AUTHORITY TO DRILL A WELL

CANADA

Exploratory ☐ Delineation ☒X
Development ☐ Service ☐

AUTHORITY TO DRILL A WELL

APPLICATION

This application is submitted with Section 82 of the Canada Oil and Gas Drilling Regulations. When approved under Section 83 of the Regulations, it is the requisite authority for the commencement of drilling operations.

Well Name in Full: SUNCOR NETLA K-77

Operator: SUNCOR ENERGY INC. Drilling Program No.: NA

Contractor: TO BE DETERMINED Permit or Lease No.: ---

Drilling Rig or Unit: TO BE DETERMINED Estimated Well Cost: $1,660,000.00

Location-Unit: K Section: 77 Grid Area: 60° 50'N, 122° 30'W

Coordinates: Lat.: 60° 46' 30.724" N (EST) Long.: 122° 44' 23.945" W (EST)

Area: NETLA Field/Pool: DEVELOPMENT

Elevation-RT/KB: ELEVATION: 618.9m (ASL) Seafloor: NA (BRT)

Approx. Spud Date: DECEMBER 30, 1998 Estimated Days on Location: 21 DAYS

Anticipated Total Depth: 2106m Target Horizon(s) SLAVE POINT

EVALUATION PROGRAM

Ten-metre sample intervals ---

Five-metre sample intervals SURFACE BEDROCK TO TD.

Canned sample intervals NOT REQUIRED

Conventional cores at ONE 18 METRE CORE OVER THE SLAVE POINT FORMATION

Logs and Tests SEE ATTACHED SHEET

CASING AND CEMENTING PROGRAM

O.D	Weight:	Grade:	Setting Depth Below Seafloor:	Cementing Program (Volumes):
406.4mm	CONDUCTOR PIPE		20mKB	GROUT TO SURFACE
244.5mm	53.57 kg/m	J-55	530mKB	50.7m³
177.8mm	34.23 kg/m	L-80	2106mKB	31.6m³

B.O.P. Equipment: AS PER CANADA OIL AND GAS DRILLING REGULATIONS, SECTION 60.
ACTUAL BOP INFORMATION TO FOLLOW UPON FINAL RIG SELECTION.

Other Information: REQUEST AUTHORIZATION TO SET SURFACE CASING AT 530mKB, REQUEST BASED ON FACT THAT THE FORMATIONS ENCOUNTERED TO 530mKB AND DOWN TO ± 664mKB ARE ALL SIMILAR KOTCHO SHALES. SEE ATTACHED IMPERIAL SUN NETLA D-7 OFFSET WELL INFORMATION. AS SUCH AN EQUIVALENT AMOUNT OF SAFETY IS CLAIMED.

Signed: Michael Southwood P.Eng. Title: MANAGER OF PROJECTS

Date: NOVEMBER 20, 1998 Company: PAJAK ENGINEERING LTD. FOR SUNCOR ENERGY INC.

APPROVAL

An approved copy of this notice is to be posted at each wellsite.

Signed: Terry Baker
Chief Conservation Officer

Date: Jan. 26/99

File: 0211-S85-1-2, WID 1862
UWI 300K776050122300

Canada

WELL TERMINATION RECORD (with attachment)

CANADA

WELL TERMINATION RECORD

This record is submitted in triplicate in compliance with Section 184 of the Canada Oil and Gas Drilling Regulations.

WELL DATA

Well Name: Suncor Netla K-77 Area: Netla

Grid Area: 60° 50' N 122° 30' W Field/Pool: Development

Permit or Lease No.: - Final Coordinates: Lat.: 60°46'30.724" Long: 122°44'23.945" (Surface)
60°46'39.24" 122°44'29.96" (FTD)

Drilling Unit: Akita 58E/Bonus 235 Elevations RT/KB: 625.2 SF/GL: 618.4

Spud Date: 7 Feb 1999 Rig Released: 12 Mar 1999 Total Depth: 2118 mKB
TVD 2058.7mKB

CASING AND CEMENTING

O.D.:	Weight:	Grade:	Depth Set:	Cement and Additives:
244.5 mm	53.57 kg/m	J 55	535.34mKB	35 tonnes RFC + 1% $CaCl_2$
177.7 mm	34.23 kg/m	L 80	1990 mKB	43 tonnes 0:1:8 Class G
				12 tonnes RFC

PLUGGING PROGRAM

Approval of the following program was obtained by (person) ..... from

(person) ..... by means of

..... on ..... 19 .

Type of Plug:	Interval:	Felt:	Cement and Additives:

Lost Circulation/Overpressure Zones: .....

Equipment left on Seafloor (Describe): .....

Provision for Re-entry (Describe and attach sketch): .....

Cores: Type: Rotary Sidewall Intervals: 22 plugs from 1997.5 to 2064.5 mKB

Other Downhole Completion/Suspension Equipment: Wireline plug in tubing at 1985 mKB
Wellhead back pressure valve

CERTIFICATION

I certify on the basis of personal knowledge of operations undertaken at the above named well that the above information is accurate.

Signed: R.W. Kooyman P. Eng. Title: Completions Consultant

Name R. W. Kooyman P. Eng. Date: 29 June 1999

Acknowledged by: D. McCabe
Engineering Branch

Well Status
Suspended [X]
Completed [X]
Abandoned [ ]

Date: Sept. 15/99

File: 9211-S85-1-2, WID 1862

UWI 300K776050122300

Canada

CANADA

RAPPORT DE CESSATION DE PUITS

Ce rapport doit être présenté en trois exemplaires, conformément à l'article 184 du Règlement concernant le forage des puits de pétrole et de gaz naturel au Canada.

DONNÉES SUR LE PUITS

Nom du puits: ..... Région .....

Étendue quadrillée: ..... Champs/Gisement: .....

No. de Permis ou Concession: ..... Coordonnées Finales: Lat: ..... Long: .....

Unité de forage: ..... Élevation-TR/GE: ..... Fonds marins/sol: .....

Date du démarrage: ..... Date de libération de l'appareil: ..... Profond. Totale: .....

TUBAGE ET CIMENTATION

Diamètre extérieur:	Poids:	Qualité	Profondeur:	Ciment et Additifs:
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

PROGRAMME D'OBTURATION

L'approbation du programme de cessation fut obtenue par (personne) .....

de (personne) .....

par ..... le ..... 19 .

Type de bouchon:	Intervalle:	Profond. vérifiée:	Ciment et Additifs:
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

Zone de perte de circulation/surpression: .....

Équipements laissés sur les fonds marins (description): .....

Mesures prises pour la réintégration (description et schéma): .....

Carottes: Type: ..... Intervalles: .....

....

Autre équipement en fond de trou pour l'achèvement/la suspension: .....

.....

CERTIFICATION

Je certifie qu'à ma connaissance, les informations ci-haut mentionnées sont exactes.

Signé: ..... Ing. Titre: .....

Nom: ..... Date: .....

État du puits
Suspendu ☐
Achevé ☐
Abandonné ☐

Reçu par: .....
Direction de la technique

Date: .....

No. de dossier: .....

Canada

Suncor Drilling and Completions

Wellbore Diagrams

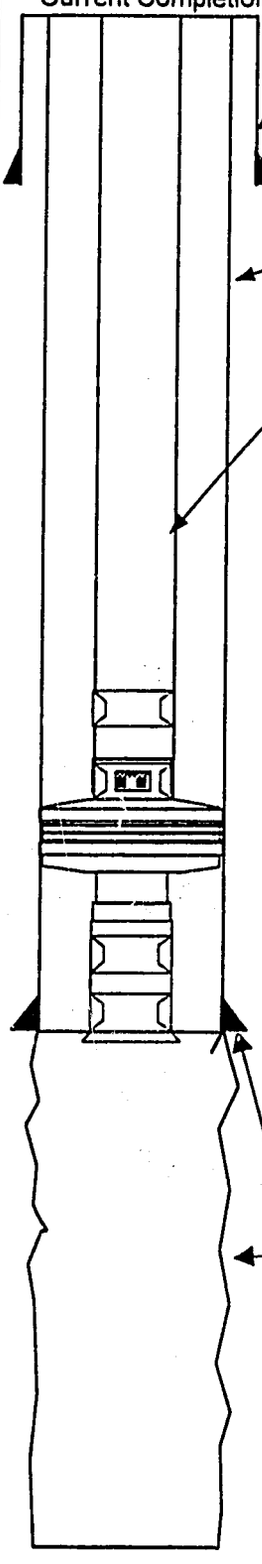
Well Name: **Suncor Netla K-77**

Surface Location: **Lat:** 60 deg 46' 30.724" North **Long:** 122 deg 44' 23.945" West

Date Run: 13 March 1999 WID : 191

Kelly Bushing	625.20	Drilled TD	2118
Ground Level	618.75	est. PBTD	2118
Difference	6.45		

Current Completion



DOWNHOLE SCHEMATIC

	Length (m)	Top Depth (mKB)	Min.I.D. (mm)
SURFACE CASING			
41 jts 244.5 mm 53.57 kg/m,J-55	294.00	0.00	
Landed @ 535.54 mKB and cemented to surface.		294.00	
PRODUCTION CASING			
154 jt. 177.8 mm. 34.23 kg/m L-80 LT&C	1992.94	-3.90	158.50
Landed @ 1989.04 mKB and cemented with 43 tonnes 0:1:8		1989.04	
tailed with 12 tonnes RFC. 8 m3 cement returns.			
Production Tubing KB to THF	3.80		
1 ea. 177.8 mm Vetco Gray XP-1 Tubing Hanger	0.20	6.20	72.82
Top lift thread 89mm EUE c/w back pressure threads			
1 ea. 88.9 mm 13.84 kg/m J-55 EUE tubing joint(s)	9.50	6.40	72.82
1 ea. 88.9 mm 13.84 kg/m J-55 EUE pup joint	1.95	15.90	72.82
204 jts. 88.9 mm 13.84 kg/m J-55 EUE tubing joint(s)	1952.00	17.85	72.82
1 ea. 88.9 mm 13.84 kg/m J-55 EUE pup joint	0.70	1969.85	72.82
1 ea. 88.9 mm Guiberson GX profile nipple	0.39	1970.55	69.85
1 jt. 88.9 mm 13.84 kg/m J-55 EUE tubing joint(s)	9.62	1970.94	72.82
1 ea. 88.9 mm EUE box x 88.9 mm NS-CT pin L-80 Baker cross over	0.22	1980.56	72.82
1 ea. 88.9 mm NS-CT box x 88.9 mm VAM ACE pin L-80 Baker cross	0.28	1980.78	72.82
1 ea. 88.9 mm 13 Chrome Baker L-10 on-off tool	0.74	1981.06	69.85
1 ea. 88.9 mm 13 Chrome Baker E-22, 80-400 seal assembly c/w v-ry	0.25	1981.80	72.82
1 ea. 13 Chrome Baker FB-1, 87-40 packer	0.89	1982.05	76.32
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE pup joint	2.86	1982.94	72.82
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE B x B QX profile nipple	0.33	1985.80	69.85
1 ea. 88.9 mm 13 Chrome Baker VAM ACE underbalance disk assemb	0.33	1986.13	72.82
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE perforated pup joint	3.15	1986.46	72.82
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE QXN profile nipple	0.38	1989.61	66.93
Tubing Bottom		1989.99	

NOTE: A PX plug has been set into the X profile of the on-off connector to suspend the well.

177.8 mm Casing Shoe at 1989.04 mKB

Slave Point Open Hole

1989.04 to 2113 mKB

Acidized with foam diverted 55 m3 28% HCl FoamMAT treatment

Drilled TD = 2113 mKB

FINAL WELL REPORT

SUNCOR
ENERGY

Final Well Report

for

Suncor Netla K-77

Lat.: 60 deg 46' 30.724" North
Long: 122 deg 44' 23.945" West

1862

N.E.B. COPY

SUNCOR ENERGY

Final Well Report

for

Suncor Netla K-77

Lat.: 60 deg 46' 30.724" North
Long: 122 deg 44' 23.945" West

NATIONAL ENERGY BOARD
ENGINEERING BRANCH
JUN 30 1999

Suncor Netla K-77
Final Well Report

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Suncor Netla K-77
Final Well Report

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A) Introduction

Suncor Netla K-77
Final Well Report

a) INTRODUCTION

The Suncor Netla K-77 well was originally planned as a vertical test of a 2-D seismic anomaly thought to be a Slave Point Reef anomaly. The location was picked and prepared prior to a 3-D seismic survey being completed and the results being available. Upon receipt of the seismic results, a large fault was recognized and it was decided drill the well directionally and to move the bottomhole location approximately 260 m North and 100 m West of the surface location.

Field Operations began 29 January 1999. It took approximately 9 days to move and prepare the Akita #58 drilling rig from Chetwin to location and rig up fully. The well was spudded on 7 February 1999 and drilled without incident into the top of the Slave Point Formation to a depth of 1990 mKB. Logs were run and 177.8 mm casing was set at 1990 mKB to protect the wellbore from unstable sloughing shales. The Akita drilling rig was removed from location and the Alberta Gold (Bonus Well Servicing) Rig # 235 moved from C-07 to location.

88.9 mm tubing was used to drill the well to an FTD of 2118 mKB where logs were again run, a Formation Microscanner log was run and 22 sidewall cores were cut. A Velocity Seismic profile was also run.

The completion was commenced following the open hole evaluation. A Baker FB-1 packer was set in the 177.8 mm casing at 1982 mKB on wireline. The service rig was used to run the seal assembly on 88.9 mm EUE tubing. An attempt was made to record an initial static pressure using gauges suspended from the wellhead.

Following a foamed acid stimulation, the well was unable to flow once the nitrogen injected into the formation was depleted. Stop cocking the well recovered 47.58 m3 fluid in 24 hours.

The well was shut and the service rig released. Nitrogen was used to charge the well and record a pressure fall off test. All equipment and services were off location by the 18 March 1999.

The pressure recorders were pulled using a wireline skid winch mobilized to site with a helicopter. At this time, the well is standing, suspended. A wireline plug is set near the tubing bottom, the tubing is depressured and inhibited, and a backpressure valve has been installed in the tubing hanger to isolate the wellhead from the tubing. The wellhead valves are chained and locked.

6) Well Data

b) **General Well Data**

WELL DATA: (All depths in KB)

Location:	Lat.: 60 deg 46' 30.724" North
	Long: 122 deg 44' 23.945" West
Ground Elevation:	618.40 m
KB Elevation:	625.20 m
Drilled TD:	2118 mKB (meas.) 2108 mKB (TVD)
Cased Depth	1990 mKB
PBTD:	2118 mKB
Perforations:	None
	Slave Point open hole from 1990 to 2118 mKB.
Well Deliverability:	TSTM
AOF:	TSTM
H_2S:	275 – 350 PPM (Based on offset gas analysis)
CO_2:	12% (Based on offset gas analysis)

CASING DATA:

Surface Casing:

41 joints 244.5 mm, 53.57 kg/m, J-55 landed at 535.54 mKB. Casing cemented to surface with 35 tonnes RFC +1% $CaCl_2$.

Production Casing:

154 joints (1,992.94 m) 177.8 mm, 34.23 kg/m, L-80, LT&C landed @1990m kb. Casing cemented to surface with 43 tonnes 0:1:8 tailed with 12 tonnes RFC. There were 8 m3 cement returns. Estimated cement interface is 1800 mKB.

CASING PROPERTIES: 177.8 mm 34.23 kg/m, L-80, LT&C

Nominal ID	161.7 mm
Min. Drift Diameter	158.5 mm
Casing Capacity	0.020538 m^3/m
88.9 mm Annulus Capacity	0.014327 m^3/m
Min. Casing Burst	43.71 MPa (@ 100%)
Min. Casing Collapse	26.41 MPa (@ 100%)
73mm Tubing	0.003012 m^3/m
88.9 mm Tubing	0.004540 m^3/m

WELLBORE EQUIPMENT

TUBING PROPERTIES:	73.0mm, J-55 9.67 kg/m	88.9 mm J-55 EUE
Nominal ID	62.0 mm	76.0 mm
Min. Drift Diameter	59.61 mm	72.82 mm
Coupling OD	93.17 mm	114.3 mm
Tubing Capacity	0.003012m3/m	0.004540 m3/m
Min. Tubing Burst	53.0 MPa (@ 100%)	48.13 MPa (@100%)
Min. Tubing Collapse	50.1 MPa (@ 100%)	51.02 MPa (@100%)

CASING BOWL: ABB Vetco 346.1 mm 21 MPa x 340mm Slip on

WELLHEAD: As per Quote 98-7003R2. 346.1 mm, 21 MPa x 179 mm 35 MPa tubing spool, 35 MPa 79 mm double master valve top section and 79 mm 35 MPa wing valve. Tubing hanger threaded 88.9mm NS-CT down complete with BPV preparation.
Note: Primary parts are PSL 3. Secondary parts are PSL 2.

PERFORATIONS:

1999 Slave Point open hole, 1989 - 2118 mKB (129 m)
Acidized with 55 m3 28% HCl in a foam diverted treatment

FORMATION INFORMATION:

Zone	Slave Point	
Depth (Top)	1990m	
Pressure	17,300 kPa	
H2S Content	275 PPM	(Est. from C-07)
CO2 Content	12.22 %	(Est. from C-07)
Temperatures	72.2 degC (162 degF)	
On Target	Yes	
Directionally Drilled	No. Vertical Well.	

Well Operator

Suncor Energy Inc.
P.O. Box 38
112 - Fourth Avenue S.W.
Calgary, Alberta, Canada
T2P 2V5

Drilling and Servicing Rig Information

Drilling Rig:	Akita Rig 58E
Operator:	Akita Drilling Ltd. 1110, 505 – Third Street S.W. Calgary, Alberta, Canada T2P 3E6

Completion Rig Information

Service Rig:	Bonus Rig 235
Operator:	Bonus Resource Service Corp. 1710, 700 – Fourth Ave. S.W. Calgary, Alberta, Canada T2P 3J4

c) Ops Summ

c) SUMMARY OF DRILLING OPERATIONS

Date	Day	Operation Summary	Midnight Depth
29-Jan-99	1P	Load out & move Akita 58	
30-Jan-99	2P	Load out & move	
31-Jan-99	3P	Move & Rig Up	
01-Feb-99	4P	Move & Rig up	
02-Feb-99	5P	Move & Rig up.	
03-Feb-99	6P	Rig to spud.	
04-Feb-99	7P	Rig up to spud. Fired up boiler, inspect and raise derrick.	
05-Feb-99	8P	Install Tesco Top Drive, Weld Conductor, Rig to Spud	
06-Feb-99	9P	Rig to spud.	
07-Feb-99	1	Make up Bit & BHA. Spud in well, drill and survey surface hole.	237
08-Feb-99	2	Drill & survey 311mm surface hole from 237 m to 401 m.	401
09-Feb-99	3	Drill and survey ahead. Wiper trip. S.S. Survey on trip. Condition hole.	540
10-Feb-99	4	Directional survey surface hole. Run casing and cement. Nipple down diverter.	540
11-Feb-99	5	Nipple down diverter. Install bowl and nipple up 349 mm stack.	540
12-Feb-99	6	Nipple up. Pressure test. Drill out. Leak Off Test. Drill ahead.	544
13-Feb-99	7	Drill and survey ahead to KOP.	725
14-Feb-99	8	Drill and survey ahead to KOP.	895
15-Feb-99	9	Drill and survey ahead to KOP.	1085
16-Feb-99	10	Drill to KOP. Condition hole. Trip. Make up dir. tools. Trip CTB	1117
17-Feb-99	11	Directional drill build section with Anadrill.	1251
18-Feb-99	12	Drill ahead with Anadrill Motor & MWD.	1373
19-Feb-99	13	Drill ahead tangent section with Anadrill Motor & MWD.	1484
20-Feb-99	14	Drill ahead with Anadrill Motor & MWD. Trip for bit.	1577
21-Feb-99	15	Tripped for bit. Directional drill with Anadrill & MWD.	1630
22-Feb-99	16	Drill & Survey Ahead, Trip to set up motor, CTB, Drill ahead.	1685
23-Feb-99	17	Directional drill with Anadrill motor & MWD.	1782
24-Feb-99	18	Motor drill ahead 222mm hole	1872

c) SUMMARY OF DRILLING OPERATIONS

Date	Day	Operation Summary	Midnight Depth
25-Feb-99	19	Motor drill ahead 222mm hole	1990
26-Feb-99	20	Circulated and conditioned hole. Tripped out and logged.	1990
27-Feb-99	21	Wireline logged. Tripped in, condition hole and laid down DP.	1990
28-Feb-99	22	Lay down drill pipe. Run casing.	1990
01-Mar-99	23	Circulated casing & cemented. Set slips. Install tree. Rig out.	1990
02-Mar-99	24	Tear out rentals. Tear out rig to move.	1990
03-Mar-99	25	Dismantle Akita 58 and move off location.	1990
04-Mar-99	26	Finished moving Akita # 58 off location. Used the same trucks to move Bonus # 235 from C-07 to the above location c/w necessary rental equipment. Spotted & began to rig in the rig & support equipment.	1990
05-Mar-99	27	Rigged in the rig, pumps & tanks, BOP's & flow nipple, drill recorder. Function / pressure tested the accumulator & BOP's. Rigged in handling equipment. Spotted & tallied D/C's & tbg.	1990
06-Mar-99	28	Made up drilling BHA # 6. Ran in the hole sideways w/ 89mm EUE tubing. Rigged in the Power Swivel & pack-off head. Broke circulation w/ fresh water & prepared to drill out cement.	1990
07-Mar-99	29	Drilled out cement & wiper plugs from 1973 mKB to 1991 mKB. Displaced to "StarDrill" Mud system. Rigged out the pack-off head, installed flow nipple. Drilled new hole from 1990 - 2024 mKB.	2024
08-Mar-99	30	Continued to motor drill new hole from 2024 - 2088.6 mKB @ 00:00 hrs.	2088
09-Mar-99	31	Continued to motor drill new hole from 2088 to 2118 mKB. Circulate sample to surface. POOH.	2118
10-Mar-99	32	Continued to POOH w/ BHA # 6. Laid down Drill Collars. Rigged in Schlumberger open hole logging unit. Ran "Platform Express" (1 misrun). RIH & cut 22 sidewall cores.	2118
11-Mar-99	33	POOH w/ MSCT. Waited on FMI tools to arrive on location. Conducted FMI log. N/D riser spools & flow nipple. RIH w/ casing scraper to 1988 mKB. Displaced to fresh water. POOH.	2118

c) SUMMARY OF DRILLING OPERATIONS

Date	Day	Operation Summary	Midnight Depth
12-Mar-99	34	POOH w/ Bit & Scraper. Waited on Velocity logging tools / equipment to arrive on location. Conducted VSP log, w/ 2 thumpers in 2 locations. Rigged out Schlumberger's open hole equipment.	2118

NOTE:

Details of penetration rate, lithology and formation tops, gas shows, etc. are shown in the "Composite Well History and Drilling Time Lithology Log" which is included in the Appendices.

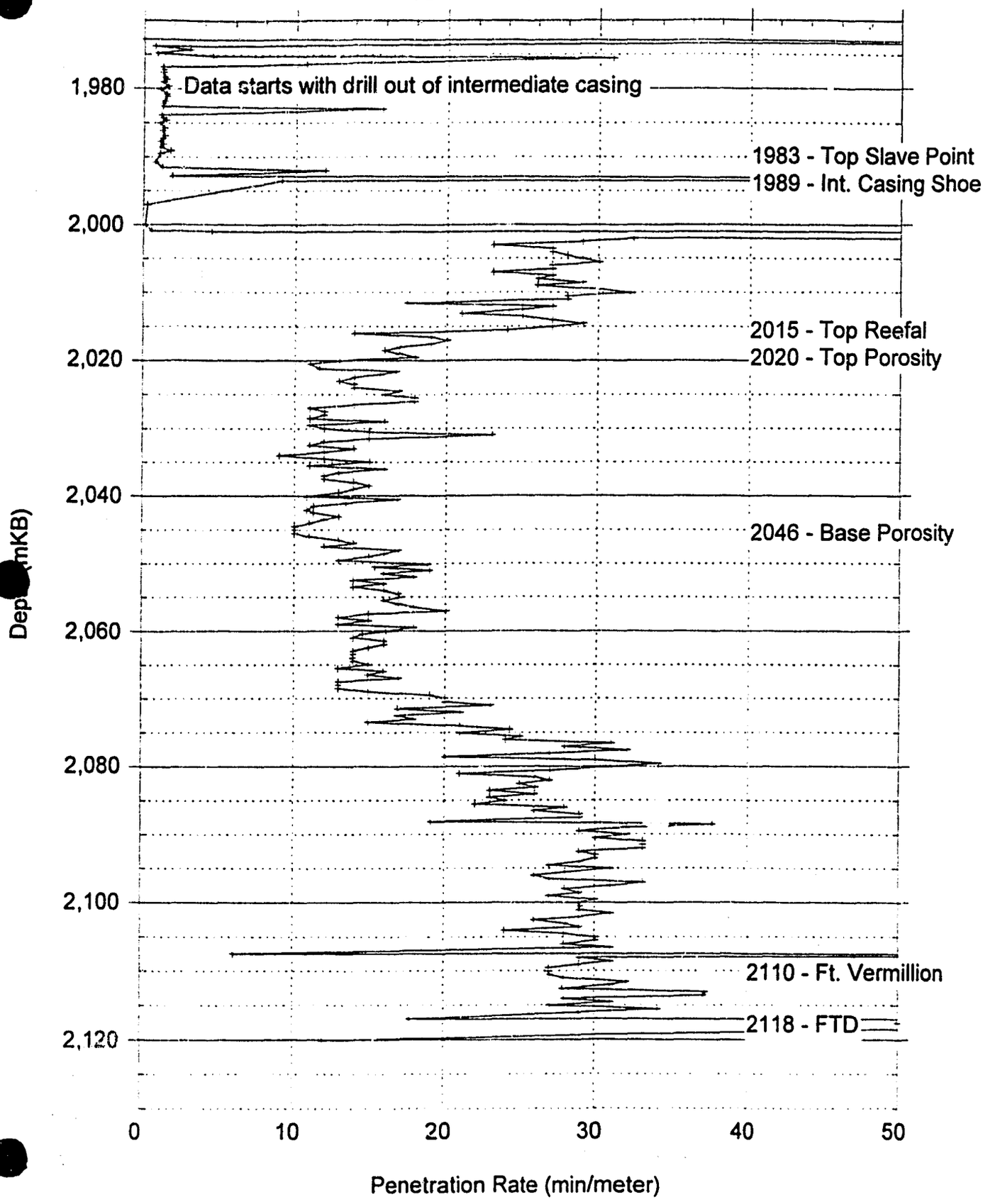
Suncor Netla K-77-60-50-122-30
Mud Properties

Date	Day #	Mud System	Depth (m)	Mud Density	E.C.D. (kg/m³)	Mud pH	API Water Loss	Mud PV	Filter Cake	Viscosity	Mud Yield	K Parame	N Parameter
07/02/99	1	K2SO4 Visplex	210	1,040.00	0	11.1	11	11	1	0	26	29.98	0.09
08/02/99	2	K2SO4 Visplex	354	1,070.00	0	10	10.2	10	1	0	23.5	29.98	0.09
09/02/99	3	K2SO4 Visplex	540	1,125.00	0	10.1	11	10	1	0	27	42.52	0.03
10/02/99	4	K2SO4 Visplex	540	1,125.00	0	10	11.2	9	1	0	26.5	41.46	0.04
Run and Cement 244.5 mm Surface Casing at 535.54 mKB - Nipple up and prepare to drill ahead.													
11/02/99	5	K2SO4 Visplex	540	1,095.00	0	8.5	11.5	6	1	0	23.5	40.8	0.02
12/02/99	6	K2SO4 Visplex	540	1,095.00	0	8.5	11.5	6	1	0	23.5	40.8	0.02
13/02/99	7	K2SO4 Visplex	695	1,140.00	0	10.5	8.5	16	1	0	32.5	36.58	0.1
14/02/99	8	K2SO4 Visplex	895	1,160.00	0	10	11.8	17	1	0	27	30.75	0.1
15/02/99	9	K2SO4 Visplex	1,051.00	1,160.00	0	10.8	8	15	1	0	19.5	20.94	0.11
16/02/99	10	K2SO4 Visplex	1,117.00	1,155.00	0	10.2	9.7	16	1	0	23.5	20.94	0.11
17/02/99	11	K2SO4 Visplex	1,251.00	1,145.00	0	10	8.3	13	1	0	16	16.54	0.12
18/02/99	12	K2SO4 Visplex	1,357.00	1,155.00	0	10	8.3	18	1.5	0	28	31.47	0.1
19/02/99	13	K2SO4 Visplex	1,462.00	1,180.00	0	9.7	7.3	19	1.5	0	31	35.88	0.1
20/02/99	14	K2SO4 Visplex	1,568.00	1,190.00	0	10	7.6	19	1.5	0	32	33.16	11
21/02/99	15	K2SO4 Visplex	1,611.00	1,195.00	0	10.5	8.5	18	1.5	0	34.5	38.04	10
22/02/99	16	K2SO4 Visplex	1,681.00	1,185.00	0	9.5	7.2	20	1.5	0	27	30.72	10
23/02/99	17	K2SO4 Visplex	1,780.00	1,195.00	0	10.5	7.2	16	1.5	0	40	36.6	0.14
24/02/99	18	K2SO4 Visplex	1,860.00	1,210.00	0	10	7	20	1.5	0	41	48.35	0.09
25/02/99	19	K2SO4 Visplex	1,959.00	1,205.00	0	10	7.2	17	1.5	0	31.5	38.41	0.08
26/02/99	20	K2SO4 Visplex	1,990.00	1,205.00	0	10	7.2	20	1.5	0	32.5	36.6	0.1
27/02/99	21	K2SO4 Visplex	1,990.00	1,210.00	0	10	8	16	1.5	0	31	39.98	0.07
28/02/99	22	K2SO4 Visplex	1,990.00	1,210.00	0	10	8	16	1.5	0	31	39.98	0.07
01/03/99	23	K2SO4 Visplex	1,990.00	1,200.00	0	9	9	15	1.5	0	21.5	26.16	0.08
Run and Cement 177.8 Intermediate Casing at 1,989.04 mKB - Dump Mud and Prepare Servica Rig Drill In Fluid													
07/03/99	29	STARDRILL	2,019.00	1,040.00	0	9.5	6.5	7	1	45	10	3.53	0.32
08/03/99	30	STARDRILL	2,081.00	1,040.00	0	10.5	7.8	17	1	57	14	10.3	0.19
09/03/99	31	STARDRILL	2,118.00	1,050.00	0	10.5	6.5	28	1	90	24.5	19.72	0.17
10/03/99	32	STARDRILL	2,118.00	1,050.00	0	10.5	6.5	28	1	90	24.5	19.72	0.17
11/03/99	33	STARDRILL	2,118.00	1,050.00	0	10.5	6.5	28	1	90	24.5	19.72	0.17
12/03/99	34	STARDRILL	2,118.00	1,050.00	0	10.5	6.5	28	1	90	24.5	19.72	0.17

Suncor Netla K-77-60-50-122-30
Drill Bit Summary

Bit #	Manufacturer	Designation	Size (mm)	(N) New or (U) Used	Cost	Date Run	Date Pulled	Depth In	Depth Out	Cumulative Meters	Cumulative Hours	Cumulative ROP (m/hr)	Reason Pulled
1	Reed	HP11	311	U	2,500	07-Feb-99	08-Feb-99	0	315	315	24.5	12.86	HP
2	Hughes	J1	311	U	2,500	08-Feb-99	10-Feb-99	315	540	225	21.5	10.47	TD
3	Reed	EHP43A	222.2	N	10,500	12-Feb-99	16-Feb-99	540	1,105.00	565	63.5	8.9	BHA
4	Smith	F10T	222	N	11,095	16-Feb-99	21-Feb-99	1,105.00	1,577.00	472	82.5	5.72	TQ
5	Smith	F10T	222	N	11,095	21-Feb-99	26-Feb-99	1,577.00	1,990.00	108	20.75	5.2	TD
6	Smith	F10T	222	R	11,095	27-Feb-99	28-Feb-99	1,990.00	1,990.00	0	0	0	TD
7	Reed	EHP51H	155.6	N	8,200	05-Mar-99	10-Mar-99	1,990.00	2,118.00	128.6	52.75	2.44	TD

Suncor Netla K-77
ROP for Nisku Zone



c) SUMMARY OF COMPLETION OPERATIONS

Date	Day	Operation Summary
13-Mar-99	1	RIH w/ gauge ring & junk basket to 1987 mKB. RIH & wireline set Baker FB-1 permanent packer @ 1982.0 mKB. RIH w/ seal assembly, on/off, & 89mm J-55 EUE tbg. Pickled tbg. N/U wellhead. Swabbed & flowed a brief clean up.
14-Mar-99	2	Suspend recorders on slickline. POOH, conducted reverse gradient. Rigged in Dowell Schlumberger's FoamMAT treating equip. Stimulated the Slave Point w/ 55 m3 of 28% HCl, 70.41 m3 of surfactant. Prepared to flow well on cleanup.
15-Mar-99	3	Continued to flow clean-up after stimulating the Slave Point. Flow rates dropped, & the tubing loaded w/ fluid. Began to stopcock the well @ 22:00 hrs. 47.58m3 of load fluid to recover @ midnight.
16-Mar-99	4	Rigged out Bonus # 235 and released from location. Ran bottom hole recorders and set on Nipple stop in "QXN" profile. Lined up equipment to perform fall off test as directed by Calgary.
17-Mar-99	5	Charged well w/ 4000 scm's of N2. Starting pressure = 4500 kPa, ISIP = 13,400 kPa, FSIP @ 3 hrs = 7400 kPa. Secured the well. Released all services. Hauled out equipment. 44,705 3,024,389
18-Mar-99	6	Hauled out test equipment & wellsite trailer. Removed rig & flare stack anchors. All equipment is off location & the wellhead is secured.
5-May-99	7	Helicopter arrived in Liard at 15:00 Hrs. Flew to Km 91 and hauled wireline skid unit and junk basket to location for work in morning.
6-May-99	8	Continue with operations as planned. Pull recorders and run static gradient. SITP-14.072 kPa, PBTD- 2078 mKB, BHT-105.2*c, BHP-17,157 kPa.
7-May-99	9	Heavy snowfall through out day unable to fly out of Fort Liard with current weather conditions. Extremely high gusting winds with snow.
8-May-99	10	Heavy snowfall through out day unable to fly out of Fort Liard with current weather conditions. Extremely high gusting winds with snow.
9-May-99	11	Managed to fly out to K-77 location. Run and tag PBTD at 2113.5 mKB, Set plug and prong in Proficient "QX" profile at 1985.8mKB. Bled down and monitored pressure for 1 hour with no increase.

c) SUMMARY OF COMPLETION OPERATIONS

Date	Day	Operation Summary
10-May-99	12	SITP= 7000 kPa no change from last night at 19:00 Hrs. Bleed down remaining pressure and inhibited tbg. Install ABB Vetco BPV. Well secured until further notice.
NOTE:		A copy of the detailed drilling and completion reports is included in the appendix to this report.

d) Weather

d) SUMMARY OF WEATHER CONDITIONS

Suncor Netla K-77-60-50-122-30

Date	Daily Low(°C)	Daily High (°C)	Description of Weather.
5-Mar-99	-27	0	Snow
6-Mar-99	-25	0	Light Snow
7-Mar-99	-24	0	Overcast
8-Mar-99	-20	0	Light Snow
9-Mar-99	-20	0	Light Snow
9-Mar-99	0	-7	Clear
9-Mar-99	-18	-6	Clear sky,south wind,-6"c
10-Mar-99	-18	-6	Snow
11-Mar-99	-7	-6	Clear
12-Mar-99	-7	-6	Clear
13-Mar-99	-8	0	Clear
14-Mar-99	-8	100	Clear
15-Mar-99	-8	100	Clear
15-Mar-99	9	0	Warm with slight wind from west
15-Mar-99	-1	0	Clear
16-Mar-99	-1	0	Clear
17-Mar-99	-2	0	Clear
18-Mar-99	5	0	Clear
5-May-99	-1	0	Clear
6-May-99	-1	0	Clear
6-May-99	-4	0	Light rain and fog during flight back
7-May-99	-6	0	Heavy snowfall and high winds.
7-May-99	-4	0	Still heavy snowfall.
7-May-99	-4	0	High winds and intermitant snowfall.
7-May-99	-3	0	Light snow chance clear by morning.
8-May-99	-3	0	Windy & snow
8-May-99	-5	0	Snow
8-May-99	-3	0	1/4 mile visibility, Light snow.
8-May-99	-1	0	Heavy wet snowfall, Low visibilty.
9-May-99	-1	0	Some snow,rain and hail throught day.
10-May-99	2	0	Heavy fog in Ft Liard.

e) Geological.

e) GEOLOGICAL AND PALAEONTOLOGICAL INFORMATION

See attached Well Geological Report prepared by Brian Hester of Cabra Consulting for Suncor Energy.

©Directional

f) SUMMARY OF DIRECTIONAL SURVEYS WELLBORE DIRECTIONAL PLOT

Please see attached Post Well Directional Report prepared by Schlumberger Anadrill for Suncor Energy Inc.

ستاد اقدامات تأمینی

g) DETAILS OF COMPLETION AND WELLBORE EQUIPMENT

Surface Casing:
41 joints 244.5 mm, 53.57 kg/m, J-55 landed at 535.54 mKB. Casing cemented to surface with 35 tonnes RFC +1% $CaCl_2$.

Production Casing:
154 joints (1,992.94 m) 177.8 mm, 34.23 kg/m, L-80, LT&C landed at 1,989.04 m. Casing cemented to surface with 43 tonnes 0:1:8 tailed with 12 tonnes RFC. There were 8 m3 cement returns. Estimated cement interface is 1800 mKB.

Open Hole:

The well was completed with an open hole section from 1989 to 2113 mKB

Production Tubing String:

Item	Length	Top Depth	OD	ID
KB to THF	6.20			
1 ea. 177.8 mm EUE tubing hanger	0.2	6.2	179	72.82
1 ea. 88.9 mm 13.84 kg/m J-55 EUE tubing joint	9.5	6.4	106.17	72.82
1 ea. 88.9 mm 13.84 kg/m J-55 EUE pup joint	1.95	15.9	106.17	72.82
204 jts. 88.9 mm 13.84 kg/m J-55 EUE tubing joints	1,952.00	17.85	106.17	72.82
1 ea. 88.9 mm 13.84 kg/m J-55 EUE pup joint	0.7	1,969.85	106.17	72.82
1 ea. 88.9 mm Guiberson GX profile nipple	0.39	1,970.55	106.17	69.85
1 ea. 88.9 mm 13.84 kg/m J-55 EUE tubing joint	9.62	1,970.94	106.17	72.82
1 ea. 88.9 mm L-80 EUE x NSCT cross over	0.22	1,980.56	114.3	72.82
1 ea. 88.9 mm L-80 NSCT x VAM ACE cross over	0.28	1,980.78	114.3	72.82
1 ea. 88.9 mm 13 Chrome Baker l-10 on-off tool c/w 69.85mm Otis "X" profile	0.74	1,981.06	140	69.85
1 ea. 88.9 mm 13 Chrome Baker size 80-40, E-22 seal assembly c/w V-Ryte seals	0.25	1,981.80	152.4	72.82
1 ea. 152.4 mm 13 Chrome Baker FB-1 packer	0.89	1,982.05	152.4	101.6
1 ea. 88.9 mm 13.84 kg/m 13 Chrome VAM ACE pup joint	2.86	1,982.94	93.17	72.82
1 ea. 88.9 mm 13 Chrome Proficient QX nipple	0.33	1,985.80	100	69.85
1 ea. 88.9 mm 13 chrome underbalance disk	0.33	1,986.13	115	72.82
1 ea. 88.9 mm 13.84 kg/m 13 chrome VAM ACE perforated pup joint	3.15	1,986.46	100	72.82
1 ea. 88.9 mm 13 chrome proficient QXN profile nipple c/w re-entry guide	0.38	1,989.61	100 66	93.00
Tubing Bottom		1943.28		

Suncor Drilling and Completions
Wellbore Diagrams

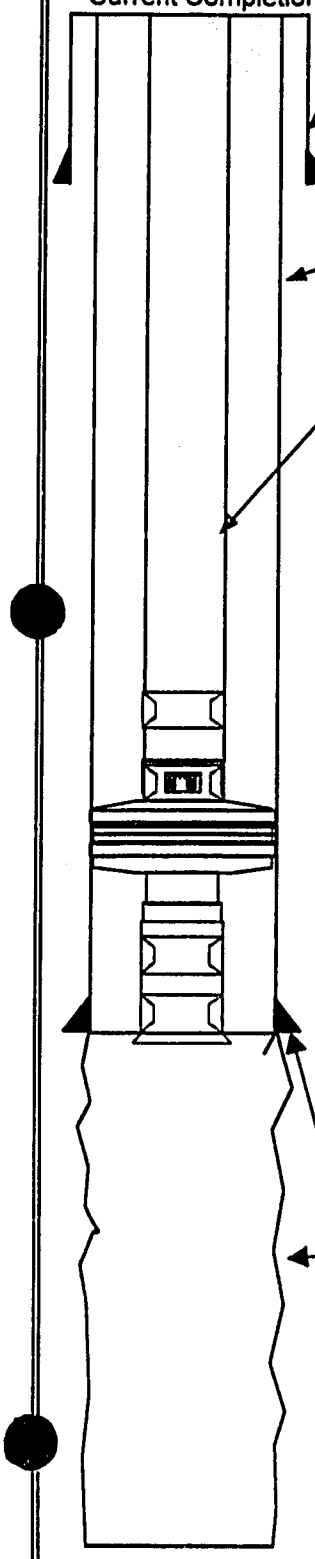
Well Name: **Suncor Netla K-77**

Surface Location: **Lat:** 60 deg 46' 30.724" North **Long:** 122 deg 44' 23.945" West

Date Run: 13 March 1999 WID : 191

Kelly Bushing	625.20	Drilled TD	2118
Ground Level	618.75	est. PBTD	2118
Difference	6.45		

Current Completion



DOWNHOLE SCHEMATIC

	Length (m)	Top Depth (mKB)	Min.I.D. (mm)
SURFACE CASING			
41 jts 244.5 mm 53.57 kg/m,J-55	294.00	0.00	
Landed @ 535.54 mKB and cemented to surface.		294.00	
PRODUCTION CASING			
154 jt. 177.8 mm. 34.23 kg/m L-80 LT&C	1992.94	-3.90	158.50
Landed @ 1989.04 mKB and cemented with 43 tonnes 0:1:8		1989.04	
tailed with 12 tonnes RFC. 8 m3 cement returns.			
Production Tubing KB to THF	3.80		
1 ea. 177.8 mm Vetco Gray XP-1 Tubing Hanger	0.20	6.20	72.82
Top lift thread 89mm EUE c/w back pressure threads			
1 ea. 88.9 mm 13.84 kg/m J-55 EUE tubing joint(s)	9.50	6.40	72.82
1 ea. 88.9 mm 13.84 kg/m J-55 EUE pup joint	1.95	15.90	72.82
204 jts. 88.9 mm 13.84 kg/m J-55 EUE tubing joint(s)	1952.00	17.85	72.82
1 ea. 88.9 mm 13.84 kg/m J-55 EUE pup joint	0.70	1969.85	72.82
1 ea. 88.9 mm Guiberson GX profile nipple	0.39	1970.55	69.85
1 jt. 88.9 mm 13.84 kg/m J-55 EUE tubing joint(s)	9.62	1970.94	72.82
1 ea. 88.9 mm EUE box x 88.9 mm NS-CT pin L-80 Baker cross over	0.22	1980.56	72.82
1 ea. 88.9 mm NS-CT box x 88.9 mm VAM ACE pin L-80 Baker cross	0.28	1980.78	72.82
1 ea. 88.9 mm 13 Chrome Baker L-10 on-off tool	0.74	1981.06	69.85
1 ea. 88.9 mm 13 Chrome Baker E-22, 80-400 seal assembly c/w v-ry	0.25	1981.80	72.82
1 ea. 13 Chrome Baker FB-1, 87-40 packer	0.89	1982.05	76.32
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE pup joint	2.86	1982.94	72.82
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE B x B QX profile nipple	0.33	1985.80	69.85
1 ea. 88.9 mm 13 Chrome Baker VAM ACE underbalance disk assemb	0.33	1986.13	72.82
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE perforated pup joint	3.15	1986.46	72.82
1 ea. 88.9 mm 13 Chrome Proficient VAM ACE QXN profile nipple	0.38	1989.61	66.93
Tubing Bottom		1989.99	

NOTE: A PX plug has been set into the X profile of the on-off connector to suspend the well.

177.8 mm Casing Shoe at 1989.04 mKB

Slave Point Open Hole

1989.04 to 2113 mKB

Acidized with foam diverted 55 m3 28% HCl FoamMAT treatment

Drilled TD = 2113 mKB

b) Emulation

h) RESERVOIR AND WELL EVALUATION DATA

The well was drilled to FTD using a carbonate loaded polymer drilling mud system. After the packer and production tubing string were run, the well was swabbed in on 13 March 1999. It was flowed briefly (4 hours) in an attempt to unload any mud remaining in the wellbore and then shut in while stimulation equipment was rigged up.

A short duration initial pressure buildup was conducted on the 14 March 1999 following the initial cleanup flow. A final pressure of 11,534.5 kPa was recorded but the bottomhole pressure was still building at 10 kPa/hour.

A 55 m^3 foam diverted acid stimulation was conducted on 14 March 1999.

The well was flowed back on clean up from 0000 on 15 March until 1030 on 16 March 1999. Flow declined rapidly and died. The well was stopcocked in an attempt to lift stimulation fluid out of the well. Total recover was 83.74 m3 with 44.12 m3 load fluid remaining to be recovered.

Tandem Starburst Quartz pressure recorders were run into the well on 16 March 1999. While the well was shut in, the service rig and testers were rigged out and moved out just ahead of breakup. An attempt was made to conduct a pressure falloff test with nitrogen to determine reservoir permeability but the pressure gauge information would suggest that it was unsuccessful.

The Starburst recorders were pulled and a static gradient survey run on 6 May 1999. A wireline plug was run and the well suspended.

Copies of the testers notes and of the pressure data reports are included in the appendix to this report. A digital copy of this information is included in this report to the National Energy Board.

Dynamical Analysis (I

i) WIRELINE LOGS, ANALYSES, AND OTHER REPORTS

Wireline Logs

Two logging runs were conducted on this well; one on the open hole prior to running casing, and second on the open hole Slave Point portion of the well. The following logs were run:

AITE-BHC-CNL-LDT-D-RXO-XY CAL	27 Feb 1999	535.5 - 1990 mKB
DIS	27 Feb 1999	0 - 535.5 mKB
Platform Express	11 March 1999	1986.8 - 2115.6 mKB
MSCT (22 cores)	11 March 1999	1997.5 - 2064.5 mKB
FMI	11 March 1999	1986.8 - 2115.6 mKB
VSP	11 March 1999	600.0 - 2115.6 mKB

Copies of these logs have been forwarded to the National Energy Board under separate cover.

Analyses

Core Analysis

Core Laboratories conducted an analysis of the 22 plugs cut and recovered from the well. A copy of the analysis is included in the appendix to this report.

Pressure Analysis

No detailed pressure analysis was conducted on the data collected from this well. Copies of the digital data are appended to this report.

Fluid Analysis

Attached are copies of gas and water analyses conducted on the effluent from this well.

Suncor feels that all of the water recovered was a mixture of spent acid water, load water or water of condensation. At the end of the test period, 44.12 m3 load fluid remained in the formation.

AGAT® Laboratories

GAS ANALYSIS

CONTAINER IDENTIFICATION: AGAT #NN1

LABORATORY NUMBER: GN37201A

OPERATOR NAME: SUNCOR INC. RESOURCES GROUP

UNIQUE WELL IDENTIFIER:

WELL NAME:

ELEVATIONS: KB m / GRD m

FIELD OR AREA: YUKON

POOL OR ZONE: SLAVE POINT

NAME OF SAMPLER:

COMPANY: ENTEST CORP.

TEST TYPE:

NO:

TEST RECOVERY: 60 DEG 50'latitude 122 DEG 30'longitude

TEST INTERVAL OR PERFS:

SAMPLING POINT: WELLHEAD

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa				1750	1750	850
TEMPERATURE °C						21

DATE SAMPLED (Y-M-D): 99-03-16

DATE RECEIVED (Y-M-D): 99-03-22

DATE REPORTED (Y-M-D): 99-03-29

ANALYST: CT/PL NCO

OTHER INFORMATION: NETLA K-77

COMP	MOLE FRACTION: AIR FREE AS RECEIVED	MOLE FRACTION: AIR FREE ACID GAS FREE	PETROLEUM LIQUID CONTENT mL/m³
H_2	0.0001	0.0001	
He	0.0015	0.0018	
N_2	0.1661	0.2007	
CO_2	0.1723	0.0000	
H_2S	TRACE	TRACE	
C_1	0.6595	0.7968	
C_2	0.0005	0.0006	
C_2	0.0000	0.0000	0.0
iC_4	0.0000	0.0000	0.0
nC_4	0.0000	0.0000	0.0
iC_5	0.0000	0.0000	0.0
nC_5	0.0000	0.0000	0.0
C_6	0.0000	0.0000	0.0
C_7 +	0.0000	0.0000	0.0
C_8			
C_9			
TOTAL	1.0000	1.0000	0.0

GROSS HEATING VALUE MJ/m³ 15° C AND 101.325 kPa

MOISTURE AND ACID GAS FREE: 30.13

AIR FREE AS RECEIVED: 24.95

VAPOUR PRESSURE PENTANES PLUS: 0.0 kPa

RELATIVE DENSITY

MOISTURE FREE AS SAMPLED		MOISTURE AND ACID GAS FREE	
MEASURED	CALCULATED	MEASURED	CALCULATED
	0.788		0.636

PSEUDO CRITICAL PROPERTIES (CALCULATED)

AS SAMPLED		ACID GAS FREE	
pPc (abs)	pTc	pPc (abs)	pTc
4876 kPa	199.2 K	4354 kPa	177.3 K

RELATIVE MOLECULAR MASS

TOTAL GAS	C_7+
22.8	0.0

H_2S g/m³: 0.01

REMARKS:

EXCEED NORMAL LIMITS : N2 ,CO2
FIELD H2S = 10ppm/LAB = ND

AGAT Laboratories

WATER ANALYSIS

CONTAINER IDENTIFICATION: PS 2A

LABORATORY NUMBER: WN37201A

OPERATOR NAME: SUNCOR INC. RESOURCES GROUP

UNIQUE WELL IDENTIFIER:

WELL NAME: NETLA K-77

ELEVATIONS: KB m / GRD m

FIELD OR AREA:

POOL OR ZONE: SLAVE POINT

NAME OF SAMPLER:

COMPANY: ENTEST CORP.

TEST TYPE: NO

TEST RECOVERY: SP.400 BBL LAT60050 LONG.122030'

SAMPLING POINT:

AMT & TYPE OF CUSHION:

MUD RESISTIVITY Ω m @ 25° C:

TEST INTERVAL OR PERFS:

TYPE OF PRODUCTION: PUMPING | FLOWING | GAS LIFT | SWAB

PRODUCTION RATES: WATER m³/d | OIL m³/d | GAS 10³ m³/d

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa						
TEMPERATURE °C						

DATE SAMPLED (Y-M-D): 99-03-16

DATE RECEIVED (Y-M-D): 99-03-22

DATE REPORTED (Y-M-D): 99-03-26

ANALYST: LAN NCO

OTHER INFORMATION: K-77

ION	mg/L	MASS FRACTION	mmol/L
Na	14400.0	0.102	624.0
K	525.0	0.004	13.4
Ca	32200.0	0.227	803.0
Mg	1540.0	0.011	63.3
Ba	N.A.	N.A.	N.A.
Sr	N.A.	N.A.	N.A.
Fe	225.0	0.002	4.0

ION	mg/L	MASS FRACTION	mmol/L
Cl	92800.0	0.654	2620.0
Br	N.A.	N.A.	N.A.
I	N.A.	N.A.	N.A.
HCO_3	153.0	0.001	2.5
SO_4	20.8	TRC*	0.2
CO_3	NIL	NIL	NIL
OH	NIL	NIL	NIL
H_2S	N.D.	N.D.	N.D.

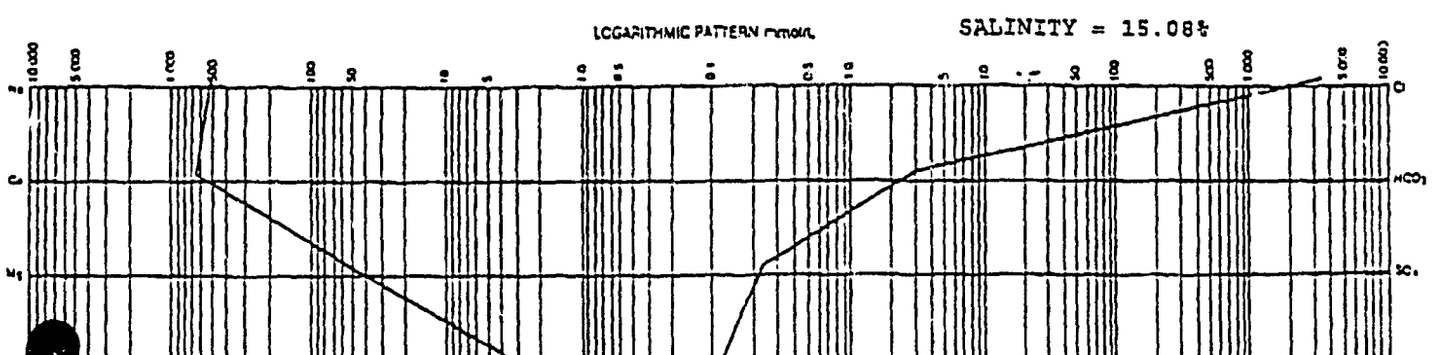
DISSOLVED TOTAL SOLIDS mg/L

EVAPORATED AT 110° C	EVAPORATED AT 180° C
AT IGNITION	CALCULATED
	142000.0

RELATIVE DENSITY	REFRACTIVE INDEX
1.111 @ 25° C	N.A. @ 25° C
OBSERVED pH	RESISTIVITY OHM-m
5.19 @ 25° C	0.06 @ 25° C

LOGARITHMIC PATTERN mmol/L

SALINITY = 15.08%



REMARKS

TRC*= LESS THAN 0.1 N.D.= NOT DETECTED NIL= 0.0 TRC*= LESS THAN 0.001 N.A.= NOT ANALYZED

CORE ANALYSIS REPORT

FOR

SUNCOR ENERGY INC.

SUNCOR NETLA
K77 60.50 LATITUDE 122.50 LONGITUDE
NETLA, NORTHWEST TERRITORIES

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom; and for whose exclusive and confidential use; this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories (all errors and omissions excepted); but Core Laboratories and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or mineral well or formation in connection with which such report is used or relied upon.

CORE LABORATORIES

Company : SUNCOR ENERGY INC.
Well : SUNCOR NETLA
Location : K77 60.50 LATITUDE 122.50 LONGITUDE
Province : NORTHWEST TERRITORIES

Field : NETLA
Formation : SLAVE POINT
Coring Equip. : ROTARY SIDEWALL
Coring Fluid : WATER BASE MUD

File No.: 52131-99-0091
Date : 99-03-14
Analysts: DJB
Core Dia:

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH m	PERMEABILITY (MAXIMUM) Kair mD	POROSITY (HELIUM) fraction	GRAIN DENSITY kg/m3	DESCRIPTION
22	1997.50	<.01	0.005	2700.	ls i
21	2003.60	0.01	0.005	2710.	ls i
20	2010.50				NSS ru
19	2014.15	0.01	0.005	2710.	ls i
18	2016.20	0.01	0.008	2710.	ls i
17	2019.50	0.01	0.008	2690.	ls i
16	2021.60	<.01	0.005	2690.	ls i
15	2023.20	0.05	0.014	2710.	ls i
14	2026.20	0.02	0.011	2690.	ls i
13	2028.60	0.03	0.013	2700.	ls i
12	2032.00	0.03	0.019	2680.	ls i
11	2030.50	<.01	0.018	2690.	ls i
10	2034.50	0.07	0.027	2710.	ls i
9	2036.60	0.01	0.014	2700.	ls i
8	2039.00	<.01	0.011	2700.	ls i
7	2041.50	0.05	0.018	2700.	ls i
6	2043.50	0.01	0.015	2700.	ls i
5	2046.70	0.03	0.018	2710.	ls i sty
4	2050.50	<.01	0.011	2700.	ls i
3	2054.60	0.01	0.011	2700.	ls i
2	2060.50	0.03	0.011	2700.	ls i
1	2064.50	0.01	0.014	2700.	ls i

CORELAB

CODE KEY - DESCRIPTIONS

A	= (Prefix A) Horizontal matrix permeability measured by pressure decay profile permeametry through a probe tip due to induced fractures
ACA	= Removed for advanced core analysis
anhy	= Anhydrite
AST	= Appears similar to
bit	= Bitumen
bk	= Break
bldr	= Boulder
c	= Coarse
calc	= Calcite (calcareous)
carb	= Carbonaceous
cbl	= Cobble
CEC	= Cation exchange capacity
cem	= Cemented
cgl	= Conglomerate
cht	= Chert
coal	= Coal/coal inclusion
dol	= Dolomite
f	= Fine
FD	= Full diameter analysis including three directional permeabilities, porosity and densities
foss	= Fossil (fossiliferous)
frac	= Fracture (undifferentiated)
fri	= Friable
glauc	= Glauconite (glauconitic)
grnl	= Granule
gyp	= Gypsum
hfrac	= Horizontal fracture
hal	= Halite (salt)
i	= Intercrystalline
incl	= Inclusions
lam	= Laminae (laminated)
lmy	= Limy
ls	= Limestone
lv	= Large vug
m	= Medium
mi	= Mud invaded
mic	= Micaceous
mv	= Medium vug
NA	= Not analyzed by request
NP	= No permeability measurement possible due to poor sample quality
NR	= Not received
ool	= Oolitic
OB	= Overburden sample (permeability and porosity measured at net overburden stress)
P	= Preserved for future studies
pbl	= Pebble
PET	= Removed for petrographic analysis
ppv	= Pinpoint vug
PSA	= Particle size analysis
pyr	= Pyrite (pyritic)
pyrbit	= Pyrobitumen
ru	= Rubble
SA	= Sieve analysis
sdy	= Sandy
SEM	= Scanning electron microscope analysis
sh	= Shale
SPH	= Humidity analysis of small plug sample at 60 degrees Celsius and 50 percent relative humidity
SPT	= Small Plug used for tracer analysis
shy	= Moderately shaly (20% - 40%)
sid	= Siderite
sltst	= Siltstone
slty	= Silty
SP	= Small plug (sample drilled from core in maximum horizontal direction and parallel to bedding plane where possible) permeability, porosity and grain density are measured
ss	= Sandstone
sshy	= Slightly shaly (<20%)
sty	= Stylolite (ic)
sulf	= Sulphur
sv	= Small vug
TEC	= Thermal Extraction Chromatography to determine oil richness
TS	= Thin section
uncon	= Unconsolidated
vc	= Very coarse
vfrac	= Vertical fracture
vf	= very fine
VIS	= Viscosity of oil measured
VOB	= Vertical overburden sample (vertical permeability measured at net overburden stress)
vshy	= Very shaly (>40%)
VSP	= Vertical small plug drilled from whole core to measure vertical permeability and occasionally porosity
vug	= Vuggy (vuggular)
ws	= Water sand
XRD	= X-ray diffraction
*	= Perm unavailable due to broken core

CORE LABORATORIES

ompany : SUNCOR ENERGY INC.
ell : SUNCOR NETLA

Field : NETLA
Formation : SLAVE POINT

File No.: 52131-99-0091
Date : 99-03-14

A N A L Y T I C A L P R O C E D U R E S A N D Q U A L I T Y A S S U R A N C E

HANDLING & CLEANING

Core Transportation	:
Solvent	: TOLUENE
Extraction Equipment	: VAPOR PHASE EXTRACTOR
Extraction Time	: 28 HOURS
Drying Equipment	: GRAVITY OVEN
Drying Time	: 12 HOURS
Drying Temperature	: 115 DEGREES C.

j) WELL STIMULATION REPORTS

Dowell Schlumberger conducted a foam diverted 28% HCl acid stimulation of the wellbore on 13 March 1999. A copy of the treatment report is attached.

Schlumberger
Dowell

Stimulation Service Report

Customer	Job Number
SUNCOR ENERGY, INCORPORATED	81.42199

Well	Location (legal)	Dowell Location	Job Start
Suncor Netla K77-60-50-122-30	K77-60-50-122-30	Ft St John, BC	3/13/99

Field	Formation Name/Type	Deviation	BitSize:	Well MD	Well TVD
Suncor Netla		0 °	0 m	2,117 m	0 m

County	State/Province	BHP	BHST	BHCT	Pore Pres Gradient
	NWT	0 kPa	68 °C	0 °C	0 kPa/m

Rig Name	Drilled For	Service Via
	Oil & Gas	Land

Offshore Zone	Well Class	Well Type
	New	Exploration

Primary Treating Fluid	Polymer Loading	Fluid Density
	0 lb/1000gal	kg/m³

Service Line	Job Type
Matrix	Foamed Acid Service

Max. Allowed Tubing Pressure	Max. Allowed Ann. Pressure	Wellhead Connection
33000 kPa	33000 kPa	

Service Instructions

Conduct acid / foamed stimulation program using 55m3 of 28%HCLacid + 0.6%A261+ 0.5% F75+ 1% U42 +1.2%A201+2 kg/m3 L58 , Foam diversion with 65 Quality Foam using fresh water with 1.5% F78

Casing

Depth, m	Size, mm	Weight, kg/m	Grade	Thread
1986	178			
0	0	0		

Tubing

Depth,	Size, mm	Weight, kg/m	Grade	Thread
1985	89			
0				

Perforated Intervals

Top, m	Bottom, m	spm	No. of Shots	Total Interval
		0		m
0	0	0	0	Diameter
0	0	0	0	0 mm

Treat Down	Displacement	Packer Type	Packer Depth
Tubing	m³		1975 m

Job Scheduled For:	Arrived on Location:	Leave Location:	Tubing Vol.	Casing Vol.	Annular Vol.	Open Hole Vol
	3/13/99 8:00	3/13/99 18:00	m³	0 m³	m³	0 m³

Time (24 hr clock)	Casing Press MegaPa	Fluid Vol. m3	N2 Volume m3	n2pump m3/min	Pump m3/min	Tubing Press MegaPa			Message
9:38	8.248	0	31.02	0	0	.2968	0	0	start job
9:42	7.799	0	176.5	.5841	0	21.8	0	0	pressure test testers line
10:02	7.504	0	238.8	0	0	43.58	0	0	pressure test Dowel Lines
10:34	7.41	.015	238.8	0	0	11.37	0	0	
10:35	7.41	.015	238.8	0	0	11.37	0	0	start acid
10:35	7.378	.015	238.8	0	0	11.38	0	0	
10:36	7.378	0	238.8	0	0	11.38	0	0	
10:37	7.378	.3088	238.8	0	.5942	12.22	0	0	
10:38	7.434	.9353	238.8	0	.798	11.64	0	0	
10:39	7.438	1.741	238.8	0	.8031	11.11	0	0	
10:40	7.417	2.547	238.8	0	.8031	10.51	0	0	
10:41	7.305	3.436	238.8	0	.8985	10.04	0	0	
10:42	7.161	4.336	238.8	0	.8984	9.714	0	0	
10:43	6.887	5.237	238.8	0	.8984	9.409	0	0	
10:44	6.887	5.237	238.8	0	.8984	9.409	0	0	pump water
10:44	6.518	6.138	238.8	0	.8982	9.511	0	0	
10:45	6.101	7.039	238.8	0	.8981	10.55	0	0	
10:46	5.585	7.94	238.8	0	.8986	10.31	0	0	
10:47	4.961	8.841	238.8	0	.8987	9.781	0	0	
10:48	4.638	9.71	238.8	0	.7456	17.26	0	0	
10:49	3.907	10.53	238.8	0	.8983	12.66	0	0	
10:50	3.03	11.43	238.8	0	.9014	3.628	0	0	
10:51	3.03	11.43	238.8	0	.9014	3.628	0	0	broke
10:51	2.5	12.33	238.8	0	.8985	2.036	0	0	
10:52	1.869	13.23	238.8	0	.8986	2.184	0	0	
10:53	1.334	14.13	238.8	0	.8984	2.127	0	0	
10:54	.8749	15.03	238.8	0	.898	2.278	0	0	
10:55	.8749	15.03	238.8	0	.898	2.278	0	0	stop pump
10:55	4.812	15.48	238.8	0	0	.2061	0	0	

Well	Field	Service Date	Customer	Job Number
Suncor Netla #K77-60-50-122-30	Suncor Netla		ICOR ENERGY, INCORPOR	B142199

Time (24 hr clock)	Casing Press (Mega Pa)	Fluid Vel. (m/s)	Job Volume (bbl)	Rotation (rpm)	Pump (rpm)	Tubing Press (Mega Pa)			Message
10:56	7.795	15.48	238.8	0	0	0	0	0	
10:57	7.482	15.48	238.8	0	0	0	0	0	
10:58	7.294	15.48	238.8	0	0	0	0	0	
10:59	7.164	15.48	238.8	0	0	0	0	0	
11:00	7.096	15.48	238.8	0	0	0	0	0	
11:01	7.033	15.48	238.8	0	0	0	0	0	
11:02	7.002	15.48	238.8	0	0	0	0	0	
11:03	7.002	15.48	238.8	0	0	0	0	0	
11:11	7.127	0	0	0	0	0	0	0	
11:12	7.19	0	0	0	0	0	0	0	
11:13	7.217	0	0	0	0	.0943	0	0	
11:14	7.243	0	0	0	0	0	0	0	
11:15	7.253	0	0	0	0	0	0	0	
11:16	7.284	0	0	0	0	0	0	0	
11:17	7.284	0	0	0	0	0	0	0	pump preflush
11:17	7.315	0	0	0	0	.1164	0	0	
11:18	7.347	.3089	0	0	.6137	.545	0	0	
11:19	7.255	.912	0	0	.5655	.5014	0	0	
11:20	7.022	1.736	0	0	.8638	.6992	0	0	
11:21	6.686	2.613	0	0	.8782	.8969	0	0	
11:22	6.296	3.495	0	0	.8787	.8554	0	0	
11:23	5.888	4.378	0	0	.8771	2.101	0	0	
11:24	5.453	5.28	0	0	.8769	2.957	0	0	
11:25	5.063	6.063	0	0	.7553	2.144	0	0	
11:26	4.722	6.754	0	0	.2018	1.02	0	0	
11:27	4.563	6.961	13.31	39.81	.1868	3.805	0	0	
11:28	4.563	6.961	13.31	39.81	.1868	3.805	0	0	stage 1 foam
11:28	4.317	.1656	53.36	39.79	.1804	4.968	0	0	
11:29	4.059	.3462	93.32	39.75	.178	5.689	0	0	
11:30	3.836	.5244	133.3	39.66	.1766	6.316	0	0	
11:31	3.652	.7005	173.2	39.67	.1742	6.83	0	0	
11:32	3.517	.8751	213.1	39.63	.1731	7.239	0	0	
11:33	3.392	1.048	253	39.68	.1719	7.632	0	0	
11:34	3.297	1.218	292.9	39.64	.1684	7.973	0	0	
11:35	3.215	1.386	332.7	39.56	.1653	8.262	0	0	
11:36	3.171	1.55	372.5	39.63	.1618	8.538	0	0	
11:37	3.14	1.713	412.3	39.61	.1601	8.717	0	0	
11:38	3.108	1.873	452.2	39.65	.1587	8.938	0	0	
11:39	3.08	2.031	492	39.62	.1563	9.16	0	0	
11:40	3.077	2.189	531.8	39.62	.1675	9.429	0	0	
11:41	3.077	2.359	571.6	39.6	.1689	9.711	0	0	
11:42	3.077	2.527	611.4	39.59	.1665	9.963	0	0	
11:43	3.077	2.695	651.2	39.58	.1698	10.03	0	0	
11:44	3.108	2.871	691	39.51	.176	10.15	0	0	
11:46	3.14	2.958	730.4	25.29	0	10.14	0	0	
11:46	3.14	2.958	730.4	25.29	0	10.14	0	0	fix leak
11:47	3.171	2.958	731.9	0	0	.3348	0	0	
11:48	3.202	2.958	731.9	0	0	.1835	0	0	
11:49	3.244	2.958	731.9	0	0	.1884	0	0	
11:50	3.296	2.958	731.9	0	0	.1886	0	0	
11:51	3.328	2.958	731.9	0	0	9.32	0	0	
11:51	3.328	2.958	731.9	0	0	9.32	0	0	resume pumping
11:52	3.391	3.045	757.5	39.43	.1756	9.786	0	0	
11:53	3.454	3.227	797.2	39.43	.1809	10.17	0	0	

Well	Field	Service Date	Customer	Job Number
Suncor Netla #K77-60-50-122-30	Suncor Netla		ICOR ENERGY, INCORPOR	RE2190

Time	Casing Press	Fluid Vol.	N2 Volume	Injection	Power	Tubing Press			Message
24 hr clock	MegaPa	m3	m3/hr	Rate		MegaPa			
11:54	3.485	3.407	836.8	39.43	.1782	10.5	0	0	
11:55	3.527	3.586	876.4	39.42	.176	10.68	0	0	
11:56	3.548	3.763	916.1	39.42	.1749	10.8	0	0	
11:57	3.579	3.939	955.7	39.42	.174	10.97	0	0	
11:58	3.611	4.114	995.3	39.42	.1734	11.12	0	0	
11:59	3.611	4.287	1035	39.43	.1725	11.25	0	0	
12:00	3.611	4.46	1075	39.46	.171	11.38	0	0	
12:01	3.629	4.632	1114	39.41	.1701	11.51	0	0	
12:02	3.642	4.803	1154	39.39	.1693	11.6	0	0	
12:03	3.642	4.973	1193	39.42	.1689	11.72	0	0	
12:04	3.642	5.148	1233	39.32	.1754	11.91	0	0	
12:04	3.642	5.148	1233	39.32	.1754	11.91	0	0	acid
12:05	3.642	5.406	1243	0	.503	11.79	0	0	
12:06	3.642	5.914	1243	0	.5058	10.19	0	0	
12:07	3.58	6.423	1243	0	.5062	9.762	0	0	
12:08	3.486	6.931	1243	0	.5059	9.394	0	0	
12:08	3.486	6.931	1243	0	.5059	9.394	0	0	foam
12:09	3.391	7.267	1254	39.28	.1796	9.508	0	0	
12:10	3.297	7.445	1293	39.43	.1715	9.988	0	0	
12:11	3.203	7.616	1333	39.42	.1702	10.41	0	0	
12:12	3.14	7.788	1373	39.4	.1694	10.73	0	0	
12:13	3.085	7.959	1412	39.42	.1686	11.02	0	0	
12:14	3.046	8.133	1452	39.42	.1776	11.24	0	0	
12:15	3.014	12.53	1492	39.42	.1885	11.41	0	0	
12:16	2.983	12.71	1531	39.42	.1744	11.6	0	0	
12:16	2.983	12.71	1531	39.42	.1744	11.6	0	0	[Fluid Vol.]=8 m3
12:17	2.983	8.102	1571	39.38	.1734	11.78	0	0	
12:18	2.951	8.275	1610	39.32	.1711	11.97	0	0	
12:19	2.951	8.447	1650	39.38	.17	12.16	0	0	
12:19	2.951	8.447	1650	39.38	.17	12.16	0	0	[Fluid Vol.]=9 m3
12:19	2.951	8.447	1650	39.38	.17	12.16	0	0	acid
12:20	2.92	9.218	1658	0	.5079	12.3	0	0	
12:21	2.909	9.734	1658	0	.514	10.75	0	0	
12:22	2.839	10.25	1658	0	.5141	10.41	0	0	
12:23	2.739	10.95	1658	0	.8483	11.21	0	0	
12:23	2.739	10.95	1658	0	.8483	11.21	0	0	shut down 10 min
12:24	2.608	0	0	0	0	9.306	0	0	
12:25	2.575	0	0	0	0	9	0	0	
12:26	2.543	0	0	0	0	8.715	0	0	
12:27	2.543	0	0	0	0	8.467	0	0	
12:28	2.543	0	0	0	0	8.27	0	0	
12:29	2.543	0	0	0	0	8.081	0	0	
12:30	2.575	0	0	0	0	7.912	0	0	
12:31	2.575	0	0	0	0	7.766	0	0	
12:32	2.606	0	0	0	0	7.64	0	0	
12:33	2.637	0	0	0	0	7.515	0	0	
12:33	2.637	0	0	0	0	7.515	0	0	stage 2
12:34	2.666	0	9.082	39	0	7.848	0	0	
12:34	2.666	0	9.082	39	0	7.848	0	0	foam
12:35	2.669	.1018	48.77	39.53	.1772	8.804	0	0	
12:36	2.609	.2777	88.45	39.46	.1735	9.399	0	0	
12:37	2.575	.4501	128.1	39.46	.1694	9.997	0	0	
12:38	2.543	.6354	167.8	39.43	.1838	10.57	0	0	
12:39	2.512	.8188	207.4	39.43	.1811	11.08	0	0	

Well	Field	Service Date	Customer	Job Number
Suncor Nella #K77-60-50-122-30	Suncor Nella		ICOR ENERGY, INCORPOR	0142199

Time: 24 hr clock	Casing Press psi	Fluid Vol bbl	Rate gpm	Density ppg	Power hhp	Treating Press psi	Slurry Vol bbl	Total Fluid bbl	Remarks
12:40	2.512	.9968	247	39.42	.1763	11.58	0	0	
12:41	2.512	1.175	286.6	39.39	.1739	12.01	0	0	
12:42	2.512	1.349	326.2	39.38	.1723	12.36	0	0	
12:43	2.512	1.521	365.8	39.31	.1708	12.66	0	0	
12:44	2.512	1.691	405.4	39.29	.1671	12.92	0	0	
12:44	2.512	1.691	405.4	39.29	.1671	12.92	0	0	acid
12:46	2.512	2.061	407.7	0	.5268	12.65	0	0	
12:46	2.512	2.589	407.7	0	.5246	11.87	0	0	
12:47	2.449	3.116	407.7	0	.5247	11.6	0	0	
12:48	2.326	3.483	407.7	0	0	10.73	0	0	
12:48	2.326	3.483	407.7	0	0	10.73	0	0	shut down 10 min
12:49	2.292	3.483	407.7	0	0	10.6	0	0	
12:50	2.261	3.483	407.7	0	0	10.36	0	0	
12:51	2.261	3.483	407.7	0	0	10.16	0	0	
12:52	2.261	3.483	407.7	0	0	9.998	0	0	
12:53	2.261	3.483	407.7	0	0	9.842	0	0	
12:54	2.261	3.483	407.7	0	0	9.714	0	0	
12:55	2.292	3.483	407.7	0	0	9.589	0	0	
12:56	2.292	3.483	407.7	0	0	9.464	0	0	
12:57	2.323	0	0	0	0	9.368	0	0	
12:57	2.323	0	0	0	0	9.368	0	0	stage 3
12:58	2.351	0	0	0	0	9.274	0	0	
12:58	2.351	0	0	0	0	9.274	0	0	pump acid
12:59	2.386	.2933	0	0	.5244	9.556	0	0	
13:00	-25.15	0	0	0	0	-25.31	0	0	Crash -
13:01	2.23	.1508	36.99	39.38	.1556	10.48	0	0	Foam
13:02	2.166	.3249	76.61	39.42	.1779	11.04	0	0	
13:03	2.104	.5018	116.2	39.39	.174	11.6	0	0	
13:04	2.072	.6753	155.8	39.38	.1717	12.08	0	0	
13:05	2.041	.8456	195.4	39.38	.167	12.56	0	0	
13:06	2.041	1.013	234.9	39.32	.1651	13.01	0	0	
13:07	2.041	1.177	274.5	39.35	.1625	13.46	0	0	
13:08	2.041	1.339	314.1	39.34	.1598	13.85	0	0	
13:09	2.041	1.498	353.6	39.35	.1628	14.08	0	0	
13:10	2.041	1.662	393.1	39.35	.1625	14.27	0	0	
13:11	2.041	1.662	393.1	39.35	.1625	14.27	0	0	acid
13:11	2.009	1.833	413.8	0	.3191	14.2	0	0	
13:12	1.978	2.32	413.8	0	.4914	13.56	0	0	
13:13	1.918	2.815	413.8	0	.4924	13.25	0	0	
13:14	1.918	2.815	413.8	0	.4924	13.25	0	0	shut down
13:14	1.839	3.114	413.8	0	0	12.57	0	0	
13:15	1.79	0	0	0	0	12.39	0	0	
13:16	1.758	0	0	0	0	12.15	0	0	
13:18	1.758	0	0	0	0	11.92	0	0	
13:19	1.758	0	0	0	0	11.73	0	0	
13:20	1.758	0	0	0	0	11.56	0	0	
13:21	1.79	0	0	0	0	11.4	0	0	
13:22	1.79	0	0	0	0	11.26	0	0	
13:23	1.79	0	0	0	0	11.13	0	0	
13:23	1.79	0	0	0	0	11.13	0	0	stage 4
13:24	1.821	0	0	0	.2295	11.31	0	0	
13:25	1.821	.5375	0	0	.7293	11.66	0	0	
13:25	1.821	.5375	0	0	.7293	11.66	0	0	foam
13:26	1.74	.9788	14.88	39.35	.1919	11.04	0	0	

Well	Field	Service Date	Customer	Job Number
Suncor Nella #K77-60-50-122-30	Suncor Nella		ICOR ENERGY, INCORPOR	3142706

Time	Casing Press	Fluid Rate	Slurry	Proppant Conc	Proppant	Treating Press			Message
24 hr clock	psi	bbl/min	bbl	lb/gal	lbs/min	psi			
13:27	1.556	1.17	54.46	39.41	.1875	11.66	0	0	
13:28	1.445	1.357	94.03	39.37	.1853	12.22	0	0	
13:29	1.356	1.541	133.6	39.25	.1802	12.73	0	0	
13:30	1.319	1.721	173.1	39.28	.1783	13.12	0	0	
13:31	1.284	1.9	212.7	39.3	.1787	13.45	0	0	
13:32	1.256	2.076	252.2	39.35	.1739	13.79	0	0	
13:33	1.224	2.25	291.7	39.26	.1723	14.12	0	0	
13:34	1.193	2.421	331.2	39.31	.1699	14.42	0	0	
13:35	1.162	2.592	370.7	39.32	.169	14.63	0	0	
13:36	1.106	2.761	410.2	39.29	.1678	14.83	0	0	
13:36	1.106	2.761	410.2	39.29	.1678	14.83	0	0	acid
13:37	1.068	2.965	431.8	0	.4177	15.1	0	0	
13:38	1.005	3.554	431.8	0	.6012	14.43	0	0	
13:38	1.005	3.554	431.8	0	.6012	14.43	0	0	shut down
13:39	.9106	0	0	0	0	13.58	0	0	
13:40	.818	0	0	0	0	13.38	0	0	
13:41	.6919	0	0	0	0	13.14	0	0	
13:42	.5568	0	0	0	0	12.93	0	0	
13:43	1.203	0	0	0	0	12.74	0	0	
13:44	6.948	0	0	0	0	12.58	0	0	
13:45	6.608	0	0	0	0	12.43	0	0	
13:46	6.351	0	0	0	0	12.29	0	0	
13:47	6.111	0	0	0	0	12.17	0	0	
13:48	9.444	0	0	0	0	12.04	0	0	
13:48	9.444	0	0	0	0	12.04	0	0	stage 5
13:49	9.096	0	0	0	0	11.92	0	0	
13:49	9.096	0	0	0	0	11.92	0	0	acid
13:50	8.777	.4701	0	0	.6123	12.15	0	0	
13:51	8.573	1.086	0	0	.6127	12.07	0	0	
13:51	8.573	1.086	0	0	.6127	12.07	0	0	foam
13:52	8.45	1.326	27.4	39.37	.1835	11.97	0	0	
13:53	8.352	1.509	66.96	39.35	.1813	12.4	0	0	
13:54	8.259	1.69	106.5	39.36	.1786	12.8	0	0	
13:55	8.196	1.868	146	39.35	.1748	13.24	0	0	
13:56	8.163	2.043	185.6	39.26	.1729	13.67	0	0	
13:57	8.132	2.215	225.1	39.25	.1736	14.07	0	0	
13:58	8.1	2.39	264.6	39.20	.1717	14.42	0	0	
13:59	8.1	2.566	304.1	39.25	.177	14.77	0	0	
14:00	8.1	2.742	343.6	39.32	.1745	15.12	0	0	
14:01	8.1	2.917	383	39.24	.1728	15.45	0	0	
14:02	8.1	3.09	422.5	39.22	.1707	15.7	0	0	
14:03	8.132	3.263	461.9	39.23	.1738	15.9	0	0	
14:04	8.132	3.437	501.4	39.28	.1734	16.05	0	0	
14:04	8.132	3.437	501.4	39.28	.1734	16.05	0	0	acid
14:05	8.132	3.683	509.4	0	.5835	16.75	0	0	
14:05	8.132	3.683	509.4	0	.5835	16.75	0	0	shut down
14:06	8.132	3.976	509.4	0	0	15.02	0	0	
14:07	8.132	0	0	0	0	14.76	0	0	
14:08	8.132	0	0	0	0	14.51	0	0	
14:09	8.163	0	0	0	0	14.29	0	0	
14:10	8.196	0	0	0	0	14.12	0	0	
14:11	8.228	0	0	0	0	13.96	0	0	
14:12	8.257	0	0	0	0	13.83	0	0	
14:13	8.319	0	0	0	0	13.71	0	0	

Well	Field	Service Date	Customer	Job Number
Suncor Netla #K77-60-50-122-30	Suncor Netla		ICOR ENERGY, INCORPOR	28239

Time	Clean Flow Rate (bpm)	Fluid Vol. (bbl)	Inj. Pressure (psi)	Proppant Conc. (ppg)	Proppant Amount (lbm)	Slurry Rate (bpm)	Slurry Vol. (bbl)	Comments
14:14	8.352	0	0	0	0	13.58	0	0	
14:14	8.352	0	0	0	0	13.58	0	0	stage 6
14:15	8.352	0	0	0	0	13.58	0	0	acid
14:15	8.383	0	0	0	0	13.55	0	0	
14:16	8.414	.5122	0	0	.6157	13.85	0	0	
14:17	8.384	1.131	0	0	.6157	13.58	0	0	
14:18	8.233	1.647	0	.0787	.1877	12.45	0	0	
14:18	8.233	1.647	0	.0787	.1877	12.45	0	0	foam
14:19	8.163	1.826	37.01	39.32	.1758	13.3	0	0	
14:20	8.07	2	76.51	39.26	.1775	13.77	0	0	
14:21	8.014	2.178	116	39.41	.1759	14.22	0	0	
14:22	8.006	2.354	155.6	39.32	.1778	14.67	0	0	
14:23	7.975	2.531	195	39.24	.1748	15.09	0	0	
14:24	7.975	2.706	234.5	39.31	.173	15.5	0	0	
14:25	7.975	2.882	274	39.24	.1754	15.92	0	0	
14:26	7.975	3.058	313.4	39.3	.1738	16.25	0	0	
14:27	8.006	3.232	352.9	39.26	.1717	16.5	0	0	
14:28	8.006	3.41	392.3	39.2	.1811	16.73	0	0	
14:29	8.006	3.591	431.8	39.21	.179	16.88	0	0	
14:30	8.006	3.771	471.2	39.21	.1796	16.97	0	0	
14:31	8.006	3.95	510.7	39.21	.1781	17.1	0	0	
14:31	8.006	3.95	510.7	39.21	.1781	17.1	0	0	shut down
14:32	8.006	3.99	520	0	0	16.54	0	0	
14:33	8.006	0	0	0	0	16.32	0	0	
14:34	8.056	0	0	0	0	16.1	0	0	
14:35	8.09	0	0	0	0	15.91	0	0	
14:36	8.132	0	0	0	0	15.75	0	0	
14:37	8.163	0	0	0	0	15.6	0	0	
14:38	8.195	0	0	0	0	15.47	0	0	
14:39	8.195	0	0	0	0	15.47	0	0	stage 7
14:39	8.253	0	.3719	5.544	0	15.37	0	0	
14:40	8.253	0	.3719	5.544	0	15.37	0	0	foam
14:40	8.289	0	28.61	39.3	.1346	15.86	0	0	
14:41	8.317	.1911	68.07	39.2	.18	16.23	0	0	
14:42	8.32	.3712	107.5	39.28	.1783	16.48	0	0	
14:43	8.32	.55	147	39.28	.1776	16.66	0	0	
14:44	8.32	.7279	186.4	39.23	.1757	16.84	0	0	
14:45	8.32	.9048	225.9	39.24	.1763	17.03	0	0	
14:46	8.32	1.081	265.4	39.24	.1744	17.18	0	0	
14:47	8.32	1.256	304.9	39.23	.174	17.35	0	0	
14:48	8.32	1.432	344.3	39.24	.181	17.6	0	0	
14:49	8.32	1.613	383.8	39.22	.1797	17.73	0	0	
14:50	8.32	1.794	423.2	39.28	.1792	17.91	0	0	
14:51	8.352	1.975	462.6	39.24	.1783	18.11	0	0	
14:52	8.383	2.154	502.1	39.18	.1778	18.3	0	0	
14:53	8.414	2.332	541.5	39.27	.1767	18.53	0	0	
14:54	8.446	2.508	580.9	39.19	.1746	18.77	0	0	
14:55	8.477	2.684	620.3	39.2	.1739	18.95	0	0	
14:55	8.477	2.684	620.3	39.2	.1739	18.95	0	0	acid
14:56	8.538	3.068	627.8	0	.6139	19.18	0	0	
14:57	8.54	3.685	627.8	0	.6142	18.41	0	0	
14:58	8.452	4.303	627.8	0	.5155	18.24	0	0	
14:59	8.326	4.775	629.5	29.01	.8836	17.48	0	0	
14:59	8.326	4.775	629.5	29.01	.6836	17.48	0	0	foam

Well			Field			Service Date	Customer		Job Number
Suncor Netla #K77-60-50-122-30			Suncor Netla				ICOR ENERGY, INCORPOR		1142198
Time	Casing Press	Fluid Vol	Slurry Vol	Rate	Slurry Density	Hydro Press	Pump Press	Pump Press	Message
15:00	8.257	0	668.4	39.2	.1783	17.76	0	0	
15:01	8.176	.2209	707.9	39.19	.1757	17.89	0	0	
15:02	8.132	.3981	747.3	39.11	.175	18.01	0	0	
15:03	8.132	.5747	786.7	39.31	.1762	18.14	0	0	
15:04	8.1	.7506	826.1	39.19	.1745	18.23	0	0	
15:05	8.1	.9261	865.5	39.19	.1742	18.33	0	0	
15:06	8.1	1.101	904.9	39.18	.1738	18.42	0	0	
15:07	8.1	1.265	944.3	39.18	.1852	18.45	0	0	
15:08	8.1	1.47	983.7	39.19	.1834	18.55	0	0	
15:09	8.1	1.655	1023	39.23	.1833	18.63	0	0	
15:10	8.1	1.655	1023	39.23	.1833	18.63	0	0	acid
15:10	8.1	0	1037	0	1.362	18.32	0	0	
15:11	8.132	.0516	1037	0	.6147	18.15	0	0	
15:12	8.05	.6699	1037	0	.6145	17.92	0	0	
15:13	7.914	1.288	1037	0	.6155	17.79	0	0	
15:14	7.76	1.906	1037	0	.6157	17.56	0	0	
15:15	7.76	1.906	1037	0	.6157	17.56	0	0	shut down
15:15	7.632	2.053	1037	0	0	16.14	0	0	
15:16	7.629	0	0	0	0	15.83	0	0	
15:17	7.629	0	0	0	0	15.56	0	0	
15:18	7.629	0	0	0	0	15.33	0	0	
15:19	7.661	0	0	0	0	15.13	0	0	
15:20	7.692	0	0	0	0	14.97	0	0	
15:21	7.724	0	0	0	0	14.81	0	0	
15:22	7.781	0	0	0	0	14.68	0	0	
15:23	7.818	0	0	0	0	14.54	0	0	
15:23	7.818	0	0	0	0	14.54	0	0	stage 8
15:24	7.849	0	10.85	39.19	0	14.67	0	0	
15:24	7.849	0	10.85	39.19	0	14.67	0	0	foam
15:25	7.849	.1445	50.32	39.3	.1738	15.37	0	0	
15:26	7.849	.3187	89.79	39.3	.173	15.71	0	0	
15:27	7.825	.4917	129.3	39.24	.1719	16.04	0	0	
15:28	7.818	.663	168.7	39.24	.1691	16.34	0	0	
15:29	7.818	.8323	208.1	39.19	.1678	16.7	0	0	
15:30	7.818	.9997	247.5	39.19	.1651	17.05	0	0	
15:31	7.818	1.173	286.9	39.19	.1741	17.46	0	0	
15:32	7.818	1.348	326.4	39.23	.1718	17.79	0	0	
15:33	7.849	1.522	365.8	39.2	.1737	18.15	0	0	
15:34	7.881	1.696	405.2	39.21	.1714	18.47	0	0	
15:35	7.912	1.869	444.6	39.19	.1732	18.69	0	0	
15:36	7.912	2.046	484	39.11	.1773	18.87	0	0	
15:37	7.912	2.046	484	39.11	.1773	18.87	0	0	acid
15:37	7.943	0	511	.1092	.2117	18.82	0	0	
15:38	7.943	.6163	511	0	.6144	18.73	0	0	
15:39	7.893	1.234	511	0	.6143	18.51	0	0	
15:40	7.893	1.234	511	0	.6143	18.51	0	0	shut down
15:40	7.755	1.654	511	0	0	17.29	0	0	
15:41	7.724	0	0	0	0	17.11	0	0	
15:42	7.724	0	0	0	0	16.87	0	0	
15:43	7.724	0	0	0	0	16.67	0	0	
15:44	7.724	0	0	0	0	16.51	0	0	
15:45	7.755	0	0	0	0	16.36	0	0	
15:46	7.786	0	0	0	0	16.23	0	0	
15:47	7.818	0	0	0	0	16.1	0	0	

Well				Field		Service Date	Customer			
Suncor Netla #K77-60-50-122-30				Suncor Netla			ICOR ENERGY, INCORPOR			
Time	Clean Flow	Fluid Vol	Slurry Vol	Prop Conc	Prop	Treating Press				Message
15:48	7.818	0	0	0	0	16.1	0	0	stage 9	
15:48	7.849	0	0	0	0	16	0	0		
15:49	7.849	0	0	0	0	16	0	0	acid	
15:49	7.943	.2006	0	0	.6112	16.9	0	0		
15:50	7.943	.2006	0	0	.6112	16.9	0	0	foam	
15:50	7.881	.4904	21.17	39.43	.1692	16.15	0	0		
15:51	7.849	.6627	60.62	39.43	.1784	16.62	0	0		
15:52	7.788	.8411	100.3	39.22	.1768	17.08	0	0		
15:53	7.786	1.018	139.9	39.39	.1743	17.46	0	0		
15:54	7.786	1.192	179.5	39.4	.1716	17.81	0	0		
15:55	7.786	1.365	219.1	39.41	.1768	18.17	0	0		
15:56	7.786	1.544	258.7	39.4	.1773	18.53	0	0		
15:57	7.818	1.721	298.3	39.38	.1763	18.86	0	0		
15:58	7.849	1.896	337.8	39.39	.1734	19.19	0	0		
15:59	7.881	2.07	377.4	39.37	.1723	19.56	0	0		
16:00	7.912	2.244	417	39.37	.1763	19.77	0	0		
16:01	7.943	2.422	456.5	39.37	.1769	19.96	0	0		
16:02	7.974	2.599	496.1	39.3	.1766	20.11	0	0		
16:03	7.974	2.599	496.1	39.3	.1766	20.11	0	0	acid	
16:03	7.985	0	522.8	0	.347	20.16	0	0		
16:04	8.006	.6271	522.8	0	.5988	20.05	0	0		
16:05	7.956	1.227	522.8	0	.5966	19.86	0	0		
16:06	7.956	1.227	522.8	0	.5966	19.86	0	0	shut down	
16:06	7.882	1.285	522.8	0	0	18.8	0	0		
16:07	7.881	1.285	522.8	0	0	18.58	0	0		
16:08	7.881	1.285	522.8	0	0	18.36	0	0		
16:09	7.881	1.285	522.8	0	0	18.18	0	0		
16:10	7.912	1.285	522.8	0	0	18.03	0	0		
16:11	7.943	1.285	522.8	0	0	17.89	0	0		
16:12	7.975	1.285	522.8	0	0	17.76	0	0		
16:13	8.006	1.285	522.8	0	0	17.64	0	0		
16:14	8.006	1.285	522.8	0	0	17.64	0	0	stage 10	
16:14	8.038	1.285	522.8	0	0	17.54	0	0		
16:15	8.069	0	0	0	0	17.43	0	0		
16:16	8.126	0	0	0	.444	17.97	0	0		
16:17	8.088	.8423	0	0	.3637	17.35	0	0		
16:18	8.088	.8423	0	0	.3637	17.35	0	0	foam	
16:18	8.04	0	20.77	39.19	.1766	17.42	0	0		
16:20	7.975	.1939	60.18	39.19	.1741	17.72	0	0		
16:21	7.929	.3689	99.57	39.1	.1736	17.96	0	0		
16:22	7.912	.5426	138.9	39.17	.1712	18.26	0	0		
16:23	7.881	.7147	178.3	39.15	.1697	18.55	0	0		
16:24	7.881	.8905	217.7	39.15	.1766	18.87	0	0		
16:25	7.881	1.067	257	39.15	.1739	19.21	0	0		
16:26	7.912	1.241	296.4	39.09	.1729	19.53	0	0		
16:27	7.943	1.416	335.7	39.14	.1761	19.84	0	0		
16:28	7.975	1.592	375.1	39.14	.175	20.14	0	0		
16:29	8.006	1.767	414.4	39.14	.1802	20.34	0	0		
16:30	8.038	1.948	453.8	39.09	.1805	20.53	0	0		
16:31	8.067	2.128	493.1	39.16	.1787	20.71	0	0		
16:32	8.069	2.307	532.5	39.17	.1778	20.87	0	0		
16:33	8.069	2.307	532.5	39.17	.1778	20.87	0	0	acid	
16:33	8.1	0	562.3	.3498	.1801	20.76	0	0		
16:34	8.132	.5952	562.3	0	.5842	20.64	0	0		

Well	Field	Service Date	Customer	Job Number
Suncor Notla #K77-60-50-122-30	Suncor Notla		ICOR ENERGY, INCORPOR	8142196

Time	Rate	Volume	Pressure			Tubing Pressure			Message
16:34	8.132	.5952	582.3	0	.5842	20.64	0	0	shut down
16:35	8.069	.84	582.3	0	0	19.8	0	0	
16:36	8.069	0	0	0	0	19.69	0	0	
16:37	8.069	0	0	0	0	19.52	0	0	
16:38	8.069	0	0	0	0	19.37	0	0	
16:39	8.069	0	0	0	0	19.24	0	0	
16:40	8.1	0	0	0	0	19.12	0	0	
16:41	8.132	0	0	0	0	19.02	0	0	
16:42	8.163	0	0	0	0	18.94	0	0	
16:43	8.195	0	0	0	0	18.86	0	0	
16:43	8.195	0	0	0	0	18.86	0	0	stage 11
16:43	8.195	0	0	0	0	18.86	0	0	acid
16:44	8.226	0	0	0	0	18.78	0	0	
16:45	8.255	.4409	0	0	.5076	19.22	0	0	
16:46	8.156	1.052	0	0	.5397	19.06	0	0	
16:46	8.156	1.052	0	0	.5397	19.06	0	0	foam
16:47	8.042	0	16.15	39.15	.181	18.54	0	0	
16:48	7.975	.199	55.54	39.17	.1802	18.84	0	0	
16:49	7.912	.3789	94.95	39.32	.1781	19.11	0	0	
16:50	7.881	.5573	134.3	39.12	.1772	19.42	0	0	
16:51	7.881	.7343	173.7	39.27	.1758	19.73	0	0	
16:52	7.881	.9096	213.3	39.36	.1734	20.05	0	0	
16:53	7.881	1.083	252.8	39.36	.1723	20.35	0	0	
16:54	7.936	1.255	292.3	39.36	.1701	20.66	0	0	
16:55	7.975	1.433	331.9	39.36	.1831	20.99	0	0	
16:56	8.006	1.616	371.4	39.36	.1823	21.21	0	0	
16:57	8.038	1.799	411	39.36	.1804	21.36	0	0	
16:58	8.069	1.981	450.5	39.36	.1799	21.53	0	0	
16:59	8.1	2.162	490	39.35	.1792	21.69	0	0	
17:00	8.132	2.342	529.6	39.27	.1798	21.82	0	0	
17:00	8.132	2.342	529.6	39.27	.1798	21.82	0	0	acid
17:01	8.163	.2935	535.8	0	.5741	21.9	0	0	
17:02	8.163	.2935	535.8	0	.5741	21.9	0	0	shut down
17:02	8.163	.6289	535.8	0	0	20.79	0	0	
17:03	-25.15	0	0	0	0	-25.31	0	0	
17:10	8.257	0	0	0	0	20.02	0	0	
17:10	8.257	0	0	0	0	20.02	0	0	stage 12
17:11	8.257	0	0	0	0	20.02	0	0	acid
17:11	8.331	0	0	0	.2761	20.06	0	0	
17:12	8.326	.5967	0	0	.5972	20.15	0	0	
17:13	8.195	1.197	0	0	.5586	19.86	0	0	
17:14	8.038	1.494	1.236	25.79	.1819	18.92	0	0	
17:14	8.038	1.494	1.236	25.79	.1819	18.92	0	0	foam
17:15	7.951	.1792	39.88	39.18	.181	19.33	0	0	
17:16	7.898	.3605	79.24	39.15	.1812	19.55	0	0	
17:17	7.85	.542	118.7	39.11	.1808	19.79	0	0	
17:18	7.849	.7223	158	39.06	.1783	20.05	0	0	
17:19	7.849	.9011	197.4	39.36	.1771	20.39	0	0	
17:20	7.849	1.079	237	39.35	.1749	20.66	0	0	
17:21	7.881	1.254	276.6	39.28	.1736	20.99	0	0	
17:22	7.941	1.433	316.3	39.29	.1604	21.3	0	0	
17:23	7.975	1.613	355.9	39.3	.1784	21.59	0	0	
17:24	8.006	1.793	395.7	39.35	.1777	21.78	0	0	
17:25	8.038	1.972	435.4	39.3	.1767	22	0	0	

Well		Field		Service Date	Customer			Job Number
Suncor Netla #K77-60-50-122-30		Suncor Netla			ICOR ENERGY, INCORPOR			3142199
Time 24 hour clock	Combo Pump Rate bbl/min	Total Fluid bbl	Tot Nitrogen scf	Combo Pressure psi	Annulus Pressure psi	Tubing Pressure psi	Bottom Hole Temp deg F	Comments
17:26	8.069	2.149	475.2	39.28	.1741	22.17	0	0	
17:27	8.1	2.324	514.9	39.35	.1734	22.31	0	0	
17:28	8.132	2.499	554.5	39.27	.1726	22.41	0	0	
17:29	8.132	2.499	554.5	39.27	.1726	22.41	0	0	shut down
17:29	8.132	2.612	581.1	0	0	22.21	0	0	
17:30	8.132	0	0	0	0	22.06	0	0	
17:31	8.132	0	0	0	0	21.85	0	0	
17:32	8.163	0	0	0	0	21.72	0	0	
17:33	8.195	0	0	0	0	21.6	0	0	
17:34	8.226	0	0	0	0	21.51	0	0	
17:35	8.257	0	0	0	0	21.41	0	0	
17:36	8.289	0	0	0	0	21.34	0	0	
17:37	8.32	0	0	0	0	21.28	0	0	
17:38	8.352	0	0	0	0	21.19	0	0	
17:38	8.352	0	0	0	0	21.19	0	0	stage 13
17:39	8.352	0	0	0	0	21.19	0	0	foam
17:39	8.383	0	21.96	39.31	.1693	21.67	0	0	
17:40	8.414	.2167	61.5	39.26	.1819	21.81	0	0	
17:41	8.414	.3994	101.1	39.23	.1812	22	0	0	
17:42	8.383	.582	140.7	39.12	.1809	22.16	0	0	
17:43	8.352	.765	180.1	39.11	.1803	22.3	0	0	
17:44	8.32	.9476	219.5	39.04	.181	22.42	0	0	
17:45	8.289	1.13	259	39.12	.1795	22.51	0	0	
17:46	8.257	1.312	298.5	39.05	.1792	22.6	0	0	
17:47	8.226	1.493	338	39.29	.179	22.72	0	0	
17:48	8.226	1.673	377.6	39.3	.1781	22.91	0	0	
17:49	8.195	1.853	417.4	39.3	.1778	23.13	0	0	
17:50	8.195	2.031	457	39.27	.1768	23.35	0	0	
17:51	8.221	2.209	496.7	39.04	.1761	23.63	0	0	
17:52	8.257	2.385	536.1	39.07	.174	23.86	0	0	
17:53	8.318	2.561	575.5	39.07	.1757	24.18	0	0	
17:54	8.362	2.736	614.9	38.99	.1733	24.38	0	0	
17:55	8.414	2.91	653.3	16.24	.173	24.52	0	0	
17:55	8.414	2.91	653.3	16.24	.173	24.52	0	0	acid
17:56	8.476	.2805	654.2	0	.4417	24.58	0	0	
17:57	8.495	.7224	654.2	0	.4368	23.82	0	0	
17:58	8.431	1.143	654.2	0	.4369	23.36	0	0	
17:59	8.314	1.59	654.2	0	.4445	23.08	0	0	
18:00	8.195	1.974	654.2	0	.188	22.36	0	0	
18:01	8.195	1.974	654.2	0	.188	22.36	0	0	foam
18:01	8.102	2.159	687	39.06	.1795	22.73	0	0	
18:02	8.038	5.207	726.4	39.07	.2398	22.82	0	0	
18:03	8.006	2.639	765.8	39.07	.1808	22.9	0	0	
18:04	7.975	2.82	805.2	39.07	.1803	22.97	0	0	
18:05	7.975	3.002	844.6	39.05	.1792	23.04	0	0	
18:06	8.005	3.182	884	39.16	.1792	23.07	0	0	
18:07	8.036	3.363	923.3	39.14	.1787	23.1	0	0	
18:08	8.069	3.544	962.7	39.11	.1799	23.11	0	0	
18:09	8.1	3.726	1002	39.14	.1817	23.16	0	0	
18:10	8.132	3.908	1041	39.05	.1811	23.2	0	0	
18:11	8.163	0	1079	9.457	.18	23.15	0	0	
18:12	8.163	0	1079	9.457	.18	23.15	0	0	acid
18:12	8.194	.2038	1079	0	.1821	22.91	0	0	
18:13	8.226	.6972	1079	0	.5561	22.48	0	0	

Well		Field		Service Date	Customer	Job Number
Suncor Netla #K77-60-50-122-30		Suncor Netla			ICOR ENERGY, INCORPOR	8/22/99

Time	Casing Pressure	Fluid Rate	Nitrogen Rate	Volume	Pump Pressure	Total Fluid Pumped			Message
24 hr clock	psig	bpm	scf/min	bbl	psig	bbl			
18:14	8.195	1.256	1079	0	.5563	22.11	0	0	
18:15	8.051	1.817	1079	0	.56	21.86	0	0	
18:16	8.051	1.817	1079	0	.56	21.86	0	0	shut down
18:16	7.882	6.581	1079	0	.1743	20.94	0	0	
18:18	-25.15	0	0	0	0	-25.31	0	0	
18:23	7.943	0	0	0	0	20.65	0	0	
18:24	7.974	0	0	0	0	20.47	0	0	
18:25	8.006	0	0	0	0	20.43	0	0	
18:25	8.006	0	0	0	0	20.43	0	0	stage 14
18:26	8.038	0	0	0	0	20.37	0	0	
18:26	8.038	0	0	0	0	20.37	0	0	foam
18:27	8.069	0	0	0	0	20.31	0	0	
18:28	8.1	0	0	0	0	20.28	0	0	
18:29	8.132	.146	29.96	39.26	.1828	20.8	0	0	
18:30	8.132	.3297	69.49	39.36	.1827	21.01	0	0	
18:31	8.1	.513	109	39.27	.1821	21.09	0	0	
18:32	8.1	.6956	148.6	39.27	.1805	21.22	0	0	
18:33	8.069	.8777	188.1	39.35	.1812	21.34	0	0	
18:34	8.069	1.06	227.5	39.14	.1851	21.46	0	0	
18:35	8.069	1.245	266.9	39.13	.1835	21.63	0	0	
18:36	8.1	1.429	306.3	39.31	.1828	21.88	0	0	
18:37	8.132	1.612	345.9	39.31	.1818	22.09	0	0	
18:38	8.174	1.794	385.4	39.37	.1808	22.31	0	0	
18:39	8.224	1.976	425	39.37	.1873	22.6	0	0	
18:40	8.224	1.976	425	39.37	.1873	22.6	0	0	acid
18:40	8.257	.077	450.5	.0579	.5478	24.1	0	0	
18:41	8.269	.6381	450.5	0	.5591	22.31	0	0	
18:42	8.185	1.199	450.5	0	.5586	22.06	0	0	
18:43	8.185	1.199	450.5	0	.5586	22.06	0	0	shut down
18:43	8.009	1.638	450.5	0	0	21.09	0	0	
18:44	7.975	1.638	450.5	0	0	21.25	0	0	
18:45	7.975	1.638	450.5	0	0	21.15	0	0	
18:46	7.975	1.638	450.5	0	0	21.03	0	0	
18:47	7.975	1.638	450.5	0	0	20.94	0	0	
18:48	7.975	1.638	450.5	0	0	20.85	0	0	
18:49	8.004	1.638	450.5	0	0	20.78	0	0	
18:50	8.004	1.638	450.5	0	0	20.78	0	0	stage 15
18:50	8.017	0	0	0	0	20.69	0	0	
18:51	8.017	0	0	0	0	20.69	0	0	acid
18:51	8.035	.2655	0	0	.1956	20.18	0	0	
18:52	8.035	.2655	0	0	.1956	20.18	0	0	foam
18:52	8.006	0	28.25	39.18	.183	20.81	0	0	
18:53	7.944	.2606	67.62	39.17	.1823	21	0	0	
18:54	7.912	.4436	107	39.08	.182	21.19	0	0	
18:55	7.881	.6259	146.3	39.05	.1813	21.34	0	0	
18:56	7.867	.8076	185.6	39.06	.1798	21.45	0	0	
18:57	7.849	.9885	224.9	39.12	.1793	21.66	0	0	
18:58	7.88	1.169	264.2	39.04	.1798	21.86	0	0	
18:59	7.911	1.348	303.5	39.07	.1773	22.09	0	0	
19:00	7.943	1.526	342.9	39.12	.1769	22.34	0	0	
19:01	7.975	1.703	382.2	39.13	.1765	22.38	0	0	
19:02	8.006	1.88	421.5	39.04	.1767	22.31	0	0	
19:03	8.069	2.058	460.8	39.12	.1774	22.13	0	0	
19:04	8.069	2.058	460.8	39.12	.1774	22.13	0	0	acid

Well				Field		Service Date	Customer		
Suncor Nella #K77-60-50-122-30				Suncor Nella			ICOR ENERGY, INCORPOR		
Time 24 hr clock	Casing Pressure	[illegible]	[illegible]	[illegible]	[illegible]	Treating Pressure			Remarks
19:04	8.1	.0241	494.5	1.766	.1611	21.58	0	0	
19:05	8.132	.5087	494.6	0	.5761	20.97	0	0	
19:06	8.07	1.092	494.6	0	.583	20.24	0	0	
19:07	7.917	1.681	494.6	0	.5896	19.77	0	0	
19:08	7.702	2.182	494.6	0	0	18.14	0	0	
19:09	7.702	2.182	494.6	0	0	18.14	0	0	shut down
19:09	7.692	0	0	0	0	18.55	0	0	
19:10	7.692	0	0	0	0	18.58	0	0	
19:11	7.692	0	0	0	0	18.58	0	0	
19:12	7.692	0	0	0	0	18.5	0	0	
19:13	7.724	0	0	0	0	18.42	0	0	
19:14	7.755	0	0	0	0	18.3	0	0	
19:15	7.786	0	0	0	0	18.2	0	0	
19:16	7.818	0	0	0	0	18.13	0	0	
19:17	7.818	0	0	0	0	18.13	0	0	stage 16
19:17	7.863	0	0	0	0	18.05	0	0	
19:18	7.863	0	0	0	0	18.05	0	0	acid
19:18	7.903	.1798	0	0	.1796	18.05	0	0	
19:19	7.903	.1798	0	0	.1796	18.05	0	0	foam
19:20	7.881	0	25.34	39.15	.1787	18.17	0	0	
19:21	7.831	.2425	64.71	39.18	.1781	18.26	0	0	
19:22	7.818	.4217	104.1	39.17	.1784	18.39	0	0	
19:23	7.786	.5998	143.4	39.09	.1768	18.66	0	0	
19:24	7.786	.7767	182.8	39.17	.1771	18.96	0	0	
19:25	7.786	.9543	222.2	39.33	.1765	19.26	0	0	
19:26	7.818	1.13	261.6	39.19	.1754	19.53	0	0	
19:27	7.849	1.305	301	39.16	.1732	19.86	0	0	
19:28	7.881	1.478	340.3	39.17	.1722	20.16	0	0	
19:29	7.881	1.651	379.7	39.18	.1702	20.27	0	0	
19:30	7.881	1.823	419.1	39.19	.1765	20.33	0	0	
19:31	7.881	1.994	458.5	39.16	.1689	20.37	0	0	
19:32	7.881	2.164	497.8	39.17	.1686	20.43	0	0	
19:33	7.881	2.333	537.2	39.13	.1684	20.52	0	0	
19:34	7.881	2.501	576.5	39.12	.1671	20.56	0	0	
19:35	7.881	2.67	615.8	39.12	.1675	20.62	0	0	
19:35	7.881	2.67	615.8	39.12	.1675	20.62	0	0	acid
19:36	7.881	0	636.9	0	.3062	20.58	0	0	
19:37	7.85	.614	636.9	0	.5947	20.09	0	0	
19:37	7.85	.614	636.9	0	.5947	20.09	0	0	shut down
19:38	7.786	0	0	0	0	19.39	0	0	
19:39	7.786	0	0	0	0	19.4	0	0	
19:40	7.818	0	0	0	0	19.36	0	0	
19:41	7.849	0	0	0	0	19.33	0	0	
19:42	7.881	0	0	0	0	19.3	0	0	
19:43	7.943	0	0	0	0	19.27	0	0	
19:44	7.975	0	0	0	0	19.24	0	0	
19:45	8.038	0	0	0	0	19.21	0	0	
19:45	8.038	0	0	0	0	19.21	0	0	stage 17
19:45	8.038	0	0	0	0	19.21	0	0	acid
19:46	8.004	0	0	0	.1517	19.32	0	0	
19:47	8.1	.5621	0	0	.6054	19.5	0	0	
19:48	7.981	1.003	0	2.912	.1871	18.23	0	0	
19:49	7.915	0	37.53	39.08	.1841	18.9	0	0	
19:50	7.881	.208	76.88	39.08	.182	19.23	0	0	Foam.

Well	Field	Service Date	Customer	Job Number
Suncor Nella #K77-00-50-122-30	Suncor Nella		ICOR ENERGY, INCORPOR	81/2100

Time 24 hr clock	Choke Press	Fluid Vol	N2 Volume	Volume	Pump Rate	Pump Press			Message
19:51	7.819	.3899	116.3	39.19	.1793	19.53	0	0	
19:52	7.789	.5703	155.6	39.19	.1787	19.84	0	0	
19:53	7.786	.7491	195	39.17	.1772	20.13	0	0	
19:54	7.755	.9266	234.4	39.17	.1754	20.43	0	0	
19:55	7.755	1.103	273.7	39.08	.1741	20.69	0	0	
19:56	7.755	1.277	313.1	39.08	.1719	20.9	0	0	
19:57	7.755	1.451	352.4	39.09	.1729	20.97	0	0	
19:58	7.724	1.631	391.8	39.14	.1799	21.03	0	0	
19:59	7.724	1.811	431.1	39.15	.1788	21.06	0	0	
20:00	7.692	1.991	470.5	39.17	.1787	21.12	0	0	
20:01	7.664	2.17	509.8	39.15	.1783	21.16	0	0	
20:02	7.661	2.349	549.2	39.09	.1779	21.22	0	0	
20:03	7.632	2.528	588.5	39.14	.1778	21.3	0	0	
20:04	7.629	2.706	627.9	39.07	.1777	21.34	0	0	
20:04	7.629	2.706	627.9	39.07	.1777	21.34	0	0	acid
20:05	7.629	.1731	639.4	0	.3897	21.73	0	0	
20:05	7.629	.1731	639.4	0	.3897	21.73	0	0	shut down
20:06	7.598	0	0	0	0	20.69	0	0	
20:07	7.598	0	0	0	0	20.65	0	0	
20:08	7.64	0	0	0	0	20.59	0	0	
20:09	7.692	0	0	0	0	20.56	0	0	
20:10	7.734	0	0	0	0	20.53	0	0	
20:11	7.786	0	0	0	0	20.5	0	0	
20:12	7.848	0	0	0	0	20.46	0	0	
20:13	7.881	0	0	0	0	20.43	0	0	
20:13	7.881	0	0	0	0	20.43	0	0	stage 18
20:14	7.881	0	0	0	0	20.43	0	0	acid
20:15	7.975	.5121	0	0	.5898	20.68	0	0	
20:16	7.857	1.058	0	0	.2168	19.41	0	0	
20:16	7.857	1.058	0	0	.2168	19.41	0	0	foam
20:17	7.776	0	32.79	39.14	.1779	19.8	0	0	
20:18	7.724	.2683	72.12	39.13	.1777	19.89	0	0	
20:19	7.662	.4463	111.4	39.13	.1758	20.02	0	0	
20:20	7.629	.6237	150.7	39.07	.1754	20.19	0	0	
20:21	7.598	.8	190	39.04	.1746	20.45	0	0	
20:22	7.567	.9753	229.3	39.03	.1749	20.73	0	0	
20:23	7.567	1.149	268.6	39.11	.1728	20.99	0	0	
20:24	7.567	1.322	307.9	39.03	.1704	21.25	0	0	
20:25	7.535	1.493	347.2	39.04	.1707	21.44	0	0	
20:26	7.535	1.665	386.5	39.12	.1785	21.55	0	0	
20:27	7.51	1.845	425.8	39.04	.1784	21.63	0	0	
20:28	7.504	2.025	465.1	39.03	.1786	21.65	0	0	
20:29	7.473	2.205	504.4	39.03	.1781	21.69	0	0	
20:30	7.472	2.384	543.6	39.03	.178	21.72	0	0	
20:31	7.441	2.563	582.9	39.02	.1783	21.78	0	0	
20:32	7.441	2.742	622.2	39.02	.1778	21.85	0	0	
20:33	7.441	2.921	661.5	39.08	.1763	21.88	0	0	
20:33	7.441	2.921	661.5	39.08	.1763	21.88	0	0	shut down
20:34	7.41	0	0	0	0	21.47	0	0	
20:35	7.441	0	0	0	0	21.6	0	0	
20:36	7.502	0	0	0	0	21.5	0	0	
20:37	7.535	0	0	0	0	21.46	0	0	
20:38	7.598	0	0	0	0	21.44	0	0	
20:39	7.659	0	0	0	0	21.38	0	0	

Well		Field		Service Date	Customer	Job Number
Suncor Nella #K77-60-50-122-30		Suncor Nella			ICOR ENERGY, INCORPOR	8142196

Time	Casing Pressure	Slurry Rate	Total Fluid Pumped	Proppant Concentration	Total Proppant Pumped	Treating Pressure	Annulus Pressure	Slurry Temperature	Message
	psi	bpm	bbl	ppa	lbs	psi	psi	deg F	
20:40	7.703	0	0	0	0	21.34	0	0	
20:41	7.755	0	0	0	0	21.32	0	0	
20:41	7.755	0	0	0	0	21.32	0	0	stage 19
20:42	7.755	0	0	0	0	21.32	0	0	foam
20:42	7.817	0	0	0	0	21.31	0	0	
20:43	7.849	.1353	31.03	39.04	.1832	21.69	0	0	
20:44	7.881	.32	70.32	39.04	.1845	21.78	0	0	
20:45	7.881	.5046	109.6	39.03	.1844	21.87	0	0	
20:46	7.881	.689	148.9	39.11	.1842	21.91	0	0	
20:47	7.881	.8731	188.2	39.1	.1841	21.94	0	0	
20:48	7.849	1.057	227.4	39.11	.1827	21.97	0	0	
20:49	7.849	1.241	266.7	39.03	.183	22	0	0	
20:50	7.818	1.425	306	39.03	.1825	22.06	0	0	
20:51	7.818	1.608	345.3	39.06	.1822	22.19	0	0	
20:52	7.818	1.791	384.5	39.06	.1801	22.4	0	0	
20:53	7.818	1.972	423.8	39.02	.1793	22.63	0	0	
20:54	7.849	2.152	463.1	39.03	.1787	22.86	0	0	
20:55	7.881	2.332	502.3	39.02	.1778	23.07	0	0	
20:56	7.912	2.51	541.6	39.07	.1771	23.14	0	0	
20:57	7.972	2.689	580.8	39.01	.1771	23.17	0	0	
20:57	7.972	2.689	580.8	39.01	.1771	23.17	0	0	acid
20:58	8.006	.1758	595	0	.5613	24.26	0	0	
20:59	8.006	.7465	595	0	.5644	22.37	0	0	
21:00	7.913	1.315	595	0	.5562	21.93	0	0	
21:01	7.758	1.866	595	0	.3051	20.88	0	0	
21:02	7.758	1.866	595	0	.3051	20.88	0	0	foam
21:02	7.664	0	615.7	39.13	.1821	21.15	0	0	
21:03	7.598	.2581	655	39.04	.1806	21.25	0	0	
21:04	7.536	.4417	694.3	39.12	.1818	21.33	0	0	
21:05	7.504	.6242	733.6	39.12	.1802	21.39	0	0	
21:06	7.504	.8182	773	39.04	.1813	21.44	0	0	
21:07	7.504	.9698	812.3	39.09	.181	21.5	0	0	
21:08	7.504	1.181	851.6	39.11	.1809	21.53	0	0	
21:09	7.504	1.362	890.9	39.08	.1792	21.59	0	0	
21:10	7.535	1.543	930.2	39.04	.1792	21.62	0	0	
21:11	7.566	1.724	969.4	39.03	.1805	21.66	0	0	
21:12	7.597	1.904	1009	39.03	.18	21.72	0	0	
21:13	7.597	1.904	1009	39.03	.18	21.72	0	0	acid
21:13	7.629	.2405	1023	0	.5813	23.16	0	0	
21:14	7.629	.8238	1023	0	.5791	20.98	0	0	
21:15	7.537	1.409	1023	0	.5854	20.68	0	0	
21:16	7.385	2	1023	0	.5917	20.34	0	0	
21:17	7.385	2	1023	0	.5917	20.34	0	0	shut down
21:17	7.315	0	0	0	0	19.46	0	0	
21:18	7.284	0	0	0	0	19.46	0	0	
21:19	7.284	0	0	0	0	19.46	0	0	
21:20	7.315	0	0	0	0	19.43	0	0	
21:21	7.347	0	0	0	0	19.43	0	0	
21:22	7.378	0	0	0	0	19.4	0	0	
21:24	-25.15	0	0	0	0	-25.31	0	0	
21:28	7.567	0	0	0	0	19.3	0	0	
21:29	7.648	0	0	0	0	19.27	0	0	
21:29	7.648	0	0	0	0	19.27	0	0	stage 20
21:30	7.648	0	0	0	0	19.27	0	0	foam

Well	Field	Service Date	Customer
Suncor Netla #K77-60-50-122-30	Suncor Netla		ICOR ENERGY, INCORPOR

Time									
21:31	7.692	.219	71.5	64.66	.1741	20.22	0	0	
21:32	7.661	.3948	136.5	64.67	.1778	20.47	0	0	
21:33	7.598	.5732	201.5	64.63	.1773	20.7	0	0	
21:34	7.567	.7503	266.4	64.62	.1764	20.95	0	0	
21:35	7.511	.9257	331.4	64.65	.1736	21.29	0	0	
21:36	7.504	1.101	390.3	6.657	.1765	21.39	0	0	
21:37	7.504	1.277	426.4	39.04	.1744	21.64	0	0	
21:38	7.504	1.452	466.7	39.09	.174	21.84	0	0	
21:39	7.561	1.636	505	39.05	.1831	22.06	0	0	
21:40	7.598	1.819	544.3	39.1	.1821	22.26	0	0	
21:41	7.629	2.002	583.5	39.11	.1818	22.37	0	0	
21:42	7.661	2.184	622.8	39.13	.1816	22.44	0	0	
21:43	7.724	2.366	662.1	39.12	.1812	22.48	0	0	
21:43	7.724	2.366	662.1	39.12	.1812	22.48	0	0	acid
21:44	7.784	.3593	664.8	0	.5707	22.59	0	0	
21:45	7.759	.9345	664.8	0	.5734	21.67	0	0	
21:46	7.667	1.507	664.8	0	.3443	20.84	0	0	
21:46	7.667	1.507	664.8	0	.3443	20.84	0	0	shut down
21:47	7.598	0	0	0	0	20.54	0	0	
21:48	7.598	0	0	0	0	20.56	0	0	
21:49	7.598	0	0	0	0	20.56	0	0	
21:50	7.598	0	0	0	0	20.56	0	0	
21:51	7.629	0	0	0	0	20.53	0	0	
21:52	7.661	0	0	0	0	20.53	0	0	
21:53	7.706	0	0	0	0	20.5	0	0	
21:54	7.706	0	0	0	0	20.5	0	0	stage 21
21:54	7.754	0	0	0	0	20.47	0	0	
21:54	7.754	0	0	0	0	20.47	0	0	acid
21:55	7.764	.4442	0	0	.593	20.88	0	0	
21:55	7.764	.4442	0	0	.593	20.88	0	0	foam
21:56	7.661	.1115	24.2	39.27	.1913	20.24	0	0	
21:57	7.629	.3041	63.6	39.26	.1913	20.49	0	0	
21:58	7.598	.4958	103.2	39.33	.1901	20.87	0	0	
21:59	7.598	.6861	142.7	39.31	.1879	21.09	0	0	
22:00	7.628	.8749	182.2	39.31	.1869	21.39	0	0	
22:01	7.661	1.062	221.7	39.25	.1861	21.66	0	0	
22:02	7.751	1.248	261.1	39.24	.1837	21.91	0	0	
22:03	7.818	1.433	300.6	39.22	.1827	22.18	0	0	
22:04	7.906	1.616	340.1	39.22	.1823	22.27	0	0	
22:05	7.974	1.8	379.5	39.22	.1843	22.32	0	0	
22:06	8.037	0	419	39.24	.1831	22.31	0	0	
22:06	8.037	0	419	39.24	.1831	22.31	0	0	acid
22:07	8.1	.468	424.6	0	.5763	22.26	0	0	
22:08	8.101	1.047	424.6	0	.5773	21.22	0	0	
22:08	8.101	1.047	424.6	0	.5773	21.22	0	0	shut down
22:09	8.014	0	0	0	0	20.42	0	0	
22:10	8.006	0	0	0	0	20.5	0	0	
22:11	8.006	0	0	0	0	20.5	0	0	
22:12	8.006	0	0	0	0	20.47	0	0	
22:13	8.008	0	0	0	0	20.46	0	0	
22:14	8.028	0	0	0	0	20.43	0	0	
22:15	8.056	0	0	0	0	20.43	0	0	
22:16	8.1	0	0	0	0	20.4	0	0	
22:17	8.131	0	0	0	0	20.37	0	0	

Well	Field	Service Date	Customer	Job Number
Suncor Netla #K77-60-50-122-30	Suncor Netla		ICOR ENERGY, INCORPOR	42100

Time 24 hr. clock	Pump Press. Annulus	Fluid Vol. Slurry	Rate Slurry	Rate Annulus	Rate Foam	Pump Press. Tubing	Rate Acid	Fluid Vol. Acid	Remarks
22:17	8.131	0	0	0	0	20.37	0	0	stage 22
22:18	8.131	0	0	0	0	20.37	0	0	acid
22:18	8.163	0	0	0	0	20.37	0	0	
22:19	8.195	0	0	0	0	20.36	0	0	
22:20	8.257	.1005	0	0	.103	20.35	0	0	
22:21	8.257	.1939	0	0	0	20.14	0	0	
22:21	8.257	.1939	0	0	0	20.14	0	0	pump N2
22:22	8.289	0	36.06	58.44	0	20.64	0	0	
22:23	8.289	0	94.88	58.45	0	21.05	0	0	
22:24	8.289	0	153.7	58.4	0	21.57	0	0	
22:25	8.257	0	212.5	58.48	0	22.07	0	0	
22:26	8.257	0	271.2	58.47	0	22.5	0	0	
22:27	8.227	0	330	58.4	0	22.84	0	0	
22:28	8.226	0	388.7	58.39	0	23.11	0	0	
22:29	8.226	0	447.5	58.44	0	23.29	0	0	
22:30	8.195	0	506.2	58.38	0	23.42	0	0	
22:31	8.195	0	564.9	58.45	0	23.51	0	0	
22:32	8.195	0	623.6	58.38	0	23.64	0	0	
22:33	8.195	0	682.4	58.37	0	23.83	0	0	
22:34	8.205	0	741.1	58.34	0	24.08	0	0	
22:35	8.226	0	799.7	58.34	0	24.35	0	0	
22:36	8.257	0	858.4	58.4	0	24.64	0	0	
22:37	8.257	0	917.1	58.3	0	24.92	0	0	
22:38	8.281	0	975.7	58.26	0	25.24	0	0	
22:39	8.289	0	1034	58.29	0	25.54	0	0	
22:40	8.319	0	1093	58.29	0	25.83	0	0	No Acid left on surface
22:41	8.319	0	1093	58.29	0	25.83	0	0	foamed flush
22:41	8.32	0	1151	58.27	.3183	26.57	0	0	
22:42	8.352	.3512	44.69	2.182	.1877	27.03	0	0	
22:43	8.414	.5703	73.8	48.08	.245	26.52	0	0	
22:43	8.414	.5703	73.8	48.08	.245	26.52	0	0	reduce rate on flush
22:44	8.53	.8167	127.4	58.15	.2445	26.83	0	0	
22:45	8.683	1.062	186	58.3	.2439	26.93	0	0	
22:46	8.82	1.307	244.6	58.22	.2441	26.9	0	0	
22:47	8.976	1.552	303.2	58.28	.2436	26.89	0	0	
22:48	9.123	1.798	362.7	65.03	.2668	27.14	0	0	
22:49	9.262	2.108	430.6	67.88	.2999	27.83	0	0	
22:50	9.417	2.41	498.9	67.88	.301	27.69	0	0	
22:51	9.588	2.73	540.8	72.89	.3217	27.81	0	0	
22:52	9.782	3.054	620.9	80.64	.3215	28.36	0	0	
22:53	10.01	3.378	702	80.52	.3216	28.73	0	0	
22:54	10.2	3.702	782.9	80.54	.322	28.45	0	0	
22:55	10.36	4.026	863.8	80.37	.3229	27.95	0	0	
22:56	10.45	4.225	944.7	80.44	0	26.48	0	0	
22:57	10.52	0	88.91	151.9	0	27.26	0	0	
22:58	10.55	0	245.4	158.8	0	28	0	0	
22:59	10.52	0	404.8	158.5	0	27.98	0	0	
23:00	10.49	0	564.2	158.6	0	28.06	0	0	
23:01	10.46	0	724.3	158.6	0	28.28	0	0	
23:02	10.42	0	883.8	159	0	28.58	0	0	
23:03	10.4	0	1042	158.7	0	28.9	0	0	
23:04	10.39	0	1203	160.1	0	29.28	0	0	
23:05	2.11	0	1364	160.1	0	29.53	0	0	
23:06	.7895	0	1525	160.1	0	29.9	0	0	

Well	Field	Service Date	Customer	Job Number
Suncor Nella #K77-60-50-122-30	Suncor Nella		ICOR ENERGY, INCORPOR	RT42.00

Time	Clean Fluid	Fluid Vol	Wellhead Pressure	Rate	Annulus Pressure	Slurry Rate	Slurry Vol	Proppant Conc	Remarks
24hr	m³	m³	kPa	m³/min	kPa	m³/min	m³	kg/m³	
23:07	.569	0	1686	160.1	0	30.26	0	0	
23:08	.5024	0	1847	159.9	0	30.59	0	0	
23:09	.4634	0	2008	159.7	0	30.92	0	0	
23:10	.4634	0	2008	159.7	0	30.92	0	0	stop pump
23:10	.4396	0	2038	0	0	30.07	0	0	
23:10	.4396	0	2038	0	0	30.07	0	0	end job
23:11	.4323	0	2038	0	0	29.91	0	0	
23:12	.4082	0	2038	0	0	29.49	0	0	
23:13	.402	0	2038	0	0	27.13	0	0	

Post-Job Summary

Average Injection Rates, m³/m

Fluid	N2	CO2	Maximum Rate
0.18	42	0	0.5

Volume of Fluid Injected, m³

Clean Fluid	Acid	Oil	CO2	N2 (scm)
0	55	0	0	

Treating Pressure Summary, kPa

Breakdown	Maximum	Final	Average	ISIP	15 Min. ISIP
17.2	30.9	30.9	20	30.9	

Quantity of & placed, kg

Total Injected	Total Ordered/Designed
0	0

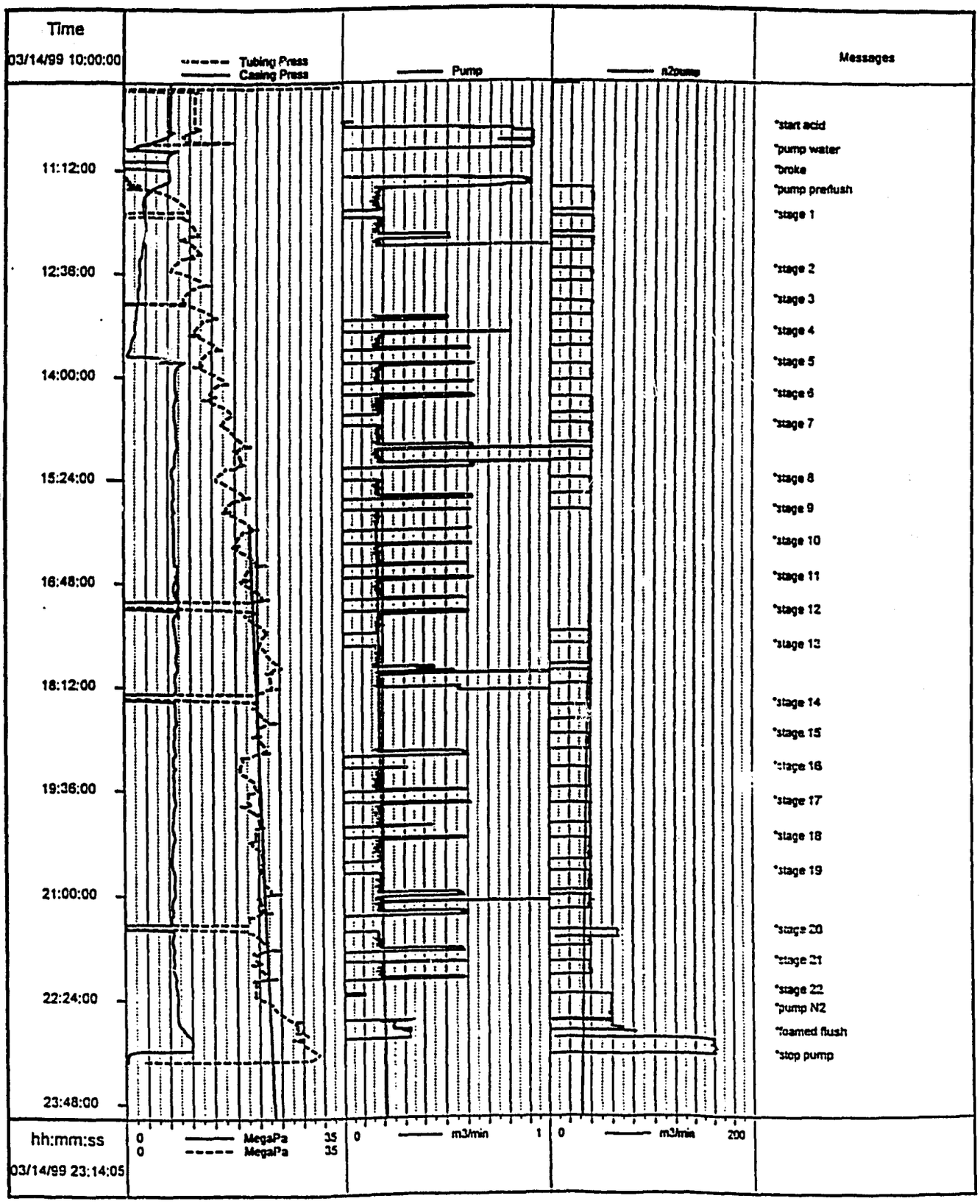
N2 Percent	CO2 Percent	Designed Fluid Volume	Displacement	Slurry Volume	Pad Volume	Percent Pad
65 %	0 %	0	m³	0 m³	0	0 %

Customer or Authorized Representative	Dowell Supervisor	Number of Stages	Fracture Gradient	
Garwin Valeen	Michael King	0	0 kPa/m	☑ Job Completed ☐ Screen Out

Schlumberger
Dowell

Marathon Report

Well	K77-60-50-122-30	**Client**	Suncor
Field	Suncor Netla	**SIR No.**	814-2199
Country	Canada	**Job Date**	3/14/99 10:00:00 AM



Job: netlak77

03/18/1999 14:0

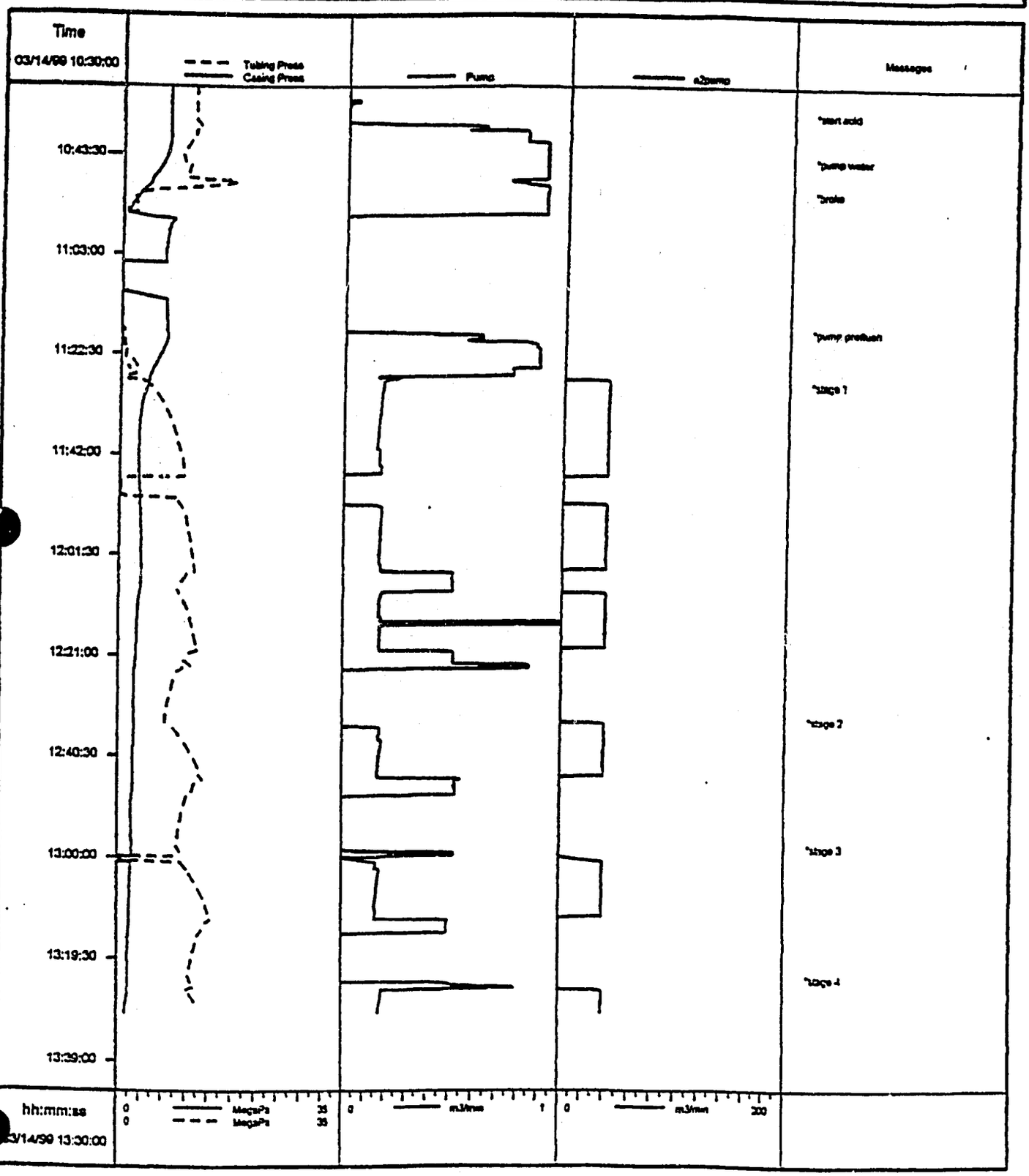
* Mark of Schlumberger

Schlumberger
Dowell

Matrix Job Report

PRISM* V3.2

Well	Suncor Netla K-77	**Client**	Suncor
Field		**SR No.**	814-
Country	Canada	**Job Date**	3/14/99 10:30:00 AM



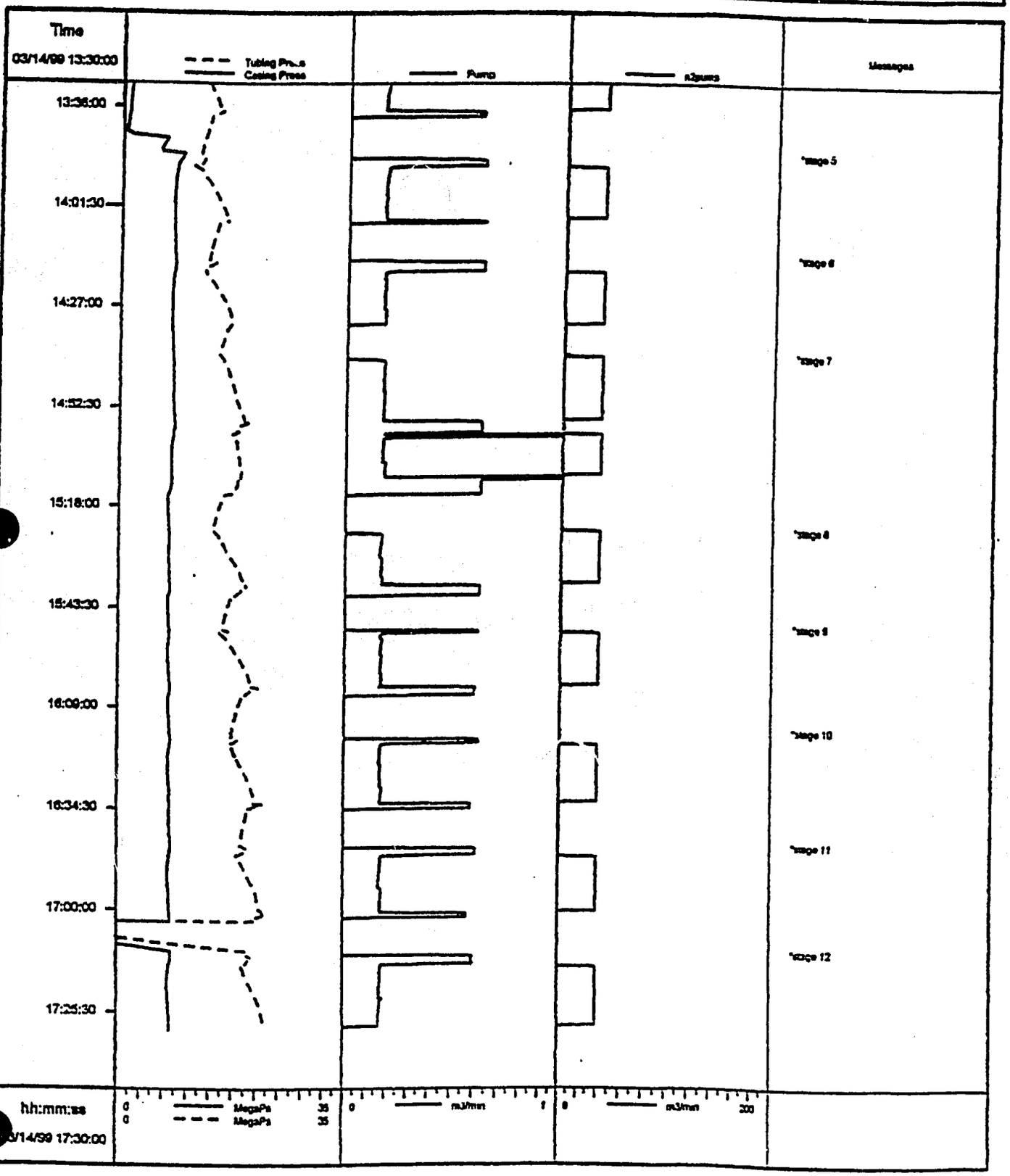
* Mark of Schlumberger

Schlumberger
Dowell

Matrix Job Report

PRISM* V2.2

Well Suncor Netla K-77	**Client** Suncor
Field	**SR No.** 814-
Country Canada	**Job Date** 3/14/99 1:30:00 PM



Job: netaK77

99 23:45

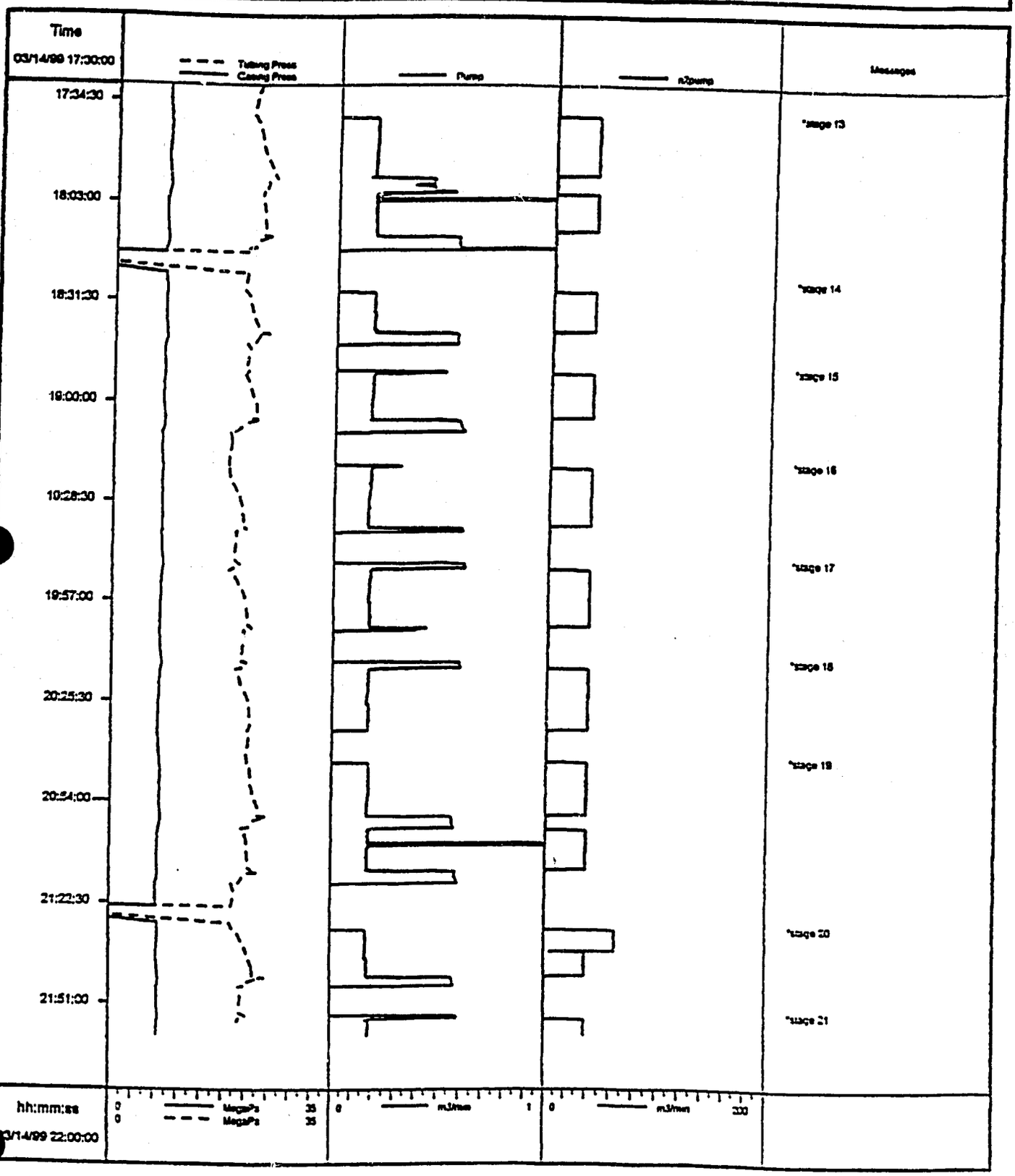
* Mark of Schlumberger

Schlumberger
Dowell

Matrix Job Report

PRISM* V2.2

Well	Suncor Netla K-77	**Client**	Suncor
Field		**SIR No.**	814-
Country	Canada	**Job Date**	3/14/99 5:30:00 PM



Job netlak77

1069 23 50

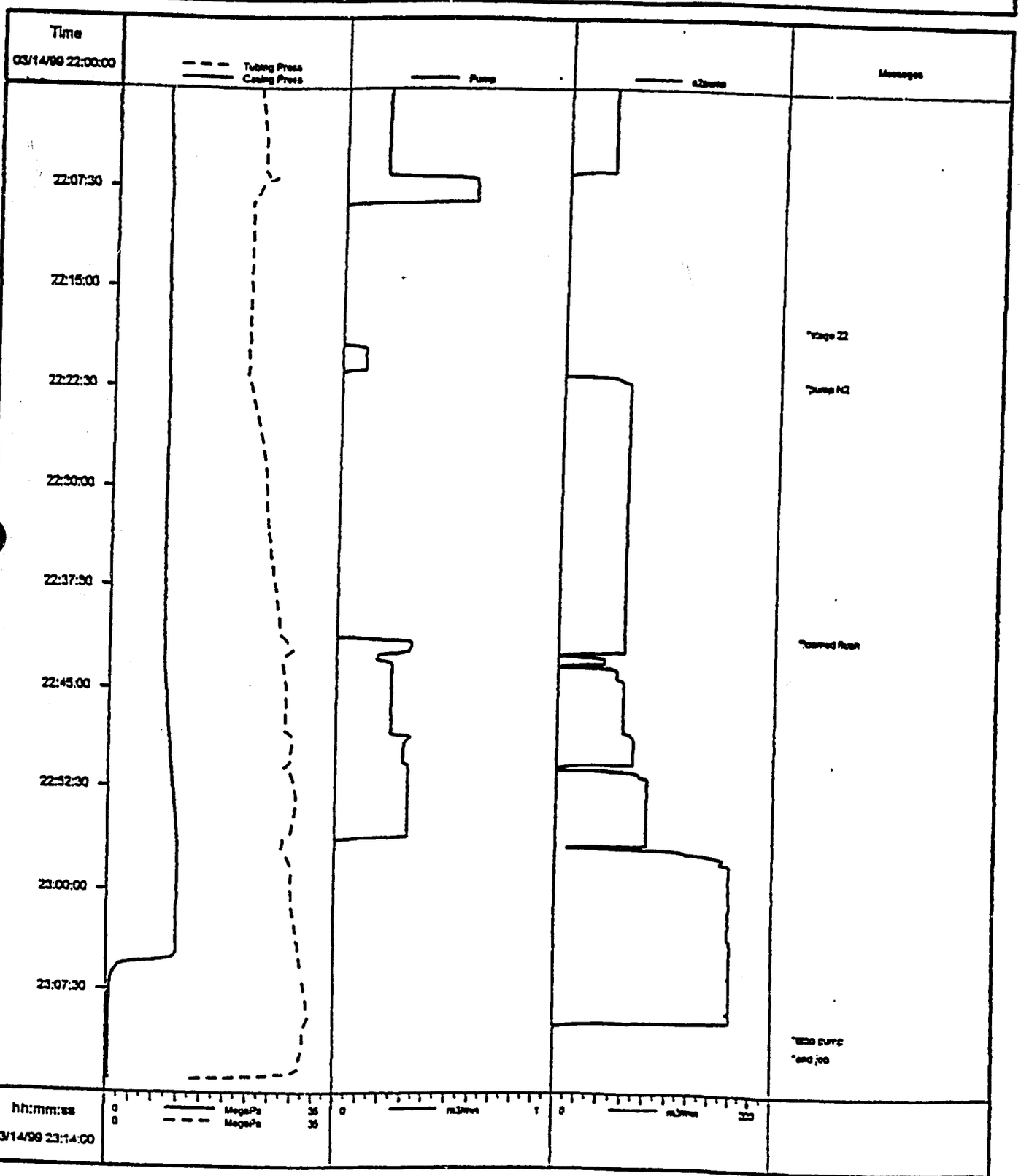
* Mark of Schlumberger

Schlumberger
Dowell

Matrix Job Report

PRISM* V2.2

Well	Suncor Netla K-77	**Client**	Suncor
Field		**SIR No.**	814-
Country	Canada	**Job Date**	3/14/99 10:00:00 PM



Job: netla77

* Mark of Schlumberger

k) Appendices

1) Detailed drilling and completion reports
2) Testing Reports
3) Bottom Hole Pressure Data Reports
4) Well Geological Report
5) Well Directional Report
6) Access Map
   Location Map
   Legal Survey

Daily Comp Rots

SUNCOR INC. RESOURCES GROUP

Well Summary Report

Legal Name: Suncor Netla K-77-60-50-122-30
Common Name: Suncor Netla K-77-60-50-122-30

Well Location

Country: CANADA
API #: Well ID: State/Prov: NWT County:
Location: 300/K- 77 Lat: 60° 50' Long: 122° 30'
Field Name: NETLA
Block: Slot No: Platform:
License No: License Date: 26/01/1999 Licensee: SUNCOR INC.
Spud Date/Time: 07/02/1999 - 02:30 P&A Date:

Surface / Bottom Hole Coordinates

	Surface Location	Bottom Hole Location
Latitude:		
Longitude:		
Distance North/(-)South:	21.40 (m)	(m)
Distance East/(-)West:	120.00 (m)	(m)
Measured From:	SW corner of Unit K of Section 77	

Reference Elevations

Permanent Datum: Kelly Bushing Datum Elev: 625.20 (m)
Kelly Bushing: 625.20 (m) Water TMD: (m)
Ground Level/Mudline: 618.40 (m) Measured Depth: 2,118.00 (m)
Casing Flange: 618.75 (m) Date Measured: 12/02/1999 TVD: 2,108.00 (m)
Tubing Hanger: (m) Date Measured: 13/03/1999 Plugback TMD: (m)
KB to Datum: 6.45 (m) Fill: (m)
KB to GL/Mudline: 6.80 (m) / (m) Deviated Well: y

Operator / Well Information

Operator: SUNCOR INC. RESOURCES GROUP
Region: NETLA Division: EXPLORATION District: GRANDE PRAIRIE
Well Type: Suspended Status: SUSPENDED
Geological Play:
Authorized TVD: (m) Authorized TMD: (m)

Event Summary

Event Type	Objective	Start Date	End Date	Auth. Cost	Last Est.
ORIG COMPLETION	COMPLETION	13/03/1999	10/05/1999	515,000	26/02/1999
ORIG DRILLING	EXPLORATORY	29/01/1999	12/03/1999	2,042,430	28/02/1999

SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 1P

1. Date 29/01/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Move Rig (SDFN) Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
				R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp.

Personnel: Total 1 Rig 0 Service 0 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	10	Others	14

11. Cost: Day $ 1,225 Cumulative $ 1,225 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	18:00	10.00	23	d	PP	Load out Akita #58 at Chetwin BC with Mullen Trucking and start move towards Netla Location. No loads @ location at dark (SDFN)

13. Foreman in Charge L.Brazel 220-9479 Weather Overcast -30 -26

Printed: 23/06/99 3:29:44 PM

SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 2P

1. Date 30/01/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Move Rig (SNFN) Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
				R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp.

Personnel: Total 1 Rig 0 Service 0 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	10	Others	14

11. Cost Day $ 6,799 Cumulative $ 8,024 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	18:00	10.00	23	d	PP	Load out Akita #58 at Chetwin and move loads to Netla K-77 location. (SDFN). I ducharme wellsite and aprox 8 rig loads unloaded on location

13. Foreman in Charge L.Brazel 220-9479 Weather Overcast -30 -25

Printed 23/06/99 3:30:07 PM

SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 3P

1. Date 31/01/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Move & Rig up (SDFN) Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
				R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp.

Personnel: Total 33 Rig 11 Service 21 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
[illegible]ging	0	Slip & Cut	0	Cementing	0	Rig up/down	10	Others	14

11. Cost: Day $ 67,861 Cumulative $ 75,885 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	18:00	10.00	23	d	PP	Move Akita #58 onto Netla K-77 location and unload trucks, 70% of rig on location. Rig crews had trouble flying to location due to bad weather and mechanical problems, arrived on location at 18:00 hrs. Prejob safety and procedure meeting held with Akita #58 crews and Mullen trucking this evening in camp.

13. Foreman in Charge L.Brazel 220-9479 Weather Overcast -30 -25

Printed 23/06/99 3:30:23 PM

SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 4P

1. Date 01/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Rigging Up equipment. (SDFN) Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
				R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp.

Personnel: Total 21 Rig 11 Service 9 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	10	Others	14

11. Cost: Day $ 15,768 Cumulative $ 91,653 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	18:00	10.00	23	d	pp	Move Akita #58 onto location, spot matting, build sub and pin derrick. Unloading loads on location. 95% of rig on location, drill pipe yet to arrive. Note: camp was turned over to drilling from seismic operation 99-02-01

13 Foreman in Charge L.Brazel 220-9479 Weather Clear -30 -26

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 5P

1. Date 02/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Rigging to spud (SDFN) Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
				R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp.

Personnel: Total 34 Rig 11 Service 21 Suncor 2 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
gging	0	Slip & Cut	0	Cementing	0	Rig up/down	10	Others	14

11. Cost: Day $ 246,717 Cumulative $ 338,370 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	18:00	10.00	1	a	PP	Rig up drilling equipment and unload pipe trucks

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Clear -30 -26

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 6P

1. Date 03/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Rigging to spud (SDFN) Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
		254.0		R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp.

Personnel: Total 31 Rig 15 Service 13 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	16	Others	8

11. Cost: Day $ 49,205 Cumulative $ 387,575 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	00:00	16.00	1	a	PP	Rigged up with Mullen until 13:00 hrs. Crane & trucks released at this time. Rig up rig , cold start generator fired up string power cords and hook up lines and start putting up prefabs.

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Windy -30 -26

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 7P

1. Date 04/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Rig to spud (SDFN) Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
		254.0		R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp.

Personnel: Total 34 Rig 14 Service 17 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
[illegible]gging	0	Slip & Cut	0	Cementing	0	Rig up/down	16	Others	8

11. Cost: Day $ 22,428 Cumulative $ 410,003 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	00:00	16.00	1	a	PP	Rigged up to raise derrick. Derrick inspected and raised. Boiler fired up 1000 hours. Water lines in drawworks removed and repaired due to damage on the rig move.

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Snowing -30 -26

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 8P

1. Date 05/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Rigging to spud. Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
		254.0		R.S.P P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp. 05/02/99

Personnel: Total 46 Rig 25 Service 18 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
gging	0	Slip & Cut	0	Cementing	0	Rig up/down	16	Others	8

11. Cost: Day $ 27,962 Cumulative $ 437,965 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	00:00	16.00	1	a	PP	Rig to spud .including rigging in Tesco Top Drive, weld on adapter flange for divertor system and continue rigging to spud. Put up Prefabs, nipple up diverter system

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Lt. Snow - 22 c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 9P

1. Date 06/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth (m) Operation Pre Spud Meeting Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities			
		254.0		D.P.	m/min	D.C.	m/min
		254.0		R.S.P.P	kPa	@	SPM

9. B.O.P. Check Last Drill Incident Last Rig Insp. 06/02/99

Personnel: Total 33 Rig 14 Service 16 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	24	Others	0

11. Cost: Day $ 15,333 Cumulative $ 453,298 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:00	24.00	1	a	PP	Rig in top drive. Install diverter system. Remodled flow nipple and relief line. Prespud meeting with all personal on location.

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Lt. Snow - 20c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 1

1. Date 07/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 237.00 (m) Operation Drill 311mm surface hole Progress 237.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,040.0		11.0	11.10	11.00	26.00	2.4	15.0 / 16.0	1.0	

4.

Potassium Sulfat 80 sx	VISPLEX 11 20 SX	SODA ASH 10 SX	FLOPLEX 47 SX	BENTONITE M1 40 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
1	311.000	HP11	431711	20.0 15.0 15.0	315.00	237.00	16.00	14.81	10,000 / 150	5 3 I

6. Assembly: 311.00 Tri-Cone Bit, 228.00 Bit Sub, 3 228.00 Drill Collar, 1 228.00 Cross Over, 1 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 1 157.00 Cross Over, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe,

7. Surveys: 30.00/0.250/0.000 59.00/0.500/0.000 89.00/0.750/0.000 115.00/0.750/0.000 155.00/0.750/0.000 182.00/0.500/0.000 209.00/1.000/0.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
100	152.4	254.0	2,900	D.P.	21.8	m/min	D.C.	39.3 m/min
100	152.0	254.0	2,050	R.S.P.P		kPa	@	SPM

9. B.O.P. Check 07/02/99 Last Drill Incident Last Rig Insp. 07/02/99

Personnel: Total 31 Rig 14 Service 14 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	16	Directional.	0	Rig Service	.25	Reaming	0	Coring	0
Tripping	0	Cond. Mud	.75	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	2	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	2.5	Others	0

11. Cost: Day $ 181,318 Cumulative $ 634,616 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	02:30	2.50	1	a	PP	Pick up 228 mm dc to spud with 311 mm
02:30	03:00	0.50	2	b	PP	Drill out cement in conductor barrel Spud well @ 02:30 hrs 99-02-07
03:00	03:45	0.75	28		PU	Change out shaker screens to 140's
03:45	04:00	0.25	2	b	PP	Drill out cement in conductor barrel
04:00	04:15	0.25	5	a	PP	Displace cement water to drill mud
04:15	05:15	1.00	2	a	PP	Drill 311 mm 31 m to 40 m
05:15	05:30	0.25	10	a	PP	Survey as required
05:30	05:45	0.25	7	a	PP	Rig service
05:45	06:00	0.25	2	a	PP	Drill 311 mm 40 m to 47 m
06:00	07:30	1.50	28		PU	Change out shaker screens to 84's
07:30	08:00	0.50	5	a	PU	Circulate and treat drill mud
08:00	08:30	0.50	2	a	PP	Drill 311 mm 47 m to 55 m
08:30	08:45	0.25	7		PP	Rig serviced
08:45	22:15	13.50	2	a	PP	Drilled 311 mm 55 m to 237 m
22:15	00:00	1.75	10	a	PP	Surveys as required Direction to Location. North of Fort Liard on hwy #7 to Maker post Km 92, Right for 40 km on existing siesmic line to location.

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Breezy - 28 -30 Celcius

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 2

1. Date 08/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 401.00 (m) Operation Drilling 311 mm surface hole Progress 164.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,070.0		10.2	10.00	10.00	23.50	4.2	16.0 / 17.0	1.0	

4.

CELLOPHANE 1 SX	Potassium Sulfat 5 sx	FLOPLEX 15 SX	BENTONITE M1 10 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
2	311.000	J1	87703	20.0 15.0 15.0	540.00	86.00	6.00	14.33	10,000 / 150	4 E I
1	311.000	HP11	431711	20.0 15.0 15.0	315.00	315.00	24.50	12.86	9,000 / 160	5 3 I

6. Assembly: 311.00 Tri-Cone Bit, 228.00 Bit Sub, 3 228.00 Drill Collar, 1 228.00 Cross Over, 1 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 1 157.00 Cross Over, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe,

7. Surveys: 256.00/0.250/0.000 286.00/0.750/0.000 315.00/0.000/0.000 333.00/0.750/0.000 362.00/0.250/0.000 391.00/0.750/0.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
75	152.4	254.0	6,000	D.P.	32.7	m/min	D.C.	58.9 m/min
75	152.4	254.0	6,000	R.S.P.P		kPa	@	SPM

9. B.O.P. Check 07/02/99 Last Drill Incident Last Rig Insp. 08/02/99

Personnel: Total 30 Rig 14 Service 13 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	13.25	Directional.	0	Rig Service	.5	Reaming	2	Coring	0
Tripping	6.75	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	.5	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 50,055 Cumulative $ 684,671 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	02:00	2.00	2	a	PP	Drilled 311 mm surface hole from 237m to 255 m.
02:00	03:00	1.00	28		NU	Cleaned out pump suctions
03:00	03:15	0.25	7		PP	Rig serviced
03:15	08:30	5.25	2	a	PP	Drilled 311 mm surface hole from 255m to 315m
08:30	13:45	5.25	6	h	PP	Tripped out to condition hole and change bit
13:45	14:00	0.25	7		PP	Rig serviced
14:00	16:00	2.00	3	a	PU	Reamed into hole from 20m to 100m
16:00	17:30	1.50	6	a	PP	Tripped into 315 m
17:30	23:30	6.00	2	a	PP	Drilled 311 mm from 315 m to 401 m
23:30	00:00	0.50	10	a	PP	Surveyed as required

13. Foreman in Charge L.Brazel / P. Miller 220-3479 Weather Snowing -32 -24 Celcius

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 3

1. Date 09/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 540.00 (m) Operation Clean out for casing Progress 139.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,125.0		11.0	10.10	10.00	27.00	7.5	20.0 / 22.0	1.0	

4. Potassium Sulfat 27 sx | CAUSTIC 1 SX | VISPLEX 11 3 SX | FLOPLEX 9 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets			Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
2	311.000	J1	87703	14.3	14.3	14.3	540.00	225.00	21.50	10.47	12,000 / 190	4 E I

6. Assembly: 311.00 Tri-Cone Bit, 228.00 Bit Sub, 3 228.00 Drill Collar, 1 228.00 Cross Over, 1 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 1 157.00 Cross Over, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe.

7. Surveys: 418.00/1.000/0.000 448.00/0.500/0.000 477.00/0.750/0.000 505.00/0.100/0.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
75	152.4	254.0	6,400	D.P.	32.7	m/min	D.C.	58.9 m/min
75	152.4	254.0	6,400	R.S.P.P		kPa	@	SPM

9. B.O.P. Check 09/02/99 Last Drill Incident Last Rig Insp. 09/02/99

Personnel: Total 34 Rig 14 Service 17 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	15.5	Directional.	0	Rig Service	.5	Reaming	0	Coring	0
Tripping	5	Cond. Mud	.75	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	2	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 27,924 Cumulative $ 712,594 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	03:00	3.00	2	a	PP	Drill 311 mm from 401 m to 428 mKb
03:00	03:30	0.50	10	a	PP	Surveys as required
03:30	03:45	0.25	7		PP	Rig serviced
03:45	10:45	7.00	2	a	PP	Drilled 311 mm from 428 m to 487 mKb
10:45	11:00	0.25	7		PP	Rig serviced
11:00	11:45	0.75	10	a	PP	Surveys as required
11:45	17:15	5.50	2	a	PP	Drilled 311 mm from 487 m to 540 mKb
17:15	18:00	0.75	5	a	PP	Circulate hole clean prior to wiper trip
18:00	18:15	0.25	10	a	PP	Surveys as required
18:15	18:30	0.25	28		NU	Clean out plugged off flow line
18:30	23:30	5.00	6	h	PP	Wiper tripped to condition well bore. Well bore tight. Tripped in right to bottom.
23:30	00:00	0.50	10	b	PP	Directional surveys on wiper trip in

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Cold -35 -26

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 4

1. Date 10/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 540.00 (m) Operation Nipple down diverter system Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,125.0		11.2	10.00	9.00	26.50	7.5	21.0 / 22.0	1.0	

4. CELLOPHANE 30 SX CaCl2 9 KCl

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
2	311.000	J1	87703	14.3 14.3 14.3	540.00				/	4 E I

6. Assembly: 311.00 Tri-Cone Bit, 228.00 Bit Sub, 3 228.00 Drill Collar, 1 228.00 Cross Over, 1 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 1 157.00 Cross Over, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe,

7. Surveys: 0.00/0.000/0.000 37.75/0.700/52.000 150.67/0.700/77.000 263.34/0.500/107.000 378.15/0.300/237.000 503.00/0.500/82.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		254.0		D.P.	32.7	m/min	D.C.	58.9 m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 09/02/99 Last Drill Incident Last Rig Insp. 10/02/99

Personnel: Total 32 Rig 15 Service 14 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	.25	Reaming	0	Coring	0
Tripping	4.25	Cond. Mud	.75	Rig Repairs	0	Run Casing	8.75	W.O.C.	5.5
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	4.5	Rig up/down	0	Others	0

11. Cost: Day $ 72,134 Cumulative $ 784,729 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	01:30	1.50	6	h	PP	Trip in and directional survey surface hole
01:30	02:15	0.75	5	a	PP	Circulate hole clean
02:15	02:30	0.25	7		PP	Rig service
02:30	05:15	2.75	6	h	PP	Tripped out to run casing. Laid down 228 mm DC
05:15	14:00	8.75	12	a	PP	Rigged up to run casing. Conducted an safety meeting. Run casing; 41 jts 244.5mm 53.6 kg/m J-55 LT&C new Prudential casing Landed @ 535m KB Circulate casing at 350 m.
14:00	16:45	2.75	12	c	PP	Rig up to circulate and circulate same
16:45	18:30	1.75	12	c	PP	Conducted a safety meeting. Rig to cement and cement 244 mm casing with 35t RFC + 1% CaCl2 Displace plug with 21m3 water plug down @ 18:30 hrs with 5m3 good cement returns.
18:30	00:00	5.50	13		PP	Wait on cement. Nipple down diverter

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Cold -35 -26

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 5

1. Date 11/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD /58

2. Depth 540.00 (m) Operation Nipple up 349 mm stack and lines Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,095.0		11.5	8.50	6.00	23.50	6.0	23.5 / 35.0	1.0	

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities					
		254.0		D.P.	32.7	m/min	D.C.	58.9	m/min
		254.0		R.S.P.P		kPa	@		SPM

9. B.O.P. Check 09/02/99 Last Drill Incident Last Rig Insp. 11/02/99

Personnel: Total 31 Rig 15 Service 13 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	4
Circulate	0	Survey	0	BOP Drill	20	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 36,216 Cumulative $ 820,945 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	04:00	4.00	13		PP	Nipple down diverter. Install Stream Flo FMC C-29 Screw on 279 mm X 244.5 mm LCT, 34mpa with two 52 mm flanged 34 mpa outlets. Torque bowl to Max.
04:00	00:00	20.00	14	b	PP	Install and nipple up 346 mm BOP components and lines with rig crews and nipple up crew.

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Cold -35 -20

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 6

1. Date 12/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 544.00 (m) Operation Drill 222mm Hole Progress 4.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,095.0		11.5	8.50	6.00	23.50	6.0	23.5 / 35.0	1.0	

4.

BICARBONATE 2 KG										

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/hr)	Force/RPM	Cond.
3	222.200	EHP43A	LQ4592	8.7 8.7 9.5	1,105.00	4.00	0.50	8.00	8,000 / 70	3 3 I

6. Assembly: 222.20 Tri-Cone Bit, 173.00 Bit Sub, 171.00 Shock Sub - String, 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 171.00 Cross Over, 1 178.00 Drill Collar, 215.00 Taper Blade Stabilizer, 4 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
80	152.0	254.0	9,100	D.P.	32.7	m/min	D.C.	58.9 m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 12/02/99 Last Drill Incident Last Rig Insp. 12/02/99

Personnel: Total 31 Rig 15 Service 13 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional	0	Rig Service	0	Reaming	0	Coring	0
Tripping	4.5	Cond. Mud	0	Rig Repairs	2	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	15.75	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	.25

11. Cost: Day $ 44,879 Cumulative $ 865,824 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	05:30	5.50	14	b	PP	Nipple up BOP stack, sweep line and related components.
05:30	15:00	9.50	15	a	PP	Pressure test BOP stack and related components to 1400 KPa & 14000 KPa 10 min each test, with Inland Pressure testers. All tests OK.
15:00	17:00	2.00	8	a	NU	Replace and repair Washed valves on pump manifold.
17:00	21:30	4.50	6	j	PP	Pick up and make up BHA for drill out & drill to KOP
21:30	23:00	1.50	28		PP	Drill out Cement, Float collar shoe & drill 5m new hole for leak off test
23:00	23:45	0.75	15	c	PP	Run leak off test with Inland Pressure testers, Leak off Gradient at 20 KPa/m

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Lt.Snow -25,-16

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 7

1. Date 13/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 725.00 (m) Operation Drill ahead 222mm hole. Progress 181.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,140.0		8.5	10.50	16.00	32.50	6.0	20.5 / 21.5	1.0	

4.

Potassium Sulfat 105 sx	CAUSTIC 1 SX	SODA ASH 2 SX	FLOPLEX 48 SX	BICARBONATE 4 KG
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5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
3	222.200	EHP43A	LQ4592	8.7 8.7 9.5	1,105.00	185.00	17.75	10.42	16,000 / 80	3 3 I

6. Assembly: 222.20 Tri-Cone Bit, 173.00 Bit Sub, 171.00 Shock Sub - String, 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 171.00 Cross Over, 1 178.00 Drill Collar, 215.00 Taper Blade Stabilizer, 4 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 591.00/0.700/307.000 677.00/1.000/324.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
70	152.0	254.0	8,000	D.P.	34.5	m/min	D.C.	64.8 m/min
		254.0		R.S.P.P	5,200	kPa	@	45 SPM

9. B.O.P. Check 13/02/99 Last Drill 13/02/99 Incident Last Rig Insp. 13/02/99

Personnel: Total 30 Rig 16 Service 11 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	17.25	Directional.	0	Rig Service	.75	Reaming	.5	Coring	0
Tripping	0	Cond. Mud	2	Rig Repairs	1	Run Casing	0	W.O.C.	0
Circulate	0	Survey	.5	BOP Drill	1.5	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 43,844 Cumulative $ 909,668 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	01:30	1.50	15	b	PP	Pressure test mud lines. Repairs to two four inch mud line valves.
01:30	03:30	2.00	5	a	PP	Displace cement water to drill mud. Circulate and condition mud prior to drill ahead.
03:30	12:30	9.00	2	a	PP	Drill 222 mm from 544 kb to 638 mKb
12:30	12:45	0.25	7		PP	Rig service. Function test hydril
12:45	13:00	0.25	10	b	PP	Survey as required
13:00	14:00	1.00	8	a	PU	Repairs to pipe screen
14:00	14:45	0.75	2	a	PP	Drill 222 mm from 638 kb to 648 mkb
14:45	15:15	0.50	28		PP	BOP drill. Well secure in 1 minute
15:15	16:45	1.50	2	a	PP	Drill 222 mm from 648 kb to 667 mkb
16:45	17:15	0.50	7		PP	Rig serviced . Function tested remote choke
17:15	23:15	6.00	2	a	PP	Drill 222 mm from 667 kb to 725 mkb
23:15	23:45	0.50	3	a	PP	Cum. work tight hole on connections
23:45	00:00	0.25	10	b	PP	Surveys as required

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Lt.Snow -25,-16

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 8

1. Date 14/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 895.00 (m) Operation Drilling Ahead 222mm Hole @ 895m Progress 170.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,160.0		11.8	10.00	17.00	27.00	9.5	17.0 / 18.0	1.0	

4. Potassium Sulfat 101 sx | CAUSTIC 1 SX | VISPLEX 11 2 SX | FLOPLEX 33 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
3	222.200	EHP43A	LQ4592	8.7 8.7 9.5	1,105.00	355.00	39.75	8.93	16,000 / 80	3 3 I

6. Assembly: 222.20 Tri-Cone Bit, 173.00 Bit Sub, 171.00 Shock Sub - String, 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 171.00 Cross Over, 1 178.00 Drill Collar, 215.00 Taper Blade Stabilizer, 4 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 792.00/1.750/274.000 878.00/1.250/322.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
70	152.4	254.0	7,700	D.P.	34.5	m/min	D.C. 64.8	m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 13/02/99 Last Drill 13/02/99 Incident Last Rig Insp. 14/02/99

Personnel: Total 34 Rig 16 Service 15 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	22	Directional.	0	Rig Service	.5	Reaming	.5	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	1	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 33,287 Cumulative $ 942,955 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig serviced. Function tested lower pipe rams
00:15	15:15	15.00	2	a	PP	Drill 222 mm hole from 725 m to 838 mKb
15:15	15:45	0.50	10	b	PP	Directional survey as required
15:45	16:00	0.25	7		PP	Rig serviced. Function tested upper pipe rams
16:00	23:00	7.00	2	a	PP	Drill 222 mm hole from 838 m to 895 mKb
23:00	23:30	0.50	10	b	PP	Directional survey as required
23:30	00:00	0.50	3	a	PU	Cumulative: Work tight hole on connections

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Sunny -22 -10

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 9

1. Date 15/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,085.00 (m) Operation Drill 222 mm at 1085 mKb Progress 190.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,160.0		8.0	10.80	15.00	19.50	9.5	15.0 / 16.0	1.0	

4.

Potassium Sulfat 113 sx	CAUSTIC 1 SX	VISPLEX 11 9 SX	FLOPLEX 69 SX	SAWDUST 20 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
3	222.200	EHP43A	LQ4592	8.7 8.7 9.5	1,105.00	545.00	61.25	8.90	18,000 / 80	3 3 I

6. Assembly: 222.20 Tri-Cone Bit, 173.00 Bit Sub, 171.00 Shock Sub - String, 165.00 Cross Over, 1 157.00 Non-Mag Drill Collar, 171.00 Cross Over, 1 178.00 Drill Collar, 215.00 Taper Blade Stabilizer, 4 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 991.00/1.500/322.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.4	254.0	10,200	D.P.	34.5	m/min	D.C.	64.8 m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 15/02/99 Last Drill 13/02/99 Incident Last Rig Insp. 15/02/99

Personnel: Total 34 Rig 16 Service 15 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	21.5	Directional.	0	Rig Service	.5	Reaming	1.5	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	.25	Run Casing	0	W.O.C.	0
Circulate	.0	Survey	.25	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 49,551 Cumulative $ 992,506 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig serviced. Function tested annular and checked RSPP
00:15	00:30	0.25	8	a	R	Repairs to mud line
00:30	08:15	7.75	2	a	PP	Drilled 222 mm from 895 m to 972 mKb
08:15	09:45	1.50	3	a	PU	Cumulative: Work tight hole on connections
09:45	10:00	0.25	7		PP	Rig serviced. Function tested bottom pipe rams
10:00	23:45	13.75	2	a	PP	Drilled 222 mm from 972 m to 1085 mKb
23:45	00:00	0.25	10	b	PP	Surveys as required

13. Foreman in Charge L.Brazel / F. Miller 220-9479 Weather Sunny -22 -10

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 10

1. Date 16/02/99 Well Name Suncor Notla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,117.00 (m) Operation Drill ahead 222mm build section Progress 32.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,155.0		9.7	10.20	16.00	23.50	9.5	15.0 / 16.0	1.0	

4.

Potassium Sulfat 9 sx	CAUSTIC 1 SX	FLOPLEX 9 SX	BENTONITE M1 20 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
4	222.000	F10T	LT7093	8.7 8.7 9.5	1,577.00	12.00	2.75	4.36	15 / 90	3 E I
3	222.200	EHP43A	LQ4592	8.7 8.7 9.5	1,105.00	565.00	63.50	8.90	18,000 / 80	3 3 I

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,093.09/1.900/342.460 1,102.90/2.100/334.700 1,111.40/3.200/347.800 1,121.50/4.400/344.500

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.0	254.0	6,200	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P	3,900	kPa	@	50 SPM

9. B.O.P. Check 16/02/99 Last Drill 13/02/99 Incident Last Rig Insp. 16/02/99

Personnel: Total 34 Rig 16 Service 15 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	5	Directional.	2.5	Rig Service	.5	Reaming	0	Coring	0
Tripping	13.75	Cond. Mud	.75	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	.5	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	1	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 57,926 Cumulative $ 1,050,432 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig service. Function test upper pipe rams
00:15	02:30	2.25	2	a	PP	Drill 222 mm from 1085 m to 1105 mKb
02:30	03:15	0.75	5	a	PP	Circulate well bore clean
03:15	11:00	7.75	6	j	PP	Trip out to pick up directional tools. Back reamed out from 950 mKb to 500 mKb. Taber blade stabalizer was balled up with filter cake.
11:00	13:30	2.50	20	a	PP	Pick up directional tools and surface test same
13:30	13:45	0.25	7		PP	Rig service. Function test blind rams
13:45	16:15	2.50	6	j	PP	Tripped in with directional tools to 565 mKb. Function tested MWD.
16:15	17:15	1.00	9		PP	Slipped and cut 20 m of drilling line
17:15	20:45	3.50	6	j	PP	Trip in with directional tools. Reamed a small bridge at 655 mKb. Checked directional survey at 792 mKb. 3 m of fill on bottom.
20:45	23:30	2.75	2	a	PP	Directional drill 222mm from 1105 m to 1117 mKb
23:30	00:00	0.50	10	e	PP	Cumulative MWD surveys

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Sunny -19 -12

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 11

1. Date 17/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,251.00 (m) Operation Directional drill 222 mm hole Progress 134.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,145.0		8.3	10.00	13.00	16.00	9.0	11.0 / 13.0	1.0	

4.

Potassium Sulfat 108 sx	CAUSTIC 2 SX	VISPLEX 11 8 SX	FLOPLEX 54 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
4	222.000	F10T	LT7093	15.9 15.9 15.9	1,577.00	146.00	23.00	6.35	18,000 / 90	3 E I

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 151.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,131.50/5.700/351.600 1,141.84/7.300/348.790 1,151.02/8.900/348.090 1,161.00/10.100/348.790 1,170.75/11.200/348.090 1,180.60/12.000/349.490 1,189.28/13.600/348.090 1,199.24/15.800/348.090 1,208.92/17.500/347.380 1,218.46/19.300/345.980 1,228.22/21.100/343.870 1,237.62/22.700/343.870

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.4	254.0	10,200	D.P.	46.1	m/min	D.C. 86.8	m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 16/02/99 Last Drill 13/02/99 Incident Last Rig Insp. 17/02/99

Personnel: Total 34 Rig 15 Service 16 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	20.25	Rig Service	.5	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	3.25	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 47,721 Cumulative $ 1,098,153 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	05:30	5.50	20	a	PP	Directional drilled 222 mm from 1117 m to 1145 mKb
05:30	06:00	0.50	10	e	PP	Cumulative: MWD surveys as required
06:00	06:15	0.25	7		PP	Rig service. Function test lower pipe rams
06:15	14:15	8.00	20	a	PP	Directional drilled 222 mm from 1145 m to 1202 mKb
14:15	15:45	1.50	10	e	PP	Cumulative: MWD surveys as required
15:45	16:00	0.25	7		PP	Rig serviced. Function tested annular
16:00	22:45	6.75	20	a	PP	Directional drilled 222 mm from 1202 m to 1251 mKb
22:45	00:00	1.25	10	a	PP	Cumulative: MWD surveys as required

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Sunny -19 -12

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 12

1. Date 18/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,373.00 (m) Operation Motor drill ahead 222mm hole tangent section Progress 122.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,155.0		8.3	10.00	18.00	28.00	9.4	17.0 / 18.0	1.5	

4.

Potassium Sulfat 196 sx	CAUSTIC 2 SX	FLOPLEX 27 SX	

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
4	222.000	F10T	LT7093	15.9 15.9 15.9	1,577.00	268.00	42.75	6.27	18,000 / 90	3 E I

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,246.75/23.900/344.570 1,256.52/25.000/345.980 1,266.27/26.200/347.400 1,276.27/27.100/347.790 1,285.74/27.900/348.090 1,295.49/28.500/346.680 1,305.15/28.700/344.570 1,314.72/28.900/341.050 1,324.31/29.200/338.240 1,334.00/29.600/336.200 1,343.38/29.800/337.540 1,353.04/29.800/340.350 1,362.59/28.700/337.540 1,371.99/27.200/338.240 1,381.70/26.500/334.000

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.0	254.0	7,200	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P	4,600	kPa	@	50 SPM

9. B.O.P. Check 18/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 18/02/99

Personnel: Total 34 Rig 15 Service 16 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	19.75	Rig Service	.5	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	3.25	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 47,057 Cumulative $ 1,145,210 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig serviced. Function tested remote choke
00:15	11:00	10.75	20	a	PP	Directional drill 222mm from 1251 m to 1319 mKb
11:00	12:15	1.25	10	e	PP	Cumulative MWD surveys
12:15	12:30	0.25	28		PP	BOP drill. Well secure in 90 seconds with annular
12:30	12:45	0.25	7		PP	Rig service. Function test top pipe rams
12:45	21:45	9.00	20	a	PP	Directional drill 222mm from 1319 m to 1373 mKb
21:45	22:00	0.25	28		PP	BOP drill. Well secure
22:00	00:00	2.00	10	e	PP	Cumulative MWD surveys

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Overcast -22 -17

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 13

1. Date 19/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,484.00 (m) Operation Directional drill with Anadrill motor & MWD Progress 111.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,180.0		7.3	9.70	19.00	31.00	10.0	22.0 / 23.0	1.5	

4.

Potassium Sulfat 91 sx	CAUSTIC 3 SX	FLOPLEX 41 SX	BENTONITE M1 24 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
4	222.000	F10T	LT7093	15.9 15.9 15.9	1,577.00	379.00	63.25	5.99	22,000 / 90	3 E I

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,391.13/26.400/333.300 1,400.75/26.800/332.620 1,410.34/27.300/334.730 1,419.96/28.000/334.730 1,429.55/28.700/334.680 1,439.20/28.200/335.400 1,448.90/27.600/334.700 1,458.60/28.000/334.000 1,467.90/28.900/335.400 1,477.30/29.800/336.100 1,486.94/30.400/337.750

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities					
90	152.0	254.0	9,000	D.P.	46.1	m/min	D.C.	86.8	m/min
		254.0		R.S.P.P	5,200	kPa	@	50	SPM

9. B.O.P. Check 19/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 19/02/99

Personnel: Total 34 Rig 15 Service 16 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional	20.5	Rig Service	.5	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	3	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 41,953 Cumulative $ 1,187,163 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig service. Function test top pipe rams
00:15	11:15	11.00	20	a	PP	Directional drill 222 mm from 1373 m to 1433 mKb
11:15	12:15	1.00	10	e	PP	Cumulative: MWD surveys
12:15	12:30	0.25	7		PP	Rig service. Function test bottom pipe rams
12:30	22:00	9.50	20	a	PP	Directional drill 222 mm from 1433 m to 1484 mKb
22:00	00:00	2.00	10	e	PP	Cumulative: MWD surveys

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Overcast -22 -17

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 14

1. Date 20/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,577.00 (m) Operation Trip for bit. Progress 93.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,190.0		7.6	10.00	19.00	32.00	10.0	19.0 / 20.0	1.5	

4. Potassium Sulfat 32 sx | CAUSTIC 2 SX | FLOPLEX 20 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
4	222.000	F10T	LT7093	15.9 15.9 15.9	1,577.00	472.00	82.50	5.72	22,000 / 90	3 E I

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,496.20/29.700/336.800 1,505.80/28.500/337.300 1,515.40/27.800/335.400 1,525.04/28.100/334.700 1,534.41/29.300/334.730 1,543.97/29.700/336.500 1,553.50/29.200/336.500 1,563.01/28.800/337.590

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities					
90	152.0	254.0	9,100	D.P.	46.1	m/min	D.C.	86.8	m/min
		254.0		R.S.P.P	5,700	kPa	@	50	SPM

9. B.O.P. Check 20/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 20/02/99

Personnel: Total 34 Rig 15 Service 16 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	19.25	Rig Service	.5	Reaming	0	Coring	0
Tripping	1.5	Cond. Mud	0	Rig Repairs	.25	Run Casing	0	W.O.C.	0
Circulate	0	Survey	2.5	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 47,657 Cumulative $ 1,234,821 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig serviced. Function test annular.
00:15	13:45	13.50	20	a	PP	Directional drilled 222 mm from 1484 m to 1548 mKb
13:45	15:30	1.75	10	e	PP	MWD surveys as required
15:30	15:45	0.25	7		PP	Rig serviced. Function tested top pipe rams
15:45	21:30	5.75	20	a	PP	Directional drilled 222mm from 1548 m to 1577 mKb
21:30	22:15	0.75	10	e	PP	MWD surveys as required
22:15	22:30	0.25	8	a	RU	Change out shaker screens
22:30	00:00	1.50	6	a	PP	Tripped out for bit. Pumped out 7 stands of drill pipe out of the fT Simpson formation.

13. Foreman in Charge Weather Overcast -18,-10

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 15

1. Date 21/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,630.00 (m) Operation Directional drill with Anadrill & MWD Progress 53.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,195.0		8.5	10.50	18.00	34.50	11.0	20.0 / 21.0	1.5	

4. Potassium Sulfat 52 sx | CAUSTIC 2 SX | FLOPLEX 19 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
5	222.000	F10T	LT7094	15.9 15.9 15.9	1,990.00	53.00	10.75	4.93	24 / 90	4 5 1
4	222.000	F10T	LT7093	15.9 15.9 15.9	1,577.00				/	3 E I

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,572.61/28.500/338.240 1,582.21/28.200/338.950 1,591.81/28.300/339.650 1,601.39/27.900/340.350 1,610.64/27.200/340.350 1,619.93/26.200/341.760 1,629.64/25.600/341.760

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.0	254.0	9,400	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P	5,400	kPa	@	50 SPM

9. B.O.P. Check 20/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 21/02/99

Personnel: Total 33 Rig 15 Service 15 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	10.75	Rig Service	.5	Reaming	0	Coring	0
Tripping	11.5	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	1.25	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 37,931 Cumulative $ 1,272,752 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	04:00	4.00	6	a	PP	Tripped out for bit. Hole good shape from 1400 m to surface.
04:00	06:45	2.75	6	a	PP	Change out bit, Mud motor, check MWD.
06:45	07:00	0.25	7		PP	Rig serviced. Function tested blind rams
07:00	11:45	4.75	6	a	PP	Tripped in hole. Shallow MWD check at 565 mKb. Break circulation at 970 m, 1300 m, 1528 m.
11:45	12:00	0.25	7		PP	Rig serviced. Function tested pipe bottom pipe rams
12:00	22:45	10.75	20	a	PP	Directional drilled 222 mm from 1577 m to 1630 mKb
22:45	00:00	1.25	10	e	PP	Cumulative MWD surveys

13. Foreman In Charge L.Brazel / P. Miller 220-9479 Weather Overcast -18,-10

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 16

1. Date 22/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,685.00 (m) Operation Directional drill 222 mm at 1685 mKb Progress 55.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,185.0		7.2	9.50	20.00	27.00	11.0	16.0 / 17.0	1.5	

4. Potassium Sulfat 67 sx | CAUSTIC 1 SX | FLOPLEX 23 SK

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
5	222.000	F10T	LT7094	15.9 15.9 15.9	1,990.00	108.00	20.75	5.20	24,000 /	4 5 1

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,639.15/25.500/341.050 1,648.63/25.000/341.760 1,658.32/24.300/343.160 1,668.00/23.900/336.680 1,677.88/23.700/350.200

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.0	254.0	9,000	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P	4,800	kPa	@	50 SPM

9. B.O.P. Check 20/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 21/02/99

Personnel: Total 33 Rig 15 Service 15 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	10	Rig Service	.5	Reaming	0	Coring	0
Tripping	11.25	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	1.75	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 58,506 Cumulative $ 1,331,258 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig service. Function test remote choke
00:15	09:30	9.25	20	a	PP	Directional drill 222 mm from 1630 m to 1681 mKb
09:30	11:15	1.75	10	e	PP	Cumulative: MWD surveys
11:15	16:45	5.50	6	j	PP	Trip out to set up mud motor
16:45	17:00	0.25	7		PP	Rig serviced. Function tested blind rams.
17:00	17:30	0.50	28		PP	Safety meeting with Akita crew & Akita field super.
17:30	18:15	0.75	6	j	PP	Check bit. Change motor from 1.5 degrees to 2.125 degrees. Serviced MWD.
18:15	23:15	5.00	6	j	PP	Tripped in hole. Function tested MWD at 590 mKb. Break circulation at 870 m, 1160 m, 1440 m.
23:15	00:00	0.75	20	a	PP	Directional drilled 222 mm from 1681 m to 1685 mKb

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Overcast -18,-10

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 17

1. Date 23/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,782.00 (m) Operation Directional drill ahead Progress 97.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,195.0		7.2	10.50	16.00	40.00	11.5	21.0 / 22.0	1.5	

4. Potassium Sulfat 96 sx | CAUSTIC 2 SX | VISPLEX 11 4 SX | SODA ASH 1 SX | FLOPLEX 26 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
5	222.000	F10T	LT7094	15.9 15.9 15.9	1,990.00	205.00	40.25	5.09	24,000 / 90	4 5 1

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,687.83/22.600/350.900 1,696.91/20.300/351.600 1,706.73/18.900/348.790 1,716.19/18.700/345.700 1,725.67/18.500/344.570 1,735.26/16.900/346.680 1,744.94/15.200/344.570 1,754.41/12.800/346.680

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities					
90	152.0	254.0	9,800	D.P.	46.1	m/min	D.C.	86.8	m/min
		254.0		R.S.P.P	4,800	kPa	@	50	SPM

9. B.O.P. Check 20/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 23/02/99

Personnel: Total 32 Rig 15 Service 14 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional	19.5	Rig Service	.5	Reaming	0	Coring	0
Tripping	0	Cond. Mud	.75	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	3.25	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 52,990 Cumulative $ 1,384,248 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig service. Function test bottom pipe rams
00:15	12:00	11.75	20	a	PP	Directional drill 222 mm 1685 m to 1739 mKb
12:00	13:15	1.25	10	e	PP	Cumulative MWD surveys
13:15	13:30	0.25	7		PP	Rig service. Function top pipe rams
13:30	21:15	7.75	20	a	PP	Directional drill 222 mm 1739 m to 1782 mKb
21:15	23:15	2.00	10	e	PP	Cumulative surveys
23:15	00:00	0.75	5	a	NP	Cumulative work hole before connections

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Overcast -18,-10

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 18

1. Date 24/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,872.00 (m) Operation Drill ahead 222mm hole Progress 90.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,210.0		7.0	10.00	20.00	41.00	12.5	25.0 / 26.0	1.5	

4. Potassium Sulfat 90 sx | CAUSTIC ? SX | SODA ASH 2 SX | FLOPLEX 31 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
5	222.000	F10T	LT7094	15.9 15.9 15.9	1,990.00	295.00	60.75	4.86	24,000 / 90	4 5 1

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,764.00/10.200/344.570 1,773.58/8.600/338.240 1,783.20/8.300/336.800 1,792.80/8.400/336.100 1,802.26/8.400/336.840 1,811.50/7.900/337.400 1,821.37/7.200/336.300 1,830.98/6.500/337.540 1,840.58/6.100/341.760 1,850.10/5.800/343.160 1,859.69/4.900/345.270

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.0	254.0	9,800	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P	5,500	kPa	@	50 SPM

9. B.O.P. Check 24/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 24/02/99

Personnel: Total 33 Rig 15 Service 15 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	20.5	Rig Service	.5	Reaming	.5	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	2.5	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 56,485 Cumulative $ 1,440,733 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig service. Function test annular
00:15	06:45	6.50	20	a	PP	Directional driledl from 1782 m to 1813 mKb
06:45	07:15	0.50	3	a	NP	Cumulative: Ream dog leg
07:15	08:00	0.75	10	e	PP	Cumulative: MWD surveys
08:00	08:15	0.25	7		PP	Rig serviced. Function tested bottom pipe rams
08:15	22:15	14.00	20	a	PP	Directional drilled from 1813 m to 1872 mKb
22:15	00:00	1.75	10	e	PP	Cumulative: MWD surveys

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Low Overcast -12,-20c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 19

1. Date 25/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) Operation Circulate sample checking for casing point. Progress 118.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,205.0		7.2	10.00	17.00	31.50	12.5	22.0 / 23.0	1.5	

4.

Potassium Sulfat 51 sx	CAUSTIC 1 SX	SODA ASH 1 SX	FLOPLEX 33 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
5	222.000	F10T	LT7094	15.9 15.9 15.9	1,990.00	413.00	81.50	5.07	30 / 90	4 5 1

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys: 1,869.28/3.700/341.050 1,878.73/2.900/348.790 1,888.19/2.200/6.400 1,897.80/1.900/32.380 1,906.90/2.200/54.170 1,916.60/2.500/75.980 1,926.20/2.800/86.410 1,945.30/2.000/104.030 1,955.10/1.500/118.870 1,974.16/0.600/171.600 1,976.00/0.560/178.420

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.0	254.0	10,000	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P	6,100	kPa	@	50 SPM

9. B.O.P. Check 25/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 25/02/99

Personnel: Total 32 Rig 15 Service 14 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	20.75	Rig Service	.5	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	.25	Survey	2.5	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 154,053 Cumulative $ 1,594,786 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig service. Function top pipe rams.
00:15	14:30	14.25	20	a	PP	Directional drill 222mm from 1872 m to 1949 mKb
14:30	16:15	1.75	10	e	PP	Cumulative: MWD surveys
16:15	16:30	0.25	7		PP	Rig service. Function bottom pipe rams
16:30	23:00	6.50	20	a	PP	Directional drill 222 mm from 1949 m to 1990 mKb
23:00	23:45	0.75	10	e	PP	Cumulative: MWD surveys
23:45	00:00	0.25	5	i	PP	Circulate up bottom hole sample

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Low Overcast -12.-20c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 20

1. Date 26/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) Operation Log with Schlumberger Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,205.0		7.2	10.00	20.00	32.50	12.5	20.0 / 21.0	1.5	

4. BIOCIDE (BIOTROL 3 PAIL

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
5	222.000	F10T	LT7094	15.9 15.9 15.9	1,990.00				/	4 5 1

6. Assembly: 222.00 Tri-Cone Bit, 171.00 Positive Displacement Motor, 162.00 Float Sub, 162.00 Muleshoe Sub, 2 161.00 Non-Mag Drill Collar, 160.00 Cross Over, 5 178.00 Drill Collar, 174.00 Drilling Jar, 12 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
90	152.0	254.0	9,000	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P	4,800	kPa	@	50 SPM

9. B.O.P. Check 25/02/99 Last Drill 18/02/99 Incident Last Rig Insp. 26/02/99

Personnel: Total 32 Rig 15 Service 14 Suncor 3 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	.5	Reaming	0	Coring	0
Tripping	8.75	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	10.5	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 43,242 Cumulative $ 1,638,028 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	01:15	1.25	5	d	PP	Circulate bottom hole sample and survey
01:15	01:30	0.25	7		PP	Rig serviced. Function tested annular
01:30	08:45	7.25	6	h	PP	Wiper tripped from 1990 to 990 mKb. Pumped out and back reamed 435 m from 1990 to 1555 mkb.
08:45	09:00	0.25	7		PP	Rig serviced. Function tested bottom pipe rams
09:00	12:45	3.75	5	d	PP	Circulated hole clean and conditioned mud
12:45	18:15	5.50	6	c	PP	Tripped out to log. Pumped out 348 m. Strapped out log
18:15	19:45	1.50	6	j	PP	Lay down directional tools. Blow mud lines.
19:45	00:00	4.25	11	a	PP	Rig to log with Schlumberger and log open hole

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Low Overcast -12,-20c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 21

1. Date 27/02/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) Operation Lay down drill pipe Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,210.0		8.0	10.00	16.00	31.00	12.5	20.0 / 21.0	1.5	

4.

Potassium Sulfat 23 sx	CAUSTIC 1 SX	BIOCIDE (BIOTROL 3 PAIL	FLOPLEX 10 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
6	222.000	F10T	LT7094		1,990.00				/	4 3 I

6. Assembly: 222.20 Tri-Cone Bit, 173.00 Bit Sub, 1 178.00 Drill Collar, 1 174.00 Drilling Jar, 2 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities					
90	152.0	254.0	5,000	D.P.	46.1	m/min	D.C.	86.8	m/min
		254.0		R.S.P.P	4,000	kPa	@	50	SPM

9. B.O.P. Check 27/02/99 Last Drill 27/02/99 Incident Last Rig Insp. 27/02/99

Personnel: Total 29 Rig 15 Service 13 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	.75	Reaming	0	Coring	0
Tripping	9.25	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	3.75	Slip & Cut	1.25	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 79,353 Cumulative $ 1,717,382 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	09:00	9.00	11	a	PP	Log open open hole with Schlumberger. No 1 Log on bottom at 0130 hours at 1990 mKb
09:00	11:00	2.00	6	h	PP	Pick up BHA and trip in to condition hole for casing
11:00	12:15	1.25	9		PP	Slip & cut drilling line
12:15	12:45	0.50	7		PP	Rig serviced. Function tested lower pipe rams. BOP drill. Well secure in 1 minute
12:45	17:15	4.50	6	h	PP	Picked up 18 singles. Tripped into hole. Broke circulation every 300 m.
17:15	21:00	3.75	5	d	PP	Circulated hole clean and conditioned mud.
21:00	21:15	0.25	7		PP	Rig serviced. Functioned bottom pipe rams.
21:15	00:00	2.75	6	h	PP	Tripped out 300 m. Lay down drill pipe

13. Foreman in Charge L.Brazel / P. Miller 220-9479 Weather Clear -5 to -20c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 22

1. Date 28/02/99 | Well Name Suncor Netla K-77-60-50-122-30 | Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) | Operation Circulate casing down and condition hole | Progress (m)

Ground Elevation 618.40 (m) | KB to GL 6.80 (m) | KB to CF 6.45 (m) | KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,210.0		8.0	10.00	16.00	31.00	12.5	20.0 / 21.0	1.5	

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
6	222.000	F10T	LT7094		1,990.00				/	4 3 I

6. Assembly: 222.20 Tri-Cone Bit, 173.00 Bit Sub, 1 178.00 Drill Collar, 1 174.00 Drilling Jar, 2 178.00 Drill Collar, 171.00 Cross Over, 9 127.00 Heavy Weight Drill Pipe

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities					
90	152.0	254.0	7,000	D.P.	46.1	m/min	D.C.	86.8	m/min
		254.0		R.S.P.P	2,000	kPa	@	50	SPM

9. B.O.P. Check 28/02/99 | Last Drill 27/02/99 | Incident | Last Rig Insp. 28/02/99

Personnel: Total 36 | Rig 20 | Service 15 | Suncor 1 | Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	.5	Reaming	0	Coring	0
Tripping	7.75	Cond. Mud	0	Rig Repairs	0	Run Casing	13	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 28,151 | Cumulative $ 1,745,533 | AFE $ 2,042,430 | AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	00:15	0.25	7		PP	Rig service. Function test top pipe rams
00:15	08:00	7.75	6	h	PP	Lay down DP and DC.
08:00	08:15	0.25	7		PP	Rig service. Function test blind rams
08:15	11:00	2.75	28		NU	Wait on Weatherford power tongs. Tong truck ran into the ditch on highway 77. Required an bed truck from Ft Nelson to get out.
11:00	12:00	1.00	12	a	PP	Conducted an safety meeting. Rig up power tongs
12:00	00:00	12.00	12	a	PP	Ran 177.8 mm casing. Circulate all casing in from 1830 m to 1900 mKb

13. Foreman in Charge L.Brazel 220-9479 | Weather Clear -5 to -20c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 23

1. Date 01/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) Operation Rig out rentals. Tear out rig Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
K2SO4 Visplex	1,200.0		9.0	9.00	15.00	21.50	12.0	14.0 / 15.0	1.5	

4. BARITE (WT) 160 SX | SODIUM SULFATE 2 SX | SULPHAMIC ACID 10 sx

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
70	152.0	254.0	5,000	D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 01/03/99 Last Drill 27/02/99 Incident Last Rig Insp. 01/03/99

Personnel: Total 43 Rig 20 Service 22 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	3	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	20	Rig up/down	1	Others	0

11. Cost: Day $ 89,644 Cumulative $ 1,835,177 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	03:00	3.00	12	a	PP	Circulated casing in from 1900 m to 1989 mKb.
03:00	09:00	6.00	12	c	PP	Circulated hole clean. (Excessive shale)
09:00	12:30	3.50	12	c	PP	Conducted an Pre job safety meeting. Rig to cement and cement. Safety tested Dowell cement lines to 25000 kpa. Pumped 3m3 of chemical wash 100, 12.5 m3 of Mudpush XL, lead slurry of 46 m3 (43 tonne, 1800 m to 485 m plus 40%) 1-1-2+.3%D65 +.2%D46 +.1%B71. 8 m3 of good cement returns. Followed by Tail cement: 10.5 m3 (12 tonne 1990 m to 1800 m plus 40%) RFC +.12%B30 +.4%B71 + .2%D46. Estimated top 1800 mKb Displaced with 41 m3 of fresh water. Plug landed at 4 mPa over pumping pressure of 13 mpa. Pressure released. Floats OK. Plug down 99-03-01 at 1200 hours. Casing could not be reciprocated while circulating and cementing due to (excessive hole drag, Stuck???).
12:30	16:30	4.00	12	d	PP	Nipple down BOP and set Auto 177.8 mm X 279 mm C-22 casing slips. Casing landed in slips at 1989 mKb with 15000 dan over a casing string weight of 58000 dan. Cut off casing.
16:30	23:00	6.50	12	d	PP	Nipple down BOP and install well head.
23:00	00:00	1.00	1	b	PP	Tear out rentals. Clean mud tanks.

13. Foreman in Charge L.Brazel 220-9479 Weather ttered cloud. -15c to -5c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 24

1. Date 02/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) Operation Akita 58# Rig Released Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		254.0		D.P.	46.1	m/min	D.C.	86.8 m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 01/03/99 Last Drill 27/02/99 Incident Last Rig Insp. 02/03/99

Personnel: Total 37 Rig 20 Service 16 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	20	Others	4

11. Cost: Day $ 26,244 Cumulative $ 1,861,420 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	08:00	8.00	22	b	PP	Tear out rentals (top drive, Centrifudges, Premix tank). Rig released to move
08:00	20:00	12.00	1	b	PP	Tear out rig to move. Move off 4 loads of drill pipe, 2 buildings to rack site of Canadian Forest

13. Foreman in Charge L.Brazel 220-9479 Weather Scattered cloud. -15c to -5c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 25

1. Date 03/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) Operation Rig move off Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		254.0		D.P.	46.1	m/min	D.C.	96.8 m/min
		254.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 01/03/99 Last Drill Incident Last Rig Insp.

Personnel: Total 43 Rig 20 Service 22 Suncor 1 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	12	Others	12

11. Cost: Day $ 27,658 Cumulative $ 1,889,078 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	20:00	12.00	1	b	PP	Conducted an safety meeting with Mullen Trucking. Dismantle rig and move off location.

13. Foreman in Charge L. Frazel 220-9479 Weather Scattered cloud. -15c to -5c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 26

1. Date 04/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig AKITA DRILLING LTD./58

2. Depth 1,990.00 (m) Operation Rigging in the service rig & drilling equipment. Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

G.P.M.	Size	Stroke	Pressure	Annular Velocities				
		254.0		D.P. 46.1	m/min	D.C. 86.8	m/min	
		254.0		R.S.P.P	kPa	@	SPM	

9. B.O.P. Check 01/03/99 Last Drill Incident Last Rig Insp. 05/03/99

Personnel: Total 62 Rig 30 Service 27 Suncor 5 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	15.5	Others	8

11. Cost: Day $ 61,359 Cumulative $ 1,950,437 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
08:00	12:00	4.00	23	d	PP	Completed loading & hauling Akita # 58 off location (Mullen Trucking).
12:00	20:00	8.00	23	b	PP	Moved on Bonus Well Servicing rig # 235 from Netla C-07 to the above location. The location was soft around the wellhead, & the ditches weren't filled in due to time constraints. 4 extra pieces of swamp matting were used to spot the rig, pumps, & tanks on. Moved on & spotted: matting, service rig, Class III accumulator & BOP's, mud tank c/w shaker, clean rig tank, 63.6m3 storage tank, boiler, combonation shack, power swivel, 2 pumps, fuel skid, & utility skid. Installed & pull tested rig anchors, as well as anchors for the flare stack & grounds for the generators.
20:00	22:00	2.00	1	a	PP	Rigged in the service rig, drilling & support equipment.
22:00	22:30	0.50	28		PP	Held a safety / operations meeting w/ all on site personnel.
22:30	00:00	1.50	1	a	PP	Continued to rig in the service rig, drilling & support equipment.

13. Foreman in Charge Brazel, Valin, Petroski 220-9479 Weather ttered cloud. -20c to -5c

SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 27

1. Date 05/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 1,990.00 (m) Operation Picking up tubing Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
7	155.600	EHP51H	ED1895		2,118.00				/	4 5 I

6. Assembly: 1 155.60 Tri-Cone Bit, 1 123.00 Mud Motor, 1 122.00 Float Sub, 10 122.00 Drill Collar, 1 118.00 Cross Over, 1 88.90 pup joint, 1 88.90 "GX" Profile, 1 88.90 Pup Joint

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		203.0		D.P.	46.1	m/min	D.C. 86.8	m/min
		203.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 05/03/99 Last Drill Incident Last Rig Insp. 05/03/99

Personnel: Total 33 Rig 10 Service 18 Suncor 5 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	.5	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
[illegible]culate	0	Survey	0	BOP Drill	2	D.S.T.		Fishing	0
[illegible]gging	0	Slip & Cut	0	Cementing	0	Rig up/down	20.5	Others	0

11. Cost: Day $ 38,298 Cumulative $ 1,988,735 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	07:00	7.00	1	a	PP	Continued to rig in the service rig, support equipment, & drilling equipment.
07:00	07:15	0.25	7		PP	Tour change. Held a safety / operations meeting w/ all on site personnel. Serviced the rig & equipment.
07:15	17:00	9.75	1	a	PP	Moved in, spotted, & rigged in Entest's P-tank, line heater, & flare stack. Continued to rig in the service rig & drilling equipment. Rigged in Chimo's electronic drill recorder. Rigged in Firemaster's 4-head H2S monitoring system, as well as an LEL monitor @ the wellhead. Tallied the drill collars & one tier of tubing. Note: Rental light plant went down, and would not generate power once re-started. Had an electrician effect repairs.
17:00	19:00	2.00	15	a	PP	Landed the tubing hanger. Pressure tested the pipe rams, blind rams, & annular preventor to 1.4 & 21 MPa for 10 minutes each. Tightened the wellhead connection & re-tested - solid tests.
19:00	19:15	0.25	7		PP	Tour change. Held a safety / operations meeting w/ all on site personnel. Serviced the rig & equipment.
[illegible]:15	23:00	3.75	1	a	PP	Rigged in the floor & handling equipment. Rigged in Oil Country power tongs. Installed pick-up subs in the drill collars & removed box thread protectors.

13. Foreman in Charge Brazel, Valin, Petroski 220-9479 Weather Light Snow. -27c to -12c

SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
23:00	00:00	1.00	28		PP	Conducted a rig & lease walkaround inspection. Conducted a full accumulator function test as follows: Class III, 360 l system Shaffer LWS 34.5 MPa double gate Shaffer 34.5 MPa annular preventor Volume to close each ram = 4.7 l Volume to close Bag = 17.3 l Precharge average = 7000 kPa Usable fluid = 119 l N2 back-up, 2 X 42 l bottles, 13.8 MPa Usable N2 = 55 l System Pressure = 14,000 kPa Manifold Pressure = 10,000 kPa Time to close rams = 4 seconds each Time to close bag = 16 seconds System pressure after 3 closing functions = 10,200 kPa Recharge time = 85 seconds (14,400 kPa)

13. Foreman in Charge Brazel,Valin,Petroski 220-9479

Weather Light Snow. -27c to -12c

SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 28

1. Date 06/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 1,990.00 (m) Operation Beginning to drill out cement, wiper plug, & float collar. Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
7	155.600	EHP51H	ED1895		2,118.00				/	4 5 I

6. Assembly: 1 155.60 Tri-Cone Bit, 1 123.00 Mud Motor, 1 122.00 Float Sub, 10 122.00 Drill Collar, 1 116.00 Cross Over, 1 88.90 pup joint, 1 88.90 "GX" Profile, 1 88.90 Pup Joint

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		203.0		D.P.	46.1	m/min	D.C.	86.8 m/min
		203.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 06/03/99 Last Drill 06/03/99 Incident Last Rig Insp. 06/03/99

Personnel: Total 25 Rig 10 Service 11 Suncor 4 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	16.5	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	4.5	Others	0

11. Cost: Day $ 29,478 Cumulative $ 2,018,213 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	01:45	1.75	6	j	NP	Repaired dog collar - the pin & nut were seized.
01:45	07:00	5.25	6	j	PP	Made up & RIH w/ BHA # 6. Removed thread protectors, drifted, picked up & RIH w/ 88.9mm J-55 EUE tubing. The thread protectors were very difficult to remove due to frozen thread lubricant. Ran 34 joints of tubing @ tour change.
07:00	16:30	9.50	6	j	PP	Continue to run in hole w/ BHA. Tagged cement top at 1974.18 mKB, 1.60m in on joint # 196.
16:30	19:00	2.50	1	j	PP	Rig off flow nipple.
19:00	22:00	3.00	1	a	PP	Rigged in the Power Swivel & pack-off head. Rigged in to drill cement & wiper plug w/ pump # 2 & the rig tank. Rigged in Entest's P-tank to recover potential kicks, & a shipping line to return mud to the shaker tank. Rigged in steam to the P-tank as well. Note: Pre-mixed 45m3 of "StarDrill" polymer / carbonate mud.
22:00	22:30	0.50	28		PP	Held a safety / operations meeting w/ all on site personnel. Reviewed procedures, communication, personnel responsibilities, & potential well conditions upon drilling through the shoe.
22:30	00:00	1.50	1	a	PP	Installed a shaker screen in the suction pot on pump # 2. Broke circulation to tank # 2 w/

13. Foreman in Charge Brazel, Valin, Petroski 220-9479 Weather Light Snow. -25c to -15c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
22:30	00:00	1.50	1	a	PP	fresh water - used 5.2 m3 to fill the well. Changed suctions to circulate & fill tank # 2 to a useable volume from 63.6m3 storage tank. Tightened the riser spool flanges. Had good circulation @ 0.7m3/min & 3500 kPa.

13. Foreman in Charge Brazel, Valin, Petroski 220-9479

Weather Light Snow. -25c to -15c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 29

1. Date 07/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 2,024.00 (m) Operation Motor drill 155.6 mm hole. Progress 34.00 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
STARDRILL	1,040.0	45	6.5	9.50	7.00	10.00	2.5	3.0 / 7.0	1.0	

4.

SODA ASH 1 SX	SAWDUST 50 SX	DE-FOAM 1 L	ID VIS D 12 SX	STARCH 65 KG
DUALFLO 24 KG				

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
7	155.600	EHP51H	ED1895		2,118.00	34.00	13.75	2.47	6,000 / 120	4 5 I

6. Assembly: 1 155.60 Tri-Cone Bit, 1 123.00 Mud Motor, 1 122.00 Float Sub, 10 122.00 Drill Collar, 1 118.00 Cross Over, 1 88.90 pup joint, 1 88.90 "GX" Profile, 1 88.90 Pup Joint

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
110	127.0	203.0	2,525	D.P.	54.2	m/min	D.C.	91.9 m/min
		203.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 07/03/99 Last Drill 06/03/99 Incident Last Rig Insp. 07/03/99

Personnel: Total 29 Rig 10 Service 15 Suncor 4 Other 0

10. Time Breakdowns - Hours

Drilling	16.25	Directional.	0	Rig Service	.25	Reaming	0	Coring	0
Tripping	0	Cond. Mud	4	Rig Repairs	.25	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 166,872 Cumulative $ 2,185,085 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	03:00	3.00	2	d	PP	Began to drill on joint # 195, circulating fresh water @ 0.7 m3/min & 3500 kPa. Drilled down # 195 - no tag. M/C # 196, drilled down & tagged cement / wiper plug @ 1974 mKB. Drilled down #'s 196 & 197 to 1991.96 mKB. Rubber & cement returns to Tank # 2.
03:00	05:00	2.00	5	a	PP	Circulated 10m3, pumped a 5m3 plug of clean fresh water, & began to displace to "StarDrill" polymer mud system. Displaced the water to the sump.
05:00	07:00	2.00	5	a	PP	Stipped off the pack-off head, & stripped on the flow nipple. Closed the annular preventor & continued to circulate @ 0.35 m3/min & 2000 kPa while stripping on the flow nipple. Hauled in water to the mud tank & began to mix / condition "StarDrill" mud system.
07:00	09:30	2.50	5			Conditioned Stardrill mud system to drill ahead
09:30	10:15	0.75	28		NU	Repairs to Chimo equipment (Mud Pressure sensor, electrical)
10:15	12:30	2.25	2	a	PP	Motor drill from 1991 mKb to 1998 mKb
12:30	12:45	0.25	8	a	RU	Repairs to mud shaker
12:45	13:45	1.00	2	a	PP	Motor drill from 1998 mkb to 2000 mKb
13:45	14:00	0.25	7		PP	Rig serviced

13. Foreman in Charge Brazel, Valin, Petroski 220-9479 Weather Overcast -24

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
14:00	00:00	10.00	2	a	PP	Motor drill from 2000 mkb to 2024 mKb

13. Foreman in Charge Brazel, Valin, Petroski 220-9479

Weather Overcast -24

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 30

1. Date 08/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 2,088.60 (m) Operation Motor drilling 155.6 mm hole. Progress 64.60 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt Cake	Polymer
STARDRILL	1,040.0	57	7.8	10.50	17.00	14.00	2.5	7.0 / 9.0	1.0	

4. CAUSTIC 2 SX ID VIS D 3 SX DUALFLO 32 KG

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
7	155.600	EHP51H	ED1895		2,118.00	98.60	36.00	2.74	6,000 / 120	4 5 I

6. Assembly: 1 155.60 Tri-Cone Bit, 1 123.00 Mud Motor, 1 122.00 Float Sub, 10 122.00 Drill Collar, 1 118.00 Cross Over, 1 88.90 pup joint, 1 88.90 "GX" Profile, 1 88.90 Pup Joint

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
110	127.0	203.0	2,400	D.P.	54.2	m/min	D.C.	91.9 m/min
		203.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 08/03/99 Last Drill 06/03/99 Incident Last Rig Insp. 08/03/99

Personnel: Total 29 Rig 10 Service 15 Suncor 4 Other 0

10. Time Breakdowns - Hours

Drilling	22.25	Directional.	0	Rig Service	.25	Reaming	0	Coring	0
Tripping	0	Cond. Mud	0	Rig Repairs	1.5	Run Casing	0	W.O.C.	0
[illegible]culate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
[illegible]gging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 34,013 Cumulative $?.219,098 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	14:30	14.50	2	a	PP	Total drilled depth at 00:00 was 2024 mKb, Continued to drill open hole as directed.
14:30	16:00	1.50	8	e	NU	Fuel leak on main pump shut down operations and attempt to repair leak.Unable to repair leak rig in spare pump after repairing pop valve on discharge line.
16:00	19:00	3.00	2	a	PP	Continued to motor drill new hole. Drilled to 2078.5 mKB at tour change.
19:00	23:15	4.25	2	a	PP	Tour change, held a safety / operations meeting w/ night shift prior to tour change. Continued to motor drill new hole.
23:15	23:30	0.25	7		PP	Connection jt # 208. Rig Service. Function tested the annular preventor - fully closed in 17 seconds.
23:30	00:00	0.50	2	a	PP	Continued to motor drill new hole. Drilled to 2088.6 mKB at 00:00 hrs.

13. Foreman In Charge Brazel,Valin,Petroski 220-9479 Weather Light Snow, -20oC

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 31

1. Date 09/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 2,118.00 (m) Operation Tripping out to log with Schlumberger Progress 29.40 (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
STARDRILL	1,050.0	90	6.5	10.50	28.00	24.50	3.1	13.0 / 18.0	1.0	

4.

CAUSTIC 5 SX	BIOCIDE (BIOTROL 3 PAIL	SAWDUST 30 SX	BENTONITE M1 41 SX
STARCH 74 KG	DUALFLO 37 KG		

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
7	155.600	EHP51H	ED1895		2,118.00	128.60	52.75	2.44	6,000 / 120	4 5 I

6. Assembly: 1 155.60 Tri-Cone Bit, 1 123.00 Mud Motor, 1 122.00 Float Sub, 10 122.00 Drill Collar, 1 118.00 Cross Over, 1 88.90 pup joint, 1 88.90 "GX" Profile, 1 88.90 Pup Joint

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
110	127.0	203.0	5,500	D.P.	54.2	m/min	D.C. 91.9	m/min
		203.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 08/03/99 Last Drill 06/03/99 Incident Last Rig Insp. 09/03/99

Personnel: Total 30 Rig 10 Service 16 Suncor 4 Other 0

10. Time Breakdowns - Hours

Drilling	16.75	Directional.	0	Rig Service	.25	Reaming	0	Coring	0
Tripping	5.25	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	1.5	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 42,507 Cumulative $ 2,261,605 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	09:15	9.25	2	a	PP	Motor drilled ahead from 2088.6 mKB to 2106 mKB.
09:15	09:30	0.25	7		PP	Rig service. Function test Annular
09:30	17:00	7.50	2	a	PP	Motor drilled from 2106 m to 2118 mKb
17:00	18:30	1.50	5	i	PP	Pull off bottom and circulate sample to surface at rate of 0.865m3/min with pump pressure of 5500 Kpa.
18:30	18:45	0.25	28	a	PP	Safety meeting with suncor rep. Function test pipe rams
18:45	00:00	5.25	6	j	PP	Laid down power swivel and tripped out to log

13. Foreman in Charge Brazel, Valin, Petroski 220-9479 Weather Light Snow, -10c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 32

1. Date 10/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 2,118.00 (m) Operation POOH w/ coring tools, wait on FMI tools. Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
STARDRILL	1,050.0	90	6.5	10.50	28.00	24.50	3.1	13.0 / 18.0	1.0	

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.
7	155.600	EHP51H	ED1895		2,118.00				/	4 5 I

6. Assembly: 1 155.60 Tri-Cone Bit, 1 123.00 Mud Motor, 1 122.00 Float Sub, 10 122.00 Drill Collar, 1 118.00 Cross Over, 1 88.90 pup joint, 1 88.90 "GX" Profile, 1 88.90 Pup Joint

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		203.0		D.P.	54.2	m/min	D.C.	91.9 m/min
		203.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 08/03/99 Last Drill 06/03/99 Incident Last Rig Insp. 10/03/99

Personnel: Total 31 Rig 10 Service 17 Suncor 4 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	0	Reaming	0	Coring	0
Tripping	3.5	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 30,015 Cumulative $ 2,291,620 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	01:15	1.25	6	j	PP	Continued to POOH w/ 88.9mm J-55 EUE tubing & BHA # 6.
01:15	03:30	2.25	6	j	PP	Pulled & laid down BHA # 6, including drill collars.
03:30	05:30	2.00	11	a	PP	Rigged in Schlumberger's open hole logging unit.
05:30	12:45	7.25	11	a	NU	RIH to conduct a PE - HALS - LDT log. Tested tools @ 2020 mKB - were unable to run tools, Misrun. Repair to tools. PEX- HALS- LDT on bottom at 12:45 hours at 2117 mKB.
12:45	17:45	5.00	11	a	PP	Log "Platform Express" (PEX - AIT), BHC Sonic, LDT, CCL, GR, from TD @ 2117 mKB to the casing shoe @ 1988.0 mKB.
17:45	00:00	6.25	11	d	PP	RIH w/ MSCT tools & cut 22 sidewall cores: 1997.5 mKB, 2003.6 mKB, 2010.5 mKB, 2014.5 mKB, 2016.2 mKB, 2019.5 mKB, 2021.6 mKB, 2032.2 mKB, 2026.2 mKB, 2028.6 mKB, 2030.5 mKB, 2032.0 mKB, 2034.5 mKB, 2036.6 mKB, 2039.0 mKB, 2041.5 mKB, 2043.5 mKB, 2046.7 mKB, 2050.5 mKB, 2054.6 mKB, 2060.5 mKB, 2064.5 mKB.

13. Foreman in Charge Brazel, Valin, Petroski 220-9479 Weather Clear, -10c

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 33

1. Date 11/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 2,118.00 (m) Operation POOH w/ casing scraper & bit. Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Fl. Cake	Polymer
STARDRILL	1,050.0	90	6.5	10.50	28.00	24.50	3.1	13.0 / 18.0	1.0	

4. CAUSTIC 5 SX SODIUM SULFATE 2 SX

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		203.0		D.P.	54.2	m/min	D.C.	91.9 m/min
129	114.0	203.0	3,000	R.S.P.P		kPa	@	SPM

9. B.O.P. Check 11/03/99 Last Drill 11/03/99 Incident Last Rig Insp. 11/03/99

Personnel: Total 29 Rig 10 Service 15 Suncor 4 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional.	0	Rig Service	.25	Reaming	0	Coring	0
Tripping	5.75	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	2	Slip & Cut	.5	Cementing	0	Rig up/down	1	Others	0

11. Cost: Day $ 34,660 Cumulative $ 2,326,280 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	01:00	1.00	11	a	PP	POOH w/ MSCT. Recovered 22 core samples.
01:00	01:30	0.50	9		PP	Slipped & cut drill line.
01:30	09:00	7.50	28	c	NU	Waited on Shclumberger's FMI logging tools to be hot shotted to location.
09:00	15:00	6.00	11	a	PP	Log with Schlumberger FMI tools as directed.
15:00	16:00	1.00	1	b	PP	Rig out flow nipples and spacer spools, lower rig floor.
16:00	19:00	3.00	6	j	PP	Make up casing scraper and 156mm bit and run in hole to clean shoe joint for permanent packer.
19:00	19:15	0.25	7		PP	Tour Change. Held a safety / operations meeting w/ night shift personnel. Rig Service. Function tested the pipe rams - 4 seconds to fully close.
19:15	21:30	2.25	6	j	PP	Continued to RIH w/ the bit & scraper. Ran 207 joints of tubing & double scraped from 1930 - 1988 mKB.
21:30	23:30	2.00	5	d	PP	Displaced the cased hole to fresh water. Starting pump pressure = 5000 kPa @ 0.23 m3/min, end = 5000 kPa @ 0.72 m3/min.
23:30	00:00	0.50	6	j	PP	POOH & stood 88.9mm J-55 EUE tubing. Laid down 4 joints, casing scraper, & bit.

13. Foreman in Charge Brazel, Valin, Petroski 220-9479 Weather Clear, -7oC

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SUNCOR INC. RESOURCES GROUP
DAILY DRILLING REPORT

Drilling Report At Midnight

D.F.S. 34

1. Date 12/03/99 Well Name Suncor Netla K-77-60-50-122-30 Contractor / Rig BONUS WELL SERVICING/235

2. Depth 2,118.00 (m) Operation Event Complete. Progress (m)

Ground Elevation 618.40 (m) KB to GL 6.80 (m) KB to CF 6.45 (m) KB Elev. 625.20 (m)

3.

Mud Type	Wt.	Vis.	W.L.	pH	PV	YP	Solids	Gels	Filt. Cake	Polymer
STARDRILL	1,050.0	90	6.5	10.50	28.00	24.50	3.1	13.0 / 18.0	1.0	

4.

5.

Bit No.	Size (mm)	Type	Serial No.	Jets	Out (m)	Drilled (m)	Hours	ROP (m/Hr)	Force/RPM	Cond.

6. Assembly:

7. Surveys:

8.

S.P.M.	Size	Stroke	Pressure	Annular Velocities				
		203.0		D.P.	54.2	m/min	D.C. 91.9	m/min
		203.0		R.S.P.P		kPa	@	SPM

9. B.O.P. Check 12/03/99 Last Drill 11/03/99 Incident Last Rig Insp. 12/03/99

Personnel: Total 29 Rig 10 Service 15 Suncor 4 Other 0

10. Time Breakdowns - Hours

Drilling	0	Directional	0	Rig Service	0	Reaming	0	Coring	0
Tripping	3	Cond. Mud	0	Rig Repairs	0	Run Casing	0	W.O.C.	0
Circulate	0	Survey	0	BOP Drill	0	D.S.T.	0	Fishing	0
Logging	0	Slip & Cut	0	Cementing	0	Rig up/down	0	Others	0

11. Cost: Day $ 171,859 Cumulative $ 2,498,139 AFE $ 2,042,430 AFE # A9811680K77

12. Operation Summary

FROM	TO	HOURS	CODE	SUB	C	OPERATIONS
00:00	03:00	3.00	6	j	PP	POOH w/ 88.9mm J-55 EUE tubing, casing scraper, & bit.
03:00	08:00	5.00	28	c	NP	Waited on Schlumberger's Velocity logging tools / equipment to arrive on location.
08:00	10:00	2.00	11	e	PP	Function test BOP's,Annular 15 seconds shut in,rams 3 seconds.Rig in Schlumberger wireline tools and run in hole to T.D. Load out rental equipment and return to Ft.St. John {HESS} Load out 4 units from Beaver Camp and haul out to Ft. Nelson. Prepare Mud pump,Rental light plant and Mixing tank to be hauled out.
10:00	00:00	14.00	11	e	PP	Off load and spot Thumpers in desired areas and proceed with Velocity log. Conducted the VSP w/ 2 thumpers in 2 locations. POOH & rigged out Schlumberger's VSP & open hole equipment. Original Drilling Event Complete.

13. Foreman in Charge Brazel,Valin,Petroski 220-9479 Weather Overcast, -9oC

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SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 13/03/99 REPORT No.: 1

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 175,876
CUM COST: 175,876
CONTRACTOR / RIG: BONUS WELL SERVICING / 235
SUPERVISOR: Valin, Petroski 220-9479
WEATHER: Clear, -8oC

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	69.93 (m^3)	67.48 (m^3)	2.45 (m^3)
OTHER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: RIH w/ G-Ring & JB to 1987 mKB. RIH & WL set Baker FB-1 Permanent pkr @ 1982.0 mKB. RIH w/ seal assembly, on/off, & 89mm J-55 EUE tbg. Pickled tbg. N/U wlhd. Swabbed & flowed a brief clean-up.

FROM	TO	HRS	CODE	C	OPERATIONS
00:00	02:30	2.50	11	PP	RIH w/ a 153mm Gauge Ring & junk basket on Schlumberger's electric line to 1987 mKB, POOH.
02:30	02:45	0.25	28	PP	Held a safety / operations meeting w/ all on site personnel. Ensured all two-way radios & mobile telephones were shut off.
02:45	06:15	3.50	11	PP	RIH, correlated into position, & set a Baker FB-1 87-40 Permanent Retainer Packer @ 1982.0 mKB COE. Used a slow-burn charge. Pulled over 200 kg's to pull free of the packer after setting. POOH & rigged out Schlumberger.
06:15	06:45	0.50	15	PP	Pressure tested the casing & packer to 10,000 kPa for 15 minutes - solid test.
06:45	07:00	0.25	28	PP	Changed V-door to level stairs.
07:00	10:30	3.50	6	PP	Make up BHA assembly as follows : 1-E-22 Anchor seal assembly complete with on/off connector,1-NSCT x VAM L-80 crossover,1-NSCT x EUE L-80 crossover sub,1-jont 88.9 mm J-55 tubing,1-"GX" profile nipple 69.85mm,204 joint 88.9mm J-55,1- 88.9mm pup joint 1.95m,1-joint 88.9mm tubing 9.66m.
10:30	14:30	4.00	28	PP	Rig in Alliance trucking to pickel tubing with 2m3 15% Hcl acid and chase acid with 7 m3 fresh water at a rate of 250 Litres/min backwash acid to surface with 28.4m3 inhibated fluid divert acid returns to Alliance tank truck and ship off

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 13/03/99 REPORT No.: 1

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

FROM	TO	HRS	CODE	C	OPERATIONS
10:30	14:30	4.00	28	PP	of location for disposal.
14:30	16:00	1.50	1	PP	Latch onto baker packer,pull test 8000 daN's tension land tubing hanger with 6500 daN's compresion on packer.Pressure test annulas to 21,000 Kpa,held 100% for 15 mins.Rig out rig floor and tubing handling equipment.Inspect tubing hanger seals both good,Install ABB Vetco wellhead assembly.Rig in Baker pump and pressure test seals on extended neck tubing hanger to 21,000 Kpa
16:00	19:00	3.00	25	PP	Rigged in the rig floor & swabbing equipment. Pulled 6 swabs & recovered 5.1 m3.
19:00	19:15	0.25	25	PP	Tour Change. Held a safety / operations meeting w/ all on site personnel. Rig & lease walkaround inspection.
19:15	21:00	1.75	25	PP	Pulled 5 swabs & recovered 3.12 m3. Total recovery in 11 swabs = 8.22 m3. After pulling the 11th swab, the well began to flow. Shut in the well @ 21:00 hrs.
21:00	21:30	0.50	27	PP	R & R build-up pressures while preparing to flow: 21:05 11,000 kPa 21:10 11,600 kPa 21:15 11,900 kPa 21:20 12,200 kPa 21:25 12,300 kPa 21:30 12,400 kPa Note: Held a brief safety meeting w/ all personnel. Ensured all personnel were aware of the location of the ESD valves & the potential of H2S.
21:30	00:00	2.50	27	PP	Opened the well to flow a brief clean-up. Drew the FTP down to 600 kPa on a 50.8mm chcke in an attempt to unload fluid. In 2.5 hrs of flow: Recovered 2.37 m3 of water / drilling mud Total initial load fluid = 4.82 m3 Total remaining load fluid = 2.45 m3 H2S content = 90 ppm Gas Rate = 71.95 e3m3/day Gas flared = 8.65 e3m3 Note: Moved in & spotted Northland Wireline - prepared to RIH w/ recorders. Moved in & spotted Dowell Schlumberger's FoamMAT equipment & Firemaster's shower unit.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 14/03/99 REPORT No.: 2

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 184,971
CUM COST: 360,848
CONTRACTOR / RIG: BONUS WELL SERVICING / 235
SUPERVISOR: Valin, Petroski 220-9479
WEATHER: Clear, -8oC

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m³)	0.00 (m³)	0.00 (m³)
WATER:	78.37 (m³)	5.51 (m³)	72.86 (m³)
OTHER:	55 (m³)	0.00 (m³)	55.00 (m³)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Suspend recorders on slickline, POOH, conducted reverse gradient. Rigged in DS's FoamMAT treating equip. Stimulated the Slave Point w/ 55 m3 of 28% HCl, 70.41 m3 of surfactant. Prepared to flow C/U.

FROM	TO	HRS	CODE	C	OPERATIONS
00:00	01:30	1.50	27	PP	Continued to flow a brief pre-stimulation clean-up. Drew the FTP down to 500 kPa on a 50.8mm choke in an attempt to unload fluid. In 1.5 hrs of flow: Recovered no water / drilling mud Total initial load fluid = 4.82 m3 Total remaining load fluid = 2.45 m3 H2S content = 90 ppm Gas Rate = 52.00 e3m3/day Gas flared = 12.15 e3m3 Shut in the well @ 01:30 hrs, recorded build-ups for 15 minutes while rigging in wireline: 01:31 1450 kPa 01:32 1900 kPa 01:33 2400 kPa 01:34 2700 kPa 01:35 3000 kPa 01:40 4150 kPa 01:45 5300 kPa
01:30	07:00	5.50	11	PP	Rigged in Northland Wireline. Pressure tested the lubricator w/ well gas to 6500 kPa - good test. RIH w/ tandem Starburst Quartz Recorders. Suspended the recorders @ 2046.2 mCF. Monitored surface pressures w/ an electronic deadweight gauge. At 05:00 hrs POOH & conducted a reverse

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 14/03/99 REPORT No.: 2

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

FROM	TO	HRS	CODE	C	OPERATIONS
01:30	07:00	5.50	11	PP	static gradient. BHP = 11,534.5 kPa , BHT = 100.4 oC. Note: the BHP was increasing on average 10 kPa / minute.
08:00	09:00	1.00	1	PP	Rig in Dowell Schlumberger as per Suncor & AEUB specs to perform FoamMat stimulation with 55m3 28% HcL
09:00	09:30	0.50	28	PP	Hold prejob safety meeting with all personal on location and discuss daily safety and stimulation procedures.
09:30	10:00	0.50	28	PP	Pressure test treating lines and testing line to 21,000 Kpa, Small leak on the hammer union at wellhead repair and retest treating line to 45,000 Kpa held good.
10:00	11:20	1.33	26	PP	Conducted Dowell Schlumberger's FoamMAT acid treatment: Pumped a 28% HCl acid spearhead followed by 9.03 m3 of fresh water. Achieved breakdown w/ 10 m3 of total fluid away @ 17.26 MPa. Stopped pumping & allowed the acid to soak for 20 minutes - tubing went on a vacuum.
11:20	22:40	11.33	26	PP	Pumped a 7.0m3 pre-flush of Surfactant solution w/ no N2, & began staging the FoamMAT acid treatment. Pumped 55.0m3 of 28% HCl, & 70.41m3 of 65Q Foamed fresh water in 22 stages. The net pressure trend was becoming flat on stage # 10, and began to decrease on stage # 14. Increased the Foam stage volumes as listed: # 10 - 300 litres # 11 - 15, 200 litres # 16 - 580 litres # 17 - 520 litres # 18 - 500 litres # 19 - 250 litres # 20 - 500 litres Regained a positive trend on the final stages. Ran out of acid on the final stage - pumped 200 litres, 800 litres programmed. Pumped an 1150 SCM N2 flush as the final segment of stage # 22.
22:40	23:10	0.50	26	PP	***Were unable to pump step # 8 of the program, which was a flush w/ 5.0 m3 of acid.*** Followed the last stage w/ a final 12.0 m3 foamed flush. Pumped an overflush of 2000 SCM's of N2 @ 160 SCM/min. ISIP = 30,070 kPa, maximum treating pressure = 30,920 kPa, average = 20,000 kPa. Pumped a total of 70.41 m3 of surfactant solution (F78 / F75 & fresh water) & 55.0 m3 of acid + additives. Total load fluid to recover after the

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 14/03/99 REPORT No.: 2

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

FROM	TO	HRS	CODE	C	OPERATIONS
22:40	23:10	0.50	26	PP	treatment = 127.86 m3 (55.0 m3 of acid, 70.41 m3 of fresh water, & 2.45m3 of water / mud).
23:10	23:30	0.33	26	PP	Rigged out Dowell Schlumberger's equipment.
23:30	00:00	0.50	27	NP	Pressure tested the test iron w/ N2 from the wellbore. Opened up to the testors choke, 28,800 kPa - found a leaking union. Shut in & repaired. Re-tested line - good test.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 16/03/99 REPORT No.: 4

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 73,955
CUM COST: 481,547
CONTRACTOR / RIG: BONUS WELL SERVICING / 235
SUPERVISOR: Valin, Petroski 220-9479
WEATHER: Clear, -5 oC

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	24.12 (m^3)	0.00 (m^3)	24.12 (m^3)
OTHER:	20 (m^3)	0.00 (m^3)	20.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Rigged out Bonus # 235 and released from location. Ran bottom hole recorders and set on Nipple stop in "QXN" profile. Lined up equipment to perform fall off test as directed by Calgary.

FROM	TO	HRS	CODE	C	OPERATIONS
00:00	10:30	10.50	27	PP	Continued to stop-cock the well.At 10:30 am shut in well and take buildups until Northland wireline picker arrives. Total Load used in stimulation ========== 127.86 m3 Total load recover ========== 83.74 m3 Total load left to recover ========== 44.12 m3 Final gas rate ========== 5.87 Em3 Flow temp ========== 10 " c Final Flowing tubing pressure ========== 160 Kpa Sal = 220,000 , Ph = 6 , Choke = 50.8 . 2 - high pressure gas samples taken # 19573 & # 1051,2 stock tank fluid sample were also taken with results to Alan Young , Dave Herrra.
10:30	15:00	4.50	11	NP	Rigged out derrick and released rig & equipment from location. Rigged out Entest Corp. production testing equipment - prepared to move.
15:00	19:00	4.00	11	PP	Rigged in Northland Wireline complete with full lubricatcr. RIH with 69.85mm gauge ring and

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 16/03/99 REPORT No.: 4

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

FROM	TO	HRS	CODE	C	OPERATIONS
15:00	19:00	4.00	11	PP	tagged "QXN" profile 1986 mCF. RIH & set a 69.85mm "X" lock in the "QXN" @ 1986 mCF. RIH & unlatched tandem Starburst Quartz on the "X" lock c/w a 76.2mm hold down & a 50.8mm "J" head. POOH & rigged out wireline.
19:00	00:00	5.00	1	PP	Stacked rig loads w/ loader. Loaded & hauled out 30.56m3 of recovered fluid, & the combonation shack.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 17/03/99 REPORT No.: 5

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 44,705
CUM COST: 526,251
CONTRACTOR / RIG /
SUPERVISOR: Valin / Petroski 220-9479
WEATHER: Clear, 6 / -2 oC

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
OTHER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Charged well w/ 4000 scm's of N2. Starting pressure = 4500 kPa, ISIP = 13,400 kPa, FSIP @ 3 hrs = 7400 kPa. Secured the well. Released all services. Hauled out equipment.

FROM	TO	HRS	CODE	C	OPERATIONS
07:00	10:30	3.50	23	PP	Loaded & hauled out the remaining rig equipment (3 loads) on winch tractor / trailer units. Rigged out test equipment. (Continued to wait on N2 for fall-off test)
10:30	11:00	0.50	28	PP	Moved in, spotted, & rigged in Sanjel's Ambient Heat Recovery N2 unit. R&R wellhead pressures; SITP = 4500 kPa, SICP = TSTM.
11:00	11:15	0.25	28	PP	Held a brief safety / operations meeting w/ all on site personnel.
11:15	12:30	1.25	28	PP	Pressure tested the treating line to 28.0 MPa for 5 minutes - solid test. Opened the well & pumped away 4000 scm's of N2 @ 80 scm/min & 13,600 kPa. The pumping pressure reached 13,600 kPa within 500 scm's away, & remained constant throughout the treatment. Shut in the well & rigged out Sanjel's equipment. Secured the wellhead. ISIP = 13,400 kPa FSIP @ 3 hrs shut in = 7400 kPa.
12:30	17:00	4.50	23	PP	Continued to load out equipment. Hauled out remaining rental equipment (light tower, potable water tank, matting, recycle bin, & loader). Loaded Entest's Flare Stack on with rig equipment - all rig & test equipment to be moved to Grande Prairie. SDFN - test equipment & wellsite unit to be hauled out in the AM.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 18/03/99 REPORT No.: 6

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 19,782
CUM COST: 546,198
CONTRACTOR / RIG /
SUPERVISOR: Mike Petroski, 318 2324
WEATHER: Clear, 5 oC

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
OTHER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Hauled out test equipment & wellsite trailer. Removed rig & flare stack anchors. All equipment is off location & the wellhead is secured.

FROM	TO	HRS	CODE	C	OPERATIONS
07:00	13:00	6.00	28	PP	Loaded 2 winch tractor / trailer units w/ Entest's equipment. Loaded the wellsite shack. All loads shipped to Grande Prairie. Removed rig & flare stack anchors. Chained & locked the wellhead. Event suspended until the recorders can be retrieved. Note: Planks & palettes were left on location to spot a skidded slickline unit on.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 05/05/99 REPORT No.: 7

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 8,741
CUM COST: 554,939
CONTRACTOR / RIG: NORTHLAND WIRELINE / # 2
SUPERVISOR: G. Valin 250-774-8848
WEATHER: Clear, -5°C, Windy.

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
OTHER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Helicopter arrived in Liard at 15:00 Hrs, Flew to Km 91 and hauled wireline skid unit and junk basket to location for work in morning.

FROM	TO	HRS	CODE	C	OPERATIONS
08:00	15:00	7.00	28	NP	Waiting in Fort Liard for Northern Mountian Helicopter to leave from Fort St John to haul wireline equiptment into location.
15:00	22:00	7.00	1	PP	Fuel up Helicopter and fly to Km 91 on Hyway # 7. Off load Northland wireline skid unit and junk basket to be flowen into location. Hauled in wireline unit and junk basket and misc, Had trouble with gusting winds pushing helicopter around when hauling equipment. Return to Fort Liard base for the night.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 06/05/99 REPORT No.: 8

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 21,885
CUM COST: 576,824
CONTRACTOR / RIG: NORTHLAND WIRELINE / # 2
SUPERVISOR: G. Valin 250-774-8848
WEATHER: Clear, -5"C, Windy.

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
OTHER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Continue with operations as planned. Pull recorders and run static gradient. SITP-14.072 Kpa, PBTD- 2078 mKB, BHT-105.2°c, BHP-17,157 Kpa.

FROM	TO	HRS	CODE	C	OPERATIONS
07:30	08:00	0.50	28	PP	Hold prejob safety meeting with Northland personal and Northern Helicopter pilot and discuss daily safety procedures as per SUNCOR and NORTHERN HELI services.
08:00	11:00	3.00	28	PP	Fly from Fort Liard to stagging site pick up Wireline operator and continue into location. Start to rig up wireline equipment while helicopter flew back to staging site to pick up remaining wireline equipment. Finish rigging jim poles up onto wellhead and rig in BOP's and lubricator complete with latch to pull Bottom Hole Recorders.
11:00	14:00	3.00	11	PP	SITP = 14,123 Kpa , SICP = zero . Run in hole and latch onto at recorders from 1985 mcf at 12:55 Hrs. At surface at 13:45 Hrs. Break apart recorders and pulling equipment.
14:00	15:00	1.00	11	PP	Make up and run in hole to pull "XN" lock from "XN" profile, recovered with no problem.
15:00	18:30	3.50	11	PP	Set up ZI recorders to run static gradient with 5 min stop starting at surface, 500m's, 1000m's, 1500m's, 1800m's, 1900m's, 2000m's, 2046.2m's for

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 06/05/99 REPORT No.: 8

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

FROM	TO	HRS	CODE	C	OPERATIONS
15:00	18:30	3.50	11	PP	30 minutes, 2070m's. Tagged plug back at 2072.0 mcf {2078.2 mKB}. Aproximently 38.8m's of fill in open hole section. Tubing pressure start of static = 14,072 Kpa. Bottom hole pressure at 2052.4 mKB was 17,042 Kpa, BHT = 105.2*c

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 07/05/99 REPORT No.: 9

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 2,175
CUM COST: 578,999
CONTRACTOR / RIG: NORTHLAND WIRELINE / # 2
SUPERVISOR: G. Valin 250-774-8848
WEATHER: Heavy snowfall, Ext high winds

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
OTHER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Heavy snowfall through out day unable to fly out of Fort Liard with current wheather conditions. Extremely high gusting winds with snow.

FROM	TO	HRS	CODE	C	OPERATIONS
07:00	19:00	12.00	28	NP	At 07:00 Hrs there was 6 inches of fresh snowfall and still snowing heavy. At that time the pilot had dicided that is was unsafe to attempt to fly to location and work. Wait on wheather. Winds gusting from 40 to 60 km/hr with continous snowfall off and on through out the day.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 08/05/99 REPORT No.: 10

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 2,975
CUM COST: 581,974
CONTRACTOR / RIG: NORTHLAND WIRELINE / # 2
SUPERVISOR: G. Valin 250-774-8848
WEATHER: Heavy snowfall, Ext high winds

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
WATER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)
OTHER:	0 (m^3)	0.00 (m^3)	0.00 (m^3)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Heavy snowfall through out day unable to fly out of Fort Liard with current wheather conditions. Extremely high gusting winds with snow.

FROM	TO	HRS	CODE	C	OPERATIONS
07:00	13:00	6.00	28	NP	Heavy snowfall in Fort Liard area and low clouds with only 1/4 mile visibilty. Air travel to northeast of Liard not recomended at all.
13:00	14:00	1.00	28	NP	Attempt to fly into area of Netla K-77 and once in the air the the clouds and heavy snowfall was to much and had to return to Fort Liard. Helicopter grounded until better weather conditions. Approximently 10 inches of snow has fallen in the past 48 hours.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 09/05/99 REPORT No.: 11

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 5,347
CUM COST: 587,321
CONTRACTOR / RIG: NORTHLAND WIRELINE / # 2
SUPERVISOR: G. Valin 250-774-8848
WEATHER: Snow, rain and hail

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m³)	0.00 (m³)	0.00 (m³)
WATER:	0 (m³)	0.00 (m³)	0.00 (m³)
OTHER:	0 (m³)	0.00 (m³)	0.00 (m³)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: Managed to fly out to K-77 location. Run and tag PBTD at 2113.5 mKB, Set plug and prong in Proficient "QX" profile at 1985.8mKB. Bled down and monitored pressure for 1 hour with no increase.

FROM	TO	HRS	CODE	C	OPERATIONS
07:00	08:00	1.00	28	PP	Arrive at Fort Li[illegible] airport and weather looked good for travel. Fi[illegible] 2 barrels with aviation fuel and hauled to K[illegible] 91 on Liard highway.
08:00	08:30	0.50	28	PP	Travel from staging site to Netla K-77 with Northern Mountian Helicopters, Northland wireline crew and proceed with wireline operations.
08:30	17:00	8.50	11	PP	Rig onto wellhead and run into retag plugback with 2" OSB and found that PBTD was actually at 2113.5 mKB not at 2078.2 mKB as previously noted. Make up and run in hole with 69.85 mm gauge ring and POOH. Make up and run in hole with plug body and prong and set in Proficient "QX" profile at 1985.8mKB. Bled pressure down from 13,774 Kpa to 13,000 Kpa and monitored for 60 mins, Not building rig out lubricator and BOP's. secure well. Rig out remaining equipment and move to Netla C-07 to retreive recorders. In morning ABB Vetco Gray will move in and dump 50 Litres of MEP 426 into tubing and set tubing hanger plug to suspend well as per NWT specs. Final SITP= 7000 Kpa.

SUNCOR INC. RESOURCES GROUP
DAILY COMPLETION and/or WORKOVER REPORT

WELL NAME: Suncor Netla K-77-60-50-122-30 DATE: 10/05/99 REPORT No.: 12

LOCATION: 300/K- 77 Lat: 60° 50' Long: 122° 30'

PURPOSE OF JOB: COMPLETION

AFE NO: A9911260K77
AFE TOTAL: 515,000
DAILY COST: 1,794
CUM COST: 589,115
CONTRACTOR / RIG: NORTHLAND WIRELINE / # 2
SUPERVISOR: G. Valin 250-774-8848
WEATHER: Snow, rain and hail

FLUID SUMMARY (M3)

	TOTAL USED	IN TANKS	LEFT TO RECOVER
OIL:	0 (m³)	0.00 (m³)	0.00 (m³)
WATER:	0 (m³)	0.00 (m³)	0.00 (m³)
OTHER:	0 (m³)	0.00 (m³)	0.00 (m³)

FORMATION: SLAVE POINT
PERF INTERVAL (mKB): 1,989 - 2,118.00 (m)

KB: 625.20 CF: 618.75
KB to CF: 6.45
TD: 2,118.00 PBTD:
RODS LANDED @: m JTS:

PROD. CASING: mm WT: kg/m
CASING LANDED @: m JTS:
TUBING: mm WT: kg/m
TUBING LANDED @: m JTS:
PACKER @: m ANCHOR @: m
DUAL PACKER @: m SCR: mm JTS:
PSN @: m PL: mm JTS:

OPERATION SUMMARY: SITP= 7000 Kpa no change from last night at 19:00 Hrs. Bleed down remaining pressure and Inhibate tbg, Install BPV {ABB Vetco} secure Untill further notice.

FROM	TO	HRS	CODE	C	OPERATIONS
10:00	12:00	2.00	28	PP	Hold prejob safety meeting with ABB Vetco Gray and discuss daily operational procedures to suspend well. SITP = 7000 Kpa no change from last night, Bleed down remaining pressure in tubing to atmosphere, Remove wellhead cap and dump 40 Litres of Mep-426 into well to inhibibate tubing. Install Back Pressure Valve in tubing hanger, poor 5 litres Mep-426 on top of BPV. Install wellhead cap close and secure valves and relock with origonal lock. UnKnown Lock # .

ENTEST CORP.

"A Plains Energy Services Company"

Suncor Energy Inc.

K-77

Clean Up

99/03/14 – 99/03/16

Prepare by
Entest Corp.
March 31, 1999

Suncor Energy Inc.
0K-77 (60 D[illegible]50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Field Notes
Field Measurements

Netla K-77
Form[illegible]n: Slave Point
Job Number: C0173

	Date	Clock Time	.	Choke	Pt	Pc	WHT	Static	Diff	Meter Temp	Orifice	Gas Rate	Cum Gas	Oil/Cond Gain	Cum Oil/Cond	H2O Gain	Cum H2O	BSW1	Ph	Salinity
	yyyy/mm/dd	hh:mm:ss			kPa(g)	kPa(g)	°C	kPa(g)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	%		ppm
14		00:05:00	OPEN TO FLOW ON 32/64(12.70mm)																	
15		00:10:00			13200	6100														
16		00:12:00			14000	7200														
17		00:12:00	DECREASE CHOKE SIZE TO 18/64(7.14mm)																	
18		00:15:00	INCREASE BACK PRESSURE TO CONTROL FOAM.																	
19		00:30:00			15600	7800														
20		00:37:00			16000	7800														
21	1999/03/15	00:45:00	DECREASE CHOKE SIZE TO 16/64(6.35mm) TO CONTROL FOAM.																	
22	1999/03/15	00:47:00			16700	7300														
23		01:00:00	DECREASE CHOKE SIZE TO 12/64(4.76mm)																	
24		01:00:00														4.350	4.350	100.00		
25		01:30:00			16800	7000														
26		02:00:00			19100	7400										3.630	7.980	100.00		
27		02:30:00			19400	6900														
28		03:00:00			19600	7100										3.260	11.240	100.00	3	276000
29		03:05:00			19800	4600														
30		03:30:00	OPEN UP CHOKE TO 18/64(7.14mm)WELL LOADING																	
31		03:35:00			19800	9200														
32		04:00:00	BLEED OFF CASING PRESSURE.																	
33		04:00:00														4.280	15.520	100.00	3	276000
34		04:15:00			17400	500														
35		04:30:00	OPEN UP TO 32/64(12.70mm)WELL LOADING																	
36		04:35:00			9000	10000														
37		04:35:00	DECREASE CHOKE SIZE TO 14/64(5.56mm) CONTROL FOAMING OVER.																	
38		05:00:00	CONTINUE TO PUMP D[illegible]FOAMER.																	
39		05:00:00														5.480	21.000	100.00	3	276000
40		05:25:00			9800	200														
41		05:30:00	CHOKE BACK TO 12/64(4.76mm)CONTROL FOAM																	
42		05:35:00			10300	350														

1999/03/14 23:10:00 To 1999/03/15 06:00:00

Gas	0.000	Cum.	0.000	10^3m^3
Oil	0.000	Cum.	0.000	m^3
Water	21.000	Cum.	21.000	m^3

Suncor Energy Inc.
0K-77 (60 D[illegible]50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Field Notes
Field Measurements

Netla K-77
Form[illegible]n: Slave Point
Job Number: C0173

	Date	Clock Time	Choke	Pt	Pc	WHT	Static	Diff	Meter Temp	Orifice	Gas Rate	Cum Gas	Oil/Cond Gain	Cum Oil/Cond	H2O Gain	Cum H2O	BSW1	Ph	Salinity
	yyyy/mm/dd	hh:mm:ss		kPa(g)	kPa(g)	°C	kPa(g)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	%		ppm
43	1999/03/15	06:00:00	OPEN CHOKE TO 18/64(7.14mm)																
44		06:00:00													4.970	25.970	100.00	4	276000
45		06:30:00		9700	1600														
46	1999/03/15	07:00:00		8900	5000										4.280	30.250	100.00	4	240000
47	1999/03/15	07:30:00		7200	800														
48		08:00:00		7500	1200										4.280	34.530	100.00	5	
49		08:15:00	METER IN SERVICE WITH A 1.250 PLATE.(31.75 mm)																
50		08:30:00		7500	1700	22.0	1241	4.5	14.0	31.750	14.628	5.181							
51		08:50:00	SHIPPING FLUID TO 400 BBL.																
52		09:00:00		7400	5000	24.0	827	2.0	14.0	31.750	8.078	5.417			5.540	40.070	100.00	5	
53		09:01:00	INCREASE CHOKE TO A 26/64. (10.32 mm)																
54		09:30:00		6500	800	24.0	1255	14.9	16.0	31.750	26.786	5.780							
55		10:00:00		6500	1700	25.0	1262	12.9	20.0	31.750	24.997	6.320			5.670	45.740	100.00	5	
56		10:10:00	SHIPPING FLUID TO 400 BBL TO TOP UP TANK TRUCK.																
57		10:30:00		6400	2200	27.0	1034	10.0	23.0	31.750	19.684	6.785							
58		11:00:00		6340	2450	28.0	1310	16.4	24.0	31.750	28.250	7.285			4.680	50.420	100.00		
59		11:30:00		6280	2700	28.0	1317	17.7	25.0	31.750	29.330	7.884							
60		12:00:00		6150	2700	28.0	1310	20.7	26.0	31.750	31.586	8.619			5.470	55.890	100.00	5	250000
61		12:30:00		5960	2400	28.0	1345	20.7	26.0	31.750	31.987	9.181							
62		13:00:00		5560	2200	28.0	1324	20.4	24.0	31.750	31.670	9.844			3.960	59.850	100.00	5	
63		13:30:00		5140	2000	28.0	1282	19.9	24.0	31.750	30.799	10.495							
64		13:40:00	INCREASE CHOKE TO A 32/64. (12.7 mm)																
65		14:00:00		4190	1800	28.0	1041	39.3	24.0	31.750	39.350	11.226			3.640	63.490	100.00	5	
66		14:25:00	INCREASE CHOKE TO A 40/64 (15.875 mm) TO AVOID LOADING.																
67	1999/03/15	14:30:00	BURNABLE GAS TO SURFACE.																
68	1999/03/15	14:30:00		3470	2000	28.0	1269	56.0	27.0	31.750	51.366	12.171							
69		15:00:00		3430	1900	28.0	1269	24.9	26.0	31.750	34.164	13.062			3.640	67.130	100.00	5	250000
70		15:30:00		2400	1900	28.0	1138	39.8	25.0	31.750	41.207	13.847							
71		16:00:00		1930	1400	26.0	1048	30.4	24.0	31.750	34.638	14.637			3.210	70.340	100.00	5	
72		16:15:00	INCREASE CHOKE TO A 48/64.(19.05 mm)																
73		16:30:00		1720	1000	28.0	821	36.6	24.0	31.750	30.077	15.311							
74		16:30:00	INCREASE CHOKE TO A 2.0 INCH. (50.8 mm)																
75		16:45:00	INCREASE ORIFICE PLATE TO A 1.75 INCH. (44.45 mm)																
76		17:00:00		1260	1200	32.0	248	33.9	26.0	44.450	39.991	16.041			2.740	73.080	100.00	6	250000
77		17:30:00		880	1300	32.0	228	31.9	26.0	44.450	37.636	16.849							
78		18:00:00		740	1300	31.0	166	27.9	25.0	44.450	31.709	17.572			3.260	76.340	100.00	6	236000
79		18:30:00		550	900	28.0	124	22.1	24.0	44.450	25.876	18.172							
80		19:00:00		500	700	25.0	97	19.9	25.0	44.450	22.923	18.680			1.780	78.120	100.00	6	246000
81		19:30:00		350	450	23.0	90	16.9	25.0	44.450	20.693	19.134							
82		20:00:00		275	300	21.0	83	12.9	26.0	44.450	16.650	19.523			0.590	78.710	100.00	6	224000
83		20:30:00		260		20.0	41	11.4	27.0	44.450	14.497	19.848							
84		21:00:00		320		18.0	35	7.5	26.0	44.450	11.411	20.117			0.730	79.440	100.00	6	220000
85		21:30:00		280		15.0	35	9.0	26.0	44.450	12.522	20.367							
86		21:35:00	H2S=30ppm																
87		22:00:00		320		16.0	28	8.2	27.0	44.450	11.630	20.618			0.830	80.270	100.00	6	200000

1999/03/15 06:00:00 To 1999/03/16 06:30:00

Gas	28.117	Cum.	28.117 10^3m^3
Oil	0.000	Cum.	0.000 m^3
Water	60.700	Cum.	81.700 m^3

Suncor Energy Inc.
0K-77 (60 [illegible]50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Field Notes
Field Measurements

Netla K-77
Formation: Slave Point
Job Number: C0173

	Date	Clock Time	Choke	Pt	Pc	WHT	Static	Diff	Meter Temp	Orifice	Gas Rate	Cum Gas	Oil/Cond Gain	Cum Oil/Cond	H2O Gain	Cum H2O	BSW1	Ph	Salinity
	yyyy/mm/dd	hh:mm:ss		kPa(g)	kPa(g)	°C	kPa(g)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	%		ppm
111		00:05:00	OPEN TO FLOW ON 2(50.80mm) / CASING ON VAC																
112		00:05:00		1200		-2.0													
113		00:06:00	ORIFICE PLATE IN SERVICE, 1 3/4 (44.45mm) / CASING TSTM																
114		00:10:00		850		8.0	138	72.7	15.0	44.450	50.998	20.795			0.000	80.270	100.00	6	200000
115		00:10:00	CASING TSTM																
116		00:15:00		370		10.0	124	56.7	15.0	44.450	43.266	20.959			0.120	80.390	100.00		
117		00:30:00	CASING TSTM																
118		00:30:00		130		12.0	41	15.9	16.0	44.450	17.525	21.276			0.000	80.390	100.00		
119		00:44:00	DECREASE BACK PRESSURE																
120		00:45:00	CASING TSTM																
121		00:45:00		75		12.0	7	6.0	17.0	44.450	9.159	21.415			0.060	80.450	100.00	6	200000
122		01:00:00		140		14.0	7	7.0	17.0	44.450	9.912	21.514			0.060	80.510	100.00		
126		01:10:00	CASING ON VAC																
127		01:10:00		810															
128		01:15:00	CASING ON VAC																
129		01:15:00		860															
130		01:30:00	CASING ON VAC																
131		01:30:00		1080															

1999/03/15 06:00:00 To 1999/03/16 06:30:00

Gas	28.117	Cum.	28.117 10^3m^3
Oil	0.000	Cum.	0.000 m^3
Water	60.700	Cum.	81.700 m^3

Suncor Energy Inc.
0K-77 (60 D[redacted]50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Field Notes
Field Measurements

Netla K-77
Form[redacted]n: Slave Point
Job Number: C0173

	Date	Clock Time	Choke	Pt	Pc	WHT	Static	Diff	Meter Temp	Orifice	Gas Rate	Cum Gas	Oil/Cond Gain	Cum Oil/Cond	H2O Gain	Cum H2O	BSW1	Ph	Salinity
	yyyy/mm/dd	hh:mm:ss		kPa(g)	kPa(g)	°C	kPa(g)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	%		ppm
132	1999/03/16	01:45:00		1270															
133		02:00:00	CASING ON VAC																
134		02:00:00		1500															
135		02:15:00	CASING ON VAC																
136		02:15:00		1650															
137		02:30:00	CASING ON VAC																
138	1999/03/16	02:30:00		1800															
139		02:45:00		1900															
140		03:00:00	CASING ON VAC																
141		03:00:00		2000															
142		03:15:00		2050															
143		03:30:00		2200															
144		03:45:00		2250															
145		04:00:00		2300															
146		04:00:00	OPEN TO FLOW ON 2 INCH(50.80mm) / CASING ON VAC																
147		04:05:00		1200		0.0									0.120	80.630	100.00	6	200000
148		04:07:00	ORIFICE PLATE IN SERVICE, 1.75 INCH (44.45mm) / CASING ON VACUUM																
149		04:10:00		850		8.0	110	59.7	7.0	44.450	43.796	27.141			0.000	80.630	100.00		
150		04:15:00		260		8.0	41	37.8	7.0	44.450	28.238	27.266			0.000	80.630	100.00		
151		04:20:00	DECREASE BACK PRESSURE																
152		04:30:00		140		10.0	7	9.9	7.0	44.450	12.115	27.476			0.120	80.750	100.00	6	200000
153		04:45:00		205		10.0	7	5.5	10.0	44.450	8.876	27.585			0.240	80.990	100.00		
154		05:00:00	CASING TSTM																
155		05:00:00		210		11.0	7	4.0	9.0	44.450	7.560	27.671			0.240	81.230	100.00	6	236000
156		05:30:00		200		8.0	7	4.5	7.0	44.450	8.055	27.833							
157		06:00:00	CASING ON VAC																
158		06:00:00		200		9.0	7	3.0	7.0	44.450	6.566	27.986			0.470	81.700	100.00	6	236000

1999/03/16 06:30:00 To 1999/03/16 15:30:00

Gas	0.929	Cum.	29.045 10^3m^3
Oil	0.000	Cum.	0.000 m^3
Water	2.030	Cum.	83.730 m^3

Suncor Energy Inc.
0K-77 (60 [redacted] 50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Field Notes
Field Measurements

Netla K-77
For[redacted]on: Slave Point
Job Number: C0173

	Date	Clock Time	Choke	Pt	Pc	WHT	Static	Diff	Meter Temp	Orifice	Gas Rate	Cum Gas	Oil/Cond Gain	Cum Oil/Cond	H2O Gain	Cum H2O	BSW1	Ph	Salinity
	yyyy/mm/dd	hh:mm:ss		kPa(g)	kPa(g)	°C	kPa(g)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	%		ppm
159	1999/03/16	06:30:00		195		7.0	7	2.5	5.0	44.450	6.010	28.117							
160		06:35:00	H2S=10ppm																
161		07:00:00	CASING ON VAC																
162	1999/03/16	07:00:00		185		8.0	7	2.5	4.0	44.450	6.020	28.242			0.710	82.410	100.00	6	232000
163		07:30:00		175	0	8.0	7	2.5	4.0	44.450	6.020	28.367							
164		08:00:00		170	0	8.0	7	2.0	3.0	44.450	5.389	28.486			0.360	82.770	100.00	6	230000
165		08:30:00		165	0	8.0	7	2.0	4.0	44.450	5.379	28.598							
166		09:00:00		155	0	8.0	7	2.0	6.0	44.450	5.360	28.710			0.360	83.130	100.00	6	226000
167		09:30:00		155	0	10.0	7	2.0	6.0	44.450	5.360	28.822							
168		10:00:00		160	0	10.0	7	2.0	6.0	44.450	5.360	28.934			0.360	83.490	100.00	6	220000
169		10:30:00		160	0	10.0	7	2.0	6.0	44.450	5.360	29.045			0.240	83.730	100.00		
170		10:30:00	SHUT IN WELL AND BEGIN BUILD UPS																
171		10:31:00	OBTAIN TOW HIGH PRESSURE GAS SAMPLES BOTTLES #19573 AND 1051 / ALSO TWO STOCK TANK FLUID SAMPLES																
172		10:31:00		170															
173		10:32:00		180															
174		10:33:00		190															
175		10:34:00		420															
176		10:35:00		440															
177		10:40:00		560															
178		10:45:00		620															
179		11:00:00		770															
180		11:15:00		890															
181		11:30:00		1030															
182		11:45:00		1165															
183		12:00:00		1260															
184		12:30:00		1550															
185		13:00:00		1750															
186		13:30:00		1800															
187		14:00:00		1950															
188		14:30:00		2000															
189		15:00:00		2100															
190		15:30:00		2150															
191		15:30:00	SHUT IN / END OF JOB																

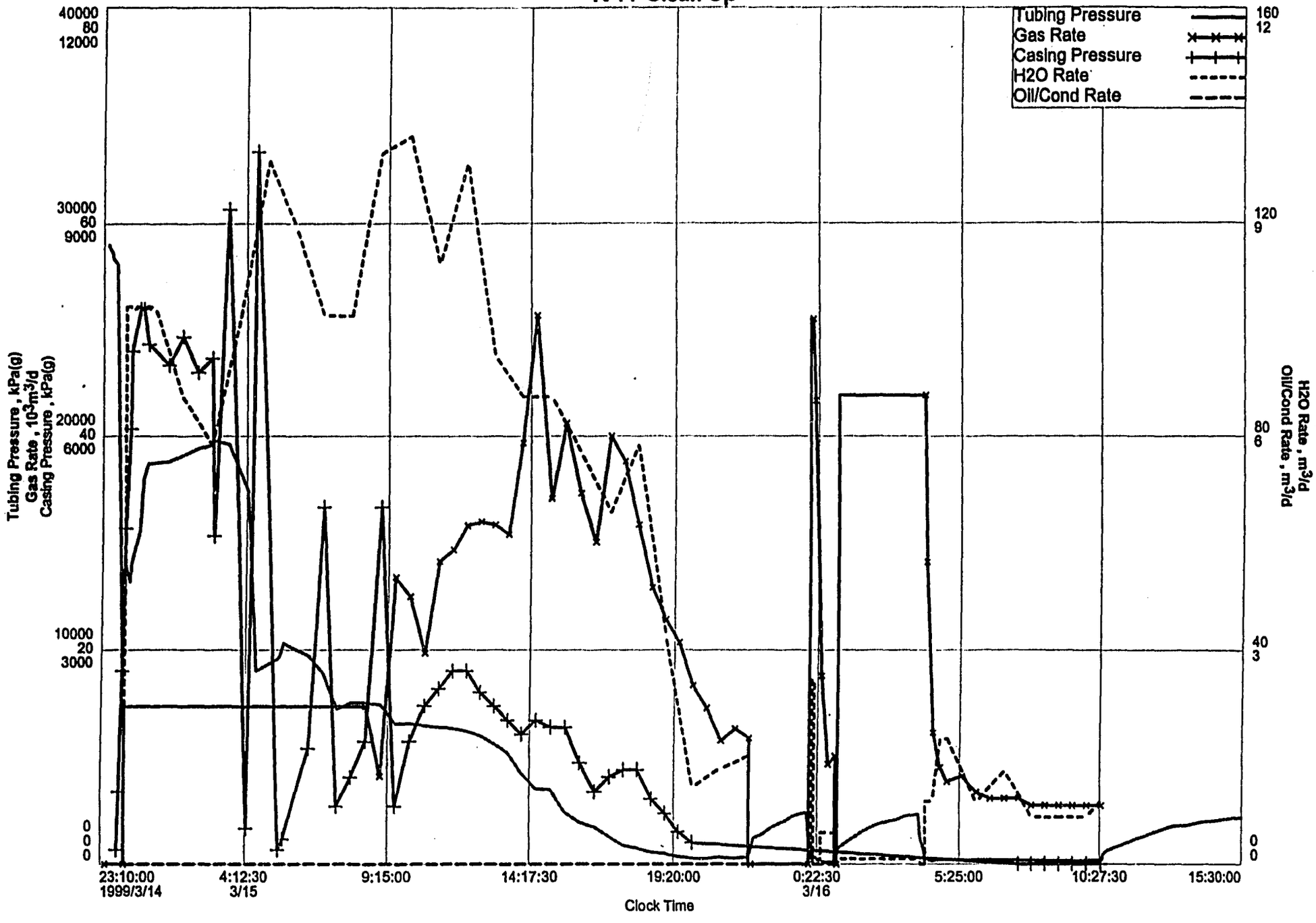
1999/03/16 06:30:00 To 1999/03/16 15:30:00

Gas	0.929	Cum.	29.045 10^3m^3
Oil	0.000	Cum.	0.000 m^3
Water	2.030	Cum.	83.730 m^3

Suncor Energy Inc
K-77 (60 Deg 50' Latitude, 122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Bella
Formation: Slave Point
Job Number: C0173

K-77 Clean Up



Suncor Ener[redacted]nc.
0K-77 (60 [redacted] 50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

[redacted] Netla K-77
For[redacted]ion: Slave Point
Job Number: C0173

	From Date	Clock Time	To Date	Clock Time	Daily Cum. Gas	Daily Cum. Oil	Daily Cum. Water	Daily Cum. Cond.	Cum. Gas To Date	Cum. Oil To Date	Cum. Water To Date	Cum. Cond To Date
	yyyy/mm/dd	hh:mm:ss	yyyy/mm/dd	hh:mm:ss	10^3m^3	m^3	m^3	m^3	10^3m^3	m^3	m^3	m^3
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2	1999/03/15	06:00:00	1999/03/16	06:30:00	28.117	0.000	60.700		28.117	0.000	81.700	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Print Filter Off

Suncor Energ[illegible]c.
0K-77 (60 [illegible]50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Netla K-77
Form[illegible]n: Slave Point
Job Number: C0173

	Date	Clock	Comment
	yyyy/mm/dd	hh:mm:ss	
1	1999/03/14	23:10:00	ACID FRAC COMPLETE / DOWELL RIG OFF WELL HEAD.
2	1999/03/14	23:30:00	PRESSURE TEST FLOW LINE TO 30MPA.
3	[illegible]	23:32:00	SHUT IN WELL TO REPAIR SMALL LEAK ON DEFOAMER PUMP LINE
4	1999/03/14	23:55:00	SHUT IN WELL / BATCH DEFOAMER IN TEST VESSEL / DIFFICULT TO GET ACCURATE FLUID GAUGE DO TO FOAM.
5	[illegible]	00:03:00	OPEN TO FLOW ON 32/64 (12.70mm)
6	1999/03/15	00:12:00	DECREASE CHOKE SIZE TO 18/64(7.14mm)
7	[illegible]	00:15:00	INCREASE BACKPRESSURE TO CONTROL FOAM
8	1999/03/15	00:45:00	DECREASE CHOKE SIZE TO 16/64(6.35mm) TO CONTROL FOAM.
9	[illegible]	01:00:00	DECREASE CHOKE SIZE TO 12/64(4.76mm)
10	1999/03/15	03:30:00	OPEN UP CHOKE TO 18/64(7.14mm)WELL LOADING
11	[illegible]	04:00:00	BLEED OFF CASING PRESSURE
12	1999/03/15	04:30:00	OPEN UP TO 32/64(12.70mm)WELL LOADING
13	[illegible]	04:35:00	DEGREASE CHOKE SIZE TO 15/64 (5.56mm) CONTROL FOAMING OVER
14	1999/03/15	05:00:00	CONTINUE TO PUMP DEFOAMER.
15	[illegible]	05:30:00	CHOKE BACK TO 12/64 (4.76mm) CONTROL FOAM
16	1999/03/15	06:00:00	OPEN CHOKE TO 18/64(7.14mm)
17	[illegible]	08:15:00	METER IN SERVICE WITH A 1.250 PLATE (31.75 mm)
18	1999/03/15	08:50:00	SHIPPING FLUID TO 400 BBL.
19	[illegible]	09:10:00	INCREASE CHOKE TO A 26/64 (10.32mm)
20	1999/03/15	10:10:00	SHIPPING FLUID TO 400 BBL TO TOP UP TANK TRUCK.
21	[illegible]	11:40:00	INSREASE CHOKE TO A 32/64 (12.7mm)
22	1999/03/15	14:25:00	INCREASE CHOKE TO A 40/64 (15.875 mm) TO AVOID LOADING.
23	[illegible]	14:30:00	BURNABLE GAS TO SURFACE
24	1999/03/15	16:15:00	INCREASE CHOKE TO A 48/64.(19.05 mm)
25	[illegible]	16:30:00	INCREASE CHOKE TO A 2.0 INCH (50.8 mm)
26	1999/03/15	16:45:00	INCREASE ORIFICE PLATE TO A 1.75 INCH. (44.45 mm)
27	[illegible]	17:35:00	H2S=30ppm
28	1999/03/15	22:01:00	STOP COCK WELL / RECORD BUILD UPS.
29	[illegible]	00:00:00	(6.380 10³ M NITROGEN SUBTRACTED FROM CUM GAS IN NOTES)
30	1999/03/16	00:00:00	H2S=30ppm
31	[illegible]	00:00:00	LIQUID HYDROCARBON PRODUCTION.
32	1999/03/16	00:00:00	NONE
33	[illegible]	00:00:00	FOAM MAT RECOVERY
34	1999/03/16	00:00:00	CUMULATIVE FLUID RECOVERED=80.280M³

Print Filter Off

Suncor Energ[illegible]c.
0K-77 (60 D[illegible]50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/14
Final Test Date: 1999/03/16

Netla K-77
Form[illegible]n: Slave Point
Job Number: C0173

	Date	Clock	Comment
	yyyy/mm/dd	hh:mm:ss	
35	1999/03/16	00:00:00	TOTAL LOAD PUMPED DOWN HOLE=127.860 M³
36	1999/03/16	00:00:00	TOTAL LOAD LEFT TO RECOVER=47.580M³
37	1999/03/16	00:00:00	SALINITY=200,000ppm
38	1999/03/16	00:00:00	PH=6
39	1999/03/16	00:00:00	PRESSURE UP TO CHOKE / BLEED OFF / REPAIR LEAK
40	1999/03/16	00:05:00	OPEN TO FLOW ON 2(50.80mm) / CASING ON VAC
41	1999/03/16	00:08:00	ORIFICE PLATE IN SERVICE 1 3/4 (44.45mm) / CASING TSTM
42	1999/03/16	00:10:00	CASING TSTM
43	1999/03/16	00:30:00	CASING TSTM
44	1999/03/16	00:44:00	DECREASE BACK PRESSURE
45	1999/03/16	00:45:00	CASING TSTM
46	1999/03/16	01:00:00	STOP COCK WELL / RECORD BUILD UPS.
47	1999/03/16	01:05:00	CASING TSTM
48	1999/03/16	01:10:00	CASING ON VAC
49	1999/03/16	01:15:00	CASING ON VAC
50	1999/03/16	01:30:00	CASING ON VAC
51	1999/03/16	02:00:00	CASING ON VAC
52	1999/03/16	02:15:00	CASING ON VAC
53	1999/03/16	02:30:00	CASING ON VAC
54	1999/03/16	03:00:00	CASING ON VAC
55	1999/03/16	04:00:00	OPEN TO FLOW ON 2 INCH (50.80mm) / CASING ON VAC
56	1999/03/16	04:07:00	ORIFICE PLATE IN SERVICE, 1.75 INCH (44.45mm) / CASING ON VACUUM
57	1999/03/16	04:20:00	DECREASE BACK PRESSURE
58	1999/03/16	05:00:00	CASING TSTM
59	1999/03/16	05:00:00	CASING ON VAC
60	1999/03/16	06:35:00	H2S=10ppm
61	1999/03/16	07:00:00	CASING ON VAC
62	1999/03/16	10:30:00	SHUT IN WELL AND BEGIN BUILD UPS
63	1999/03/16	10:31:00	OBTAIN TOW HIGH PRESURE GAS SAMPLES BOTTLES #19573 AND 1051 / ALSO TWO STOCK TANK FLUID SAMPLES
64	1999/03/16	15:30:00	SHUT IN / END OF JOB

Print Filter Off

Field Notes

Gas Meter 1

Meter Type:	Orifice Meter
Meter Size:	102.26 mm
Previous Gas Production:	0.000 10^3m^3
Tap Type:	Flange
Tap Location:	Downstream
Gas Gravity (G):	0.788
CO_2:	0.17 %
H_2S:	0.00 %
N_2:	0.17 %
Critical Temperature (T_c):	199.20 K
Critical Pressure (P_c):	4876.00 kPa

Oil Meter1

Meter Type:	Produced Volume
Measurement Type:	Cumulative
Previous Oil Production:	0.000 m^3
Previous Water Production:	0.000 m^3

Water Meter1

Meter Type:	Produced Volume
Measurement type:	Incremental
Previous Water Production:	0.000 m^3

AGAT Laboratories

GAS ANALYSIS

CONTAINER IDENTIFICATION: AGAT #NN1

LABORATORY NUMBER: GN37201A

OPERATOR NAME: SUNCOR INC. RESOURCES GROUP

UNIQUE WELL IDENTIFIER | WELL NAME | ELEVATIONS KB m | GRD m

FIELD OR AREA: YUKON | POOL OR ZONE: SLAVE POINT | NAME OF SAMPLER | COMPANY: ENTEST CORP.

TEST TYPE | SPG | TEST RECOVERY: 60 DEG 50'latitude 122 DEG 30'longitude

TEST INTERVAL OR PERFS | SAMPLING POINT: WELLHEAD

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
CASING PRESSURE kPa				1750	1750	850
TEMPERATURE °C						21

DATE SAMPLED (YY-MM-DD): 99-03-16 | DATE RECEIVED (YY-MM-DD): 99-03-22 | DATE REPORTED (YY-MM-DD): 99-03-29 | ANALYST: CT/PL, NCO | OTHER INFORMATION: NETLA K-77

COMP.	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	PETROLEUM LIQUID CONTENT mL/m³
H_2	0.0001	0.0001	
He	0.0015	0.0018	
N_2	0.1661	0.2007	
[redacted]	0.1723	0.0000	
H_2S	TRACE	TRACE	
C_1	0.6595	0.7968	
C_2	0.0005	0.0006	
C_3	0.0000	0.0000	0.0
iC_4	0.0000	0.0000	0.0
nC_4	0.0000	0.0000	0.0
iC_5	0.0000	0.0000	0.0
nC_5	0.0000	0.0000	0.0
C_6	0.0000	0.0000	0.0
C_7 +	0.0000	0.0000	0.0
C_8			
C_9			
[redacted]			
TOTAL	1.0000	1.0000	0.0

GROSS HEATING VALUE MJ/m³ 15° C AND 101.325 kPa

MOISTURE AND ACID GAS FREE: 30.13 | AIR FREE AS RECEIVED: 24.95 | VAPOUR PRESSURE PENTANES PLUS: 0.0 kPa

RELATIVE DENSITY

MOISTURE FREE AS SAMPLED		MOISTURE AND ACID GAS FREE	
MEASURED	CALCULATED	MEASURED	CALCULATED
	0.788		0.636

REAL CRITICAL PROPERTIES (CALCULATED)

AS SAMPLED		ACID GAS FREE	
kPa (abs)	°R	kPa (abs)	°R
4876 kPa	199.2 K	4354 kPa	177.3 K

RELATIVE MOLECULAR MASS

TOTAL GAS: 22.8 | C_7+: 0.0

H_2S ppm: 0.01

REMARKS:

EXCEED NORMAL LIMITS : N2 , CO2
FIELD H2S = 10ppm/LAB = ND

AGAT Laboratories

WATER ANALYSIS

CONTAINER IDENTIFICATION: 2A

LABORATORY NUMBER: WN372021A

OPERATOR NAME: SUNCOR INC. RESOURCES GROUP

UNIQUE WELL IDENTIFIER:

WELL NAME: MEDIA K-77

ELEVATIONS:

FIELD OR AREA:

POOL OR ZONE: SLAVE POINT

NAME OF SAMPLER:

COMPANY: ESSO CORP.

TEST TYPE:

NO:

SP.400 BBL

SAMPLING POINT:

UNIT & TYPE OF CUSHION:

MUD RESISTIVITY:

TEST INTERVAL OR PERFS:

TYPE OF PRODUCTION: PUMPING | FLOWING | GAS LIFT | SWAB

PRODUCTION RATES: WATER | OIL | GAS

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLER	RECEIVED
GAUGE PRESSURE kPa						
TEMPERATURE °C						

DATE SAMPLED (YY-MM-DD): 99-03-16

DATE RECEIVED (YY-MM-DD): 99-03-22

DATE REPORTED (YY-MM-DD): 99-03-26

ANALYST: ZAP NCO

OTHER INFORMATION: K-77

ION	mg/L	BASE FRACTION	mmol/L
[redacted]	14400.0	0.102	624.0
K	525.0	0.004	13.4
Ca	32200.0	0.227	803.0
Mg	1540.0	0.011	63.3
Ba	N.A.	N.A.	N.A.
Sr	N.A.	N.A.	N.A.
Fe	225.0	0.002	4.0

ION	mg/L	BASE FRACTION	mmol/L
Cl	92800.0	0.654	2620.0
Br	N.A.	N.A.	N.A.
I	N.A.	N.A.	N.A.
HCO_3	153.0	0.001	2.5
SO_4	20.8	TRC*	0.2
CO_3	NIL	NIL	NIL
OH	NIL	NIL	NIL
H_2S	N.D.	N.D.	N.D.

DISSOLVED

TOTAL SOLIDS mg/L

EVAPORATED AT 110° C:

EVAPORATED AT 180° C:

AT IGNITION:

CALCULATED: 142000.0

RELATIVE DENSITY: 1.111 @ 25°C

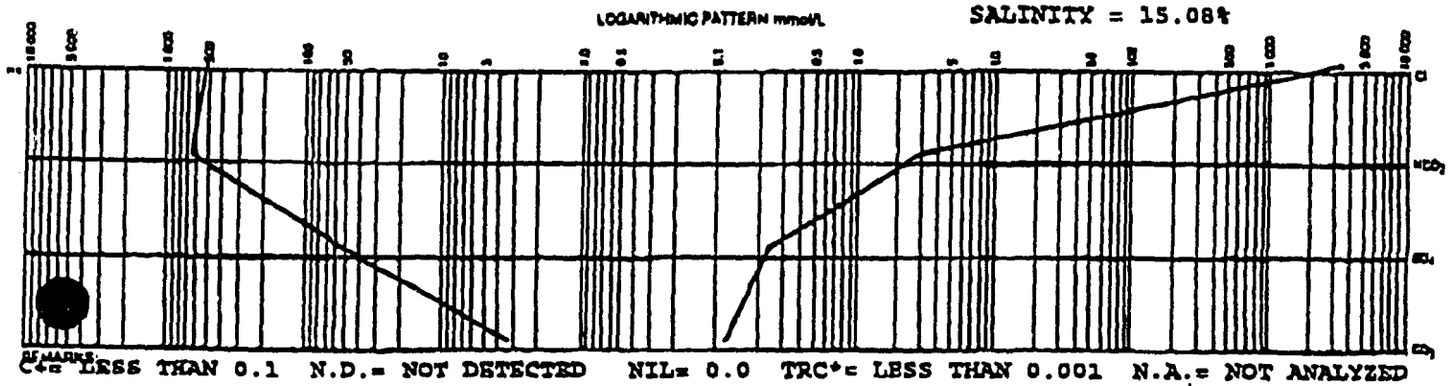
REFRACTIVE INDEX: N.A. @ 25°C

OBSERVED pH: 5.19 @ 24°C

RESISTIVITY OHM-m: 0.06 @ 21°C

LOGARITHMIC PATTERN mmol/L

SALINITY = 15.08%



REMARKS: C4= LESS THAN 0.1 N.D.= NOT DETECTED NIL= 0.0 TRC*= LESS THAN 0.001 N.A.= NOT ANALYZED

ENTEST CORP.

"A Plains Energy Services Company"

Suncor Energy Inc.

K-77

Preflow

99/03/05 – 99/03/14

Prepare by
Entest Corp.
April 1, 1999

Suncor Energy
0K-77 (60 Deg Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/05
Final Test Date: 1999/03/14

Field Notes
Field Measurements

Netla K-77
Formation: Slave Point
Job Number: C0173a

	Date	Clock Time	Choke	Pt	Pc	WHT	Static	Diff	Meter Temp	Orifice	Gas Rate	Cum Gas	Oil/Cond Gain	Cum Oil/Cond	H2O Gain	Cum H2O	BSW1	Ph	Salinity
	yyyy/mm/dd	hh:mm:ss		kPa(g)	kPa(g)	°C	kPa(g)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	%		ppm
		00:00:00	ARRIVE ON LOCATION RIG IN; MARCH 6 TO 11 DRILLING OPERATIONS, MARCH 12 LOGGING OPERATION, MARCH 13 RUN IN HOLE WITH PACKER																
			WAIT ON WELL SERVICE UNIT																
			PRESSURE SHUT IN / RECORD BUILD UPS																
			1000																
			1600																
			1800																
			2000																
			2200																
			MEETING																
			2400																
			TEST LINES TO 12,000 KPA																
12		21:30:00	OPEN TO FLOW ON 32/64(12.70mm)																
13		21:35:00		9400															
14		21:40:00		8400															
15		21:45:00		8300															
16		21:50:00		8000															
17		21:55:00		7400															
18		22:00:00		6600															
19		22:00:00	OPEN CHOKE TO 48/64(19.05mm)																
20		22:10:00	ORIFICE PLATE IN SERVICE(50.80mm)																
21		22:15:00		4000		16.0	317	61.7	-1.0	50.800	88.935	2.779							
22		22:30:00		4000	90	16.0	248	73.0	2.0	50.800	88.581	3.704							
23		22:30:00	OPEN CHOKE TO 1 1/8(28.57mm)																
24		22:40:00	CHANGE ORIFICE PLATE TO 2 1/2(63.50mm)																
25			H2S = 80ppm																
26		22:45:00		1600	140	16.0	290	31.9	9.0	63.500	98.483	4.678							
27		23:00:00		1600	140	16.0	310	26.9	10.0	63.500	95.668	5.690							
28		23:10:00	OPEN CHOKE TO 2 (50.80mm)																
29		23:15:00		900	140	16.0	310	26.9	15.0	63.500	91.605	6.667			0.370	0.370	100.00		
30		23:30:00		675	140	16.0	276	22.9	15.0	63.500	80.801	7.565			0.500	0.870	100.00		
31		23:40:00	H2S=90ppm																
32		23:45:00		625	145	16.0	276	19.9	15.0	63.500	75.271	8.378			0.750	1.620	100.00		
33	1999/03/14	00:00:00		600	145	16.0	276	18.9	15.0	63.500	73.328	9.152			0.750	2.370	100.00		
34		00:00:00	H2S=90ppm																
35		00:00:00	HYDROCARBON PRODUCTION:																
36		00:00:00	NONE																
37		00:00:00	H20/ MUD RECOVERY:																
38		00:00:00	TOTAL LOAD FLUID RECOVERED(FLOWING)=2.370 M^3																
39		00:00:00	CUMULATIVE LOAD FLUID RECOVERED(FLOWING)=2.370 M^3																
40		00:15:00		575	145	15.0	290	15.9	16.0	63.500	68.365	9.890			0.000	2.370	100.00		
41		00:30:00		525	145	15.0	290	13.9	16.0	63.500	63.907	10.578			0.000	2.370	100.00		
42			NO MORE MUD/WATER PRODUCED																
43		00:44:00	CHANGE ORIFICE PLATE TO 2 (50.80mm)																
44		00:45:00		525	145	15.0	290	35.8	16.0	50.800	62.831	11.239			0.000	2.370	100.00		
45		01:00:00		500	400	15.0	290	32.9	16.0	50.800	60.190	11.879			0.000	2.370	100.00		
46		01:15:00		500	800	15.0	290	29.9	15.0	50.800	57.310	12.491			0.000	2.370	100.00		
47		01:25:00	H2S=90ppm																
48		01:30:00		500	810	12.0	290	28.1	15.0	50.800	53.523	13.068			0.000	2.370	100.00		
49		01:30:00	SHUT IN / RECORD BUILD UPS.																
50		01:31:00		1450	850														
51		01:32:00		1900	880														
52		01:33:00		2400	890														

Suncor Energy Inc.
0K-77 (60 Deg [illegible] Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/05
Final Test Date: 1999/03/14

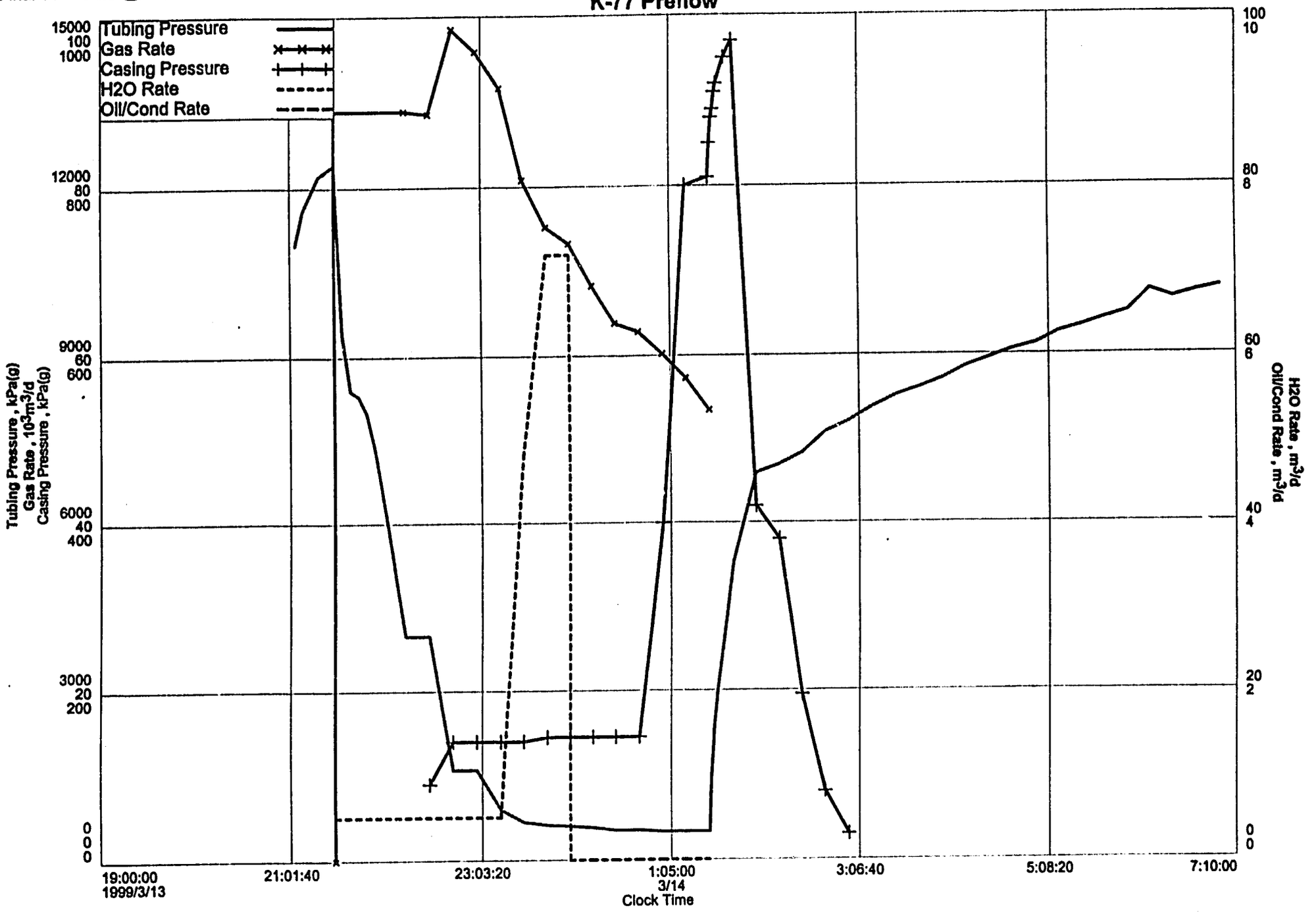
Field Notes
Field Measurements

Netla K-77
Form[illegible]n: Slave Point
Job Number: C0173a

	Date	Clock Time	Choke	Pt	Pc	WHT	Static	Diff	Meter Temp	Orifice	Gas Rate	Cum Gas	Oil/Cond Gain	Cum Oil/Cond	H2O Gain	Cum H2O	BSW1	Ph	Salinity
	yyyy/mm/dd	hh:mm:ss		kPa(g)	kPa(g)	°C	kPa(g)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	m^3	m^3	%		ppm
53	1999/03/14	01:34:00		2700	910														
54		01:35:00		3000	920														
55		01:40:00		4150	950														
56		01:45:00		5300	970														
57		02:00:00		6895	420														
58		02:15:00		7047	360														
59		02:30:00		7254	195														
60		02:45:00		7626	80														
61		03:00:00		7619	30														
62		03:15:00		8067															
63		03:30:00		8274															
64		03:45:00		8412															
65		04:00:00		8577															
66		04:15:00		8784															
67		04:30:00		8922															
68		04:45:00		9074															
69		05:00:00		9184															
70		05:15:00		9391															
71		05:30:00		9501															
72		05:45:00		9639															
73		06:00:00		9749															
74		06:15:00		10136															
75		06:30:00		9998															
76		06:45:00		10108															
77		07:00:00		10191															
78		07:10:00	BLEED OFF WELL HEAD TO PULL RECORDERS.																

Suncor Energy Inc
K-77 (60 Deg 50' Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/05
Final Test Date: 1999/03/14
Formation: Slave Point
Job Number: C0173a

K-77 Preflow



Entest Corp.

Suncor Energy [redacted]
0K-77 (60 Deg [redacted] Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/05
Final Test Date: 1999/03/14

Netla K-77
Form[redacted]: Slave Point
Job Number: C0173a

	From Date	Clock Time	To Date	Clock Time	Daily Cum. Gas	Daily Cum. Oil	Daily Cum. Water	Daily Cum. Cond.	Cum. Gas To Date	Cum. Oil To Date	Cum. Water To Date	Cum. Cond To Date
	yyyy/mm/dd	hh:mm:ss	yyyy/mm/dd	hh:mm:ss	10^3m^3	m^3	m^3	m^3	10^3m^3	m^3	m^3	m^3
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2	1999/03/13	19:00:00	1999/03/13	21:00:00		0.000				0.000		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
4	1999/03/13	21:05:00	1999/03/13	21:10:00		0.000				0.000		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
6	1999/03/13	21:15:00	1999/03/13	21:20:00		0.000				0.000		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
8	1999/03/13	21:25:00	1999/03/13	21:25:00		0.000				0.000		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
10	1999/03/13	21:30:00	1999/03/14	06:15:00	13.068	0.000	2.370		13.068	0.000	2.370	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Print Filter Off

Suncor Energy Inc.
0K-77 (60 Deg Latitude) (122 Deg 30' Longitude)
Start Test Date: 1999/03/05
Final Test Date: 1999/03/14

Netla K-77
Form : Slave Point
Job Number: C0173a

	Date	Clock	Comment
	yyyy/mm/dd	hh:mm:ss	
1	1999/03/05	08:00:00	ARRIVE ON LOCATION RIG IN MARCH 6 TO 11 DRILLING OPERATIONS. MARCH 12 LOGGING OPERATION. MARCH 13 RUN IN
2	1999/03/13	19:00:00	SWABED TUBING DRY / DISK SHATTERED
3	1999/03/13	21:00:00	GAS TO SURFACE / SHUT IN / RECORD BUILD UPS
4	1999/03/13	21:25:00	HOLD SAFETY MEETING.
5	1999/03/13	21:30:00	PRESSURE TEST LINES TO 12400 KPA
6	1999/03/13	21:30:00	OPEN TO FLOW ON 32/64(12.70mm)
7	1999/03/13	22:00:00	OPEN CHOKE TO 48/64(19.05mm)
8	1999/03/13	22:10:00	ORIFICE PLATE IN SERVICE(50.80mm)
9	1999/03/13	22:30:00	OPEN CHOKE TO 1 1/8(28.57mm)
10	1999/03/13	22:40:00	CHANGE ORIFICE PLATE TO 2 1/2(63.50mm)
11	1999/03/13	22:40:00	H2S =80ppm
12	1999/03/13	23:10:00	OPEN CHOKE TO 2 (50.80mm)
13	1999/03/13	23:40:00	H2S =90ppm
14	1999/03/14	00:00:00	H2S=90ppm
15	1999/03/14	00:00:00	HYDROCARBON PRODUCTION
16	1999/03/14	00:00:00	NONE
17	1999/03/14	00:00:00	H20/MUD RECOVERY
18	1999/03/14	00:00:00	TOTAL LOAD FLUID RECOVERED(FLOWING)=2.370 M³
19	1999/03/14	00:00:00	CUMULATIVE LOAD FLUID RECOVERED(FLOWING)=2.370 M³
20	1999/03/14	00:30:00	NO MORE MUD/WATER PRODUCED
21	1999/03/14	00:45:00	CHANGE ORIFICE PLATE TO 2(50.80mm)
22	1999/03/14	01:25:00	H2S=90ppm
23	1999/03/14	01:30:00	SHUT IN / RECORD BUILD UPS
24	1999/03/14	07:10:00	BLEED OFF WELL HEAD TO PULL RECORDERS.

Print Filter Off

Field Notes

Gas Meter 1

Meter Type:	Orifice Meter
Meter Size:	102.26 mm
Previous Gas Production:	0.000 10^3m^3
Tap Type:	Flange
Tap Location:	Downstream
Gas Gravity (G):	0.692
CO_2:	0.00 %
H_2S:	0.00 %
N_2:	0.00 %
Critical Temperature (T_C):	207.76 K
Critical Pressure (P_C):	4625.74 kPa

Oil Meter1

Meter Type:	Produced Volume
Measurement Type:	Cumulative
Previous Oil Production:	0.000 m^3
Previous Water Production:	0.000 m^3

Water Meter1

Meter Type:	Produced Volume
Measurement type:	Incremental
Previous Water Production:	0.000 m^3

NORTHLAND
WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC.
K-77-60-50-122-30
99/03/14

Northland

Quartz Pressure Recorder

1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC.
Address:	112 - 4 AVE. S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	BUILDUP
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.2
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	40014 [Top]
Probe Range:	0 - 51711 kPag
Last Calibration Date:	98/09/29
Time Interval - Normal/Fast:	30S/NONE

Tubing Pressure	**Initial**	6895	**Final**	10270 kPag
Casing Pressure	**Initial**	970	**Final**	0 kPag

Run Depth (mGL):	2045.2
Time On Bottom:	99/03/14 02:29:00
Time Off Bottom:	99/03/14 05:29:00
Maximum Temperature:	100.8 °C
Date of Test:	99/03/14

Comments:

GRADIENT STOPS IN TVD mGL / 69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL
69.85 mm QX NIPPLE @ 1978.89 mGL
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
69.85 mm QXN NIPPLE @ 1982.75 mGL
REPORT TO DAVE HERRERA

Programmed Sample Intervals

From	To	Primary	Fast
99/03/14 01:53:00	—End of Run—	30S	NONE

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
	Recorders on bottom - 99/03/14 02:29:00				
1	99/03/14 02:29:00	0.000		78.51	8839.03
7	99/03/14 02:32:00	0.050		86.77	8946.19
13	99/03/14 02:35:00	0.100		91.96	9058.25
19	99/03/14 02:38:00	0.150		95.09	9156.84
25	99/03/14 02:41:00	0.200		96.94	9241.60
31	99/03/14 02:44:00	0.250		98.04	9313.31
37	99/03/14 02:47:00	0.300		98.71	9376.34
43	99/03/14 02:50:00	0.350		98.92	9438.21
49	99/03/14 02:53:00	0.400		99.20	9492.50
55	99/03/14 02:56:00	0.450		99.41	9545.06
61	99/03/14 02:59:00	0.500		99.56	9592.05
67	99/03/14 03:02:00	0.550		99.68	9642.47
73	99/03/14 03:05:00	0.600		99.77	9690.83
79	99/03/14 03:08:00	0.650		99.85	9737.85
85	99/03/14 03:11:00	0.700		99.90	9786.30
91	99/03/14 03:14:00	0.750		99.95	9833.89
97	99/03/14 03:17:00	0.800		99.99	9879.73
103	99/03/14 03:20:00	0.850		100.03	9925.49
109	99/03/14 03:23:00	0.900		100.06	9970.73
115	99/03/14 03:26:00	0.950		100.08	10015.48
121	99/03/14 03:29:00	1.000		100.11	10059.69
127	99/03/14 03:32:00	1.050		100.13	10103.45
133	99/03/14 03:35:00	1.100		100.15	10146.89
139	99/03/14 03:38:00	1.150		100.17	10189.84
145	99/03/14 03:41:00	1.200		100.18	10232.50
151	99/03/14 03:44:00	1.250		100.20	10274.63
157	99/03/14 03:47:00	1.300		100.22	10316.34
163	99/03/14 03:50:00	1.350		100.23	10357.85
169	99/03/14 03:53:00	1.400		100.25	10398.87
175	99/03/14 03:56:00	1.450		100.27	10439.48
181	99/03/14 03:59:00	1.500		100.29	10479.76
187	99/03/14 04:02:00	1.550		100.31	10519.67
193	99/03/14 04:05:00	1.600		100.33	10559.25
199	99/03/14 04:08:00	1.650		100.34	10598.63
205	99/03/14 04:11:00	1.700		100.36	10637.52
211	99/03/14 04:14:00	1.750		100.38	10676.07
217	99/03/14 04:17:00	1.800		100.40	10714.30
223	99/03/14 04:20:00	1.850		100.42	10750.64
229	99/03/14 04:23:00	1.900		100.43	10788.27
235	99/03/14 04:26:00	1.950		100.45	10825.45
241	99/03/14 04:29:00	2.000		100.46	10862.46
247	99/03/14 04:32:00	2.050		100.48	10899.07
253	99/03/14 04:35:00	2.100		100.50	10935.51
259	99/03/14 04:38:00	2.150		100.52	10971.54

*** denotes fast readings** **Run depth: 2045.2** **Recorder: 40014**

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
265	99/03/14 04:41:00	2.200		100.53	11007.41
271	99/03/14 04:44:00	2.250		100.54	11043.03
277	99/03/14 04:47:00	2.300		100.56	11078.25
283	99/03/14 04:50:00	2.350		100.58	11113.26
289	99/03/14 04:53:00	2.400		100.59	11148.10
295	99/03/14 04:56:00	2.450		100.61	11182.54
301	99/03/14 04:59:00	2.500		100.62	11216.78
307	99/03/14 05:02:00	2.550		100.64	11250.76
313	99/03/14 05:05:00	2.600		100.65	11284.51
319	99/03/14 05:08:00	2.650		100.66	11317.92
325	99/03/14 05:11:00	2.700		100.67	11351.05
331	99/03/14 05:14:00	2.750		100.69	11383.97
337	99/03/14 05:17:00	2.800		100.70	11416.69
343	99/03/14 05:20:00	2.850		100.71	11449.36
349	99/03/14 05:23:00	2.900		100.71	11481.95
355	99/03/14 05:26:00	2.950		100.65	11515.77
361	99/03/14 05:29:00	3.000		100.75	11545.81

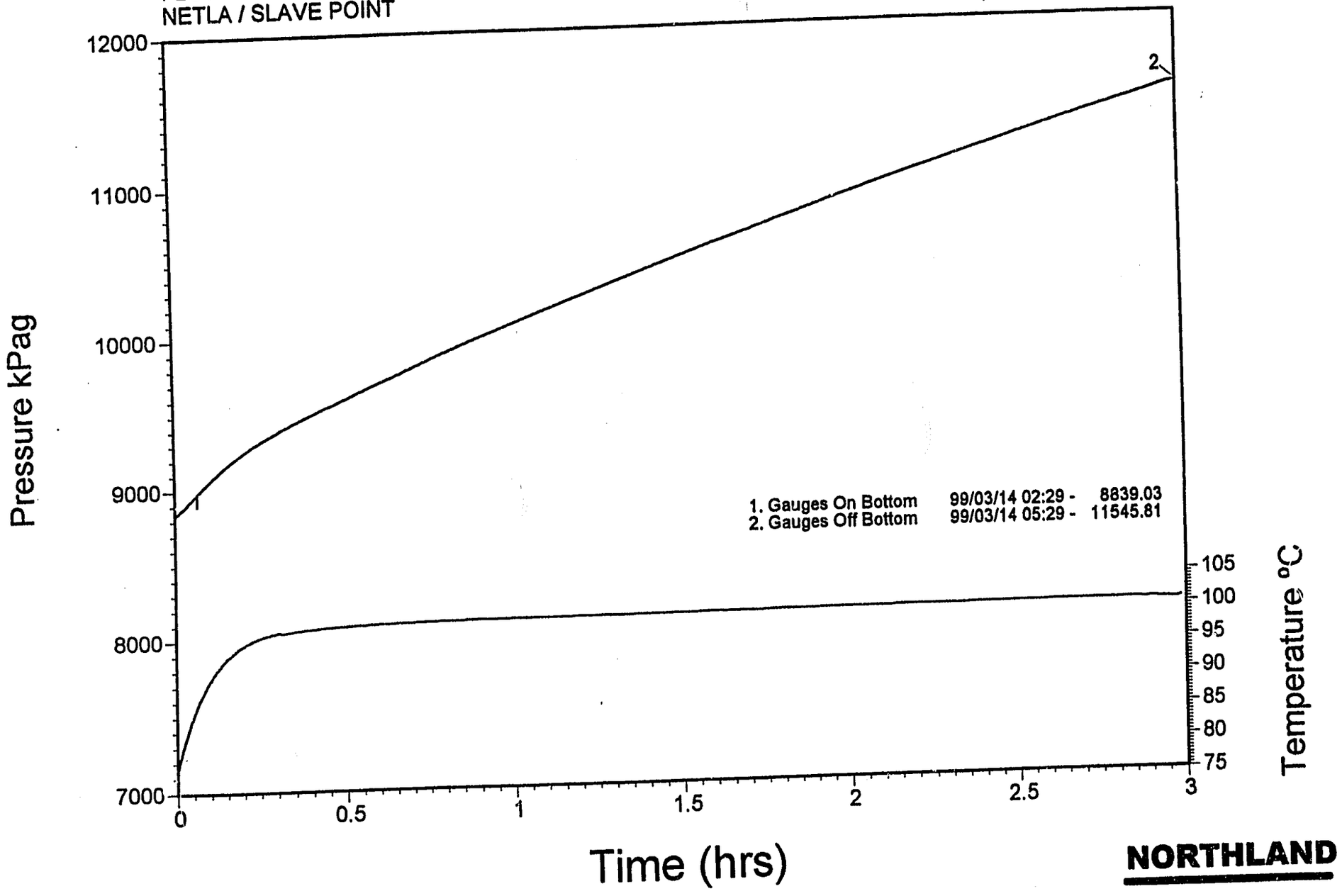
Recorders off bottom - 99/03/14 05:29:00

SUNCOR ENERGY INC.

SUNCOR NETLA (K-77-60-50-122-30)

FLOW & BUILD UP
NETLA / SLAVE POINT

Probe: 40014 [Top]
Depth: 2045.2 mGL



NORTHLAND

NORTHLAND
WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC.
K-77-60-50-122-30
99/03/14

Northland

Quartz Pressure Recorder

1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC.
Address:	112 - 4 AVE. S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	STATIC GRADIENT
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.2
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	40014 [Top]
Probe Range:	0 - 51711 kPag
Last Calibration Date:	98/09/29
Time Interval - Normal/Fast:	30S/NONE
Tubing Pressure **Initial** 6895	**Final** 10270 kPag
Casing Pressure **Initial** 970	**Final** 0 kPag
Run Depth (mGL):	1985.86
Time On Bottom:	99/03/14 05:09:00
Time Off Bottom:	99/03/14 05:29:00
Temperature @ Run Depth:	100.6 °C
Gradient @ Run Depth:	0.68 kPa/m
Pressure @ Run Depth:	11527.2 kPag
Pressure @ MPP	11568.2 kPag
Pressure @ Datum Depth:	kPag
Shutin Date:	99/03/14 01:30
Date of Test:	99/03/14

Comments:

GRADIENT STOPS IN TVD mGL / 69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL / 69.85 mm QX NIPPLE @ 1978.89
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
69.85 mm QXN NIPPLE @ 1982.75 mGL / REPORT TO DAVE HERRERA

NORTHLAND

NORTHLAND

Subsurface Pressure Measurements

Company: SUNCOR ENERGY INC.
Well Name: SUNCOR NETLA
Unique Well Id: K-77-60-50-122-30
Date of Test: 99/03/14 00:00:00

Readings and Calculations For Static Gradient

Depth Stops (TVD)	Time Stop			Pressure kPag	Gradient kPa/m
Surface	6:51	-	7:01	10286.52	0.00
499.00	6:36	-	6:46	10707.67	0.84
999.00	6:21	-	6:31	11065.99	0.72
1433.90	6:06	-	6:16	11299.14	0.54
1740.16	5:53	-	6:03	11468.09	0.55
1839.74	5:42	-	5:52	11487.27	0.19
1939.64	5:30	-	5:40	11495.64	0.08
1985.86	5:09	-	5:29	11527.18	0.68

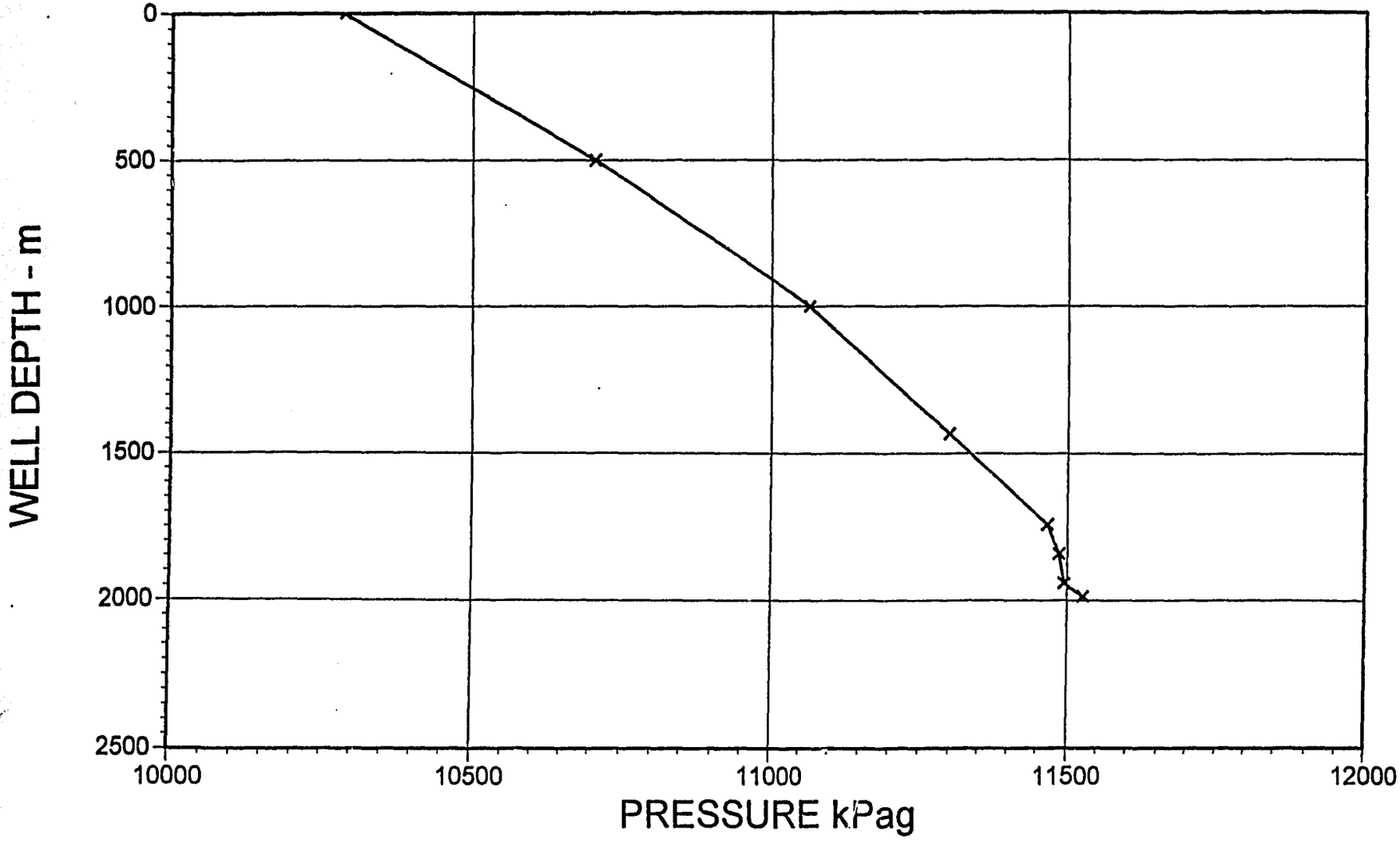
Temperature On Bottom: 100.6

Recorder # 40014 [top]

SUNCOR ENERGY INC.

SUNCOR NETLA (K-77-60-50-122-30)

STATIC GRADIENT (99/03/14 00:00:00)



Recorder # 40014

NORTHLAND

NORTHLAND
WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC.
K-77-60-50-122-30
99/03/14

Northland

Quartz Pressure Recorder

1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC.
Address:	112 - 4 AVE. S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	BUILDUP
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.2
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	40013 [Bottom]
Probe Range:	0 - 51711 kPag
Last Calibration Date:	98/09/29
Time Interval - Normal/Fast:	30S/NONE
Tubing Pressure **Initial** 6895	**Final** 10270 kPag
Casing Pressure **Initial** 970	**Final** 0 kPag
Run Depth (mGL):	2046.2
Time On Bottom:	99/03/14 02:29:00
Time Off Bottom:	99/03/14 05:29:00
Maximum Temperature:	100.6 °C
Date of Test:	99/03/14

Comments:

GRADIENT STOPS IN TVD mGL / 69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL
69.85 mm QX NIPPLE @ 1978.89 mGL
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
69.85 mm QXN NIPPLE @ 1982.75 mGL
REPORT TO DAVE HERRERA

NORTHLAND

Programmed Sample Intervals

From	To	Primary	Fast
99/03/14 01:54:00	—End of Run—	30S	NONE

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
	Recorders on bottom - 99/03/14 02:29:00				
1	99/03/14 02:29:00	0.000		73.98	8843.21
7	99/03/14 02:32:00	0.050		81.81	8922.37
13	99/03/14 02:35:00	0.100		87.40	9019.01
19	99/03/14 02:38:00	0.150		91.31	9116.97
25	99/03/14 02:41:00	0.200		93.97	9207.48
31	99/03/14 02:44:00	0.250		95.79	9288.35
37	99/03/14 02:47:00	0.300		97.03	9359.61
43	99/03/14 02:50:00	0.350		97.88	9424.58
49	99/03/14 02:53:00	0.400		98.25	9486.78
55	99/03/14 02:56:00	0.450		98.66	9543.08
61	99/03/14 02:59:00	0.500		98.96	9593.78
67	99/03/14 03:02:00	0.550		99.21	9647.50
73	99/03/14 03:05:00	0.600		99.41	9698.07
79	99/03/14 03:08:00	0.650		99.55	9745.95
85	99/03/14 03:11:00	0.700		99.67	9795.86
91	99/03/14 03:14:00	0.750		99.76	9843.89
97	99/03/14 03:17:00	0.800		99.83	9891.34
103	99/03/14 03:20:00	0.850		99.89	9935.93
109	99/03/14 03:23:00	0.900		99.93	9981.23
115	99/03/14 03:26:00	0.950		99.97	10025.91
121	99/03/14 03:29:00	1.000		100.00	10070.20
127	99/03/14 03:32:00	1.050		100.03	10114.11
133	99/03/14 03:35:00	1.100		100.05	10157.60
139	99/03/14 03:38:00	1.150		100.07	10200.56
145	99/03/14 03:41:00	1.200		100.09	10243.18
151	99/03/14 03:44:00	1.250		100.11	10285.32
157	99/03/14 03:47:00	1.300		100.13	10327.08
163	99/03/14 03:50:00	1.350		100.15	10368.44
169	99/03/14 03:53:00	1.400		100.16	10409.40
175	99/03/14 03:56:00	1.450		100.18	10450.05
181	99/03/14 03:59:00	1.500		100.20	10490.30
187	99/03/14 04:02:00	1.550		100.22	10529.31
193	99/03/14 04:05:00	1.600		100.24	10568.67
199	99/03/14 04:08:00	1.650		100.25	10607.75
205	99/03/14 04:11:00	1.700		100.27	10646.44
211	99/03/14 04:14:00	1.750		100.29	10684.81
217	99/03/14 04:17:00	1.800		100.31	10722.86
223	99/03/14 04:20:00	1.850		100.32	10760.69
229	99/03/14 04:23:00	1.900		100.34	10798.15
235	99/03/14 04:26:00	1.950		100.35	10835.39
241	99/03/14 04:29:00	2.000		100.37	10872.26
247	99/03/14 04:32:00	2.050		100.38	10908.87
253	99/03/14 04:35:00	2.100		100.40	10945.24
259	99/03/14 04:38:00	2.150		100.41	10981.29

*** denotes fast readings** **Run depth: 2046.2** **Recorder: 40013**

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
265	99/03/14 04:41:00	2.200		100.43	11017.07
271	99/03/14 04:44:00	2.250		100.44	11052.61
277	99/03/14 04:47:00	2.300		100.46	11087.83
283	99/03/14 04:50:00	2.350		100.47	11122.82
289	99/03/14 04:53:00	2.400		100.49	11157.54
295	99/03/14 04:56:00	2.450		100.50	11191.98
301	99/03/14 04:59:00	2.500		100.51	11226.15
307	99/03/14 05:02:00	2.550		100.53	11260.07
313	99/03/14 05:05:00	2.600		100.54	11293.69
319	99/03/14 05:08:00	2.650		100.55	11327.11
325	99/03/14 05:11:00	2.700		100.56	11360.21
331	99/03/14 05:14:00	2.750		100.57	11393.04
337	99/03/14 05:17:00	2.800		100.58	11425.71
343	99/03/14 05:20:00	2.850		100.58	11458.22
349	99/03/14 05:23:00	2.900		100.58	11490.94
355	99/03/14 05:26:00	2.950		100.50	11523.58
361	99/03/14 05:29:00	3.000		100.62	11486.18

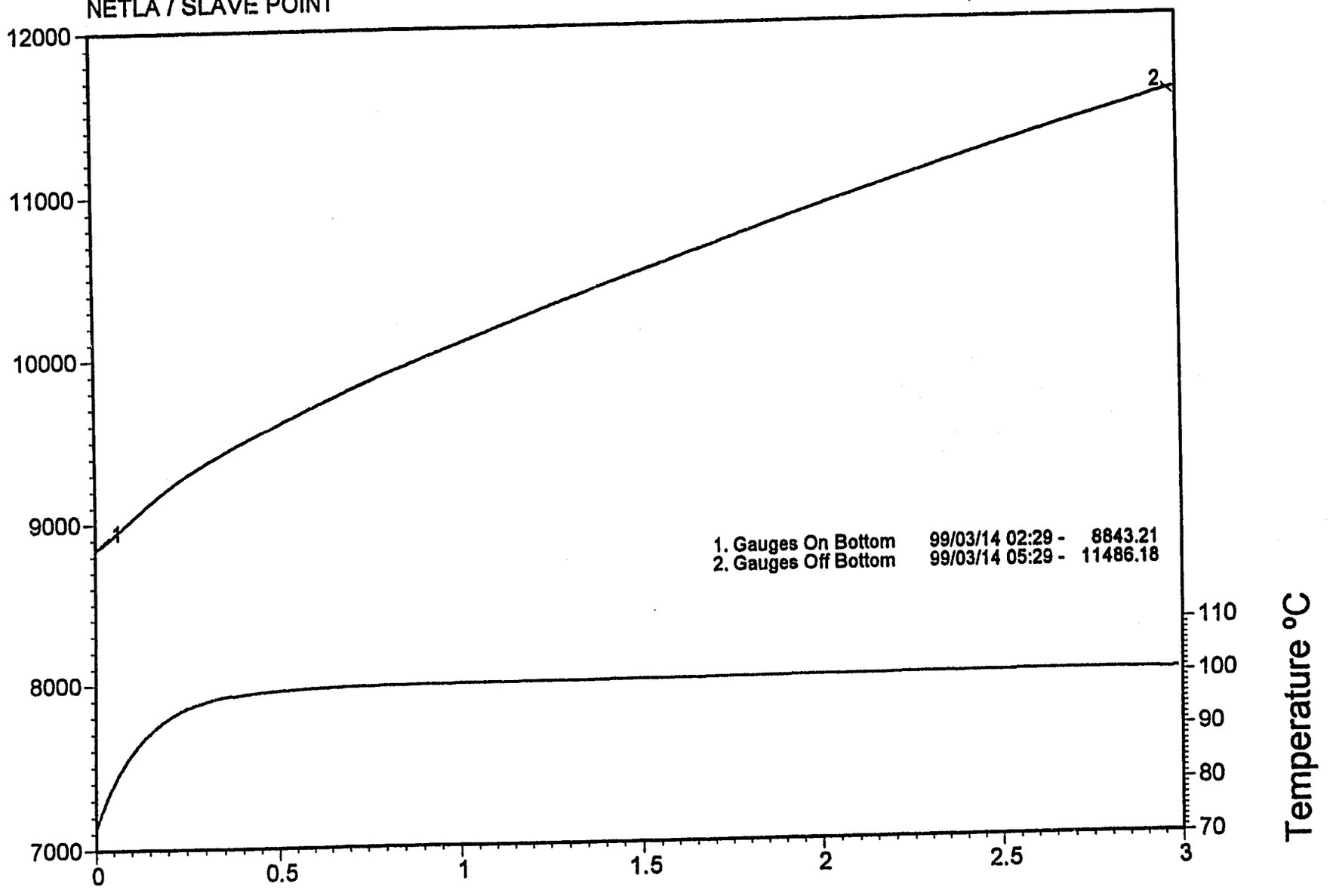
Recorders off bottom - 99/03/14 05:29:00

SUNCOR ENERGY INC.

SUNCOR NETLA (K-77-60-50-122-30)

FLOW & BUILD UP
NETLA / SLAVE POINT

Probe: 40013 [Bottom]
Depth: 2046.2 mGL



NORTHLAND

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WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC.
K-77-60-50-122-30
99/03/14

Northland

Quartz Pressure Recorder

1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC.
Address:	112 - 4 AVE. S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	STATIC GRADIENT
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.2
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	40013 [Bottom]
Probe Range:	0 - 51711 kPag
Last Calibration Date:	98/09/29
Time interval - Normal/Fast:	30S/NONE
Tubing Pressure **Initial** 6895	**Final** 10270 kPag
Casing Pressure **Initial** 970	**Final** 0 kPag
Run Depth (mGL):	1986.86
Time On Bottom:	99/03/14 05:09:00
Time Off Bottom:	99/03/14 05:29:00
Temperature @ Run Depth:	100.4 °C
Gradient @ Run Depth:	0.96 kPa/m
Pressure @ Run Depth:	11534.5 kPag
Pressure @ MPP	11591.5 kPag
Pressure @ Datum Depth:	kPag
Shutin Date:	99/03/14 01:30
Date of Test:	99/03/14

Comments:

GRADIENT STOPS IN TVD mGL / 69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL / 69.85 mm QX NIPPLE @ 1978.89
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
69.85 mm QXN NIPPLE @ 1982.75 mGL / REPORT TO DAVE HERRERA

NORTHLAND

NORTHLAND

Subsurface Pressure Measurements

Company: SUNCOR ENERGY INC.
Well Name: SUNCOR NETLA
Unique Well Id: K-77-60-50-122-30
Date of Test: 99/03/14 00:00:00

Readings and Calculations For Static Gradient

Depth Stops (TVD)	Time Stop			Pressure kPag	Gradient kPa/m
Surface	6:51	-	7:01	10286.64	0.00
500.00	6:36	-	6:46	10700.48	0.83
1000.00	6:21	-	6:31	11062.65	0.72
1434.90	6:06	-	6:16	11293.66	0.53
1741.16	5:53	-	6:03	11462.06	0.55
1840.74	5:42	-	5:52	11481.05	0.19
1940.64	5:30	-	5:40	11490.27	0.09
1986.86	5:09	-	5:29	11534.55	0.96

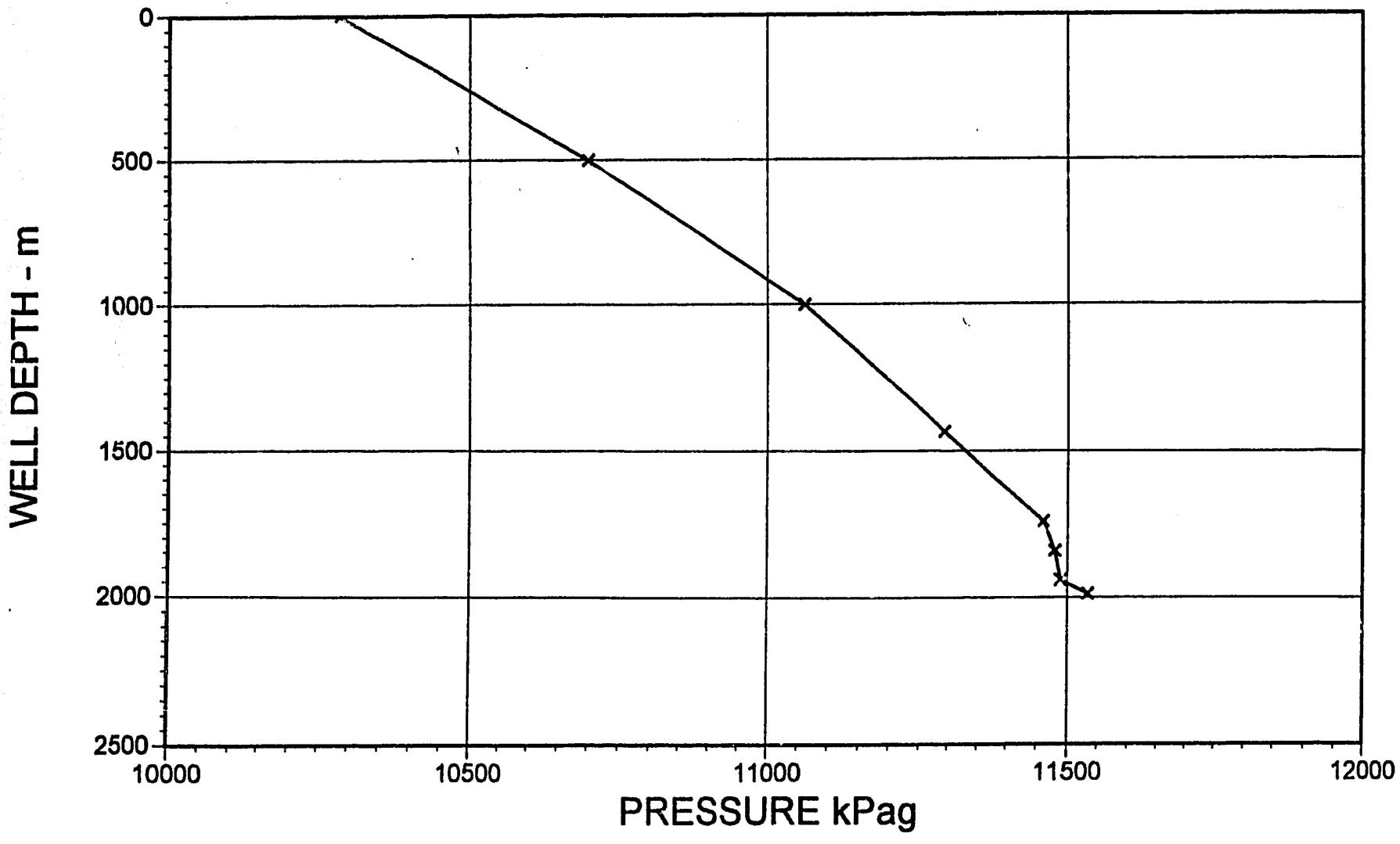
Temperature On Bottom: 100.4

Recorder # 40013 [bottom]

SUNCOR ENERGY INC.

SUNCOR NETLA (K-77-60-50-122-30)

STATIC GRADIENT (99/03/14 00:00:00)



Recorder # 40013

NORTHLAND

NORTHLAND
WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC.
K-77-60-50-122-30
99/03/16 - 99/05/06

Northland

Quartz Pressure Recorder

1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC.
Address:	112 - 4 AVE .S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	INJECTION FALLOFF
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.20
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	40014 [Top]
Probe Range:	0 - 51711 kPag
Last Calibration Date:	98/09/29
Time Interval - Normal/Fast:	2M/10S
Tubing Pressure **Initial** 2465	**Final** 14050 kPag
Casing Pressure **Initial** 0.0	**Final** 0 kPag
Run Depth (mGL):	1984
Time On Bottom:	99/03/16 17:42:00
Time Off Bottom:	99/05/06 11:30:00
Maximum Temperature:	105.2 °C
Date of Test:	99/03/16

Comments:

69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL
69.85 mm QX NIPPLE @ 1978.89 mGL
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
REPORT TO DAVE HERRERA

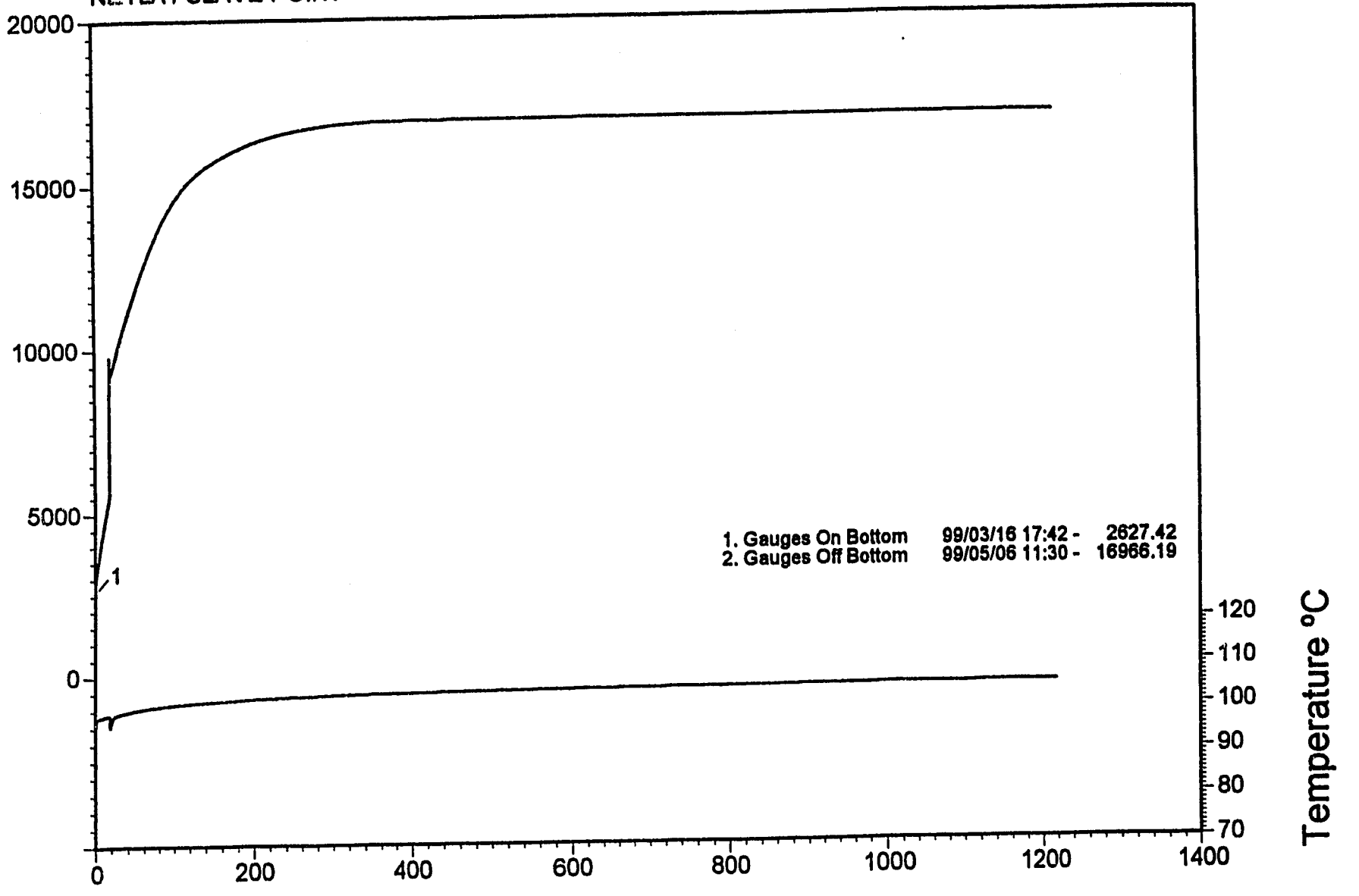
NORTHLAND

SUNCOR ENERGY INC.

SUNCOR NETLA (K-77-60-50-122-30)

INJECTION FALLOFF
NETLA / SLAVE POINT

Probe: 40014 [Top]
Depth: 1984 mGL



NORTHLAND

Programmed Sample Intervals

From	To	Primary	Fast
99/03/16 16:57:00	—End of Run—	2M	10S

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
	Recorders on bottom - 99/03/16 17:42:00				
1	99/03/16 17:42:00	0.000		76.53	2627.42*
121	99/03/16 20:25:00	2.717		98.68	3310.85
241	99/03/17 00:25:00	6.717		98.85	3955.43
361	99/03/17 04:25:00	10.717		99.02	4561.58
481	99/03/17 08:25:00	14.717		99.21	5143.56
601	99/03/17 11:31:50	17.831		98.64	6169.79*
721	99/03/17 11:51:50	18.164		97.59	7856.57*
841	99/03/17 12:11:50	18.497		97.13	9206.03*
961	99/03/17 14:31:00	20.817		98.31	9304.92
1081	99/03/17 18:31:00	24.817		99.28	9676.33
1201	99/03/17 22:31:00	28.817		99.53	10044.33
1321	99/03/18 02:31:00	32.817		99.77	10400.61
1441	99/03/18 06:31:00	36.817		99.95	10739.50
1561	99/03/18 10:31:00	40.817		100.11	11065.41
1681	99/03/18 14:31:00	44.817		100.26	11378.57
1801	99/03/18 18:31:00	48.817		100.41	11679.21
1921	99/03/18 22:31:00	52.817		100.54	11966.63
2041	99/03/19 02:31:00	56.817		100.65	12240.91
2161	99/03/19 06:31:00	60.817		100.74	12502.29
2281	99/03/19 10:31:00	64.817		100.85	12751.28
2401	99/03/19 14:31:00	68.817		100.95	12988.05
2521	99/03/19 18:31:00	72.817		101.04	13212.75
2641	99/03/19 22:31:00	76.817		101.13	13425.27
2761	99/03/20 02:31:00	80.817		101.21	13626.21
2881	99/03/20 06:31:00	84.817		101.30	13815.97
3001	99/03/20 10:31:00	88.817		101.37	13994.93
3121	99/03/20 14:31:00	92.817		101.46	14162.17
3241	99/03/20 18:31:00	96.817		101.53	14319.73
3361	99/03/20 22:31:00	100.817		101.60	14467.57
3481	99/03/21 02:31:00	104.817		101.66	14606.22
3601	99/03/21 06:31:00	108.817		101.73	14736.05
3721	99/03/21 10:31:00	112.817		101.79	14857.30
3841	99/03/21 14:31:00	116.817		101.85	14970.48
3961	99/03/21 18:31:00	120.817		101.91	15076.07
4081	99/03/21 22:31:00	124.817		101.96	15174.51
4201	99/03/22 02:31:00	128.817		102.01	15266.49
4321	99/03/22 06:31:00	132.817		102.06	15352.37
4441	99/03/22 10:31:00	136.817		102.11	15433.22
4561	99/03/22 14:31:00	140.817		102.16	15509.24
4681	99/03/22 18:31:00	144.817		102.22	15580.76
4801	99/03/22 22:31:00	148.817		102.26	15648.15
4921	99/03/23 02:31:00	152.817		102.30	15711.84
5041	99/03/23 06:31:00	156.817		102.35	15772.14
5161	99/03/23 10:31:00	160.817		102.40	15829.47

*** denotes fast readings** **Run depth: 1984** **Recorder: 40014**

SUNCOR ENERGY INC. SUNCOR NETLA (K-77-60-50-122-30)

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
5281	99/03/23 14:31:00	164.817		102.45	15884.10
5401	99/03/23 18:31:00	168.817		102.49	15935.82
5521	99/03/23 22:31:00	172.817		102.53	15985.26
5641	99/03/24 02:31:00	176.817		102.57	16032.56
5761	99/03/24 06:31:00	180.817		102.61	16077.66
5881	99/03/24 10:31:00	184.817		102.65	16121.01
6001	99/03/24 14:31:00	188.817		102.69	16162.42
6121	99/03/24 18:31:00	192.817		102.73	16201.88
6241	99/03/24 22:31:00	196.817		102.76	16239.86
6361	99/03/25 02:31:00	200.817		102.80	16276.04
6481	99/03/25 06:31:00	204.817		102.83	16310.79
6601	99/03/25 10:31:00	208.817		102.86	16344.19
6721	99/03/25 14:31:00	212.817		102.90	16376.03
6841	99/03/25 18:31:00	216.817		102.92	16406.61
6961	99/03/25 22:31:00	220.817		102.95	16436.08
7081	99/03/26 02:31:00	224.817		102.98	16464.11
7201	99/03/26 06:31:00	228.817		103.02	16490.92
7321	99/03/26 10:31:00	232.817		103.05	16516.57
7441	99/03/26 14:31:00	236.817		103.07	16541.30
7561	99/03/26 18:31:00	240.817		103.10	16564.70
7681	99/03/26 22:31:00	244.817		103.13	16587.00
7801	99/03/27 02:31:00	248.817		103.16	16608.15
7921	99/03/27 06:31:00	252.817		103.18	16628.41
8041	99/03/27 10:31:00	256.817		103.21	16647.80
8161	99/03/27 14:31:00	260.817		103.24	16666.17
8281	99/03/27 18:31:00	264.817		103.26	16683.47
8401	99/03/27 22:31:00	268.817		103.29	16699.99
8521	99/03/28 02:31:00	272.817		103.31	16715.70
8641	99/03/28 06:31:00	276.817		103.33	16730.62
8761	99/03/28 10:31:00	280.817		103.36	16744.81
8881	99/03/28 14:31:00	284.817		103.38	16758.14
9001	99/03/28 18:31:00	288.817		103.40	16770.73
9121	99/03/28 22:31:00	292.817		103.43	16782.54
9241	99/03/29 02:31:00	296.817		103.45	16793.81
9361	99/03/29 06:31:00	300.817		103.47	16804.27
9481	99/03/29 10:31:00	304.817		103.49	16814.11
9601	99/03/29 14:31:00	308.817		103.51	16823.63
9721	99/03/29 18:31:00	312.817		103.53	16832.36
9841	99/03/29 22:31:00	316.817		103.55	16840.44
9961	99/03/30 02:31:00	320.817		103.57	16848.07
10081	99/03/30 06:31:00	324.817		103.59	16855.25
10201	99/03/30 10:31:00	328.817		103.61	16861.89
10321	99/03/30 14:31:00	332.817		103.63	16868.12
10441	99/03/30 18:31:00	336.817		103.65	16873.90
10561	99/03/30 22:31:00	340.817		103.66	16879.23
10681	99/03/31 02:31:00	344.817		103.68	16884.20
10801	99/03/31 06:31:00	348.817		103.70	16888.95
10921	99/03/31 10:31:00	352.817		103.72	16893.42
11041	99/03/31 14:31:00	356.817		103.73	16897.48
11161	99/03/31 18:31:00	360.817		103.75	16901.09
11281	99/03/31 22:31:00	364.817		103.77	16904.45
11401	99/04/01 02:31:00	368.817		103.78	16907.65
11521	99/04/01 06:31:00	372.817		103.80	16910.52

* denotes fast readings Run depth: 1984 Recorder: 40014

SUNCOR ENERGY INC. SUNCOR NETLA (K-77-60-50-122-30)

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
11641	99/04/01 10:31:00	376.817		103.82	16913.18
11761	99/04/01 14:31:00	380.817		103.83	16915.72
11881	99/04/01 18:31:00	384.817		103.85	16917.98
12001	99/04/01 22:31:00	388.817		103.86	16920.07
12121	99/04/02 02:31:00	392.817		103.88	16921.91
12241	99/04/02 06:31:00	396.817		103.89	16923.76
12361	99/04/02 10:31:00	400.817		103.91	16925.48
12481	99/04/02 14:31:00	404.817		103.92	16927.07
12601	99/04/02 18:31:00	408.817		103.94	16928.42
12721	99/04/02 22:31:00	412.817		103.95	16929.65
12841	99/04/03 02:31:00	416.817		103.97	16930.92
12961	99/04/03 06:31:00	420.817		103.98	16932.07
13081	99/04/03 10:31:00	424.817		103.99	16933.22
13201	99/04/03 14:31:00	428.817		104.00	16934.24
13321	99/04/03 18:31:00	432.817		104.02	16935.10
13441	99/04/03 22:31:00	436.817		104.04	16935.87
13561	99/04/04 02:31:00	440.817		104.05	16936.65
13681	99/04/04 06:31:00	444.817		104.06	16937.43
13801	99/04/04 10:31:00	448.817		104.07	16938.21
13921	99/04/04 14:31:00	452.817		104.08	16938.94
14041	99/04/04 18:31:00	456.817		104.09	16939.60
14161	99/04/04 22:31:00	460.817		104.11	16940.13
14281	99/04/05 02:31:00	464.817		104.12	16940.62
14401	99/04/05 06:31:00	468.817		104.13	16941.15
14521	99/04/05 10:31:00	472.817		104.14	16941.76
14641	99/04/05 14:31:00	476.817		104.16	16942.25
14761	99/04/05 18:31:00	480.817		104.17	16942.70
14881	99/04/05 22:31:00	484.817		104.18	16943.07
15001	99/04/06 02:31:00	488.817		104.19	16943.52
15121	99/04/06 06:31:00	492.817		104.20	16943.93
15241	99/04/06 10:31:00	496.817		104.22	16944.38
15361	99/04/06 14:31:00	500.817		104.22	16944.83
15481	99/04/06 18:31:00	504.817		104.23	16945.15
15601	99/04/06 22:31:00	508.817		104.25	16945.39
15721	99/04/07 02:31:00	512.817		104.25	16945.85
15841	99/04/07 06:31:00	516.817		104.27	16946.21
15961	99/04/07 10:31:00	520.817		104.28	16946.54
16081	99/04/07 14:31:00	524.817		104.29	16946.91
16201	99/04/07 18:31:00	528.817		104.30	16947.11
16321	99/04/07 22:31:00	532.817		104.30	16947.52
16441	99/04/08 02:31:00	536.817		104.32	16947.76
16561	99/04/08 06:31:00	540.817		104.33	16948.00
16681	99/04/08 10:31:00	544.817		104.34	16948.37
16801	99/04/08 14:31:00	548.817		104.35	16948.62
16921	99/04/08 18:31:00	552.817		104.36	16948.99
17041	99/04/08 22:31:00	556.817		104.36	16949.27
17161	99/04/09 02:31:00	560.817		104.38	16949.51
17281	99/04/09 06:31:00	564.817		104.38	16949.84
17401	99/04/09 10:31:00	568.817		104.39	16950.17
17521	99/04/09 14:31:00	572.817		104.40	16950.45
17641	99/04/09 18:31:00	576.817		104.41	16950.66
17761	99/04/09 22:31:00	580.817		104.42	16950.82
17881	99/04/10 02:31:00	584.817		104.43	16951.06

* denotes fast readings

Run depth: 1984

Recorder: 40014

SUNCOR ENERGY INC. SUNCOR NETLA (K-77-60-50-122-30)

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
30721	99/04/27 22:31:00	1012.817		105.05	16965.97
30841	99/04/28 02:31:00	1016.817		105.05	16966.01
30961	99/04/28 06:31:00	1020.817		105.05	16966.14
31081	99/04/28 10:31:00	1024.817		105.06	16966.26
31201	99/04/28 14:31:00	1028.817		105.07	16966.38
31321	99/04/28 18:31:00	1032.817		105.07	16966.46
31441	99/04/28 22:31:00	1036.817		105.07	16966.42
31561	99/04/29 02:31:00	1040.817		105.07	16966.50
31681	99/04/29 06:31:00	1044.817		105.07	16966.67
31801	99/04/29 10:31:00	1048.817		105.08	16966.79
31921	99/04/29 14:31:00	1052.817		105.09	16966.83
32041	99/04/29 18:31:00	1056.817		105.09	16966.91
32161	99/04/29 22:31:00	1060.817		105.09	16966.95
32281	99/04/30 02:31:00	1064.817		105.09	16966.99
32401	99/04/30 06:31:00	1068.817		105.10	16967.07
32521	99/04/30 10:31:00	1072.817		105.10	16967.28
32641	99/04/30 14:31:00	1076.817		105.11	16967.32
32761	99/04/30 18:31:00	1080.817		105.11	16967.40
32881	99/04/30 22:31:00	1084.817		105.11	16967.40
33001	99/05/01 02:31:00	1088.817		105.12	16967.36
33121	99/05/01 06:31:00	1092.817		105.12	16967.48
33241	99/05/01 10:31:00	1096.817		105.12	16967.64
33361	99/05/01 14:31:00	1100.817		105.12	16967.68
33481	99/05/01 18:31:00	1104.817		105.13	16967.72
33601	99/05/01 22:31:00	1108.817		105.13	16967.72
33721	99/05/02 02:31:00	1112.817		105.14	16967.80
33841	99/05/02 06:31:00	1116.817		105.14	16967.89
33961	99/05/02 10:31:00	1120.817		105.14	16968.05
34081	99/05/02 14:31:00	1124.817		105.14	16968.05
34201	99/05/02 18:31:00	1128.817		105.15	16968.05
34321	99/05/02 22:31:00	1132.817		105.15	16968.09
34441	99/05/03 02:31:00	1136.817		105.16	16968.13
34561	99/05/03 06:31:00	1140.817		105.16	16968.21
34681	99/05/03 10:31:00	1144.817		105.16	16968.29
34801	99/05/03 14:31:00	1148.817		105.16	16968.33
34921	99/05/03 18:31:00	1152.817		105.16	16968.46
35041	99/05/03 22:31:00	1156.817		105.17	16968.50
35161	99/05/04 02:31:00	1160.817		105.17	16968.58
35281	99/05/04 06:31:00	1164.817		105.18	16968.62
35401	99/05/04 10:31:00	1168.817		105.18	16968.70
35521	99/05/04 14:31:00	1172.817		105.18	16968.70
35641	99/05/04 18:31:00	1176.817		105.18	16968.82
35761	99/05/04 22:31:00	1180.817		105.19	16968.78
35881	99/05/05 02:31:00	1184.817		105.19	16968.90
36001	99/05/05 06:31:00	1188.817		105.19	16968.90
36121	99/05/05 10:31:00	1192.817		105.19	16968.98
36241	99/05/05 14:31:00	1196.817		105.19	16969.15
36361	99/05/05 18:31:00	1200.817		105.20	16969.15
36481	99/05/05 22:31:00	1204.817		105.21	16969.06
36601	99/05/06 02:31:00	1208.817		105.21	16969.15
36721	99/05/06 06:31:00	1212.817		105.21	16969.23
36841	99/05/06 10:31:00	1216.817		105.21	16963.72

Recorders off bottom - 99/05/06 11:30:00

* denotes fast readings Run depth: 1984 Recorder: 40014

NORTHLAND
WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC.
K-77-60-50-122-30
99/03/16 - 99/05/06

Northland

Quartz Pressure Recorder

1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC.
Address:	112 - 4 AVE .S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	INJECTION FALLOFF
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.20
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	40013 [Bottom]
Probe Range:	0 - 51711 kPag
Last Calibration Date:	98/09/29
Time Interval - Normal/Fast:	2M/10S

Tubing Pressure	**Initial**	2465	**Final**	14050 kPag
Casing Pressure	**Initial**	0.0	**Final**	0 kPag

Run Depth (mGL):	1985
Time On Bottom:	99/03/16 17:42:00
Time Off Bottom:	99/05/06 11:30:00
Maximum Temperature:	104.7 °C
Date of Test:	99/03/16

Comments:

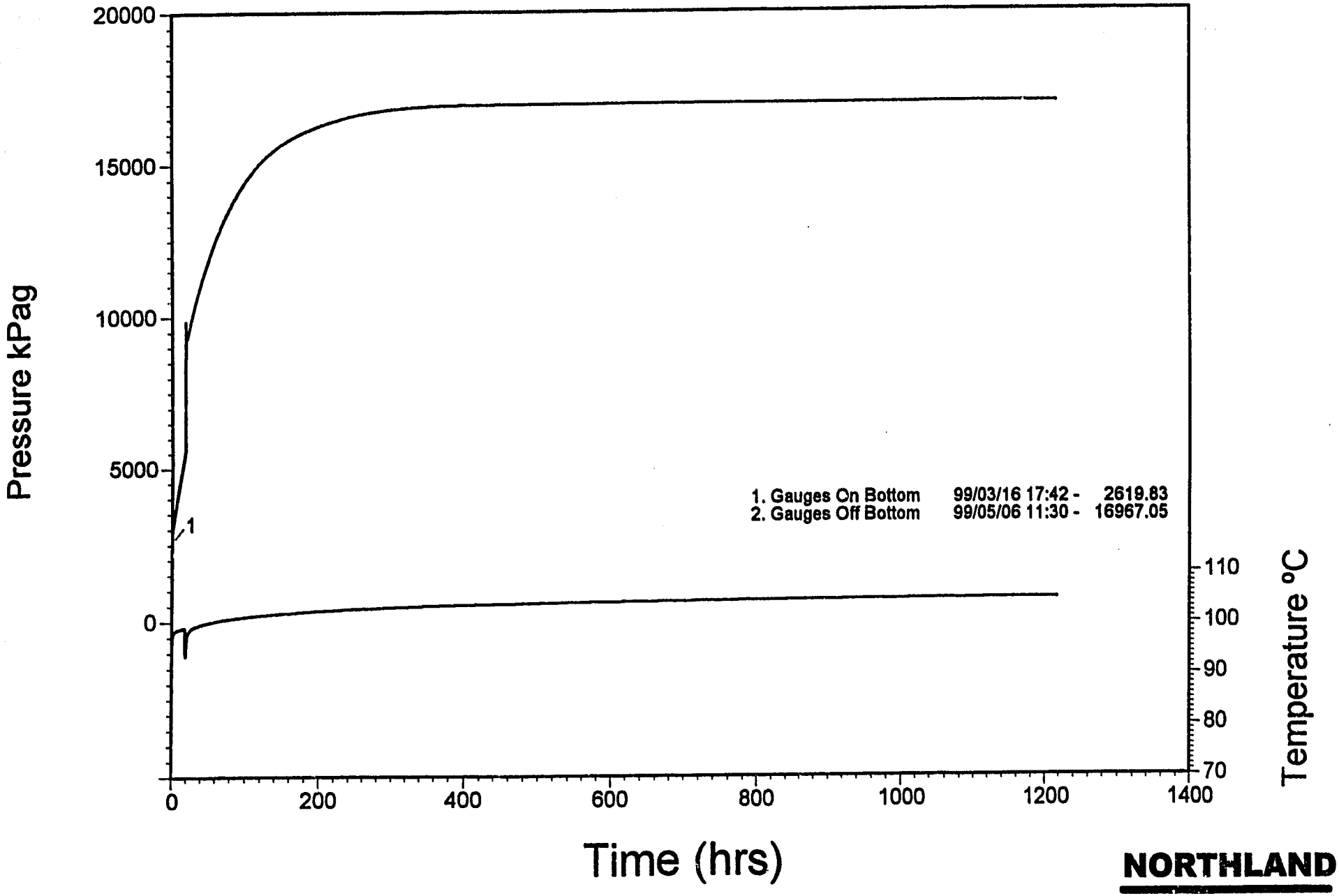
69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL
69.85 mm QX NIPPLE @ 1978.89 mGL
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
REPORT TO DAVE HERRERA

SUNCOR ENERGY INC.

SUNCOR NETLA (K-77-60-50-122-30)

INJECTION FALLOFF
NETLA / SLAVE POINT

Probe: 40013 [Bottom]
Depth: 1985 mGL



NORTHLAND

Programmed Sample Intervals

From	To	Primary	Fast
99/03/16 16:59:00	—End of Run—	2M	10S

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
	Recorders on bottom - 99/03/16 17:42:00				
1	99/03/16 17:42:00	0.000		71.68	2619.83*
121	99/03/16 21:31:00	3.817		98.46	3491.97
241	99/03/17 01:31:00	7.817		98.68	4125.84
361	99/03/17 05:31:00	11.817		98.84	4724.24
481	99/03/17 09:31:00	15.817		99.01	5299.80
601	99/03/17 11:37:20	17.922		97.66	6710.97*
721	99/03/17 11:57:20	18.256		94.96	8214.38*
841	99/03/17 12:17:20	18.589		94.11	9577.62*
961	99/03/17 15:37:00	21.917		98.06	9457.55
1081	99/03/17 19:37:00	25.917		98.80	9862.45
1201	99/03/17 23:37:00	29.917		99.18	10256.76
1321	99/03/18 03:37:00	33.917		99.40	10604.59
1441	99/03/18 07:37:00	37.917		99.60	10929.29
1561	99/03/18 11:37:00	41.917		99.76	11240.86
1681	99/03/18 15:37:00	45.917		99.91	11540.53
1801	99/03/18 19:37:00	49.917		100.04	11827.62
1921	99/03/18 23:37:00	53.917		100.18	12101.88
2041	99/03/19 03:37:00	57.917		100.30	12363.89
2161	99/03/19 07:37:00	61.917		100.40	12613.36
2281	99/03/19 11:37:00	65.917		100.51	12850.92
2401	99/03/19 15:37:00	69.917		100.61	13076.67
2521	99/03/19 19:37:00	73.917		100.69	13290.53
2641	99/03/19 23:37:00	77.917		100.78	13492.82
2761	99/03/20 03:37:00	81.917		100.86	13684.08
2881	99/03/20 07:37:00	85.917		100.94	13864.52
3001	99/03/20 11:37:00	89.917		101.01	14042.32
3121	99/03/20 15:37:00	93.917		101.08	14207.35
3241	99/03/20 19:37:00	97.917		101.15	14362.24
3361	99/03/20 23:37:00	101.917		101.22	14507.56
3481	99/03/21 03:37:00	105.917		101.29	14643.58
3601	99/03/21 07:37:00	109.917		101.35	14770.99
3721	99/03/21 11:37:00	113.917		101.41	14890.11
3841	99/03/21 15:37:00	117.917		101.46	15001.16
3961	99/03/21 19:37:00	121.917		101.51	15104.59
4081	99/03/21 23:37:00	125.917		101.57	15201.23
4201	99/03/22 03:37:00	129.917		101.61	15291.44
4321	99/03/22 07:37:00	133.917		101.67	15375.99
4441	99/03/22 11:37:00	137.917		101.71	15455.40
4561	99/03/22 15:37:00	141.917		101.76	15530.08
4681	99/03/22 19:37:00	145.917		101.80	15600.49
4801	99/03/22 23:37:00	149.917		101.84	15666.70
4921	99/03/23 03:37:00	153.917		101.89	15729.48
5041	99/03/23 07:37:00	157.917		101.91	15788.49
5161	99/03/23 11:37:00	161.917		101.95	15845.05

*** denotes fast readings** **Run depth: 1985** **Recorder: 40013**

SUNCOR ENERGY INC. SUNCOR NETLA (K-77-60-50-122-30)

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
5281	99/03/23 15:37:00	165.917		102.00	15898.72
5401	99/03/23 19:37:00	169.917		102.05	15950.08
5521	99/03/23 23:37:00	173.917		102.10	15998.87
5641	99/03/24 03:37:00	177.917		102.13	16045.65
5761	99/03/24 07:37:00	181.917		102.18	16090.26
5881	99/03/24 11:37:00	185.917		102.22	16133.11
6001	99/03/24 15:37:00	189.917		102.24	16173.98
6121	99/03/24 19:37:00	193.917		102.29	16212.99
6241	99/03/24 23:37:00	197.917		102.32	16250.51
6361	99/03/25 03:37:00	201.917		102.35	16286.27
6481	99/03/25 07:37:00	205.917		102.39	16320.62
6601	99/03/25 11:37:00	209.917		102.41	16353.60
6721	99/03/25 15:37:00	213.917		102.44	16385.16
6841	99/03/25 19:37:00	217.917		102.48	16415.33
6961	99/03/25 23:37:00	221.917		102.51	16444.24
7081	99/03/26 03:37:00	225.917		102.54	16472.14
7201	99/03/26 07:37:00	229.917		102.57	16498.69
7321	99/03/26 11:37:00	233.917		102.59	16524.10
7441	99/03/26 15:37:00	237.917		102.62	16548.30
7561	99/03/26 19:37:00	241.917		102.65	16571.57
7681	99/03/26 23:37:00	245.917		102.68	16593.51
7801	99/03/27 03:37:00	249.917		102.70	16614.43
7921	99/03/27 07:37:00	253.917		102.73	16634.33
8041	99/03/27 11:37:00	257.917		102.76	16653.35
8161	99/03/27 15:37:00	261.917		102.78	16671.59
8281	99/03/27 19:37:00	265.917		102.80	16688.70
8401	99/03/27 23:37:00	269.917		102.83	16704.92
8521	99/03/28 03:37:00	273.917		102.85	16720.40
8641	99/03/28 07:37:00	277.917		102.88	16735.09
8761	99/03/28 11:37:00	281.917		102.90	16749.11
8881	99/03/28 15:37:00	285.917		102.92	16762.31
9001	99/03/28 19:37:00	289.917		102.94	16774.63
9121	99/03/28 23:37:00	293.917		102.96	16786.29
9241	99/03/29 03:37:00	297.917		102.98	16797.28
9361	99/03/29 07:37:00	301.917		103.00	16807.63
9481	99/03/29 11:37:00	305.917		103.02	16817.36
9601	99/03/29 15:37:00	309.917		103.04	16826.73
9721	99/03/29 19:37:00	313.917		103.07	16835.22
9841	99/03/29 23:37:00	317.917		103.09	16843.17
9961	99/03/30 03:37:00	321.917		103.11	16850.68
10081	99/03/30 07:37:00	325.917		103.13	16857.72
10201	99/03/30 11:37:00	329.917		103.14	16864.22
10321	99/03/30 15:37:00	333.917		103.16	16870.43
10441	99/03/30 19:37:00	337.917		103.18	16875.97
10561	99/03/30 23:37:00	341.917		103.20	16881.28
10681	99/03/31 03:37:00	345.917		103.21	16886.12
10801	99/03/31 07:37:00	349.917		103.23	16890.83
10921	99/03/31 11:37:00	353.917		103.24	16895.20
11041	99/03/31 15:37:00	357.917		103.26	16899.12
11161	99/03/31 19:37:00	361.917		103.28	16902.69
11281	99/03/31 23:37:00	365.917		103.29	16905.98
11401	99/04/01 03:37:00	369.917		103.31	16909.04
11521	99/04/01 07:37:00	373.917		103.33	16911.86

* denotes fast readings

Run depth: 1985

Recorder: 40013

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
11641	99/04/01 11:37:00	377.917		103.34	16914.57
11761	99/04/01 15:37:00	381.917		103.36	16916.99
11881	99/04/01 19:37:00	385.917		103.37	16919.23
12001	99/04/01 23:37:00	389.917		103.39	16921.25
12121	99/04/02 03:37:00	393.917		103.40	16923.13
12241	99/04/02 07:37:00	397.917		103.42	16924.89
12361	99/04/02 11:37:00	401.917		103.43	16926.61
12481	99/04/02 15:37:00	405.917		103.45	16928.12
12601	99/04/02 19:37:00	409.917		103.46	16929.49
12721	99/04/02 23:37:00	413.917		103.48	16930.69
12841	99/04/03 03:37:00	417.917		103.49	16931.90
12961	99/04/03 07:37:00	421.917		103.50	16933.03
13081	99/04/03 11:37:00	425.917		103.52	16934.16
13201	99/04/03 15:37:00	429.917		103.53	16935.17
13321	99/04/03 19:37:00	433.917		103.54	16936.02
13441	99/04/03 23:37:00	437.917		103.55	16936.83
13561	99/04/04 03:37:00	441.917		103.57	16937.60
13681	99/04/04 07:37:00	445.917		103.58	16938.37
13801	99/04/04 11:37:00	449.917		103.59	16939.14
13921	99/04/04 15:37:00	453.917		103.61	16939.80
14041	99/04/04 19:37:00	457.917		103.62	16940.41
14161	99/04/04 23:37:00	461.917		103.63	16940.95
14281	99/04/05 03:37:00	465.917		103.64	16941.45
14401	99/04/05 07:37:00	469.917		103.65	16942.03
14521	99/04/05 11:37:00	473.917		103.66	16942.64
14641	99/04/05 15:37:00	477.917		103.68	16943.17
14761	99/04/05 19:37:00	481.917		103.69	16943.55
14881	99/04/05 23:37:00	485.917		103.70	16943.94
15001	99/04/06 03:37:00	489.917		103.71	16944.39
15121	99/04/06 07:37:00	493.917		103.72	16944.81
15241	99/04/06 11:37:00	497.917		103.73	16945.28
15361	99/04/06 15:37:00	501.917		103.74	16945.65
15481	99/04/06 19:37:00	505.917		103.76	16945.95
15601	99/04/06 23:37:00	509.917		103.76	16946.26
15721	99/04/07 03:37:00	513.917		103.78	16946.67
15841	99/04/07 07:37:00	517.917		103.79	16947.05
15961	99/04/07 11:37:00	521.917		103.79	16947.40
16081	99/04/07 15:37:00	525.917		103.81	16947.74
16201	99/04/07 19:37:00	529.917		103.81	16947.96
16321	99/04/07 23:37:00	533.917		103.83	16948.30
16441	99/04/08 03:37:00	537.917		103.83	16948.61
16561	99/04/08 07:37:00	541.917		103.85	16948.91
16681	99/04/08 11:37:00	545.917		103.86	16949.24
16801	99/04/08 15:37:00	549.917		103.87	16949.55
16921	99/04/08 19:37:00	553.917		103.87	16949.82
17041	99/04/08 23:37:00	557.917		103.88	16950.13
17161	99/04/09 03:37:00	561.917		103.89	16950.38
17281	99/04/09 07:37:00	565.917		103.91	16950.68
17401	99/04/09 11:37:00	569.917		103.91	16951.03
17521	99/04/09 15:37:00	573.917		103.92	16951.30
17641	99/04/09 19:37:00	577.917		103.92	16951.53
17761	99/04/09 23:37:00	581.917		103.94	16951.71
17881	99/04/10 03:37:00	585.917		103.94	16951.93

*** denotes fast readings** **Run depth: 1985** **Recorder: 40013**

SUNCOR ENERGY INC. **SUNCOR NETLA** **(K-77-60-50-122-30)**

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
18001	99/04/10 07:37:00	589.917		103.96	16952.19
18121	99/04/10 11:37:00	593.917		103.96	16952.62
18241	99/04/10 15:37:00	597.917		103.97	16952.85
18361	99/04/10 19:37:00	601.917		103.98	16952.99
18481	99/04/10 23:37:00	605.917		103.99	16953.13
18601	99/04/11 03:37:00	609.917		104.00	16953.40
18721	99/04/11 07:37:00	613.917		104.00	16953.63
18841	99/04/11 11:37:00	617.917		104.01	16953.94
18961	99/04/11 15:37:00	621.917		104.02	16954.12
19081	99/04/11 19:37:00	625.917		104.03	16954.31
19201	99/04/11 23:37:00	629.917		104.04	16954.42
19321	99/04/12 03:37:00	633.917		104.04	16954.64
19441	99/04/12 07:37:00	637.917		104.06	16954.86
19561	99/04/12 11:37:00	641.917		104.06	16955.09
19681	99/04/12 15:37:00	645.917		104.07	16955.28
19801	99/04/12 19:37:00	649.917		104.07	16955.43
19921	99/04/12 23:37:00	653.917		104.08	16955.58
20041	99/04/13 03:37:00	657.917		104.09	16955.77
20161	99/04/13 07:37:00	661.917		104.09	16955.92
20281	99/04/13 11:37:00	665.917		104.10	16956.22
20401	99/04/13 15:37:00	669.917		104.11	16956.37
20521	99/04/13 19:37:00	673.917		104.12	16956.55
20641	99/04/13 23:37:00	677.917		104.13	16956.66
20761	99/04/14 03:37:00	681.917		104.13	16956.85
20881	99/04/14 07:37:00	685.917		104.14	16957.04
21001	99/04/14 11:37:00	689.917		104.15	16957.27
21121	99/04/14 15:37:00	693.917		104.15	16957.46
21241	99/04/14 19:37:00	697.917		104.16	16957.61
21361	99/04/14 23:37:00	701.917		104.17	16957.68
21481	99/04/15 03:37:00	705.917		104.17	16957.82
21601	99/04/15 07:37:00	709.917		104.18	16958.09
21721	99/04/15 11:37:00	713.917		104.19	16958.28
21841	99/04/15 15:37:00	717.917		104.19	16958.43
21961	99/04/15 19:37:00	721.917		104.20	16958.58
22081	99/04/15 23:37:00	725.917		104.20	16958.69
22201	99/04/16 03:37:00	729.917		104.21	16958.84
22321	99/04/16 07:37:00	733.917		104.22	16959.03
22441	99/04/16 11:37:00	737.917		104.22	16959.25
22561	99/04/16 15:37:00	741.917		104.23	16959.36
22681	99/04/16 19:37:00	745.917		104.23	16959.48
22801	99/04/16 23:37:00	749.917		104.24	16959.55
22921	99/04/17 03:37:00	753.917		104.24	16959.66
23041	99/04/17 07:37:00	757.917		104.25	16959.81
23161	99/04/17 11:37:00	761.917		104.26	16960.08
23281	99/04/17 15:37:00	765.917		104.26	16960.19
23401	99/04/17 19:37:00	769.917		104.27	16960.30
23521	99/04/17 23:37:00	773.917		104.28	16960.37
23641	99/04/18 03:37:00	777.917		104.28	16960.53
23761	99/04/18 07:37:00	781.917		104.28	16960.72
23881	99/04/18 11:37:00	785.917		104.29	16960.94
24001	99/04/18 15:37:00	789.917		104.30	16961.05
24121	99/04/18 19:37:00	793.917		104.30	16961.16
24241	99/04/18 23:37:00	797.917		104.31	16961.19

* denotes fast readings Run depth: 1985 Recorder: 40013

SUNCOR ENERGY INC. SUNCOR NETLA (K-77-60-50-122-30)

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
24361	99/04/19 03:37:00	801.917		104.32	16961.38
24481	99/04/19 07:37:00	805.917		104.32	16961.49
24601	99/04/19 11:37:00	809.917		104.32	16961.69
24721	99/04/19 15:37:00	813.917		104.33	16961.84
24841	99/04/19 19:37:00	817.917		104.33	16961.87
24961	99/04/19 23:37:00	821.917		104.34	16961.94
25081	99/04/20 03:37:00	825.917		104.34	16962.06
25201	99/04/20 07:37:00	829.917		104.35	16962.29
25321	99/04/20 11:37:00	833.917		104.35	16962.44
25441	99/04/20 15:37:00	837.917		104.36	16962.63
25561	99/04/20 19:37:00	841.917		104.37	16962.62
25681	99/04/20 23:37:00	845.917		104.37	16962.66
25801	99/04/21 03:37:00	849.917		104.37	16962.77
25921	99/04/21 07:37:00	853.917		104.38	16962.99
26041	99/04/21 11:37:00	857.917		104.39	16963.10
26161	99/04/21 15:37:00	861.917		104.39	16963.22
26281	99/04/21 19:37:00	865.917		104.39	16963.29
26401	99/04/21 23:37:00	869.917		104.40	16963.40
26521	99/04/22 03:37:00	873.917		104.41	16963.51
26641	99/04/22 07:37:00	877.917		104.41	16963.67
26761	99/04/22 11:37:00	881.917		104.41	16963.78
26881	99/04/22 15:37:00	885.917		104.42	16963.97
27001	99/04/22 19:37:00	889.917		104.42	16963.97
27121	99/04/22 23:37:00	893.917		104.43	16964.08
27241	99/04/23 03:37:00	897.917		104.43	16964.19
27361	99/04/23 07:37:00	901.917		104.44	16964.30
27481	99/04/23 11:37:00	905.917		104.44	16964.42
27601	99/04/23 15:37:00	909.917		104.45	16964.53
27721	99/04/23 19:37:00	913.917		104.45	16964.56
27841	99/04/23 23:37:00	917.917		104.45	16964.63
27961	99/04/24 03:37:00	921.917		104.46	16964.71
28081	99/04/24 07:37:00	925.917		104.46	16964.85
28201	99/04/24 11:37:00	929.917		104.46	16965.05
28321	99/04/24 15:37:00	933.917		104.47	16965.08
28441	99/04/24 19:37:00	937.917		104.48	16965.19
28561	99/04/24 23:37:00	941.917		104.48	16965.23
28681	99/04/25 03:37:00	945.917		104.48	16965.30
28801	99/04/25 07:37:00	949.917		104.49	16965.41
28921	99/04/25 11:37:00	953.917		104.49	16965.53
29041	99/04/25 15:37:00	957.917		104.50	16965.68
29161	99/04/25 19:37:00	961.917		104.50	16965.76
29281	99/04/25 23:37:00	965.917		104.50	16965.75
29401	99/04/26 03:37:00	969.917		104.51	16965.90
29521	99/04/26 07:37:00	973.917		104.51	16965.98
29641	99/04/26 11:37:00	977.917		104.52	16966.13
29761	99/04/26 15:37:00	981.917		104.52	16966.24
29881	99/04/26 19:37:00	985.917		104.52	16966.32
30001	99/04/26 23:37:00	989.917		104.53	16966.39
30121	99/04/27 03:37:00	993.917		104.53	16966.47
30241	99/04/27 07:37:00	997.917		104.54	16966.54
30361	99/04/27 11:37:00	1001.917		104.54	16966.69
30481	99/04/27 15:37:00	1005.917		104.54	16966.80
30601	99/04/27 19:37:00	1009.917		104.54	16966.84

* denotes fast readings Run depth: 1985 Recorder: 40013

SUNCOR ENERGY INC. SUNCOR NETLA (K-77-60-50-122-30)

Item #	Date	Total Acc Time	Event Acc Time	Temp C	Pres kPag
30721	99/04/27 23:37:00	1013.917		104.55	16966.91
30841	99/04/28 03:37:00	1017.917		104.56	16966.98
30961	99/04/28 07:37:00	1021.917		104.56	16967.10
31081	99/04/28 11:37:00	1025.917		104.56	16967.25
31201	99/04/28 15:37:00	1029.917		104.56	16967.33
31321	99/04/28 19:37:00	1033.917		104.57	16967.36
31441	99/04/28 23:37:00	1037.917		104.57	16967.36
31561	99/04/29 03:37:00	1041.917		104.58	16967.47
31681	99/04/29 07:37:00	1045.917		104.58	16967.54
31801	99/04/29 11:37:00	1049.917		104.58	16967.70
31921	99/04/29 15:37:00	1053.917		104.59	16967.77
32041	99/04/29 19:37:00	1057.917		104.59	16967.89
32161	99/04/29 23:37:00	1061.917		104.59	16967.88
32281	99/04/30 03:37:00	1065.917		104.59	16967.88
32401	99/04/30 07:37:00	1069.917		104.60	16968.03
32521	99/04/30 11:37:00	1073.917		104.60	16968.15
32641	99/04/30 15:37:00	1077.917		104.61	16968.22
32761	99/04/30 19:37:00	1081.917		104.61	16968.26
32881	99/04/30 23:37:00	1085.917		104.61	16968.25
33001	99/05/01 03:37:00	1089.917		104.61	16968.33
33121	99/05/01 07:37:00	1093.917		104.62	16968.44
33241	99/05/01 11:37:00	1097.917		104.62	16968.56
33361	99/05/01 15:37:00	1101.917		104.63	16968.63
33481	99/05/01 19:37:00	1105.917		104.63	16968.66
33601	99/05/01 23:37:00	1109.917		104.63	16968.70
33721	99/05/02 03:37:00	1113.917		104.63	16968.77
33841	99/05/02 07:37:00	1117.917		104.64	16968.88
33961	99/05/02 11:37:00	1121.917		104.64	16968.96
34081	99/05/02 15:37:00	1125.917		104.64	16969.00
34201	99/05/02 19:37:00	1129.917		104.65	16968.99
34321	99/05/02 23:37:00	1133.917		104.65	16969.03
34441	99/05/03 03:37:00	1137.917		104.65	16969.10
34561	99/05/03 07:37:00	1141.917		104.66	16969.21
34681	99/05/03 11:37:00	1145.917		104.66	16969.21
34801	99/05/03 15:37:00	1149.917		104.66	16969.33
34921	99/05/03 19:37:00	1153.917		104.67	16969.36
35041	99/05/03 23:37:00	1157.917		104.67	16969.44
3516[illegible]	99/05/04 03:37:00	1161.917		104.67	16969.47
3528[illegible]	99/05/04 07:37:00	1165.917		104.67	16969.55
3540[illegible]	99/05/04 11:37:00	1169.917		104.68	16969.66
35521	99/05/04 15:37:00	1173.917		104.68	16969.66
35641	99/05/04 19:37:00	1177.917		104.69	16969.69
35761	99/05/04 23:37:00	1181.917		104.69	16969.77
35881	99/05/05 03:37:00	1185.917		104.69	16969.89
36001	99/05/05 07:37:00	1189.917		104.69	16969.88
36121	99/05/05 11:37:00	1193.917		104.69	16970.00
36241	99/05/05 15:37:00	1197.917		104.69	16970.04
36361	99/05/05 19:37:00	1201.917		104.70	16970.11
36481	99/05/05 23:37:00	1205.917		104.70	16970.11
36601	99/05/06 03:37:00	1209.917		104.71	16970.10
36721	99/05/06 07:37:00	1213.917		104.71	16970.21

Recorders off bottom - 99/05/06 11:30:00

* denotes fast readings Run depth: 1985 Recorder: 40013

NORTHLAND
WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC
K-77-60-50-122-30
99/05/06

Northland
ZI Pressure Recorder
1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC
Address:	112 - 4 AVE. S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	STATIC GRADIENT
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.20
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	P8 [Top]
Probe Range:	0 - 20684 kPag
Last Calibration Date:	99/02/16

Tubing Pressure	**Initial**	14025	**Final**	14000 kPag
Casing Pressure	**Initial**	0	**Final**	0 kPag

Run Depth (mGL):	2009.68
Time On Bottom:	99/05/06 18:31:00
Time Off Bottom:	99/05/06 18:36:00

Temperature @ Run Depth:	106.3	°C
Gradient @ Run Depth:	4.93	kPa/m
Pressure @ Run Depth:	17159.6	kPag
Pressure @ MPP	17339.7	kPag
Pressure @ Datum Depth:		kPag
Shutin Date:	99/03/17 12:30	
Date of Test:	99/05/06	

Comments:

ALL GRADIENT STOPS IN TVD mGL / 69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL
69.85 mm QX NIPPLE @ 1978.89 MGL
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
REPORT TO DAVE HERRERA / TAGGED PBD @ 2072 mGL

NORTHLAND

NORTHLAND

Subsurface Pressure Measurements

Company: SUNCOR ENERGY INC
Well Name: SUNCOR NETLA
Unique Well Id: K-77-60-50-122-30
Date of Test: 99/05/06 16:27:40

Readings and Calculations For Static Gradient

Depth Stops (TVD)	Time Stop			Pressure kPag	Gradient kPa/m
Surface	16:49	-	16:54	14069.19	0.00
499.00	17:03	-	17:08	14914.26	1.69
999.00	17:16	-	17:21	15716.93	1.61
1463.91	17:29	-	17:34	16389.67	1.45
1740.16	17:38	-	17:43	16742.34	1.28
1839.74	17:45	-	17:50	16862.47	1.21
1939.64	17:52	-	17:57	16983.29	1.21
1985.86	17:59	-	18:29	17042.19	1.27
2009.68	18:31	-	18:36	17159.64	4.93

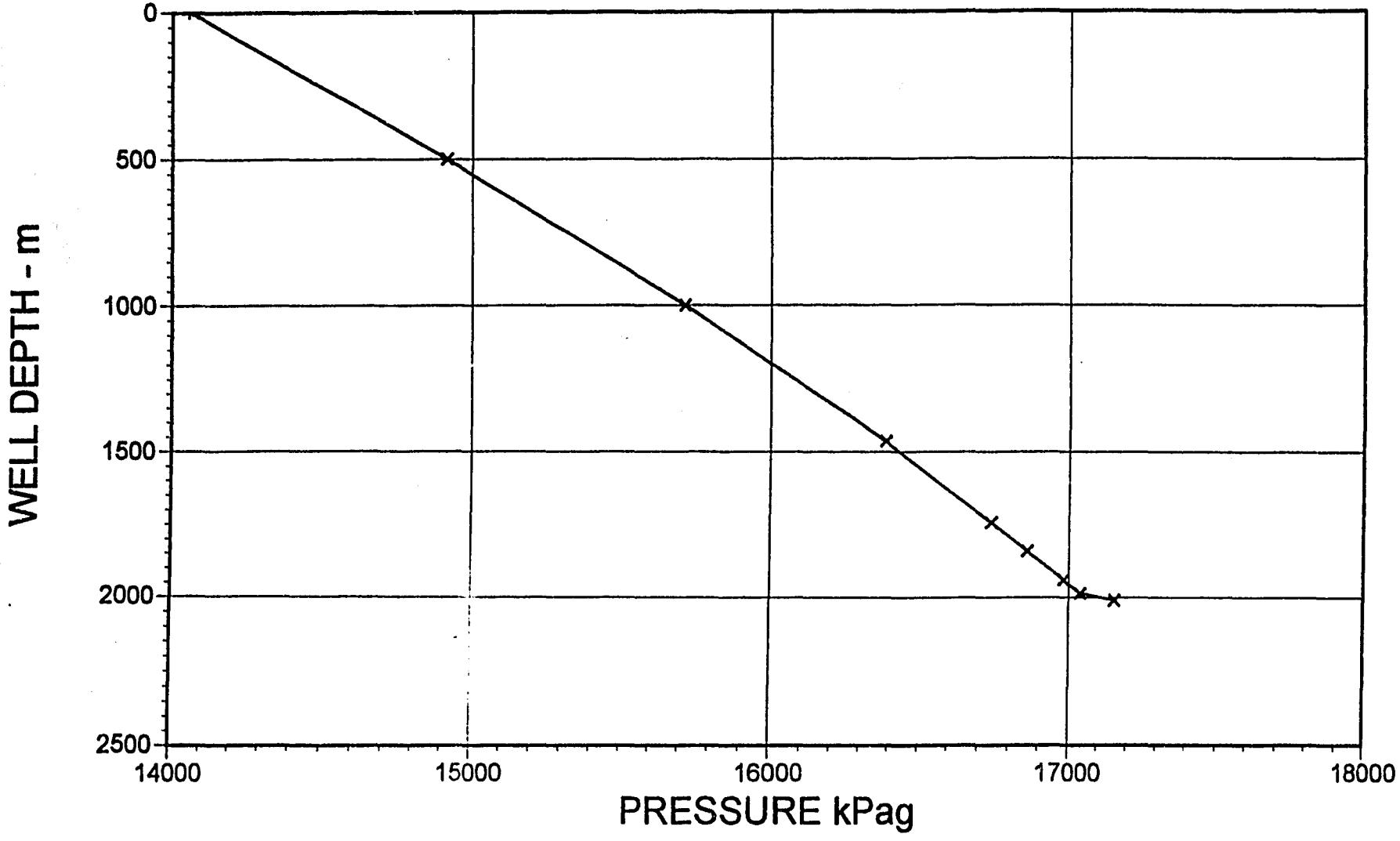
Temperature On Bottom: 106.3

Recorder # P8 [top]

SUNCOR ENERGY INC

SUNCOR NETLA (K-77-60-50-122-30)

STATIC GRADIENT (99/05/06 16:27:40)



Recorder # P8

NORTHLAND

NORTHLAND
WIRELINE SERVICES

A Division of Northland Energy Corporation

Subsurface Pressure Reports

SUNCOR ENERGY INC
K-77-60-50-122-30
99/05/06

Northland

ZI Pressure Recorder

1 (403) 264-9700

Northland Wireline Services
A Division of Northland Energy Corporation
200, 407 - 3rd Street S.W.
Subsurface Pressure Measurements

Company:	SUNCOR ENERGY INC
Address:	112 - 4 AVE. S.W. CAL.
Well Name:	SUNCOR NETLA
Location:	K-77-60-50-122-30
Field/Pool:	NETLA / SLAVE POINT
Type of Test:	STATIC GRADIENT
Well Status:	Gas
Producing Interval (mGL):	1981.2 - 2111.2
Mid Point Perfs (mGL):	2046.20
Elevations (m):	**GL:** 618.4 **KB:** 625.2
Pool datum (mSS):	
Datum Depth (mGL):	
Producing Through Tubing (mm):	88.9 **Casing:** 177.8
Probe Serial #:	P13 [Bottom]
Probe Range:	0 - 20684 kPag
Last Calibration Date:	99/02/16

Tubing Pressure	**Initial**	14025	**Final**	14000 kPag
Casing Pressure	**Initial**	0	**Final**	0 kPag

Run Depth (mGL):	2010.68
Time On Bottom:	99/05/06 18:31:00
Time Off Bottom:	99/05/06 18:36:00

Temperature @ Run Depth:	106.7	°C
Gradient @ Run Depth:	5.28	kPa/m
Pressure @ Run Depth:	17165.3	kPag
Pressure @ MPP	17352.8	kPag
Pressure @ Datum Depth:		kPag
Shutin Date:	99/03/17 12:30	
Date of Test:	99/05/06	

Comments:

ALL GRADIENT STOPS IN TVD mGL / 69.85 mm X NIPPLE @ 1963.7 mGL
69.85 mm X PROFILE IN ON/OFF @ 1974.56 mGL
69.85 mm QX NIPPLE @ 1978.89 MGL
69.85 mm QXN NIPPLE WITH 66.93 mm NOGO @ 1982.75 mGL
REPORT TO DAVE HERRERA / TAGGED PBD @ 2072 mGL

NORTHLAND

NORTHLAND

Subsurface Pressure Measurements

Company: SUNCOR ENERGY INC
Well Name: SUNCOR NETLA
Unique Well Id: K-77-60-50-122-30
Date of Test: 99/05/06 16:27:40

Readings and Calculations For Static Gradient

Depth Stops (TVD)	Time Stop			Pressure kPag	Gradient kPa/m
Surface	16:49	-	16:54	14071.63	0.00
500.00	17:03	-	17:08	14918.95	1.69
1000.00	17:16	-	17:21	15723.36	1.61
1464.91	17:29	-	17:34	16391.99	1.44
1741.16	17:38	-	17:43	16747.25	1.29
1840.74	17:45	-	17:50	16869.49	1.23
1940.64	17:52	-	17:57	16987.17	1.18
1986.86	17:59	-	18:29	17039.50	1.13
2010.68	18:31	-	18:36	17165.27	5.28

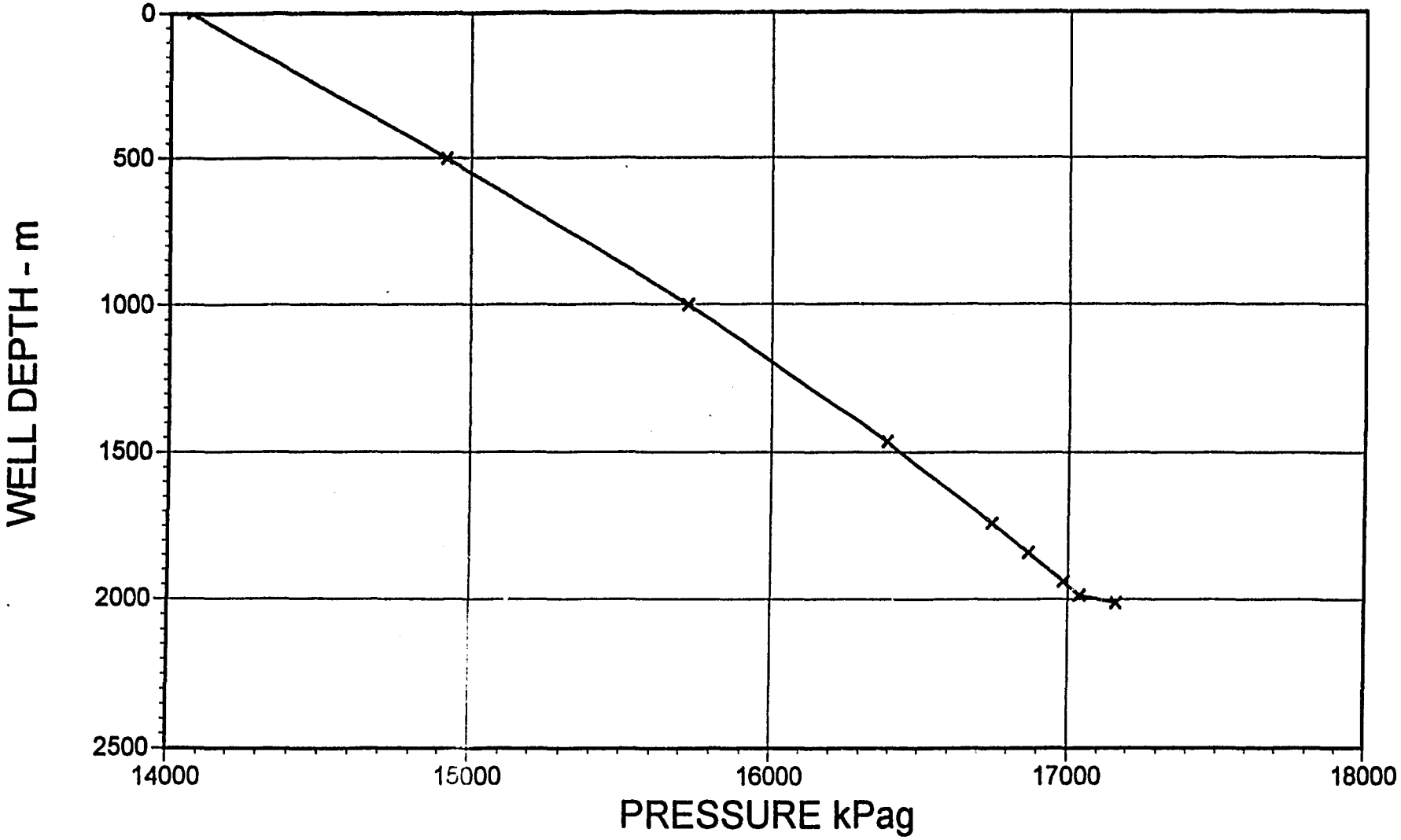
Temperature On Bottom: 106.7

Recorder # P13 [bottom]

SUNCOR ENERGY INC

SUNCOR NETLA (K-77-60-50-122-30)

STATIC GRADIENT (99/05/06 16:27:40)



Recorder # P13

NORTHLAND

WELL FILE

SUNCOR ENERGY INC.

GEOLOGICAL REPORT

SUNCOR NETLA K-77-60-50-122-30

Latitude 60°46'30.724"

Longitude 122°44'23.945"

Prepared by: Brian Hester P. Geol..

Cabra Consulting
1623 - 48th Avenue S.W.
Calgary, Alberta
T2T 2S9
(403) 243-5022

Reported to: Ms. Lauren Pudsey

SUNCOR NETLA K-77-60-50-122-30

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SUNCOR NETLA K-77-60-50-122-30

WELL DATA SUMMARY

Company:	Suncor Energy Inc.
Well Name:	Suncor Netla K-77-60-50-122-30
Surface Location:	K-77-60-50-122-30
Surface Co-ordinates:	Latitude 60°46'30.724" Longitude 122°44'23.945"
Target Co-ordinates:	261.4 m North, 100.3 m West of well center.
Elevations:	***Ground:*** 618.4 meters (cut.5 m) ***Kelly Bushing:*** 625.2 meters ***K.B. to Ground:*** 6.8 meters
Unique Well I.D.:	300/K-77-60-50-122-30/00
Field:	Netla
Classification:	Exploration
Objectives:	***Primary*** – Slave Point (Gas)
Terminating Zone:	Fort Vermilion (Middle Devonian)
Security:	Tight
AFE Number:	A9811680K77
Licence Number:	NA
Spud Date:	0230 Hrs., February 7, 1999
Total Depth:	2118 meters @ 1700 Hrs, March 10, 1999
Sampled Interval:	***Suncor:*** 15 to 2118 meters (5 meter intervals) ***N.E.B.:*** 15 to 2118 meters (5 meter intervals)
Contractor:	Akita Rig No. 58 & Bonus Rig No. 235

SUNCOR NETLA K-77-60-50-122-30

Drilling Supervision: Lee Brazel, Pat Miller, Godwin Valin, Mike Petroski

Geological Supervision: Brian Hester

Hole Size:
Surface: 311.0 mm
Intermediate: 222 mm
Main: 155.6 mm

Surface Casing:
Size: 244.5 mm
Type: 41 joints of 53.6 kg/m J-55, ST&C
Landed @ 535.5 meters
Cement: 35.0 tonnes RFC
Plug down @ 1832 Hrs February 10, 1999

Intermediate Casing:
Size: 177.8 mm
Type: 154 joints of 34.2 kg/m L-80
Landed @ 1989 meters
Cement with: 43 tonnes 1-1-2 + additives
Tail: 21 tonnes RFC + additives
Plug down @ 1200 Hrs., March 1, 1999
Cement Top @ 1800 meters

Mudlogging:
Datalog
Operated by Geologist.
Interval Logged: 20 to 2118 meters

Directional Services:
Anadrill
Directional Drillers: Maurice Nolan
MWD Operators: Several

Drill Stem Tests: None

Cores: None

Open Hole Logs: Schlumberger

Log	*Interval Logged*	*Scale*
Run 1		
AIT-BHC-CNL-LDT	1990 to 535.5 meters	1:240
DPS	535.5 to 0 meters	1:240
Run 2		
AIT-BHC-CNL-LDT	2118 to 1986.8 meters	1:240
MSCT	Various	
FMI	2118 to 1986.8 meters	1:240
VSP	2 vibration points	1:240

SUNCOR NETLA K-77-60-50-122-30

Final Status:	Potential Slave Point Gas Well
Rig Release:	2400 Hrs, March 12, 1999
Final Costs:	$2,513,003
Comments:	This well was drilled by Akita to 990 meters and then drilled directionally to intermediate casing point at 1990 meters. The well was logged casing was run and the Akita rig was then moved off. A Bonus service rig was moved on to finish the well. After drilling to T.D. the Well was logged and a VSP was run. After this the well was turned over to production for completion.

GEOLOGICAL MARKERS

K.B. 1458.8 meters

	Prognosis		Samples			Logs		
Formation	Depth (m)	Subsea (m)	MD (m)	TVD (m)	Subsea (m)	MD (m)	TVD (m)	Subsea (m)
Upper Devonian								
Surface Casing	NP	NP	535.5	535.5	89.7	535.5	535.5	89.7
Exshaw	NP	NP	639.0	639.0	-13.8	638.0	638	-12.8
Kotcho Shale	665.2	-40.0	652.0	652.0	-26.8	652.3	652.3	-27.1
Kotcho Carbonate	713.9	-88.7	708.0	708.0	-82.8	710.9	710.9	-85.7
Tetcho Carbonate	988.3	-363.1	981.0	981.0	-355.8	989.6	989.6	-364.4
Trout River	1080.5	-455.3	1062.0	1062.0	-436.8	1078.7	1078.6	-453.4
Kakisa	1166.8	-541.6	1156.0	1155.6	-530.4	1156.7	1156.2	-531.0
Redknife	1185.8	-560.6	1176.0	1175.2	-550.0	1183.5	1182.5	-557.3
Jean Marie	1349.5	-724.3	1318.0	1305.8	-680.6	1317.0	1304.9	-679.7
Ft. Simpson	1432.4	-807.2	1433.0	1407.1	-781.9	1384.0	1363.6	-738.4
Middle Devonian								
Muskwa	NP	NP	1955.0	1895.7	-1270.5	1955.0	1895.7	-1270.5
Slave Point	1951.2	-1326.0	1983.0	1923.7	-1298.5	1982.0	1922.7	-1297.5
Intermediate Casing	NP	NP	1989.0	1929.7	-1304.5	1986.8	1927.5	-1302.3
Top Slave Pt. Reef	NP	NP	2015.0	1955.7	-1330.5	2013.4	1954.1	-1328.9
Top Porosity	NP	NP	2026.0	1966.7	-1341.5	2030.4	1971.1	-1345.9
Base Porosity	NP	NP	2046.0	1986.7	-1361.5	2043.8	1984.5	-1359.3
Ft. Vermillion	NP	NP	2111.0	2051.7	-1426.5	NP	NP	NP
Sulphur Point	2067.1	-1441.9	NP	NP	NP	NP	NP	NP
Total Depth	2107.1	-1481.9	2118.0	2058.7	-1433.5	2117.0	2057.7	-1432.5

DAILY PROGRESS SUMMARY

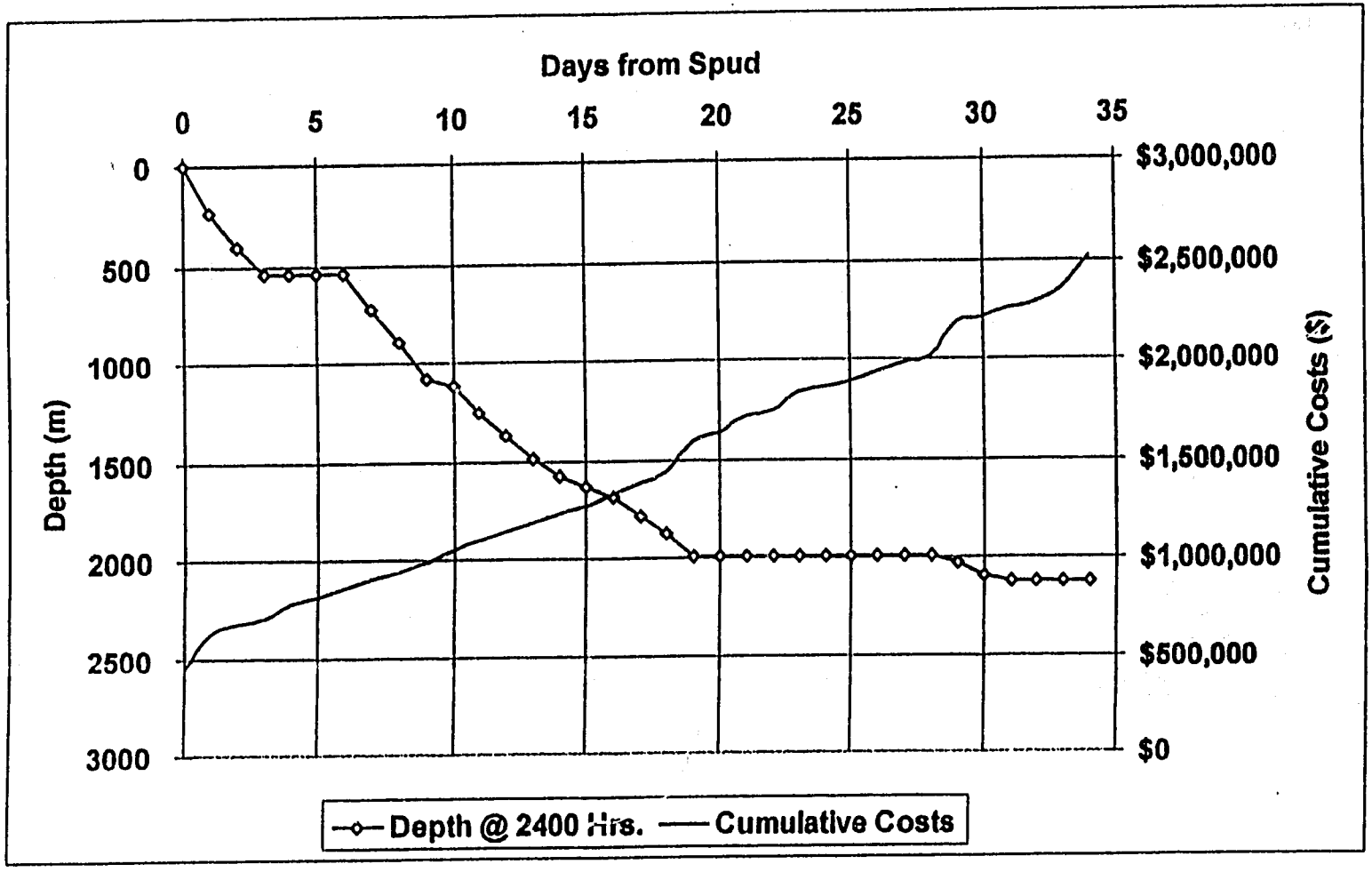
Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
0	$453,298	0	0	0	Surface	Rig to Spud	Move Rig. Rig up to Spud.
1	$634,616	237	237	14.8	Cretaceous	Drill	Rig up to spud. Spud well @ 0230 Hrs. Drill 311 mm hole & survey.
2	$684,671	401	164	12.4	Cretaceous	Drill	Drill ahead & survey to 315 m. Trip out to condition hole & change bits. Ream in and drill ahead & survey.
3	$712,594	540	139	9.0	Cretaceous	Trip	Drill ahead & survey to 540 m. Circulate and wiper trip. Survey. Circulate and trip out. Run in to survey.
4	$784,729	540	0	0.0	Cretaceous	Wait on cement	Trip in & directional survey. Trip out. Rig up & run & cement casing. Wait on cement & nipple down.
5	$820,945	540	0	0.0	Cretaceous	Nipple up	Nipple down diverter. Nipple up 346 mm BOPE's.
6	$865,824	544	4	5.3	Cretaceous	Leak off	Nipple up. Pressure test BOPE stack. Repair pumps. Pick up BHA. Run in & drill out @ 2130 Hrs. Under shoe @ 1100 Hrs. Drill 4 meters and perform leakoff.
7	$909,668	725	181	10.5	Kotcho	Drill	Pressure test. Drill ahead & survey.
8	$942,955	895	170	7.7	Kotcho	Drill	Drilll ahead & survey.
9	$992,506	1085	190	8.8	Trout River	Drill	Drill ahead & survey.

Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
10	$1,050,432	1117	32	6.4	Trout River	Drill	Drill ahead to 1105 m. Circulate & trip out of hole. Pick up directional tools & bit #2. Run in & slip & cut. Finish in & drill ahead directionally.
11	$1,098,153	1252	135	6.7	Redknife	Drill	Drill ahead directionally
12	$1,145,210	1373	121	6.1	Jean Marie	Drill	Drill ahead directionally
13	$1,187,163	1484	111	5.4	Ft Simpson	Drill	Drill ahead directionally
14	$1,234,821	1577	93	4.8	Ft Simpson	Trip	Drill ahead & survey to 1577 m. Trip out of hole for bit #3.
15	$1,272,752	1630	53	4.9	Ft Simpson	Drill	Trip out for bit #3. Change out motor. Run in testing MWD on way in. Drill ahead directionally.
16	$1,331,258	1685	55	5.5	Ft Simpson	Drill	Drill ahead directionally to 1681 m. Trip for BHA. Set motor to 2.12`. Run in & drill ahead directionally.
17	$1,384,248	1782	97	5.0	Ft Simpson	Drill	Drill ahead directionally.
18	$1,440,733	1872	90	4.4	Ft. Simpson	Drill	Drill ahead directionally.
19	$1,594,786	1990	118	5.7	Slave Point	Circulate	Drill ahead directionally to 1990 m. Circulate sample.
20	$1,638,028	1990	0	0.0	Slave Point	Log	Circulate sample. Wiper trip to 990 m. Circulate & condition hole. Trip out to log. Lay down directional tools & rig up loggers.
21	$1,717,382	1990	0	0.0	Slave Point	Trip out sideways	Log well. Finish logging @ 0900 Hrs. Run in & condition hole for casing. Trip out sideways.

Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
22	$1,745,533	1990	0	0.0	Slave Point	Run casing	Trip out sideways. Wait on power tong truck. Rig up tongs and run 177.8 mm casing.
23	$1,835,177	1990	0	0.0	Slave Point	Tear out	Circulate casing in to 1989 m. Circulate hole clean. Cement casing. (Unable to work same due to hole conditions.) Plug down 1200 Hrs. Nipple down and install well head. Rig released @ 2300 Hrs.
24	$1,861,420	1990	0	0.0	Slave Point	Move	Tear out rig. Rig released @ 0800 Hrs. Tear out and move rig.
25	$1,889,078	1990	0	0.0	Slave Point	Move	Tear down and move rig.
26	$1,941,084	1990	0	0.0	Slave Point	Rig in	Finish moving Akita #58 off location. Move on & spot service rig (Bonus #235). Rig in service rig.
27	$1,981,585	1990	0	0.0	Slave Point	Run in	Finish rigging up. Test accumulator.
28	$2,016,959	1990	0	0.0	Slave Point	Circulate	Make up BHA with mud motor & run in. Rig up power swivel & circulate in preparation to drill cement.
29	$2,185,085	2024	34	2.1	Slave Point	Drill ahead	Drill cement, plug & shoe. Drill to 1991.9 m. Under shoe @ 0230 Hrs. Circulate hole clean of cement. Displace to mud. Mix mud to replace displaced fluid. Drill ahead @ 1015 Hrs.
30	$2,219,098	2089	65	2.9	Slave Point	Drill ahead	Drill ahead. Repair rig. Drill ahead.

Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
31	$2,261,605	2118	29	1.7	Slave Point	Trip out	Drill ahead to 2118 m. ROP decrease to 1 m/hr. Call T.D. of 2118 m @ 1700 Hrs. Circulate. Lay down power swivel & trip out.
32	$2,291,620	2118	0	0.0	Slave Point	Core	Trip out & lay down drill collars. Rig to log. Run in @ 0530 with PE-HALS-LDT unable to get tools to function. Change out tools & run AITE-BHC-PE DENS-CNL-LDT-MEL & log well. Rig out & pick up MSCT tool. Cut & recover 22 cores.
33	$2,358,792	2118	0	0.0	Slave Point	Trip out	Finish MSCT & rig down. Wait on FMI. Rig up & log out with same. Make up casing scraper & run in. Scraper casing from 1930 to 1988 m. Displace cased hole to water. Trip out.
34	$2,513,003	2118	0	0.0	Slave Point	Rig release	Trip out with bit & casing scraper. Wait on VSP tools for 5 hours. Rig up for VSP. Spot vibro units and log VSP. Rig down loggers. Rig out open hole equipment. Release rig from drilling @ 0000 Hrs.

DAYS FROM SPUD VS DEPTH & CUMULATIVE COSTS



SUNCOR NETLA K-77-60-50-122-30

MUD RECORD

Date	Depth (m)	Density (kg/m3)	Viscosity (s/l)	pH	Water Loss.	Filter Cake (mm)	Yield Point
99/02/07	237	1040		11.1	11	1.0	26.0
99/02/08	401	1070		10.0	10.2	1.0	23.5
99/02/09	540	1125		10.1	11	1.0	27.0
99/02/10	540	1125		10.0	11.2	1.0	26.5
99/02/11	540	1095		8.5	11.5	1.0	23.5
99/02/12	544	1095		8.5	11.5	1.0	23.5
99/02/13	725	1140		10.5	8.5	1.0	32.5
99/02/14	895	1160		10.0	11.8	1.0	27.0
99/02/15	1085	1160		10.8	8.0	1.0	19.5
99/02/16	1117	1155		10.2	9.7	1.0	23.5
99/02/17	1252	1145		10.0	8.3	1.0	16.0
99/02/18	1373	1155		10.0	8.3	1.5	28.0
99/02/19	1484	1180		9.7	7.3	1.5	31.0
99/02/20	1577	1190		10.0	7.6	1.5	32.0
99/02/21	1630	1195		10.5	8.5	1.5	34.5
99/02/22	1685	1185		9.5	7.2	1.5	27.0
99/02/23	1782	1195		10.5	7.2	1.5	40.0
99/02/24	1872	1210		10.0	7	1.5	41.0
99/02/25	1990	1205		10.0	7.2	1.5	31.5
99/02/26	1990	1205		10.0	7.2	1.5	32.5
99/02/27	1990	1210		10.0	8	1.5	31
99/02/28	1990	1210		10.0	8	1.5	31
99/03/01	1990	1200		9.0	9	1.5	21.5
99/03/02	1990	Casing and rig on Service rig					
99/03/03	1990	Casing and rig on Service rig					
99/03/04	1990	Casing and rig on Service rig					
99/03/05	1990	Casing and rig on Service rig					
99/03/06	1990	Casing and rig on Service rig					
99/03/07	2024	1040	45	9.5	6.5	1	10
99/03/08	2089	1040	57	10.5	7.8	1	14
99/03/09	2118	1050	90	10.5	6.5	1	24.5
99/03/10	2118	1050	90	10.5	6.5	1	24.5
99/03/11	2118	1050	90	10.5	6.5	1	24.5
99/03/12	2118	1050	90	10.5	6.5	1	24.5

SUNCOR NETLA K-77-60-50-122-30

BIT RECORD

Bit No.	Type	Size (mm)	Depth Out(m)	Interval Cut(m)	Hrs	FOB (daN)	RPM	Cond'n T	Cond'n B	Cond'n G	ROP (m/hr)	Comments
1A	HP11	311	315	315	24.5	9000	160	5	3	I	12.9	ROP
2A	J1	311	540	225	21.5	12000	190	4	3	I	10.5	Casing
1	EHP43A	222	1105	565	63.5	18000	80	3	3	I	8.9	ROP
2	F10T	222	1577	472	82.5	22000	90	3	3	I	5.7	ROP
3	F10T	222	1990	413	81.5	30000	90	6	5	I	5.1	Casing
1B	EHP51H	156	2118	128	52.8	6000	120	4	3	I	2.4	T.D.

SUNCOR NETLA K-77-60-50-122-30

DEVIATION RECORD

Survey No.	Depth (meters)	Deviation (degrees)	Interval (meters)
1	30	0.250	30
2	59	0.500	29
3	89	0.750	30
4	115	0.750	26
5	155	0.750	40
6	182	0.500	27
7	209	1.000	27
8	256	0.250	47
9	286	0.750	30
10	315	0.000	29
11	333	0.750	18
12	362	0.250	29
13	391	0.750	29
14	418	1.000	27
15	477	0.750	59
16	505	0.000	28
	See Directional Record		

DIRECTIONAL RECORD

Vertical section @ 339°

Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	37.75	0.70	52.00	37.75	587.45	0.14	0.18	0.07	0.56
3	150.67	0.70	77.00	150.66	474.54	0.72	1.40	0.17	0.08
4	263.34	0.50	107.00	263.32	361.88	0.73	2.54	-0.23	0.10
5	378.15	0.30	273.00	378.13	247.07	0.60	2.72	-0.41	0.21
6	503.00	0.50	82.00	502.98	122.22	0.70	2.93	-0.40	0.19
7	551.00	0.30	320.60	550.98	74.22	0.82	3.06	-0.33	0.44
8	591.00	0.70	307.00	590.97	34.23	1.05	2.80	-0.02	0.31
9	677.00	1.00	324.00	676.96	-51.76	1.97	1.94	1.15	0.14
10	777.00	0.80	317.20	776.95	-151.75	3.19	0.95	2.64	0.07
11	792.00	1.75	274.00	791.95	-166.75	3.28	0.65	2.83	2.58
12	878.00	1.25	322.00	877.92	-252.72	4.11	-1.24	4.29	0.45
13	991.00	1.50	322.00	990.89	-365.69	6.25	-2.91	6.88	0.07
14	1093.10	1.90	342.50	1092.94	-467.74	8.92	-4.24	9.85	0.21
15	1102.90	2.10	334.70	1102.73	-477.53	9.24	-4.37	10.19	1.03
16	1111.40	3.20	347.80	1111.22	-486.02	9.61	-4.48	10.58	4.41
17	1121.50	4.40	344.50	1121.30	-496.10	10.26	-4.65	11.24	3.62
18	1131.50	5.70	351.60	1131.26	-506.06	11.12	-4.82	12.11	4.32
19	1141.84	7.30	348.79	1141.53	-516.33	12.27	-5.02	13.26	4.73
20	1151.02	8.90	348.09	1150.62	-525.42	13.54	-5.28	14.53	5.24
21	1161.00	10.10	348.79	1160.46	-535.26	15.15	-5.61	16.16	3.62

Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
22	1170.75	11.20	348.09	1170.05	-544.85	16.92	-5.97	17.93	3.41
23	1180.60	12.00	349.49	1179.69	-554.49	18.86	-6.36	19.89	2.58
24	1189.28	13.60	348.09	1188.16	-562.96	20.74	-6.73	21.78	5.63
25	1199.24	15.80	348.09	1197.79	-572.59	23.22	-7.26	24.28	6.63
26	1208.92	17.50	347.38	1207.06	-581.86	25.93	-7.84	27.02	5.31
27	1218.46	19.30	345.98	1216.11	-590.91	28.86	-8.54	30.00	5.83
28	1228.22	21.10	343.87	1225.27	-600.07	32.11	-9.42	33.35	5.97
29	1237.62	22.70	343.87	1233.99	-608.79	35.48	-10.39	36.84	5.11
30	1246.75	23.90	344.57	1242.38	-617.18	38.95	-11.37	40.44	4.05
31	1256.52	25.00	345.98	1251.27	-626.07	42.86	-12.40	44.46	3.82
32	1266.27	26.20	347.40	1260.06	-634.86	46.96	-13.37	48.63	4.15
33	1276.27	27.10	347.79	1269.00	-643.80	51.34	-14.33	53.07	2.75
34	1285.74	27.90	348.09	1277.40	-652.20	55.62	-15.25	57.39	2.57
35	1295.49	28.50	346.68	1285.99	-660.79	60.11	-16.25	61.95	2.76
36	1305.15	28.70	344.57	1294.48	-669.28	64.59	-17.40	66.54	3.20
37	1314.72	28.90	341.05	1302.86	-677.66	69.00	-18.76	71.14	5.35
38	1324.31	29.20	338.24	1311.25	-686.05	73.36	-20.38	75.79	4.37
39	1334.00	29.60	336.84	1319.69	-694.49	77.76	-22.20	80.55	2.46
40	1343.38	29.80	337.54	1327.84	-702.64	82.04	-24.00	85.19	1.28
41	1353.04	29.80	340.35	1336.22	-711.02	86.52	-25.73	89.99	4.34
42	1362.59	28.70	337.54	1344.55	-719.35	90.87	-27.40	94.66	5.53
43	1371.99	27.20	338.24	1352.85	-727.65	94.95	-29.06	99.06	4.90
44	1381.70	26.50	334.00	1361.52	-736.32	98.96	-30.83	103.44	6.30
45	1391.10	26.40	333.30	1369.93	-744.73	102.71	-32.69	107.61	1.05
46	1400.75	26.90	332.60	1378.56	-753.36	106.57	-34.66	111.91	1.84

Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
47	1410.30	27.30	334.70	1387.06	-761.86	110.47	-36.59	116.24	3.26
48	1420.00	28.00	334.70	1395.65	-770.45	114.54	-38.51	120.73	2.16
49	1429.60	28.80	334.90	1404.09	-778.89	118.67	-40.46	125.28	2.52
50	1439.20	28.20	335.40	1412.53	-787.33	122.82	-42.38	129.85	2.02
51	1448.90	27.60	334.70	1421.10	-795.90	126.94	-44.30	134.38	2.11
52	1458.60	28.00	334.00	1429.68	-804.48	131.02	-46.25	138.89	1.60
53	1467.90	28.90	335.40	1437.86	-812.66	135.02	-48.15	143.31	3.61
54	1477.30	29.80	336.10	1446.05	-820.85	139.22	-50.04	147.91	3.07
55	1486.94	30.40	337.75	1454.39	-829.19	143.67	-51.93	152.74	3.18
56	1496.20	29.70	336.80	1462.41	-837.21	147.95	-53.72	157.37	2.74
57	1505.80	28.50	337.30	1470.80	-845.60	152.25	-55.54	162.04	3.83
58	1515.40	27.80	335.40	1479.26	-854.06	156.39	-57.36	166.56	3.55
59	1525.00	28.10	334.70	1487.74	-862.54	160.47	-59.26	171.05	1.39
60	1534.41	29.30	334.73	1495.99	-870.79	164.56	-61.19	175.56	3.83
61	1543.97	29.70	336.50	1504.32	-879.12	168.85	-63.13	180.26	3.01
62	1553.50	29.20	336.84	1512.61	-887.41	173.15	-64.99	184.94	1.66
63	1563.01	28.89	337.59	1520.93	-895.73	177.41	-66.77	189.55	1.51
64	1572.60	28.50	338.30	1529.34	-904.14	181.67	-68.50	194.16	1.62
65	1582.20	28.20	338.90	1537.79	-912.59	185.92	-70.17	198.71	1.29
66	1591.80	28.30	339.70	1546.24	-921.04	190.17	-71.77	203.26	1.22
67	1601.40	28.00	340.40	1554.71	-929.51	194.43	-73.32	207.79	1.39
68	1610.60	27.20	340.40	1562.86	-937.66	198.44	-74.75	212.05	2.61
69	1619.90	26.20	341.80	1571.17	-945.97	202.39	-76.10	216.22	3.81
70	1629.60	25.60	341.80	1579.90	-954.70	206.42	-77.43	220.45	1.86
71	1639.20	25.50	341.10	1588.56	-963.36	210.34	-78.74	224.59	0.99

Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
72	1648.60	25.00	341.80	1597.06	-971.86	214.14	-80.02	228.60	1.86
73	1658.30	24.30	343.20	1605.87	-980.67	218.00	-81.24	232.64	2.82
74	1668.00	23.90	346.70	1614.73	-989.53	221.83	-82.26	236.57	4.59
75	1677.70	23.70	350.20	1623.60	-998.40	225.66	-83.05	240.43	4.41
76	1687.30	22.60	350.90	1632.43	-1007.23	229.38	-83.67	244.13	3.54
77	1696.90	20.30	351.60	1641.36	-1016.16	232.85	-84.20	247.56	7.23
78	1706.70	18.90	348.80	1650.60	-1025.40	236.09	-84.76	250.78	5.16
79	1716.20	18.80	345.70	1659.59	-1034.39	239.08	-85.44	253.82	3.18
80	1725.70	18.50	344.60	1668.59	-1043.39	242.02	-86.22	256.84	1.46
81	1735.30	16.90	346.70	1677.73	-1052.53	244.84	-86.94	259.74	5.38
82	1744.90	15.20	344.60	1686.96	-1061.76	247.42	-87.60	262.37	5.61
83	1754.40	12.80	346.70	1696.17	-1070.97	249.64	-88.17	264.66	7.75
84	1764.10	10.20	344.60	1705.68	-1080.48	251.51	-88.64	266.58	8.14
85	1773.60	8.60	338.30	1715.05	-1089.85	252.98	-89.13	268.12	6.00
86	1783.20	8.30	336.80	1724.54	-1099.34	254.29	-89.67	269.53	1.16
87	1792.80	8.40	336.10	1734.04	-1108.84	255.57	-90.23	270.93	0.45
88	1802.30	8.40	336.80	1743.44	-1118.24	256.84	-90.78	272.31	0.32
89	1811.80	7.90	337.40	1752.84	-1127.64	258.08	-91.30	273.66	1.60
90	1821.40	7.20	336.10	1762.36	-1137.16	259.24	-91.80	274.92	2.25
91	1831.00	6.50	337.50	1771.89	-1146.69	260.29	-92.25	276.06	2.25
92	1840.60	6.10	341.80	1781.43	-1156.23	261.28	-92.62	277.12	1.93
93	1850.10	5.80	343.20	1790.88	-1165.68	262.22	-92.92	278.10	1.05
94	1859.70	4.90	345.30	1800.44	-1175.24	263.08	-93.16	278.99	2.88
95	1869.30	3.70	341.10	1810.01	-1184.81	263.77	-93.37	279.71	3.87
96	1878.70	2.90	348.80	1819.40	-1194.20	264.29	-93.51	280.24	2.91

Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
97	1888.20	2.20	6.40	1828.89	-1203.69	264.70	-93.54	280.64	3.29
98	1897.80	1.90	32.40	1838.48	-1213.28	265.02	-93.43	280.90	3.02
99	1906.90	2.30	54.20	1847.57	-1222.37	265.26	-93.20	281.04	2.92
100	1916.60	2.60	76.00	1857.27	-1232.07	265.42	-92.83	281.06	3.01
101	1926.20	2.80	86.40	1866.85	-1241.65	265.49	-92.39	280.96	1.65
102	1945.40	2.00	104.20	1886.04	-1260.84	265.44	-91.59	280.63	1.69
103	1955.10	1.50	118.90	1895.73	-1270.53	265.33	-91.32	280.44	2.07
104	1974.20	0.60	171.60	1914.83	-1289.63	265.11	-91.08	280.15	1.94
105	1976.00	0.60	178.40	1916.63	-1291.43	265.10	-91.08	280.13	1.19
106	1990.00	0.60	178.00	1930.63	-1305.43	264.95	-91.08	279.99	0.01

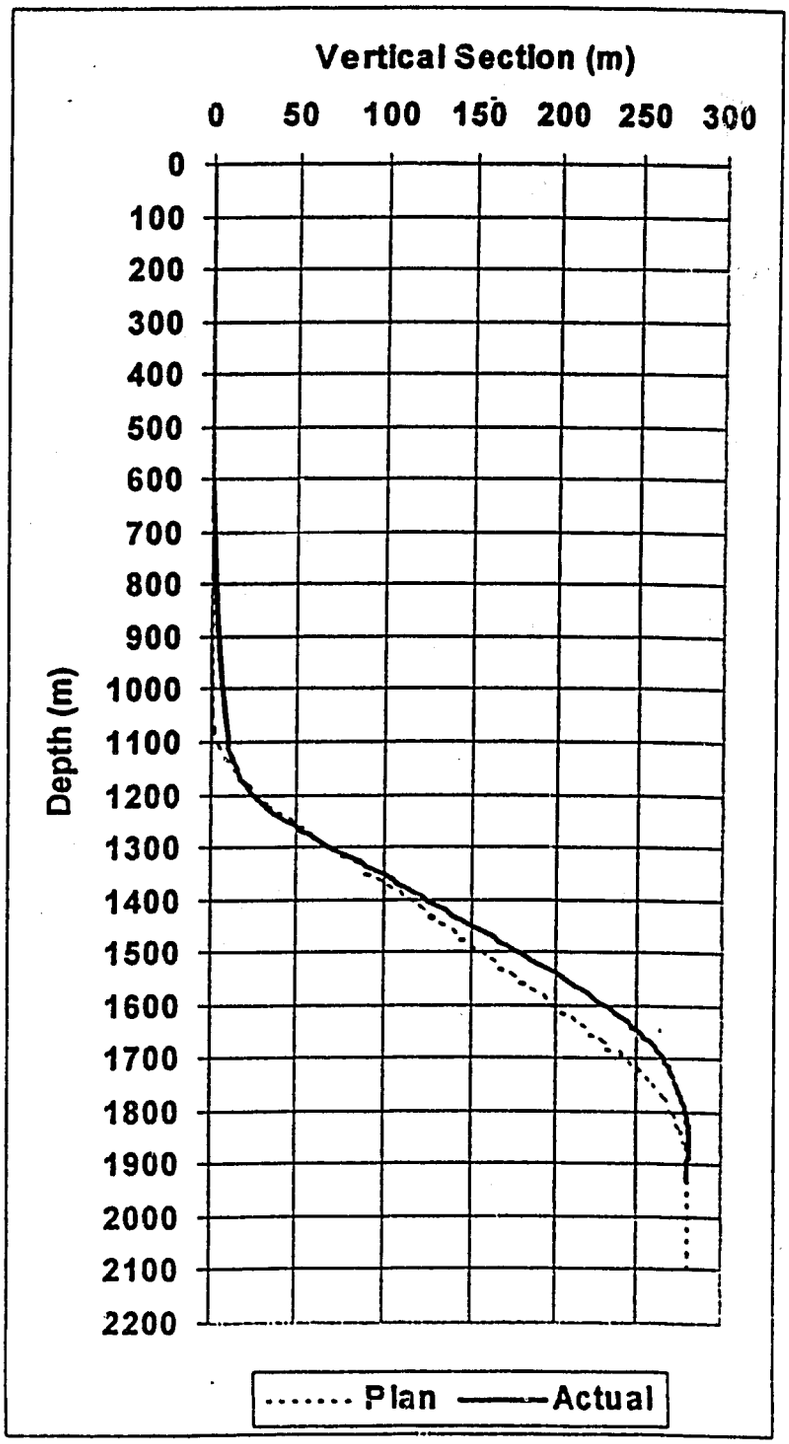
Last survey was extrapolated.

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VERTICAL SECTION

VERTICAL SECTION VS TRUE VERTICAL DEPTH

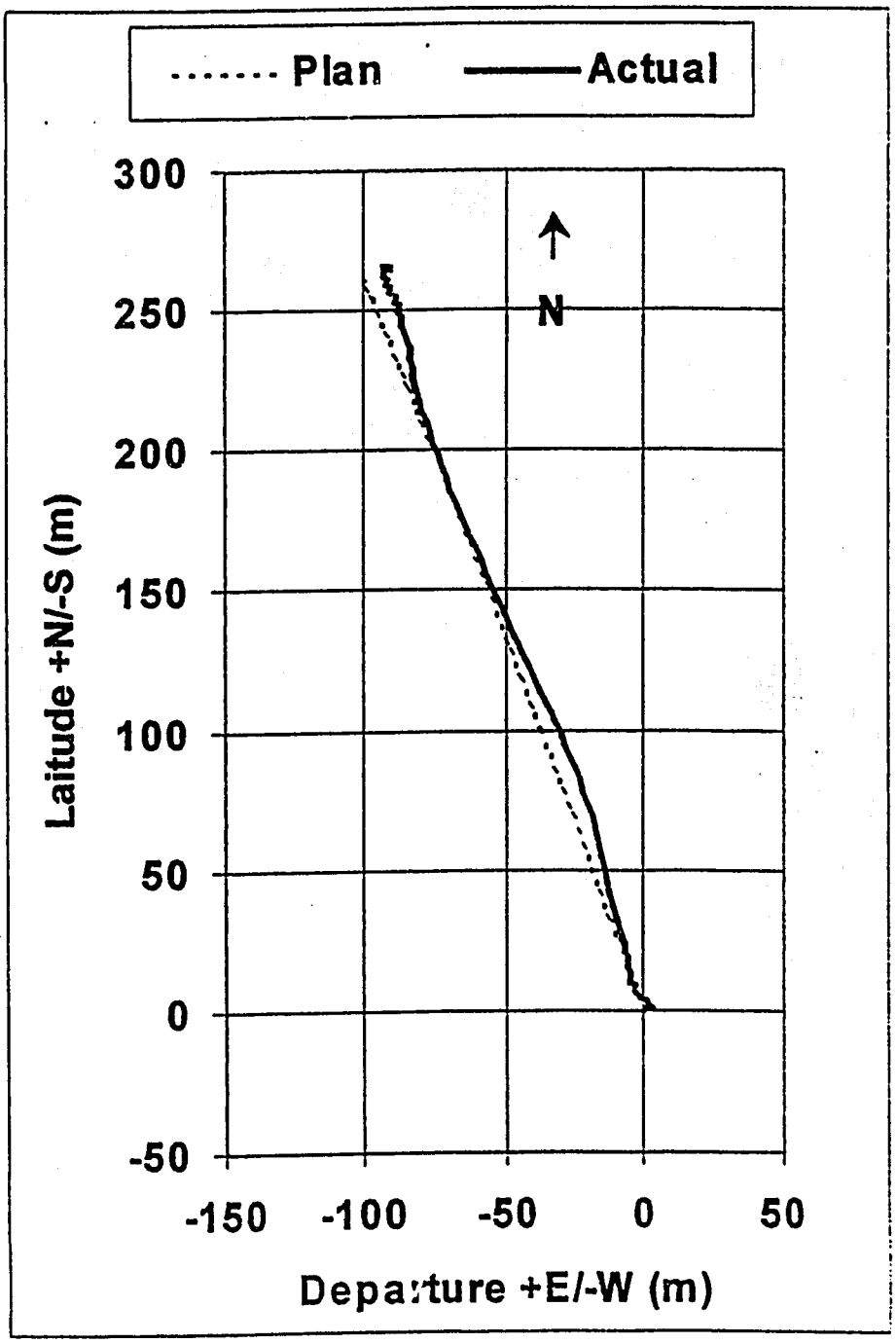
Vertical section @ 339°



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PLAN VIEW

LATITUDE VS DEPARTURE



SUNCOR NETLA K-77-60-50-122-30

OPEN HOLE LOG SUMMARY

INTERMEDIATE

Contractor:	Schlumberger	***Engineer:***	Tony Daniel
District:	Grande Prairie	***Truck No.:***	2028
Circulation End:	99/02/26 12:45	***Finish Trip:***	99/02/26 18:15
On Location:	99/02/26 15:30	***Off Location:***	99/02/27 14:00
Rig Up:	99/02/26 19:45	***Rig Down:***	99/02/27 09:15

Mud Properties: ***Type:*** K2SO4
Density: 1205 ***pH:*** 7.2
Viscosity: ***WL:*** 10

BHT: 80°C ***Total Depth:*** ***Driller*** 1990 meters
Logger 1990 meters

Services:

Log	*Interval Logged From*	*To*	*Meters Logged*	*Comments*
AITE-RXO	1987.6	535.5	1452.1	Combo platform express
BHC-XY CAL	1968.0	535.5	1432.5	Combo platform express
CNL-LDT-D	1984.4	535.5	1448.9	Combo platform express
DIS	535.5	0.0	535.5	Logged through casing

Times:

Tool Combo	*Date*	*Run in*	*First on bottom*	*Last on bottom*	*Clear Hole*	*Total Hours*
AIT-BHC-CNL-LDT	99/02/27	0:30:00	01:40	02:00	04:30	4.00
DIS	99/02/27	06:15	07:30	07:40	08:30	2.25

Logging Time:	6.25 Hrs	***Rig Up/Down:***	4.50 Hrs
Time Losses:	2.75 Hrs	***Total Time:***	13.50 Hrs

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MAIN

Contractor:	Schlumberger	***Engineer:***	Kim Baker
District:	Grande Prairie	***Truck No.:***	3010
Circulation End:	99/03/09 18:45	***Finish Trip:***	99/03/10 03:30
On Location:	99/03/09 19:00	***Off Location:***	To production 99-03-12 22:00
Rig Up:	99/03/10 03:45	***Rig Down:***	99/03/10 14:30
Rig Up VSP:	99/03/12 08:00	***Rig Down VSP:***	99/03/12 22:00

Mud Properties: ***Type:*** Carbonate Polymer
Density: 1050 ***pH:*** 10.5
Viscosity: 90 ***WL:*** 6.5

BHT: 88°C ***Total Depth:*** ***Driller:*** 2118 meters
Logger: 2117 meters

Services:

Log	*Interval Logged From*	*To*	*Meters Logged*	*Comments*
AITE-RXO	2115.6	1986.8	128.8	Combo platform express
BHC-XY CAL	2094.3	1986.8	107.5	Combo platform express
CNL-LDT-D	2111.3	1986.8	124.5	Combo platform express
MEL	2111.3	1988.0	123.3	Combo platform express
MSCT	2064.5	1997.5	67.0	22 cores cut & recovered
FMI	2113.0	1986.8	126.2	2 passes
VSP	2117.0	600.0	1517.0	Zero offset & Vib 1

Times:

Tool Combo	*Date*	*Run in*	*First on bottom*	*Last on bottom*	*Clear Hole*	*Total Hours*
Platform Express	99/03/10	11:30	12:45	15:15	17:00	5.50
MSCT	99/03/10	19:40	21:30	00:10	01:15	5.70
FMI	99/03/11	10:30	11:45	12:30	13:45	3.25
VSP	99/03/12	09:00	10:20	16:00	21:30	12.50

Logging Time:	26.95 Hrs	***Rig Up/Down:***	8.95 Hrs
Time Losses:	13 Hrs	***Total Time:***	48.90 Hrs

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Remarks: Problems with tool bridle on initial rig up. Unable to run HALs. 6 hours lost time to tool failure. Some of this time may have been saved if tools were tested as soon as crew arrived on location and/or this tool configuration was checked prior to field use. 7 hours lost time waiting on FMI tool was due to addition of tool after logging job ordered out. Overall good job with very good job done by MSCT operator. Personnel were experienced and kept representative well informed. VSP job followed after equipment on location. Location of zero vib was 80 meters west of source line 19 on receiver line 24. Location of first vib was 180 meters west of source line 23 on receiver line 24. Both locations were chained in from center of intersection of the 2 lines.

Copies: 2 field, 6 final - 8 Total. ***Cost:*** $132,641.95

SIDEWALL CORING REPORT

Attempts: 22 cores
Recovery: 22 cores
Analysis: Core Labratories
Core Hand: Tony Smith

Core No.	Depth (m)	Core Length (cm)	Lithology	Condition	Permeability (mD)	Porosity (%)	Comments
22	1997.5	2.5	Limestone	minor broken	<.01	0.5	tight
21	2003.6	4.6	Limestone	solid	0.01	0.5	tight
20	2010 5	-	Limestone	rubble	NA	NA	fossiliferous
19	2014.5	4.4	Limestone	top break	0.01	0.5	sulphur odour
18	2016.2	3.9	Limestone	broken in half	0.01	0.8	hairline frac - fossil ghosts
17	2019.5	4.5	Limestone	solid	0.01	0.8	thamnapora & stroms
16	2021.6	4.8	Limestone	broken in half	<.01	0.5	strom massive?
15	2023.2	3.2	Limestone	broken in half	0.05	1.4	fracture / calcite fill
14	2026.2	4.8	Limestone	broken in pieces	0.02	1.1	calcite rhombs floating
13	2028.6	4.5	Limestone	solid	0.03	1.3	hairline fractures
12	2030.5	4.2	Limestone	solid	0.03	1.9	fractures & euhedral xstals
11	2032.0	4.2	Limestone	chipped	0.01	1.8	fractures & euhedral xstals
10	2034.5	2.6	Limestone	fractured	0.07	2.7	molds & stroms
9	2036.6	4.4	Limestone	solid	0.01	1.4	tight
8	2039.0	3.7	Limestone	solid	0.01	1.1	tight into calcite mold
7	2041.5	4.0	Limestone	solid	0.05	1.8	tight / thamnapora
6	2043.5	4.7	Limestone	solid	0.01	1.5	tight
5	2046.7	4.5	Limestone	Broken	0.03	1.8	tight brachiopod shale fill
4	2050.5	4.1	Limestone	Broken	<.01	1.1	tight fragmental LS
3	2054.6	4.5	Limestone	Solid	0.01	1.1	tight strom??

Core No.	Depth (m)	Core Length (cm)	Lithology	Condition	Permeability (mD)	Porosity (%)	Comments
2	2060.5	4.5	Limestone	Solid	0.03	1.1	tight corals
1	2064.5	4.5	Limestone	Solid	0.01	1.4	tight corals

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SAMPLE DESCRIPTIONS

15-41 m	Siltstone with minor Shale laminae. SILTSTONE - light grey, clay cement, moderately cemented, friable. Very poor samples.
41-75 m	Siltstone with Sandstone stringers and interbeds. SILTSTONE - light grey, clay cement, moderately cemented, friable, scattered fish scales. SANDSTONE - grey white, quartz minor lithics, very fine to fine grained trace medium grained, well sorted, subangular to angular, calcareous and siliceous cement, well cemented, trace micaceous, tight, no shows. Very poor samples.
75-98 m	Shale with Siltstone stringers. SHALE - light to medium grey, blocky, subfissile, abundant scattered fish scales, arenaceous.
98-134 m	Interbedded and interlaminated Shale and Siltstone with minor Sandstone. SHALE - medium grey, blocky, subfissile, arenaceous to highly arenaceous. SILTSTONE - light grey, clay cement, moderately to well cemented, friable in part, sandy in part, micaceous. SANDSTONE - grey white, quartz, very fine grained, well sorted, subangular, calcareous and siliceous cement, well cemented, tight, no shows.
134-154 m	Shale with interlaminated Siltstone. SHALE - medium grey, blocky, subfissile, arenaceous, carbonaceous matter & plant fossils, disseminated pyrite.
154-173 m	Shale with minor Siltstone laminae. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, scattered fish scales and chitinous fish remains, disseminated pyrite. Trace Inoceramus.
173-192 m	Interbedded and interlaminated Shale and Siltstone. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous. SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part.

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192-221 m	Sandstone with interbeds and interlaminated Shale. SANDSTONE - grey white, quartz, very fine to occasionally fine grained, well sorted, subangular, siliceous cement, well cemented, argillaceous in part, trace glauconite, carbonaceous fragments, poor porosity to tight, (3-5%), no shows. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part.
221-254 m	SHALE-- dark grey, platy, highly fissile, trace fossiliferous, micromicaceous.
254-279 m	Shale with interlaminae of Siltstone. SHALE - medium to dark grey trace white specks, platy to blocky, highly fissile to fissile, scattered fish scales and amber chitinous fish remains, trace micromicaceous.
279-285 m	SHALE - dark grey, platy, highly fissile, trace fossiliferous, micromicaceous.
285-302 m	Interbedded and interlaminated Shale and Siltstone. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous. SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part.
302-315 m	Siltstone with interbedded and interlaminated Shale. SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous.
315-329 m	Siltstone with Sandstone stringers. SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.
329-353 m	Sandstone with interbedded and interlaminated Siltstone. SANDSTONE - snow white to light tan, clear to frosted quartz, very fine grained, well sorted, subangular, calcareous cement, moderately to well cemented, semifriable in part, trace kaolinitic, poor to fair porosity (3-8%), minor streaks good porosity (10-12%), no shows. SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.

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353-371 m	Interbedded & interlaminated Siltstone, Sandstone & Shale. SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy. SANDSTONE - snow white to light tan, clear to frosted quartz, very fine grained, well sorted, subangular, calcareous cement, moderately to well cemented, semifriable in part, trace kaolinitic, silty, poor porosity (3-4%), no shows. SHALE - dark grey, platy to blocky, subfissile, arenaceous in part.
371-396 m	Interbedded & interlaminated Siltstone & Shale with minor Sandstone. SILTSTONE - light to buff tan, calcareous with clay cement increasing downsection, well to highly cemented, glauconitic in part, sandy in part. SHALE - dark grey, platy to blocky, subfissile, arenaceous in part. SANDSTONE - light tan, clear to frosted quartz, very fine grained, well sorted, subangular, loose, silty, poor to fair porosity (3-7%), no shows. Presence of Sandstone is questionable, abundant loose grains in bottom of examination tray, could be cavings. Trace black hematite nodules.
396-419 m	Shale with minor laminae & stringers of Siltstone decreasing downsection. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micromicaceous, trace fish scales, rare fossil fragments.
419-443 m	Shale with Siltstone stringers and interbeds. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous. SILTSTONE - light grey, clay cement, well cemented.
443-461 m	Shale with Siltstone stringers and interbeds. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous. SILTSTONE - light grey, calcareous cement, well cemented, trace glauconite.
461-486 m	Shale with Siltstone stringers. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous, micromicaceous.
486-515 m	Shale with minor Sandstone interbeds and Siltstone laminae. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous, micromicaceous. SANDSTONE - grey white, clear to frosted quartz, silt to very fine grained, well sorted, subangular, siliceous cement, well cemented, tight, no shows.

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515-540 m	Interbedded & interlaminated Siltstone, Sandstone, Siderite & Shale. SILTSTONE - light tan to light grey green, sideritic, calcareous and clay cement, well cemented, sandy, glauconitic, scattered stain, very light fluorescence, yellow white streaming cut. SANDSTONE - light tan to grey green, clear quartz trace lithics, silt to very fine grained, well sorted, subangular to subround, sideritic cement, moderately to well cemented, semifriable in part, highly glauconitic, trace kaolinitic, poor to fair porosity (4-11%), Sneider ID - III (.07-1.0 md), patchy stain, scattered very light yellow fluorescence, fast yellow white streaming cut. SIDERITE - light brown, bedded, argillaceous. SHALE - dark grey, platy to blocky, subfissile, arenaceous in part.
540-568 m	Siltstone with interbeds and stringers of Shale. SILTSTONE - medium to dark grey to light grey tan, clay minor sideritic cement, calcareous in part, well cemented, sandy in part, trace glauconitic, trace disseminated pyrite. SHALE - dark grey to grey brown, platy to blocky, subfissile, arenaceous, micromicaceous.
568-582 m	Shale with minor Siltstone interbeds and laminae. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous. SILTSTONE - light brown, clay cement, highly cemented.
582-597 m	Shale with minor Siltstone interbeds and laminae. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous. SILTSTONE - light brown, clay cement, highly cemented.
597-613 m	Shale with interbedded Siderite and Siltstone. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous. SIDERITE - light to medium brown, bedded, argillaceous. SILTSTONE - light grey to grey tan, sideritic & clay cement, well cemented.
613-639 m	Shale with minor interbeds of Siderite and minor Siltstone laminae. SHALE - medium to dark grey to grey brown, platy to blocky, fissile to subfissile, trace arenaceous, sideritic in part, trace bituminous downsection, trace fossiliferous, micromicaceous. SIDERITE - light to medium brown, bedded, argillaceous. Traces sparry calcite throughout.

639-652 m — Shale with Siltstone laminae.
SHALE - medium to dark grey, platy to blocky, highly fissile to subfissile, trace arenaceous, bituminous, glauconitic, trace disseminated pyrite, micromicaceous.

Kotcho Shale 652.0 m

652-658 m — Siltstone with minor Limestone stringers.
SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous in part.

658-681 m — Interlaminated and interbedded Siltstone and Shale with minor Limestone.
SILTSTONE - grey tan, calcareous cement, well cemented, argillaceous.
SHALE - light grey to light brown, blocky, subfissile, calcareous, arenaceous, (silty), micromicaceous.
LIMESTONE - light tan, calcilutite, biomicrite, mudstone, argillaceous, arenaceous, tight, no shows.
Scattered loose sand grains.

681-696 m — Shale with Limestone and Siltstone stringers.
SHALE - light to medium grey, blocky, subfissile, calcareous to highly calcareous, arenaceous in part, disseminated pyrite, micromicaceous.
Abundant loose crinoid stems at base of section.

696-708 m — Shale with Limestone stringers.
SHALE - light to medium grey, blocky, subfissile, calcareous to highly calcareous, arenaceous in part, disseminated pyrite, micromicaceous.
Scattered loose crinoid stems.

Kotcho Carbonate 708 m

708-727 m — Limestone with Marlstone and Shale interbeds.
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite with very coarse calcarenite, brachiopod crinoid intramicrite, packstone, arenaceous, argillaceous, disseminated pyrite, tight, no shows.
MARLSTONE - grey white, calcareous, highly argillaceous, fossiliferous.
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.

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727-754 m	Interbedded and interlaminated Siltstone, Limestone, Marlstone and Shale. SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, sparse crinoid intramicrite, wackestone, arenaceous, argillaceous, disseminated pyrite, tight, no shows. MARLSTONE - grey white, calcareous, highly argillaceous, fossiliferous. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
754-773 m	Interbedded and interlaminated Marlstone, Limestone, Siltstone and Shale. MARLSTONE - grey white, calcareous, highly argillaceous, fossiliferous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, sparse crinoid intramicrite, wackestone, arenaceous, argillaceous, disseminated pyrite, tight, no shows. SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
773-794 m	Marlstone with interbedded Limestone and Shale. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous, fossiliferous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, pelecypod brachiopod crinoid biomicrite, wackestone, argillaceous, disseminated pyrite, tight, no shows. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
794-811 m	Limestone with interbedded Marlstone. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, pelecypod brachiopod crinoid biomicrite, wackestone, argillaceous, scattered pyrite nodules, tight, no shows. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous, fossiliferous.
811-840 m	Marlstone with interbedded Limestone and Shale. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, biomicrite, wackestone, argillaceous, tight, no shows. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous. Scattered sparry calcite.

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840-867 m	Interbedded Marlstone and Shale with minor Limestone. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous. SHALE - light to medium grey, blocky, subfissile, highly calcareous, trace disseminated pyrite, micromicaceous. LIMESTONE - buff white to grey white, calcilutite to very fine calcarenite, intrabiomicrite, wackestone, argillaceous, tight, no shows.
867-896 m	Marlstone with Limestone and Shale interbeds. MARLSTONE - light to medium grey, calcareous, highly argillaceous. LIMESTONE - buff white to grey white to grey tan, calcilutite to very fine calcarenite, [illegible]oid intrabiomicrite, wackestone to mudstone, argillaceous, disseminated pyrite, tight, no shows. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
896-920 m	Interbedded Marlstone and Shale with minor Limestone. MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous. SHALE - light to medium grey, platy to blocky, subfissile to fissile, highly calcareous, micromicaceous. LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, biomicrite, mudstone, argillaceous, tight, no shows.
920-933 m	Marlstone with Limestone and Shale interbeds. MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous. LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, crinoid biomicrite, mudstone, argillaceous, tight, no shows. SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, micromicaceous.
933-952 m	Interbedded Shale and Marlstone with Limestone stringers. SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, disseminated pyrite, micromicaceous. MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous.
952-960 m	Shale with Limestone stringers. SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, disseminated pyrite, micromicaceous.

960-972 m — Interbedded Marlstone and Shale with minor Limestone.
MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous.
SHALE - light to medium grey, platy to blocky, subfissile to fissile, highly calcareous, micromicaceous.
LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, biomicrite, mudstone, argillaceous, tight, no shows.

972-981. — Shale with Limestone stringers.
SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, micromicaceous.

Tetcho Carbonate 981 m

981-995 m — Limestone with minor Shale interbeds.
LIMESTONE - buff tan, calcilutite with interbeds of fine to medium calcarenite, brachiopod pelmicrite with interbeds of intrapelmicrite, packstone, argillaceous, tight, trace scattered gilsonite.
SHALE - grey green t light grey, platy, fissile, calcareous.

995-1008 m — Interbedded & interlaminated Limestone, Marlstone & Shale.
LIMESTONE - buff tan to grey white, calcilutite, biopelmicrite, packstone, argillaceous, tight, no shows.
MARLSTONE - light grey to buff white, calcareous, argillaceous.
SHALE - grey green, platy, fissile, highly calcareous, micromicaceous.

1008-1030 m — Limestone with Marlstone and minor Shale.
LIMESTONE - buff tan to grey white, calcilutite, brachiopod? pelmicrite, packstone, argillaceous, tight, no shows.
MARLSTONE - light grey to buff white, calcareous, argillaceous.
SHALE - grey green, platy, fissile, highly calcareous, micromicaceous.

1030-1048 m — LIMESTONE - light to buff tan to grey white, calcilutite, crinoid brachiopod? pelmicrite, packstone, argillaceous, tight, no shows.

1048-1062 m — Limestone with Marlstone interbeds.
LIMESTONE - buff tan to grey white, calcilutite, pelmicrite, packstone, argillaceous, arenaceous in part, tight, no shows.
MARLSTONE - light grey to buff white, calcareous, argillaceous, arenaceous.

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Trout River 1062 m

1062-1078 m	Interbedded Limestone and Siltstone with Shale. LIMESTONE - buff white to grey white, calcilutite with very fine calcarenite scattered coarse calcarenite, pelmicrite with brachiopod intramicrite, packstone to wackestone, arenaceous, argillaceous, tight, no shows. SILTSTONE - buff white to light grey, calcareous cement, highly cemented, trace anhydrite. SHALE - grey green to light to medium grey, platy, subfissile to fissile, calcareous, micromicaceous.
1077-1091 m	Interbedded Limestone, Marlstone and Siltstone stringers minor Shale. LIMESTONE - buff white to light reddish brown, calcilutite with medium to coarse calcarenite, gastropod intrasparite with pelmicrite, grainstone with packstone, arenaceous, argillaceous, tight, no shows. MARLSTONE - medium grey, calcareous, arenaceous, argillaceous. SILTSTONE - buff white to light grey, calcareous cement, highly cemented. SHALE - light grey to grey green, platy, fissile, micromicaceous. Base unit Fe stained gastropod grainstone.
1091-1105 m	Shale with stringers and interbeds of Siltstone. SHALE - olive brown to light to medium grey, platy to blocky, subfissile, non-calcareous to slightly calcareous, arenaceous, trace black carbonaceous? flakes. SILTSTONE - light grey, calcareous cement, well cemented, argillaceous.
1105-1126 m	Shale with interbeds and stringers of Siltstone minor interbeds and stringers of Limestone. SHALE - light to medium grey, platy, subfissile, slightly calcareous, arenaceous, scattered black flakes. SILTSTONE - light to yellowish brown to grey white, calcareous cement, well cemented, argillaceous, micromicaceous. LIMESTONE - light tan to reddish orange, medium to coarse calcarenite, crinoid brachiopod intramicrite to intrasparite, packstone to grainstone, friable, Fe stained, tight, no shows. Limestones are mostly as fine laminae within Shale sequence.
1126-1132 m	Shale with Limestone stringers. SHALE - light to medium grey, platy, subfissile, slightly calcareous, arenaceous.

1206-1221 m	Interbedded Shale and Siltstone. SHALE - light to medium grey to grey green to dark grey purple, platy to splintery, fissile, slightly calcareous to calcareous, micromicaceous, arenaceous in part. SILTSTONE - light grey to light tan to grey brown, calcareous cement, highly cemented, argillaceous in part.
1221-1236 m	Interbedded Siltstone and Shale with Limestone stringers & interbeds. SILTSTONE - light tan to yellow brown to grey white, calcareous cement, well cemented, argillaceous. SHALE - grey green to grey purple to olive brown, platy to splintery, fissile, calcareous, arenaceous in part, micromicaceous. LIMESTONE - reddish white, fine to coarse calcarenite, brachiopod gastropod intrasparite, grainstone, Fe stained, tight, no shows.
1236-1260 m	Shale with Limestone & Siltstone stringers. SHALE - grey green to grey purple to medium grey, platy to splintery, fissile to highly fissile, slightly calcareous to calcareous, micromicaceous.
1260-1270 m	Shale with Limestone & Siltstone stringers. SHALE - grey green to grey purple to medium grey, platy to splintery, fissile to highly fissile, slightly calcareous, micromicaceous.
1270-1288 m	Shale with Siltstone stringers. SHALE - medium grey to grey green to grey purple to olive brown, platy to splintery, highly fissile, noncalcareous to slightly calcareous, micromicaceous.
1288-1302 m	Shale with minor interbeds & stringers of Limestone. SHALE - medium grey to grey purple to olive brown to grey green, platy to splintery, fissile to highly fissile, noncalcareous to slightly calcareous, micromicaceous. LIMESTONE - white with scattered orange red streaks, fine to coarse calcarenite, brachiopod intrasparite, grainstone, Fe stained, tight, no shows.
1302-1318 m	Shale with minor stringers of Limestone, Siltstone & Sandstone. SHALE - medium grey to trace grey purple to olive brown, platy to splintery, fissile to highly fissile, slightly calcareous, micromicaceous.

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Jean Marie 1318 m (1305.8 m TV)

1318-1338 m	Shale with interbedded Sandstone scattered Limestone stringers & laminae minor Siltstone stringers. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. SANDSTONE - white to light tan, quartz, silt to very fine grained, well sorted, subround, calcareous trace siliceous cement, well cemented, tight, no shows.
1338-1355 m	Shale with minor Sandstone and Limestone interbeds & stringers. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. SANDSTONE - white to light tan, quartz, silt to very fine grained, well sorted, subround, calcareous trace siliceous cement, well cemented, tight, no shows. LIMESTONE - buff white to tan, calcilutite, arenaceous intramicrite, wackestone, tight, no shows.
1355-1370 m	Shale with Marlstone interbeds & stringers of Siltstone and Sandstone. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. MARLSTONE - light to medium grey, calcareous, arenaceous in part.
1370-1391 m	Shale with Sandstone interbeds & stringers minor Siltstone stringers. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. SANDSTONE - buff grey to grey tan, quartz, silt to very fine grained, well sorted, subangular to subround, calcareous with minor siliceous cement, well cemented, tight, no shows.
1391-1405 m	Shale with rare Sandstone laminae. SHALE - light to medium grey, platy, fissile to highly fissile, slightly calcareous, fossil fragments, micromicaceous.
1405-1420 m	Shale with Sandstone and Limestone interbeds and stringers and Siltstone stringers. SHALE - light to medium grey, platy, fissile to highly fissile, slightly calcareous to calcareous, micromicaceous. SANDSTONE - light tan to mottled grey white, quartz, silt to very fine grained, well sorted, subround, calcareous with minor siliceous cement, well cemented, tight, no shows. LIMESTONE - white to tan minor Fe stained, fine with coarse calcarenite, intrasparite, grainstone, arenaceous in part, tight, no shows.

1420-1433 m	Shale with Siltstone interbeds and stringers and Sandstone laminae. SHALE - light to medium grey rare purple brown, platy to splintery, fissile to highly fissile, slightly calcareous to calcareous, trace disseminated pyrite, micromicaceous. SILTSTONE - grey tan, calcareous cement, well cemented, sandy.

Ft. Simpson 1433 m (1407.1 m TV)

1433-1447 m	Shale with minor Sandstone & Siltstone laminae. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.
1447-1467 m	Shale with minor Siltstone laminae. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous in part, micromicaceous.
1467-1490 m	Shale with minor Siltstone laminae. SHALE - light to medium grey to purple brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.
1490-1514 m	Shale with minor Siltstone laminae. SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, noncalcareous to slightly calcareous, micromicaceous.
1514-1539 m	Shale with minor Siltstone laminae. SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, noncalcareous to slightly calcareous, micromicaceous.
1539-1552 m	Shale with minor Claystone trace Limestone laminae. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, trace arenaceous, micromicaceous. CLAYSTONE - light grey, soft, slightly calcareous.
1552-1570 m	Shale with minor Claystone. SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, slightly calcareous.
1570-1577 m	Shale with Claystone interbeds. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, slightly calcareous.

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1577-1597 m	Shale with Claystone interbeds. SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1597-1613 m	SHALE - light to medium grey to grey tan trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous.
1613-1630 m	Interbedded Shale and Claystone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1630-1645 m	Interbedded Shale and Claystone minor Siltstone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, non calcareous to slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1645-1650 m	SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, non calcareous to trace calcareous, micromicaceous.
1650-1660 m	Interbedded Shale and Claystone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, calcareous.
1660-1677 m	Shale with interbeds of Claystone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, trace calcareous in part to non calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1677-1699 m	SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous.
1699-1716 m	Shale with interbeds of Claystone trace Limestone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1716-1731 m	SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous.

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1731-1744 m	Shale with minor Siltstone stringers. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous.
1744-1754 m	Shale with minor Claystone interbeds trace Siltstone and Limestone stringers. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1754-1768 m	Interbedded Marlstone and Shale with Limestone stringers. MARLSTONE - light grey, finely laminated, calcareous, argillaceous, trace arenaceous. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, waxy in part, trace arenaceous, micromicaceous.
1768-1780 m	Interbedded Shale and Marlstone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, trace arenaceous, micromicaceous, trace disseminated pyrite. MARLSTONE - light grey, finely laminated, calcareous, argillaceous, trace arenaceous.
1780-1798 m	Shale with minor interbedded Marlstone and Claystone. SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, trace arenaceous, micromicaceous. MARLSTONE - light grey, calcareous, argillaceous, trace arenaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1798-1815 m	Shale with interbedded Claystone. SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, trace arenaceous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous. Rare stringers of Fe stained ostracod grainstone.
1815-1833 m	Shale with minor Claystone interbeds and Siltstone stringers. SHALE - light to medium grey minor grey green to purple brown trace laminated, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, trace arenaceous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.

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1833-1845 m	Shale with minor Limestone and Marlstone stringers. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, waxy in part, trace arenaceous, micromicaceous.
1845-1857 m	Shale with minor Claystone interbeds and Limestone stringers. SHALE - light to medium grey minor purple brown, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, trace arenaceous, micromicaceous. CLAYSTONE - grey tan, calcareous, soft.
1857-1875 m	Shale with minor Marlstone interbeds and Siltstone stringers. SHALE - light to medium grey to grey tan, platy to splintery to blocky, fissile to subfissile, noncalcareous to calcareous in part, trace arenaceous, trace disseminated pyrite, micromicaceous. MARLSTONE - light grey, calcareous, argillaceous. Trace loose fossil fragments.
1875-1895 m	Shale with trace Marlstone stringers. SHALE - light to medium grey to grey tan to purple brown, platy to splintery to trace blocky, highly fissile to subfissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous.
1895-1915 m	SHALE - light to medium grey minor olive tan to purple brown, platy to splintery rare blocky, highly fissile to fissile, noncalcareous to slightly calcareous, trace disseminated pyrite, trace arenaceous with Siltstone inclusions.
1915-1930 m	Shale with minor Siltstone stringers. SHALE - light to medium grey to olive tan to purple brown to grey green, platy to splintery rare blocky, highly fissile to fissile, calcareous to slightly calcareous, trace disseminated pyrite, trace arenaceous.
1930-1944 m	Shale with minor Claystone interbeds trace Siltstone stringers. SHALE - light to medium grey rare dark grey to minor purple brown to grey green, platy to splintery rare blocky, highly fissile to fissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous. CLAYSTONE - grey tan, calcareous, soft.
1944-1955 m	Shale with minor Siltstone stringers. SHALE - light to medium grey rare dark grey to minor purple brown, platy to splintery rare blocky, highly fissile to subfissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous.

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Muskwa 1955 m (1895.7 m TV)

1955-1971 m — SHALE - black to dark grey scattered white specks with interbeds of olive tan, blocky to platy, subfissile to fissile, mostly noncalcareous, olive tan is calcareous, siliceous in part with black chert, bituminous in part, abundant pyritic streaks and nodules, micromicaceous.

1971-1983 m — Shale with Limestone stringers increasing downsection.
SHALE - black to dark grey, blocky to platy, subfissile to fissile, noncalcareous to calcareous increasing downsection, bituminous in part, pyritic streaks and nodules, micromicaceous.

Slave Point 1983 m (1923.7 m TV)

1983-1990 m — LIMESTONE - mottled buff tan to medium to dark brown to grey white, fine to coarse calcarenite with very coarse calcarenite, brachiopod amphipora? intramicrite, packstone to wackestone, argillaceous, tight, no shows.
Abundant cavings.

1990-2001 m — Limestone with Shale laminae.
LIMESTONE - mottled brown to buff tan to medium brown to dark grey, fine to coarse calcarenite, brachiopod amphipora? intrabiomicrite with minor micrite, packstone to wackestone with minor mudstone, trace dolomitic, trace calcispheres, trace algal material, trace siliceous decreasing downsection, micrite is fractured with sparry calcite infilling, tight to poor fracture porosity, no shows.

2001-2015 m — LIMESTONE - light grey brown to light brown to tan to buff white, calcilutite to fine calcarenite minor very coarse calcarenite, micrite with brachiopod intramicrite, mudstone with packstone, intramicrite increases downsection, micrite is pyritic, algal material, tight, no shows.

Slave Point Reef 2015 m (1955.7 m TV)

2015-2026 m — LIMESTONE - snow white to light tan, calcilutite to medium calcarenite minor very coarse calcarenite, scattered coarse crystalline, stromatoporoid? biosparite with intrasparite and pelmicrite, boundstone to packstone, chalky in part, scattered euhedral calcite rhombs (mold infilling), trace disseminated pyrite, tight to poor moldic porosity (3-5%), no shows.

Slave Point Porosity 2026 m (1966.7 m TV)

2026-2046 m — LIMESTONE - snow white to buff white, calcilutite to medium calcarenite with minor very coarse calcarenite scattered coarse to very coarse crystals, stromatoporoid? biosparite with intrasparite and pelmicrite, boundstone to packstone, chalky in part, styolitic, scattered euhedral calcite rhombs some with trace sphalerite & disseminated pyrite on crystal faces, trace euhedral quartz crystals (fracture fill?), tight to fair fracture porosity (3-6%), Archie ID, questionable trace gilsonite otherwise no shows.

Base Slave Point Porosity 2046 m (1986.7 m TV)

2046-2057 m — LIMESTONE - snow white to buff tan, calcilutite to medium calcarenite with minor very coarse calcarenite, pelmicrite with intrasparite and strom biosparite, packstone to boundstone, chalky in part, tight to trace moldic porosity (2-3%), no shows.

2057-2069 m — LIMESTONE - snow white to buff white, calcilutite to coarse calcarenite interbeds very coarse calcarenite, ostracod intrasparite and pelmicrite with stromatoporoid? biosparite, packstone to boundstone, chalky in part, trace sparry calcite rhombs, rare scattered euhedral quartz crystals floating in lime matrix, tight trace fracture & moldic porosity (2%), questionable trace gilsonite otherwise no shows.

2069-2075 m — LIMESTONE - snow to buff tan, calcilutite to coarse calcarenite interbeds very coarse calcarenite, intrasparite with stromatoporoid? biosparite minor pelmicrite, packstone to boundstone, disseminated pyrite, tight, no shows.

2075-2088 m — LIMESTONE - snow white to buff white to light tan, calcilutite to medium calcarenite with interbeds very coarse calcarenite, coralline ostracod intrasparite with stromatoporoid? biosparite minor pelmicrite, grainstone to boundstone with packstone, chalky in part, scattered sparry calcite, trace sphalerite, tight, no shows.

2088-2102 m — LIMESTONE - buff white to buff tan, calcilutite with interbeds fine to coarse calcarenite minor very coarse calcarenite, intrasparite with pelmicrite and stromatoporoid? biosparite, grainstone with packstone & boundstone, chalky in part, trace disseminated pyrite, trace scattered molds, tight, no shows.

2102-2111 m — LIMESTONE - buff white to buff tan, fine to coarse calcarenite with interbeds very coarse calcarenite minor calcilutite, intrasparite and stromatoporoid? biosparite with pelmicrite, boundstone & grainstone with packstone, trace chalky, tight, no shows.

SUNCOR NETLA K-77-60-50-122-30

Ft. Vermillion 2111 m (2051.7 m TV)

2111-2118 m	Limestone with trace Shale laminae. LIMESTONE - light tan to buff tan to buff white to black, fine to coarse calcarenite with minor interbeds very coarse calcarenite & calcilutite, intrasparite with stromatoporoid? biosparite & pelmicrite, grainstone with boundstone & packstone, abundant black algal? residue or styolites, trace chalky, tight, no shows.

Total Depth 2118 m (2058.7 m TV)

Sneider Classification - Clastics
Type I - Abundant to common visible porosity, needle probe dislodges grains
IA > 100 md - excellent relief, loose, poor cement, no filler, usually fine >
IB - 10-100 md - excellent - good relief, moderate to loose, moderate cement, no to trace filler
IC - 1-10 md - mod - good relief, even por, mod consolidation, mod cement, low to mod clay
ID - .5-1 md - mod relief, patch por, mod-well consolidation, mod cement, varies
II - .07-.5 md - scat por, rare needle probe dislodge
III - <.07 - poor relief, no vis por, well consolidated, highly cemented, mod-abnt clay

Depth	Lithology	Grain Size	Visible Porosity	Non-Vis Porosity	Total Porosity	Est. Perm.	Sneider Class	Relief	Clay Level	Comments
515-520	Sltst & SS	.05-.10	1-5%	3-4%	4-9%	.07-1.0	III-II	p-fr	mod	glau, shows (stn&cut)
520-525	Sltst & SS	.10-.15	3-7%	3-4%	6-10%	.5-1.0	ID-II	fr	mod	glau, shows (stn&cut)
525-530	SS/Sltst	.10-.15	1-7%	3-4%	4-11%	.2-1.0	ID-II	p-fr	mod-hi	glau, shows (stn&cut)
530-535	SS/Sltst	.10-.15	1-7%	3-4%	4-11%	.2-1.0	ID-II	p-fr	mod-hi	glau, shows (stn&cut)
535-540	SS/Sltst	.05-.07	1-3%	3-4%	4-7%	.1-.5	II-III	p	mod	hi glau, shows
540-545	Sltst & SS	.05-.07	1-2%	2-3%	3-5%	.07-.5	III	p	hi	no shows

BB

Schlumberger
Anadrill

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40003197

SUNCOR ENERGY INC.

POST WELL ANALYSIS REPORT FOR

SUNCOR NETLA

K-77-60-50-122-30

Job Identification
Suncor Inc. Resources Group

Project ID:	Suncor Energy Netla
Pad ID:	Single well
Well ID:	Suncor Netla K-77-60-50-122-30
Unique ID:	K77-60-50-122-30

Operator:	Suncor Inc. Resources Group
Address:	Calgary Alberta
Co Rep:	Lee Brazel- Pat Miller

Contractor:	Akita Drilling
Rig ID:	Akita 58
Pusher:	Dave Lauck

Service Co:	Anadrill - Schlumberger
District:	Calgary, Alberta
DD Eng:	Maurice Deschamps
MWD Eng:	Brad Erick Warren Cox

Start Date:	February 15 1999
Release Date:	february 26 1999
Total Days:	#VALUE!

Well Specifications
Suncor Inc. Resources Group

Well Name: Suncor Netla K-77-60-50-122-30

Well Number: K77-60-50-122-30

Field Name: Netla (CDN)

Area: South Eastern

KB level (above sea): 625.2m **Magnetic Declination:** 26.763 degrees

Ground Level (above sea): 618.40m

KB to Ground level : 6.8m

Surface Location

N-S Coord: Lat. N60-46-30.724

E-W Coord: Lon. W122-44-23.945

Target Loc: Planned **(Ref: Kelly Bushing)** **Final Bottom Hole Loc:**

N-S Coord:	261.40 North	**N-S Coord:**	264.96 North
E-W Coord:	100.34 West	**E-W Coord:**	91.08 West
TVD:	1951.00 m	**TVD:**	1930.67m
Target Radius:			

Well Descriptions

Suncor Inc. Resources Group

Suncor Netla K-77-60-50-122-30
K77-60-50-122-30

Project Description: Proposed

The Suncor Netla K77-60-50-122-30 is a proposed "S" Type well with a kick off at 1105 meters measured depth.A three degree per 30 build rate will be used to build to an inclination of 23 .3 degrees in an azmuth of 339 drgrees direction. This angle will be held through the hold section to a TVD of 1724.69 meters Where the well will be dropped at a rate of 3 degrees per 30 maintaining the azmuth od 339 ndegrees until the incllination reaches 0 maintaining this inclination to the top of the Slave Point formation Where the tools will be layed down casing run and the sevice rig will complete the drilling of the well to TD were they will put the well into production.

Project Results: Actual

The well was kicked off at 1105.0 meters and was .14 meters North and .18 meters East of well center.The build section went well when reaching the hold section the formation called the Ft Simpson has a tendency to build in inclination this was very true it was difficult to control the build with slides from four to nine meter The end results was an inclination of 28 degrees at the drop of point. At the start of of the drop we were able to get our results then we were sliding nine meters and getting builds instead of drops. We pulled the motor and raised the motor setting from 1.50 to 2.12 degrees. We needed some large doglegs to get to the target at this point and we were able to achieve this with this setting but it was very difficult to control the doglegs each survey with the the same amount of slide was totaly different from .63 to7.00 degree doglegs with the same slide. Right to the target when you rotated you got builds and drastic turns to the right. The target was penetrated at approximately 264.96 meters North and 91.08 meters West of hole center. This put the entry at approximatley 4.86 meters from target center.....

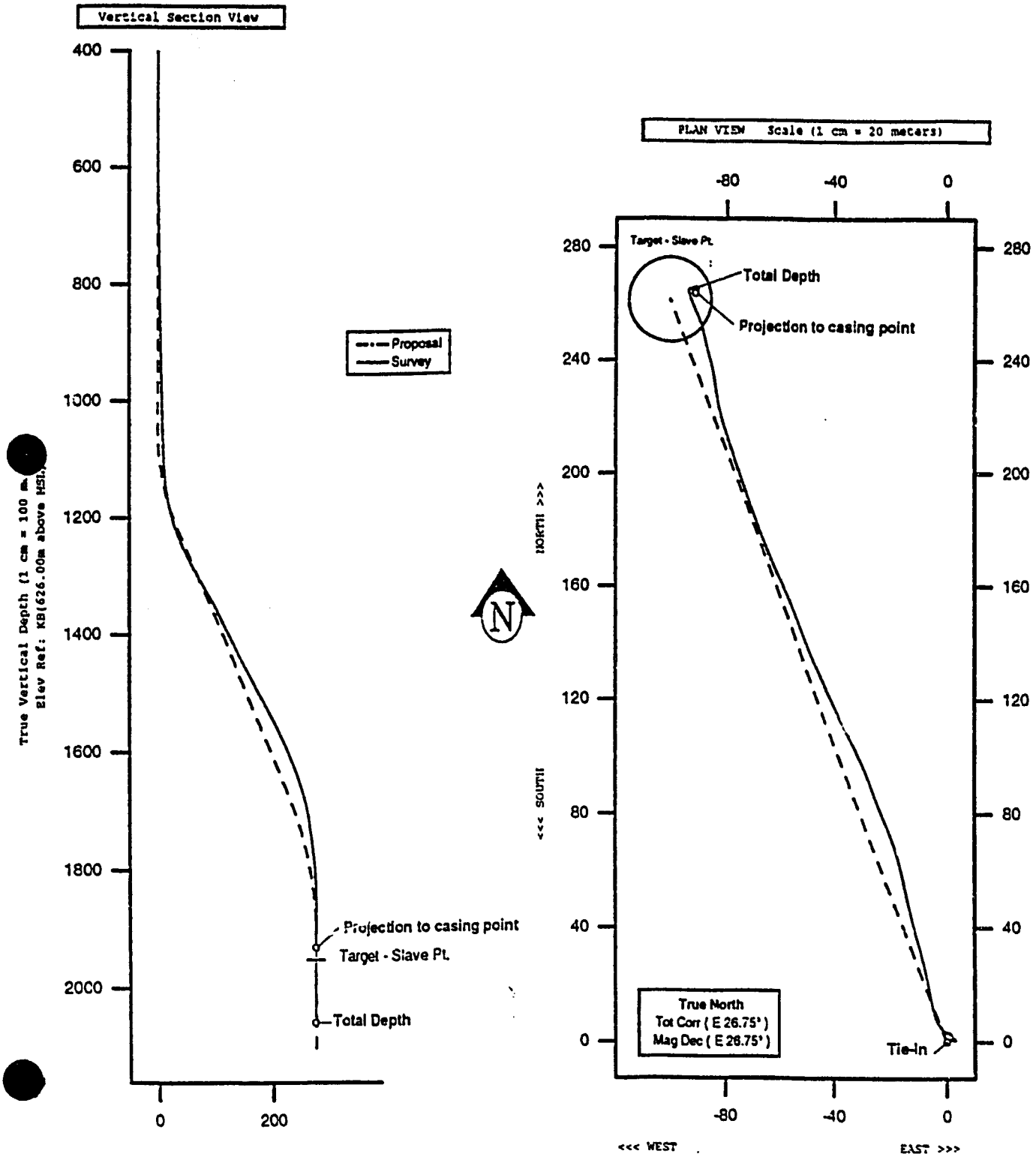
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SUNCOR ENERGY

WELL	FIELD	STRUCTURE
	NETLA (CDN)	Suncor/K-77

Magnetic Parameters Model: BGS 1998 Dip: 79.004° Mag Dec: 26.752° Date: February 17, 1999 FS: 59071.8 nT	Surface Location Lat: N60 46 30.724 Lon: W122 44 23.945 North: 6737571.92 m East: 514162.95 m Grid Conv: 0.2269° Scale Fact:0.9996	Miscellaneous Slot: Suncor Netla K-77-60-55-122-30 Elev Rel: KB(626.00m above MSL) Date Drawn: 11:54:51AM 11-Mar-1999

COMPLETION DRAWING



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Survey
Final Survey

Client:	SUNCOR ENERGY	Survey Computation Method:	Minimum Curvature
Field:	NETLA (CDN)	DLS Computation Method:	Lubinski
Structure:	Suncor/K-77	Vertical Section Azimuth:	339.000°
Well:		Vertical Section Origin:	N 0.000 m, E 0.000 m
Borehole:	Job # 40003197	TVD Reference:	KB
API #:			526.0 m above MSL
Date:	March 11, 1999	Magnetic Declination:	26.752°
Grid Convergence:	0.22691852°	Total Field Strength:	59071.812 nT
Scale Factor:	0.99960246	Dip:	79.004°
		Declination Date:	February 17, 1999
Location:	N 60 46 30.724, W 122 44 23.945	Magnetic Declination Model:	EGS 1998
:	N 6737571.924 m, E 514162.948 m	North Reference:	True North
Coordinate System:	UTM Zone 10N	Coordinate Reference To:	Well Head

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
Tie-In	37.75	0.70	52.0	37.75	0.07	0.14	0.18	0.23	52.13	0.00	77.0MTF
	150.67	0.70	77.0	150.66	0.17	0.72	1.40	1.57	62.72	0.08	107.0MTF
	263.34	0.50	107.0	263.33	-0.23	0.73	2.54	2.64	73.92	0.10	-87.0MTF
	378.15	0.30	273.0	378.13	-0.41	0.60	2.72	2.78	77.54	0.21	82.0MTF
	503.00	0.50	82.0	502.98	-0.40	0.69	2.93	3.01	76.68	0.19	-39.4MTF
	551.00	0.30	320.6	550.98	-0.33	0.82	3.06	3.16	74.99	0.44	-53.0MTF
	591.00	0.70	307.0	590.98	-0.02	1.05	2.79	2.98	69.45	0.31	-36.0MTF
	677.00	1.00	324.0	676.97	1.15	1.97	1.93	2.76	44.46	0.14	-42.8MTF
	777.00	0.80	317.2	776.96	2.64	3.19	0.95	3.33	16.53	0.07	-86.0MTF
	792.00	1.75	274.0	791.96	2.83	3.28	0.65	3.34	11.15	2.58	-38.0MTF
	878.00	1.25	322.0	877.93	4.28	4.11	-1.24	4.30	343.21	0.45	-38.0MTF
	991.00	1.50	322.0	990.90	6.88	6.25	-2.91	6.89	335.03	0.07	-17.5MTF
	1093.10	1.90	342.5	1092.95	9.84	8.92	-4.24	9.87	334.56	0.21	-25.3MTF
	1102.90	2.10	334.7	1102.75	10.19	9.23	-4.37	10.21	334.69	1.03	-12.2MTF
	1111.40	3.20	347.8	1111.24	10.58	9.61	-4.48	10.60	334.98	4.41	-15.5MTF
	1121.50	4.40	344.5	1121.31	11.24	10.26	-4.65	11.26	335.62	3.62	-8.4MTF
	1131.50	5.70	351.6	1131.28	12.11	11.12	-4.82	12.12	336.55	4.32	-12.6
	1141.84	7.30	348.8	1141.55	13.25	12.27	-5.03	13.26	337.73	4.73	-3.9
	1151.02	8.90	348.1	1150.64	14.53	13.54	-5.28	14.53	338.67	5.24	5.8
	1161.00	10.10	348.8	1160.48	16.16	15.15	-5.61	16.16	339.67	3.62	-7.1
	1170.75	11.20	348.1	1170.06	17.93	16.91	-5.98	17.94	340.54	3.41	20.1
	1180.60	12.00	349.5	1179.71	19.88	18.86	-6.36	19.90	341.36	2.58	-11.7
	1189.28	13.60	348.1	1188.18	21.78	20.74	-6.74	21.81	342.01	5.63	0.0
	1199.24	15.80	348.1	1197.81	24.28	23.22	-7.26	24.32	342.64	6.63	-7.2
	1208.92	17.50	347.4	1207.08	27.02	25.93	-7.85	27.09	343.16	5.31	-14.5
	1218.46	19.30	346.0	1216.13	30.00	28.86	-8.54	30.09	343.51	5.83	-23.0
	1228.22	21.10	343.9	1225.29	33.35	32.11	-9.42	33.46	343.65	5.97	0.0
	1237.62	22.70	343.9	1234.02	36.85	35.48	-10.40	36.97	343.67	5.11	13.3
	1246.75	23.90	344.6	1242.40	40.44	38.95	-11.38	40.58	343.72	4.05	28.6
	1256.52	25.00	346.0	1251.29	44.46	42.86	-12.40	44.62	343.86	3.82	27.7
	1266.27	26.20	347.4	1260.09	48.64	46.96	-13.37	48.83	344.11	4.15	11.2
	1276.27	27.10	347.8	1269.02	53.07	51.34	-14.34	53.31	344.40	2.75	10.0
	1285.74	27.90	348.1	1277.42	57.39	55.62	-15.25	57.67	344.67	2.57	-48.6
	1295.49	28.50	346.7	1286.02	61.95	60.11	-16.26	62.27	344.87	2.76	-79.7
	1305.15	28.70	344.6	1294.50	66.54	64.59	-17.40	66.90	344.92	3.20	-84.8
	1314.72	28.90	341.0	1302.89	71.14	69.00	-18.77	71.50	344.78	5.35	-78.8
	1324.31	29.20	338.2	1311.27	75.79	73.36	-20.39	76.14	344.47	4.37	-60.4
	1334.00	29.60	336.8	1319.71	80.55	77.76	-22.20	80.86	344.06	2.46	60.3

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N-S (m)	E/-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
	1343.38	29.80	337.5	1327.86	85.19	82.04	-24.01	85.48	343.69	1.28	90.0
	1353.04	29.80	340.4	1336.24	89.99	86.52	-25.73	90.26	343.44	4.34	-129.9
	1362.59	28.70	337.5	1344.58	94.66	90.87	-27.40	94.92	343.22	5.53	168.0
	1371.99	27.20	338.2	1352.88	99.06	94.96	-29.06	99.30	342.98	4.90	-112.0
	1381.70	26.50	334.0	1361.54	103.44	98.96	-30.84	103.66	342.69	6.30	-108.1
	1391.10	26.40	333.3	1369.96	107.61	102.72	-32.69	107.79	342.34	1.05	-32.4
	1400.75	26.90	332.6	1378.58	111.91	106.57	-34.66	112.07	341.98	1.84	68.2
	1410.30	27.30	334.7	1387.08	116.24	110.47	-36.59	116.37	341.67	3.26	0.0
	1420.00	28.00	334.7	1395.68	120.73	114.54	-38.52	120.84	341.41	2.16	6.9
	1429.60	28.80	334.9	1404.12	125.29	118.67	-40.46	125.38	341.17	2.52	158.5
	1439.20	28.20	335.4	1412.56	129.86	122.83	-42.39	129.93	340.96	2.02	-151.7
	1448.90	27.60	334.7	1421.13	134.39	126.94	-44.30	134.45	340.76	2.11	-39.5
	1458.60	28.00	334.0	1429.71	138.89	131.02	-46.26	138.95	340.55	1.60	37.2
	1467.90	28.90	335.4	1437.89	143.31	135.02	-48.15	143.35	340.37	3.61	21.2
	1477.30	29.80	336.1	1446.08	147.91	139.23	-50.04	147.95	340.23	3.07	54.8
	1486.94	30.40	337.8	1454.42	152.74	143.67	-51.94	152.77	340.13	3.18	-146.2
	1496.20	29.70	336.8	1462.44	157.38	147.95	-53.73	157.40	340.04	2.74	168.8
	1505.80	28.50	337.3	1470.83	162.04	152.25	-55.55	162.07	339.96	3.83	-128.8
	1515.40	27.80	335.4	1479.29	166.57	156.40	-57.36	166.59	339.86	3.55	-47.9
	1525.00	28.10	334.7	1487.77	171.06	160.48	-59.26	171.07	339.73	1.39	0.7
	1534.41	29.30	334.7	1496.02	175.56	164.56	-61.19	175.57	339.60	3.83	66.1
	1543.97	29.70	336.5	1504.34	180.26	168.85	-63.14	180.27	339.50	3.01	161.7
	1553.50	29.20	336.8	1512.64	184.94	173.15	-64.99	184.95	339.43	1.66	130.7
	1563.01	28.89	337.6	1520.96	189.56	177.41	-66.78	189.56	339.37	1.51	136.9
	1572.60	28.50	338.4	1529.37	194.16	181.68	-68.51	194.16	339.34	1.68	139.7
	1582.20	28.20	338.9	1537.82	198.72	185.92	-70.17	198.72	339.32	1.23	75.6
	1591.80	28.30	339.7	1546.27	203.26	190.17	-71.77	203.27	339.32	1.22	132.6
	1601.40	28.00	340.4	1554.74	207.79	194.43	-73.32	207.80	339.34	1.39	180.0
	1610.60	27.20	340.4	1562.89	212.05	198.45	-74.75	212.06	339.36	2.61	148.5
	1619.90	26.20	341.8	1571.20	216.23	202.40	-76.10	216.23	339.39	3.81	180.0
	1629.60	25.60	341.8	1579.93	220.46	206.42	-77.43	220.47	339.44	1.86	-108.6
	1639.20	25.50	341.1	1588.59	224.60	210.35	-78.74	224.60	339.48	0.99	149.5
	1648.60	25.00	341.8	1597.09	228.60	214.15	-80.02	228.61	339.51	1.86	140.8
	1658.30	24.30	343.2	1605.91	232.64	218.01	-81.24	232.65	339.56	2.82	107.2
	1668.00	23.90	346.7	1614.76	236.58	221.83	-82.27	236.59	339.65	4.59	99.7
	1677.70	23.70	350.2	1623.64	240.44	225.66	-83.05	240.46	339.80	4.41	166.3
	1687.30	22.60	350.9	1632.46	244.14	229.39	-83.67	244.17	339.96	3.54	174.0
	1696.90	20.30	351.6	1641.40	247.57	232.86	-84.20	247.61	340.12	7.23	-147.5
	1706.70	18.90	348.8	1650.63	250.79	236.10	-84.76	250.85	340.25	5.16	-97.2
	1716.20	18.80	345.7	1659.62	253.83	239.09	-85.44	253.90	340.34	3.18	-131.0
	1725.70	18.50	344.6	1668.62	256.85	242.03	-86.22	256.92	340.39	1.46	159.2
	1735.30	16.90	346.7	1677.77	259.75	244.85	-86.94	259.83	340.45	5.38	-162.1
	1744.90	15.20	344.6	1686.99	262.38	247.42	-87.60	262.47	340.50	5.61	169.1
	1754.40	12.80	346.7	1696.21	264.66	249.65	-88.17	264.76	340.55	7.75	-171.9
	1764.10	10.20	344.6	1705.71	266.58	251.52	-88.65	266.69	340.59	8.14	-150.3
	1773.60	8.60	338.3	1715.09	268.13	252.99	-89.13	268.23	340.59	6.00	-144.4
	1783.20	8.30	336.8	1724.58	269.54	254.30	-89.67	269.64	340.58	1.16	-45.8
	1792.80	8.40	336.1	1734.06	270.93	255.58	-90.23	271.03	340.56	0.45	90.0
	1802.30	8.40	336.8	1743.48	272.32	256.85	-90.78	272.42	340.53	0.32	170.6
	1811.80	7.90	337.4	1752.88	273.67	258.09	-91.31	273.76	340.52	1.60	-166.9
	1821.40	7.20	336.1	1762.40	274.93	259.25	-91.80	275.02	340.50	2.25	167.3
	1831.00	6.50	337.5	1771.93	276.07	260.30	-92.25	276.16	340.48	2.25	132.4
	1840.60	6.10	341.8	1781.47	277.12	261.29	-92.62	277.22	340.48	1.93	154.9
	1850.10	5.80	343.2	1790.92	278.11	262.22	-92.92	278.20	340.49	1.05	168.8
	1859.70	4.90	345.3	1800.48	279.00	263.09	-93.16	279.09	340.50	2.88	-18.9MTF
	1869.30	3.70	341.1	1810.05	279.71	263.78	-93.37	279.81	340.51	3.97	-11.2MTF

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
	1878.70	2.90	348.8	1819.44	280.25	264.30	-93.51	280.35	340.52	2.91	6.4MTF
	1888.20	2.20	6.4	1828.93	280.65	264.71	-93.54	280.75	340.54	3.29	32.4MTF
	1897.80	1.90	32.4	1838.52	280.91	265.03	-93.43	281.02	340.58	3.02	54.2MTF
	1906.90	2.30	54.2	1847.62	281.05	265.26	-93.20	281.16	340.64	2.92	76.0MTF
	1916.60	2.60	76.0	1857.31	281.07	265.43	-92.83	281.20	340.72	3.01	86.4MTF
	1926.20	2.80	86.4	1866.90	280.97	265.50	-92.39	281.11	340.81	1.65	104.2MTF
	1945.40	2.00	104.2	1886.08	280.64	265.45	-91.59	280.80	340.96	1.69	118.9MTF
	1955.10	1.50	118.9	1895.77	280.44	265.34	-91.32	280.62	341.01	2.07	171.6MTF
	1974.20	0.60	171.6	1914.87	280.16	265.12	-91.08	280.33	341.04	1.94	178.4MTF
	1976.00	0.60	178.4	1916.67	280.14	265.10	-91.08	280.31	341.04	1.19	178.0MTF
'rojection to casing point	1990.00	0.60	178.0	1930.67	280.00	264.96	-91.08	280.17	341.03	0.01	178.0MTF
Total Depth	2117.00	0.60	178.0	2057.66	278.74	263.63	-91.03	278.90	340.95	0.00	

Suncor Inc.
Resources Group

COMPOSITE WELL HISTORY
DRILLING TIME
LITHOLOGY LOG

COMPANY: SUNCOR ENERGY INC.
WELL: SUNCOR NETLA K-77-60-50-122-30
FIELD: NETLA
PROVINCE: NWT
LOCATION: K77-60-50-122-30

COORDINATES: 60`46'30.7" 122`44'23.9
ELEVATIONS: GD 618.4 m LOG MEASURED FROM KB
KB 625.2 m 6.8 m ABOVE GROUND
WELL TYPE: EXPLORATION TOTAL DEPTH: 2118
SPUD DATE: 99-02-07 0230 HRS T.D. DATE: 99-03-09 1700 HRS
LICENCE No.: AFE No.: A9811680K77

CONTRACTOR: AKITA 58 & BONUS 238
MUD TYPE: KCL & CARB POLYMER
MUD UP @: 15
SAMPLES: 5 meter INTERVALS
SUNCOR: 15 TO 2118 meters
NEB: 15 TO 2118 meters (2 SETS)
DSTs: AFTER LOGGING

CORES: SCHLUMBERGER
22 SIDEWALL CORES CUT OVER INTERVAL NOTED. BELOW INTERMEDIATE CASING
ATTEMPTS: 22 RECOVERED: 22
OPEN HOLE LOGS: SCHLUMBERGER
AIT-CNL-PEXD-LDT-BSC - 1990 m-CSG
DPS-GR - 535 m - SURF
DLL-CNL-PEXD-LDT-BSC-MSCL-GR
AIT-GR-SP-CCL - T.D. TO 1990 m
FMI - T.D. TO 1990 m

SUPERVISION
GEOLOGICAL: Brian Hester
DRILLING: BRASEL/MILLER

CASING DEPTH
SURFACE: 535.5 m
INTERMEDIATE: 1990 m
MAIN: 2118 m

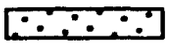
CASING SIZE
SURFACE: 244.5 mm
INTERMEDIATE: 177.8 mm
MAIN: mm

HOLE SIZE
SURFACE: 311 mm
INTERMEDIATE: 222 mm
MAIN: 156 mm

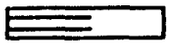
REMARKS: SAMPLE QUALITY FAIR TO GOOD. WELL WAS DRILLED DIRECTIONALLY TO TOP SLAVE POINT WITH DRILLING RIG. CASING WAS RUN AND SERVICE RIG WAS MOVED ON TO FINISH WELL . FORMATION TOPS NOT ADJUSTED TO OPEN HOLE LOGS.

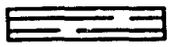
ROCK TYPE

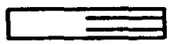

CONGLOMERATE


SANDSTONE

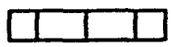

SILTSTONE


SHALE, grey


SHALE, black


SHALE, coloured


CHERT

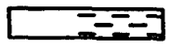

LIMESTONE


DOLOMITE


ANHYDRITE


COAL


CLAYSTONE, grey

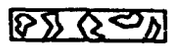

CLAYSTONE, coloured


MARLSTONE, calcareous


MARLSTONE, dolomitic


SALT

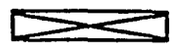

SIDERITE, LIMONITE


BRECCIA

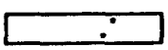

IGNEOUS, basic

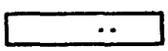

IGNEOUS, acidic

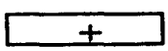

CANNOT INTERPRET

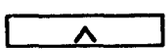

NO SAMPLE

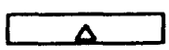
ACCESSORIES


SANDY

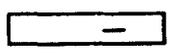

SILTY


FELDSPAR

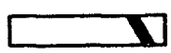

SILICEOUS

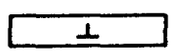

CHERTY, light

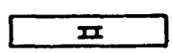

CHERTY, dark

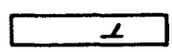

ARGILLACEOUS

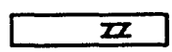

CARBONACEOUS

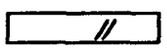

BITUMENOUS

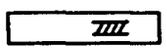

CALCAREOUS

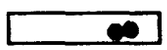

LIMESTONE strg

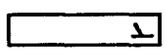

DOLOMITIC

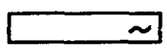

DOLOMITE strg

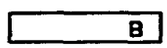

ANHYDRITIC


ANHYDRITE strg

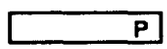

PHOSPHATE pel


FERRUGINOUS

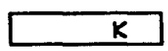

GLAUCONITIC



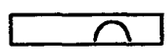
BENTONITIC

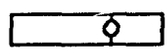


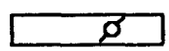
PYRITIC

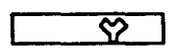


KAOLINITIC


BIOCLASTIC

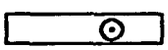

OOLITES

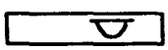

PELLETS

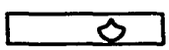

INTRACLASTS

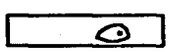


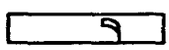
FOSSILS

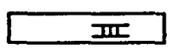

CRINOID


PELECYPOD

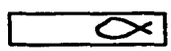

BRACHIOPOD

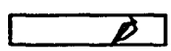

OSTRACOD

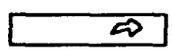

CORAL

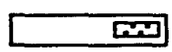

STROMATOPOROID

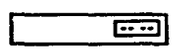

AMPHIPORA

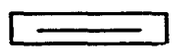

FISH REMAINS


PLANT REMAINS


BRECCIA FRAGMENT


SANDSTONE strg


SILTSTONE strg


SHALE lam

OIL SHOWS

● EVEN STAINING, FLUORESCES

◑ SPOTTY STAIN, FLUORESCES

○ QUESTIONABLE, NO FLUORESCENCE,

D DEAD, ASPHALTIC

POROSITY TYPES

X INTERCRYSTALLINE, INTERGRANULAR

ϕ INTEROOLITIC, INTEPELLETOID,

V VUGGY,

P PINPOINT,

MOLDIC

O ORGANIC

F FRACTURE

e EARTHY

⊡ FENESTRAL

SCALE 1:240

TOTAL GAS (units)
0 50 100

DRILLING TIMES (min/m)
0 5 10

99/02/07
0230 HRS

BIT#1A
HP11

WORK ON MUD

DEPTH

25

S-.25°

S-.7°
52°

50

S-.50°

OIL SHOWS

POROSITY

POROSITY TYPE

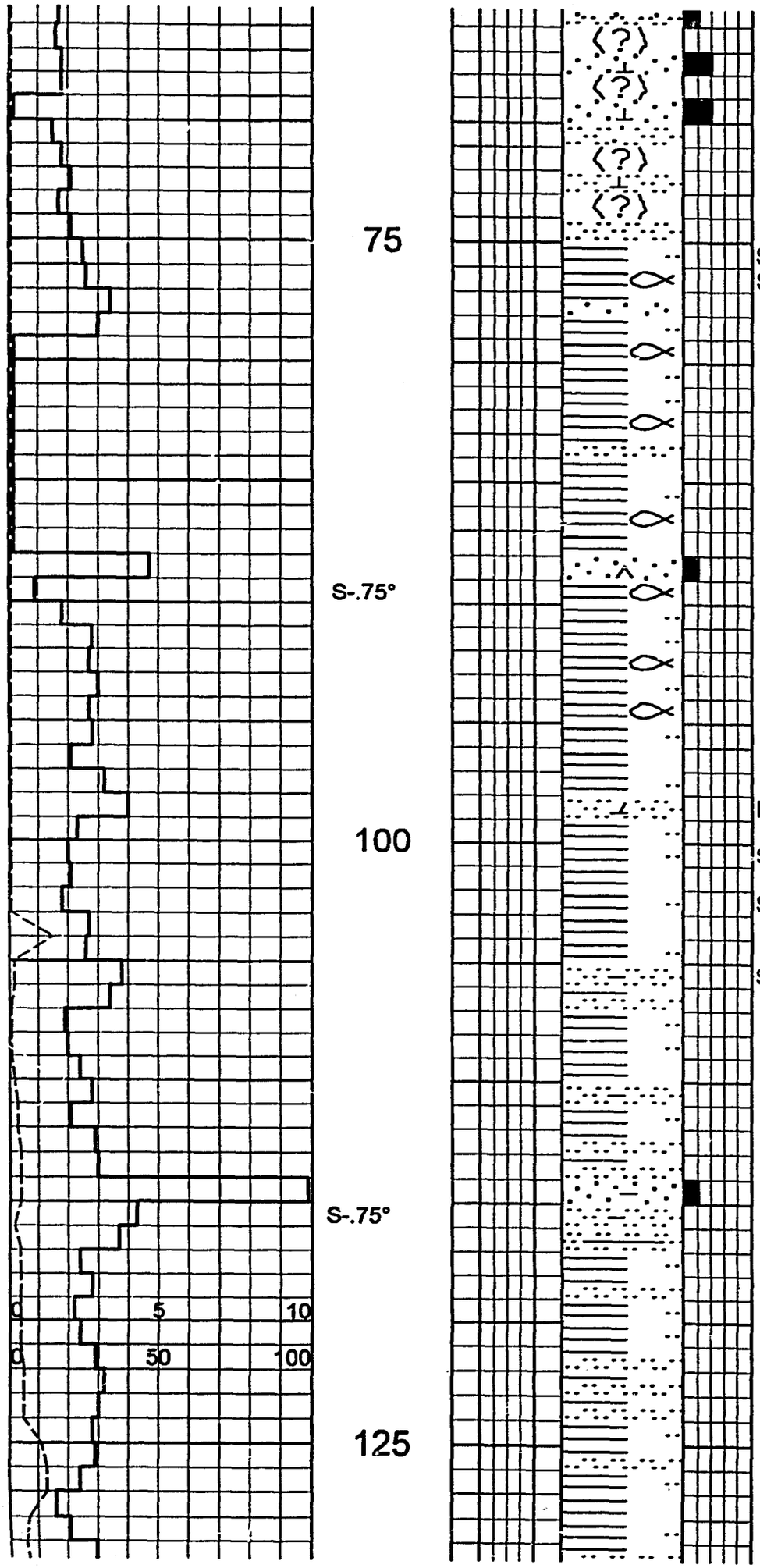
LITHOLOGY

GRAIN or CRYSTAL SIZE

DESCRIPTIONS

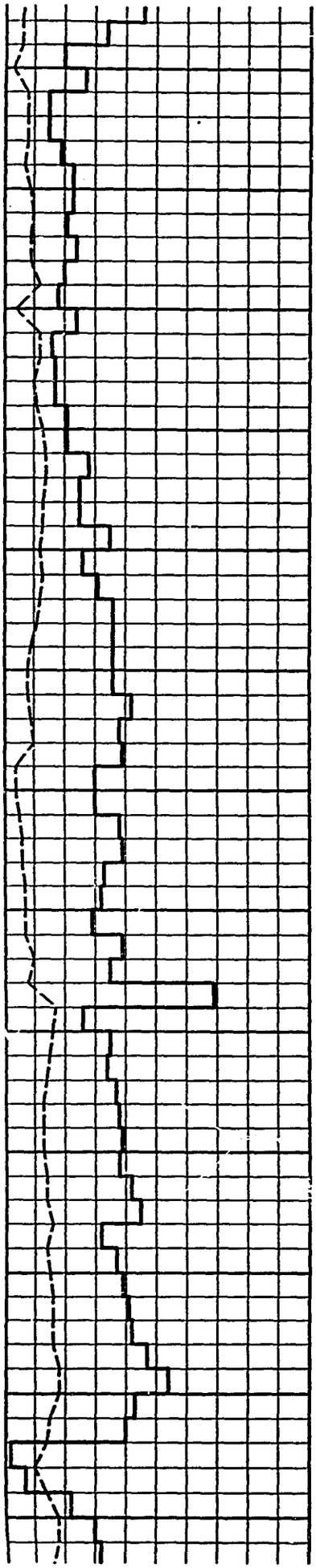
Siltstone with minor Shale laminae:
SILTSTONE - light grey, clay cement, moderately cemented, friable;
Very poor samples.

Siltstone with Sandstone stringers and interbeds:
SILTSTONE - light grey, clay cement, moderately cemented, friable, scattered fish scales;
SANDSTONE - grey white, quartz minor lithics, very fine to fine grained trace medium grained, well sorted, subangular to angular, calcareous and siliceous cement, well cemented, trace micaceous, tight, no shows;
Very poor samples.



Shale with Siltstone stringers:
SHALE - light to medium grey, blocky, subfissile, abundant scattered fish scales, arenaceous.

Interbedded and interlaminated Shale and Siltstone with minor Sandstone:
SHALE - medium grey, blocky, subfissile, arenaceous to highly arenaceous;
SILTSTONE - light grey, clay cement, moderately to well cemented, friable in part, sandy in part, micaceous;
SANDSTONE - grey white, quartz, very fine grained, well sorted, subangular, calcareous and siliceous cement, well cemented, tight, no shows.



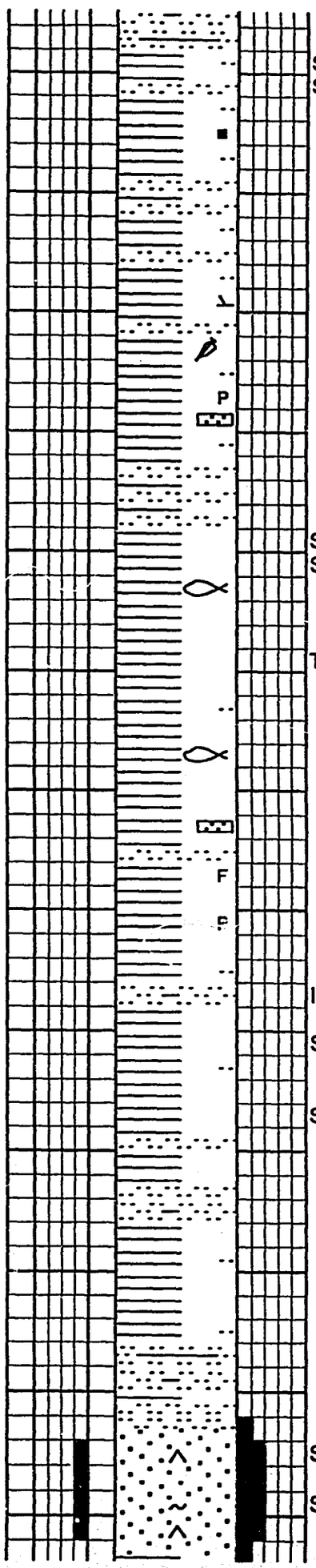
150

S-.7°

S-.75°
77°

175

S-.5°

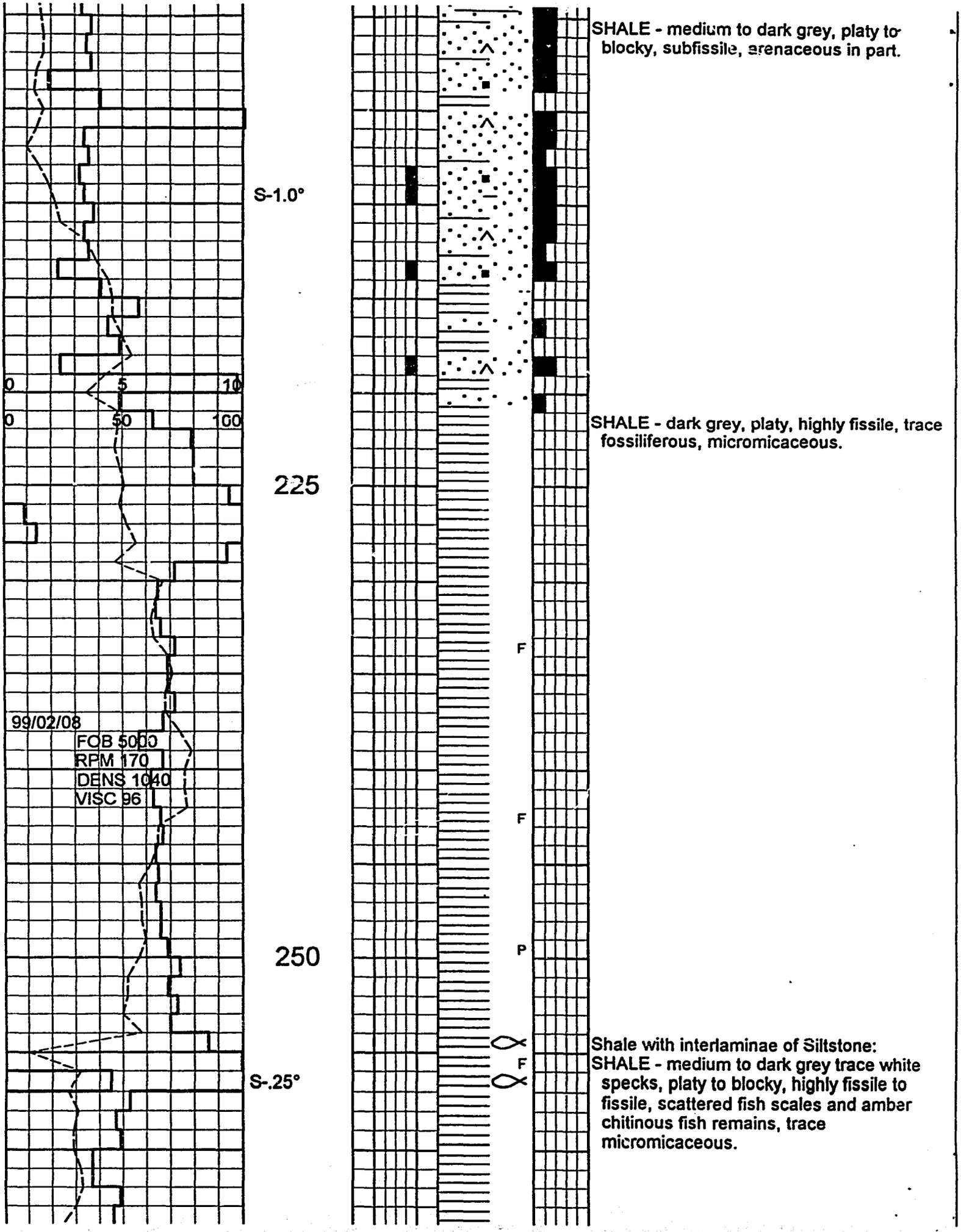


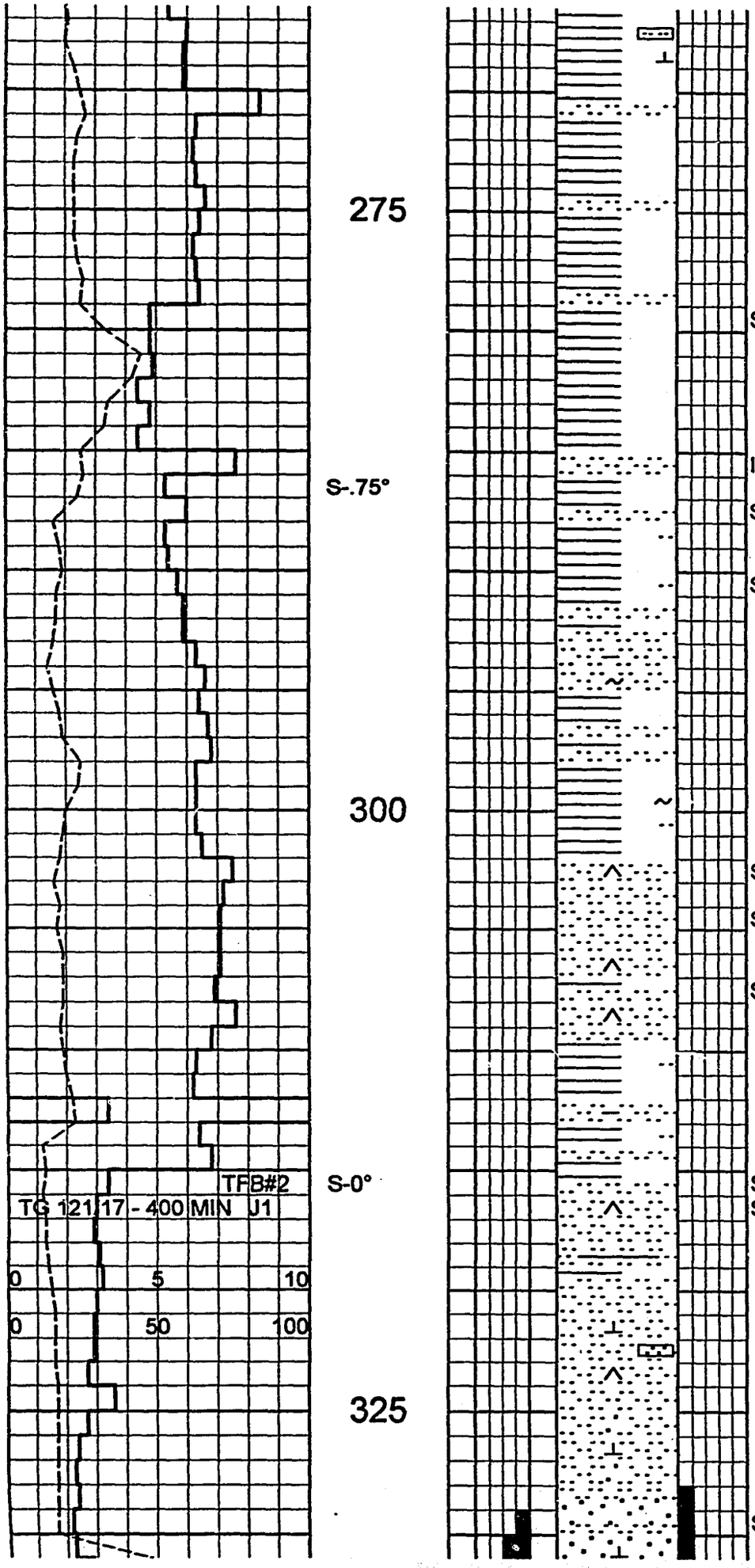
Shale with interlaminated Siltstone:
SHALE - medium grey, blocky, subfissile, arenaceous, carbonaceous matter & plant fossils, disseminated pyrite.

Shale with minor Siltstone laminae:
SHALE - medium to dark grey, platy to blocky, subfissile to fissile, scattered fish scales and chitinous fish remains, disseminated pyrite;
Trace Inoceramus.

Interbedded and interlaminated Shale and Siltstone:
SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous;
SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part.

Sandstone with interbeds and interlaminated Shale:
SANDSTONE - grey white, quartz, very fine to occasionally fine grained, well sorted,


S-1.0°
0
5
10
0
50
100
225
99/02/08
FOB 5000
RPM 170
DENS 1040
VISC 96
250
S-.25°
F
F
P
F
SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part.
SHALE - dark grey, platy, highly fissile, trace fossiliferous, micromicaceous.
Shale with interlaminae of Siltstone:
SHALE - medium to dark grey trace white specks, platy to blocky, highly fissile to fissile, scattered fish scales and amber chitinous fish remains, trace micromicaceous.



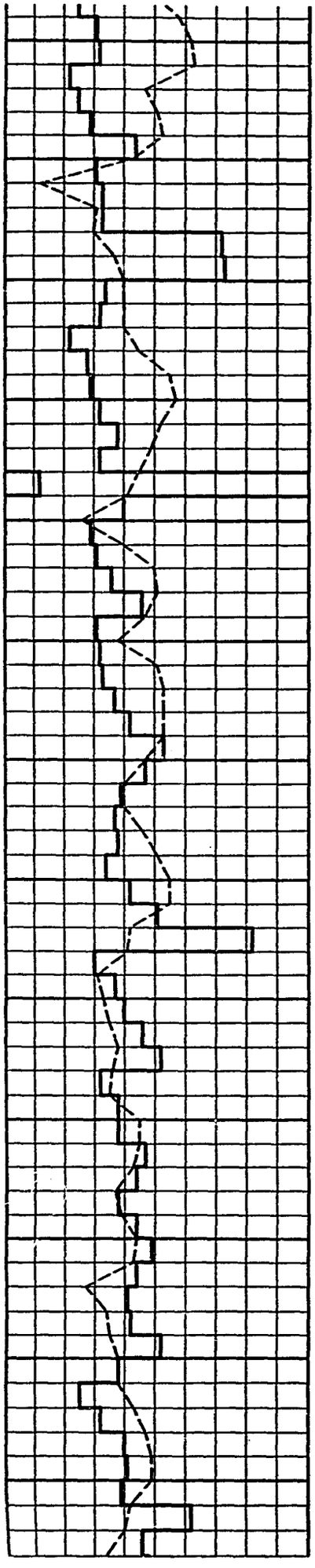
SHALE - dark grey, platy, highly fissile, trace fossiliferous, micromicaceous.

Interbedded and interlaminated Shale and Siltstone:
SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous;
SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part.

Siltstone with interbedded and interlaminated Shale:
SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part;
SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous.

Siltstone with Sandstone stringers:
SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.

Sandstone with interbedded and



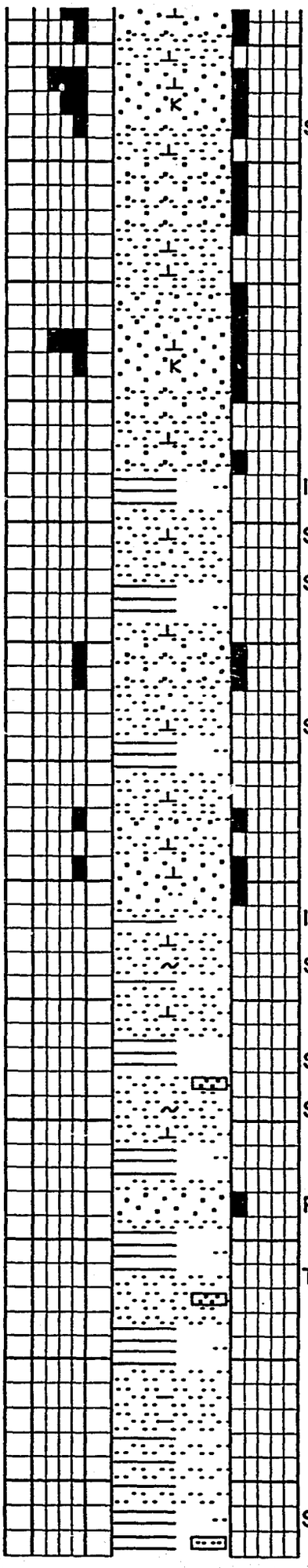
350

S-.25°

375

S-.3°
273°

S-.75°

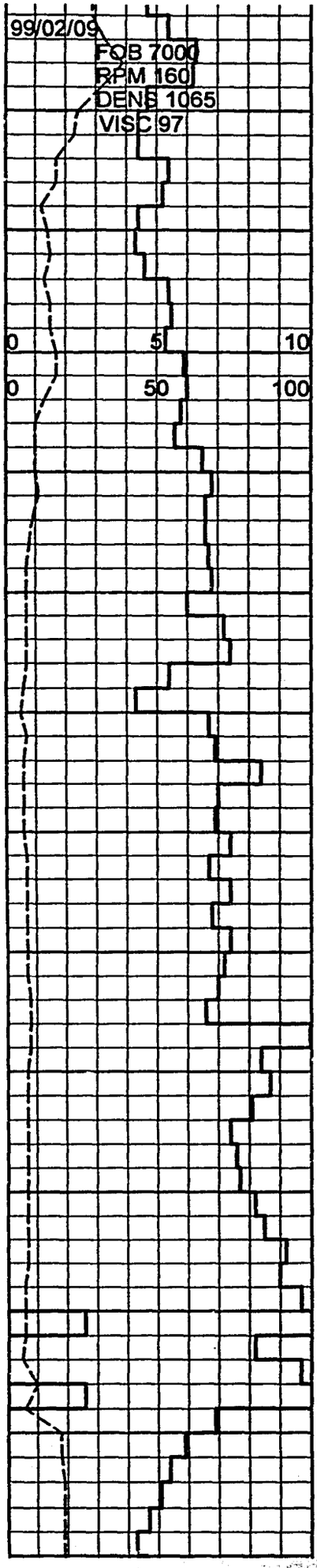


moderately to well cemented, semifriable in part, trace kaolinitic, poor to fair porosity (3-8%), minor streaks good porosity (10-12%), no shows;
SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.

Interbedded & interlaminated Siltstone, Sandstone & Shale:
SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy;
SANDSTONE - snow white to light tan, clear to frosted quartz, very fine grained, well sorted, subangular, calcareous cement, moderately to well cemented, semifriable in part, trace kaolinitic, silty, poor porosity (3-4%), no shows;
SHALE - dark grey, platy to blocky, subfissile, arenaceous in part.

Interbedded & interlaminated Siltstone & Shale with minor Sandstone:
SILTSTONE - light to buff tan, calcareous with clay cement increasing downsection, well to highly cemented, glauconitic in part, sandy in part;
SHALE - dark grey, platy to blocky, subfissile, arenaceous in part;
SANDSTONE - light tan, clear to frosted quartz, very fine grained, well sorted, subangular, loose, silty, poor to fair porosity (3-7%), no shows;
Presence of Sandstone is questionable, abundant loose grains in bottom of examination tray, could be cavings;
Trace black hematite nodules.

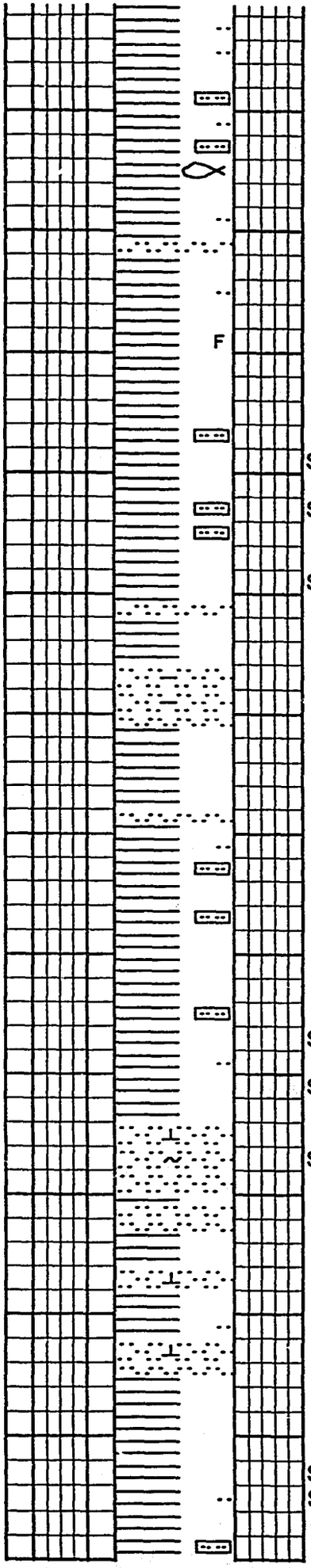
Shale with minor laminae & stringers of Siltstone decreasing downsection:



S-1.0°

425

450

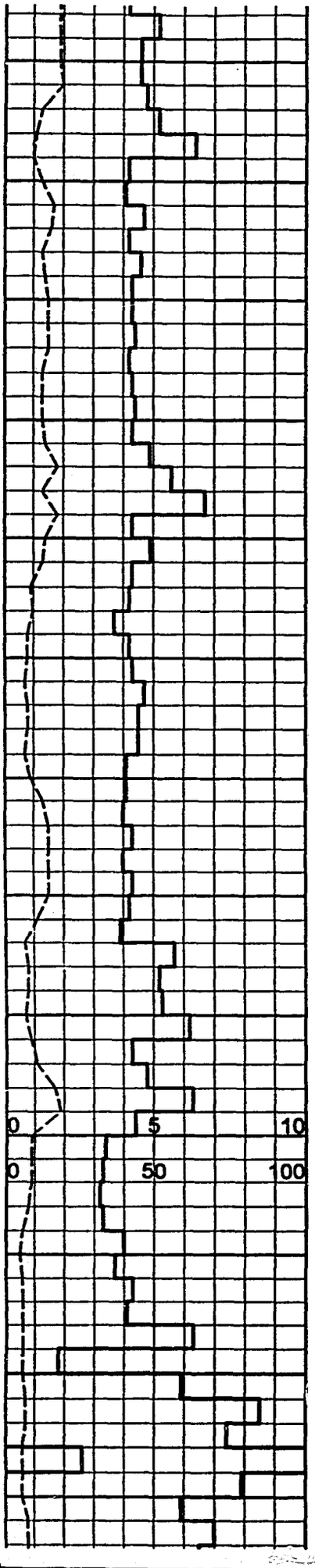


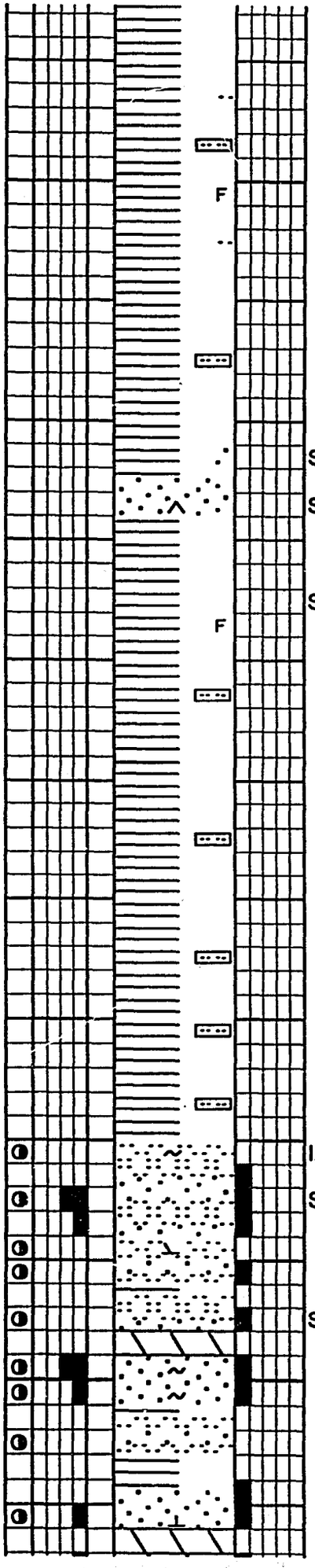
fossil fragments.

Shale with Siltstone stringers and interbeds:
SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous;
SILTSTONE - light grey, clay cement, well cemented.

Shale with Siltstone stringers and interbeds:
SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous;
SILTSTONE - light grey, calcareous cement, well cemented, trace glauconite.

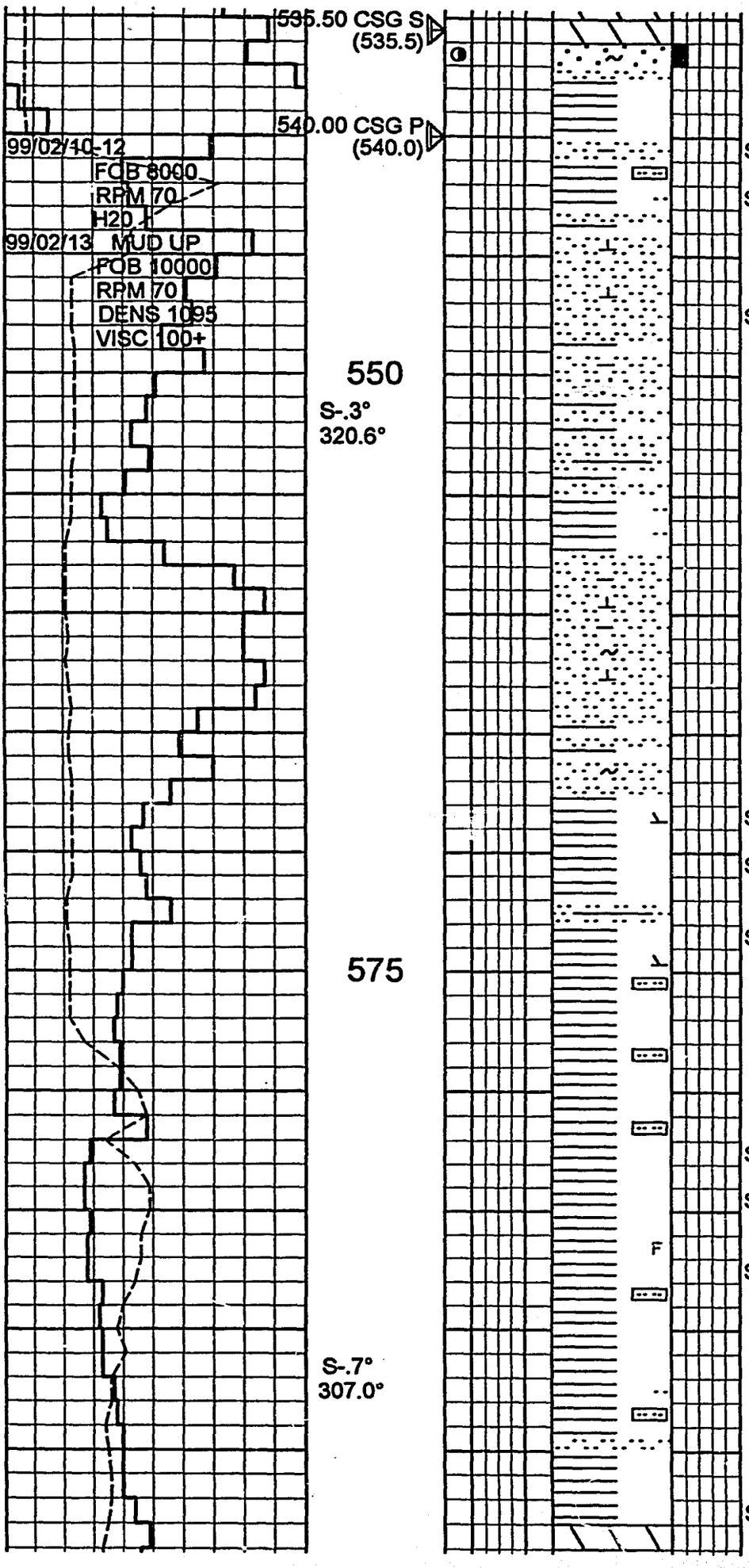
Shale with Siltstone stringers:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous,





Shale with minor Sandstone interbeds and Siltstone laminae:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous, micromicaceous;
SANDSTONE - grey white, clear to frosted quartz, silt to very fine grained, well sorted, subangular, siliceous cement, well cemented, tight, no shows.

Interbedded & interlaminated Siltstone, Sandstone, Siderite & Shale:
SILTSTONE - light tan to light grey green, sideritic, calcareous and clay cement, well cemented, sandy, glauconitic, scattered stain, very light fluorescence, yellow white streaming cut;
SANDSTONE - light tan to grey green, clear quartz trace lithics, silt to very fine grained, well sorted, subangular to subround, sideritic cement, moderately to well cemented, semifriable in part, highly glauconitic, trace kaolinitic, poor to fair porosity (4-11%), Sneider ID - III (.07-1.0 md), patchy stain, scattered very light yellow fluorescence, fast yellow white streaming cut;



subfissile, arenaceous in part.

Siltstone with interbeds and stringers of Shale:
SILTSTONE - medium to dark grey to light grey tan, clay minor sideritic cement, calcareous in part, well cemented, sandy in part, trace glauconitic, trace disseminated pyrite;
SHALE - dark grey to grey brown, platy to blocky, subfissile, arenaceous, micromicaceous.

Shale with minor Siltstone interbeds and laminae:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous;
SILTSTONE - light brown, clay cement, highly cemented.

Shale with minor Siltstone interbeds and laminae:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous;
SILTSTONE - light brown, clay cement, highly cemented.

Shale with interbedded Siderite and Siltstone:

OVERSIZED

DOCUMENT

FILMED

ON

35mm

POST WELL ANALYSIS REPORT

Schlumberger
Anadrill

525 - 3rd Avenue S.W.
Calgary, Alberta T2P 0G4
(403) 509-4000 (Tel)
(403) 509-4300 (Tel)

40003197

N.E.B. COPY

SUNCOR ENERGY INC.

POST WELL ANALYSIS REPORT FOR

SUNCOR NETLA

K-77-60-50-122-30

Job Identification
Suncor Inc. Resources Group

Project ID:	Suncor Energy Netla
Pad ID:	Single well
Well ID:	Suncor Netla K-77-60-50-122-30
Unique ID:	K77-60-50-122-30

Operator:	Suncor Inc. Resources Group
Address:	Calgary Alberta
Co Rep:	Lee Brazel- Pat Miller

Contractor:	Akita Drilling
Rig ID:	Akita 58
Pusher:	Dave Lauck

Service Co:	Anadrill - Schlumberger
District:	Calgary, Alberta
DD Eng:	Maurice Deschamps
MWD Eng:	Brad Erick Warren Cox

Start Date:	February 15 1999
Release Date:	february 26 1999
Total Days:	#VALUE!

Well Specifications
Suncor Inc. Resources Group

Well Name: Suncor Netla K-77-60-50-122-30

Well Number: K77-60-50-122-30

Field Name: Netla (CDN)

Area: South Eastern

KB level (above sea): 625.2m **Magnetic Declination:** 23.783 degrees

Ground Level (above sea): 618.40m

KB to Ground level : 6.8m

Surface Location

N-S Coord: Lat. N60-46-30.724

E-W Coord: Lon. W122-44-23.945

Target Loc: Planned **(Ref: Kelly Bushing)** **Final Bottom Hole Loc:**

N-S Coord:	261.40 North	**N-S Coord:**	264.96 North
E-W Coord:	100.34 West	**E-W Coord:**	91.08 West
TVD:	1951.00 m	**TVD:**	1930.67m
Target Radius:			

Schlumberger | Anadrill | JOB NUMBER 40003197

Well Descriptions

Suncor Inc. Resources Group

Suncor Netla K-77-60-50-122-30
K77-60-50-122 30

Project Description: Proposed

The Suncor Netla K77-60-50-122-30 is a proposed "S" Type well with a kick off at 1105 meters measured depth.A three degree per 30 build rate will be used to build to an inclination of 23 .3 degrees in an azmuth of 339 drgrees direction. This angle will be held through the hold section to a TVD of 1724.69 meters Where the well will be dropped at a rate of 3 degrees per 30 maintaining the azmuth od 339 ndegrees until the incllination reaches 0 maintaining this inclination to the top of the Slave Point formation Where the tools will be layed down casing run and the sevice rig will complete the drilling of the well to TD were they will put the well into production.

Project Results: Actual

The well was kicked off at 1105.0 meters and was .14 meters North and .18 meters East of well center.The build section went well when reaching the hold section the formation called the Ft Simpson has a tendency to build in inclination this was very true it was difficult to control the build with slides from four to nine meter The end results was an inclination of 28 degrees at the drop of point. At the start of of the drop we were able to get our results then we were sliding nine meters and getting builds instead of drops. We pulled the motor and raised the motor setting from 1.50 to 2.12 degrees. We needed some large doglegs to get to the target at this point and we were able to achieve this with this setting but it was very difficult to control the doglegs each survey with the the same amount of slide was totaly different from .63 to7.00 degree doglegs with the same slide. Right to the target when you rotated you got builds and drastic turns to the right. The target was penetrated at approximately 264.96 meters North and 91.08 meters West of hole center. This put the entry at approximatley 4.86 meters from target center.....

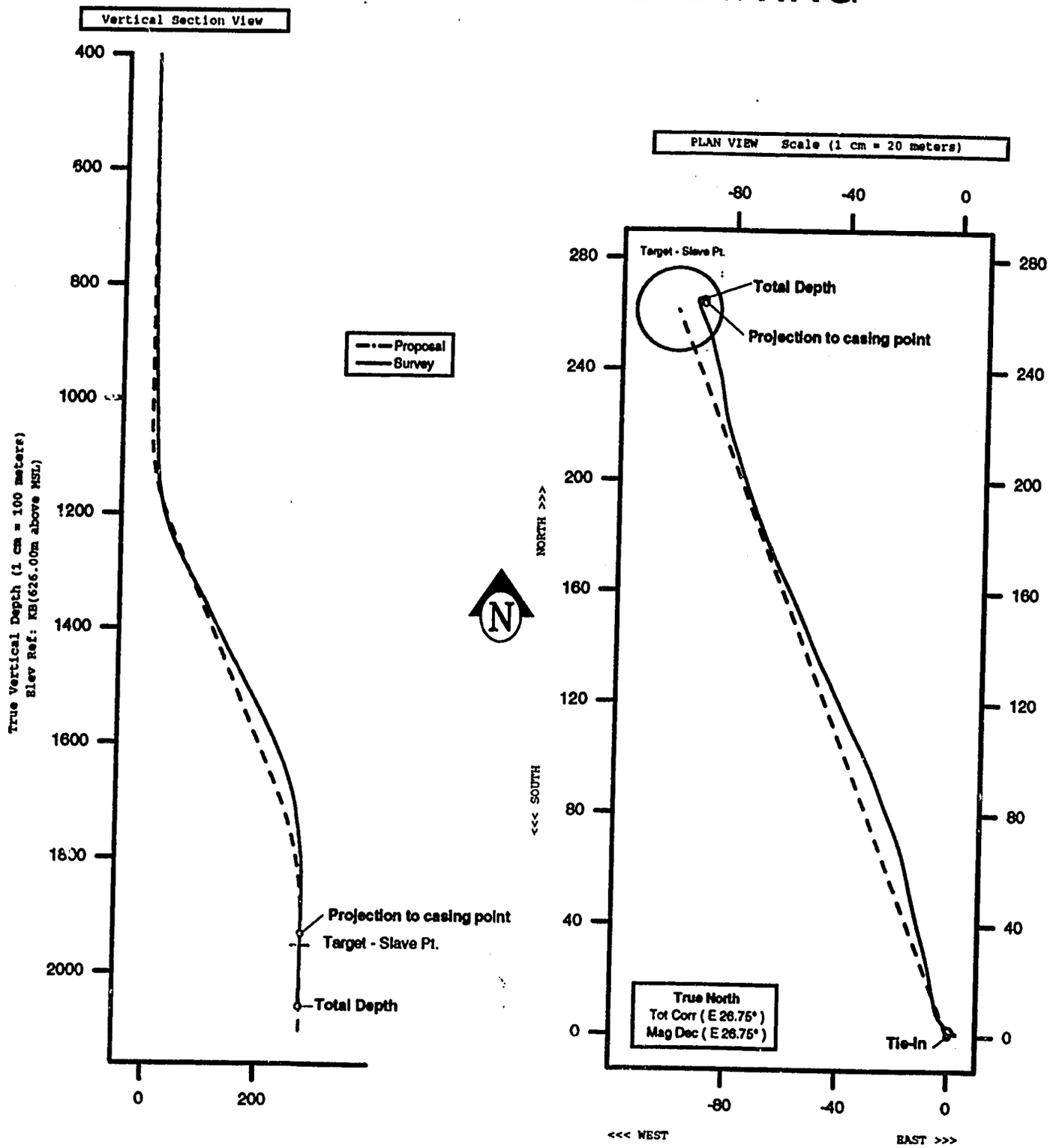
Schlumberger
Anadrill

SUNCOR ENERGY

WELL	FIELD	STRUCTURE
	NETLA (CDN)	Suncor/K-77

Magnetic Parameters Model: BGS 1998 Dip: 79.004° Mag Dec: 26.752° Date: February 17, 1999 FS: 59071.8 nT	Surface Location Lat: N60 46 30.724 Lon: W122 44 23.945 North: 6737571.92 m East: 514162.95 m Grid Conv: 0.2269° Scale Fact:0.9998	Miscellaneous Slot: Suncor Netla K-77-60-55-122-30 Elev Ref: KB(626.00m above MSL) Date Drawn: 11:54:51AM 11-Mar-1999

COMPLETION DRAWING



Schlumberger
Anadrill

Schlumberger

Survey

Anadrill
Final Survey

Client:	SUNCOR ENERGY	Survey Computation Method:	Minimum Curvature
Field:	NETLA (CDN)	DLS Computation Method:	Lubinski
Structure:	Suncor/K-77	Vertical Section Azimuth:	339.000°
Well:		Vertical Section Origin:	N 0.000 m, E 0.000 m
Borehole:	Job # 40003197	TVD Reference:	KB
API #:			626.0 m above MSL
Date:	March 11, 1999	Magnetic Declination:	26.752°
Grid Convergence:	0.22691852°	Total Field Strength:	59071.812 nT
Scale Factor:	0.99960246	Dip:	79.004°
		Declination Date:	February 17, 1999
Location:	N 60 46 30.724, W 122 44 23.945	Magnetic Declination Model:	BGS 1998
:	N 6737571.924 m, E 514162.948 m	North Reference:	True North
Coordinate System:	UTM Zone 10N	Coordinate Reference To:	Well Head

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
Tie-In	37.75	0.70	52.0	37.75	0.07	0.14	0.18	0.23	52.13	0.00	77.0MTF
	150.67	0.70	77.0	150.66	0.17	0.72	1.40	1.57	62.72	0.08	107.0MTF
	263.34	0.50	107.0	263.33	-0.23	0.73	2.54	2.64	73.92	0.10	-87.0MTF
	378.15	0.30	273.0	378.13	-0.41	0.60	2.72	2.78	77.54	0.21	82.0MTF
	503.00	0.50	82.0	502.98	-0.40	0.69	2.93	3.01	76.68	0.19	-39.4MTF
	551.00	0.30	320.6	550.98	-0.33	0.82	3.06	3.16	74.99	0.44	-53.0MTF
	591.00	0.70	307.0	590.98	-0.02	1.05	2.79	2.98	69.45	0.31	-36.0MTF
	677.00	1.00	324.0	676.97	1.15	1.97	1.93	2.76	44.46	0.14	-42.8MTF
	777.00	0.80	317.2	776.96	2.64	3.19	0.95	3.33	16.53	0.07	-86.0MTF
	792.00	1.75	274.0	791.96	2.83	3.28	0.65	3.34	11.15	2.58	-38.0MTF
	878.00	1.25	322.0	877.93	4.28	4.11	-1.24	4.30	343.21	0.45	-38.0MTF
	991.00	1.50	322.0	990.90	6.88	6.25	-2.91	6.89	335.03	0.07	-17.5MTF
	1093.10	1.90	342.5	1092.95	9.84	8.92	-4.24	9.87	334.56	0.21	-25.3MTF
	1102.90	2.10	334.7	1102.75	10.19	9.23	-4.37	10.21	334.69	1.03	-12.2MTF
	1111.40	3.20	347.8	1111.24	10.58	9.61	-4.48	10.60	334.98	4.41	-15.5MTF
	1121.50	4.40	344.5	1121.31	11.24	10.26	-4.65	11.26	335.62	3.62	-8.4MTF
	1131.50	5.70	351.6	1131.28	12.11	11.12	-4.82	12.12	336.55	4.32	-12.6
	1141.84	7.30	348.8	1141.55	13.25	12.27	-5.03	13.26	337.73	4.73	-3.9
	1151.02	8.90	348.1	1150.64	14.53	13.54	-5.28	14.53	338.67	5.24	5.8
	1161.00	10.10	348.8	1160.48	16.16	15.15	-5.61	16.16	339.67	3.62	-7.1
	1170.75	11.20	348.1	1170.06	17.93	16.91	-5.98	17.94	340.54	3.41	20.1
	1180.60	12.00	349.5	1179.71	19.88	18.86	-6.36	19.90	341.36	2.58	-11.7
	1189.28	13.60	348.1	1188.18	21.78	20.74	-6.74	21.81	342.01	5.63	0.0
	1199.24	15.80	348.1	1197.81	24.28	23.22	-7.26	24.32	342.64	6.63	-7.2
	1208.92	17.50	347.4	1207.08	27.02	25.93	-7.85	27.09	343.16	5.31	-14.5
	1218.46	19.30	346.0	1216.13	30.00	28.86	-8.54	30.09	343.51	5.83	-23.0
	1228.22	21.10	343.9	1225.29	33.35	32.11	-9.42	33.46	343.65	5.97	0.0
	1237.62	22.70	343.9	1234.02	36.85	35.48	-10.40	36.97	343.67	5.11	13.3
	1246.75	23.90	344.6	1242.40	40.44	38.95	-11.38	40.58	343.72	4.05	28.6
	1256.52	25.00	346.0	1251.29	44.46	42.86	-12.40	44.62	343.86	3.82	27.7
	1266.27	26.20	347.4	1260.09	48.64	46.96	-13.37	48.83	344.11	4.15	11.2
	1276.27	27.10	347.8	1269.02	53.07	51.34	-14.34	53.31	344.40	2.75	10.0
	1285.74	27.90	348.1	1277.42	57.39	55.62	-15.25	57.07	344.67	2.57	-48.6
	1295.49	28.50	346.7	1286.02	61.95	60.11	-16.26	62.27	344.87	2.76	-79.7
	1305.15	28.70	344.6	1294.50	66.54	64.59	-17.40	66.90	344.92	3.20	-84.8
	1314.72	28.90	341.0	1302.89	71.14	69.00	-18.77	71.50	344.78	5.35	-78.8
	1324.31	29.20	338.2	1311.27	75.79	73.36	-20.39	76.14	344.47	4.37	-60.4
	1334.00	29.60	336.8	1319.71	80.55	77.76	-22.20	80.86	344.06	2.46	60.3

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
	1343.38	29.80	337.5	1327.86	85.19	82.04	-24.01	85.48	343.69	1.28	90.0
	1353.04	29.80	340.4	1336.24	89.99	86.52	-25.73	90.26	343.44	4.34	-129.9
	1362.59	28.70	337.5	1344.58	94.66	90.87	-27.40	94.92	343.22	5.53	168.0
	1371.99	27.20	338.2	1352.88	99.06	94.96	-29.06	99.30	342.98	4.90	-112.0
	1381.70	26.50	334.0	1361.54	103.44	98.96	-30.84	103.66	342.69	6.30	-108.1
	1391.10	26.40	333.3	1369.96	107.61	102.72	-32.69	107.79	342.34	1.05	-32.4
	1400.75	26.90	332.6	1378.58	111.91	106.57	-34.66	112.07	341.98	1.84	68.2
	1410.30	27.30	334.7	1387.08	116.24	110.47	-36.59	116.37	341.67	3.26	0.0
	1420.00	28.00	334.7	1395.68	120.73	114.54	-38.52	120.84	341.41	2.16	6.9
	1429.60	28.80	334.9	1404.12	125.29	118.67	-40.46	125.38	341.17	2.52	158.5
	1439.20	28.20	335.4	1412.56	129.86	122.83	-42.39	129.93	340.96	2.02	-151.7
	1448.90	27.60	334.7	1421.13	134.39	126.94	-44.30	134.45	340.76	2.11	-39.5
	1458.60	28.00	334.0	1429.71	138.89	131.02	-46.26	138.95	340.55	1.60	37.2
	1467.90	28.90	335.4	1437.89	143.31	135.02	-48.15	143.35	340.37	3.61	21.2
	1477.30	29.80	336.1	1446.08	147.91	139.23	-50.04	147.95	340.23	3.07	54.8
	1486.94	30.40	337.8	1454.42	152.74	143.67	-51.94	152.77	340.13	3.18	-146.2
	1496.20	29.70	336.8	1462.44	157.38	147.95	-53.73	157.40	340.04	2.74	168.8
	1505.80	28.50	337.3	1470.83	162.04	152.25	-55.55	162.07	339.96	3.83	-128.8
	1515.40	27.80	335.4	1479.29	166.57	156.40	-57.36	166.59	339.86	3.55	-47.9
	1525.00	28.10	334.7	1487.77	171.06	160.48	-59.26	171.07	339.73	1.39	0.7
	1534.41	29.30	334.7	1496.02	175.56	164.56	-61.19	175.57	339.60	3.83	66.1
	1543.97	29.70	336.5	1504.34	180.26	168.85	-63.14	180.27	339.50	3.01	161.7
	1553.50	29.20	336.8	1512.64	184.94	173.15	-64.99	184.95	339.43	1.66	130.7
	1563.01	28.89	337.6	1520.96	189.56	177.41	-66.78	189.56	339.37	1.51	136.9
	1572.60	28.50	338.4	1529.37	194.16	181.68	-68.51	194.16	339.34	1.68	139.7
	1582.20	28.20	338.9	1537.82	198.72	185.92	-70.17	198.72	339.32	1.23	75.6
	1591.80	28.30	339.7	1546.27	203.26	190.17	-71.77	203.27	339.32	1.22	132.6
	1601.40	28.00	340.4	1554.74	207.79	194.43	-73.32	207.80	339.34	1.39	180.0
	1610.60	27.20	340.4	1562.89	212.05	198.45	-74.75	212.06	339.36	2.61	148.5
	1619.90	26.20	341.8	1571.20	216.23	202.40	-76.10	216.23	339.39	3.81	180.0
	1629.60	25.60	341.8	1579.93	220.46	206.42	-77.43	220.47	339.44	1.86	-108.6
	1639.20	25.50	341.1	1588.59	224.60	210.35	-78.74	224.60	339.48	0.99	149.5
	1648.60	25.00	341.8	1597.09	228.60	214.15	-80.02	228.61	339.51	1.86	140.8
	1658.30	24.30	343.2	1605.91	232.64	218.01	-81.24	232.65	339.56	2.82	107.2
	1668.00	23.90	346.7	1614.76	236.58	221.83	-82.27	236.59	339.65	4.59	99.7
	1677.70	23.70	350.2	1623.64	240.44	225.66	-83.05	240.46	339.80	4.41	166.3
	1687.30	22.60	350.9	1632.46	244.14	229.39	-83.67	244.17	339.96	3.54	174.0
	1696.90	20.30	351.6	1641.40	247.57	232.86	-84.20	247.61	340.12	7.23	-147.5
	1706.70	18.90	348.8	1650.63	250.79	236.10	-84.76	250.85	340.25	5.16	-97.2
	1716.20	18.80	345.7	1659.62	253.83	239.09	-85.44	253.90	340.34	3.18	-131.0
	1725.70	18.50	344.6	1668.62	256.85	242.03	-86.22	256.92	340.39	1.46	159.2
	1735.30	16.90	346.7	1677.77	259.75	244.85	-86.94	259.83	340.45	5.38	-162.1
	1744.90	15.20	344.6	1686.99	262.38	247.42	-87.60	262.47	340.50	5.61	169.1
	1754.40	12.80	346.7	1696.21	264.66	249.65	-88.17	264.76	340.55	7.75	-171.9
	1764.10	10.20	344.6	1705.71	266.58	251.52	-88.65	266.69	340.59	8.14	-150.3
	1773.60	8.60	338.3	1715.09	268.13	252.99	-89.13	268.23	340.59	6.00	-144.4
	1783.20	8.30	336.8	1724.58	269.54	254.30	-89.67	269.64	340.58	1.16	-45.8
	1792.80	8.40	336.1	1734.08	270.93	255.58	-90.23	271.03	340.56	0.45	90.0
	1802.30	8.40	336.8	1743.48	272.32	256.85	-90.78	272.42	340.53	0.32	170.6
	1811.80	7.90	337.4	1752.88	273.67	258.09	-91.31	273.76	340.52	1.60	-166.9
	1821.40	7.20	336.1	1762.40	274.93	259.25	-91.80	275.02	340.50	2.25	167.3
	1831.00	6.50	337.5	1771.93	276.07	260.30	-92.25	276.16	340.48	2.25	132.4
	1840.60	6.10	341.8	1781.47	277.12	261.29	-92.62	277.22	340.48	1.93	154.9
	1850.10	5.80	343.2	1790.92	278.11	262.22	-92.92	278.20	340.49	1.05	168.8
	1859.70	4.90	345.3	1800.48	279.00	263.09	-93.16	279.09	340.50	2.88	-18.9MTF
	1869.30	3.70	341.1	1810.05	279.71	263.78	-93.37	279.81	340.51	3.87	-11.2MTF

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
	1878.70	2.90	348.8	1819.44	280.25	264.30	-93.51	280.35	340.52	2.91	6.4MTF
	1888.20	2.20	6.4	1828.93	280.65	264.71	-93.54	280.75	340.54	3.29	32.4MTF
	1897.80	1.90	32.4	1838.52	280.91	265.03	-93.43	281.02	340.58	3.02	54.2MTF
	1906.90	2.30	54.2	1847.62	281.05	265.26	-93.20	281.16	340.64	2.92	76.0MTF
	1916.60	2.60	76.0	1857.31	281.07	265.43	-92.83	281.20	340.72	3.01	86.4MTF
	1926.20	2.80	86.4	1866.90	280.97	265.50	-92.39	281.11	340.81	1.65	104.2MTF
	1945.40	2.00	104.2	1886.08	280.64	265.45	-91.59	280.80	340.96	1.69	118.9MTF
	1955.10	1.50	118.9	1895.77	280.44	265.34	-91.32	280.62	341.01	2.07	171.6MTF
	1974.20	0.60	171.6	1914.87	280.16	265.12	-91.08	280.33	341.04	1.94	178.4MTF
	1976.00	0.60	178.4	1916.67	280.14	265.10	-91.08	280.31	341.04	1.19	178.0MTF
Projection to casing point	1990.00	0.60	178.0	1930.67	280.00	264.96	-91.08	280.17	341.03	0.01	178.0MTF
Total Depth	2117.00	0.60	178.0	2057.66	278.74	263.63	-91.03	278.90	340.95	0.00	

Schlumberger | Anadrill | BHA DataSheet

Suncor Inc. Resources Group

JSO#	40003197	Depth In:	1105	Depth out:	1577		Mtr. Drlg	472	BHA # 1	
Well Name:	Suncor Netla K-77-60-50-1	Date In:	FEB-16-99	Date Out:	FEB 22-99		Days:	#VALUE!	Hole Size:	222
LSD:	K77-60-50-122-30	Slide Dist.:	108.0	Slide Hrs.:	16.98	Hrs.	Steering %	23%	PDM Run #:	1
Field:	GGGGG	Rotate Dist.:	364.0	Rot. Hrs.:	63.52	Hrs.	Rotate %	77%	Drlg hrs	82.50
Province:	North West Territories	PDM R/S config:	7/8	Volume:	1.2	cu-m/min	Slide ROP:	5.7	Circ. Hrs:	13.25
Rig:	Akita 58	ABH Set:	1.00	RPM S/DH:	40	90	Rot. ROP:	5.7	Tot. D&C:	95.75
DD:	Maurice Deschamps	Motor Vendor	ANADRILL	Avg. WOB:	16	KdaN	Avg. ROP:	5.72	Inc. In:	0.70
DD:		Reactive Torq.:	120	SPP Off/On:	7500	6000	Bit to Svy:	14	Azm. In:	52.00
MWD:	Brad Erick	Mud Type:	PHOSPHATE	PV/YP:			Sand%		Inc. Out:	28.89
MWD:	Warren Cox	Mud Wt:	1185	Chlorides:			Solid cont:		Azm. Out:	337.59
Co. Rep:	Lee Brazel- Pat Miller	Mud Vis:		Wt.:	7.2		Oil/Water :		MWD BHT:	35.80
String Wt:		P/U Wt.:	70000.0	S/O Wt.:	60000.0		BHA Wt.:	63000.0	Rot. Torq:	

Item	Description	Vendor	Serial #	FN/MAX OD	OD	ID	B. Conn	T. Conn	Length	Cum Len
1	F10TP	SMITH	LT77093						0.25	0.25
2	PDM @ 1.50 -7/8 XP	ANADRILL	675A-2573		171	N/A	4.5 REG	4.5 H90	7.83	8.08
3	FLOAT	ANADRILL	1316555		162	66	4.5 H90	4.5 H90	0.51	8.59
4	UBHO	ANADRILL	1416516		162	73	4.5 H90	4.5 H90	0.64	9.23
5	NMDC	ANADRILL	2016519		161	70	4.5 H90	4.5 H90	9.26	18.49
6	NMDC	ANADRILL	2016524		162	73	4.5 H90	4.5 H90	9.39	27.88
7	X / OVER	ANADRILL	1216579		160	71	4.5 H90	5.0 H90	0.30	28.18
8	5 DC s	AKITA					5.0 H90	5.0 H90	47.60	75.78
9	JARS						5.0 H90	5.0 H90	4.86	80.64
10	12-178 DCs	AKITA					5.0 H90	5.0 H90	114.39	195.03
11	X / OVER	ANADRILL					5.0 H90	4.5 IF	1.42	196.45
12	9 HWDP	AKITA					4.5 IF	4.5 IF	82.77	279.22
13										
14										
15										
16										
17										
18										

Make-up Torque

Drill Collars		Hevi-Wate drill pipe			Motor Nut
4.5 H90	23000 ft lb / 31000 N-m	2.9 AOH	3500 ft lb / 4700 N-m	3.38	
4.5 XH	22200 ft lb / 30000 N-m	2.9 H90	4600 ft lb / 7500 N-m	4.75	10000 ft lb / 14000 N-m
4.5 FH	19800 ft lb / 27000 N-m	3.5 IF	9000 ft lb / 13600 N-m	6.75	18000 ft lb / 24400 N-m
3.5 IF	9900 ft lb / 13000 N-m	4 FH	12250 ft lb / 16200 N-m	8.00	24000 ft lb / 33000 N-m
2.9 AOH	3500 ft lb / 4700 N-m	4.5 XH	21800 ft lb / 30000 N-m		
2.9 H90	4600 ft lb / 6200 N-m	4.5 IF	29400 ft lb / 39800 N-m		Above is for Black Max motors
PH3	5500 ft lb / 7500 N-m	ALL TORQUE'S ARE FOR STEEL, USE 80% FOR MONEL'S			

Trip out BHA # 1 @ 555 m due to lack of penetration , all else acting normal . Bit was OK , balled up
Change bit and set motor to 1.5 deg . Run in as BHA # 2 .

Schlumberger | Anadrill | BHA DataSheet

Suncor Inc. Resources Group

JSO#	40003197	Depth In:	1577	Depth out:	1682		Mtr. D:tg	105	BHA # 2	
Well Name:	Suncor Netla K-77-60-50-1	Date In:	FEB-21-99	Date Out:	FEB-22-99		Days:	#VALUE!	Hole Size:	222
LSD:	K77-60-50-122-30	Slide Dist.:	89.0	Slide Hrs.:	1.02	Hrs.	Steering %	85%	PDM Run #:	2
Field:	Netla (CDN)	Rotate Dist.:	16.0	Rot. Hrs.:	19.73	Hrs.	Rotate %	15%	Drlg hrs	20.75
Province:	North West Territories	PDM R/S config:	7/8	Volume:	1.2	cu.m/min	Slide ROP:	87.3	Circ. Hrs:	4.00
Rig:	Akita 58	ABH Set:	1.50	RPM S/DH:	30	90	Rot. ROP:	0.8	Tot. D&C:	24.75
DD:	Maurice Deschamps	Motor Vendor	ANADRILL	Avg. WOB:	18	KdaN	Avg. ROP:	5.06	Inc. In:	28.89
DD:		Reactive Torq.:	160	SPP Off/On:	8000	9000	Bit to Svy:	14	Azm. In:	337.59
MWD:	Brad Erick	Mud Type:	PHOSPHATE	PV/YP:			Sand%		Inc. Out:	24.30
MWD:	Warren Cox	Mud Wt:	1185	Chlorides:			Solid cont:		Azm. Out:	343.16
Co. Rep:	Lee Brazel- Pat Miller	Mud Vis:		Wl.:	7.5		Oil/Water :		MWD BHT:	35.80
String Wt:	52000.0	P/U Wt.:	64000.0	S/O Wt.:			BHA Wt.:		Rot. Torq:	

Item	Description	Vendor	Serial #	FN/MAX OD	OD	ID	B. Conn	T. Conn	Length	Cum Len
1	F10TP	SMITH	LT77093						0.25	0.25
2	PDM @ 1.50 -7/8 XP	ANADRILL	675A-2573		171	N/A	4.5 REG	4.5 H90	7.83	8.08
3	FLOAT	ANADRILL	1316555		162	66	4.5 H90	4.5 H90	0.51	8.59
4	UBHO	ANADRILL	1416516		162	73	4.5 H90	4.5 H90	0.64	9.23
5	NMDC	ANADRILL	2016519		161	70	4.5 H90	4.5 H90	9.26	18.49
6	NMDC	ANADRILL	2016524		162	73	4.5 H90	4.5 H90	9.39	27.88
7	X / OVER	ANADRILL	1216579		160	71	4.5 H90	5.0 H90	0.30	28.18
8	5 DC s	AKITA					5.0 H90	5.0 H90	47.60	75.78
9	JARS						5.0 H90	5.0 H90	4.86	80.64
10	12-178 DCs	AKITA					5.0 H90	5.0 H90	114.39	195.03
11	X / OVER	ANADRILL					5.0 H90	4.5 IF	1.42	196.45
12	9 HWDP	AKITA					4.5 IF	4.5 IF	82.77	279.22
13										
14										
15										
16										
17										
18										

Make-up Torque

Drill Collars		Hevi-Wate drill pipe		Motor Nut	
4.5 H90	23000 ft lb / 31000 N-m	2.9 ACH	3500 ft lb / 4700 N-m	3.38	
4.5 XH	22200 ft lb / 30000 N-m	2.9 H90	4600 ft lb / 7500 N-m	4.75	10000 ft lb / 14000 N-m
4.5 FH	19800 ft lb / 27900 N-m	3.5 IF	9000 ft lb / 13800 N-m	6.75	18000 ft lb / 24400 N-m
3.5 IF	9900 ft lb / 13000 N-m	4 IF	13250 ft lb / 18200 N-m	8.00	24000 ft lb / 33000 N-m
2.9 ACH	3500 ft lb / 4700 N-m	4 XH	21800 ft lb / 30000 N-m		
2.9 H90	4600 ft lb / 6200 N-m	4.5 IF	29400 ft lb / 39800 N-m		Above is for Black Max motors
PH6	6500 ft lb / 7500 N-m	ALL TORQUE'S ARE FOR STEEL, USE 80% FOR MONEL'S			

The motor was pulled because after the bit trip 1.5° setting would not drop it constantly built inclination before we change the bit it was responding favorably therefore we discussed the setting and stayed at 1.50.

Schlumberger | Anadrill | BHA DataSheet

Suncor Inc. Resources Group

JSO#	40003197	Depth In:	1682	Depth out:	1990		Mtr. Drlg	308	BHA # 3	
Well Name:	Suncor Netla K-77-60-50-1	Date In:	FEB-22-99	Date Out:	FEB 26 99		Days:	5	Hole Size:	222
LSD:	K77-60-50-122-30	Slide Dist.:	93.0	Slide Hrs.:	24.45	Hrs.	Steering %	30%	PDM Run #:	3
Field:	Netla (CDN)	Rotate Dist.:	215.0	Rot. Hrs.:	57.05	Hrs.	Rotate %	70%	Drlg hrs	81.50
Province:	North West Territories	PDM R/S config:	7/8	Volume:	1.2	cu-m/min	Slide ROP:	3.8	Circ. Hrs:	26.50
Rig:	Akita 58	ABH Set:	2.12	RPM S/A/H:	30	90	Rot. ROP:	3.8	Tot. D&C:	108.00
DD:	Maurice Deschamps	Motor Vendor	ANADRILL	Avg. WOB:	16-22	daN	Avg. ROP:	3.78	Inc. In:	24.30
DD:		Reactive Torq.:	160	SPP Off/On:	95000	11000	Bit to Svy:	14	Azm. In:	343.16
MWD:	Brad Erick	Mud Type:	PHOS	PV/YP:			Sand%		Inc. Out:	0.56
MWD:	Warren Cox	Mud Wt:	1189	Chlorides:			Solid cont:		Azm. Out:	178.00
Co. Rep:	Lee Brazel- Pat Miller	Mud Vis:	N/A	WL:			Oil/Water :		MWD BHT:	
String Wt:	78000.0	P/U Wt.:		S/O Wt.:			BHA Wt.:		Rot. Torq:	

Item	Description	Vendor	Serial #	FN/MAX OD	OD	ID	B. Conn	T. Conn	Length	Cum Len
1	F10TP	SMITH	LT77093						0.25	0.25
2	PDM @2.12 -7/8 XP	ANADRILL	675A-2573		171	N/A	4.5 REG	4.5 H90	7.83	8.08
3	FLOAT	ANADRILL	1316555		162	66	4.5 H90	4.5 H90	0.51	8.59
4	UBHO	ANADRILL	1416516		162	73	4.5 H90	4.5 H90	0.64	9.23
5	NMDC	ANADRILL	2016519		161	70	4.5 H90	4.5 H90	9.26	18.49
6	NMDC	ANADRILL	2016524		162	73	4.5 H90	4.5 H90	9.39	27.88
7	X / OVER	ANADRILL	1216579		160	71	4.5 H90	5.0 H90	0.30	28.18
8	5 DC s	AKITA					5.0 H90	5.0 H90	47.60	75.78
9	JARS						5.0 H90	5.0 H90	4.86	80.64
10	12-178 DCs	AKITA					5.0 H90	5.0 H90	114.39	195.03
11	X / OVER	ANADRILL					5.0 H90	4.5 IF	1.42	196.45
12	9 HWDP	AKITA					4.5 IF	4.5 IF	82.77	279.22
13										
14										
15										
16										
17										
18										
19										
20										

Bottom Hole Assembly Summary, Objectives VS Results:

At the start it was hard to get drops with this setting once its back was broken we got our drops but we needed large doglogs to hit the target upon reaching low inclinations direction was very hard to hold the dip of the land pulled it to the right.

1040-14551 / 46785

Schlumberger ANADRILL

Daily Drilling Report — Page 1

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 13 1999	SUNCOR INC. RESOURCES	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.			FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)		COST
SIZE			00.00		TRAVEL FROM CALGARY TO	SUPERVISION 1 @ 725	$	725.00
TYPE					SUNCOR LOCATION K77-60-50-122-30	MOTOR HR3 @	$	-
JETS						MOTOR DAILY @	$	-
DEPTH IN						MOTOR STBY @	$	-
DEPTH OUT						JARS @	$	-
HOURS						USHO SUB @	$	-
PP ON						MONEL @		
PP OFF						MIN EQUIP CHARGE		
FLOW			0800			WELL PLAN @		
RPM						TS REAMER		
STRING WT						TRAVEL DAY		
P/U WT						MWD SYSTEMS		
S/O WT						GAMMA RAY		
WOB						MWD OPERATORS 1 @ 2 575	$	1,150.00
MUD REPORT						SUBSISTENCE (Note if Comp Job)		
PUMP TYPE						3 @ 75		225.00
LINER/STROKE (mm)			1600			Thread Insp. on Subs		100.00
CU. M./STROKE						2 TRUCKS @ .75 / km.		[redacted]
MUD TYPE						KILOMETERS TODAY		[redacted]
MUD WEIGHT (g/cc)						KM ACCUMULATED		[redacted]
VISCOSITY (sec)						VEHICLES		[redacted]
WATER LOSS (mm)								[redacted]
Ph								[redacted]
SAND (%)						DAILY TOTAL	$ 2160	1,375.00
TEMPERATURE (°C)						ACCUMULATED	2160 $	1,375.00

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD. WARREN COX	

Daily Drilling Report — Page 2

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 14 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.			FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)		COST
SIZE			0000		TRAVEL FROM CALGARY TO	SUPERVISION 1 @ 725	$	725.00
TYPE					SUNCOR'S LOCATION K77-60-50-122-	MOTOR HRS @	$	-
JETS						MOTOR DAILY @	$	-
DEPTH IN						MOTOR STBY @	$	-
DEPTH OUT						JARS @	$	-
HOURS						UBHO SUB @	$	-
PP ON						MONEL @		
PP OFF						EQUIP CHARGE		
FLOW			0600			WELL PLAN @		
RPM						TS REAMER		
STRING WT						TRAVEL DAY		
P/U WT						MWD SYSTEMS		
S/O WT						GAMMA RAY		
WOB						MWD OPERATORS 1 @ 2 575	$	1,150.00
MUD REPORT						SUSSISTENCE (Note if Comp Job)		
PUMP TYPE						3 AT 75		225.00
LINER/STROKE (mm)			16.00					
CU. M./STROKE						2 TRUCKS @ 2700 @ .75 / km.		[redacted]
MUD TYPE						KILOMETERS TODAY		[redacted]
MUD WEIGHT (g/cc)						KM ACCUMULATED		[redacted]
VISCOSITY (sec)						VEHICLES		[redacted]
WATER LOSS (mm)								[redacted]
Ph								[redacted]
SAND (%)						DAILY TOTAL	$ 475.-	[redacted]
TEMPERATURE (°C)						ACCUMULATED	6285.- $	[redacted]

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SIZE	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD. WARREN COX	

Schlumberger Anadrill

Daily Drilling Report — Page 3

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 15 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LESS BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.			FROM	TO	ACTIVITY	ST SUPPLIER (IF NOT ANADRIL		COST
SIZE			0000		STANDBY ON LOCATION FOR	SUPERVISIC 1 @	725	$ 725.00
TYPE					SUNCOR ENERGY LTD.	MOTOR HRS @		$ -
JETS					K77-60-50-122-30	MOTOR DAILY @		$ -
DEPTH IN						MOTOR STBY @		$ -
DEPTH OUT						JARS @		$ -
HOURS						UBHO SUB @		$ -
PP ON						MONEL @		
PP OFF						EQUIP CHARGE		1100.00
FLOW			0800			WELL PLAN @		
RPM						TB REAMER		
STRING WT						TRAVEL DAY		
P/U WT						MWD SYSTEMS		
S/O WT						GAMMA RAY		
WOB						MWD OPERATORS @	575	$ 1,150.00
MUD REPORT						SUBSISTENCE (Note if Comp Job)		
PUMP TYPE						3 @ 75		225.00
LINER/STROKE (mm)			1600					
CU. M./STROKE						1 Trucks X @ .75 / km.		
MUD TYPE						KILOMETERS TODAY		
MUD WEIGHT (g/cc)						KM ACCUMULATED		
VISCOSITY (sec)						VEHICLES		
WATER LOSS (mm)								
Ph								
SAND (%)						DAILY TOTAL	$ 3200.	1,875.00
TEMPERATURE (°C)						ACCUMULATED	######## $	7,850.00 9485.

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SIZE	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD. WARREN COX	

Schlumberger ANADRILL

Daily Drilling Report Page 4

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 16 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE				
BIT NO.	2		FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)				COST
SIZE	222		11.00	12.00	PICK UP MOTOR	SUPERVISION	1	@	725	$ 725.00
TYPE	F 10 TP		12.00	13.30	TEST MWD TOOL	MOTOR HRS				$ -
JETS	3/15.9		13.30	13.45	RIG SERVICE	MOTOR DAILY		@		$ -
DEPTH IN	1105		13.45	16.00	MAKE UP BIT AND RUN IN	XP MOTOR USE	3	@	30	$ 90.00
DEPTH OUT						JARS		@		$ -
HOURS	2.75		16.00	16.15	SURVEY 565M	USHO SUB		@		$ -
PP ON	7500		16.15	17.15	SLIP AND CUT	MONEL		@		$ -
PP OFF	6500		17.15	17.45	RUN IN HOLE	DAY RATE				$ 6,400.00
FLOW	1.2		17.45	18.15	REAM 565M	STABILIZERS		@		$ -
RPM	30/90		18.15	18.45	RUN IN 669-792	TB REAMER				
STRING WT	64000		18.45	19.00	SURVEY 792M	2 MWD OPER.	2	@	575	$ 1,150.00
PU WT	67000		19.00	20.30	RUN IN HOLE	MWD SYSTEMS				
SO WT	62000		20.30	20.45	BREAK CIRC WASH 25M TO BTM.	GAMMA RAY				
TQB	12-16		20.45	21.30	DRILL 222mm HOLE					
MUD REPORT			21.30	21.45	SURVEY	SUBSISTENCE (Note if Comp Job)				
PUMP TYPE	EMSCO F-1000		21.45	23.45	DRILL 1107-1117					
LINER/STROKE (mm)	152/254		23.45	24.00	SURVEY 1112					
CU. IN/STROKE						MILEAGE		@		
MUD TYPE	POTASIUM SULFATE					KILOMETERS TODAY				
MUD WEIGHT (g/cc)	1175					KM ACCUMULATED				
VISCOSITY (sec)						VEHICLES				
WATER LOSS (ml)	10									
Ph										
SAND (%)						DAILY TOTAL				$ 8,365.00
TEMPERATURE (°C)						ACCUMULATED				4950- $ 16,015.00

DOWNHOLE MOTORS					
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	

MWD CONFIGURATION					
RUN	COMP.	HRS TOY	HRS TTL	COMMENTS	
					AFE #
					@
					@
					@

PERSONNEL	
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK
DD.	MWD. WARREN COX

SIGNATURE

Schlumberger Anadrill

Daily Drilling Report Page 5

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 17 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD		TIME RECORD			COST ESTIMATE				
BIT NO.	2	FROM	TO		LIST SUPPLIER (IF NOT ANADRILL)				COST
SIZE	222	00:00	6.75	DRILL FROM 1117-1155	SUPERVISION	1	@	725	$ 725.00
TYPE	F-10-TP	6.75	7.00	RIG SERVICE	MOTOR HRS				$ -
JETS	3/15.9	700	800	ACCUMULATED SURVEYS	XP. MOTOR HRS	20	@	30	$ ~~600.00~~ 600.00
DEPTH IN	1105				MOTOR STBY		@		$ -
DEPTH OUT					JARS		@		$ -
HOURS	23.50				UBHO SUB		@		$ -
PP ON	7400				MONEL		@		$ -
PP OFF	6800				DAY RATE				$ 6,400.00
FLOW	1.2	0000	1475	DRILL FROM 1155-1202	STABILIZERS		@		$ -
RPM	35/90	1475	1500	RIG SERVICE	TR REAMER				
STRING WT	65000	1500	1600	ACCUMULATED SURVEYS	2 MWD OPER.	2	@	575	$ 1,150.00
PU WT	66000				MWD SYSTEMS				
SO WT	63000				GAMMA RAY				
WOB	12-18								
MUD REPORT					SUBSISTENCE (Note if Comp Job)				
PUMP TYPE	EMSCO F-1000				3@75				
LINER/STROKE (mm)	152/254	1600	2200	DRILL FROM 1202-1258					
CU IN/STROKE		2200	2225	RIG SERVICE	MILEAGE		@		$
MUD TYPE	POTASIUM SULFATE	2225	2400	ACCUMULATED SURVEYS	KILOMETERS TODAY				
MUD WEIGHT (g/cc)	1150				KM ACCUMULATED				
VISCOSITY (sec)	N/A				VEHICLES				
WATER LOSS (mm)	8								
PH	10								
SAND (%)					DAILY TOTAL				$ 8895.00 ~~8,960.00~~
TEMPERATURE (°C)					ACCUMULATED				21,775 - $ ~~21,875.00~~

DOWNHOLE MOTORS				
RUN	SIZE	SER. NO.	CIRC. HOURS	TOTAL HOURS

MWD CONFIGURATION						
RUN	COMP.	HRS TOY	HRS TTL	COMMENTS		
2	3047	24	35	mode 1230		
2	P947	24	35	F5(45 5/12imp)		
2	B3187	24	35	New Battery	AFE #	
	E213	0	0	STANDBY	TARGET TVD @ TIME	@
	P227	0	0	STANDBY	TARGET TVD @ TIME	@
	B3186	0	1.6	STANDBY	TARGET TVD @ TIME	@

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICKS	
DD.	MWD. WARREN COX	

Schlumberger Anadrill

Daily Drilling Report

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 18 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.	2		FROM	TO		LIST SUPPLIER (IF NOT ANADRILL)		COST
SIZE	222		00:00	0650	DRILL	SUPERVISION @		$ 725.00
TYPE	F 10 -TP		0650	0715	SURVEYS	MOTOR HRS		$ -
JETS	3/15.9		0715	0800	RIG SERVICE	XP MOTOR COST 21 @ 30		$ 630.00
DEPTH IN	1105					MOTOR STBY @		$ -
DEPTH OUT						JARS @		$ -
HOURS	43.75					UBHO SUB @		$ -
PP ON	7500					MONEL @		$ -
PP OFF	6800					DAY RATE		$ 6,400.00
FLOW	1.2		0800	1215	DRILL 1296-1319	STABILIZERS @		$ -
RPM	30/90		1215	1230	BOP DRILL	TB REAMER		
STRING WT	670000		1230	1245	RIG SERVICE	2 MWD OPER. 2 @ 575		$ 1,150.00
PU WT			1245	1500	DRILL 1315 -1335	MWD SYSTEMS		
SO WT			1500	1600	ACCUMULATED SURVEYS	GAMMA RAY		
WOB	15-18							
MUD REPORT						SUBSISTENCE (Note if Comp Job)		
PUMP TYPE	EMSCO- F-1000							
LINER/STROKE (mm)	152/254		1600	1945	DRILL 1335-1357			
CIL SUB/STROKE			1945	2000	BOP DRILL .	MILEAGE @		$ [illegible]
MUD TYPE	POTASIUM SULFATE		2000	2300	DRILL 1357	KILOMETERS TODAY		[illegible]
MUD WEIGHT (g/cc)	1155		2300	2400	ACCUMULATED SURVEYS	KM ACCUMULATED		[illegible]
VISCOSITY (sec)						VEHICLES		[illegible]
WATER LOSS (mm)	7.5							[illegible]
Ph	10.5							[illegible]
SAND (%)						DAILY TOTAL	$	$ 8,905.00
TEMPERATURE (°C)						ACCUMULATED	35630	$ 33,[illegible]0.00

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
2	E047	24	59	MODE 1230	
2	P947	24	59	45 5/12 IMP	
2	B3187	24	59	NEW	
	E213			STANDBY	TARGET TVD @ TIME @
	P227			STANDBY	TARGET TVD @ TIME @
	B3186		1.5	STANDBY	TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD WARREN COX	

Schlumberger Anadrill

Daily Drilling Report

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 19 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
LEE BRAZEL- PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE			
BIT NO.	2		FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)			COST
SIZE	222		00:00	0500	DRILL 1373-1395	SUPERVISION	1 @	725	$ 725.00
TYPE	F-10-TP		0500	0515	RIG SERVICE .	MOTOR HRS	@		
JETS	3/15.9		0515	0700	DRILL -1395 -1408	MOTOR DAILY	@		
DEPTH IN	1105		0700	0800	ACCUMULATED SURVEYS	XP MOTOR TIME	21 @	30	630.00 ←
DEPTH OUT						JARS	@		
HOURS	63.25					USHO SUB	@		
PP ON	6800					MONEL	@		
PP OFF						DAY RATE			$ 6,400.00
FLOW	1.2		0800	1215	DRILL-1408-1433	STABILIZERS	@		
RPM	30/90		1215	1230	RIG SERVICE	TB REAMER			
STRING WT			1230	1500	DRILL-1433-1443	2 MWD OPER.	2 @	575	$ 1,150.00
PU WT			1500	1600	ACCUMULATED SURVEYS	MWD SYSTEMS			
SO WT						GAMMA RAY			
WOB	15-20					COMPUTER &WELL PLAN			
MUD REPORT						SUBSISTENCE (Note if Comp Job)			
PUMP TYPE	EMSCO F-1000					3 @ 75.00			
LINER/STROKE (mm)	152/254		1600	2300	DRILL -1443 -				
CU. IN/STROKE			2300	2400	ACCUMULATED SURVEYS	MILEAGE	100 @	0.75	[illegible]
MUD TYPE	POTASSIEUM SULFATE					KILOMETERS TODAY		600	[illegible]
MUD WEIGHT (g/cc)	1165					KM ACCUMULATED		600	[illegible]
VISCOSITY (sec)						VEHICLES			[illegible]
WATER LOSS (cm)	7.6					TGH-607			[illegible]
Ph	10.5								[illegible]
SAND (%)						DAILY TOTAL		$ 8980.-	$ 8,980.00
TEMPERATURE (°C)	45.5					ACCUMULATED		41610.-	$ 42,130.00

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
2	E047	24	83	MODE 1230	
2	P847	24	83	45 5/12 IMP	
2	B3187	24	83	NEW	
	E213			STANDBY	TARGET TVD @ TIME @
	P227			STANDBY	TARGET TVD @ TIME @
	B3186		1.5	STANDBY	TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD WARREN COX	

Schlumberger Anadrill

Daily Drilling Report

JOB NUMBER	DATE	COMPANY	WELL NAME
3197	FEBRUARY 20 1999	SUNCOR ENERGY LTD	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE				
BIT NO.	2		FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)				COST
SIZE	222		00:00	01:00	Drill 1484-1491m	SUPERVISION	1	@ 725	$	725.00
TYPE	F-10-TP		01:00	01:15	Rig Service	MOTOR HRS		@		
JETS	3/15.9		01:15	07:15	Drill 1491-1514m	MOTOR DAILY	22	@ 30	$	660.00
DEPTH IN	1105		07:15	08:00	surveys	MOTOR STBY		@		
DEPTH OUT	1577					JARS		@		
HOURS	82.5					USHO SUB		@		
PP ON	8800					MONEL		@		
PP OFF						DAY RATE			$	6,400.00
FLOW	1.2		08:00	14:30	Drill 1514-1548m	STABILIZERS		@		
RPM	30/90		14:30	14:45	Rig Service	TB REAMER				
STRING WT			14:45	15:00	Drill 1548-1551m	TRAVEL DAY	Wapiti Hang			309.00
PU WT	10,000		15:00	16:00	Surveys	MWD SYSTEMS				
SO WT	9,000					MWD OPERATOR	2	@ 575	$	1,150.00
WOB	17-20					COMPUTER &WELL PLAN				
MUD REPORT						SUBSISTENCE (Note if Camp Job)				
PUMP TYPE	EMSCO F-1000							CAMP		
LINER/STROKE (mm)	152/254		16:00	17:30	Drill 1551-1558m					
CIL SLIP/STROKE			17:30	17:45	Change Shaker Screens	MILEAGE		@ 0.75		
MUD TYPE	POTASSIUM SULFATE		17:45	21:45	Drill 1558-1577m	KILOMETERS TODAY				
MUD WEIGHT (g/cc)	1190		21:45	22:30	Acc. Surveys	KM ACCUMULATED		2800		
VISCOSITY (sec)			22:30	24:00	POOH	VEHICLES				
WATER LOSS (cm³)	7.8					TGH-907				
Ph	10.5									
SAND (%)						DAILY TOTAL			$ 9235.	8,965.00
TEMPERATURE (°C)	47.8					ACCUMULATED			53845 $	51,065.00

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	AFE #

MWD COMPUTATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
2	E047	24	107	MODE 1230	
2	P947	24	107	4/5 5/12 IMP	
2	83187	24	107	NEW	
	E213			STANDBY	TARGET TVD @ TIME @
	P227			STANDBY	TARGET TVD @ TIME @
	83186		1.5	STANDBY	TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD WARREN COX	

Schlumberger

Daily Drilling Report

JOB NUMBER	DATE	COMPANY	WELL NAME
4E+07	FEBRUARY 21 1999	SUNCOR ENERGY LTD.	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD		
BIT NO.	2	3
SIZE	222	222
TYPE	F-10-TP	F-10-TP
JETS	3/15.9	3/15.9
DEPTH IN	1105	1571
DEPTH OUT	1577	
HOURS	82.50	10.25
PP ON	9000	9500
PP OFF	8000	8000
FLOW	1.2	1.2
RPM	30/90	30/90
STRING WT	69000	69000
PU WT		
SO WT		
WOB	18-20	18-20

MUD REPORT	
PUMP TYPE	EMSCO F 1000
LINER/STROKE (mm)	152/254
CU. M./STROKE	
MUD TYPE	POTASSIUM SULFATE
MUD WEIGHT (g/cc)	1190
VISCOSITY (sec)	
WATER LOSS (mm)	8.2
Ph	10.5
SAND (%)	
TEMPERATURE (°C)	

TIME RECORD			
FROM	TO	ACTIVITY
00:00	0400	PULL OUT OF HOLE
0400	0500	LAY DOWN TOOLS
0500	0645	PICK UP TOOLS
0645	0700	RIG SERVICE
0700	0800	MAKE UP BIT AND RUN IN HOLE
0800	0830	RUN IN HOLE TO 565
0830	0900	SHALLOW TEST
0900	1100	RUN IN HOLE TO 565
1100	1130	WASH AND REAM FROM 1528-1577
1130	1145	CORRECT TOOL FACE
1145	1330	DRILL 1577-1586
1330	1345	RIG SERVICE
1345	1530	DRILL 1586-1597
1530	1600	ACCUMULATE SURVEYS
1600	2330	DRILL 1597-1630
230	2400	ACCUMULATE SURVEYS

COST ESTIMATE				
LIST SUPPLIER (IF NOT ANADRILL)				COST
SUPERVISION		@		$ 725.00
MOTOR HRS	11.75	@	30	$ 352.50
MOTOR DAILY		@		$ -
MOTOR STBY		@		$ -
JARS		@		$ -
USHO SUB		@		$ -
MONEL		@		$ -
DAY RATE				$ 6,400.00
MWD OPER	2	@	575	$ 1,150.00
TB REAMER				
TRAVEL DAY				
MWD SYSTEMS				
GAMMA RAY				
COMPUTER &WELL PLAN				
SUBSISTENCE (Note if Comp Job)				
MILEAGE		@	0.75	
KILOMETERS TODAY			600	
KM ACCUMULATED			600	
VEHICLES				
TGH-907				
DAILY TOTAL				$ 8,627.50
ACCUMULATED				62472.50 $ 58,592.50

DOWNHOLE MOTORS				
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS

MWD CONFIGURATION				
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS
2, 3	E047	24	131	MODE 1230
2, 3	P947	24	131	45 5/12 IMP
2, 3	83187	24	131	NEW
	E213			STANDBY
	P227			STANDBY
	83186		1.5	STANDBY

REMARKS

AFE #

TARGET TVD @ TIME	@
TARGET TVD @ TIME	@
TARGET TVD @ TIME	@

PERSONNEL	
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK
DD.	MWD. WARREN COX

SIGNATURE

Schlumberger Anadrill

Daily Drilling Report

JOB NUMBER	DATE	COMPANY	WELL NAME
3197	FEBRUARY 22 1999	SUNCOR ENERGY LTD	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE				
BIT NO.	2	3	FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)				COST
SIZE	222	222	00:00	02:40	Drill 1630-1643m	SUPERVISION	1	@	725	$ 725.00
TYPE	F-10-TP	F-10-TP	02:40	03:00	Rig Service	MOTOR HRS		@		
JETS	3/15.9	3/15.9	03:00	07:00	Drill 1643-1661m	MOTOR DAILY	16	@	30	$ 480.00
DEPTH IN	1105	1577	07:00	08:00	surveys	MOTOR STBY		@		
DEPTH OUT	1577	1682				JARS		@		
HOURS	82.5	20.75				UBHO SUB		@		
PP ON	8800	9500				MONEL		@		
PP OFF		8000				DAY RATE				$ 6,400.00
FLOW	1.2	1.2	08:00	10:30	Drill 1661-1681m	STABILIZERS		@		
RPM	30/90	30/90	10:30	11:45	surveys	TB REAMER				
STRING WT		68000	11:45	13:00	Pump out stands	TRAVEL DAY				
PU WT	10,000		13:00	13:15	Rig Service	MWD SYSTEMS				
SO WT	9,000		13:15	16:00	POOH	MWD OPERATOR	2	@	575	$ 1,150.00
WOB	17-20	16				COMPUTER &WELL PLAN				
MUD REPORT						SUBSISTENCE (Note if Comp Job)				
PUMP TYPE	EMSCO F-1000								CAMP	
LINER/STROKE (mm)	152/254		16:00	17:00	POOH					
CU. M./STROKE			17:00	17:45	Orient motor	MILEAGE		@	0.75	$ [illegible]
MUD TYPE	POTASSIEUM SULFATE		17:45	18:15	Safety Meeting	KILOMETERS TODAY				[illegible]
MUD WEIGHT (g/cc)	1185		18:15	22:30	RIH	KM ACCUMULATED			2800	[illegible]
VISCOSITY (sec)			22:30	22:45	Break Circ.	VEHICLES				[illegible]
WATER LOSS (mm)	7.2		22:45	23:15	Orient tool face	TGH-907				[illegible]
Ph	9.5		23:15	24:00	Drill 1681-1685					[illegible]
SAND (%)						DAILY TOTAL			$	8,755.00
TEMPERATURE (°C)	49.9					ACCUMULATED			71777.50 $	68,447.50

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION						
RUN	COMP.	HRS THIS	HRS TTL	COMMENTS		
3,4	E047	24	155	MODE 1230		
3,4	P947	24	155	45 5/12 IMP		
3,4	B3167	24	155	NEW		
	E213			STANDBY	TARGET TVD @ TIME	@
	P227			STANDBY	TARGET TVD @ TIME	@
	B3166		1.5	STANDBY	TARGET TVD @ TIME	@

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD WARREN COX	

Schlumberger Anadrill

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JOB NUMBER	DATE	COMPANY	WELL NAME
3197	FEBRUARY 23 1999	SUNCOR ENERGY LTD	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD				TIME RECORD			COST ESTIMATE					
BIT NO.	3		4	FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)					COST
SIZE	222		222	00:00	0245	Drill 1685-1697m	SUPERVISION	1	@	725	$	725.00
TYPE	F-10-TP		F-10-TP	0245	0300	Rig Service	MOTOR HRS		@			
JETS	3/15.9		3/15.9	03:00	0715	Drill 1697-1716m	MOTOR DAILY	23	@	30	$	690.00
DEPTH IN	1577		1682	0715	0800	surveys	MOTOR STBY		@			
DEPTH OUT	1682						JARS		@			
HOURS	20.75		40.25				UBHO SUB		@			
PP ON	9500		9700				MONEL		@			
PP OFF	8000		8200				DAY RATE				$	6,400.00
FLOW	1.2		1.2	08:00	1245	Drill 1716-1739m	STABILIZERS		@			
RPM	30/90		30/90	1245	1300	Rig Service	TB REAMER					
STRING WT	66000		73000	1300	1430	Drill 1739-1751	TRAVEL DAY					
PU WT				1430	1600	Accum. Surveys	MWD SYSTEMS					
SO WT							MWD OPERATORS	2	@	575	$	1,150.00
WOB	16		16-20				COMPUTER &WELL PLAN					
MUD REPORT							SUBSISTENCE (Note if Comp Job)					
PUMP TYPE	EMSCO F-1000									CAMP		
LINER/STROKE (mm)	152/254			16:00	2145	Drill 1751-1778m						
CU. IN/STROKE				2145	2230	Work Pipe	MILEAGE		@	0.75		
MUD TYPE	POTASSIEUM SULFATE			2230	2300	Drill 1778-1788	KILOMETERS TODAY					
MUD WEIGHT (g/cc)	1195			2300	2400	Accum. Surveys	KM ACCUMULATED			2800		
VISCOSITY (sec)							VEHICLES					
WATER LOSS (mm)	7.2						TQH-007					
Ph	10.5											
SAND (%)							DAILY TOTAL				$	8,965.80
TEMPERATURE (°C)	50.9						ACCUMULATED				$	80,925.80

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION							
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS			
4	E047	24	179	MODE 1230			
4	P947	24	179	45 5/12 IMP			
4	B3187	24	179	NEW			
	E213			STANDBY	TARGET TVD @ TIME	@	
	P227			STANDBY	TARGET TVD @ TIME	@	
	B3186		1.5	STANDBY	TARGET TVD @ TIME	@	

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	

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JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 24 1999	SUNCOR INC. RESOURCES	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.	3		FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)		COST
SIZE	222		00.00	0315	DRILL F/ 1782-1797	SUPERVISION 1 @ 725	$	725.00
TYPE	F 10 TP		0315	0345	WORK TIGHT HOLE	MOTOR HRS @	$	-
JETS	3/15.9		0345	0400	RIG SERVICE	MOTOR DAILY 23 @ 30	$	690.00
DEPTH IN	1577		0400	0715	DRILL F/ 1797-1813	MOTOR STBY @	$	-
DEPTH OUT			0715	0800	ACCUMULATED SURVEYS	JARS @	$	-
HOURS	60.75					UBHO SUB @	$	-
PP ON	11000					MONEL @		
PP OFF	9500					MIN EQUIP CHARGE	$	6,400.00
FLOW	1.2		0800	1315	DRILL F/ 1813-1834	WELL PLAN @		
RPM	30/90		1315	1330	RIG SERVICE	TB REAMER		
STRING WT	75000		1330	1500	DRILL F/ 1834 -1846			
P/U WT			1500	1600	ACCUMULATED SURVEYS	MWD SYSTEMS		
S/O WT						GAMMA RAY		
WOB	18-22					MWD OPERATORS 1 @ 2 575	$	1,150.00
MUD REPORT						SUBSISTENCE (Note if Comp Job)		
PUMP TYPE	EMSCO F-1000					3 @ 75		
LINER/STROKE (mm)	152/254		1600	23:15	DRILL F/ 1846- 1873m			
CU. IN./STROKE			23:15	24:00	ACCUMULATED SURVEYS	2 TRUCKS @ .75 / km.		
MUD TYPE	POTASSIEUM SULFATE					KILOMETERS TODAY		
MUD WEIGHT (g/cc)	1210					KM ACCUMULATED		
VISCOSITY (sec)						VEHICLES		
WATER LOSS (mm)	7							
Pb	10							
SAND (%)						DAILY TOTAL	$ 8966	8,972.50
TEMPERATURE (°C)						ACCUMULATED	89154.50	$ 98,356.00

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION						
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS		
4	E047	24	203	MODE 1230		
4	P947	24	203	45 5/12 IMP		
4	B3187	24	203	NEW		
	E213			STANDBY	TARGET TVD @ TIME	@
	P227			STANDBY	TARGET TVD @ TIME	@
	B3186		1.5	STANDBY	TARGET TVD @ TIME	@

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD. WARREN COX	

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 25 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.	3		FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)		COST
SIZE	222		0000	0415	DRILL 1872-1892	SUPERVISION 1 @ 725	$	725.00
TYPE	F-10-TP		0415	0430	RIG SERVICE	MOTOR HRS @	$	-
JETS	3/15.9		0430	0715	DRILL 1892-1907	MOTOR DAILY 23.5 @ 30	$	705.00
DEPTH IN	1577		0715	0800	ACCUM SURVEYS	MOTOR STBY @	$	-
DEPTH OUT						JARS @	$	-
HOURS	81.5					UBHO SUB @	$	-
PP ON	11000					MONEL @		
PP OFF	9500					EQUIP CHARGE	$	6,400.00
FLOW	1.2		0800	1500	DRILL 1907-1948	WELL PLAN @		
RPM	30/90		1500	1600	ACCUM SURVEYS	TS REAMER		
STRING WT	80000					TRAVEL DAY		
P/U WT						MWD SYSTEMS		
S/O WT						GAMMA RAY		
WOB	16-22					MWD OPERATORS 1 @ 2 575	$	1,150.00
MUD REPORT						SUBSISTENCE (Note if Comp Job)		
PUMP TYPE	EMSCO F-1000					3 AT 75		
LINER/STROKE (mm)	152/254		16.00	1615	DRILL 1948-1949			
CU. M./STROKE	0.0151		1615	1630	RIG SERVICE	2 TRUCKS @ @ .75 / km.		[redacted]
MUD TYPE	POTASSIUM SULFATE		1630	2300	DRILL 1949-1990	KILOMETERS TODAY		[redacted]
MUD WEIGHT (g/cc)	1205		2300	2345	ACCUM SURVEYS	KM ACCUMULATED		[redacted]
VISCOSITY (sec)			2345	2400	CIRC SAMPLE	VEHICLES		[redacted]
WATER LOSS (mm)	7.5							[redacted]
Pf	10							[redacted]
SAND (%)						DAILY TOTAL	$	8,980.00
TEMPERATURE (°C)	59.5					ACCUMULATED	98137.50 $	98,280.00

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SIZE	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
4	E047	24	227	MODE 1230	
4	P947	24	227	45 5/12 IMP	
4	83187	24	227	NEW	
	E213			STANDBY	TARGET TVD @ TIME @
	P227			STANDBY	TARGET TVD @ TIME @
	83186		1.5	STANDBY	TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD BRICK	
DD.	MWD. WARREN COX	

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JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 26 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
COMPANY REPRESENTATIVE		**RIG NAME**	**LOCATION**
LESS BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.			FROM	TO	ACTIVITY	ST SUPPLIER (IF NOT ANADRIL		COST
SIZE			0000		FINISH DRILLING THE WELL	SUPERVISIC 1 @ 725	$	725.00
TYPE					CIRCULATE AND CONDITION	MOTOR HRS 16.00 @ 30	$	480.00
JETS					MUD WIPER TRIP 36 STANDS	MOTOR DAILY @	$	-
DEPTH IN					CIRCULATE AND CONDITION	MOTOR STBY @	$	-
DEPTH OUT					MUD TRIP TO LAYDOWN TOO	JARS @	$	-
HOURS					AND RUN LOGS	UBHO SUB @	$	-
PP ON						MONEL @		
PP OFF						EQUIP CHARGE	$	6,400.00
FLOW			0800			WELL PLAN @		
RPM						TB REAMER		
STRING WT						TRAVEL DAY Inspection		300.80
P/U WT						MWD SYSTEMS		
S/O WT						GAMMA RAY		
WOB						MWD OPERATORS @ 575	$	1,150.00
MUD REPORT						SUBSISTENCE (Note if Comp Job)		
PUMP TYPE						3 @ 75		
LINER/STROKE (mm)			1600					
CU. M./STROKE						1 Trucks X @ .75 / km.		[redacted]
MUD TYPE						KILOMETERS TODAY		[redacted]
MUD WEIGHT (g/cc)						KM ACCUMULATED		[redacted]
VISCOSITY (sec)						VEHICLES		[redacted]
WATER LOSS (mm)								[redacted]
Pb								[redacted]
SAND (%)						DAILY TOTAL	$9666.80	~~8,755.00~~
TEMPERATURE (°C)						ACCUMULATED	107192.80	~~105,520.00~~

DOWNHOLE MOTORS					REMARKS
RUN	MAKE	SIZE	CIRC. HOURS	TOTAL HOURS	AFE #

MWD CONFIGURATION					
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS	
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @
					TARGET TVD @ TIME @

PERSONNEL		SIGNATURE
DD MAURICE DESCHAMPS	MWD. BRAD ERICK	
DD.	MWD. WARREN COX	

Schlumberger Anadrill

Daily Drilling Report

JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 27 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD			COST ESTIMATE		
BIT NO.			FROM	TO	ACTIVITY	LIST SUPPLIER (IF NOT ANADRILL)		COST
SIZE			11.00		TRAVEL FROM SUNCOR WELL	SUPERVISION 1 @ 725	$	725.00
TYPE					K77-60-50-122-30 TO CALGARY	MOTOR HRS	$	-
JETS						MOTOR DAILY @	$	-
DEPTH IN						XP MOTOR USE @	$	-
DEPTH OUT						JARS @	$	-
HOURS						UBHO SUB @	$	-
PP ON						MONEL @	$	-
PP OFF						DAY RATE Equip. charge		1100.00
FLOW			17.45			STABILIZERS @	$	-
RPM						TB REAMER		
STRING WT						2 MWD OPER. 2 @ 575	$	1,150.00
PU WT						MWD SYSTEMS		
SO WT						GAMMA RAY		
WOB						tool freight billed direct	by [redacted] Amatt	
MUD REPORT						SUBSISTENCE (Note if Comp Job)		
PUMP TYPE	EMSCO F-1000					3 X 75.		225.00
LINER/STROKE (mm)	152/254	23.45						
CIL SLIM/STROKE						MILEAGE 2700 @ 0.75	$	2,025.00
MUD TYPE						KILOMETERS TODAY		
MUD WEIGHT (g/cc)						KM ACCUMULATED		
VISCOSITY (sec)						VEHICLES		
WATER LOSS (mm)								
Pb								
SAND (%)						DAILY TOTAL	$ 5225.	3,250.00
TEMPERATURE (°C)						ACCUMULATED	$	108,020.00

112417.50 208320.50

DOWNHOLE MOTORS				
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS

MWD CONFIGURATION				
RUN	COMP.	HRS TDY	HRS TTL	COMMENTS

AFE #: Drlg AFE # A9811680K77

	@
	@
	@

PERSONNEL	
DD. MAURICE DESCHAMPS	MWD. BRAD ERICK
DD.	MWD. WARREN COX

SIGNATURE

Schlumberger Anadrill

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JOB NUMBER	DATE	COMPANY	WELL NAME
40003197	FEBRUARY 28 1999	SUNCOR ENERGY INC.	SUNCOR NETLA
LEE BRAZEL - PAT MILLER		AKITA 58	K77-60-50-122-30

DRILLING RECORD			TIME RECORD		
BIT NO.			FROM	TO	
SIZE			00:00		
TYPE					
JETS					
DEPTH IN					
DEPTH OUT					
HOURS					
PP ON					
PP OFF					
FLOW			0800		
RPM			1475		
STRING WT			1500		
PU WT					
SO WT					
WOB					

MUD REPORT				
PUMP TYPE	EMSCO F-1000			
LINER/STROKE (mm)	152/254	1600		
CIL SLAVROKE		2200		
MUD TYPE		2225		
MUD WEIGHT (g/cc)				
VISCOSITY (sec)				
WATER LOSS (mm)				
PH				
SAND (%)				
TEMPERATURE (°C)				

COST ESTIMATE			
LIST SUPPLIER (IF NOT ANADRILL)			COST
SUPERVISION	1 @ 725		$ 725.00
MOTOR HRS			$ -
XP. MOTOR HRS	@		$ -
MOTOR STBY	@		$ -
JARS	@		$ -
UBHO SUB	@		$ -
MONEL	@		$ -
DAY RATE			
STABILIZERS	@		$ -
TS REAMER			
2 MWD OPER.	2 @ 575		$ 1,150.00
MWD SYSTEMS	Equipment		1100.00
GAMMA RAY			
transport of tools to			4054.56
SUBSISTENCE (Note if Comp Job)	location		
3875			775.00
MILEAGE	@		
KILOMETERS TODAY			
KM ACCUMULATED			
VEHICLES			
DAILY TOTAL		$ 7254.56	2,875.00
ACCUMULATED		196726.00	109,895.00

DOWNHOLE MOTORS				
RUN	MAKE	SER. NO.	CIRC. HOURS	TOTAL HOURS

MWD CONFIGURATION				
RUN	CONF.	HRS TDY	HRS TTL	COMMENTS
2	E047	24	35	mode 1230
2	P947	24	35	FS(45 5/12mp)
2	B3187	24	35	New Battery

AFE #

TARGET TVD @ TIME	@
TARGET TVD @ TIME	@
TARGET TVD @ TIME	@

PERSONNEL		SIGNATURE
DD. MAURICE DESCHAMPS	MWD. BRAD ERICKS	
DD.	MWD. WARREN COX	

10% off of $110,832.50
= (11,083.25)

Anadrill

DAILY DIRECTIONAL & SLIM-1 MWD REPORT

JOB NUMBER	DATE	COMPANY	WELL NAME
4000 3197	Mar. 7,8,9	Suncor	Net La
COMPANY REPRESENTATIVE	**RIG NAME**	**LOCATION**	
Lee Brazel	Akita 58	K-77-60-50-122-30	

DRILLING RECORD

BIT NO.		
SIZE		
TYPE		
JETS		
DEPTH IN		
DEPTH OUT		
HOURS		
PP ON		
PP OFF		
FLOW		
RPM		
STRING WT		
P/U WT		
S/O WT		
WOB		

MUD REPORT

PUMP TYPE	
LINER/STROKE (mm)	
CU. M./STROKE	
MUD TYPE	
MUD WEIGHT (g/cc)	
VISCOSITY (sec)	
WATER LOSS (mm)	
Ph	
SAND (%) / SOLID (%)	
TEMPERATURE (°C)	

TIME RECORD

FROM	TO	ACTIVITY
00:00		Mar 7th 13.75 hrs
		8th 20.25 hrs
		9th 16.75 hrs
		50.75
		4 3/4 Reg Motor
08:00		Mtr. Price Reduced
		from $250/hr.
18:00		

COST ESTIMATE

LIST SUPPLIER (IF NOT ANADRILL)	COST
SUPERVISION @	
MOTOR HRS 50.75 @ 175.00	8881.25
MOTOR DAILY @	
MOTOR STBY @	
JAP	
UBHO SUB	
MONEL @	
STABILIZERS @	
TB REAMER	
MWD SYSTEMS	
GAMMA RAY	
Thread Inspection (Mk)	300.00
SUBSISTENCE (Note if Camp Job)	
MILEAGE @	
KILOMETERS TODAY	
KM ACCUMULATED	
VEHICLES	
DAILY TOTAL $	9181.25
ACCUMULATED $	

BHA # _____

ITEM	SERIAL NO.	LENGTH

FINAL DIRECTIONAL SURVEY

Final Directional Survey

Schlumberger

Survey

Client:	SUNCOR ENERGY	Survey Computation Method:	Minimum Curvature
Field:	NETLA (CDM)	DLS Computation Method:	Lubinski
Structure:	Suncor/K-77	Vertical Section Azimuth:	339.000°
Well:		Vertical Section Origin:	N 0.000 m, E 0.000 m
Borehole:	Job # 40003197	TVD Reference:	KB
UWI/API#:			626.0 m above MSL
Date:	July 16, 1999	Magnetic Declination:	28.753°
Grid Convergence:	0.22691852°	Total Field Strength:	59053.698 nT
Scale Factor:	0.99960246	Dip:	79.008°
		Declination Date:	February 17, 1999
Location:	N 60 46 30.724, W 122 44 23.945	Magnetic Declination Model:	BGGM 1999
:	N 6737571.924 m, E 514182.943 m	North Reference:	True North
Coordinate System:	UTM Zone 10N	Coordinate Reference To:	Well Head

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N-S (m)	E/-W (m)	DLS (°/30m)	Grid Coordinates Northing (m)	Grid Coordinates Easting (m)	Geographic Coordinates Latitude	Geographic Coordinates Longitude
Tie-In	37.75	0.70	52.0	37.75	0.07	0.14	0.18		6737572.06	514183.13	N 60 46 30.729	W 122 44 23.933
	150.67	0.70	77.0	150.66	0.17	0.72	1.40	0.06	6737572.65	514184.34	N 60 46 30.747	W 122 44 23.853
	263.34	0.60	107.0	263.33	-0.23	0.73	2.54	0.10	6737572.66	514185.48	N 60 46 30.748	W 122 44 23.777
	376.15	0.30	273.0	376.13	-0.41	0.60	2.72	0.21	6737572.53	514185.66	N 60 46 30.743	W 122 44 23.766
	503.00	0.50	82.0	502.98	-0.40	0.69	2.93	0.19	6737572.63	514185.87	N 60 46 30.746	W 122 44 23.752
	551.00	0.30	320.6	550.98	-0.33	0.82	3.08	0.44	6737572.76	514186.00	N 60 46 30.750	W 122 44 23.743
	591.00	0.70	307.0	590.98	-0.02	1.05	2.79	0.31	6737572.98	514185.74	N 60 46 30.758	W 122 44 23.760
	677.00	1.00	324.0	676.97	1.15	1.97	1.93	0.14	6737573.90	514184.87	N 60 46 30.788	W 122 44 23.817
	777.00	0.80	317.2	776.96	2.64	3.19	0.95	0.07	6737575.12	514183.88	N 60 46 30.827	W 122 44 23.882
	792.00	1.75	274.0	791.96	2.83	3.28	0.65	2.58	6737575.21	514183.58	N 60 46 30.830	W 122 44 23.902
	878.00	1.25	322.0	877.93	4.28	4.11	-1.24	0.45	6737576.03	514181.69	N 60 46 30.857	W 122 44 24.027
	991.00	1.50	322.0	990.90	6.88	6.25	-2.91	0.07	6737578.16	514180.01	N 60 46 30.926	W 122 44 24.137
	1093.10	1.90	342.5	1092.95	9.84	8.92	-4.24	0.21	6737580.82	514158.67	N 60 46 31.012	W 122 44 24.225

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/S (m)	E/W (m)	DLS (°/30m)	Grid Coordinates Northing (m)	Grid Coordinates Easting (m)	Geographic Coordinates Latitude	Geographic Coordinates Longitude
	1102.90	2.10	334.7	1102.75	10.19	9.23	-4.37	1.03	6737581.14	514158.55	N 60 46 31.022	W 122 44 24.234
	1111.40	3.20	347.8	1111.24	10.58	9.61	-4.46	4.41	6737581.51	514158.43	N 60 46 31.034	W 122 44 24.241
	1121.50	4.40	344.5	1121.31	11.24	10.26	-4.65	3.62	6737582.16	514158.26	N 60 46 31.055	W 122 44 24.252
	1131.50	5.70	351.6	1131.28	12.11	11.12	-4.82	4.32	6737583.02	514158.08	N 60 46 31.083	W 122 44 24.264
	1141.84	7.30	348.8	1141.55	13.25	12.27	-5.03	4.73	6737584.17	514157.98	N 60 46 31.120	W 122 44 24.277
	1151.02	8.90	348.1	1150.64	14.53	13.54	-5.28	5.24	6737585.43	514157.61	N 60 46 31.161	W 122 44 24.294
	1161.00	10.10	348.8	1160.48	16.16	15.15	-5.61	3.62	6737587.05	514157.28	N 60 46 31.213	W 122 44 24.316
	1170.75	11.20	348.1	1170.06	17.93	16.91	-5.98	3.41	6737588.81	514156.91	N 60 46 31.270	W 122 44 24.340
	1180.60	12.00	349.5	1179.71	19.88	18.86	-6.36	2.58	6737590.75	514156.52	N 60 46 31.333	W 122 44 24.365
	1189.28	13.60	348.1	1188.18	21.78	20.74	-6.74	5.63	6737592.63	514156.13	N 60 46 31.394	W 122 44 24.390
	1199.24	15.80	348.1	1197.81	24.28	23.22	-7.26	6.63	6737595.10	514155.60	N 60 46 31.474	W 122 44 24.424
	1208.92	17.50	347.4	1207.08	27.02	25.93	-7.85	5.31	6737597.81	514155.00	N 60 46 31.562	W 122 44 24.463
	1218.46	19.30	346.0	1216.13	30.00	28.86	-8.54	5.83	6737600.73	514154.29	N 60 46 31.656	W 122 44 24.509
	1228.22	21.10	343.9	1225.29	33.35	32.11	-9.42	5.97	6737603.98	514153.40	N 60 46 31.761	W 122 44 24.567
	1237.62	22.70	343.9	1234.02	36.85	35.48	-10.40	5.11	6737607.35	514152.42	N 60 46 31.870	W 122 44 24.632
	1248.75	23.90	344.6	1242.40	40.44	38.95	-11.38	4.05	6737610.82	514151.42	N 60 46 31.982	W 122 44 24.697
	1258.52	25.00	346.0	1251.29	44.46	42.86	-12.40	3.82	6737614.72	514150.38	N 60 46 32.109	W 122 44 24.764
	1268.27	26.20	347.4	1260.09	48.64	46.96	-13.37	4.15	6737618.81	514149.40	N 60 46 32.241	W 122 44 24.828
	1278.27	27.10	347.8	1269.02	53.07	51.34	-14.34	2.75	6737623.19	514148.41	N 60 46 32.383	W 122 44 24.892
	1285.74	27.90	348.1	1277.42	57.39	55.62	-15.25	2.57	6737627.46	514147.48	N 60 46 32.521	W 122 44 24.952
	1295.49	28.50	346.7	1286.02	61.95	60.11	-16.26	2.76	6737631.95	514146.48	N 60 46 32.668	W 122 44 25.019
	1305.15	28.70	344.6	1294.50	66.54	64.59	-17.40	3.20	6737636.42	514145.30	N 60 46 32.811	W 122 44 25.095
	1314.72	28.90	341.0	1302.89	71.14	69.00	-18.77	5.35	6737640.82	514143.92	N 60 46 32.953	W 122 44 25.185
	1324.31	29.20	338.2	1311.27	75.79	73.36	-20.39	4.37	6737645.17	514142.28	N 60 46 33.094	W 122 44 25.292
	1334.00	29.60	336.8	1319.71	80.55	77.76	-22.20	2.46	6737649.56	514140.45	N 60 46 33.236	W 122 44 25.412
	1343.38	29.80	337.5	1327.86	85.19	82.04	-24.01	1.28	6737653.84	514138.63	N 60 46 33.375	W 122 44 25.531
	1353.04	29.80	340.4	1336.24	89.99	86.52	-25.73	4.34	6737658.31	514136.89	N 60 46 33.519	W 122 44 25.645
	1362.59	28.70	337.5	1344.58	94.66	90.87	-27.40	5.59	6737662.65	514135.20	N 60 46 33.660	W 122 44 25.756
	1371.99	27.20	338.2	1352.88	99.06	94.96	-29.06	4.90	6737666.73	514133.52	N 60 46 33.792	W 122 44 25.865
	1381.70	26.50	334.0	1361.54	103.44	98.96	-30.84	6.30	6737670.73	514131.73	N 60 46 33.921	W 122 44 25.982
	1391.10	26.40	333.3	1369.96	107.61	102.72	-32.69	1.05	6737674.47	514129.86	N 60 46 34.043	W 122 44 26.105
	1400.75	26.90	332.6	1378.58	111.91	106.57	-34.66	1.84	6737678.31	514127.88	N 60 46 34.167	W 122 44 26.235

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	DLS (°/30m)	Grid Coordinates Northing (m)	Grid Coordinates Easting (m)	Geographic Coordinates Latitude	Geographic Coordinates Longitude
	1410.30	27.30	334.7	1387.08	116.24	110.47	-36.59	3.26	6737682.20	514125.93	N 60 46 34.293	W 122 44 26.383
	1420.00	28.00	334.7	1395.68	120.73	114.54	-38.52	2.16	6737686.26	514123.99	N 60 46 34.424	W 122 44 26.490
	1429.60	28.80	334.9	1404.12	125.29	118.67	-40.46	2.52	6737690.39	514122.03	N 60 46 34.558	W 122 44 26.618
	1439.20	28.20	335.4	1412.56	129.86	122.83	-42.39	2.02	6737694.53	514120.09	N 60 46 34.692	W 122 44 26.745
	1448.90	27.60	334.7	1421.13	134.39	126.94	-44.30	2.11	6737698.64	514118.16	N 60 46 34.825	W 122 44 26.872
	1458.60	28.00	334.0	1429.71	138.89	131.02	-46.26	1.60	6737702.71	514116.19	N 60 46 34.957	W 122 44 27.001
	1467.90	28.80	335.4	1437.89	143.31	135.02	-48.15	3.61	6737706.70	514114.28	N 60 46 35.086	W 122 44 27.126
	1477.30	29.80	336.1	1446.06	147.91	139.23	-50.04	3.07	6737710.90	514112.37	N 60 46 35.222	W 122 44 27.251
	1486.94	30.40	337.8	1454.42	152.74	143.67	-51.94	3.18	6737715.33	514110.46	N 60 46 35.366	W 122 44 27.376
	1496.20	29.70	336.8	1462.44	157.38	147.95	-53.73	2.74	6737719.60	514108.66	N 60 46 35.504	W 122 44 27.495
	1505.80	28.50	337.3	1470.83	162.04	152.25	-55.55	3.63	6737723.89	514106.82	N 60 46 35.643	W 122 44 27.615
	1515.40	27.80	335.4	1479.29	166.57	156.40	-57.38	3.55	6737728.03	514104.99	N 60 46 35.777	W 122 44 27.735
	1525.00	28.10	334.7	1487.77	171.06	160.48	-59.26	1.39	6737732.10	514103.07	N 60 46 35.909	W 122 44 27.860
	1534.41	29.30	334.7	1496.02	175.56	164.56	-61.19	3.83	6737736.18	514101.13	N 60 46 36.041	W 122 44 27.988
	1543.97	29.70	336.5	1504.34	180.26	168.85	-63.14	3.01	6737740.46	514099.17	N 60 46 36.179	W 122 44 28.116
	1553.50	29.20	336.8	1512.64	184.94	173.15	-64.99	1.66	6737744.75	514097.30	N 60 46 36.318	W 122 44 28.239
	1563.01	28.89	337.6	1520.96	189.56	177.41	-66.78	1.51	6737749.00	514095.49	N 60 46 36.456	W 122 44 28.357
	1572.60	28.50	338.4	1529.37	194.16	181.68	-68.51	1.68	6737753.26	514093.75	N 60 46 36.594	W 122 44 28.471
	1582.20	28.20	338.9	1537.82	198.72	185.92	-70.17	1.23	6737757.49	514092.07	N 60 46 36.731	W 122 44 28.581
	1591.80	28.30	339.7	1546.27	203.26	190.17	-71.77	1.22	6737761.74	514090.45	N 60 46 36.868	W 122 44 28.687
	1601.40	28.00	340.4	1554.74	207.79	194.43	-73.32	1.39	6737765.99	514088.89	N 60 46 37.006	W 122 44 28.789
	1610.60	27.20	340.4	1562.89	212.05	198.45	-74.75	2.61	6737769.99	514087.44	N 60 46 37.135	W 122 44 28.884
	1619.90	26.20	341.8	1571.20	216.23	202.40	-76.10	3.81	6737773.94	514086.07	N 60 46 37.263	W 122 44 28.973
	1629.60	25.60	341.8	1579.93	220.46	206.42	-77.43	1.86	6737777.96	514084.74	N 60 46 37.393	W 122 44 29.060
	1639.20	25.50	341.1	1588.59	224.60	210.35	-78.74	0.99	6737781.88	514083.40	N 60 46 37.520	W 122 44 29.148
	1648.60	25.00	341.8	1597.09	228.60	214.15	-80.02	1.80	6737785.67	514082.11	N 60 46 37.643	W 122 44 29.232
	1658.30	24.30	343.2	1605.91	232.64	218.01	-81.24	2.82	6737789.52	514080.88	N 60 46 37.767	W 122 44 29.312
	1668.00	23.90	346.7	1614.76	236.58	221.83	-82.27	4.59	6737793.34	514079.84	N 60 46 37.891	W 122 44 29.380
	1677.70	23.70	350.2	1623.64	240.44	225.66	-83.05	4.41	6737797.17	514079.04	N 60 46 38.015	W 122 44 29.432
	1687.30	22.60	350.9	1632.46	244.14	229.39	-83.67	3.54	6737800.89	514078.40	N 60 46 38.135	W 122 44 29.473
	1696.90	20.30	351.6	1641.40	247.57	232.86	-84.20	7.23	6737804.35	514077.86	N 60 46 38.247	W 122 44 29.508
	1706.70	18.90	348.8	1650.63	250.79	236.10	-84.76	5.16	6737807.59	514077.29	N 60 46 38.352	W 122 44 29.545
	1716.20	18.80	345.7	1659.62	253.83	239.09	-85.44	3.18	6737810.58	514076.60	N 60 46 38.448	W 122 44 29.590

Suncor D&C
ANADRIL CANADA
403 269 6203
FAX 403 509 4357

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	DLS (°/30m)	Grid Coordinates Northing (m)	Grid Coordinates Easting (m)	Geographic Coordinates Latitude	Geographic Coordinates Longitude
	1725.70	16.50	344.6	1668.62	256.85	242.03	-86.22	1.46	6737813.51	514075.81	N 60 46 38.543	W 122 44 29.641
	1735.30	16.90	346.7	1677.77	259.75	244.85	-86.94	5.38	6737816.33	514075.07	N 60 46 38.635	W 122 44 29.669
	1744.90	15.20	344.6	1686.99	262.38	247.42	-87.60	5.61	6737818.90	514074.41	N 60 46 38.718	W 122 44 29.733
	1754.40	12.60	346.7	1696.21	264.66	249.65	-88.17	7.75	6737821.12	514073.83	N 60 46 38.790	W 122 44 29.770
	1764.10	10.20	344.6	1705.71	266.58	251.52	-88.65	8.14	6737822.99	514073.34	N 60 46 38.850	W 122 44 29.802
	1773.60	8.60	338.3	1715.00	268.13	252.99	-89.13	8.00	6737824.46	514072.85	N 60 46 38.898	W 122 44 29.834
	1783.20	8.30	336.8	1724.58	269.54	254.30	-89.67	1.16	6737825.76	514072.31	N 60 46 38.940	W 122 44 29.869
	1792.80	8.40	336.1	1734.08	270.93	255.58	-90.23	0.45	6737827.04	514071.75	N 60 46 38.981	W 122 44 29.906
	1802.30	8.40	336.8	1743.48	272.32	256.85	-90.78	0.32	6737828.31	514071.19	N 60 46 39.022	W 122 44 29.943
	1811.80	7.90	337.4	1752.88	273.67	258.09	-91.31	1.60	6737829.55	514070.66	N 60 46 39.062	W 122 44 29.978
	1821.40	7.20	336.1	1762.40	274.93	259.25	-91.80	2.25	6737830.70	514070.16	N 60 46 39.100	W 122 44 30.010
	1831.00	6.50	337.5	1771.93	276.07	260.30	-92.25	2.25	6737831.75	514069.70	N 60 46 39.134	W 122 44 30.040
	1840.60	6.10	341.8	1781.47	277.12	261.29	-92.62	1.93	6737832.74	514069.33	N 60 46 39.166	W 122 44 30.065
	1850.10	5.80	343.2	1790.92	278.11	262.22	-92.92	1.05	6737833.67	514069.03	N 60 46 39.196	W 122 44 30.084
	1859.70	4.90	345.3	1800.48	279.00	263.09	-93.16	2.68	6737834.53	514068.78	N 60 46 39.224	W 122 44 30.100
	1869.30	3.70	341.1	1810.05	279.71	263.78	-93.37	3.87	6737835.22	514068.58	N 60 46 39.246	W 122 44 30.114
	1878.70	2.90	348.6	1819.44	280.25	264.30	-93.51	2.91	6737835.74	514068.43	N 60 46 39.263	W 122 44 30.123
	1888.20	2.20	6.4	1828.93	280.65	264.71	-93.54	3.29	6737836.16	514068.40	N 60 46 39.276	W 122 44 30.125
	1897.80	1.90	32.4	1838.52	280.91	265.03	-93.43	3.02	6737836.48	514068.51	N 60 46 39.287	W 122 44 30.118
	1906.90	2.30	54.2	1847.62	281.05	265.26	-93.20	2.92	6737836.71	514068.73	N 60 46 39.294	W 122 44 30.103
	1916.60	2.60	76.0	1857.31	281.07	265.43	-92.83	3.01	6737836.88	514069.10	N 60 46 39.300	W 122 44 30.078
	1926.20	2.80	86.4	1866.90	280.97	265.50	-92.39	1.65	6737836.95	514069.55	N 60 46 39.302	W 122 44 30.049
	1945.40	2.00	104.2	1886.08	280.64	265.45	-91.59	1.69	6737836.90	514070.34	N 60 46 39.300	W 122 44 29.997
	1955.10	1.50	118.9	1895.77	280.44	265.34	-91.32	2.07	6737836.80	514070.62	N 60 46 39.297	W 122 44 29.978
	1974.20	0.60	171.6	1914.87	280.16	265.12	-91.08	1.94	6737836.58	514070.85	N 60 46 39.290	W 122 44 29.963
	1976.00	0.60	178.4	1916.67	280.14	265.10	-91.08	1.19	6737836.56	514070.85	N 60 46 39.289	W 122 44 29.963
Projection to casing point	1990.00	0.60	178.0	1930.67	280.00	264.98	-91.08	0.01	6737836.41	514070.86	N 60 46 39.284	W 122 44 29.963
Total Depth	2117.00	0.60	178.0	2057.66	278.74	263.83	-91.03	0.00	6737835.09	514070.91	N 60 46 39.241	W 122 44 29.960

GEOLOGICAL REPORT

N.E.B. COPY



CABRA CONSULTING
A Division of Cabra Enterprises Ltd.
CALGARY, ALBERTA

SUNCOR ENERGY INC.

GEOLOGICAL REPORT

SUNCOR NETLA K-77-60-50-122-30

Latitude 60°46'30.724"
Longitude 122°44'23.945"

Prepared by: Brian Hester P. Geol..

Cabra Consulting
1623 - 48th Avenue S.W.
Calgary, Alberta
T2T 2S9
(403) 243-5022

Reported to: Ms. Lauren Pudsey

SUNCOR NETLA K-77-60-50-122-30

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SUNCOR NETLA K-77-60-50-122-30

WELL DATA SUMMARY

Company:	Suncor Energy Inc.
Well Name:	Suncor Netla K-77-60-50-122-30
Surface Location:	K-77-60-50-122-30
Surface Co-ordinates:	Latitude 60°46'30.724" Longitude 122°44'23.945"
Target Co-ordinates:	261.4 m North, 100.3 m West of well center.
Elevations:	***Ground:*** 618.4 meters (cut.5 m) ***Kelly Bushing:*** 625.2 meters ***K.B. to Ground:*** 6.8 meters
Unique Well I.D.:	300/K-77-60-50-122-30/00
Field:	Netla
Classification:	Exploration
Objectives:	***Primary*** – Slave Point (Gas)
Terminating Zone:	Fort Vermilion (Middle Devonian)
Security:	Tight
AFE Number:	A9811680K77
Licence Number:	NA
Spud Date:	0230 Hrs., February 7, 1999
Total Depth:	2118 meters @ 1700 Hrs, March 10, 1999
Sampled Interval:	***Suncor:*** 15 to 2118 meters (5 meter intervals) ***N.E.B.:*** 15 to 2118 meters (5 meter intervals)
Contractor:	Akita Rig No. 58 & Bonus Rig No. 235

SUNCOR NETLA K-77-60-50-122-30

Drilling Supervision: Lee Brazel, Pat Miller, Godwin Valin, Mike Petroski

Geological Supervision: Brian Hester

Hole Size:
Surface: 311.0 mm
Intermediate: 222 mm
Main: 155.6 mm

Surface Casing:
Size: 244.5 mm
Type: 41 joints of 53.6 kg/m J-55, ST&C
Landed @ 535.5 meters
Cement: 35.0 tonnes RFC
Plug down @ 1832 Hrs February 10, 1999

Intermediate Casing:
Size: 177.8 mm
Type: 154 joints of 34.2 kg/m L-80
Landed @ 1989 meters
Cement with: 43 tonnes 1-1-2 + additives
Tail: 21 tonnes RFC + additives
Plug down @ 1200 Hrs., March 1, 1999
Cement Top @ 1800 meters

Mudlogging:
Datalog
Operated by Geologist.
Interval Logged: 20 to 2118 meters

Directional Services:
Anadrill
Directional Drillers: Maurice Nolan
MWD Operators: Several

Drill Stem Tests: None

Cores: None

Open Hole Logs: Schlumberger

Log	*Interval Logged*	*Scale*
Run 1		
AIT-BHC-CNL-LDT	1990 to 535.5 meters	1:240
DPS	535.5 to 0 meters	1:240
Run 2		
AIT-BHC-CNL-LDT	2118 to 1986.8 meters	1:240
MSCT	Various	
FMI	2118 to 1986.8 meters	1:240
VSP	2 vibration points	1:240

SUNCOR NETLA K-77-60-50-122-30

Final Status:	Potential Slave Point Gas Well
Rig Release:	2400 Hrs, March 12, 1999
Final Costs:	$2,513,003
Comments:	This well was drilled by Akita to 990 meters and then drilled directionally to intermediate casing point at 1990 meters. The well was logged casing was run and the Akita rig was then moved off. A Bonus service rig was moved on to finish the well. After drilling to T.D. the Well was logged and a VSP was run. After this the well was turned over to production for completion.

GEOLOGICAL MARKERS

K.B. 1458.8 meters

	Prognosis		Samples			Logs		
Formation	Depth (m)	Subsea (m)	MD (m)	TVD (m)	Subsea (m)	MD (m)	TVD (m)	Subsea (m)
Upper Devonian								
Surface Casing	NP	NP	535.5	535.5	89.7	535.5	535.5	89.7
Exshaw	NP	NP	639.0	639.0	-13.8	638.0	638	-12.8
Kotcho Shale	665.2	-40.0	652.0	652.0	-26.8	652.3	652.3	-27.1
Kotcho Carbonate	713.9	-88.7	708.0	708.0	-82.8	710.9	710.9	-85.7
Tetcho Carbonate	988.3	-363.1	981.0	981.0	-355.8	989.6	989.6	-364.4
Trout River	1080.5	-455.3	1062.0	1062.0	-436.8	1078.7	1078.6	-453.4
Kakisa	1166.8	-541.6	1156.0	1155.6	-530.4	1156.7	1156.2	-531.0
Redknife	1185.8	-560.6	1176.0	1175.2	-550.0	1183.5	1182.5	-557.3
Jean Marie	1349.5	-724.3	1318.0	1305.8	-680.6	1317.0	1304.9	-679.7
Ft. Simpson	1432.4	-807.2	1433.0	1407.1	-781.9	1384.0	1363.6	-738.4
Middle Devonian								
Muskwa	NP	NP	1955.0	1895.7	-1270.5	1955.0	1895.7	-1270.5
Slave Point	1951.2	-1326.0	1983.0	1923.7	-1298.5	1982.0	1922.7	-1297.5
Intermediate Casing	NP	NP	1989.0	1929.7	-1304.5	1986.8	1927.5	-1302.3
Top Slave Pt. Reef	NP	NP	2015.0	1955.7	-1330.5	2013.4	1954.1	-1328.9
Top Porosity	NP	NP	2026.0	1966.7	-1341.5	2030.4	1971.1	-1345.9
Base Porosity	NP	NP	2046.0	1986.7	-1361.5	2043.8	1984.5	-1359.3
Ft. Vermillion	NP	NP	2111.0	2051.7	-1426.5	NP	NP	NP
Sulphur Point	2067.1	-1441.9	NP	NP	NP	NP	NP	NP
Total Depth	2107.1	-1481.9	2118.0	2058.7	-1433.5	2117.0	2057.7	-1432.5

DAILY PROGRESS SUMMARY

Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
0	$453,298	0	0	0	Surface	Rig to Spud	Move Rig. Rig up to Spud.
1	$634,616	237	237	14.8	Cretaceous	Drill	Rig up to spud. Spud well @ 0230 Hrs. Drill 311 mm hole & survey.
2	$684,671	401	164	12.4	Cretaceous	Drill	Drill ahead & survey to 315 m. Trip out to condition hole & change bits. Ream in and drill ahead & survey.
3	$712,594	540	139	9.0	Cretaceous	Trip	Drill ahead & survey to 540 m. Circulate and wiper trip. Survey. Circulate and trip out. Run in to survey.
4	$784,729	540	0	0.0	Cretaceous	Wait on cement	Trip in & directional survey. Trip out. Rig up & run & cement casing. Wait on cement & nipple down.
5	$820,945	540	0	0.0	Cretaceous	Nipple up	Nipple down diverter. Nipple up 346 mm BOPE's.
6	$865,824	544	4	5.3	Cretaceous	Leak off	Nipple up. Pressure test BOPE stack. Repair pumps. Pick up BHA. Run in & drill out @ 2130 Hrs. Under shoe @ 1100 Hrs. Drill 4 meters and perform leakoff.
7	$909,668	725	181	10.5	Kotcho	Drill	Pressure test. Drill ahead & survey.
8	$942,955	895	170	7.7	Kotcho	Drill	Drilll ahead & survey.
9	$992,506	1085	190	8.8	Trout River	Drill	Drill ahead & survey.

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Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
10	$1,050,432	1117	32	6.4	Trout River	Drill	Drill ahead to 1105 m. Circulate & trip out of hole. Pick up directional tools & bit #2. Run in & slip & cut. Finish in & drill ahead directionally.
11	$1,098,153	1252	135	6.7	Redknife	Drill	Drill ahead directionally
12	$1,145,210	1373	121	6.1	Jean Marie	Drill	Drill ahead directionally
13	$1,187,163	1484	111	5.4	Ft Simpson	Drill	Drill ahead directionally
14	$1,234,821	1577	93	4.8	Ft Simpson	Trip	Drill ahead & survey to 1577 m. Trip out of hole for bit #3.
15	$1,272,752	1630	53	4.9	Ft Simpson	Drill	Trip out for bit #3. Change out motor. Run in testing MWD on way in. Drill ahead directionally.
16	$1,331,258	1685	55	5.5	Ft Simpson	Drill	Drill ahead directionally to 1681 m. Trip for BHA. Set motor to 2.12`. Run in & drill ahead directionally.
17	$1,384,248	1782	97	5.0	Ft Simpson	Drill	Drill ahead directionally.
18	$1,440,733	1872	90	4.4	Ft. Simpson	Drill	Drill ahead directionally.
19	$1,594,786	1990	118	5.7	Slave Point	Circulate	Drill ahead directionally to 1990 m. Circulate sample.
20	$1,638,028	1990	0	0.0	Slave Point	Log	Circulate sample. Wiper trip to 990 m. Circulate & condition hole. Trip out to log. Lay down directional tools & rig up loggers.
21	$1,717,382	1990	0	0.0	Slave Point	Trip out sideways	Log well. Finish logging @ 0900 Hrs. Run in & condition hole for casing. Trip out sideways.

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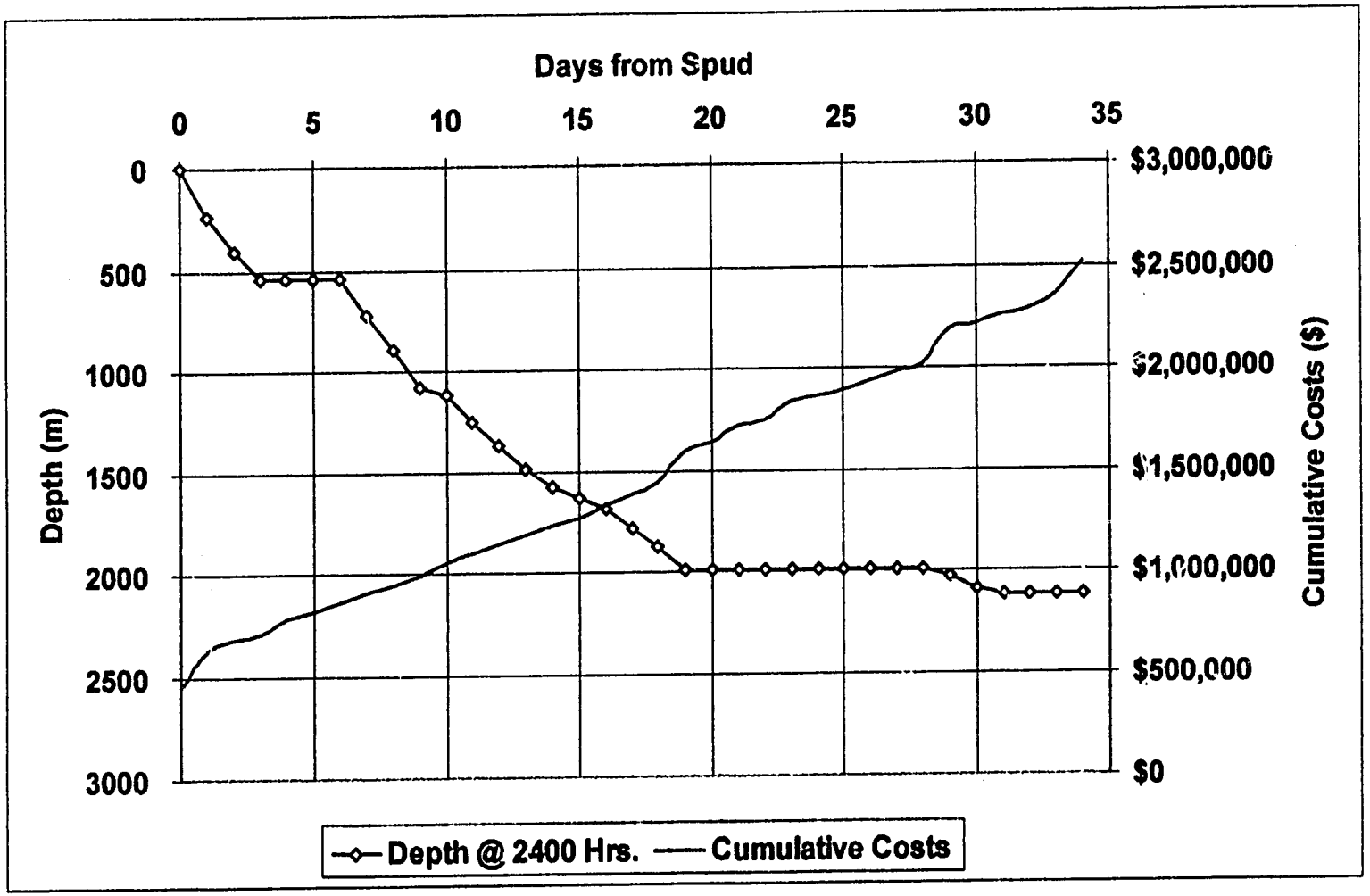
Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
22	$1,745,533	1990	0	0.0	Slave Point	Run casing	Trip out sideways. Wait on power tong truck. Rig up tongs and run 177.8 mm casing.
23	$1,835,177	1990	0	0.0	Slave Point	Tear out	Circulate casing in to 1989 m. Circulate hole clean. Cement casing. (Unable to work same due to hole conditions.) Plug down 1200 Hrs. Nipple down and install well head. Rig released @ 2300 Hrs.
24	$1,861,420	1990	0	0.0	Slave Point	Move	Tear out rig. Rig released @ 0800 Hrs. Tear out and move rig.
25	$1,889,078	1990	0	0.0	Slave Point	Move	Tear down and move rig.
26	$1,941,084	1990	0	0.0	Slave Point	Rig in	Finish moving Akita #58 off location. Move on & spot service rig (Bonus #235). Rig in service rig.
27	$1,981,585	1990	0	0.0	Slave Point	Run in	Finish rigging up. Test accumulator.
28	$2,016,959	1990	0	0.0	Slave Point	Circulate	Make up BHA with mud motor & run in. Rig up power swivel & circulate in preparation to drill cement.
29	$2,185,085	2024	34	2.1	Slave Point	Drill ahead	Drill cement, plug & shoe. Drill to 1991.9 m. Under shoe @ 0230 Hrs. Circulate hole clean of cement. Displace to mud. Mix mud to replace displaced fluid. Drill ahead @ 1015 Hrs.
30	$2,219,098	2089	65	2.9	Slave Point	Drill ahead	Drill ahead. Repair rig. Drill ahead.

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Days From Spud	Costs	Depth @ 2400 Hrs.	Progress (meters)	ROP	Formation	Operation	Operations Summary
31	$2,261,605	2118	29	1.7	Slave Point	Trip out	Drill ahead to 2118 m. ROP decrease to 1 m/hr. Call T.D. of 2118 m @ 1700 Hrs. Circulate. Lay down power swivel & trip out.
32	$2,291,620	2118	0	0.0	Slave Point	Core	Trip out & lay down drill collars. Rig to log. Run in @ 0530 with PE-HALS-LDT unable to get tools to function. Change out tools & run AITE-BHC-PE DENS-CNL-LDT-MEL & log well. Rig out & pick up MSCT tool. Cut & recover 22 cores.
33	$2,358,792	2118	0	0.0	Slave Point	Trip out	Finish MSCT & rig down. Wait on FMI. Rig up & log out with same. Make up casing scraper & run in. Scraper casing from 1930 to 1988 m. Displace cased hole to water. Trip out.
34	$2,513,003	2118	0	0.0	Slave Point	Rig release	Trip out with bit & casing scraper. Wait on VSP tools for 5 hours. Rig up for VSP. Spot vibro units and log VSP. Rig down loggers. Rig out open hole equipment. Release rig from drilling @ 0000 Hrs.

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DAYS FROM SPUD VS DEPTH & CUMULATIVE COSTS



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MUD RECORD

Date	Depth (m)	Density (kg/m3)	Viscosity (s/l)	pH	Water Loss.	Filter Cake (mm)	Yield Point
99/02/07	237	1040		11.1	11	1.0	26.0
99/02/08	401	1070		10.0	10.2	1.0	23.5
99/02/09	540	1125		10.1	11	1.0	27.0
99/02/10	540	1125		10.0	11.2	1.0	26.5
99/02/11	540	1095		8.5	11.5	1.0	23.5
99/02/12	544	1095		8.5	11.5	1.0	23.5
99/02/13	725	1140		10.5	8.5	1.0	32.5
99/02/14	895	1160		10.0	11.8	1.0	27.0
99/02/15	1085	1160		10.8	8.0	1.0	19.5
99/02/16	1117	1155		10.2	9.7	1.0	23.5
99/02/17	1252	1145		10.0	8.3	1.0	16.0
99/02/18	1373	1155		10.0	8.3	1.5	28.0
99/02/19	1484	1180		9.7	7.3	1.5	31.0
99/02/20	1577	1190		10.0	7.6	1.5	32.0
99/02/21	1630	1195		10.5	8.5	1.5	34.5
99/02/22	1685	1185		9.5	7.2	1.5	27.0
99/02/23	1782	1195		10.5	7.2	1.5	40.0
99/02/24	1872	1210		10.0	7	1.5	41.0
99/02/25	1990	1205		10.0	7.2	1.5	31.5
99/02/26	1990	1205		10.0	7.2	1.5	32.5
99/02/27	1990	1210		10.0	8	1.5	31
99/02/28	1990	1210		10.0	8	1.5	31
99/03/01	1990	1200		9.0	9	1.5	21.5
99/03/02	1990	Casing and rig on Service rig					
99/03/03	1990	Casing and rig on Service rig					
99/03/04	1990	Casing and rig on Service rig					
99/03/05	1990	Casing and rig on Service rig					
99/03/06	1990	Casing and rig on Service rig					
99/03/07	2024	1040	45	9.5	6.5	1	10
99/03/08	2089	1040	57	10.5	7.8	1	14
99/03/09	2118	1050	90	10.5	6.5	1	24.5
99/03/10	2118	1050	90	10.5	6.5	1	24.5
99/03/11	2118	1050	90	10.5	6.5	1	24.5
99/03/12	2118	1050	90	10.5	6.5	1	24.5

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BIT RECORD

Bit No.	Type	Size (mm)	Depth Out(m)	Interval Cut(m)	Hrs	FOB (daN)	RPM	Cond'n T	Cond'n B	Cond'n G	ROP (m/hr)	Comments
1A	HP11	311	315	315	24.5	9000	160	5	3	I	12.9	ROP
2A	J1	311	540	225	21.5	12000	190	4	3	I	10.5	Casing
1	EHP43A	222	1105	565	63.5	18000	80	3	3	I	8.9	ROP
2	F10T	222	1577	472	82.5	22000	90	3	3	I	5.7	ROP
3	F10T	222	1990	413	81.5	30000	90	6	5	I	5.1	Casing
1B	EHP51H	156	2118	128	52.8	6000	120	4	3	I	2.4	T.D.

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DEVIATION RECORD

Survey No.	Depth (meters)	Deviation (degrees)	Interval (meters)
1	30	0.250	30
2	59	0.500	29
3	89	0.750	30
4	115	0.750	26
5	155	0.750	40
6	182	0.500	27
7	209	1.000	27
8	256	0.250	47
9	286	0.750	30
10	315	0.000	29
11	333	0.750	18
12	362	0.250	29
13	391	0.750	29
14	418	1.000	27
15	477	0.750	59
16	505	0.000	28
	See Directional Record		

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DIRECTIONAL RECORD

Vertical section @ 339°

Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	37.75	0.70	52.00	37.75	587.45	0.14	0.18	0.07	0.56
3	150.67	0.70	77.00	150.66	474.54	0.72	1.40	0.17	0.08
4	263.34	0.50	107.00	263.32	361.88	0.73	2.54	-0.23	0.10
5	378.15	0.30	273.00	378.13	247.07	0.60	2.72	-0.41	0.21
6	503.00	0.50	82.00	502.98	122.22	0.70	2.93	-0.40	0.19
7	551.00	0.30	320.60	550.98	74.22	0.82	3.06	-0.33	0.44
8	591.00	0.70	307.00	590.97	34.23	1.05	2.80	-0.02	0.31
9	677.00	1.00	324.00	676.96	-51.76	1.97	1.94	1.15	0.14
10	777.00	0.80	317.20	776.95	-151.75	3.19	0.95	2.64	0.07
11	792.00	1.75	274.00	791.95	-166.75	3.28	0.65	2.83	2.58
12	878.00	1.25	322.00	877.92	-252.72	4.11	-1.24	4.29	0.45
13	991.00	1.50	322.00	990.89	-365.69	6.25	-2.91	6.88	0.07
14	1093.10	1.90	342.50	1092.94	-467.74	8.92	-4.24	9.85	0.21
15	1102.90	2.10	334.70	1102.73	-477.53	9.24	-4.37	10.19	1.03
16	1111.40	3.20	347.80	1111.22	-486.02	9.61	-4.48	10.58	4.41
17	1121.50	4.40	344.50	1121.30	-496.10	10.26	-4.65	11.24	3.62
18	1131.50	5.70	351.60	1131.26	-506.06	11.12	-4.82	12.11	4.32
19	1141.84	7.30	348.79	1141.53	-516.33	12.27	-5.02	13.26	4.73
20	1151.02	8.90	348.09	1150.62	-525.42	13.54	-5.28	14.53	5.24
21	1161.00	10.10	348.79	1160.46	-535.26	15.15	-5.61	16.16	3.62

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Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
22	1170.75	11.20	348.09	1170.05	-544.85	16.92	-5.97	17.93	3.41
23	1180.60	12.00	349.49	1179.69	-554.49	18.86	-6.36	19.89	2.58
24	1189.28	13.60	348.09	1188.16	-562.96	20.74	-6.73	21.78	5.63
25	1199.24	15.80	348.09	1197.79	-572.59	23.22	-7.26	24.28	6.63
26	1208.92	17.50	347.38	1207.06	-581.86	25.93	-7.84	27.02	5.31
27	1218.46	19.30	345.98	1216.11	-590.91	28.86	-8.54	30.00	5.83
28	1228.22	21.10	343.87	1225.27	-600.07	32.11	-9.42	33.35	5.97
29	1237.62	22.70	343.87	1233.99	-608.79	35.48	-10.39	36.84	5.11
30	1246.75	23.90	344.57	1242.38	-617.18	38.95	-11.37	40.44	4.05
31	1256.52	25.00	345.98	1251.27	-626.07	42.86	-12.40	44.46	3.82
32	1266.27	26.20	347.40	1260.06	-634.86	46.96	-13.37	48.63	4.15
33	1276.27	27.10	347.79	1269.00	-643.80	51.34	-14.33	53.07	2.75
34	1285.74	27.90	348.09	1277.40	-652.20	55.62	-15.25	57.39	2.57
35	1295.49	28.50	346.68	1285.99	-660.79	60.11	-16.25	61.95	2.76
36	1305.15	28.70	344.57	1294.48	-669.28	64.59	-17.40	66.54	3.20
37	1314.72	28.90	341.05	1302.86	-677.66	69.00	-18.76	71.14	5.35
38	1324.31	29.20	338.24	1311.25	-686.05	73.36	-20.38	75.79	4.37
39	1334.00	29.60	336.84	1319.69	-694.49	77.76	-22.20	80.55	2.46
40	1343.38	29.80	337.54	1327.84	-702.64	82.04	-24.00	85.19	1.28
41	1353.04	29.80	340.35	1336.22	-711.02	86.52	-25.73	89.99	4.34
42	1362.59	28.70	337.54	1344.55	-719.35	90.87	-27.40	94.66	5.53
43	1371.99	27.20	338.24	1352.85	-727.65	94.95	-29.06	99.06	4.90
44	1381.70	26.50	334.00	1361.52	-736.32	98.96	-30.83	103.44	6.30
45	1391.10	26.40	333.30	1369.93	-744.73	102.71	-32.69	107.61	1.05
46	1400.75	26.90	332.60	1378.56	-753.36	106.57	-34.66	111.91	1.84

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Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
47	1410.30	27.30	334.70	1387.06	-761.86	110.47	-36.59	116.24	3.26
48	1420.00	28.00	334.70	1395.65	-770.45	114.54	-38.51	120.73	2.16
49	1429.60	28.80	334.90	1404.09	-778.89	118.67	-40.46	125.28	2.52
50	1439.20	28.20	335.40	1412.53	-787.33	122.82	-42.38	129.85	2.02
51	1448.90	27.60	334.70	1421.10	-795.90	126.94	-44.30	134.38	2.11
52	1458.60	28.00	334.00	1429.68	-804.48	131.02	-46.25	138.89	1.60
53	1467.90	28.90	335.40	1437.86	-812.66	135.02	-48.15	143.31	3.61
54	1477.30	29.80	336.10	1446.05	-820.85	139.22	-50.04	147.91	3.07
55	1486.94	30.40	337.75	1454.39	-829.19	143.67	-51.93	152.74	3.18
56	1496.20	29.70	336.80	1462.41	-837.21	147.95	-53.72	157.37	2.74
57	1505.80	28.50	337.30	1470.80	-845.60	152.25	-55.54	162.04	3.83
58	1515.40	27.80	335.40	1479.26	-854.06	156.39	-57.36	166.56	3.55
59	1525.00	28.10	334.70	1487.74	-862.54	160.47	-59.26	171.05	1.39
60	1534.41	29.30	334.73	1495.99	-870.79	164.56	-61.19	175.56	3.83
61	1543.97	29.70	336.50	1504.32	-879.12	168.85	-63.13	180.26	3.01
62	1553.50	29.20	336.84	1512.61	-887.41	173.15	-64.99	184.94	1.66
63	1563.01	28.89	337.59	1520.93	-895.73	177.41	-66.77	189.55	1.51
64	1572.60	28.50	338.30	1529.34	-904.14	181.67	-68.50	194.16	1.62
65	1582.20	28.20	338.90	1537.79	-912.59	185.92	-70.17	198.71	1.29
66	1591.80	28.30	339.70	1546.24	-921.04	190.17	-71.77	203.26	1.22
67	1601.40	28.00	340.40	1554.71	-929.51	194.43	-73.32	207.79	1.39
68	1610.60	27.20	340.40	1562.86	-937.66	198.44	-74.75	212.05	2.61
69	1619.90	26.20	341.80	1571.17	-945.97	202.39	-76.10	216.22	3.81
70	1629.60	25.60	341.80	1579.90	-954.70	206.42	-77.43	220.45	1.86
71	1639.20	25.50	341.10	1588.56	-963.36	210.34	-78.74	224.59	0.99

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Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
72	1648.60	25.00	341.80	1597.06	-971.86	214.14	-80.02	228.60	1.86
73	1658.30	24.30	343.20	1605.87	-980.67	218.00	-81.24	232.64	2.82
74	1668.00	23.90	346.70	1614.73	-989.53	221.83	-82.26	236.57	4.59
75	1677.70	23.70	350.20	1623.60	-998.40	225.66	-83.05	240.43	4.41
76	1687.30	22.60	350.90	1632.43	-1007.23	229.38	-83.67	244.13	3.54
77	1696.90	20.30	351.60	1641.36	-1016.16	232.85	-84.20	247.56	7.23
78	1706.70	18.90	348.80	1650.60	-1025.40	236.09	-84.76	250.78	5.16
79	1716.20	18.80	345.70	1659.59	-1034.39	239.08	-85.44	253.82	3.18
80	1725.70	18.50	344.60	1668.59	-1043.39	242.02	-86.22	256.84	1.46
81	1735.30	16.90	346.70	1677.73	-1052.53	244.84	-86.94	259.74	5.38
82	1744.90	15.20	344.60	1686.96	-1061.76	247.42	-87.60	262.37	5.61
83	1754.40	12.80	346.70	1696.17	-1070.97	249.64	-88.17	264.66	7.75
84	1764.10	10.20	344.60	1705.68	-1080.48	251.51	-88.64	266.58	8.14
85	1773.60	8.60	338.30	1715.05	-1089.85	252.98	-89.13	268.12	6.00
86	1783.20	8.30	336.80	1724.54	-1099.34	254.29	-89.67	269.53	1.16
87	1792.80	8.40	336.10	1734.04	-1108.84	255.57	-90.23	270.93	0.45
88	1802.30	8.40	336.80	1743.44	-1118.24	256.84	-90.78	272.31	0.32
89	1811.80	7.90	337.40	1752.84	-1127.64	258.08	-91.30	273.66	1.60
90	1821.40	7.20	336.10	1762.36	-1137.16	259.24	-91.80	274.92	2.25
91	1831.00	6.50	337.50	1771.89	-1146.69	260.29	-92.25	276.06	2.25
92	1840.60	6.10	341.80	1781.43	-1156.23	261.28	-92.62	277.12	1.93
93	1850.10	5.80	343.20	1790.88	-1165.68	262.22	-92.92	278.10	1.05
94	1859.70	4.90	345.30	1800.44	-1175.24	263.08	-93.16	278.99	2.88
95	1869.30	3.70	341.10	1810.01	-1184.81	263.77	-93.37	279.71	3.87
96	1878.70	2.90	348.80	1819.40	-1194.20	264.29	-93.51	280.24	2.91

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Survey No.	Measured Depth (m)	Drift (degrees)	Direction (degrees)	True Vertical Depth (m)	Subsea (m)	Latitude +N/-S (m)	Departure +E/-W (m)	Vertical Section (m)	DLS (deg/30 m)
97	1888.20	2.20	6.40	1828.89	-1203.69	264.70	-93.54	280.64	3.29
98	1897.80	1.90	32.40	1838.48	-1213.28	265.02	-93.43	280.90	3.02
99	1906.90	2.30	54.20	1847.57	-1222.37	265.26	-93.20	281.04	2.92
100	1916.60	2.60	76.00	1857.27	-1232.07	265.42	-92.83	281.06	3.01
101	1926.20	2.80	86.40	1866.85	-1241.65	265.49	-92.39	280.96	1.65
102	1945.40	2.00	104.20	1886.04	-1260.84	265.44	-91.59	280.63	1.69
103	1955.10	1.50	118.90	1895.73	-1270.53	265.33	-91.32	280.44	2.07
104	1974.20	0.60	171.60	1914.83	-1289.63	265.11	-91.08	280.15	1.94
105	1976.00	0.60	178.40	1916.63	-1291.43	265.10	-91.08	280.13	1.19
106	1990.00	0.60	178.00	1930.63	-1305.43	264.95	-91.08	279.99	0.01

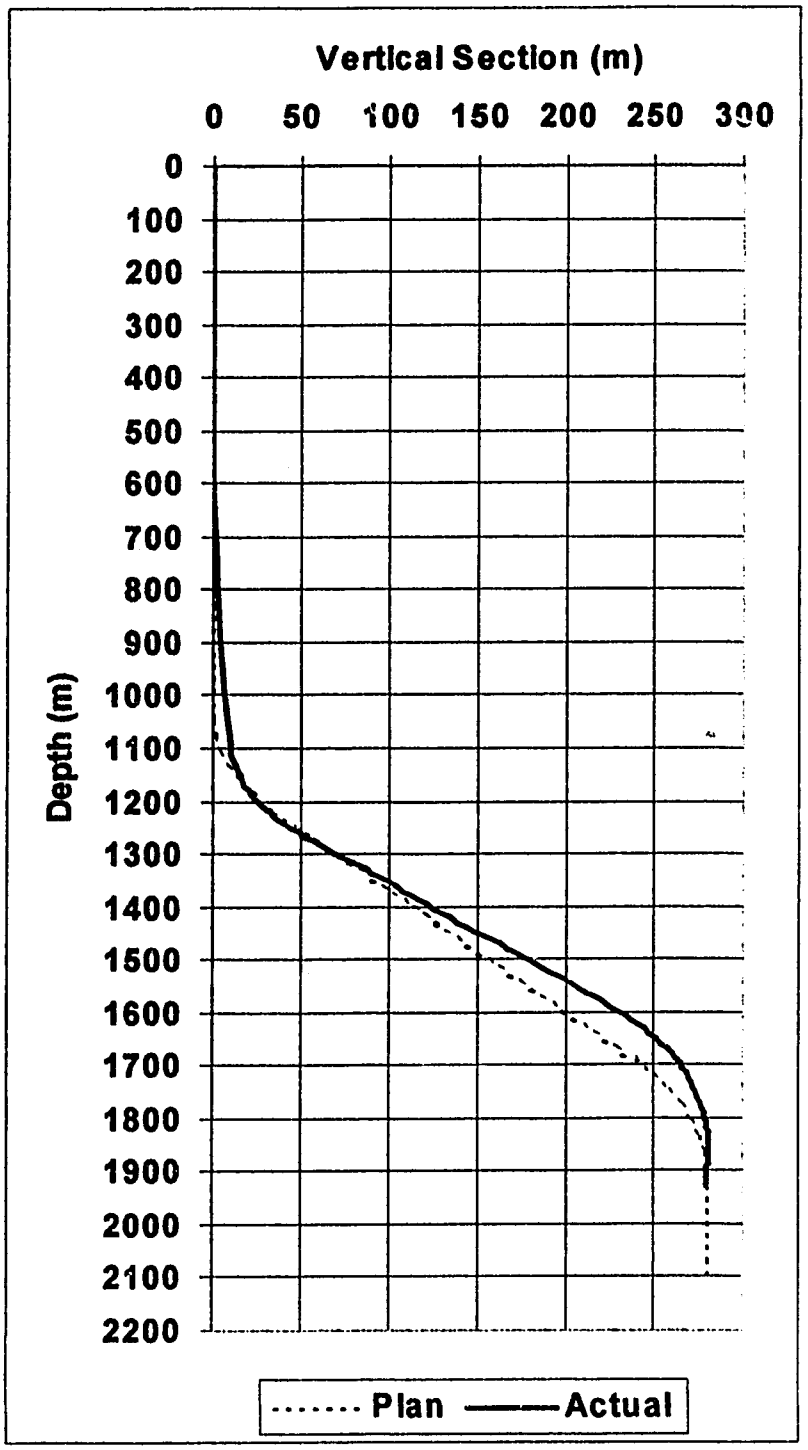
Last survey was extrapolated.

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VERTICAL SECTION

VERTICAL SECTION VS TRUE VERTICAL DEPTH

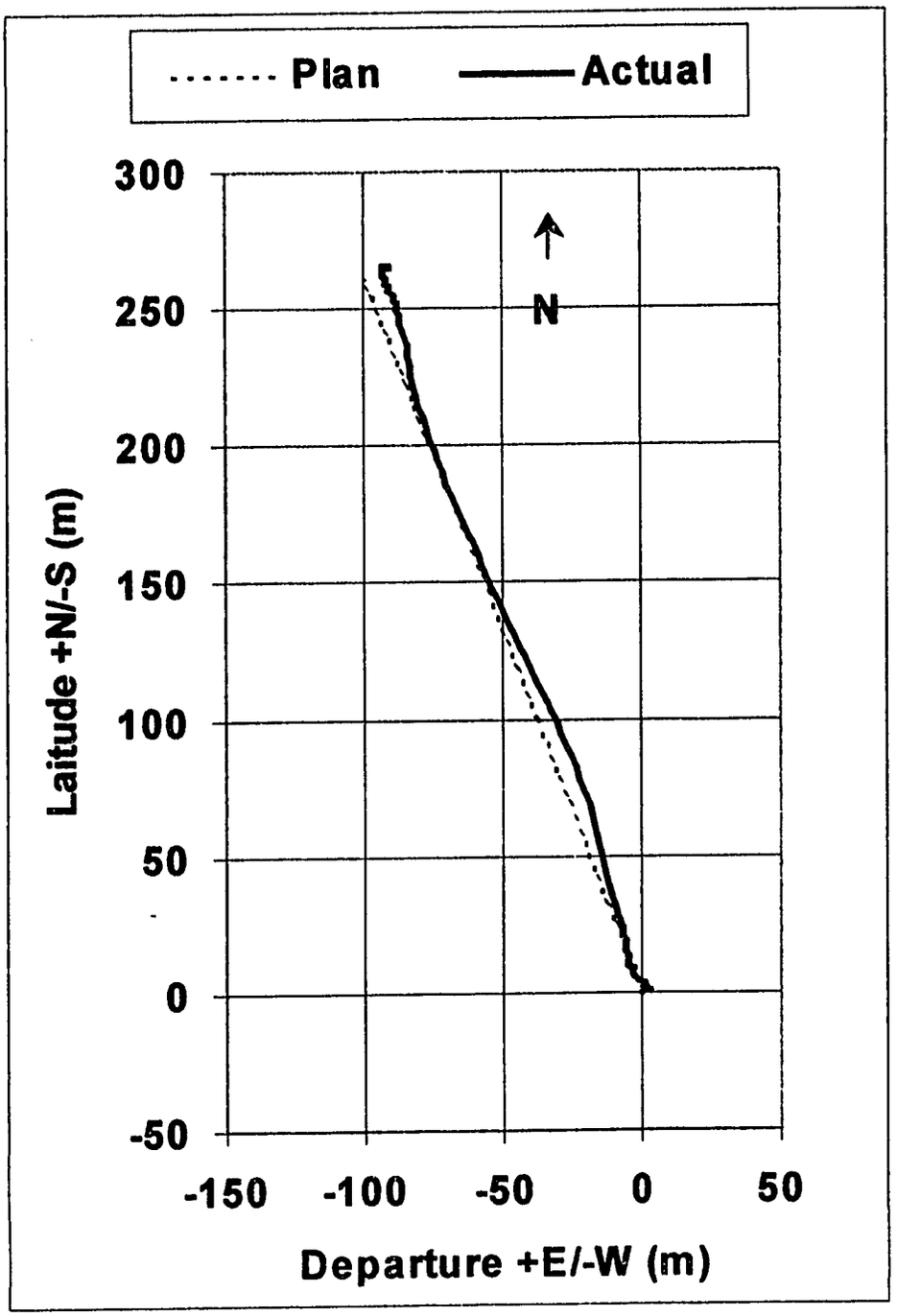
Vertical section @ 339°



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PLAN VIEW

LATITUDE VS DEPARTURE



SUNCOR NETLA K-77-60-50-122-30

OPEN HOLE LOG SUMMARY

INTERMEDIATE

Contractor:	Schlumberger	***Engineer:***	Tony Daniel
District:	Grande Prairie	***Truck No.:***	2028
Circulation End:	99/02/26 12:45	***Finish Trip:***	99/02/26 18:15
On Location:	99/02/26 15:30	***Off Location:***	99/02/27 14:00
Rig Up:	99/02/26 19:45	***Rig Down:***	99/02/27 09:15

Mud Properties: ***Type:*** K2SO4
Density: 1205 ***pH:*** 7.2
Viscosity: ***WL:*** 10

BHT: 80°C ***Total Depth:*** ***Driller*** 1990 meters
Logger 1990 meters

Services:

Log	***Interval Logged*** ***From***	***To***	***Meters Logged***	***Comments***
AITE-RXO	1987.6	535.5	1452.1	Combo platform express
BHC-XY CAL	1968.0	535.5	1432.5	Combo platform express
CNL-LDT-D	1984.4	535.5	1448.9	Combo platform express
DIS	535.5	0.0	535.5	Logged through casing

Times:

Tool Combo	***Date***	***Run in***	***First on bottom***	***Last on bottom***	***Clear Hole***	***Total Hours***
AIT-BHC-CNL-LDT	99/02/27	0:30:00	01:40	02:00	04:30	4.00
DIS	99/02/27	06:15	07:30	07:40	08:30	2.25

Logging Time:	6.25 Hrs	***Rig Up/Down:***	4.50 Hrs
Time Losses:	2.75 Hrs	***Total Time:***	13.50 Hrs

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Remarks: Viscosity was to high to measure. Problems getting tools to communicate on initial rig up. 2 hours allowed for rig up the balance of time taken prior to starting in the hole was considered lost time. Some of this time may have been saved if tools were tested as soon as crew arrived on location. Multiple attempts were made to get LDT calliper in axis of hole over the build section but they failed. With dual density callipers did get a reasonable calliper. Overall good job. Personnel were experienced and kept representative informed.

Copies: 2 field, 6 final - 8 Total. ***Cost:*** $44,302.06

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MAIN

Contractor:	Schlumberger	***Engineer:***	Kim Baker
District:	Grande Prairie	***Truck No.:***	3010
Circulation End:	99/03/09 18:45	***Finish Trip:***	99/03/10 03:30
On Location:	99/03/09 19:00	***Off Location:***	To production 99-03-12 22:00
Rig Up:	99/03/10 03:45	***Rig Down:***	99/03/10 14:30
Rig Up VSP:	99/03/12 08:00	***Rig Down VSP:***	99/03/12 22:00

Mud Properties: ***Type:*** Carbonate Polymer
Density: 1050 ***pH:*** 10.5
Viscosity: 90 ***WL:*** 6.5

BHT: 88°C ***Total Depth:*** ***Driller:*** 2118 meters
Logger: 2117 meters

Services:

Log	*Interval Logged From*	*To*	*Meters Logged*	*Comments*
AITE-RXO	2115.6	1986.8	128.8	Combo platform express
BHC-XY CAL	2094.3	1986.8	107.5	Combo platform express
CNL-LDT-D	2111.3	1986.8	124.5	Combo platform express
MEL	2111.3	1988.0	123.3	Combo platform express
MSCT	2064.5	1997.5	67.0	22 cores cut & recovered
FMI	2113.0	1986.8	126.2	2 passes
VSP	2117.0	600.0	1517.0	Zero offset & Vib 1

Times:

Tool Combo	*Date*	*Run in*	*First on bottom*	*Last on bottom*	*Clear Hole*	*Total Hours*
Platform Express	99/03/10	11:30	12:45	15:15	17:00	5.50
MSCT	99/03/10	19:40	21:30	00:10	01:15	5.70
FMI	99/03/11	10:30	11:45	12:30	13:45	3.25
VSP	99/03/12	09:00	10:20	16:00	21:30	12.50

Logging Time:	26.95 Hrs	***Rig Up/Down:***	8.95 Hrs
Time Losses:	13 Hrs	***Total Time:***	48.90 Hrs

SUNCOR NETLA K-77-60-50-122-30

Remarks: Problems with tool bridle on initial rig up. Unable to run HALs. 6 hours lost time to tool failure. Some of this time may have been saved if tools were tested as soon as crew arrived on location and/or this tool configuration was checked prior to field use. 7 hours lost time waiting on FMI tool was due to addition of tool after logging job ordered out. Overall good job with very good job done by MSCT operator. Personnel were experienced and kept representative well informed. VSP job followed after equipment on location. Location of zero vib was 80 meters west of source line 19 on receiver line 24. Location of first vib was 180 meters west of source line 23 on receiver line 24. Both locations were chained in from center of intersection of the 2 lines.

Copies: 2 field, 6 final - 8 Total. ***Cost:*** $132,641.95

SUNCOR NETLA K-77-60-50-122-30

SIDEWALL CORING REPORT

Attempts: 22 cores
Recovery: 22 cores
Analysis: Core Labratories
Core Hand: Tony Smith

Core No.	Depth (m)	Core Length (cm)	Lithology	Condition	Permeability (mD)	Porosity (%)	Comments
22	1997.5	2.5	Limestone	minor broken	<.01	0.5	tight
21	2003.6	4.6	Limestone	solid	0.01	0.5	tight
20	2010.5	-	Limestone	rubble	NA	NA	fossiliferous
19	2014.5	4.4	Limestone	top break	0.01	0.5	sulphur odour
18	2016.2	3.9	Limestone	broken in half	0.01	0.8	hairline frac - fossil ghosts
17	2019.5	4.5	Limestone	solid	0.01	0.8	thamnapora & stroms
16	2021.6	4.8	Limestone	broken in half	<.01	0.5	strom massive?
15	2023.2	3.2	Limestone	broken in half	0.05	1.4	fracture / calcite fill
14	2026.2	4.8	Limestone	broken in pieces	0.02	1.1	calcite rhombs floating
13	2028.6	4.5	Limestone	solid	0.03	1.3	hairline fractures
12	2030.5	4.2	Limestone	solid	0.03	1.9	fractures & euhedral xstals
11	2032.0	4.2	Limestone	chipped	0.01	1.8	fractures & euhedral xstals
10	2034.5	2.6	Limestone	fractured	0.07	2.7	molds & stroms
9	2036.6	4.4	Limestone	solid	0.01	1.4	tight
8	2039.0	3.7	Limestone	solid	0.01	1.1	tight into calcite mold
7	2041.5	4.0	Limestone	solid	0.05	1.8	tight / thamnapora
6	2043.5	4.7	Limestone	solid	0.01	1.5	tight
5	2046.7	4.5	Limestone	Broken	0.03	1.8	tight brachiopod shale fill
4	2050.5	4.1	Limestone	Broken	<.01	1.1	tight fragmental LS
3	2054.6	4.5	Limestone	Solid	0.01	1.1	tight strom??

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Core No.	Depth (m)	Core Length (cm)	Lithology	Condition	Permeability (mD)	Porosity (%)	Comments
2	2060.5	4.5	Limestone	Solid	0.03	1.1	tight corals
1	2064.5	4.5	Limestone	Solid	0.01	1.4	tight corals

SAMPLE DESCRIPTIONS

15-41 m	Siltstone with minor Shale laminae. SILTSTONE - light grey, clay cement, moderately cemented, friable. Very poor samples.
41-75 m	Siltstone with Sandstone stringers and interbeds. SILTSTONE - light grey, clay cement, moderately cemented, friable, scattered fish scales. SANDSTONE - grey white, quartz minor lithics, very fine to fine grained trace medium grained, well sorted, subangular to angular, calcareous and siliceous cement, well cemented, trace micaceous, tight, no shows. Very poor samples.
75-98 m	Shale with Siltstone stringers. SHALE - light to medium grey, blocky, subfissile, abundant scattered fish scales, arenaceous.
98-134 m	Interbedded and interlaminated Shale and Siltstone with minor Sandstone. SHALE - medium grey, blocky, subfissile, arenaceous to highly arenaceous. SILTSTONE - light grey, clay cement, moderately to well cemented, friable in part, sandy in part, micaceous. SANDSTONE - grey white, quartz, very fine grained, well sorted, subangular, calcareous and siliceous cement, well cemented, tight, no shows.
134-154 m	Shale with interlaminated Siltstone. SHALE - medium grey, blocky, subfissile, arenaceous, carbonaceous matter & plant fossils, disseminated pyrite.
154-173 m	Shale with minor Siltstone laminae. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, scattered fish scales and chitinous fish remains, disseminated pyrite. Trace Inoceramus.
173-192 m	Interbedded and interlaminated Shale and Siltstone. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous. SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part.

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192-221 m	Sandstone with interbeds and interlaminated Shale. SANDSTONE - grey white, quartz, very fine to occasionally fine grained, well sorted, subangular, siliceous cement, well cemented, argillaceous in part, trace glauconite, carbonaceous fragments, poor porosity to tight, (3-5%), no shows. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part.
221-254 m	SHALE - dark grey, platy, highly fissile, trace fossiliferous, micromicaceous.
254-279 m	Shale with interlaminae of Siltstone. SHALE - medium to dark grey trace white specks, platy to blocky, highly fissile to fissile, scattered fish scales and amber chitinous fish remains, trace micromicaceous.
279-285 m	SHALE - dark grey, platy, highly fissile, trace fossiliferous, micromicaceous.
285-302 m	Interbedded and interlaminated Shale and Siltstone. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous. SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part.
302-315 m	Siltstone with interbedded and interlaminated Shale. SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part. SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous.
315-329 m	Siltstone with Sandstone stringers. SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.
329-353 m	Sandstone with interbedded and interlaminated Siltstone. SANDSTONE - snow white to light tan, clear to frosted quartz, very fine grained, well sorted, subangular, calcareous cement, moderately to well cemented, semifriable in part, trace kaolinitic, poor to fair porosity (3-8%), minor streaks good porosity (10-12%), no shows. SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.

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353-371 m	Interbedded & interlaminated Siltstone, Sandstone & Shale. SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy. SANDSTONE - snow white to light tan, clear to frosted quartz, very fine grained, well sorted, subangular, calcareous cement, moderately to well cemented, semifriable in part, trace kaolinitic, silty, poor porosity (3-4%), no shows. SHALE - dark grey, platy to blocky, subfissile, arenaceous in part.
371-396 m	Interbedded & interlaminated Siltstone & Shale with minor Sandstone. SILTSTONE - light to buff tan, calcareous with clay cement increasing downsection, well to highly cemented, glauconitic in part, sandy in part. SHALE - dark grey, platy to blocky, subfissile, arenaceous in part. SANDSTONE - light tan, clear to frosted quartz, very fine grained, well sorted, subangular, loose, silty, poor to fair porosity (3-7%), no shows. Presence of Sandstone is questionable, abundant loose grains in bottom of examination tray, could be cavings. Trace black hematite nodules.
396-419 m	Shale with minor laminae & stringers of Siltstone decreasing downsection. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micromicaceous, trace fish scales, rare fossil fragments.
419-443 m	Shale with Siltstone stringers and interbeds. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous. SILTSTONE - light grey, clay cement, well cemented.
443-461 m	Shale with Siltstone stringers and interbeds. SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous. SILTSTONE - light grey, calcareous cement, well cemented, trace glauconite.
461-486 m	Shale with Siltstone stringers. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous, micromicaceous.
486-515 m	Shale with minor Sandstone interbeds and Siltstone laminae. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous, micromicaceous. SANDSTONE - grey white, clear to frosted quartz, silt to very fine grained, well sorted, subangular, siliceous cement, well cemented, tight, no shows.

515-540 m	Interbedded & interlaminated Siltstone, Sandstone, Siderite & Shale. SILTSTONE - light tan to light grey green, sideritic, calcareous and clay cement, well cemented, sandy, glauconitic, scattered stain, very light fluorescence, yellow white streaming cut. SANDSTONE - light tan to grey green, clear quartz trace lithics, silt to very fine grained, well sorted, subangular to subround, sideritic cement, moderately to well cemented, semifriable in part, highly glauconitic, trace kaolinitic, poor to fair porosity (4-11%), Sneider ID - III (.07-1.0 md), patchy stain, scattered very light yellow fluorescence, fast yellow white streaming cut. SIDERITE - light brown, bedded, argillaceous. SHALE - dark grey, platy to blocky, subfissile, arenaceous in part.
540-568 m	Siltstone with interbeds and stringers of Shale. SILTSTONE - medium to dark grey to light grey tan, clay minor sideritic cement, calcareous in part, well cemented, sandy in part, trace glauconitic, trace disseminated pyrite. SHALE - dark grey to grey brown, platy to blocky, subfissile, arenaceous, micromicaceous.
568-582 m	Shale with minor Siltstone interbeds and laminae. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous. SILTSTONE - light brown, clay cement, highly cemented.
582-597 m	Shale with minor Siltstone interbeds and laminae. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous. SILTSTONE - light brown, clay cement, highly cemented.
597-613 m	Shale with interbedded Siderite and Siltstone. SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous. SIDERITE - light to medium brown, bedded, argillaceous. SILTSTONE - light grey to grey tan, sideritic & clay cement, well cemented.
613-639 m	Shale with minor interbeds of Siderite and minor Siltstone laminae. SHALE - medium to dark grey to grey brown, platy to blocky, fissile to subfissile, trace arenaceous, sideritic in part, trace bituminous downsection, trace fossiliferous, micromicaceous. SIDERITE - light to medium brown, bedded, argillaceous. Traces sparry calcite throughout.

639-652 m — Shale with Siltstone laminae.
SHALE - medium to dark grey, platy to blocky, highly fissile to subfissile, trace arenaceous, bituminous, glauconitic, trace disseminated pyrite, micromicaceous.

Kotcho Shale 652.0 m

652-658 m — Siltstone with minor Limestone stringers.
SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous in part.

658-681 m — Interlaminated and interbedded Siltstone and Shale with minor Limestone.
SILTSTONE - grey tan, calcareous cement, well cemented, argillaceous.
SHALE - light grey to light brown, blocky, subfissile, calcareous, arenaceous, (silty), micromicaceous.
LIMESTONE - light tan, calcilutite, biomicrite, mudstone, argillaceous, arenaceous, tight, no shows.
Scattered loose sand grains.

681-696 m — Shale with Limestone and Siltstone stringers.
SHALE - light to medium grey, blocky, subfissile, calcareous to highly calcareous, arenaceous in part, disseminated pyrite, micromicaceous.
Abundant loose crinoid stems at base of section.

696-708 m — Shale with Limestone stringers.
SHALE - light to medium grey, blocky, subfissile, calcareous to highly calcareous, arenaceous in part, disseminated pyrite, micromicaceous.
Scattered loose crinoid stems.

Kotcho Carbonate 708 m

708-727 m — Limestone with Marlstone and Shale interbeds.
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite with very coarse calcarenite, brachiopod crinoid intramicrite, packstone, arenaceous, argillaceous, disseminated pyrite, tight, no shows.
MARLSTONE - grey white, calcareous, highly argillaceous, fossiliferous.
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.

727-754 m	Interbedded and interlaminated Siltstone, Limestone, Marlstone and Shale. SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, sparse crinoid intramicrite, wackestone, arenaceous, argillaceous, disseminated pyrite, tight, no shows. MARLSTONE - grey white, calcareous, highly argillaceous, fossiliferous. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
754-773 m	Interbedded and interlaminated Marlstone, Limestone, Siltstone and Shale. MARLSTONE - grey white, calcareous, highly argillaceous, fossiliferous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, sparse crinoid intramicrite, wackestone, arenaceous, argillaceous, disseminated pyrite, tight, no shows. SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
773-794 m	Marlstone with interbedded Limestone and Shale. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous, fossiliferous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, pelecypod brachiopod crinoid biomicrite, wackestone, argillaceous, disseminated pyrite, tight, no shows. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
794-811 m	Limestone with interbedded Marlstone. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, pelecypod brachiopod crinoid biomicrite, wackestone, argillaceous, scattered pyrite nodules, tight, no shows. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous, fossiliferous.
811-840 m	Marlstone with interbedded Limestone and Shale. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous. LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, biomicrite, wackestone, argillaceous, tight, no shows. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous. Scattered sparry calcite.

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840-867 m	Interbedded Marlstone and Shale with minor Limestone. MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous. SHALE - light to medium grey, blocky, subfissile, highly calcareous, trace disseminated pyrite, micromicaceous. LIMESTONE - buff white to grey white, calcilutite to very fine calcarenite, intrabiomicrite, wackestone, argillaceous, tight, no shows.
867-896 m	Marlstone with Limestone and Shale interbeds. MARLSTONE - light to medium grey, calcareous, highly argillaceous. LIMESTONE - buff white to grey white to grey tan, calcilutite to very fine calcarenite, crinoid intrabiomicrite, wackestone to mudstone, argillaceous, disseminated pyrite, tight, no shows. SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.
896-920 m	Interbedded Marlstone and Shale with minor Limestone. MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous. SHALE - light to medium grey, platy to blocky, subfissile to fissile, highly calcareous, micromicaceous. LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, biomicrite, mudstone, argillaceous, tight, no shows.
920-933 m	Marlstone with Limestone and Shale interbeds. MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous. LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, crinoid biomicrite, mudstone, argillaceous, tight, no shows. SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, micromicaceous.
933-952 m	Interbedded Shale and Marlstone with Limestone stringers. SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, disseminated pyrite, micromicaceous. MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous.
952-960 m	Shale with Limestone stringers. SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, disseminated pyrite, micromicaceous.

960-972 m — Interbedded Marlstone and Shale with minor Limestone.
MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous.
SHALE - light to medium grey, platy to blocky, subfissile to fissile, highly calcareous, micromicaceous.
LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, biomicrite, mudstone, argillaceous, tight, no shows.

972-981. — Shale with Limestone stringers.
SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, micromicaceous.

Tetcho Carbonate 981 m

981-995 m — Limestone with minor Shale interbeds.
LIMESTONE - buff tan, calcilutite with interbeds of fine to medium calcarenite, brachiopod pelmicrite with interbeds of intrapelmicrite, packstone, argillaceous, tight, trace scattered gilsonite.
SHALE - grey green t light grey, platy, fissile, calcareous.

995-1008 m — Interbedded & interlaminated Limestone, Marlstone & Shale.
LIMESTONE - buff tan to grey white, calcilutite, biopelmicrite, packstone, argillaceous, tight, no shows.
MARLSTONE - light grey to buff white, calcareous, argillaceous.
SHALE - grey green, platy, fissile, highly calcareous, micromicaceous.

1008-1030 m — Limestone with Marlstone and minor Shale.
LIMESTONE - buff tan to grey white, calcilutite, brachiopod? pelmicrite, packstone, argillaceous, tight, no shows.
MARLSTONE - light grey to buff white, calcareous, argillaceous.
SHALE - grey green, platy, fissile, highly calcareous, micromicaceous.

1030-1048 m — LIMESTONE - light to buff tan to grey white, calcilutite, crinoid brachiopod? pelmicrite, packstone, argillaceous, tight, no shows.

1048-1062 m — Limestone with Marlstone interbeds.
LIMESTONE - buff tan to grey white, calcilutite, pelmicrite, packstone, argillaceous, arenaceous in part, tight, no shows.
MARLSTONE - light grey to buff white, calcareous, argillaceous, arenaceous.

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Trout River 1062 m

1062-1078 m	Interbedded Limestone and Siltstone with Shale. LIMESTONE - buff white to grey white, calcilutite with very fine calcarenite scattered coarse calcarenite, pelmicrite with brachiopod intramicrite, packstone to wackestone, arenaceous, argillaceous, tight, no shows. SILTSTONE - buff white to light grey, calcareous cement, highly cemented, trace anhydrite. SHALE - grey green to light to medium grey, platy, subfissile to fissile, calcareous, micromicaceous.
1077-1091 m	Interbedded Limestone, Marlstone and Siltstone stringers minor Shale. LIMESTONE - buff white to light reddish brown, calcilutite with medium to coarse calcarenite, gastropod intrasparite with pelmicrite, grainstone with packstone, arenaceous, argillaceous, tight, no shows. MARLSTONE - medium grey, calcareous, arenaceous, argillaceous. SILTSTONE - buff white to light grey, calcareous cement, highly cemented. SHALE - light grey to grey green, platy, fissile, micromicaceous. Base unit Fe stained gastropod grainstone.
1091-1105 m	Shale with stringers and interbeds of Siltstone. SHALE - olive brown to light to medium grey, platy to blocky, subfissile, non-calcareous to slightly calcareous, arenaceous, trace black carbonaceous? flakes. SILTSTONE - light grey, calcareous cement, well cemented, argillaceous.
1105-1126 m	Shale with interbeds and stringers of Siltstone minor interbeds and stringers of Limestone. SHALE - light to medium grey, platy, subfissile, slightly calcareous, arenaceous, scattered black flakes. SILTSTONE - light to yellowish brown to grey white, calcareous cement, well cemented, argillaceous, micromicaceous. LIMESTONE - light tan to reddish orange, medium to coarse calcarenite, crinoid brachiopod intramicrite to intrasparite, packstone to grainstone, friable, Fe stained, tight, no shows. Limestones are mostly as fine laminae within Shale sequence.
1126-1132 m	Shale with Limestone stringers. SHALE - light to medium grey, platy, subfissile, slightly calcareous, arenaceous.

1132-1150 m — Siltstone with interbedded Shale and minor Limestone interbeds and stringers.
SILTSTONE - light to yellow tan to buff white to light grey, calcareous cement, well cemented, fossiliferous in part, argillaceous in part, trace disseminated pyrite.
SHALE - light to medium grey to grey tan, platy to splintery, fissile, slightly calcareous, micromicaceous, arenaceous in part.
LIMESTONE - buff white to tan to trace orange red, medium to coarse calcarenite, brachiopod intrasparite, grainstone, tight, no shows.
Limestones highly fragmented.

Kakisa 1156 m (1155.6 m TV)

1150-1156 m — Shale with Siltstone & Limestone stringers.
SHALE - light to medium grey to grey tan, platy to splintery, fissile, slightly calcareous, micromicaceous, arenaceous in part.

1156-1176 m — Limestone with Shale & minor Siltstone interbeds.
LIMESTONE - buff white to light grey, calcilutite to fine calcarenite with coarse calcarenite interbedded with well sorted medium calcarenite, brachiopod intrapelmicrite with interbeds of oosparite, packstone to grainstone, arenaceous in part, argillaceous in part, tight, no shows.
SHALE - light grey, blocky, calcareous to highly calcareous, arenaceous, micromicaceous.
SILTSTONE - grey white, calcareous cement, well cemented.

Redknife 1176 m (1175.2 m TV)

1176-1190 m — Interbedded Siltstone and Shale with minor Marlstone and Limestone stringers.
SILTSTONE - light grey to grey white, calcareous cement, well cemented, argillaceous in part.
SHALE - light to medium grey, platy to splintery, calcareous, micromicaceous.
MARLSTONE - light grey, calcareous, argillaceous, arenaceous.
Scattered loose crinoid stems and oxidized shell fragments.

1190-1206 m — Interbedded Shale and Siltstone with Limestone stringers.
SHALE - light to medium grey to grey green to dark grey purple, platy to splintery, fissile, slightly calcareous to calcareous, micromicaceous, arenaceous in part.
SILTSTONE - light grey to light tan, calcareous cement, highly cemented, argillaceous in part.
Scattered oxidized fossil fragments.

1206-1221 m	Interbedded Shale and Siltstone. SHALE - light to medium grey to grey green to dark grey purple, platy to splintery, fissile, slightly calcareous to calcareous, micromicaceous, arenaceous in part. SILTSTONE - light grey to light tan to grey brown, calcareous cement, highly cemented, argillaceous in part.
1221-1236 m	Interbedded Siltstone and Shale with Limestone stringers & interbeds. SILTSTONE - light tan to yellow brown to grey white, calcareous cement, well cemented, argillaceous. SHALE - grey green to grey purple to olive brown, platy to splintery, fissile, calcareous, arenaceous in part, micromicaceous. LIMESTONE - reddish white, fine to coarse calcarenite, brachiopod gastropod intrasparite, grainstone, Fe stained, tight, no shows.
1236-1260 m	Shale with Limestone & Siltstone stringers. SHALE - grey green to grey purple to medium grey, platy to splintery, fissile to highly fissile, slightly calcareous to calcareous, micromicaceous.
1260-1270 m	Shale with Limestone & Siltstone stringers. SHALE - grey green to grey purple to medium grey, platy to splintery, fissile to highly fissile, slightly calcareous, micromicaceous.
1270-1288 m	Shale with Siltstone stringers. SHALE - medium grey to grey green to grey purple to olive brown, platy to splintery, highly fissile, noncalcareous to slightly calcareous, micromicaceous.
1288-1302 m	Shale with minor interbeds & stringers of Limestone. SHALE - medium grey to grey purple to olive brown to grey green, platy to splintery, fissile to highly fissile, noncalcareous to slightly calcareous, micromicaceous. LIMESTONE - white with scattered orange red streaks, fine to coarse calcarenite, brachiopod intrasparite, grainstone, Fe stained, tight, no shows.
1302-1318 m	Shale with minor stringers of Limestone, Siltstone & Sandstone. SHALE - medium grey to trace grey purple to olive brown, platy to splintery, fissile to highly fissile, slightly calcareous, micromicaceous.

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Jean Marie 1318 m (1305.8 m TV)

1318-1338 m	Shale with interbedded Sandstone scattered Limestone stringers & laminae minor Siltstone stringers. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. SANDSTONE - white to light tan, quartz, silt to very fine grained, well sorted, subround, calcareous trace siliceous cement, well cemented, tight, no shows.
1338-1355 m	Shale with minor Sandstone and Limestone interbeds & stringers. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. SANDSTONE - white to light tan, quartz, silt to very fine grained, well sorted, subround, calcareous trace siliceous cement, well cemented, tight, no shows. LIMESTONE - buff white to tan, calcilutite, arenaceous intramicrite, wackestone, tight, no shows.
1355-1370 m	Shale with Marlstone interbeds & stringers of Siltstone and Sandstone. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. MARLSTONE - light to medium grey, calcareous, arenaceous in part.
1370-1391 m	Shale with Sandstone interbeds & stringers minor Siltstone stringers. SHALE - medium grey minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous. SANDSTONE - buff grey to grey tan, quartz, silt to very fine grained, well sorted, subangular to subround, calcareous with minor siliceous cement, well cemented, tight, no shows.
1391-1405 m	Shale with rare Sandstone laminae. SHALE - light to medium grey, platy, fissile to highly fissile, slightly calcareous, fossil fragments, micromicaceous.
1405-1420 m	Shale with Sandstone and Limestone interbeds and stringers and Siltstone stringers. SHALE - light to medium grey, platy, fissile to highly fissile, slightly calcareous to calcareous, micromicaceous. SANDSTONE - light tan to mottled grey white, quartz, silt to very fine grained, well sorted, subround, calcareous with minor siliceous cement, well cemented, tight, no shows. LIMESTONE - white to tan minor Fe stained, fine with coarse calcarenite, intrasparite, grainstone, arenaceous in part, tight, no shows.

1420-1433 m — Shale with Siltstone interbeds and stringers and Sandstone laminae.
SHALE - light to medium grey rare purple brown, platy to splintery, fissile to highly fissile, slightly calcareous to calcareous, trace disseminated pyrite, micromicaceous.
SILTSTONE - grey tan, calcareous cement, well cemented, sandy.

Ft. Simpson 1433 m (1407.1 m TV)

1433-1447 m — Shale with minor Sandstone & Siltstone laminae.
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.

1447-1467 m — Shale with minor Siltstone laminae.
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous in part, micromicaceous.

1467-1490 m — Shale with minor Siltstone laminae.
SHALE - light to medium grey to purple brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.

1490-1514 m — Shale with minor Siltstone laminae.
SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, noncalcareous to slightly calcareous, micromicaceous.

1514-1539 m — Shale with minor Siltstone laminae.
SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, noncalcareous to slightly calcareous, micromicaceous.

1539-1552 m — Shale with minor Claystone trace Limestone laminae.
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, trace arenaceous, micromicaceous.
CLAYSTONE - light grey, soft, slightly calcareous.

1552-1570 m — Shale with minor Claystone.
SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.
CLAYSTONE - light grey, soft, slightly calcareous.

1570-1577 m — Shale with Claystone interbeds.
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.
CLAYSTONE - light grey, soft, slightly calcareous.

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1577-1597 m	Shale with Claystone interbeds. SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1597-1613 m	SHALE - light to medium grey to grey tan trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous.
1613-1630 m	Interbedded Shale and Claystone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1630-1645 m	Interbedded Shale and Claystone minor Siltstone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, non calcareous to slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1645-1650 m	SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, non calcareous to trace calcareous, micromicaceous.
1650-1660 m	Interbedded Shale and Claystone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, calcareous.
1660-1677 m	Shale with interbeds of Claystone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, trace calcareous in part to non calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1677-1699 m	SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous.
1699-1716 m	Shale with interbeds of Claystone trace Limestone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1716-1731 m	SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous.

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1731-1744 m	Shale with minor Siltstone stringers. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous.
1744-1754 m	Shale with minor Claystone interbeds trace Siltstone and Limestone stringers. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1754-1768 m	Interbedded Marlstone and Shale with Limestone stringers. MARLSTONE - light grey, finely laminated, calcareous, argillaceous, trace arenaceous. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, waxy in part, trace arenaceous, micromicaceous.
1768-1780 m	Interbedded Shale and Marlstone. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, trace arenaceous, micromicaceous, trace disseminated pyrite. MARLSTONE - light grey, finely laminated, calcareous, argillaceous, trace arenaceous.
1780-1798 m	Shale with minor interbedded Marlstone and Claystone. SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, trace arenaceous, micromicaceous. MARLSTONE - light grey, calcareous, argillaceous, trace arenaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.
1798-1815 m	Shale with interbedded Claystone. SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, trace arenaceous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous. Rare stringers of Fe stained ostracod grainstone.
1815-1833 m	Shale with minor Claystone interbeds and Siltstone stringers. SHALE - light to medium grey minor grey green to purple brown trace laminated, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, trace arenaceous, micromicaceous. CLAYSTONE - light grey, soft, fissile, slightly calcareous.

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1833-1845 m	Shale with minor Limestone and Marlstone stringers. SHALE - light to medium grey, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, waxy in part, trace arenaceous, micromicaceous.
1845-1857 m	Shale with minor Claystone interbeds and Limestone stringers. SHALE - light to medium grey minor purple brown, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, trace arenaceous, micromicaceous. CLAYSTONE - grey tan, calcareous, soft.
1857-1875 m	Shale with minor Marlstone interbeds and Siltstone stringers. SHALE - light to medium grey to grey tan, platy to splintery to blocky, fissile to subfissile, noncalcareous to calcareous in part, trace arenaceous, trace disseminated pyrite, micromicaceous. MARLSTONE - light grey, calcareous, argillaceous. Trace loose fossil fragments.
1875-1895 m	Shale with trace Marlstone stringers. SHALE - light to medium grey to grey tan to purple brown, platy to splintery to trace blocky, highly fissile to subfissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous.
1895-1915 m	SHALE - light to medium grey minor olive tan to purple brown, platy to splintery rare blocky, highly fissile to fissile, noncalcareous to slightly calcareous, trace disseminated pyrite, trace arenaceous with Siltstone inclusions.
1915-1930 m	Shale with minor Siltstone stringers. SHALE - light to medium grey to olive tan to purple brown to grey green, platy to splintery rare blocky, highly fissile to fissile, calcareous to slightly calcareous, trace disseminated pyrite, trace arenaceous.
1930-1944 m	Shale with minor Claystone interbeds trace Siltstone stringers. SHALE - light to medium grey rare dark grey to minor purple brown to grey green, platy to splintery rare blocky, highly fissile to fissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous. CLAYSTONE - grey tan, calcareous, soft.
1944-1955 m	Shale with minor Siltstone stringers. SHALE - light to medium grey rare dark grey to minor purple brown, platy to splintery rare blocky, highly fissile to subfissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous.

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Muskwa 1955 m (1895.7 m TV)

1955-1971 m — SHALE - black to dark grey scattered white specks with interbeds of olive tan, blocky to platy, subfissile to fissile, mostly noncalcareous, olive tan is calcareous, siliceous in part with black chert, bituminous in part, abundant pyritic streaks and nodules, micromicaceous.

1971-1983 m — Shale with Limestone stringers increasing downsection.
SHALE - black to dark grey, blocky to platy, subfissile to fissile, noncalcareous to calcareous increasing downsection, bituminous in part, pyritic streaks and nodules, micromicaceous.

Slave Point 1983 m (1923.7 m TV)

1983-1990 m — LIMESTONE - mottled buff tan to medium to dark brown to grey white, fine to coarse calcarenite with very coarse calcarenite, brachiopod amphipora? intramicrite, packstone to wackestone, argillaceous, tight, no shows.
Abundant cavings.

1990-2001 m — Limestone with Shale laminae.
LIMESTONE - mottled brown to buff tan to medium brown to dark grey, fine to coarse calcarenite, brachiopod amphipora? intrabiomicrite with minor micrite, packstone to wackestone with minor mudstone, trace dolomitic, trace calcispheres, trace algal material, trace siliceous decreasing downsection, micrite is fractured with sparry calcite infilling, tight to poor fracture porosity, no shows.

2001-2015 m — LIMESTONE - light grey brown to light brown to tan to buff white, calcilutite to fine calcarenite minor very coarse calcarenite, micrite with brachiopod intramicrite, mudstone with packstone, intramicrite increases downsection, micrite is pyritic, algal material, tight, no shows.

Slave Point Reef 2015 m (1955.7 m TV)

2015-2026 m — LIMESTONE - snow white to light tan, calcilutite to medium calcarenite minor very coarse calcarenite, scattered coarse crystalline, stromatoporoid? biosparite with intrasparite and pelmicrite, boundstone to packstone, chalky in part, scattered euhedral calcite rhombs (mold infilling), trace disseminated pyrite, tight to poor moldic porosity (3-5%), no shows.

Slave Point Porosity 2026 m (1966.7 m TV)

2026-2046 m — LIMESTONE - snow white to buff white, calcilutite to medium calcarenite with minor very coarse calcarenite scattered coarse to very coarse crystals, stromatoporoid? biosparite with intrasparite and pelmicrite, boundstone to packstone, chalky in part, styolitic, scattered euhedral calcite rhombs some with trace sphalerite & disseminated pyrite on crystal faces, trace euhedral quartz crystals (fracture fill?), tight to fair fracture porosity (3-6%), Archie ID, questionable trace gilsonite otherwise no shows.

Base Slave Point Porosity 2046 m (1986.7 m TV)

2046-2057 m — LIMESTONE - snow white to buff tan, calcilutite to medium calcarenite with minor very coarse calcarenite, pelmicrite with intrasparite and strom biosparite, packstone to boundstone, chalky in part, tight to trace moldic porosity (2-3%), no shows.

2057-2069 m — LIMESTONE - snow white to buff white, calcilutite to coarse calcarenite interbeds very coarse calcarenite, ostracod intrasparite and pelmicrite with stromatoporoid? biosparite, packstone to boundstone, chalky in part, trace sparry calcite rhombs, rare scattered euhedral quartz crystals floating in lime matrix, tight trace fracture & moldic porosity (2%), questionable trace gilsonite otherwise no shows.

2069-2075 m — LIMESTONE - snow to buff tan, calcilutite to coarse calcarenite interbeds very coarse calcarenite, intrasparite with stromatoporoid? biosparite minor pelmicrite, packstone to boundstone, disseminated pyrite, tight, no shows.

2075-2088 m — LIMESTONE - snow white to buff white to light tan, calcilutite to medium calcarenite with interbeds very coarse calcarenite, coralline ostracod intrasparite with stromatoporoid? biosparite minor pelmicrite, grainstone to boundstone with packstone, chalky in part, scattered sparry calcite, trace sphalerite, tight, no shows.

2088-2102 m — LIMESTONE - buff white to buff tan, calcilutite with interbeds fine to coarse calcarenite minor very coarse calcarenite, intrasparite with pelmicrite and stromatoporoid? biosparite, grainstone with packstone & boundstone, chalky in part, trace disseminated pyrite, trace scattered molds, tight, no shows.

2102-2111 m — LIMESTONE - buff white to buff tan, fine to coarse calcarenite with interbeds very coarse calcarenite minor calcilutite, intrasparite and stromatoporoid? biosparite with pelmicrite, boundstone & grainstone with packstone, trace chalky, tight, no shows.

SUNCOR NETLA K-77-60-50-122-30

Ft. Vermillion 2111 m (2051.7 m TV)

2111-2118 m	Limestone with trace Shale laminae. LIMESTONE - light tan to buff tan to buff white to black, fine to coarse calcarenite with minor interbeds very coarse calcarenite & calcilutite, intrasparite with stromatoporoid? biosparite & pelmicrite, grainstone with boundstone & packstone, abundant black algal? residue or styolites, trace chalky, tight, no shows.

Total Depth 2118 m (2058.7 m TV)

APPENDIX

SUNCOR NETLA K-77-60-50-122-30

Sneider Classification - Clastics
Type I - Abundant to common visible porosity, needle probe dislodges grains
IA > 100 md - excellent relief, loose, poor cement, no filler, usually fine >
IB - 10-100 md - excellent - good relief, moderate to loose, moderate cement, no to trace filler
IC - 1-10 md - mod - good relief, even por, mod consolidation, mod cement, low to mod clay
ID - .5-1 md - mod relief, patch por, mod-well consolidation, mod cement, varies
II - .07-.5 md - scat por, rare needle probe dislodge
III - <.07 - poor relief, no vis por, well consolidated, highly cemented, mod-abnt clay

Depth	Lithology	Grain Size	Visible Porosity	Non-Vis Porosity	Total Porosity	Est. Perm.	Sneider Class	Relief	Clay Level	Comments
515-520	Sltst & SS	.05-.10	1-5%	3-4%	4-9%	.07-1.0	III-II	p-fr	mod	glau, shows (stn&cut)
520-525	Sltst & SS	.10-.15	3-7%	3-4%	6-10%	.5-1.0	ID-II	fr	mod	glau, shows (stn&cut)
525-530	SS/Sltst	.10-.15	1-7%	3-4%	4-11%	.2-1.0	ID-II	p-fr	mod-hi	glau, shows (stn&cut)
530-535	SS/Sltst	.10-.15	1-7%	3-4%	4-11%	.2-1.0	ID-II	p-fr	mod-hi	glau, shows (stn&cut)
535-540	SS/Sltst	.05-.07	1-3%	3-4%	4-7%	.1-.5	II-III	p	mod	hi glau, shows
540-545	Sltst & SS	.05-.07	1-2%	2-3%	3-5%	.07-.5	III	p	hi	no shows

CABRA CONSULTING
1623 - 48th Avenue S.W.
CALGARY, Alberta
T2T-2S9 (403) 243-5022

COMPOSITE WELL HISTORY
DRILLING TIME
LITHOLOGY LOG

COMPANY: SUNCOR ENERGY INC.
WELL: SUNCOR NETLA K-77-60-50-122-30
FIELD: NETLA
PROVINCE: NWT
LOCATION: K77-60-50-122-30

COORDINATES: 60°46'30.7" 122°44'23.9
ELEVATIONS: GD 618.4 m LOG MEASURED FROM KB
KB 625.2 m 6.8 m ABOVE GROUND
WELL TYPE: EXPLORATION TOTAL DEPTH: 2118
SPUD DATE: 99-02-07 0230 HRS T.D. DATE: 99-03-09 1700 HRS
LICENCE No.: AFE No.: A9811680K77

CONTRACTOR: AKITA 58 & BONUS 238
MUD TYPE: KCL & CARB POLYMER
MUD UP @: 15
SAMPLES: 5 meter INTERVALS
SUNCOR: 15 TO 2118 meters
NEB: 15 TO 2118 meters (2 SETS)
DSTs: AFTER LOGGING

CORES: SCHLUMBERGER
22 SIDEWALL CORES CUT OVER INTERVAL NOTED. BELOW INTERMEDIATE CASING
ATTEMPTS: 22 RECOVERED: 22
OPEN HOLE LOGS: SCHLUMBERGER
AIT-CNL-PEXD-LDT-BSC - 1990 m-CSG
DPS-GR - 535 m - SURF
AIT-CNL-PEXD-LDT-BSC-MSCL & FMI
T.D. TO 1990 m
VSP - T.D. TO SURF CSG.

SUPERVISION
GEOLOGICAL: BRIAN HESTER
DRILLING: BRASELMILLER

CASING DEPTH
SURFACE: 535.5 m
INTERMEDIATE: 1990 m
MAIN: 2118 m

CASING SIZE
SURFACE: 244.5 mm
INTERMEDIATE: 177.8 mm
MAIN: mm

HOLE SIZE
SURFACE: 311 mm
INTERMEDIATE: 222 mm
MAIN: 156 mm

REMARKS: SAMPLE QUALITY - AIR TO GOOD. WELL WAS DRILLED DIRECTIONALLY TO TOP SLAVE POINT WITH DRILLING RIG. CASING WAS RUN AND SERVICE RIG WAS MOVED ON TO FINISH WELL. FORMATION TOPS NOT ADJUSTED TO OPEN HOLE LOGS.

CANSTRAT SYMBOLS USED FOR LITHOLOGY AND SHOWS

SCALE 1:240

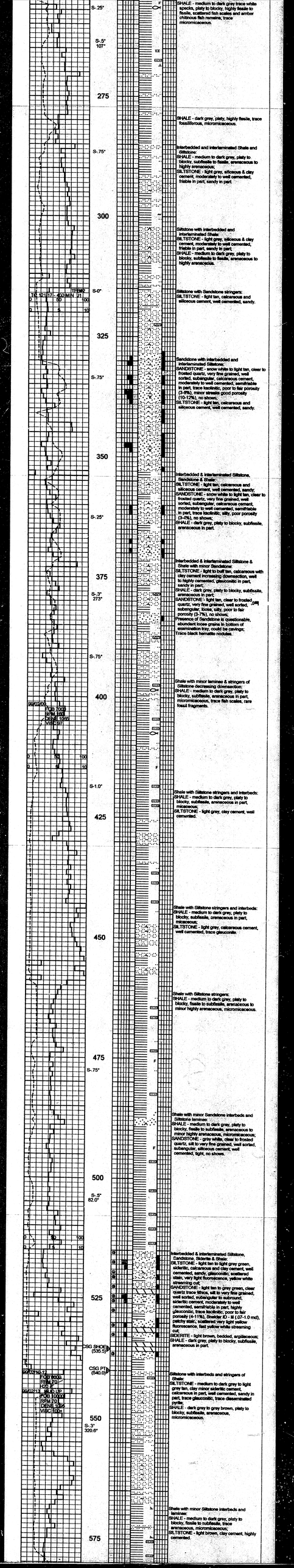
DESCRIPTIONS

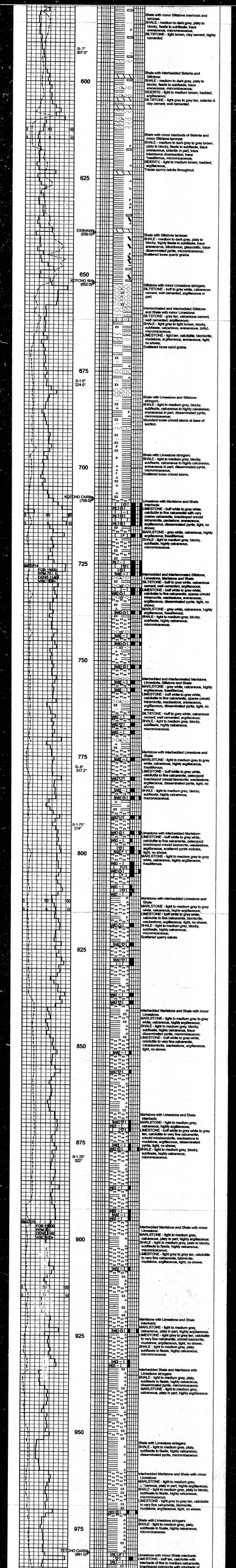
DEPTH

POROSITY
DOLOMITE
CRYSTALLINE
VUGGY
FRACTURE

LITHOLOGY

Sandstone with Claystone stringers and laminations: SILTSTONE: light grey, moderately consolidated, moderately cemented, friable, scattered dolomite cement, trace calcite cement, trace pyrite, trace carbonaceous material, trace glauconite, trace fossil fragments, trace bioturbation, trace sandstone, trace shale, trace coal, trace limestone, trace siderite, trace chert, trace anhydrite, trace dolomite, trace bentonite, trace conglomerate, trace tuff, trace ash, trace volcanic glass, trace igneous rock, trace metamorphic rock, trace sedimentary rock, trace organic material


S- 25°
S-5°
107°
275
S- 75°
300
S-0°
325
S-75°
350
S-25°
375
S-3°
273°
S-75°
400
S-1.0°
425
S-75°
450
475
S-5°
82.0°
500
525
CSG SHOE
(535.5')
CSG PT
(540.0')
S-3°
320.6°
550
575
SHALE - medium to dark grey trace white specks, platy to blocky, highly fissile to fissile, scattered fish scales and amber chitinous fish remains, trace micromicaceous.
SHALE - dark grey, platy, highly fissile, trace fossiliferous, micromicaceous.
Interbedded and interlaminated Shale and Siltstone:
SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous;
SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part.
Siltstone with interbedded and interlaminated Shale:
SILTSTONE - light grey, siliceous & clay cement, moderately to well cemented, friable in part, sandy in part;
SHALE - medium to dark grey, platy to blocky, subfissile to fissile, arenaceous to highly arenaceous.
TIME 12:11:17 - 400 MIN
0 50 100
TENS
0 10
Siltstone with Sandstone stringers:
SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.
Sandstone with interbedded and interlaminated Siltstone:
SANDSTONE - snow white to light tan, clear to frosted quartz, very fine grained, well sorted, subangular, calcareous cement, moderately to well cemented, semifriable in part, trace kaolinitic, poor to fair porosity (3-9%), minor streaks good porosity (10-12%), no shows;
SILTSTONE - light tan, calcareous and siliceous cement, well cemented, sandy.
Interbedded & interlaminated Siltstone, Sandstone & Shale:
SILTSTONE - light tan; calcareous and siliceous cement, well cemented, sandy;
SANDSTONE - snow white to light tan, clear to frosted quartz, very fine grained, well sorted, subangular, calcareous cement, moderately to well cemented, semifriable in part, trace kaolinitic, silty, poor porosity (3-5%), no shows;
SHALE - dark grey, platy to blocky, subfissile, arenaceous in part.
Interbedded & interlaminated Siltstone & Shale with minor Sandstone:
SILTSTONE - light to buff tan, calcareous with clay cement showing downsection, well to highly cemented, glauconitic in part, sandy in part;
SHALE - dark grey, platy to blocky, subfissile, arenaceous in part;
SANDSTONE - light tan, clear to frosted quartz, very fine grained, well sorted, subangular, fcose, silty; poor to fair porosity (3-7%), no shows;
Presence of Sandstone is questionable, abundant loose grains in bottom of examination tray; could be cavings;
Trace black hematite nodules.
09/12/2003
FOB 1000
ROM 1000
CENE 1055
VISC 32cP
0 50 100
0 10
Shale with minor laminae & stringers of Siltstone decreasing downsection:
SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micromicaceous, trace fish scales, rare basal fragments.
Shale with Siltstone stringers and interbeds:
SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous;
SILTSTONE - light grey, calcareous cement, well cemented.
Shale with Siltstone stringers and interbeds:
SHALE - medium to dark grey, platy to blocky, subfissile, arenaceous in part, micaceous;
SILTSTONE - light grey, calcareous cement, well cemented, trace glauconite.
Shale with Siltstone stringers:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous, micromicaceous.
Shale with minor Sandstone interbeds and Siltstone laminae:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, arenaceous to minor highly arenaceous, micromicaceous;
SANDSTONE - grey white, clear to frosted quartz, silt to very fine grained, well sorted, subangular, siliceous cement, well cemented, tight, no shows.
0 50 100
0 10
Interbedded & interlaminated Siltstone, Sandstone, Siderite & Shale:
SILTSTONE - light tan to light grey green, sideritic, calcareous and clay cement, well cemented, sandy, glauconitic, scattered stain, very light fluorescence, yellow white streaming cut;
SANDSTONE - light tan to grey green, clear quartz trace lithics, silt to very fine grained, well sorted, subangular to subround, sideritic cement, moderately to well cemented, semifriable in part, highly glauconitic, trace kaolinitic, poor to fair porosity (4-11%), Bradder ID - III (.07-1.0 md), patchy stain, scattered very light yellow fluorescence, fast yellow white streaming cut;
SIDERITE - light brown, bedded, argillaceous;
SHALE - dark grey, platy to blocky, subfissile, arenaceous in part.
09/12/2003
FOB 1000
ROM 970
CEN
09/12/2003
FOB 1000
RPM 70
CENE 1056
VISC 100s
Siltstone with interbeds and stringers of Shale:
SILTSTONE - medium to dark grey to light grey tan, clay mineor sideritic cement, calcareous in part, well cemented, sandy in part, trace glauconitic, trace disseminated pyrite;
SHALE - dark grey to grey brown, platy to blocky, subfissile, arenaceous, micromicaceous.
Shale with minor Siltstone interbeds and laminae:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous;
SILTSTONE - light brown, clay cement, highly cemented.



Shale with minor Siltstone interbeds and laminae:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous;
SILTSTONE - light brown, clay cement, highly cemented.

Shale with interbedded Siderite and Siltstone:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, micromicaceous;
SIDERITE - light to medium brown, bedded, argillaceous;
SILTSTONE - light grey to grey tan, sideritic & clay cement, well cemented

Shale with minor interbeds of Siderite and minor Siltstone laminae:
SHALE - medium to dark grey to grey brown, platy to blocky, fissile to subfissile, trace arenaceous, sideritic in part, trace bituminous downsection, trace micromicaceous;
SIDERITE - light to medium brown, bedded, argillaceous;
Traces spotty calcite throughout.

Shale with Siltstone laminae:
SHALE - medium to dark grey, platy to blocky, fissile to subfissile, trace arenaceous, trace bituminous, glauconitic, trace disseminated pyrite, micromicaceous;
Scattered loose quartz grains.

Siltstone with minor Limestone stringers:
SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous in part.

Interlaminated and interbedded Siltstone and Shale with minor Limestone:
SILTSTONE - grey tan, calcareous cement, well cemented, argillaceous;
SHALE - light grey to light brown, blocky, subfissile, calcareous, arenaceous, (silty), micromicaceous;
LIMESTONE - light tan, calcilutite, biomicrite, mudstone, argillaceous, arenaceous, light, no shows;
Scattered loose sand grains.

Shale with Limestone and Siltstone laminae:
SHALE - light to medium grey, blocky, subfissile, calcareous to highly calcareous, arenaceous in part, disseminated pyrite, micromicaceous;
Abundant loose crinoid stems at base of section.

Shale with Limestone stringers:
SHALE - light to medium grey, blocky, subfissile, calcareous to highly calcareous, arenaceous in part, disseminated pyrite, micromicaceous;
Scattered loose crinoid stems.

Limestone with Marlstone and Shale interbeds:
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite with very coarse calcisiltite, brachiopod crinoid intramicrite, packstone, arenaceous, argillaceous, disseminated pyrite, light, no shows;
MARLSTONE - grey white, calcareous, highly argillaceous;
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.

Interbedded and interlaminated Siltstone, Limestone, Marlstone and Shale:
SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous;
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, sparse crinoid intramicrite, wackestone, arenaceous, argillaceous, disseminated pyrite, light, no shows;
MARLSTONE - grey white, calcareous, highly argillaceous;
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.

Interbedded and interlaminated Marlstone, Limestone, Siltstone and Shale:
MARLSTONE - grey white, calcareous, highly argillaceous, fossiliferous;
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, sparse crinoid intramicrite, wackestone, arenaceous, argillaceous, disseminated pyrite, light, no shows;
SILTSTONE - buff to grey white, calcareous cement, well cemented, argillaceous;
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.

Marlstone with interbedded Limestone and Shale:
MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous, fossiliferous;
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, packstone, brachiopod crinoid biomicrite, wackestone, argillaceous, scattered pyrite nodules, light, no shows;
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.

Limestone with interbedded Marlstone:
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, packstone, brachiopod crinoid biomicrite, wackestone, argillaceous, scattered pyrite nodules, light, no shows;
MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous, fossiliferous.

Marlstone with interbedded Limestone and Shale:
MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous;
LIMESTONE - buff white to grey white, calcilutite to fine calcarenite, packstone, arenaceous, argillaceous, light, no shows;
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous;
Scattered sparry calcite.

Interbedded Marlstone and Shale with minor Limestone:
MARLSTONE - light to medium grey to grey white, calcareous, highly argillaceous;
SHALE - light to medium grey, blocky, subfissile, highly calcareous, trace disseminated pyrite, micromicaceous;
LIMESTONE - buff white to grey white, calcilutite to very fine calcarenite, intramicrite, wackestone, argillaceous, light, no shows.

Marlstone with Limestone and Shale interbeds:
MARLSTONE - light to medium grey, calcareous, highly argillaceous;
LIMESTONE - buff white to grey white to grey tan, calcilutite to very fine calcarenite, crinoid intramicrite, wackestone to packstone, argillaceous, disseminated pyrite, light, no shows;
SHALE - light to medium grey, blocky, subfissile, highly calcareous, micromicaceous.

Interbedded Marlstone and Shale with minor Limestone:
MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous;
SHALE - light to medium grey, platy to blocky, subfissile to fissile, highly calcareous, micromicaceous;
LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, biomicrite, mudstone, argillaceous, light, no shows.

Marlstone with Limestone and Shale interbeds:
MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous;
LIMESTONE - light to grey tan, calcilutite to very fine calcarenite, crinoid biomicrite, wackestone, argillaceous, light, no shows;
SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, micromicaceous.

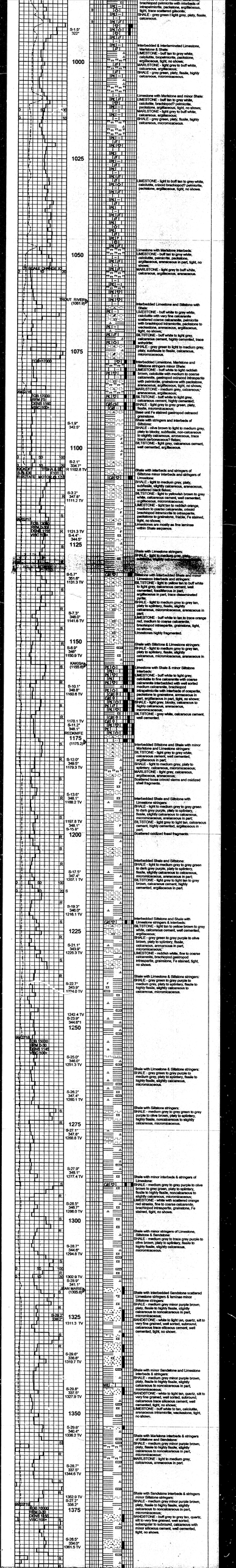
Interbedded Shale and Marlstone with Limestone stringers:
SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, disseminated pyrite, micromicaceous;
MARLSTONE - light to medium grey, calcareous, platy in part, highly argillaceous.

Shale with Limestone stringers:
SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, disseminated pyrite, micromicaceous.

Interbedded Marlstone and Shale with minor Limestone:
MARLSTONE - light to medium grey, ~calcareous, platy in part, highly argillaceous;
SHALE - light to medium grey, platy to blocky, subfissile to fissile, highly calcareous, micromicaceous;
LIMESTONE - light grey to grey tan, calcilutite to very fine calcarenite, biomicrite, mudstone, argillaceous, light, no shows.

Shale with Limestone stringers:
SHALE - light to medium grey, platy, subfissile to fissile, highly calcareous, micromicaceous.

Limestone with minor Shale interbeds:
LIMESTONE - buff white, calcilutite with interbeds of fine to medium calcarenite, packstone, crinoid intramicrite, wackestone,


1000
1025
1050
1075
1100
1125
1150
1175
1200
1225
1250
1275
1300
1325
1350
1375
Limestone with Mantstone interbeds:
LIMESTONE - light to buff tan to gray white, calcilutite, colonial brachiopod? pelmicrite, pectatone, argillaceous, bigh, no shows;
MARLSTONE - light gray to buff white, calcareous, argillaceous;
SHALE - gray green, platy, fissile, highly calcareous, micromicaceous.
Interbedded Limestone and Siltstone with Shale:
LIMESTONE - buff tan to gray white, calcilutite with very fine calcarenite stringers, colonial brachiopod? pelmicrite with brachiopod intrasparite, pectatone to wackestone, argillaceous, bigh, no shows;
SILTSTONE - buff white to light gray, calcareous cement, lightly comented, trace asphaltic;
SHALE - gray green to light to medium gray, platy, subfissile to fissile, calcareous, micromicaceous.
Interbedded Limestone, Mantstone and Siltstone with Shale:
LIMESTONE - buff white to light reddish brown, calcilutite with medium to coarse calcarenite, grainstone? oolmicrite with brachiopod intrasparite, pectatone with pelmicrite, pectatone with pelsparite, argillaceous, bigh, no shows;
MARLSTONE - medium gray, calcareous, arenaceous, argillaceous;
SILTSTONE - buff white, light gray, calcareous cement, highly cemented;
SHALE - light gray to dark green, platy, fissile, micromicaceous.
Base unit I's stained pastropod calcarenite grainstone.
Shale with stringers and interbeds of Siltstone:
SHALE - olive brown to light to medium gray, platy to blocky, subfissile, non-calcareous to slightly calcareous, arenaceous, trace black carbonaceous? flakes;
SILTSTONE - light gray, calcareous cement, well cemented, argillaceous.
Shale with interbeds and stringers of Siltstone interbeds and stringers of Limestone:
SHALE - light to medium gray, platy, subfissile, slightly calcareous, arenaceous, micromicaceous, bigh;
SILTSTONE - light to medium brown to gray white, calcareous cement, well cemented, argillaceous, micromicaceous;
LIMESTONE - light tan to reddish orange, medium to coarse calcarenite, colonial brachiopod intrasparite to intrarenite, pectatone to grainstone, fissile, I's stained, light, no shows;
SILTSTONE - shows are mostly as fine laminae within Shale sequence.
Shale with Limestone stringers:
SHALE - light to medium gray, platy, subfissile, slightly calcareous, micromicaceous;
LIMESTONE - light gray to buff white, calcilutite, pectatone, argillaceous, bigh, no shows.
Interbedded Siltstone and Shale with minor Limestone and Limestone stringers:
SILTSTONE - light gray to gray white, calcareous cement, well cemented, argillaceous in part;
SHALE - light to medium gray, platy to splintery, calcareous, micromicaceous, arenaceous in part;
LIMESTONE - light gray, calcareous, argillaceous, arenaceous;
Abundant silicified stems and oxidized shell fragments.
Interbedded Shale and Siltstone with Limestone stringers:
SHALE - light to medium gray to gray green to dark gray purple, platy to splintery, fissile, slightly calcareous to calcareous, micromicaceous;
SILTSTONE - light gray to light tan to gray brown, calcareous cement, highly cemented, argillaceous in part.
Scattered calcified fossil fragments.
Interbedded Shale and Siltstone:
SHALE - light to medium grey to gray green to dark gray purple, platy to splintery, fissile, slightly calcareous to calcareous, micromicaceous, arenaceous in part;
SILTSTONE - light gray to light tan to gray brown, calcareous cement, highly cemented, argillaceous in part
Interbedded Siltstone and Shale with Limestone stringers & interbeds:
SILTSTONE - light gray to yellow brown to gray white, calcareous cement, well cemented, argillaceous;
SHALE - gray green to gray purple to olive brown, platy to splintery, fissile to flaggy, micromicaceous in part;
LIMESTONE - reddish white, fine to coarse calcarenite, brachiopod gastropod intrasparite, grainstone, I's stained, light, no shows.
Shale with Limestone & Siltstone stringers:
SHALE - gray green to gray purple to medium gray, platy to splintery, fissile to highly fissile, slightly calcareous to calcareous, micromicaceous.
Shale with Siltstone stringers:
SHALE - medium gray to green to gray green to olive brown, platy to splintery, highly fissile, noncalcareous to slightly calcareous, micromicaceous.
Shale with minor interbeds & stringers of Limestone:
SHALE - medium gray to gray purple to olive brown, platy to splintery, fissile to highly fissile, slightly calcareous, micromicaceous;
LIMESTONE - white to light tan, calcilutite, scattered orange red streaks, fine to coarse calcarenite, brachiopod intrasparite, grainstone, I's stained, light, no shows.
Shale with minor stringers of Limestone, Siltstone & Sandstone:
SHALE - medium gray to trace gray purple to olive brown, platy to splintery, fissile to highly fissile, slightly calcareous, micromicaceous.
Shale with interbedded Sandstone scattered Limestone stringers & laminae minor Siltstone stringers:
SHALE - medium gray minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous;
SANDSTONE - white to light tan, quartz, silt to very fine grained, well sorted, subround, calcareous trace siliceous cement, well cemented, light, no shows.
Shale with minor Sandstone and Limestone interbeds & stringers:
SHALE - medium gray minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous;
SANDSTONE - white to light tan, quartz, silt to very fine grained, well sorted, subround, calcareous trace siliceous cement, well cemented, light, no shows;
LIMESTONE - buff white to tan, calcilutite, calcareous intramicrite, wackestone, light, no shown.
Shale with Mantstone interbeds & stringers of Limestone and Sandstone:
SHALE - medium gray minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous;
MARLSTONE - light to medium gray, calcareous, arenaceous in part.
Shale with Sandstone interbeds & stringers minor Siltstone stringers:
SHALE - medium gray minor purple brown, platy, fissile to highly fissile, slightly calcareous to noncalcareous in part, micromicaceous;
SANDSTONE - light gray to gray green, quartz, silt to very fine grained, well sorted, subround, calcareous to siliceous cement, well cemented, light, no shows.
S-1.5' 322°
BOUT RIVER (1081.6)
S-1.9' 342.5°
S-3.2' 347.8° 1111.2 TV
S-7.7' 351.6° 1131.3 TV
S-8.3' 348.0° 1141.8 TV
S-8.5' 348° 1150.9 TV
KANSAS (1155.6)
S-10.1' 348.1° 1160.8 TV
1170.1 TV
S-11.1' 348.1°
PECKMARK
S-12.0' 348.0° 1179.3 TV
S-13.6' 348.1° 1188.2 TV
1197.8 TV
348.1°
S-15.6'
S-17.5' 347.4° 1207.1 TV
S-19.3' 346.0° 1216.1 TV
S-21.1' 343.9° 1225.3 TV
S-22.7' 343.9° 1774.0 TV
1240.4 TV
S-23.9' 344.6°
S-25.0' 346.0° 1251.3 TV
S-26.2' 347.4° 1260.1 TV
S-27.1' 347.8° 1268.8 TV
S-27.9' 348.1° 1277.4 TV
S-28.5' 348.7° 1286.0 TV
S-28.7' 344.6° 1294.8 TV
1302.9 TV
S-29.0' 341.1°
JEAN MARIE (1305.6)
S-29.2' 336.2°
S-29.6' 336.6° 1310.7 TV
S-29.8' 337.5° 1327.9 TV
S-29.6' 340.4° 1336.2 TV
1352.9 TV
S-27.2' 338.2°
S-26.5' 334.6° 1361.9 TV
FR GAGE (1400)
BENTON
DENE 11GC
DENE 10GC
DENE 9GC
VISCOSH
FR GAGE (1400)
BENTON
DENE 11GC
DENE 10GC
DENE 9GC
VISCOSH

S-26.4°
333.3°
1370.0 TV

1400

S-26.9°
332.6°
1378.6 TV

S-27.3°
334.7°
1387.1 TV

S-28.0°
334.7°
1395.6 TV

1425

1404.1 TV
S-28.1°
334.9°
S SWP02PN
(1407.1)

S-28.2°
335.4°
1412.6 TV

S-28.2°
334.8°
1421.1 TV

1450

S-28.0°
334.0°
1429.7 TV

S-28.9°
335.4°
1437.9 TV

1475

S-29.8°
336.1°
1446.1 TV

S-30.4°
337.6°
1454.4 TV

S-29.7°
338.9°
1462.4 TV

1500

S-28.5°
337.3°
1470.8 TV

S-27.6°
335.4°
1472.3 TV

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S-26.1°
334.7°
1487.8 TV

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340.4°
1562.9 TV

S-26.2°
341.8°
1571.2 TV

1625

S-25.6°
341.8°
1579.9 TV

S-25.5°
341.1°
1588.6 TV

S-25.0°
341.8°

1650

1597.6 TV

S-24.3°
343.7°
1605.9 TV

S-23.9°
346.7°
1614.8 TV

1675

S-23.7°
350.2°
1623.6 TV

S-22.6°
352.9°
1632.5 TV

1641.4 TV
S-20.5°
351.6°

1700

S-18.9°
348.8°
1650.87 TV

S-18.6°
346.7°
1659.5 TV

1725

S-18.5°
344.8°
1668.6 TV

S-18.9°
346.7°
1677.9 TV

S-18.2°
344.8°
1687.1 TV

1750

S-12.8°
346.7°
1696.2 TV

S-10.2°
344.8°
1705.7 TV

Shale with rare Sandstone laminae:
SHALE - light to medium grey, platy, fissile to highly fissile, slightly calcareous, fossil fragments, micromicaceous.

Shale with Sandstone and Limestone interbeds and stringers and Siltstone stringers:
SHALE - light to medium grey, platy, fissile to highly fissile, slightly calcareous to calcareous, micromicaceous;
SANDSTONE - light tan to mottled grey white, quartz, feldspar, grains fine grained, well sorted, subrounded, calcareous, siliceous cement, well cemented, tight, no shows;
LIMESTONE - white to tan minor Fe stained, fine with coarse calcarenite, intraclastite, grainstone, arenaceous in part, tight, no shows.

Shale with Siltstone interbeds and stringers and Sandstone laminae:
SHALE - light to medium grey rare purple brown, platy to splintery, fissile to highly fissile, slightly calcareous to calcareous, trace disseminated pyrite, micromicaceous;
SILTSTONE - light tan, calcareous cement, well cemented, sandy.

Shale with minor Sandstone & Siltstone laminae:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.

Shale with minor Siltstone laminae:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous in part, micromicaceous.

Shale with minor Siltstone laminae:
SHALE - light to medium grey to purple brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.

Shale with minor Siltstone laminae:
SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, noncalcareous to slightly calcareous, micromicaceous.

Shale with minor Siltstone laminae:
SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous.

Shale with minor Claystone trace Limestone laminae:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, trace arenaceous, micromicaceous;
CLAYSTONE - light grey, soft, slightly calcareous.

Shale with minor Claystone:
SHALE - light to medium grey to rare purplish brown, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous;
CLAYSTONE - light grey, soft, slightly calcareous.

Shale with Claystone interbeds:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, calcareous to slightly calcareous, micromicaceous;
CLAYSTONE - light grey, soft, slightly calcareous.

Shale with Claystone interbeds:
SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous;
CLAYSTONE - light grey, soft, fissile, slightly calcareous.

SHALE - light to medium grey to grey tan trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous.

Interbedded Shale and Claystone:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, non calcareous to slight calcareous, micromicaceous;
CLAYSTONE - light grey, soft, fissile, slightly calcareous.

Interbedded Shale and Claystone minor Siltstone:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, non calcareous to slightly calcareous, micromicaceous;
CLAYSTONE - light grey, soft, fissile, slightly calcareous.

SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, non calcareous to slight calcareous, micromicaceous.

Interbedded Shale and Claystone:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous, micromicaceous;
CLAYSTONE - light grey, soft, fissile, calcareous.

Shale with interbeds of Claystone:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, trace calcareous in part to non calcareous, micromicaceous;
CLAYSTONE - light grey, soft, fissile, slightly calcareous.

SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous.

Shale with interbeds of Claystone trace Limestone:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to calcareous, micromicaceous;
CLAYSTONE - light grey, soft, fissile, slightly calcareous.

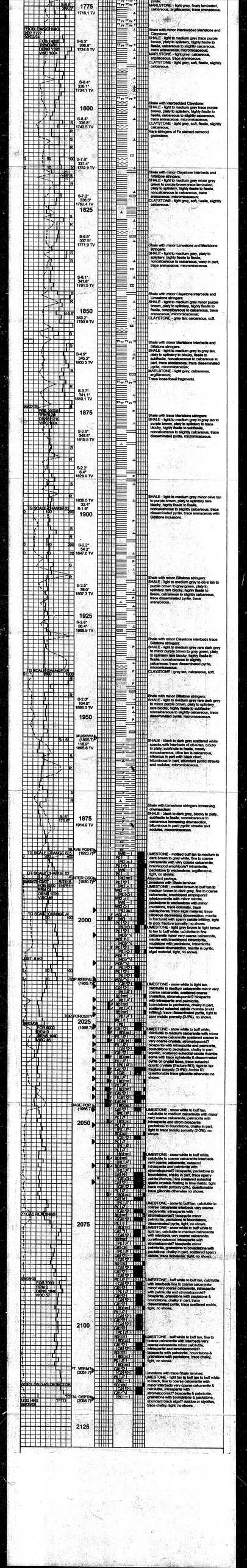
SHALE - light to medium grey trace purple brown, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous.

Shale with minor Siltstone stringers:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous.

Shale with minor Claystone interbeds trace Siltstone and Limestone stringers:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, trace arenaceous, micromicaceous;
CLAYSTONE - light grey, soft, fissile, slightly calcareous.

Interbedded Marlstone and Shale with Limestone stringers:
MARLSTONE - light grey, finely laminated, massive, slightly calcareous, trace arenaceous;
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, wavy in part, trace arenaceous, micromicaceous.

Interbedded Shale and Marlstone:
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, slightly calcareous to noncalcareous, micromicaceous, trace disseminated pyrite;


S-8.4'
336.0'
1775
1715.1 TV
TC GR LDNC HDNC
REP 7727
SPC 224
RDN 1000
RPM 0.5
VSHE 1100
VRC 300+
S-8-3"
336.8'
1724.8 TV
S-8-4"
336.1'
1734.1 TV
1800
S-8-4"
336.6'
1743.5 TV
S-7.9"
337.4'
1752.9 TV
S-7.3"
336.3'
1762.4 TV
1825
S-8-5"
337.5'
1771.9 TV
S-8-1"
341.0'
1781.5 TV
1850
S-8-6
343.7'
1790.9 TV
S-4.9'
345.0'
1800.5 TV
S-3.7'
341.1'
1810.1 TV
1875
S-2.9'
346.8'
1819.5 TV
S-2.2'
6.4'
1828.9 TV
1838.5 TV
32.4'
S-1.9'
1900
S-2.2'
54.2'
1847.6 TV
S-2.5'
76.9'
1857.2 TV
1925
S-2.8'
99.4'
1866.9 TV
G SCALE CHANGE X2
100
200
S-2.0'
104.0'
1886.0 TV
1950
MUSKWA
(1895.7')
118.9'
1885.8 TV
S-1.5'
S-6'
173.6'
1975
1914.9 TV
SLAVE POINT
(1923.7')
TC SCALE CHANGE 2X
240
480
DT SCALE CHANGE 2X
20
40
WATER CRCN
(1930.7')
SPC 224
RDN 0
VSHE 1100
VRC 300
DT 1 SCALE CHANGE 2X
100
200
2000
DRIT .5 m?
50
100
TOP REEFAL
(1955.7')
SPC 224
RDN 0
VSHE 1040
VRC 300
TOP POROSITY
2025
(1956.7')
BASE POR IN
(1966.7')
2050
77 LOG RERUNS
2075
SPC 224
RDN 0
VSHE 1040
VRC 300
77 VERM?
(2051.7')
INDEX ON DAS DETECTOR
TITTI
TOTAL DEPTH
(2058.7')
2100
2125
Shale with minor Claystone interbeds and Siltstone stringers;
SHALE - light to medium grey minor grey green to purple brown trace laminated, platy to splintery, highly flissile to fissile, noncalcareous to calcareous, trace arenaceous; micromicaceous;
CLAYSTONE - light grey, soft, f.sslle, slightly calcareous.
Shale with minor Limestone and Marlstone stringers;
SHALE - light to medium grey, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, waxy in part, trace arenaceous, micromicaceous.
Shale with minor Claystone interbeds and Limestone stringers;
SHALE - light to medium grey minor purple brown, platy to splintery, highly fissile to fissile, noncalcareous to calcareous, trace arenaceous micromicaceous
CLAYSTONE - grey tan, calcareous, soft.
Shale with minor Marlstone interbeds and Siltstone stringers;
SHALE - light to medium grey to grey tan, platy to splintery to blocky, fissile to subfissile, noncalcareous to calcareous in part, trace arenaceous, trace disseminated pyrite, micromicaceous;
MARLSTONE - light grey, calcareous, argillaceous;
Trace loose fossil fragments.
Shale with trace Marlstone stringers;
SHALE - light to medium grey to grey tan to purple brown, platy to splintery to trace blocky, highly fissile to subfissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous.
SHALE - light to medium grey minor olive tan to purple brown, platy to splintery rare blocky, highly fissile to fissile, noncalcareous to slightly calcareous, trace disseminated pyrite, trace arenaceous with Siltstone inclusions.
Shale with minor Siltstone stringers;
SHALE - light to medium grey to olive tan to purple brown to grey green, platy to splintery rare blocky; highly fissile to fissile, calcareous to slightly calcareous, trace disseminated pyrite, trace arenaceous.
Shale with minor Claystone interbeds trace Siltstone stringers;
SHALE - light to medium grey minor dark grey to minor purple brown to grey green, platy to splintery rare blocky, highly fissile to fissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous;
CLAYSTONE - grey tan, calcareous, soft.
Shale with minor Siltstone stringers;
SHALE - light to medium grey rare dark grey to minor purple brown, platy to splintery rare blocky, highly fissile to subfissile, noncalcareous to slightly calcareous, trace disseminated pyrite, micromicaceous.
SHALE - black to dark grey scattered white specks with interbeds of olive tan, blocky to platy, subfissile to fissile, mostly noncalcareous, olive tan is calcareous, siltaceous in part with black chert, bituminous in part, abundant pyritic streaks and nodules, micromicaceous.
Shale with Limestone stringers increasing downward;
SHALE - black to dark grey, blocky to platy, subfissile to fissile, noncalcareous to calcareous increasing downsection, siltaceous in part, pyritic streaks and nodules, micromicaceous.
LIMESTONE - mottled buff tan to medium to dark brown to dark grey, fine to coarse calcarenite with very coarse calcarenite, brachiopod? shamporo? intraclasts, packstone to wackestone, argillaceous, tight, no shows.
Abundant cavings.
Upsidown with shale laminae.
LIMESTONE - mottled brown to buff tan to medium brown to dark grey, fine to coarse calcarenite, brachiopod amphipora? packstone to wackestone with minor grainstone, rare dolomite, trace dolomitic matrix, trace stylolaminae, trace algal material, trace siliceous decreasing downsection, micrite is fractured with sparry calcite infilling, tight to poor fracture porosity, no shows.
LIMESTONE - light grey brown to light brown to tan to buff white, calcilutite to fine calcarenite minor very coarse calcarenite, mlcrite with brachiopod intraclasts, mudstone with packstone, stylolaminite increases downsection, micrite is pyritic, algal material, tight, no shows.
LIMESTONE - snow white to light tan, calcilutite to medium calcarenite minor very coarse calcarenite, scattered coarse crystalline, stromatoporoid? in part, with intraseparite and palmicrite, boundstone to packstone, chalky in part, scattered euhedral calcite rhombs (moldic ?mineral), dissemmated pyrite, tight to poor moldic porosity (3-5%), no shows.
LIMESTONE - snow white to buff white, calcilutite to medium calcarenite with minor very coarse calcarenite scattered coarse to very coarse crystals, stromatoporoid? biosparite with intraspartite and palmicrite, boundstone to packstone, chalky in part, moldic, euhedral calcite rhombs, some with trace sphalerite & disseminated pyrite, trace oil cystal faces, trace siliceous, quartz crystals (fracture fill?), tight to fair fracture porosity (5-9%), Anhy ID, no observable trace gilsonite otherwise no shows.
LIMESTONE - snow white to buff tan, calcilutite to medium calcarenite with minor very coarse calcarenite, palmicrite with intraclasts and strom biosparite, packstone to boundstone, chalky in part, tight to trace moldic porosity (2-3%), no shows.
LIMESTONE - snow white to buff white, calcilutite to coarse calcarenite interbeds very coarse calcarenite, calcarod intraspartite and palmicrite with stromatoporoid? biosparite, packstone to boundstone, chalky in part, trace vuggy calcite rhombs, rare scattered euhedral quartz crystals forming in lime matrix, tight trace moldic porosity (2%), questionable trace gilsonite otherwise no shows.
LIMESTONE - snow to buff tan, calcilutite to coarse calcarenite interbeds very coarse calcarenite, intraspartite with stromatoporoid? biosparite minor palmicrite, packstone to boundstone, chalky in part, tight, no shows.
LIMESTONE - snow white to buff white to buff tan, calcilutite to medium calcarenite minor very coarse calcarenite, coralline stromatoporoid? biosparite, intraspartite and stromatoporoid? biosparite, grainstone to boundstone with packstone, chalky in part, scattered sparry calcite, trace sphalerite, tight, no shows.
LIMESTONE; buff white to buff tan, calcilutite with interbeds fine to coarse calcarenite minor very coarse calcarenite, intraspartite with stromatoporoid? biosparite, grainstone with packstone & grainstone, chalky in part, trace disseminated pyrite, trace scattered molds, tight, no shows.
LIMESTONE - buff white to buff tan, fine to coarse calcarenite with interbeds very coarse calcarenite minor calcilutite, wackestone and stromatoporoid? biosparite with packstone, boundstone & grainstone with packstone, trace chalky, tight, no shows.
LIMESTONE - light tan to buff tan to buff white to black, fine to coarse calcarenite with minor very very coarse calcarenite & calcilutite, intraspartite with stromatoporoid? biosparite, grainstone with packstone & palmicrite, grainstone with packstone & palmicrite, abundant black algal? residue or styolitic, trace chalky, tight, no shows.
Limestone with trace Shale laminae;
LIMESTONE - light tan to buff tan to buff white to black, fine to coarse calcarenite with minor very very coarse calcarenite & calcilutite, intraspartite with stromatoporoid? biosparite with packstone & palmicrite, grainstone with packstone & palmicrite, abundant black algal? residue or styolitic, trace chalky, tight, no shows.

CORE ANALYSIS REPORT

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CORE LABORATORIES

CORE ANALYSIS REPORT

FOR

SUNCOR ENERGY INC.

SUNCOR NETLA
K77 60.50 LATITUDE 122.50 LONGITUDE
NETLA, NORTHWEST TERRITORIES

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom; and for whose exclusive and confidential use; this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories (all errors and omissions excepted); but Core Laboratories and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or mineral well or formation in connection with which such report is used or relied upon.

CORE LABORATORIES

Company : SUNCOR ENERGY INC.
Well : SUNCOR NETLA
Location : K77 60.50 LATITUDE 122.50 LONGITUDE
Province : NORTHWEST TERRITORIES

Field : NETLA
Formation : SLAVE POINT
Coring Equip.: ROTARY SIDEWALL
Coring Fluid : WATER BASE MUD

File No.: 52131-99-0091
Date : 99-03-14
Analysts: DJB
Core Dia:

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH m	PERMEABILITY (MAXIMUM) Kair mD	POROSITY (HELIUM) fraction	GRAIN DENSITY kg/m3	DESCRIPTION
22	1997.50	<.01	0.005	2700.	ls i
21	2003.60	0.01	0.005	2710.	ls i
20	2010.50				NSS ru
19	2014.15	0.01	0.005	2710.	ls i
18	2016.20	0.01	0.008	2710.	ls i
17	2019.50	0.01	0.008	2690.	ls i
16	2021.60	<.01	0.005	2690.	ls i
15	2023.20	0.05	0.014	2710.	ls i
14	2026.20	0.02	0.011	2690.	ls i
13	2028.60	0.03	0.013	2700.	ls i
12	2032.00	0.03	0.019	2680.	ls i
11	2030.50	<.01	0.018	2690.	ls i
10	2034.50	0.07	0.027	2710.	ls i
9	2036.60	0.01	0.014	2700.	ls i
8	2039.00	<.01	0.011	2700.	ls i
7	2041.50	0.05	0.018	2700.	ls i
6	2043.50	0.01	0.015	2700.	ls i
5	2046.70	0.03	0.018	2710.	ls i sty
4	2050.50	<.01	0.011	2700.	ls i
3	2054.60	0.01	0.011	2700.	ls i
2	2060.50	0.03	0.011	2700.	ls i
1	2064.50	0.01	0.014	2700.	ls i

CORELAB

CODE KEY - DESCRIPTIONS

A	= (Prefix A) Horizontal matrix permeability measured by pressure decay profile permeametry through a probe tip due to induced fractures	incl	= Inclusions	shy	= Moderately shaly (20% - 40%)
ACA	= Removed for advanced core analysis	lam	= Laminae (laminated)	sid	= Siderite
anhy	= Anhydrite	lmy	= Limy	sltst	= Siltstone
AST	= Appears similar to	ls	= Limestone	slty	= Silty
bit	= Bitumen	lv	= Large vug	SP	= Small plug (sample drilled from core in maximum horizontal direction and parallel to bedding plane where possible) permeability, porosity and grain density are measured
bk	= Break	m	= Medium		
bldr	= Boulder	mi	= Mud invaded		
c	= Coarse	mic	= Micaceous		
calc	= Calcite (calcareous)	mv	= Medium vug		
carb	= Carbonaceous	NA	= Not analyzed by request	ss	= Sandstone
cbl	= Cobble	NP	= No permeability measurement possible due to poor sample quality	sshy	= Slightly shaly (<20%)
CEC	= Cation exchange capacity			sty	= Stylolite (ic)
cem	= Cemented	NR	= Not received	sulf	= Sulphur
cgl	= Conglomerate	ool	= Oolitic	sv	= Small vug
cht	= Chert	OB	= Overburden sample (permeability and porosity measured at net overburden stress)	TEC	= Thermal Extraction Chromatography to determine oil richness
coal	= Coal/coal inclusion			TS	= Thin section
dol	= Dolomite	P	= Preserved for future studies	uncon	= Unconsolidated
f	= Fine	pbl	= Pebble	vc	= Very coarse
FD	= Full diameter analysis including three directional permeabilities, porosity and densities	PET	= Removed for petrographic analysis	vfrac	= Vertical fracture
		ppv	= Pinpoint vug	vf	= very fine
		PSA	= Particle size analysis	VIS	= Viscosity of oil measured
foss	= Fossil (fossiliferous)	pyr	= Pyrite (pyritic)	VOB	= Vertical overburden sample (vertical permeability measured at net overburden stress)
frac	= Fracture (undifferentiated)	pyrbit	= Pyrobitumen		
fri	= Friable	ru	= Rubble		
glauc	= Glauconite (glauconitic)	SA	= Sieve analysis	vshy	= Very shaly (>40%)
grnl	= Granule	sdy	= Sandy	VSP	= Vertical small plug drilled from whole core to measure vertical permeability and occasionally porosity
gyp	= Gypsum	SEM	= Scanning electron microscope analysis		
hfrac	= Horizontal fracture	sh	= Shale		
hal	= Halite (salt)	SPH	= Humidity analysis of small plug sample at 60 degrees Celsius and 50 percent relative humidity	vug	= Vuggy (vuggular)
i	= Intercrystalline			ws	= Water sand
		SPT	= Small Plug used for tracer analysis	XRD	= X-ray diffraction
				*	= Perm unavailable due to broken core

CORE LABORATORIES

Company : SUNCOR ENERGY INC.
Well : SUNCOR NETLA

Field : NETLA
Formation : SLAVE POINT

File No.: 52131-99-0091
Date : 99-03-14

A N A L Y T I C A L P R O C E D U R E S A N D Q U A L I T Y A S S U R A N C E

HANDLING & CLEANING

Core Transportation	:
Solvent	: TOLUENE
Extraction Equipment	: VAPOR PHASE EXTRACTOR
Extraction Time	: 28 HOURS
Drying Equipment	: GRAVITY OVEN
Drying Time	: 12 HOURS
Drying Temperature	: 115 DEGREES C.

RESISTIVITY/ CONDUCTIVITY

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

PROVINCE:NORTHWEST TERRITORIES | Field: NETLA | Well: SUNCOR NETLA K-77-60-50-122-30 (SUR LOC) | Company: SUNCOR ENERGY INC.

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION-RXO
LOG

60 deg-46', 122 deg-30' (SUR LOCATION) Elev.: K.B. 625.2 m
294.98N, -91.08M (BOT LOCATION) G.L. 616.4 m
300/K-77-60.50-122.30/00 (UWI) D.F. 624.9 m

Permanent Datum: GROUND LEVEL Elev.: 616.4 m
Log Measured From: KELLY BUSHING 8.8 m above Perm. Datum
Drilling Measured From: KELLY BUSHING

	API Serial No. N/A	N/A	N/A	N/A
Logging Date	08-FEB-1999			
Run Number	ONE			
Depth Driller	1990 m			
Schlumberger Depth	1990 m			
Bottom Log Interval	1987.6 m			
Top Log Interval	535.5 m			
Casing Driller Size @ Depth	244.500 mm @ 535.5 m	@	@	
Casing Schlumberger	535.5 m			
Bit Size	269.000 mm			
Type Fluid in Hole	POTASSIUM SULPHATE			
MUD Density / Viscosity	1205 kg/m3			
MUD Fluid Loss / PH	7.2 cm3 / 10			
Source Of Sample	FLOWLINE			
RM @ Measured Temperature	0.090 ohm.m @ 18 degC	@	@	
RMF @ Measured Temperature	0.160 ohm.m @ 18 degC	@	@	
RMC @ Measured Temperature	0.200 ohm.m @ 13 degC	@	@	
Source RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	0.065 @ 80 / 0.070 @ 80	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	80 degC	80	80	
Circulation Stopped / Time	26-FEB-1999	12:30		
Logger On Bottom / Time	27-FEB-1999	1:30		
Unit Number / Location	3028 / GRANDE PRAIRIE			
Recorded By	TONY DANIEL			
Witnessed By	BRIAN HEISTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid in Hole				
MUD Density / Viscosity				
MUD Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source RMF / RMC				
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

ALL PUBLISHED DATA ARE OBTAINED BASED ON EMPIRICAL FIELD & LABORATORY CALIBRATIONS AND ARE REPRESENTATIVE OF THE WELL ONLY TO THE EXTENT THAT THE ASSUMPTIONS AND APPROXIMATIONS USED IN THE INTERPRETATION METHODS ARE VALID FOR THE PARTICULAR FORMATION AND ENVIRONMENT UNDER CONSIDERATION. SCHLUMBERGER DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF INTERPRETATIONS AND WILL NOT BE LIABLE FOR ANY LOSS, COST, DAMAGE OR EXPENSE INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF ITS OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES
OS1: ARRAY INDUCTION IMAGER
OS2: DUAL DENSITY
OS3: DUAL NEUTRON
OS4: SONIC
OS5: CSNG - CASING COLLAR LOG
ALL NATURAL AND PRESCRIBED CURVES AS PER CLIENT REQUEST

AT MAX RECORDED TEMPERATURE (AMT) FOR 3 HRS
RECIPROCATED THROUGH ENTIRE LOGGED INTERVAL
FAST LOGGING WITH NO SECONDS DEPART FROM NORMAL

RMC CR DOMES @ 153.6°C / RMC 3.5 DOMES @ 153.6°C / RM, 3.5 DOMES @ 153.6°C
STUCK TOOL, REAL TIME* ON BOTTOM, STUCK, CUT AND STRUNG OUT
VISCOSITY WAS SO HIGH, IT WAS NOT MEASURED
PAYNE 3 FIELD TRIAL
RIG: NOTA 36
RIG MOVED AND 3 MOVES

SERVICE ORDER #	350253	350253
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FIELD STATION	EOJ	EOJ
FIELD STATION	INTERVAL	INTERVAL

RUN 1 RUN 2

EQUIPMENT DESCRIPTION

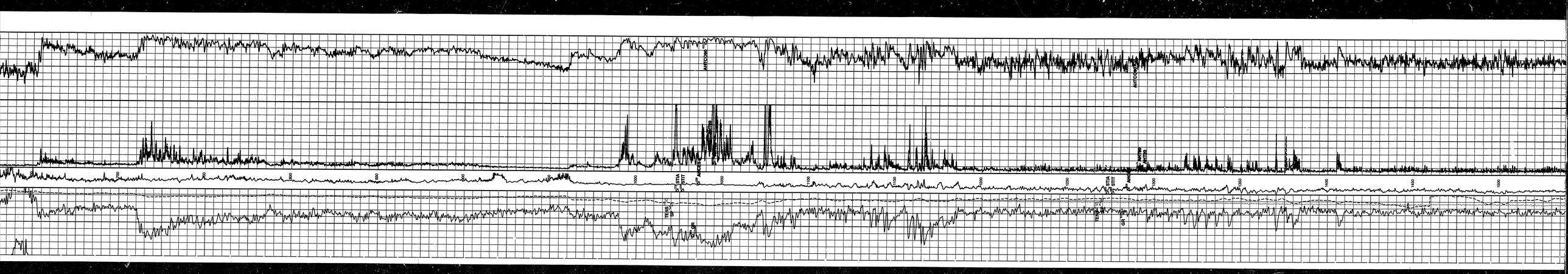
RUN 1 RUN 2

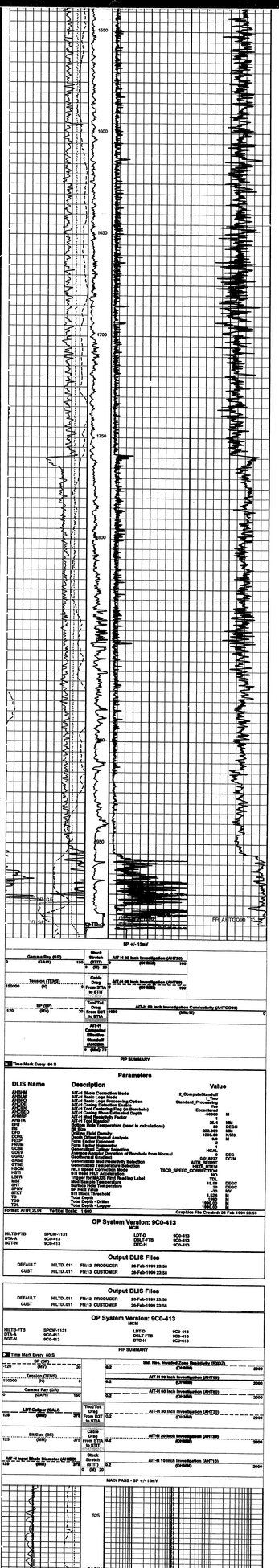
SURFACE EQUIPMENT
WITH DTSH-A

DOWNHOLE EQUIPMENT

CBHV 1972			
CNTH 1			
HDSH-B			

LEH-QT 30.13
LEH-QT
LEH-QT
DSI-HC 9109 OTSM 29.97 29.25
Toolbus 28.33
Gamma Ray 28.33
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AHTCOM
AHTCOM
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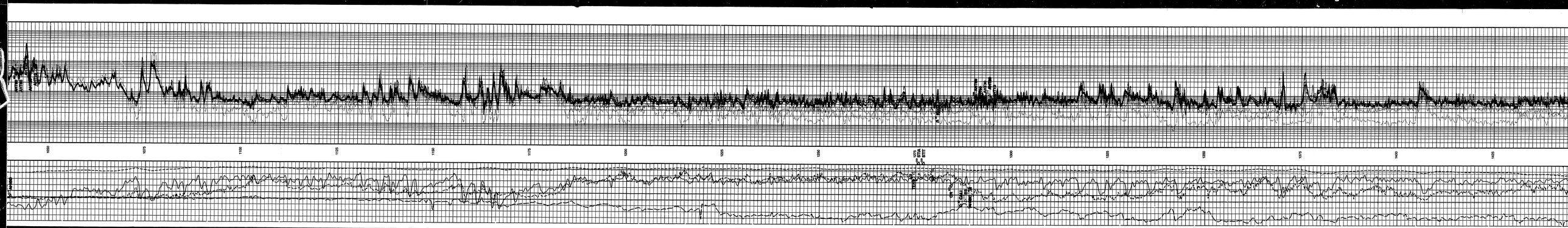

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3100
3150
3200
3250
3300
3350
3400
3450
3500
3550

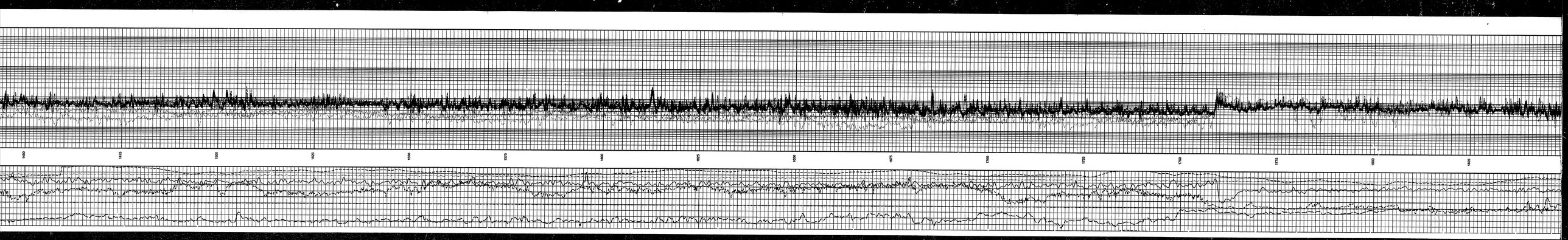
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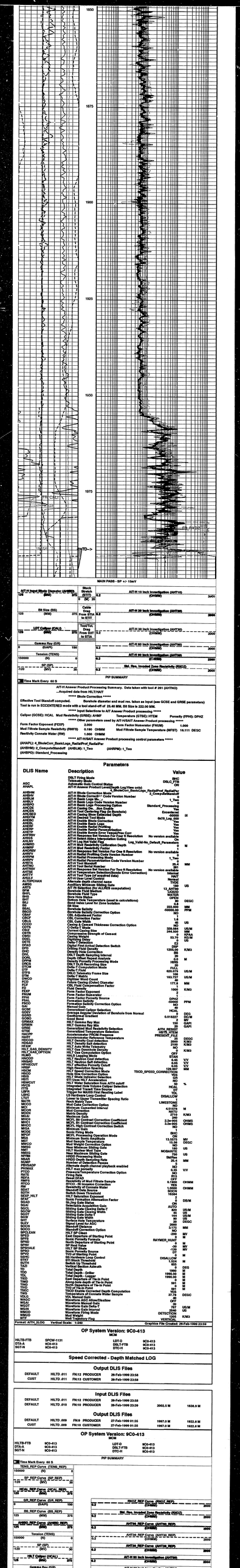
THIS STA STA

SAT

PM


1000
1075
1100
1125
1150
1175
1200
1225
1250
1275
1300
1325
1350
1375
1400
1425


1450
1475
1500
1525
1550
1575
1600
1625
1650
1675
1700
1725
1750
1775
1800
1825



AIT-H Input Mode Overview (AIHMO)		Stack Stretch (STIT)	AIT-H 10 Inch Investigation (AIT10)	
120 (deg) 370		0.3 (in/ 30	(OHMM) 0.2	2000
Bit Size (BS)		Cable Drag	AIT-H 20 Inch Investigation (AIT20)	
125 (MM) 375		From STIA to STIT	(OHMM) 0.2	2000
LDT Caliper (CALI)		Tool/Tot. Drag	AIT-H 30 Inch Investigation (AIT30)	
125 (MM) 375		From DIT to STIA	(OHMM) 0.2	2000
Gamma Ray (GR)			AIT-H 60 Inch Investigation (AIT60)	
(GAPI) 0 150			(OHMM) 0.2	2000
Tension (TENS)			AIT-H 90 Inch Investigation (AIT90)	
150000 (lb) 0			(OHMM) 0.2	2000
SP (SP)			Std. Res. Invaded Zone Resistivity (RIXO)	
-20 (MV) 80			(OHMM) 0.2	2000

PIP SUMMARY

Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with tool # 281 (AITH0)
...Acquired data from HILT/HAIT
***** Data Corrections *****
Effective Tool Standoff computed. Borehole diameter and mud res. taken as input (see GCSE and GRSE parameters)
Tool is run in ECCENTERED mode with a tool stand-off of 35.40 MM. Bit Size is 222.00 MM.
***** Input Selections to AIT Answer Product processing *****
Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMP Temperature (GTEM): HTEM Porosity (PHND): DPHZ
***** Other parameters used by AIT-H/AIT Answer product processing *****
Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000
Mud Filtrate Sample Resistivity (RMFS) 0.100 OHMM Mud Filtrate Sample Temperature (MFST) 15.111 DEGC
Resitivity Contrast Value (RW) 1.000 OHMM
***** AIT-H/SAIT Answer Product processing control parameters *****
(AHAPL): 4_BholeCorr_SlackLoop_RadialProf_RadialPar
(AIHBHM): 2_CompositeBandsIF (AIHBJM): 1_Two (AIHPRG): 1_Two
(AIHBPO): Standard_Processing

Parameters

DLIS Name	Description	Value
	DSLT Fixing Mode	BHC
	Telemetry Mode	DSLC_FTS
AGC	Automatic Gain Control Status	ON
ANAPL	AIT-H Answer Product Levels (Length Log/View only) 4_BholeCorr_SlackLoop_RadialProf_RadialPar	4
AHBHM	AIT-H Mode Correction Mode	2_CompositeBandsIF
AHBHV	AIT-H Basic Logic Code Version Number	7
AHBLC	AIT-H Basic Logic Code	1_Two
AHBLV	AIT-H Basic Logic Code Version Number	7
AHCSC	AIT-H Caliper Selection Mode	Standard_Processing
AHCSD	AIT-H Sampling Dir. - Box Enable	Yes
AHDEB	AIT-H Tool Centering Flag (In Borehole)	Eccentered
AHDTD	AIT-H Detector Total Measured Depth	16
AHDTM	AIT-H Detector Mode	0x(no_Log_000
AHEBC	AIT-H Enable Bhole Correction	Yes
AHEBF	AIT-H Enable Basic Logic	Yes
AHEHP	AIT-H Enable Hybrid Processing	Yes
AHERP	AIT-H Enable Radial Profiling	Yes
AHETR	AIT-H Enable Software Temp/Pres Corr	Yes
AHIOS	AIT-H Response Set Version For Fast R Resolution	No version available
AHLWC	AIT-H Log Weighting Function Coding	1
AHLWV	AIT-H Log Not Valid Flag	1_Two
AHMHD	AIT-H Mud Resistivity Calibration Depth	0
AHMPC	AIT-H Mud Type Code	4
AHORW	AIT-H Response Set Version For One R Resolution	No version available
AHPPV	AIT-H Radial Profiling Code Version Number	1
AHPRC	AIT-H Radial Processing Code	1_Two
AHPRV	AIT-H Radial Processing Code Version Number	1
AHSTA	AIT-H Tool Standoff	MM
AHTBV	AIT-H Tool Bad Value	281
AHTRE	AIT-H Response Set Version For Two R Resolution	No version available
AHTTT	AIT-H Tool Temperature (Software Error Correction)	0
AHTYP	AIT Type (of acquired data)	HAIT
ALTOPCHAN	AIT-H User Level Control	Normal
AMOD	Acquisition Mode Name	Main
AMSG	Auxiliary Message Code	135 US
AMTS	AIT Fit Selection (for ALLRES computation)	13_AHT90
ANAL	Analysis Mode Name	LOGGED
BHTS	Borehole Fluid Type	WATER
BHS	Bore Hole Status	OPEN
BHT	Bore Hole Temperature (used in calculations)	26 DEGC
BIH	Bond Index Level for Zone Isolation	0
BS	Bit Size	222.000 MM
BSAL	Borehole Salinity	45000.00 PPM
BSCO	Core Auto Salinity Correction Option	NO
CBAF	Casing Bow Amplitude	0
CBCF	CBL Correlation Factor	1.0
CBLG	CBL Gate Width	40 US
CBTH	CBL Equivalent Thickness Correction Option	NO
CBTP	C-Delta-T Slope	328.084 US/M
CBTX	Current Casing Size	244.500 MM
CDEN	Density Weight of Cement	1.90 KGA
CMTW	Casing Weight	53.72 KG/M
DDEL	Digitizing Delay	0 US
DFAC	Depth Factor	EZ
DFAO	Digital Filter(s) Detection Switch	ON
DFD	Drilling Fluid Density	1200.00 K/M3
DFH	Density Hole Correction	0.0
DFI	DSLT Depth Sampling Interval	3.0
DORL	Depth Offset for Reference Log	0 M
DPCS	Density Processing Processing Mode	HIRES
DREC	DSLT DLIS Recording Size	2
DRT	DSLT Recording Type	FIX
DTF	Deflux Fluid	620.815 US/M
DTFS	DSLC Telemetry Frame Size	100
DTM	Delta-T Matrix	183.727 US/M
DWCO	Digitizer Word Count	4
FCD	Fulcrum Casing (Collar) Diameter	177.8 MM
FD	DSLT Fluid Compensation Factor	1
FE	Fill Error	1000 K/M3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
FPN	Form Factor Porosity Source	DPHZ
FPPM	Formation Salinity	45000 PPM
FSVO	Formation Salinity Version Option	NO
GAC	Manual Gain	AC
GCSE	Generic Caliper Selection	HCAL
GDEG	Average Caliper Deviation of Borehole from Normal	0 DEG
GGRO	Geothermal Gradient	0.016327 DC/M
GMAT	Gas Matrix	0 DC/M
GRMAX	GR Gamma Ray Max	150 GAPI
GRMIN	GR Gamma Ray Min	0 GAPI
HAIM	Generalized Mud Resistivity Selection	AITH_RESIST
HAIP	Generalized Temperature Selection	HISTS_HTEM
HAOP	Generalized Porosity Selection	PRESENT_DPHZ
HDEG	Accelerator Reference Temperature	25 DEGC
HDEO	HILT Density Dual Detection	2000 K/M3
HDES	HILT Density Single Detection	2000 K/M3
HFMC	HILT Mud Wire Telemetry	NO
HILT_GAS_DENSITY	HILT Gas Downhole Density	257 K/M3
HILT_TOOL_OPTION	HILT Tool Configuration Option	OFF
HLAC	HILT Logging Mode	STAT
HNCDO	HILT Neutron Cord detection	0.45 V/V
HNDDO	HILT Neutron Det detection	0.05 V/V
HPSEC/UT	HILT Pressure Sensor Calibr	0.67 V/V
HRSF	High Resolution Density Switch	126.000
HRSM	High Resolution Density Mode	TSCD_SPEED_CORRECTION
HSIS	Hole Size Correction Option	YES
HSTI	HILT Standoff Correction	35.4 MM
HSTO	STI Uses HILT Accelerometer	NO
HSWC/UT	HILT Water Saturation from ATIH cutoff	30 %
HTCS	HILT Tool Configuration Control Selection	NORM
HTIS	Integrated Time Delay	27
LBFR	Trigger for MAXIS Fast Reading Label	TDL
LTOT	Logging Tool Orientation	DISALLOW
MATS	Linear Scaler for Counter Spacing Ratio	1
MATX	Rock Matrix Type	LIMESTONE
MCO	Mud Cake Correction Option	NO
MCOI	Mud Cake Commit Interval	4.61575 M
MCOR	Mud Cake Logic	NO
MDEN	Matrix Density	2710 K/M3
MFAC	Mud Factor	240
MFC1	MCFL Contrast Correction Coefficient	2.2e-003 OHMS
MFC2	MCFL Contrast Correction Coefficient	2.2e-003 OHMS
MFCC	MCFL High Contrast Correction Switch	NO
MFCO	MCFL Option	ON
MFDE	Smith Filing Mode	ON
MFOP	MCFL Processing Operation Mode	ON
MFSS	Mud Filtrate Salinity	13,000 MV
MFT	Mud Sample Temperature	15.56 DEGC
MWCO	Mud Weight Correction Option	NO
NMFS	Neutron Matrix Sliding Gate	180 US
NMEG	HILT Neutron Log Type	NOBARITE
NMXG	Near Maximum Sliding Gate	120 US
NPMM	HRDD Processing Mode	Stellar
NSMP	HRDD Depth Sampling Rate	25.4 MM
PBMSADP	Alternate depth channel playback enabled	NO
PHMAX	HILT max porosity	0.52 V/V
PHTC	HILT Porosity Temperature Correction Option	NO
RATO	Ratio Mode	OFF
RDFA	Reset DFAO	OFF
RMCS	Resistivity of Mud Filtrate Sample	0.1000 OHMM
RMD	RTCO - Rt Correction Correction	0.0000
RMFT	Resistivity of Console Water	1.000 OHMM
SDTI	Standoff Data Source	SOCH
SEXP_HILT	HILT Standoff Exponent	16384
SFAC	Sonic Formation Attenuation Factor	0 DB/M
SGAG	SLJog Gate Control	OR
SGCO	Sliding Gate Correction Gain	AUTO
SGDT	Sliding Gate Clocking Delta-T	40 US/M
SGDW	Sliding Gate Clocking Width	40 US/M
SGW	Sliding Gate Width	160 US/M
SHY	Surface Hole Temperature	80 DEGC
SKEW	Skew Angle at TD	2000
SOCG	Standoff Clearance	3.172 MM
SPCO	HILT SP Offset	-50 MV
SPTS	Event Depth(s) of Starting Point	0 M
SPTY	Event Type(s) of Starting Point	RAYMER_HUNT
SPWE	North Departure of Starting Point	0 M
SPWN	SP Vault Value	-30 MV
SPWV	SP Vault Value	-30 MV
SPXO	Sonic Porosity Source	LDT
SPYO	TVD of Starting Point	0 M
STCO	Standoff Correction Control	DISALLOW
STIT	STIT Stretch Threshold	0.3 in/30
SWTH	Switch Up Threshold	625
TAZI	Tool Deviation Azimuth	0 DEG
TD	Total Depth	1998.00 M
TDD	Total Depth - Driller	1998.00 M
TDL	Total Depth - Logger	1998.00 M
TMD	End Depth(s) of Tie-In Point	0 M
TMDO	End Depth(s) of Tie-In Point	0 M
TMO	Measured Depth of Tie-In Point	0 M
TNVD	TVD of Tie-In Point	0 M
TNVO	TVD of Tie-In Point	0 M
TRS	Total Number of Selected Depth Computation	1
TSAM	Temperature of Console Water Sample	37.78 DEGC
VDL	VDL Manual Gain	40
VDLS	VDL Manual Slow/Shallow	OFF
WGAI	Waveform Manual Gain	757
WGST	Waveform Gain Delta-T	757 US/M
WGTH	Waveform Gain Threshold	2500
WMOD	Waveform Firing Mode	DETECTION
WSPA	WSPA Mode	1 K/M3
WTD	Weight Telemetry Flag	0

Format: AITH_2LOG Vertical Scale: 1:240 Graphics File Created: 26-Feb-1999 23:09

OP System Version: 9C0-413

MCM

HILTB-FTB	SPCW-1131	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

Speed Corrected - Depth Matched LOG

Output DLIS Files

DEFAULT	HILTD .011	FN:12 PRODUCER	26-Feb-1999 23:58	
CUST	HILTD .011	FN:13 CUSTOMER	26-Feb-1999 23:58	
			(OHMM)	

Input DLIS Files

DEFAULT	HILTD .011	FN:12 PRODUCER	26-Feb-1999 23:58	
DEFAULT	HILTD .010	FN:10 PRODUCER	27-Feb-1999 22:29	2002.5 M 1838.9 M

Output DLIS Files

DEFAULT	HILTD .009	FN:9 PRODUCER	27-Feb-1999 01:35	1997.0 M 1922.8 M
CUST	HILTD .009	FN:10 CUSTOMER	27-Feb-1999 01:35	1997.0 M 1922.8 M

OP System Version: 9C0-413

MCM

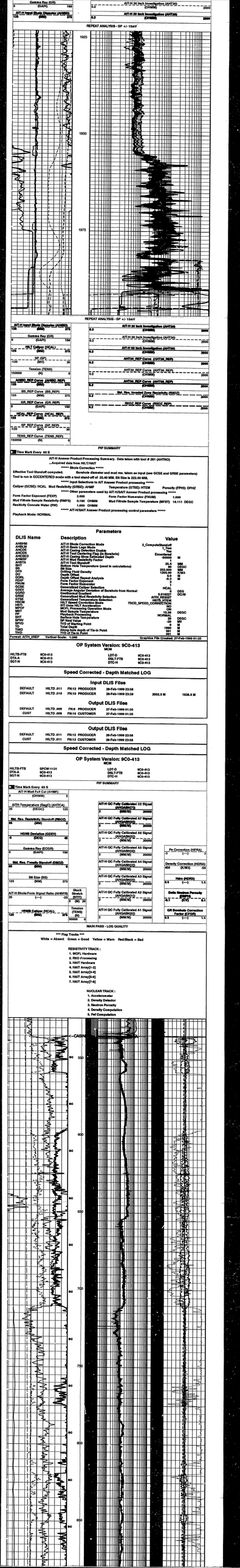
HILTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

PIP SUMMARY

Time Mark Every 60 S

TENS_REP Curve (TENS_REP)	
150000 (lb) 0	
SP_REP Curve (SP_REP)	
-20 (MV) 80	
HCAL_REP Curve (HCAL_REP)	
125 (MM) 375	
GR_REP Curve (GR_REP)	
0 (GAPI) 150	
RIS_REP Curve (RIS_REP)	
0.2 (OHMM) 2000	
AHBC_REP Curve (AHBC_REP)	
125 (MM) 375	
Tension (TENS)	
150000 (lb) 0	
SP (SP)	
-20 (MV) 80	
LDT Caliper (HCAL)	
125 (MM) 375	
Gamma Ray (GR)	
0 (GAPI) 150	

RIXO_REP Curve (RIXO_REP)	
0.2 (OHMM) 2000	
Std. Res. Invaded Zone Resistivity (RIXO)	
0.2 (OHMM) 2000	
AHTR6_REP Curve (AHTR6_REP)	
0.2 (OHMM) 2000	
AHTR9_REP Curve (AHTR9_REP)	
0.2 (OHMM) 2000	
AHTR6_REP Curve (AHTR6_REP)	
0.2 (OHMM) 2000	
AIT-H 90 Inch Investigation (AIT90)	
0.2 (OHMM) 2000	



PIP SUMMARY

Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with tool # 291 (AHTNO)
...Acquired data from HILT/HAIT
***** Shale Corrections *****
Effective Tool Standoff computed. Borehole diameter and mud res. taken as input (see GCSE and GRSE parameters)
Tool is run in ECCENTERED mode with a tool stand-off of .25.40 MM. Bit Size is 222.00 MM.
***** Input Selection to AIT Answer Product processing *****

Caliper (GCSE): HCAL	Mud Resistivity (CSRE): AHMF	Temperature (GTSE): HTEM	Porosity (FPHI): DPHZ

***** Other parameters used by AIT-H/SAT Answer Product processing *****

Form Factor Exponent (FEXP)	2.000	Form Factor Numerator (FNUM)	1.000
Mud Filtrate Sample Resistivity (RMFS)	0.190 OHMM	Mud Filtrate Sample Temperature (MFST)	10.111 DEGC
Resistivity Connate Water (RW)	1.000 OHMM		

***** AIT-H/SAT Answer Product processing control parameters *****

Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
AHBHM	AIT-H Shale Correction Mode	2_ComputedStandoff
AHBLM	AIT-H Basic Logs Mode	1_Yes
AHCEN	AIT-H Centralizer Mode Enable	Yes
AHCES	AIT-H Tool Centering(Eg.En.Sonolith)	Eccentered
AHCSED	AIT-H Casing Shoe Estimated Depth	-50000 M
AHMFA	AIT-H Mud Resistivity Factor	1
AHPT	AIT-H Tool Standoff	38.4 MM
BHT	Bottom Hole Temperature (used in calculations)	10.111 DEGC
BS	Bit Size	222.000 MM
DFD	Drilling Fluid Density	1265.00 KG/M3
DFV	Drilling Fluid Viscosity	0.0 M
DONL	Depth Offset Recent Analysis	0.0 M
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliber Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GRSE	Generalized Standoff	0.018227 DCM
GTSE	Generalized Temperature Selection	ATEMP_INTEMP
HDEN	Generalized Tool Resistivity Selection	AIT-H_AIT-M
HGM	HILT Ganged Correction Mode	TSCD_SPEED_CORRECTION
HPCF	HILT Gate HILT Acceleration	100
MFSS	Mud Filtrate Sample Mode	SMPL
MST	Mud Sample Temperature	15.56 DEGC
PMF	Playback Processing	NORMAL
SFNV	Surface Temperature	23 DEGC
SPAV	SP Hard Value	0 MV
SPVO	TVD of Starting Point	0 M
TDD	Date Logged	1999
TIMD	Alternate Index of Tie-In Point	861 M
TVD	TVD of Tie-In Point	861 M

Format: AITH_2REP Vertical Scale: 1/240 Graphics File Created: 27-Feb-1999 01:35

OP System Version: 9C0-413

MCM

HILTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

Speed Corrected - Depth Matched LOG

Input DLIS Files

DEFAULT	HILTD.011	FN:12	PRODUCER	28-Feb-1999 22:58	
DEFAULT	HILTD.010	FN:10	PRODUCER	28-Feb-1999 23:39	2002.6 M 1838.9 M

Output DLIS Files

DEFAULT	HILTD.009	FN:9	PRODUCER	27-Feb-1999 01:35
CUST	HILTD.009	FN:10	CUSTOMER	27-Feb-1999 01:35

Output DLIS Files

DEFAULT	HILTD.011	FN:12	PRODUCER	28-Feb-1999 22:58
CUST	HILTD.011	FN:13	CUSTOMER	28-Feb-1999 23:58

Speed Corrected - Depth Matched LOG

OP System Version: 9C0-413

MCM

HILTB-FTB	SPCW-1131	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

PIP SUMMARY

Time Mark Every 60 S

AIT-H Mud Full Cal (AHMF)
(OHMM)

AITH Temperature (RegC) (AHTCA)
(DEGC)

Std_Res_Resistivity Standoff (SRSO)
(IN)

HGNS Deviation (SDEV)
(DEG)

Gamma Ray (EGGR)
(GAPI)

Std_Res_Penalty Standoff (DSCO)
(IN)

Bit Size (BS)
(MM)

AIT-H Shale/Form Signal Ratio (AHSFR)
(---)

Stack Stretch (STTT)

HTNS Caliber (HCAL)
(IN)

Tension (TENS)
(LBF)

AIT-H QC Fully Calibrated A1 Signal (AHQA2IN1D)
(MM/M)

AIT-H QC Fully Calibrated A2 Signal (AHQA2IN2D)
(MM/M)

AIT-H QC Fully Calibrated A3 Signal (AHQA2IN3D)
(MM/M)

AIT-H QC Fully Calibrated A4 Signal (AHQA2IN4D)
(MM/M)

AIT-H QC Fully Calibrated A5 Signal (AHQA2IN5D)
(MM/M)

AIT-H QC Fully Calibrated A6 Signal (AHQA2IN6D)
(MM/M)

Pe Correction (SIFRA)
(---)

Density Correction (HDRA)
(G/M3)

Hdrn (HDRO)
(---)

Delta Neutron Porosity (DNPO)
(DEC)

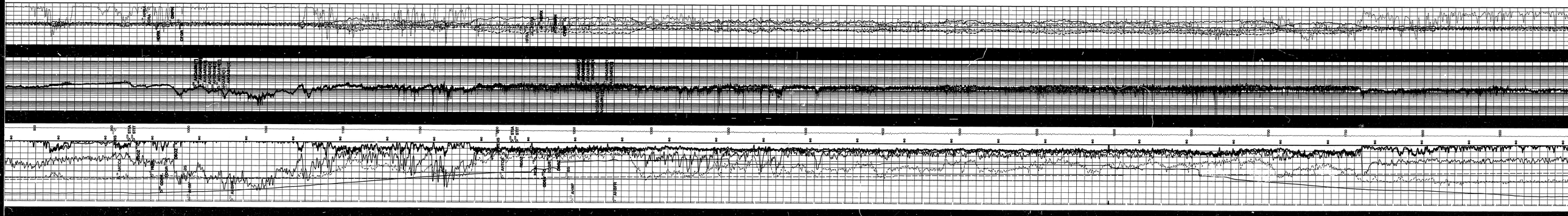
GR Borehole Correction Factor (CFGR)
(---)

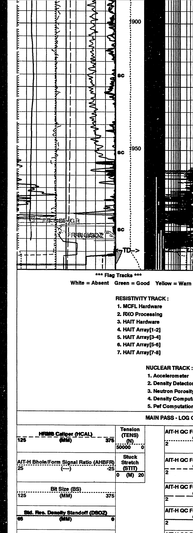
MAIN PASS - LOG QUALITY

*** Flag Tracks ***
White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :
1. MCFL Hardware
2. RDO Processing
3. HAIT Hard Here
4. HAIT Array[1-2]
5. HAIT Array[3-4]
6. HAIT Array[5-6]
7. HAIT Array[7-8]

NUCLEAR TRACK :
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation





*** Trap Tracks ***

White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :
1. MCFL Hardness
2. RXO Processing
3. HMT Hardware
4. HMT Array[T-3]
5. HMT Array[T-5]
6. HMT Array[T-4]
7. HMT Array[T-6]

NUCLEAR TRACK :
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

MAIN PASS - LOG QUALITY

HSNR Caliper (HCAL) (MIN)	Tension (TENS) (MIN)	ATT-H QC Fully Calibrated A1 Signal (AHQA8IN2D)	GR Borehole Correction Factor (CFGR)
125 (MM) 375	0 (LBF) 20000	2 (MM/M) 20000	0.9 (---) 1.5
ATT-H Shale/Form Signal Ratio (AHSR2F)	Shock (SHOC) (BIT)	ATT-H QC Fully Calibrated A2 Signal (AHQA8IN1D)	Delta Hostess Porosity (DHPOR)
20 -20	0 (NO) 20	2 (MM/M) 20000	-0.1 (FV) 0.1
Rft Size (SIZ)		ATT-H QC Fully Calibrated A3 Signal (AHQA8IN2D)	Hdrx (HDRO)
125 (MM) 375		2 (MM/M) 20000	0.5 (---) 1.5
Rft. Res. Density Standoff (RSO)		ATT-H QC Fully Calibrated A4 Signal (AHQA8IN1D)	Density Correction (HDRA)
50 (MM) 0		2 (MM/M) 20000	450 (K/M3) -50
Gamma Ray (CCGR)		ATT-H QC Fully Calibrated A5 Signal (AHQA8IN2D)	Pe Correction (HPRA)
0 (GAPI) 150		2 (MM/M) 20000	2 (---) 5
HSNR Deviation (CDEV)		ATT-H QC Fully Calibrated A6 Signal (AHQA8IN1D)	
0 (DEG) 45		2 (MM/M) 20000	
Rft. Res. Resistivity Standoff (RSO)		ATT-H QC Fully Calibrated A7 Signal (AHQA8IN2D)	
50 (MM) 0		2 (MM/M) 20000	
ATTH Temperature (Degc) (AHTCA)		ATT-H QC Fully Calibrated A8 Signal (AHQA8IN1D)	
25 (DEGC) 125		2 (MM/M) 20000	
ATT.H Hunt Full Cal (AHMF) (CHHUM) 1			

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
AHBSM	ATT-H Shock Correction Mode	2_ComputeStandoff
AHDAT	ATT-H Dash Gap Mode	1_Two
AHENF	ATT-H Unit Hardening Flag (0=Borehole)	Eccentered
AHMSF	ATT-H Unit Hardening Factor	2
AHSTA	ATT-H Tool Standoff	25.4 MM
BHFL	Borehole Fluid Type	WATER
BHT	Bottom Hole Temp	0
BHTF	Bottom Hole Temperature (used in calculations)	80 DEGC
BSAL	Rft Size	222.000 MM
CHSA	Borehole Salinity	-0000.000 PPM
CSCO	Borehole Stability Correction Option	NO
CSDD	Casing & Cement Thickness Correction Option	NO
CSID	Casing Diameter	244.500 MM
CSWT	Casing Weight	53.570 KG/M
DFD	Drilling Fluid Density	1355.00 KG/M3
DFL	Density Hole Correction	60
DOF	Depth Offset Repeat Analysis	0.0 M
FDEP	Form Factor Deviation	0
FNUM	Form Factor Numerator	0
FSAL	Formation Salinity	-00000 PPM
GSCO	Generalized Density Correction Option	NO
GSED	Generalized Density Mode	HCAL
GSEV	Average Angular Deviation of Borehole from Normal	0 DEG
GSID	Generalized Mud Density	0.012227 DCIB
GSMD	Generalized Mud Resistivity Selection	ATH_RESIST
GSTE	Generalized Temperature Selection	HSTS_HTEM
HDAT	Hole Size & Density Source	TSCD_SPEED_CORRECTION
HSCO	Hole Size Correction	YES
HSTI	STI Uses HSLT Accelerometer	YES
LMTH	Trigger for MAXIS Filming Label	TRI
MCCO	Mud Cake Correction	LIMESTONE
MCOO	Mud Correction Option	NO
MCOR	Mud Correction	NATU
MPC	MCFL Processing Operation Mode	CH
MRT	Mud Resistivity Temp	0 DEGC
MWCO	Mud Weight Correction	NO
NMT	HSLT Nuclear Mod Type	NOBARITE
PDEP	Pef Hole Correction	Barite
RBAT	HRDD Depth Sampling Rate	152.4 MM
PTCO	Pressure/Temperature Correction Option	NO
RMFS	Resistivity of Mud Filtrate Sample	0.1000 OHMM
SDAT	Density Source	SOCN
SHT	Surface Hole Temperature	0 DEGC
SOCS	Standoff Distance	3.175 MM
SOCT	Standoff Correction Option	1
STKY	Sticking Tendency	0.523 M
TCD	Total Depth	1996 M
TDD	Total Depth - Driller	1990.00 M
TDL	Total Depth - Logger	1990.00 M

Format: ATT_HILT_LOC Vertical Scale: 1/600 Graphics File Created: 26-Feb-1999 23:59

OP System Version: 9C0-413

MCM

		LDT-D	9C0-413
HILTB-FTB	SPCM-1131	LDT-DTB	9C0-413
DTA-A	9C0-413	DTC-H	9C0-413
SDT-N	9C0-413		

Speed Corrected - Depth Matched LOG

Output DLIS Files

DEFAULT	HILTD .011	FN:13 PRODUCER	26-Feb-1999 23:58
CUST	HILTD .011	FN:13 CUSTOMER	26-Feb-1999 23:58

Calibration and Check Summary

Measurement	Nominal	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase						
Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22						
Thru Cal Magnitude - 1	0	0.0073	0.0122	N/A	N/A	V
Thru Cal Magnitude - 2	0	1.056	1.057	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.6172	0.6231	N/A	N/A	V
Thru Cal Magnitude - 4	0	0.6894	0.6942	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.309	1.319	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.309	1.319	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.801	1.816	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.353	1.360	N/A	N/A	V
Phase - 1	0	50.84	50.92	N/A	N/A	DEG
Phase - 2	0	50.84	51.02	N/A	N/A	DEG
Phase - 3	0	47.28	47.61	N/A	N/A	DEG
Phase - 4	0	46.51	46.47	N/A	N/A	DEG
Phase - 5	0	46.37	46.80	N/A	N/A	DEG
Phase - 6	0	46.37	46.80	N/A	N/A	DEG
Phase - 7	0	34.39	34.57	N/A	N/A	DEG
Phase - 8	0	34.39	34.09	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Auxiliary						
Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22						
ATH Bpv	995.5	994.1	993.4	N/A	N/A	MV
ATH Bpi		0.3000	0.1400	N/A	N/A	MV
ATH Temperature Pos	0.9150	0.9000	0.9150	N/A	N/A	V
ATH Temperature Zero	0	0.0001548	0.0001060	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Test Loop Gain Correction						
Master: 21-DEC-1998 10:54						
Test Loop Gain Magnitude - 0	0	1.036	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.033	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.033	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.027	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	1.010	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9914	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	0.9914	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.011	N/A	N/A	N/A	V
Phase - 0	0	0.4700	N/A	N/A	N/A	DEG
Phase - 1	0	0.4700	N/A	N/A	N/A	DEG
Phase - 2	0	0.02457	N/A	N/A	N/A	DEG
Phase - 3	0	0.001693	N/A	N/A	N/A	DEG
Phase - 4	0	-0.00982	N/A	N/A	N/A	DEG
Phase - 5	0	-0.1154	N/A	N/A	N/A	DEG
Phase - 6	0	-0.1154	N/A	N/A	N/A	DEG
Phase - 7	0	-0.2482	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Sonde Error Correction						
Master: 21-DEC-1998 10:54						
R Sonde Error Correction - 0	0	-58.52	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	149.0	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	113.9	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	24.38	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	24.38	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	10.18	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	10.18	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-0.6874	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	133.3	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	-27.20	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	-39.61	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	22.83	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	22.83	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	11.76	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	11.76	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	0.2173	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Gain Correction						
Master: 21-DEC-1998 10:54						
Coarse - Mag. Real, Imag - 0	0	1.052	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 1	0	1.052	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 2	0	1.052	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 0	0	1.052	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 1	0	1.051	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 2	0	1.051	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stah Measurement Summary						
Before: 26-FEB-1999 20:23						
SD Window Ratio	0.6824	N/A	0.6921	N/A	N/A	%
SD Window Sum	19800	N/A	19360	N/A	N/A	
LD Window Ratio	0.6880	N/A	0.6980	N/A	N/A	CPS
LD Window Sum	11700	N/A	11200	N/A	N/A	
LS Window Ratio	0.2929	N/A	0.2001	N/A	N/A	CPS
LS PM High Voltage (Command)	1440	N/A	1440	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations						
Before: 26-FEB-1999 20:24						
SS PM High Voltage (Command)	2069	N/A	2116	N/A	N/A	V
LS PM High Voltage (Command)	1440	N/A	1440	N/A	N/A	V
LD PM High Voltage (Command)	1850	N/A	1850	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration						
Before: 26-FEB-1999 20:24						
SD Crystal Resolution	13.58	N/A	14.00	N/A	N/A	%
LD Crystal Resolution	8.000	N/A	8.150	N/A	N/A	%
LS Crystal Resolution	11.01	N/A	10.97	N/A	N/A	%
High resolution Integrated Logging Tool-DTS Wellsite Calibration - HSLT Calibration						
Before: 26-FEB-1999 20:40						
Rev SD Resistivity	3875	N/A	3851	N/A	N/A	OHMM
Rev LD Resistivity	3830	N/A	3805	N/A	N/A	OHMM
Rev SD Resistivity	3830	N/A	3805	N/A	N/A	OHMM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - HILT Caliper Calibration						
Before: 26-FEB-1999 20:26						
HILT Caliper Zero Measurement	1004.2	N/A	1004.2	N/A	N/A	MM
HILT Caliper Raw Measurement	304.6	N/A	330.0	N/A	N/A	MM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration						
Before: 26-FEB-1999 20:23						
Gamma Ray Up - Sngl	30.00	N/A	5.564	N/A	N/A	GAPI
Gamma Ray Down - Sngl	196.7	N/A	186.7	N/A	N/A	GAPI
Gamma Ray (Combined)	165.0	N/A	165.0	N/A	N/A	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement						
Before: 26-FEB-1999 20:26 Before: 26-FEB-1999 20:26						
CFTC Background	25.45	N/A	26.68	N/A	N/A	3.816 CPS
CFTC Background	26.29	28.39	28.64	N/A	N/A	4.259 CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration						
Before: 26-FEB-1999 20:22						
Z-Axis Acceleration	1.010	9.809	9.809	N/A	N/A	MS2
High resolution Integrated Logging Tool-DTS Master Calibration - Inversion results						
Master: 21-DEC-1998 10:54						
Rho Aluminum	2696	2603	–	–	–	KM3
Rho Magnesium	1800	1655	–	–	–	KM3
Pe Aluminum	2.540	2.525	–	–	–	
Pe Magnesium	3.650	3.595	–	–	–	
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Deviation Summary						
Before: 26-FEB-1999 20:22						
Rft Average Deviation	0	0.4000	–	–	–	
Rft Max Deviation	0	1.259	–	–	–	
Rft Min Deviation	0	0.2344	–	–	–	
LD Min Deviation	0	0.2344	–	–	–	
LD Average Deviation	0	0.4000	–	–	–	
LD Max Deviation	0	1.259	–	–	–	
High resolution Integrated Logging Tool-DTS Master Calibration - Tank Measurement						
Master: 28-NOV-1998 18:06						
Thermal Real Conv. (Tank)	6021	5964	–	–	–	CPS
Thermal Real Conv. (Tank)	5964	5964	–	–	–	CPS
CNTC/CFTC (Tank)	2.024	–	–	–	–	
Litho Density - D Master Calibration - Background Measurement						
Master: 21-DEC-1998 10:24 Before: 26-FEB-1999 20:25						
LS Background	19.58	19.48	N/A	N/A	1.000	CPS
LD Background	76.87	74.05	N/A	N/A	1.000	CPS
LD Background	57.00	56.87	56.50	N/A	1.000	CPS
SS Background	56.87	56.50	N/A	N/A	0.9900	CPS
SSH Background	18.00	17.32	17.60	N/A	0.9900	CPS
SS2 Background	11.00	11.89	11.71	N/A	0.9900	CPS
Litho Density - D Wellsite Calibration - Third Quality Control Information HV						
Master: 24-FEB-1999 12:24 Before: 26-FEB-1999 20:25						
SSHV Background	1020	1322	1324	N/A	N/A	V
SSHV Background	1300	1309	1511	N/A	N/A	V
Litho Density - D Wellsite Calibration - Detectors Resolution from SSG Measurements						
Master: 24-FEB-1999 12:24 Before: 26-FEB-1999 20:25						
SS Resolution Background	8.000	8.693	8.741	N/A	N/A	%
SD Resolution Background	8.000	8.739	8.751	N/A	N/A	%
Litho Density - D Wellsite Calibration - Caliper Calibration						
Before: 26-FEB-1999 20:04						
Caliper Zero Ring	203.2	N/A	203.1	N/A	N/A	MM
Caliper Large Ring	324.6	N/A	327.9	N/A	N/A	MM
Litho Density - D Master Calibration - Aluminum Measurement						
Master: 24-FEB-1999 12:48						
LL Aluminum	90.00	89.07	–	–	–	CPS
LD Aluminum	139.0	141.1	–	–	–	CPS
LS Aluminum	165.0	163.8	–	–	–	CPS
SS Aluminum	165.0	165.0	–	–	–	CPS
SSH Aluminum	170.0	168.3	–	–	–	CPS
SS2 Aluminum	260.0	261.8	–	–	–	CPS
Litho Density - D Master Calibration - Lithology Measurement						
Master: 24-FEB-1999 13:58						
LL Iron	85.00	82.51	–	–	–	CPS
LD Iron	130.0	129.1	–	–	–	CPS
LS Iron	150.0	150.1	–	–	–	CPS
LITH Iron	30.00	30.53	–	–	–	CPS
SS1 Iron	155.0	156.6	–	–	–	CPS
SS2 Iron	245.0	237.1	–	–	–	CPS
Litho Density - D Master Calibration - Spectrum Quality Ratios						
Master: 24-FEB-1999 13:58						
QRLS Calculated	0.6500	0.6337	–	–	–	
QRLD Calculated	0.6500	0.6500	–	–	–	
QRU Calculated	0.3900	0.3445	–	–	–	
QLIR Calculated	1.500	1.397	–	–	–	
QR Calculated	1.000	1.012	–	–	–	
Scintillation Gamma Ray - N Wellsite Calibration - Detector Calibration						
Before: 26-FEB-1999 20:23						
Gamma Ray Up - Sngl	155.4	N/A	155.4	N/A	N/A	14.13 GAPI
Gamma Ray (Combined)	165.0	N/A	165.0	N/A	N/A	15.00 GAPI

The GLS-XJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 18.8 DEGC
Thermal Housing Size 89.954 MM

High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:
Array Induction Imager-H
Array Induction Sonde
HILT High-Resolution Mechanical Sonde
HILT Rwt-Samma-ray Device
HILT Nuclear Back-Scatter Detector
HILT Nuclear Compensated Detector
HILT Nuclear Long-Spacing Detector
Micro Cylindrically Focused Log Device

Auxiliary Equipment:

ATT - H			
AMS - SA	281		
HRDD - H	1001		
HRDD -	898		
HILT -			
HILT -			
MCFL -			

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Info	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase	DEG	Nominal
	Master	0.6873		0.6830	71.56			
	Before	0.6182			59.55			
	Master	1.248		1.270	59.64			70.00
	Before	1.207			57.98			
	Master	0.6172		0.6830	47.28			66.00
	Before	0.6025			47.61			
	Master	0.6894		0.7040	46.51			66.00
	Before	0.7042			47.04			
	Master	1.309		1.337	45.33			59.00
	Before	1.319			45.80			
	Master	1.309		1.365	34.39			53.00
	Before	1.319			34.09			
	Master	1.353		1.415	34.39			53.00
	Before	1.360			34.57			
		Above: % Nominal	Below: % Nominal		Above: deg Nominal	Below: deg Nominal		

Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	ATT-H SPA Pos MV	Value	Phase	ATT-H SPA Zero MV	Value
Master		994.1	Master		0.1400
Before		993.4	Before		0.1494
Above/Below	Above Nominal	Below Nominal	Above/Below	Above Nominal	Below Nominal

Phase	ATT-H Temperature Pos V	Value	ATT-H Temperature Zero V	Value
Master	0.9000	0.9000	0.0001548	0.0001548
Before	0.9150	0.9150	0.0001060	0.0001060
Above/Below	Above Nominal	Below Nominal	Above/Below	Above Nominal

Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Test Loop Gain Correction

Info	Test Loop Gain Magnitude V	Nominal	Value	Test Loop Gain Phase DEG	Nominal	Value
	Master	1.036	1.036	0.4700	0.4700	0.4700
	Before	1.033	1.033	0.02457	0.02457	0.02457
	Master	1.033	1.033	0.001693	0.001693	0.001693
	Before	1.027	1.027	-0.00982	-0.00982	-0.00982
	Master	1.010	1.010	-0.1154	-0.1154	-0.1154
	Before	0.9914	0.9914	-0.1154	-0.1154	-0.1154
	Master	0.9914	0.9914	-0.2482	-0.2482	-0.2482
	Before	1.011	1.011	N/A	N/A	N/A
	Above/Below	Above Nominal	Below Nominal	Above/Below	Above Nominal	Below Nominal

Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22

Info	Sonde Error Correction	Nominal	Value
	R Sonde Error Correction - 0	-58.52	N/A
	R Sonde Error Correction - 1	149.0	N/A
	R Sonde Error Correction - 2	113.9	N/A
	R Sonde Error Correction - 3	24.38	N/A
	R Sonde Error Correction - 4	24.38	N/A
	R Sonde Error Correction - 5	10.18	N/A
	R Sonde Error Correction - 6	10.18	N/A
	R Sonde Error Correction - 7	-0.6874	N/A
	X Sonde Error Correction - 0	133.3	N/A
	X Sonde Error Correction - 1	-27.20	N/A
	X Sonde Error Correction - 2	-39.61	N/A
	X Sonde Error Correction - 3	22.83	N/A
	X Sonde Error Correction - 4	22.83	N/A
	X Sonde Error Correction - 5	11.76	N/A
	X Sonde Error Correction - 6	11.76	N/A
	X Sonde Error Correction - 7	0.2173	N/A

Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22

Info	Mud Gain Correction	Nominal	Value
	Coarse - Mag. Real, Imag - 0	1.052	N/A
	Coarse - Mag. Real, Imag - 1	1.052	N/A
	Coarse - Mag. Real, Imag - 2	1.052	N/A
	Fine - Mag. Real, Imag - 0	1.052	N/A
	Fine - Mag. Real, Imag - 1	1.051	N/A
	Fine - Mag. Real, Imag - 2	1.051	N/A

Before: 26-FEB-1999 20:23

Info	Stah Measurement Summary	Nominal	Value
	SD Window Ratio	0.6824	N/A
	SD Window Sum	19800	N/A
	LD Window Ratio	0.6880	N/A
	LD Window Sum	11700	N/A
	LS Window Ratio	0.2929	N/A
	LS PM High Voltage (Command)	1440	N/A

Before: 26-FEB-1999 20:24

Info	Photo-multiplier High Voltages Calibrations	Nominal	Value
	SS PM High Voltage (Command)	2069	N/A
	LS PM High Voltage (Command)	1440	N/A
	LD PM High Voltage (Command)	1850	N/A

Before: 26-FEB-1999 20:24

Info	Crystal Quality Resolutions Calibration	Nominal	Value
	SD Crystal Resolution	13.58	N/A
	LD Crystal Resolution	8.000	N/A
	LS Crystal Resolution	11.01	N/A

Before: 26-FEB-1999 20:40

Info	HSLT Calibration	Nominal	Value
	Rev SD Resistivity	3875	N/A
	Rev LD Resistivity	3830	N/A
	Rev SD Resistivity	3830	N/A

Before: 26-FEB-1999 20:26

Info	HILT Caliper Calibration	Nominal	Value
	HILT Caliper Zero Measurement	1004.2	N/A
	HILT Caliper Raw Measurement	304.6	N/A

Before: 26-FEB-1999 20:23

Info	Accelerometer Calibration	Nominal	Value
	Gamma Ray Up - Sngl	30.00	N/A
	Gamma Ray Down - Sngl	196.7	N/A
	Gamma Ray (Combined)	165.0	N/A

Before: 26-FEB-1999 20:26 Before: 26-FEB-1999 20:26

Info	Zero Measurement	Nominal	Value
	CFTC Background	25.45	26.68
	CFTC Background	26.29	28.39

Before: 26-FEB-1999 20:22

Info	Accelerometer Calibration	Nominal	Value
	Z-Axis Acceleration	1.010	9.809

Master: 21-DEC-1998 10:54

Info	Master Calibration - Inversion results	Nominal	Value
	Rho Aluminum	2696	2603
	Rho Magnesium	1800	1655
	Pe Aluminum	2.540	2.525
	Pe Magnesium	3.650	3.595

Before: 26-FEB-1999 20:22

Info	Deviation Summary	Nominal	Value
	Rft Average Deviation	0	0.4000
	Rft Max Deviation	0	1.259
	Rft Min Deviation	0	0.2344
	LD Min Deviation	0	0.2344
	LD Average Deviation	0	0.4000
	LD Max Deviation	0	1.259

Master: 28-NOV-1998 18:06

Info	Tank Measurement	Nominal	Value
	Thermal Real Conv. (Tank)	6021	5964
	Thermal Real Conv. (Tank)	5964	5964
	CNTC/CFTC (Tank)	2.024	–

Master: 21-DEC-1998 10:24 Before: 26-FEB-1999 20:25

Info	Background Measurement	Nominal	Value
	LS Background	19.58	19.48
	LD Background	76.87	74.05
	LD Background	57.00	56.87
	SS Background	56.87	56.50
	SSH Background	18.00	17.32
	SS2 Background	11.00	11.89

Master: 24-FEB-1999 12:24 Before: 26-FEB-1999 20:25

Info	Third Quality Control Information HV	Nominal	Value
	SSHV Background	1020	1322
	SSHV Background	1300	1309

Master: 24-FEB-1999 12:24 Before: 26-FEB-1999 20:25

Info	Detectors Resolution from SSG Measurements	Nominal	Value
	SS Resolution Background	8.000	8.693
	SD Resolution Background	8.000	8.739

Before: 26-FEB-1999 20:04

Info	Caliper Calibration	Nominal	Value
	Caliper Zero Ring	203.2	N/A
	Caliper Large Ring	324.6	N/A

Master: 24-FEB-1999 12:48

Info	Aluminum Measurement	Nominal	Value
	LL Aluminum	90.00	89.07
	LD Aluminum	139.0	141.1
	LS Aluminum	165.0	163.8
	SS Aluminum	165.0	165.0
	SSH Aluminum	170.0	168.3
	SS2 Aluminum	260.0	261.8

Master: 24-FEB-1999 13:58

Info	Lithology Measurement	Nominal	Value
	LL Iron	85.00	82.51
	LD Iron	130.0	129.1
	LS Iron	150.0	150.1
	LITH Iron	30.00	30.53
	SS1 Iron	155.0	156.6
	SS2 Iron	245.0	237.1

Master: 24-FEB-1999 13:58

Info	Spectrum Quality Ratios	Nominal	Value
	QRLS Calculated	0.6500	0.6337
	QRLD Calculated	0.6500	0.6500
	QRU Calculated	0.3900	0.3445
	QLIR Calculated	1.500	1.397
	QR Calculated	1.000	1.012

Before: 26-FEB-1999 20:23

Info	Detector Calibration	Nominal	Value
	Gamma Ray Up - Sngl	155.4	N/A
	Gamma Ray (Combined)	165.0	N/A

Above/Below	Above Nominal	Below Nominal	Above/Below	Above Nominal	Below Nominal
			Above	14.13	GAPI
			Below	15.00	GAPI

5	1.008	[redacted]			0.4700					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			
1	1.024	[redacted]			-0.2340					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			
2	1.024	[redacted]			-0.04187					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			
3	1.027	[redacted]			0.001868					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			
4	1.012	[redacted]			-0.009096					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			
5	0.9917	[redacted]			-0.1154					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			
6	1.004	[redacted]			0.0136					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			
7	1.017	[redacted]			-0.0492					
		0.8000	1.000	1.080	-0.005	0	0.000	3.000		
		Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			

Master: 21-DEC-1989 10:54

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Wellsite Array Induction

Ch	Value	R Sonde Error Correction	Value	X Sonde Error Correction	Value
0	-56.52	[redacted]	133.3	[redacted]	
	224.3	-80.00	119.0	-2850	2250
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
1	149.0	[redacted]	-37.20	[redacted]	
	114.0	159.0	204.0	-625.0	625.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
2	11.51	[redacted]	-58.65	[redacted]	
	65.00	111.0	158.0	-350.0	350.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
3	63.31	[redacted]	-22.21	[redacted]	
	39.00	84.00	89.00	-250.0	250.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
4	24.06	[redacted]	22.65	[redacted]	
	13.00	29.00	35.00	-63.00	63.00
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
5	12.18	[redacted]	11.76	[redacted]	
	4.000	14.00	24.00	-30.00	30.00
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
6	9.657	[redacted]	1.299	[redacted]	
	4.000	14.00	15.00	-30.00	30.00
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
7	-0.6674	[redacted]	0.2173	[redacted]	
	-5.000	0.000	5.000	-20.00	20.00
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 21-DEC-1989 10:54

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Mud Gain Correction

Ch	Value	Coarse - Mag. Rad. Imag.	Value	Fine - Mag. Rad. Imag.	Value
0	1.092	[redacted]	1.091	[redacted]	
	0.8000	1.000	1.400	0.8000	1.000	1.400
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
1	1.092	[redacted]	1.091	[redacted]	
	0.8000	1.000	1.400	0.8000	1.000	1.400
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
2	1.092	[redacted]	1.091	[redacted]	
	0.8000	1.000	1.400	0.8000	1.000	1.400
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 21-DEC-1989 10:54

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Gain Measurement Summary

Phase	SS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Baluns				1.043	Baluns				1.054	Baluns				0.9997
	0.9438	0.9634	1.043			0.9454	0.9648	0.9846			0.9769	0.9969	0.9970	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	
Phase	SS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Baluns				1690	Baluns				1690	Baluns				1440
	1660	1692	1720			1140	1170	1200			1370	1440	1510	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	

Before: 24-FEB-1989 20:24

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Pulse High Voltage Calibration

Phase	SS PH High Voltage (Command)			V
Baluns				2100
	1900	2100	2189	
	Minimum	Nominal	Maximum	

Before: 24-FEB-1989 20:24

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Pulse High Voltage Calibrations

Phase	SS PH High Voltage (Command)			V	Phase	LS PH High Voltage (Command)			V
Baluns				2100	Baluns				1950
	1900	2100	2189			1800	1950	2050	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	

Before: 24-FEB-1989 20:24

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Crystal Oscillator Resolutions Calibration

Phase	SS Crystal Resolution %			Value	Phase	SS Crystal Resolution %			Value	Phase	LS Crystal Resolution %			Value
Baluns				14.00	Baluns				8.776	Baluns				10.97
	12.00	14.00	16.00			6.000	8.776	10.00			10.00	11.00	12.00	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	

Before: 28-FEB-1989 20:24

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
MCFL Calibration

Phase	Rxo SS Resistivity OHMM			Value	Phase	Rxo SS Resistivity OHMM			Value	Phase	Rxo SS Resistivity OHMM			Value
Baluns				3600	Baluns				3604	Baluns				3605
	2800	3600	4500			2800	3600	4500			2800	3600	4500	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	

Before: 28-FEB-1989 20:40

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
MLT Caliper Calibration

Phase	MLT Caliper Zero Measurement MM			Value	Phase	MLT Caliper Plus Measurement MM			Value
Baluns				31.53	Baluns				305.1
	190.5	200.0	254.0			228.6	304.8	381.0	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	

Before: 28-FEB-1989 20:39

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Gamma Ray Calibration

Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray Eq - Bkg GAPI			Value	Phase	Gamma Ray (Calibrated) GAPI			Value
Baluns				9.564	Baluns				136.7	Baluns				146.0
	0.0000	30.00	120.0			76.00	106.7	214.0			130.0	150.0	190.0	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	

Before: 28-FEB-1989 20:23

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Zero Measurement

Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				25.42	Master				29.50
Baluns				26.68	Baluns				29.64
	0.000	25.42	45.00			0.000	29.50	45.00	
	Minimum	Nominal	Maximum			Minimum	Nominal	Maximum	

Master: 28-NOV-1989 18:06 Before: 28-FEB-1989 20:23

High-resolution Integrated Logging Tool-DTS Wellsite Calibration
Wellsite Calibration Summary
Electronics Calibration Check - Sum/Dev

Phase	Delta Accelerator (ACS2	Value
Baluns		0.809
	0.810	10.01
	Minimum	Nominal

Before: 28-FEB-1989 20:22

High-resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Thru Cal Mtrx & Phase

Ch	Phase	Value	Thru Cal Magnitude V	Nominal	Phase DD3	Nominal
0	Master	0.6070	[redacted]	0.6050	81.94	71.00
1	Master	1.245	[redacted]	1.270	50.94	70.00
2	Master	0.6172	[redacted]	0.6230	47.28	85.00
3	Master	0.6984	[redacted]	0.7040	48.81	69.00
4	Master	1.309	[redacted]	1.307	40.33	59.00
5	Master	1.168	[redacted]	1.167	46.04	57.00
6	Master	1.301	[redacted]	1.356	38.45	57.00
7	Master	1.362	[redacted]	1.415	34.59	55.00
		90.00 %	Nominal	140.0 %	45.00	Nominal	Non - 40.00

Master: 21-DEC-1989 10:54

High-resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Sum/Dev

Phase	ATT-R SPA Plus MV	Value	Phase	ATT-R SPA Dev MV	Value
Master		994.1	Master		0.1808
	900.0	1040	1140	80.00	[redacted]	80.00
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
Phase	ATT-R Temperature Plus V	Value	Phase	ATT-R Temperature Zero V	Value
Master		0.5027	Master		0.5031548
	0.4700	0.4750	0.5000	0.0000	[redacted]	0.0500
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 21-DEC-1989 10:54

High-resolution Integrated Logging Tool-DTS Master Calibration
Test Loop Gain Correction

Ch	Value	Test Loop Gain Magnitude V	Nominal	Phase DD3	Nominal
0	1.096	[redacted]	0.4700	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
1	1.029	[redacted]	-0.2340	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
2	1.024	[redacted]	-0.04187	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
3	1.027	[redacted]	0.001868	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
4	1.013	[redacted]	-0.009096	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
5	0.9944	[redacted]	-0.1154	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
6	1.003	[redacted]	0.0135	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
7	1.011	[redacted]	-0.0492	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 21-DEC-1989 10:54

High-resolution Integrated Logging Tool-DTS Master Calibration
Test Loop Gain Correction

Ch	Value	Test Loop Gain Magnitude V	Nominal	Phase DD3	Nominal
0	1.096	[redacted]	0.4700	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
1	1.029	[redacted]	-0.2340	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
2	1.024	[redacted]	-0.04187	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
3	1.027	[redacted]	0.001868	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
4	1.013	[redacted]	-0.009096	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
5	0.9944	[redacted]	-0.1154	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
6	1.003	[redacted]	0.0135	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
7	1.011	[redacted]	-0.0492	0.00	0.000
	0.8000	1.000	1.080	-3.000	0.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 21-DEC-1989 10:54

High-resolution Integrated Logging Tool-DTS Master Calibration
Tank Measurement

Phase	Thermal Noise Corr. (Tank) CPS	Value	Phase	Thermal Fw Corr. (Tank) CPS	Value	Phase	Master Calibration	CNTC/CFTC (Tank)	Value
Master		5564	Master		2094	Master		0.000	2.524
	4000	5000	7000	1800	2000	2200	0.000	2.000	3.000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 28-NOV-1989 18:06

Litho Density - D / Equipment Identification

Primary Equipment:
Nuclear Sources Cartridge — NGC - E — 2707
Powered Gamma Detector — NGD - D
Gamma Source Radioactive — GSR - J — 2050

Auxiliary Equipment:
Density Reliability Sonde — DRS - C — 4069
Powered Gamma Ray Housing — PGH - MXA
Powered Detector Housing — PDH - L — 2959

Litho Density - D Wellsite Calibration
Detectors Resolution From SNS Measurements

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Baluns		9.563	Baluns		9.709
	6.000	8.743	12.00	6.000	8.791	12.00
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 24-FEB-1989 13:24 Before: 28-FEB-1989 20:26

Litho Density - D Wellsite Calibration
Aluminum Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master		99.07	Master		140.1	Master		165.6
	80.00	126.0	180.0	110.0	170.0	230.0	140.0	207.0	270.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
Phase	LITH Aluminum CPS	Value	Phase	SU Aluminum CPS	Value	Phase	SS Aluminum CPS	Value
Master		56.36	Master		105.5	Master		281.9
	30.00	50.00	75.00	80.00	100.0	140.0	200.0	260.0	350.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 24-FEB-1989 13:26

Litho Density - D Wellsite Calibration
Lithology Measurement

Phase	LL Incr. CPS	Value	Phase	LU Incr. CPS	Value	Phase	LS Incr. CPS	Value
Master		92.91	Master		133.1	Master		144.1
	80.00	115.0	160.0	120.0	160.0	200.0	130.0	150.0	170.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
Phase	LITH Incr. CPS	Value	Phase	SDH Incr. CPS	Value	Phase	SDI Incr. CPS	Value
Master		35.53	Master		169.8	Master		227.1
	20.00	30.00	45.00	140.0	170.0	200.0	210.0	240.0	270.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Master: 24-FEB-1989 13:55

Litho Density - D Master Calibration
Aluminum Quality Ratio

Phase	GRLS Calculated	Value	Phase	QRSS Calculated	Value	Phase	QRLS Calculated	Value
Master		0.7008	Master		0.7008	Master		0.7008
	0.6000	0.7000	0.8000	0.6000	0.7000	0.8000	0.6000	0.7000	0.8000
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
Phase	GLR Calculated	Value	Phase	QR Calculated	Value				
Master		1.397	Master		1.397				
	1.200	1.400	1.600	1.200	1.400	1.600			
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum			

Master: 24-FEB-1989 13:58

Scintillation Gamma Ray - N / Equipment Identification

Primary Equipment:
Scintillation Gamma Cartridge — SGC - SA
Scintillation Gamma Detector — SGD - TAA

Auxiliary Equipment:
Scintillation Gamma Housing — SGH - K
Gamma Source Radioactive — GSR - UV — 1072

Scintillation Gamma Ray - N Wellsite Calibration
Gamma Ray Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Eq - Bkg GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Baluns		29.75	Baluns		135.4	Baluns		165.0
	0.0000	120.0	141.3	106.4	139.6	150.0	165.0	180.0
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum

Before: 28-FEB-1989 20:23

COMPANY	SUNCOR ENERGY INC.	BOTTOM LOG INTERVAL	1697.8 m
		SCHLUMBERGER DEPTH	1690 m
WELL	SUNCOR NETLA K-77-60-50-122-30	DEPTH DRILLER	1690 m
FIELD	NETLA	BELLY BUSHING	505.2 m
PROVINCE	NORTHWEST TERRITORIES	DRILL FLOOR	504.8 m
		GROUND LEVEL	518.4 m

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION-RXO
LOG

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES***TVD***

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION-RXO
LOG

LOCATION	60 deg-49', 122 deg-30' (SUR LOCATION)	Elev.: K.B.	825.2 m
	264.98M/, -91.08M (BOT LOCATION)	G.L.	818.4 m
	300/K-77-60.50-122.30/00 (LWI)	D.F.	824.9 m
	Permanent Datum: GROUND LEVEL	Elev.:	818.4 m
	Log Measured From: KELLY BUSHING	6.8 m	above Perm. Datum
	Drilling Measured From: KELLY BUSHING		

API Serial No.	N/A	N/A	N/A	N/A

MUD								
Logging Date	26-FEB-1999							
Run Number	ONE							
Depth Driller	1990 m							
Schlumberger Depth	1990 m							
Bottom Log Interval	1987.6 m							
Top Log Interval	535.5 m							
Casing Driller Size @ Depth	244.500 mm @ 535.5 m							
Casing Schlumberger	535.5 m							
Bit Size	222.000 mm							
Type Fluid In Hole	POTASSIUM SULPHATE							
Density	1205 kg/m3	Viscosity						
Fluid Loss	7.2 cm3	PH	10					
Source Of Sample	FLOWLINE							
RM @ Measured Temperature	0.260 ohm.m @ 16 degC							
RMF @ Measured Temperature	0.190 ohm.m @ 16 degC							
RMC @ Measured Temperature	0.200 ohm.m @ 13 degC							
Source RMF / RMC	MEASURED / MEASURED							
RM @ MRT / RMF @ MRT	0.095 @ 80 / 0.070 @ 80							
Maximum Recorded Temperatures	80 degC		80					
Circulation Stopped / Time	26-FEB-1999	12:30						
Logger On Bottom / Time	27-FEB-1999	1:30						
Unit Number / Location	2028 / GRANDE PRAIRIE							
Recorded By	TONY DANIEL							
Witnessed By	BRIAN HESTER							

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@		@
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@	@		@
RMF @ Measured Temperature	@	@		@
RMC @ Measured Temperature	@	@		@
Source RMF / RMC				
RM @ MRT / RMF @ MRT	@ @	@ @	@ @	@ @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

ALL INTERPRETATIONS, ARE, AND SHALL BE CONSIDERED, OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT, GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES1
OBI1: OBDN-INDUCTION RXO
OBI2: DUAL DENSITY
OBI3: DUAL SPACED
OBI5: LOGNET
OBI6: ACCESS #1

ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST

AT MAN ECCENTERED IN COMPLETE STANDOFF MODE
AT MAN VERTICAL RESOLUTION PRODUCTS OF BHC HARDWARE
BHC RAN CENTERED WITH THREE CMK2 AND ONE MCT-3

RMT-1.29 OHMS @ 15.54 C; RMF-0.30 OHMS @ 18.00 C; RMC-0.21 OHMS @ 15.00 C
STARTED IN HOLE @ 0530, FIRST GR TO BOTTOM @ 0745, LAST GR ON BOTTOM @ 0930
VISCOSITY WAS 60 HIGH, THAT IT WAS NOT MEASURED
MULTIPLE ATTEMPTS MADE AT GETTING LDT INTO ANVIL

PRINTS: 2 FIELD, 5 FINAL
PLOTS: 2 FIELD, 5 FINAL
CREW: T. DONIEN AND D. MOYLES

	RUN 1	RUN 2
SERVICE ORDER #	3002213	
PROGRAM NAME	ARRAY	
FLUID LEVEL	FULL	
LOGGED INTERVAL	START	STOP
	535.5	1990

	RUN 2
SERVICE ORDER #	
PROGRAM NAME	
FLUID LEVEL	
LOGGED INTERVAL	START / STOP

EQUIPMENT DESCRIPTION

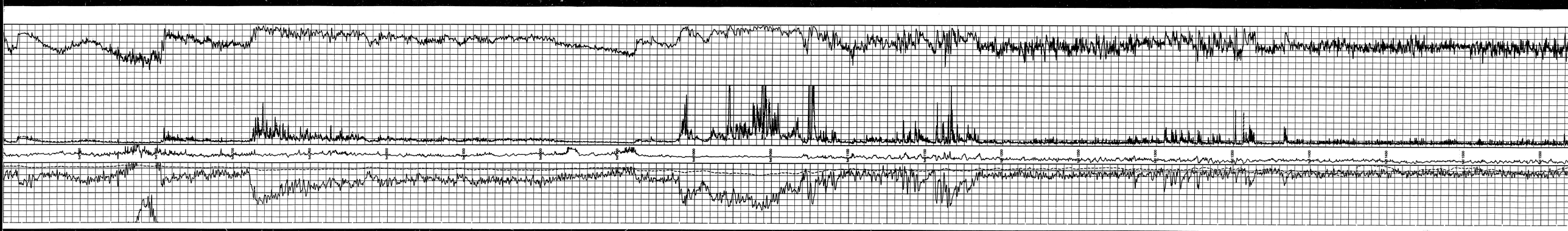
RUN 1 / RUN 2

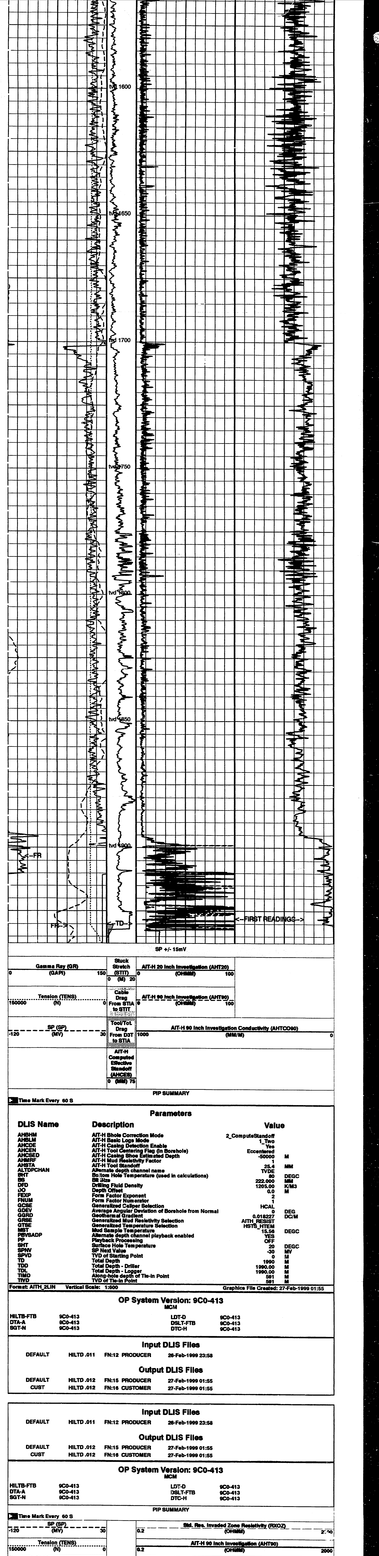
GSR-UW 1072
DCTB
NGS-09

SURFACE EQUIPMENT
WITH DTWA

DOWNHOLE EQUIPMENT

LEH-QT			30.13
ECH-HC			
DTC-H	CTEM		28.97
ECH-HC 9109	TriaStat		29.25
SGC-SA	Gamma Ray		28.83
SGC-SA 21566			28.95
DSLT-FTB			28.33
SGC-SA 3812			
DSLT-HTB			28.85
SGC-SA 3812			
DTA-A			20.37
ECH-WB 8312			
ECH-WB 8312			20.37
AH-107			19.15
AH-90			18.54
LDT-D			17.93
SGC-SA 2999			
SGC-SA 2999			
SGC-SA 2999			
HDIS-A 2566			12.64
AH-107			12.03
HILTB-FTB			
HNGS-B 765			
HNGS-B 765			
SGC-SA 765			
HNGS-E			
HNGS-E			
HDIS-E			
HDIS-E			
HILT-Nod 884			
HILT-Nod 884			
HILT-Nod 884			
HILT-Nod 88			
HILT-Nod 88			
HILT-Nod 88			
SGC-SA 3491			
SGC-SA 3491			
SGC-SA 3491





Time Mark Every 60 S

PIP SUMMARY

Parameters

DLIS Name	Description	Value
AHBHM	AIT-H Borehole Correction Mode	2_ComputeStandoff
AHCAL	AIT-H Caliper Selection	T_Two
AHCDE	AIT-H Casing Detection Enable	Yes
AHCEN	AIT-H Tool Centering Flag (In Borehole)	Eccentered
AHMDD	AIT-H Mud Density Default Value	-9999 M
AHMRF	AIT-H Mud Resistivity Factor	1
AHSTA	AIT-H Tool Standoff	25.4 MM
ATCDPCHAN	Array Induction channel name	TVDC
BIT	Bit Size	8.5 DEGC
BS	Bit Size	222.900 MM
DFD	Drilling Fluid Density	1205.00 K/M3
FEXP	Form Factor Exponent	4.5 M
FFOF	Form Factor Offset	0
FRKM	Form Factor Ramanator	1
GCSC	Generalized Caliper Selection	HCAL
GDEV	Generalized Deviation of Borehole from Normal	0 DEG
GGEO	Geothermal Gradient	0.018227 DC/M
GRBE	Generalized Mud Resistivity Selection	AITH_RESIST
MRT	Mud Resistivity Temperature Selection	19315_FIELD
MST	Mud Sample Temperature	0 DEGC
PBVSADP	Alternate depth channel playback enabled	YES
SHT	Surface Hole Temperature	OFF
SHV	Surface Hole Temperature	20 DEGC
SPMV	SP Null Value	-500 MV
SPVD	TVD of Mud Pump	0 M
TDD	Total Depth - Driller	1900 M
TDL	Total Depth - Logger	1900.00 M
TMD	Total Depth - Measured	1901 M
WBS	Array Induction Tie-In Point	597 M

Format: AITH_RUN Vertical Scale: 1:600 Graphics File Created: 27-Feb-1999 01:55

OP System Version: 9C0-413 MCM

NLTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	285.7-FTB	9C0-413
9GT-H	9C0-413	DTC-H	9C0-413

Input DLIS Files

DEFAULT	HLTD .011	FN:12 PRODUCER	26-Feb-1999 23:58

Output DLIS Files

DEFAULT	HLTD .012	FN:15 PRODUCER	27-Feb-1999 01:55
CUST	HLTD .012	FN:16 CUSTOMER	27-Feb-1999 01:55

Input DLIS Files

DEFAULT	HLTD .011	FN:12 PRODUCER	26-Feb-1999 23:58

Output DLIS Files

DEFAULT	HLTD .012	FN:15 PRODUCER	27-Feb-1999 01:55
CUST	HLTD .012	FN:16 CUSTOMER	27-Feb-1999 01:55

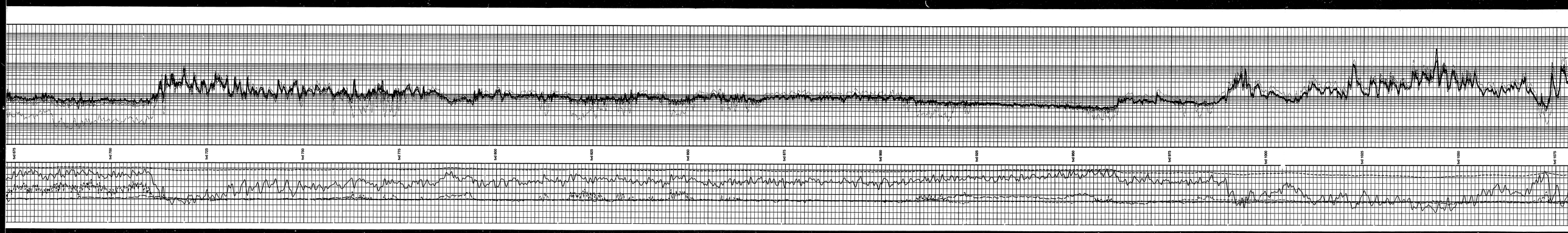
OP System Version: 9C0-413 MCM

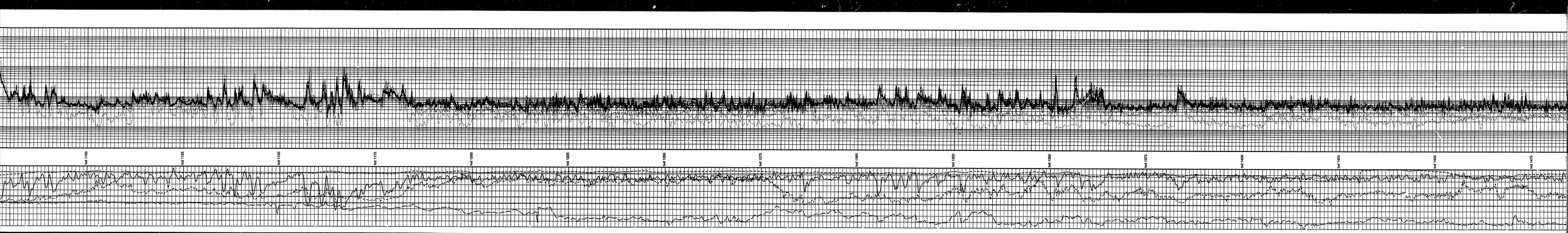
NLTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	285.7-FTB	9C0-413
9GT-H	9C0-413	DTC-H	9C0-413

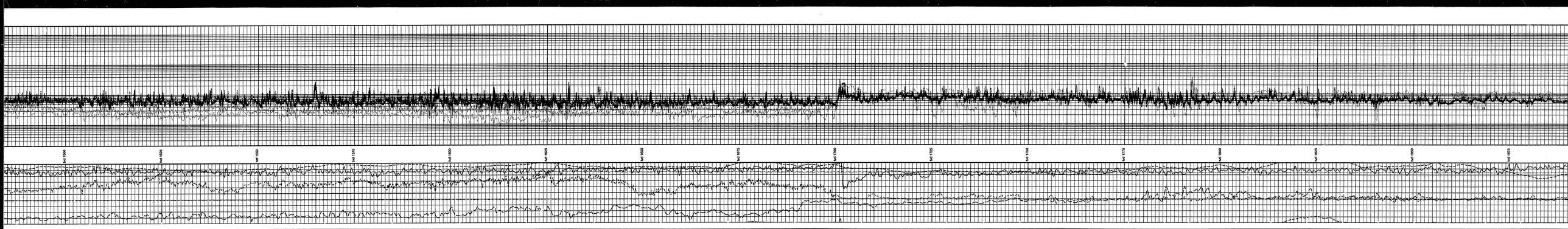
PIP SUMMARY

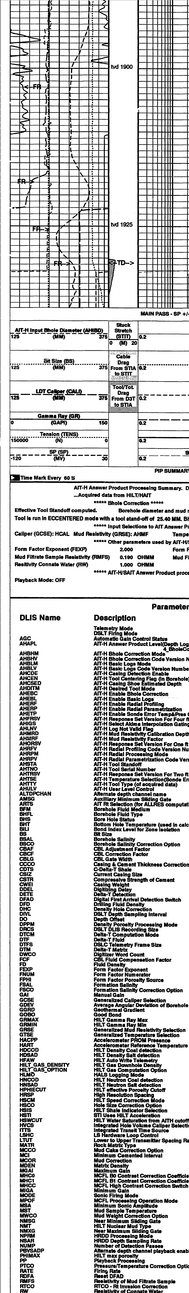
Time Mark Every 60 S

Bit Size (BS)
Gamma Ray (GR)
Tension (TENS)
Caliper (CALI)
Cable Drag From STA To STT
Tool Yrd. Drag From OUT to STA
Stick Slip (SS)
Mud Resistivity (RM) at Tie-In Point
Mud Resistivity (RM) at BHT
Mud Resistivity (RMF) at MRT
Mud Density (MD)
Mud Viscosity (MV)
Mud pH
Mud Chlorides
Fluid Loss
Source of Sample
Rm at Measured Temperature
Rmf at Measured Temperature
Rmc at Measured Temperature
Source of Rmf and Rmc values
Rm at BHT
Time Since Circulation
Time Since Circulation
Max. Recorded Temperature
Equipment Number
Location
Recorded By
Witnessed By
Run Number
Depth Driller
Depth Logger
Bottom Logged Interval
Top Logged Interval
Type Fluid in Hole
Salinity
Density
Viscosity
pH


Ind 675
Ind 700
Ind 725
Ind 750
Ind 775
Ind 800
Ind 825
Ind 850
Ind 875
Ind 900
Ind 925
Ind 950
Ind 975
Ind 1000
Ind 1025
Ind 1050
Ind 1075


Int 1100
Int 1125
Int 1150
Int 1175
Int 1200
Int 1225
Int 1250
Int 1275
Int 1300
Int 1325
Int 1350
Int 1375
Int 1400
Int 1425
Int 1450
Int 1475


Jul 1800
Jul 1825
Jul 1850
Jul 1875
Jul 1900
Jul 1925
Jul 1950
Jul 1975
Jul 2000
Jul 2025
Jul 2050
Jul 2075
Jul 2100
Jul 2125
Jul 2150
Jul 2175
Jul 2200
Jul 2225
Jul 2250
Jul 2275


FR->
FR->
FR->

AIT-H Input Shale Diameter (AHSBD)
125 (MM) 375

Stuck Stretch (STTD)
0 (V) 50

AIT-H 10 Inch Investigation (AHT10)
0.2 (OHMM) 2000

BR Size (BS)
125 (MM) 375

Cable Drag From STA to STIT
0 (FT) 50

AIT-H 20 Inch Investigation (AHT20)
0.2 (OHMM) 2000

LDT Caliper (CALI)
125 (MM) 375

Tool/Tail Drag From TAT to STA
0 (FT) 50

AIT-H 30 Inch Investigation (AHT30)
0.2 (OHMM) 2000

Gamma Ray (GR)
0 (GAPI) 150

AIT-H 60 Inch Investigation (AHT60)
0.2 (OHMM) 2000

Tension (TENS)
150000 (N) 0

AIT-H 90 Inch Investigation (AHT90)
0.2 (OHMM) 2000

SP (SP)
-125 (MV) 20

Std. Res. Invaded Zone Resistivity (RIDZ)
0.2 (OHMM) 2000

PIP SUMMARY

Time Mark Every 30 S

AIT-H Answer Product Processing Summary. Data taken with tool # 281 (AHTNO)
...Acquired data from HILT/HAT
***** Shale Correction *****
Effective Tool Standoff computed.
Borehole diameter and mud res. taken as input (see GCSE and GRSE parameters)
Tool is run in ECCENTERED mode with a tool stand-off of 25.40 MM, BR Size is 222.00 MM.
***** Input Selections to AIT Answer Product processing *****
Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): HTEM Porosity (PPHI): DPHZ
***** Other parameters used by AIT-H/SHT Answer Product processing *****
Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000
Mud Filtrate Sample Resistivity (RMFS) 0.100 OHMM Mud Filtrate Sample Temperature (MFST) 16.111 DEGC
Resistivity Connate Water (RW) 1.000 OHMM
***** AIT-H/SAIT Answer Product processing cont'ol parameters *****
Playback Mode: OFF

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLCP, FTB
	DSLT Filing Mode	SYC
AGC	Automatic Gain Control Status	ON
AHAPL	AIT-H Answer Product Level (Log/View only)	2_ComputedResult
AHBHM	AIT-H Borehole Correction Code Version Number	870
AHBLW	AIT-H Bessel Low Pass	1.2
AHBLY	AIT-H Basic Logs Code Version Number	872
AHCDS	AIT-H Casing Detection Enable	Yes
AHCSD	AIT-H Casing Shoe Depth (Borehole)	Excessive
AHDTD	AIT-H Casing Shoe Extended Depth	-9999 M
AHDTM	AIT-H Deleted Tool Mode	0x00_Log_000
AHEBC	AIT-H Enable Bad Cal Logic	Yes
AHEBL	AIT-H Enable Bessel Logs	Yes
AHERF	AIT-H Enable Radial Profiling	Yes
AHERP	AIT-H Enable Radial Parameterization	Yes
AHFIF	AIT-H Filter Initialization Failure Corr	Yes
AHFSV	AIT-H Response Set Version For Four R Resolution	30.66,23,11
AHGS	AIT-H Gain Selected Aliens/+Ideo Gating	On
AHLNY	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMCV	AIT-H Mud Resistivity Calibration Depth	M
AHMNF	AIT-H Mud Resistivity Factor	1
AHORSV	AIT-H Response Set Version For One R Resolution	30.66,23,11
AHPCM	AIT-H Radial Parameterization Mode	Thin
AHRPV	AIT-H Radial Permeabilities Code Version Number	710
AHSBD	AIT-H Shale Diameter	12.4
AHTDT	AIT-H Tool Deployment	MM
AHTRSV	AIT-H Response Set Version For Two R Resolution	30.66,23,11
AHTSC	AIT-H Temperature Selected(Borehole Error Correction)	Internal
AHTV	AIT-H Tool Type (of encoded data)	HAIT
AHUV	AIT-H Unit Version	1.0
AHVCH	Alternate Depth channel name	TVDE
AIMSG	Auxiliary Minimum Sliding Gate	150 US
AIRM	AIT Radial Model (for ELAS computation)	12_ZoneModel
BHF	Borehole Fluid Medium	LIQUID
BHFL	Borehole Fluid Type	WATER
BHT	Bit Hole Type	OPEN
BIT	Bottom Hole Temperature (used in calculations)	16.111 DEGC
BSJ	Bend Index Level for Zone Isolation	0.5
BSI	Bit Size	222.000 MM
BSOO	Borehole Salinity	-10000.00 PPM
BSOO	Borehole Salinity Correction Option	NO
CBL	CBL Adjustment Factor	0 MM
CBLC	CBL Correction Factor	1.6
CCLO	CCL Offset	0 US
CCOO	Casing & Cement Thickness Correction Option	NO
CDT0	C-Delta-T Static	328.084 US/M
CDTS	C-Delta-T Shale Slow	246.556 US/M
CDTR	Compressive Strength of Cement	0 KPA
CMEI	Casing Weight	53.70 KG/M
CSIZ	Casing Size	0 US
DATE	Date/T Generation	0
DFAO	Digital First Arrival Detection Switch	DSP
DTE	Drilling Fluid Density	1265.00 K/M3
DTO	Drilling Fluid Sampling	60
DVL	DSLT Depth Sampling Interval	0.1
DW	Depth Offset	0.0 M
DWHI	Density Porosity Processing Mode	HIRD
DWO	Delta-T Compaction Option	OFF
DWOM	Delta-T Computation Mode	FULL
DTF	Delta-T Fluid	620.079 US/M
DTFR	Delta-T Matrix Frame Size	182.372 US/M
DTM	Delta-T Matrix	183.372 US/M
DWOO	Digitizer Word Count	0
EC	Fluid Conductivity Cell Constant	10
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	1
FNUM	Form Factor Numerator	1
FSAL	Form Factor Porosity Source	DPHZ
FSAL	Form Factor Salinity	0.00 PPM
FSO	Formation Salinity Correction Option	NO
GAC	Manual Gain	40
GAE	Gamma Ray Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0.000 DEG
GGRO	Geothermal Gradient	0.016227 DC/M
GMA	GR Matrix	0 GAPI
GRMAX	HILT Gamma Ray Max	150 GAPI
GRMIN	HILT Gamma Ray Min	20 GAPI
HAAC	Accelerometer Redundancy Selection	AUTH_REDUNDANT
HACC	Centralized Temperature Selection	HSTS STSS
HACPP	Accelerometer PROM Presence	PRESENT_FILE
HADT	Accelerometer Redundancy Tolerance	0.2
HDEC	HILT Density Cool Detection	2000 K/M3
HDEO	HILT Density Cool Offset	2000 K/M3
HFAV	HILT Auto Velocity	NO
HFLT_GAS_DENSITY	HILT Gas Downhole Density	0 K/M3
HFLT_GAS_OPTION	HILT Gas Downhole Option	OFF
HGAC	HILT Logging Mode	STAC
HHCDC	HILT Neutron Cool detection	0.45 V/V
HHCDO	HILT Neutron Cool Offset	0.45 V/V
HPHSECUT	HILT effective Porosity Cutoff	0.05 V/V
HRSF	High Resolution Spacing	126.997 MM
HSCO	HILT Seed Correction Mode	TSCD_SPEED_CORRECTION
HSCO	HILT Shale Correction Option	YES
HSIS	HILT Shale Indicator Selection	YSI
HSTC	STI Uses HILT Accelerometer	NO
HWWT	HILT Water Saturation from AITH cutoff	100 %
IDPH	Array Induction Processing Selection	AUTOMATIC
IHT	Integrated Transit Time Source	DT
LSHC	LS Hardware Loop Control	DISALLOW
MAC	Manual Acoustic Transmitter Spacing Ratio	0
MCCO	Mech Matrix Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MCDS	Mud Cake Deposition	4.5715 M
MCOS	Mud Correction Offset	59370
MDEN	Matrix Density	2710 K/M3
MHCC	MCFL Cake Clip	200
MHCI	MCFL Hi Contact Correction Coefficient	3.2e-005 OHMS
MHCL	MCFL Hi Control Correction Coefficient	3.2e-005 OHMS
MHCO	MCFL High Control Correction Switch	NO
MHSS	Mineral Scale	0
MOOO	Mode Of Operation	BHC
MPOF	MCFL Processing Operation Mode	ON
MRA	Minimum Acetic Amplitude	13.5573 MV
MRGO	Mud Resistivity Correction	0.0 OHMM
MWCO	Mud Weight Correction Fully Calibrated	NO
NMSG	Near Minimum Sliding Gate	550 US
NOMA	Near Minimum Sliding Gate	NOMATTE US
NPRM	Near Maximum Sliding Gate	1000 US
NPRM	HRDD Processing Mode	20 DEGC
NPSD	HRDD Depth Sampling Rate	25.4 MM
OFFD	Standoff of Detection Passes	0.115
OFFD	Standoff Correction Option	NO
OFFS	Tool Standoff	0.25 MV
OFSB	Standoff Correction at Starting Point	0.25 MV
OFSS	Sonic Porosity Formula	RAYMER_HUNT M
OFSS	Standoff Correction at Starting Point	0 MV
OFSV	SP-VO Table	-30 MV
OPSHALE	HILT SP Shale	0.25 MV
OPSO	TFD of Starting Point	27 FT M
OPVC	TFD of Starting Point	
PSTC	Pad Selection Loop Control	DISALLOW
PSTH	Switch Up Threshold	600
TAZI	Vertical Section Azimuth	0 DEG
TDI	Total Depth	1990.00 M
TDO	Total Depth - Driller	1990.00 M
TDO	Total Depth - Logger	1990.00 M
TIMD	Absolute Depth of Tie-In Point	0 M
TIMD	Measured Depth of Tie-In Point	597 M
TIND	Mud Depth of Tie-In Point	0 M
TIVD	TVD of Tie-In Point	597 M
TSCD	TSCD Enable Corrected Depth Computation	0 M
TSCS	TSCD Enable Speed Correction Sensor	27.432 DEGC
VDL	VDL Manual Gain	20
WASC	Waveform ASC Allow/Disallow	OFF
WDAT	Waveform Data Type	0
WGDT	Waveform Gain Delta-T	0 US/M
WGVL	Waveform Gain Interval	2540 US
WMOD	Waveform Sonic Mode	DETECTOR
WMUD	Mud Weight	1265 K/M3
WTF	Well Trajectory Flag	VERTICAL

Format: AITH_2LOG Vertical Scale: 1:200 Graphics File Created: 27-Feb-1999 01:40

OP System Version: 9C0-413

MCM

HILTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

Speed Corrected - Depth Matched LOG

Input DLIS Files

DEFAULT	HILTD .010	FN:10 PRODUCER	28-Feb-1999 20:39	2002.5 M
				1638.9 M

Output DLIS Files

DEFAULT	HILTD .011	FN:13 PRODUCER	27-Feb-1999 01:40
CUST	HILTD .011	FN:14 CUSTOMER	27-Feb-1999 01:40

Input DLIS Files

DEFAULT	HILTD .011	FN:12 PRODUCER	28-Feb-1999 23:58

Output DLIS Files

DEFAULT	HILTD .012	FN:15 PRODUCER	27-Feb-1999 01:55
CUST	HILTD .012	FN:19 CUSTOMER	27-Feb-1999 01:55

Speed Corrected - Depth Matched LOG

OP System Version: 9C0-413

MCM

HILTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

PIP SUMMARY

Time Mark Every 60 S

AIT-H Mud Full Cal (AHMF)
0 (OHMM) 2000

AITH Temperature (TeqC) (AHTCA)
20 (DEGC) 125

Std. Res. Resistivity Standoff (HRSO)
15 (MM) 0

HGNS Deviation (GDEV)
-5 (DEG) 45

Gamma Ray (EGR)
0 (GAPI) 150

Std. Res. Density Standoff (DSO)
0 (MM) 0

BR Size (BS)
125 (MM) 375

AIT-H QC Fully Calibrated A3 Signal (AHQA3M1D)
2 (MM/M) 20000

AIT-H QC Fully Calibrated A4 Signal (AHQA4M1D)
2 (MM/M) 20000

AIT-H QC Fully Calibrated A5 Signal (AHQA5M1D)
2 (MM/M) 20000

AIT-H QC Fully Calibrated A6 Signal (AHQA6M1D)
2 (MM/M) 20000

AIT-H QC Fully Calibrated A7 Signal (AHQA7M1D)
2 (MM/M) 20000

AIT-H QC Fully Calibrated A8 Signal (AHQA8M1D)
2 (MM/M) 20000

AIT-H QC Fully Calibrated A9 Signal (AHQA9M1D)
2 (MM/M) 20000

AIT-H QC Fully Calibrated A10 Signal (AHQA10M1D)
2 (MM/M) 20000

Pe Correction (HPAL)
-3 (—) 2

Density Correction (HDRA)
400 (K/M3) -50

Hdrx (HDRX)
0.5 (—) 1.5

Delta Neutron Porosity (DNPH)
0.1 (V/V) -0.1

GR Borehole Correction Factor (CGR)
0.5 (—) 1.5

AIT-H Shale/Form Signal Ratio (AHSFR)
0 (—) 20

Stuck Stretch (STTD)
0 (V) 50

Tension (TENS)
150000 (N) 0

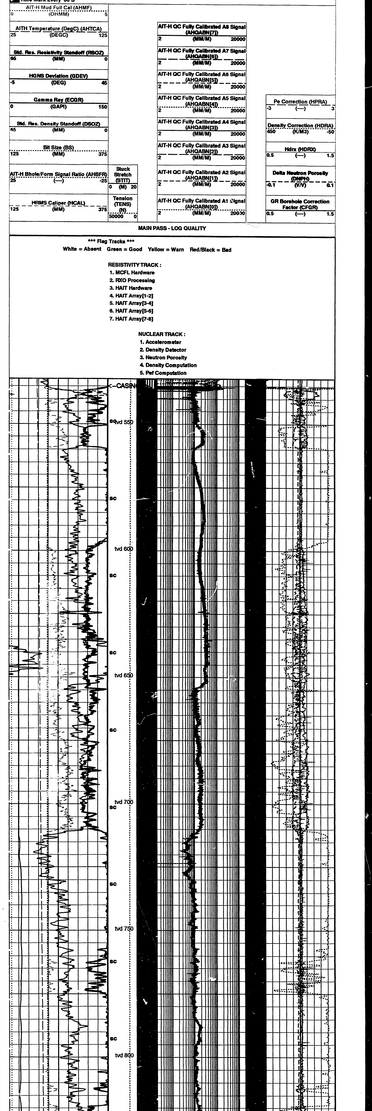
HRMS Caliper (HCAL)
125 (MM) 375

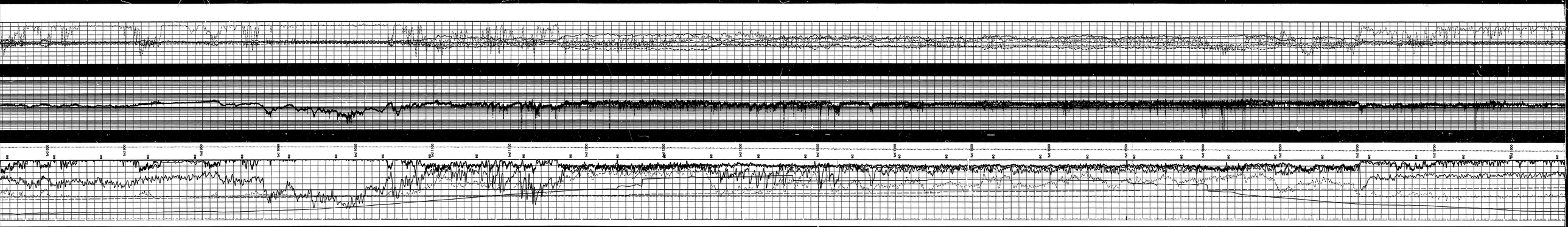
MAIN PASS - LOG QUALITY

*** Flag Tracks ***
White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :
1. MCFL Hardware
2. RIDO Processing
3. HAIT Hardware
4. HAIT Array[1-12]
5. HAIT Array[3-6]
6. HAIT Array[5-8]
7. HAIT Array[7-9]

NUCLEAR TRACK :
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation







*** Rag Tracks ***
White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :
1. MCFL Hardness
2. R90 Processing
3. HAT Hardware
4. HAT Array[1-2]
5. HAT Array[3-4]
6. HAT Array[5-6]
7. HAT Array[7-8]

NUCLEAR TRACK :
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

MAIN PASS - LOG QUALITY

HSNR Caliper (HSCAL)	Tension (TENS)	ATI-H GC Fully Calibrated A1 Signal (AHGAIN01)	GR Borehole Correction Factor (CFGR)
125 (MIN) 375	0 (V) 50000 0	1 (MIN) 20000	0.5 (---) 1.5
ATI-H Shale/Form Signal Ratio (AHSFR)	Slack Stretch (STTT)	ATI-H GC Fully Calibrated A2 Signal (AHGAIN02)	Delta Neutron Porosity (DNPO)
25 (---) 225	0 (M) 20	2 (MIN) 20000	-0.1 (V/V) 0.1
Slt Size (SS)		ATI-H GC Fully Calibrated A3 Signal (AHGAIN03)	Hdrx (HDRX)
125 (MIN) 375		3 (MIN) 20000	0.5 (---) 1.5
Std. Res. Density Standoff (DSO2)		ATI-H GC Fully Calibrated A4 Signal (AHGAIN04)	Density Correction (HDRA)
00 (MM) 0		4 (MIN) 20000	400 (K/M3) -32
Gamma Ray (EGSR)		ATI-H GC Fully Calibrated A5 Signal (AHGAIN05)	Pe Correction (HPHA)
0 (GAPI) 150		5 (MIN) 20000	-3 (---) 3
HGNS Deviation (SDEV)		ATI-H GC Fully Calibrated A6 Signal (AHGAIN06)	
-5 (MDG) 40		6 (MIN) 20000	
Std. Res. Resistivity Standoff (RSO2)		ATI-H GC Fully Calibrated A7 Signal (AHGAIN07)	
00 (MM) 0		7 (MIN) 20000	
ATI Temperature (DegC) (AHTCA)		ATI-H GC Fully Calibrated A8 Signal (AHGAIN08)	
25 (DEGC) 125		8 (MIN) 20000	
ATI-H Mud Full Cal (AHMF)			
(OHMM)			

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
ANHHM	ATI-H Shale Correction Mode	2_ComputedStandoff
ANDLM	ATI-H Static Logic Mode	1_Two
ANDNM	ATI-H Density Type (In Borehole)	Eccentered
ANMRF	ATI-H Mud Resistivity Factor	1
AHSTA	ATI-H Tool Standoff	25.4 MM
ALTSPCHAN	Alternate depth channel name	TVDE
BHOL	Borehole Fluid Type	WATER
SHS	Borehole Salinity	0 PPM
SHT	Borehole Temperature (used in calculations)	0 DEGC
BSAL	Bit Size	222.000 MM
CHLS	Borehole Salinity	0.00000 PPM
CSCO	Borehole Salinity Correction Option	NO
CSDO	Casing & Cement Thickness Correction Option	NO
CSTD	Casing Diameter	244.500 MM
CWEI	Casing Weight	53.70 KG/M
DFD	Drilling Fluid Density	1.760 K/M3
DFC	Density Hole Correction	0
DOH	Depth Offset	0.0 M
EKBF	Kelly Bushing Elevation	0
FNUM	Form Factor Resistivity	2
FBAL	Formation Salinity	0 PPM
GCOR	Gravel Pack Correction Option	NO
GDCM	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDMD	Geodetic Declination	0.018227 DEGM
GRSD	Generalized Mud Resistivity Selection	ATI1_RESIST
GTSE	Generalized Temperature Selection	HSNR_TEMP
HBCM	HNGS Borehole Correction Key	TSCD_SPEED_CORRECTION
HSCO	Hole Size Correction Option	YES
HSIZ	Hole Size Correction	222.000 MM
MATN	Rock Matrix Name	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MCTY	Mud Cake Type	NATU
MET	MCFL Processing Operation Mode	CM
MSTD	Mud Sample Temperature	193.00 DEGC
NMCO	Neutron Mud Correction	NO
NPIM	HNGS Neutron Mod Type	NOSANITE
NPRM	HNGS Density Mode	SLOW
RSCALE	HNGS Depth Sampling Rate	25.4 MM
PRIVSADP	Alternate depth channel playback enabled	YES
PTD	Pressure Type	SEA
PTOO	Pressure/Temperature Correction Option	NO
RMFS	Resistivity of Mud Filtrate Sample	0.1900 OHMM
SDT	Surface Data Type	SOCS
SOCT	Surface Hole Temperature	20 DEGC
SOCN	Standoff Distance	3.175 MM
SOCO	Standoff Correction Option	NO
SPHO	TVD of Starting Point	0 M
TDD	Total Depth - Driller	1900 M
TDL	Total Depth - Logger	1900.00 M
TMAD	Time Mud Was Last At Tie-In Point	1990.00 M
TVD	TVD of Tie-In Point	891 M

Format: AIT_HILT_LQC Vertical Scale: 1:900 **Graphics File Created: 27-Feb-1999 01:55**

OP System Version: 9C0-413

MCM

HILTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	LDT-D-FTB	9C0-413
5IGT-N	9C0-413	DTC-H	9C0-413

Speed Corrected - Depth Matched LOG

Input DLIS Files

DEFAULT	HILTD .011	FN:12 PRODUCER	26-Feb-1999 23:58

Output DLIS Files

DEFAULT	HILTD .012	FN:15 PRODUCER	27-Feb-1999 01:55
CUST	HILTD .012	FN:16 CUSTOMER	27-Feb-1999 01:55

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Thru Cal Map. & Phase							
Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:20							
Thru Cal Map/Amp - 0	0	0.6079	0.6122	N/A	N/A	N/A	V
Thru Cal Map/Amp - 1	0	0.6722	0.6771	N/A	N/A	N/A	V
Thru Cal Map/Amp - 2	0	0.6172	0.6231	N/A	N/A	N/A	V
Thru Cal Map/Amp - 3	0	0.6994	0.7042	N/A	N/A	N/A	V
Thru Cal Map/Amp - 4	0	1.308	1.319	N/A	N/A	N/A	V
Thru Cal Map/Amp - 5	0	1.891	1.910	N/A	N/A	N/A	V
Thru Cal Map/Amp - 6	0	1.553	1.567	N/A	N/A	N/A	V
Thru Cal Map/Amp - 7	0	1.353	1.360	N/A	N/A	N/A	V
Phase - 0	0	51.94	52.53	N/A	N/A	N/A	DEG
Phase - 1	0	46.51	47.04	N/A	N/A	N/A	DEG
Phase - 2	0	47.26	47.81	N/A	N/A	N/A	DEG
Phase - 3	0	46.51	47.04	N/A	N/A	N/A	DEG
Phase - 4	0	45.93	46.45	N/A	N/A	N/A	DEG
Phase - 5	0	38.47	38.59	N/A	N/A	N/A	DEG
Phase - 6	0	34.09	34.09	N/A	N/A	N/A	DEG
Phase - 7	0	34.62	34.91	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Auxiliary							
Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:20							
AT-H SPA Plus	990.5	994.1	993.4	N/A	N/A	N/A	MV
AT-H SPA Zero	0	0.5000	141.5	N/A	N/A	N/A	MV
AT-H Temperature Plus	0.9100	0.9007	0.9000	N/A	N/A	N/A	V
AT-H Temperature Zero	0	0.0000	0.000100	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Teel Loop Gain Correction							
Master: 21-DEC-1998 10:54							
Teel Loop Gain Magnitude - 0	1	1.026	N/A	N/A	N/A	N/A	V
Teel Loop Gain Magnitude - 1	1	1.026	N/A	N/A	N/A	N/A	V
Teel Loop Gain Magnitude - 2	1	1.024	N/A	N/A	N/A	N/A	V
Teel Loop Gain Magnitude - 3	1	1.027	N/A	N/A	N/A	N/A	V
Teel Loop Gain Magnitude - 4	1	1.014	N/A	N/A	N/A	N/A	V
Teel Loop Gain Magnitude - 5	1	0.9914	N/A	N/A	N/A	N/A	V
Teel Loop Gain Magnitude - 6	1	1.003	N/A	N/A	N/A	N/A	V
Teel Loop Gain Magnitude - 7	1	1.011	N/A	N/A	N/A	N/A	V
Phase - 0	0	0.4720	N/A	N/A	N/A	N/A	DEG
Phase - 1	0	0.0000	N/A	N/A	N/A	N/A	DEG
Phase - 2	0	-0.04197	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	0.000992	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	-0.04197	N/A	N/A	N/A	N/A	DEG
Phase - 5	0	0.4154	N/A	N/A	N/A	N/A	DEG
Phase - 6	0	0.3100	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	0.2462	N/A	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Sonde Error Correction							
Master: 21-DEC-1998 10:54							
R Sonde Error Correction - 0	0	-68.52	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	149.3	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	113.1	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	24.04	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	12.19	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	-68.52	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	-0.6614	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	133.3	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	-27.20	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	-39.61	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	-22.85	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	22.85	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	11.78	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	27.20	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	0.2170	N/A	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Cell Correction							
Master: 21-DEC-1998 10:54							
Coarse - Meg, Real, Imag - 0	0	1.052	N/A	N/A	N/A	N/A	
Coarse - Meg, Real, Imag - 1	0	1.052	N/A	N/A	N/A	N/A	
Coarse - Meg, Real, Imag - 2	0	1.052	N/A	N/A	N/A	N/A	
Fine - Meg, Real, Imag - 0	0	1.051	N/A	N/A	N/A	N/A	
Fine - Meg, Real, Imag - 1	0	1.051	N/A	N/A	N/A	N/A	
Fine - Meg, Real, Imag - 2	0	1.051	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Summary							
Master: 21-DEC-1998 10:24							
SS Window Ratio		0.9894	N/A	0.9901	N/A	N/A	
SS Window Sum		16900	N/A	16900	N/A	N/A	CPS
SS Window Ratio		0.4600	N/A	0.4600	N/A	N/A	
SS Window Ratio		0.1700	N/A	0.1700	N/A	N/A	CPS
LS Window Ratio		0.7200	N/A	0.7200	N/A	N/A	
LS Window Ratio		1440	N/A	1440	N/A	N/A	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations							
Before: 26-FEB-1999 20:24							
SS PM High Voltage (Command)	2069	N/A	2110	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1958	N/A	1995	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1992	N/A	1955	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration							
Before: 26-FEB-1999 20:24							
SS Crystal Resolution	13.58	N/A	14.00	N/A	N/A	N/A	%
SS Crystal Resolution	14.80	N/A	9.178	N/A	N/A	N/A	%
LS Crystal Resolution	11.01	N/A	10.97	N/A	N/A	N/A	%
High resolution Integrated Logging Tool-DTS Wellsite Calibration - MCFL Calibration							
Before: 26-FEB-1999 20:40							
Rxo 01 Resistivity	3878	N/A	3851	N/A	N/A	N/A	OHMM
Rxo 01 Resistivity	3930	N/A	3904	N/A	N/A	N/A	OHMM
Rxo 01 Resistivity	3930	N/A	3904	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - HLT Caliper Calibration							
Before: 26-FEB-1999 20:08							
HLT Caliper Zero Measurement	203.2	N/A	218.3	N/A	N/A	N/A	MM
HLT Caliper Plus Measurement	304.8	N/A	320.0	N/A	N/A	N/A	MM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Calibration							
Before: 26-FEB-1999 20:23							
Gamma Ray Background	35.00	N/A	5.564	N/A	N/A	N/A	GAPI
Gamma Ray Calibrated	150.0	N/A	150.0	N/A	N/A	17.00	GAPI
Gamma Ray Calibrated	150.0	N/A	150.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement							
Master: 21-DEC-1998 10:06 Before: 26-FEB-1999 20:23							
CNTC Background	25.40	25.40	26.66	N/A	N/A	3.810	CPS
CFTC Background	25.40	28.58	28.64	N/A	N/A	4.258	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration							
Before: 26-FEB-1999 20:22							
Z-Axis Acceleration	9.810	N/A	9.809	N/A	N/A	N/A	M/S2
High resolution Integrated Logging Tool-DTS Master Calibration - Inversion results							
Master: 23-FEB-1999 10:04							
Rho Aluminum	2598	2602	--	--	--	--	K/M3
Rho Magnesium	1666	1663	--	--	--	--	K/M3
Pe Aluminum	2.503	2.503	--	--	--	--	
Pe Magnesium	3.600	3.604	--	--	--	--	
High resolution Integrated Logging Tool-DTS Master Calibration - Deviation Summary							
Master: 23-FEB-1999 10:04							
SS Average Deviation	0	0.4005	--	--	--	--	%
SS Max Deviation	0	1.089	--	--	--	--	%
SS Average Deviation	0	0.7344	--	--	--	--	%
LS Max Deviation	0	1.503	--	--	--	--	%
LS Average Deviation	0	0.8479	--	--	--	--	%
LS Max Deviation	0	1.919	--	--	--	--	%
High resolution Integrated Logging Tool-DTS Master Calibration - Tank Measurement							
Master: 23-FEB-1999 10:04							
Thermal Near Corr. (Tank)	6021	5994	--	--	--	--	CPS
Thermal Far Corr. (Tank)	2793	2784	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.324	--	--	--	--	
Lithe Density - D Wellsite Calibration - Background Measurement							
Master: 24-FEB-1999 10:24 Before: 26-FEB-1999 20:23							
LL Background	20.00	19.68	19.47	N/A	N/A	1.000	CPS
LS Background	57.00	56.83	56.93	N/A	N/A	1.000	CPS
LU Background	57.00	57.00	56.93	N/A	N/A	1.000	CPS
LTH Background	5.500	5.573	5.596	N/A	N/A	0.5000	CPS
SS1 Background	13.00	13.00	17.42	N/A	N/A	0.5000	CPS
SS2 Background	11.00	11.66	11.71	N/A	N/A	0.5000	CPS
Lithe Density - D Wellsite Calibration - Tool Quality Control Information HV							
Master: 24-FEB-1999 10:24 Before: 26-FEB-1999 20:23							
Thermal Near Corr. (Tank)	1320	1324	N/A	N/A	N/A	V	
SSHV Background	1500	1505	1511	N/A	N/A	V	
Lithe Density - D Wellsite Calibration - Detectors Resolution From SNS Measurements							
Master: 24-FEB-1999 10:24 Before: 26-FEB-1999 20:23							
SS Resolution Background	8.660	8.693	8.741	N/A	N/A		
SS Resolution Background	8.660	8.709	8.751	N/A	N/A		
Lithe Density - D Wellsite Calibration - Caliper Calibration							
Before: 26-FEB-1999 20:24							
Caliper Large Ring	203.2	N/A	203.1	N/A	N/A	MM	
Caliper Large Ring	304.8	N/A	327.9	N/A	N/A	MM	
Lithe Density - D Master Calibration - Aluminum Measurement							
Master: 24-FEB-1999 10:48							
LL Aluminum	90.00	93.07	--	--	--	--	CPS
LU Aluminum	130.0	141.1	--	--	--	--	CPS
LS Aluminum	155.0	163.6	--	--	--	--	CPS
SS1 Aluminum	175.0	185.2	--	--	--	--	CPS
SS1 Aluminum	175.0	185.2	--	--	--	--	CPS
SS2 Aluminum	260.0	261.6	--	--	--	--	CPS
Lithe Density - D Master Calibration - Lithology Measurement							
Master: 24-FEB-1999 13:55							
LL Iron	60.00	62.51	--	--	--	--	CPS
LU Iron	120.0	123.1	--	--	--	--	CPS
LS Iron	150.0	151.1	--	--	--	--	CPS
LTH Iron	30.00	30.52	--	--	--	--	CPS
SS1 Iron	155.0	165.8	--	--	--	--	CPS
SS2 Iron	245.0	237.1	--	--	--	--	CPS
Lithe Density - D Master Calibration - Spectrum Quality Ratios							
Master: 24-FEB-1999 13:56							
CPLS Calculated	0.4500	0.6507	--	--	--	--	
CPLS Calculated	0.4500	0.6507	--	--	--	--	
CPU Calculated	0.2000	0.2482	--	--	--	--	
CUR Calculated	1.390	1.397	--	--	--	--	
CUR Calculated	1.390	1.412	--	--	--	--	
Scintillation Gamma Ray - N Wellsite Calibration - Detector Calibration							
Before: 26-FEB-1999 20:23							
Gamma Ray (Jig - Big)	155.4	N/A	155.4	N/A	N/A	14.13	GAPI
Gamma Ray (Calibrated)	150.0	N/A	150.0	N/A	N/A	10.00	GAPI

The GLS-U source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 18.8 DEGC.
Thermal Hosing Size 83.954 MM.

High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:		AT-H	
Array Induction Tool - H		AHIS - MA	261
Array Induction Sonde		HNNS - S	664
HILT Non-Resolution Mechanical Sonde		HRID	666
HILT Rxo Gamma-ray Device		HILT	
HILT Rxo Pad Mechanical Detector		HILT -	
HILT Nuclear Short-Spacing Detector		HILT -	
HILT Nuclear Long-Spacing Detector		HILT -	
Micro Cylindrically Focused Log Device		MCFL -	

Auxiliary Equipment:

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Map & Phase

Mr.	Phase	Value	Thru-Cal Map/Amp V	Nominal	Value	Phase DEG	Nominal
	Master	0.6079		0.6080	51.94		71.00
	Before	0.6122			52.53		
	Master	1.246		1.270	50.84		73.00
	Before	1.287			51.52		
	Master	0.6172		0.6250	47.26		69.00
	Before	0.6231			47.81		
	Master	0.6994		0.7040	46.51		65.00
	Before	0.7042			47.04		
	Master	1.308		1.307	45.93		59.00
	Before	1.319			46.45		
	Master	1.895		1.906	38.47		57.00
	Before	1.912			38.59		
	Master	1.561		1.569	34.09		57.00
	Before	1.574			34.09		
	Master	1.353		1.418	34.62		53.00
	Before	1.360			34.90		

Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:20

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

AT-H SPA Plus	990.5	994.1	993.4	N/A	N/A	N/A
AT-H SPA Zero	0	0.5000	141.5	N/A	N/A	N/A
AT-H Temperature Plus	0.9100	0.9007	0.9000	N/A	N/A	N/A
AT-H Temperature Zero	0	0.0000	0.000100	N/A	N/A	N/A

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Teel Loop Gain Correction

Teel Loop Gain Magnitude - 0	1	1.026	N/A	N/A	N/A	N/A
Teel Loop Gain Magnitude - 1	1	1.026	N/A	N/A	N/A	N/A
Teel Loop Gain Magnitude - 2	1	1.024	N/A	N/A	N/A	N/A
Teel Loop Gain Magnitude - 3	1	1.027	N/A	N/A	N/A	N/A
Teel Loop Gain Magnitude - 4	1	1.014	N/A	N/A	N/A	N/A
Teel Loop Gain Magnitude - 5	1	0.9914	N/A	N/A	N/A	N/A
Teel Loop Gain Magnitude - 6	1	1.003	N/A	N/A	N/A	N/A
Teel Loop Gain Magnitude - 7	1	1.011	N/A	N/A	N/A	N/A
Phase - 0	0	0.4720	N/A	N/A	N/A	N/A
Phase - 1	0	0.0000	N/A	N/A	N/A	N/A
Phase - 2	0	-0.04197	N/A	N/A	N/A	N/A
Phase - 3	0	0.000992	N/A	N/A	N/A	N/A
Phase - 4	0	-0.04197	N/A	N/A	N/A	N/A
Phase - 5	0	0.4154	N/A	N/A	N/A	N/A
Phase - 6	0	0.3100	N/A	N/A	N/A	N/A
Phase - 7	0	0.2462	N/A	N/A	N/A	N/A

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Sonde Error Correction

R Sonde Error Correction - 0	0	-68.52	N/A	N/A	N/A	N/A
R Sonde Error Correction - 1	0	149.3	N/A	N/A	N/A	N/A
R Sonde Error Correction - 2	0	113.1	N/A	N/A	N/A	N/A
R Sonde Error Correction - 3	0	24.04	N/A	N/A	N/A	N/A
R Sonde Error Correction - 4	0	12.19	N/A	N/A	N/A	N/A
R Sonde Error Correction - 5	0	-68.52	N/A	N/A	N/A	N/A
R Sonde Error Correction - 6	0	-0.6614	N/A	N/A	N/A	N/A
R Sonde Error Correction - 7	0	133.3	N/A	N/A	N/A	N/A
X Sonde Error Correction - 0	0	-27.20	N/A	N/A	N/A	N/A
X Sonde Error Correction - 1	0	-39.61	N/A	N/A	N/A	N/A
X Sonde Error Correction - 2	0	-22.85	N/A	N/A	N/A	N/A
X Sonde Error Correction - 3	0	22.85	N/A	N/A	N/A	N/A
X Sonde Error Correction - 4	0	11.78	N/A	N/A	N/A	N/A
X Sonde Error Correction - 5	0	27.20	N/A	N/A	N/A	N/A
X Sonde Error Correction - 6	0	0.2170	N/A	N/A	N/A	N/A

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Cell Correction

Coarse - Meg, Real, Imag - 0	0	1.052	N/A	N/A	N/A	N/A
Coarse - Meg, Real, Imag - 1	0	1.052	N/A	N/A	N/A	N/A
Coarse - Meg, Real, Imag - 2	0	1.052	N/A	N/A	N/A	N/A
Fine - Meg, Real, Imag - 0	0	1.051	N/A	N/A	N/A	N/A
Fine - Meg, Real, Imag - 1	0	1.051	N/A	N/A	N/A	N/A
Fine - Meg, Real, Imag - 2	0	1.051	N/A	N/A	N/A	N/A

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Summary

SS Window Ratio	0.9894	N/A	0.9901	N/A	N/A	
SS Window Sum	16900	N/A	16900	N/A	N/A	CPS
SS Window Ratio	0.4600	N/A	0.4600	N/A	N/A	
SS Window Ratio	0.1700	N/A	0.1700	N/A	N/A	CPS
LS Window Ratio	0.7200	N/A	0.7200	N/A	N/A	
LS Window Ratio	1440	N/A	1440	N/A	N/A	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations

SS PM High Voltage (Command)	2069	N/A	2110	N/A	N/A	V
SS PM High Voltage (Command)	1958	N/A	1995	N/A	N/A	V
LS PM High Voltage (Command)	1992	N/A	1955	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration

SS Crystal Resolution	13.58	N/A	14.00	N/A	N/A	%
SS Crystal Resolution	14.80	N/A	9.178	N/A	N/A	%
LS Crystal Resolution	11.01	N/A	10.97	N/A	N/A	%

High resolution Integrated Logging Tool-DTS Wellsite Calibration - MCFL Calibration

Rxo 01 Resistivity	3878	N/A	3851	N/A	N/A	OHMM
Rxo 01 Resistivity	3930	N/A	3904	N/A	N/A	OHMM
Rxo 01 Resistivity	3930	N/A	3904	N/A	N/A	OHMM

High resolution Integrated Logging Tool-DTS Wellsite Calibration - HLT Caliper Calibration

HLT Caliper Zero Measurement	203.2	N/A	218.3	N/A	N/A	MM
HLT Caliper Plus Measurement	304.8	N/A	320.0	N/A	N/A	MM

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Calibration

Gamma Ray Background	35.00	N/A	5.564	N/A	N/A	GAPI
Gamma Ray Calibrated	150.0	N/A	150.0	N/A	N/A	17.00
Gamma Ray Calibrated	150.0	N/A	150.0	N/A	N/A	15.00

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement

CNTC Background	25.40	25.40	26.66	N/A	N/A	3.810
CFTC Background	25.40	28.58	28.64	N/A	N/A	4.258

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration

Z-Axis Acceleration	9.810	N/A	9.809	N/A	N/A	M/S2

High resolution Integrated Logging Tool-DTS Master Calibration - Inversion results

Rho Aluminum	2598	2602	--	--	--	K/M3
Rho Magnesium	1666	1663	--	--	--	K/M3
Pe Aluminum	2.503	2.503	--	--	--	
Pe Magnesium	3.600	3.604	--	--	--	

High resolution Integrated Logging Tool-DTS Master Calibration - Deviation Summary

SS Average Deviation	0	0.4005	--	--	--	%
SS Max Deviation	0	1.089	--	--	--	%
SS Average Deviation	0	0.7344	--	--	--	%
LS Max Deviation	0	1.503	--	--	--	%
LS Average Deviation	0	0.8479	--	--	--	%
LS Max Deviation	0	1.919	--	--	--	%

High resolution Integrated Logging Tool-DTS Master Calibration - Tank Measurement

Thermal Near Corr. (Tank)	6021	5994	--	--	--	CPS
Thermal Far Corr. (Tank)	2793	2784	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.324	--	--	--	

Lithe Density - D Wellsite Calibration - Background Measurement

LL Background	20.00	19.68	19.47	N/A	N/A	1.000	CPS
LS Background	57.00	56.83	56.93	N/A	N/A	1.000	CPS
LU Background	57.00	57.00	56.93	N/A	N/A	1.000	CPS
LTH Background	5.500	5.573	5.596	N/A	N/A	0.5000	CPS
SS1 Background	13.00	13.00	17.42	N/A	N/A	0.5000	CPS
SS2 Background	11.00	11.66	11.71	N/A	N/A	0.5000	CPS

Lithe Density - D Wellsite Calibration - Tool Quality Control Information HV

Thermal Near Corr. (Tank)	1320	1324	N/A	N/A	N/A	V
SSHV Background	1500	1505	1511	N/A	N/A	V

Lithe Density - D Wellsite Calibration - Detectors Resolution From SNS Measurements

SS Resolution Background	8.660	8.693	8.741	N/A	N/A
SS Resolution Background	8.660	8.709	8.751	N/A	N/A

**Lithe Density - D

Phase	ATT-H SPA Plus M/Y	Value	Phase	ATT-H SPA Zero M/Y	Value
Master	[redacted]	9941	Master	[redacted]	0.1808
Before	[redacted]	9945	Before	[redacted]	0.1464
	941.0 Minimum	1040 Maximum		-50.50 Minimum	50.00 Maximum

Phase	ATT-H Temperature Plus V	Value	Phase	ATT-H Temperature Zero V	Value
Master	[redacted]	0.8050	Master	[redacted]	0.0001948
Before	[redacted]	0.8050	Before	[redacted]	0.0001500
	0.6750 Minimum	0.8750 Maximum		-0.0500 Minimum	0.0500 Maximum

Before 26-FEB-1999 20:22

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Tool Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V			Phase DDS		
0	1.026	[redacted]			0.4720	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
1	1.026	[redacted]			-0.2240	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
2	1.034	[redacted]			-0.04187	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
3	1.027	[redacted]			0.501553	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
4	1.010	[redacted]			-0.04548	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
5	0.991	[redacted]			-0.1154	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
6	1.003	[redacted]			0.3138	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
7	1.011	[redacted]			-0.2482	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum

Master: 21-OCC-1999 10:54

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-99.50	[redacted]			133.5	[redacted]		
	-200.0 Minimum	-99.50 Nominal	0 Maximum	119.5 Minimum	200 Nominal	400 Maximum		
1	149.0	[redacted]			-57.20	[redacted]		
	114.0 Minimum	149.0 Nominal	184.0 Maximum	-204.0 Minimum	-90.0 Nominal	24.00 Maximum	-628.0 Minimum	-628.0 Nominal
2	113.9	[redacted]			-39.61	[redacted]		
	88.00 Minimum	113.9 Nominal	111.0 Maximum	-64.00 Minimum	-90.0 Nominal	-26.00 Maximum	-360.0 Minimum	-360.0 Nominal
3	63.31	[redacted]			-22.21	[redacted]		
	36.00 Minimum	63.31 Nominal	64.00 Maximum	-92.00 Minimum	-90.0 Nominal	-88.00 Maximum	-292.0 Minimum	-292.0 Nominal
4	24.06	[redacted]			22.65	[redacted]		
	18.00 Minimum	24.06 Nominal	28.00 Maximum	-68.00 Minimum	-45.00 Nominal	-22.00 Maximum	-68.00 Minimum	-68.00 Nominal
5	12.18	[redacted]			11.78	[redacted]		
	4.000 Minimum	14.00 Nominal	24.00 Maximum	-40.00 Minimum	-20.00 Nominal	0 Maximum	50.00 Minimum	50.00 Nominal
6	8.657	[redacted]			1.298	[redacted]		
	-4.000 Minimum	15.00 Nominal	15.00 Maximum	-60.00 Minimum	-30.00 Nominal	0 Maximum	30.00 Minimum	30.00 Nominal
7	-0.6674	[redacted]			0.2173	[redacted]		
	-4.000 Minimum	0 Nominal	8.000 Maximum	-30.00 Minimum	0 Nominal	30.00 Maximum	-30.00 Minimum	30.00 Nominal

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High resolution Integrated Logging Tool-DTS Wellsite Calibration

Mud Cake Correction

Idx	Value	Coarse - Mag, Real, Imag			Value	Fine - Mag, Real, Imag		
0	1.052	[redacted]			1.051	[redacted]		
		0.8000 Minimum	1.000 Nominal	1.400 Maximum		0.8000 Minimum	1.000 Nominal	1.400 Maximum
1	1.052	[redacted]			1.051	[redacted]		
		0.8000 Minimum	1.000 Nominal	1.400 Maximum		0.8000 Minimum	1.000 Nominal	1.400 Maximum
2	1.052	[redacted]			1.051	[redacted]		
		0.8000 Minimum	1.000 Nominal	1.400 Maximum		0.8000 Minimum	1.000 Nominal	1.400 Maximum

Master: 21-OCC-1999 10:54

High resolution Integrated Logging Tool-DTS Master Calibration

Rbd Measurement Summary

Phase	B0 Window Ratio			Value	B0 Window Ratio			Value	LS Window Ratio			Value
Master	[redacted]			0.9925	[redacted]			0.4660	[redacted]			0.2901
Before	0.8450 Minimum	0.9000 Nominal	1.045 Maximum		0.4000 Minimum	0.4500 Nominal	0.5000 Maximum		0.2750 Minimum	0.3000 Nominal	0.3250 Maximum	

Phase	B0 Window Sum CPS			Value	B0 Window Sum CPS			Value	LS Window Sum CPS			Value
Master	[redacted]			16390	[redacted]			11700	[redacted]			1448
Before	13960 Minimum	15360 Nominal	17056 Maximum		11140 Minimum	12600 Nominal	13974 Maximum		1275 Minimum	1442 Nominal	1613 Maximum	

Before 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Pitch-Roll-Tilt High Voltage Command

Phase	S0 PM High Voltage (Command) V			Value	S0 TM High Voltage (Command) V			Value	LS PM High Voltage (Command) V			Value
Master	[redacted]			2110	[redacted]			1979	[redacted]			1486
	1800 Minimum	2000 Nominal	2200 Maximum		1800 Minimum	2000 Nominal	2200 Maximum		1360 Minimum	1360 Nominal	1360 Maximum	

Before 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration

OVAS Quality Resolution Calibration

Phase	S0 Crystal Resolution %			Value	S0 Crystal Resolution %			Value	LS Crystal Resolution %			Value
Master	[redacted]			14.00	[redacted]			8.579	[redacted]			12.97
	12.50 Minimum	13.50 Nominal	14.50 Maximum		8.000 Minimum	8.460 Nominal	10.48 Maximum		12.00 Minimum	13.00 Nominal	14.00 Maximum	

Before 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration

MCFL Calibration

Phase	Raw S0 Resistivity OHMM			Value	Raw S0 Resistivity OHMM			Value	Raw S0 Resistivity OHMM			Value
Before	[redacted]			3881	[redacted]			3804	[redacted]			3804
	2000 Minimum	2000 Nominal	4188 Maximum		2826 Minimum	3826 Nominal	4188 Maximum		2826 Minimum	3826 Nominal	4136 Maximum	

Before 26-FEB-1999 20:40

High resolution Integrated Logging Tool-DTS Wellsite Calibration

HLT Caliper Zero Measurement

Phase	BLT Caliper Zero Measurement	Value	Phase	Mass ECT-Caliper Plus Measurement	Value
Before	[redacted]	2013	Before	[redacted]	5903
	190.4 Minimum	2000.0 Nominal	204.7 Maximum	200.4 Minimum	5903.0 Nominal

Before 26-FEB-1999 20:16

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Cal. Up GAPI	Value	Phase	Gamma Ray Cal.Inverse GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Master	[redacted]		Master	[redacted]		Master	[redacted]		Master	[redacted]	
Before	[redacted]	0.564	Before	[redacted]	0.564	Before	[redacted]	196.7	Before	[redacted]	149.0
	0 Minimum	20.00 Nominal	180.0 Maximum	0 Minimum	20.00 Nominal	180.0 Maximum					

Before 26-FEB-1999 20:23

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Spin Measurement

Phase	CVTD Background CPS	Value	Phase	CFTD Background CPS	Value
Master	[redacted]	25.45	Master	[redacted]	28.39
Before	[redacted]	28.68	Before	[redacted]	28.64
	0.000 Minimum	28.45 Nominal	40.00 Maximum	0.000 Minimum	40.00 Nominal

Master: 29-NOV-1999 15:38

Before: 26-FEB-1999 20:23

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Accelerometer Calibration

Phase	Z-Axis Acceleration M/S2	Value
Before	[redacted]	9.809
	9.400 Minimum	9.810 Nominal

Before: 26-FEB-1999 20:20

High resolution Integrated Logging Tool-DTS Master Calibration

Electronic Calibration - Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V			Nominal	Value	Phase DDS	Nominal
0	Master	0.8375	[redacted]			0.4000	51.84	[redacted]	75.00
1	Master	1.248	[redacted]			1.270	80.64	[redacted]	75.00
2	Master	0.8172	[redacted]			0.8250	47.28	[redacted]	65.00
3	Master	0.8364	[redacted]			0.7500	44.91	[redacted]	65.00
4	Master	1.309	[redacted]			1.337	45.33	[redacted]	50.00
5	Master	1.886	[redacted]			1.888	36.47	[redacted]	37.50
6	Master	1.884	[redacted]			1.888	30.48	[redacted]	37.50
7	Master	1.353	[redacted]			1.413	34.66	[redacted]	25.00
		80.00 % Minimum	%	Nominal	140.0 % Maximum	Nom -80.00 Minimum		Nom + 80.00 Nominal	Nominal

Master: 21-OCC-1999 10:54

High resolution Integrated Logging Tool-DTS Master Calibration

Rbd Measurement Summary

Phase	ATT-H SPA Plus M/Y	Value	Phase	ATT-H SPA Zero M/Y	Value
Master	[redacted]	9941	Master	[redacted]	0.1808
Before	[redacted]	9945	Before	[redacted]	0.1464
	941.0 Minimum	1040 Maximum		-50.50 Minimum	50.00 Maximum

Phase	ATT-H Temperature Plus V	Value	Phase	ATT-H Temperature Zero V	Value
Master	[redacted]	0.8007	Master	[redacted]	0.0001948
Before	[redacted]	0.8050	Before	[redacted]	0.0000
	0.6750 Minimum	0.8750 Maximum		-0.0500 Minimum	0.0500 Maximum

Master: 21-OCC-1999 10:54

High resolution Integrated Logging Tool-DTS Master Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V			Phase DDS		
0	1.034	[redacted]			0.4720	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
1	1.026	[redacted]			-0.2240	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
2	1.034	[redacted]			-0.04187	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
3	1.027	[redacted]			0.501553	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
4	1.010	[redacted]			-0.04548	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
5	0.991	[redacted]			-0.1154	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
6	1.003	[redacted]			0.3138	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum
7	1.011	[redacted]			-0.2482	[redacted]	
		0.9000 Minimum	1.000 Nominal	1.080 Maximum	-0.500 Minimum	0 Nominal	0.500 Maximum

Master: 21-OCC-1999 10:54

High resolution Integrated Logging Tool-DTS Master Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-99.50	[redacted]			133.5	[redacted]		
	-200.0 Minimum	-99.50 Nominal	0 Maximum	119.5 Minimum	200 Nominal	400 Maximum		
1	149.0	[redacted]			-57.20	[redacted]		
	114.0 Minimum	149.0 Nominal	184.0 Maximum	-204.0 Minimum	-90.0 Nominal	24.00 Maximum	-628.0 Minimum	-628.0 Nominal
2	113.9	[redacted]			-39.61	[redacted]		
	88.00 Minimum	113.9 Nominal	111.0 Maximum	-64.00 Minimum	-90.0 Nominal	-26.00 Maximum	-360.0 Minimum	-360.0 Nominal
3	63.31	[redacted]			-22.21	[redacted]		
	36.00 Minimum	63.31 Nominal	64.00 Maximum	-92.00 Minimum	-90.0 Nominal	-88.00 Maximum	-292.0 Minimum	-292.0 Nominal
4	24.06	[redacted]			22.65	[redacted]		
	18.00 Minimum	24.06 Nominal	28.00 Maximum	-68.00 Minimum	-45.00 Nominal	-22.00 Maximum	-68.00 Minimum	-68.00 Nominal
5	12.18	[redacted]			11.78	[redacted]		
	4.000 Minimum	14.00 Nominal	24.00 Maximum	-40.00 Minimum	-20.00 Nominal	0 Maximum	50.00 Minimum	50.00 Nominal
6	8.657	[redacted]			1.298	[redacted]		
	-4.000 Minimum	15.00 Nominal	15.00 Maximum	-60.00 Minimum	-30.00 Nominal	0 Maximum	30.00 Minimum	30.00 Nominal
7	-0.6674	[redacted]			0.2173	[redacted]		
	-4.000 Minimum	0 Nominal	8.000 Maximum	-30.00 Minimum	0 Nominal	30.00 Maximum	-30.00 Minimum	30.00 Nominal

Master: 21-OCC-1999 10:54

High resolution Integrated Logging Tool-DTS Master Calibration

Mud Cake Correction

Idx	Value	Coarse - Mag, Real, Imag			Value	Fine - Mag, Real, Imag		
0	1.052	[redacted]			1.051	[redacted]		
		0.8000 Minimum	1.000 Nominal	1.400 Maximum		0.8000 Minimum	1.000 Nominal	1.400 Maximum
1	1.052	[redacted]			1.051	[redacted]		
		0.8000 Minimum	1.000 Nominal	1.400 Maximum		0.8000 Minimum	1.000 Nominal	1.400 Maximum
2	1.052	[redacted]			1.051	[redacted]		
		0.8000 Minimum	1.000 Nominal	1.400 Maximum		0.8000 Minimum	1.000 Nominal	1.400 Maximum

Master: 21-OCC-1999 10:54

High resolution Integrated Logging Tool-DTS Master Calibration

Thermal Gauge Calibration

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/GPTC (Tank)	Value
Master	[redacted]	7500	Master	[redacted]	8000	Master	[redacted]	0.504
	7000 Minimum	7500 Nominal	8000 Maximum	8000 Minimum	8000 Nominal	8000 Maximum	0.130 Minimum	0.504 Nominal

Master: 29-NOV-1999 15:06

High resolution Integrated Logging Tool-DTS Master Calibration

Inventory results

Phase	Rho Aluminum K/M3	Value	Phase	Rho Magnesium K/M3	Value
Master	[redacted]	2693	Master	[redacted]	1686
	2698 Minimum	2698 Nominal	2875 Maximum	1675 Minimum	1686 Nominal

Phase	Fe Aluminum	Value	Phase	Fe Magnesium	Value
Master	[redacted]	2.525	Master	[redacted]	0.835
	2.475 Minimum	2.525 Nominal	2.575 Maximum	0.800 Minimum	2.700 Nominal

Master: 24-FEB-1998 12:24

High resolution Integrated Logging Tool-DTS Master Calibration

Detector Calibration

Phase	S0 Average Deviation %	Value	Phase	S0 Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master	[redacted]	0.4206	Master	[redacted]	0.7344	Master	[redacted]	0.6479
	0.4000 Minimum	0.4000 Nominal	0.6000 Maximum	0.6000 Minimum	0.6000 Nominal	0.8000 Maximum	0.4000 Minimum	0.4000 Nominal

Phase	S0 Max Deviation %	Value	Phase	S0 Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master	[redacted]	1.200	Master	[redacted]	1.928	Master	[redacted]	1.315
	1.000 Minimum	1.000 Nominal	1.400 Maximum	1.400 Minimum	1.400 Nominal	2.000 Maximum	1.000 Minimum	1.000 Nominal

Master: 24-FEB-1998 19:04

High resolution Integrated Logging Tool-DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/GPTC (Tank)	Value
Master	[redacted]	7500	Master	[redacted]	8000	Master	[redacted]	0.504
	7000 Minimum	7500 Nominal	8000 Maximum	8000 Minimum	8000 Nominal	8000 Maximum	0.130 Minimum	0.504 Nominal

Master: 29-NOV-1999 15:06

Litho Density - D / Equipment Identification

Primary Equipment:
Nuclear Sensitive Cartridge — NSC - E — 3707
Powered Gamma Detector — PGD - S — 2250
Gamma Source Radioactive — GSR - J

Auxiliary Equipment:
Density Resistivity Sonde — DRS - C — 4969
Electronics Cartridge Housing — ECH - MKA — 2959
Pressure Detector Housing — PDH - L

Litho Density - D Wellsite Calibration

Background Measurement

Ph ice	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Master	[redacted]	19.68	Master	[redacted]	74.59	Master	[redacted]	56.97
Before	[redacted]	19.47	Before	[redacted]	74.55	Before	[redacted]	56.92
	15.00 Minimum	20.00 Nominal	25.00 Maximum	60.00 Minimum	75.00 Nominal	90.00 Maximum	45.00 Minimum	57.00 Nominal

Phase	LITH Background CPS	Value	Phase	SU Background CPS	Value	Phase	SSU Background CPS	Value
Master	[redacted]	8.573	Master	[redacted]	17.33	Master	[redacted]	11.66
Before	[redacted]	8.573	Before	[redacted]	17.48	Before	[redacted]	11.70
	4.000 Minimum	8.500 Nominal	7.000 Maximum	12.00 Minimum	16.00 Nominal	19.00 Maximum	8.000 Minimum	11.00 Nominal

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Litho Density - D Wellsite Calibration

Formation Measurement

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master	[redacted]	8.663	Master	[redacted]	8.764
Before	[redacted]	8.741	Before	[redacted]	8.783
	8.000 Minimum	11.00 Maximum		8.000 Minimum	11.00 Maximum

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Litho Density - D Master Calibration

Short Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master	[redacted]	99.07	Master	[redacted]	141.1	Master	[redacted]	193.6
Before	[redacted]	98.96	Before	[redacted]	140.9	Before	[redacted]	217.0
	80.00 Minimum	100.0 Nominal	120.0 Maximum	120.0 Minimum	140.0 Nominal	160.0 Maximum	160.0 Minimum	200.0 Nominal

Phase	LITH Aluminum CPS	Value	Phase	SU Aluminum CPS	Value	Phase	SSU Aluminum CPS	Value
Master	[redacted]	84.18	Master	[redacted]	189.5	Master	[redacted]	291.1
	60.00 Minimum	80.00 Nominal	100.0 Maximum	160.0 Minimum	180.0 Nominal	200.0 Maximum	240.0 Minimum	300.0 Nominal

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Litho Density - D Master Calibration

Long Measurement

Phase	LL Iron CPS	Value	Phase	LU Iron CPS	Value	Phase	LS Iron CPS	Value
Master	[redacted]	82.5	Master	[redacted]	1263	Master	[redacted]	1161
Before	[redacted]	114.0	Before	[redacted]	1773	Before	[redacted]	1850
	80.00 Minimum	80.00 Nominal	120.0 Maximum	1000 Minimum	1200 Nominal	1400 Maximum	1000 Minimum	1200 Nominal

Phase	LITH Iron CPS	Value	Phase	SU Iron CPS	Value	Phase	SSU Iron CPS	Value
Master	[redacted]	35.9	Master	[redacted]	1065	Master	[redacted]	1241
	15.00 Minimum	30.00 Nominal	60.00 Maximum	1000 Minimum	1000 Nominal	1200 Maximum	1000 Minimum	1200 Nominal

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Litho Density - D Master Calibration

Ultralong Measurement

Phase	CRLS Calculated	Value	Phase	CRSS Calculated	Value	Phase	CRLU Calculated	Value
Master	[redacted]	0.6597	Master	[redacted]	0.7038	Master	[redacted]	0.5443
Before	[redacted]	0.6604	Before	[redacted]	0.7050	Before	[redacted]	0.5444
	0.6500 Minimum	0.7000 Nominal	0.7500 Maximum	0.6500 Minimum	0.7000 Nominal	0.7500 Maximum	0.5000 Minimum	0.5500 Nominal

Phase	CLSA Calculated	Value	Phase	CR Calculated	Value	Phase	CRSA Calculated	Value
Master	[redacted]	1.397	Master	[redacted]	1.012	Master	[redacted]	1.012
	1.200 Minimum	1.400 Nominal	1.600 Maximum	0.900 Minimum	1.000 Nominal	1.100 Maximum	0.900 Minimum	1.000 Nominal

Master: 24-FEB-1998 13:16

Scintillation Gamma-Ray - N / Equipment Identification

Primary Equipment:
Scintillation Gamma Cartridge — SGC - SA — 3707
Scintillation Gamma Detector — SGD - YAA — 2250

Auxiliary Equipment:
Scintillation Gamma Housing — SGH - K — 3372
Gamma Source Radioactive — GSR - UW — 1072

Scintillation Gamma-Ray - N Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Cal. Up GAPI	Value	Phase	Gamma Ray Cal.Inverse GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before	[redacted]	28.70	Before	[redacted]	196.4	Before	[redacted]	196.4	Before	[redacted]	149.0
	0 Minimum	20.00 Nominal	180.0 Maximum	147.3 Minimum	196.4 Nominal	196.4 Maximum	147.3 Minimum	196.4 Nominal	112.0 Minimum	149.0 Nominal	186.2 Maximum

Before: 26-FEB-1999 20:23

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point : Measured Depth True Vertical Depth

591.00 M 591.00 M

Depth	Deviation	True Vertical Depth	Depth	Deviation	True Vertical Depth
37.75 M	0.70 DEG	37.77 M	1486.94 M	30.40 DEG	1454.43 M
150.67 M	0.70 DEG	150.69 M	1496.20 M	29.70 DEG	1462.45 M
263.34 M	0.50 DEG	263.35 M	1505.80 M	28.50 DEG	1470.84 M
378.15 M	0.30 DEG	378.16 M	1515.40 M	27.80 DEG	1479.30 M
503.00 M	0.50 DEG	503.00 M	1525.00 M	28.10 DEG	1487.78 M
551.00 M	0.30 DEG	551.00 M	1534.41 M	29.30 DEG	1496.03 M
591.00 M	0.70 DEG	591.00 M	1543.97 M	29.70 DEG	1504.35 M
677.00 M	1.00 DEG	676.99 M	1553.50 M	29.20 DEG	1512.65 M
777.00 M	0.80 DEG	776.98 M	1563.01 M	28.89 DEG	1520.97 M
792.00 M	1.75 DEG	791.97 M	1572.60 M	28.50 DEG	1529.38 M
878.00 M	1.25 DEG	877.94 M	1582.20 M	28.20 DEG	1537.83 M
991.00 M	1.50 DEG	990.91 M	1591.80 M	28.30 DEG	1546.28 M
1093.10 M	1.90 DEG	1092.97 M	1601.40 M	28.00 DEG	1554.75 M
1102.90 M	2.10 DEG	1102.76 M	1610.60 M	27.20 DEG	1562.90 M
1111.40 M	3.20 DEG	1111.25 M	1619.90 M	26.20 DEG	1571.21 M
1121.50 M	4.40 DEG	1121.33 M	1629.60 M	25.60 DEG	1579.94 M
1131.50 M	5.70 DEG	1131.29 M	1639.20 M	25.50 DEG	1588.60 M
1141.84 M	7.30 DEG	1141.56 M	1648.60 M	25.00 DEG	1597.10 M
1151.02 M	8.90 DEG	1150.65 M	1658.30 M	24.30 DEG	1605.91 M
1161.00 M	10.10 DEG	1160.49 M	1668.00 M	23.90 DEG	1614.77 M
1170.75 M	11.20 DEG	1170.08 M	1677.70 M	23.70 DEG	1623.64 M
1180.60 M	12.00 DEG	1179.72 M	1687.30 M	22.60 DEG	1632.47 M
1189.28 M	13.60 DEG	1188.19 M	1696.90 M	20.30 DEG	1641.40 M
1199.24 M	15.80 DEG	1197.82 M	1706.70 M	18.90 DEG	1650.64 M
1208.92 M	17.50 DEG	1207.10 M	1716.20 M	18.80 DEG	1659.63 M
1218.46 M	19.30 DEG	1216.15 M	1725.70 M	18.50 DEG	1668.63 M
1228.22 M	21.10 DEG	1225.31 M	1735.30 M	16.90 DEG	1677.77 M
1237.62 M	22.70 DEG	1234.03 M	1744.90 M	15.20 DEG	1687.00 M
1246.75 M	23.90 DEG	1242.41 M	1754.40 M	12.80 DEG	1696.22 M
1256.52 M	25.00 DEG	1251.31 M	1764.10 M	10.20 DEG	1705.72 M
1266.27 M	26.20 DEG	1260.10 M	1773.60 M	8.60 DEG	1715.09 M
1276.27 M	27.10 DEG	1269.04 M	1783.20 M	8.30 DEG	1724.59 M
1285.74 M	27.90 DEG	1277.44 M	1792.80 M	8.40 DEG	1734.09 M
1295.49 M	28.50 DEG	1286.03 M	1802.30 M	8.40 DEG	1743.48 M
1305.15 M	28.70 DEG	1294.51 M	1811.80 M	7.90 DEG	1752.89 M
1314.72 M	28.90 DEG	1302.90 M	1821.40 M	7.20 DEG	1762.41 M
1324.31 M	29.20 DEG	1311.28 M	1831.00 M	6.50 DEG	1771.94 M
1334.00 M	29.60 DEG	1319.72 M	1840.60 M	6.10 DEG	1781.48 M
1343.38 M	29.80 DEG	1327.87 M	1850.10 M	5.80 DEG	1790.93 M
1353.04 M	29.80 DEG	1336.25 M	1859.70 M	4.90 DEG	1800.49 M
1362.59 M	28.70 DEG	1344.59 M	1869.30 M	3.70 DEG	1810.06 M
1371.99 M	27.20 DEG	1352.89 M	1878.70 M	2.90 DEG	1819.44 M
1381.70 M	26.50 DEG	1361.55 M	1888.20 M	2.20 DEG	1828.93 M
1391.10 M	26.40 DEG	1369.97 M	1897.80 M	1.90 DEG	1838.53 M
1400.75 M	26.90 DEG	1378.59 M	1906.90 M	2.30 DEG	1847.62 M
1410.30 M	27.30 DEG	1387.10 M	1916.60 M	2.60 DEG	1857.31 M
1420.00 M	28.00 DEG	1395.69 M	1926.20 M	2.80 DEG	1866.90 M
1429.60 M	28.80 DEG	1404.13 M	1945.40 M	2.00 DEG	1886.08 M
1439.20 M	28.20 DEG	1412.57 M	1955.10 M	1.50 DEG	1895.78 M
1448.90 M	27.60 DEG	1421.14 M	1974.20 M	0.60 DEG	1914.88 M
1458.60 M	28.00 DEG	1429.72 M	1976.00 M	0.60 DEG	1916.68 M
1467.90 M	28.90 DEG	1437.90 M	1990.00 M	0.60 DEG	1930.68 M
1477.30 M	29.80 DEG	1446.09 M			

COMPANY	SUNCOR ENERGY INC.
WELL	SUNCOR NETLA K-77-60-50-122-30
FIELD	NETLA
PROVINCE	NORTHWEST TERRITORIES

TVD

BOTTOM LOG INTERVAL	1926.6 m
SCHLUMBERGER DEPTH	1931 m
DEPTH DRILLER	1930.67 m
KELLY BUSHING	625.2 m
DRILL FLOOR	624.9 m
GROUND LEVEL	618.4 m

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION-RXO
LOG

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

N.E.B. COPY

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA

NORTHWEST TERRITORIES

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION - RXO

PROVINCE: NORTHWEST TERRITORIES
Field: NETLA
Well: SUNCOR NETLA K-77-60-50-122-30 (SUR LOC)
Location: 263.66M, -90.17M (BOTTOM LOC)
Company: SUNCOR ENERGY INC.

LOCATION

60 deg-49', 122 deg-30' (SUR LOCATION) Elev.: K.B. 627.29 M
263.66M, -90.17M (BOTTOM LOC) G.L. 618.4 M
200/K-77-60-50-122-30/00 (UWI) D.F. 624.9 M

Permanent Datum: GROUND LEVEL Elev.: 618.4 M
Log Measured From: KELLY BUSHING 8.8 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No. N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	10-MAR-1999			
Run Number	2			
Depth Driller	2119 M			
Schlumberger Depth	2117 M			
Bottom Log Interval	2115.6 M			
Top Log Interval	1956.8 M			
Casing Driller Size @ Depth	177.800 MM @ 1956 M	@	@	
Casing Schlumberger	1956.8 M			
Bit Size	156.000 MM			
Type Fluid In Hole	POTASSIUM SULPHATE			
MUD Density	1045 KMS			
MUD Viscosity	53 S			
Fluid Loss	8 C3			
MUD PH	8.6			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.680 OHMM @ 22 DEGC	@	@	
RMF @ Measured Temperature	2.580 OHMM @ 22 DEGC	@	@	
RMC @ Measured Temperature	3.500 OHMM @ 21 DEGC	@	@	
Source RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	1.870 @ 88 / 1.031 @ 88	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	88 DEGC			
Circulation Stopped / Time	10-MAR-1999 / 17:30			
Logger On Bottom / Time	10-MAR-1999 / 12:45			
Unit Number / Location	3010 / 6940			
Recorded By	KIMBERLEY BAKER			
Witnessed By	BRIAN HESTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@		
Casing Schlumberger				
Bit Size				
MUD Type Fluid In Hole				
MUD Density				
MUD Viscosity				
MUD Fluid Loss				
MUD PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	
RMF @ Measured Temperature	@	@	@	
RMC @ Measured Temperature	@	@	@	
Source RMF / RMC				
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

OTHER SERVICES
OS1: NEUTRON-DENSITY-GR
OS2: BHC SONIC
OS3: FM
OS4: MSCT-GOL
OS5: CSNG-GR
OS6:

REMARKS: RUN NUMBERS 2
ALL CURVES AND PARAMETERS AS PER CLIENT REQUEST
ARH WAS RUN WITH 12.7 MM STANDOFF
HILT WAS DISCONTINUED
RMT: 2.58 OHMS @ 13.3 C, RMC: 4.10 OHMS @ 22.2 C
TIME FIRST ON BOTTOM - 12:45, TIME LAST ON BOTTOM - 17:00
TIME DOWNLOGGING TRANSMIT INTERVAL - 1500, TIME BACK ON SURFACE - 17:00
TIME DOWNLOGGING STRAIGHT HOLE SURVEY AND TOOL ORIENTATIONS

PRINTED 2 FIELD & FINAL
SERVICE ORDER #:
PROGRAM VERSION:

RUN 1
6072534
TOOI715
START
STOP

RUN 2
SERVICE ORDER #:
PROGRAM VERSION:
START
STOP

LOGGED INTERVAL

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR STANDARD TERMS AND CONDITIONS AND OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE

OTHER SERVICES
OS1:
OS2:
OS3:
OS4:
OS5:
OS6:

REMARKS: RUN NUMBERS 2

RUN 1 — EQUIPMENT DESCRIPTION — RUN 2

SURFACE EQUIPMENT
GSR-UY
NGS-AB
CNS-AB
NGRS

DOWNHOLE EQUIPMENT

| | | | |

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2120.3 17:42:02
	0.600 DEG	0.600 DEG	1988.9 17:45:55
	0.600 DEG	0.600 DEG	1975.9 17:46:00
	1.500 DEG	0.600 DEG	1974.2 17:46:16

PIP SUMMARY

Time Mark Every 60 S

AIT-H Computed Effective Standoff (AHCES) 0 (MM) 75

SP (SP) -120 (MV) 30 — Tool/Tot. Drag From DST to STIA

AIT-H 90 Inch Investigation Conductivity (AHTC090) 1000 (MMHM) 0

Tension (TENS) 150000 (N) 0 — Cable Drag From STIA to STIT

AIT-H 90 Inch Investigation (AHT90) 0 (OHMM) 100

Gamma Ray (GR) 0 (GAPI) 150 — Stuck Stretch (STIT) 0 (M) 20

AIT-H 20 Inch Investigation (AHT20) 0 (OHMM) 100

MAIN PASS

2000

2050

2100

TD

MAIN PASS

Gamma Ray (GR) 0 (GAPI) 150 — Stuck Stretch (STIT) 0 (M) 20

AIT-H 20 Inch Investigation (AHT20) 0 (OHMM) 100

Tension (TENS) 150000 (N) 0 — Cable Drag From STIA to STIT

AIT-H 90 Inch Investigation (AHT90) 0 (OHMM) 100

SP (SP) -120 (MV) 30 — Tool/Tot. Drag From DST to STIA

AIT-H 90 Inch Investigation Conductivity (AHTC090) 1000 (MMHM) 0

AIT-H Computed Effective Standoff (AHCES) 0 (MM) 75

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DSLT Firing Mode	BHC
	Telemetry Status	DSLC_TCC
AGC	Automatic Gain Control Status	ON
AHAPL	AIT-H Answer Product Levels(Depth Log/View only)	3_ShortCon_BasicLogs_RadialProf_RadialPlot
AHBHM	AIT-H Shale Correction Mode	2_CompulsaStandoff
AHBHV	AIT-H Shale Correction Code Version Number	6
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_FINF
AHBLV	AIT-H Basic Logs Code Version Number	7
AHCEN	AIT-H Casing Detection Enable	Yes
AHCEN	AIT-H Tool Centering Flag (in Borehole)	Eccentered
AHCSED	AIT-H Casing Shoe Estimated Depth	-9999 M
AHDITM	AIT-H Destrez Tool Mode	0x00_Log_000
AHEEN	AIT-H Enable Mode Correction	Yes
AHENL	AIT-H Enable Basic Logs	Yes
AHENP	AIT-H Enable Radial Profiling	Yes
AHENR	AIT-H Enable Radial Parameterization	Yes
AHETP	AIT-H Enable Sonde Error Temp/Pres Corr	Yes
AHFSV	AIT-H Response Set Version For Four ft Resolution	30.66,23,10
AHGEN	AIT-H Select Auto-s Interpolation Gating	On
AHLSD	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMRD	AIT-H Mud Resistivity Calibration Depth	0 M
AHMRF	AIT-H Mud Resistivity Factor	1
AHORSV	AIT-H Response Set Version For One ft Resolution	30.66,23,10
AHRFV	AIT-H Radial Profiling Code Version Number	2
AHRPM	AIT-H Radial Processing Mode	6_One_Two_and_FINF
AHRPV	AIT-H Radial Parameterization Code Version Number	512
AHSTA	AIT-H Tool Standoff	12.7 MM
AHTMO	AIT-H Tool Serial Number	202
AHTRSV	AIT-H Response Set Version For Two ft Resolution	30.66,23,10
AHTSE	AIT-H Temperature Selection(Sonde Error Correction)	Internal
AHTTV	AIT-H Tool Type (of acquired data)	HAIT
AHULV	AIT-H User Level Control	Normal
ALTDPCHAN	Name of alternate depth channel	TVDE
AMEG	Azimuth of Manually-Entered (Well) Deviation	0 DEG
AMING	Auxiliary Minimum Sticking Gate	180 US
APTS	AIT Pk Selection for ALLRES computation)	13_AHT20
BHFL	Borehole Fluid Medium	LIQUID
BHLT	Bore Hole Log Type	WATER
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	80 DEGC
BLI	Bond Index Level for Zone Isolation	0.6
BS	Bit Size	156.000 MM
BSAL	Borehole Salinity	-50900.00 PPM
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Adjustment Factor	1
CBCF	CBL Correction Factor	1.6
CBLG	CBL Gate Width	45 US
CCCO	Casing & Cement Thickness Correction Option	NO
CCLD	CCL reset delay	300 MM
CCLT	CCL detection level	0.3 V
CDTS	C-Delta-T Shale	328.084 US/M
CSTR	Compressive Strength of Cement	0 KPAA
CWEI	Casing Weight	34.20 KG/M
DDIG	Digitizing Delay	0 US
DETE	Delta-T Detection	E2
DFAS	Digital First Arrival Detection Switch	DSF
DFD	Drilling Fluid Density	1045.00 K/M3
DHC	Density Hole Correction	BS
DIVL	DSLT Depth Sampling Interval	20
DO	Depth Offset	0.5 M
DPPM	Density Porosity Processing Mode	HIGH
DRCS	DSLT DUB Recording Size	20
DTCM	Delta-T Computation Mode	FULL
DTF	Delta-T Fluid	620.000 US/M
DTFS	DSLC Telemetry Frame Size	108
DTM	Delta-T Matrix	183.727 US/M
DWCO	Digitizer Word Count	20
FCF	CBL Fluid Compensation Factor	1
FD	Fluid Density	1000 K/M3
FDCP	Form Factor Exponent	2
FRUM	Form Factor Numerator	1
FWAL	Form Factor Porosity Source	DPHZ
FSCO	Formation Salinity	-59000 PPM
GAI	Gain Correction Option	NO
GCSE	Manual Gain	40
GDEV	Generalized Caliper Selection	BS
GGRD	Average Angular Deviation of Borehole from Normal	0 DEG
GGRDO	Geothermal Gradient	0.018227 DEG/M
GMAX	Good Hole	2
GRMAX	HILT Gamma Ray Max	150 GAPI
GRMIN	HILT Gamma Ray Min	20 GAPI
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
HACPP	Accelerometer PRObl Presence	PRESENT_DOWNHOLE
HAHT	Accelerometer Reference Temperature	30 DEGC
HDCAD	HILT Density Coal detection	2600 K/M3
HDMD	HILT Density Salt detection	2100 K/M3
HFAW	HILT Auto Write Telemetry	NO
HFSK	HILT Gas Downhole Density	0 K/M3
HILT_GAS_DENSITY	HILT Gas Computation Option	OFF
HILT_GAS_OPTION	HALS Logging Mode	HIRES
HNDCO	HILT Neutron Coal detection	0.45 V/V
HNSAD	HILT Neutron Salt detection	0.05 V/V
HPHSECUT	HILT effective Porosity Cutoff	0.05 V/V
HRSP	High Resolution Spacing	1 M
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCO	Hole Size Correction Option	GR
HSIS	HILT Shale Indicator Selection	GR
HSTI	STI Uses HILT Acceleration	NO
HSWCUT	HILT Water Saturation from AITH cutoff	0.35 %
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC
ITTS	Integrated Transit Time Source	DT
LGMS	LGMS Coverage	NONE
LSHC	LS Hardware Loop Control	DISALLOW
LTUT	Lower to Upper Transmitter Spacing Ratio	1
MATR	Rock Matrix Type	DOLOMITE
MCCO	Mud Cake Correction Option	NO
MCI	Maximum Cemented Interval	3.048 M
MCOR	Mud Corrosivity	NATU
MDEN	Matrix Density	2850 K/M3
MED	Azimuth Entered (Well) Deviation	0.600 DEG
MGAI	Maximum Gain	200
MHCO	MCFL Bit Contrast Correction Coefficient	2.2e-05 OHMS
MHC1	MCFL Bit Contrast Correction Coefficient	3.3e-05 OHMS
MHCC	MCFL High Contrast Correction Switch	NO
MIGA	Minimum Gain	1
MODE	Sonic Firing Mode	DIPOLE
MPOF	MCFL Processing Operation Mode	ON
MSA	Minimum Sonic Amplitude	0 MV
MST	Mud Sample Temperature	22.22 DEGC
MWCO	Mud Weight Correction Option	NO
NMSG	Near Minimum Sliding Gate	180 US
NMT	HILT Nuclear Mud Type	NOBARITE
NMXG	Near Maximum Sliding Gate	750 US
NRMM	HRDD Processing Mode	HiRes
NSAP	HRDD Depth Sampling Rate	25.4 MM
NUMP	Number of Depths Passes	1
PHMSADP	Next alternate depth channel for playback	NO
PHMAX	HILT Porosity	0.35 V/V
PP	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RATE	Firing Rate	2
RDFA	Reset DFAD	OFF
RMFS	Resistivity of Mud Filtrate Sample	0.520 OHMM
RTCO	RTCO - Rt Invasion Correction	YES
RW	Resistivity of Connate Water	1.0000 OHMM
SDAT	Standoff Data Source	SOCN
SDTH	Switch Down Threshold	16384
SEXP_HILT	HILT Saturation Exponent	2
SFAF	Sonic Formation Attenuation Factor	2 DB/M
SGAD	Sliding Gate Status	ON
SGAI	Selectable Acquisition Gain	AUTO
SGCW	Sliding Gate Closing Delta-T	620 US/M
SGOW	Sliding Gate Closing Width	25 US
SGW	Sliding Gate Delta-T	164 US/M
SGWT	Sliding Gate Width	80 US
SLEV	Surface Hole Temperature	20 DEGC
SOCH	Signal Offset for AGC	5000
SOCO	Sonic Standoff	3.175 MM
SPCLEAN	Standoff Correction Option	NO
SPED	HILT SP Clean	-200 MV
SPFS	East Departure of Starting Point	0 M
SPND	Sonic Porosity Formula	RAYMER_HUNT
SPNW	North Departure of Starting Point	0 M
SPSHALE	SP Head Value	0 MV
SPSO	HILT SP Shale	-120 MV
SPVD	Sonic Porosity Source	DT
SSHC	TVD of Starting Point	0 M
STKT	SS Hardware Loop Control	DISALLOW
SUTH	STI Stuck Threshold	1.524 M
SUZI	Switch Up Threshold	655
TD	Vertical Section Azimuth	0 DEG
TDEC	Total Depth	2118 M
TWS	TDCD Enable Corrected Depth Computation	YES
VDLG	Tool Vertical Connate Water Sample	37.78 DEGC
WAGC	VDL Manual Gain	40
WGAI	Waveform AGC Allow/Disallow	OFF
WGMG	Waveform Manual Gain	20
WGOT	Waveform Gain Delta-T	787 US/M
WGIN	Waveform Gain Interval	200 US
WMOD	Waveform Firing Mode	DETECTION
WMUD	Mud Weight	1045 K/M3
WTF	Well Trajectory Flag	VERTICAL

Format: AITH_2LIN Vertical Scale: 1:600 — Graphics File Created: 10-MAR-1999 17:41

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Input DLIS Files

CUSTOMER	HILTB .023	FN:35	CUST	10-MAR-1999 15:54	2119.6 M

1806.7 M

Output DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41

Input DLIS Files

CUSTOMER	HILTB .023	FN:35	CUST	10-MAR-1999 15:54	2119.6 M

1806.7 M

Output DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

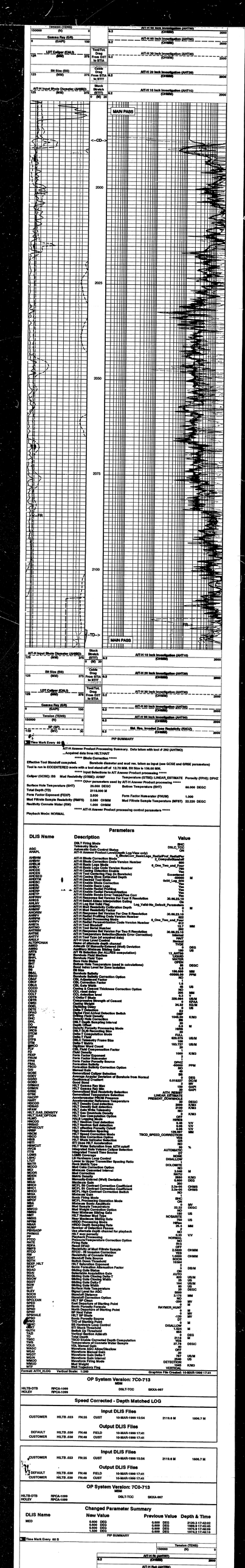
Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2120.3 17:42:02
	0.600 DEG	0.600 DEG	1988.9 17:45:55
	0.600 DEG	0.600 DEG	1975.9 17:46:00
	1.500 DEG	0.600 DEG	1974.2 17:46:16

PIP SUMMARY

Time Mark Every 60 S

SP (SP) -120 (MV) 30 — Std. Res. Invaded Zone Resistivity (RXOZ) 0.2 (OHMM) 2000



ATT-01 Input Shale Dispersion (AHSD) (MM) 125 375

Stuck Sketch (STIT) 0 (W) 30

ATT-01 10 Inch Investigation (AHT10) (OHMM) 0.2 2000

Cable Drag From STA to STIT 0 (W) 30

ATT-01 20 Inch Investigation (AHT20) (OHMM) 0.2 2000

Tool/Tot. Drag From CUT to STA 0 (W) 30

LDT Caliper (CALI) (MM) 125 375

ATT-01 30 Inch Investigation (AHT30) (OHMM) 0.2 2000

Gamma Ray (GR) (GAPI) 0 150

ATT-01 60 Inch Investigation (AHT60) (OHMM) 0.2 2000

Tension (TENS) (lbf) 1500000 0

ATT-01 90 Inch Investigation (AHT90) (OHMM) 0.2 2000

SP (SP) (mV) -10 20

Bit. Res. Invaded Zone Resistivity (ID2O2) (OHMM) 0.2 2000

Time Mark Every 60 S

ATT-01 Input Shale Dispersion (AHSD) (MM) 125 375

Stuck Sketch (STIT) 0 (W) 30

ATT-01 10 Inch Investigation (AHT10) (OHMM) 0.2 2000

Cable Drag From STA to STIT 0 (W) 30

ATT-01 20 Inch Investigation (AHT20) (OHMM) 0.2 2000

Tool/Tot. Drag From CUT to STA 0 (W) 30

LDT Caliper (CALI) (MM) 125 375

ATT-01 30 Inch Investigation (AHT30) (OHMM) 0.2 2000

Gamma Ray (GR) (GAPI) 0 150

ATT-01 60 Inch Investigation (AHT60) (OHMM) 0.2 2000

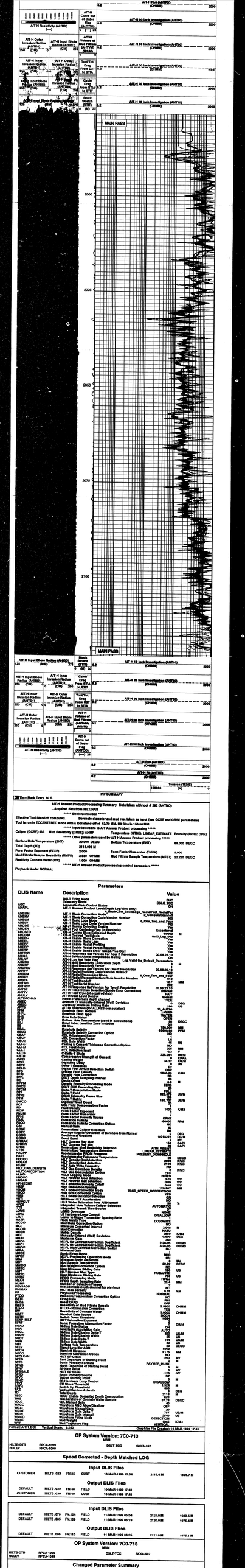
Tension (TENS) (lbf) 1500000 0

ATT-01 90 Inch Investigation (AHT90) (OHMM) 0.2 2000

SP (SP) (mV) -10 20

Bit. Res. Invaded Zone Resistivity (ID2O2) (OHMM) 0.2 2000

PIP SUMMARY



AIT-H Answer Product Processing Summary. Data taken with tool # 292 (AHTH0)
---Acquired data from WELL WANT
****** Shute Correction ******
Borehole diameter and mud res. taken as input (on GCSE and GRSE parameters)
Tool is run in ECCENTERED mode with a tool stand-off of 13.75 MM. BH Size is 156.00 MM.
****** Input Selections to AIT Answer Product processing ******
Caliper (GCRC): BS Mud Resistivity (GRSC): AHMF Temperature (GTEM): LINEAR_ESTIMATE Porosity (FPHI): DPHZ
****** Other parameters used by AIT-H Answer Product processing ******

Surface Hole Temperature (SHT)	30.000	DEGC	Bottom Temperature (BHT)	66.000	DEGC
Total Depth (TD)	2114.000 M				
Form Factor Exponent (FEXP)	2.000		Form Factor Numerator (FFNUM)	1.000	
Mud Filtrate Sample Resistivity (RMFS)	2.550	OHMM	Mud Filtrate Sample Temperature (MFST)	22.220	DEGC
Resistivity Concate Water (RW)	1.000	OHMM			

****** AIT-H Answer Product processing control parameters ******

Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
	DSLT Fitting Mode	BHC
	Telemetry Error	DSLC_TCC
ASC	Automatic Gain Control Status	ON
ASHDFL	AIT-H Answer Product Level of Processing (High Low=Raw only)	0_Borehole_SectCorr_RadialProf_RadialRes
AHBHM	AIT-H Shute Correction Mode	0_Compensated
AHBHV	AIT-H Shute Correction Code Version Number	1
AHELV	AIT-H Basic Logs Code Version Number	6_One_Two_and_Four
AHFOC	AIT-H Focusing Selection	4
AHHCRD	AIT-H Tool Centering Flag (In Borehole)	Eccentered
AHHDEP	AIT-H Tool Centering Depth	156.000 M
AHHTM	AIT-H Depth Logic Mode	Gold_Log_Only
AHIEC	AIT-H Enable Shute Correction	Yes
AHIEF	AIT-H Enable Focusing	Yes
AHIEP	AIT-H Enable Radial Profiling	Yes
AHIER	AIT-H Enable Radial Perfect Inversion	Yes
AHIEV	AIT-H Enable Vertical Resolution Corr	Yes
AHIFRV	AIT-H Selected Vertical Res For Four R Resolution	30.48,23,10
AHIVS	AIT-H Select Allow Interpolation Gating	1
AHLVL	AIT-H Basic Logs Code Version Number	Log_Valid_No_Default_Parameters
AHMPV	AIT-H Mud Resistivity Correction Depth	0 M
AHMRF	AIT-H Mud Resistivity Factor	1
AHRFRV	AIT-H Selected Resolution For One R Resolution	30.48,23,10
AHRPM	AIT-H Radial Processing Code Version Number	2
AHRPN	AIT-H Radial Perfect Inversion Code Version Number	6_One_Two_and_Four
AHRVL	AIT-H Radial Reconstruction Code Version Number	1
AHTIO	AIT-H Tool Standoff	13.7 MM
AHTMN	AIT-H Tool Serial Number	292
AHTRV	AIT-H Resolution Selected For Two R Resolution	30.48,23,10
AHTSC	AIT-H Temperature Selection(Grade Error Correction)	Selected
AHTVL	AIT-H Tool Vertical Resolution	1ft27
	AIT-H Unit Depth Correction	Inches
ALTDPCHAN	Name of alternate depth channel	Time
AMBC	Auxiliary Measurement Bit (AMB) Deviation	0 DEG
ARBC	Auxiliary Measurement Bit Count	180 US
ARTB	AIT-H Selection (for ALLRUN computation)	13_60_90
BFB	Borehole Fluid Type	LIQUID
BHB	Bore Hole Status	WATER
BHT	Bottom Hole Temperature	66 DEGC
BHT	Bottom Hole Temperature (used in calculations)	66 DEGC
BI	Bend Index Level for Zone Isolation	0
BS	Bit Size	156.000 MM
BSCO	Borehole Salinity	<0000.0> PPM
CBCO	Borehole Salinity Correction Option	0
CBFO	CBL Combine Filter	1
CBL	CBL Combine Number	4
CBLO	Calib Cutts Width	0 US
CCLC	CCL Casing Collar Thickness Correction Option	NO
CCLT	CCL detection level	20 MM
CCLW	C-Cable Weight	0 KG
CMFS	Conductivity Strength of Cesium	325.000 MMHO
CMFT	Casing Weight	0 KPCA
CWEI	Casing Weight	34.00 LB/F
DBUS	Debug Status	US
DFD	Depth Datum	ED
DFDD	Depth Datum Default Selection Switch	Default
DFE	Drilling Fluid Density	1000 KG/M3
DHL	Density Logging Correction	88
DO	Density Sampling Interval	152
DPCM	Depth Offset	0 M
DPFM	Density Porosity Processing Mode	HRDD
DPHZ	Matrix Density for Zone	2650
DTCM	Delta T Compression Bias	0
DTF	Delta T Fluid	620 US/M
DTM	Delta T Matrix Frame Size	189 US/M
DWCO	Digitizer Wind Count	163,727
EDF	CBL Fluid Type Correction Factor	0.5
FD	Form Design	1000
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
FRAI	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	<0000.0> PPM
FSCO	Formation Salinity Correction Option	NO
GAIN	Manual Gain	40
GCEN	Geometrical Caliper Selection	BS
GDEV	Average Angular Deviation of Boreholes from Normal	0 DEG
GGRD	Geothermal Gradient	0.018222 DEGC/M
GMAX	Gain Max	80 GAPI
GRMIN	HILT Gamma Ray Min	150 GAPI
GTEM	Geothermal Model Selection	AITH_BHT
GTPE	Geothermal Temperature Equation	LINEAR_ESTIMATE
HACPP	Accelerometer Pressure Response	PRESENT_DOWNSHOT
HBHT	Borehole Bottom Hole Temperature	66 DEGC
HDCD	HILT Density Coal detection	2000 KG/M3
HDCO	HILT Density Correction Option	2100 KG/M3
HFAV	HILT Auto Write Telemetry	2150 KG/M3
HHLT_GAS_DENSITY	HILT Gas Downhole Density	0 KG/M3
HHLT_GAS_OPTION	HILT Gas Downhole Option	OFF
HLMO	HALS Logging Mode	1Hz
HNCOD	HILT Neutron Coal detection	0.55 V/V
HNPOR	HILT Neutron Porosity Cutoff	0.45 V/V
HPEFCUT	HILT Photoelectric Cutoff	3.5 V/V
HRNP	High Resolution Neutron	1000 MM
HSCO	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSIS	HILT Shot Correction Option	YES
HSPD	HILT Speed Correction	YES
HTNT	NTI View HILT Acceleration	0
HWCF	HILT Water Selection from NTH cutoff	0.5 %
HWCS	HILT Water Saturation Flag Selection	AUTOMATIC
ITB	Integrated Travel Time Bracket	100
LONG	Longitude	NONE
LUL	Lower Log Limit	DRAWDOWN
LTYC	Lower in Hole Transmitter Spacing Ratio	0
MATR	Rock Matrix Type	DOLOMITE
MCOR	Mud Cake Correction Option	NO
MDEV	Minimum Deviation	0.000 M
MDOR	Mud Correction	0.000
MDSI	Matrix Density	2.680 G/C3
MEAN	Magnetic Declination (Mnd) Deviation	0.000 DEG
MHCO	Mechanical Hole	OFF
MHCT	Mudcake Correction Coefficient	2.2e-05 OHMS
MHCU	HCTI, DI Constant Correction Coefficient	3.2e-02 OHMS
MHSC	Mudcake Resistivity Correction Source	HFS
MMOD	Mudcake Model	
MOD	Sonic Fitting Mode	SHC
MRC	Mud Resistivity Correction Mode	ON
MRT	Minimum Room Temperature	0
MSP	Mud Sample Temperature	22.22 DEGC
MSPO	Mud Sample Temperature Option	NO
MUD	Mud Weight Selection Code	0 US
NBT	HILT Neutron Mud Type	NOBARITE
NCOR	Neutron Porosity Matrix Gate	750 US
NPHB	HRDD Neutron Porosity Bias	16Hex US
NSAR	HRDD Depth Sampling Rate	25.4 MM
NSEC	Number of Sectors	8
NSHOOP	Alternate depth channel for playback	NO
PRMAX	Max Pressure	30000 V/V
PSC	Playback Pressure Correction	NONE
PSTC	Pressure/Temperature Correction Option	NO
PTC	Pipe Type	CSG
RDFA	Reset DFA's	OFF
RMFS	Resistivity of Mud Filtrate Sample	2.5600 OHMM
RMS	Resistivity of Mud Sample	YES
RW	Resistivity of Connate Water	1 OHMM
SDAT	Standoff Data Source	SOCH
SDEV	Standoff Deviation Cutoff	15345
SDSP_HILT	HILT Standoff	2
SFAF	Sonic Formation Attenuation Factor	2 DB/M
SFAT	Sonic Fitting Method	DH
SGCL	Sliding Gate Caliper Delta	AUTO
SGCT	Sliding Gate Counting Delta T	40 US/M
SGDT	Sliding Gate Counting Width	20 US/M
SGGT	Sliding Gate Delta T	164 US/M
SGRT	Sliding Gate Ratio	1.5 US/M
SHT	Surface Hole Temperature	30 DEGC
SIGC	Signal Level for AGC	5000
SOCO	Sonic Correction	1170
SPCLEAN	Threshold Option	0.170
SPD	HILT SP Chan	0 MV
SPDD	Sonic Porosity Dolomite	0
SPHD	Sonic Porosity Fluid	1
SPMA	North Departure of Starting Point	0 M
SPMALE	HILT Tool Face	0 MV
SPSO	HILT SP Offset	-120 MV
SPWO	Sonic Porosity Source	0
SRVD	TVD of Starting Point	0 M
SSTC	SS Hardware Loop Control	DISALLOW
STEP	Depth Step	0.254 M
STIT	Surface Up Transmission	1024
TDD	Vertical Deviation Azimuth	0 DEG
TDS	Tool Size	6 1/8 IN
TSCC	TSCD Enable Correction Strength Computation	YES
TWL	Temperature of Concrete Water Sample	22.78 DEGC
WDCO	Wind Count	0
WGAI	Waveform ADC Attenuation	OFF
WGAU	Waveform Manual Gain	0
WGSI	Waveform Sample Delta T	167 US/M
WMOD	Waveform Data Interval	7500 US
WSCO	Waveform Logging Mode	DETECTION
WSPA	Waveform Spacing	1200 IN/3
	Well Trajectory Flag	VERTICAL

Format: AITH_DCII Vertical Scale: 1/240 Graphics File Created: 10-MAR-1999 17:41

OP System Version: 7C0-713

		MSN	
HILTB-DTB	RPCA-1099	DSLT-TCC	SKXA-997
HDLEV	NPCA-1099		

Speed Corrected - Depth Matched LOG

CUSTOMER	HILTB_023	FN:35	CUST	10-MAR-1999 15:54	2119.6 M	1806.7 M

Output DLIS Files

DEFAULT	HILTB_030	FN:48	FIELD	10-MAR-1999 17:41	
CUSTOMER	HILTB_030	FN:49	CUST	10-MAR-1999 17:41	

Input DLIS Files

DEFAULT	HILTB_079	FN:104	FIELD	11-MAR-1999 00:04	2121.0 M	1933.5 M
DEFAULT	HILTB_085	FN:105	FIELD	11-MAR-1999 06:19	2120.0 M	1975.4 M

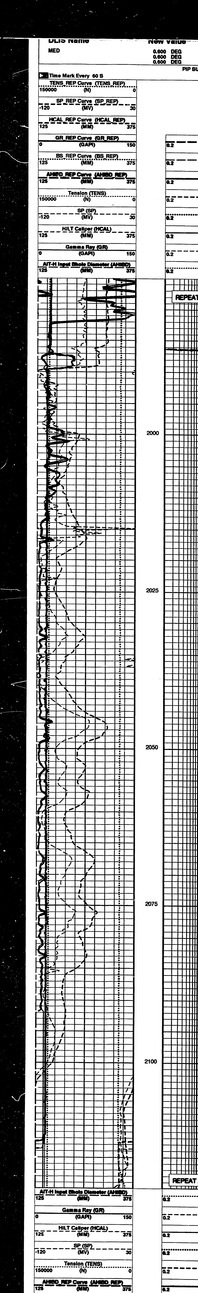
Output DLIS Files

DEFAULT	HILTB_088	FN:110	FIELD	11-MAR-1999 06:25	2121.0 M	1975.1 M

OP System Version: 7C0-713

		MSN	
HILTB-DTB	RPCA-1099	DSLT-TCC	SKXA-997
HDLEV	NPCA-1099		

Changed Parameter Summary



Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC_TOC
	DSLT Filter Mode	MAC
AGC	AIT-H Answer Product Control Status	ON
AHAPL	AIT-H Answer Product Level(Depth Log/View only)	6_BoreCor_BestLogs_RadialProf_RadialPer
		5_ComputedMaps_Invasion
AHBHM	AIT-H Shallo Correction Mode Version Number	6
AHBLM	AIT-H Basic Logs Mode	Yes
AHBPV	AIT-H Basic Logs Mode Version Number	6_One_Two_and_Four
AHCAL	AIT-H Caking Status Enable	Yes
AHCEN	AIT-H Tool Centering Flag (to Borehole)	Yes
AHCMD	AIT-H Deepest Computed Depth	Eccentered
AHEBC	AIT-H Electrical Bore Code	-9999_Log_000
AHEBP	AIT-H Enable Borehole Correction	Yes
AHEHP	AIT-H Enable Bed Charts	Yes
AHERP	AIT-H Enable Radial Profiles	Yes
AHFIP	AIT-H Enable Radial Resolution	Yes
AHFRP	AIT-H Enable Shallo Error Track/Pre Corr	Yes
AHHRV	AIT-H Response Set Version For Four 0 Resolution	30.68,23.10
AHIPP	AIT-H Invasion Profile Resolution Status	Yes
AHLVL	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMRD	AIT-H Mud Resistivity Calibration Depth	0 M
AHMRP	AIT-H Mud Resistivity Value	0
AHOHV	AIT-H Radial Profiling Code For One 0 Resolution	30.68,23.10
AHRPV	AIT-H Radial Profiling Code Version Number	6
AHRPV	AIT-H Radial Processing Mode Code Version Number	6_One_Two_and_Four
AHRTA	AIT-H Tool Standoff	12.7 MM
AHRTV	AIT-H Tool Standoff Number	392
AHTHV	AIT-H Tempered Set Version For Two H Resolution	30.68,23.10
AHTRC	AIT-H Tool Configuration (Error Correction)	13_AHTRC
AHTV	AIT-H Tool Type (of acquired data)	HALT
ALTDCHAN	AIT-H Used Shallo Channel	Normal
AMF	Annulus Mud Filtrate	TYPE_1
AMSD	Annulus Standoff (Well) Deviation	0 DEG
ARSG	Auxiliary Minimum Sliding Gate	20 US
ATIM	Auxiliary Time (ALLEN computation)	13_AHTRC
BFM	Borehole Fluid Medium	WATER
BHFL	Borehole Fluid Type	WATER
BHT	Bottom Hole Temp	OPEN
BHT	Bottom Hole Temperature (used in calculations)	88.000 DEGC
BMJ	Bond Index Level for Zone Isolation	3
BS	Bit Size	190.000 MM
CBAL	Borehole Salinity	-50000.00 PPM
CBSO	Borehole Salinity Correction Option	NO
CBTA	CBL Adjusted Tension Factor	0
CBUF	CBL Correction Factor	1.0
CBUS	CBL Units	US
CCLD	Casing A Cement Thickness Correction Option	NO
CCLD	CCL reset delay	300 MM
CCLT	CCL Trigger Level	20 MV
CDBT	C-Delta-T Data	359.00 US/M
CSTR	Compressive Strength of Cement	3 KPAA
CTEM	Cable Temp	54.50 DEGC
CVEL	Depleting Delay	0 US
DETE	Delta-T Detection	2
DFSD	Default Filter Actual Detection Switch	DSLT
DMC	Density Matrix Value	1040.00 K/M3
DOL	Density Processing Mode	1
DOL	DSLT Depth Sampling Interval	0.1
DOPL	Depth Offset	0.0 M
DPRH	Depth Offset Repeat Analysis	0.0 M
DRCH	Density Processing Mode	1
DSLT	DSLT DLIS Recording Size	200
DTF	Delta-T Compensation Mode	2
DTFS	Delta-T Telemetry Frame Size	128
DTM	Delta-T Matrix	182.727 US/M
FCNT	Diagnostic Count	300
FDF	DIL Fluid Compensation Factor	1
FDP	Fluid Density	1000 K/M3
FNUM	Form Factor Numerator	1
FSRC	Form Factor Resistivity Source	DPHZ
FSRC	Formation Salinity	-50000 PPM
FSRC	Formation Salinity Correction Option	NO
GAI	Manual Gain	0
GDEV	Generalized Caliper Selection	HCAL
GDEV	Generalized Deviation of Borehole from Normal	0 DEG
GGBD	Geothermal Gradient	0.018227 DC/M
GOBX	Good Bond	2 MV
GTMX	Good Bond Delay Max	300 GAPI
GTRS	HILT Gamma Ray Min	0 GAPI
GTSC	Generalized Mud Resistivity Selection	AITH_RESET
GTSC	Generalized Temperature Selection	LINEAR_ESTIMATE
HART	Accelerometer Reference Temperature	PRESENT_FILE
HDAR	HILT Density Count Interval	2000 DEGC
HDAS	HILT Density Gain Selection	800 K/M3
HFAW	HILT Auto Wire Telemetry	2100 K/M3
HFCS	HILT CAL_DENSITY Coefficient	0
HFLAG	HILT Tool Configuration Option	3 K/M3
HLMD	HILT Log Mode	1
HNCO	HILT Neutron Cool detection	OFF V/V
HNHC	HILT Neutron Hot detection	0.05 V/V
HNHT	HILT Neutron Hot Threshold	0.05 V/V
HSGI	HILT Neutron Sliding Gate	1200 MM
HSOX	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSPC	HILT Speed Correction Option	YES
HSTI	HILT Status Indicator Selection	NONE
HSTI	HILT Use Indicator	NO
HTCO	HILT Water Cut Selection from AITH cutoff	30 %
ITTS	Integrated Time Volume Caliper Selection	AUTOMATIC
LDRS	Logging Direction	1
LSRC	LS Hardware Loop Control	NONE
LTUT	LS Hardware Loop Control	DISALLOW
MATR	Matrix Delta-T Transmitter Spacing Ratio	1
MDEN	Rock Matrix Type	LIMESTONE
MDOO	Mud Cake Correction Option	NO
MDTM	Mud Delta-T Matched Interval	0 M
MDTP	Mud Correction	AUTO
MDEN	Matrix Density	2710 K/M3
MFAL	Mud Filtrate Alkalinity	0.000 DEG
MHCS	Machine Skin	0 K/M3
MHCS	MCFL Bit Contrast Correction Coefficient	2.3e-06 OHMS
MHCS	MCFL Bit Contrast Correction Coefficient	3.2e-05 OHMS
MHCS	MCFL Bit Contrast Correction Switch	NO
MKIA	Mud Kill Alarm	0
MOOS	Sonde Mode	RHO
MPA	MCFL Processing Operation Mode	OIL
MRT	Mud Resistivity Temp	0
MRT	Mud Sample Temperature	23.22 DEGC
MSCO	Mud Weight Correction Option	NO
MSGI	Mud Weight Sliding Gate	300 US
NDOO	HILT Neutron Mode Type	NOBORITE
NSGI	Near Minimum Sliding Gate	700 US
NUMA	HRDD Depth Sampling Rate	25.4 MM
NUMF	HRDD Depth Sampling Rate	25.4 MM
NUMP	Number of Detection Passes	1
PBACKUP	Playback Analysis channel for playback	NC
PHMAX	HILT Porosity Max	0.33 V/V
PP	Playback Processing	NORMAL
PTCO	Pressure Temperature Correction Option	NO
RAT	Ratio	OFF
RDFA	Read DFAD	OFF
RHOF	Reflectivity of Mud Filtrate Sample	2.5000 OHMM
RTCO	RTCO - TD emission Correction	YES
RW	Resistivity Connate Water	1.000 OHMM
SDAT	Standoff Data Source	50000
SDTH	Switch Down Threshold	16384
SHLT	Shallo Tool Configuration	2
SGAD	Sliding Formation Attenuation Factor	0 DB/M
SGAD	Sliding Gate Status	ON
SGCW	Sliding Gate Correlation Gain	AUTO
SGCW	Sliding Gate Closing Delta-T	620 US/M
SGCW	Sliding Gate Closing Width	80 US/M
SGDT	Sliding Gate Delta-T	184 US/M
SHT	Surface Hole Temperature	20 DEGC
SLEV	Signal Level for ARC	0.000
SOOO	Standoff Distance	3.175 MM
SPCO	Spike Correction Option	OFF
SPDF	HILT SP Offset	200 MV
SPEC	Cent Departure of Starting Point	0 M
SPHI	Sandstone Porosity	RAYMER_HUNT
SPNO	North Departure of Starting Point	0 M
SPRV	SP Hard Value	0 MV
SPSC	SP Scale Factor	1 MV
SPSO	Quick Formality Source	OFF
SPWD	TVD of Starting Point	0 M
STCO	SP Hardware Loop Control	DISALLOW
STHT	SP Hardware Loop Control	0.762 M
SUTH	Switch Up Threshold	49
TDC	Vertical Section Azimuth	0 DEG
TDEC	Switch Depth	2118 M
TEC	Tension Sonde Corrected Depth Computation	2115.00 M
TVD	Temperature of Connate Water Sample	27.78 DEGC
VGAG	VDL Manual Gain	40
WBLO	Waveform Gain Allow/Disallow	ALLOW
WDLY	Waveform Sliding Gate	0 US
WGDT	Waveform Gain Delta-T	297 US/M
WSGI	Waveform Sliding Gate	2048 US
WSMD	Waveform Sliding Mode	FULL
WWGT	Mud Weight	1040 K/M3
WWTY	Mud Telemetry Flag	VERTICAL

Format: AIT-H_DREP Vertical Scale: 1/240 Graphics File Created: 11-MAR-1999 06:25

OP System Version: 7C0-713

		MSN#	
HILTB-078	RPCA-1099	DSLT-TCC	SKXA-997
HOLBY	RPCA-1099		

Speed Corrected - Depth Matched LOG

Input DLIS Files

DEFAULT	HILTB.079	FN:104	FIELD	11-MAR-1999 00:04	2121.9 M	1933.5 M
DEFAULT	HILTB.080	FN:109	FIELD	11-MAR-1999 06:19	2120.0 M	1975.4 M

Output DLIS Files

DEFAULT	HILTB.066	FN:110	FIELD	11-MAR-1999 06:25

Input DLIS Files

Input DLIS Files

CUSTOMER	HILTB .023	FN:35	CUST	10-MAR-1999 10:54	2119.6 M	1806.7 M

Output DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41		
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41		

Speed Corrected - Depth Matched LOG

OP System Version: 7C0-713
MEM

HILTB-DTB	RPCA-1099	DSLT:TCC	SKXA-997
HOLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2125.2 17:42:00
	0.600 DEG	0.600 DEG	1985.8 17:42:00
	0.600 DEG	0.600 DEG	1974.3 17:42:00
	1.000 DEG	0.600 DEG	1974.2 17:42:14

PIP SUMMARY

Time Mark Every 60 S

ATH Temperature (DegC) (AHTCA) (DEGC) 20 125

Std. Res. Resistivity Standoff (RSCO) (MM) 25 0

HGNS Deviation (SDEV) (DEG) -5 45

Gamma Ray (ECGR) (GAPI) 0 150

Std. Res. Density Standoff (DSCO) (MM) 25 0

Bit Size (BS) (MM) 120 375

ATH Shock/Tornado Signal Rate (AHSR) (#) 20 0

Shock Counter (STTC) (#) 30 0

HNRS Caliper (HCAL) (MM) 125 375

Tension (TN) (LBF) 10000 0

ATH Pressure (PSIA) (PSIA) 0 20000

ATH-T QC Fully Calibrated A1 Signal (AHQAQBT1) (MM/M) 3 20000

ATH-T QC Fully Calibrated A2 Signal (AHQAQBT2) (MM/M) 3 20000

ATH-R QC Fully Calibrated A1 Signal (AHQAQBR1) (MM/M) 3 20000

ATH-R QC Fully Calibrated A2 Signal (AHQAQBR2) (MM/M) 3 20000

ATH-G QC Fully Calibrated A1 Signal (AHQAQBG1) (MM/M) 3 20000

ATH-G QC Fully Calibrated A2 Signal (AHQAQBG2) (MM/M) 3 20000

Pe Correction (HPHL) (---) -3 3

Density Correction (HDRA) (K/M3) -650 650

Delta Hostile Porosity (HDPH) (---) -0.1 0.1

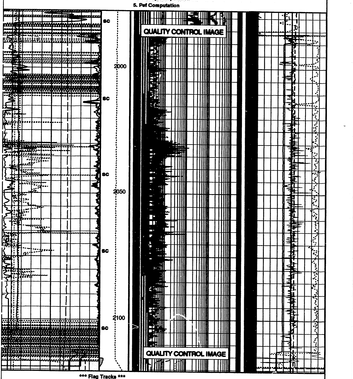
GR Borehole Corrective Factor (CFGR) (---) 0.5 1.5

*** Flag Tracks ***

White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :
1. MCFL Hardware
2. RXO Processing
3. HAIT Hardware
4. HAIT Array[1-3]
5. HAIT Array[3-4]
6. HAIT Array[5-6]
7. HAIT Array[7-8]

NUCLEAR TRACK :
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation



*** Flag Tracks ***

White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :
1. MCFL Hardware
2. RXO Processing
3. HAIT Hardware
4. HAIT Array[1-2]
5. HAIT Array[3-4]
6. HAIT Array[5-6]
7. HAIT Array[7-8]

NUCLEAR TRACK :
1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
AGC	DSLT:Firing Mode	BKC
AHAPL	DSLT:Tool Mode	DSLT_TCC
	Automatic Gain Control Status	ON
	AIT-H Answer Product Level(Depth Log/View only)	
	6_Phase_Shared_Loop_RatioProf, RatioProf	
AHBHM	AIT-H Shock Correction Mode	5_ComputeStandard
AHBHV	AIT-H Shock Correction Coda Version Number	600
AHCDI	AIT-H Caliper Selection	6_One_Two_and_Four
AHCDM	AIT-H Radial Logic Data Version Number	600
AHCDS	AIT-H Casing Detection Enable	Yes
AHCDV	AIT-H Shock Correction Coda (In Borehole)	Enabled
AHDMM	AIT-H Shock Correction Detected Depth	-0.0000 M
AHDTM	AIT-H Decimal Test Mode	0x0d_1a_0a_00
AHEBC	AIT-H Enable Bias Correction	Yes
AHEBL	AIT-H Enable Back Logs	Yes
AHEBP	AIT-H Enable Bias Processing	Yes
AHEBT	AIT-H Enable Sonde Error Temp/Pres Corr	Yes
AHEDV	AIT-H Electronics Drift Value for Pe Computation	30.66,33,10
AHEIG	AIT-H Select Antilog Interpolation Gating	400
AHLRU	AIT-H Log Rot Valid Field	Log_Valid-No_Default_Parameters
AHMDP	AIT-H Mud Resistivity Calibration Depth	-0.0000 M
AHMRV	AIT-H Mud Resistivity Value	0.1
AHPRV	AIT-H Response Set Version For One ft Resolution	30.66,33,10
AHRCV	AIT-H Radial Processing Coda Version Number	600
AHRPV	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHRSV	AIT-H Radial Resolution Coda Version Number	600
AHSTI	AIT-H Tool Serial Number	1 MM
AHTWV	AIT-H Response Set Version For Two ft Resolution	30.66,33,10
AHTZE	AIT-H Temperature Selection(Sonde Error Correction)	Internal
AHTZT	AIT-H Tool Type (of acquired data)	HAIT
ATSPCHAN	Name of primary depth channel	TVDD
ATSPCHAN	Name of primary depth channel	TVDD
AWED	Azimuth Of Manually-Entered (Well) Deviation	0 DEG
AWEI	Inclination Of Manually-Entered (Well)	0 US
AWTD	ATT.TD Selection (for ALLBED computation)	13_ATT_TD
BFM	Borehole Fluid Medium	LIQUID
BFN	Borehole Fluid Name	WATER
BHC	Bore Hole Condition	OPEN
BHT	Bottom Hole Temperature (used in calculations)	0 DEGC
BHTC	Bottom Hole Temperature for Zone Isolation	0
BS	Bit Size	156.000 MM
BSAL	Borehole Salinity	0.0000 PPM
CBCO	Borehole Salinity Correction Option	NO
CBCP	CBL Attenuation Factor	1
CBCR	CBL Casing Radius	1.5 US
CBCT	CBL Gate Width	40 US
CCCO	Casing & Cement Thickness Correction Option	NO
CCCT	Casing Thickness	9.5 MM
CCT1	CCL calibration Slot	0.1
CDTS	C-Delta-T Shale	326.004 US/M
CDWT	Cable Weight Strength of Cement	0 KG/M
CEWT	Casing Weight	34.32 KG/M
DDEL	Digitizing Delay	0 US
DFCS	Default Fluid Code	1
DFMT	Default Fluid Default Detection Switch	0
DFSD	Drilling Fluid Density	1040.00 KG/M3
DHC	Density Hole Correction	NO
DLI	DSLT Depth Sampling Interval	0.2 M
DOC	Density Offset	0.0 M
DPRM	Density Processing Mode	HIRES
DRCV	DSLT OJP Recording Size	512
DRMO	DSLT Data Acquisition Mode	FULL
DTEF	Delta-T Fluid	620.370 US/M
DTFR	DSLT Telemetry Frame Size	1220
DTMA	Delta-T Matrix	182.880 US/M
DWCO	Digitizer Word Count	512
EDF	CBL Fluid Compensation Factor	1
FDPI	Form Pipe Id	1000 MM
FEXP	Form Factor Exponent	2
FKUM	Form Factor Numerator	1
FMAT	Form Factor Material	DPHZ
FPSL	Formation Salinity	40000 PPM
FSCO	Formation Salinity Correction Option	NO
GDF	Manual Gain	0
GDFC	Generalized Caliper Selection	0
GHOL	Generalized Caliper Selection of Borehole from Normal	0 DEG
GOBO	Geothermal Gradient	0.018227 DEGM
GOOD	Good Bond	0 MV
GPMX	HILT Gamma Ray Max	150 GAPI
GPMN	HILT Gamma Ray Min	0 GAPI
GRMF	Generalized Mud Resistivity Selection	ATH_RESIST
GSEL	Generalized Selection of Borehole	LINE_ATTENUATION
HACRP	Accelerometer Reference Processing	PRESENT_DOWNHOLE
HARF	Accelerometer Reference Temperature	DEGC
HCAL	HILT Caliper Selection	2 KJM3
HFMAD	HILT Density Calibration	2100 KJM3
HFWM	HILT Auto Write Telemetry	20
HILT_GAS_DENSITY	HILT Gas Density Value	0.2 KJM3
HILT_GAS_OPTION	HILT Gas Selection Option	GAS
HLHO	HILT Hole Size	200 MM
HMCO	HILT Mandrel Coal detection	0.65 V/V
HMNT	HILT Neutron Soil detection	0.65 V/V
HMSHCUT	HILT Neutron Shale CutOff	0.65 V/V
HMSR	High Resolution Mode	1200 MM
HSCR	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSDI	HILT Shock Detection	0
HSTI	HILT Shock Indicator Selection	0
HSTO	STI Uses HILT Accelerometer	NO
HSTP	STI Uses HILT Shock Detection ATH cutoff	0 %
HTCS	Interpolated Mud Resistivity Value Selection	AUTOMATIC
ITS	Integrated Travel Time Source	LDEN
LDMC	LDEN Correction	NO
LTOT	Log Tension Telemetry Control	DISALLOW
MCCO	Manual Caliper Centralizer Spacing Ratio	0
MCCO	Mud Cake Correction Option	NO
MDEI	Manually Entered Deviation Interval	0 M
MDEN	Mud Composition	WATER
MDEN	Matrix Density	2650 KJM3
MDI	Manually Entered (Well) Deviation	0 DEG
MHAI	Maximum Hole Size	0.000 MM
MRCO	MCFL Bit Contact Coefficient	2.2e-05 OHMS
MRCT	MCFL Pad Contact Coefficient	3.3e-05 OHMS
MRSC	MCFL Rpc Correction Correction Switch	NO
MSIA	Minimum Gain	70
MSOP	Sonde Firing Mode	SKC
MSPM	MCFL Processing Operation Mode	OIL
MTA	Mud Resistivity Temperature	0 MV
MTEM	Mud Resistivity Temperature	39.67 DEGC
MWCO	Mud Weight Correction Option	NO
MWEI	Mud Weight Entered	1000 KG/M3
NBTY	HILT Hostile Hole Type	NORMAL
NSKG	Near Maximum Sliding Gate	750 US
NSKP	Near Minimum Sliding Gate	20 US
NSRD	HSDD Depth Sampling Rate	25.4 MM
NSSP	Number of Detection Passes	2
OPCHAN	Name of primary depth channel for playback	NO
PHMAX	HILT max porosity	0.6 V/V
PP	Playback Processing	NORMAL
PPCO	Pressure Correction Correction Option	NO
PRFA	Filter Delay	2917
PRFA	Recall DFAL	2917
PRMA	Sensitivity Of Mud Filtrate Sample	0.0000 OHMM
PRMF	Resistivity Of Mud Filtrate	1000 OHMM
PRWT	Recall Mud Weight Value	1000 KG/M3
QSAT	Sandoff Source	SOCR
SDSP	Switch Down Threshold	16384
SDSP_HILT	Switch Down Threshold	2
SFAF	Sonde Attenuation Factor	0.5 DB/M
SGAS	Sliding Gate Status	0
SGCW	Sliding Gate Caliper Gain	AUTO
SGDV	Sliding Gate Closing Delta-T	20 US/M
SGCW	Sliding Gate Closing Width	20 US/M
SGOV	Sliding Gate Opening	20 US/M
SHT	Surface Hole Temperature	20 DEGC
SKCO	Signal Control for AGC	0
SOCC	Standoff Correction	3.175 MM
SPECHAN	Name of primary depth channel	TVDD
SPID	Seat Departure of Starting Point	0 M
SPMO	Spectral Processing Mode	RAYMER_HUNT
SPND	North Departure of Starting Point	0 M
SPNV	SP Hold Value	0 MV
SPSALE	SP Hold Value	-120 MV
SPWO	Sonic Porosity Source	0
SPWO	TVD of Starting Point	0 M
STCO	Sticking Detection Control	DISALLOW
STHT	STI Shock Threshold	1024 M
SWTH	Switch Up Threshold	500
TAZI	Tool Orientation Azimuth	0 DEG
TDEP	Total Depth	2119.6 M
TSEC	TSCD Enable Corrected Depth Computation	0
TWS	Temperature of Cementa Water Sample	37.78 DEGC
VDC	VDL Manual Gain	40
VHDC	Waveform Gain Follow/Disallow	ALLOW
WSDT	Waveform Manual Gain	40
WSDT	Waveform Gain Delta-T	797 US/M
WSDT	Waveform Gain Density	2540 KJM3
WWJD	Waveform Trigger Mode	DETECTION
WWJD	Mud Weight	1040 KJM3
WWJD	Mud Trajectory Flag	VERTICAL

Format: AIT_HILT_LGC Vertical Scale: 1:600 Graphics File Created: 10-MAR-1999 17:41

OP System Version: 7C0-713
MEM

HILTB-DTB	RPCA-1099	DSLT:TCC	SKXA-997
HOLEV	RPCA-1099		

Speed Corrected - Depth Matched LOG

Input DLIS Files

CUSTOMER	HILTB .023	FN:35	CUST	10-MAR-1999 10:54	2119.6 M	1806.7 M

Output DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41		
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41		

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase							
Master: Feb 21 17:06 1999 Before: Mar 10 12:27 1999							
Thru Cal Magnitude - 1	0	0.6100	0.6289	N/A	N/A	N/A	V
Thru Cal Magnitude - 2	0	1.202	1.220	N/A	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.7039	0.6991	N/A	N/A	N/A	V
Thru Cal Magnitude - 4	0	0.7039	0.7246	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.315	1.356	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.315	1.356	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.809	1.858	N/A	N/A	N/A	V
Thru Cal Magnitude - 8	0	1.370	1.410	N/A	N/A	N/A	V
Phase - 1	0	57.19	58.44	N/A	N/A	N/A	DEG
Phase - 2	0	57.19	58.44	N/A	N/A	N/A	DEG
Phase - 3	0	57.19	58.44	N/A	N/A	N/A	DEG
Phase - 4	0	50.12	51.38	N/A	N/A	N/A	DEG
Phase - 5	0	50.12	51.38	N/A	N/A	N/A	DEG
Phase - 6	0	44.30	45.65	N/A	N/A	N/A	DEG
Phase - 7	0	44.30	45.65	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Auxiliary							
Master: Feb 21 17:06 1999 Before: Mar 10 12:27 1999							
ATH Pressure	990.0	990.0	991.3	N/A	N/A	N/A	MV
ATH-R SPA Zero	0.0000	0.01413	0.03930	N/A	N/A	N/A	MV
ATH-R Temperature Plus	0.9150	0.01413	0.01413	N/A	N/A	N/A	MV
ATH-R Temperature Zero	0	0.00000	0.21000	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Test Loop Gain Correction							
Test Loop Gain Magnitude - 0	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.021	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	0.9609	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9609	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.013	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.013	N/A	N/A	N/A	N/A	V
Phase - 0	0	-0.3545	N/A	N/A	N/A	N/A	DEG
Phase - 1	0	-0.3545	N/A	N/A	N/A	N/A	DEG
Phase - 2	0	-0.3545	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	0.3033	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	0.03888	N/A	N/A	N/A	N/A	DEG
Phase - 5	0	0.03888	N/A	N/A	N/A	N/A	DEG
Phase - 6	0	0.1060	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	0.1060	N/A	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Sonde Error Correction							
Master: Feb 21 17:06 1999							
R Sonde Error Correction - 0	0	-44.76	N/A	N/A	N/A	N/A	MM/M

R Sonde Error Correction - 1	V	1994	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	V	107.3	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	V	56.16	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	24.65	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	11.99	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	9.664	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-0.6063	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	70.36	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	69.71	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	71.22	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	93.45	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	-10.46	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	-12.57	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	3.602	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	4.448	N/A	N/A	N/A	N/A	MM/M

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Mud Gain Correction
Master: Feb 21 17:36 1999

Coarse - Mag. Real, Imag. - 0	0	1.022	N/A	N/A	N/A	N/A
Coarse - Mag. Real, Imag. - 1	0	1.023	N/A	N/A	N/A	N/A
Coarse - Mag. Real, Imag. - 2	0	1.023	N/A	N/A	N/A	N/A
Fine - Mag. Real, Imag. - 0	0	1.022	N/A	N/A	N/A	N/A
Fine - Mag. Real, Imag. - 1	0	1.022	N/A	N/A	N/A	N/A
Fine - Mag. Real, Imag. - 2	0	1.022	N/A	N/A	N/A	N/A

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Stab Measurement Summary
Before: Mar 7 12:25 1999

BS Window Ratio	0.9904	N/A	0.9927	N/A	N/A	V
BS Window Sum	19650	N/A	19640	N/A	N/A	CPS
SS Window Ratio	0.4638	N/A	0.4641	N/A	N/A	V
SS Window Sum	11150	N/A	11120	N/A	N/A	CPS
LS Window Ratio	0.3049	N/A	0.3068	N/A	N/A	V
LS Window Sum	1479	N/A	1474	N/A	N/A	CPS

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations
Before: Mar 7 12:25 1999

BS PM High Voltage (Command)	2059	N/A	2101	N/A	N/A	V
SS PM High Voltage (Command)	2165	N/A	2175	N/A	N/A	V
LS PM High Voltage (Command)	1777	N/A	1770	N/A	N/A	V

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Crystal Quality Resolutions Calibration
Before: Mar 7 12:25 1999

BS Crystal Resolution	12.66	N/A	12.71	N/A	N/A	%
SS Crystal Resolution	10.41	N/A	10.39	N/A	N/A	%
LS Crystal Resolution	9.314	N/A	9.017	N/A	N/A	%

High resolution Integrated Logging Tool-CTS Wellsite Calibration - MCFL Calibration
Before: Mar 7 12:26 1999

Rwi BS Resistivity	3575	N/A	3552	N/A	N/A	OHMM
Rwi B1 Resistivity	3630	N/A	3634	N/A	N/A	OHMM
Rwi B2 Resistivity	3630	N/A	3852	N/A	N/A	OHMM

High resolution Integrated Logging Tool-CTS Wellsite Calibration - HILT Caliper Calibration
Before: Mar 7 12:21 1999

HILT Caliper Zero Measurement	203.2	N/A	194.9	N/A	N/A	MM
HILT Caliper Plus Measurement	304.8	N/A	307.6	N/A	N/A	MM

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Detector Calibration
Before: Mar 7 12:26 1999

Gamma Ray Background	30.00	N/A	32.22	N/A	N/A	GAPI
Gamma Ray (Lig - Bkg)	129.8	N/A	129.0	N/A	11.78	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	15.00	GAPI

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Zero Measurement
Master: Jan 8 00:27 1999 Before: Mar 7 12:24 1999

GNTC Background	25.11	25.11	24.34	N/A	N/A	3.767 CPS
CFTC Background	23.68	23.68	24.53	N/A	N/A	3.532 CPS

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Accelerometer Calibration
Before: Mar 10 06:12 1999

Z-Axis Acceleration	9.810	N/A	9.826	N/A	N/A	M/S2

High resolution Integrated Logging Tool-CTS Master Calibration - Inversion results
Master: Feb 25 18:22 1999

Rho Aluminum	2596	2596	--	--	--	K/M3
Rho Magnesium	1688	1688	--	--	--	K/M3
Pe Aluminum	2.570	2.564	--	--	--	
Pe Magnesium	2.650	2.632	--	--	--	

High resolution Integrated Logging Tool-CTS Master Calibration - Deviation Summary
Master: Feb 25 18:22 1999

BS Average Deviation	0	0.1779	--	--	--	%
BS Max Deviation	0	0.4007	--	--	--	%
SS Average Deviation	0	0.2880	--	--	--	%
SS Max Deviation	0	0.9348	--	--	--	%
LS Average Deviation	0	0.5765	--	--	--	%
LS Max Deviation	0	1.404	--	--	--	%

High resolution Integrated Logging Tool-CTS Master Calibration - Tank Measurement
Master: Jan 8 00:27 1999

Thermal Near Corr. (Tank)	6031	5453	--	--	--	CPS
Thermal Far Cor. (Tank)	2793	2419	--	--	--	CPS
CNTC/CFTC (Ten.)	2.159	2.257	--	--	--	

Litho Density - D Wellsite Calibration - Background Measurement
Master: Calibration not done Before: Mar 7 12:25 1999

LL Background	20.00	N/A	19.81	N/A	N/A	1.000 CPS
LU Background	76.00	N/A	75.36	N/A	N/A	1.000 CPS
LS Background	57.00	N/A	57.52	N/A	N/A	1.000 CPS
LITH Background	5.500	N/A	5.357	N/A	N/A	0.3000 CPS
SS1 Background	16.00	N/A	17.40	N/A	N/A	0.5000 CPS
SS2 Background	11.00	N/A	11.79	N/A	N/A	0.5000 CPS

Litho Density - D Wellsite Calibration - Tool Quality Control Information HV
Master: Calibration not done Before: Mar 7 12:25 1999

LSHV Background	1500	N/A	1315	N/A	N/A	V
SSHV Background	1500	N/A	1508	N/A	N/A	V

Litho Density - D Wellsite Calibration - Detectors Resolution From BKG Measurments
Master: Calibration not done Before: Mar 7 12:25 1999

LS Resolution Background	8.000	N/A	8.853	N/A	N/A	
SS Resolution Background	8.000	N/A	9.094	N/A	N/A	

Litho Density - D Wellsite Calibration - Caliper Calibration
Before: Mar 7 12:24 1999

Caliper Small Ring	203.2	N/A	199.2	N/A	N/A	MM
Caliper Large Ring	304.8	N/A	293.3	N/A	N/A	MM

Litho Density - D Master Calibration - Aluminum Measurement
Master: Calibration not done

LL Aluminum	90.00	93.07	--	--	--	CPS
LU Aluminum	135.0	141.1	--	--	--	CPS
LS Aluminum	155.0	163.6	--	--	--	CPS
LITH Aluminum	50.00	54.36	--	--	--	CPS
SS1 Aluminum	175.0	189.5	--	--	--	CPS
SS2 Aluminum	250.0	261.8	--	--	--	CPS

Litho Density - D Master Calibration - Lithology Measurement
Master: Calibration not done

LL Iron	60.00	62.51	--	--	--	CPS
LU Iron	120.0	123.1	--	--	--	CPS
LS Iron	135.0	144.1	--	--	--	CPS
LITH Iron	30.00	35.53	--	--	--	CPS
SS1 Iron	155.0	168.8	--	--	--	CPS
SS2 Iron	245.0	237.1	--	--	--	CPS

Litho Density - D Master Calibration - Spectrum Quality Ratios
Master: Calibration not done

GRLS Calculated	0.6500	N/A	--	--	--	
GRSS Calculated	0.7200	N/A	--	--	--	
GRLI Calculated	0.3900	N/A	--	--	--	
GLIR Calculated	1.380	N/A	--	--	--	
QR Calculated	1.000	N/A	--	--	--	

Scintillation Gamma-Ray - L Wellsite Calibration - Detector Calibration
Before: Mar 9 11:10 1999

Gamma Ray Background	30.00	N/A	69.17	N/A	N/A	GAPI
Gamma Ray (Lig - Bkg)	148.9	N/A	148.9	N/A	13.54	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	15.00	GAPI

The GLS-VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 18.4 DEGC.
Thermal Housing Size 85.926 MM.

High resolution Integrated Logging Tool-CTS / Equipment Identification

Primary Equipment:

Array Induction Tool - H	AIT - H
Array Induction Sonde	AIHS - BA
HILT High-Resolution Mechanical Sonde	HRMS - B
HILT Rho Gamma-ray Device	HRGD -
HILT Nuclear Back-Scatter Detector	HILT -
HILT Nuclear Short-Spacing Detector	HILT -
HILT Nuclear Long-Spacing Detector	HILT -
Micro Cylindrically Focused Log Device	MCFL -

Auxiliary Equipment

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Mins. & Phases

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6100		0.6000	61.95		71.00
	Before	0.6289			63.18		
1	Master	1.252		1.270	60.93		70.00
	Before	1.290			62.17		
2	Master	0.6219		0.6330	57.19		66.00
	Before	0.6410			58.44		
3	Master	0.7029		1040	56.41		65.00
	Before	0.7248			57.66		
4	Master	1.315		1.337	50.12		59.00
	Before	1.356			51.38		
5	Master	1.911		1.955	48.20		57.00
	Before	1.970			49.47		
6	Master	1.909		1.955	48.21		57.00
	Before	1.969			49.48		
7	Master	1.370		1.415	44.30		53.00
	Before	1.413			45.65		
		60.00 % (Minimum)	140.0 % (Maximum)		Nom -60.00 (Minimum)	Nom + 60.00 (Maximum)	

Master: Feb 21 17:36 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	AIT-H SPA Plus MV	Value	Phase	AIT-H SPA Zero MV	Value
Master		990.9	Master		-0.01513
Before		991.3	Before		-0.003005
940.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)	-60.00 (Minimum)	0 (Nominal)	60.00 (Maximum)

Phase	AIT-H Temperature Plus V	Value	Phase	AIT-H Temperature Zero V	Value
Master		0.9177	Master		3.025E-08
Before		0.9181	Before		1.21 0E-08
0.8700 (Minimum)	0.9130 (Nominal)	0.9600 (Maximum)	-0.06000 (Minimum)	0 (Nominal)	0.06000 (Maximum)

Master: Feb 21 17:36 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.024	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.3545	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
1	1.026	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.2548	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
2	1.024	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.09691	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
3	1.021	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	0.3033	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
4	1.004	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.03692	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
5	0.9929	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.06606	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
6	1.004	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	0.2365	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
7	1.013	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.8195	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M
0	-44.75	-237.0 -66.00 118.0 (Minimum) (Nominal) (Maximum)	70.36	-225.0 0 225.0 (Minimum) (Nominal) (Maximum)
1	156.2	114.0 159.0 204.0 (Minimum) (Nominal) (Maximum)	-99.71	-525.0 0 525.0 (Minimum) (Nominal) (Maximum)
2	107.3	66.00 111.0 156.0 (Minimum) (Nominal) (Maximum)	71.22	-300.0 0 300.0 (Minimum) (Nominal) (Maximum)
3	56.16	39.00 64.00 89.00 (Minimum) (Nominal) (Maximum)	93.45	-250.0 0 250.0 (Minimum) (Nominal) (Maximum)
4	24.65	15.00 25.00 35.00 (Minimum) (Nominal) (Maximum)	-10.46	-63.00 0 63.00 (Minimum) (Nominal) (Maximum)
5	11.99	4.000 14.00 24.00 (Minimum) (Nominal) (Maximum)	-12.57	-50.00 0 50.00 (Minimum) (Nominal) (Maximum)
6	9.664	5.000 10.00 15.00 (Minimum) (Nominal) (Maximum)	3.602	-30.00 0 30.00 (Minimum) (Nominal) (Maximum)
7	-0.6063	-5.000 0 5.000 (Minimum) (Nominal) (Maximum)	4.448	-30.00 0 30.00 (Minimum) (Nominal) (Maximum)

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Mud Gain Correction

Idx	Value	Coarse - Mag. Real, Imag	Value	Fine - Mag. Real, Imag
0	1.022	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)	1.022	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)
1	1.023	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)	1.022	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)
2	1.023	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)	1.022	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Stab Measurement Summary

Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				0.9927	Before				0.4641	Before				0.3068
0.9409 (Minimum)	0.9904 (Nominal)	1.040 (Maximum)			0.4406 (Minimum)	0.4638 (Nominal)	0.4870 (Maximum)			0.2897 (Minimum)	0.3049 (Nominal)	0.3200 (Maximum)		

Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				19640	Before				11120	Before				1474
18680 (Minimum)	19650 (Nominal)	20630 (Maximum)			10580 (Minimum)	11150 (Nominal)	11700 (Maximum)			1405 (Minimum)	1479 (Nominal)	1553 (Maximum)		

Before: Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Photo-multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V			Value	Phase	SS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				2101	Before				2175	Before				1770
1950 (Minimum)	2059 (Nominal)	2139 (Maximum)			2065 (Minimum)	2165 (Nominal)	2265 (Maximum)			1677 (Minimum)	1777 (Nominal)	1877 (Maximum)		

Before: Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %			Value	Phase	SS Crystal Resolution %			Value	Phase	LS Crystal Resolution %			Value
Before				12.71	Before				10.39	Before				9.017
11.96 (Minimum)	12.66 (Nominal)	13.66 (Maximum)			8.439 (Minimum)	10.41 (Nominal)	11.41 (Maximum)			8.314 (Minimum)	9.314 (Nominal)	10.31 (Maximum)		

Before: Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration

High resolution Integrated Logging Tool-CTS Website Calibration
MCFL Calibration

Phase	Raw B0 Resistivity OHMM		Value	Phase	Raw B1 Resistivity OHMM		Value	Phase	Raw B2 Resistivity OHMM		Value
Before	[illegible]		3682	Before	[illegible]		3834	Before	[illegible]		3652
3666 (Minimum)	3675 (Nominal)	4185 (Maximum)		3534 (Minimum)	3330 (Nominal)	4136 (Maximum)		3534 (Minimum)	3830 (Nominal)	4136 (Maximum)	

Before: Mar 7 12:26 1999

High resolution Integrated Logging Tool-CTS Website Calibration
HILT Caliber Calibration

Phase	HILT Caliber Zero Measurement MM	Value	Phase	HILT Caliber Plus Measurement MM	Value
Before	[illegible]	194.9	Before	[illegible]	307.6
152.4 (Minimum)	203.2 (Nominal)	254.0 (Maximum)	228.6 (Minimum)	304.8 (Nominal)	381.0 (Maximum)

Before: Mar 7 12:21 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Ag - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before	[illegible]	38.22	Before	[illegible]	128.6	Before	[illegible]	165.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	117.6 (Minimum)	128.6 (Nominal)	145.3 (Maximum)	150.0 (Minimum)	165.0 (Nominal)	190.0 (Maximum)

Before: Mar 7 12:29 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master	[illegible]	25.11	Master	[illegible]	23.68
Before	[illegible]	24.34	Before	[illegible]	24.53
5.000 (Minimum)	25.11 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	23.68 (Nominal)	40.00 (Maximum)

Master: Jan 8 00:27 1999 Before: Mar 7 12:24 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Accelerometer Calibration

Phase	Z-Axis Acceleration M/S2	Value
Before	[illegible]	9.826
9.810 (Minimum)	9.810 (Nominal)	10.05 (Maximum)

Before: Mar 10 06:12 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Electronics Calibration Check - Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6100	[illegible]	0.6090	61.95	[illegible]	71.00
1	Master	1.252	[illegible]	1.270	60.93	[illegible]	70.00
2	Master	0.6219	[illegible]	0.6230	57.19	[illegible]	66.00
3	Master	0.7029	[illegible]	0.7040	56.41	[illegible]	66.00
4	Master	1.315	[illegible]	1.337	50.12	[illegible]	59.00
5	Master	1.911	[illegible]	1.955	48.20	[illegible]	57.00
6	Master	1.909	[illegible]	1.955	48.21	[illegible]	57.00
7	Master	1.370	[illegible]	1.415	44.30	[illegible]	53.00
		60.00 % (Minimum)	140.0 % (Maximum)	Nom -60.00 (Minimum)		Nom + 60.00 (Maximum)	

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	AIT-H SPA Plus MV	Value	Phase	AIT-H SPA Zero MV	Value
Master	[illegible]	990.9	Master	[illegible]	-0.01513
841.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)	-60.00 (Minimum)	0 (Nominal)	50.00 (Maximum)

Phase	AIT-H Temperature Plus V	Value	Phase	AIT-H Temperature Zero V	Value
Master	[illegible]	0.9177	Master	[illegible]	3.020E-06
0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)	-0.06000 (Minimum)	0 (Nominal)	0.06000 (Maximum)

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG		
0	1.004	[illegible]			-0.3648	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
1	1.026	[illegible]			-0.2848	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
2	1.024	[illegible]			-0.0668	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
3	1.021	[illegible]			0.3033	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
4	1.004	[illegible]			-0.03952	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
5	0.9929	[illegible]			-0.06806	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
6	1.004	[illegible]			0.2365	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	
7	1.013	[illegible]			-0.1896	[illegible]		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)	

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-44.75	[illegible]			70.38	[illegible]		
	-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-200.0 (Minimum)	0 (Nominal)	2050 (Maximum)	
1	158.2	[illegible]			-99.71	[illegible]		
	114.0 (Minimum)	158.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)	
2	107.3	[illegible]			71.22	[illegible]		
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-300.0 (Minimum)	0 (Nominal)	300.0 (Maximum)	
3	56.18	[illegible]			93.45	[illegible]		
	38.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)	
4	24.65	[illegible]			-10.48	[illegible]		
	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)	
5	11.96	[illegible]			-12.57	[illegible]		
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)	
6	8.664	[illegible]			3.602	[illegible]		
	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	
7	-0.8083	[illegible]			4.449	[illegible]		
	-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Mud Gain Correction

Idx	Value	Coarse - Mag. Real, Imag			Value	Fine - Mag. Real, Imag		
0	1.022	[illegible]			1.022	[illegible]		
	0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)	
1	1.023	[illegible]			1.022	[illegible]		
	0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)	
2	1.023	[illegible]			1.022	[illegible]		
	0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)	

Master: Feb 21 17:36 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Inversion results

Phase	Rho Aluminum K/M3		Value	Phase	Rho Magnesium K/M3		Value
Master	[illegible]		2566	Master	[illegible]		1885
2626 (Minimum)	2566 (Nominal)	2626 (Maximum)		1676 (Minimum)	1886 (Nominal)	1898 (Maximum)	
Phase	Pe Aluminum		Value	Phase	Pe Magnesium		Value
Master	[illegible]		2.564	Master	[illegible]		2.632
2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)		2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)	

Master: Feb 25 18:22 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Deviation Summary

Phase	SS Average Deviation %		Value	Phase	SS Average Deviation %		Value	Phase	LS Average Deviation %		Value
Master	[illegible]		0.1779	Master	[illegible]		0.2860	Master	[illegible]		0.5785
-0.8000 (Minimum)	0 (Nominal)	0.8000 (Maximum)		-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)		-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)	
Phase	SS Max Deviation %		Value	Phase	SS Max Deviation %		Value	Phase	LS Max Deviation %		Value
Master	[illegible]		0.4027	Master	[illegible]		0.8048	Master	[illegible]		1.404
-1.400 (Minimum)	0 (Nominal)	1.400 (Maximum)		-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)		-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)	

Master: Feb 25 18:22 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master	[illegible]	5483	Master	[illegible]	3419	Master	[illegible]	2.267
5000 (Minimum)	6031 (Nominal)	7250 (Maximum)	2075 (Minimum)	2750 (Nominal)	3125 (Maximum)	2.120 (Minimum)	2.158 (Nominal)	2.540 (Maximum)

Master: Jan 8 00:27 1999

Litho Density - D / Equipment Identification

Primary Equipment:	
Nuclear Services Cartridge	NSC - E
Powered Gamma Detector	PGD - G
Gamma Source Radioactive	GSR - J
Auxiliary Equipment:	
Density Resistivity Sonde	DRS - C
Electronics Cartridge Housing	ECH - MKA
Powered Detector Housing	PDH - L

Litho Density - D X" Hole Calibration
Background Measurement

Phase	LL Background CPS		Value	Phase	LU Background CPS		Value	Phase	LS Background CPS		Value
Master	NOT DONE		N/A	Master	NOT DONE		N/A	Master	NOT DONE		N/A
Before	[illegible]		19.81	Before	[illegible]		75.38	Before	[illegible]		57.50
15.00 (Minimum)	20.00 (Nominal)	25.00 (Maximum)		58.00 (Minimum)	76.00 (Nominal)	94.00 (Maximum)		43.00 (Minimum)	57.00 (Nominal)	72.00 (Maximum)	
Phase	UTH Background CPS		Value	Phase	SS1 Background CPS		Value	Phase	SS2 Background CPS		Value
Master	NOT DONE		N/A	Master	NOT DONE		N/A	Master	NOT DONE		N/A
Before	[illegible]		5.387	Before	[illegible]		17.49	Before	[illegible]		11.79
4.000 (Minimum)	5.500 (Nominal)	7.000 (Maximum)		12.00 (Minimum)	18.00 (Nominal)	19.00 (Maximum)		8.000 (Minimum)	11.00 (Nominal)	13.00 (Maximum)	

Master: Calibration not done Before: Mar 7 12:25 1999

Litho Density - D Wellsite Calibration
Detection Resolution From BKG Measurements

Phase	LS Resolution Background		Value	Phase	SS Resolution Background		Value
Master	NOT DONE		N/A	Master	NOT DONE		N/A
Before	[illegible]		8.853	Before	[illegible]		9.064
5.000 (Minimum)	8.000 (Nominal)	11.00 (Maximum)		5.000 (Minimum)	8.000 (Nominal)	11.00 (Maximum)	

Master: Calibration not done Before: Mar 7 12:25 1999

Litho Density - D Master Calibration
Aluminum Measurement

Phase	LL Aluminum CPS		Value	Phase	LU Aluminum CPS		Value	Phase	LS Aluminum CPS		Value
Master	[illegible]		93.07	Master	[illegible]		141.1	Master	[illegible]		163.6
75.00 (Minimum)	90.00 (Nominal)	125.0 (Maximum)		100.0 (Minimum)	130.0 (Nominal)	194.0 (Maximum)		130.0 (Minimum)	155.0 (Nominal)	217.0 (Maximum)	
Phase	UTH Aluminum CPS		Value	Phase	SS1 Aluminum CPS		Value	Phase	SS2 Aluminum CPS		Value
Master	[illegible]		56.38	Master	[illegible]		164.5	Master	[illegible]		261.8
35.00 (Minimum)	50.00 (Nominal)	74.00 (Maximum)		126.0 (Minimum)	170.0 (Nominal)	256.0 (Maximum)		210.0 (Minimum)	260.0 (Nominal)	353.0 (Maximum)	

Master: Calibration not done

Litho Density - D Master Calibration
Lithology Measurement

Phase	LL Iron CPS		Value	Phase	LU Iron CPS		Value	Phase	LS Iron CPS		Value
Master	[illegible]		114.0	Master	[illegible]		123.1	Master	[illegible]		144.1
60.00 (Minimum)	80.00 (Nominal)	114.0 (Maximum)		85.00 (Minimum)	130.0 (Nominal)	177.0 (Maximum)		100.0 (Minimum)	135.0 (Nominal)	193.0 (Maximum)	
Phase	UTH Iron CPS		Value	Phase	SS1 Iron CPS		Value	Phase	SS2 Iron CPS		Value
Master	[illegible]		36.53	Master	[illegible]		168.8	Master	[illegible]		237.1
15.00 (Minimum)	30.00 (Nominal)	51.00 (Maximum)		106.0 (Minimum)	156.0 (Nominal)	234.0 (Maximum)		190.0 (Minimum)	245.0 (Nominal)	325.0 (Maximum)	

Master: Calibration not done

Litho Density - D Master Calibration
Spectrum Quality Ratios

Phase	QRLS Calculated		Value	Phase	QRSS Calculated		Value	Phase	QRLU Calculated		Value
Master	NOT DONE		N/A	Master	NOT DONE		N/A	Master	NOT DONE		N/A
0.8600 (Minimum)	0.8800 (Nominal)	0.7000 (Maximum)		0.6800 (Minimum)	0.7200 (Nominal)	0.8200 (Maximum)		0.2800 (Minimum)	0.3900 (Nominal)	0.4800 (Maximum)	
Phase	QLR Calculated		Value	Phase	QR Calculated		Value				
Master	NOT DONE		N/A	Master	NOT DONE		N/A				
1.200 (Minimum)	1.380 (Nominal)	1.400 (Maximum)		0.9600 (Minimum)	1.070 (Nominal)	1.020 (Maximum)					

Master: Calibration not done

Scintillation Gamma-Ray - L / Equipment Identification

Primary Equipment:	
Scintillation Gamma Cartridge	SGC - SA
Scintillation Gamma Detector	SGD - TAA
Auxiliary Equipment:	
Scintillation Gamma Housing	SGH - K
Gamma Source Radioactive	GSR - UV

Scintillation Gamma-Ray - L Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Ag - Bkg) GAPI		Value	Phase	Gamma Ray (Calibrated) GAPI		Value
Before	[illegible]		68.17	Before	[illegible]		148.9	Before	[illegible]		165.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		138.4 (Minimum)	148.9 (Nominal)	162.4 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	190.0 (Maximum)	

Before: Mar 8 11:10 1999

COMPANY SUNCOR ENERGY INC.
WELL SUNCOR NETLA K-77-60-50-122-30
FIELD NETLA
PROVINCE NORTHWEST TERRITORIES

BOTTOM LOG INTERVAL	2115.8 M
SCHLUMBERGER DEPTH	2117 M
DEPTH DRILLER	2116 M
KELLY BUSHING	627.29 M
DRILL FLOOR	624.9 M
GROUND LEVEL	618.4 M

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION - RXO

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA TRUE VERTICAL DEPTH

PROVINCE NORTHWEST TERRITORIES

PROVINCE:NORTHWEST TERRITORIES | FIELD: NETLA | Well: SUNCOR NETLA K-77-60-50-122-30 | Company: SUNCOR ENERGY INC.

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION - RXO

60 deg-46, 122 deg-30 (SUR LOCATION) Elev.: K.B. 627.29 M
393.15M, 40.17M (BOT LOCATION) G.L. 618.4 M
30(R:77-60-50-122-30(H) (LAS) D.F. 624.8 M

Permanent Datum: GROUND LEVEL Elev.: 618.4 M
Log Measured From: KELLY BUSHING 6.8 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.
N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	10-MAY-1999			
Run Number	1	*** TVD ***		
Depth Driller	2118.5M	2052.4M		
Schlumberger Depth	2117.9M	2056.9M		
Bottom Log Interval	2115.9 M			
Top Log Interval	1998.8 M			
Casing Driller Size @ Depth	177.800 MM @ 1998 M	@	@	@
Casing Schlumberger	1998.8 M			
Bit Size	156.000 MM			
Type Fluid In Hole	POTASSIUM SILPHATE			
Density / Viscosity	1.09 KG/M3 / 52 S			
Fluid Loss / Ph	9% / 9.9			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.680 OHMM @ 22 DEGC	@	@	@
RMF @ Measured Temperature	0.560 OHMM @ 22 DEGC	@	@	@
RMC @ Measured Temperature	3.500 OHMM @ 21 DEGC	@	@	@
Source: RMF / RMC	MEASURED /			
RM @ MRT / RMF @ MRT	1.670 @ 88 / 1.031 @ 88	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	88 DEGC			
Circulation Stopped / Time	10-MAY-1999 / 17:20			
Logger On Bottom / Time	10-MAY-1999 / 12:45			
Unit Number / Location	5 / YELLOWKNIFE			
Recorded By	KRISTELEY GAKER			
Witnessed By	BRIAN HEISTER			

ALL DEPTH MEASUREMENTS ARE DRILLER'S DEPTHS UNLESS OTHERWISE NOTED. ALL DEPTHS ARE REFERENCED TO THE DRILLING MEASURED DEPTH REFERENCE. ALL SERVICES TO BE SUPPLIED, TO INCLUDE ALL EQUIPMENT, MATERIALS AND PERSONNEL NECESSARY TO PERFORM THE SERVICES AS DESCRIBED IN THE CONTRACT. ALL SERVICES TO BE PERFORMED IN ACCORDANCE WITH SCHLUMBERGER'S STANDARD TERMS AND CONDITIONS AND THE CONTRACT PRICE SCHEDULE.

OTHER SERVICES
OBH: BHC-GR
OBI: BHC-SONIC
OBK: MICRO-CYL
OBM: MICRO-SFL

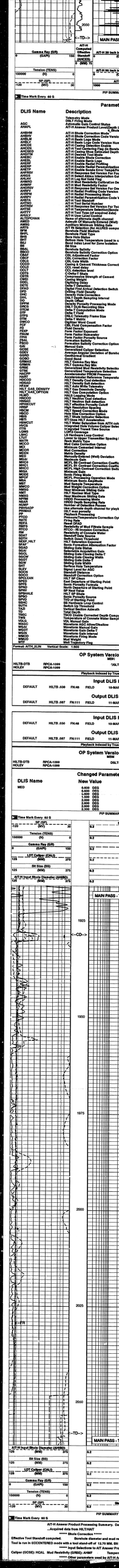
ALL DEPTHS ARE REFERENCED TO DRILLING MEASURED DEPTH REFERENCE

AFTER EDITING, QC AND RECOMPUTE TRANSMIT MODE
RUN 1 COMPUTATION
RUN 2 COMPUTATION

RUN #1 PASSES: 1 PASS THROUGH OPEN HOLE
RUN #2 PASSES: 1 PASS THROUGH OPEN HOLE

PRIME 2 FIELD 1 FINAL
RIG: BOYD 58

RUN	EQUIPMENT	DESCRIPTION
RUN 1	SURFACE EQUIPMENT	
	GSH-27	
	CSU-5	
	HDS-66	
	SDU-5	
	DOWNHOLE EQUIPMENT	
	TCD-JF	Tool/Mnemonic
	EDTC-C	Telemetry Cartridge
	SGC-SA	Gamma Ray
	SDC-E	
	CAL-Y	CCL
	DIL-E	
	DSLT-TCC	
	SDLT-A	
	SDLT-B	
	MCD-G	HD
	MCD-E	
	AH-107	
	AH-107	
	AH-113	
	CMTC-D	
	CMTC-A	
	CMTC-C	
	AH-107	
	HTDB-TTB	HTDB, HNGS Gamma Ray
	HTDB-TTB	Neutron for HTDB and HNGS


MAIN PASS - TRUE VERTICAL DEPTH
Gamma Ray (GAPI)
Tension (TENS)
SP (SP)
AIT-H Computed Effective Formation Resistivity (AHCOEF)
AIT-H 20 inch Investigation (AHT20)
AIT-H 90 inch Investigation Conductivity (AHTCON)
PIP SUMMARY
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
AGC
ANAPL
AHBHM
AHBHV
AHBLM
AHBLV
AHCEN
AHCOEF
AHCSEQ
AHDHTM
AHDIAM
AHESC
AHESP
AHETP
AHFRSV
AHLAV
AHMIN
AHMRO
AHMSF
AHNPDV
AHRHOM
AHRSF
AHSFV
AHTHO
AHTRSV
AHTTV
AHVLV
AHXO-CHAN
AMTEM
AMWG
APTC
BFPL
BHCF
BHT
BHV
BI
BSAL
CBDEP
CBHO
CBOF
CDIAM
CDMA
CDTC
CDTP
CDTS
CFTC
CMFR
CN
CNAV
CNC
CNDC
CNTC
CNTH
CRAT
CSS
CTEM
CVEL
DAZ
DCAL
DEVI
DFD
DFH
DFPH
DFSH
DFV
DHFV
DNCS
DTCM
DTF
DTTS
DTTP
DTWCO
FCF
FF1
FINP
FNUM
FPHI
FPRE
FSCO
GDEV
GDEV
GSRG
GOBQ
GRMAV
GRMIN
GTEM
HAZI
HBCPF
HAPD
HCAL_DEFECT
HDIAM
HFAU
HFK
HHKD
HHMI
HSCM
HTEN
HTNP
HBTI
HVOLCUT
HVOL
ITT1
LDMS
LTYP
LUN
MATR
MCCO
MDEN
MDEN
MDIA
MHCS
MHCT
MHCU
MRGA
MSFA
MSA
MST
MWCO
NBEF
NMXG
NPHS
NRAS
NUMAVP
PEMAAV
PP
PTCO
RATS
RDFV
RDFW
RTCO
SAT
SDAV
SDDT
SFAV
SGAD
SGAS
SGCW
SGDW
SGFW
SGW
SLEV
SOCS
SPAR
SPD_GAIN
SPED
SPHS
SPMS
SPTH
SPWHALE
SRAT
SRHO
SSHV
SUTH
TAB
TD
TMSC
TNPH
VDAT
WSDC
WSDF
WSDT
WSDU
WSDV
WTF
Format: AITH_2LIN
Vertical Scale: 1:240
Graphics File Created: 11-MAR-1999 06:32
OP System Version: 7C0-713
MSSI
HILTB-DTB
HOLEV
RPCA-1099
RPCA-1099
70LT-TCC
SKXA-997
Playback Indexed by True Vertical Depth
Input DLIS Files
DEFAULT
HILTB .030
FN:48
FIELD
10-MAR-1999 17:41
2120.3 M
1607.6 M
Output DLIS Files
DEFAULT
HILTB .067
FN:111
FIELD
11-MAR-1999 06:32
Input DLIS Files
DEFAULT
HILTB .030
FN:48
FIELD
10-MAR-1999 17:41
2120.3 M
1607.6 M
Output DLIS Files
DEFAULT
HILTB .067
FN:111
FIELD
11-MAR-1999 06:32
2061.1 M
1915.7 M
Playback Indexed by True Vertical Depth
OP System Version: 7C0-713
MSSI
HILTB-DTB
HOLEV
RPCA-1099
RPCA-1099
DSLT-TCC
SKXA-997
Changed Parameter Summary
DLIS Name
New Value
Previous Value
Depth & Time
MED
0.600 DEG
0.000 DEG
2061.1 06:32:42
0.600 DEG
0.000 DEG
1959.9 06:34:13
0.600 DEG
0.000 DEG
1875.0 06:34:31
0.600 DEG
0.000 DEG
1790.0 06:34:53
1.000 DEG
0.000 DEG
1705.0 06:35:12
2.000 DEG
0.000 DEG
1620.0 06:35:37
2.000 DEG
0.000 DEG
1535.0 06:36:07
2.000 DEG
0.000 DEG
1915.6 06:33:09
PIP SUMMARY
Time Mark Every 60 S
SP (SP)
Tension (TENS)
Gamma Ray (GR)
LDT Caliper (CALI)
SS Sine (SS)
AIT-H Input Mode Diameter (AHIDD)
MAIN PASS - TRUE VERTICAL DEPTH
Std. Res. Invaded Zone Resistivity (RXO)
AIT-H 10 inch Investigation (AHT10)
AIT-H 20 inch Investigation (AHT20)
AIT-H 60 inch Investigation (AHT60)
AIT-H 90 inch Investigation (AHT90)
Std. Res. Invaded Zone Resistivity (RXO2)
AIT-H Input Mode Diameter (AHIDD)
SS Sine (SS)
LDT Caliper (CALI)
Gamma Ray (GR)
Tension (TENS)
SP (SP)
Time Mark Every 60 S
PIP SUMMARY
AIT-H Answer Product Processing Summary. Data taken with tool # 293 (AHTNO).
Acquired data from HILTHAT
***** Mode Connection *****
Effective Tool Standoff computed.
Tool is run in ECCENTERED mode with a tool stand-off of 12.70 MM, SS Size is 156.00 MM.
***** Input Selection to AIT Answer Product processing *****
Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTEM): LINEAR_ESTIMATE Porosity (FPHI): DPHZ
***** Other parameters used by AIT-H Answer Product processing *****

Surface Hole Temperature (SHT)	20.000 DEGC	Bottom Temperature (BHT)	68.000 DEGC
Total Depth (TD)	2118.000 M		
Form Factor Exponent (FEXP)	2.000	Form Factor Numerator (FNUM)	1.000
Mud Filtrate Sample Resistivity (RMFS)	2.500 OHMM	Mud Filtrate Sample Temperature (MFST)	22.220 DEGC
Resistivity Console Water (RW)	1.000 OHMM		

***** AIT-H Answer Product processing control parameters *****

Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC,TDC
	DSLT Filing Mode	TDC
	Automatic Gain Control Status	ON
ASC	AIT-H Answer Product Level (Depth Log/View only)	
ANAPL		4_BholeCorr_BasicLogs_RadialProf_RadialRxv
AHBHM	AIT-H Bhole Correction Mode	2_CompBorehole&Mudcak
AHBLM	AIT-H Basic Logs Processing Version Number	700
AHBLW	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	700
AHCEM	AIT-H Cashing Flag Mode	Yes
AHCED	AIT-H Cashing Flag (In Borehole)	Encashed
AHCSD	AIT-H Casing Shoe Estimated Depth	-50000 M
AHCSM	AIT-H Casing Shoe Mode	0x00_Use_Default
AHEDC	AIT-H Enable Dielectric Correction	Yes
AHEBL	AIT-H Enable Basic Logs	Yes
AHERP	AIT-H Enable Radial Profiles	Yes
AHETF	AIT-H Enable Radial Drilling Fluid Corr	Yes
AHEVC	AIT-H Enable Vertical Resolution Corr	Yes
AHHRV	AIT-H Hi Resolution Set For Four R Resolution	30.48,23,10
AHSEL	AIT-H Select Alpha Interpolation Ceiling	On
AHSLV	AIT-H Slowness Log Version	Log_Valid-No_Default_Parameters
AHMRD	AIT-H Mud Resistivity Calibration Depth	0 M
AHMRF	AIT-H Mud Resistivity Factor	1
AHRTV	AIT-H Radial Resolution Set For One R Resolution	30.48,23,10
AHRVM	AIT-H Radial Profiles Code Version Number	1
AHRPM	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHRTV	AIT-H Radial Resolution Set	0,0
AHTBD	AIT-H Tool Standoff Number	13.7 MM
AHTNO	AIT-H Tool Serial Number	1207
AHTRV	AIT-H Resolution Set Version For Two R Resolution	30.48,23,10
AHTSV	AIT-H Temperature Selection(Borehole Error Correction)	Auto
AHTTV	AIT-H Tool Type (Wireline Data)	HAIT
ARSLV	AIT-H Input Level Selected	Normal
ALTDPCHAN	Name of alternate depth channel	TYDE
AMBD	Auxiliary Bhole Deviation (AHV) Deviation	0 DEG
AMBS	Auxiliary Bhole Status	ON US
AITD	AIT Rt Selection (for ALLRES computation)	13_AHT90
BFS	Borehole Fluid Salinity	1.5000
BHS	Borehole Fluid Type	WATER
SHS	Bore Hole Status	OPEN
BHT	Bore Hole Temperature (used in calculations)	68 DEGC
BIS	Bit Size Level for Zone Isolation	8.5
BS	Bit Size	156.000 MM
BSAL	Borehole Salinity	-50000.00 PPM
CBLF	Borehole Salinity Correction Option	NO
CBUF	CBL Calculation Flag	1
CBOF	CBL Configuration Factor	1.0
CBUL	CBL Gate Width	40 US
CCLD	CCL Casing Shoe Thickness Correction Option	NO
CCLO	CCL Hold Off	300 MM
CCLT	CCL detection level	0.3 V
CCTM	C-Collar Thickness	338.094 MM
CWTH	Casing Wall Strength of Cement	120 US
CWEI	Casing Weight	34.30 KG/M
DFPL	Depth Filing Delay	200 M
DFCL	Depth Filing Mode	EQ
DFSD	Digital First Actual Detection Switch	DEC
DFD	Drilling Fluid Density	1045.00 KG/M3
DHC	Density Hole Correction	ON
DSI	Density Sampling Interval	0.1524 M
DO	Depth Offset	0 M
DPCM	Density Porosity Processing Mode	HRDD
DPHZ	Density Porosity Z Matrix	11.9
DTCM	Delta T Compensation Mode	FDCV
DTF	Delta T Fluid	620.076 US/M
EFSE	Extended Frame Sync Frame Size	1
ELEV	Elevation	183.727 US/M
ERCO	Digitizer Word Count	1
FF	CBL Fluid Compensation Factor	1
FD	Fluid Density	1000 KG/M3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
FPH	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	-50000 PPM
FSCO	Form Factor Sensitivity Option	NO
GJU	Manual Gain	40
GCAL	Gamma Ray Caliper Selection	HCAL
GDEV	Average Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.016287 DC/M
GMAC	GR Matrix	0 GAPI
GRMAX	HSLT Gamma Ray Max	600 GAPI
GRMIN	HSLT Gamma Ray Min	20 GAPI
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
GVEP	Generalized Vertical Resolution	PRESENT_FILE
HAFT	Anchormetrics Filtrate Temperature	30.56 DEGC
HDCO	HLT Density Coal detection	2000 KM3
HDFA	HLT Density Filter Action	2 V/V
HFAN	HLT Auto Write Interactive	NO
HLTF_GAS_DENSITY	HLT Gas Downhole Density	0 KM3
HLTF_GAS_OPTION	HLT Gas Downhole Option	ON
HLMC	HNGS Logging Mode	HNGS
HNCCO	HLT Neutron Coal detection	0.45 V/V
HNSCO	HLT Neutron Shale Cutoff	0.45 V/V
HNWCUT	HLT Neutron Porosity Cutoff	0.45 V/V
HRGD	HNGS Processing Mode	128,9600
HSCR	HLT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCO	Hole Size Correction Option	YES
HSI	HLT Sampling Interval	0.1524 M
HSTI	HTI Data Hold Acceleration	0
HSWCUT	HLT Water Saturation from AITH cutoff	50 %
HTAB	Hostile Table Number Manual Selection	AUTOMATIC
ITIS	Integrated Travel Time Enable	ON
LGMS	LGMS Coverage	MODE
LLGF	Long Spacing Loop Control	DISALLOW
LTHT	Lower to Upper Transmitter Spacing Ratio	1.1
MATR	Rock Matrix Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MCDI	Minimum Connected Interval	3.048 M
MDCR	MDT Run	MDT1
MDTS	MDTS Density	2717 KM3
MEUI	Manually-Entered (Well) Deviation	0.500 DEG
MHCO	Mud Hole Cake	0 MM
MNCI	MCFL Bit Contrast Correction Coefficient	3.2e-05 OHMS
MNCL	MCFL Bit Contrast Correction Coefficient	3.2e-05 OHMS
MNCS	MCFL Bit Contrast Correction Switch	NO
MOD	Minimum Gain	0
MODE	Sonic Filing Mode	BHC
MSCO	MCFL Filtrate Correction Mode	ON
MSX	MCFL Pe Matrix Velocity	0 MV
MST	Mud Sample Temperature	22.22 DEGC
MWCO	Mud Weight Correction Option	NO
NBUS	HLT Neutron Bin Window Size	32 US
NMT	HLT Neutron Mud Type	NOBARITE
NMOS	Near Master Gating Gate	70 US
NPWN	HLT Neutron Porosity Mode	HPWA
NSRT	HLT Neutron Sampling Rate	20 MS
NUMP	Number of Detected Passes	1
PDVSADP	Use alternate depth channel for playback	YES
PDVSADX	Alternate Depth	0 V/V
PP	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RDFA	Radial Drilling	DISALLOW
RMFD	Recalculate of Mud Filtrate Sample	2.54000 OHMM
RTCO	RTCO - Rt Invasion Correction	YES
SDAT	Sensitivity of Concave Water	1.0000 OHMM
SDFT	Sensitivity of Starting Point	0.0000
SDTF	Switch Down Threshold	1024
SEXP_HILT	HILT Saturation Exponent	2
SFCO	Shale Form Factor Correction Factor	2 DB/M
SGAO	Shading Gate Below	ON
SGAI	Selectable Acquisition Gate	AUTO
SGCW	Shading Gate Cashing Width	635 US/M
SGGW	Shading Gate Casing Width	635 US
SGGT	Shading Gate Delta T	194 US/M
SGWT	Shading Gate Width	80 US
SHT	Surface Hole Temperature	20 DEGC
SLEV	Signal Level for AGC	500
SOCH	Standoff Channel	0 MM
SOCO	Standoff Correction Option	NO
SPCLGAN	SP Log Gain	1 MV
SPFD	Fast Deviation Starting Point	30 M
SPHD	Sonic Porosity Formula	RAYMER_HUNT
SPSD	SP Deviation of Starting Point	0 M
SPSH	SP Shift Value	0 MV
SPSHVALE	HSLT SP Shale	-120 MV
SPSO	SP Curve Filing Source	TYDE
SPTO	TYD of Starting Point	0 M
SSHC	SS Hardware Loop Control	DISALLOW
SSHT	Surface Hole Temperature	68
TAD	Vertical TD Added	0
TD	Total Depth	2118
TDCC	TNCD Enable Coincetal Depth Computation	YES
TWX	Temperature of Cosmatic Water Sample	37.78 DEGC
WAGC	Waveform AGC Gate	ON
WAGG	Waveform AGC Allow/Disallow	ON
WGAI	Waveform Manual Gain	20
WGAT	Waveform Gate Width	100 US
WGIN	Waveform Gate Interval	2048 US
WMOD	Waveform Firing Mode	FULL
WSPC	Waveform Spacing	0.61 M
WTF	Wireline Tool Family Flag	VERTILOG

Format: AITH_ZLOG Vertical Scale: 1:240 Graphics File Created: 11-MAR-1998 06:32

OP System Version: 7C0-713

MEM

HILTB-DTB	RPCA-1099	DSLT-TCC	SKXA-997
HOLEY	RPCA-1099		

Speed Corrected - Depth Matched LOG

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.6 M

Output DLIS Files

DEFAULT	HILTB .007	FN:111	FIELD	11-MAR-1998 06:32		

Input DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.6 M

Output DLIS Files

DEFAULT	HILTB .067	FN:111	FIELD	11-MAR-1998 06:32	2061.1 dl	1915.7 M

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MEM

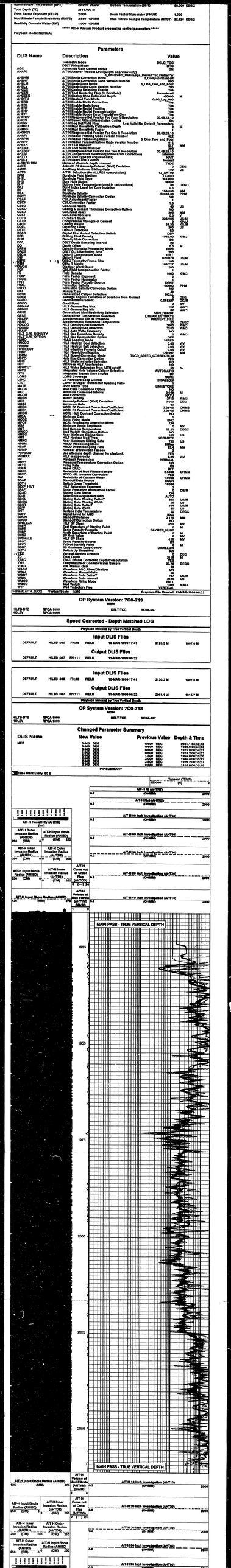
HILTB-DTB	RPCA-1099	DSLT-TCC	SKXA-997
HOLEY	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000 DEG	0.000 DEG	2061.1 06:32:42
	0.000 DEG	0.000 DEG	1958.6 06:34:13
	0.000 DEG	0.000 DEG	1873.0 06:35:31
	1.000 DEG	0.000 DEG	1873.0 06:36:33
	2.000 DEG	1.000 DEG	1958.6 06:35:09
	2.000 DEG	2.000 DEG	1958.6 06:35:12
	2.000 DEG	2.000 DEG	1915.7 06:35:58

PIP SUMMARY

Time Mark Every 60 S



AIT-H Resistivity (AHTR0)
(---)

AIT-H 90 inch Investigation (AHT90)
(OHMM)
0.2 2000

AIT-H 60 inch Investigation (AHT60)
(OHMM)
0.2 2000

AIT-H 30 inch Investigation (AHT30)
(OHMM)
0.2 2000

Tension (TENS)
1500000 (lb) 0

Time Mark Every 60 S

PIP SUMMARY

AIT-H Answer Product Processing Summary: Data taken with tool # 292 (AHTNO)
---Acquired data from HILTHAT

***** Shale Correction *****

Effective Tool Standoff computed.
Borehole diameter and mud res. taken as input (see GCSE and GRSE parameters)

Tool is run in ECCENTERED mode with a tool stand-off of 13.70 MM. SN Size is 156.00 MM.

***** Input Selections to AIT Answer Product processing *****

Caliper (GCSE): HCAL	Mud Resistivity (GRSE): AHMF	Temperature (GTSE): LINEAR_ESTIMATE	Porosity (FPHI): DPHZ

***** Other parameters used by AIT-H Answer Product processing *****

Surface Hole Temperature (SHT)	20.000 DEGC	Bottom Temperature (BHT)	88.000 DEGC
Total Depth (TD)	2118.000 M		
Form Factor Exponent (FEXP)	2.000	Form Factor Numerator (FNUM)	1.000
Mud Filtrate Sample Resistivity (RMFS)	0.580 OHMM	Mud Filtrate Sample Temperature (MFST)	22.220 DEGC
Resitivity Connate Water (RW)	1.000 OHMM		

Playback Mode: NORMAL

***** AIT-H Answer Product processing control parameters *****

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLO_TOC
AGC	AIT-H AGC Status	ON
AHAPL	Automatic Batt Control Status AIT-H Answer Product Levels (Depth Log/View only)	OK 4_Basic/Cor_Res/Log_Radial/Prof_RadialFac
AHBHM	AIT-H Mode Borehole Correction Mod	1_Compute/Borehole
AHBNV	AIT-H Shale Correction Code Version Number	400
AHBLV	AIT-H Basic Logs Level	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Version Number	700
AHCDE	AIT-H Casing Detection Enable	Yes
AHCEN	AIT-H Tool Centering Flag (to Schlshr)	Eccentric
AHDTM	AIT-H Casing Shoe Estimated Depth	-60000 M
AHDTM	AIT-H Depth Mode	0x00_Log_Data
AHEBC	AIT-H Enable Shale Correction	Yes
AHEBL	AIT-H Enable Basic Logs	Yes
AHEPF	AIT-H Enable Porosity Flag	Yes
AHEPP	AIT-H Enable Radial Processing	Yes
AHETP	AIT-H Enable Borehole Error Temp&Pres Corr	Yes
AHHRS	AIT-H Hardware Sampling Rate and Resolution	30.6&12
AHIWS	AIT-H Select Inline Waveform Data	No
AHLNV	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMDP	AIT-H Mud Resistivity Calibration Depth	0 M
AHMRV	AIT-H Mud Resistivity Value	0.1
AHORSV	AIT-H Response Set Version For One R Resolution	30.6&23.13
AHPBL	AIT-H Radial Profiling Code Version Number	400
AHPFM	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHPPV	AIT-H Radial Profiling Code Version Number	400
AHRTA	AIT-H Tool Standoff	13.7 MM
AHTNO	AIT-H Tool Serial Number	292
AHTRV	AIT-H Response Set Version For Two R Resolution	30.6&23.13
AHTSE	AIT-H Temperature Sensor(Sonde Error Correction)	KPAA
AHTSY	AIT-H Tool Type (of acquired data)	HAIT
AHTYP	AIT-H Tool Type (Sonde)	Hostail
AILTOPCHAN	Name of shallowest depth channel	TVDS
AMED	Azimuth Of Manually-Entered (Well) Deviation	DEG
AMSU	Auxiliary Measurements Status	US
ANPTS	AIT-H Selection (for ALLRES computation)	13_AHTNO
BFIN	Bore Hole Fluid Index	WATER
BHFL	Borehole Fluid Type	WATER
BHS	Bore Hole Status	OPEN
BHT	Bore Hole Temperature (used in calculations)	88 DEGC
BU	Bond Index Level for Gain Indicator	6
BS	Bit Size	156.000 MM
CBAL	Borehole Salinity	-10000.000 PPM
CBCO	Borehole Salinity Correction Option	NO
CBAF	CBL Adjustment Factor	1
CBLF	CBL Calibration Factor	1.5
CBLU	CBL Calibration Units	US
CCDO	Casing & Cement Thickness Correction Option	NO
CCLD	CCL Used Delay	300 MM
CDTC	CCL Detection level	0.1 V
CDTS	CCL Status	326.98 US/M
CBTR	Compressive Strength of Cement	KPAA
CWEI	Casing Weight	34.32 KG/M
CWEU	Casing Weight	US
DATE	Date / Decimal	2001
DFAD	Digital First Actual Detection Switch	DSP
DH	Drilled Hole Size	1045.00 K/M3
DHC	Density Hole Correction	0
DIVL	DSLT Depth Sampling Interval	30
DO	Depth Offset	0.5 M
DPHZ	Density Porosity Calculation Mode	HRZD
DRCU	DSLT Acquisition Software	3.0
DTCM	Delta-T Compensation Mode	FULL
DTFS	Delta-T Fluid	620.000 US/M
DTFR	Delta-T Telemetry Frame Size	4 BYTE
DTM	Delta-T Matrix	182.727 US/M
DWCO	Depth Wave Count	300
EDTC	Edit Detection Correction Factor	1
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
FSAL	Formation Salinity Source	DPHZ
FSAL	Formation Salinity	0 PPM
FSCO	Formation Salinity Correction Option	NO
GCNC	Gamma Count	0
GDEC	Hemi-Sonde Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0.018227 DEG
GGRO	Geothermal Gradient	0.018227 DG/M
GMAG	Magnetic	NO
GRMF	HILT Gamma Ray Mac	150 GAPI
GRMIN	HILT Gamma Ray Min	20 GAPI
GSEL	Generalized Temperature Selection	ATH_ESTIMATE
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
HACPP	Accelerometer PROM Presence	PRESENT_RUE
HBHT	Hardware Borehole Temperature	88 DEGC
HDAC	HILT Density Sub Array	2000 K/M3
HDAD	HILT Density Detection	2.65 K/M3
HEAV	HILT Density Efficiency	70 K/M3
HILT_AS_DENSITY	HILT Use Downhole Density	NO
HLT_CAS_OPTION	HILT Casing Correction Option	OFF
HLMO	HALS Logging Mode	MRES
HRDD	HILT Hardrock Dual detection	0.45 V/V
HRDS	HILT Hardrock Single detection	0.45 V/V
HRSECUT	HILT effective Porosity Cutoff	0.45 V/V
HRSF	High Resolution Spacing	126.667 MM
HSCO	HILT Shale Correction Code	TSCO_SPEED_CORRECTION
HSIO	Hole Size Correction Option	NO
HSIS	HILT Shale Indicator Selection	ISA
HSIS	HILT Shale Indicator	ISA
HSLOUT	HILT Water Saturation from ARTI cutoff	100 %
HVCC	HILT Velocity Correction Selection	AUTOMATIC
ITB	Integrated Travel Time Enable	NO
LGHO	LGHO Coverage	NONE
LTOT	Logging Tool Group Control	DISALLOW
LTOT	Lower to Upper Sensor Spacing Ratio	1.5
MATR	Rock Matrix Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MCOR	Minimum Correction Mode	0.000 M
MCOR	Mud Correction	NATU
MDEN	Mud Density	2710 K/M3
MDSD	Memorize Section (Well) Deviation	90 DEG
MGAI	Manscale Gain	1
MHCC	HRDD Bit Contrast Correction Coefficient	2.2e-02 OHMS
MHCC	HRDS Bit Contrast Correction Coefficient	3.3e-02 OHMS
MHCC	MPTL Hi Contrast Correction Switch	NO
MOSA	MOSA	0
MOSE	Sonic Firing Mode	SHC
MPTL	MPTL Logging Operation Mode	ON
MSF	Minimum Sonic Spacing	MV
MST	Mud Sample Temperature	22.22 DEGC
MSTO	Mud Sample Temperature Source	MEAS
MWSO	Heat Hardrock Switching Data	US
NMT	HILT Nuclear Mud Type	NOBARITE
NRAT	HRDD Resistivity Sampling Rate	750 US
NRMM	HRDD Resistivity Data	1Sfast
NSAR	HRDD Depth Sampling Rate	2 MM
NUMF	Number of Detectors Passes	1
PBYSAOP	Use alternate depth channel for playback	YES
PEFAC	Pe Correction	1.81 V/V
PFLD	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RDTC	RDTC	OFF
RDTS	Tuned DTAC	OFF
RMFS	Resistivity of Mud Filtrate Sample	0.5800 OHMM
RMFT	Resistivity of Mud Filtrate Source	YES
RW	Resistivity of Connate Water	1.000 OHMM
SDAT	Standoff Data Source	SOCH
SDAT	Standoff Data Source	SOSH
SDCO_HLT	HILT Sonde Centered	15384
SFAC	Sonic Formation Attenuation Factor	2
SGAT	Sliding Gate Status	ON
SGAI	Selectable Acquisition Gain	AUTO
SGDT	Sliding Gate Delay Mode	1Sfast US/M
SGCW	Sliding Gate Delay Width	30 US/M
SGDT	Sliding Gate Delay T	184 US/M
SGWT	Sliding Gate Width T	30 US/M
SHT	Surface Hole Temperature	20 DEGC
SLEV	Signal Level for ASC	3900
SMM	Standoff Measure	13.170 MM
SOCO	Standoff Detection Option	NO
SPCLEAN	HILT SP Clean	-200 MV
SPED	East Departure at Starting Point	0 M
SPHD	Sonic Formula Formula	RWYMER_HUNT
SPND	North Departure at Starting Point	0 M
SPNV	SP Hard Value	0 MV
SPSHALE	HILT SP Shale	-120 MV
SPSO	SP Hardware Source	SP
SPVO	TVD of Starting Point	0 M
SSHC	SD Hardware Loop Control	DISALLOW
SSHT	Sonic Shale Transit	662
TAZI	Vertical Section Azimuth	0 DEG
TD	Total Depth	2118 M
TSEC	TSCD Sonde Corrected Depth Computation	YES
TSWC	TSCD Sonde Corrected Water Sample	27.78 DEGC
VDLG	VDL Sensor Gain	20
WGAC	Waveform Manual Gain	ON
WGAI	Waveform Manual Gain	30
WGIN	Waveform Gain Interval	20 US/M
WGIS	Waveform Gain Interval	2040 US
WMOD	Waveform Firing Mode	FULL
WSPA	Sonic Spacing	2.5 K/M3
WTF	Waveform Factory Flag	VERIFIED

Format: AITH_DOI Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 08:32

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-1099	DSLT-TOC	SKKA-997
HOLEV	RPCA-1099		

Speed Corrected - Depth Matched LOG

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HLTB .030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.5 M

Output DLIS Files

DEFAULT	HLTB .087	FN:111	FIELD	11-MAR-1999 08:32		

Input DLIS Files

DEFAULT	HLTB .021	FN:30	FIELD	10-MAR-1999 15:25	2120.0 M	1975.4 M

Output DLIS Files

DEFAULT	HLTB .091	FN:115	FIELD	11-MAR-1999 08:50	2060.0 M	1916.1 M

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-1099	DSLT-TOC	SKKA-997
HOLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000 DEG	2.300 DEG	3980.0 06:50:07
	0.000 DEG	2.400 DEG	3977.0 06:50:08
	0.000 DEG	2.500 DEG	1975.8 06:53:33
	1.500 DEG	0.000 DEG	1974.2 06:53:33
	2.500 DEG	1.500 DEG	1965.0 06:53:34
	2.400 DEG	2.500 DEG	1964.2 06:53:34
	2.600 DEG	2.600 DEG	1958.2 06:53:00
	2.500 DEG	2.600 DEG	1918.6 06:53:16

PIP SUMMARY

Time Mark Every 60 S

SP (SP)
-125 (MV) 25

Tension (TENS)
1500000 (lb) 0

Gamma Ray (GR)
0 (GAPI) 150

LDT Caliper (CALI)
125 (MM) 375

DII Size (DIS)
125 (MM) 375

AIT-H Input Mode Diameter (AIHSD)
125 (MM) 375

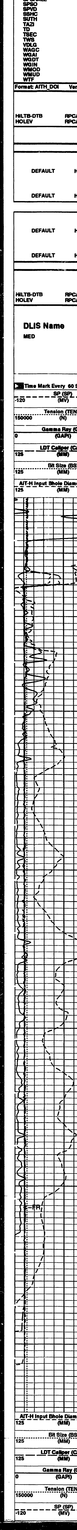
Sht. Res. Invaded Zone Resistivity (RSOZ)
0.2 2000

AIT-H 90 Inch Investigation (AHT90)
(OHMM)
0.2 2000

AIT-H 60 Inch Investigation (AHT60)
(OHMM)
0.2 2000

AIT-H 30 Inch Investigation (AHT30)
(OHMM)
0.2 2000

AIT-H 10 Inch Investigation (AHT10)
(OHMM)
0.2 2000



REPEAT SECTION - TRUE VERTICAL DEPTH

AIT-H Input Mode Diameter (AIHSD)
125 (MM) 375

DII Size (DIS)
125 (MM) 375

LDT Caliper (CALI)
125 (MM) 375

Gamma Ray (GR)
0 (GAPI) 150

Tension (TENS)
1500000 (lb) 0

SP (SP)
-125 (MV) 25

AIT-H 90 Inch Investigation (AHT90)
(OHMM)
0.2 2000

AIT-H 60 Inch Investigation (AHT60)
(OHMM)
0.2 2000

AIT-H 30 Inch Investigation (AHT30)
(OHMM)
0.2 2000

AIT-H 10 Inch Investigation (AHT10)
(OHMM)
0.2 2000

Sht. Res. Invaded Zone Resistivity (RSOZ)
0.2 2000

Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with tool # 292 (AHTNO)
...Acquired data from HILT/HAIT
***** Bhole Correction *****

Effective Tool Standoff computed. Borehole diameter and mud res. taken as input (see GCSE and GRSE parameters)
Tool is run in ECCENTERED mode with a tool stand-off of 12.70 MM. Bit Size is 156.00 MM.
***** Input Selections to AIT Answer Product processing *****

Caliper (GCSE): HCAL	Mud Resistivity (GRSE): AHMF	Temperature (GTSE): LINEAR_ESTIMATE	Porosity (FPHI): DPHZ

***** Other parameters used by AIT-H Answer Product processing *****

Surface Hole Temperature (SHT)	20.000 DEGC	Bottom Temperature (BHT)	88.000 DEGC
Total Depth (TD)	2118.000 M		
Form Factor Exponent (FEXP)	2.000	Form Factor Numerator (FNUM)	1.000
Mud Filtrate Sample Resistivity (RMFS)	2.580 OHMM	Mud Filtrate Sample Temperature (MFST)	22.220 DEGC
Resitivity Connate Water (RW)	1.000 OHMM		

***** AIT-H Answer Product processing control parameters *****

Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value	
	Telemetry Mode	DSLC_TCC	
	DSLT Firing Mode	BHC	
AGC	Automatic Gain Control Status	ON	
AHAPL	AIT-H Answer Product Level(Depth Log/View only)	4_BholeCorr_BasicLogs_RadialProf_RadialPar	
AHBHM	AIT-H Bhole Correction Mode	2_ComputeStandoff	
AHBHV	AIT-H Bhole Correction Code Version Number	600	
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four	
AHBLV	AIT-H Basic Logs Code Version Number	700	
AHCDE	AIT-H Casing Detection Enable	Yes	
AHCEN	AIT-H Tool Centering Flag (in Borehole)	Eccentered	
AHCSED	AIT-H Casing Shoe Estimated Depth	-50000	M
AHDITM	AIT-H Desired Tool Mode	0x00_Log_000	
AHEBC	AIT-H Enable Bhole Correction	Yes	
AHEBL	AIT-H Enable Basic Logs	Yes	
AHERF	AIT-H Enable Radial Profiling	Yes	
AHERP	AIT-H Enable Radial Parametrization	Yes	
AHETP	AIT-H Enable Sonde Error Temp&Pres Corr	Yes	
AHFRSV	AIT-H Response Set Version For Four ft Resolution	30.66.23.10	
AHIGS	AIT-H Select Akima Interpolation Gating	On	
AHLNV	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters	
AHMRD	AIT-H Mud Resistivity Calibration Depth	0	M
AHMRF	AIT-H Mud Resistivity Factor	1	
AHORSV	AIT-H Response Set Version For One ft Resolution	30.66.23.10	
AHRFV	AIT-H Radial Profiling Code Version Number	622	
AHRPM	AIT-H Radial Processing Mode	6_One_Two_and_Four	
AHRPV	AIT-H Radial Parametrization Code Version Number	612	
AHSTA	AIT-H Tool Standoff	12.7	MM
AHTNO	AIT-H Tool Serial Number	292	
AHTRSV	AIT-H Response Set Version For Two ft Resolution	30.66.23.10	
AHTSE	AIT-H Temperature Selection(Sonde Error Correction)	Internal	
AHTTY	AIT-H Tool Type (of acquired data)	HAIT	
AHUC	AIT-H User Level Control	Normal	
ALTDPCHAN	Name of alternate depth channel	TVDE	
AMED	Azimuth Of Manually-Entered (Well) Deviation	0	DEG
AMSG	Auxillary Minimum Sliding Gate	180	US
ARTS	AIT Rt Selection (for ALLRES computation)	13_AHT90	
BFM	Borehole Fluid Medium	LIQUID	
BHFL	Borehole Fluid Type	WATER	
BHS	Bore Hole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	88	DEGC
BILI	Bond Index Level for Zone Isolation	0.6	
BS	Bit Size	156.000	MM
BSAL	Borehole Salinity	-50000.00	PPM
BSCO	Borehole Salinity Correction Option	NO	
CBAF	CBL Adjustment Factor	1	
CBCF	CBL Correction Factor	1.6	
CBLG	CBL Gate Width	45	US
CCCO	Casing & Cement Thickness Correction Option	NO	
CCLD	CCL reset delay	305	MM
CCLT	CCL detection level	0.3	V
CDTS	C-Delta-T Shale	328.084	US/M
CSTR	Compressive Strength of Cement	0	KPAA
CWEI	Casing Weight	34.32	KG/M
DDEL	Digitizing Delay	200	US
DETE	Delta-T Detection	E2	
DFAD	Digital First Arrival Detection Switch	DSP	
DFD	Drilling Fluid Density	1045.00	K/M3
DHC	Density Hole Correction	BS	
DIVL	DSLT Depth Sampling Interval	20	
DO	Depth Offset	0.0	M
DPPM	Density Porosity Processing Mods	HIRS	
DRCN	DSLT DLIS Recording Size	200	
DTCM	Delta-T Computation Mode	FULL	
DTF	Delta-T Fluid	620.079	US/M
DTFS	DSLC Telemetry Frame Size	106	
DTM	Delta-T Matrix	183.727	US/M
DWCO	Digitizer Word Count	200	
FCF	CBL Fluid Compensation Factor	1	
FD	Fluid Density	1000	K/M3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GAI	Manual Gain	40	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GOBO	Good Bond	2	MV
GRMAX	HILT Gamma Ray Max	150	GAPI
GRMIN	HILT Gamma Ray Min	0	GAPI
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	20	DEGC
HDCOD	HILT Density Coal detection	2000	K/M3
HDSAD	HILT Density Salt detection	2100	K/M3
HFAW	HILT Auto Write Telemetry	NO	
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	K/M3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HLMO	HALS Logging Mode	HIRES	
HNCOD	HILT Neutron Coal detection	0.45	V/V
HNSAD	HILT Neutron Salt detection	0.05	V/V
HPHIECUT	HILT effective Porosity Cutoff	0.05	V/V
HRSP	High Resolution Spacing	129.967	MM
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION	
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSTI	STI Used in HILT Acceleration	NO	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
ITTS	Integrated Transit Time Source	DT	
LQMS	LQMS Coverage	NONE	
LSHC	LS Hardware Loop Control	DISALLOW	
LTUT	Lower to Upper Transmitter Spacing Ratio	1	
MATR	Rock Matrix Type	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCI	Minimum Cemented Interval	3.048	M
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2710	K/M3
MED	Manually-Entered (Well) Deviation	2.300	DEG
MGAI	Maximum Gain	60	
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e-05	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e-05	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MIGA	Minimum Gain	1	
MODE	Sonic Firing Mode	BHC	
MPOF	MCFL Processing Operation Mode	ON	
MSA	Minimum Sonic Amplitude	0	MV
MST	Mud Sample Temperature	22.22	DEGC
MWCO	Mud Weight Correction Option	NO	
NMSG	Near Minimum Sliding Gate	180	US
NMT	HILT Nuclear Mod Type	NOBARITE	
NMXG	Near Maximum Sliding Gate	750	US
NPRM	HRDD Processing Mode	HiRes	
NSAM	HRDD Depth Sampling Rate	25.4	MM
NUMP	Number of Detection Passes	2	
PBVSADP	Use alternate depth channel for playback	TVDE	
PHIMAX	HILT max porosity	0.35	V/V
PP	Playback Processing	NORMAL	
PTCO	Pressure/Temperature Correction Option	NO	
RATE	Firing Rate	R3	
RDFA	Reset DFAD	OFF	
RMFS	Resistivity of Mud Filtrate Sample	2.5800	OHMM
RTCO	RTCO - Rt invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SDAT	Standoff Data Source	90CN	
SDTH	Switch Down Threshold	16384	
SEXP_HILT	HILT Saturation Exponent	2	
SFAF	Sonic Formation Attenuation Factor	0	DB/M
SGAD	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gain	AUTO	
SGCL	Sliding Gate Closing Delta-T	820	US/M
SGCW	Sliding Gate Closing Width	25	US
SGDT	Sliding Gate Delta-T	164	US/M
SGW	Sliding Gate Width	80	US
SHT	Surface Hole Temperature	20	DEGC
SLEV	Signal Level for AGC	5000	
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	NO	
SPCLEAN	HILT SP Clean	-200	MV
SPED	East Departure of Starting Point	0	M
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPND	North Departure of Starting Point	0	M
SPNV	SP Next Value	0	MV
SPSHALE	HILT SP Shale	-120	MV
SPSO	Sonic Porosity Source	DT	
SPVD	TVD of Starting Point	0	M
SSHC	SS Hardware Loop Control	DISALLOW	
SUTH	Switch Up Threshold	655	
TAZI	Vertical Section Azimuth	0	DEG
TD	Total Depth	2118	M
TSEC	TSCD Enable Corrected Depth Computation	YES	
TWS	Temperature of Connate Water Sample	37.78	DEGC
VDLG	VDL Manual Gain	40	
WAGC	Waveform AGC Allow/Disallow	ON	
WGAI	Waveform Manual Gain	20	
WGDT	Waveform Gain Delta-T	787	US/M
WGIN	Waveform Gain Interval	2540	US
WMOD	Waveform Firing Mode	FULL	
WMUD	Mud Weight	1045	K/M3
WTF	Well Trajectory Flag	VERTICAL	

Format: AITH_2LOG Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 08:50

OP System Version: 7C0-713

MBM

HILTB-DTB	RPCA-1099		DSLT-TCC	SKKA-997	
HOLEV	RPCA-1099				

Speed Corrected - Depth Matched LOG

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB .021	FN:30	FIELD	10-MAR-1999 15:25	2120.0 M	1975.4 M

Output DLIS Files

DEFAULT	HILTB .091	FN:115	FIELD	11-MAR-1999 08:50	

Directional Survey Manually-Entered Deviation Summary

Depth	Deviation	Depth	Deviation
1802.30 M	8.40 DEG	1897.80 M	1.90 DEG
1811.80 M	7.90 DEG	1906.90 M	2.30 DEG
1821.40 M	7.20 DEG	1916.60 M	2.60 DEG
1831.00 M	6.50 DEG	1926.20 M	2.80 DEG
1840.60 M	6.10 DEG	1945.40 M	2.00 DEG
1850.10 M	5.80 DEG	1955.10 M	1.50 DEG
1859.70 M	4.90 DEG	1974.25 M	0.60 DEG
1869.30 M	3.70 DEG	1978.00 M	0.60 DEG
1878.70 M	2.90 DEG	1990.00 M	0.60 DEG
1888.20 M	2.20 DEG	19812.00 M	0.60 DEG

COMPANY: SUNCOR ENERGY INC.
WELL: SUNCOR NETLA K-77-60-50-122-30
FIELD: NETLA
LOCATION: NORTHWEST TERRITORIES
SERVICE ORDER: 71187

BOTTOM LOG INTERVAL	2115.6 M
SCHLUMBERGER DEPTH	2117 M
DEPTH DRILLER	2118 M
KELLY BUSHING	627.29 M
DRILL FLOOR	624.9 M
GROUND LEVEL	616.4 M

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION - RXO

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

SONIC
NEUTRON
DENSITY

NOT A COPY

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA

PROVINCE NORTHWEST TERRITORIES

PROVINCE NORTHWEST TERRITORIES
FIELD NETLA
WELL SUNCOR NETLA K-77-60-50-122-30 (60-deg-NE, 122 deg-30' (EUR LOCATION)
COMPANY SUNCOR ENERGY INC.
LOCATION: 354.58M, 61.08M (BOT LOCATION)
300K-77-60-50-122-30/00 (UWI)

Schlumberger

PLATFORM EXPRESS
BOREHOLE COMPENSATED SONIC LOG

60 deg-NE, 122 deg-30' (EUR LOCATION)
354.58M, 61.08M (BOT LOCATION)
300K-77-60-50-122-30/00 (UWI)

Elev.: K.B. 625.7 m
G.L. 616.4 m
D.F. 624.9 m

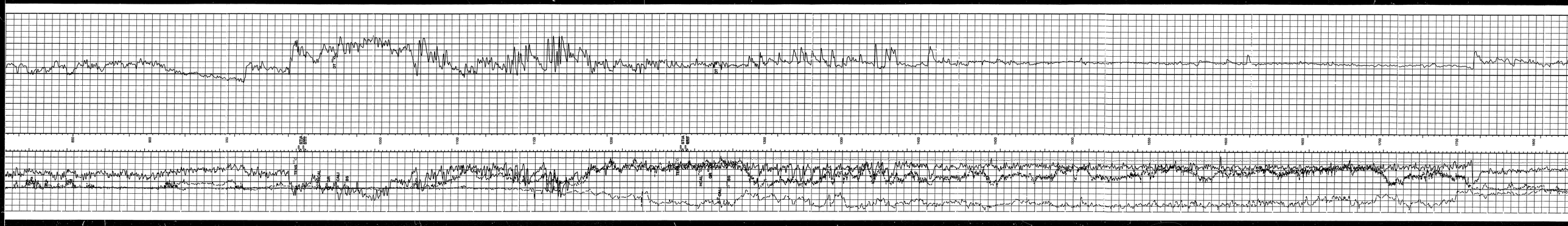
Permanent Datum:	GROUND LEVEL	Elev.:	616.4 m
Log Measured From:	KELLY BUSHING	6.8 m	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		

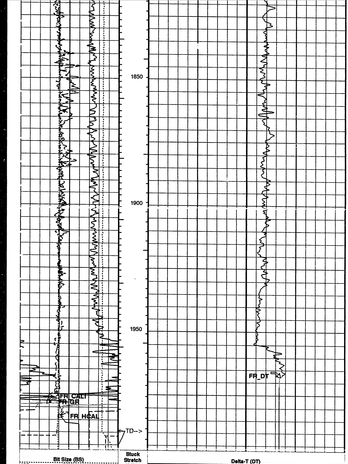
	API Serial No. N/A	N/A	N/A	N/A
Logging Date		26-FEB-1999		
Run Number		ONE		
Depth Driller		1990 m		
Schlumberger Depth		1990 m		
Bottom Log Interval		1968 m		
Top Log Interval		320.5 m		
Casing Driller Size @ Depth		244.500 mm @ 320.5 m	@	@
Casing Schlumberger		323.0 m		
Bit Size		222.000 mm		
Type Fluid in Hole		POTASSIUM SULPHATE		
Density / Viscosity		1006 kg/m3 /	/	/
Fluid Loss / PH		7.0 cm3 / 10	/	/
Source Of Sample		FLOWLINE		
RM @ Measured Temperature		0.060 ohm.m @ 10 degC	@	@
RMF @ Measured Temperature		0.160 ohm.m @ 7 degC	@	@
Source RMF / RMC		MEASURED / MEASURED	@	@
Source RMF / RMC		MEASURED / MEASURED		
RM @ MRT / RMF @ MRT		0.055 @ 80 / 0.070 @ 80	@ / @	@ / @
Maximum Recorded Temperatures		80 degC	80	80
Circulation Stopped / Time		26-FEB-1999 / 12:00		
Logger On Bottom / Time		21-FEB-1999 / 1:30		
Unit Number / Location		2508 / GRANDE PRAIRIE		
Recorded By		TOMY DANIEL		
Witnessed By		BRIAN HEISTER		

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid in Hole				
Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
Source RMF / RMC	@	@	@	@
Source RMF / RMC				
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATIONS, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

CDN4 SERIES PRESSURE
CBIL DUAL DENSITY
CBIL DUAL DENSITY
CBIL SONIC
CBIL SONIC
ALL CURVES ARE 2 INCH PRESENTATIONS AS PER CLIENT REQUEST
ALL CURVES ARE PRESENTED ON FIELD PRINT
ALL PASS WERE RECORDED IN FIELD PRINT
RUN 1 WAS RECORDED WITH 3 INCH CENTRALIZERS ON THE TOOL STRING
RUN 2 WAS CENTERED WITH THREE CENTRALIZERS AND ONE MCD
MUTTER CHARGE OF 2.5 GC, RMF 2.5 @ 20 degC, RMC 2.5 @ 20 degC
TOOLS DECENTRALIZED IN OPEN HOLE WITH MAXIMUM STANDOFF
TOOLS DECENTRALIZED IN OPEN HOLE WITH MAXIMUM STANDOFF
TOOLS LOST ATTEMPTS MADE AT GETTING LOST INTO HOUSE
RUN 1
RUN 2
RUN 1
RUN 2
RUN 1
RUN 2


800
900
950
1000
1100
1150
1200
1300
1350
1400
1450
1500
1550
1600
1650
1700
1750
1800
ST
ST
ST



PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
BS	Bit Size	222.000	MM
DFPD	Depth Offset Repeat Analysis	0.0	M
DFSM	Delta-T Computation Mode	FULL	
HSCM	HILT Sonic Combine Mode	TSCD_SPEED_CORRECTION	
HSTI	HTI Uses HILT Acceleration	100	
LDFN	Trigger for MAX20 First Reading Label	TDL	
SPCM	Sonic Combine	YES	
STOT	STI Stuck Threshold	1.500	M
TDD	Total Depth - Driller	1990.00	M
TDL	Total Depth - Logger	1995.00	M

Format: RLT_2 Vertical Scale: 1:600 Graphics File Created: 20-Feb-1999 23:59

OP System Version: 9C0-613 MCM

HILTB-FTB	SPCW-1131	LDT-D	9C0-613
DTA-A	9C0-613	DSLT-FTB	9C0-613
SIGT-N	9C0-613	DTC-H	9C0-613

Output DLIS Files

DEFAULT	HILTD_011	FN:12 PRODUCER	20-Feb-1999 23:58
CUST	HILTD_011	FN:13 CUSTOMER	20-Feb-1999 23:58

Output DLIS Files

DEFAULT	HILTD_011	FN:12 PRODUCER	20-Feb-1999 23:58
CUST	HILTD_011	FN:13 CUSTOMER	20-Feb-1999 23:58

OP System Version: 9C0-613 MCM

HILTB-FTB	SPCW-1131	LDT-D	9C0-613
DTA-A	9C0-613	DSLT-FTB	9C0-613
SIGT-N	9C0-613	DTC-H	9C0-613

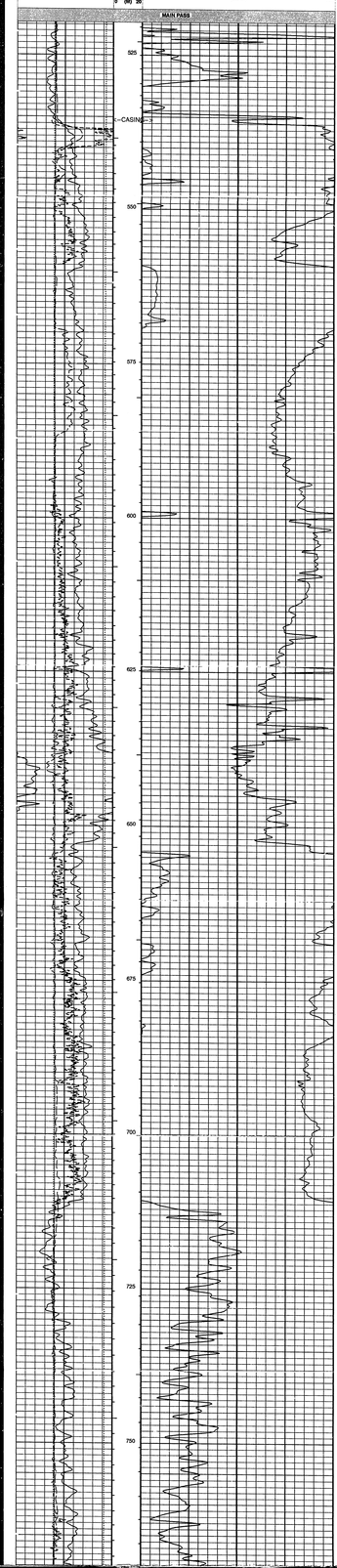
PIP SUMMARY

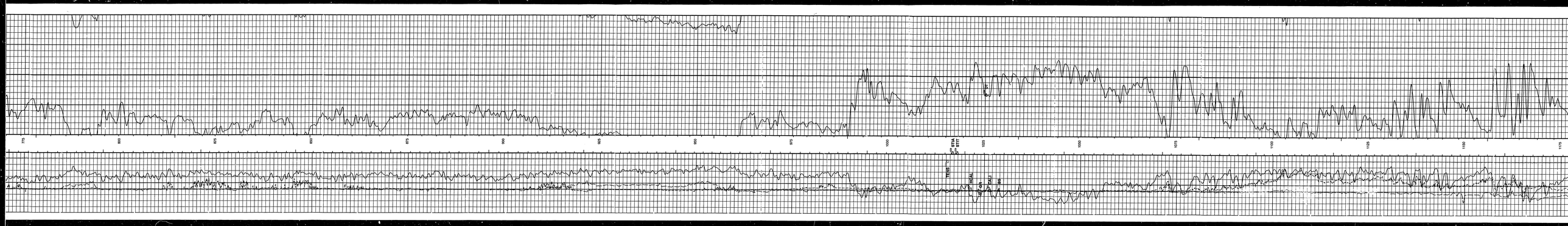
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

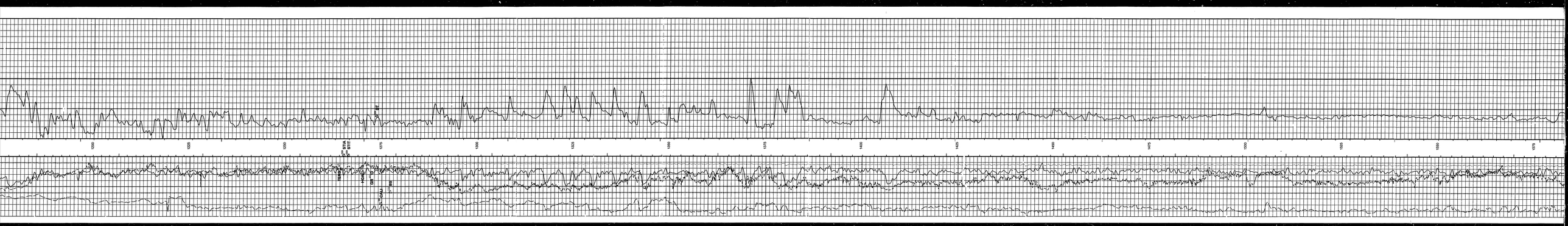
Time Mark Every 60 S

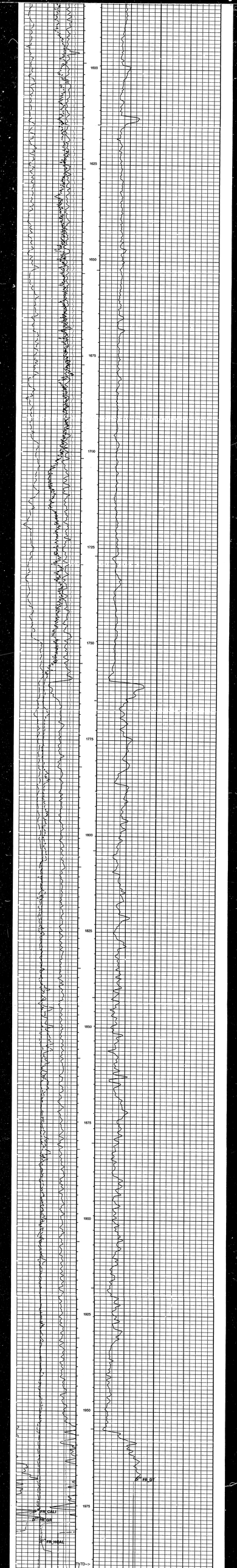
Tension (TENS) (N)
HDMA Caliber (HCAL) (MM)
Gamma Ray (GR) (GAPI)
LDT Caliber (CALI) (MM)
Bit Size (BS) (MM)
Stuck Sketch (STIT) (IN)
Delta-T (DT) (US/M)

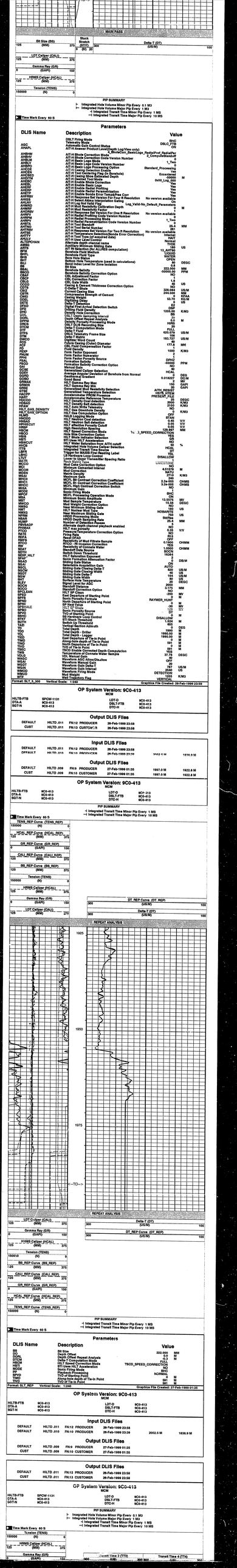
MAIN PASS

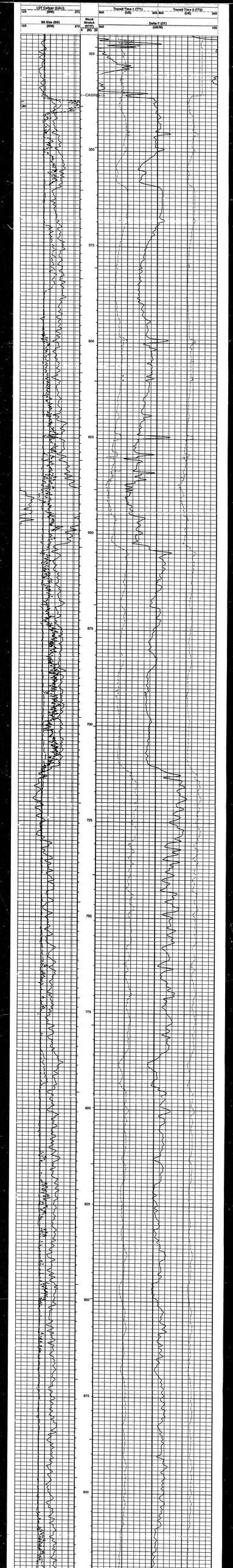


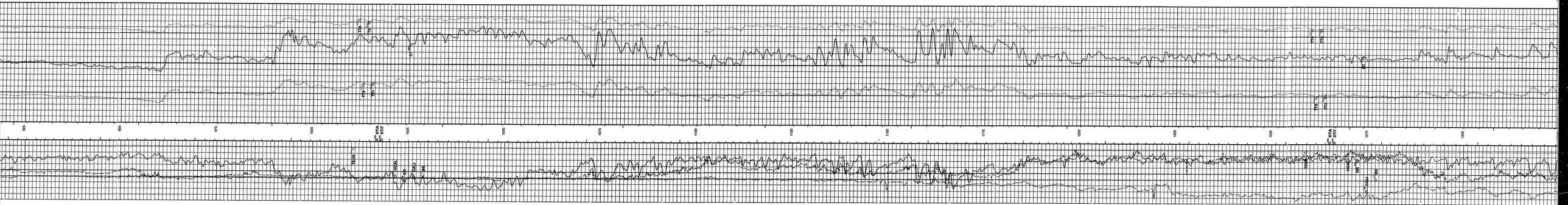

775
800
825
850
875
900
925
950
975
1000
1025
1050
1075
1100
1125
1150
1175
ETIA
RTT
TTIME
RKAL
RCH
RCLT
RBC

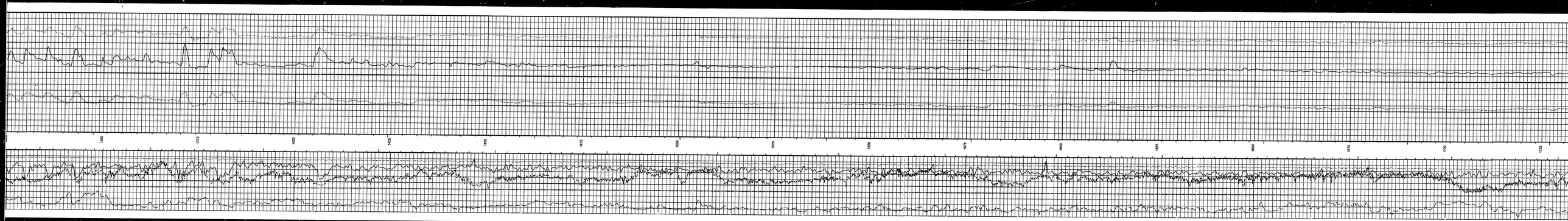

1200
1225
1250
1275
1300
1325
1350
1375
1400
1425
1450
1475
1500
1525
1550
1575
STA
STA
INT
INT
INT

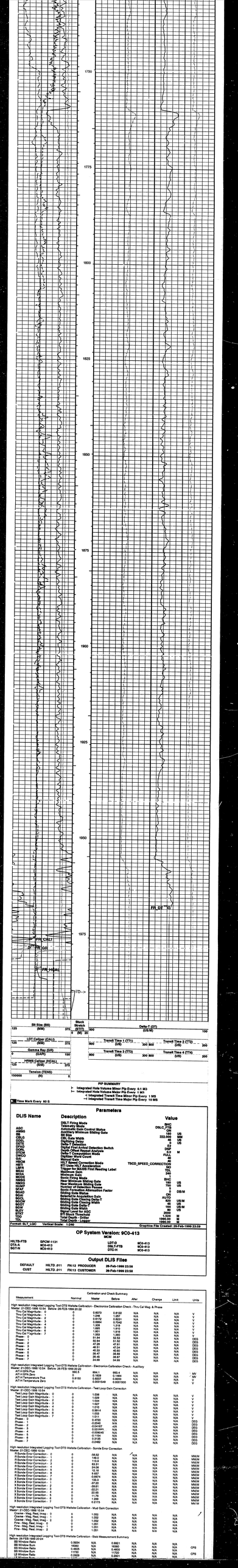

1600
1625
1650
1675
1700
1725
1750
1775
1800
1825
1850
1875
1900
1925
1950
1975
FR_CALI
FR_GR
FR_HDAR
FR_DT
TD->
TD->
TD->


MAIN PASS
Bit Size (BS)
(MM)
Stuck Stretch (STIT)
(S) (M)
Delta-T (DT)
(US/M)
LQT Caliper (CALI)
(MM)
Gamma Ray (GR)
(GAPI)
HDMS Caliper (HCAL)
(MM)
Tension (TENS)
(N)
PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
Format: SLT_6_300
Vertical Scale: 1:240
Graphic File Created: 26-Feb-1999 23:59
OP System Version: 9C0-413
MCM
HLTB-FTB
DTA-A
SGT-N
SPCW-1131
9C0-413
9C0-413
LDT-D
DBLT-FTB
DTC-H
9C0-413
9C0-413
9C0-413
Output DLIS Files
DEFAULT
HILT.011
FN:12 PRODUCER
FN:13 CUSTOMER
26-Feb-1999 23:58
26-Feb-1999 23:58
Input DLIS Files
DEFAULT
HILT.011
FN:12 PRODUCER
26-Feb-1999 23:58
Output DLIS Files
DEFAULT
HILT.009
FN:9 PRODUCER
FN:10 CUSTOMER
27-Feb-1999 01:35
27-Feb-1999 01:35
OP System Version: 9C0-413
MCM
HLTB-FTB
DTA-A
SGT-N
9C0-413
9C0-413
9C0-413
LDT-D
DBLT-FTB
DTC-H
9C0-413
9C0-413
9C0-413
PIP SUMMARY
Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
REPEAT ANALYSIS
REPEAT ANALYSIS
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
Format: SLT_REP
Vertical Scale: 1:240
Graphic File Created: 27-Feb-1999 01:35
OP System Version: 9C0-413
MCM
HLTB-FTB
DTA-A
SGT-N
9C0-413
9C0-413
9C0-413
LDT-D
DBLT-FTB
DTC-H
9C0-413
9C0-413
9C0-413
Input DLIS Files
DEFAULT
HILT.011
FN:12 PRODUCER
26-Feb-1999 23:58
DEFAULT
HILT.010
FN:10 PRODUCER
26-Feb-1999 23:39
2002.5 M
1838.9 M
Output DLIS Files
DEFAULT
HILT.009
FN:9 PRODUCER
27-Feb-1999 01:35
CUST
HILT.009
FN:10 CUSTOMER
27-Feb-1999 01:35
Output DLIS Files
DEFAULT
HILT.011
FN:12 PRODUCER
26-Feb-1999 23:58
CUST
HILT.011
FN:13 CUSTOMER
26-Feb-1999 23:58
OP System Version: 9C0-413
MCM
HLTB-FTB
DTA-A
SGT-N
SPCW-1131
9C0-413
9C0-413
LDT-D
DBLT-FTB
DTC-H
9C0-413
9C0-413
9C0-413
PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S


LDT Caliper (CALI)
125
375
(MM)
Bit Size (BS)
125
375
(MM)
Stuck Stretch (STST)
0
20
(IN)
Transit Time 1 (TT1)
900
300
(US)
Transit Time 2 (TT2)
900
300
(US)
Delta-T (DT)
300
100
(US/M)
CASING
525
550
575
600
625
650
675
700
725
750
775
800
825
850
875
900


T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
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T41


1350
1375
1400
1425
1450
1475
1500
1525
1550
1575
1600
1625
1650
1675
1700
1725



88 Slow (SS) (MM)	125 375	Stack Stretch (STIT)	500 Delta-T (DT) (US/M) 100
LDT Caliper (CALI) (MM)	125 375	Transit Time 1 (TT1) (US)	900 300 800 Transit Time 2 (TT2) (US) 200
Gamma Ray (GR) (GAPI)	0 150	Transit Time 3 (TT3) (US)	900 300 800 Transit Time 4 (TT4) (US) 200
HRMS Caliper (HCAL) (INS)	12 375		
Tension (TENS) (N)	150000 0		

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
  - → Integrated Transit Time Minor Pip Every 1 MS
  - → Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DSL Firing Mode	SHOT
	Telemetry Mode	DSLC_FTB
AGC	Auxiliary Gain Control Status	ON
AMAG	Auxiliary Minimum Sliding Gate	200 US
BS	BS Gate	222.000 MM
CBLG	CBL Gate Width	40 US
CDEL	Digitizer Delay	US
DFTS	Delta-T Detection	
DGEL	Digital Pixel Arrival Detection Switch	FF
DORL	Depth Offset Repeat Analysis	DISP
DTCH	Depth Offset Channel	0.0 M
DWC	Digitizer Word Count	512
GM	Memory Gain	0
HBCM	Hole Bond Correction Mode	TSCD_SPEED_CORRECTION
HBTI	HTI Uses HILT Acceleration	NO
LBFT	Trigger for MAXIS First Reading Label	TDL
MSPC	Minimum Space	240
MXGA	Minimum Gain	0
NOSS	Sonic Firing Mode	SHOT
NWG1	Near Minimum Sliding Gate	150 US
NWG2	Near Maximum Sliding Gate	750 US
NUMP	Number of Detection Passes	1
PFAC	Sonic Formation Attenuation Factor	0 DB/M
RGAD	Sonic Gain Adaption	ON
SGAI	Sensor Gain Initialization Gain	0 DB
SKCL	Sliding Gate Clearing Delta T	400 US/M
SGCT	Sliding Gate Clearing Width	40 US
SGST	Sliding Gate Start	150 US/M
SGW	Sliding Gate Width	40 US
SLEV	Signal Level for AGC	3000
TDC	Total Depth - Cable	1.524 M
TDL	Total Depth - Driller	1696.00 M
TDL	Total Depth - Logger	1696.00 M

Format: SLT_LGC Vertical Scale: 1/240 Graphics File Created: 28-Feb-1999 23:59

OP System Version: 9C0-413

MCM

		LDT-D	9C0-413
HLTD-FTB	SPCW-1131	DSLT-FTB	9C0-413
DTA-A	9C0-413	DTC-H	9C0-413
90748	9C0-413		

Output DLIS Files

DEFAULT	HLTD.011 FR/12 PRODUCER	28-Feb-1999 23:58
CUST	HLTD.011 FR/12 CUSTOMER	28-Feb-1999 23:58

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTS Website Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase Master: 21-DEC-1998 10:54 Before: 28-FEB-1999 22:22							
Thru Cal Magnitude - 1	0	0.6072	0.6122	N/A	N/A	N/A	V
Thru Cal Magnitude - 2	0	0.7172	0.7231	N/A	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.8172	0.8231	N/A	N/A	N/A	V
Thru Cal Magnitude - 4	0	0.8984	0.7042	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.005	1.013	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.005	1.013	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.801	1.810	N/A	N/A	N/A	V
Phase - 1	0	0.000	0.000	N/A	N/A	N/A	DEG
Phase - 2	0	51.84	51.92	N/A	N/A	N/A	DEG
Phase - 3	0	50.84	51.92	N/A	N/A	N/A	DEG
Phase - 4	0	47.28	47.81	N/A	N/A	N/A	DEG
Phase - 5	0	46.51	47.04	N/A	N/A	N/A	DEG
Phase - 6	0	38.89	38.89	N/A	N/A	N/A	DEG
Phase - 7	0	38.48	38.87	N/A	N/A	N/A	DEG
Phase - 8	0	34.58	34.58	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Website Calibration - Bonde Error Correction Master: 21-DEC-1998 10:54 Before: 28-FEB-1999 22:22							
ATI H EPA Zero		990.5	990.5	993.4	N/A	N/A	MV
ATI H EPA Span		0	0.1547	0.1544	N/A	N/A	V
ATI H Temperature Poly		0.9100	0.9037	0.9000	N/A	N/A	V
ATI H Temperature Zero		0	0.0001549	0.0001800	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Website Calibration - Test Loop Gain Correction Master: 21-DEC-1998 10:54							
Test Loop Gain Magnitude - 0	0	1.036	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.026	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.027	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	1.010	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	1.030	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.030	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.011	N/A	N/A	N/A	N/A	V
Phase - 0	0	0.4720	N/A	N/A	N/A	N/A	DEG
Phase - 1	0	0.0000	N/A	N/A	N/A	N/A	DEG
Phase - 2	0	-0.04167	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	-0.031991	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	-0.008043	N/A	N/A	N/A	N/A	DEG
Phase - 5	0	0.0000	N/A	N/A	N/A	N/A	DEG
Phase - 6	0	0.3120	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	-0.2482	N/A	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Website Calibration - Bonde Error Correction Master: 21-DEC-1998 10:54							
R Bonde Error Correction - 0	0	-59.52	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 1	0	149.0	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 2	0	63.81	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 3	0	63.81	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 4	0	24.06	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 5	0	9.537	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 6	0	9.537	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 7	0	-0.6674	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 0	0	133.3	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 1	0	-37.20	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 2	0	22.21	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 3	0	-22.21	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 4	0	22.65	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 5	0	1.286	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 6	0	-1.286	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 7	0	0.3173	N/A	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-DTS Website Calibration - Mud Gain Correction Master: 21-DEC-1998 10:54							
Coarse - Mag, Real, Imag - 0	0	1.050	N/A	N/A	N/A	N/A	
Coarse - Mag, Real, Imag - 1	0	1.052	N/A	N/A	N/A	N/A	
Coarse - Mag, Real, Imag - 2	0	1.052	N/A	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 0	0	1.051	N/A	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 1	0	1.051	N/A	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 2	0	1.051	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Website Calibration - Stak Measurement Summary Master: 21-DEC-1998 20:24							
SS Window Slow	0.0004	N/A	0.0661	N/A	N/A	N/A	
SS Window Sum	0.0004	N/A	0.0661	N/A	N/A	N/A	CPS
SS Window Slow	0.0003	N/A	0.4002	N/A	N/A	N/A	
SS Window Sum	11700	N/A	11700	N/A	N/A	N/A	CPS
LS Window Slow	0.2809	N/A	0.2901	N/A	N/A	N/A	
LS Window Sum		N/A		N/A	N/A	N/A	

				N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations
Before: 26-FEB-1999 20:24

BS PM High Voltage (Command)	2069	N/A	2116	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1908	N/A	1878	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1992	N/A	1955	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration
Before: 26-FEB-1999 20:24

BS Crystal Resolution	13.58	N/A	14.00	N/A	N/A	N/A	%
SS Crystal Resolution	9.480	N/A	9.178	N/A	N/A	N/A	%
LS Crystal Resolution	11.01	N/A	10.97	N/A	N/A	N/A	%

High resolution Integrated Logging Tool-DTS Wellsite Calibration - MCFL Calibration
Before: 26-FEB-1999 20:40

Raw B0 Resistivity	3875	N/A	3851	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3804	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3805	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool-DTS Wellsite Calibration - HILT Caliper Calibration
Before: 26-FEB-1999 20:38

HILT Caliper Zero Measurement	203.2	25.45	26.66	N/A	N/A	3.818	CPS
HILT Caliper Plus Measurement	304.8	28.39	28.64	N/A	N/A	4.259	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration
Before: 26-FEB-1999 20:22

Z-Axis Acceleration	M.001	N/A	M.002	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool-DTS Master Calibration - Inversion results
Master: 23-FEB-1999 19:04

Rho Aluminum	2596	2603	--	--	--	--	K/M3
Rho Magnesium	1698	1685	--	--	--	--	K/M3
Pe Aluminum	2.570	2.525	--	--	--	--	
Pe Magnesium	2.650	2.655	--	--	--	--	

High resolution Integrated Logging Tool-DTS Master Calibration - Deviation Summary
Master: 23-FEB-1999 19:04

BS Average Deviation	0	0.4205	--	--	--	--	%
BS Max Deviation	0	1.269	--	--	--	--	%
SS Average Deviation	0	0.7344	--	--	--	--	%
SS Max Deviation	0	1.925	--	--	--	--	%
LS Average Deviation	0	0.6479	--	--	--	--	%
LS Max Deviation	0	1.315	--	--	--	--	%

High resolution Integrated Logging Tool-DTS Master Calibration - Tank Measurement
Master: 28-NOV-1998 18:06

Thermal Near Corr. (Tank)	6031	5564	--	--	--	--	CPS
Thermal Far Corr. (Tank)	2783	2394	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.324	--	--	--	--	

Litho Density - D Wellsite Calibration - Background Measurement
Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:25

LL Background	20.00	19.68	19.47	N/A	N/A	1.000	CPS
LU Background	78.00	74.59	74.05	N/A	N/A	1.000	CPS
LS Background	57.00	56.97	56.50	N/A	N/A	1.000	CPS
LITH Background	5.500	5.573	5.596	N/A	N/A	0.3000	CPS
SS1 Background	16.00	17.33	17.42	N/A	N/A	0.5000	CPS
SS2 Background	11.00	11.69	11.71	N/A	N/A	0.5000	CPS

Litho Density - D Wellsite Calibration - Tool Quality Control Information HV
Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:25

LSHV Background	1500	1320	1324	N/A	N/A	N/A	V
SSHV Background	1500	1509	1511	N/A	N/A	N/A	V

Litho Density - D Wellsite Calibration - Detectors Resolution From BKG Measurments
Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:25

LS Resolution Background	8.000	8.663	8.741	N/A	N/A	N/A	
SS Resolution Background	8.000	8.759	8.751	N/A	N/A	N/A	

Litho Density - D Wellsite Calibration - Caliper Calibration
Before: 26-FEB-1999 20:34

Caliper Small Ring	203.2	N/A	223.1	N/A	N/A	N/A	MM
Caliper Large Ring	304.8	N/A	322.2	N/A	N/A	N/A	MM

Litho Density - D Master Calibration - Aluminum Measurement
Master: 24-FEB-1999 13:48

LL Aluminum	90.00	93.07	--	--	--	--	CPS
LU Aluminum	135.0	141.1	--	--	--	--	CPS
LS Aluminum	155.0	163.6	--	--	--	--	CPS
LITH Aluminum	50.00	56.36	--	--	--	--	CPS
SS1 Aluminum	175.0	189.5	--	--	--	--	CPS
SS2 Aluminum	260.0	281.8	--	--	--	--	CPS

Litho Density - D Master Calibration - Lithology Measurement
Master: 24-FEB-1999 13:55

LL Iron	60.00	62.51	--	--	--	--	CPS
LU Iron	120.0	123.1	--	--	--	--	CPS
LS Iron	135.0	144.1	--	--	--	--	CPS
LITH Iron	30.00	35.53	--	--	--	--	CPS
SS1 Iron	155.0	168.8	--	--	--	--	CPS
SS2 Iron	245.0	237.1	--	--	--	--	CPS

Litho Density - D Master Calibration - Spectrum Quality Ratios
Master: 24-FEB-1999 13:58

QRLS Calculated	0.6500	0.6597	--	--	--	--	
QRSS Calculated	0.7200	0.7239	--	--	--	--	
QRU Calculated	0.3900	0.3445	--	--	--	--	
QLIR Calculated	1.300	1.397	--	--	--	--	
QR Calculated	1.000	1.012	--	--	--	--	

Scintillation Gamma-Ray - N Wellsite Calibration - Detector Calibration
Before: 26-FEB-1999 20:23

Gamma Ray (Ug - Bkg)	155.4	N/A	155.4	N/A	N/A	14.13	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

The GLS-VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 16.6 DEGC.
Thermal Housing Size 85.954 MM.

High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:

Array Induction Tool - H	AIT - H	
Array Induction Sonde	AHIS - BA	261
HILT high-Resolution Mechanical Sonde	HRMS - B	664
HILT Rho Gamma-ray Device	HRGD	568
HILT Nuclear Back-Scatter Detector	HILT -	
HILT Nuclear Short-Spacing Detector	HILT -	
HILT Nuclear Long-Spacing Detector	HILT -	
Micro Cylindrically Focused Log Device	MCFL -	

Auxiliary Equipment:

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Mag & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6073		0.6050	51.84		71.00
	Before	0.6122			52.53		
1	Master	1.246		1.270	50.84		70.00
	Before	1.287			51.52		
2	Master	0.6172		0.6230	47.28		66.00
	Before	0.6231			47.81		
3	Master	0.6984		0.7040	46.81		65.00
	Before	0.7042			47.04		
4	Master	1.309		1.337	40.33		59.00
	Before	1.319			40.80		
5	Master	1.895		1.955	38.47		57.00
	Before	1.910			38.89		
6	Master	1.901		1.956	38.45		57.00
	Before	1.916			38.87		
7	Master	1.353		1.415	34.99		53.00
	Before	1.360			34.99		
		60.00 % (Minimum)	100.0 % (Nominal)	140.0 % (Maximum)		Nom -60.00 (Minimum)	Nom. + 90.00 (Nominal) (Maximum)

Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	AIT-H SPA Plus MV	Value	Phase	AIT-H SPA Zero MV	Value
Master		994.1	Master		0.1808
Before		983.4	Before		0.1464
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)			-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	AIT-H Temperature Plus V	Value	Phase	AIT-H Temperature Zero V	Value
Master		0.9007	Master		0.0001549
Before		0.9000	Before		0.0001500
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)			-0.06000 (Minimum) 0 (Nominal) 0.06000 (Maximum)	

Master: 21-DEC-1998 10:54 Before: 26-FEB-1999 20:22

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.036	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	0.4730	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
1	1.029	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.2340	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
2	1.034	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.04167	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
3	1.027	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	0.007883	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
4	1.010	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.009045	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
5	0.9974	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	[illegible]	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
6	1.003	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	0.3135	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)
7	1.011	0.9500 1.000 1.050 (Minimum) (Nominal) (Maximum)	-0.2482	-3.000 0 3.000 (Minimum) (Nominal) (Maximum)

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M
0	-58.52	-226.0 -58.00 118.0 (Minimum) (Nominal) (Maximum)	133.3	-2250 0 2250 (Minimum) (Nominal) (Maximum)
1	148.0	114.0 158.0 204.0 (Minimum) (Nominal) (Maximum)	-37.20	-625.0 0 625.0 (Minimum) (Nominal) (Maximum)
2	113.7	66.00 111.0 156.0 (Minimum) (Nominal) (Maximum)	-38.61	-350.0 0 350.0 (Minimum) (Nominal) (Maximum)
3	63.31	38.00 64.00 89.00 (Minimum) (Nominal) (Maximum)	-22.21	-250.0 0 250.0 (Minimum) (Nominal) (Maximum)
4	24.06	15.00 25.00 35.00 (Minimum) (Nominal) (Maximum)	29.65	-63.00 0 63.00 (Minimum) (Nominal) (Maximum)
5	12.18	4.000 14.00 24.00 (Minimum) (Nominal) (Maximum)	11.78	-50.00 0 50.00 (Minimum) (Nominal) (Maximum)
6	9.667	5.000 10.00 15.00 (Minimum) (Nominal) (Maximum)	1.209	-30.00 0 30.00 (Minimum) (Nominal) (Maximum)
7	-0.6674	-5.000 0 5.000 (Minimum) (Nominal) (Maximum)	0.2173	-30.00 0 30.00 (Minimum) (Nominal) (Maximum)

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Mud Gain Correction

Idx	Value	Coarse - Mag. Real, Imag	Value	Fine - Mag. Real, Imag
0	1.062	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)	1.051	0.8000 1.000 1.400 (Minimum) (Nominal) (Maximum)
1	1.062	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)	1.051	0.8000 1.000 1.400 (Minimum) (Nominal) (Maximum)
2	1.052	0.6000 1.000 1.400 (Minimum) (Nominal) (Maximum)	1.051	0.8000 1.000 1.400 (Minimum) (Nominal) (Maximum)

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Stab Measurement Summary

Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before	0.9431	0.9921	Before	0.4664	0.4800	Before	0.2783	0.2901
	0.8438 (Minimum) 0.9934 (Nominal) 1.043 (Maximum)			0.4608 (Minimum) 0.8045 (Nominal) 0.8200 (Maximum)			0.2609 (Minimum) 0.2909 (Nominal) 0.3078 (Maximum)	

Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before	18580	18360	Before	11140	11720	Before	1375	1449
	15680 (Minimum) 16360 (Nominal) 17200 (Maximum)			11140 (Minimum) 11730 (Nominal) 12320 (Maximum)			1375 (Minimum) 1447 (Nominal) 1519 (Maximum)	

Before: 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Photo-multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before	2069	2116	Before	1908	1879	Before	1992	1955
	1969 (Minimum) 2069 (Nominal) 2169 (Maximum)			1808 (Minimum) 1908 (Nominal) 2008 (Maximum)			1892 (Minimum) 1992 (Nominal) 2092 (Maximum)	

Before: 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before	13.58	14.00	Before	9.480	9.178	Before	11.01	10.97
	12.58 (Minimum) 13.58 (Nominal) 14.58 (Maximum)			8.480 (Minimum) 9.480 (Nominal) 10.48 (Maximum)			10.01 (Minimum) 11.01 (Nominal) 12.01 (Maximum)	

Before: 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
MCFL Calibration

Phase	Raw B0 Resistivity OHMM	Value	Phase	Raw B1 Resistivity OHMM	Value	Phase	Raw B2 Resistivity OHMM	Value
Before	3875	3851	Before	3830	3804	Before	3830	3805
	3095 (Minimum) 3875 (Nominal) 4195 (Maximum)			3804 (Minimum) 3830 (Nominal) 3830 (Maximum)			3830 (Minimum) 3830 (Nominal) 4136 (Maximum)	

Before: 26-FEB-1999 20:40

High resolution Integrated Logging Tool-DTS Wellsite Calibration
HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement MM	Value	Phase	HILT Caliper Plus Measurement MM	Value
Before	203.2	219.3	Before	304.8	330.0
	152.4 (Minimum) 203.2 (Nominal) 254.0 (Maximum)			228.6 (Minimum) 304.8 (Nominal) 381.0 (Maximum)	

Before: 26-FEB-1999 20:38

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		5.564
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)	

Phase	Gamma Ray Ufg - Bkgd GAPI	Value
Before		196.7
	176.9 (Minimum) 196.7 (Nominal) 214.6 (Maximum)	

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		165.0
	150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 26-FEB-1999 20:23

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Zero Measurement

Phase	CNTC Background CPS	Value
Master		25.45
Before		26.68
	5.000 (Minimum) 25.45 (Nominal) 40.00 (Maximum)	

Phase	CFTC Background CPS	Value
Master		28.39
Before		28.64
	5.000 (Minimum) 28.39 (Nominal) 40.00 (Maximum)	

Master: 28-NOV-1998 18:06 Before: 26-FEB-1999 20:23

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Accelerometer Calibration

Phase	Z-Axis Acceleration M/S2	Value
Before		9.809
	9.810 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 26-FEB-1999 20:22

High resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6073		0.6060	51.94		71.00
1	Master	1.246		1.270	50.84		70.00
2	Master	0.6172		0.6230	47.28		64.00
3	Master	0.6564		0.7040	46.51		65.00
4	Master	1.309		1.337	40.33		59.00
5	Master	1.895		1.968	38.47		57.00
6	Master	1.901		1.968	38.45		57.00
7	Master	1.383		1.418	34.99		53.00
			60.00 % (Minimum) (Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum) (Nominal)	Nom + 60.00 (Maximum)	

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	AIT-H SPA Plus MV	Value	Phase	AIT-H SPA Zero MV	Value
Master		994.1	Master		0.1609
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)		-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)		

Phase	AIT-H Temperature Plus V	Value	Phase	AIT-H Temperature Zero V	Value
Master		0.9007	Master		0.0001549
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)		-0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)		

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.036		0.4720	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.029		-0.2340	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
2	1.034		-0.04187	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
3	1.027		0.001680	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
4	1.010		-0.009045	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
5	0.9914		-0.1154	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
6	1.003		0.3138	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
7	1.011		-0.2482	
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Master Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M
0	-56.52		133.3	
		-221.0 (Minimum) -56.00 (Nominal) 119.0 (Maximum)	-2850 (Minimum) 0 (Nominal) 2850 (Maximum)	
1	148.0		-37.20	
		114.0 (Minimum) 158.0 (Nominal) 204.0 (Maximum)	-625.0 (Minimum) 0 (Nominal) 625.0 (Maximum)	
2	113.9		-39.61	
		68.00 (Minimum) 111.0 (Nominal) 156.0 (Maximum)	-380.0 (Minimum) 0 (Nominal) 380.0 (Maximum)	
3	63.31		-22.21	
		39.00 (Minimum) 64.00 (Nominal) 89.00 (Maximum)	-280.0 (Minimum) 0 (Nominal) 280.0 (Maximum)	
4	24.06		22.65	
		15.00 (Minimum) 25.00 (Nominal) 35.00 (Maximum)	-63.00 (Minimum) 0 (Nominal) 63.00 (Maximum)	
5	12.18		11.76	
		4.000 (Minimum) 14.00 (Nominal) 24.00 (Maximum)	-60.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	
6	9.657		1.299	
		5.000 (Minimum) 10.00 (Nominal) 15.00 (Maximum)	-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)	
7	-0.6674		0.2173	
		-5.000 (Minimum) 0 (Nominal) 5.000 (Maximum)	-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)	

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Master Calibration
Mud Gain Correction

Idx	Value	Coarse - Mag. Real. Imag	Value	Fine - Mag. Real. Imag
0	1.052		1.051	
		0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)	0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)	
1	1.052		1.051	
		0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)	0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)	
2	1.052		1.051	
		0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)	0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)	

Master: 21-DEC-1998 10:54

High resolution Integrated Logging Tool-DTS Master Calibration
Inversion results

Phase	Rho Aluminium K/M3	Value	Phase	Rho Magnesium K/M3	Value
Master		2603	Master		1685
	2596 (Minimum) 2598 (Nominal) 2600 (Maximum)		1676 (Minimum) 1696 (Nominal) 1699 (Maximum)		

Phase	Pe Aluminium	Value	Phase	Pe Magnesium	Value
Master		2.525	Master		0.635
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)		2.580 (Minimum) 2.650 (Nominal) 2.750 (Maximum)		

Master: 23-FEB-1999 19:04

High resolution Integrated Logging Tool-DTS Master Calibration
Deviation Summary

Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		1.4200	Master		0.7344	Master		0.6479
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)		-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)		

Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		1.289	Master		1.925	Master		1.315
	-1.800 (Minimum) 0 (Nominal) 1.800 (Maximum)		-2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			-3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)		

Master: 23-FEB-1999 19:04

High resolution Integrated Logging Tool-DTS Master Calibration
Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5564	Master		2394	Master		2.324
	5020 (Minimum) 5031 (Nominal) 7290 (Maximum)		2075 (Minimum) 2793 (Nominal) 3128 (Maximum)			2.130 (Minimum) 2.159 (Nominal) 2.540 (Maximum)		

Master: 28-NOV-1998 18:06

Litho Density - D / Equipment Identification

Primary Equipment:
Nuclear Services Cartridge — NSC - E — 2707
Powered Gamma Detector — PGD - G
Gamma Source Radioactive — GSR - J — 2050

Auxiliary Equipment:
Density Resistivity Sonde — DRS - C — 4969
Electronics Cartridge Housing — ECH - MKA
Powered Detector Housing — PDH - L — 2959

Litho Density - D Wellsite Calibration
Background Measurement

Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Master		18.68	Master		74.59	Master		58.97
Before		18.47	Before		74.05	Before		56.50
	10.00 (Minimum) 20.00 (Nominal) 25.00 (Maximum)		59.00 (Minimum) 78.00 (Nominal) 94.00 (Maximum)			43.00 (Minimum) 57.00 (Nominal) 72.00 (Maximum)		

Phase	LITH Background CPS	Value	Phase	SS1 Background CPS	Value	Phase	SS2 Background CPS	Value
Master		9.573	Master		17.33	Master		11.69
Before		9.596	Before		17.42	Before		11.71
	4.000 (Minimum) 8.500 (Nominal) 7.000 (Maximum)		12.00 (Minimum) 16.00 (Nominal) 19.00 (Maximum)			8.000 (Minimum) 11.00 (Nominal) 13.00 (Maximum)		

Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:25

Litho Density - D Wellsite Calibration
Detectors Resolution From BKG Measurements

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master		8.663	Master		8.759
Before		8.741	Before		8.751
	8.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)		5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)		

Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:25

Litho Density - D Master Calibration
Aluminum Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master		83.07	Master		141.1	Master		163.6
	70.00 (Minimum) 90.00 (Nominal) 125.0 (Maximum)		100.0 (Minimum) 135.0 (Nominal) 184.0 (Maximum)			120.0 (Minimum) 155.0 (Nominal) 217.0 (Maximum)		

Phase	LITH Aluminum CPS	Value	Phase	SS1 Aluminum CPS	Value	Phase	SS2 Aluminum CPS	Value
Master		56.36	Master		188.5	Master		261.8
	35.00 (Minimum) 50.00 (Nominal) 74.00 (Maximum)		126.0 (Minimum) 175.0 (Nominal) 256.0 (Maximum)			210.0 (Minimum) 290.0 (Nominal) 383.0 (Maximum)		

Master: 24-FEB-1999 13:48

Litho Density - D Master Calibration
Lithotog Measurement

Phase	LL Iron CPS	Value	Phase	LU Iron CPS	Value	Phase	LS Iron CPS	Value
Master		52.51	Master		123.1	Master		144.1
	60.00 (Minimum) 80.00 (Nominal) 114.0 (Maximum)		85.00 (Minimum) 120.0 (Nominal) 177.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 193.0 (Maximum)		

Phase	LITH Iron CPS	Value	Phase	SS1 Iron CPS	Value	Phase	SS2 Iron CPS	Value
Master		35.53	Master		166.8	Master		227.1
	18.00 (Minimum) 30.00 (Nominal) 51.00 (Maximum)		105.0 (Minimum) 155.0 (Nominal) 234.0 (Maximum)			190.0 (Minimum) 248.0 (Nominal) 325.0 (Maximum)		

Master: 24-FEB-1999 13:55

Litho Density - D Master Calibration
Spectrum Quality Ratios

Phase	GRLS Calculated	Value	Phase	GRSS Calculated	Value	Phase	GRLI Calculated	Value
Master		0.6587	Master		0.7239	Master		0.3445
	0.6000 (Minimum) 0.6800 (Nominal) 0.7000 (Maximum)		0.6200 (Minimum) 0.7200 (Nominal) 0.8200 (Maximum)			0.2900 (Minimum) 0.3900 (Nominal) 0.4500 (Maximum)		

Phase	GLIR Calculated	Value	Phase	QR Calculated	Value
Master		1.397	Master		1.012
	1.280 (Minimum) 1.380 (Nominal) 1.450 (Maximum)		0.9600 (Minimum) 1.000 (Nominal) 1.020 (Maximum)		

Master: 24-FEB-1999 13:55

Scintillation Gamma-Ray - N / Equipment Identification

Primary Equipment:
Scintillation Gamma Cartridge — SGC - SA
Scintillation Gamma Detector — SGD - TAA

Auxiliary Equipment:
Scintillation Gamma Housing — SGH - K
Gamma Source Radioactive — GSR - UY — 1072

Scintillation Gamma-Ray - N Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		26.70
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)	

Phase	Gamma Ray Ufg - Bkgd GAPI	Value
Before		155.4
	141.3 (Minimum) 156.4 (Nominal) 169.4 (Maximum)	

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		165.0
	150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 26-FEB-1999 20:23

COMPANY	SUNCOR ENERGY INC.	BOTTOM LOG INTERVAL	1968 m
		SCHLUMBERGER DEPTH	1990 m
WELL	SUNCOR NETLA K-77-60-50-122-30	DEPTH DRILLER	1990 m
FIELD	NETLA	KELLY BUSHING	825.2 m
PROVINCE	NORTHWEST TERRITORIES	DRILL FLOOR	824.9 m
		GROUND LEVEL	818.4 m

Schlumberger

PLATFORM EXPRESS
BOREHOLE COMPENSATED
SONIC LOG

NEB COPY

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA

PROVINCE NORTHWEST TERRITORIES ***TVD***

PROVINCE:NORTHWEST TERRITORIES
Field: NETLA
Location: 60 deg-46', 122 deg-30' (SUR LO
Well: SUNCOR NETLA K-77-60-50-12
Company: SUNCOR ENERGY INC.

LOCATION

Schlumberger

PLATFORM EXPRESS
BOREHOLE COMPENSATED
SONIC LOG

60 deg-46', 122 deg-30' (SUR LOCATION)
284.98M, -91.69M (BOT LOCATION)
300K'-77-60-50-122-30W (UWI)

Permanent Datum:	GROUND LEVEL	Elev.:	K.B. 625.2 m
Log Measured From:	KELLY BUSHING		G.L. 616.4 m
Drilling Measured From:	KELLY BUSHING		D.F. 624.9 m

Elev.: 616.4 m
6.8 m above Perm. Datum

| | | |

Input DLIS Files

DEFAULT HILTD .011 FN:12 PRODUCER 26-Feb-1999 23:58

Output DLIS Files

DEFAULT HILTD .012 FN:15 PRODUCER 27-Feb-1999 01:55
CUST HILTD .012 FN:16 CUSTOMER 27-Feb-1999 01:55

OP System Version: 9C0-413

MCN

HILTB-ETB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

PIP SUMMARY
-t Integrated Transit Time Minor Pip Every 1 MS
-t Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Tension (TENS) 0 / 100000 (lb)

HRMS Caliber (HCAL) 3.75 / 12.5 (MM)

Gamma Ray (GR) 150 / 0 (GAPI)

LDT Caliber (CALI) 3.75 / 12.5 (MM)

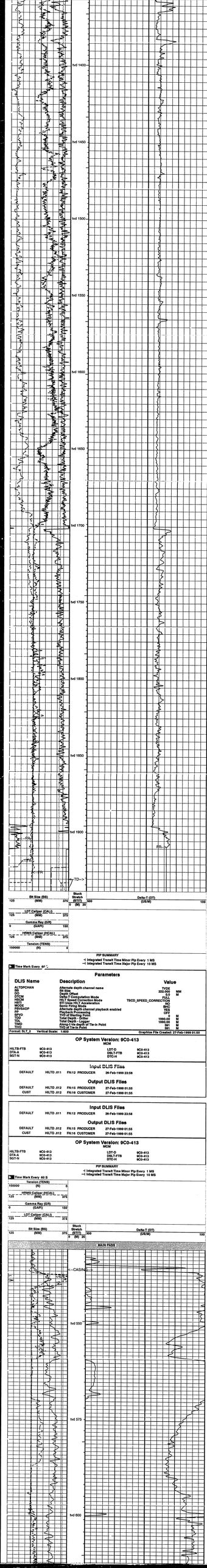
Rib Site (RS) 3.75 / 12.5 (MM)

Stack Sketch (STIT) 0 / 500 (M) 20

Delta-T (DT) 100 / 400 (US/M)

CASING

tvd 550
tvd 600
tvd 650
tvd 700
tvd 750
tvd 800
tvd 850
tvd 900
tvd 950
tvd 1000
tvd 1050
tvd 1100
tvd 1150
tvd 1200
tvd 1250
tvd 1300
tvd 1350



Parameters

DLIS Name	Description	Value	
AUTOPCHAN	Alternate depth channel name	TVDE	
BS	Bit Size	222.000	MM
DFD	Drilling Fluid Density	0.0	M
DTCM	Delta-T Correlation Mode	FULL	
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION	
HSTI	STI Uses HILT Acceleration	NO	
PBVD	Playback on Bottom	BHC	
PBVSADP	Alternate depth channel playback enabled	NO	
SP	Playback Processing	CPP	
SPVD	TVD of Starting Point		M
TCL	Total Depth - Driller	1990.00	M
TDL	Total Depth - Logger	1990.00	M
TIMD	Along-Hole depth of Tie-In Point	591	M
TIVD	TVD at Tie-In Point	591	M

Format: SLT_2 Vertical Scale: 1:600 Graphics File Created: 27-Feb-1999 01:55

OP System Version: 9C0-413

MCM

HILTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTD-H	9C0-413

Input DLIS Files

DEFAULT	HILTD.011	FN:12	PRODUCER	26-Feb-1999 23:58

Output DLIS Files

DEFAULT	HILTD.012	FN:15	PRODUCER	27-Feb-1999 01:55
CUST	HILTD.012	FN:16	CUSTOMER	27-Feb-1999 01:55

Input DLIS Files

DEFAULT	HILTD.011	FN:12	PRODUCER	26-Feb-1999 23:58

Output DLIS Files

DEFAULT	HILTD.012	FN:15	PRODUCER	27-Feb-1999 01:55
CUST	HILTD.012	FN:16	CUSTOMER	27-Feb-1999 01:55

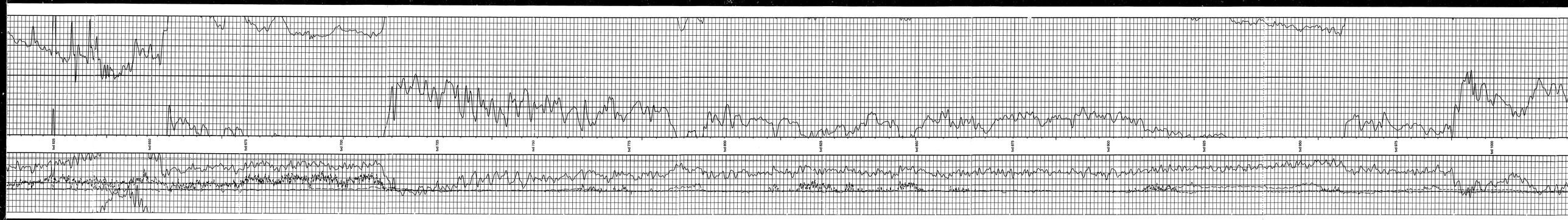
OP System Version: 9C0-413

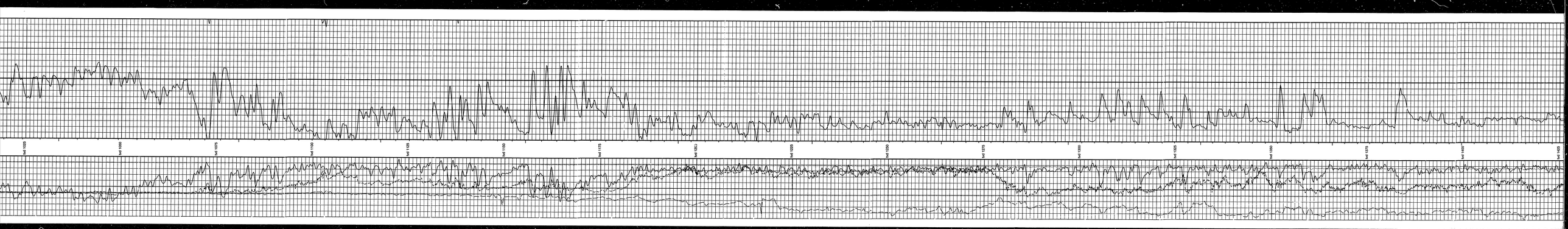
MCM

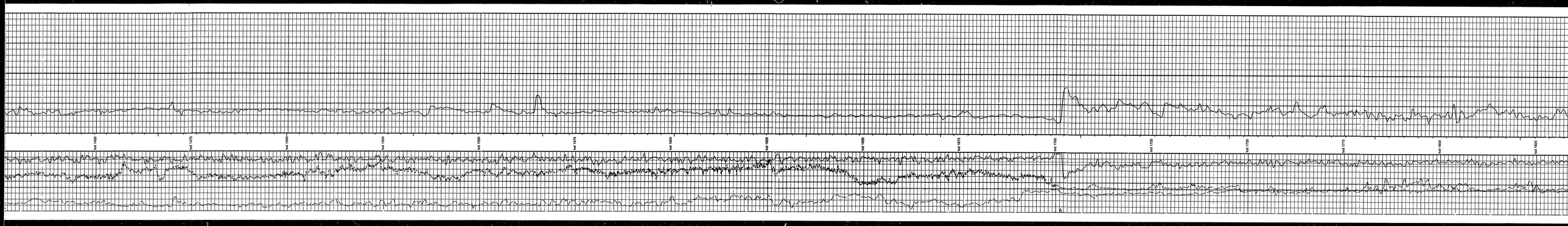
HILTB-FTB	9C0-413	LDT-D	9C0-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTD-H	9C0-413

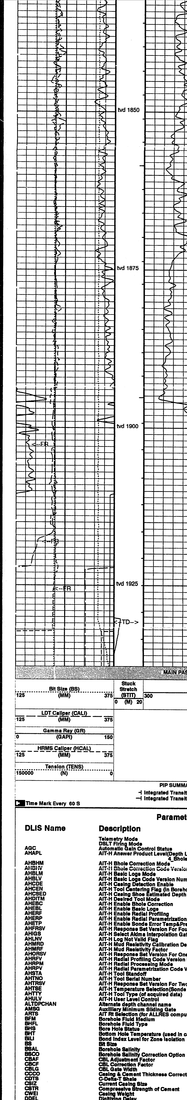
PIP SUMMARY
Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S
Tension (TENS) (N) 150000 0
HNAS Caliber (HCAL) (MM) 125 375
Gamma Ray (GR) (GAPI) 0 150
LDT Caliber (CALI) (MM) 125 375
Bit Size (BS) (MM) 125 375
Stuck Stretch (STIT) 0 (M) 300 20
Delta-T (DT) (US/M) 300 100

MAIN PASS


bd 625
bd 650
bd 675
bd 700
bd 725
bd 750
bd 775
bd 800
bd 825
bd 850
bd 875
bd 900
bd 925
bd 950
bd 975
bd 1000


Jul 1025
Jul 1050
Jul 1075
Jul 1100
Jul 1125
Jul 1150
Jul 1175
Jul 1200
Jul 1225
Jul 1250
Jul 1275
Jul 1300
Jul 1325
Jul 1350
Jul 1375
Jul 1400
Jul 1425


hrd 1450
hrd 1475
hrd 1500
hrd 1525
hrd 1550
hrd 1575
hrd 1600
hrd 1625
hrd 1650
hrd 1675
hrd 1700
hrd 1725
hrd 1750
hrd 1775
hrd 1800
hrd 1825



Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLCTPE
	DWLT Firing Mode	6
AGC	AIT-H Basic Control Status	ON
ANAPL	AIT-H Annulus Pressure Level(Depth Log/View only)	0
	E_WindowCorr_BasicLogs_RadialPost_RadialPair	E_CompSetRadialPost
ARBHM	AIT-H Basic Hole Configuration Mode	0
ARBSW	AIT-H Basic Logs Software Code Version Number	1.370
AHELM	AIT-H Basic Logs Mode	0
AHELV	AIT-H Basic Logs Software Version Number	1.370
AHCSE	AIT-H Casing Detection Enable	Yes
AHCSD	AIT-H Casing Detection Mode (Borehole)	Exceeding
AHCRED	AIT-H Casing Shoe Extended Depth	4000 M
AHDTM	AIT-H Decimal Tool Mode	0x00_Log_000
AHEEC	AIT-H Enable Environmental Corr	Yes
AHEBL	AIT-H Enable Basic Logging	Yes
AHERF	AIT-H Enable Radial Profiling	Yes
AHEVF	AIT-H Enable Vertical Deconvolution	Yes
AHFTP	AIT-H Formation Temperature/Time Corr	Yes
AHFRSV	AIT-H Response Set Version For Fast 8 Resolution	30.66.23.11
AHGS	AIT-H Select Allow Interpolation Gating	On
AHLNV	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMDD	AIT-H Mud Density Calibration Depth	0 M
AHMRV	AIT-H Mud Resistivity	0
AHRDRV	AIT-H Response Set Version For One R Resolution	30.66.23.11
AHRFM	AIT-H Radial Profiling Mode Number	1
AHRNV	AIT-H Radial Processing Mode	1.7mv
AHRPV	AIT-H Radial Parameterization Code Version Number	710
AHSPV	AIT-H Software Version	2.4 MM
AHTNC	AIT-H Tool Serial Number	0004
AHTRV	AIT-H Response Set Version For Two R Resolution	30.66.23.11
AHTSE	AIT-H Temperature Correction(Borehole Error Correction)	Internal
AHTV	AIT-H Tool Type (of acquired data)	HAT
AHVLV	AIT-H Vertical Log Mode	Normal
AHWID	Alternate depth channel name	TVDE
AWBD	Auxiliary Minimum Sliding Gate	US
BFV	Bit Size Value (Value for computation)	13_.497500
BFM	Borehole Fluid Mode	LIQUID
BHFL	Borehole Fluid Type	WATER
BHS	Borehole Salinity	0
BHT	Bottom Hole Temperature (used in calculations)	89 DEGC
BSJ	Bond Index Level for Zone Isolation	0.0
BS	Bit Size	222.250 MM
BSAL	Borehole Salinity	-00000.00 PPM
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Attenuation Factor	1.0
CBLC	CBL Correction Factor	1.0
CBLG	CBL Gain	0.0
CCCO	Casing & Cement Thickness Correction Option	NO
CBTD	C-Orbit-T Stride	328.084 US/M
CBTS	C-Orbit-T Stride Size	244.000 US/M
CBTB	Compressional Strength of Cement	0 KPAA
CWEI	Casing Weight	53.70 KG/M
DATE	Date of Survey	0
DTTI	Delta-T Detection	0
DFAD	Digital Fluid Artifact Detection Switch	OFF
DFC	Drilling Fluid Conductivity	1295.00 K/M3
DFD	Drilling Fluid Density	0.0
DVL	DWLT Depth Sampling Interval	152
DO	Depth Offset	0.0 M
DMOD	DWLT Depth Sampling Mode	76800
DRCS	DWLT 5LSB Recording Size	5
DTM	DWLT Tool Mode	1
DTSP	DWLT Transmitter Spacing	823.076 US/M
DTFB	DWLT Telemetry Frame Size	1
DTD	Delta-T Marks	183.727 US/M
DWCO	Digitizer Word Count	40
EC	Env. Temperature Compensation Factor	1.0
FD	Fluid Density	1000 K/M3
FEXP	Formation Factor Exponent	1.800
FFAC	Formation Factor Factor	0.810
FMAT	Formation Factor Matrix	DOLO
FSAL	Formation Salinity	-00002 PPM
FSCO	Formation Salinity Correction Option	NO
GAIN	Gain	0.0
GCBE	Generalized Caliper Selection	HCAL
GSEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.016327 DEGM
GOBD	Gouge Bed	NO
GRMAX	HILT Gamma Ray Max	150 GAPI
GRMIN	HILT Gamma Ray Min	20 GAPI
GTAE	Generalized Temperature Selection	AITH_RESP
GTSE	Generalized Temperature Selection	HSTR_RESP
HACP	Accelerometer PROM Presence	PRESENT_FILE
HBHT	Bottom Hole Circulating Temperature	0 DEGC
HDCD	HILT Density Detector Selection	2.52 G/C3
HDAD	HILT Density Bell detection	2100 K/M3
HFSV	HILT Sub-Volts Telemetry	0 V
HILT_SAS_DENSITY	HILT Gas Correction	NO K/M3
HILT_SAS_OPTION	HILT Gas Correction Option	OFF
HLMD	HILT Logging Mode	STAN
HNSD	HILT Neutron Cool detection	DISALLOW
HPEF	HILT Photoelectric Transmitter Spacing Ratio	0.18
HPWEOUT	HILT effective Pwave Cutoff	0.00 US/M
HRDM	HILT Resolution Specs	120.597 MM
HSCO	HILT Sonde Configuration Code	TSCD_SPEED_CORRELATION
HSCO	Hole Size Correction Option	YES
HSIS	HILT Shale Indicator Selection	GR
HSIV	HILT Shale Indicator Value	0.0
HWEOUT	HILT Water Saturation from AITH cutoff	100 %
HYCS	Integrated Hole Volume Caliper Selection	AUTOMATIC
ITT	Integrated Time Source	STAN
LSV	LQT Hardware Loop Control	DISALLOW
MATR	Matrix Density Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MCTH	Mud Cake Thickness	4.572 M
MCON	Mud Conductivity	1.0 K/M3
MDEN	Matrix Density	2710
MDFL	Mud Filtrate Density	1000
MHCC	MCFL Bit Contract Correction Coefficient	2.2e-005 OHMS
MHCI	MCFL Bit Contract Correction Coefficient	3.3e-005 OHMS
MHCN	MCFL-High Contract Correction Switch	NO
MODE	Mode	0
MODS	Socks Fitting Mode	BHC
MPCO	MCFL Processing Operation Mode	ON
MRES	Mud Resistivity Computed	13.5879 MV
MST	Mud Sample Temperature	89 DEGC
MWGD	Mud Weight Gradient Option	NO
NHTP	Near Minimum Sliding Gate	152 US
NMTP	Near Minimum Tracking Gate	0
NWXG	Near Maximum Sliding Gate	762 US
NPRM	HRDD Processing Mode	Shallow
NSRR	Nominal Logging Speed Rate	35.4 MM
NUMP	Number of Detection Passes	1
PBVBADP	Alternate depth channel playback enabled	YES
PNMAL	PNAV Alarm	0.25 V/V
PNP	PNAV Input Processing	0.25
PTCO	Pressure/Temperature Correction Option	NO
RBIT	Rig Bit No.	813
RMFI	Resistivity of Mud Filtrate Sample	0.1000 OHMM
RTCO	RTCO - IR Inversion Correction	YES
RWT	Resistivity of Connate Water	1.0000 OHMM
RDAT	Run Data Source	TOOL
SDTU	Switch Down Threshold	16384
SEXP_HILT	HILT Saturation Exponent	2
SHOE	Shoe Track Volume Correction Factor	0.0 DB/M
SOAG	Sliding Gate Status	ON
SGAI	Selectable Acquisition Gain	AUTO
SGCH	Sliding Gate Channel Delta T	0 US/M
SGCW	Sliding Gate Channel Width	128 US
SGDT	Sliding Gate Delta T	184 US
SGLT	Sliding Gate Length	80 US
SGOC	Sliding Gate Offscreen	20 DEGC
SLEV	Signal Level for AGC	0.0
SOCS	Standoff Correction Option	2.175 MM
SOCC_LAN	Standoff Correction Option	NO
SPEV	Speed Value	0.000 MV
SPED	Tool Depth/Time of Sampling Point	0 M
SPES	Sonic Porosity Formula	RAYMER_HUNT
SPMP	Tool Depth/Time of Sampling Point	0 M
SPWV	SP Hold Value	-70 MV
SPSHALE	HILT SP Shale	-120 MV
SPSO	SP Reference Source	STAN
STDP	TVD of Starting Point	0 M
SSHC	SS Hardware Loop Control	DISALLOW
STU	Switch Up Threshold	8192
TAZI	Tool Orientation Azimuth	0 DEG
TD	Total Depth	1990 M
TDD	Total Depth - Driller	1990.00 M
TDL	Total Depth - Logger	1990.00 M
TEND	Temperature at Tie In Point	0 M
TIND	Along-hole depth of Tie Point	0 M
TINO	North Departure at Tie In Point	0 M
TLAB	Run Number	99
TSCD	TSCD Enable Corrected Depth Computation	YES
TWG	Temperature of Connate Water Sample	37.78 DEGC
VDCO	Vertical Depth Source	DTC
WAGC	Waveform AGC Auto/Disallow	OFF
WGAI	Waveform Manual Gain	0
WGSH	Waveform Gain Delta T	127 US/M
WINT	Waveform Gain Interval	20 US
WMOD	Waveform Gain Mode	DETECTED
WWGT	Well Weight	1200 K/M3
WTYP	Well Trajectory Flag	VERTICAL

Format: BLS_6_200 | Graphics File Created: 27-Feb-1999 01:55

OP System Version: 9C0-413

MCM

HILTB-TTB	9C0-413	LQT-O	9C0-413
DTA-A	9C0-413	DSLT-TTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

Input DLIS Files

DEFAULT	HILTD.011	FN:12 PRODUCER	26-Feb-1999 23:58	

Output DLIS Files

DEFAULT	HILTD.012	FN:15 PRODUCER	27-Feb-1999 01:55	
CUST	HILTD.012	FN:16 CUSTOMER	27-Feb-1999 01:55	

Input DLIS Files

DEFAULT	HILTD.010	FN:10 PRODUCER	26-Feb-1999 23:39	2002.5 M
				1838.9 M

Output DLIS Files

DEFAULT	HILTD.011	FN:13 PRODUCER	27-Feb-1999 01:40	1843.3 M
CUST	HILTD.011	FN:14 CUSTOMER	27-Feb-1999 01:40	1843.3 M
				1840.8 M

OP System Version: 9C0-413

MCM

HILTB-TTB	9C0-413	LQT-O	9C0-413
DTA-A	9C0-413	DSLT-TTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

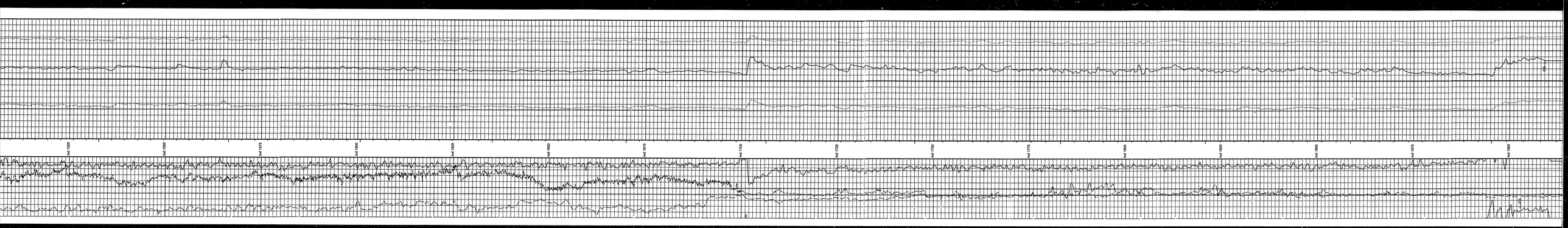
PIP SUMMARY

Time Mark Every 60 S

hrd 1925
TD-->
REPEAT SECTION
Bit Size (BS)
(MM)
Stuck Stretch (STST)
(IN) 30
Delta-T (DT)
(US/M)
LDT Caliper (CALI)
(MM)
Gamma Ray (GR)
(GAPI)
HSMS Caliper (HCAL)
(IN)
Tension (TENS)
(N)
PIP SUMMARY
-t Integrated Transit Time Minor Pip Every 1 MS
-t Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
Telemetry Mode
DSLC_FTB
AGC
AGC Mode Control
ON
AHAPL
Autowash Status
OK
AIT-H Answer Product Level(Depth Log/View only)
AHBH
AIT-H Shale Correction Mode
X_ComputeBasedOnR
AHBW
AIT-H Shale Correction Code Version Number
870
AHEV
AIT-H Basic Logs Version Number
1.Two
AHEW
AIT-H Basic Logs Code Version Number
972
AHDE
AIT-H Casing Detection Enable
Yes
AHDT
AIT-H Tool Centering Flag (to Borehole)
Eccentred
AHDED
AIT-H Deepest Processed Depth
-50000
M
AHDTM
AIT-H Casing Tool Mode
0x00_Logging
AHBC
AIT-H Enable Shale Correction
Yes
AHEN
AIT-H Enable Basic Logs
Yes
AHEO
AIT-H Enable Quad Logs
Yes
AHEW
AIT-H Enable Radial Presentation
Yes
AHETP
AIT-H Enable Simple Error Terms&Tres Corr
Yes
AHHRV
AIT-H Enable Variable Depth Sample Resolution
Yes
AHDS
AIT-H Detect Adrill Stem/Jacket Casing
30.66.33.11
AHLNV
AIT-H Log Not Valid Flag
1.Two
AHNPD
AIT-H Neutron Porosity Application Depth
Log_Valid-No_Default_Parameters
AHNPM
AIT-H Mud Model Number
1
AHORSV
AIT-H Response Set Version For One R Resolution
30.66.33.11
AHRBV
AIT-H Radial Processing Code Version Number
700
AHRPV
AIT-H Radial Processing Mode
1.Two
AHRPL
AIT-H Radial Permeability Code Version Number
1.0
M
AHRTA
AIT-H Tool Standoff
25.4
MM
AHTRSV
AIT-H Response Set Version For Two R Resolution
30.66.33.11
AHTSE
AIT-H Temperature Selection(Borehole Error Correction)
Internal
AHTTY
AIT-H Tool Type (id acquired data)
HALT
ALTSPC
Alternate depth channel
None
ALTSPCHAN
Alternate depth channel name
TENS
AMSG
Auxiliary Minimum Sliding Gate
150
US
AMSR
Auxiliary Sliding Gate Resolution (AUTOS computation)
13_ANTMS
BHS
Borehole Fluid Salinity
0.0
BHFL
Borehole Fluid Type
WATER
BHS
Bore Hole Status
OPEN
BHT
Bottom Hole Temperature (used in calculations)
88
DEGC
BIAS
Bias to Level for Zeros Isolation
0.0
BS
Bit Size
220.000
MM
BSCO
Borehole Salinity
-50000.00
PPM
CBAF
CBL Acquisition Correction Option
NO
CBAT
CBL Attenuation Factor
1.0
CBCF
CBL Correction Factor
1.0
CCSD
Casing & Cement Shadow Correction Option
NO
CCSS
Casing & Cement Thickness Correction Option
NO
CDT2
C-Code-T Shale
328.084
US/M
CDTS
C-Code-T Sand Slope
246.000
US/M
CEMT
Compressive Strength of Cement
KPAA
CWEI
Casing Weight
53.70
KG/M
CWEL
Casing Linear
3
US
DFAD
Digital Filter Arrival Detection Switch
ST
DFD
Drilling Fluid Density
1265.00
K/M3
DFL
Density Hole Correction
BS
DFSI
Density Sampling Interval
12.5
DPHI
Depth Offset
0.0
M
DPPM
Density Porosity Processing Mode
HIRE
DTCO
Delta-T Compressional
DTCR
Delta-T Compressional Raw
DTF
Delta-T Fluid
620.079
US/M
DTFM
Delta-T Matrix
175.727
US/M
Delta-T Memory Frame Size
DMCO
Digitiser Word Count
DTP
Delta-T Pulse Count
DTSH
Delta-T Shear
DTSM
Delta-T Mode
FANG
Formation Angle
FDEP
Form Factor Exponent
1
FNUM
Form Factor Numerator
1
FRAL
Form Factor Porosity Source
SPHI
FRAT
Form Factor Ratio
FPPO
Formation Porosity Correction Option
NO
GAS
Gamed Gain
40
GCBF
Gamma Ray Caliper Selection
HCAL
GDEV
Average Angular Deviation of Borehole from Normal
DEG
GGNO
Geothermal Gradient
0.019227
DC/M
GMAC
GR Mode
GMMX
HLT Gamma Ray Max
150
GAPI
GRMIN
HLT Gamma Ray Min
0
GAPI
GTSE
Generalized Mud Resistivity Selection
AITH_RESIST
HACM
Generalized Temperature Selection
HSTS_HTEM
HACP
Generalized Tool Type
PRESENT_SE
HAHT
Environmental Temperature
DEGC
HDEC
HLT Density Cont detection
2000
K/M3
HDEN
HLT Density Continuous
2000
K/M3
HFAV
HLT Auto Velocity
NO
HLT_BAS_DENSITY
HLT Gas Downhole Density
HLTC_AUTO_OPTION
HLT Logging Control Option
OFF
HLTC
HNLX Logging Method
HTAH
HNOD
HLT Neutron Cod detection
0.45
V/V
HNOR
HLT Neutron Continuous
0.45
V/V
HPHECUT
HLT effective Porosity Cutoff
0.45
V/V
HRBF
High Resolution Sigma
1206.697
HRMO
HLT Mud Resistivity
TSCO_SPEED_CORRECTION
HSCO
HLT Shale Correction Option
YES
HSIS
HLT Sigma Correction
YES
HSTI
STI Used HLT Acquisition
NO
HTCUT
HLT Water Saturation from ATIH cutoff
%
HTTB
Hydrostatic Tool Temperature Selection
AUTOMATIC
ITTB
Integrated Travel Time Switch
ITT
LSHC
LS Hardware Loop Control
DISALLOW
MAPS
Max Allowable Amplitude Spacing Ratio
MATR
Matrix Density Type
LIMESTONE
MCOD
Mod Cake Correction Option
NO
MDEN
Matrix Density Channel
4.13378
M
MGEN
Matrix Density
2710
K/M3
MHCI
Matrix Hole Size
216
MHCC
MCFL Bit Contrast Correction Coefficient
3.2e-003
OHMS
MHCI
MCFL Bit Contrast Correction Coefficient
3.2e-003
OHMS
MHDC
MCFL High Resistivity Correction Switch
NO
MHSI
Shale Index
YES
MODE
Operating Mode
BHC
MOPC
MCFL Processing Operation Mode
ON
MPA
Minimum Sonic Amplitude
13.5879
MV
MSG
Minimum Sliding Gate
1.500
DEGC
MSGO
Mod Weight Correction Option
NO
NMSO
Near Minimum Sliding Gate
150
US
NORM
Normalisation Mode
NORMITE
NSG
Near Maximum Sliding Gate
700
US
NRIM
HRDD Processing Mode
SHALE
OBS
HRDD Depth Sample Rate
25.4
MM
OSAP
Number of Detection Passes
4
PBVSADP
Attenuation Correction pathcheck enabled
YES
PHMAX
HLT max porosity
0.39
V/V
PTCO
Playback Processing
OFF
RATC
Rate Aperture Correction Option
NO
RATE
Firing Rate
8Hz
RBFA
Reset DFADP
OFF
RMFS
Resistivity of Mud Filtrate Sample
0.1000
OHMM
RTCO
RTCO - Rt Invasion Correction
OFF
RWT
Resistivity of Concrete Water
1.0000
OHMM
SCAT
Scatter Plot Control
DISALLOW
SDTH
Sonic Downthreshold
16384
SEXP_HILT
HLT Saturation Exponent
2
SFAC
Sonic Formation Attenuation Factor
2
DB/M
SGAI
Detection Amplitude Gain
20
SGCL
Sliding Gate Clearing Delta-T
450
US/M
SGDT
Sliding Gate Clearing Width
64
US
SGLT
Sliding Gate Delta-T
450
US/M
SGW
Sliding Gate Width
96
US
SHT
Surface Hole Temperature
25
DEGC
SMOH
Smoothing Mode
SNCH
Standoff Distance
2.159
MM
SOCO
Standoff Correction Option
NO
SPAN
Set Span
-300
MV
SPFS
Sonic Porosity Formula
RAYMER_HUNT
SPMV
Set Pip Detection Starting Point
-30
MV
SPMVALE
HLT Set Span
-30
MV
SPSC
Sonic Porosity Source
DT
MV
SPVC
TTO of Starting Point
DT
M
SSTC
Sonic Stretch Control
DISALLOW
SWTH
Swtich Threshold
600
TAZI
Vertical Section Azimuth
180
DEG
TCC
Tool Code
TDD
Total Depth - Driller
1900.00
M
TDL
Total Depth - Logger
1900.00
M
TIMD
Mud Filtrate Time in Pipe
60
M
TIND
Mud Cake Time in Pipe
60
M
TIWD
TWD of Tie-In Point
581
M
TMC
Time Enable Corrected Depth Computation
M
TWS
Time Stamp Sampling Rate
2.5
SEC
VDLG
VDL Manual Gain
40
WBAT
Waveform ASC Allow/Disallow
OFF
WBAV
Waveform Auto Velocity
NO
WDIT
Waveform Delta-T
US/M
WGIN
Waveform Gain Interval
3540
US
WMOD
Waveform Mode
DETECTED_MODE
WMOO
Mud Weight
1000
K/M3
WTF
Web Trajectory Flag
VERTICAL
Format: 60_F_0_300
Vertical Scale: 1:240
Graphics File Created: 27-Feb-1999 01:40
OP System Version: 9C0-413
MCM
HILTB-FTB
9C0-413
LDT-D
9C0-413
DTA-A
9C0-413
DBLT-FTB
9C0-413
SGT-N
9C0-413
DTC-H
9C0-413
Input DLIS Files
DEFAULT
HILTD .010
FN:10 PRODUCER
28-Feb-1999 22:39
2002.5 M
1838.9 M
Output DLIS Files
DEFAULT
HILTD .011
FN:13 PRODUCER
27-Feb-1999 01:40
CUST
HILTD .011
FN:14 CUSTOMER
27-Feb-1999 01:40
Input DLIS Files
DEFAULT
HILTD .011
FN:12 PRODUCER
26-Feb-1999 23:58
Output DLIS Files
DEFAULT
HILTD .012
FN:15 PRODUCER
27-Feb-1999 01:55
CUST
HILTD .012
FN:16 CUSTOMER
27-Feb-1999 01:55
OP System Version: 9C0-413
MCM
HILTB-FTB
9C0-413
LDT-D
9C0-413
DTA-A
9C0-413
DBLT-FTB
9C0-413
SGT-N
9C0-413
DTC-H
9C0-413
PIP SUMMARY
-t Integrated Transit Time Minor Pip Every 1 MS
-t Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S
CASING
hrd 1591
hrd 575
hrd 600
hrd 625
hrd 650
hrd 675


hrd 700
hrd 725
hrd 750
hrd 775
hrd 800
hrd 825
hrd 850
hrd 875
hrd 900
hrd 925
hrd 950
hrd 975
hrd 1000
hrd 1025
hrd 1050
hrd 1075
hrd 1100


Ref 1125
Ref 1150
Ref 1175
Ref 1200
Ref 1225
Ref 1250
Ref 1275
Ref 1300
Ref 1325
Ref 1350
Ref 1375
Ref 1400
Ref 1425
Ref 1450
Ref 1475
Ref 1500


Jul 1525
Jul 1550
Jul 1575
Jul 1600
Jul 1625
Jul 1650
Jul 1675
Jul 1700
Jul 1725
Jul 1750
Jul 1775
Jul 1800
Jul 1825
Jul 1850
Jul 1875
Jul 1900



PIP SUMMARY

-I Integrated Transit Time Minor Pip Every 1 MS
-I Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC FTB
AOC	DELT Filter Mode	OFF
AUTOPHASN	Automatic Gain Control Status	ON
AWMD	Alternate depth channel name	TVDE
BBSW	Borehole Wireline Sliding Gate	180 US
BS	Bit Size	222.250 MM
CBLG	CBL Gate Width	40 US
DSTG	Digitizing Delay	0 US
DTEL	DELT Threshold	2
DTSD	Digital Fluid Sound Detection Switch	OFF
DZ	Depth Offset	0.0 M
EXCM	Excess Computation Mode	NO
GWCO	Digitizer Word Count	4096
MAG	Manual Gain	40
MCSC	Master Clock Correction Mode	TSCO_SPEED_CORRECTION
MSG1	MTI Gate MLT Acceleration	NO
MSG2	Maximum Gain	80
MSG3	Minimum Gain	1
NMSG	Near Minimum Gain	SHC
NMSG	Near Minimum Sliding Gate	180 US
NMSG	Near Maximum Sliding Gate	750 US
NSWEADP	Number of Detection Passes	2
PSD	Pipeline Sound Velocity Switch	YES
SFAF	Playback Processing Switch	OFF
SFAF	Static Formation Attenuation Factor	0.0 DB/M
SGCL	Sample Count	2048
SGCL	Selectable Acquisition Gate	AUTO
SGCL	Sliding Gate Closing Delta-T	820 US/M
SGCL	Sliding Gate Opening Width	40 US/M
SGDT	Sliding Gate Delay	184 US/M
SGW	Sliding Gate Width	184 US/M
SPD	Start Velocity for AGC	2000 M/S
TDD	TDT Drilling Depth	3500 M
TDD	TDT Logging Depth	1900.00 M
TDD	Total Depth - Logger	1900.00 M
TIMD	Time/Active depth of Tie-in Point	591 M
TIMD	Tie-in Depth	591 M
Vertical Scale: 1:240		**Graphics File Created: 27-Feb-1999 01:55**

OP System Version: 9C0-413

MCM

HILTB-FTB	9C0-413	LDT-B	4CC-413
DTA-A	9C0-413	DSLT-FTB	9C0-413
HILT-N	9C0-413	DTC-H	4CC-413

Input DLIS Files

DEFAULT	HILTD.001	FN:12 PRODUCER	26-Feb-1999 23:58

Output DLIS Files

DEFAULT	HILTD.012	FN:15 PRODUCER	27-Feb-1999 01:55
CUST	HILTD.012	FN:16 CUSTOMER	27-Feb-1999 01:55

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase							
Master: 24-FEB-1999 20:24 Before: 26-FEB-1999 20:22							
Thru Cal Magnitude - 1	0	0.0000	0.0127	N/A	N/A	N/A	V
Thru Cal Magnitude - 2	0	0.0000	0.0127	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	0.0172	0.0231	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	0.0004	0.7540	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	0.0000	0.0127	N/A	N/A	N/A	V
Thru Cal Magnitude - 8	0	1.003	1.010	N/A	N/A	N/A	V
Thru Cal Magnitude - 9	0	1.001	1.016	N/A	N/A	N/A	V
Phase - 1	0	50.94	51.32	N/A	N/A	N/A	DEG
Phase - 2	0	47.08	47.61	N/A	N/A	N/A	DEG
Phase - 5	0	46.51	47.04	N/A	N/A	N/A	DEG
Phase - 6	0	38.47	38.98	N/A	N/A	N/A	DEG
Phase - 7	0	38.47	38.98	N/A	N/A	N/A	DEG
Phase - 8	0	38.45	38.97	N/A	N/A	N/A	DEG
Phase - 9	0	38.44	38.96	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Auxiliary							
Master: 24-DEC-1998 10:54 Before: 26-FEB-1999 20:22							
ATT-H SPA Pos	900.0	899.1	900.4	N/A	N/A	N/A	MV
ATT-H SPA Zero	0	0.0000	0.0044	N/A	N/A	N/A	MV
ATT-H Temperature Pos	0	0.0037	0.0037	N/A	N/A	N/A	V
ATT-H Temperature Zero	0	0.0001549	0.0001920	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Test Loop Gain Correction							
Master: 21-DEC-1998 10:04							
Test Loop Gain Magnitude - 0	0	1.026	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.029	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.027	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.027	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	1.010	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.003	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.011	N/A	N/A	N/A	N/A	V
Test Loop Gain - 0	0	0.4720	N/A	N/A	N/A	N/A	DEG
Test Loop Gain - 1	0	0.0000	N/A	N/A	N/A	N/A	DEG
Test Loop Gain - 2	0	-0.0417	N/A	N/A	N/A	N/A	DEG
Test Loop Gain - 3	0	-0.0417	N/A	N/A	N/A	N/A	DEG
Test Loop Gain - 4	0	-0.0000345	N/A	N/A	N/A	N/A	DEG
Test Loop Gain - 5	0	-0.0000045	N/A	N/A	N/A	N/A	DEG
Test Loop Gain - 6	0	0.2135	N/A	N/A	N/A	N/A	DEG
Test Loop Gain - 7	0	-0.2482	N/A	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Bonde Error Correction							
Master: 21-DEC-1998 10:04							
R Bonde Error Correction - 0	0	-0.02	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 1	0	148.0	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 2	0	93.03	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 3	0	93.03	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 4	0	24.06	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 5	0	19.57	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 6	0	19.57	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 7	0	-0.6874	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 8	0	103.3	N/A	N/A	N/A	N/A	MM/M
R Bonde Error Correction - 9	0	-37.20	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 0	0	0.00	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 3	0	-22.21	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 4	0	22.65	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 5	0	0.00	N/A	N/A	N/A	N/A	MM/M
X Bonde Error Correction - 7	0	0.2173	N/A	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Gain Correction							
Master: 21-DEC-1998 10:04							
Coarse - Mag. Real, Imag - 0	0	1.052	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 1	0	1.052	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 0	0	1.051	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 1	0	1.051	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 2	0	1.051	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Summary							
Before: 24-FEB-1999 20:24							
BS Window Ratio	0.9934	N/A	0.9921	N/A	N/A	N/A	
BS Window Sum	11730	N/A	11720	N/A	N/A	N/A	CPS
SS Window Ratio	0.4800	N/A	0.4800	N/A	N/A	N/A	
SS Window Sum	11730	N/A	11720	N/A	N/A	N/A	CPS
LS Window Ratio	0.4800	N/A	0.4800	N/A	N/A	N/A	
LS Window Sum	1467	N/A	1465	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations							
Before: 24-FEB-1999 20:24							
SS PM High Voltage (Command)	2068	N/A	2116	N/A	N/A	N/A	V
SS PM High Voltage (Measured)	1958	N/A	1979	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1992	N/A	1955	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Quality Resolution Calibration							
Before: 26-FEB-1999 20:24							
SS Crystal Resolution	13.58	N/A	14.00	N/A	N/A	N/A	%
SS Crystal Resolution	9.480	N/A	9.179	N/A	N/A	N/A	%
LS Crystal Resolution	11.40	N/A	10.97	N/A	N/A	N/A	%
High resolution Integrated Logging Tool-DTS Wellsite Calibration - MCPL Calibration							
Before: 26-FEB-1999 20:24							
Rec S1 Resistivity	3870	3851	N/A	N/A	N/A	N/A	OHMM
Rec S1 Resistivity	3650	N/A	3804	N/A	N/A	N/A	OHMM
Rec S2 Resistivity	3040	N/A	3040	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Calibration							
Before: 26-FEB-1999 20:24							
Gamma Ray Background	30.30	N/A	5.584	N/A	N/A	N/A	GAPI
Gamma Ray Lig - Bkg	199.7	N/A	186.7	N/A	N/A	17.89	GAPI
Gamma Ray (Calibrated)	185.6	N/A	181.1	N/A	N/A	16.62	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement							
Master: 24-FEB-1999 18:58 Before: 26-FEB-1999 20:22							
CNTC Background	25.45	25.45	26.66	N/A	N/A	3.815	CPS
CFTC Background	28.39	28.39	29.64	N/A	N/A	4.255	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration							
Before: 26-FEB-1999 20:22							
Z-Axis Acceleration	0.810	N/A	0.809	N/A	N/A	N/A	M/S2
High resolution Integrated Logging Tool-DTS Master Calibration - Inverter results							
Master: 23-FEB-1999 19:04							
Bis Magnetic	2598	2603	--	--	--	--	K/MG
Bis Magnetium	1858	1855	--	--	--	--	K/MG
Pe Aluminium	2.570	2.225	--	--	--	--	
Pe Magnesium	2.650	2.433	--	--	--	--	
High resolution Integrated Logging Tool-DTS Master Calibration - C-station Summary							
Master: 23-FEB-1999 19:04							
BS Average Deviation	0	0.4205	--	--	--	--	%
SS Average Deviation	0	0.4205	--	--	--	--	%
LS Average Deviation	0	0.7344	--	--	--	--	%
SS Max Deviation	0	1.605	--	--	--	--	%
LS Max Deviation	0	1.605	--	--	--	--	%
LS Max Deviation	0	1.605	--	--	--	--	%
High resolution Integrated Logging Tool-DTS Master Calibration - Tank Measurement							
Master: 23-FEB-1999 19:04							
Thermal Neutron Ratio (Unitless)	6031	5564	--	--	--	--	CPS
Thermal Far Count (Tank)	2793	2580	--	--	--	1.000	CPS
CNTC/CFTC (Tank)	0.159	0.324	--	--	--	0.0000	CPS
Uthn Density - D Wellsite Calibration - Background Measurement							
Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:05							
LG Background	20.00	19.66	19.47	N/A	N/A	1.000	CPS
LE Background	76.00	74.59	74.05	N/A	N/A	1.000	CPS
LU Background	76.00	74.59	74.05	N/A	N/A	1.000	CPS
UTH Background	53.00	51.96	51.58	N/A	N/A	0.3000	CPS
SSI Background	16.00	17.33	17.42	N/A	N/A	0.5000	CPS
SSD Background	11.00	11.07	11.71	N/A	N/A	0.5000	CPS
Uthn Density - D Wellsite Calibration - Tool Quality Control Information HV							
Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:05							
LSHV Background	1500	1320	1324	N/A	N/A	N/A	V
SSHV Background	1500	1500	1501	N/A	N/A	N/A	V
Uthn Density - D Wellsite Calibration - Detectors Resolution From DSG Measurements							
Master: 24-FEB-1999 13:24 Before: 26-FEB-1999 20:05							
LS Resolution Background	8.000	6.993	6.741	N/A	N/A	N/A	
SS Resolution Background	8.000	6.709	6.751	N/A	N/A	N/A	
Uthn Density - D Wellsite Calibration - Caliper Calibration							
Before: 24-FEB-1999 20:22							
Caliper Small Ring	209.2	N/A	223.1	N/A	N/A	N/A	MM
Caliper Large Ring	304.8	N/A	327.9	N/A	N/A	N/A	MM
Uthn Density - D Master Calibration - Aluminum Measurement							
Master: 24-FEB-1999 13:48							
LG Aluminum	90.00	93.07	--	--	--	--	CPS
LU Aluminum	135.0	141.1	--	--	--	--	CPS
LE Aluminum	185.0	183.8	--	--	--	--	CPS
UTH Aluminum	50.00	58.26	--	--	--	--	CPS
SSI Aluminum	175.0	188.5	--	--	--	--	CPS
SSD Aluminum	350.0	361.5	--	--	--	--	CPS
Uthn Density - D Master Calibration - Lithology Measurement							
Master: 24-FEB-1999 13:53							
LG Hydrogen	80.00	82.91	--	--	--	--	CPS
LU Iron	120.0	123.1	--	--	--	--	CPS
LE Iron	170.0	170.0	--	--	--	--	CPS
UTH Iron	30.00	35.53	--	--	--	--	CPS
SSI Iron	150.0	161.3	--	--	--	--	CPS
SSD Iron	245.0	257.1	--	--	--	--	CPS
Uthn Density - D Master Calibration - Spectrum Quality Ratios							
Master: 24-FEB-1999 13:58							
GRLS Calculated	0.6500	0.6697	--	--	--	--	
GRSS Calculated	0.7200	0.7259	--	--	--	--	
GLU Calculated	0.3800	0.3445	--	--	--	--	
GLH Calculated	0.1900	0.1716	--	--	--	--	
GR Calculated	1.050	1.012	--	--	--	--	
Scintillation Gamma Ray -N Wellsite Calibration - Detector Calibration							
Before: 26-FEB-1999 20:22							
Gamma Ray Lig - Bkg	155.4	N/A	155.4	N/A	N/A	14.13	GAPI
Gamma Ray (Calibrated)	185.0	N/A	185.0	N/A	N/A	16.20	GAPI

The CLS-V source activity is acceptable.

The nCNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 18.6 DEGC
Thermal Housing Size 89.954 MM

High resolution Integrated Logging Tool-D1-S / Equipment Identification

Primary Equipment:			
Array Induction Tool - H		ATT - H	
Array Induction Sonde		AHID - BA	281
HILT Array Induction Mechanical Sonde		HNDS - C	564
HILT Pod Gamma ray Device		HPGD - B	666
HILT Nuclear Back-Scatter Detector		HILT -	
HILT Nuclear Short-Spacing Detector		HILT -	
HILT Nuclear Long-Spacing Detector		HILT -	
Micro Cylindrically Focused Log Device		MCFL -	
Auxiliary Equipment:			

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Mag. & Phase

Up	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DES	Nominal
	Master	0.0273		0.0000	0.0127		71.00
	Before	0.0122			0.0231		
	Master	1.246			50.94		70.00
	Before	1.287		1.270	51.32		
	Master	0.8172			47.28		69.00
	Before	0.8231		0.8232	47.61		
1	Master	0.6884			46.51		68.00
	Before	0.7242		0.7040	47.04		
	Master	1.308			40.93		50.00
	Before	1.318		1.307	40.92		
	Master	1.695			38.47		51.00
	Before	1.910		1.695	38.98		
	Master	1.901			38.45		51.00
	Before	1.918		1.895	38.97		
	Master	.753			34.89		52.00
	Before	.743		1.412	34.96		
		90.00 %		140.0 %	Num = 90.00		Num = 90.00
		Before	Nominal	Maximum	Before	Nominal	Maximum
Master: 21-DEC-1998 10:54					Before: 26-FEB-1999 20:22		

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	ATT-H SPA Pos	MV	Phase	ATT-H SPA Zero	MV	Value
Master	0	899.1	Master	0	0.0000	0.1408
Before		899.4	Before		0.0044	0.1408
Ref C	180.0	1040	Ref C	0	90.00	
Before	179.9	899.4	Before		90.00	
Phase	ATT-H Temperature Pos	V	Phase	ATH Temperature Zero	V	Value
Master	0	0.0037	Master			0.0001549
Before		0.0000	Before			0.0001550
Ref C	0.8750	0.0000	Ref C	0.00000	0.0000	
Before	0.8750	0.0000	Before	0.00000	0.0000	
Master: 21-DEC-1998 10:54			Before: 26-FEB-1999 20:22			

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Test Loop Gain Correction

Up	Value	Test Loop Gain Magnitude V	Value	Phase DES	
0	1.038	1.000	0.4720		0.000
		0.9500	1.050	0.4500	0.500
		Minimum	Nominal	Maximum	Minimum
1	1.029	1.000	-0.0000		0.000
		0.9500	1.050	0.0000	0.500
		Minimum	Nominal	Maximum	Minimum
2	1.034	1.000	-0.04167		0.000
		0.9500	1.050	0.0000	0.500
		Minimum	Nominal	Maximum	Minimum
3	1.027	1.000	-0.00166		0.000
		0.9500	1.050	0.0000	0.500
		Minimum	Nominal	Maximum	Minimum
4	1.010	1.000	-0.00048		0.000
		0.9500	1.050	0.0000	0.500
		Minimum	Nominal	Maximum	Minimum
5	1.004	1.000	-0.1184		0.000
		0.9500	1.050	0.0000	0.500
		Minimum	Nominal	Maximum	Minimum
6	1.003	1.000	0.3138		0.000
		0.9500	1.050	0.0000	0.500
		Minimum	Nominal	Maximum	Minimum
7	1.011	1.000	-0.2482		0.000
		0.9500	1.050	0.0000	0.500
		Minimum	Nominal	Maximum	Minimum
Master: 21-DEC-1998 10:54					

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Bonde Error Correction

Up	Value	R Bonde Error Correction MM/M	Value	X Bonde Error Correction MM/M	
0	-56.52	-100.0	133.3		200.0
		-200.0	Nominal	-200.0	Nominal
		Minimum		Minimum	
1	149.0	100.0	-37.20		200.0
		0.0000	Nominal	-200.0	Nominal
		Minimum		Minimum	
2	113.8	100.0	204.5	-200.0	685.3
		0.0000	Nominal	-200.0	Minimum
		Minimum		Minimum	
3	93.03	100.0	-58.81	-200.0	200.0
		0.0000	Nominal	-200.0	Minimum
		Minimum		Minimum	
4	24.06	100.0	22.65	-200.0	200.0
		0.0000	Nominal	-200.0	Minimum
		Minimum		Minimum	
5	19.57	100.0	11.79	-200.0	200.0
		0.0000	Nominal	-200.0	Minimum
		Minimum		Minimum	
6	19.57	100.0	1.289	-200.0	200.0
		0.0000	Nominal	-200.0	Minimum
		Minimum		Minimum	
7	-0.6874	100.0	0.2173	-200.0	200.0
		0.0000	Nominal	-200.0	Minimum
		Minimum		Minimum	
Master: 21-DEC-1998 10:54					

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Mud Gain Correction

Up	Value	Coarse - Mag. Real, Imag	Value	Fine - Mag. Real, Imag	
0	1.052	1.000	1.051	1.000	1.400
		0.6000	1.000	0.6000	1.400
		Minimum	Nominal	Minimum	Maximum
1	1.052	1.000	1.051	1.000	1.400
		0.6000	1.000	0.6000	1.400
		Minimum	Nominal	Minimum	Maximum
2	1.052	1.000	1.051	1.000	1.400
		0.6000	1.000	0.6000	1.400
		Minimum	Nominal	Minimum	Maximum
Master: 21-DEC-1998 10:54					

High resolution Integrated Logging Tool-DTS Wellsite Calibration
SS Window Ratio

Phase	SS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before	0.8927		Before	0.8927		Before	0.2901	
	0.8700 (minimum)	0.9000 (maximum)		0.8700 (minimum)	0.9000 (maximum)		0.2700 (minimum)	0.3070 (maximum)

Phase	SS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before	13090		Before	13090		Before	11700	
	11600 (minimum)	13400 (maximum)		11600 (minimum)	13400 (maximum)		1400 (minimum)	1440 (maximum)

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
SS High Voltage Command

Phase	SS HV High Voltage Command, V	Value	Phase	SS HV High Voltage Command, V	Value	Phase	LS HV High Voltage Command, V	Value
Before	2118		Before	1878		Before	1898	
	2000 (minimum)	2200 (maximum)		1800 (minimum)	1950 (maximum)		2000 (minimum)	2200 (maximum)

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Optical Quality Resolution, %

Phase	SS Optical Resolution %	Value	Phase	SS Optical Resolution %	Value	Phase	LS Optical Resolution %	Value
Before	14.00		Before	14.00		Before	12.97	
	12.50 (minimum)	15.00 (maximum)		12.50 (minimum)	15.00 (maximum)		11.25 (minimum)	12.50 (maximum)

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Raw SS Resistivity, OHMM

Phase	Raw SS Resistivity OHMM	Value	Phase	Raw SS Resistivity OHMM	Value	Phase	Raw SS Resistivity OHMM	Value
Before	3681		Before	3604		Before	3605	
	3526 (minimum)	3840 (maximum)		3526 (minimum)	3840 (maximum)		3520 (minimum)	4136 (maximum)

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
HV-T Cellar

Phase	HV-T Cellar Gas Measurement	MV	Phase	HV-T Cellar Flux Measurement	MV	Value
Before	219.3		Before			350.5
	192.4 (minimum)	250.2 (maximum)		324.4 (minimum)	384.7 (maximum)	

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Gamma Ray

Phase	Gamma Ray Background (GAP)	Value	Phase	Gamma Ray Dia - Bkgd (GAP)	Value	Phase	Gamma Ray (Calibrated) (GAP)	Value
Before	8.564		Before	176.9		Before	185.5	
	30.00 (minimum)	120.0 (maximum)		146.8 (minimum)	206.8 (maximum)		150.0 (minimum)	190.0 (maximum)

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
OPTO

Phase	OPTO Background CPS	Value
Master	25.45	
Before	28.84	
	5.000 (minimum)	45.00 (maximum)

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Thru Cal Mag & Phase

Idx	Phase	Value	Thru Cal Magnitude	Value	Phase DDS	Nominal
0	Master	0.8573		0.6050	81.84	71.55
1	Master	1.248		1.070	52.94	79.03
2	Master	0.9172		0.6250	47.28	66.51
3	Master	0.6884		0.7040	48.81	63.55
4	Master	1.219		1.107	40.92	56.53
5	Master	1.595		1.955	38.47	57.55
6	Master	1.901		1.955	36.45	57.55
7	Master	1.393		1.418	34.96	53.55
		40.00 (minimum)		140.0 (maximum)		Nom. +/- 40.00

Master 27-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Resistivity Calibration Check - Auxiliary

Phase	AT-H SFA Plus MV	Value	Phase	AT-H SFA Zero MV	Value
Master	2017	2017.1	Master	2017	2017.1
	1900.0 (minimum)	2100.0 (maximum)		40.00 (minimum)	70.00 (maximum)

Master 27-DEC-1998 13:54

Phase	AT-H Temperature Plus V	Value	Phase	AT-H Temperature Zero V	Value
Master	0.8057		Master		0.000156
	0.8000 (minimum)	0.9000 (maximum)	0.00000 (minimum)	0.00500 (maximum)	

Master 27-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude, V	Value	Phase DDS
0	1.136	0.4700		
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)
1	1.028	0.4500		-0.2540	
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)
2	1.102	0.4500		-0.0418	
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)
3	1.027	0.4500		0.03188	
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)
4	1.015	0.4500		-0.09099	
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)
5	0.9814	0.4500		-0.1154	
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)
6	1.003	0.4500		0.01126	
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)
7	1.111	0.4500		-0.04622	
		1.000 (minimum)	1.000 (maximum)	-3.000 (minimum)	3.000 (maximum)

Master 27-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Near Echo Correction

Idx	Value	R Bomb Energy Condition Word	Value	X Bomb Error Correction Word	Value
0	-16.52	133.3		133.3	
		127.3 (minimum)	139.3 (maximum)	127.3 (minimum)	139.3 (maximum)
1	149.3	133.3		-37.33	
		127.3 (minimum)	139.3 (maximum)	-40.00 (minimum)	-34.67 (maximum)
2	113.9	204.3		-39.81	
		197.3 (minimum)	211.3 (maximum)	-40.00 (minimum)	-34.67 (maximum)
3	62.31	133.3		-33.21	
		127.3 (minimum)	139.3 (maximum)	-40.00 (minimum)	-34.67 (maximum)
4	24.06	133.3		22.85	
		127.3 (minimum)	139.3 (maximum)	-40.00 (minimum)	-34.67 (maximum)
5	12.18	133.3		11.79	
		127.3 (minimum)	139.3 (maximum)	-40.00 (minimum)	-34.67 (maximum)
6	9.957	133.3		1.299	
		127.3 (minimum)	139.3 (maximum)	-40.00 (minimum)	-34.67 (maximum)
7	-0.9674	133.3		0.3173	
		127.3 (minimum)	139.3 (maximum)	-40.00 (minimum)	-34.67 (maximum)

Master 27-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Rail Gain Correction

Idx	Value	Coarse - Mag, Real, Imag	Value	Fine - Mag, Real, Imag	Value
0	1.052	1.081		1.081	
		0.8000 (minimum)	1.400 (maximum)	0.8000 (minimum)	1.400 (maximum)
1	1.052	1.081		1.081	
		0.8000 (minimum)	1.400 (maximum)	0.8000 (minimum)	1.400 (maximum)
2	-0.0000	0.0000		0.0000	
		0.8000 (minimum)	1.400 (maximum)	0.8000 (minimum)	1.400 (maximum)

Master 27-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Inverter Levels

Ph	Rx Aluminum, ICM3	Value	Phase	Rx Magnesium, ICM3	Value
Master	2800		Master	2800	
	2500 (minimum)	2900 (maximum)		2500 (minimum)	2900 (maximum)

Phase	Rx Aluminum	Value	Phase	Rx Magnesium	Value
Master	2.473		Master	2.525	
	2.400 (minimum)	2.600 (maximum)		2.400 (minimum)	2.600 (maximum)

Master 27-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Deviation Correction

Phase	SS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master	0.4000		Master	0.7344		Master	0.8479	
	0.4000 (minimum)	0.8000 (maximum)		0.4000 (minimum)	0.8000 (maximum)		0.8000 (minimum)	1.200 (maximum)

Phase	SS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master	0.9109		Master	1.259		Master	1.318	
	0.4000 (minimum)	1.600 (maximum)		0.4000 (minimum)	2.400 (maximum)		0.8000 (minimum)	1.600 (maximum)

Master 27-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Thermal Near Gain

Phase	Thermal Near Gain (Tank) CPS	Value	Phase	Thermal Far Gain (Tank) CPS	Value	Phase	CNTD/CTD (Tank)	Value
Master	3356		Master	2075		Master	0.3720	
	3000 (minimum)	7000 (maximum)		2000 (minimum)	2100 (maximum)		0.3100 (minimum)	0.3400 (maximum)

Master 26-DEC-1998 13:54

Litho Density - D / Equipment Identification

Primary Equipment
Density Sensor Cartridge
Powered Gamma Detector
Gamma Source Radioactive

NSC - E	3707
NSG - S	2032
GSR - J	2050
DRS - C	4869
DCH - MAA	
PCH - L	2059

Auxiliary Equipment
Density Reliability Bonde
Electronics Cartridge Housing
Powered Detector Housing

Litho Density - D / Density Calibration
Density Calibration

Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Before	19.69		Before	74.89		Before	35.67	
	18.47 (minimum)	20.91 (maximum)		74.39 (minimum)	75.39 (maximum)		35.67 (minimum)	35.67 (maximum)

Phase	LDH Background CPS	Value	Phase	SDI Background CPS	Value	Phase	SDU Background CPS	Value
Before	0.573		Before	17.33		Before	11.82	
	0.506 (minimum)	0.640 (maximum)		17.42 (minimum)	17.42 (maximum)		11.70 (minimum)	11.70 (maximum)

Before 28-FEB-1999 20:25

Litho Density - D / Density Calibration
Density Measurement from SDI Measurement

Phase	LS * Jolution Background	Value	Phase	SS Resolution Background	Value
Before	0.741		Before	8.781	
	0.741 (minimum)	11.22 (maximum)	8.000 (minimum)	8.800 (maximum)	

Before 28-FEB-1999 20:25

Litho Density - D / Aluminum Calibration
Aluminum Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Before	33.37		Before	141.1		Before	165.8	
	30.00 (minimum)	36.74 (maximum)	130.0 (minimum)	150.0 (maximum)		150.0 (minimum)	180.0 (maximum)	

Phase	LDH Aluminum CPS	Value	Phase	SDI Aluminum CPS	Value	Phase	SDU Aluminum CPS	Value
Before	50.35		Before	199.5		Before	391.8	
	45.00 (minimum)	74.00 (maximum)	180.0 (minimum)	220.0 (maximum)		360.0 (minimum)	420.0 (maximum)	

Master 24-FEB-1999 13:48

Litho Density - D / Master Calibration
Lithology Measurement

Phase	LL Int. CPS	Value	Phase	LU Int. CPS	Value	Phase	LS Int. CPS	Value
Master	44.51		Master	1963.31		Master	1320.97	
	40.00 (minimum)	50.00 (maximum)	1800.0 (minimum)	2100.0 (maximum)		1200.0 (minimum)	1400.0 (maximum)	

Phase	LITH Ituh CPS	Value	Phase	SDI Int. CPS	Value	Phase	SDU Int. CPS	Value
Master	114.9		Master	1901.40		Master	3297.51	
	100.0 (minimum)	130.0 (maximum)	1800.0 (minimum)	2000.0 (maximum)		3000.0 (minimum)	3600.0 (maximum)	

Master 24-FEB-1999 13:55

Litho Density - D / Master Calibration
Spectrum Quality Factor

Phase	GRLS Calculated	Value	Phase	GRSS Calculated	Value	Phase	GRLU Calculated	Value
Master	0.6697		Master	0.7039		Master	0.3445	
	0.6000 (minimum)	0.7400 (maximum)	0.6000 (minimum)	0.7400 (maximum)		0.3000 (minimum)	0.4000 (maximum)	

Phase	GLH Calculated	Value	Phase	GR Calculated	Value
Master	1.307		Master		1.012
	1.200 (minimum)	1.400 (maximum)	0.8000 (minimum)	1.200 (maximum)	

Master 24-FEB-1999 13:55

Scintillation Gamma Ray - V / Equipment Identification

Primary Equipment
Scintillation Gamma Cartridge
Scintillation Gamma Detector

Auxiliary Equipment
Scintillation Gamma Housing
Gamma Source Radioactive

SGC - SA	
SGD - TYA	
SGH - K	
GSR - LH	1072

Scintillation Gamma Ray - V Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background (GAP)	Value	Phase	Gamma Ray Dia - Bkgd (GAP)	Value	Phase	Gamma Ray (Calibrated) (GAP)	Value
Before	8.715		Before	168.4		Before	185.0	
	30.00 (minimum)	120.0 (maximum)		146.8 (minimum)	206.8 (maximum)		150.0 (minimum)	190.0 (maximum)

Before 28-FEB-1999 20:23

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point : Measured Depth True Vertical Depth

591.00 M 591.00 M

Depth	Deviation	True Vertical Depth
37.75 M	0.70 DEG	37.77 M
150.67 M	0.70 DEG	150.69 M
263.34 M	0.50 DEG	263.36 M
378.15 M	0.30 DEG	378.16 M
503.00 M	0.50 DEG	503.00 M
551.00 M	0.30 DEG	551.00 M
591.00 M	0.70 DEG	591.00 M
677.00 M	1.00 DEG	676.99 M
764.00 M	1.00 DEG	763.98 M
792.00 M	1.75 DEG	791.97 M
876.00 M	1.25 DEG	873.94 M
991.00 M	3.00 DEG	990.81 M
1093.10 M	1.90 DEG	1092.97 M
1102.00 M	2.10 DEG	1102.78 M
1111.40 M	3.20 DEG	1111.25 M
1121.50 M	4.10 DEG	1121.30 M
1131.50 M	5.70 DEG	1131.29 M
1141.40 M	7.30 DEG	1141.08 M
1151.40 M	8.90 DEG	1150.65 M
1161.00 M	10.10 DEG	1160.48 M
1170.75 M	11.20 DEG	1170.08 M
1180.80 M	12.00 DEG	1179.72 M
1189.28 M	13.50 DEG	1188.19 M
1199.24 M	15.80 DEG	1197.82 M
1208.92 M	17.70 DEG	1207.19 M
1218.66 M	19.30 DEG	1216.15 M
1228.32 M	21.10 DEG	1225.33 M
1237.62 M	22.70 DEG	1234.03 M
1246.74 M	23.90 DEG	1242.41 M
1256.52 M	25.00 DEG	1251.31 M
1266.37 M	26.20 DEG	1260.13 M
1276.27 M	27.10 DEG	1269.04 M
1285.74 M	27.60 DEG	1277.44 M
1295.49 M	28.30 DEG	1286.03 M
1305.15 M	28.70 DEG	1294.51 M
1314.72 M	28.90 DEG	1302.93 M
1324.31 M	29.20 DEG	1311.28 M
1334.00 M	29.60 DEG	1319.72 M
1343.39 M	29.80 DEG	1327.97 M
1353.04 M	29.80 DEG	1336.33 M
1362.59 M	28.70 DEG	1344.59 M
1371.99 M	27.50 DEG	1352.89 M
1381.70 M	27.00 DEG	1361.55 M
1391.10 M	26.40 DEG	1369.97 M
1400.75 M	26.90 DEG	1378.58 M
1410.30 M	27.30 DEG	1387.10 M
1420.00 M	28.00 DEG	1395.69 M
1429.60 M	28.80 DEG	1404.13 M
1439.20 M	28.30 DEG	1412.57 M
1448.90 M	27.60 DEG	1421.14 M
1458.50 M	28.00 DEG	1429.72 M
1467.90 M	28.90 DEG	1437.90 M
1477.30 M	29.80 DEG	1446.09 M
1486.94 M	30.40 DEG	1454.43 M
1496.30 M	29.70 DEG	1462.45 M
1505.80 M	28.50 DEG	1470.64 M
1515.40 M	27.60 DEG	1479.30 M
1524.90 M	28.10 DEG	1487.78 M
1534.41 M	29.30 DEG	1496.03 M
1543.97 M	29.70 DEG	1504.35 M
1553.50 M	29.30 DEG	1512.65 M
1563.01 M	29.30 DEG	1520.97 M
1572.60 M	28.50 DEG	1529.36 M
1582.20 M	28.20 DEG	1537.83 M
1591.80 M	28.20 DEG	1546.28 M
1601.40 M	28.00 DEG	1554.75 M
1610.90 M	27.20 DEG	1563.20 M
1619.90 M	26.20 DEG	1571.21 M
1629.40 M	25.60 DEG	1579.24 M
1638.30 M	25.50 DEG	1586.80 M
1648.00 M	25.00 DEG	1595.07 M
1658.30 M	24.30 DEG	1605.91 M
1668.00 M	23.60 DEG	1614.77 M
1677.70 M	23.70 DEG	1623.64 M
1687.30 M	22.60 DEG	1632.47 M
1696.90 M	21.90 DEG	1641.40 M
1706.50 M	19.90 DEG	1650.64 M
1716.20 M	18.70 DEG	1659.83 M
1725.70 M	18.50 DEG	1668.83 M
1735.30 M	18.50 DEG	1677.77 M
1744.90 M	15.20 DEG	1687.00 M
1754.40 M	12.60 DEG	1696.22 M
1764.10 M	10.20 DEG	1705.72 M
1773.80 M	8.40 DEG	1715.08 M
1783.20 M	8.30 DEG	1724.59 M
1792.80 M	8.40 DEG	1734.09 M
1802.30 M	8.40 DEG	1743.48 M
1811.90 M	7.90 DEG	1752.89 M
1821.40 M	7.20 DEG	1762.41 M
1831.00 M	6.60 DEG	1771.94 M
1840.60 M	6.10 DEG	1781.48 M
1850.10 M	5.80 DEG	1790.93 M
1859.70 M	5.60 DEG	1800.48 M
1869.30 M	5.70 DEG	1810.09 M
1878.90 M	5.60 DEG	1819.44 M
1888.30 M	5.60 DEG	1828.94 M
1897.80 M	1.90 DEG	1838.52 M
1906.90 M	2.30 DEG	1847.82 M
1916.60 M	2.90 DEG	1857.31 M
1926.20 M	2.80 DEG	1866.90 M
1945.40 M	2.00 DEG	1886.08 M
1955.10 M	1.00 DEG	1895.78 M
1974.20 M	0.60 DEG	1914.88 M
1994.00 M	0.60 DEG	1934.68 M
1999.00 M	0.60 DEG	1939.66 M

COMPANY	SUNCOR ENERGY INC.
WELL	SUNCOR NE/TLA K-77-60-50-122-30
FIELD	NETLA
PROVINCE	NORTHWEST TERRITORIES

BOTTOM LOG INTERVAL	1999 m
SCHLUMBERGER DEPTH	1931 m
DEPTH DRILLER	1930.97
KELLY BUSHING	583.2 m
DRILL FLOOR	624.9 m
GROUND LEVEL	618.4 m

Schlumberger

PLATFORM EXPRESS
BOREHOLE COMPENSATED
SONIC LOG

N.E.& COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

BOREHOLE COMPENSATED SONIC LOG

	60 deg-46', 122 deg-30' (SUR LOCATION)	Elev.: K.B.	627.28 M
	263.68M, -90.17M (BOTTOM LOG)	G.L.	616.4 M
	3000N,77-60-50-122,30(W) (LIMS)	D.F.	624.9 M
	Permanent Datum: GROUND LEVEL	Elev.:	616.4 M
	Log Measured From: KELLY BUSHING	8.8 M	above Perm. Datum
	Drilling Measured From: KELLY BUSHING		

		Run 1	Run 2	Run 3	Run 4
API Serial No.	N/A				
Logging Date	10-MAY-1999				
Run Number	1				
Depth Driller	2118 M				
Schlumberger Depth	2117 M				
Bottom Log Interval	2094.5 M				
Top Log Interval	1995 M				
Casing Driller Size @ Depth	177.800 MM @ 1989 M	@	@	@	@
Casing Schlumberger	1986.8 M				
Bit Size	156.000 MM				
Type Fluid In Hole	POTASSIUM SULPHATE				
Density / Viscosity	1040 KG/M3 / 33 S				
Fluid Loss / PH	8 C3 / 9.8				
Source Of Sample	MEAS.FED				
RM @ Measured Temperature	4.980 C/HMM @ 20 DEGC	@	@	@	@
RMF @ Measured Temperature	3.560 C/HMM @ 20 DEGC	@	@	@	@
RMC @ Measured Temperature	4.000 C/HMM @ 20 DEGC	@	@	@	@
Source: RMF / RMC	MEAS.FED / CALC	@	@	@	@
RM at MRT / RMF at MRT	1.870 @ 60 / 1.051 @ 60	@ @	@ @	@ @	@ @
Maximum Recorded Temperatures	66. DEGC				
Circulation Stopped / Time	10-MAY-1999 / 17:30				
Logger On Bottom / Time	10-MAY-1999 / 19:45				
Unit Number / Location	3010 / 9640				
Recorded By	KIMBERLEY BAKER				
Witnessed By	BRIAN HERTER				

		Run 1	Run 2	Run 3	Run 4
Logging Date					
Run Number					
Depth Driller					
Schlumberger Depth					
Bottom Log Interval					
Top Log Interval					
Casing Driller Size @ Depth					
Casing Schlumberger					
Bit Size					
Type Fluid In Hole					
Density / Viscosity					
Fluid Loss / PH					
Source Of Sample					
RM @ Measured Temperature					
RMF @ Measured Temperature					
RMC @ Measured Temperature					
Source: RMF / RMC					
RM at MRT / RMF at MRT					
Maximum Recorded Temperatures					
Circulation Stopped / Time					
Logger On Bottom / Time					
Unit Number / Location					
Recorded By					
Witnessed By					

MAX. RECORDED TEMPERATURES

Field:	NETLA		
Location:	K-77-60-50-122-30 W6M		
Well:	SUNCOR NETLA K-77-60-122-30		
Company:	SUNCOR ENERGY INC.		

OTHER SERVICES

GR1	HOLTRON-DOUGHTY GR		
GR4	HNGS-HALS		
GR6	MWD - GR		
GR8	MWD - CCL		
GR9	MWD - GR		

REMARKS

RUN 1 WITH 8 1/2 STABIL.
PRE-TAGGED @ 2118M.
RECORDED REPEAT SECTION AS PER CLIENT REQUEST.
ATTN: RON DOCKENDORF/JOHN DOMPKE/ STRATIGRAPHIC
RUN 2 WITH DOCKENDORF/JOHN DOMPKE/ STRATIGRAPHIC
ATTN MARK BOSTICK/ DAVE EDWARDS
RAT HOLE CHART: 8 1/2" HOLE TO 2118M (6.1"C" RAT HOLE 2118-2138)
TAG HARD BOTTOM @ 2138M. PULLED 2 STDS TO 2094.5M FOR LOGS
TAG HARD BOTTOM @ 2138M. PULLED 2 STDS TO 2094.5M FOR LOGS
1ST MARTI CUT EXTENTED MY HOLE TO 2138M AND CIRCULATED HOLE CLEAN
PRE-TAGGED @ 2118M.
RECORDED REPEAT SECTION AS PER CLIENT REQUEST.
ATTN: RON DOCKENDORF/JOHN DOMPKE/ STRATIGRAPHIC
ATTN MARK BOSTICK/ DAVE EDWARDS
RAT HOLE CHART: 8 1/2" HOLE TO 2118M (6.1"C" RAT HOLE 2118-2138)
TAG HARD BOTTOM @ 2138M. PULLED 2 STDS TO 2094.5M FOR LOGS
TAG HARD BOTTOM @ 2138M. PULLED 2 STDS TO 2094.5M FOR LOGS
1ST MARTI CUT EXTENTED MY HOLE TO 2138M AND CIRCULATED HOLE CLEAN

MULTI-RESEARCH LOG OF GEOLOGY & GEOPHYSICS (P) JANUARY 1990 MADE BY SCHLUMBERGER FOR: SUNCOR ENERGY INC. WELL: SUNCOR NETLA K-77-60-50-122-30 W6M FIELD: NETLA PROVINCE: NORTHWEST TERRITORIES

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

SSN/HT
NGT-B
HGNS-HS

DOWNHOLE EQUIPMENT

| | | | | |

Gamma Ray (GR)
0 (GAPI) 150

HRMS Caliper (HCAL)
6 (MM) 16

Tension (TENS)
1500000 (N) 0

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DSLT Firing Mode	SHC
	Telemetry Mode	DSLC.TCC
ASC	Automatic Gain Control Status	ON
ANAPL	AIT-H Answer Product Level(Depth Log/View only)	
	AIT-H Block Correction Mode	2_Mode2Corr_BasicLogs_RadialProf_RadialPer
AHBKM	AIT-H Block Correction Code Version Number	2_ComputeStandard
AHBLV	AIT-H Basic Logs Code Version Number	800
AHDLV	AIT-H Basic Logs Code Version Number	6_One_Two_and_Four
AHCEN	AIT-H Caliper Enable	TWO
AHCDEN	AIT-H Test Caliper Enable (Borehole)	Yes
AHCDED	AIT-H Casing Shoe Estimated Depth	Excentered
AHCDV	AIT-H Casing Thickness Value	0x0b_Log_500
AHEBD	AIT-H Enable Bitsize Correction	Yes
AHEBL	AIT-H Enable Bitsize Logs	Yes
AHEBP	AIT-H Enable Drilling	Yes
AHETP	AIT-H Enable Radial Parameterization	Yes
AHFBV	AIT-H Enable Real Time Borehole Size Corr	Yes
AHSEV	AIT-H Response Set Version For Four ft Resolution	30.66.23.13
AHSIV	AIT-H Select Alpha Interpolation Gating	On
AHWKM	AIT-H Wave Keep Mode	2
AHMHD	AIT-H Mud Resistivity Calibration Depth	Log_Valid-No_Default_Parameters
AHMHF	AIT-H Mud Resistivity Factor	1
AHSFV	AIT-H Radial Processing Set For One ft Resolution	30.66.23.10
AHRPV	AIT-H Radial Processing Mode Version Number	620
AHRLV	AIT-H Radial Processing Mode Code Version Number	6_One_Two_and_Four
AHSTX	AIT-H Tool Serial Number	1202
AHTHO	AIT-H Tool Stand Off	12.7
AHTHSV	AIT-H Response Set Version For Two ft Resolution	30.66.23.15
AHTTC	AIT-H Temperature Selection(Sonde Error Correction)	Internal
AHTXV	AIT-H Tool Version Number(SAV)	1202
AHULV	AIT-H User Level Control	Normal
ALTDPCHAN	Name of alternate depth channel	TYDE
AMBD	Auxiliary Minimum Borehole Deviation	0
AMBS	Auxiliary Minimum Sticking Rate	US
ARTB	AIT-H Selection (for ALCRIBS computation)	12_ANTBC
ATMS	Backup Mud Filtrate Solution	1.00000
BHS	Borehole Fluid	WATER
BHS	Bore Hole Salinity	0
BHV	Bottom hole Temperature (used in calculations)	84
BIL	Bitsize Index Level for Zone Isolation	0.000
BE	Bit Size	158.75 MM
BEDS	Borehole Salinity	42000.00 PPM
BEGD	Borehole Salinity Correction Option	NO
CBCC	CBL Correction Factor	1
CBCF	CBL Correction Factor	1.5
CBLG	CBL Gate Width	40 US
CCLC	CCL Casing Wall Thickness Correction Option	NO
CCLD	CCL Head Delay	305 MM
CDLT	CDL detection level	0.5
CDTB	CDL Gate Width	320.04 US/M
CMFI	Cement Weight Strength of Cement	15.8 KRAA
CWFI	Casing Weight	34.32 KRAA
DDEL	Drilling Delay	0 US
DFD	Delta-T Declination	52
DFES	Delta-T Excessive Deviation Detection Switch	ENABLE
DFMD	Drilling Fluid Density	1045.97 K/M3
DHC	Density Hole Correction	86
DIC	Delta-T Integration Interval	0.5
DIFM	Depth Offset	0.0 M
DPPM	Density Porosity Processing Mode	HRM
DPRM	Delta-T Processing Mode	2
DTCM	Delta-T Correction Mode	FULL
DTF	Delta-T Fluid	620.00 US/M
DTFR	Delta-T Frequency Frame Size	100
DTM	Delta-T Matrix	183.727 US/M
DWDO	Depth Word Count	32
FCF	CBL Fluid Compensation Factor	0
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	2
FMUM	Form Factor Porosity Source	0
FPHI	Form Factor Porosity Source	DPHZ
FPLS	Formation Salinity	60000 PPM
FSO	Formation Salinity Correction Option	NO
GAI	Manual Gain	40
GCBE	Gamma Ray Caliper Selection	0
GDEP	Average Angular Deviation of Borehole from Normal	0.0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GMAM	Good Mud	2 M/
GRMAX	HLT Gamma Ray Max	150 GAPI
GRMIN	HLT Gamma Ray Min	0 GAPI
GTBE	Generalized Bad Hole Selection	AITH_RESET
GTCP	Generalized Temperature Selection	LINEAR_ESTIMATE
GTSM	Generalized Temperature Source	PRESENT_DOWNHOLE
HAHT	Accelerometer Reference Temperature	38 DEGC
HCCDD	HILT Density Cool detection	2000 K/M3
HCCSD	HILT Sonde Cool detection	2100 K/M3
HFAV	HILT Auto Write Frequency	4
HILT_GAS_DENSITY	HILT Gas Downhole Density	90 K/M3
HLHC_OPTION	HILT Hole Correction Option	OFF
HLNC	HILT Logging Strength of Cement	HINES
HNCDD	HILT Neutron Cool detection	0.05 V/V
HNSCD	HILT Neutron Sail detection	0.05 V/V
HPHICUT	HILT effective Porosity Cutoff	0.01 V/V
HRCD	HILT Rugosity Cutoff	126.00 MM
HRDD	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCD	Hole Size Correction Option	YES
HSDD	HILT Sonde Diameter Selection	158.75 MM
HSTI	STI (min) HILT Assessment	NO
HSWCUT	HILT Water Saturation from ATR cutoff	90 %
HTCS	Integrated Transit Time Caliper Selection	AUTOMATIC
HTTD	Integrated Transit Time Enable	YES
LGMS	LGMS Coverage	HOMT
LTHT	LB Hardware Logic Control	DSALLOW
MATR	Mud Matrix Densitometer Spacing Ratio	0
MATR	Rock Matrix Type	DOLOMITE
MCCO	Mud Cake Correction Option	NO
MCOR	Minimum Cemented Interval	3.048 M
MDEN	Matrix Density	2870 K/M3
MED	Matrix Density	2650 K/M3
MEO	Manually-Entered (Wall) Deviation	0.000 DEG
MFSS	Mud Filtrate	NACL
MHCC	MCFL Bh Contrast Correction Coefficient	3.2e-05 OHMS
MHCI	MCFL Bh Contrast Correction Coefficient	3.2e-05 OHMS
MHCO	Mudcake Correction Switch	NO
MODA	Mudcake Data	
MODE	Sonic Firing Mode	SHC
MPHA	MCFL Processing Operation Mode	ON
MRES	Mud Resistivity at Surface	0.2 OHMM
MST	Mud Sample Temperature	22.22 DEGC
MWGO	Mud Weight Correction Option	NO
NBS	Near Minimum Sliding Gate	180 US
NBSM	Near Minimum Sliding Gate	NOBALANCE
NMIN	Near Minimum Sliding Gate	70 US
NPAM	HRDD Processing Mode	Hilles
NSAR	Nominal Sampling Rate	25.4 MM
NUMP	Number of Depth Points	2
PBVSAOP	Use alternate depth channel for playback	NO
PBVMAX	Playback Velocity	3.05 V/V
PP	Playback Process	NORMAL
PTCO	Pressure/Temperature Correction Option	ON
RDFA	Rig Floor Alt	810
RMFS	Resistivity of Mud Filtrate Sample	OFF
RTCO	RTCO - fill in/out/no correction	2.0000 OHMM
SCAT	rescaling or Laroute water	YES
SDAT	Sonic Data Source	LVDU LPHMM
SDTH	Switch Down Threshold	0.0254
SEXP_HILT	HILT Saturation Exponent	1.9
SFAC	Sonic Stretch Compression Factor	2 DB/M
SGAO	Sliding Gate Adjust	0
SGAI	Selectable Acquisition Gain	AUTO M
SGDW	Sliding Gate Down Delta-T	800 US/M
SGOW	Sliding Gate Opening Width	124 US
SGST	Sliding Gate Delay	0.0 US/M
SGW	Sliding Gate Width	80 US
SLBV	Surface Hole Temperature	20 DEGC
SLOW	Slowness Logging Mode	SHC
SOCH	Standoff Distance	3.175 MM
SOCO	Standoff Correction Option	NO
SPACEAN	Sonic Spacing	.305 M/
SPBS	East Standard of Starting Point	0
SPBS	Sonic Porosity Formula	RAYMER_HUNT
SPBS	Sonic Porosity Formula of Starting Point	0 M
SPNV	SP Hard Value	0 MV
SPSKALE	HILT SP Skale	0 MV
SPTO	Sonic Porosity Source	-120
SPTO	Sonic Porosity Source	DT
SSHC	Sonic Shear Loop Control	M
STHT	STI Short Threshold	DISALLOW
STTN	Switch Up Threshold	1.524 M
TAZI	Tool Azimuth Angle	665 DEG
TD	Total Depth	0 M
TSCC	TSCD Enable Corrected Depth Computation	2113 M
TSSC	TSCD Enable Sonde Error Sample	37.79 DEGC
VDLG	VDL Manual Gain	0
WSZC	Waveform ASC Allow/Disallow	OFF
WSZT	Waveform Gain Delta-T	0
WSZT	Waveform Gain Delta-T	297 US/M
WSZV	Waveform Gain Interval	0.0762 M
WWDT	Wash Depth	DETECTION
WTF	Wall Thickness Flag	1048 K/M3
WTF	Wall Thickness Flag	VERTICAL

Format: ELT_2 Vertical Scale: 1:600 Graphics File Created: 10-MAR-1999 17:41

OP System Version: 7C0-713

		MSM	
HILTB-DTB	RPCA-1099	DBLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Input DLIS Files

CUSTOMER	HILTB .023	FN:35	CUST	10-MAR-1999 15:54	2119.8 M

1806.7 M

Output DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41	
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41	

Input DLIS Files

CUSTOMER	HILTB .023	FN:35	CUST	10-MAR-1999 15:54	2119.8 M

1806.7 M

Output DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41	
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41	

Integrated Hole/Cement Volume Summary

Hole Volume = 2.17 M3
Cement Volume = 2.17 M3 (assuming 0.00 MM casing O.D.)
Computed from 2117.9 M to 1806.1 M (using data channel(s) CALI

OP System Version: 7C0-713

		MSM	
HILTB-DTB	RPCA-1099	DBLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000 DEG	0.000 DEG	2133.3 17:42:02
	0.000 DEG	0.000 DEG	1992.2 17:42:02
	0.000 DEG	0.000 DEG	1975.0 17:46:09
	1.000 V/V	1.000 V/V	1918.1 17:50:16

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Tension (TENS)
1560000 (N) 0

Gamma Ray (GR)
0 (GAPI) 150

HRMS Caliper (HCAL)
125 (MM) 375

LDT Caliper (CALI)
125 (MM) 375

Bit Size (BS)
125 (MM) 375

Transit Time 3 (TT3)
900 (US) 300

Transit Time 4 (TT4)
900 (US) 300

Transit Time 1 (TT1)
900 (US) 300

Transit Time 2 (TT2)
900 (US) 300

Stuck Stretch
0 (S) 30

Delta-T (DT)
300 (US/M) 100

MAIN PASS

MAIN PASS

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DSLT Firing Mode	SHC
	Telemetry Mode	DSLC.TCC
ASC	Automatic Gain Control Status	ON
ANAPL	AIT-H Answer Product Level(Depth Log/View only)	
	AIT-H Block Correction Mode	2_Mode2Corr_BasicLogs_RadialProf_RadialPer
AHBKM	AIT-H Block Correction Code Version Number	2_ComputeStandard
AHBLV	AIT-H Basic Logs Code Version Number	800
AHDLV	AIT-H Basic Logs Code Version Number	6_One_Two_and_Four
AHCEN	AIT-H Caliper Enable	TWO
AHCDEN	AIT-H Casing Detection Enable	Yes
AHCDED	AIT-H Casing Shoe Estimated Depth	Excentered

AHCSEQ	ATT-H Casing Shoe Extrapolated Depth	10000	M
AHDITM	ATT-H Decimal Tool Model	0x00_Log_000	
AHEBC	ATT-H Enable Borehole Correction	Yes	
AHEBC	ATT-H Enable Borehole Correction	Yes	
AHERP	ATT-H Enable Radial Profiling	Yes	
AHERP	ATT-H Enable Radial Profiling	Yes	
AHFTP	ATT-H Enable Standoff Correction	Yes	
AHFRBW	ATT-H Response Set Version For Four R Resolution	30.66.23.10	
AHFRBW	ATT-H Response Set Version For One R Resolution	30.66.23.10	
AHLSV	ATT-H Service Identification Catalog	Cln	
AHMRO	ATT-H Tool Mnemonic	Log_Valid-No_Default_Parameters	
AHMSV	ATT-H Tool Software Calibration Depth	0	M
AHNPOV	ATT-H Neutralility Factor	SATEN	
AHRBW	ATT-H Response Set Version For One R Resolution	30.66.23.10	
AHSCV	ATT-H Service Catalog Version Number	4000	
AHSPH	ATT-H Vehicle Processing Mode	6_One_Two_and_Four	
AHSPX	ATT-H Radial Parameterization Code Version Number	872	
AHTDP	ATT-H Tool Serial Number	1317	MM
AHTMO	ATT-H Tool Serial Number	12.7	
AHTRW	ATT-H Response Set Version For Two R Resolution	30.66.23.10	
AHTSV	ATT-H Vehicle Identification/Service Error Correction	1000	
AHTTY	ATT-H Tool Type (Computed Data)	HAT	
AHUL	ATT-H User Log Comment	None	
AHUTCHCHAN	Name of Auxiliary channel	Cln	
AIMAX	Azimuth Of Manually-Entered (Well) Deviation	0	DEG
AIMBQ	Azimuthal Image Bin Quantity	16	
AIMTB	ATT IB Selection for ALLRES computation	13_AHTBD	
BHE	Borehole Fluid Medium	1.00000	
BHS	Borehole Fluid Salinity	0.00000	
BHT	Bore Hole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	88	DEGC
BHV	Borehole Index Level for Zone Isolation	2000	
BI	Bit Size	150.038	MM
BMAL	Borehole Salinity	-50000.00	PPM
CBCF	CBL Amplitude Correction Factor	Inv	
CBCF	CBL Equation Type	Inv	
CBCT	CBL Correction Factor	1.8	
CBUS	CBL Gate Width	40	US
CCLC	Casing & Cement Thickness Correction Option	NO	
CCLD	CCL Correction Depth	0.0	MM
CCLT	CCL Detection Level	0.5	V
CDTS	C-Delta-T Shale	328.084	US/M
CDTS	Compressional Slowness of Casing	57	US/M
CEIN	Casing Weight	34.32	KG/M
DDEL	Depth Delay	0	MM
DFD	Drilling Fluid Density	1.07	G/C3
DFD	Digital Fluid Artifact Detection Switch	OFF	
DFD	Drilling Fluid Density	1040.00	K/M3
DFL	Density Index Level for Zone Isolation	2000	
DIC	Depth Sampling Interval	30	M
DOP	Depth Offset	0.00	M
DPAM	Density Porosity Processing Mode	HIRES	
DTCM	DSLT DSI Recording Size	20	
DTCM	DSLT Recording Size	20.0000	
DTF	Delta-T Fluid	620.078	US/M
DTFB	DSLC Telemetry Frame Size	100	
DTM	Delta-T Matrix	183.727	US/M
DTOCO	Digitizer Word Count	20	
FDT	CBL Fluid Compensation Factor	0	
FEC	Fast Edit	1000	K/M3
FENP	Fluid Density Exponent	1	
FNUM	Form Factor Numerator	2	
FPAR	Form Factor Porosity	0	
FPC	Formation Salinity	DFHC	PPM
FSCO	Formation Salinity	-50000	
FSCO	Formation Salinity Correction Option	NO	
GAIN	Manual Gain	40	
GDEV	Generalized Caliper Selection	BS	
GDPM	Generalized Depth Correction of Borehole from Normal	0	DEG
GGMX	Geothermal Gradient	0.018337	DEGM
GOOD	Good Bond	2	HV
GRMW	Gamma Ray Max	150	GAPI
GRMW	Gamma Ray Min	0	GAPI
GRNE	Generalized Mud Resistivity Selection	ATR_DEN_NEU	
GTEM	Gain Control Processing Selection	LINEAR_ESTIMATE	
HAEN	Accelerometer Hardware Enable	PRESENT_DOWNHOLE	
HAMT	Accelerometer Reference Temperature	25	DEGC
HBAD	HLT Density Cool detection	2650	K/M3
HBAD	HLT Neutron Salt detection	2100	K/M3
HBAT	HLT Gas Downhole Density	NO	
HBAT	HLT Gas Downhole Density	0	K/M3
HLSO	HLT Gas Computation Option	OFF	
HLSO	HLT Gas Option	HIGH	
HNCOD	HNAS Neutron Salt detection	0.00	V/V
HNSAD	HLT Neutron Salt detection	0.00	V/V
HNSCOUNT	HLT Neutron Salt detection	0.00	V/V
HRMM	High Resolution Mode	120000	MM
HSCM	HLT Speed Correction Mode	TSCD_SPEED_CORRECTION	
HSCO	HLT Shale Correction Option	YES	
HSD	HLT Shale Density	2650	
HSVOUT	HLT Vshale Mid Z Antenna	0	
HSWOUT	HLT Water Saturation from ATR cutoff	0	%
HTAS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
ITTS	Integrated Travel Time	0	
LDMB	LDMB Coverage	0	
LBT	LB Hardware Loop Control	DISALLOW	
LSUT	LB Hardware Tool Assembling Spacing Ratio	0	
MATS	Rock Matrix Type	DOLOMITE	
MCCO	Mud Cake Correction Option	NC	
MDEN	Matrix Density	2.840	M
MDEN	Mud Correction	NATU	
MDEN	Matrix Density	2840	K/M3
MHDI	Manually Entered (Well) Deviation	0.000	DEG
MHCI	Mud Inclination	0	
MHC1	MCFL Bit Contrast Correction Coefficient	3.354-03	OHMS
MHC2	MCFL Bit Contrast Correction Coefficient	3.354-03	OHMS
MHCS	MCFL High Contrast Correction Switch	NO	
MIDA	Mud Type	1	
MOCS	Basin Fining Mode	BHC	
MPAT	MCFL Processing Operation Mode	OH	
MPAT	Mud Salinity Correction	0	MV
MSAL	Mud Sample Temperature	23.22	DEGC
MWCO	Mud Weight Correction Option	NO	
MWT	Mud Weight Correction	1.07	
NBTS	HLT Nuclear Mud Type	NOSAR	
NMOD	Near Maximum Sliding Gate	1000	US
NMOD	Near Maximum Sliding Mode	Hires	
NRAN	HRDD Depth Sampling Rate	25.4	MM
NUMP	Neutron Porosity Processing Mode	1	
OBSAMP	Use alternate depth channel for playback	NO	
PEMAX	HLT max porosity	0.22	V/V
PO	Porosity Correction	NORMAL	
PTCO	Pressure/Temperature Correction Option	NO	
RATE	Firing Rate	RH1	
RATE	Firing Rate	2.000	
RMFS	Resistivity of Mud Filtrate Sample	0.067	OHMM
RTCO	RTCO - RI Inversion Correction	1000	
RW	Resistivity of Water	0.067	OHMM
SAAT	Standoff Gas Sensor Value	0.000	
SBTH	Bath Threshold	SOCH	
SBUF_HLT	HLT Standoff Buffer	16384	
SCAL	Sonic Caliper Determination Factor	0	CO.M
SGAO	Sliding Gate Offset	OS	
SGAO	Selectable Acquisition Gain	AUTO	
SGDV	Sliding Gate Delta-T	600	US/M
SGDV	Sliding Gate Velocity Width	150	US/M
SGIV	Sliding Gate Delta-T	40	US/M
SGIV	Sliding Gate Width	90	US
SGTV	Sliding Gate Temperature	100	DEGC
SGVV	Signal Level for AGC	40	
SGOS	Standoff Distance	3.175	MM
SHCO	Shale Correction Option	NO	
SHOLCAN	HLT SP Correction	-200	MV
SPED	East Departure of Starting Point	0	M
SPED	Sonic Porosity Formula	1	
SPIS	North Departure of Starting Point	0	M
SPMA	Sonic Matrix	47.6	
SPSHALE	HLT SP Shale	-120	MV
SPWD	Sonic Porosity Source	DT	
SPWD	Sonic Porosity Source	0	M
SRHC	SP Hardware Loop Control	DISALLOW	
STKT	STI Stuck Threshold	1.524	M
TAZI	Vertical Gathering Azimuth	0	
TAZI	Vertical Gathering Azimuth	0	DEG
TE	Total Depth	2118	M
TENS	Tension Cable Corrected Depth Computation	YES	
TVDS	Tension Cable Compensate Water Sample	37.78	DEGC
VDLG	VDL Manual Gain	40	
WAVO	Waveform ADC/ Above/Shallow	OFF	
WDST	Waveform Manual Gain	20	
WDST	Waveform Manual Gain	20	US/M
WMOD	Waveform Firing Mode Interval	2000	US
WMOD	Waveform Firing Mode	DETECTION	
WRT	Write Rate	30	K/M3
WTT	Wall Thickness Flag	Inch	

Format: SLT_LOC Vertical Scale: 1:240 Graphics File Created: 10-MAR-1999 17:41

OP System Version: 7C0-713

MSM

HLTB-DTB	RPCA-1099	DSLT-TOC	SKXA-997
HCLEV	RPCA-1099		

Input DLIS Files

CUSTOMER	HLTB .023	FN:35	CUST	10-MAR-1999 15:54	2119.6 M

1806.7 M

Output DLIS Files

DEFAULT	HLTB .030	FN:48	FIELD	10-MAR-1999 17:41
CUSTOMER	HLTB .030	FN:48	CUST	10-MAR-1999 17:41

Input DLIS Files

DEFAULT	HLTB .079	FN:104	FIELD	11-MAR-1999 05:04
DEFAULT	HLTB .085	FN:109	FIELD	11-MAR-1999 08:19

2121.9 M
2120.0 M

1933.0 M
1975.4 M

Output DLIS Files

DEFAULT	HLTB .086	FN:110	FIELD	11-MAR-1999 08:25

2121.9 M

1975.1 M

OP System Version: 7C0-713

MSM

HLTB-DTB	RPCA-1099	DSLT-TOC	SKXA-997
HCLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.000 DEG	2121.0 08:20:40
	0.000 DEG	0.600 DEG	1975.6 08:20:41
	0.600 DEG	0.000 DEG	1975.6 08:20:41

PIP SUMMARY

-| Integrated Transit Time Minor Pip Every 1 MS
-|| Integrated Transit Time Major Pip Every 10 MS

Time Mark Every .50 S

TENS_REP Curve (TENS_REP)
150000 (lb) 0

HCAL_REP Curve (HCAL_REP)
125 (MM) 375

GR_REP Curve (GR_REP)
0 (GAPI) 150

CALI_REP Curve (CALI_REP)
125 (MM) 375

BS_REP Curve (BS_REP)
125 (MM) 375

Tension (TENS)
150000 (lb) 0

HRMR Caliper (HCAL)
125 (MM) 375

Gamma Ray (GR)
0 (GAPI) 150

LDT Caliper (CALI)
125 (MM) 375

DT_REP Curve (DT_REP)
300 (US/M) 100

Delta-T (DT)
300 (US/M) 100

REPEAT ANALYSIS

2000

2025

2050

2075

2100

REPEAT ANALYSIS

LDT Caliper (CALI)
125 (MM) 375

Delta-T (DT)
300 (US/M) 100

Gamma Ray (GR)
0 (GAPI) 150

DT_REP Curve (DT_REP)
300 (US/M) 100

HRMR Caliper (HCAL)
125 (MM) 375

Tension (TENS)
150000 (lb) 0

BS_REP Curve (BS_REP)
125 (MM) 375

CALI_REP Curve (CALI_REP)
125 (MM) 375

GR_REP Curve (GR_REP)
0 (GAPI) 150

HCAL_REP Curve (HCAL_REP)
125 (MM) 375

TENS_REP Curve (TENS_REP)
150000 (lb) 0

PIP SUMMARY

-| Integrated Transit Time Minor Pip Every 1 MS
-|| Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC.TOC
	Telemetry Mode	SHC
AGC	Automatic Gain Control Status	ON
ANAPL	ATT-H Analysis Level(Depth Log/View only)	0_ShortCon_BasicLogs_RadialProf_RadialPer
ANBHM	ATT-H Bhole Correction Mode	2_ComputeBestMode
ANBHV	ATT-H Bhole Correction Version Number	4000
ANBLM	ATT-H Basic Logs Mode	6_One_Two_and_Four
ANBLV	ATT-H Basic Logs Version Number	790
ANCDS	ATT-H Caliper Enable	Yes
ANCEN	ATT-H Tool Centering Flag (2x Borehole)	0
ANDETM	ATT-H Detector Spacing and Depth	Eccentered
ANDETM	ATT-H Detector Spacing and Depth	0x00_Log_000
ANEBC	ATT-H Enable Bhole Correction	Yes
ANEBC	ATT-H Enable Bhole Correction	Yes
ANERP	ATT-H Enable Radial Profiling	Yes
ANERP	ATT-H Enable Radial Parameterization	Yes
ANFRBV	ATT-H Response Set Version For Four R Resolution	30.66.23.10
ANFRV	ATT-H Radial Processing Mode	6_One_Two_and_Four
ANHLV	ATT-H Service Identification Catalog	Log_Valid-No_Default_Parameters
ANMRO	ATT-H Mud Resistivity Calibration Depth	0
ANMSV	ATT-H Tool Software Calibration Depth	M
ANRBV	ATT-H Response Set Version For One R Resolution	30.66.23.10
ANRCV	ATT-H Radial Processing Code Version Number	872
ANRMV	ATT-H Radial Parameterization Code Version Number	872
ANSCV	ATT-H Service Catalog Version Number	4000
ANSPH	ATT-H Vehicle Processing Mode	6_One_Two_and_Four
ANTDP	ATT-H Tool Serial Number	1317
ANTMO	ATT-H Tool Serial Number	12.7
ANTRW	ATT-H Response Set Version For Two R Resolution	30.66.23.10
ANTSV	ATT-H Vehicle Identification/Service Error Correction	1000
ANTTY	ATT-H Tool Type (Computed Data)	HAT
ANUL	ATT-H User Log Comment	None
ANUTCHCHAN	Name of Auxiliary channel	Cln
AOMAX	Azimuth Of Manually-Entered (Well) Deviation	0
AOMBQ	Azimuthal Image Bin Quantity	16
AOMTB	ATT IB Selection for ALLRES computation	13_AHTBD
BHE	Borehole Fluid Medium	1.00000
BHS	Borehole Fluid Salinity	0.00000
BHT	Bore Hole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	88
BHV	Borehole Index Level for Zone Isolation	2000
BI	Bit Size	150.038
BMAL	Borehole Salinity	-50000.00
CBCF	CBL Amplitude Correction Option	Inv
CBCF	CBL Equation Type	Inv
CBCT	CBL Correction Factor	1.8
CBUS	CBL Gate Width	40
CCLC	Casing & Cement Thickness Correction Option	NO
CCLD	CCL Correction Depth	0.0
CCLT	CCL Detection Level	0.5
CDTS	C-Delta-T Shale	328.084
CEIN	Casing Weight	34.32
DDEL	Depth Delay	0
DFD	Drilling Fluid Density	1040.00
DFD	Digital Fluid Artifact Detection Switch	OFF
DFD	Drilling Fluid Density	1.07
DIC	Depth Sampling Interval	30
DOP	Depth Offset	0.00
DPAM	Density Porosity Processing Mode	HIRES
DTCM	DSLT DSI Recording Size	20
DTCM	DSLT Recording Size	20.0000
DTF	Delta-T Fluid	620.078
DTFB	DSLC Telemetry Frame Size	100
DTM	Delta-T Matrix	183.727
DTOCO	Digitizer Word Count	20
FDT	CBL Fluid Compensation Factor	0
FEC	Fast Edit	1000
FENP	Fluid Density Exponent	1
FNUM	Form Factor Numerator	2
FPAR	Form Factor Porosity	0
FPC	Formation Salinity	DFHC
FSCO	Formation Salinity	-50000
FSCO	Formation Salinity Correction Option	NO
GAIN	Manual Gain	40
GDEV	Generalized Caliper Selection	BS
GDPM	Generalized Depth Correction of Borehole from Normal	0
GGMX	Geothermal Gradient	0.018337
GOOD	Good Bond	2
GRMW	Gamma Ray Max	150
GRMW	Gamma Ray Min	0
GRNE	Generalized Mud Resistivity Selection	ATR_DEN_NEU
GTEM	Gain Control Processing Selection	LINEAR_ESTIMATE
HAEN	Accelerometer Hardware Enable	PRESENT_DOWNHOLE
HAMT	Accelerometer Reference Temperature	25
HBAD	HLT Density Cool detection	2650
HBAD	HLT Neutron Salt detection	2100
HBAT	HLT Gas Downhole Density	NO
HBAT	HLT Gas Downhole Density	0
HLSO	HLT Gas Computation Option	OFF
HLSO	HLT Gas Option	HIGH
HNCOD	HNAS Neutron Salt detection	0.00
HNSAD	HLT Neutron Salt detection	0.00
HNSCOUNT	HLT Neutron Salt detection	0.00
HRMM	High Resolution Mode	120000
HSCM	HLT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCO	HLT Shale Correction Option	YES
HSD	HLT Shale Density	2650
HSVOUT	HLT Vshale Mid Z Antenna	0
HSWOUT	HLT Water Saturation from ATR cutoff	0
HTAS	Integrated Hole Volume Caliper Selection	AUTOMATIC
ITTS	Integrated Travel Time	0
LDMB	LDMB Coverage	0
LBT	LB Hardware Loop Control	DISALLOW
LSUT	LB Hardware Tool Assembling Spacing Ratio	0
MATS	Rock Matrix Type	DOLOMITE
MCCO	Mud Cake Correction Option	NC
MDEN	Matrix Density	2.840
MDEN	Mud Correction	NATU
MDEN	Matrix Density	2840
MHDI	Manually Entered (Well) Deviation	0.000
MHCI	Mud Inclination	0
MHC1	MCFL Bit Contrast Correction Coefficient	3.354-03
MHC2	MCFL Bit Contrast Correction Coefficient	3.354-03
MHCS	MCFL High Contrast Correction Switch	NO
MIDA	Mud Type	1
MOCS	Basin Fining Mode	BHC
MPAT	MCFL Processing Operation Mode	OH
MPAT	Mud Salinity Correction	0
MSAL	Mud Sample Temperature	23.22
MWCO	Mud Weight Correction Option	NO
MWT	Mud Weight Correction	1.07
NBTS	HLT Nuclear Mud Type	NOSARTE
NMOD	Near Maximum Sliding Gate	1000
NMOD	Near Maximum Sliding Mode	Hires
NRAN	HRDD Depth Sampling Rate	25.4
NUMP	Neutron Porosity Processing Mode	1
OBSAMP	Use alternate depth channel for playback	NO
PEMAX	HLT max porosity	0.22
PO	Porosity Correction	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RATE	Firing Rate	RH1
RATE	Firing Rate	2.000
RMFS	Resistivity of Mud Filtrate Sample	0.067
RTCO	RTCO - RI Inversion Correction	1000
RW	Resistivity of Water	0.067
SAAT	Standoff Gas Sensor Value	0.000
SBTH	Bath Threshold	SOCH
SBUF_HLT	HLT Standoff Buffer	16384
SCAL	Sonic Caliper Determination Factor	0
SGAO	Sliding Gate Offset	OS
SGAO	Selectable Acquisition Gain	AUTO
SGDV	Sliding Gate Delta-T	600
SGDV	Sliding Gate Velocity Width	150
SGIV	Sliding Gate Delta-T	40
SGIV	Sliding Gate Width	90
SGTV	Sliding Gate Temperature	100
SGVV	Signal Level for AGC	40
SGOS	Standoff Distance	3.175
SHCO	Shale Correction Option	NO
SHOLCAN	HLT SP Correction	-200
SPED	East Departure of Starting Point	0
SPED	Sonic Porosity Formula	1
SPIS	North Departure of Starting Point	0
SPMA	Sonic Matrix	47.6
SPSHALE	HLT SP Shale	-120
SPWD	Sonic Porosity Source	DT
SPWD	Sonic Porosity Source	0
SRHC	SP Hardware Loop Control	DISALLOW
STKT	STI Stuck Threshold	1.524
TAZI	Vertical Gathering Azimuth	0
TAZI	Vertical Gathering Azimuth	0
TE	Total Depth	2118
TENS	Tension Cable Corrected Depth Computation	YES
TVDS	Tension Cable Compensate Water Sample	37.78
VDLG	VDL Manual Gain	40
WAVO	Waveform ADC/ Above/Shallow	OFF
WDST	Waveform Manual Gain	20
WDST	Waveform Manual Gain	20
WMOD	Waveform Firing Mode Interval	2000
WMOD	Waveform Firing Mode	DETECTION
WRT	Write Rate	30
WTT	Wall Thickness Flag	Inch

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AMED	Azimuth Of Manually-Entered (Well) Deviation	0
AMEX	Auxiliary Memory Sliding Gate	180
ANFS	Annulus Correction (for ALCRS computation)	13.4HTIC
AP1K	Borehole Fluid Type	SALTWATER
BHCO	Borehole Fluid Type	WATER
BHT	Bore Hole Temperature	OPEN
BHT	Bore Hole Temperature (used in calculations)	0
BLI	Bond Index Level for Zone Isolation	0.8
BS	Bit Size	158.000
BSAL	Borehole Salinity	-50000.00
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Attenuation Factor	1
CBFO	CBL Offset Factor	1.0
CBLG	CBL Data Window	40
CCCO	Casing & Cement Thickness Correction Option	NO
CCL	CCL Head delay	305
CCRT	CCL Detection level	0.5
CDTB	C-Delta-T Blank	326.04
CEMW	Compressive Strength of Cement	4.35
CENT	Casing Weight	34.32
CMEL	Cable Mass/Length	0.5
CNFC	Delta-T Selection	DSP
DFAD	Digital Fluid Arrival Detection Switch	DSP
DFSD	Digital Fluid Sampling Interval	1046.00
DGL	DELT Depth Sampling Interval	30
DOL	DELT Depth Offset	0.0
DPAD	Depth Offset Receipt Analysis	0.0
DPRM	Density Porosity Processing Mode	NO
DRCO	DELT DLIS Recording Data	2
DTCM	Delta-T Computation Mode	3
DTF	Delta-T Filter	625.078
DTFR	DELT Sampling Frame Size	1
DTMO	Delta-T Mode	183.727
DTO	Delta-T Offset	0
DTSM	Delta-T Sample Time Size	1
EDFV	Delta-T Matrix	183.727
EFNO	CBL Event Count	300
FD	CBL Fluid Compensation Factor	1
FDEP	Fluid Density	1000
FEXP	Fluid Density Exponent	2
FRUM	Form Factor Numerator	2
FRVL	Form Factor Porosity Source	DPHZ
FRVO	Form Factor Porosity	-99999
FSCO	Fluid Salinity Correction Option	NO
GAC	Manual Gain	0
GACM	Generalized Caliper Selection	HCAL
GDIO	Average Angular Deviation of Borehole from Normal	0
GGRO	Gamma Ray Gradient	0.018227
GOBO	Good Bond	80
GRMAX	HILT Gamma Ray Max	150
GRMIN	HILT Gamma Ray Min	20
GRSE	Generalized Bad Hole Selectivity	AITH_RHOB
GSEL	Generalized Temperature Selection	LINEAR_ESTIMATE
HAMT	Hole Azimuth Measurement	PRIMARY_ALG
HDCG	Accelerometer Reference Temperature	0
HDCO	HILT Density Cool detection	2600
HFAC	HILT Density Cool detection	2100
HFAW	HILT Density Bit detection	NO
HILT_GAS_DENSITY	HILT Gas Downhole Density	0.0
HILT_HIRES_OPTION	HILT Gas Correction Option	OFF
HLOG	HALS Logging Mode	HIRES
HNCO	HILT Neutron Cool detection	1.9
HNGAC	HILT Neutron Cool detection	0.65
HPHECUT	HILT effective Porosity Cutoff	0.65
HPOR	HILT Porosity Mode	129.007
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCO	Hole Size Correction Option	YES
HSEL	HILT Porosity Selection	GR
HSTO	HTI Uses HLT Association	NO
HSWCUT	HILT Water Saturation from AITH cutoff	70
HTYP	Integrated Hole Caliper Selection	AUTOMATIC
ITYS	Integrated Transit Time Source	DT
LGMS	LLS Gain Control	AUTO
LSHC	LS Hardware Loop Control	SALLOW
MATR	Lower to Upper Transmitter Spacing Ratio	1.042
MATS	Matrix Selection	LIMESTONE
MCCO	Mud Cake Correction	NO
MCDI	Minimum Cemented Interval	3.048
MDEN	Matrix Density	2.71
MDEN	Matrix Density	NATU
MED	Manually-Entered (Well) Deviation	0.000
MHDI	Minimum Hole Diameter	0.05
MHSI	MCFL Bit Contrast Correction Coefficient	3.2e-03
MHSJ	MCFL Bit Contrast Correction Coefficient	3.2e-03
MHSC	MCFL High Contrast Correction Switch	NO
MINC	Minimum Gain	0
MODE	Mode for Mud Filtrate Sample	BHC
MPCO	MPCL Processing Operation Mode	ON
MRT	Minimum Sonic Amplitude	20
MSEL	Mud Weight Selection	22.2
MWCO	Mud Weight Correction Option	NO
NNSG	Near Minimum Sliding Gate	180
NOBA	Near Normalizer Baseline	NOBASITE
NWOS	Near Nucleonic Offset	70
NPRM	HRDD Processing Mode	HIRES
NSAT	Near Saturation Rate	35.4
NUHP	Neutron pH Correction Passer	NO
PBVSADP	Use alternate depth channel for playback	NO
PERMAX	HILT max porosity	0.35
PP	Playback Processing	NORMAL
PTCO	Pressure and Temperature Correction Option	NO
PSITE	Curing Time	0
RDFS	Reset DFSD	OFF
RFMC	Resistivity of Mud Filtrate Sample	2.4800
RTCO	RTCO - Resistivity Correction	NO
RW	Resistivity of Connate Water	1.0000
RWAT	Resistivity of Water	1.0000
SCOT	Switch Down Threshold	SCOT
SEXP_HILT	HILT Saturation Exponent	16384
SGAC	Sonic Frequency Attenuation Factor	0
SGAD	Sonic Gain Adjust	ON
SGAI	Selectable Acquisition Gain	AUTO
SGCW	Sliding Gate Closing Delta-T	600
SGDT	Sliding Gate Closing Width	24
SGOP	Sliding Gate Opening	96
SGWI	Sliding Gate Width	180
SHTY	Surface Hole Temperature	20
SLEV	Surface Log Level	0000
SOCO	Standoff Clearance	3.175
SOCO_CAN	Standoff Correction Option	NO
SPCO	Fast Spectrum of Starting Point	-900
SPIS	Sonic Porosity Formula	RAYMER_HUNT
SPNO	North Departure of Starting Point	0
SPRF	Sonic Ref Value	0.782
SPSHALE	HILT SP Shale	-15
SPWO	Sonic Porosity Source	DT
SPWS	TVD of Starting Point	2318
SRVC	Sonic Receiver Control	1.2192
STHT	STT Shock Threshold	30.78
SWCH	Switch Up Threshold	0.782
TCCO	Tool Centered	NO
TD	Total Depth	2318
TSED	TSCD Enable Corrected Depth Computation	2318
TSEL	Tool Selection Remote Water Sample	1
VDLS	VDL Manual Gain	30.78
WASC	Waveform AGC Allow/Disallow	40
WDSH	Waveform Default Gain	20
WGSH	Waveform Gain Delta-T	767
WGSV	Waveform Gain Voltage	1.2192
WMOD	Waveform Filter Mode	FULL
WTS	Mud Weight	1042
WTSU	Mud Weight Salinity Flag	VERTICAL

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OP System Version: 7C0-713

MRM

HILTB-DTB	RPCA-1099	DSLT-TOC	SKKA-997
HOLEV	RPCA-1099		

Input DLIS Files

DEFAULT	HILTB..079	FN:104	FIELD	11-MAR-1999 05:04	2121.9 M	1933.5 M
DEFAULT	HILTB..085	FN:109	FIELD	11-MAR-1999 06:19	2120.8 M	1975.4 M

Output DLIS Files

DEFAULT	HILTB..086	FN:110	FIELD	11-MAR-1999 06:25

Input DLIS Files

CUSTOMER	HILTB..023	FN:26	CUST	10-MAR-1999 19:54	2119.8 M	1650.7 M

Output DLIS Files

DEFAULT	HILTB..030	FN:48	FIELD	10-MAR-1999 17:41
CUSTOMER	HILTB..030	FN:49	CUST	10-MAR-1999 17:41

Integrated Hole/Cement Volume Summary

Hole Volume = 2.17 M3
Cement Volume = 2.17 M3 (assuming 0.00 MM casing O.D.)
Computed from 2117.9 M to 1988.1 M using data channel(s) CALI

OP System Version: 7C0-713

MRM

HILTB-DTB	RPCA-1099	DSLT-TOC	SKKA-997
HOLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2126.3 17:42:02
	0.600 DEG	0.600 DEG	1999.9 17:42:45
	0.600 DEG	0.600 DEG	1975.4 17:46:18
	0.600 DEG	0.600 DEG	1974.3 17:46:18

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
  - Integrated Transit Time Minor Pip Every 1 MS
  - Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Tension (TENS)		
1500000	(N)	0
HRMN Caliper (HCAL)		
125	(MM)	375
Gamma Ray (GR)		
0	(GAPI)	150
LDT Caliper (CALI)		
125	(MM)	375
Bit Size (BS)		
125	(MM)	375

Stuck Stretch		Delta-T (DT)	
(STTC)		(US/M)	
300			100
0	(M)	300	

MAIN PASS

--CD-->

2000

2025

2050

2075

2100

--TD-->

MAIN PASS

Bit Size (BS)		Stuck Stretch	Delta-T (DT)
125	(MM)	375 (STTC)	300 (US/M) 100

LDT Caliper (CALI)		
125	(MM)	375
Gamma Ray (GR)		
0	(GAPI)	150
HRMS Caliper (HCAL)		
125	(MM)	375
Tension (TENS)		
1500000	(N)	0

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
  - Integrated Transit Time Minor Pip Every 1 MS
  - Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DSLT Ring Mode	SHC
	DSLT Tool Type	DSLC_TOC
ASC	Automatic Gain Control Status	ON
AHAPL	AIT-H Answer Product Level (Depth Log/View only)	AIT_Shoulder_Bed_Logs_HadRnProf_RadialRes_2_DomainBestAvailable
AHBHW	AIT-H Whole Elem Inversion Mode	2_DomainBestAvailable
AHBVV	AIT-H Whole Correction Code Version Number	4400
AHBXV	AIT-H Whole Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	799
AHCDE	AIT-H Centering Data Enable	Yes
AHCDM	AIT-H Centering Flag (In Borehole)	Eccentered
AHDUM	AIT-H Casing Shoe Extended Depth	30000
AHDUV	AIT-H Dummy Code	0x00_Logs_Valid
AHEBC	AIT-H Environ Correction	Yes
AHEBL	AIT-H Enable Basic Logs	Yes
AHEBV	AIT-H Enable Borehole Volume	Yes
AHEDP	AIT-H Enable Depth Trends	Yes
AHEEW	AIT-H Enable Sonde Error Temps/Pres Corr	Yes
AHGAS	AIT-H Gas Detection Flag For Fast R Resolution	30.66,23.10
AHGEL	AIT-H Gas Detection Selection Calling	On
AHLVV	AIT-H Log Not Valid Flag	0
AHMAV	AIT-H Mud Resistivity Calibration Depth	Log_Valid-No_Default_Parameters
AHMRV	AIT-H Mud Resistivity Factor	1
AHORV	AIT-H Radial Processing Mode For One R Resolution	30.66,23.10
AHPCV	AIT-H Radial Processing Mode Correction Number	822
AHRPV	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHSCV	AIT-H Shoulder Correction Code Version Number	1
AHSTA	AIT-H Test Standoff	51.7
AHTNO	AIT-H Test Serial Number	292
AHTOR	AIT-H Tornado Detection Mode For Two R Resolution	30.66,23.10
AHTSE	AIT-H Tornado Detection/Device Error Correction)	HIGHT
AHTTY	AIT-H Tool Type (of acquired data)	AIT-H
AILTCP	AIT-H User Level Control	Normal
ALTOPCHAN	Altimeter Operation Channel	TVDE
AMED	Azimuth Of Manually-Entered (Well) Deviation	0
AMEX	Auxiliary Memory Sliding Gate	180
ANFS	Annulus Correction (for ALCRS computation)	13.4HTIC
BFM	Borehole Fluid Mode	SALTWATER
BHFL	Borehole Fluid Type	WATER
BHS	Bore Hole Shape	OPEN
BHT	Bore Hole Temperature (used in calculations)	0
BLI	Bond Index Level for Zone Isolation	0.8
BS	Bit Size	158.000
BSAL	Borehole Salinity	-50000.00
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Attenuation Factor	1
CBFO	CBL Offset Factor	1.0
CBLG	CBL Data Window	40
CCCO	Casing & Cement Thickness Correction Option	NO
CCL	CCL Head delay	305
CCRT	CCL Detection level	0.5
CDTB	C-Delta-T Blank	326.04
CEMW	Compressive Strength of Cement	4.35
CENT	Casing Weight	34.32
CMEL	Cable Mass/Length	0.5
CNFC	Delta-T Selection	DSP
DFAD	Digital Fluid Arrival Detection Switch	DSP
DFSD	Digital Fluid Sampling Interval	1046.00
DGL	DELT Depth Sampling Interval	30
DOL	DELT Depth Offset	0.0
DPAD	Depth Offset Receipt Analysis	0.0
DPRM	Density Porosity Processing Mode	HIRES
DRCO	DELT DLIS Recording Data	2
DTCM	Delta-T Computation Mode	3
DTF	Delta-T Filter	625.078
DTFR	DELT Sampling Frame Size	1
DTMO	Delta-T Mode	183.727
DTO	Delta-T Offset	0
DTSM	Delta-T Sample Time Size	1
EDFV	Delta-T Matrix	183.727
EFNO	CBL Event Count	300
FD	CBL Fluid Compensation Factor	1
FDEP	Fluid Density	1000
FEXP	Fluid Density Exponent	2
FRUM	Form Factor Numerator	2
FRVL	Form Factor Porosity Source	DPHZ
FRVO	Form Factor Porosity	-99999
FSCO	Fluid Salinity Correction Option	NO
GAC	Manual Gain	0
GACM	Generalized Caliper Selection	HCAL
GDIO	Average Angular Deviation of Borehole from Normal	0
GGRO	Gamma Ray Gradient	0.018227
GOBO	Good Bond	80
GRMAX	HILT Gamma Ray Max	150
GRMIN	HILT Gamma Ray Min	20
GRSE	Generalized Bad Hole Selectivity	AITH_RHOB
GSEL	Generalized Temperature Selection	LINEAR_ESTIMATE
HAMT	Hole Azimuth Measurement	PRIMARY_ALG
HDCG	HILT Density Cool detection	2600
HFAC	HILT Density Cool detection	2100
HFAW	HILT Density Bit detection	NO
HILT_GAS_DENSITY	HILT Gas Downhole Density	0.0
HILT_HIRES_OPTION	HILT Gas Correction Option	OFF
HLOG	HALS Logging Mode	HIRES
HNCO	HILT Neutron Cool detection	1.9
HNGAC	HILT Neutron Cool detection	0.65
HPHECUT	HILT effective Porosity Cutoff	0.65
HPOR	HILT Porosity Mode	129.007
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCO	Hole Size Correction Option	YES
HSEL	HILT Porosity Selection	GR
HSTO	HTI Uses HLT Association	NO
HSWCUT	HILT Water Saturation from AITH cutoff	70
HTYP	Integrated Hole Caliper Selection	AUTOMATIC
ITYS	Integrated Transit Time Source	DT
LGMS	LLS Gain Control	AUTO
LSHC	LS Hardware Loop Control	SALLOW
MATR	Lower to Upper Transmitter Spacing Ratio	1.042
MATS	Matrix Selection	LIMESTONE
MCCO	Mud Cake Correction	NO
MCDI	Minimum Cemented Interval	3.048
MDEN	Matrix Density	2.71
MDEN	Matrix Density	NATU
MED	Manually-Entered (Well) Deviation	0.000
MHDI	Minimum Hole Diameter	0.05
MHSI	MCFL Bit Contrast Correction Coefficient	3.2e-03
MHSJ	MCFL Bit Contrast Correction Coefficient	3.2e-03
MHSC	MCFL High Contrast Correction Switch	NO
MINC	Minimum Gain	0
MODE	Mode for Mud Filtrate Sample	BHC
MPCO	MPCL Processing Operation Mode	ON
MRT	Minimum Sonic Amplitude	20
MSEL	Mud Weight Selection	22.2
MWCO	Mud Weight Correction Option	NO
NNSG	Near Minimum Sliding Gate	180
NOBA	Near Normalizer Baseline	NOBASITE
NWOS	Near Nucleonic Offset	70
NPRM	HRDD Processing Mode	HIRES
NSAT	Near Saturation Rate	35.4
NUHP	Neutron pH Correction Passer	NO
PBVSADP	Use alternate depth channel for playback	NO
PERMAX	HILT max porosity	0.35
PP	Playback Processing	NORMAL
PTCO	Pressure and Temperature Correction Option	NO
PSITE	Curing Time	0
RDFS	Reset DFSD	OFF
RFMC	Resistivity of Mud Filtrate Sample	2.4800
RTCO	RTCO - Resistivity Correction	NO
RW	Resistivity of Connate Water	1.0000
RWAT	Resistivity of Water	1.0000
SCOT	Switch Down Threshold	SCOT
SEXP_HILT	HILT Saturation Exponent	16384
SGAC	Sonic Frequency Attenuation Factor	0
SGAD	Sonic Gain Adjust	ON
SGAI	Selectable Acquisition Gain	AUTO
SGCW	Sliding Gate Closing Delta-T	600
SGDT	Sliding Gate Closing Width	24
SGOP	Sliding Gate Opening	96
SGWI	Sliding Gate Width	180
SHTY	Surface Hole Temperature	20
SLEV	Surface Log Level	0000
SOCO	Standoff Clearance	3.175
SOCO_CAN	Standoff Correction Option	NO
SPCO	Fast Spectrum of Starting Point	-900
SPIS	Sonic Porosity Formula	RAYMER_HUNT
SPNO	North Departure of Starting Point	0
SPRF	Sonic Ref Value	0.782
SPSHALE	HILT SP Shale	-15
SPWO	Sonic Porosity Source	DT
SPWS	TVD of Starting Point	2318
SRVC	Sonic Receiver Control	1.2192
STHT	STT Shock Threshold	30.78
SWCH	Switch Up Threshold	0.782
TCCO	Tool Centered	NO
TD	Total Depth	2318
TSED	TSCD Enable Corrected Depth Computation	2318
TSEL	Tool Selection Remote Water Sample	1
VDLS	VDL Manual Gain	30.78
WASC	Waveform AGC Allow/Disallow	40
WDSH	Waveform Default Gain	20
WGSH	Waveform Gain Delta-T	767
WGSV	Waveform Gain Voltage	1.2192
WMOD	Waveform Filter Mode	FULL
WTS	Mud Weight	1042
WTSU	Mud Weight Salinity Flag	VERTICAL

HZ	Frame Density	1000
FRQM	Form Factor Exponent	2
FRNM	Form Factor Numerator	1
FSRC	Form Factor Reference Source	DPHI
FSAL	Formation Salinity Correction Option	-60000
FBCO	Formation Salinity Correction Option	PPM
GAI	Manual Gain	40
GAIC	Generalized Caliper Selection	BS
GDEV	Geometry Deviation Indicator of Borehole from Normal	0.0
GSRC	Geometry Stacked Data	DEG
GODM	Good Bend	0.0182271
GRAM	HLT Gamma Ray Max	500
GRMN	HLT Gamma Ray Min	19
GRSC	HLT Gamma Ray Sensitivity Selection	GAPI
GTEC	HLT Shale Compensation Selection	ATTH_RESD
HADP	Accelerometer FROM Pressure	LINEAR_KENNEDY
HAFP	Accelerometer FROM Pressure	PRESENT_DOWNHOLE
HDCO	Accelerometer Reference Temperature	25
HDEC	HILT Density Coef detection	2600
HDRAD	HILT Density Coef Typical	2100
HFAX	HILT Density Dia Selection	1
HLT_GAS_DENSITY	HILT Gas Downhole Density	-0.2
HLT_GAS_OPTION	HILT Gas Computation Option	0
HLTC	HILT Logging Mode	HIRES
HNCOD	HILT Neutron Detection	MCFL
HNRAD	HILT Neutron Coef detection	0.65
HPHSCOUT	HILT effective Porosity Cutoff	0.05
HPOR	HILT Porosity Type	HLIM
HSCO	HILT Speed Correction Mode	1200
HSCR	Hole Size Correction Option	TSCD_SPEED_CORRECTION
HSIS	HILT Shale Compensation	ISS
HSTI	STI Uses HILT Acceleration	NO
HTCUT	Hydrogen Index Cutoff from ATTH cutoff	45
HVOR	Interpreted Hole Volume Caliper Selection	AUTOMATIC
ITTS	Integrated Travel Time Source	TTHR
LDRS	LDRS Coverage	NONE
LSC	LS Hardware Loop Control	DISALLOW
MAPS	MCFL Pad Mud Cake Transmitter Spacing Ratio	2
MATN	Mool Matrix Type	DOLOMITE
MCCO	Mud Cake Correction Option	NO
MCIN	Minimum Caliper Interval	3.048
MDEN	Mud Correction	NATU
MDEP	Mud Density	2650
MDMI	Manually Entered Mi (Well) Deviation	0.550
MDMJ	Maximum Gain	0.550
MHCC	MCFL Bi Contrast Correction Coefficient	2.2e-05
MHCI	MCFL Bi Contrast Correction Coefficient	3.2e-05
MHCS	MCFL Bi Contrast Correction Switch	NO
MHGA	Minimum Gain	1
MODE	Sonic Fitting Mode	BHC
MOFF	MCFL Processing Correction Mode	ON
MRA	Mud Resistivity Attenuation	2
MST	Mud Sample Temperature	22.33
MWCO	Mud Weight Correction Option	NO
NMSG	Near Minimum Sliding Gate	180
NSC	HILT Neutron Mud Type	NOBARITE
NWID	HILT Processing Window Size	750
NRAM	NRDD Processing Mode	HLM
NSAD	NRDD Depth Sampling Rate	25.4
NUMI	Number of Detection Passes	1
OVERSAMP	Oversampling Option Selected for playback	NO
PHMAX	HILT max porosity	0.33
PP	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RDFS	Firing Rate	R15
RDFT	Firing Rate Type	OFF
RMFCUT	Resistivity of Mud Filtrate Sample	2.5800
RTCO	RTCO - Pf Invasion Correction	0.1000
SDAT	Resistivity of Connate Water	1.0000
SDTH	Standoff Data Source	SOCH
SHOT_HILT	Shots per Depth Interval	15354
SFAF	HILT Saturation Exponent	2
SFAC	Sonic Formation Alteration Factor	0
SGCL	Sliding Gate Status	DB/M
SGSI	Selectable Acquisition Gate	ON
SHCO	Shale Correction Option Select	AUTO
SHOW	Sliding Gate Display Width	650
SGDT	Sliding Gate Delta-T	64
SGW	Sliding Gate Width	128
SLEH	Surface Hole Temperature	20
SLEV	Surface Temperature	20
SOCH	Standoff Distance	3.175
SOCC	Standoff Correction Option	YES
SPAC	HILT SP Clean	1.270
SPED	Sort Departure at Starting Point	2
SPFS	Spectral Stacking Ratio	2
SPMO	North Reference or Sliding Gate Mode	RAYMER_HUNT
SPNV	SP Heat Value	0
SPSALE	SP Salinity Value	MV
SPSC	SP Scale	MV
SPVD	TVD of Starting Point	0.0
SSHC	SS Hardware Loop Control	M
STKT	STI Block Threshold	DISALLOW
STMT	STI Tension Threshold	1.524
TAZI	Vertical Deviation Azimuth	65.0
TD	Total Depth	DEG
TSEC	TSCD Enable Corrected Depth Computation	2119
TWG	Temperature of Connate Water Sample	YES
VDEN	Matrix Density	2.71
WGCC	Waveform ASC Abscissa Code	DEGC
WGAI	Waveform Manual Gain	40
WGDT	Waveform Gain Delta-T	OFF
WGWT	Waveform Gain Interval	2
WMOD	Waveform Windowing Mode	2640
WTF	Wet Weight	US
WTT	Wet Trajectory Flag	1040
		VERTICAL

Format: SLT_0_300 Vertical Scale: 1/240 Graphics File Created: 10-MAR-1999 17:41

OP System Version: 7C0-713

MSM

		DSLT.TCC	
HLTB-DTB	RPCA-1999		
HOLEV	RPCA-1999		SKKA-997

Input DLIS Files

CUSTOMER	HILTB_023	FN:35	CUST	10-MAR-1999 15:54

2119.6 M 1806.7 M

Output DLIS Files

DEFAULT	HILTB_030	FN:48	FIELD	10-MAR-1999 17:41
CUSTOMER	HILTB_030	FN:49	CUST	10-MAR-1999 17:41

Calibration and Check Summary

Measurement	Nominal	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase						
Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999						
Thru Cal Magnitude - 1	0	0.8100	0.8289	N/A	N/A	V
Thru Cal Magnitude - 2	0	1.258	1.290	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.8219	0.8410	N/A	N/A	V
Thru Cal Magnitude - 4	0	0.7069	0.7248	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.315	1.350	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.303	1.336	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.503	1.562	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.370	1.413	N/A	N/A	V
Phase - 1	0	61.55	63.15	N/A	N/A	DEG
Phase - 2	0	60.93	62.17	N/A	N/A	DEG
Phase - 3	0	57.15	58.44	N/A	N/A	DEG
Phase - 4	0	56.12	57.68	N/A	N/A	DEG
Phase - 5	0	50.43	51.98	N/A	N/A	DEG
Phase - 6	0	48.20	49.47	N/A	N/A	DEG
Phase - 8	0	48.21	49.46	N/A	N/A	DEG
Phase - 7	0	44.50	45.65	N/A	N/A	DEG
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Auxiliary						
Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999						
AIT-H SPA Plus	990.9	990.9	991.3	N/A	N/A	MV
AIT-H SPA Slope	0.0100	0.0103	-0.003029	N/A	N/A	V/V
AIT-H Temperature Plus	0.9150	0.9177	0.9181	N/A	N/A	V
AIT-H Temperature Zero	0	1.210E-06	1.210E-06	N/A	N/A	V
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Test Loop Gain Correction						
Master: Feb 21 17:26 1999						
Test Loop Gain Magnitude - 0	0	1.024	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.024	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.024	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.021	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	1.004	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9929	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.004	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.013	N/A	N/A	N/A	V
Phase - 0	0	0.2344	N/A	N/A	N/A	DEG
Phase - 1	0	-0.2344	N/A	N/A	N/A	DEG
Phase - 2	0	-0.09551	N/A	N/A	N/A	DEG
Phase - 3	0	0.3533	N/A	N/A	N/A	DEG
Phase - 5	0	-0.03952	N/A	N/A	N/A	DEG
Phase - 6	0	0.09551	N/A	N/A	N/A	DEG
Phase - 7	0	0.2383	N/A	N/A	N/A	DEG
	0	-0.1895	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Sonde Error Correction						
Master: Feb 21 17:26 1999						
R Sonde Error Correction - 0	0	-44.78	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	158.2	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	107.3	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	56.16	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	11.58	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	11.58	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	8.864	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-0.5503	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	70.38	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	69.71	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	71.32	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	71.32	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	-10.46	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	-12.57	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	3.602	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	4.449	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Mud Gain Correction						
Master: Feb 21 17:26 1999						
Coarse - Mag. Real. Intag. - 0	0	1.022	N/A	N/A	N/A	
Coarse - Mag. Real. Intag. - 1	0	1.023	N/A	N/A	N/A	
Coarse - Mag. Real. Intag. - 2	0	1.022	N/A	N/A	N/A	
Fine - Mag. Real. Intag. - 0	0	1.022	N/A	N/A	N/A	
Fine - Mag. Real. Intag. - 1	0	1.022	N/A	N/A	N/A	
Fine - Mag. Real. Intag. - 2	0	1.022	N/A	N/A	N/A	
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Cable Measurement Summary						
Before: Mar 7 12:26 1999						
8B Window Ratio	0.9904	N/A	0.9907	N/A	N/A	
9B Window Sum	19650	N/A	19640	N/A	N/A	CPS
9B Window Ratio	0.4638	N/A	0.4641	N/A	N/A	
LS Window Sum	11100	N/A	11120	N/A	N/A	CPS
LS Window Sum	0.2049	N/A	0.3066	N/A	N/A	
	1478	N/A	1478	N/A	N/A	CPS
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations						
Master: Feb 21 17:26 1999						
9B PM High Voltage (Command)	2095	N/A	2121	N/A	N/A	V
9B PM High Voltage (Command)	2165	N/A	2191	N/A	N/A	V
LB PM High Voltage (Command)	1772	N/A	1770	N/A	N/A	V
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Crystal Quality Resolutions Calibration						
Master: Feb 21 17:26 1999						
8B Crystal Resolution	12.66	N/A	12.71	N/A	N/A	%
9B Crystal Resolution	10.41	N/A	10.39	N/A	N/A	%
LS Crystal Resolution	9.314	N/A	9.017	N/A	N/A	%
High resolution Integrated Logging Tool-CTS Wellsite Calibration - MCFL Calibration						
Before: Mar 7 12:26 1999						
Ser R1 Resistivity	3870	--	3892	--	N/A	OHMM
Ser R1 Resistivity	3830	N/A	3834	N/A	N/A	OHMM
Ser R1 Resistivity	3830	N/A	3834	N/A	N/A	OHMM
High resolution Integrated Logging Tool-CTS Wellsite Calibration - HILT Caliper Calibration						
Before: Mar 7 12:21 1999						
HILT Caliper Zero Measurement	203.2	N/A	194.9	N/A	N/A	MV
HILT Caliper Plus Measurement	304.8	N/A	304.7	N/A	N/A	MM
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Detector Calibration						
Before: Mar 7 12:26 1999						
Gamma Ray Background	30.00	N/A	36.22	N/A	N/A	GAPI
Gamma Ray Lig - Sig	129.6	N/A	129.6	N/A	N/A	11.78
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	16.00
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Zero Measurement						
Master: Jan. 8 00:27 1999 Before: Mar 7 12:24 1999						
CNTC Background	25.17	N/A	24.54	N/A	N/A	3.787
CFTC Background	23.66	N/A	24.53	N/A	N/A	3.552
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Accelerometer Calibration						
Master: Feb 21 17:26 1999						
Z Axis Acceleration	8.916	N/A	9.828	N/A	N/A	MS2
High resolution Integrated Logging Tool-CTS Master Calibration - Inversion results						
Master: Feb 25 18:22 1999						
Rho Matrix	2595	2595	--	--	--	K/M3
Rho Magnesium	1680	1680	--	--	--	K/M3
Pe Aluminium	2.970	2.964	--	--	--	
Pe Magnesium	2.950	2.932	--	--	--	
High resolution Integrated Logging Tool-CTS Master Calibration - Deviation Summary						
Master: Feb 25 18:22 1999						
BB Average Deviation	0	0.1779	--	--	--	
BB Max Deviation	0	0.4007	--	--	--	
SS Average Deviation	0	0.2880	--	--	--	
SS Max Deviation	0	0.6348	--	--	--	
LS Average Deviation	0	0.5795	--	--	--	
LS Max Deviation	0	1.404	--	--	--	
High resolution Integrated Logging Tool-CTS Master Calibration - Tank Measurement						
Master: Jan. 8 00:27 1999						
Thermal Neut Dec. (Tank)	6031	5483	--	--	--	CPS
CNTC/CFTC (Tank)	2.158	2.019	--	--	--	
CNTC/CFTC (Tank)	2.158	2.267	--	--	--	
Litho Density - D Wellsite Calibration - Background Measurement						
Master: Calibration not done Before: Mar 7 12:25 1999						
LB Background	70.00	N/A	19.81	N/A	N/A	1.000
LC Background	70.00	N/A	70.35	N/A	N/A	1.000
LS Background	67.00	N/A	67.58	N/A	N/A	0.9000
SB1 Background	5.500	N/A	5.387	N/A	N/A	0.9000
SS1 Background	16.00	N/A	17.49	N/A	N/A	0.9000
SS2 Background	11.00	N/A	11.79	N/A	N/A	0.9000
Litho Density - D Wellsite Calibration - Tool Quality Control Information HV						
Master: Calibration not done Before: Mar 7 12:25 1999						
LBHV Background	1500	N/A	1315	N/A	N/A	V
SSHV Background	1900	N/A	1908	N/A	N/A	V
Litho Density - D Wellsite Calibration - Detectors Resolution From BKG Measurements						
Master: Calibration not done Before: Mar 7 12:25 1999						
LC Resolution Background	8.000	N/A	8.853	N/A	N/A	
SS Resolution Background	8.000	N/A	9.084	N/A	N/A	
Litho Density - D Wellsite Calibration - Caliper Calibration						
Before: Mar 7 12:24 1999						
Caliper Small Ring	203.2	N/A	199.2	N/A	N/A	MM
Caliper Large Ring	304.8	N/A	299.3	N/A	N/A	MM
Litho Density - D Master Calibration - Aluminum Measurement						
Master: Calibration not done						
LL Aluminum	90.00	93.07	--	--	--	CPS
LU Aluminum	139.0	141.1	--	--	--	CPS
LS Aluminum	155.0	163.6	--	--	--	CPS
SU Aluminum	50.00	58.38	--	--	--	CPS
SS1 Aluminum	173.0	188.5	--	--	--	CPS
SS2 Aluminum	380.0	391.8	--	--	--	CPS
Litho Density - D Master Calibration - Lithology Measurement						
Master: Calibration not done						
LL Iron	85.00	82.31	--	--	--	CPS
LU Iron	135.0	134.1	--	--	--	CPS
LS Iron	135.0	144.1	--	--	--	CPS
UTH Iron	30.00	35.53	--	--	--	CPS
SS1 Iron	155.0	166.6	--	--	--	CPS
SS2 Iron	245.0	227.1	--	--	--	CPS
Litho Density - D Master Calibration - Spectrum Quality Ratios						
Master: Calibration not done						
QRLB Calculated	0.6500	N/A	--	--	--	
QRSS Calculated	0.7200	N/A	--	--	--	
QRLC Calculated	0.3500	N/A	--	--	--	
QUR Calculated	1.380	N/A	--	--	--	
QR Calculated	1.000	N/A	--	--	--	
Scintillation Gamma-Ray - L Wellsite Calibration - Detector Calibration						
Before: Mar 10 11:10 1999						
Gamma Ray Background	30.00	N/A	68.17	N/A	N/A	GAPI
Gamma Ray Lig - Sig (Calib)	129.0	N/A	129.0	N/A	12.84	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	15.00	GAPI

The GLS-XJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-S Water Temperature	18.4	DEGC
Thermal Housing Size	69.929	MM

High resolution Integrated Logging Tool-CTS / Equipment Identification

Primary Equipment:

Array Induction Tool - H	AIT - H
Array Induction Tool	AHIS - SA
Micro Spherically Focused Log	MSFD - B
HILT Nov Gamma-ray Device	HNGD -
HILT Nuclear Back-Scatter Detector	HILT -
HILT Nuclear Short-Spacing Detector	HILT -
HILT Nuclear Long-Spacing Detector	HILT -
Micro Cylindrically Focused Log Device	MCFL -

Auxiliary Equipment:

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Mag. & Phase

Up	Phase	Value	Thru Cal Magnitude V	Value	Phase	Value	DEG	Nominal
1	Master	0.8130	1	0.8289	1	61.55	1	71.00
	Before	0.8289		0.8289		63.15		
2	Master	1.282	2	1.270	2	60.93	2	70.00
	Before	1.290				62.17		
3	Master	0.8218	3	0.8220	3	57.19	3	66.00
	Before	0.8410				58.44		
4	Master	0.7028	4	0.7049	4	56.41	4	65.00
	Before	0.7248				57.68		
5	Master	1.318	5	1.337	5	50.13	5	59.00
	Before	1.350				51.98		
6	Master	1.301	6	1.958	6	48.20	6	57.00
	Before	1.370				49.47		
7	Master	1.909	7	1.958	8	48.21	7	57.00
	Before	1.968				48.46		
8	Master	1.370		1.413	7	44.50	8	53.00
	Before	1.413				45.65		
		90.00 % Nominal		140.0 % Nominal		Nom 40.00 Nominal		Nom. = Nom. Nominal

Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	AIT-H SPA Plus	MV	Value	Phase	AIT-H SPA Zero	MV	Value
Master			990.9				-0.003029
Before			991.3				-0.00300
Nom Nominal	990.9	1040 Nominal	49.00 Nominal	0 Nominal	80.00 Nominal		
Phase	AIT-H Temperature Plus	V	Value	Phase	AIT-H Temperature Zero	V	Value
Master			0.9177	Master			3.026E-06
Before			0.9181	Before			1.210E-06
0.8700 Nominal	0.9150 Nominal	0.9600 Nominal		0.0000 Nominal	0.0000 Nominal		0.06000 Nominal

Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Test Loop Gain Correction

Up	Value	Test Loop Gain Magnitude V	Value	Phase DEG	Value
0	1.024	1	-0.3545	1	0.000
	0.9900 Nominal	1.000 Nominal	-3.000 Nominal	0.000 Nominal	3.000 Nominal
1	1.024	2	-0.2948	2	0.000
	0.9900 Nominal	1.000 Nominal	-3.000 Nominal	0.000 Nominal	3.000 Nominal
2	1.024	3	-0.0990	3	0.000
	0.9900 Nominal	1.000 Nominal	-3.000 Nominal	0.000 Nominal	3.000 Nominal
3	1.021	4	0.3033	4	0.000
	0.9900 Nominal	1.000 Nominal	-3.000 Nominal	0.000 Nominal	3.000 Nominal
4	1.004	5	-0.03982	5	0.000
	0.9900 Nominal	1.000 Nominal	-3.000 Nominal	0.000 Nominal	3.000 Nominal
5	0.9929	6	0.0985	6	0.000
	0.9900 Nominal	1.000 Nominal	-3.000 Nominal	0.000 Nominal	3.000 Nominal
6	1.004	7	-0.1895	7	0.000
	0.9900 Nominal	1.000 Nominal	-3.000 Nominal	0.000 Nominal	3.000 Nominal

Master: Feb 21 17:26 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Detector Calibration

Up	Value	Ser R1 Resistivity OHMM	Value	Ser R1 Resistivity OHMM	Value	Ser R1 Resistivity OHMM	Value
Master		3870		3830		3830	
Before		3892		3834		3834	
	0.9900 Nominal	3870 Nominal	1.000 Nominal	3830 Nominal	1.000 Nominal	3830 Nominal	1.000 Nominal

Master: Feb 21 17:26 1999 Before: Mar 7 12:26 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
HILT Caliper Calibration

Up	Value	HILT Caliper Zero Measurement V	Value	HILT Caliper Plus Measurement V	Value
Master		203.2		304.8	
Before		194.9		304.7	
	0.9900 Nominal	203.2 Nominal	1.000 Nominal	304.8 Nominal	1.000 Nominal

Master: Feb 21 17:26 1999 Before: Mar 7 12:21 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Detector Calibration

Up	Value	Gamma Ray Background GAPI	Value	Gamma Ray Lig - Sig GAPI	Value	Gamma Ray (Calibrated) GAPI	Value
Master		30.00		129.0		165.0	
Before		36.22		129.6		165.0	
	0.9900 Nominal	30.00 Nominal	1.000 Nominal	129.0 Nominal	1.000 Nominal	165.0 Nominal	1.000 Nominal

Master: Feb 21 17:26 1999 Before: Mar 7 12:26 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Zero Measurement

Up	Value	CNTC Background	Value	CFTC Background	Value
Master		25.17		23.66	
Before		24.54		24.53	
	0.9900 Nominal	25.17 Nominal	1.000 Nominal	23.66 Nominal	1.000 Nominal

Master: Jan. 8 00:27 1999 Before: Mar 7 12:24 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Accelerometer Calibration

Up	Value	Z Axis Acceleration MS2	Value
Master		8.916	
Before		9.828	
	0.9900 Nominal	8.916 Nominal	1.000 Nominal

Master: Feb 21 17:26 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Inversion results

Up	Value	Rho Matrix K/M3	Value	Rho Magnesium K/M3	Value	Pe Aluminium	Value	Pe Magnesium	Value
Master		2595		1680		2.970		2.950	
Before		2595		1680		2.964		2.932	
	0.9900 Nominal	2595 Nominal	1.000 Nominal	1680 Nominal	1.000 Nominal	2.970 Nominal	1.000 Nominal	2.950 Nominal	1.000 Nominal

Master: Feb 25 18:22 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Deviation Summary

Up	Value	BB Average Deviation	Value	BB Max Deviation	Value	SS Average Deviation	Value	SS Max Deviation	Value	LS Average Deviation	Value	LS Max Deviation	Value
Master		0		0		0		0		0		0	
Before		0.1779		0.4007		0.2880		0.6348		0.5795		1.404	
	0.9900 Nominal	0.1779 Nominal	1.000 Nominal	0.4007 Nominal	1.000 Nominal	0.2880 Nominal	1.000 Nominal	0.6348 Nominal	1.000 Nominal	0.5795 Nominal	1.000 Nominal	1.404 Nominal	1.000 Nominal

Master: Feb 25 18:22 1999 Before: Mar 7 12:26 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Tank Measurement

Up	Value	Thermal Neut Dec. (Tank) CPS	Value	CNTC/CFTC (Tank)	Value	CNTC/CFTC (Tank)	Value
Master		6031		2.158		2.158	
Before		5483		2.019		2.267	
	0.9900 Nominal	6031 Nominal	1.000 Nominal	2.158 Nominal	1.000 Nominal	2.267 Nominal	1.000 Nominal

Master: Jan. 8 00:27 1999 Before: Mar 7 12:24 1999

Litho Density - D Wellsite Calibration
Background Measurement

Up	Value	LB Background CPS	Value	LC Background CPS	Value	LS Background CPS	Value	SB1 Background CPS	Value	SS1 Background CPS	Value	SS2 Background CPS	Value
Master		70.00		70.00		67.00		5.500		16.00		11.00	
Before		19.81		70.35		67.58		5.387		17.49		11.79	
	0.9900 Nominal	70.00 Nominal	1.000 Nominal	70.00 Nominal	1.000 Nominal	67.00 Nominal	1.000 Nominal	5.500 Nominal	1.000 Nominal	16.00 Nominal	1.000 Nominal	11.00 Nominal	1.000 Nominal

Master: Calibration not done Before: Mar 7 12:25 1999

Litho Density - D Wellsite Calibration
Tool Quality Control Information HV

Up	Value	LBHV Background V	Value	SSHV Background V	Value
Master		1500		1900	
Before		1315		1908	
	0.9900 Nominal	1500 Nominal	1.000 Nominal	1900 Nominal	1.000 Nominal

Master: Calibration not done Before: Mar 7 12:25 1999

Litho Density - D Wellsite Calibration
Detectors Resolution From BKG Measurements

Up	Value	LC Resolution Background	Value	SS Resolution Background	Value
Master		8.000		8.000	
Before		8.853		9.084	
	0.9900 Nominal	8.000 Nominal	1.000 Nominal	8.000 Nominal	1.000 Nominal

Master: Calibration not done Before: Mar 7 12:25 1999

Litho Density - D Wellsite Calibration
Caliper Calibration

Up	Value	Caliper Small Ring MM	Value	Caliper Large Ring MM	Value
Master		203.2		304.8	
Before		199.2		299.3	
	0.9900 Nominal	203.2 Nominal	1.000 Nominal	304.8 Nominal	1.000 Nominal

Before: Mar 7 12:24 1999

Litho Density - D Master Calibration
Aluminum Measurement

Up	Value	LL Aluminum CPS	Value	LU Aluminum CPS	Value	LS Aluminum CPS	Value	SU Aluminum CPS	Value	SS1 Aluminum CPS	Value	SS2 Aluminum CPS	Value
Master		90.00		139.0		155.0		50.00		173.0		380.0	
Before		93.07		141.1		163.6		58.38		188.5		391.8	
	0.9900 Nominal	90.00 Nominal	1.000 Nominal	139.0 Nominal	1.000 Nominal	155.0 Nominal	1.000 Nominal	50.00 Nominal	1.000 Nominal	173.0 Nominal	1.000 Nominal	380.0 Nominal	1.000 Nominal

Master: Calibration not done

Litho Density - D Master Calibration
Lithology Measurement

Up	Value	LL Iron CPS	Value	LU Iron CPS	Value	LS Iron CPS	Value	UTH Iron CPS	Value	SS1 Iron CPS	Value	SS2 Iron CPS	Value
Master		85.00		135.0		135.0		30.00		155.0		245.0	
Before		82.31		134.1		144.1		35.53		166.6		227.1	
	0.9900 Nominal	85.00 Nominal	1.000 Nominal	135.0 Nominal	1.000 Nominal	135.0 Nominal	1.000 Nominal	30.00 Nominal	1.000 Nominal	155.0 Nominal	1.000 Nominal	245.0 Nominal	1.000 Nominal

Master: Calibration not done

Litho Density - D Master Calibration
Spectrum Quality Ratios

Up	Value	QRLB Calculated	Value	QRSS Calculated	Value	QRLC Calculated	Value	QUR Calculated	Value	QR Calculated	Value
Master		0.6500		0.7200		0.3500		1.380		1.000	
	0.9900

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Sonde Error Correction

Up	Value	R Sonde Error Correction: MM/M	Value	X Sonde Error Correction: MM/M
0	-54.75		70.38	
	-201.0	-66.50	118.0	2060 0 2080
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
1	159.2		-99.71	
	114.0	159.0	204.0	822.0
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
2	107.3		71.22	
	66.00	111.0	156.0	380.0 0 380.0
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
3	58.16		93.45	
	36.00	64.00	89.00	280.0 0 280.0
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
4	24.05		-10.48	
	15.00	26.00	38.00	43.00 0 63.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
5	11.96		-12.67	
	-5.000	11.00	24.00	40.00 0 50.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
6	9.564		3.602	
	8.000	10.00	16.00	-30.00 0 30.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
7	-0.6083		4.449	
	-2.000	8.000	16.00	-30.00 0 30.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum

Master / up at 11:48 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Mud Gain Correction

Up	Value	Coarse - Mag. Real. Imag	Value	Fine - Mag. Real. Imag
0	1.032		1.032	
	0.6000	1.000 1.400	0.6000	1.000 1.400
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
1	1.023		1.022	
	0.6000	1.000 1.400	0.6000	1.000 1.400
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
2	1.023		1.022	
	0.6000	1.000 1.400	0.6000	1.000 1.400
	Minimum	Nominal Maximum	Minimum	Nominal Maximum

Master: Feb 21 17:56 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Main Borehole Summary

Phase	SS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.9507	Before		0.6491	Before		0.3499
	0.9409	0.9804 1.040		0.6406	0.6970		0.2997	0.3499 0.3852
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum
Phase	SS Window Sum: CPS	Value	Phase	SS Window Sum: CPS	Value	Phase	LS Window Sum: CPS	Value
Before		19045	Before		11720	Before		7474
	18882	19880 20902		11090	11760 11950		7436	7474 7895
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Before: Mar 7 12:28 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Photo-Multiplier High Voltages Calibration

Phase	SS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before		2131	Before		2170	Before		1770
	1909	2099 2139		2040	2146 2200		1870	1770 1877
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Before: Mar 7 12:28 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Crystal Quality Resolutions Calibration

Phase	SS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	Ls Crystal Resolution %	Value
Before		12.71	Before		10.59	Before		8.017
	11.99	12.66 13.66		8.409	9.547 11.00		8.014	8.014 9.224 10.0
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Before: Mar 7 12:28 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
MCFL Calibration

Phase	Raw B2 Resistivity OHMM	Value	Phase	Raw B1 Resistivity OHMM	Value	Phase	Raw B2 Resistivity GHMM	Value
Before		3692	Before		3534	Before		3452
	2598	3658 4149		2624	3420 4128		2624	3420 4128
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Before: Mar 7 12:28 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
HILT Calibration

Phase	HILT Caliper Zero Measurement MM	Value	Phase	HILT Caliper Plus Measurement MM	Value
Before		194.9	Before		307.6
	192.6	203.2 204.2		298.8	304.8 381
	Minimum	Nominal Maximum		Minimum	Nominal Maximum

Before: Mar 7 12:21 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background: GAPI	Value	Phase	Gamma Ray Sig/ GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		36.22	Before		139.8	Before		185.0
	30.00	120.0		117.8	140.1		180.0	180.0
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Before: May 7 12:28 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		28.11	Master		25.98
Before		24.34	Before		24.53
	0.000	25.17		23.99	0.0000
	Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Jan. 8 00:27 1999

Before: Mar 7 12:24 1999

High resolution Integrated Logging Tool-CTS
Wellsite Calibration
Accelerometer Calibration

Phase	Z-Axis Acceleration: M/S2	Value
Before		8.928
	8.813	10.00
	Minimum	Nominal Maximum

Before: Mar 10 08:12 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Wellsite Calibration Check - Auxiliary

Phase	AT-H SPA Rat MV	Value	Phase	AT-H SPA Dev MV	Value
Master		992.9	Master		-0.9193
	847.0	992.9 1060		-40.00	0 80.00
	Minimum	Nominal Maximum		Minimum	Nominal Maximum

Phase	AT-H SPA Rat MV	Value	Phase	AT-H SPA Dev MV	Value
Master		0.9177	Master		3.10E-16
	0.8750	0.9750 0.9800		-0.04000	0 0.04000
	Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Feb 21 17:56 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Wellsite Calibration Check - Phase & Amplitude

Up	Phase	Thru Cal Magnitude V	Value	Nominal	Value	Phase DEG	Value	Nominal
0	Master	0.8150		1.000	81.86			71.00
1	Master	1.252		1.270	80.93			70.00
2	Master	0.8219		0.8250	57.18			65.00
3	Master	0.7329		0.7500	50.41			60.00
4	Master	1.315		1.337	50.12			59.00
5	Master	1.911		1.965	49.85			57.00
6	Master	1.908		1.966	48.81			57.00
7	Master	1.370		1.418	44.30			53.00
		80.00 %		140.0 %	90.00		Nom: - 40.00	
		Minimum	Nominal Maximum		Minimum	Nominal Maximum		

Master: Feb 21 17:56 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	Value	Phase	Value	Phase	Value
Master	0.9977	Master		Master	3.10E-16
	0.9750 0.9800		-0.04000 0 0.04000		
	Minimum Nominal Maximum		Minimum Nominal Maximum		

Master: Feb 21 17:56 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Test Loop Gain Correction

Up	Value	Test Loop Gain Magnitude	Value	Phase DEG
0	1.024		-0.3045	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
1	1.026		-0.2645	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
2	1.024		-0.0888	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
3	1.021		0.3033	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
4	1.004		-0.03852	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
5	0.9928		-0.0608	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
6	1.004		0.2365	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
7	1.013		-0.1588	
	0.9600	1.000 1.080	-3.000	0 3.000
	Minimum	Nominal Maximum	Minimum	Nominal Maximum

Master: Feb 21 17:56 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Sonde Error Correction

Up	Value	R Sonde Error Correction: MM/M	Value	X Sonde Error Correction: MM/M
0	-44.75		70.38	
	-201.0	-66.50	118.0	-2060 0 2080
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
1	159.2		-99.71	
	114.0	159.0	204.0	822.0
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
2	107.3		71.22	
	66.00	111.0	156.0	380.0 0 380.0
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
3	58.16		93.45	
	36.00	64.00	89.00	280.0 0 280.0
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
4	24.05		-10.48	
	15.00	26.00	38.00	43.00 0 63.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
5	11.96		-12.67	
	-5.000	11.00	24.00	40.00 0 50.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
6	9.564		3.602	
	8.000	10.00	16.00	-30.00 0 30.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
7	-0.6083		4.449	
	-2.000	8.000	16.00	-30.00 0 30.00
	Minimum	Nominal Maximum	Minimum	Nominal Maximum

Master: Feb 21 17:56 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Mud Gain Correction

Up	Value	Coarse - Mag. Real. Imag	Value	Fine - Mag. Real. Imag
0	1.032		1.032	
	0.6000	1.000 1.400	0.6000	1.000 1.400
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
1	1.023		1.022	
	0.6000	1.000 1.400	0.6000	1.000 1.400
	Minimum	Nominal Maximum	Minimum	Nominal Maximum
2	1.023		1.022	
	0.6000	1.000 1.400	0.6000	1.000 1.400
	Minimum	Nominal Maximum	Minimum	Nominal Maximum

Master: Feb 21 17:56 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Inverse Density

Phase	Rho Aluminum: K/M3	Value	Phase	Rho Magnesium: K/M3	Value
Master		2588	Master		1886
	2588	2638 2638		1875	1886 1946
	Minimum	Nominal Maximum		Minimum	Nominal Maximum
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.594	Master		2.632
	2.470	2.570 2.670		2.550	2.660 2.750
	Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Feb 21 18:22 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Deviation Measurement

Phase	SS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.1179	Master		0.3980	Master		0.6788
	-0.8000	0.000 1.800	-0.4000	0.000	0.4000	-1.600	0.000	1.600
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum
Phase	SS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		0.4007	Master		0.9048	Master		1.404
	-1.800	0.000 1.800	-0.900	0	0.900	-3.600	0	3.600
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Feb 26 18:22 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		8482	Master		3419	Master		2.097
	8000	8000 7000		3276	3276 3276		2.130	2.104 2.104
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Jan. 8 00:27 1999

Lynx Geology - O / Equipment, identification

Primary Equipment:
Nuclear Services Cartridge — NSC - E
Powered Gamma Detector — PG - G
Gamma Source Radioactive — GSR - J

Auxiliary Equipment:
Density Resistivity Sonde — DRS - C
Electronics Cartridge Housing — ECH - MAA
Powered Detector Housing — PDH - L

Ultra Density - D Wellsite Calibration
Background Measurement

Phase	LL Background: CPS	Value	Phase	LU Background: CPS	Value	Phase	LS Background: CPS	Value
Master		N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
Before		19.81	Before		78.38	Before		57.80
	15.00	20.00 25.00		59.00	79.00 84.00		43.00	57.00 72.00
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum
Phase	LITH Background: CPS	Value	Phase	SI1 Background: CPS	Value	Phase	SI2 Background: CPS	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
Before		5.997	Before		17.49	Before		11.79
	4.000	6.500 7.000		13.00	18.00 19.00		8.000	11.00 13.00
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Calibration not done

Before: Mar 7 12:28 1999

Ultra Density - D Wellsite Calibration
Detectors Resolution From Shift Measurements

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A
Before		6.883	Before		6.094
	6.000	8.000 11.80		8.000	8.000 11.80
	Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Calibration not done

Before: Mar 7 12:28 1999

Ultra Density - D Master Calibration
Aluminum Measurement

Phase	LL Aluminum: CPS	Value	Phase	LU Aluminum: CPS	Value	Phase	LS Aluminum: CPS	Value
Master		83.07	Master		141.1	Master		163.9
	70.00	80.00 128.0		130.0	136.0 184.0		120.0	160.0 217.0
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum
Phase	LITH Aluminum: CPS	Value	Phase	SI1 Aluminum: CPS	Value	Phase	SI2 Aluminum: CPS	Value
Master		56.58	Master		199.9	Master		291.9
	36.00	50.00 74.00		185.0	176.0 264.0		261.0	262.0 365.0
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Calibration not done

Ultra Density - D Master Calibration
Lithology Measurement

Phase	LL Iron: CPS	Value	Phase	LU Iron: CPS	Value	Phase	LS Iron: CPS	Value
Master		52.5	Master		251	Master		144.1
	40.00	50.00 174.0		85.00	124.0 177.0		100.0	136.0 183.0
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum
Phase	LITH Iron: CPS	Value	Phase	SI1 Iron: CPS	Value	Phase	SI2 Iron: CPS	Value
Master		36.53	Master		188.8	Master		2371
	15.00	30.00 91.00		160.0	180.0 224.0		240.0	320.0
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Master: Calibration not done

Ultra Density - D Master Calibration
Spectrum Quality Ratios

Phase	CRLS Calculated	Value	Phase	CRSS Calculated	Value	Phase	CRU Calculated	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
	0.8000	0.9000 0.9700		0.8000	0.9000 0.9700		0.8000	0.9000 0.9700
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum
Phase	QLR Calculated	Value	Phase	QR Calculated	Value			
Master	NOT DONE	N/A	Master	NOT DONE	N/A			
	1.000	1.300 1.400		0.9800	1.000 1.020			
	Minimum	Nominal Maximum		Minimum	Nominal Maximum			

Master: Calibration not done

Scintillation Gamma Ray - L / Equipment Identification

Primary Equipment:
Scintillation Gamma Cartridge — SGC - SA
Scintillation Gamma Detector — SGD - 1AA

Auxiliary Equipment:
Scintillation Gamma Housing — SGH - K
Gamma Source Radioactive — GSR - UW

Scintillation Gamma Ray - L Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background: GAPI	Value	Phase	Gamma Ray Sig/ Bkg: GAPI	Value	Phase	Gamma Ray (Calibrated): GAPI	Value
Before		69.17	Before		145.9	Before		185.0
	30.00	120.0		126.4	148.9 162.4		180.0	180.0
	Minimum	Nominal Maximum		Minimum	Nominal Maximum		Minimum	Nominal Maximum

Before: Mar 9 11:10 1999

BOREHOLE COMPENSATED SONIC LOG

COMPANY	SUNCOR ENERGY INC.
WELL	SUNCOR NETLA K-77-60-50-122-30
FIELD	NETLA
PROVINCE	NORTHWEST TERRITORIES

BOTTOM LOG INTERVAL	2094.3 M
SCHLUMBERGER DEPTH	2117 M
DEPTH DRILLER	2117 M
KELLY BUSHING	627.29 M
DRILL FLOOR	624.9 M
GROUND LEVEL	614.4 M

Schlumberger

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA TRUE VERTICAL DEPTH

PROVINCE NORTHWEST TERRITORIES

Schlumberger

BOREHOLE COMPENSATED SONIC LOG

60 deg-48', 120 deg-30' (SUR LOCATION) 263.98M, -90.17M (BOTTOM LOG) 300N-77-60-50-122-30W (UWI)

Elev.: K.B. 627.29 M
G.L. 618.4 M
D.F. 624.9 M

Permanent Datum: GROUND LEVEL — Elev.: 618.4 M
Log Measured From: KELLY BUSHING — 6.8 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No. N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	10-MAY-1999			
Run Number	2			
Depth Driller	2118 M			
Schlumberger Depth	2117 M			
Bottom Log Interval	2094.5 M			
Top Log Interval	1999 M			
Casing Driller Size @ Depth	177.800 MM @ 0 M	1999 M	@	@
Casing Schlumberger	1998.8 M	@	@	@
Bit Size	156.000 MM			
Type Fluid in Hole	POTASSIUM SILK PHATE			
Density / Viscosity	1045 KG/M3 / 53 S			
Fluid Loss / PH	8 C3 / 8.6			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.060 OHMM @ 20 DEGC	@	@	@
RMF @ Measured Temperature	3.500 OHMM @ 20 DEGC	@	@	@
RMC @ Measured Temperature	5.500 OHMM @ 20 DEGC	@	@	@
Source: RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	1.870 @ 66 / 1.020 @ 66	@ @	@ @	@ @
Maximum Recorded Temperatures	66 DEGC			
Circulation Stopped	Time 10-MAY-1999 17:30			
Logger On Bottom	Time 10-MAY-1999 12:45			
Unit Number / Location	3016 / 6640			
Recorded By	KIMBERLEY BAKER			
Witnessed By	BRIAN HESTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger	@	@	@	@
Bit Size				
Type Fluid in Hole				
Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF / RMC				
RM @ MRT / RMF @ MRT	@ @	@ @	@ @	@ @
Maximum Recorded Temperatures				
Circulation Stopped	Time	Time	Time	Time
Logger On Bottom	Time	Time	Time	Time
Unit Number / Location	/	/	/	/
Recorded By				
Witnessed By				

OTHER SERVICES
GR1 NEUTRON-DENSITY GR
GR2 DIPOLE SONIC
CBIL CBL
CBIL CBL
GR1 GR

EQUIPMENT NUMBERS
RUN 1
RBO2764 DPSA-A
CAL0001 CNTB-A
LOGGING INTERVAL
START
STOP
RUN 2
RBO2764 DPSA-A
CAL0001 CNTB-A
LOGGING INTERVAL
START
STOP

ALL INTERPRETATION ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLECT ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

FIELD TYPED STRING.

RUN 1
RBO2764 DPSA-A
CAL0001 CNTB-A
LOGGING INTERVAL
START
STOP
RUN 2
RBO2764 DPSA-A
CAL0001 CNTB-A
LOGGING INTERVAL
START
STOP

ATTACHED DIPOLE SONIC DATA SPECIFICATION BLOCK

ATTACHED CNTB DATA SPECIFICATION BLOCK

ATTACHED DPSA DATA SPECIFICATION BLOCK

RUN 1 RB 2764 DPSA-A 8.5"C-1 CNTB-A 8.5"C-1 DIGITAL SONDE 8.5"C

RUN 2 RB 2764 DPSA-A 8.5"C-1 CNTB-A 8.5"C-1 DIGITAL SONDE 8.5"C

TOP MAGNETIC DECLINATION 0 DEG. TRUE NORTH. GRID CORRECTION 0 DEG.

TOP MAGNETIC DECLINATION PROVIDED BY PANEL SHOWN AS NOT OCCUR ON SURFACE TRUE

FIELD TYPED STRING.

ATTACHED DIPOLE SONIC DATA SPECIFICATION BLOCK

ATTACHED CNTB DATA SPECIFICATION BLOCK

ATTACHED DPSA DATA SPECIFICATION BLOCK

RUN 1 RB 2764 DPSA-A 8.5"C-1 CNTB-A 8.5"C-1 DIGITAL SONDE 8.5"C

RUN 2 RB 2764 DPSA-A 8.5"C-1 CNTB-A 8.5"C-1 DIGITAL SONDE 8.5"C

TOP MAGNETIC DECLINATION 0 DEG. TRUE NORTH. GRID CORRECTION 0 DEG.

TOP MAGNETIC DECLINATION PROVIDED BY PANEL SHOWN AS NOT OCCUR ON SURFACE TRUE

RUN 1

SURFACE EQUIPMENT

HDIS-H	HDIS-H
HILT-B	HILT-B
HNGS-B	HNGS-B
TCDA-AB	TCDA-AB

DOWNHOLE EQUIPMENT

TCC-BF	TelBlock	31.39		
TCC-AB		30.48	31.39	30.48
SGT-L	Gamma Ray		30.19	
SGT-S			29.48	28.79
BBCS-A	CCL			27.72
CAL-Y				24.54
DRLT-TCC				
SLS-W				
MCG-G	HD	21.43	20.66	
MCG-D				
AH-107	Caliper	19.15	18.54	
AH-107		18.54	17.93	
LDT-D		17.93	17.28	
LDT-CA				
AH-107		12.64		
HILT-DTB	Hole Deviation	12.03	11.48	12.03
HILT-DTB				
HNGS-B	Gamma Ray	10.91		
HILT-DTB	Neutron A	9.92		
HILT-DTB	Neutron B	8.93		
HRGC-AB	HRGC Spec	7.95		
HRGC-AB	HRGC Spec	6.96	6.42	
HRGC-AB	HRGC Spec	5.97		
HRGC-AB	HRGC Spec	4.98		
HRGC-AB	HRGC Spec	3.99		
HRGC-AB	HRGC Spec	3.00		
HRGC-AB	HRGC Spec	2.01		
HRGC-AB	HRGC Spec	1.02		
HRGC-AB	HRGC Spec	0.03		
HTPH-AB	Hydrogen Index	-0.96		
HTPH-AB	Hydrogen Index	-1.95		
HTPH-AB	Hydrogen Index	-2.94		
HTPH-AB	Hydrogen Index	-3.93		
HTPH-AB	Hydrogen Index	-4.92		
HTPH-AB	Hydrogen Index	-5.91		
HTPH-AB	Hydrogen Index	-6.90		
			13.95M SLS3001	13.95M SLS3001
			-8.89	-8.89

TOOL ZERO

MAXIMUM STRING DIAMETER 3.625 IN
MEASURED DEPTH REFERENCE TO TOOL ZERO

RUN 2

SURFACE EQUIPMENT

HDIS-H	HDIS-H
HILT-B	HILT-B
HNGS-B	HNGS-B
TCDA-AB	TCDA-AB

DOWNHOLE EQUIPMENT

TCC-BF	TelBlock	31.39		
TCC-AB		30.48	31.39	30.48
SGT-L	Gamma Ray		30.19	
SGT-S			29.48	28.79
BBCS-A	CCL			27.72
CAL-Y				24.54
DRLT-TCC				
SLS-W				
MCG-G	HD	21.43	20.66	
MCG-D				
AH-107	Caliper	19.15	18.54	
AH-107		18.54	17.93	
LDT-D		17.93	17.28	
LDT-CA				
AH-107		12.64		
HILT-DTB	Hole Deviation	12.03	11.48	12.03
HILT-DTB				
HNGS-B	Gamma Ray	10.91		
HILT-DTB	Neutron A	9.92		
HILT-DTB	Neutron B	8.93		
HRGC-AB	HRGC Spec	7.95		
HRGC-AB	HRGC Spec	6.96	6.42	
HRGC-AB	HRGC Spec	5.97		
HRGC-AB	HRGC Spec	4.98		
HRGC-AB	HRGC Spec	3.99		
HRGC-AB	HRGC Spec	3.00		
HRGC-AB	HRGC Spec	2.01		
HRGC-AB	HRGC Spec	1.02		
HRGC-AB	HRGC Spec	0.03		
HTPH-AB	Hydrogen Index	-0.96		
HTPH-AB	Hydrogen Index	-1.95		
HTPH-AB	Hydrogen Index	-2.94		
HTPH-AB	Hydrogen Index	-3.93		
HTPH-AB	Hydrogen Index	-4.92		
HTPH-AB	Hydrogen Index	-5.91		
HTPH-AB	Hydrogen Index	-6.90		
			13.95M SLS3001	13.95M SLS3001
			-8.89	-8.89

TOOL ZERO

MAXIMUM STRING DIAMETER 3.625 IN
MEASURED DEPTH REFERENCE TO TOOL ZERO

Input DLIS Files

DEFAULT	HILT8.059	FIN:48	FILE: 2130.3 M	1937.4 M
DEFAULT	HILT8.060	FIN:111	FILE: 2094.5 M	2061.1 M

Remarks entered in Tool Viewer Mode

Output DLIS Files

DEFAULT	HILT8.059	FIN:111	FILE: 11-MAR-1999 09:52	1915.7 M

Remarks entered in Tool Viewer Mode

OP System Version: 7C0-713

HILT8.059	RPCS-1099	SCHX-997
HILT8.060	RPCS-1099	SCHX-997

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MID	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	2061.1 48.3 HZ 2061.1 48.3 HZ 2061.1 48.3 HZ 2061.1 48.3 HZ
	1.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	1915.7 48.3 HZ 1915.7 48.3 HZ 1915.7 48.3 HZ 1915.7 48.3 HZ

PIP SUMMARY
-1 Integrated Transit Time Major Pip Every 1 MD
-1 Integrated Transit Time Major Pip Every 10 MD

PIP SUMMARY
-1 Integrated Transit Time Major Pip Every 1 MD
-1 Integrated Transit Time Major Pip Every 10 MD

Parameters

DLIS Name	Description	Value
MID	Tool Mnemonic	DEC-SCC
	Service Order	DEC-SCC
ABC	ABC Array Processing	YES
AHDAL	AHDAL Parameter	0
AHDEV	AHDEV Parameter	0
AHDIA	AHDIA Parameter	0
AHDOC	AHDOC Parameter	0
AHDOF	AHDOF Parameter	0
AHDOP	AHDOP Parameter	0
AHDOS	AHDOS Parameter	0
AHDOT	AHDOT Parameter	0
AHDOV	AHDOV Parameter	0
AHDPA	AHDPA Parameter	0
AHDPB	AHDPB Parameter	0
AHDPC	AHDPC Parameter	0
AHDPD	AHDPD Parameter	0
AHDPE	AHDPE Parameter	0
AHDPF	AHDPF Parameter	0
AHDPG	AHDPG Parameter	0
AHDPH	AHDPH Parameter	0
AHDPI	AHDPI Parameter	0
AHDPJ	AHDPJ Parameter	0
AHDPK	AHDPK Parameter	0
AHDPL	AHDPL Parameter	0
AHDPM	AHDPM Parameter	0
AHDPN	AHDPN Parameter	0
AHDPO	AHDPO Parameter	0
AHDPP	AHDPP Parameter	0
AHDPQ	AHDPQ Parameter	0
AHDPR	AHDPR Parameter	0
AHDPS	AHDPS Parameter	0
AHDPT	AHDPT Parameter	0
AHDPU	AHDPU Parameter	0
AHDPV	AHDPV Parameter	0
AHDPW	AHDPW Parameter	0
AHDPX	AHDPX Parameter	0
AHDPY	AHDPY Parameter	0
AHDPZ	AHDPZ Parameter	0
AHDSP	AHDSP Parameter	0
AHDTH	AHDTH Parameter	0
AHDTP	AHDTP Parameter	0
AHDTS	AHDTS Parameter	0
AHDTT	AHDTT Parameter	0
AHDVP	AHDVP Parameter	0
AHDVS	AHDVS Parameter	0
AHDWT	AHDWT Parameter	0
AHDXP	AHDXP Parameter	0
AHDXS	AHDXS Parameter	0
AHDYM	AHDYM Parameter	0
AHDYP	AHDYP Parameter	0
AHDYS	AHDYS Parameter	0
AHDZP	AHDZP Parameter	0
AHDZS	AHDZS Parameter	0
AHDZT	AHDZT Parameter	0
AHDZV	AHDZV Parameter	0
AHDZW	AHDZW Parameter	0
AHDZX	AHDZX Parameter	0
AHDZY	AHDZY Parameter	0
AHDZZ	AHDZZ Parameter	0
ALGO	Algorithm Selection	0
ALGOT	Algorithm Selection	0
ALGOV	Algorithm Selection	0
ALGOW	Algorithm Selection	0
ALGOX	Algorithm Selection	0
ALGOY	Algorithm Selection	0
ALGOZ	Algorithm Selection	0
ANGLE	Angle Between Transmitter and Receiver	0
ANGLT	Angle Between Transmitter and Receiver	0
ANGLV	Angle Between Transmitter and Receiver	0
ANGLW	Angle Between Transmitter and Receiver	0
ANGLX	Angle Between Transmitter and Receiver	0
ANGLY	Angle Between Transmitter and Receiver	0
ANGLZ	Angle Between Transmitter and Receiver	0
ATTA	Attenuation Spacing	0.000
ATTAT	Attenuation Spacing	0.000
ATTAV	Attenuation Spacing	0.000
ATTAW	Attenuation Spacing	0.000
ATTAX	Attenuation Spacing	0.000
ATTAY	Attenuation Spacing	0.000
ATTAZ	Attenuation Spacing	0.000
ATTC	Attenuation Coefficient	0.000
ATTCT	Attenuation Coefficient	0.000
ATTCV	Attenuation Coefficient	0.000
ATTCW	Attenuation Coefficient	0.000
ATTCX	Attenuation Coefficient	0.000
ATTCY	Attenuation Coefficient	0.000
ATTCZ	Attenuation Coefficient	0.000
ATTE	Attenuation Spacing	0.000
ATTET	Attenuation Spacing	0.000
ATTEV	Attenuation Spacing	0.000
ATTEW	Attenuation Spacing	0.000
ATTEX	Attenuation Spacing	0.000
ATTEY	Attenuation Spacing	0.000
ATTEZ	Attenuation Spacing	0.000
ATTF	Attenuation Spacing	0.000
ATTFT	Attenuation Spacing	0.000
ATTFV	Attenuation Spacing	0.000
ATTFW	Attenuation Spacing	0.000
ATTFX	Attenuation Spacing	0.000
ATTFY	Attenuation Spacing	0.000
ATTFZ	Attenuation Spacing	0.000
ATTG	Attenuation Spacing	0.000
ATTGT	Attenuation Spacing	0.000
ATTGV	Attenuation Spacing	0.000
ATTGW	Attenuation Spacing	0.000
ATTGX	Attenuation Spacing	0.000
ATTGY	Attenuation Spacing	0.000
ATTGZ	Attenuation Spacing	0.000
ATTH	Attenuation Spacing	0.000
ATTHT	Attenuation Spacing	0.000
ATTHV	Attenuation Spacing	0.000
ATTHW	Attenuation Spacing	0.000
ATTHX	Attenuation Spacing	0.000
ATTHY	Attenuation Spacing	0.000
ATTHZ	Attenuation Spacing	0.000
ATTI	Attenuation Spacing	0.000
ATTIT	Attenuation Spacing	0.000
ATTIV	Attenuation Spacing	0.000
ATTIW	Attenuation Spacing	0.000
ATTIX	Attenuation Spacing	0.000
ATTIY	Attenuation Spacing	0.000
ATTIZ	Attenuation Spacing	0.000
ATTJ	Attenuation Spacing	0.000
ATTJT	Attenuation Spacing	0.000
ATTJV	Attenuation Spacing	0.000
ATTJW	Attenuation Spacing	0.000
ATTJX	Attenuation Spacing	0.000
ATTJY	Attenuation Spacing	0.000
ATTJZ	Attenuation Spacing	0.000
ATTK	Attenuation Spacing	0.000
ATTKT	Attenuation Spacing	0.000
ATTKV	Attenuation Spacing	0.000
ATTKW	Attenuation Spacing	0.000
ATTKX	Attenuation Spacing	0.000
ATTKY	Attenuation Spacing	0.000
ATTKZ	Attenuation Spacing	0.000
ATTL	Attenuation Spacing	0.000
ATTLT	Attenuation Spacing	0.000
ATTLV	Attenuation Spacing	0.000
ATTLW	Attenuation Spacing	0.000
ATTLX	Attenuation Spacing	0.000
ATTLY	Attenuation Spacing	0.000
ATTLZ	Attenuation Spacing	0.000
ATTM	Attenuation Spacing	0.000
ATTMT	Attenuation Spacing	0.000
ATTMV	Attenuation Spacing	0.000
ATTMW	Attenuation Spacing	0.000
ATTMX	Attenuation Spacing	0.000
ATTMY	Attenuation Spacing	0.000
ATTMZ	Attenuation Spacing	0.000
ATTN	Attenuation Spacing	0.000
ATTNT	Attenuation Spacing	0.000
ATTNV	Attenuation Spacing	0.000
ATTNW	Attenuation Spacing	0.000
ATTNX	Attenuation Spacing	0.000
ATTNY	Attenuation Spacing	0.000
ATTNZ	Attenuation Spacing	0.000
ATTO	Attenuation Spacing	0.000
ATTOT	Attenuation Spacing	0.000
ATTOV	Attenuation Spacing	0.000
ATTOW	Attenuation Spacing	0.000
ATTOX	Attenuation Spacing	0.000
ATTOY	Attenuation Spacing	0.000
ATTOZ	Attenuation Spacing	0.000
ATTP	Attenuation Spacing	0.000
ATTPT	Attenuation Spacing	0.000
ATTPV	Attenuation Spacing	0.000
ATTPW	Attenuation Spacing	0.000
ATTPX	Attenuation Spacing	0.000
ATTPY	Attenuation Spacing	0.000
ATTPZ	Attenuation Spacing	0.000
ATTQ	Attenuation Spacing	0.000
ATTQT	Attenuation Spacing	0.000
ATTQV	Attenuation Spacing	0.000
ATTQW	Attenuation Spacing	0.000
ATTQX	Attenuation Spacing	0.000
ATTQY	Attenuation Spacing	0.000
ATTQZ	Attenuation Spacing	0.000
ATTR	Attenuation Spacing	0.000
ATTRT	Attenuation Spacing	0.000
ATTRV	Attenuation Spacing	0.000
ATTRW	Attenuation Spacing	0.000
ATTRX	Attenuation Spacing	0.000
ATTRY	Attenuation Spacing	0.000
ATTRZ	Attenuation Spacing	0.000
ATTS	Attenuation Spacing	0.000
ATTST	Attenuation Spacing	0.000
ATTSV	Attenuation Spacing	0.000
ATTSW	Attenuation Spacing	0.000
ATTSX	Attenuation Spacing	0.000
ATTSY	Attenuation Spacing	0.000
ATTSZ	Attenuation Spacing	0.000
ATTT	Attenuation Spacing	0.000
ATTTT	Attenuation Spacing	0.000
ATTTV	Attenuation Spacing	0.000
ATTTW	Attenuation Spacing	0.000
ATTTX	Attenuation Spacing	0.000
ATTTY	Attenuation Spacing	0.000
ATTTZ	Attenuation Spacing	0.000
ATTU	Attenuation Spacing	0.000
ATTUT	Attenuation Spacing	0.000
ATTUV	Attenuation Spacing	0.000
ATTUW	Attenuation Spacing	0.000
ATTUX	Attenuation Spacing	0.000
ATTUY	Attenuation Spacing	0.000
ATTUZ	Attenuation Spacing	0.000
ATTV	Attenuation Spacing	0.000
ATTVT	Attenuation Spacing	0.000
ATTVV	Attenuation Spacing	0.000
ATTVW	Attenuation Spacing	0.000
ATTVX	Attenuation Spacing	0.000
ATTVY	Attenuation Spacing	0.000
ATTVZ	Attenuation Spacing	0.000
ATTW	Attenuation Spacing	0.000
ATTWT	Attenuation Spacing	0.000
ATTWV	Attenuation Spacing	0.000
ATTWW	Attenuation Spacing	0.000
ATTWX	Attenuation Spacing	0.000
ATTWY	Attenuation Spacing	0.000
ATTWZ	Attenuation Spacing	0.000
ATTX	Attenuation Spacing	0.000
ATTXT	Attenuation Spacing	0.000
ATTXV	Attenuation Spacing	0.000
ATTXW	Attenuation Spacing	0.000
ATTXX	Attenuation Spacing	0.000
ATTXY	Attenuation Spacing	0.000
ATTXZ	Attenuation Spacing	0.000
ATTY	Attenuation Spacing	0.000
ATTYT	Attenuation Spacing	0.000
ATTYV	Attenuation Spacing	0.000
ATTYW	Attenuation Spacing	0.000
ATTYX	Attenuation Spacing	0.000
ATTYY	Attenuation Spacing	0.000
ATTYZ	Attenuation Spacing	0.000
ATTZ	Attenuation Spacing	0.000
ATTZT	Attenuation Spacing	0.000
ATTZV	Attenuation Spacing	0.000
ATTZW	Attenuation Spacing	0.000
ATTZX	Attenuation Spacing	0.000
ATTZY	Attenuation Spacing	0.000
ATTZZ	Attenuation Spacing	0.000
AUTO	Automatic Mode	YES
AUTOT	Automatic Mode	YES
AUTOV	Automatic Mode	YES
AUTOW	Automatic Mode	YES
AUTOX	Automatic Mode	YES
AUTOY	Automatic Mode	YES
AUTOZ	Automatic Mode	YES
AVG	Averaging Mode	YES
AVGT	Averaging Mode	YES
AVGV	Averaging Mode	YES
AVGW	Averaging Mode	YES
AVGX	Averaging Mode	YES
AVGY	Averaging Mode	YES
AVGZ	Averaging Mode	YES
BAD	Bad Data Flag	0
BADT	Bad Data Flag	0
BADV	Bad Data Flag	0
BADW	Bad Data Flag	0
BADX	Bad Data Flag	0
BADY	Bad Data Flag	0
BADZ	Bad Data Flag	0
BAND	Bandwidth	0.000
BANDT	Bandwidth	0.000
BANDV	Bandwidth	0.000
BANDW	Bandwidth	0.000
BANDX	Bandwidth	0.000
BANDY	Bandwidth	0.000
BANDZ	Bandwidth	0.000
BASE	Baseline Correction	0.000
BASET	Baseline Correction	0.000
BASEV	Baseline Correction	0.000
BASEW	Baseline Correction	0.000
BASEX	Baseline Correction	0.000
BASEY	Baseline Correction	0.000
BASEZ	Baseline Correction	0.000
BCOR	Borehole Correction	0
BCORT	Borehole Correction	0
BCORV	Borehole Correction	0
BCORW	Borehole Correction	0
BCORX	Borehole Correction	0
BCORY	Borehole Correction	0
BCORZ	Borehole Correction	0
BDEL	Bad Data Flag	0
BDELT	Bad Data Flag	0
BDELV	Bad Data Flag	0
BDELW	Bad Data Flag	0
BDELX	Bad Data Flag	0
BDELY	Bad Data Flag	0
BDELZ	Bad Data Flag	0
BDEV	Bad Data Flag	0
BDEVT	Bad Data Flag	0
BDEVV	Bad Data Flag	0
BDEVW	Bad Data Flag	0
BDEVX	Bad Data Flag	0
BDEVY	Bad Data Flag	0
BDEVZ	Bad Data Flag	0
BDIA	Bad Data Flag	0
BDIAT	Bad Data Flag	0
BDIAV	Bad Data Flag	0
BDIAW	Bad Data Flag	0
BDIAX	Bad Data Flag	0
BDIAY	Bad Data Flag	0
BDIAZ	Bad Data Flag	0
BDOC	Bad Data Flag	0
BDOCT	Bad Data Flag	0
BDOCV	Bad Data Flag	0
BDOCW	Bad Data Flag	0
BDOCX	Bad Data Flag	0
BDOCY	Bad Data Flag	0
BDOCZ	Bad Data Flag	0
BDOF	Bad Data Flag	0
BDOFT	Bad Data Flag	0
BDOFV	Bad Data Flag	0
BDOFW	Bad Data Flag	0
BDOFX	Bad Data Flag	0
BDOFY	Bad Data Flag	0
BDOFZ	Bad Data Flag	0
BDOP	Bad Data Flag	0
BDOPT	Bad Data Flag	0
BDOPV	Bad Data Flag	0
BDOPW	Bad Data Flag	0
BDOPX	Bad Data Flag	0
BDOPY	Bad Data Flag	0
BDOPZ	Bad Data Flag	0
BDOS	Bad Data Flag	0
BDOST	Bad Data Flag	0
BDOSV	Bad Data Flag	0
BDOSW	Bad Data Flag	0
BDOSX	Bad Data Flag	0
BDOSY	Bad Data Flag	0
BDOSZ	Bad Data Flag	0
BDOT	Bad Data Flag	0
BDOTT	Bad Data Flag	0
BDOTV	Bad Data Flag	0
BDOTW	Bad Data Flag	0
BDOTX	Bad Data Flag	0
BDOTY	Bad Data Flag	0
BDOTZ	Bad Data Flag	0
BDOV	Bad Data Flag	0
BDOVT	Bad Data Flag	0
BDOVV	Bad Data Flag	0
BDOVW	Bad Data Flag	0
BDOVX	Bad Data Flag	0
BDOVY	Bad Data Flag	0
BDOVZ	Bad Data Flag	0
BDPA	Bad Data Flag	0
BDPAT	Bad Data Flag	0
BDPAV	Bad Data Flag	0
BDPAW	Bad Data Flag	0
BDPAX	Bad Data Flag	0
BDPAY	Bad Data Flag	0
BDPAZ	Bad Data Flag	0
BDPB	Bad Data Flag	0
BDPBT	Bad Data Flag	0
BDPBV	Bad Data Flag	0
BDPBW	Bad Data Flag	0
BDPBX	Bad Data Flag	0
BDPBY	Bad Data Flag	0
BDPBZ	Bad Data Flag	0
BDPC	Bad Data Flag	0
BDPCT	Bad Data Flag	0
BDPCV	Bad Data Flag	0
BDPCW	Bad Data Flag	0
BDPCX	Bad Data Flag	0
BDPCY	Bad Data Flag	0
BDPCZ	Bad Data Flag	0
BDPD	Bad Data Flag	0
BDPDT	Bad Data Flag	0
BDPDV	Bad Data Flag	0
BDPDW	Bad Data Flag	0
BDPDX	Bad Data Flag	0
BDPDY	Bad Data Flag	0
BDPDZ	Bad Data Flag	0
BDPE	Bad Data Flag	0
BDPET	Bad Data Flag	0
BDPEV	Bad Data Flag	0
BDPEW	Bad Data Flag	0
BDPEX	Bad Data Flag	0
BDPEY	Bad Data Flag	0
BDPEZ	Bad Data Flag	0
BDPF	Bad Data Flag	0
BDPFT	Bad Data Flag	0
BDPFV	Bad Data Flag	0
BDPFW	Bad Data Flag	0
BDPFX	Bad Data Flag	0
BDPFY	Bad Data Flag	0
BDPFZ	Bad Data Flag	0
BDPG	Bad Data Flag	0
BDPGT	Bad Data Flag	0
BDPGV	Bad Data Flag	0
BDPGW	Bad Data Flag	0
BDPGX	Bad Data Flag	0
BDPGY	Bad Data Flag	0
BDPGZ	Bad Data Flag	0
BDPH	Bad Data Flag	0
BDPHT	Bad Data Flag	0
BDPHV	Bad Data Flag	0
BDPHW	Bad Data Flag	0
BDPHX	Bad Data Flag	0
BDPHY	Bad Data Flag	0
BDPHZ	Bad Data Flag	0
BDPI	Bad Data Flag	0
BDPIT	Bad Data Flag	0
BDPIV	Bad Data Flag	0
BDPIW	Bad Data Flag	0
BDPIX	Bad Data Flag	0
BDPIY	Bad Data Flag	0
BDPIZ	Bad Data Flag	0
BDPJ	Bad Data Flag	0
BDPJT	Bad Data Flag	0
BDPJV	Bad Data Flag	0
BDPJW	Bad Data Flag	0
BDPJX	Bad Data Flag	0
BDPJY	Bad Data Flag	0
BDPJZ	Bad Data Flag	0
BDPK	Bad Data Flag	0
BDPKT	Bad Data Flag	0
BDPKV	Bad Data Flag	0
BDPKW	Bad Data Flag	0
BDPKX	Bad Data Flag	0
BDPKY	Bad Data Flag	0
BDPKZ	Bad Data Flag	0
BDPL	Bad Data Flag	0
BDPLT	Bad Data Flag	0
BDPLV	Bad Data Flag	0
BDPLW	Bad Data Flag	0
BDPLX	Bad Data Flag	0
BDPLY	Bad Data Flag	0
BDPLZ	Bad Data Flag	0
BDPM	Bad Data Flag	0
BDPMT	Bad Data Flag	0
BDPMV	Bad Data Flag	0
BDPMW	Bad Data Flag	0
BDPMX	Bad Data Flag	0
BDPMY	Bad Data Flag	0
BDPMZ	Bad Data Flag	0
BDPN	Bad Data Flag	0
BDPNT	Bad Data Flag	0
BDPNV	Bad Data Flag	0
BDPNW	Bad Data Flag	0
BDPNX	Bad Data Flag	0
BDPNY	Bad Data Flag	0
BDPNZ	Bad Data Flag	0
BDPO	Bad Data Flag	0
BDPOT	Bad Data Flag	0
BDPOV	Bad Data Flag	0
BDPOW	Bad Data Flag	0
BDPOX	Bad Data Flag	0
BDPOY	Bad Data Flag	0
BDPOZ	Bad Data Flag	0
BDPP	Bad Data Flag	0
BDPPT	Bad Data Flag	0
BDPPV	Bad Data Flag	0
BDPPW	Bad Data Fl

AHMINF	ATI-H Mud Resistivity Calibration Depth	0
AHNOISW	ATI-H Noise Detection Switch	ON
AHRPV	ATI-H Resistivity Processing Code Version Number	832
AHRPV	ATI-H Radial Profiling Code Version Number	832
AHRPV	ATI-H Radial Profiling Code Version Number	6_One_Two_and_Four
AHRPV	ATI-H Environmental Correction Code Version Number	612
AHSTA	ATI-H Tool Standoff	0.5
AHTSN	ATI-H Tool Serial Number	MM
AHTRF	ATI-H Tool Type (of acquired data)	282
AHTRF	ATI-H Response Set Version For Two ft Resolution	30.66.23.10
AHTRF	ATI-H Response Set Version For One ft Resolution	30.66.23.10
AHTSV	ATI-H Tool Software Version	6.0
AHTYP	ATI-H User Level Control	NAT
ALTDPCHAN	Alternate depth sample channel	Normal
AMIN	Azimuth Of Maximally Enhanced (Well) Deviation	TVDE
AMIN2	Auxiliary Minimum Sliding Gate	180
ARES	Array Resistivity (HDGM computation)	13.42ft DEG
BFB	Borehole Fluid Medium	WATER
BHFL	Borehole Fluid Type	WATER
BHT	Bottom Hole Temperature	0
BHT	Bottom Hole Temperature (used in calculations)	68
BIU	Bond Index Level for Zone Isolation	3.48
BIU	Bond Index	156.000
BMAL	Borehole Salinity	-50000.00
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Adjustment Factor	0
CBCF	CBL Correction Factor	1.6
CBLG	CBL Gate Selection	US
CCCO	Casing & Cement Thickness Correction Option	NO
CCLO	CCL reset delay	300
CCLT	CCL Threshold Control	0.05
CDTR	C-Delta-T Slope	0.2
CSTR	Compressive Strength of Cement	0
DAZ	Data Azimuth	34.32
DBTS	Digitizing Delay	300
DFTS	Delta-T Selection	2
DFTT	Digital Fast Arrival Detection Switch	ON
DPG	Density Matrix	1049.06
DWC	Density Hole Correction	0.45
DZI	Depth Sampling Interval	20
DPFM	Depth Offset	0.0
DRCS	Delta-T Quality Processing Mode	HIGH
DTCM	Delta-T Computation Mode	1
DTFS	Delta-T Selection	FULL
DTFS	DRLC Telemetry Frame Size	620.078
DTMF	Delta-T Matrix	182.727
DTPC	Delta-T Pressure Count	20
FCF	CBL Fluid Compensation Factor	0
FD	Fluid Density	1000
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	2
FPHI	Formation Porosity	DPHZ
FPHS	Formation Salinity	-50000.00
FSCO	Formation Salinity Correction Option	NO
GAI	Gain Adjustment	0.46
GCSS	Generalized Caliper Selection	HCAL
GDEC	Average Angular Deviation of Borehole from Normal	0
GDEV	Deviation	0.018227
GGSO	Good Send	1
GRMAX	HSLT Gamma Ray Max	150
GRMIN	HSLT Gamma Ray Min	0
GRMS	HSLT Gamma Ray Sensitivity Selection	ATTN_RESIST
GTSP	Generalized Temperature Selection	LINEAR_GRADIENT
HAPD	Accelerometer PHDM Presence	PRESENT
HDCO	Accelerometer Correction Temperature	30
HDGO	HDGM Bad Channel Selection	DEGC
HLCC	HLT Density Caliper Correction	0.45
HLDC	HLT Data Write Telemetry	NO
HLT_GAS_DENSITY	HLT Gas Density Value	0
HLT_GAS_OPTION	HLT Gas Computation Option	OFF
HLWO	HALS Logging Mode	HIRES
HMAD	HDGM Bad Channel Selection	0.45
HRSAD	HRSD Bad Channel Selection	0.05
HSFECUT	HSLT effective Porosity Cutoff	0.45
HSGR	High Resolution Gamma Ray	129.557
HSGR	HSLT Gamma Ray Selection	TSCO_SPEED_CORRECTION
HSCO	High Speed Correction Option	ON
HSTI	HSLT Mud Resistivity Selection	US
HSWCUT	STI Uvex HSLT Acceleration	NO
HYCF	Integrated Hole Volume Caliper Selection	0
ITCM	Integrated Transit Time Source	AUTOMATIC
LDMS	LDT Mode Selection	0
LDCC	LS Hardware Caliper Control	NORMAL
LTUT	Lower to Upper Transmitter Spacing Ratio	DISALLOW
LTYP	Lithology Type	0
MCCO	Mud Cake Correction Option	LIMESTONE
MDCM	Minimum Cemented Interval	NO
MDCR	Mud Compensation	3.048
MDSN	Mud Salinity	NATU
MEZI	Memorized Centered (Well) Deviation	ZF10
MGZI	Maximum Gate	0.45
MHC1	MCFL 80 Contrast Correction Coefficient	80
MHC2	MCFL High Gain Contrast Correction Coefficient	2.2e-05
MHCC	MCFL High Gain Correction Switch	3.5e-05
MIGA	Minimum Gate	NO
MMOD	MCFL Mode	1
MPCF	MCFL Processing Operation Mode	BOTH
MSX	Minimum Sonic Amplitude	0
MTEM	Mud Temperature Selection	22.22
MWCO	Mud Weight Correction Option	NO
NMSG	Near Shimmin Sliding Gate	150
NMTS	HSLT Nuclear Mud Type	NOBARITE
NMXG	Near Maximum Sliding Gate	750
NPRM	Neutron Porosity Matrix	HSLT
NUMS	HRSD Depth Sampling Rate	25.4
NUMSADOP	Number of Detection Passes	2
PHMAT	Porosity Matrix Material for playback	LIME
PMSAV	HSLT max porosity	0.53
PT	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RDFA	Firing Rate	40
RDFA	Reset DFAD	OFF
RHOV	RHOB Value of Mud Filtrate Sample	2.5884
RSCV	RHOB Value for Porosity Correction	1000
RW	Resistivity of Connate Water	1.0884
SDAT	Standoff Data Source	SONIC
SDTH	Switch Down Threshold	16384
SFXF_HLT	Shale Porosity Exponent	2
SFXI	Sonic Formation Attenuation Factor	0
SGAD	Sliding Gate Status	ON
SGCL	Sliding Gate Correction Gate	AUTO
SGCL	Sliding Gate Closing Delta T	0.02
SGCW	Sliding Gate Closing Width	25
SGSW	Sliding Gate Switch	184
SGW	Sliding Gate Width	30
SHT	Surface Hole Temperature	80
SLEV	Signal Level for ABS	5000
SMAD	Standoff Distance	3.175
SOCO	Sonic Correction	0.45
SPCLSAN	HLT SP Clean	-200
SPEE	East Departure of Starting Point	0
SPEZ	Starting Point Elevation	RAYMER_HUNT
SPNO	North Departure of Starting Point	0
SPWC	SP Heat Value	0
SPWSALE	SP Salinity	0
SPSH	Shale Porosity Source	-120
SPVO	TVD of Starting Point	0
SSTT	Sonic Transit Time Control	DISALLOW
SUTH	Surface Hole Threshold	665
TAZI	Vertical Section Azimuth	0
TBHC	Total Depth	2134
TEC	TSCO Enable Corrected Depth Computation	YES
TPRS	Transit Time Processing Mode	2 DEGC
VDUL	VSL Manual Gain	37
WGSC	Waveform AGC Allow/Disallow	ON
WGSF	Waveform Gain Select	1
WGSY	Waveform Gain Define	NAT US/M
WQIN	Waveform Gain Interval	3340 US
WSCO	Waveform Gain Mode	FIXED
WWGT	Mud Weight	10 K/M3
WTZ	Well Trajectory Flag	VERTICAL

Format: SLT_2 Vertical Scale: 1:600 Graphics File Created: 11-MAR-1999 06:32

OP System Version: 7C0-713

MRM

HLTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HLTB_030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.4 M

Output DLIS Files

DEFAULT	HLTB_087	FN:111	FIELD	11-MAR-1999 06:32		

Input DLIS Files

DEFAULT	HLTB_030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.4 M

Output DLIS Files

DEFAULT	HLTB_087	FN:111	FIELD	11-MAR-1999 06:32	2061.1 M	1915.7 M

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MRM

HLTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

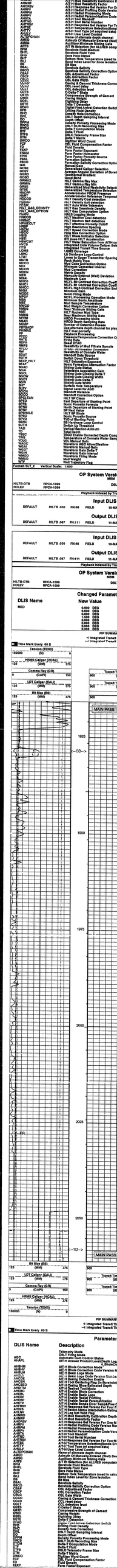
Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2061.1 08:32:42
	0.600 DEG	0.600 DEG	1899.6 08:34:13
	0.600 DEG	0.600 DEG	1873.5 08:34:31
	0.600 DEG	0.600 DEG	1858.4 08:34:42
	1.000 DEG	0.600 DEG	1850.4 08:34:50
	2.000 DEG	2.000 DEG	1845.4 08:35:12
	2.000 DEG	2.000 DEG	1839.4 08:35:18
	2.000 DEG	2.000 DEG	1915.6 08:20:49

PIP SUMMARY

-| Integrated Transit Time Minor Pip Every 1 MS
-| Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S



PIP SUMMARY

-| Integrated Transit Time Minor Pip Every 1 MS
-| Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC,TCC
AGC	Automatic Gain Control Status	TCHC
AHAPL	ATI-H Application Level(Depth Log/View only)	ON
AHBHM	ATI-H Bhole Correction Mode, 1_BhomCorr_BestLoge_RadialProf_RadialPer	1
AHBVM	ATI-H Bhole Correction Code Version Number	600
AHBLM	ATI-H Basic Logs Mode	6_One_Two_and_Four
AHBLM	ATI-H Basic Logs Code Version Number	832
AHCEN	ATI-H Casing Centering Enable	Yes
AHCEN	ATI-H Tool Centering Flag (Ex Borehole)	Eccentered
AHCDM	ATI-H Caliper Data Computed Depth	40000 M
AHEBC	ATI-H Enable Bhole Correction	0x00_Log_000
AHEBC	ATI-H Enable Bhole Correction	Yes
AHEBF	ATI-H Enable Radial Profiling	Yes
AHEPP	ATI-H Enable Radial Interpolation	Yes
AHETA	ATI-H Enable Sonic Travel Time/Rate Corr	Yes
AHGS	ATI-H Response Set Version For Four ft Resolution	30.66.23.10
AHGV	ATI-H Environmental Correction Code Version Number	612
AHMOD	ATI-H Mud Resistivity Calibration Depth	0 M
AHMOV	ATI-H Mud Resistivity Calibration Mode	Log_Valid-No_Default_Parameters
AHRES	ATI-H Array Resistivity (HDGM computation)	13.42ft DEG
AHRPV	ATI-H Radial Profiling Code Version Number	832
AHRPV	ATI-H Radial Profiling Code Version Number	6_One_Two_and_Four
AHRPV	ATI-H Environmental Correction Code Version Number	612
AHSTA	ATI-H Tool Standoff	0.5 MM
AHTSN	ATI-H Tool Serial Number	282
AHTRF	ATI-H Response Set Version For Two ft Resolution	30.66.23.10
AHTRF	ATI-H Response Set Version For One ft Resolution	30.66.23.10
AHTSV	ATI-H Tool Software Version	6.0
AHTYP	ATI-H User Level Control	NAT
ALTDPCHAN	Alternate depth sample channel	Normal
AMIN	Azimuth Of Maximally Enhanced (Well) Deviation	TVDE
AMIN2	Auxiliary Minimum Sliding Gate	180
ARES	Array Resistivity (HDGM computation)	13.42ft DEG
BFB	Borehole Fluid Medium	WATER
BHFL	Borehole Fluid Type	WATER
BHT	Bottom Hole Temperature	OPEN
BIU	Bond Index Level for Zone Isolation	3.48 DEGC
BIU	Bond Index	156.000
BMAL	Borehole Salinity	-50000.00 PPM
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Adjustment Factor	0
CBCF	CBL Correction Factor	1.6
CBLG	CBL Gate Selection	US
CCCO	Casing & Cement Thickness Correction Option	NO
CCLO	CCL reset delay	300 MM
CCLT	CCL Threshold Control	0.05 V
CDTR	C-Delta-T Slope	0.2 US/M
CSTR	Compressive Strength of Cement	0 KPAA
DAZ	Data Azimuth	34.32 DEG
DBTS	Digitizing Delay	300 US
DFTS	Delta-T Selection	2
DFTT	Digital Fast Arrival Detection Switch	ON
DPG	Density Matrix	1049.06 K/M3
DWC	Density Hole Correction	0.45
DZI	Depth Sampling Interval	20
DPFM	Depth Offset	0.0 M
DRCS	Delta-T Quality Processing Mode	HIGH
DTCM	Delta-T Computation Mode	1
DTFS	Delta-T Selection	FULL
DTFS	DRLC Telemetry Frame Size	620.078 US/M
DTMF	Delta-T Matrix	182.727 US/M
DTPC	Delta-T Pressure Count	20
FCF	CBL Fluid Compensation Factor	0
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	2
FPHI	Formation Porosity	DPHZ
FPHS	Formation Salinity	-50000.00 PPM
FSCO	Formation Salinity Correction Option	NO
GAI	Gain Adjustment	0.46
GCSS	Generalized Caliper Selection	HCAL
GDEC	Average Angular Deviation of Borehole from Normal	0 DEG
GDEV	Deviation	0.018227 DEG
GGSO	Good Send	1
GRMAX	HSLT Gamma Ray Max	150 GAPI
GRMIN	HSLT Gamma Ray Min	0 GAPI
GRMS	HSLT Gamma Ray Sensitivity Selection	ATTN_RESIST
GTSP	Generalized Temperature Selection	LINEAR_GRADIENT
HAPD	Accelerometer PHDM Presence	PRESENT
HDCO	Accelerometer Correction Temperature	30 DEGC
HDGO	HDGM Bad Channel Selection	DEGC
HLCC	HLT Density Caliper Correction	0.45
HLDC	HLT Data Write Telemetry	NO
HLT_GAS_DENSITY	HLT Gas Density Value	0 K/M3
HLT_GAS_OPTION	HLT Gas Computation Option	OFF
HLWO	HALS Logging Mode	HIRES
HMAD	HDGM Bad Channel Selection	0.45
HRSAD	HRSD Bad Channel Selection	0.05 V/V
HSFECUT	HSLT effective Porosity Cutoff	0.45 V/V
HSGR	High Resolution Gamma Ray	129.557 GAPI
HSGR	HSLT Gamma Ray Selection	TSCO_SPEED_CORRECTION
HSCO	High Speed Correction Option	ON
HSTI	HSLT Mud Resistivity Selection	US
HSWCUT	STI Uvex HSLT Acceleration	NO
HYCF	Integrated Hole Volume Caliper Selection	0 %
ITCM	Integrated Transit Time Source	AUTOMATIC
LDMS	LDT Mode Selection	0
LDCC	LS Hardware Caliper Control	NORMAL
LTUT	Lower to Upper Transmitter Spacing Ratio	DISALLOW
LTYP	Lithology Type	0
MCCO	Mud Cake Correction Option	LIMESTONE
MDCM	Minimum Cemented Interval	NO
MDCR	Mud Compensation	3.048 M
MDSN	Mud Salinity	NATU
MEZI	Memorized Centered (Well) Deviation	ZF10 DEG
MGZI	Maximum Gate	0.45
MHC1	MCFL 80 Contrast Correction Coefficient	80
MHC2	MCFL High Gain Contrast Correction Coefficient	2.2e-05 OHMS
MHCC	MCFL High Gain Correction Switch	3.5e-05 OHMS
MIGA	Minimum Gate	NO
MMOD	MCFL Mode	1
MPCF	MCFL Processing Operation Mode	BOTH
MSX	Minimum Sonic Amplitude	0 MV
MTEM	Mud Temperature Selection	22.22 DEGC
MWCO	Mud Weight Correction Option	NO
NMSG	Near Shimmin Sliding Gate	150
NMTS	HSLT Nuclear Mud Type	NOBARITE
NMXG	Near Maximum Sliding Gate	750 US
NPRM	Neutron Porosity Matrix	HSLT
NUMS	HRSD Depth Sampling Rate	25.4 MM
NUMSADOP	Number of Detection Passes	2
PHMAT	Porosity Matrix Material for playback	LIME
PMSAV	HSLT max porosity	0.53 V/V
PT	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RDFA	Firing Rate	40
RDFA	Reset DFAD	OFF
RHOV	RHOB Value of Mud Filtrate Sample	2.5884 OHMM
RSCV	RHOB Value for Porosity Correction	1000
RW	Resistivity of Connate Water	1.0884 OHMM
SDAT	Standoff Data Source	SONIC
SDTH	Switch Down Threshold	16384
SFXF_HLT	Shale Porosity Exponent	2
SFXI	Sonic Formation Attenuation Factor	0 DB/M
SGAD	Sliding Gate Status	ON
SGCL	Sliding Gate Correction Gate	AUTO
SGCL	Sliding Gate Closing Delta T	0.02 US/M
SGCW	Sliding Gate Closing Width	25 US
SGSW	Sliding Gate Switch	184 US/M
SGW	Sliding Gate Width	30 US
SHT	Surface Hole Temperature	80 DEGC
SLEV	Signal Level for ABS	5000 MV
SMAD	Standoff Distance	3.175 MM
SOCO	Sonic Correction	0.45
SPCLSAN	HLT SP Clean	-200 MV
SPEE	East Departure of Starting Point	0 M
SPEZ	Starting Point Elevation	RAYMER_HUNT
SPNO	North Departure of Starting Point	0 M
SPWC	SP Heat Value	0 MV
SPWSALE	SP Salinity	0 KPPM
SPSH	Shale Porosity Source	-120 V/V
SPVO	TVD of Starting Point	0 M
SSTT	Sonic Transit Time Control	DISALLOW
SUTH	Surface Hole Threshold	665
TAZI	Vertical Section Azimuth	0 DEG
TBHC	Total Depth	2134 M
TEC	TSCO Enable Corrected Depth Computation	YES
TPRS	Transit Time Processing Mode	2 DEGC
VDUL	VSL Manual Gain	37
WGSC	Waveform AGC Allow/Disallow	ON
WGSF	Waveform Gain Select	1
WGSY	Waveform Gain Define	NAT US/M
WQIN	Waveform Gain Interval	3340 US
WSCO	Waveform Gain Mode	FIXED
WWGT	Mud Weight	10 K/M3
WTZ	Well Trajectory Flag	VERTICAL

FNUM	Form Factor Numerator	1
FNVI	Form Factor Reservoir Index	DPHZ
FBAL	Formation Salinity	40000 PPM
FBCO	Formation Salinity Correction Option	NO
GAI	Manual Gain	0
GCAL	Geochemical Caliber Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geochemical Gradient	0.018237 DC/M
GIND	Good Bond	1 JV
GRMAX	HALT Gamma Ray Max	150 GAPI
GRMIN	HALT Gamma Ray Min	0 GAPI
GTSE	Generalized Mud Reactivity Selection	AITH_RESIST
GTSP	Generalized Temperature Selection	LINEAR_ESTIMATE
HAPP	Accelerometer Pulse Presence	PRESENT_FILE
HBHC	Accelerometer Reference Temperature	30 DEGC
HDCOD	HELT Density Cool detection	2000 KM3
HDMAD	HELT Density Bad detection	2100 KM3
HFAW	HELT Auto Write Telemetry	NO
HFDC	HELT Density Coefficient	2650 K/M3
HFDC_CAPTION	HELT Gas Correction Option	OFF
HLMD	HALB Logging Mode	HIRES
HNDCOD	HELT Neutron Cool detection	0.45 V/V
HNDAD	HELT Neutron Bad detection	0.05 V/V
HPHECUT	HELT effective Porosity Cutoff	0.05 V/V
HSEN	High Resolution Spacing	129.987 MM
HSCO	HELT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSGN	HELT Signature Selection	GAPI
HSIS	Generalized Mud Reactivity Selection	AITH_RESIST
HSTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
HTCUT	Hole Temperature Correction Presence	PRESENT_FILE
HVCO	Accelerometer Reference Temperature	30 DEGC
HDCOD	HELT Density Cool detection	2000 K/M3
HDMAD	HELT Density Bad detection	2100 K/M

HPRESCUT	HILT Effective Porosity Cutoff	0.05	V/V
HPRM	HILT Resistivity Matrix	129.997	MM
HSCH	HILT Speed Correction Type	TSCD_SPEED_CORRECTION	
HSCO	Hole Size Correction Option	YES	
HSTB	HILT Data Statistics Selection	YES	
HSTI	BTI Uses HILT Acceleration	NO	
HSWCUT	HILT Saturation Cutoff for ATR cutoff	0.2	%
HVCR	Integrated Hardware Caliper Selection	AUTOMATIC	
ITTS	Integrated Transit Time Source	DT	
LBHC	LB Hardware Control	HOUSTON	
LBHC	LB Hardware Control	DISALLOW	
LTUT	Lower to Upper Transmitter Spacing Ratio	1	
MATR	Rock Matrix Type	LIMESTONE	
MCC	Mud Cake Correction Option	NO	
MCOR	Mud Cake Correction Value	3.937	M
MCOR	Mud Correction Value	MUD	
MDEN	Matrix Density	2710	KJM3
MDIF	MCFL Mud Cake (Wall) Deviation	2.5400	DEG
MDIR	Marmousi Gain	80	
MHC0	MCFL Nil Contrast Correction Coefficient	3.3e-05	OHMS
MHC1	MCFL Nil Contrast Correction Coefficient	3.2e-05	OHMS
MHCS	MCFL High Contrast Correction Switch	NO	
MIDA	Mud Activity	0	%
MIDM	Sonic Firing Mode	Bmd	
MPSP	MCFL Processing Operation Mode	ON	
MRES	MCFL Resistivity Amplitude	0	MV
MST	Mud Sandwich Operator	22.22	DEGC
MWCO	Mud Weight Correction Option	NO	
NBHC	Near Borehole Shifting Option	150	US
NHT	HILT Nuclear Mud Type	NOBARITE	
NPRG	HRDD Processing Data Gate	750	US
NPRM	HRDD Processing Mode	HIRES	
NSAR	HRDD Depth Sampling Rate	25.4	MM
NSHO	Number of Detection Passes	2	
PBHMDP	Use alternate depth channel for playback	YES	
PRMAX	HILT Porosity Max	0.45	V/V
PP	Playback Processing	NORMAL	
PTOO	Pressure/Temperature Correction Option	NO	
RDFA	Read DFAC	OFF	
RDFB	Read DFAD	OFF	
RMFB	Resistivity of Mud Filtrate Sample	2.0400	OHMM
RTC	RTCC - RI Inversion Correction	YES	
SDAT	Resistivity of Connate Water	1.0000	OHMM
SDTH	Sonic Data Threshold	1000	
SEXP_HILT	Switch Down Threshold	10344	
SHC	HILT Saturation Exponent	2	
SHUD	Shielding Correction Factor	0.75	DB/M
SQAI	Sliding Gate Status	ON	
SQAI	Selectable Acquisition Gain	AUTO	
SQDT	Sliding Gate Sliding Delta-T	400	US/M
SQDT	Sliding Gate Closing Width	24	US
SQGT	Sliding Gate Width	80	US/M
SWT	Sliding Gate Width	80	US
SHT	Surface Hole Temperature	20	DEGC
SOCN	Sonic Velocity VELOC	5000	
SOCO	Standoff Distance	3.175	MM
SPEGAN	Standoff Correction Option	NO	
SPGA	HILT SP Gain	200	MV
SPIS	Sept Departure of Starting Point	0.762	M
SPMS	SP Mud Salinity	RAYMER_HUNT	
SPRS	North Departure of Starting Point	0	M
SPSH	SP Shot Value	0	MV
SPSHALE	SP Shale Value	0	MV
SPSO	Sonic Porosity Source	-120	
SPVO	TVO of Starting Point	0	M
SSTH	SP Hardware Loop Control	DISALLOW	
SWTH	Switch Up Threshold	665	
TAZI	Tool Orientation Azimuth	0	DEG
TD	Total Depth	2110	M
TSEC	TCCD Enable Corrected Depth Computation	YES	
TSPC	Tool Speed Correction Gate Value	27.78	DEGC
VDLG	VDL Manual Gain	-30	
WAGC	Waveform AGC Allow/Disallow	NO	
WGAI	Waveform Manual Gain	-30	
WGT	Waveform Gain Delta-T	787	UB/M
WMOD	Waveform Gain Control	2000	UB
WWGO	Mud Weight	1040	KJM3
WWT	Well Trajectory Flag	VERTICAL	

Format: SLT_LGC Vertical Scale: 1/240 Graphics File Created: 11-MAR-1999 06:50

OP System Version: 7C0-713

MBM

HILTD-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEY	RPCA-1099		

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB .021	FN:30	FIELD	10-MAR-1999 15:25	2120.0 M	1975.4 M

Output DLIS Files

DEFAULT	HILTB .091	FN:115	FIELD	11-MAR-1999 06:50		

Input DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.6 M

Output DLIS Files

DEFAULT	HILTB .067	FN:111	FIELD	11-MAR-1999 06:32	2061.1 M	1915.7 M

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MBM

HILTD-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEY	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2061.1 06:32:42
	0.600 DEG	0.600 DEG	1982.0 06:34:31
	0.600 DEG	0.600 DEG	1978.9 06:34:37
	1.500 DEG	0.600 DEG	1974.0 06:34:53
	2.600 DEG	1.500 DEG	1955.0 06:35:00
	2.600 DEG	2.600 DEG	1930.0 06:35:17
	2.300 DEG	2.600 DEG	1918.6 06:35:49

PIP SUMMARY

-| Integrated Transit Time Minor Pip Every 1 MS
-| Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Tension (TENS)
1500000 (N) 0

HRMS Caliper (HCAL)
125 (MM) 375

Gamma Ray (GR)
0 (GAPI) 150

LDT Caliper (CALI)
125 (MM) 375

RI Rim (RIM)
125 (MM) 375

Delta-T (DT)
300 (US/M) 100

MAIN PASS - TRUE VERTICAL DEPTH

1925

1950

1975

2000

2025

2050

<--TD-->

MAIN PASS - TRUE VERTICAL DEPTH

RI Rim (RIM)
125 (MM) 375

LDT Caliper (CALI)
125 (MM) 375

Gamma Ray (GR)
0 (GAPI) 150

HRMS Caliper (HCAL)
125 (MM) 375

Tension (TENS)
1500000 (N) 0

Delta-T (DT)
300 (US/M) 100

PIP SUMMARY

-| Integrated Transit Time Minor Pip Every 1 MS
-| Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC-TCC
ASC	DBLT Filing Mode	SHOT
AXAPL	Automatic Gain Control Status AIT-H Output Level/Depth Log(View only)	ON
AHBHM	AIT-H Shale Correction Mode	Off
AHBHV	AIT-H Shale Correction Code Version Number	600
AHBLW	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	600
AHCEN	AIT-H Tool Centering Flag (in Borehole)	Yes
AHCGN	AIT-H Caliper Selected Depth	Eccentered
AHDTM	AIT-H Delta-T Mode	6080
AHEBC	AIT-H Enable Bad Data Control	0x00_Log_000
AHEBL	AIT-H Enable Basic Logs	Yes
AHERP	AIT-H Enable Radial Profiling	Yes
AHFIN	AIT-H Enable Standard Processing	Yes
AHFTH	AIT-H Enable Borehole Error Term&Phase Corr	Yes
AHFRW	AIT-H Response Set Version For Four R Resolution	30,68,23,16
AHLSS	AIT-H Invasion Interpretation Gating	On
AHMRD	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMRF	AIT-H Log Not Valid Calibration Depth	0
AHORW	AIT-H Response Set Version For One R Resolution	30,68,23,10
AHPRV	AIT-H Processing Code Version Number	622
AHRPV	AIT-H Processing Mode	6_One_Two_and_Four
AHRTV	AIT-H Radial Parametrization Code Version Number	612
AHTSD	AIT-H Tool Standoff	12.7
AHTSV	AIT-H Tool Serial Number	MM
AHTWV	AIT-H Response Set Version For Two R Resolution	30,68,23,32
AHTXE	AIT-H Tool Type (of equipped data)	Internal
AHYXT	AIT-H Tool Type (of equipped data)	HAIT
AHZCH	AIT-H Zone Change Flag	Normal
ALTOPCHAN	Name of alternate channel	TVDE
AMED	Azimuth Of Manually-Entered (Well) Deviation	0
ARBS	Auxiliary Minimum Sliding Gate	180
ARM	AIT RI Selection (for ALLRES computation)	13_AHT60
ARSI	Resistivity Source	WATER
BHFL	Borehole Fluid Type	WATER
BHS	Bore Hole Status	OPEN
BHT	Bore Hole Temperature (used in calculations)	85
BHTC	Borehole Level for Zone Isolation	0
BS	Bit Size	155.000
BSCO	Borehole Salinity Correction Option	-170000.00
CBAT	Borehole Salinity Control	NO
CBCF	CBL Correction Factor	1.0
CBLG	CBL Gate Width	40
CBLT	CBL Mud Cake Thickness Correction Option	NO
CCLO	CCL delay	305
CDLT	CCL detection level	30
CDTR	C-Delta-T Ratio	328.084
CSTR	Compressive Strength of Cement	0
DBHT	Depth Bias	34.32
DDEL	Digitizing Delay	22
DETE	Delta-T Detection	200
DFD	Digital Filter Detection Switch	DSP
DHC	Drilling Fluid Density	1040.00
DMEA	Depth Measurement	0
DOTL	Depth Tracking Resolution Interval	0.0
DPPM	Depth Offset	0.0
DPRM	Depth Playback Processing Mode	M
DRCS	DBLT Cal.B Recording Size	HIRES
DTCM	Delta-T Computation Mode	FULL
DTM	Delta-T Fluid	620.375
DTM	DBLT Telemetry Frame Size	1
DWOD	Drill Collar OD	183.727
DWOD	Digitizer Word Count	4
FCF	CBL Fluid Compensation Factor	200
FDF	Filter Depth	1000
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
FPRO	Form Factor Porosity Source	DPHZ
FSCO	Formation Salinity	-50000
GAI	Gain Switching Correction Option	NO
GCBE	Manual Gain	40
GCBE	Generalized Caliper Selection	HCAL
GDEV	Generalized Deviation of Borehole from Normal	0
GSRC	Geothermal Gradient	0.018227
GODG	Good Bond	2
GRMAX	HILT Gamma Ray Max	150
GRMIN	HILT Gamma Ray Min	0
GTBE	Generalized Temperature Selection	ATR_RESIS
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
HACP	Accelerometer PROM Presence	PRESENT_FILE
HBHT	HILT Borehole Bottom Temperature	85
HDDG	HILT Density Good detection	2100
HDEN	HILT Density Salt detection	2100
HFAW	HILT Auto Write Selection	NO
HFLT_GAIN_OPTION	HILT Gain Downhole Density	OFF
HFLT_GAIN_OPTION	HILT Gain Downhole Option	OFF
HGNO	HILT Neutron Coal detection	0.45
HGNS	HILT Neutron Salt detection	0.05
HPHECUT	HILT effectivity Cutoff	0.05
HRBP	High Resolution Spacing	126.997
HRCM	HILT Real Correction Mode	TSCD_SPEED_CORRECTION
HSCH	Hole Size Correction Option	YES
HSCO	Hole Size Correction Value	3.048
HSTI	STI Uses HILT Acceleration	NO
HSWCUT	HILT Water Saturation from ATR cutoff	10
HVCR	Integrated Hardware Caliper Selection	AUTOMATIC
ITTS	Integrated Transit Time Source	DT
LGMS	LGMS Coverage	NONE
LBHC	LB Hardware Loop Control	DISALLOW
LTUT	Lower to Upper Transmitter Spacing Ratio	1
MATR	Rock Matrix Type	LIMESTONE
MCC	Mud Cake Correction Option	NO
MCOR	Minimum Contained Interval	3.048
MDEN	Matrix Density	2710
MED	Manually-Entered (Well) Deviation	27.0
MIDA	Maximum Gain	80
MHC0	MCFL Nil Contrast Correction Coefficient	3.2e-05
MHC1	MCFL Nil Contrast Correction Coefficient	3.2e-05
MHCS	MCFL High Contrast Correction Switch	NO
MIDA	Minimum Gain	0

MODE	Sonic Firing Mode	BHC	
MPOF	MCFL Processing Operation Mode	ON	
MSA	Minimum Sonic Amplitude	0	MV
MST	Mud Sample Temperature	22.22	DEGC
MWCO	Mud Weight Correction Option	NO	
NMSG	Near Minimum Sliding Gate	180	US
NMT	HILT Nuclear Mud Type	NOBARITE	
NMXG	Near Maximum Sliding Gate	750	US
NPRM	HRDD Processing Mode	HIRes	
NSAR	HRDD Depth Sampling Rate	25.4	MM
NUMP	Number of Detection Passes	2	
PBVSADP	Use alternate depth channel for playback	YES	
PHIMAX	HILT max porosity	0.35	V/V
PP	Playback Processing	NORMAL	
PTCO	Pressure/Temperature Correction Option	NO	
RATE	Firing Rate	R3	
RDFA	Reset DFAD	OFF	
RMFS	Resistivity of Mud Filtrate Sample	2.5800	OHMM
RTCO	RTCO - Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.0000	OHMM
SDAT	Standoff Data Source	SOCN	
SDTH	Switch Down Threshold	16384	
SEXP_HILT	HILT Saturation Exponent	2	
SFAF	Sonic Formation Attenuation Factor	0	DB/M
SGAD	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gain	AUTO	
SGCL	Sliding Gate Closing Delta-T	820	US/M
SGCW	Sliding Gate Closing Width	25	US
SGDT	Sliding Gate Delta-T	164	US/M
SGW	Sliding Gate Width	80	US
SHT	Surface Hole Temperature	20	DEGC
SLEV	Signal Level for AGC	5000	
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	NO	
SPCLEAN	HILT SP Clean	-200	MV
SPED	East Departure of Starting Point	0	M
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPND	North Departure of Starting Point	0	M
SPNV	SP Next Value	0	MV
SPSHALE	HILT SP Shale	-120	MV
SPSO	Sonic Porosity Source	DT	
SPVD	TVD of Starting Point	0	M
SSHC	SS Hardware Loop Control	DISALLOW	
SUTH	Switch Up Threshold	655	
TAZI	Vertical Section Azimuth	0	DEG
TD	Total Depth	2118	M
TSEC	TSCD Enable Corrected Depth Computation	YES	
TWS	Temperature of Connate Water Sample	37.78	DEGC
VDLG	VDL Manual Gain	40	
WAGC	Waveform AGC Allow/Disallow	ON	
WGAI	Waveform Manual Gain	20	
WGDT	Waveform Gain Delta-T	787	US/M
WGIN	Waveform Gain Interval	2540	US
WMOD	Waveform Firing Mode	FULL	
WMUD	Mud Weight	1045	K/M3
WTF	Well Trajectory Flag	VERTICAL	

Format: SLT_5_300 Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 06:32

OP System Version: 7C0-713
MBM

HILTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.6 M

Output DLIS Files

DEFAULT	HILTB .087	FN:111	FIELD	11-MAR-1999 06:32

Directional Survey Manually-Entered Deviation Summary

Depth	Deviation	Depth	Deviation
1802.30 M	8.40 DEG	1897.80 M	1.90 DEG
1811.80 M	7.90 DEG	1906.90 M	2.30 DEG
1821.40 M	7.20 DEG	1916.60 M	2.60 DEG
1831.00 M	6.50 DEG	1926.20 M	2.80 DEG
1840.60 M	6.10 DEG	1945.40 M	2.00 DEG
1850.10 M	5.80 DEG	1955.10 M	1.50 DEG
1859.70 M	4.90 DEG	1974.25 M	0.60 DEG
1869.30 M	3.70 DEG	1976.00 M	0.60 DEG
1878.70 M	2.90 DEG	1990.00 M	0.60 DEG
1888.20 M	2.20 DEG	19812.00 M	0.60 DEG

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA

PROVINCE NORTHWEST TERRITORIES

TRUE VERTICAL DEPTH

BOTTOM LOG INTERVAL	2094.3 M
SCHLUMBERGER DEPTH	2117 M
DEPTH DRILLER	2118 M
KELLY BUSHING	627.29 M
DRILL FLOOR	624.9 M
GROUND LEVEL	618.4 M

Schlumberger

BOREHOLE COMPENSATED SONIC LOG

FILE COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

PLATFORM EXPRESS
COMPENSATED NEUTRON
DUAL DENSITY LOG

60 deg-46', 122 deg-30' (SUR LOCATION) Elev.: K.B. 625.2 m
264.96M, -91.08M (BOT LOCATION) G.L. 616.4 m
300N,77-46,50-122,30W (LW) D.F. 624.9 m

Permanent Datum: GROUND LEVEL Elev.: 616.4 m
Log Measured From: KELLY BUSHING 6.8 m above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No. N/A | N/A | N/A | N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	26-FEB-1999			
Run Number	ONE			
Depth Driller	1990 m			
Schlumberger Depth	1990 m			
Bottom Log Interval	1984.4 m			
Top Log Interval	335.5 m			
Casing Driller Size @ Depth	244.500 mm @ 335.5 m	@	@	@
Casing Schlumberger	335.5 m			
Bit Size	222.000 mm			
Type Fluid In Hole	POTASSIUM SULPHATE			
Density / Viscosity	1050 kg/m3 /			
Fluid Loss / PH	7.2 cm3 / 10			
Source Of Sample	FLOWLINE			
RM @ Measured Temperature	0.260 ohm.m @ 16 degC	@	@	@
RMF @ Measured Temperature	0.190 ohm.m @ 16 degC	@	@	@
RMC @ Measured Temperature	0.350 ohm.m @ 13 degC	@	@	@
Source: RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	0.095 @ 80 / 0.070 @ 80	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	80 degC / 80			
Circulation Stopped	26-FEB-1999 12:30			
Logger On Bottom	27-FEB-1999 1:30			
Unit Number / Location	2028 / GRANDE PRAIRIE			
Recorded By	TONY DANIEL			
Witnessed By	BRIAN HESTER			

OTHER SERVICES
CBIL
CBIL
CBIL
CBIL
RESERVE - NOT USED

RESERVE - NOT USED

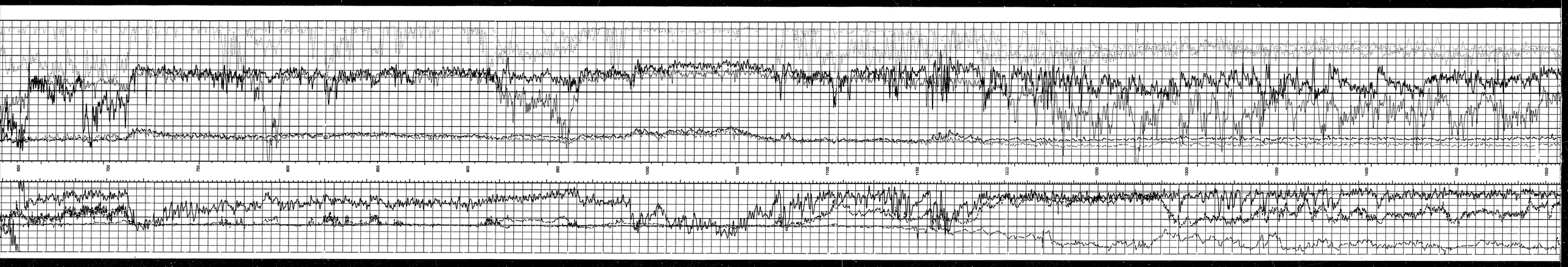
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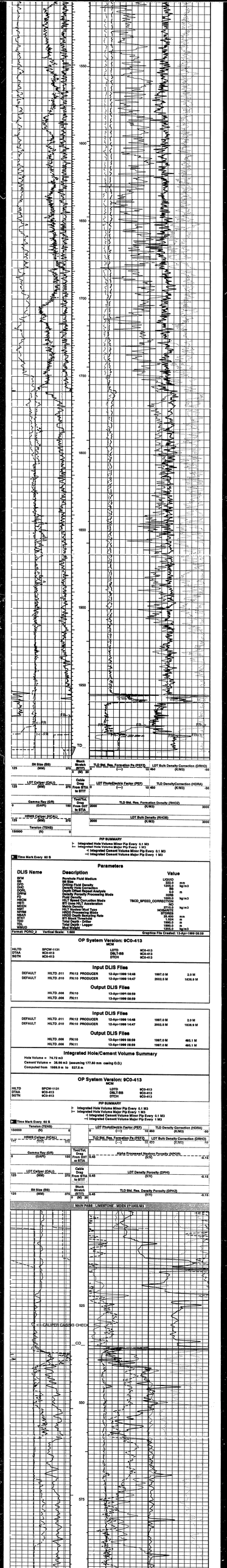
OTHER SERVICES
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RESERVE - NOT USED

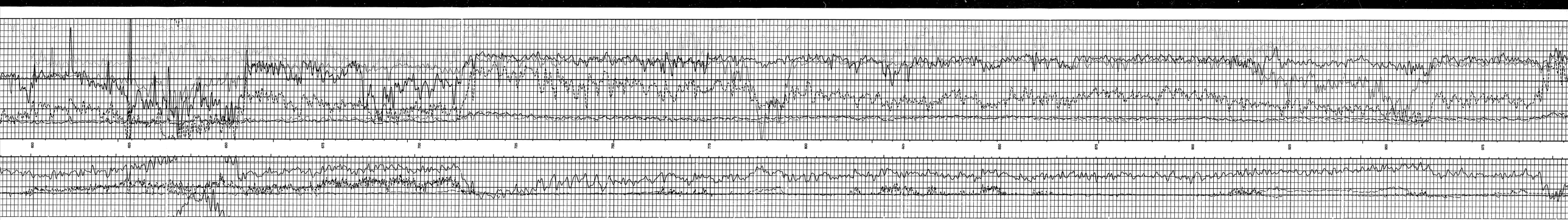
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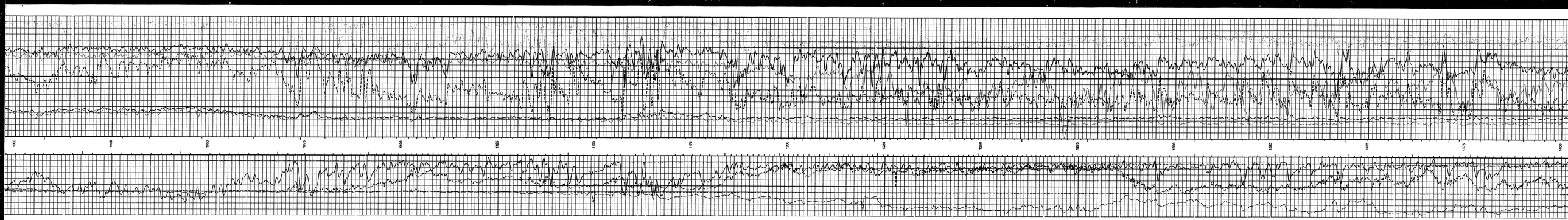
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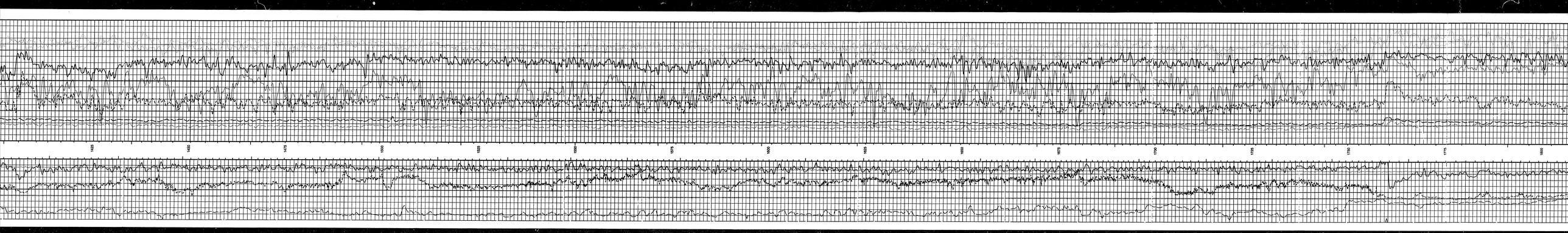
ALL PARAMETERS FROM THE SCHLUMBERGER LOG ANALYSIS PROGRAM.

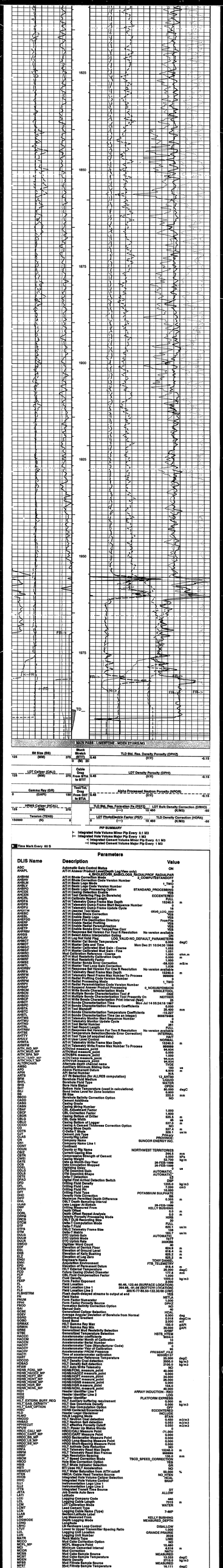

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1600
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1775
1800



Parameters

DLIS Name	Description	Value
ADC	Adbreak Gain Control Status	ON
ANAPL	AIT-H Answer Product Level/Depth Log/View.ordq	AIT_ANSWER_SUBCLOGS_RADIALPROF_RADIALPAR
AHBHW	AIT-H Bhole Compensation Software Version Number	2_COMPUTESTANDCON
AHBHV	AIT-H Bhole Correction Code Version Number	0
AHBPD	AIT-H Bhole Logging Density Number	1_TWO
AHBPO	AIT-H Bhole Logging Porosity Number	0
AHBPR	AIT-H Bhole Logging Resistivity Number	STANDARD_PROCESSING
AHCEN	AIT-H Casing Centralized	YES
AHCFL	AIT-H Cell Centering Flag (In Borehole)	ECCENTERED
AHCPA	AIT-H Cell Pressure Alarm	YES
AHDFD	AIT-H Telemetry Dump Frame Max Depth	15240.0 m
AHDFS	AIT-H Telemetry Dump Frame Start Sequence Number	0
AHDFU	AIT-H Telemetry Dump Frame Update Cycle	0
AHEIW	AIT-H Detector Test Word	0X00_LOG_LOOP
AHEBC	AIT-H Enable Bhole Correction	YES
AHEFD	AIT-H Enable Focusing	YES
AHFDD	AIT-H Flow Simulation Directory	FlowVisa
AHERF	AIT-H Enable Radial Profiling	YES
AHEVC	AIT-H Enable Vertical Compensation	YES
AHFRW	AIT-H Frequency Normalization Gain	1539
AHFRV	AIT-H Response Set Version For Four R Resolution	No version available
AHICG	AIT-H Inclinometer Calibration Gain	1
AHKCT	AIT-H Log Not Valid Flag	LOG_VALID-NO_DEFAULT_PARAMETERS
AHMCT	AIT-H Master Calibrated Mud Temperature	0 degC
AHMDT	AIT-H Master Data and Time	Mon Dec 21 10:54:00 1998
AHMGC	AIT-H Master Calibrated Mud Gain - Coarse	1.083
AHMGF	AIT-H Master Calibrated Mud Gain - Fine	1.083
AHMRC	AIT-H Master Calibrated Conductivity - Coarse	0 ohm.m
AHMRD	AIT-H Mud Resistivity Calibration Depth	0.000 m
AHMRF	AIT-H Master Calibrated Mud Gain	1.000
AHMTL	AIT-H Master Test Loop Gain Correction	-58.520 m/S/m
AHMTV	AIT-H Master Test Loop Gain Correction	-58.520
AHRFV	AIT-H Response Set Version For Core R Resolution	No version available
AHRFW	AIT-H Telemetry Read Frame Max Depth	15240.0 m
AHRFX	AIT-H Telemetry Read Frame Sequence Number To Process	999999
AHRFY	AIT-H Radial Profiling Code Version Number	0
AHRPM	AIT-H Radial Processing Mode	1_TWO
AHRPV	AIT-H Radial Processing Code Version Number	0
AHSCM	AIT-H Bhole Correction Mode	0_NOCSUSPECTEDCORR
AHSCW	AIT-H Bhole Characterization Mode	SINGLETOOL
AHSCO	AIT-H Bhole Characterization Tool Present Pp	0
AHSCP	AIT-H Multiple Bhole Characterization Tool Presently On	NEITHER
AHSCF	AIT-H Write Bhole Characterization Print Interval (feet)	20
AHSCT	AIT-H Bhole Characterization Time	Mon Jul 14 05:26:18 1997
AHSTA	AIT-H Bhole Characterization Pressure Coefficients	0.000
AHSTB	AIT-H Tool Serial Number	0.000 mm
AHSTL	AIT-H Bhole Characterization Temperature Coefficients	-10.207
AHSTU	AIT-H Bhole Characterization Time (as an Integer)	868874488
AHSTV	AIT-H Write Bhole Characterization Print Interval	10
AHSUV	AIT-H Bhole Characterization Write Cycle	10
AHTSN	AIT-H Tool Serial Number	281
AHTSV	AIT-H Tool Software Version	2.0
AHTWV	AIT-H Response Set Version For Two R Resolution	No version available
AHTXC	AIT-H Temperature Selection(Bhole Error Correction)	INTERNAL
AHTXV	AIT-H Temperature Correction	1.000
AHWLV	AIT-H Wireline Version	NEITHER
AHWFA	AIT-H Telemetry Write Frame Max Depth	15240.0 m
AHWFP	AIT-H Telemetry Write Frame Max Number To Process	999999
AHWHP	AITH(tool measure_point	94.634
AHWOP	AITH(tool measure_point	94.634
AHWPA	AITH/SPA_MP	1.000
AHWTL	AITH(temp measure_point	94.634
AHWTP	AITH/TEMP_MP	94.634
ALTDPCHAN	Alternate depth channel name	TVDF
AMOD	Auxiliary Minimum Sliding Data	180 us
APDI	API Derived Datum	4.500 m
APIS	API Serial Number	0
ARTB	AIT Pb Selection (for ALLRES computation)	13_ANYNO
BHC	Borehole Fluid Salinity	LIQUID
BHS	Bore Hole Status	WATER
BHT	Bottom Hole Temperature (used in calculations)	60.000 degC
BIG	Bland Inc Level for Zone Isolation	0.000
BS	Bit Size	215.9 mm
CBCC	Borehole Salinity Correction Option	NO
CGAD	Cement Additives	
CGDE	Cement Density	
CGDN	Casing Sliding Number	
CGAF	CBL Adjustment Factor	1.000
CGAP	CBL Amplitude Factor	1.000
CGLO	CBL Computation Order	539.5 m
CGLG	CBL Gate Width	5.5 us
CGLO	CBL Offset of Logger	537.0 m
CGTC	Casing Q-Sonect Thickness Correction Option	NO
CGTH	Casing Thickness	12.7 mm
CGTT	CBL-VDL Mode	360.1 us.ns
CJOB	Cement Job Type	PRIMARY
CN	Company Name	PROVEN
CNN	Company Name Line 1	SUNCOR ENERGY INC.
COUN	County	
COUNT	County or Reg Name	NORTHWEST TERRITORIES
CSIZ	Current Casing Size	244.5 mm
CSTR	Compressive Strength of Cement	3500 kPa
DATE	Date	98.199
DATE	Date as Month-Day-Year	20-FEB-1998
DCS	Date Computation Stopped	20-FEB-1998
DDLO	Differential Delay	0 us
DDLS	DTM Downhill Data	AUTOMATIC
DDLU	DTM Downhill Shape	AUTOMATIC
DETE	Delta-T Detection	23
DFCD	Delta-T Residual Detection Switch	OFF
DFD	Drilling Fluid Density	1250.0 kg/m3
DFL	Drilling Fluid Loss	7.200 cm3
DFPH	Drilling Fluid pH	10.000
DFT	Drilling Fluid Type	POTASSIUM SULPHATE
DHD	Density Hole Correction	63.5 mm
DHFL	Maximum Permitted Depth Difference	0.305 m
DHI	Density Hole Correction Interval	152.4 mm
DLOG	Date Logged: Month-Day	20-FEB-1998
DSI	Drilling Standard From	KELLY BUSHING
ENVI	Acquisition Environment	FTE_TELEMETRY
ESTM	Estimated Cement Top Datum	518.4 m
ETIM	HILT Ethernet Timeout	0.0 degC
FCD	Future Casing (Outer) Diameter	177.8 mm
FCT	Future Compensation Factor	1.000
FD	Fluid Density	1000.0 kg/m3
FEXP	Form Factor Exponent	2.000
FL	Field Location	60.46, 122.44 (SURFACE LOCATION)
FL2	Field Location Line 1	064.56, -01.06 (BOTTOM LOCATION)
FL3	Field Location Line 2	NB/06-07-065-05-122.33-0.00-0.00-0.00
FLSHSTRM	Flush depth keyed streams to output at end	YES
FN	Field Name	NETLA
FNUM	Form Factor Numerator	1.000
FPHI	Form Factor Porosity Source	NO
FRDO	Formation Salinity Correction Option	NO
FSAL	Formation Salinity	0
GCEC	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0.000 deg
GDSO	Geodipole Sensitivity	0.018 deg/cm
GRMAX	HILT Gamma Ray Max	2.000 API
GRMIN	HILT Gamma Ray Min	0.000 gAPI
GRSE	Generalized Mud Resistivity Selection	AHMF
GSEC	Generalized Caliper Selection	HSTR
HACCC	Accelerometer coefficients	3024.0
HACCM	Accelerometer Month of Calibration	10
HACCS	Accelerometer Serial Number	202
HACCT	Accelerometer Type (Gurmachiner Code)	0
HACCY	Accelerometer Year of Calibration	93
HAMT	Accelerometer Temperature	PRESENT_TEMP
HANT	Time of accelerometer measurement	93031215.0
HARF	Accelerometer Reference Temperature	25.000 degC
HBCO	HILT Density Seal detection	2000.0 kg/m3
HBDC	HILT Density Bad detection	2100.0 kg/m3
HBMT	HILT Bridle Temperature	0 degC
HCHB_FCN1_MP	HCHB_measure_point	60.000 m
HCHB_HACC_MP	HACCZ measure_point	0.000 m
HCHB_HCNT_MP	HCNT measure_point	28.000 m
HCHB_HDEN_MP	HDEN measure_point	28.000 m
HCHB_HGNE_MP	HGNE measure_point	0.000 m
HCHB_HTEN_MP	HTEN measure_point	0.000 m
HCHB_HCHN_MP	HCHN measure_point	0.000 m
HDI1	Header Identifier Line 1	ARRAY INDUCTION : RDO
HDI2	Header Identifier Line 2	RDO
HDIS	Header Identifier	PLATFORM EXPRESS
HELT_EXTERN_BUFF_REQ	HILT External Buffering requirement	0
HELT_GAS_DENSITY	HILT Gas Downhole Density	0.000 kg/m3
HELT_GAS_OPTION	HILT Gas Computation Option	OFF
HLC	Hole Logging Condition	ECCENTERED
HLD	Header Legal Disclaimer	INCLUDE
HLHO	HALS Logging Mode	STAN
HMAC	HILT Maximum Rejection	0.000 m3/m3
HMAO	HILT Maximum Sail Acceptance	0.000 m3/m3
HPHSOUT	HILT effective Porosity Cutoff	0.050 m3/m3
HRC	HILT Caliper Correction Mode	0
HRCC_CALI_MP	HRCC/CALI Measure Point	-31.000 m
HRCC_CART_MP	HRCC/CART Measure Point	0.000 m
HRCC_SR_MP	HRCC Backscatter Measure Point	0.000 m
HRCC_SS_MP	HRCC Long-Spacing Measure Point	0.000 m
HRCC_ST_MP	HRCC Short-Spacing Measure Point	0.000 m
HRFA	HILT Antenna Data Reduction	1
HRFX	HILT Telemetry Read Max Depth	15240.0 m
HRMP	HILT Telemetry Read Max Number	999999
HRSP	High Resolution Spacing	1000.0 mm
HSCG	H_T Speed Correction Mode	TSCG_SPEED_CORRECTION
HSCO	HILT Shock Detection Mode	YES
HSD	HILT Mode Volume Selection	15
HSTI	STI Uses HILT Accelerometer	0
HSWCUT	HILT Water Saturation from ARTH cutoff	50.000 %
HWCS	HMCN Cable Head Tension Source	NO_HTEN
HWOS	HILT Wireline Speed Correction Mode	NO_HTEN
HWV	Integrated Hole Volume Control	0.000
ILL1	Interpolation Logic Line 1	7215 m
ILL2	Interpolation Logic Line 2	
ITTS	Integrated Travel Time Source	DT
JSTA	Job Events Auto Save	ALLOW
LAT	Latitude	
LCC	Logging Company Code	490
LCN	Logging Cable Length	7215 m
LDWG	Log Delivered To	WATER
LGHT	Land Camera Flash	
LICN	Logging Cable Name (Type)	7-46P
LLAB	Lab/Truck/Laboratory Label	
LMF	Log Measured From	KELLY BUSHING
LOGMODE	Logging Mapping Mode	MEASURED_DEPTH
LONG	Longitude	
LRUF	LB Hardware Loop Control	DISALLOW
LSPD	Logging Speed Recommended Spacing Ratio	1800 m/h
LUL	Logging Unit Location	GRANDE PRAIRIE
LUN	Logging Unit Number	3038
MCSS	MCFL Scale	100
MCTO	Mud Cake Selection Option	NO
MCFL_MP	MCFL Measure Point	10.460 m
MDEC	Minimum Decimated Interval	4.615 m
MDEN	Matrix Density	2710.0 kg/m3
MDSS	Mud Cake Sample Source	MEASURED
MDTM	Mud Cake Sample Temperature	13.50 degC
MFSD	Mud Filtrate Density	2710.0 kg/m3
MFSS	Mud Filtrate Sample Source	MEASURED
MFST	Mud Filtrate Sample Temperature	21.00 degC

MRAT	Mud Resistivity Temperature	18.111 degC
MRKR	MCFL Marker	0.000
MRCC	MCFL BI Centered Correction Coefficient	0.000 ohm
MRCT	MCFL BI Centered Correction Coefficient	0.000 ohm
MRCO	MCFL Mud Cake Correction Switch	NO
MRD	Maximum Hole Deviation	29.700 deg
MSA	Minimum Gate	13.500
MSB	Minimum Gate Level	CLOSE
MMDU	Magnetic Rack Depth Units	FEET
MMOD	Mode Pulling Mode	SHIC
MSCC	MCFL Centering Correction Mode	NO
MSA	Mud Sample Resistivity	13.500 mV
MSB	Mud Sample Source	FLOWLINE
MST	Mud Sample Temperature	15.556 degC
MSTCO	Mud Sample Interface Correction Option	NO
NAT1	NaBHC	
NDTC	HNDD Dead Time Correction	APPLY
NMEA	Neutron Measurement Data Version	3.000
NMEG	Near Monitor Energy Gate	5.000 us
NMT	HILT Nuclear Mud Type	NOBARITE
NPNG	Near Maximum Counting Gate	1.000 us
NPUC	HNDD Processing Mode	STORES
NPUC	HNDD Count Rate Correction	NOT APPLIED
NSAR	HNDD Depth Recording Rate	25.400 mm
NTCO	HNDD Temperature Correction Option	ON
OPEN	Caliper Arm Positions Passes	1
OPER	Operator Code	6642
OS1	Other Services Line 1	ARRAY INDUCTION RGD
OS2	Other Services Line 2	COMPENSATED NEUTRON
OS3	Other Services Line 3	DUAL SPACED
OS4	Other Services Line 4	SHC, SV CAL
OS5	Other Services Line 5	LOGGED
OSWDAP	Alternate depth channel playback enabled	
PDAT	Permanent Datum	GROUND LEVEL
PDMAX	HILT max pressure	0.330 m3/m3
PI1U	Programmable 5 V High Voltage	1000.0 V
PDVC	Programmable 5 V High Voltage	1000.0 V
PTCO	Pressure/Temperature Correction Option	NO
PVER	Program Version	9C0-413
RB	Remark Line 1	
	HILT, INTEGRALS AND PRESENTATIONS AS PER CLIENT REQUEST	
RI=0	Remark Line 10	
	HNDD/HNGS TRANSMIT INTERVAL: XXXX, BACK ON SURFACE: XX:XX	
RI=1	Remark Line 11	
	VISCOSITY WAS SO HIGH, THAT IT WAS NOT MEASURED.	
RI2	Remark Line 12	
RI3	Remark Line 13	
RI4	Remark Line 14	PRINTS: 2 FIELD, 5 FINAL
RI5	Remark Line 15	RIG ANTA 54
RI7	Remark Line 17	CREW: T. RENNER AND D. MOYLES
RI8	Remark Line 18	
RI	Remark Line 2	AIT RAN ECCENTERED IN COMPUTE STANDOFF MODE
RI	Remark Line 3	AIT RAN WITH TWO 2IN/IN STANDOFFS
RI	Remark Line 4	
	HILT RAN ECCENTERED WITH 00 DEGREE OFFSET HARDWARE	
RI	Remark Line 5	
	THIC RAN CENTERED WITH THREE CWEZ AND ONE MCD-G	
RI7	Remark Line 7	
RI8	Remark Line 8	
	RM=: 0.28 @ 19.00 C, RMF: 0.30 OHMS @ 18.00 C, RMC: 0.20 OHMS @ 18.00 C	
RI9	Remark Line 9	
	STARTED IN HOLE: 06:30, FIRST ON BOTTOM: XX:XX, LAST ON BOTTOM: XX:XX	
RMND	Rapid Mode	N/A
RMT	Rapid Tele	N/A
RMT	MCFL Resistivity Algorithm Version	1.070
RLAB	Range/Blank Label	
RMFS	Resistivity of Flushed Zone Sample	0.300 ohm.m
RMFS	Resistivity of Mud Filtrate Sample	0.190 ohm.m
RMS	Resistivity of Mud Sample	0.350 ohm.m
RMUD	Rig Mud Density Measurement	1.20
RUN	Run Number	1
RW	Resistivity of Connate Water	1.000 ohm.m
SDAT	Standoff Data Source	SOCN
SDTH	Switch Down Threshold	16384
SEAS	Seawater	NO
SEXC_HILT	HILT Saturation Exponent	2.000
SGAD	Sonic Formation Attenuation Factor	0 dB/m
SGAI	Sonic Gate Interval	5
SGAI	Selectable Acquisition Gate	AUTO
SGCG	Sliding Gate Closing Delta-T	630 us/m
SGOG	Sliding Gate Opening Width	40 us/m
SGOT	Sliding Gate-T	40 us/m
SGW	Sliding Gate Width	80 us/m
SHCO	Surface Hole Temperature	20.000 degC
SIMULATE_DELAY	Simulate Acquisition Delay	0.000
SLAB	Slate/Preview Label	
SLEV	Signal Level for AGC	2000
SOD	Standoff Distance	3.175 mm
SOCN	Standoff Correction Option	YES
SON	Service Order Number	1238557
SPCLEAN	HILT SP Clean	-200.000 mV
SPD	SP Data	0.000 mV
SPED	Last Departure of Starting Point	1800 m
SPEE	Simulated Logging Speed	1800 ft/h
SPHO	Depth of Starting Point	1800 m
SPHO	North Departure of Starting Point	0.000 m
SPHV	SP Seal Value	-50.000 mV
SPSCALE	HILT SP Scale	-120.000 mV
SPSO	Type of Starting Point	GV
SPVO	Vertical Depth of Starting Point	1800 m
SRHO	SS Hardware Loop Control	DISALLOW
STAT	Stats or Preview	
STBT	Stick Tension Label	20.000 degC
STET	ST Stuck Threshold	1.524 m
SUTH	Switch Up Threshold	955
TAZI	Tool Azimuth Label	0.000 deg
TBN	WTB Telemetry Baud Rate	1000000
TCA	Tail Cement Additives	
TCT	Time Circulation Stopped	12:20
TDT	Tool Control Type	
TD	Total Depth	1990.0 m
TDD	Total Depth - Driller	1990.0 m
TDL	Total Depth - Logger	1989.0 m
TFR	TWB Telemetry Frame Rate	1000.0 Hz
TIED	Last Departure of Tie-In Point	0.000 m
TINO	Along-hole depth of Tie-in Point	880.0 m
TIVD	Vertical Depth of Tie-in Point	880.0 m
TIVO	TVD of Tie-in Point	880.0 m
TLAB	Tone Logger At Bottom	01:30
TLAS	Tone Last Seen	038.0 m
TLAW	Transducer/Wake Label	
TMIN	Telemetry Error Meg Report Interval (for SCP)	60 s
TOWN	Tool Owner	N/A
TPHV	Centre Rotation Reference	1000.0 bf
TSCD	TSCD Enable Corrected Depth Computation	YES
TSR	Telemetry Status Report Interval (for IO Man)	10
TSUR	Temperature of Climate Water Sample	37.778 degC
VCNT	Vibrator Control Channel Number	1
VCRR	Cumulated Casing Volume	1.857 m3
VOLC	VOL Manual Calc	40
VOLM	Waveform Mud Volume	4.864 m3
WAGC	Waveform AGC Allowdown	0.000
WGAI	Waveform Manual Gain	20
WGAT	Waveform Gain Interval	10 us/m
WGTH	Waveform Gain Threshold	128 us
WITN	Witness's Name	BRIAN HEBTER
WMOD	Waveform Filtering Mode	DETECTION
WMUD	Mud Weight	1260.0 kg/m3
WN	Well Name	SUNCOR NETLA K-77-60-5E
WTF	HILT Trajectory Flag	VERTICAL

Format: PORO_5 Vertical Scale: 1:240 Graphics File Created: 13-Apr-1999 08:59

OP System Version: 9C0-413

MCM

HILTD	SPCW-1131	LDTD	9C0-413
DTAA	9C0-413	DRLT-BB	9C0-413
SGTN	9C0-413	DTCH	9C0-413

Input DLIS Files

DEFAULT	HILTD .011	FN:12 PRODUCER	12-Apr-1999 14:48	1997.0 M
DEFAULT	HILTD .010	FN:10 PRODUCER	12-Apr-1999 14:47	2002.5 M

2.0 M
1638.9 M

Output DLIS Files

HILTD .006	FN:10	13-Apr-1999 08:59	
HILTD .005	FN:11	13-Apr-1999 08:59	

Input DLIS Files

DEFAULT	HILTD .011	FN:12 PRODUCER	12-Apr-1999 14:48	1997.0 M
DEFAULT	HILTD .010	FN:10 PRODUCER	12-Apr-1999 14:47	2002.5 M

2.0 M
1638.9 M

Output DLIS Files

HILTD .006	FN:10	13-Apr-1999 08:59	1997.0 M
HILTD .005	FN:11	13-Apr-1999 08:59	1997.0 M

405.1 M
405.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 74.72 m3
Cement Volume = 38.86 m3 (assuming 177.80 mm casing O.D.)
Computed from 1989.0 m to 537.0 m

OP System Version: 9C0-413

MCM

HILTD	SPCW-1131	LDTD	9C0-413
DTAA	9C0-413	DRLT-BB	9C0-413
SGTN	9C0-413	DTCH	9C0-413

PIP SUMMARY

- Integrated Hole Volume Major Plp Every 0.1 M3
- Integrated Hole Volume Major Plp Every 1 M3
  - Integrated Cement Volume Minor Plp Every 0.1 M3
  - Integrated Cement Volume Major Plp Every 1 M3

Time Mark Every 60 S

TENS_REP Curve (TENS_REP): 0 (lbf) 150000

HCAL_REP Curve (HCAL_REP): 6 (in) 126

GR_REP Curve (GR_REP): 0 (GAPI) 150

CALI_REP Curve (CALI_REP): 6 (in) 126

BS_REP Curve (BS_REP): 6 (in) 126

Tension (TENS): 0 (lbf) 150000

HDMN Caliper (HCAL): 6 (in) 126

Gamma Ray (GR): 0 (GAPI) 150

LDT Caliper (CALI): 6 (in) 126

GR_REP Curve (GR_REP): 0 (GAPI) 150

HCAL_REP Curve (HCAL_REP): 6 (in) 126

TENS_REP Curve (TENS_REP): 0 (lbf) 150000

PEF_REP Curve (PEF_REP): 0 (---) 10

HDRA_REP Curve (HDRA_REP): 1.95 (G/C3) 2.95

PEFZ_REP Curve (PEFZ_REP): 0 (---) 10

TLD Density Correction (HDRA): 1.95 (G/C3) 2.95

LDT PhotoElectric Factor (PEF): 0 (---) 10

DRHO_REP Curve (DRHO_REP): 0.45 (G/C3) -0.15

TLD Rhd. Res. Formation Pe (PEFZ): 0 (---) 10

LDT Bulk Density Correction (DRHO): 0.45 (G/C3) -0.15

NPOR_REP Curve (NPOS_REP): 0.45 (V/V) -0.15

Alpha Processed Neutron Porosity (NPOR): 0.45 (V/V) -0.15

DPHI_REP Curve (DPHI_REP): 0.45 (V/V) -0.15

DPHZ_REP Curve (DPHZ_REP): 0.45 (V/V) -0.15

LDT Bulk Density (RHOB): 0.45 (G/C3) -0.15

TLD Rhd. Res. Density Porosity (DPHZ): 0.45 (V/V) -0.15

REPEAT ANALYSIS: LIMESTONE - MDEN 2?.65/CM3

AST READINGS = 21

TD

PIP SUMMARY

- Integrated Hole Volume Major Plp Every 0.1 M3
- Integrated Hole Volume Major Plp Every 1 M3
  - Integrated Cement Volume Minor Plp Every 0.1 M3
  - Integrated Cement Volume Major Plp Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BRM	Borehole Fluid Medium	LIQUID
BSPL	Borehole Fluid Type	SALINE
BSU	Bore Hole Units	METRIC
BS	Bit Size	222.0 mm
CSCO	Borehole Salinity Correction Option	NO
CCCO	Casing & Cement Thickness Correction Option	NO
CBZ2	Current Casing Size	244.6 mm
DFD	Drilling Fluid	53.700 kg/m
DFV	Drilling Fluid Viscosity	1260.0 kg/m3
DHC	Density Hole Correction	NO
DFPH	Drilling Fluid pH Value	7.000
DFMC	Density Tool Processing Mode	PRIMARY
FD	Fluid Density	1260.0 kg/m3
FTCO	Formation Temperature Option	ON
GDEV	Geodetic Deviation	HOLD
GDEV	Average Angle of Deviation of Borehole from Normal	0.000 deg
GDIR	Geodetic Direction	HOLD deg/Cm

HRLM	HILT Speed Correction Mode	TRCD_SPEED_CORRECTION
HSTC	HILT Stretch Correction Option	YES
HSTI	HILT Uses Tool Orientation	NO
MATR	Rock Matrix Type	LIME
MCCO	Mud Cake Correction Option	NO
MDEN	Matrix Density	2.71
MDEN	Matrix Density	NAN kg/m3
MST	Mud Sample Temperature	15.556 degC
MWCO	Mud Weight Correction Option	NO
NMT	Neutron Matrix Type	NOMATRIX
NPRM	HRDD Processing Mode	Standard
RSAS	HRDD Depth Sampling Rate	25.400 mm
RWCO	Pressure/Temperature Correction Option	NO
RWS	Resistivity of Mud Filtrate Sample	0.150 ohm.m
SDAT	Standoff Data Source	SCHN
SHT	Surface Hole Temperature	20.000 degC
SSCN	Standoff Caliper	9.172 mm
SOCO	Standoff Correction Option	YES
TDL	Total Depth - Logger	1990.0 m
MWGD	Mud Weight	1055.0 kg/m3

Format: PORO_REP Vertical Scale: 1:240 Graphics File Created: 13-Apr-1999 08:59

OP System Version: 9C0-613

MCM

HILTD	SPCW-1131	LDTD	9C0-613
DTA	9C0-613	DSLT-BB	9C0-613
SGTH	9C0-613	DTCH	9C0-613

Input DLIS Files

DEFAULT	HILTD .011	FN:12	PRODUCER	12-Apr-1999 14:48	1997.0 M 2.0 M
DEFAULT	HILTD .010	FN:10	PRODUCER	12-Apr-1999 14:47	2002.5 M 1636.9 M

Output DLIS Files

HILTD .006	FN:10	13-Apr-1999 08:59	
HILTD .006	FN:11	13-Apr-1999 08:59	

Input DLIS Files

DEFAULT	HILTD .011	FN:12	PRODUCER	12-Apr-1999 14:48	1997.0 M 2.0 M

Output DLIS Files

DEFAULT	HILTD .010	FN:3	PRODUCER	13-Apr-1999 10:52	549.8 M 2.0 M
CUST	HILTF .010	FN:4	CUSTOMER	13-Apr-1999 10:52	549.8 M 2.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 0.66 M3

Cement Volume = 0.36 M3 (assuming 177.80 MM casing O.D.)

Computed from 549.8 M to 537.5 M using data channel(s) HCAL

OP System Version: 9C0-613

MCM

HILTB-FTB	9C0-613	LDT-D	9C0-613
DTA-A	9C0-613	DSLT-FTB	9C0-613
SGT-H	9C0-613	DTC-H	9C0-613

P/P SUMMARY

- Integrated Hole Volume Minor Plp Every 0.1 M3
- Integrated Hole Volume Major Plp Every 1 M3
- Integrated Cement Volume Minor Plp Every 0.1 M3
- Integrated Cement Volume Major Plp Every 1 M3

Time Mark Every 60 S

Tension (TENS) 1500000 (N) 0

HDMN Caliber (HCAL) 125 (MM) 375

Gamma Ray (GR) 0 (GAPI) 150

TooITVL Drag From DIT to STA

LDT Caliber (CALI) 125 (MM) 375

Cable Drag From STA to WITI

Bit Size (BS) 125 (MM) 375

Stuck Strain (STIT) 0 (N) 20

Alpha Processed Neutron Porosity (NPOR) 0.45 (V/V) -0.15

CASED HOLE SECTION MAIN PASS

<--- CASE READINGS --->

25

50

75

100

125

150

175

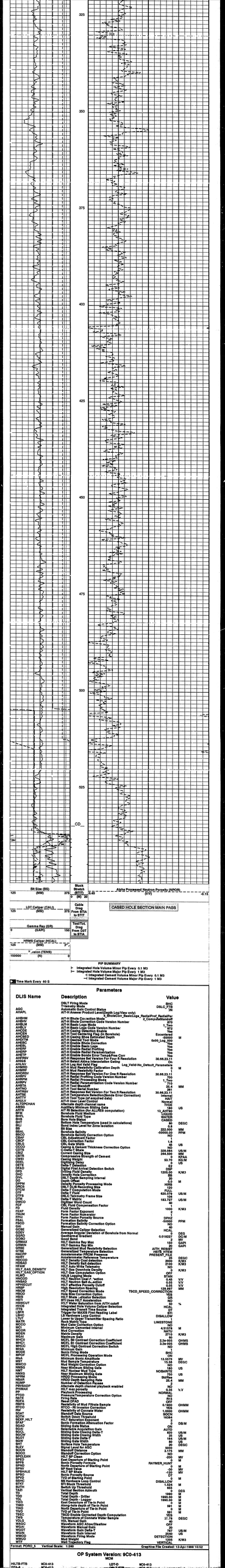
200

225

250

275

300



Parameters

DLIS Name	Description	Value
	DBLT Firing Mode	BHC
	Transmitter Mode	DBLO_FTR
ASC	AIT-H Acquisition Control Status	ON
ASPL	AIT-H Assessment Level(Depth Log/View only)	4_BHoleCorr_BasicLogs_RadialProf_RadialPar
AHBHM	AIT-H Bhole Correction Mode	3_ComputedBHole
AHBHV	AIT-H Bhole Bhole Code Version Number	600
AHBLM	AIT-H Basic Logs Mode	1_Two
AHBLV	AIT-H Basic Logs Code Version Number	600
AHCEN	AIT-H Centering Flag (In Borehole)	Eccentered
AHCERD	AIT-H Centering Estimated Depth	-50000
AHEMD	AIT-H Enable Mud Mode	0x09_Log_000
AHEPC	AIT-H Enable Pseudo Curves	Yes
AHERC	AIT-H Enable Batch Logs	Yes
AHERF	AIT-H Enable Radial Profiles	Yes
AHETF	AIT-H Enable Tornado Detection	Yes
AHETP	AIT-H Enable Batch Error Terms/Free Corr	Yes
AHFBSV	AIT-H Response Set Version For Four ft Resolution	30.64,23,11
AHLM	AIT-H Logging Mode Acquisition Gating	1
AHLN	AIT-H Log Mud Mode Selection	Log_Valid-No_Default_Parameters
AHMRD	AIT-H Mud Resistivity Calibration Depth	0 M
AHMRV	AIT-H Mud Resistivity Factor	0
AHOBV	AIT-H Radial Processing Code Version Number	30.64,23,11
AHRFV	AIT-H Radial Profiling Code Version Number	600
AHRPV	AIT-H Radial Parameterization Code Version Number	1.7m
AHTH	AIT-H Tool Size	71.5
AHTHO	AIT-H Tool Serial Number	0 MM
AHTRBV	AIT-H Response Set Version For Two ft Resolution	28.0
AHTRV	AIT-H Response Set Version For Bhole Error Correction	30.64,23,11
AHTT	AIT-H Tool Type (Measured Data)	1
AHULN	AIT-H User Level Control	1
AHUNCHAN	AIT-H Uncertainty Channel Name	Normal
AMIC	Auxiliary Measurement Control	TYDI
ARTF	AIT Bit Selection (for ALLRES computation)	US
ARTS	Resistivity Scaling	13_AIT300
BHFL	Borehole Fluid Type	TOOL
BHS	Bore Hole Status	WATER
BHT	Bore Hole Temperature	CALC
BIU	Bond Index Level for Zone Isolation	DEGC
BS	Bit Size	222.000
BSAL	Borehole Salinity	MM
CBCO	Borehole Salinity Correction Option	>50000.00 PPM
CBFI	CBL Calculation Flag	NO
CBOF	CBL Calculation Factor	1.4
CBLG	CBL Gate Width	40 US
CBTH	CBL Effective Tubular Thickness Correction Option	NO
CDTD	C-Data-T Status	324.584 US/M
CBY	Current Casing Size	244.500 MM
CBTR	Compressive Strength of Cement	0 50Mpa
CDEN	Casing Weight	53.70 KG/M
CDIS	Casing Diameter	0 US
CETS	Delta-T Selection	63
DFAD	Digital Filter Actual Detection Switch	OFF
DFD	Digital Filter Depth	1500.00 KM3
DHC	Density Hole Correction	0
DHL	DSLT Depth Sampling Interval	20
DIU	DSLT Units	M
DPPM	Density Porosity Processing Mode	1
DRCS	DSLT DLIS Recording Size	128
DTD	Delta-T Computation Mode	FULL
DTF	DSLT Frequency	620.078 US/M
DTM	Delta-T Frame Size	1024
DTRCO	Delta-T Matrix	183.727 US/M
DWO	Digitizer Word Count	40
EFD	DSLT Error Determination Factor	1
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	2
FFAC	Form Factor Multiplier	1
FPAC	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	-50000 PPM
FSCO	Formation Salinity Correction Option	NO
GAI	Mud Gain	1
GCBE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	2 DEG
GGDO	Geothermal Gradient	0.018227 DEGM
GRMA	GR Matrix	10 GAPI
GRMH	HLT Gamma Ray Max	150 GAPI
GRMN	HLT Gamma Ray Min	20 GAPI
GTBE	Generalized Tornado Sensitivity Selection	AITH_RESD
GTSE	Generalized Temperature Selection	HSTR_HTEM
HACPF	Accelerometer PRCM Presence	PRESENT_FILE
HBHT	Borehole Bottom Hole Temperature	DEGC
HDDAD	HLT Density Dual detection	2700 K/M3
HDDAS	HLT Density Bed detection	2700 K/M3
HDEC	HLT Auto Delta Tenacity	NO
HDFL	HLT Density Fluid Density	0 K/M3
HDLT_GAS_OPTION	HLT Gas Correction Option	OFF
HLMO	HALS Logging Mode	STAT
HNDAD	HLT Neutron Dual e^ection	0.46 V/V
HNDAS	HLT Neutron Bed detection	0.46 V/V
HPHEFCUT	HLT effective Porosity Cutoff	0.05 V/V
HRBP	HLT Resolution Spacing	229.997 MM
HRMO	HLT Recording Mode	TSCD_SPEED_CORRECTED
HSCO	HLT Bhole Correction Option	YES
HSIB	HLT Bhole Lubricator Selection	GR
HSIZ	HLT Bhole Size Selection	NO
HSMCUT	HLT Matrix Identification AUTH cutoff	2.65 %
HVCE	Integrated Hole Volume Caliper Selection	HCAL
HVTS	Integrated Tornado Time Source	DT
LBHC	Caliper for NAASQ Dbit Reading Label	CALI
LSHU	Logging Shoe Configuration	DISALLOW
LTSP	Lower to Upper Transmitter Spacing Ratio	1
MATR	Rock Matrix Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MC	Minimum Cemented Interval	4.5124 M
MDEN	Mud Correction	NATU
MFSS	Mud Filtrate Salinity	2700 K/M3
MSAI	Maximum Gain	2
MHCS	MCFL Bit Contrast Correction Coefficient	2.2e-005 OHMS
MHCT	MCFL Bit Contrast Correction Threshold	3.2e-005 OHMS
MHCX	MCFL Hi Contrast Correction Switch	NO
MIGA	Minimum Gain	1
MMOD	MCFL Processing Mode	BHC
MMOP	MCFL Processing Operation Mode	1
MMT	Mud Sample Temperature	13.0278 MV
MMTC	Mud Sample Temperature	15.56 DEGC
MWCO	Mud Weight Correction Option	NO
MWDU	Mud Weight Density Unit	US
MWT	HALT Nuclear Mud Type	NONANTE
NMXG	Near Maximum Sliding Gate	750 US
NMXW	Near Maximum Window	Shifted
NSAR	HRDD Depth Sampling Rate	25.4 MM
NUMP	Number of Detection Passes	2
OPMAP	Alternate depth channel playback enabled	NO
PHIAX	Max Y axis porosity	0.35 V/V
PP	Mud Filtrate Resistivity	NONANTE
PTCO	Pressure/Temperature Correction Option	NO
PDFA	Firing Rate	20.0
PSFD	Pad Shoe Flag	2
RMFS	Resistivity of Mud Filtrate Sample	0.1000 OHMM
RTCO	RTCO - RI Invasion Correction	YES
RW	Resistivity of Mud Water	0.1000 OHMM
SOAT	Standoff Data Source	SDOW
SDTH	Switch Down Threshold	16384
SFHLT	Short Frame HLT	1
SFSF	Notch Formation Attenuation Factor	2 DB/M
SGAD	Sliding Gate Status	ON
SGAI	Selectable Gain Selection	AUTO
SGCD	Sliding Gate Closing Delta-T	920 US/M
SGCW	Sliding Gate Closing Width	40 US
SGDT	Sliding Gate Delta-T	184 US/M
SGW	Sliding Gate Width	80 US
SLTC	Slowness Time Coincidence	200 DEGC
SLTZ	Signal Level for AGC	0.005 V
SODO	Standoff Distance	3.175 MM
SOFO	Standoff Correction Option	NO
SPCLEAN	HALT SP Clean	0 MV
SPED	Seat Departure of Starting Point	0 M
SPHO	Spherical Porosity	RAYMER_HUNT
SPMD	Seat Departure of Starting Point	0 M
SPMV	SP Mud Value	-30 MV
SPSHALE	HALT SP Shale	-120 MV
SPSO	Sonic Porosity Source	DT
SPSC	SP Scale Factor	1 M
SRHC	SS Hardware Long Control	DISALLOW
STNT	BTI Stuck Threshold	1.524 M
TAZI	Vertical Section Azimuth	0 DEG
TAZI	Vertical Section Azimuth	0 DEG
TD	Total Depth	1990 M
TDD	Total Depth - Driller	1990.00 M
TDL	Total Depth - Logger	1990.00 M
TED	Seat Departure of Tie-In Point	0 M
TIED	Along-hole depth of Tie-In Point	981 M
TVDD	TVD Departure of Tie-In Point	0 M
TWD	Water Depth	684 M
TWCO	TEXD Electric Corrected Depth Computation	YES
TWS	Temperature of Connate Water Sample	22.78 DEGC
VSD	Vertical Section	0
WAGO	Waveform ABC Allow/Disallow	OFF
WGAI	Waveform Manual Gain	20
WGAT	Waveform Gain Type	AUTO US/M
WGIN	Waveform Gain Interval	20 US
WMCD	Waveform Firing Mode	DETECTION
WRD	Well Radius	1220 MM
WTF	Wireline Telemetry Flag	YES/DUAL

Format: PORO_S Vertical Scale: 1:240 Graphics File Created: 13-Apr-1999 10:52

OP System Version: 9C0-413

BGT-N	9C0-413	DTC-H	9C0-413

Input DLIS Files

DEFAULT	HILTD .011	FN:12	PRODUCER	12-Apr-1999 14:48	1997.0 M	2.0 M

Output DLIS Files

DEFAULT	HILTD .010	FN:3	PRODUCER	13-Apr-1999 10:52		
CUST	HILTD .010	FN:4	CUSTOMER	13-Apr-1999 10:52		

Input DLIS Files

CUST	HILTD .014	FN:18	CUSTOMER	12-Apr-1999 09:45	1997.0 M	517.1 M

Output DLIS Files

	HILTD .008	FN:13		13-Apr-1999 09:59	1997.0 M	517.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 46.89 m3
Cement Volume = 10.77 m3 (assuming 177.80 mm casing O.D.)
Computed from 1999.0 m to 526.0 m

OP System Version: 9C0-413

		MCM	
HILTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	SGTH	9C0-413
DITCH	9C0-413		

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

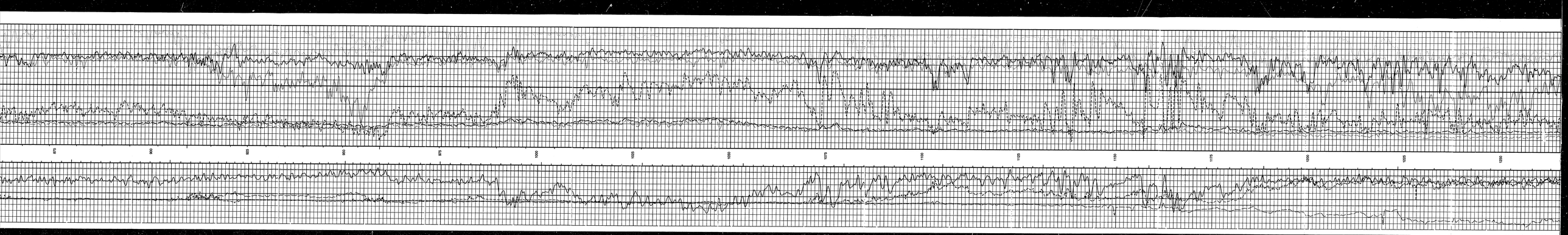
Tension (TENS)		LDT PhotoElectric Factor (PSF)	TLD Density Correction (HDRA)
1500000 (N) 0	Tool/Tot. Drag	0 (---) 10	(K/M3) -50
HRMS Caliper (HCAL)		TLD Std. Res. Formation Pe (FSF2)	LDT Bulk Density Correction (DRHO)
120 (MM) 370		0 (---) 10	460 (K/M3) -50
Gamma Ray (GR)	From DIT To BTM	Alpha Processed Neutron Porosity (NPOR)	
0 (GAPI) 150	0.45	(V/V)	-0.15
LDT Caliber (CALI)	Cable Drag From BTM To BTIT	LDT Density Porosity (DPHI)	
120 (MM) 370	0.45	(V/V)	-0.15
Bit Size (BS)	Block Weight (BITD)	TLD Std. Res. Density Porosity (DPHZ)	
120 (MM) 370	0.45	(V/V)	-0.15
	0 MD 20		

MAIN PASS - SANDSTONE - MDEN 2650KG/M3

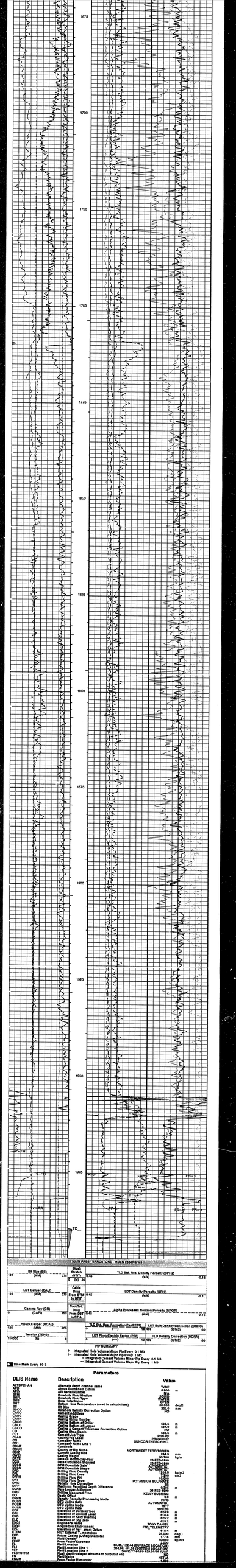
CALIPER CASING CHECK

CD

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1250

1275 1300 1325 1350 1375 1400 1425 1450 1475 1500 1525 1550 1575 1600 1625 1650



Parameters

DLIS Name	Description	Value	
ALTDPCHAN	Alternate depth channel name	TYDE	
APD	Above Perm Datum Datum	1.824	m
APIN	API Serial Number	0.0	
BHM	Borehole Fluid Medium	LIQUID	
BHL	Borehole Fluid Type	WATER	
BHT	Bottom Hole Temp	60.0	
RMT	Reform Hole Temperature (used in calculations)	60.000	degC
BS	Bit Size	222.0	mm
CBCO	Borehole Salinity Correction Option	NO	
CAAD	Cement Additives		
CASD	Casing Grade		
CASN	Casing Serial Number		
CBDR	Casing Bottom of Driller	528.5	m
CBLO	Casing Bottom of Logger	527.0	m
CCCO	Casing Centre Thickness Correction Option	NO	
CSI	Casing Shoe Depth	528.5	m
CTY	Casing Type	Primary	
CLAB	Country/Rig Label	PROVINCE/	
CN	Company Name	SUNCOR ENERGY INC.	
CONT	Continued Line 1		
CONT	Continued		
COUN	County or Rig Name	NORTHWEST TERRITORIES	
CSG	Casing Weight Size	244.5	mm
CWGT	Casing Weight	69.0	kg/m
DATE	Date as Month-Day-Year	26-FEB-1999	
DD	Date Drilling Stopped	26-FEB-1999	
DDLG	DTM Downlink Mode	AUTOMATIC	
DDLS	DTM Downlink Shape	AUTOMATIC	
DFD	Drilling Fluid Density	1010.0	kg/m3
DFL	Drilling Fluid Loss	12.000	cm3
DFPH	Drilling Fluid PH	7.500	
DFT	Drilling Fluid Type	POTASSIUM SULPHATE	
DFV	Density Hole Correction	500	
DFVS	Drilling Fluid Viscosity Sath Difference	0.000	m
DL	Date Logged At Bottom	26-FEB-1999	
DMF	Drilling Measured From	KELLY BUSHING	
DPH	Depth Offset	0.0	m
DPHM	Density Porosity Processing Mode	STD	
DULG	DTC Uplink Gain	AUTOMATIC	
DULM	DTC Uplink Mode	1	
DULR	DTC Uplink Rate	3000Hz	
EDF	Elevation of Derrick Floor	457.0	m
EGL	Elevation of Ground Level	418.4	m
ELS	Elevation of Kelly Bushing	425.3	m
ENGI	Engineers Name	0.000	m
ENGI	Engineer's Name	TONY DAMES	
EKB	Antipollution Environment	FTR_TELEMETRY	
EPD	Elevation of Perm Datum Datum	418.4	m
ITEM	HILT Element 1, Inventory	0.000	degC
FCD	Future Casing (Outer) Diameter	177.8	mm
FD	Fluid Density	1020.0	kg/m3
FDP	Form Factor Exponent	2.000	
FL	Field Location	60.49, 122.44 (SURFACE LOCATION)	
FL1	Field Location Line 1	384.88, -81.06 (BOTTOM LOCATION)	
FL2	Field Location Line 2	3300'/C/77-80.50-109.50/W6 (SURVEY)	
FLSHSTRM	Flush depth-delayed streams to output at end	NO	
FN	Field Name	HITLA	
FNUM	Form Factor Numerator	1.000	

FPCL	Form Factor Porosity Source	DPHZ
FSCO	Formation Salinity Correction Option	NO
GCEC	Generalized Caliper Selection	HCAL
GDEC	Generalized Caliper Selection of Borehole from Normal	HCAL
GHAD	Geothermal Gradient	0.000 deg
GRMAX	HLT Gamma Ray Max	0.018 degC/m
GRMIN	HLT Gamma Ray Min	0.000 gAPI
GTEC	Generalized Temperature Selection	29.000
GTOC	Generalized Temperature Correction	HTEM
HADOG	Accelerometer Azimuth of Gravity	HSTS, HSTT
HADOI	Accelerometer Azimuth of Calibration	90.000
HADOT	Accelerometer Type	10
HADOY	Accelerometer Type (Manufacturer Code)	20
HADTY	Accelerometer Year of Calibration	92
HAGO	Accelerometer Gravity Offset	PRESENT_GRAVITY
HAGT	Time of Accelerometer Calibration	1991/07/18
HASEC	Accelerometer Reference Temperature	25.000 degC
HCADO	HLT Caliper Offset Correction	2000.0 kg/m3
HDAD	HLT Density Bed Correction	2700.0 kg/m3
HFAE	HLT Auto Write Telemetry	0.000
HGNE_FCHL_MP	HGNE/FCHL measure point	40.000
HGNE_HCFT_MP	HGNE/HCFT measure point	0.000
HGNE_HCNT_MP	HGNE/HCNT measure point	28.000
HGNE_HDEN_MP	HGNE/HDEN measure point	0.000
HGNE_HCNL_MP	HGNE/HCNL measure point	40.000
HIDI	Header Identifier Line 1	ARRAY INDUCTION - 6SCI
HID2	Header Identifier Line 2	LOGS
HIFI	Header Identifier Line 3	PLATFORM EXPRESS
HILT_SYSENS_BUFF_REQ	HILT SonVision buffering requirement	0.000 m
HILT_SYSENS_OPTION	HILT SonVision Option	2000.0 kg/m3
HILT_SAE_OPTION	HILT Sae Correction Option	OFF
HIS	HNGD Centered/Eccentered	ECCENTERED
HLEC	Header Legal Engineer	INCLUDE
HLSO	Logging Head Software	5700.2
HNCOD	HNGD Neutron detection	STAN
HNMAD	HNGD Mud Salt detection	0.000 m3/m3
HPHECUT	HLT effective Porosity Cutoff	0.000 m3/m3
HPHICUT	HLT Total Porosity Cutoff	0.000 m3/m3
HRCOC_CALI_MP	HRCOC/CALI measure point	-71.000
HRCOC_CMRT_MP	HRCOC/CMRT Measure Point	0.000
HRCOC_GR_MP	HRCOC/GR Measure Point	0.000
HRCOC_HV_MP	HRCOC/HV measure point	0.000
HRDI_SHR_MP	HRDI Short-Spacing Measure Point	0.000
HRHO	HLT Bulk Density Data Request	2
HRMD	HLT Tension Pickup Depth	13245.0 m
HRPM	HLT Telemetry Read Rate	1000.000
HRSO	Recording Service Mode	TSCD_SPEED_CORRECTION
HSIB	Hole Size Correction Option	YES
HSIS	Hole Size Correction Source	HSIZ
HTMO	STI Used HILT Abnormality	NO
HTROUT	HILT Victor Selection from ATTH cutoff	40.000 %
HVCO	HILT Victor Selection Option	AUTOMATIC
HVCS	Integrated Victor/Velocity Selection	AUTOMATIC
IHLC	Integrated Hole Volume Control	START
ILC1	Instrumentation Logic Line 1	
ILC2	Instrumentation Logic Line 2	
JATS	Job Events Auto Save	ALLOW
LAT	Latitude	
LCC	Logging Conditions Code	440
LCL	Logging Caliper Log	CALI m
LCUT	LDT Calibration Mode	WATER
LDC	Load Connect Type	
LDP	Load Power Source (Type)	7-46P
LEN	Nucleonic Latitude Label	
LOG	Log Measured From	KELLY BUSHING
LOGMODE	Log Recording Mode	MEASURED_DEPTH
LONG	Longitude	
LSHC	LS Hardware Loop Control	DISALLOW
LUL	Logging Unit Location	GRANDE PRAIRIE
LUN	Logging Unit Number	3028
MATR	Rock Matrix Type	SAND
MCOR	Mud Cake Correction Option	NO
MCSP	MCFL Measure Point	10.480
MDEN	Mud Density	1.000
MDSS	Mud Cake Sample Source	MEASURED
MDTE	Mud Cake Sample Temperature	15.333 degC
MFDI	Mud Filtrate Density	1000.000 kg/m3
MFES	Mud Filtrate Sample Source	MEASURED
MFST	Mud Filtrate Sample Temperature	16.111 degC
MFTC	MCFL Bit Contact Correction Coefficient	0.000 ohm
MFWC	MCFL Pad Contact Correction Coefficient	0.000 ohm
MICFL	High Contrast Correction Switch	NO
MLAT	Mud Log Latitude	29.700 deg
MLSS	Mode Log - SS	CLOSE
MLSS	Mode Log - MS	CLOSE
MRGU	Magnetic Mark Depth Units	FEET
MRT	Mud Processing Operation Mode	ON
MSS	Mud Sample Source	FLOWLINE
MST	Mud Sample Temperature	15.556 degC
MSTCO	Mud Weight Correction Option	NO
N		
NCTC	HNGD Neut Time Correction	APPLY
NAT	HNGD Density/Pe Algorithm Version	1.970
NMAT	HNGD Density Matrix	NORMAL
NPMF	HNGD Processing Mode	MEASURED
NRUC	HNGD Pile-Up Correction	NOT_APPLY
NTOD	HNGD Neutron Tool Rate	20.000
NTOD	HNGD Temperature Correction Option	ON m/m
OPER	Operating Company	
OS1	Other Services Line 1	ARRAY INDUCTION 6SCI
OS1	Other Services Line 2	COMPENSATED NEUTRON
OS1	Other Services Line 3	SPECTRAL DENSITY
OS1	Other Services Line 4	MAC ST-A GR
OS1	Other Services Line 5	LOGNET
PDBASDP	Pad Based Depth playback enabled	ON
PEF	Permanent Datum	GROUND LEVEL
PHMAX	HILT max porosity	0.350 m3/m3
PHSV	Programmable SS High Voltage	1000.0 V
PHVV	Programmable SS High Voltage	1000.0 V
PTCO	Pressure/Temperature Correction Option	NO
PUNI	Pressure Unit	SCI-413
R	Rectangle Header	
R10	ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST	
R11	Remark Line 11 DONE LOGGING TRAMMIT INTERVAL: XXXX, BACK ON SURFACE: XX:XX Remark Line 12 VISCOSITY WAS 80 HIGH, THAT IT WAS NOT MEASURED.	
R12	Remark Line 12	
R13	Remark Line 13	
R14	Remark Line 14	PRINTS: 2 FIELD, 5 FINAL
R15	Remark Line 15	RIG: ASTA #8
R16	Remark Line 16	CREW: T. RENNER AND D. MOYLES
R17	Remark Line 17	
R18	Remark Line 18	
R2	Remark Line 2	
R3	Remark Line 3	AIT RAN CENTERED IN COMPUTE STANDOFF MODE
R4	Remark Line 4	AIT RAN WITH TWO 25MM STANDOFFS
R5	Remark Line 5	
R6	Remark Line 6 HILT RAN CENTERED WITH 90 DEGREE OFFSET HARDWARE	
R7	Remark Line 7 BHC RAN CENTERED WITH THREE CMEZ AND ONE MCD-G	
R8	Remark Line 8	
R9	Remark Line 9 RM: 0.26 OHMS @ 24 C, RMF: 0.30 OHMS @ 18.00 C, RMC: 0.29 OHMS @ 18.00 C	
RA	Remark Line A	
RANG	STARTED IN HOLE: 00:30, FIRST ON BOTTOM: XX:XX, LAST ON BOTTOM: XX:XX RAN	N/A
RAV	HGNE_Resistivity Algorithm Version	1.070
RLAS	Range/Blank Label	
RMCS	Resistivity of Mud Cake Sample	0.300 ohm_m
RMFS	Resistivity of Mud Filtrate Sample	0.190 ohm_m
RMS	Resistivity of Mud Sample	0.250 ohm_m
RUN	Run Number	0502
RWAT	Resistivity of Connate Water	1.000 ohm_m
SBEC	Sample Bed Correction	NO
SECP_HILT	Section	2.000
SEDP	HILT Sensitive Exponent	2.000
SIMULATE_DELAY	Simulate Acquisition Delay	20.000 degC
SLAC	Simulate Acquisition Delay	0.000
SLAS	Slate/Probe Label	
SOCO	Sonde Correction	3.175 mm
SOO	Mandrel Offset Correction Options	NO
SOS	Service Order Number	1230857
SPALEAN	Spherically Focused	-200.000 mV
SPBE	Spot Depiction of Starting Point	0.000 ft
SPBM	Spot Depiction of Starting Point	0.000 m
SPHSALE	North Depiction of Starting Point	0.000 deg
SPOL	HILT SP Static	-120.000 mV
SPRI	HILT SP Reference Point	0.000 mV
SSHC	SS Hardware Loop Control	DISALLOW
STAT	State or Province	
STBO	HILT Stand Off Correction	30.000 degC
STEC	BTI Stack Correction	0.000
TAZI	Vertical Section Azimuth	0.000 deg
TCAB	TTI Tension Head Rate	1000.000
TCDI	TTI Cable Diameter	0.000
TCS	Time Circulation Stopped	12:30
TDD	TVD Driller	
TDL	TVD Logger	
TDD	Total Depth - Driller	13900.0 m
TDL	Total Depth - Logger	13900.0 m
TDL	DTB Telemetry Filter Rate	1000.000 ft
TDL	Total Depth - Logger	1000.000 m
TEMP	Temperature of Circulating Fluid	AUTO
TIND	Along-hole depth of Tie-In Point	0.000 m
TIND	North Departure of Tie-In Point	0.000 m
TLA	Tie-In Log Name	5911.0 m
TLI	Top Log Interval	5300.0 m
TLAB	Tomahawk Range Label	
TMAT	Telemetry Error Mag Report Interval (for SCP)	60 s
TOWN	Town	0.000
TREC	Cable Tension Reference	1000.0 lbf
TREC	TSCD Enable Corrected Depth Computation	YES
TVDS	Along-hole depth of Tie-In Point	0.000 ft
TWD	Temperature of Circulating Fluid	37.778 degC
UWID	Unique Well Identification Number	
VDEF	Vertical Depth Correction	3.048 m3
VERS	Controlled Hole Velocity	2000.0 m/s
WITN	Witness's Name	BRIAN HEBTER
WMUD	Weight of Mud	1000.0 kg/m3
WN	Well Name	SUNCOR NETLA X-77-60-13-12-W5
WTF	Well Trajectory Flag	DEVIATED

Format: PDTOO_5 Vertical Scale: 1/240 Graphics File Created: 13-Apr-1999 09:50

OP System Version: 9C0-413

MCM

HILTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	SGTN	9C0-413
DTCH	9C0-413		

Input DLIS Files

CUST	HILTD .014	FN:19	CUSTOMER	12-Apr-1999 06:45	1997.0 M

Output DLIS Files

	HILTD .008	FN:13		13-Apr-1999 00:50	

Input DLIS Files

CUST	HILTD .015	FN:19	CUSTOMER	12-Apr-1999 06:47	1997.0 M

Output DLIS Files

	HILTD .007	FN:12		13-Apr-1999 00:43	1997.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 46.59 m3
Cement Volume = 15.77 m3 (assuming 177.80 mm casing O.D.)
Computed from 1999.9 m to 535.5 m

OP System Version: 9C0-413

MCM

HILTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	SGTN	9C0-413
DTCH	9C0-413		

PIP SUMMARY

- Integrated Hole Volume Mtier Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS)		LDT Photoelectric Factor (PEF)		TLD Density Correction (HDRA)
1500000 (lbf)	0	0 (---)	10 /464	-.50 (G/C3) .50

HRES Caliper (HCAL)		TLD Bhl. Res. Formation Pe (PEFZ)		LDT Bulk Density Correction (DPHC)
125 (MM)	375	0 (---)	10 /464	-.50 (G/C3) .50

Gamma Ray (GR)		Tool/Tot. Stress	Alpha Processed Neutron Porosity (NPOR)	
0 (GAPI)	150	Corr (LSHV) 0.45	(V/V)	-0.15
		to STTA		
		Cable Drag		
LDT Caliber (CALI)		(LSHV)		
125 (MM)	375	Fms STTA 0.45	LDT Density Porosity (DPHI)	
		to STTT	(V/V)	-0.15
		Bulk Stretch	TLD Bhl. Res. Density Porosity (DPHZ)	
Rt Stw (SW)		(LSHV)		
125 (MM)	375	0 0.45	(V/V)	-0.15
		(M) .20		

MAIN PASS - DOLOMITE - MDEN 2850KG/M3

CALIPER CASING CHECK

CD

525

550

575

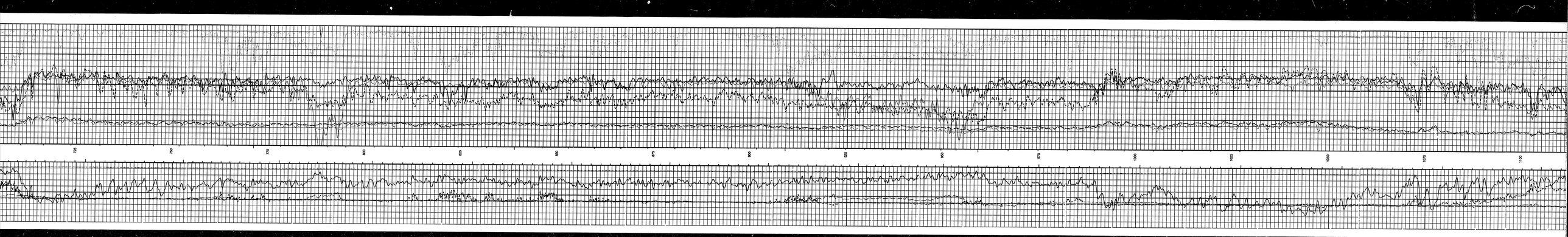
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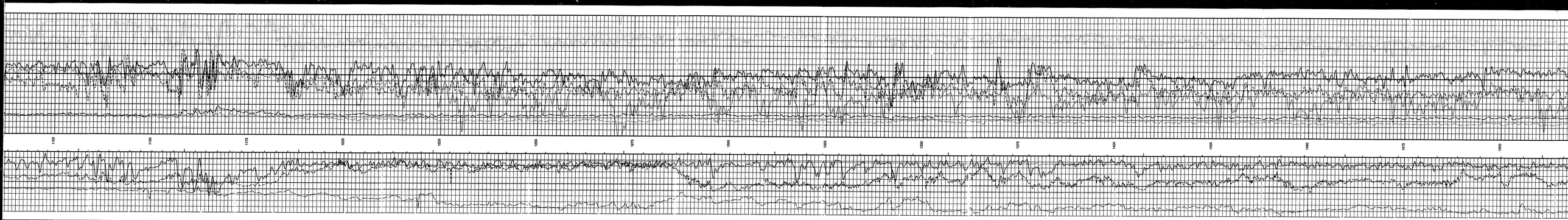
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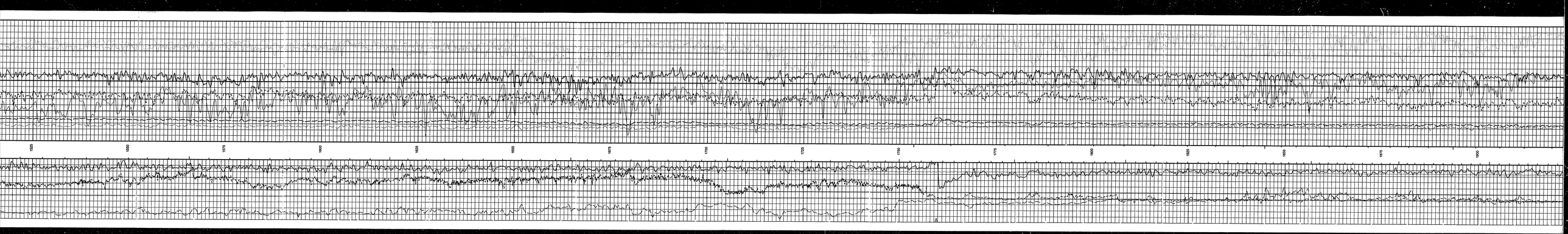
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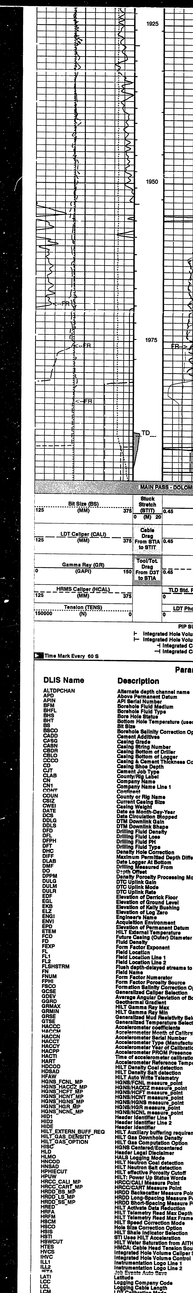
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Bit Size (BS)	Stuck Pipeto Alarm	TLD Std. Res. Density Porosity (DPHZ)
120 (MM) 372	0.45 (G/C3)	-0.15
0	3D 3D	

LDT Caliper (CALI)	Cable Drag	LDT Density Porosity (DPHZ)
120 (MM) 372	From STA 0.45 to 9TIT	-0.15

Gamma Ray (GR)	TensTen (TENS)	Alpha Processed Neutron Porosity (NPOR)
0 (GAPI) 150	From Eval 0 to 9TIA	0.45 (V/V) -0.15

HDMN Caliper (HCAL)	TLD Std. Res. Formation Fa (FEFZ)	LDT Bulk Density Correction (DRHO)
120 (IN) 372	0.45 (G/C3)	0.45 (G/C3) -.50

Tension (TENS)	LDT PhotoElectric Factor (PEF)	TLD Density Correction (HDRA)
1500000 (lb) 0	0 19.480	(K/M3) -.50

Time Mark Every 60 S

PIP SUMMARY
- Integrated Hole Volume Minor Plp Every 0.1 M3
- Integrated Hole Volume Major Plp Every 1 M3
- Integrated Cement Volume Minor Plp Every 0.1 M3
- Integrated Cement Volume Major Plp Every 1 M3

Parameters

DLIS Name	Description	Value
ALTDPCHAN	Alternate depth channel name	TVDE
APIC	Above Permanent Datum	R.KB
APIN	API Serial Number	0
BHCO	Borehole Fluid Type	LIGHT
BHS	Borehole Salinity	WATER
BHT	Bore Hole Status	OPEN
BHV	Borehole Temperature (used in calculations)	40.000 degC
BS	Bit Size	372.0 mm
CBCO	Borehole Salinity Correction Option	NO
CBFD	Casing Diameter	0
CBFI	Casing Fluid	0
CBSH	Casing Wiring Number	0
CBTH	Casing Thickness	0
CBTO	Casing Bottom of Logger	535.0 m
CDCO	Caliper Drag Correction Option	537.0 m
CDI	Caliper Drag Distance	0.45 m
CDS	Caliper Drag Start	539.0 m
CLAB	Caliper Label	Prim-pr
CN	Company Name	PRIMARY
CNH	Company Name Line 1	SUNCOR ENERGY INC.
CNW	Company Name Line 2	
COUN	Country or Reg Name	NORTHWEST TERRITORIES
CREZ	Current Casing Size	244.5 mm
DAFD	Drilling Mud Density	1.200 kg/m
DATE	Date Created	13-Apr-1999
DCD	Date Circulation Stopped	06-FEB-1999
DDD	DTM Downhole Date	06-FEB-1999
DFD	Drilling Fluid Shape	AUTOMATIC
DFL	Drilling Fluid Level	0
DFM	Drilling Fluid Type	1.200 kg/m3
DFPH	Drilling Fluid PH	7.500 ohm
DFT	Drilling Fluid Type	10.000
DFV	Drilling Fluid Viscosity	POTASSIUM SULPHATE
DHC	Density Hole Correction	0.000
DIFF	Maximum Permitted Depth Difference	0.500 m
DMF	Drilling Measured From	26-FEB-1999
DO	Drilling Operator	KELLY BUSHING
DPHZ	Density Porosity Processing Mode	2.650 m
DSLE	Depth Scale	AUTOMATIC
DSLO	DTD Uplink Mode	AUTO
DSTA	DTD Uplink Rate	9600BPS
EGL	Elevation of Derrick Floor	624.9 m
ELEV	Elevation of Kelly Bushing	624.9 m
ELZ	Elevation of Kelly Bushing	624.9 m
ELZ	Elevation of Log Zero	624.9 m
ENGI	Engineer Name	TONY DANIELS
ERU	Acquisition Environment	FTB, TELEMETRY
ERU	Elevation of Permanent Datum	624.9 m
FBC	Fluid Base Correction	0.000 m
FD	Fixture Density (Outer) Diameter	127.0 mm
FDP	Fluid Density	1.200 kg/m3
FE	Fluid Density Exponent	2.000
FL1	Field Location Line 1	60.0N 123.4W (SURFACE LOCATION)
FL2	Field Location Line 2	60.0N 123.4W (SURFACE LOCATION)
FLSHSTRM	Flush depth-delayed streams to output at end	0.000
FNUM	Field Number	NO
FPW	Form Factor Hoesaler	1.000
FRIC	Form Factor Porosity Source	DPHZ
GCSO	Geographic Coordinate System Option	NAD27
GDEV	Generalized Deviation Option	NO
GDEV	Average Angular Deviation of Borehole from Normal	0.000 deg
GMAT	Gamma Ray Matrix	0.000 gAPI
GRMAX	HILT Gamma Ray Max	150.0 gAPI
GRMIN	HILT Gamma Ray Min	0.000 gAPI
GTSE	Generalized Serial Reliability Selection	NO
GTSE	Generalized Temperature Selection	HSTB, HTEM
HACC	Accelerometer Calibration	Nov-98
HACCN	Accelerometer Serial Number	0
HACCS	Accelerometer Serial Number	350
HACCT	Accelerometer Type (Manufacturer Code)	0
HACFP	Accelerometer Unit of Calibration	0
HACFP	Accelerometer PROM Presence	PRESENT_FILE
HACT	Accelerometer Calibration Type	9000/9700
HCCO	Accelerometer Temperature	0.000 degC
HDCCO	HILT Density Coal detection	2000.0 kg/m3
HDCS	HILT Density Shale detection	2100.0 kg/m3
HFAW	HILT Auxiliary tooling requirement	0.000
HGNB_FCN1_MP	HGNB/FCN1_measure_point	40.000 mm
HGNB_FCN2_MP	HGNB/FCN2_measure_point	40.000 mm
HGNB_HCNT_MP	HGNB/HCNT_measure_point	40.000 mm
HGNB_HDEN_MP	HGNB/HDEN_measure_point	40.000 mm
HGNB_HDNC_MP	HGNB/HDNC_measure_point	55.000 mm
HGNB_HDNP_MP	HGNB/HDNP_measure_point	55.000 mm
HGSI	Header Serial Instrument	0
HIDI	Header Identifier Line 1	ARRAY INDUCTION
HIDI	Header Identifier Line 2	LDS
HIDI	Header Identifier Line 3	PLATFORM EXPRESS
HILT_EXTERN_BUFF_REQ	HILT Auxiliary tooling requirement	0.000
HILT_GAS_DENSITY	HILT Gas Downhole Density	0.000 kg/m3
HILT_GAS_OPTION	HILT Gas Downhole Option	OFF
HLD	Elevation of Derrick Floor	ECCENTERED
HLDC	Header Legal Description	WATER
HMCO	HILT Logging Mode	STAN
HNEU	HILT Neutron tool detection	0.450 m3/m3
HNSU	HILT Neutron Shale detection	0.300 m3/m3
HPCC	HILT effective Porosity Coeff	0.000 m3/m3
HPCU	HILT Power Up Status Words	0.000
HRDC	HRDC/CART_measure_point	-71.000 mm
HRDC_CART_MP	HRDC/CART_MP	0.000
HRDC_BS_MP	HRDC/ Backscatter Measure Point	0.000 mm
HRDC_DS_MP	HRDC/ Density Source Measure Point	0.000 mm
HRDC_SS_MP	HRDC/ Shield Detector Measure Point	0.000 mm
HRES	HILT Adhesive Gate Resolution	0.000
HRFA	HILT Reference Frame Azimuth	12.000 deg
HRFM	HILT Reference Frame	MRWW
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSI	Hole Size Correction Option	0.000
HSTI	STN Inclination Selection	NO
HTEM	Temperature	0.000 degC
HTES	HILT Water Solution and PRESENTATIONS AR PER CLIENT REQUEST	0.000 %
HTSC	HRDC Dead Time Correction	NO_HTEN
HVCC	Integrated Hole Volume Correction Selection	AUTOMATIC
ILL1	Instrumentation Logo Line 1	SNAP
ILL2	Instrumentation Logo Line 2	
IMA	Inch Events Count	ALLOW
LATI	Latitude	
LCDC	Logging Concentry Code	440
LCMN	Logging Company Name	7215 m
LCPI	LPI Calibration Mode	WATER
LDRC	LD Reviewed Record	
LUN	Logging Unit Location	DISALLOW
LUL	Logging Unit Number	GRANDE PRAIRIE
LWI	Log Measured From	2020 m
LOGMODE	Depth Logging Mode	DOLO
MCMP	Mud Cake Compaction	0.000
MCSH	MCFL Measure Point	10.480 mm
MCSI	Mud Cake Sample Source	NATU
MCSS	Mud Cake Sample Source	MEASURED
MLAB	Mud Cake Temperature	18.333 degC
MFEI	Mud Cake Density	2650.0 kg/m3
MFST	Mud Filtrate Sample Source	MEASURED
MHCI	Mud Filtrate Resistivity Temperature	18.111 degC
MHCI	MCFL Bit Contrast Correction Coefficient	0.000 ohm
MHCI	MCFL Bit Contrast Correction Coefficient	0.000 ohm
MHCS	MCFL High Contrast Correction Switch	NO
MKO	Maximum Hole Deviation	29.700 deg
MLSI	Mud Logging Unit	CLOSE
MLSS	Mode Loop - SS	CLOSE
MMDU	Magnetic Mark Depth Units	CLOSE
MMSI	MCFL Processing Operation Mode	ON
MRST	Mud Sample Source	FLOWLINE
MWCO	Mud Weight Correction Option	NO
NDTC	Neutron	0.000 degC
NDTC	HNDC Dead Time Correction	APPLY
NMT	HNDC Neutron Porosity Algorithm Version	2.000
NMTC	HILT Nuclear Mud Type	NOBARITE
NPHC	HNDC Porosity Correction	STONE
NPHO	HNDC Pile-Up Rejection	NOT_ACTIVE
NSAR	HNDC Depth Sampling Rate	25.400 mm
OFCS	Other Correction Service Correction Option	NO
OFSS	Other Services Line 1	ARRAY INDUCTION
OS1	Other Services Line 2	COMPENSATED NEUTRON
OS2	Other Services Line 3	DUAL DENSITY
OS3	Other Services Line 4	MICRO LOG
OS4	Other Services Line 5	LDS
PDAT	Alternate depth channel playback enabled	
PDMN	Permanent Datum	GROUND LEVEL
PHMAX	HILT max porosity	0.350 m3/m3
PLAV	Programmable LB High Voltage	1000.0 V
PLAV	Programmable LB Low Voltage	1000.0 V
PTOO	Pressure/Temperature Correction Option	NO
PVER	Program Version	SCO-413
RB	Relative Bearing	180.0 deg
R10	Remark Line 10	SNC RAN CENTERED WITH THREE CMCZ AND ONE HICD-G
R11	Remark Line 11	
R9	Remark Line 9	RM1: 0.28 OHMS @ 75.0 DEG. F RM2: 0.30 OHMS @ 74.0 DEG. F RMC: 0.29 OHMS @ 16.0 DEG. C
R12	Remark Line 12	STARTED IN HOLE at 0945, FIRST OH BOTTOM: XX:XX, LAST OH BOTTOM: XX:XX
RANG	Range	NONE
RAPA	HILT Resistivity Algorithm Version	1.000
RAUS	Resistivity of Mud Cake Sample	0.200 ohm.m
RMCS	Resistivity of Mud Cake Sample	0.200 ohm.m
RMFS	Resistivity of Mud Filtrate Sample	0.180 ohm.m
RUN	Run Number	1
RWS	Resistivity of Mud Sample	0.180 ohm.m
SECT	Section	26
SECT	Borehole Salinity Source	SOCH
SEQF, HILT	Sequence	1
SHT	HILT Schumpton Exponent	2.000
SLATE_DELAY	Surface Hole Temperature	20.000 degC
SLAB	Surface Hole Temperature Label	0.000
SOCH	State/Province Label	
SSTO	Standoff Distance	3.173 mm
STCO	Service Company Correction Option	NO
STN	Service Order Number	1230375
STNC	HILT SP Chan	0.000 mV
SPEE	Speed Selection of Starting Point	7.000 m/min
SPEE	Speed Selection Logging of Start	1800 ft/h
SPND	Depth Reference Starting Point	535.0 m
SPNDLE	HILT SP Bias	-120.000 mV
SRVC	TCD of Starting Point	0.000 m
STAT	Status of Equipment	DISALLOW
STEM	State or Province	
STRM	Surface Temperature	20.000 degC
TBHC	Time Bore Hole Circ	0.000 hr
TDR	Vertical Section Depth	0.000 deg
TEM	DTB Telemetry Baud Rate	1000kbit
TEM	Tool Configuration	
TEMP	Time Circulation Stopped	12:30
TETY	Tell Consent Type	
TDD	Total Depth - Driller	1990.0 m
TDL	Total Depth - Logger	1990.0 m
TIME	DTB Telemetry Data Rate	1000kbit
TIED	East Departure of Tie-In Point	0.000 m
TIED	North Departure of Tie-In Point	0.000 m
TIED	North Departure of Tie-In Point	0.000 m
TIVD	TVD of Tie-In Point	581.0 m
TLAB	Tool Configuration Option	21.00 m
TLI	Top Log Interval	535.0 m
TLLAB	Township/Longitude Label	
TMD	Telemetry Error Mag Report Interval (for SCP)	60 s
TOWN	Township	60 s
TREF	Cable Tension Reference	1495 lbf
TSEC	TECH Sedds Corrected Depth Computation	YES
TWS	Telemetry Status Report Interval (for IO Mon)	YES
TWSS	Tool Wireline Speed Selection	27.778 degC
UWI	Unique Well Identification Number	
VCSC	Cumulated Cement Volume	10.774 m3
VCSC	Cumulated Cement Volume	10.774 m3
WBNAME	Witness Name	BRIAN HEISTEK
WMUD	Mud Weight	1200.0 kg/m3
WPP	Well Name	SUNCOR NETLX K-77-60-06-120-13-W5-00
WTS	Well Telemetry Flag	NCW

Format: PORO_S Vertical Scale: 1:240 Graphics File Created: 13-Apr-1999 09:43

OP System Version: 9C0-413

HILTD	9C0-413	LDTD	9C0-413
DTCA	9C0-413	SGTN	9C0-413
DTCH	9C0-413		

Input DLIS Files

CUST	HILTD .015	FN:19 CUSTOMER	12-Apr-1999 00:47	1997.0 M 519.4 M

Output DLIS Files

HILTD .007	FN:12	13-Apr-1999 09:43

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Trm Cal Mag. & Phase

Master: 21-DEC-1998 10:54 Before: 28-FEB-1999 20:20

Thru Cal Magnitude - 5	0	0.8203	0.8192	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.048	1.057	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.293	1.302	N/A	N/A	N/A	V
Thru Cal Mag Noise - 5	0	0.0004	0.7042	N/A	N/A	N/A	V
Thru Cal Magnitude - 4	0	1.308	1.318	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.551	1.562	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.801	1.810	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.953	1.955	N/A	N/A	N/A	V
Phase - 5	0	51.84	52.53	N/A	N/A	N/A	DEG
Phase - 6	0	50.94	51.52	N/A	N/A	N/A	DEG
Phase - 7	0	49.61	50.19	N/A	N/A	N/A	DEG
Phase - 4	0	48.61	47.54	N/A	N/A	N/A	DEG
Phase - 5	0	46.33	46.82	N/A	N/A	N/A	DEG
Phase - 6	0	45.40	45.87	N/A	N/A	N/A	DEG
Phase - 7	0	45.40	38.97	N/A	N/A	N/A	DEG
Phase - 7	0	34.99	34.99	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Auxiliary

Master: 21-DEC-1998 10:54 Before: 28-FEB-1999 20:20

Aft Cal Bits 1 -	0	994.1	993.4	N/A	N/A	N/A	MV
Aft Cal Bits 2 -	0	0.1830	0.1464	N/A	N/A	N/A	MV
Aft Temp Curve Zero	0.9150	0.9150	0.9150	N/A	N/A	N/A	V
Aft Temp Curve Zero	0	0.0000149	0.0000149	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Test Loop Gain Correction

Master: 21-DEC-1998 10:54

Test Loop Gain Magnitude - 0	0	1.036	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.029	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.084	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.030	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9814	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.011	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.011	N/A	N/A	N/A	N/A	V
Phase - 0	0	0.4720	N/A	N/A	N/A	N/A	DEG
Phase - 1	0	-0.2340	N/A	N/A	N/A	N/A	DEG
Phase - 2	0	-0.04181	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	-0.08359	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	-0.08548	N/A	N/A	N/A	N/A	DEG
Phase - 5	0	-0.1184	N/A	N/A	N/A	N/A	DEG
Phase - 6	0	-0.1184	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	-0.1184	N/A	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Bomb Error Correction

Master: 21-DEC-1998 10:54

R Bomb Error Correction - 0	0	-58.52	N/A	N/A	N/A	N/A	MMM
R Bomb Error Correction - 1	0	9.482	N/A	N/A	N/A	N/A	MMM
R Bomb Error Correction - 2	0	113.9	N/A	N/A	N/A	N/A	MMM
R Bomb Error Correction - 3	0	5.439	N/A	N/A	N/A	N/A	MMM
R Bomb Error Correction - 4	0	16.08	N/A	N/A	N/A	N/A	MMM
R Bomb Error Correction - 5	0	12.15	N/A	N/A	N/A	N/A	MMM
R Bomb Error Correction - 6	0	9.497	N/A	N/A	N/A	N/A	MMM
R Bomb Error Correction - 7	0	-0.6674	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 0	0	7.722	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 1	0	-7.22	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 2	0	-38.81	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 3	0	-22.61	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 4	0	-22.45	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 5	0	11.79	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 6	0	11.299	N/A	N/A	N/A	N/A	MMM
X Bomb Error Correction - 7	0	9.3173	N/A	N/A	N/A	N/A	MMM

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Gain Correction

Master: 21-DEC-1998 10:54

Coarse - Mag. Real, Imag - 0	0	1.032	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 1	0	1.032	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 2	0	1.052	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 3	0	1.051	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 2	0	1.051	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Summary

Master: 21-DEC-1998 20:24

SS Window Ratio	0.8934	0.8934	0.8801	N/A	N/A	N/A	
SS Window Sum	16300	N/A	16360	N/A	N/A	N/A	CPS
LS Window Ratio	0.8934	0.8934	0.8801	N/A	N/A	N/A	
LS Window Sum	16300	N/A	16360	N/A	N/A	N/A	CPS
LS Window Ratio	0.2809	N/A	0.2901	N/A	N/A	N/A	
LS Window Sum	1448	N/A	1448	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations

Before: 28-FEB-1999 20:24

SS PM High Voltage (Command)	2069	NC	2110	N/A	N/A	N/A	V
SS PM High Voltage (Monitor)	2069	NC	2110	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1882	NC	1918	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration

Before: 28-FEB-1999 20:24

SS Crystal Resolution	13.58	N/A	14.00	N/A	N/A	N/A	%
LS Crystal Resolution	8.460	N/A	8.178	N/A	N/A	N/A	%

5S Crystal Resolution	8.462	N/A	8.178	N/A	N/A	%
LS Crystal Resolution	11.201	N/A	10.97	N/A	N/A	%

High resolution Integrated Logging Tool-OTS Wafelle Calibration - MCFL Calibration
Before 28-FEB-1999 20:40

Raw BD Reability	3875	N/A	3851	N/A	N/A	OHMM
Raw SD Reability	3875	N/A	3851	N/A	N/A	OHMM
Raw Mud Resistivity	3950	N/A	3925	N/A	N/A	OHMM

High resolution Integrated Logging Tool-OTS Wafelle Calibration - HLTC Caliper Calibration
Before 28-FEB-1999 20:56

HLT Caliper Zero Measurement	223.2	N/A	219.3	N/A	N/A	MM
HLT Caliper Plus Measurement	304.8	N/A	300.9	N/A	N/A	MM

High resolution Integrated Logging Tool-OTS Wafelle Calibration - Detector Calibration
Before 28-FEB-1999 20:23

Gamma Ray Background	30.00	N/A	5.564	N/A	N/A	GAPI
Gamma Ray Calibrated	186.7	N/A	186.7	N/A	17.69	GAPI
Gamma Ray Calibrated	165.0	N/A	165.0	N/A	15.00	GAPI

High resolution Integrated Logging Tool-OTS Wafelle Calibration - Zero Measurement
Master: 28-NOV-1998 16:06 Before: 28-FEB-1999 20:20

CPS Background	25.40	26.66	N/A	N/A	3.810	CPS
CPTC Background	25.58	25.64	N/A	N/A	4.259	CPS

High resolution Integrated Logging Tool-OTS Wafelle Calibration - Accelerometer Calibration
Before: 28-FEB-1999 20:02

Z-Axis Acceleration	9.810	N/A	9.808	N/A	N/A	M/S2

High resolution Integrated Logging Tool-OTS Master Calibration - Inversion results
Master: 28-FEB-1999 19:04

Rho Aluminium	2599	2603	--	--	--	K/M3
Rho Magnesium	1606	1603	--	--	--	K/M3
Pe Aluminium	2.883	2.883	--	--	--	
Pe Magnesium	3.050	3.050	--	--	--	

High resolution Integrated Logging Tool-OTS Master Calibration - Deviation Summary
Master: 28-FEB-1999 19:04

BS Average Deviation	0	0.4005	--	--	--	%
BS Mat Deviation	0	1.059	--	--	--	%
SS Average Deviation	0	0.7244	--	--	--	%
SS Mat Deviation	0	1.916	--	--	--	%
LD Average Deviation	0	0.4005	--	--	--	%
LD Mat Deviation	0	1.315	--	--	--	%

High resolution Integrated Logging Tool-OTS Master Calibration - Tank Measurement
Master: 28-NOV-1998 16:06

Thermal Near Corr. (Tank)	6551	5564	--	--	--	CPS
Thermal Far Corr. (Tank)	2783	2364	--	--	--	CPS
CNTC/CFTC (Tank)	2.358	2.358	--	--	--	

Litho Density - D Wafelle Calibration - Background Measurement
Master: 24-FEB-1999 13:24 Before: 28-FEB-1999 20:03

LU Background	49.05	49.68	19.47	N/A	1.000	CPS
LS Background	77.02	79.59	74.05	N/A	1.000	CPS
LB Background	57.00	57.67	56.03	N/A	1.000	CPS
LTH Background	5.500	5.573	5.586	N/A	0.3000	CPS
LTL Background	5.500	5.573	5.586	N/A	0.3000	CPS
SSI Background	11.00	11.49	11.71	N/A	0.3000	CPS

Litho Density - D Wafelle Calibration - Tool Quality Control Information HV
Master: 24-FEB-1999 13:24 Before: 28-FEB-1999 20:03

LSHV Background	1922	1920	1924	N/A	N/A	V
SSHV Background	1920	1921	1911	N/A	N/A	V

Litho Density - D Wafelle Calibration - Detector Resolution From CNG Measurements
Master: 24-FEB-1999 13:24 Before: 28-FEB-1999 20:03

LS Resolution Background	8.000	8.683	8.741	N/A	N/A	
SS Resolution Background	8.000	8.739	8.761	N/A	N/A	

Litho Density - D Wafelle Calibration - Caliper Calibration
Before: 28-FEB-1999 20:24

Caliper Small Ring	203.2	N/A	203.1	N/A	N/A	MM
Caliper Large Ring	304.8	N/A	307.9	N/A	N/A	MM

Litho Density - D Wafelle Calibration - Aluminium Measurement
Master: 24-FEB-1999 13:48

LU Aluminium	60.00	60.07	--	--	--	CPS
LU Aluminium	138.0	141.1	--	--	--	CPS
LS Aluminium	185.0	189.6	--	--	--	CPS
LTH Aluminium	53.50	56.98	--	--	--	CPS
SSI Aluminium	99.00	101.38	--	--	--	CPS
SSI Aluminium	260.0	261.6	--	--	--	CPS

Litho Density - D Master Calibration - Lithology Measurement
Master: 24-FEB-1999 13:53

LL Iron	80.00	82.51	--	--	--	CPS
LS Iron	120.0	120.1	--	--	--	CPS
LB Iron	100.0	98.61	--	--	--	CPS
LTH Iron	50.00	54.00	--	--	--	CPS
SSI Iron	170.0	168.8	--	--	--	CPS
SS2 Iron	245.0	237.1	--	--	--	CPS

Litho Density - D Master Calibration - Spectrum Quality Ratios
Master: 24-FEB-1999 13:58

GRSR Calculated	0.6500	0.6597	--	--	--	
GRSR Calculated	0.7200	0.7159	--	--	--	
GRLI Calculated	0.3800	0.3446	--	--	--	
CLRI Calculated	1.380	1.395	--	--	--	
GR Calculated	1.000	1.012	--	--	--	

Scintillation Gamma Ray - N Wafelle Calibration - Detector Calibration
Before: 28-FEB-1999 20:23

Gamma Ray Background	155.4	N/A	155.4	N/A	14.13	GAPI
Gamma Ray Calibrated	165.0	N/A	165.0	N/A	15.00	GAPI

The GLS-IU source activity is acceptable.

The HGNS Inspection Master Calibration was done with the following parameters :

NCT-B Water Temperature 16.8 DEGC
Thermal Housing Size 85.864 MM.

High resolution Integrated Logging Tool-OTS / Equipment Identification

Sensor Equipment

Array Induction Tool - H	AIT - H	
Array Induction Tool - H	AIT - H	261
HLT High-Resolution Mechanical Sonde	HRMS - A	564
HLT Pex Gamma-ray Device	HRGD - B	866
HLT Nuclear Short-Spacing Detector	HLT -	
HLT Nuclear Short-Spacing Detector	HLT -	
HLT Nuclear Long-Spacing Detector	HLT -	
Micro Cylindrically Focused Log Device	MCFL -	

Auxiliary Equipment

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Electronics Calibration Check - Thru Cal Map & Press

Idx	Phase	Value	Thru Cal Map Error %	Value	Nominal	Idx	Phase	Value	Press DDS	Nominal
0	Master	0.6073		0.6000	61.64					71.00
	Before	0.6132			62.63					
1	Master	1.046		1.070	52.64					70.00
	Before	1.257			51.52					
2	Master	0.4172		0.4200	47.28					66.00
	Before	0.4231			47.00					
3	Master	0.6884		0.7040	48.81					65.00
	Before	0.7042			47.04					
4	Master	1.309		1.337	40.83					59.00
	Before	1.318			40.92					
5	Master	1.595		1.956	38.47					57.00
	Before	1.913			38.45					
6	Master	1.801		1.958	38.48					57.00
	Before	1.918			38.87					
7	Master	1.353		1.413	34.99					53.00
	Before	1.380			34.98					

Master: 21-DEC-1998 13:54 Before: 28-FEB-1999 20:28

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Electronics Calibration Check - Auxiliary

Phase	ATI-SPA Pos. V/V	Value	Nominal	ATI-SPA Zero MV	Value	Nominal
Master		994.1	1000	0	0.1808	
Before		989.4	1000	0	0.1464	
Ref.	900.0	900.0	900.0	0.0000	0.0000	0.0000
Tolerance	2.000	2.000	2.000	0.0000	0.0000	0.0000

Phase	ATI-Temperature Pos. V	Value	Nominal	ATI-Temperature Zero V	Value	Nominal
Master		0.6697	0.6000		0.0001	0.0000
Before		0.6600	0.6000		0.0000	0.0000
Ref.	0.6000	0.6000	0.6000	0.0000	0.0000	0.0000
Tolerance	0.0100	0.0100	0.0100	0.0000	0.0000	0.0000

Master: 21-DEC-1998 13:54 Before: 28-FEB-1999 20:22

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Test Loop-Gain Correction

Idx	Value	Test Loop-Gain Magnitude V	Value	Nominal	Phase DDS	Value	Nominal
0	1.026		0.4700				
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
1	1.028		1.050	-0.500	-0.2340	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
2	1.034		1.050	-0.500	-0.04187	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
3	1.027		1.050	-0.500	0.001668	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
4	1.013		1.050	-0.500	-0.009008	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
5	0.9914		1.050	-0.500	-0.01154	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
6	1.003		1.050	-0.500	0.01381	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
7	1.014		1.050	-0.500	-0.01452	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Sonde Error Correction

Idx	Value	S-Sonde Error Correction MM/M	Value	S-Sonde Error Correction MM/M
3	-58.52		133.1	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
1	149.0		-37.20	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
2	114.2		-58.81	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
0	63.31		-22.37	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
4	24.08		22.65	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
5	12.18		11.79	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
7	-0.6872		0.2173	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Mud Gain Correction

Idx	Value	Coarse / Mag. Res. Imag.	Value	Fine / Mag. Res. Imag.
3	1.052		1.050	
		0.8000 Minimum	1.000 Nominal	1.400 Maximum
1	1.052		1.050	
		0.8000 Minimum	1.000 Nominal	1.400 Maximum
2	1.052		1.050	
		0.8000 Minimum	1.000 Nominal	1.400 Maximum

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Mud Resistivity Calibration

Phase	SS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.9900	Before		0.4800	Before		0.2001
	0.8000 Minimum	1.000 Nominal		0.8000 Minimum	1.000 Nominal		0.8000 Minimum	1.000 Nominal
						Before	0.8750	0.2009
							0.8000 Minimum	1.000 Nominal
Phase	SS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		19360	Before		1.995	Before		11720
	1000 Minimum	10000 Nominal		1000 Minimum	10000 Nominal		1000 Minimum	10000 Nominal

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Mud Resistivity High Voltages Calibration

Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before	3118		Before	1879	1998
	2000 Minimum	2500 Nominal		2000 Minimum	2500 Nominal
					2500 Maximum

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Delayed Gamma Ray Calibration

Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before	13.58	14.58	Before	8.179	10.97
	12.00 Minimum	14.00 Nominal	8.462 Minimum	8.462 Nominal	10.97 Minimum	11.20 Nominal
						11.201 Maximum

Before 28-FEB-1999 20:24

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Raw BD Reability

Phase	Raw BD Reability OHMM	Value	Phase	Raw SD Reability OHMM	Value	Phase	Raw BS Reability OHMM	Value
Before		3875	Before		3851	Before		3834
	3000 Minimum		3500 Nominal		4000 Maximum	3000 Minimum	3500 Nominal	4000 Maximum

Before 28-FEB-1999 20:40

High resolution Integrated Logging Tool-OTS Wafelle Calibration
HLT Caliper Calibration

Phase	HLT Caliper Zero Measurement MM	Value	Phase	HLT Caliper Plus Measurement MM	Value
Before	219.2	219.3	Before	304.8	300.9
	190.4 Minimum	209.4 Nominal	228.4 Maximum	285.8 Minimum	304.8 Nominal	361.3 Maximum

Before 28-FEB-1999 20:56

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Delayed Gamma Ray

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Log - Bkgd GAPI	Value	Phase	Gamma Ray Calibrated GAPI	Value
Before	30.00	5.564	Before	186.7	181.2	Before	186.7	186.7
	0.0000 Minimum	30.00 Nominal	60.00 Maximum	0.0000 Minimum	186.7 Nominal	1800 Maximum	165.0 Minimum	186.7 Nominal

Before 28-FEB-1999 20:23

High resolution Integrated Logging Tool-OTS Wafelle Calibration
Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		25.40	Master		25.58
Before		26.66	Before		25.64
	25.00 Minimum	25.40 Nominal	25.80 Maximum	25.00 Minimum	25.58 Nominal	26.00 Maximum

Master: 28-NOV-1998 16:06 Before: 28-FEB-1999 20:23

High resolution Integrated Logging Tool-OTS
Vehicle Calibration
Accelerometer Calibration

Phase	Z-Axis Acceleration M/S2	Value
Before		9.808
	9.810 Minimum	9.810 Nominal

Before: 28-FEB-1999 20:02

High resolution Integrated Logging Tool-OTS Master Calibration
Electronics Calibration Check - Thru Cal Map & Press

Idx	Phase	Value	Thru Cal Map Error %	Value	Nominal	Idx	Phase	DDS	Nominal
0	Master	0.6073		0.6000	61.64				71.00
	Before	1.046		1.070	52.64				70.00
1	Master	0.4172		0.4200	47.28				66.00
	Before	0.6884		0.7040	48.81				65.00
2	Master	1.309		1.337	40.83				59.00
	Before	1.595		1.956	38.47				57.00
3	Master	1.801		1.958	38.48				57.00
	Before	1.353		1.413	34.99				53.00
4	Master	1.380			34.98				
		0.6000 % Minimum	1.000 Nominal	1.400 % Maximum	Nom +/- 40.00 Minimum			Nom +/- 40.00 Maximum	

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-OTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	ATI-SPA Pos. V/V	Value	Nominal	ATI-SPA Zero MV	Value	Nominal
Master		994.1	1000	0	0.1808	
Before		989.4	1000	0	0.1464	
Ref.	900.0	900.0	900.0	0.0000	0.0000	0.0000
Tolerance	2.000	2.000	2.000	0.0000	0.0000	0.0000

Phase	ATI-Temperature Pos. V	Value	Nominal	ATI-Temperature Zero V	Value	Nominal
Master		0.6697	0.6000		0.0001	0.0000
Before		0.6600	0.6000		0.0000	0.0000
Ref.	0.6000	0.6000	0.6000	0.0000	0.0000	0.0000
Tolerance	0.0100	0.0100	0.0100	0.0000	0.0000	0.0000

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-OTS Master Calibration
Test Loop-Gain Correction

Idx	Value	Test Loop-Gain Magnitude V	Value	Nominal	Phase DDS	Value	Nominal
0	1.026		0.4700				
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
1	1.028		1.050	-0.500	-0.2340	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
2	1.034		1.050	-0.500	-0.04187	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
3	1.027		1.050	-0.500	0.001668	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
4	1.013		1.050	-0.500	-0.009008	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
5	0.9914		1.050	-0.500	-0.01154	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
6	1.003		1.050	-0.500	0.01381	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum
7	1.014		1.050	-0.500	-0.01452	0.000	0.000
		0.4600 Minimum	1.000 Nominal	1.400 Maximum	0.000 Minimum	0.000 Nominal	0.000 Maximum

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-OTS Master Calibration
Sonde Error Correction

Idx	Value	S-Sonde Error Correction MM/M	Value	S-Sonde Error Correction MM/M
3	-58.52		133.1	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
1	149.0		-37.20	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
2	114.2		-58.81	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
0	63.31		-22.37	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
4	24.08		22.65	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
5	12.18		11.79	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum
7	-0.6872		0.2173	
		-88.00 Minimum	118.0 Nominal	280.0 Maximum

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-OTS Master Calibration
Mud Gain Correction

Idx	Value	Coarse / Mag. Real. Imag.	Value	Fine / Mag. Real. Imag.
3	1.052		1.050	
		0.8000 Minimum	1.000 Nominal	1.400 Maximum
1	1.052		1.050	
		0.8000 Minimum	1.000 Nominal	1.400 Maximum
2	1.052		1.050	
		0.8000 Minimum	1.000 Nominal	1.400 Maximum

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration					
Inversion results					
Phase	Rho Aluminium K/M3	Value	Phase	Rho Magnesium K/M3	Value
Master		2603	Master		1685
	2586 (Minimum) 2596 (Nominal) 2606 (Maximum)			1676 (Minimum) 1686 (Nominal) 1696 (Maximum)	
Phase	Pe Aluminium	Value	Phase	Pe Magnesium	Value
Master		2.525	Master		2.635
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)			2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	
Master: 23-FEB-1999 19:04					

High resolution Integrated Logging Tool-DTS Master Calibration								
Deviation Summary								
Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.4205	Master		0.7344	Master		0.6479
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)	
Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		1.289	Master		1.925	Master		1.315
	-1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			-2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			-3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	
Master: 23-FEB-1999 19:04								

High resolution Integrated Logging Tool-DTS Master Calibration								
Tank Measurement								
Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5564	Master		2394	Master		2.324
	5000 (Minimum) 6031 (Nominal) 7200 (Maximum)			2075 (Minimum) 2793 (Nominal) 3125 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	
Master: 28-NOV-1998 18:06								

Litho Density - D / Equipment Identification

Primary Equipment:		
Nuclear Services Cartridge	NSC - E	2707
Powered Gamma Detector	PGD - G	
Gamma Source Radioactive	GSR - J	2050
Auxiliary Equipment:		
Density Resistivity Sonde	DRS - C	4969
Electronics Cartridge Housing	ECH - MKA	
Powered Detector Housing	PDH - L	2959

Litho Density - D Wellsite Calibration								
Background Measurement								
Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Master		19.68	Master		74.59	Master		56.97
Before		19.47	Before		74.05	Before		56.50
	15.00 (Minimum) 20.00 (Nominal) 25.00 (Maximum)			68.00 (Minimum) 76.00 (Nominal) 84.00 (Maximum)			43.00 (Minimum) 57.00 (Nominal) 72.00 (Maximum)	
Phase	LITH Background CPS	Value	Phase	SS1 Background CPS	Value	Phase	SS2 Background CPS	Value
Master		5.573	Master		17.33	Master		11.69
Before		5.596	Before		17.42	Before		11.71
	4.000 (Minimum) 5.500 (Nominal) 7.000 (Maximum)			12.00 (Minimum) 16.00 (Nominal) 19.50 (Maximum)			8.000 (Minimum) 11.00 (Nominal) 13.50 (Maximum)	
Master: 24-FEB-1999 13:24			Before: 26-FEB-1999 20:25					

Litho Density - D Wellsite Calibration					
Detectors Resolution From BKG Measurments					
Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master		8.663	Master		8.759
Before		8.741	Before		8.751
	5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)			5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)	
Master: 24-FEB-1999 13:24			Before: 26-FEB-1999 20:25		

Litho Density - D Master Calibration								
Aluminum Measurement								
Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master		93.07	Master		141.1	Master		163.6
	70.00 (Minimum) 90.00 (Nominal) 125.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 194.0 (Maximum)			120.0 (Minimum) 155.0 (Nominal) 217.0 (Maximum)	
Phase	LITH Aluminum CPS	Value	Phase	SS1 Aluminum CPS	Value	Phase	SS2 Aluminum CPS	Value
Master		56.36	Master		169.5	Master		261.8
	35.00 (Minimum) 50.00 (Nominal) 74.00 (Maximum)			125.0 (Minimum) 175.0 (Nominal) 256.0 (Maximum)			210.0 (Minimum) 260.0 (Nominal) 353.0 (Maximum)	
Master: 24-FEB-1999 13:48								

Litho Density - D Master Calibration								
Lithology Measurement								
Phase	LL Iron CPS	Value	Phase	LU Iron CPS	Value	Phase	LS Iron CPS	Value
Master		82.51	Master		123.1	Master		144.1
	60.00 (Minimum) 80.00 (Nominal) 114.0 (Maximum)			85.00 (Minimum) 120.0 (Nominal) 177.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 193.0 (Maximum)	
Phase	LITH Iron CPS	Value	Phase	SS1 Iron CPS	Value	Phase	SS2 Iron CPS	Value
Master		35.53	Master		168.8	Master		237.1
	15.00 (Minimum) 30.00 (Nominal) 51.00 (Maximum)			105.0 (Minimum) 155.0 (Nominal) 234.0 (Maximum)			190.0 (Minimum) 245.0 (Nominal) 325.0 (Maximum)	
Master: 24-FEB-1999 13:55								

Litho Density - D Master Calibration								
Spectrum Quality Ratios								
Phase	QRLS Calculated	Value	Phase	QRSS Calculated	Value	Phase	QRLI Calculated	Value
Master		0.6597	Master		0.7239	Master		0.3445
	0.6000 (Minimum) 0.6500 (Nominal) 0.7000 (Maximum)			0.6200 (Minimum) 0.7200 (Nominal) 0.8200 (Maximum)			0.2900 (Minimum) 0.3900 (Nominal) 0.4500 (Maximum)	
Phase	QLIR Calculated	Value	Phase	QR Calculated	Value			
Master		1.397	Master		1.012			
	1.290 (Minimum) 1.390 (Nominal) 1.450 (Maximum)			0.9800 (Minimum) 1.000 (Nominal) 1.020 (Maximum)				
Master: 24-FEB-1999 13:56								

Scintillation Gamma-Ray - N / Equipment Identification

Primary Equipment:		
Scintillation Gamma Cartridge	SGC - SA	
Scintillation Gamma Detector	SGD - TAA	
Auxiliary Equipment:		
Scintillation Gamma Housing	SGH - K	
Gamma Source Radioactive	GSR - U/Y	1072

Scintillation Gamma-Ray - N Wellsite Calibration								
Detector Calibration								
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		28.70	Before		155.4	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			141.3 (Minimum) 155.4 (Nominal) 169.6 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	
Before: 26-FEB-1999 20:23								

COMPANY	SUNCOR ENERGY INC.	BOTTOM LOG INTERVAL	1984.4 m
		SCHLUMBERGER DEPTH	1990 m
WELL	SUNCOR NETLA K-77-60-50-122-30	DEPTH DRILLER	1990 m
FIELD	NETLA	KELLY BUSHING	625.2 m
PROVINCE	NORTHWEST TERRITORIES	DRILL FLOOR	624.9 m
		GROUND LEVEL	618.4 m

Schlumberger

PLATFORM EXPRESS
COMPENSATED NEUTRON
DUAL DENSITY LOG

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES ***TVD***

Schlumberger

PLATFORM EXPRESS
COMPENSATED NEUTRON
DUAL DENSITY LOG

60 deg-40', 122 deg-30' (SUR LOCATION)	Elev.: K.B. 625.2 m
254.96M, -91.08M (BOT LOCATION)	G.L. 616.4 m
3000K-77-60-50-122-30(00 (UWI)	D.F. 624.9 m
Permanent Datum: GROUND LEVEL	Elev.: 616.4 m
Log Measured From: KELLY BUSHING, 8.8 m above Perm. Datum	
Drilling Measured From: KELLY BUSHING,	

	API Serial No. N/A		N/A		N/A		N/A	
Logging Date	26-FEB 1999							
Run Number	ONE							
Depth Driller	1990 m		***TVD***					
Schlumberger Depth	1990 m		1930.67 m					
Bottom Log Interval	1984.4 m		1931 m					
Top Log Interval	535.5 m		535.5 m					
Casing Driller Size @ Depth	244.500 mm @ 535.5 m		244.500 mm @ 535.5 m		@		@	
Casing Schlumberger	535.5 m		535.5 m					
Bit Size	222.000 mm							
Type Fluid In Hole	POTASSIUM SULPHATE							
Density Viscosity	1205 kg/m3							
Fluid Loss PH	7.2 cm3 10							
Source Of Sample	FLOWLINE							
RM @ Measured Temperature	0.250 ohm.m @ 16 degC		@		@		@	
RMF @ Measured Temperature	0.190 ohm.m @ 16 degC		@		@		@	
RMC @ Measured Temperature	0.200 ohm.m @ 13 degC		@		@		@	
Source RMF RMC	MEASURED MEASURED							
RM @ MRT RMF @ MRT	0.095 @ 80	0.070 @ 80	@	@	@	@	@	@
Maximum Recorded Temperatures	80 degC	80						
Circulation Stopped Time	26-FEB -1999 12:30							
Logger On Bottom Time	27-FEB-1999 1:30							
Unit Number Location	2028 GRANDE PRAIRIE							
Recorded By	TONY DANIEL							
Witnessed By	BRIAN HESTER							

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density Viscosity				
Fluid Loss PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source RMF RMC				
RM @ MRT RMF @ MRT	@ @	@ @	@ @	@ @
Maximum Recorded Temperatures				
Circulation Stopped Time				
Logger On Bottom Time				
Unit Number Location				
Recorded By				
Witnessed By				

ALL PUMMERED LOGS ARE CORRECTED BASED ON MEASURED DRILLING FLUID SALINITY AND TEMPERATURE UNLESS OTHERWISE NOTED. SCHLUMBERGER DOES NOT WARRANT THE ACCURACY OF ANY INTERPRETATION, AND WILL NOT BE LIABLE FOR ANY LOSS OR EXPENSE INCURRED IN RELIANCE ON ANY INTERPRETATION MADE BY ANY OF ITS OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE

OTHER SERVICES
OS1:
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 2

AT MAX LOGGING DEPTH STRETCHED AT REVS EASY PICKUP
AT MAX LOGGING DEPTH STRETCHED AT 300RPM STRAIGHT MOUSE
RAN HMD DECENTRED WITH 3D CALIPER OFFSET HARDWARE
RAN HMD DECENTRED WITH 3D CALIPER OFFSET HARDWARE
RAT, SSR POWER @ 19.5A PC, RAT, SSR POWER @ 19.5A PC, RAT, LSR POWER @ 19A PC
STARTED IN HOLE @ 02:30 TIED IN ON BOTTOM @ 03:30 LAID ON BOTTOM @ 9:00
WORKED PASS ON HIGH THOR/THORIUM ZONE @ 1830 TO 1850
WORKED PASS ON HIGH THOR/THORIUM ZONE @ 1830 TO 1850
MULTIPLE ATTEMPTS MADE AT GETTING LDT INTO AN AXIS

	RUN 1	RUN 2
PRINTS, FIELD, FINAL		
PRINTS, FIELD, PRELIM		
CREW / TRUCK NO'S		
RECORDED BY	123573	SERVICE ORDER #
WITNESSED BY	2028	RIG NAME & NO.
FLUID TYPE		FLUID TYPE
FLUID DENSITY		DENSITY INTERVAL
TIME	START	STOP

EQUIPMENT DESCRIPTION — RUN 1 / RUN 2

SURFACE EQUIPMENT
GSR3-UY 1072
HVM-SP3A
DOWNHOLE EQUIPMENT
CNS-B
HDS-B

LEH-QT 30.13
LEH-QT
DTCH 28.97
TriSonic 28.25
SGT-N 28.53
SGC-SA 2381 28.65
SGC-TA 81056
SGC-SA 2381
SGC-TA 81056
DLC-B 6952
S.E.W. 373

LEH-QT 22.85
LEH-QT 21.75
LEH-QT 21.45
LEH-QT 21.45
LSN 20.37
LSR
LSS
DELT Aux.

DTA-A 20.37
DTA-A 8312
AH-107

LDT-D 19.15
SGC-J 2650
SGC-SA 2707
SGC-SB 2999
SGC-C 2999

AH-107 19.104
17.93

HILTB-FTB 12.64
HRDD-A 8442
HRDD-B 8442
HILTB-FTB 11.48
HRDD-A 8442 11.25
HRDD-B 8442
DOWNHOLE SUB
NGS-E 9.22
HNGS-A 8.61
HNGS-B 8.61
HNGS sens 7.99
HDIL-Sat 7.99
HDIL-Dat 6.59
HRDD-A 5.42
HRDD-B
HRDD-B 884
HRDD-B 1661
HRDD-B 1661
HILT Nuc SS
HILT Nuc DS
HILT Nuc BS
SGC-SA 2381
SGC-SA 81056
SGC-SA 2381

Calipers 13.43
SS 13.28
DS
Centralizer
Centralizer
Tension
TOOL ZERO 0.00

Insulation 12.64
Temperature 11.48
SP Sensor 11.25
HTEN Adapter 9.22
HTEN Adapter 8.61
Tension 7.99

25 MM Standard 8.41
9.03

25 MM Standard

MAXIMUM STRING DIAMETER 149 MM
MEASURED FROM BOTTOM TOOL ZERO
ALL LENGTHS IN METERS

Input DLIS Files

CURT	HILTD 012	FN:14 CUSTOMER	1937.0 M 2.0 M
CURT	HILTD 011	FN:14 CUSTOMER	1940.0 M 1946.0 M

Output DLIS Files 13-Apr-1999 10:09

	HILTD 011	FN:5	1937.0 M 497.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 74.72 m3
Cement Volume = 46.19 m3 (assuming 177.00 mm casing O.D.)
Computed from 1930.0 m to 537.0 m

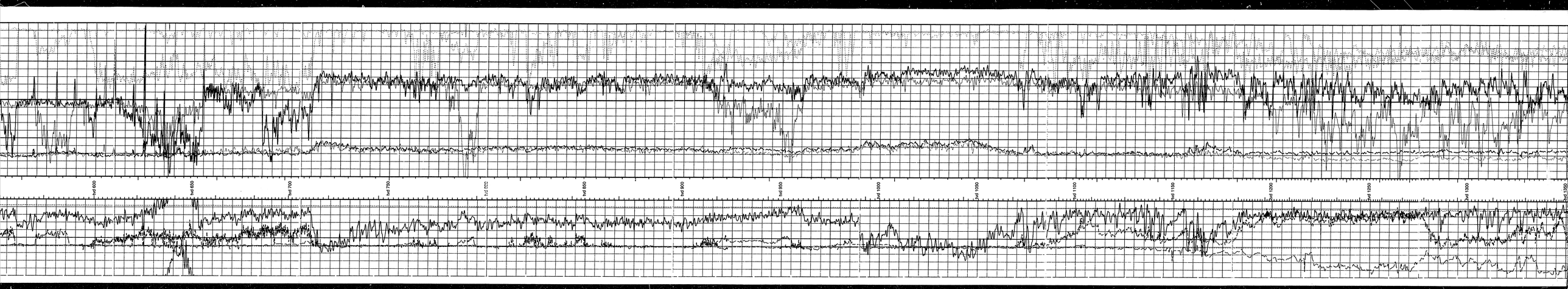
OP System Version: 9C0-413

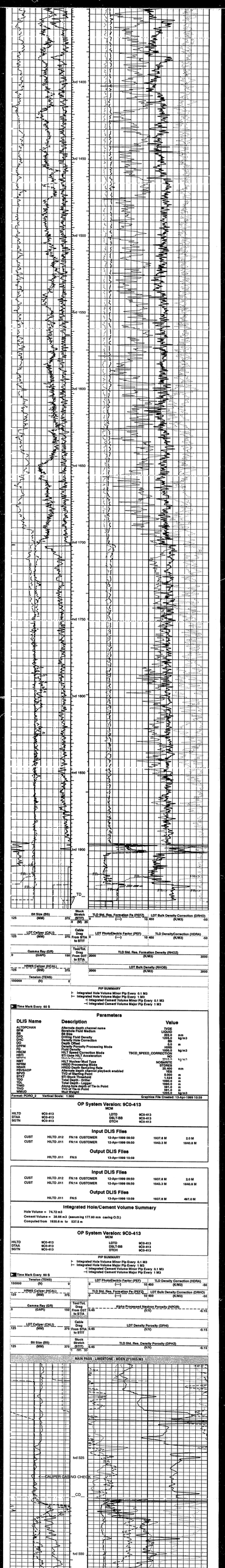
		LSTD
HILTD	9C0-413	DELT-B
SDTA	9C0-413	DELT-B
SDTA	9C0-413	

PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 0.1 M3
Integrated Cement Volume Minor Pip Every 0.1 M3
Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

1:200000	Tension (TENS)	0	2000	LDT Bulk Density (RHOB) 3000
126	HRMD Caliper (HCAL) (MM)	375		
	Gamma Ray (GR) (GAPI)	150	Tool Trk. Dwg. to SSTA	TLD Bld. Res. Formation Density (RHOD) 3000
0			Cable Head to SSTA	LDT PhotoElectric Factor (PEF) TLD Density Correction (mRHA) -50
125	LDT Caliper (CALI) (MM)	375	Black Mark to SSTA	TLD Bld. Res. Formation Pe (PEFZ) TLD Bulk Density Correction (RHOC) -50
	Bit Size (BS) (MM)	375		


hrd 600
hrd 650
hrd 700
hrd 750
hrd 800
hrd 850
hrd 900
hrd 950
hrd 1000
hrd 1050
hrd 1100
hrd 1150
hrd 1200
hrd 1250
hrd 1300
hrd 1350



Bit Size (BS) (MM) 125 375

Stuck Sketch (STIT) 0 (M) 20

TLD Shl. Res. Formation Pe (PEFZ) (---) 0 10 460

LDT Bulk Density Correction (DRHO) (K/M3) 1000 -500

LDT Caliper (CALI) (MM) 125 375

Cable Speed From STSA to STIT 0 150

LDT PhotoElectric Factor (PEF) (---) 0 10 460

TLD DensityCorrection (HDRA) (K/M3) 1000 -500

Gamma Ray (GR) (GAPI) 0 150

Tool Tot. Drag From DIF to STSA 0 2000

TLD Shl. Res. Formation Density (RHOZ) (K/M3) 1000 3000

HDMB Caliber (HCAL) (MM) 125 375

LDT Bulk Density (RHOB) (K/M3) 1000 3000

Tension (TENS) (lb) 1500000 0

P/P SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
ALTDPCHAN	Alternate depth channel name	TVDE
BFM	Borehole Fluid Medium	LIQUID
BS	Bit Size	1200.0 mm
DFD	Drilling Fluid Density	1200.0 kg/m3
DFPC	Density Pulse Correction	65
DOC	Depth Offset	0 m
DPPM	Density Porosity Processing Mode	1000
FD	Fluid Density	1000.0 kg/m3
HDCM	HRDD Data Correction Mode	TSCD_SPEED_CORRECTION
HSTI	STI Units HILT Acceleration	m/s^2
MMT	Mud Measurement Type	NOMINAL
NPRM	HRDD Processing Mode	STANDARD
NSAR	HRDD Depth Sampling Rate	10.000 mm
RWBADP	Alternate depth channel playback enabled	YES
STHD	STI Hold Time	0.000 m
STKT	STI Stuck Threshold	0.000 m
TDD	Total Depth - Driller	1995.0 m
TDL	Total Depth - Logger	1995.0 m
TIED	Tie Point Depth - Tie-In Point	1995.0 m
TVD	TVD of Tie-In Point	981.0 m
WMUD	Mud Weight	1200.0 kg/m3

Format: PORO_2 Vertical Scale: 1:200 Graphics File Created: 13-Apr-1999 10:59

OP System Version: 9C0-413

MCM

HILTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	DELT-BB	9C0-413
SHTN	9C0-413	DITCH	9C0-413

Input DLIS Files

CUST	HILTD .012	FN:16 CUSTOMER	12-Apr-1999 09:50	1937.8 M	2.0 M
CUST	HILTD .011	FN:14 CUSTOMER	12-Apr-1999 09:50	1943.3 M	1940.8 M

Output DLIS Files

HILTD .011	FN:6	1937.8 M	497.0 M

13-Apr-1999 10:59

Integrated Hole/Cement Volume Summary

Hole Volume = 74.72 m3
Cement Volume = 38.88 m3 (assuming 177.80 mm casing O.D.)
Computed from 1930.6 m to 537.5 m

OP System Version: 9C0-413

MCM

HILTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	DELT-BB	9C0-413
SHTN	9C0-413	DITCH	9C0-413

P/P SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS) (lb) 150000 0

LDT PhotoElectric Factor (PEF) (---) 0 10 460

TLD Density Correction (HDRA) (K/M3) 1000 -500

HDMB Caliber (HCAL) (MM) 125 375

TLD Shl. Res. Formation Pe (PEFZ) (---) 0 10 460

LDT Bulk Density Correction (DRHO) (K/M3) 1000 -500

Gamma Ray (GR) (GAPI) 0 150

Tool Tot. Drag From DIF to STSA 0 2000

Alpha Processed Neutron Porosity (NPOR) (V/V) 0.45 -0.15

LDT Caliber (CALI) (MM) 125 375

Cable Speed From STSA to STIT 0 150

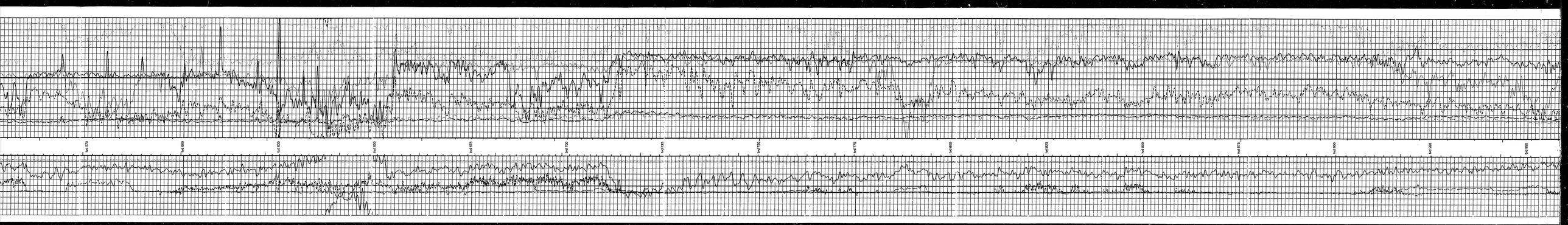
LDT Density Porosity (DPHI) (V/V) 0.45 -0.15

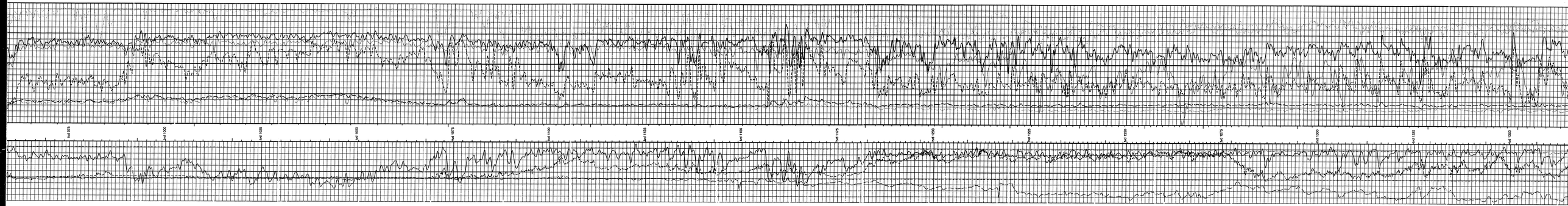
Bit Size (BS) (MM) 125 375

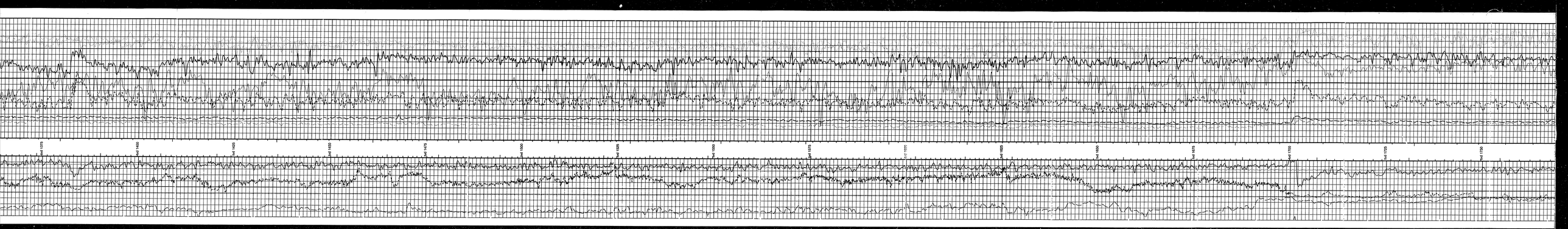
Stuck Sketch (STIT) 0 (M) 20

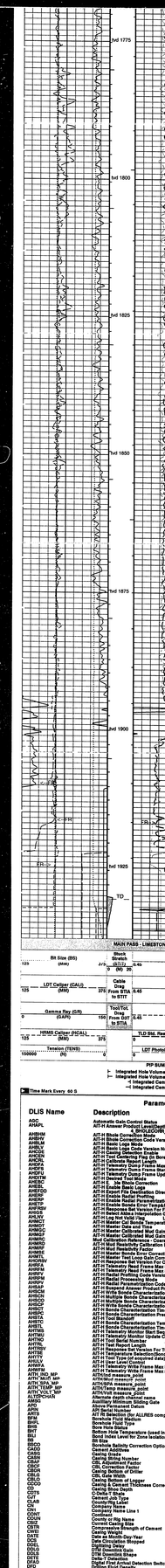
TLD Shl. Res. Density Porosity (DPHZ) (V/V) 0.45 -0.15

MAIN PASS - LIMESTONE - MDEN 2710KG.M3


Ind 575
Ind 600
Ind 625
Ind 650
Ind 675
Ind 700
Ind 725
Ind 750
Ind 775
Ind 800
Ind 825
Ind 850
Ind 875
Ind 900
Ind 925
Ind 950


Jul 975
Jul 1000
Jul 1025
Jul 1050
Jul 1075
Jul 1100
Jul 1125
Jul 1150
Jul 1175
Jul 1200
Jul 1225
Jul 1250
Jul 1275
Jul 1300
Jul 1325
Jul 1350


Jul 1375
Jul 1400
Jul 1425
Jul 1450
Jul 1475
Jul 1500
Jul 1525
Jul 1550
Jul 1575
Jul 1600
Jul 1625
Jul 1650
Jul 1675
Jul 1700
Jul 1725
Jul 1750



PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
ASC	Automatic Gain Control Status	ON
ANAPL	API of Answer Product Code(Length Log*view unit)	0_COMPUTEDSTANDOFF
AHBHM	API of Hole Bottom Hole Mode	0_RADIALPROF_RADIALPAR
AHBHV	API of Hole Correction Code Version Number	0_COMPUTEDSTANDOFF
AHCEC	API of Hole Caliper Code	873
AHDLY	API of Hole Delay Code Version Number	1_TWO
AHCES	API of Hole Density Code	872
AHCEN	API of Hole Neutron Code	874
AHCIL	API of Hole Caliper Mode	1_TWO
AHDFA	API of Telemetry Dump Frame Max Depth	1853.1
AHDFB	API of Telemetry Dump Frame Min Depth	1850.9 m
AHDFU	API of Telemetry Dump Frame Update Cycle	30
AHDTM	API of Telemetry Mode	0100_LOG_AND_DUMP
AHEMC	API of Hole Emulation Code	YES
AHEPD	API of Depth Basis Logs	YES
AHEPC	API of Hole Depth Correction Directory	Frontier
AHERP	API of Hole Enable Processing	YES
AHEPP	API of Hole Enable Radial Parameter	YES
AHEPW	API of Hole Enable Wireline Log Env Corr	YES
AHFWV	API of Hole Recovered Net Fluor X Resolution	30.68,23,11
AHMRC	API of Hole Select Alpha Interpolation Option	0
AHMRD	API of Hole Select Default Log	LOG_TAILD-NO_DEFAULT_PARAMETERS
AHMRT	API of Hole Select Density Temperature	25.000 degC
AHMDT	API of Master Date and Time	Mon Dec 21 19:54:00 2020
AHMGF	API of Master Default Mud Gain - Coarse	1.852
AHMRC	API of Master Calibrated Mud Gain - Fine	1.081
AHMRC	API of Master Calibrated Mud Gain	1.081 ohm.m
AHMRD	API of Master Default Calibration Depth	0.000 m
AHMRT	API of Mud Resistivity Factor	1.000
AHMRV	API of Master Mud Velocity	1.609 m/s-m
AHMTL	API of Master Total Log Count	5.000
AHSRW	API of Response Set Version For One R Resolution	30,68,23,11
AHSRX	API of Response Set Version For One X Resolution	10240,2 m
AHSVV	API of Tool String Frame Max Number To Process	999999
AHPFV	API of Radial Profiling Code Version Number	1700
AHPFV	API of Radial Profiling Code Version	1_TWO
AHSAP	API of Radial Processing Code Version Number	710
AHSAP	API of Suspend Answer Product Code	0_NOSUSPENSION
AHSCH	API of Sonde Characterization Mode	SINGLETOOL
AHSCO	API of Multiple Sonde Characterization Tool #	ONE
AHSCP	API of Write Sonde Characterization Log Directly On	NEITHER
AHSCT	API of Write Sonde Characterization Print Interval (feet)	0.000
AHSRC	API of Sonde Characterization Time	Mon Jul 14 05:24:18 2
AHSTC	API of Sonde Characterization Pressure Coefficients	0,0
AHSTC	API of Sonde Characterization Temperature	25.000 mm
AHSTC	API of Sonde Characterization Temperature Coefficients	-13.227
AHSTC	API of Sonde Characterization Time as Integer	66837486
AHTMU	API of Telemetry Master Start Sequence Number	1
AHTMU	API of Telemetry Monitor Update Cycle	10
AHTNL	API of Tool Number	261
AHTRW	API of Response Set Version For Two R Resolution	30,68,23,11
AHTTE	API of Temperature Selection(Sonde Error Correction)	INTERNAL
AHULV	API of Unit Type (of acquired data)	NAT
AHWFA	API of Tool String Name	NONE
AHWFA	API of Tool String Frame Max Depth	1849.3 m
AHWFB	API of Telemetry Write Frame Max Number To Process	999999
AHWFC	API of Write Sonde Characterization Log Directly On	NEITHER
AHWFT	API of Write Sonde Characterization Print Interval (feet)	0.000
AHSPA	API/SPA measure_point	1.000
AHTSA	API/SPA measure_point	84.934
AHTVL	API/SPA measure_point	84.934
ALTOPCHAN	Alternate depth channel name	GR.450
AMIN	Acquisition Minimum Sliding Gate	0.152 m
APIN	API Number	9.000
APSN	API Serial Number	261
ARTF	API Tf Number (for ALIMES computation)	12_AHTNI
BHFL	Borehole Fluid Medium	LIQUID
BHFS	Borehole Fluid State	LIQUID
BHS	Bore Hole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	80.000 degC
BIN	Bin Number for Zone Isolation	1.000
BS	Bit Size	200 mm
BSCO	Borehole Salinity Correction Option	NO
CABG	Casing Grade	
CABG	Casing Grade	
CABW	Casing String Number	
CBDF	Casing Bottom Depth	1.000
CBOF	CBL Offset Value	1.000
CBOR	Casing Master Date and Time	1.000
CBOT	CBL Gate Width	45 m
CDCO	Casing Bottom of Logger	537.0 m
CDCO	Casing Bottom Thickness Correction Option	0.000 kg/m
CDTS	Casing Depth	538.5
CDTS	C-Delta-T Slope	359.1 us/m
CLAB	Clay Bound Water	Philips
CN	Country/City Label	PRUDHOE BAY
COMP	Company Name	SUNCOR ENERGY INC.
COMT	Company Name Line 1	
COUN	Country or Rig Name	NORTHWEST TERRITORIES
CRFI	Cement Rock Factor	2400
CRTR	Compressional Strength of Cement	34.500 kPa
CWEI	Casing Weight	53.000 kg/m
DATE	Date as Month-Day-Year	26-FEB-1998
DDEL	Data Description Skipped	26-FEB-1998
DDEL	Delete Data	
DDSE	DTM Downhole Share	AUTOMATIC
DDSE	DTM Surface Share	AUTOMATIC
DFPT	Digital Filter Detection Switch	DEF
DFD	Drilling Fluid Density	1205.0 kg/m3
DFPH	Drilling Fluid pH	10.200
DFPH	Drilling Fluid PH	10.200
DFT	Drilling Fluid Type	POTASSIUM SULPHATE
DFV	Drilling Fluid Viscosity	0.000
DFVL	Density Neutron Depth Difference	0.305 m
DIVL	DBLT Depth Sampling Interval	0.152
DLAB	Data Logger At Bottom	26-FEB-1998
DMF	Drilling Measured From	KELLY BUSHING
DMFL	Drill Fluid	0.000 m
DMSL	Depth Offset Analysis	0.0 m
DRCS	Density Processing Mode	HIRES
DRCS	Density Processing Mode	1
DRT	Debtz-T Computation Mode	FULL
DTFS	Debt-T Field	620.1 us/m
DTFS	Debtz-T Density Frame Size	100
DTMS	Debtz-T Matrix	52.4 us/m
DULG	DTC Uplink Gain	AUTOMATIC
DULK	DTC Uplink Mode	TEST
DWDO	Digitizer Word Count	3936.000
EDE	Elevation of Derrick Floor	454.5 m
ENB	Elevation of Ground Level	419.4 m
ELZ	Elevation of Kelly Bushing	454.5 m
ENG	Elevation of Log Zero	454.5 m
ENGI	Engineers Name	TONY DANIEL
EQT	Equipment Type	FTE_TELEMETRY
EPD	Elevation of Permanent Datum	419.4 m
ETEM	HLT External Temperature	25.000 degC
FCP	HLT Fluid Cell Pressure Factor	0.000 mm
FD	CBL Fluid Conductivity Factor	1
FDMP	Fluid Density	1000.0 kg/m3
FE	Field Location Exponent	0.000
FL1	Field Location Line 1	60.46, 122.04 (SURFACE LOCATION)
FL2	Field Location Line 2	364.56, -91.04 (BOTTOM LOCATION)
FLSHSTRM	Flush-by-valued streams to output st and	3634/C-77-85.50-122.50/99 (UWI)
FN	Field Name	N/A
FNUM	Form Factor Numerator	NETWORK
FSCO	From Answer Product Source	1.000
GAI	Gamma Ray Sensitivity Correction Option	DPAZ
GCBO	Manual Gain	NO
GCBS	Generalized Caliper Selection	0
GDMO	Generalized Measurement of Borehole from Normal	HCAL
GOBG	Geological Boundary	0.000 deg
GOBG	Good Band	0.000 deg
GRMN	GR Gamma Ray Max	0.000
GRMX	HILT Gamma Ray Min	150.000 GAPI
GRSE	Generalized Mud Resistivity Selection	20.000
HCAL	Generalized Measurement Selection	MEASURED_DEPTH
HCCM	Accelerometer Identification	HISTB_HIRES
HCCM	Accelerometer Month of Calibration	9000.0
HCCM	Accelerometer Sensitivity	1
HCCM	Accelerometer Serial Number	850
HCCV	Accelerometer Type (Manufacturer Code)	0
HCCY	Accelerometer Year of Calibration	0
HCFP	Accelerometer PRIOR Frequency	PRESENT_FREQ
HCT	Time of accelerometer calibration	920125778
HDCO	HNDS Density Compensated Temperature	25.000 degC
HDEC	HLT Density Cesium Selection	2700.0 kg/m3
HDMD	HLT Density Bell detection	2100.0 kg/m3
HDSC	HLT Density Scale Factor	0.000
HDWB_FDNL_MP	HDNB/FDNL measure_point	40.000
HDWB_HACC_MP	HDNB/HACC measure_point	40.000
HDWB_HCNT_MP	HDNB/HCNT measure_point	34.000
HDWB_HDNT_MP	HDNB/HDNT measure_point	38.000
HDWB_HSNC_MP	HDNB/HSNC measure_point	32.000
HDWB_HCNL_MP	HDNB/HCNL measure_point	40.000
HDZ	Hole Density Z Axis	ARRAY INDUCTION_DEP
HIDI	Header Identification	1
HIDI	Header Identifier	PLATFORM EXPRESS
HIFD_EXTERN_BUFF_REQ	HLT External Buffering requirement	0 m
HLT_GAS_DENSITY	HLT Gas Conclude Density	0.000 kg/m3
HLT_GAS_OPTION	HLT Gas Computation Option	OFF
HLD	Header Logging Direction	ECCENTERED
HLD	Header Logged Direction	INCLUDE
HLMD	HALS Logging Mode	1
HNGD	HLT Neutron Gas detection	0.050 m3/m3
HPRECUT	HLT Neutron Oil detection	0.050 m3/m3
HPRS	HLT Power Up Status Words	0
HRCC_CALI_MP	HRCC/CALI Measure Point	-71.000
HRCC_CASE_MP	HRCC/CASE Measure Point	0.000
HRDD_DEN_MP	HRDD Measure Point	0.000
HRDD_LS_MP	HRDD Long-Spacing Measure Point	0.000
HRDD_SS_MP	HRDD Short-Spacing Measure Point	0.000
HRFA	HLT Asthma Data Rate	1
HRFA	HLT Telemetry Read Max Depth	10240.0 m
HRFB	HLT Telemetry Read Max Frames	999999
HRSN	HLT Hardware Sonic Spacing	152.0 mm
HSCN	Hole Size Correction Source	TSCD_SPEED_CORRECTION
HSDI	Hole Size Correction Selection	YES
HSTI	STI Hole Size Indicator Selection	QR
HTCU	HLT Tool Configuration Used	YES
HWCUT	HNDS/ HNNS Measure from ATTH cutoff	60.000 %
HWCN	HNCN / Cable Head Tension Source	NO_HTEN
HWSC	HNDS/HNNS Compensation Selection	AUTOMATIC
HVIC	Integrated Hole Volume Control	SHAM
ILL1	Instrumentation Logs Line 1	
ILL2	Instrumentation Logs Line 2	
JETS	Integrated Tripped Time Source	0
JETS	Jet Events Actv Name	ALLOW
LCC	Logging Company Code	232
LDC	Logging Cable Length	7450 m
LDMT	LDT Calibration Mode	MATRIX
LDH	Logging Date Header	26-FEB-1998
LDH	Logging Cable Name (Type)	7-46P
LLAB	Left Lab Number	
LOGMODE	Log Measured From	KELLY BUSHING
LOMD	Logging Mode	MEASURED_DEPTH
LRUC	LRU/HC	DISALLOW
LSN	Logging Service Number	1.000
LUL	Logging Unit Location	GRANDE PRAIRIE
LUN	Logging Unit Number	2928
MAIN	Main Pass Flag	LINE
MCFL_MP	MCFL Measure Point	40.000
MCFL	MCFL Measure Point	10.400
MCON	Minimum Correlation Interval	0.914 m
MCSS	Mud Cake Sample Source	NATU
MCSS	Mud Cake Sample Source	MEASURED
MCST	Mud Cake Sample Temperature	13.333 degC
MDEN	Matrix Density	2710.0 kg/m3
MFSS	Mud Filtrate Sample Source	MEASURED
MFST	Mud Filtrate Sample Temperature	18.111 degC
MGAI	Maximum Gain	240 ohm
MHCC	MCFL Bh Contrast Correction Coefficient	0.000 ohm
MHCC	MCFL Bh Contrast Correction Coefficient	0.000 ohm
MHOC	Mud Hydrate Option	NO
MMGA	Maximum Gain	2048 deg
MLLS	Mode Loop - LS	
MLSS	Mode Loop - SS	CLOSE
MMDO	Magnetic Mark Depth Units	CLOSE
MODE	Mode Selection	FEET
MOFC	MCFL Processing Operations Mode	1
MSAL	Minimum Static Amplitude	13.558 mV
MSFR	Mud Sample Resistivity	FLOWLINE
MSTD	Mud Sample Temperature	10.000 degC
MWCO	Mud Weight Correction Option	NO
NAV	Navigation	
NDAV	NRDD Dead Time Correction	APPLY
NDAV	NRDD Density/Pe Algorithm Version	2.000
NHT	NRDD Hydrogen Index	1.000 us
NMSG	Near Maximum Sliding Gate	NOBARITE
NPAV	NRDD Processing Mode	1
NPAV	NRDD Porosity Correction	STUDIED
NPLS	NRDD Porosity Limestone Correction Option	NOT_APPLY
NTCO	NRDD Temperature Correction Option	0.000 m/m
OPEN	Number of Detection Passes	0
OS1	Other Services Line 1	6648
OS2	Other Services Line 2	ARRAY INDUCTION DEP
OS3	Other Services Line 3	COMPENSATED NEUTRON
OS4	Other Services Line 4	FLOW_SURVEY
OS5	Other Services Line 5	

OS1	Other Services Line 1
OS2	Other Services Line 2
OS5	Other Services Line 5
PDXSADP	Alternate depth channel playback enabled
PHOTOV	Photo Voltaic
PHRAX	HLT max rate
PLHV	Programmable LS High Voltage
PLSV	Programmable SS High Voltage
PTCV	Pressure/Temperature Correction Option
PVER	Program Version
R1	Remark Line 1 ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST
R10	Remark Line 10 DOME LOGGING TRAINING INTERVAL: XXXX, BACK ON SURFACE: XXXX
R11	Remark Line 11 VISCOSITY WAS SO HIGH, THAT IT WAS NOT MEASURED.
R12	Remark Line 12
R13	Remark Line 13 PRINTS: 2 FIELD, 6 FINAL
R14	Remark Line 14 RIG: MAERSK RIG 4
R15	Remark Line 15 CREW: T. RENNER AND D. MOYLES
R16	Remark Line 16
R17	Remark Line 17
R2	Remark Line 2 AIT RAN ECCENTERED IN COMPUTE STANDOFF MODE
R3	Remark Line 3 AIT RAN WITH TWO 20MM STANDOFFS
R4	Remark Line 4
R5	Remark Line 5 AIT RAN ECCENTERED WITH no DEGREE OFFSET HARDWARE
R6	Remark Line 6 SHC RAN CENTERED WITH THREE CMEC AND ONE MCG
R7	Remark Line 7
R8	Remark Line 8
R9	RM1: 0.26 OHMS @ 15.50 C, RM2: 0.20 OHMS @ 16.00 C, RM3: 0.29 OHMS @ 16.00 C Remark Line 9 STARTED IN HOLE: 09:30, FIRST ON BOTTOM: XX:XX, LAST ON BOTTOM: XX:XX
RANG	Range
RAPI	Radial Profile
RAV	HDIL Repeatability Algorithm Version
RLAS	Resign/Blank Label
RMOD	Reactivity of Mud Cake Sample
RMS	Reactivity of Mud Filtrate Sample
RMUD	Resistivity of Mud Sample
RTCO	RTCO - Hi Invasion Correction
RW	Rw
RW	Resistivity of Connate Water
SDAT	Standoff Data Source
SDTH	Switch Down Threshold
SEAL	Seal
SEGP_HLT	HLT Saturation Exponent
SFAF	Sonic Formation Attenuation Factor
SGAI	Sliding Gate Inner
SGAO	Sliding Gate Outer
SGCL	Sliding Gate Closing Delta-T
SGOP	Sliding Gate Opening Width
SGW	Sliding Gate Delta-T
SGW	Sliding Gate Width
SHALE_DELAY	Surface Hole Temperature
SLAS	Simulate Acquisition Delay
SLEV	Standoff Value Used
SLNV	Signal Level for ASIC
SOCN	Standoff Distance
SOFF	Standoff Calculation Option
SOR	Service Order Number
SPCLEAN	HLT SP Clean
SPD	Speed
SPED	Fast Departure of Starting Point
SPEE	Simulated Logging Speed
SPNO	Sonic Porosity Average
SPNV	Sonic Porosity Value
SPSHALE	HLT SP Shale
SPSO	Sonic Porosity Source
SPWF	HLT Water Filtrate
SRHO	IMI Hardware Lamp Control
STAT	State or Province
STAV	Sonic Transit Time Average
STBT	STI Blurb Threshold
SWTH	Switch Up Threshold
TAB	Tension Calibration Offset
TDA	UTB Telemetry Baud Rate
TDA	Tail Cement Additives
TDIS	Time Circulation Stopped
TDT	Tail Cement Type
TDU	Tail Cement
TDD	Total Depth - Driller
TDL	Total Depth - Logger
TEMP	Temperature Logging Rate
TIED	Fast Departure of Tie-In Point
TIMD	Alongside depth of Tie-In Point
TIMT	Alongside time of Tie-In Point
TIVD	TVD of Tie-In Point
TLAB	Time Logger At Bottom
TLI	Tool Length
TLLAB	Time Logger Left Bottom
TMRI	Telemetry Mag Report Interval (for SCP)
TOWN	Township
TREC	Cable Tension Reference
TSEC	Telemetry Status Report Depth Computation
TSMI	Telemetry Status Report Interval (for SCP Mon)
TWS	Temperature of Connate Water Sample
TWSN	Temperature of Connate Water Source
VCEM	Concluded Cement Volume
VDUL	VDL Manual Gain
WAVG	Waveform AVG Volume
WAVO	Waveform AVG Attenuation
WGAI	Waveform Manual Gain
WGAU	Waveform Gain Delta-T
WGIN	Waveform Gain Interval
WITN	Witness's Name
WMOD	Waveform Firing Mode
WW	Mud Weight
WW	Mud Weight
WWT	SUNCOR NETLA K:77-40-50-E:120-00-00
WWT	Wet Transitory Flag

					DUAL DENSITY
					SHC, DUAL DEN
					SHC, DUAL DEN
					Alternate depth channel playback enabled
					YES
					GROUND LEVEL
					HLT max rate
					m3/m3
					Programmable LS High Voltage
					1000.0
					Programmable SS High Voltage
					1000.0
					V
					Pressure/Temperature Correction Option
					NO
					Program Version
					9C0-413
					Remark Line 1
					ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST
					Remark Line 10
					DOME LOGGING TRAINING INTERVAL: XX:XX, BACK ON SURFACE: XX:XX
					Remark Line 11
					VISCOSITY WAS SO HIGH, THAT IT WAS NOT MEASURED.
					Remark Line 12
					Remark Line 13
					PRINTS: 2 FIELD, 6 FINAL
					Remark Line 14
					RIG: MAERSK RIG 4
					Remark Line 15
					CREW: T. RENNER AND D. MOYLES
					Remark Line 16
					Remark Line 17
					Remark Line 2
					AIT RAN ECCENTERED IN COMPUTE STANDOFF MODE
					Remark Line 3
					AIT RAN WITH TWO 20MM STANDOFFS
					Remark Line 4
					Remark Line 5
					AIT RAN ECCENTERED WITH no DEGREE OFFSET HARDWARE
					Remark Line 6
					SHC RAN CENTERED WITH THREE CMEC AND ONE MCG
					Remark Line 7
					Remark Line 8
					RM1: 0.26 OHMS @ 15.50 C, RM2: 0.20 OHMS @ 16.00 C, RM3: 0.29 OHMS @ 16.00 C
					Remark Line 9
					STARTED IN HOLE: 09:30, FIRST ON BOTTOM: XX:XX, LAST ON BOTTOM: XX:XX
					Range
					RAPI
					Radial Profile
					RAV
					HDIL Repeatability Algorithm Version
					1.070
					RLAS
					Resign/Blank Label
					RMOD
					Reactivity of Mud Cake Sample
					0.590
					ohm.m
					RMS
					Reactivity of Mud Filtrate Sample
					0.190
					ohm.m
					RMUD
					Resistivity of Mud Sample
					0.190
					ohm.m
					RTCO
					RTCO - Hi Invasion Correction
					YES
					RW
					Resistivity of Connate Water
					0.000
					ohm.m
					SDAT
					Standoff Data Source
					SOCN
					SDTH
					Switch Down Threshold
					16384
					SEAL
					Seal
					SMOOTH
					SEGP_HLT
					HLT Saturation Exponent
					2.000
					SFAF
					Sonic Formation Attenuation Factor
					dB/m
					SGAI
					Sliding Gate Inner
					0
					SGAO
					Sliding Gate Outer
					AUTO
					SGCL
					Sliding Gate Closing Delta-T
					us/in
					SGOP
					Sliding Gate Opening Width
					40
					us/in
					SGW
					Sliding Gate Delta-T
					164
					us/in
					SGW
					Sliding Gate Width
					40
					us/in
					SHALE_DELAY
					Surface Hole Temperature
					20.000
					degC
					SLAS
					Simulate Acquisition Delay
					0.000
					SLEV
					Signal Level for ASIC
					SNOR
					Standoff Distance
					3.175
					mm
					SOFF
					Standoff Calculation Option
					NO
					SOR
					Service Order Number
					1031875
					SPCLEAN
					HLT SP Clean
					-200.000
					mV
					SPD
					Speed
					0.000
					m/hr
					SPED
					Fast Departure of Starting Point
					0.000
					ft
					SPEE
					Simulated Logging Speed
					0.000
					m/s
					SPNO
					Sonic Porosity Average
					INT
					SPNV
					Sonic Porosity Value
					0.000
					m/ft
					SPSHALE
					HLT SP Shale
					-120.000
					mV
					SPSO
					Sonic Porosity Source
					DT
					SPWF
					HLT Water Filtrate
					0.000
					n
					SRHO
					IMI Hardware Lamp Control
					DISABLED
					STAT
					State or Province
					STAV
					Sonic Transit Time Average
					90.000
					degC
					STBT
					STI Blurb Threshold
					1.020
					SWTH
					Switch Up Threshold
					655
					TAB
					Tension Calibration Offset
					0.000
					deg
					TDA
					UTB Telemetry Baud Rate
					1000HZ
					TDA
					Tail Cement Additives
					TDIS
					Time Circulation Stopped
					12:30
					TDT
					Tail Cement Type
					TDU
					Tail Cement
					1980.0
					m
					TDD
					Total Depth - Driller
					1980.0
					m
					TDL
					Total Depth - Logger
					1955.0
					m
					TEMP
					Temperature Logging Rate
					0.000
					m/s
					TIED
					Fast Departure of Tie-In Point
					0.000
					m
					TIMD
					Alongside depth of Tie-In Point
					991.0
					m
					TIMT
					Alongside time of Tie-In Point
					07:10
					hr
					TIVD
					TVD of Tie-In Point
					991.0
					m
					TLAB
					Time Logger At Bottom
					07:10
					hr
					TLI
					Tool Length
					535.3
					m
					TLLAB
					Time Logger Left Bottom
					DISALLOW
					TMRI
					Telemetry Mag Report Interval (for SCP)
					60
					s
					TOWN
					Township
					N/A
					TREC
					Cable Tension Reference
					1000.0
					lbf
					TSEC
					Telemetry Status Report Depth Computation
					TOOL
					TSMI
					Telemetry Status Report Interval (for SCP Mon)
					10
					TWS
					Temperature of Connate Water Sample
					37.778
					degC
					TWSN
					Temperature of Connate Water Source
					VCEM
					Concluded Cement Volume
					0.750
					m3
					VDUL
					VDL Manual Gain
					0.00
					WAVG
					Waveform AVG Volume
					7.62
					m3
					WAVO
					Waveform AVG Attenuation
					-20
					WGAI
					Waveform Manual Gain
					0
					WGAU
					Waveform Gain Delta-T
					164
					us/in
					WGIN
					Waveform Gain Interval
					787
					us
					WITN
					Witness's Name
					BRIAN HEISTER
					WMOD
					Waveform Firing Mode
					DETECTION
					WW
					Mud Weight
					1200.0
					kg/m3
					WW
					Mud Weight
					1200.0
					kg/m3
					WWT
					SUNCOR NETLA K:77-40-50-E:120-00-00
					VERTICAL
					WWT
					Wet Transitory Flag

Format: PORO_5 Vertical Scale: 1:240 Graphics File Created: 13-Apr-1999 10:59

OP System Version: 9C0-413

MCM

HLTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	DSLT-BB	9C0-413
SGTN	9C0-413	DTCH	9C0-413

Input DLIS Files

CUST	HLTD .012	FN:14 CUSTOMER	13-Apr-1999 09:50	1937.8 M 2.0 M
CUST	HLTD .011	FN:14 CUSTOMER	13-Apr-1999 09:50	1943.3 M 1840.8 M

Output DLIS Files

HLTD .011	FN:5	13-Apr-1999 10:59

Input DLIS Files

CUST	HLTD .012	FN:16 CUSTOMER	13-Apr-1999 09:50	1937.8 M 2.0 M
CUST	HLTD .011	FN:14 CUSTOMER	13-Apr-1999 09:50	1943.3 M 1840.8 M

Output DLIS Files

HLTD .011	FN:5	13-Apr-1999 10:59 1937.8 M 497.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 74.72 m3
Cement Volume = 36.60 m3 (assuming 177.00 mm casing O.D.)
Computed from 1936.6 m to 537.5 m

OP System Version: 9C0-413

MCM

HLTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	DSLT-BB	9C0-413
SGTN	9C0-413	DTCH	9C0-413

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
  - Integrated Cement Volume Minor Pip Every 0.1 M3
  - Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

TENS_REP Curve (TENS_REP) 0 (lbf) 150000

HCAL_REP Curve (HCAL_REP) 6 (IN) 16

GR_REP Curve (GR_REP) 0 (GAPI) 150

CALI_REP Curve (CALI_REP) 6 (IN) 16

RS_REP Curve (RS_REP) 0.2 (OHMM) 2000

Tension (TENS) 0 (lb) 150000

HSMG Caliper (HCAL) 6 (IN) 16

Gamma Ray (GR) 0 (GAPI) 150

LDT Caliper (CALI) 6 (IN) 16

PSF_REP Curve (PSF_REP) 0 (---) 0.45

HDRA_REP Curve (HDRA_REP) 10 460 (K/M3) -50

PEFZ_REP Curve (PEFZ_REP) 0 (---) 10

TLD Density Correction (HDRA) 10 460 (K/M3) -50

LDT PhotoElectric Factor (PEF) 0 (---) 10

DRHO_REP Curve (DRHO_REP) 10 460 (K/M3) -50

TLD Std. Res. Formation Pe (PEFZ) 0 (---) 10

LDT Bulk Density Correction (DRHO) 10 460 (K/M3) -50

NPOR_REP Curve (NPOR_REP) 0.45 (V/V) -0.15

Alpha Processed Neutron Porosity (NPOR) 0.45 (V/V) -0.15

DPHI_REP Curve (DPHI_REP) 0.45 (V/V) -0.15

DPHZ_REP Curve (DPHZ_REP) 0.45 (V/V) -0.15

LDT Density Porosity (DPHI) 0.45 (V/V) -0.15

TLD Std. Res. Density Porosity (DPHZ) 0.45 (V/V) -0.15

REPEAT ANALYSIS - LIMESTONE - MDEN 2710KG/M3

CALIPER READINGS

TVD 1850

TVD 1875

TVD 1900

TVD 1925

TD

REPEAT ANALYSIS - LIMESTONE - MDEN 2710KG/M3

LDT Caliper (CALI) 6 (IN) 16

Gamma Ray (GR) 0 (GAPI) 150

HSMG Caliper (HCAL) 6 (IN) 16

Tension (TENS) 0 (lb) 150000

RS_REP Curve (RS_REP) 0.2 (OHMM) 2000

CALI_REP Curve (CALI_REP) 6 (IN) 16

GR_REP Curve (GR_REP) 0 (GAPI) 150

HCAL_REP Curve (HCAL_REP) 6 (IN) 16

TENS_REP Curve (TENS_REP) 0 (lbf) 150000

TLD Std. Res. Density Porosity (DPHZ) 0.45 (V/V) -0.15

LDT Density Porosity (DPHI) 0.45 (V/V) -0.15

DPHZ_REP Curve (DPHZ_REP) 0.45 (V/V) -0.15

DPHI_REP Curve (DPHI_REP) 0.45 (V/V) -0.15

Alpha Processed Neutron Porosity (NPOR) 0.45 (V/V) -0.15

TLD Std. Res. Formation Pe (PEFZ) 0 (---) 10

LDT Bulk Density Correction (DRHO) 10 460 (K/M3) -50

LDT PhotoElectric Factor (PEF) 0 (---) 10

DRHO_REP Curve (DRHO_REP) 10 460 (K/M3) -50

PEFZ_REP Curve (PEFZ_REP) 0 (---) 10

TLD Density Correction (HDRA) 10 460 (K/M3) -50

PSF_REP Curve (PSF_REP) 0 (---) 0.45

HDRA_REP Curve (HDRA_REP) 10 460 (K/M3) -50

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
  - Integrated Cement Volume Minor Pip Every 0.1 M3
  - Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
ALTSPCHAN	Alternate depth channel name	TVDE
BHTM	Borehole Temperature Method	LIN320
BHTL	Borehole Fluid Type	WATER
BHS	Bore Hole Status	OPEN
BS	Bit Size	222.0 mm
BSCO	Borehole Salinity Correction Option	NO
CCCO	Casing & Cement Thickness Correction Option	NO
CSIZ	Current Casing Size	244.5 mm
DFD	Drilling Fluid Density	53.700 kg/m3
DFD	Drilling Fluid Density	1200.0 kg/m3
DFD	Density Hole Correction	0.0
DFPM	Density Processing Mode	STD
FD	Fluid Density	1000.0 kg/m3
FDCO	Fluid Density Correction Option	NO
GDEV	Hole Deviation	0.000 deg
GDEV	Average Angular Deviation of Borehole from Normal	0.000 deg
HAZI	Geographical Southing	0.010 deg/0m
HSCO	HLT Speed Correction Mode	TSCO_SPEED_CORRECTION
HSCO	HLT Speed Correction	1.000
HTI	9TI Uses HILT Acceleration	NO
MATN	Rock Matrix Type	LIME
MCCO	Mud Cake Correction Option	NO
MCOO	Mud Correction	NO
MDEN	Matrix Density	2710.0 kg/m3
MHCO	Mud Height Correction	15.556 degC
MWCO	Mud Weight Correction Option	NO
NMTH	HILT Nuclear Mud Type	NOBARITE
NSTD	Neutron Standoff Distance	STDRES
NWAT	HNGS Drilling Mud Type	20.400 mm
PBVRADP	Alternate depth channel playback enabled	YES
PTCO	Pressure Temperature Correction Option	NO
RMUD	Resistivity of Mud Filtrate Sample	0.130 ohm.m
SDAT	Standoff Data Source	SOCN
SHOT	Surface Hole Temperature	20.000 degC
SOCN	Standoff Distance	0.172 mm
SOFF	Standoff Calculation Option	NO
TPVD	TVD of Starting Point	0.000 m
TDL	Total Depth - Logger	1960.0 m
TIVD	TVD of Tie-In Point	991.0 m
VMUD	Mud Viscosity	1.000 cp

Format: PORO_REP Vertical Scale: 1:240 Graphics File Created: 13-Apr-1999 10:59

OP System Version: 9C0-413

MCM

HLTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	DSLT-BB	9C0-413
SGTN	9C0-413	DTCH	9C0-413

Input DLIS Files

CUST	HLTD .012	FN:16 CUSTOMER	13-Apr-1999 09:50	1937.8 M 2.0 M
CUST	HLTD .011	FN:14 CUSTOMER	13-Apr-1999 09:50	1943.3 M 1840.8 M

Output DLIS Files

HLTD .011	FN:5	13-Apr-1999 10:59

Input DLIS Files

DEFAULT	HLTD .010	FN:3 PRODUCER	13-Apr-1999 10:52	549.6 M 2.0 M

Output DLIS Files

DEFAULT	HLTD .013	FN:8 PRODUCER	13-Apr-1999 11:31	549.6 M 2.3 M
CUST	HLTD .012	FN:6 CUSTOMER	13-Apr-1999 11:31	549.6 M 2.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 0.66 M3
Cement Volume = 0.36 M3 (assuming 177.80 MM casing O.D.)
Computed from 549.6 M to 537.5 M using data channel(s) HCAL

OP System Version: 9C0-413

MCM

HLTD-FTB	9C0-413	LDT-D	9C0-413
DTA-N	9C0-413	DSLT-FTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
  - Integrated Cement Volume Minor Pip Every 0.1 M3
  - Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS) 0 (lb) 150000

HSMG Caliper (HCAL) 6 (IN) 16

Gamma Ray (GR) 0 (GAPI) 150

LDT Caliper (CALI) 6 (IN) 16

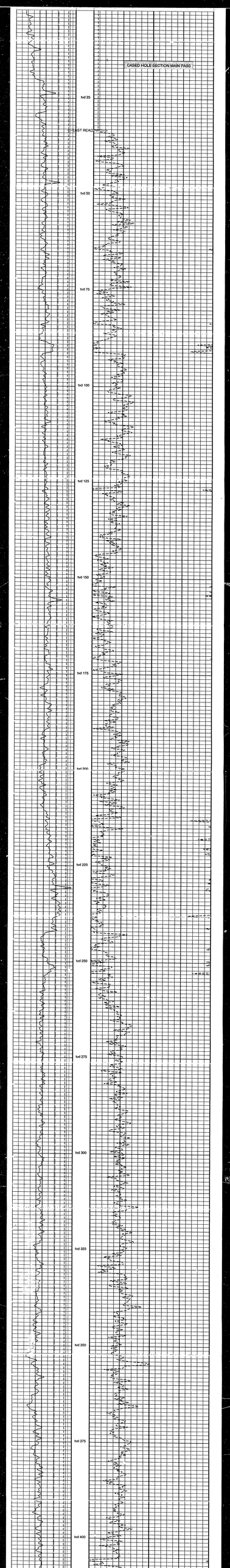
RS_REP Curve (RS_REP) 0.2 (OHMM) 2000

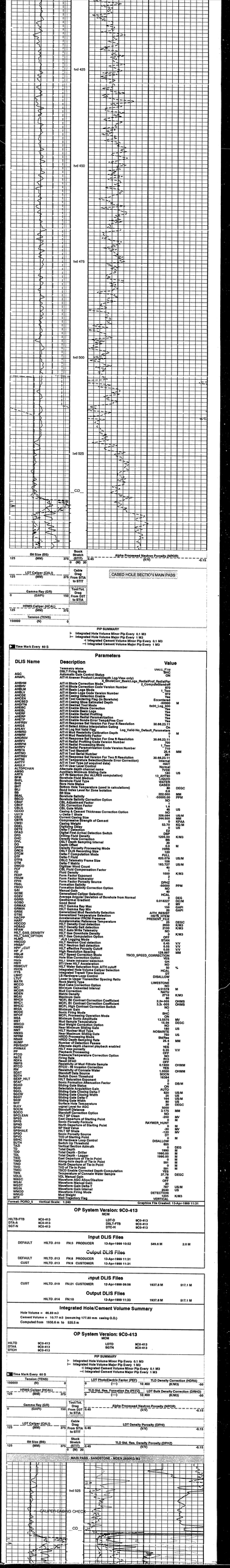
Tool/Tick Drag From LDT to STA

Cable Drag From STA to BTIT

Stuck Sticker (BTIT) 0.45

Alpha Processed Neutron Porosity (NPOR) 0.45 (V/V) -0.15


CASED HOLE SECTION MAIN PASS
LAST READING
tvd 25
tvd 50
tvd 75
tvd 100
tvd 125
tvd 150
tvd 175
tvd 200
tvd 225
tvd 250
tvd 275
tvd 300
tvd 325
tvd 350
tvd 375
tvd 400



Bit Size (BS) (MM) 125 375
Rock Strength (STTO) 0.45 (V/V) -0.15
Alpha Processed Neutron Porosity (NPOR) 0 (M) 39
LDT Caliper (CALI) (MM) 125 375
Cable Drag (DRAG) From STT to STTT
CASED HOLE SECTION MAIN PASS
Gamma Ray (GR) (GAPI) 0 150
Tool Tick From GRT to STGA
HSMS Caliper (HCAL) (MM) 125 375
Tension (TENS) (N) 0 150000

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	UHXL_F1@
ASC	DWL? Filing Mode	SHC
ASQPL	Automatic Safe Control Status (Applicable with Log View only)	ON
	AIT-H Assess Product Level(Applicable with Log View only)	
AHBHW	AIT-H Biotx Correction Mode	2_CompBeBiasdiff
AHBLW	AIT-H Bolt Logs Code Version Number	870
AHBLV	AIT-H Biotx Logs Code Version Number	1_Two
AHBLW	AIT-H Bolt Logging Mode	1_Two
AHCEN	AIT-H Casing Detection Enable	Yes
AHCSED	AIT-H Tool Centering Flag (In Borehole)	Eccentered
AHDPTH	AIT-H Depth of Measurement Depth	M
AHDTV	AIT-H Desired Tool Mode	0x00_Log_005
AHEBC	AIT-H Enable Bhole Correction	Yes
AHEBC	AIT-H Enable Bhole Correction	Yes
AHERP	AIT-H Enable Radial Compensation	Yes
AHERP	AIT-H Enable Radial Parameterization	Yes
AHFRV	AIT-H Enable Real-Time Borehole Corr	Yes
AHEXS	AIT-H Enhance Vertical Resolution Near F Resolution	30.66,23.11
AHEXS	AIT-H Select Allow Interpolation Gating	1
AHMHD	AIT-H Log Mode	0x_Log_Valid-No_Default_Parameters
AHMRF	AIT-H Mod Reactivity Factor	1
AHMRV	AIT-H Mod Reactivity Version	1
AHPBM	AIT-H Nonpress Set Version For One R Resolution	30.66,23.11
AHPBM	AIT-H Radial Profiling Code Version Number	Two
AHPRT	AIT-H Radial Profiling Mode	1_Two
AHRFV	AIT-H Radial Parameterization Code Version Number	714
AHTHO	AIT-H Tool Standoff	22.4 MM
AHTNO	AIT-H Tool Version Number	1
AHTRV	AIT-H Nonpress Set Version For Two R Resolution	30.66,23.11
AHTSE	AIT-H Temperature Selection(Sends Error Correction)	Internal
AHTSV	AIT-H Tool Software Version	1.0
AHXLV	AIT-H User Logs Code Version	HAT
ALTOPCHAN	Alternate depth channel name	None
AMTT	AMS Telemetry Mode	TYDC
ARTS	AIT-H Retention (for ALS/HS computation)	180 US
BFM	Borehole Fluid Medium	13_AIR(S)
BFR	Borehole Fluid Type	WATER
BHT	Bottom Hole Temperature	CASED
BHT	Bottom Hole Temperature (used in calculations)	0 DEGC
BS	Bond Index Level for Zone Isolation	0.6
BSAL	Bit Size	222.000 MM
BSCO	Borehole Salinity	-99999.000 PPM
CBAF	Borehole Salinity Correction Option	WATER
CBSF	CBL Adjustment Factor	CASED
CCAL	CBL Gain Value	1
CCDO	CBL Gate Width	40 US
CCL	Casing & Cement Thickness Correction Option	NO
CSIZ	Current Casing Size	339.694 US/M
CSTR	Current Casing Size	244.500 DEGC
CWT	Compressive Strength of Cement	0 KPAA
CWW	Casing Weight	53.70 KG/M
DATE	Drilling Delay	0 US
DSTE	Date of Telemetry	22
DTC	Digital Fast Actual Detection Switch	DSP
DTD	Density Tool Detection	1295.00 K/M3
DVL	DWL? Depth Sampling Interval	30
DX	DWL? Telemetry Frame Size	1,727
EDPM	Depth Of Density Processing Mode	181.92 US/M
EMCS	Delta-T Matrix	1
DTEM	Digital Logging Correction Factor	714
DTM	Delta-T Computation Mode	40.4 MM
DTPB	Fluid Type	FULL
DTM	Form Factor Exponent	620.079 US/M
FINE	Form Factor Numerator	2
FMSS	Formation Salinity Source	0.0 M
FSAL	Formation Salinity	DPHZ
FSCO	Formation Salinity Correction Option	120,587 PPM
GCS	Gain Control	NO
GDEF	Generalized Caliper Selection	TYDC
GSEV	Average Angular Deviation of Borehole from Normal	HCAL
GSMO	Geoshear Indicator	0.018227 DEG/M
GSRO	Geoshear Rotation	DO/M
GRMAX	HILT Gamma Ray Max	SP
GRMIN	HILT Gamma Ray Min	150 GAPI
GTBE	Generalized Hole Resistivity Selection	20 GAPI
HAPP	Hole Apparent Resistivity Selection	AITH_RESIST
HAZIM	Accelerometer Pitch Presence	AITH_RESIST
HCOR	Accelerometer Reference Temperature	PRESENT_FILE
HDAD	HILT Density Add detection	25 DEGC
HDAV	HILT Density Sub detection	2100 K/M3
HEAV	HILT Auto Write Telemetry	2100 K/M3
HFAC_DENSITY	HILT Gas Correction Option	NO K/M3
HFAC_OPTION	HILT Gas Correction Option	OFF
HLMO	_ALS Logging Mode	STAN
HMAT	HILT Matrix Detection	2.65 V/V
HMDP	HILT Neutron Sat detection	0.45 V/V
HPF_CUT	HILT effective Porosity Cutoff	0.00 V/V
HPOR	HILT Porosity Source	1210.00 K/M3
HSCO	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSIZ	HILT Hole Size Selection	FULL
HSS	HILT Stone nonsense detection	120
HTEN	STI Uses HILT Acceleration	NO
HTHRSHOUT	HILT Density Porosity MATH cutoff	45 %
HVOL	Integrated Hole Volume Caliper Selection	HCAL
ITTS	Integrated Transit Time Source	DT
LDSC	Logging Direction Control	DISALLOW
LTST	Lower to Upper Transmitter Spacing Ratio	1
MATN	Rock Matrix Type	LIMESTONE
MCOR	Mud Cake Correction Option	NO
MDCM	Minimum Command Interval	4.61578 M
MDOR	Mud Correction	MEAS
MDSI	Matrix Density	2710 K/M3
MHCS	Matrix Density	500
MHCS	MCFL Bit Contrast Correction Coefficient	2.2e-000 OHMS
MHCT	MCFL Bit Contrast Correction Coefficient	3.2e-000 OHMS
MHSA	MCFL High Contrast Correction Switch	NO
MHSC	MCFL Scale	2
MHSD	Sonic Firing Mode	SHC
MHSF	MCFL Processing Operation Mode	ON
MHSI	Mud Salinity Source	13.0375 MV
MHSM	Mud Sample Temperature	Surface DEGC
MWCO	Mud Weight Correction Option	NO
MWGO	Mud Weight Gate Mode	180
MWT	HILT Nuclear Mud Type	NOBARITE
NMXG	Near Maximum Sliding Gate	40 US
NMXM	Near Maximum Sliding Gate	Surface
NUMP	HSDS Depth Sampling Rate	25.4 MM
OPENDP	Open Hole Depth Sampling Rate	0
PBMAX	Attempt depth cleaned playback enabled	YES
PE	HILT max porosity	0.33 V/V
PTCO	Pressure/Temperature Correction Option	NO
RATE	Pressure/Temperature Correction Option	NO
RFS	Firing Rate	R10
RIFS	Firing Rate	1 RIFS
RTCO	Resistivity of Mud Filtrate Sample	0.1097 OHMM
	RTCO - RI Invasion Correction	YES
RWAT	Resistivity of Formation Water	1.0000 OHMM
SDAT	Standoff Data Source	SOCN
SDTH	Switch Down Threshold	10.2
SDUP	HILT Retention Segment	
SFAC	Sonic Formation Attenuation Factor	0 DB/M
SGAO	Sliding Gate Active	ON
SGAI	Selectable Acquisition Gain	AUTO
SGCL	Sliding Gate Closing Delta-T	825 US/M
SGDT	Sliding Gate Detection Delta-T	50 US/M
SGOP	Sliding Gate Delay	144 US/M
SGW	Sliding Gate Width	80 US
SLOC	Sonic Logging Departure	0.00 DEGC
SOCN	Sigma Correction	0.00
SPCG	Standoff Distance	3.172 MM
SPCGAN	Sonic Processing Option	NO
SPED	HILT SP Clean	-200 MV
SPEE	East Departure of Starting Point	0 M
SPND	Sonic Porosity Formula	RAYMER_HUNT
SPNV	Sonic Departure of Starting Point	0 M
SPSALE	Sonic Velocity	3.048 M/S
SPSALT	HILT Fluid Salt	-120 MV
SPXO	Sonic Porosity Source	GT
SSHC	SP Hardware Offset	0 M
SSHC	SS Hardware Loop Control	DISALLOW
SUTH	Switch Up Threshold	665
SVP	Sonic Velocity Option Attath	0 DEG
TDD	Total Depth	1900.00 M
TDD	Total Depth - Driller	1900.00 M
TDL	Total Depth - Logger	1900.00 M
TIED	East Departure of Tie-In Point	0 M
TIMD	Along-hole depth of Tie-In Point	997 M
TIND	North Departure of Tie-In Point	0 M
TNO	Tool Channel Number	591 M
TSEC	TSCD Enable Corrected Depth Computation	0.00 DEGC
TWS	Temperature of Connate Water Sample	37.78 DEGC
VDL	VDL Manual Gain	40
VDSC	Vertical Scale Allow/Disallow	0.2 M/S
WGAI	Waveform Manual Gain	20
WGDT	Waveform Gain Delta-T	797 US/M
WGOP	Waveform Gain Delay	2500 US
WMOD	Waveform Processing Mode	DETECTOR
WMUD	Mud Weight	1200 K/M3
WTT	Well Trajectory Flag	VERTICAL

Format: PORO_S Vertical Scale: 1:240 Graphics File Created: 13-Apr-1999 11:31

OP System Version: 9C0-413

MCM

HILTD-FTB	9C0-413	LDT-D	9C0-413
DTA-D	9C0-413	DSL-LFTB	9C0-413
SGT-N	9C0-413	DTC-H	9C0-413

Input DLIS Files

DEFAULT	HILTD .010	FN:3	PRODUCER	13-Apr-1999 10:52	549.0 M

2.0 M

Output DLIS Files

DEFAULT	HILTD .013	FN:9	PRODUCER	13-Apr-1999 11:31	
CUST	HILTD .013	FN:9	CUSTOMER	13-Apr-1999 11:31	

Input DLIS Files

CUST	HILTD .019	FN:21	CUSTOMER	13-Apr-1999 09:56	1937.0 M

517.1 M

Output DLIS Files

	HILTD .014	FN:10		13-Apr-1999 11:33	1937.0 M

517.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 46.68 m3
Cement Volume = 10.77 m3 (assuming 177.80 mm casing O.D.)
Computed from 1930.6 m to 535.5 m

OP System Version: 9C0-413

MCM

HILTD	9C0-413	LDTD	9C0-413
DTA-D	9C0-413	SGTN	9C0-413
DTCH	9C0-413		

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS) (N) 0 150000

LDT PhotoElectric Factor (PEF) 0 10.480

TLD Density Correction (HDRA) (K/M3) -30 30

HSMS Caliper (HCAL) (MM) 125 375

TLD Std. Res. Formation Pe (PEFZ) 0 10.480

LDT Bulk Density Correction (DRHO) (K/M3) -30 30

Gamma Ray (GR) (GAPI) 0 150

Tool Tick From GRT to STGA

Alpha Processed Neutron Porosity (NPOR) 0 (M) 39

Rock Strength (STTO) 0.45 (V/V) -0.15

LDT Caliper (CALI) (MM) 125 375

Cable Drag From STT to STTT

LDT Density Porosity (DPHZ) 0.45 (V/V) -0.15

Bit Size (BS) (MM) 125 375

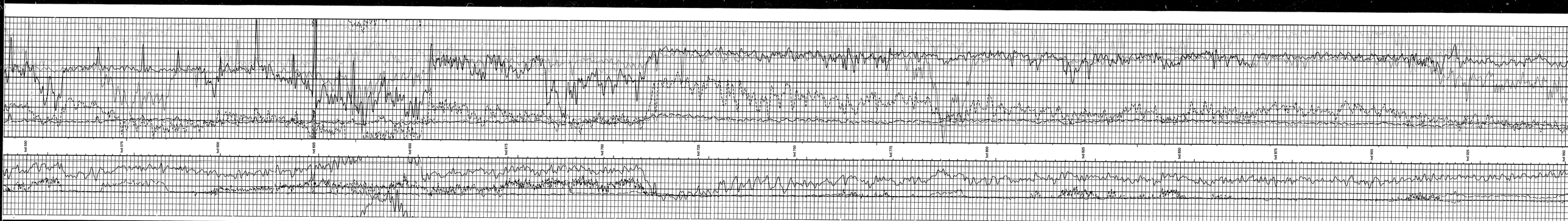
Rock Strength (STTO) 0.45 (V/V) -0.15

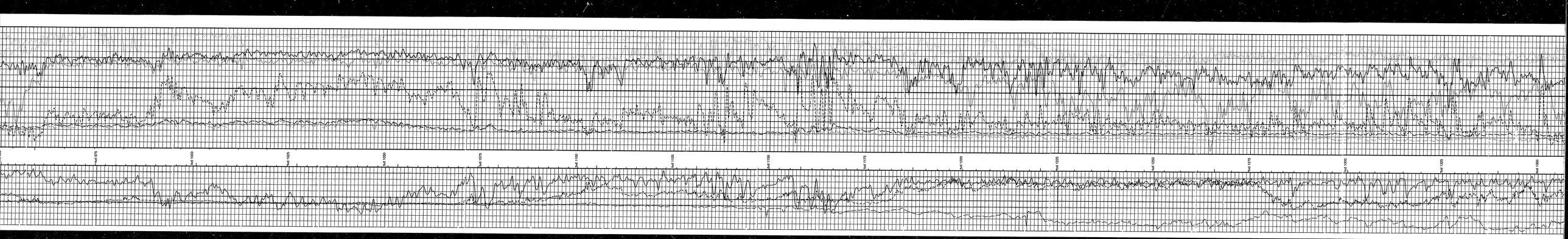
TLD Std. Res. Density Porosity (DPHZ) 0 (M) 39

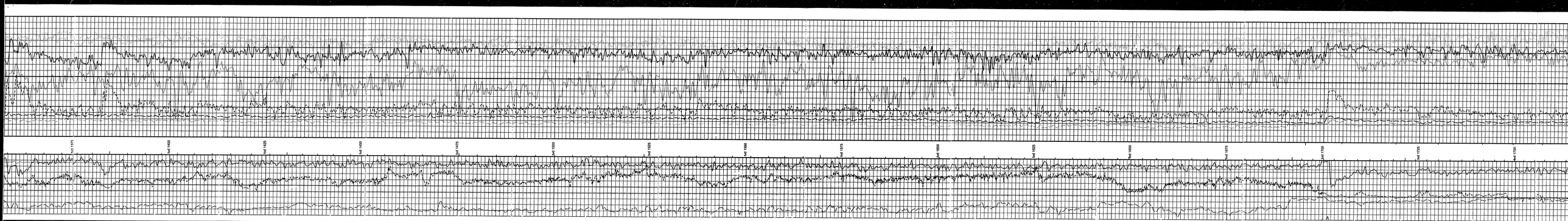
MAIN PASS - SANDSTONE - MDEN 2650KG/M3

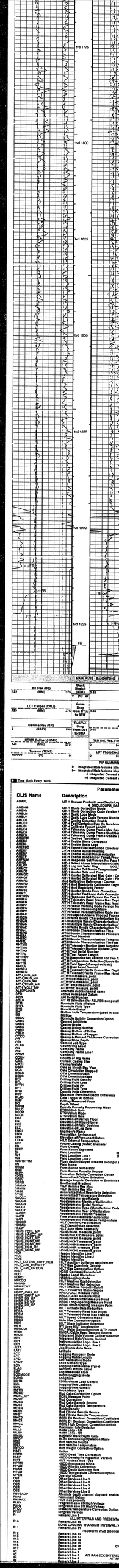
CALIPER CASING CHECK

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hrd 550
hrd 575
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hrd 950


Jul 975
Jul 1000
Jul 1025
Jul 1050
Jul 1075
Jul 1100
Jul 1125
Jul 1150
Jul 1175
Jul 1200
Jul 1225
Jul 1250
Jul 1275
Jul 1300
Jul 1325
Jul 1350


hrd 1375
hrd 1400
hrd 1425
hrd 1450
hrd 1475
hrd 1500
hrd 1525
hrd 1550
hrd 1575
hrd 1600
hrd 1625
hrd 1650
hrd 1675
hrd 1700
hrd 1725
hrd 1750



Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
ANAPL	AIT-H Answer Product Level(Depth Log/View only)	
AHBHV	AIT-H Borehole Correction Code Version Number	2_COMPUTESTANDOFF_RADIALPROF_RADIALPAR
AHBHV	AIT-H Borehole Correction Code	2_COMPUTESTANDOFF
AHBHV	AIT-H Borehole Correction Code Version Number	670
AHCDE	AIT-H Caving Detection Code	1_TRUE
AHCDE	AIT-H Caving Detection Version Number	672
AHCDE	AIT-H Caving Detection Enable	YES
AHCFT	AIT-H Tool Centering Flag (In Service)	ECCENTERED
AHDFA	AIT-H Telemetry Data Frame Size	730.1
AHDFA	AIT-H Telemetry Data Frames Max Depth	1825.2 m
AHDFA	AIT-H Telemetry Data Frames Sequence Number	1825
AHDFM	AIT-H Telemetry Data Frame Update Cycle	30
AHDFM	AIT-H Data Frame Size	0X00_LOG_TAUD
AHEGD	AIT-H Enable Mode Correction	YES
AHEGD	AIT-H Enable Swap Logs	YES
AHEP	AIT-H Environment Correction Directory	FineTune
AHEP	AIT-H Environment Correction	YES
AHEPP	AIT-H Enable Radial Parameterization	YES
AHEPP	AIT-H Enable Radial Parameterization Vote	YES
AHFRV	AIT-H Resistivity Solution For Count Resolution	30.84.25.11
AHGS	AIT-H Select Airbus Interconnect Bus	1
AHHDR	AIT-H Log Header Data	LOG_TAUD,NO_DEFAULT_PARAMETERS
AHMDT	AIT-H Master Cals and Temperature	0.000 degC
AHMDT	AIT-H Master Cals and Time	Mon Dec 21 10:54:25 2009
AHMHC	AIT-H Master Calibrated Mud Gain - Coarse	1.000
AHMHC	AIT-H Master Calibrated Mud Gain - Fine	1.001
AHMHC	AIT-H Master Calibrated Mud Salinity	0.000 ohm.m
AHMHF	AIT-H Mud Resistivity Factor	0.000 m
AHMRF	AIT-H Mud Resistivity Factor	1.000
AHMSC	AIT-H Mud Salinity Correction	0.000 mS/m
AHNDW	AIT-H Mud Weight Loss Data Correction	-99.250
AHRDW	AIT-H Response Set Version For One R Resolution	30.84.23.11
AHRFM	AIT-H Radial Profiling Code Version Number	13340.0 m
AHRFV	AIT-H Radial Profiling Data Frames Number To Process	999999
AHRFV	AIT-H Radial Profiling Vote Version Number	1.7900
AHRFV	AIT-H Radial Parameterization Code Version Number	1.7900
AHSAP	AIT-H Select Airbus Interconnect Application	0_NOSUSPENSION
AHSCD	AIT-H Airbus Sonde Characterization Mode	SINGLEMODE
AHSCD	AIT-H Multiple Sonde Characterization Tool #	ONE
AHSCD	AIT-H Multiple Sonde Characterization Tool Assembly Co	NEITHER
AHSCT	AIT-H Write Sonde Characterization Point Interval (feet)	0.5
AHSCT	AIT-H Sonde Characterization Time	Mon Jul 14 05:24:18 1997
AHSFV	AIT-H Sonde Characterization Pressure Coefficients	0.000
AHSTC	AIT-H Sonde Characterization Temperature Coefficients	10.227 mm
AHTMV	AIT-H Telemetry Major Version Number (as an integer)	868874464
AHTMV	AIT-H Telemetry Minor Bit Sequence Number	0
AHTMV	AIT-H Telemetry Monitor Update Cycle	10
AHTRT	AIT-H Tool Real Time	261
AHTRV	AIT-H Test Report Length	2431
AHTSV	AIT-H Temperature Solution For Two R Resolution	30.84.23.11
AHTSV	AIT-H Temperature Selection(Sonde Correction)	INTERNAL
AHTTY	AIT-H Tool Type (of acquired data)	HART
AHWFA	AIT-H Write Frame Data	NOMINAL
AHWFA	AIT-H Telemetry Write Frame Max Depth	13340.1 m
AHWFV	AIT-H Telemetry Write Frame Max Number To Process	999999
AHWHV_MD_MP	AIT-H Mud Weight Vote	94.934
AHWHV_MW_MP	AIT-H Mud Weight Vote	94.934
AHWPA_MP	AIT/SPA measure_point	1.000
AHWPA_VOLT_MP	AIT/SPA measure_point	24.934
AHWPA_VOLT_MP	AIT/SPA measure_point	24.934
ALTDPCHAN	Alternate depth channel name	
APD	Above Permanent Datum	0.000 m
ARTI	AIT Serial Number	N/A
ARTV	AIT Version Number (for ALLRES computation)	13_AHWPA_0
BHC	Borehole Fluid Salinity	LOGGED
BHS	Borehole Salt Type	WATER
BHT	Bottom Hole Temperature	0.000 degC
BHTMP	Bottom Hole Temperature (used in calculations)	0.000 degC
BS	Bit Size	222.0 mm
CBCO	Casing Salinity Correction Option	NO
CBSO	Cement Additive	
CBSG	Casing Grade	
CBSN	Casing String Number	
CBUD	Casing Bottom of Logger	532.2 m
CBUO	Casing Bottom of Logger	532.2 m
CBWC	Casing and Tool Thickness Correction Option	NO
CCF	Casing Shoe Depth	528.0 m
CLAB	Core Laboratory	CORE
CNTY	County	PROVINCE
CN1	Company Name	SUNCOR ENERGY INC.
CONT	Contractor Line 1	
CONT	Contract	
COUN	County or Rig Name	NORTHWEST TERRITORIES
CSIZ	Casing String Size	244.5 mm
CWEI	Casing Weight	53.700 kg/m
DATE	Date as Month-Day-Year	26-FEB-1998
DATE	Date Commodities Received	26-FEB-1998
DDAT	Datum Description	KELLY BUSHING
DFST	STM Downhole Shape	AUTOMATIC
DFT	Drilling Fluid Type	GEL
DFVL	Drilling Fluid Loss	7.200 cm3
DFPH	Drilling Fluid pH	9.000
DFT	Drilling Fluid Type	POTASSIUM SULPHATE
DFD	Density Hole Correction	900
DFV	Drilling Fluid Viscosity Depth Difference	0.000 m
DL	Data Logger At Bottom	26-FEB-1998
DMF	Drilling Measured From	KELLY BUSHING
DPI	Depth Units	0.5 m
DPRM	Density Processing Processing Mode	0
DSD	DTC Uphole Gain	AUTOMATIC
DSI	DTC Uphole Rate	1524
DSR	DTC Uphole Rate	3048.000
EDF	Elevation of Derrick Floor	0.000 m
EGL	Elevation of Ground Level	514.8 m
ELZ	Elevation of Kelly Bushing	529.2 m
ENGI	Engineer's Name	TONY DANIEL
ENGI	Engineer's Name	TONY DANIEL
ENVI	Acquisition Environment	FTB_TELEMETRY
EPD	Elevation of Permanent Datum	514.8 m
ETIM	HILT External Temperature	0.000 degC
FDD	Future Casing (Outer) Diameter	177.8 mm
FDI	Fluid Density	1000.0 kg/m3
FEXP	Form Factor Exponent	2.000
FL	Field Location	60.66, 122.44 (SURFACE LOCATION)
FL2	Field Location Line 2	364.66, -91.56 (BOTTOM LOCATION)
FLSHSTRM	Flush depth-delayed streams to output at end	0.000
FN	Field Name	2009-77-80-123.30.00W120
FRUM	Form Factor Numerator	HEVIA
FRVI	Form Factor Variable Source	1.000
FSCO	Formation Salinity Correction Option	0.0
GCRD	Generalized Caliper Selection	NO
GDAT	Generalized Depth Reference of Borehole from Normal	HCAL
GDRO	Geothermal Gradient	0.000 degC/m
GRMAX	HILT Gamma Ray Max	165.0 gAPI
GRMIN	HILT Gamma Ray Min	20.000 gAPI
GRSE	Generalized Res Sensitivity Selection	
GTSE	Generalized Temperature Selection	TEMP
HAZI	Accelerometer Azimuth	900.0
HACON	Accelerometer Serial Number	10
HACOT	Accelerometer Serial Number	10
HACOV	Accelerometer Vote (Manufacturer Code)	0
HACOY	Accelerometer Year of Calibration	
HACPT	Accelerometer Pressure Test	PRESENT_FILE
HACTD	Time of accelerometer calibration	831127.000
HADEG	Accelerometer Reference Temperature	25.000 degC
HAMP	Hole Amplitude Threshold	2500.0 kg/m3
HAMP	Hole Density Set detection	2500.0 kg/m3
HAW	HILT Auto Write Telemetry	NO
HGNB_HCNL_MP	HGNS/HCNL measure_point	40.000
HGNB_HCFT_MP	HGNS/HCFT measure_point	0.000
HGNB_HCNC_MP	HGNS/HCNC measure_point	28.000
HGNB_HGN_MP	HGNS/HGN measure_point	28.000
HGNB_HCNL_MP	HGNS/HCNL measure_point	40.000
HGS	Header Identifier Line 1	ARRAY INDUCTION - RGO
HGS2	Header Identifier Line 2	RGO
HGT	Header Identifier	PLATFORM EXPRESS
HHT	HILT Auxiliary buffering requirement	0.000 m
HHTC	HILT Caliper Set detection	0.000 kg/m3
HHTC_CHAR_OPTION	HILT Use Computed Hole Option	NO
HIGC	HGNS Centered/Eccentered	ECCENTERED
HILC	HILT Logging Conditions	UNCLOSED
HILD	HILT Hole Diameter	311.1 mm
HINCDD	HILT Inclinometry Set detection	0.000 m/3m3
HINCDJ	HILT Inclinometry Set detection	0.000 m/3m3
HINCDT	HILT Inclinometry Set detection	0.000 m/3m3
HPOW	HILT Power Up Inclinometry Delay	0.000 s
HRDD_CALI_MP	HRDD/CALI Measure Point	-71.000
HRDD_CHAT_MP	HRDD/CHAT Measure Point	0.000
HRDD_ES_MP	HRDD/ES Measure Point	0.000
HRDD_LSS_MP	HRDD/Long-Spacing Measure Point	0.000
HRDD_SS_MP	HRDD/Short-Spacing Measure Point	0.000
HRE	HILT Real Time Enable	NO
HRM	HILT Telemetry Read Max Depth	13340.0 m
HRMM	HILT Telemetry Read Max Frames	999999
HRSC	HRDD Sonde Correction Mode	TSCO_SPEED_CORRECTION
HRTC	HRDD Temperature Correction	YES
HSIT	HILT Shale Indicator Selection	0.000
HSTC	HILT Sonde Temperature Correction	NO
HSWOUT	HILT Switch Output from ATH cutoff	NO
HTES	HILT Caliper Telemetry Selection	NO_CALIPER
HTSC	Integrated Hole Volume Caliper Selection	HCAL
HTVC	Integrated Hole Volume Control	SNAP
ILL1	Header Identifier Line 1	
ILL2	Instrumentation Logic Line 2	
JETA	Job Events Auto Save	
LC	Location	ALLOW
LCC	Logging Company Code	489
LCL	Logging Cable Length	7213 m
LDWT	Logging Driller's Weight	WATER
LEM	Level Elevation Method	
LCN	Logging Cable Name (Typ)	7-46P
LMF	Permanent Datum	GRANDE PRAIRIE
LOGMODE	Log Measured From	KELLY BUSHING
LONG	Logging Engineer's Name	MEASURED_DEPTH
LSHC	LS Hardware Loop Control	DISALLOW
LUL	Logging Unit Location	GRANDE PRAIRIE
MATN	Logging Unit Number	2
MATR	Rock Matrix Type	SAND
MCSO	Mud Cake Correction Option	NO
MCSO_MP	MCFL Measure Point	30
MCOR	Mud Correction	AUTOMATIC
MDEN	Mud Density	1000 kg/m3
MDES	Mud Density Sample Temperature	13.333 degC
MDEN	Matrix Density	2650.0 kg/m3
MDT	Mud Filtrate Sample Source	MEASURED
MHCT	Mud Filtrate Sample Temperature	16.111 degC
MHCV	MCFL Mud Filtrate Correction Coefficient	0.000 ohm
MHCV	MCFL SI Conductivity Correction Option	0.000 ohm
MHCC	MCFL High Contrast Correction Switch	NO
MHT	Mud Sample Temperature	25.000 degC
MLOP	Mode Loop - LS	CLOSE
MMOD	Mode Loop - SS	CLOSE
MNDH	Minimum Depth Hole Width	311.1 mm
MOPE	MCFL Processing Operation Mode	YES
MSS	Mud Sample Source	FLOWLINE
MSTT	Mud Sample Temperature	18.500 degC
MWCO	Mud Weight Correction Option	NO
NATI	Nation	
NDTC	HRDD Dead Time Correction	APPLY
NHV	HILT Hostile Hydro Algorithm Version	3.800
NTI	HILT Nation Table	NORMAL_SI
OBD	HRDD Processing Mode	STORED
OBS	Other Services Line 1	COMPENSATED NEUTRON
OBS	Other Services Line 2	DUAL GAMMA
OBS	Other Services Line 3	BHC, BY/CAL
OPER	Operator's Code	LOONEY
OS	Other Services Line 4	8840
OS	Other Services Line 5	ARRAY INDUCTION-RGO
OS	Other Services Line 6	COMPENSATED NEUTRON
OS	Other Services Line 7	DUAL GAMMA
OS	Other Services Line 8	BHC, BY/CAL
PDAT	Permanent Datum	GROUND LEVEL
PLMV	Processing Log Major Version	0.300 cp/3m3
PLMV	Processing Log High Voltage	1000.0 V
PLMV	Programmable SS High Voltage	1000.0 V
PVCR	Pressure/Temperature Correction Option	NO
PVER	Program Version	9C0-413
RI	Remark Line 1	

ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST

RI10	Remark Line 10
	DONE LOGGING TRANSMIT INTERVAL: XXXX, BACK ON SURFACE: XX:XX
RI11	Remark Line 11
	INCOSITY WAS SO HIGH, THAT IT WAS NOT MEASURED.
RI12	Remark Line 12
RI13	Remark Line 13
RI14	Remark Line 14
RI15	Remark Line 15
RI16	Remark Line 16
RI17	Remark Line 17
RI18	Remark Line 18
RI2	Remark Line 2
RI3	Remark Line 3
RI4	Remark Line 4
RI5	Remark Line 5

PRINTS: 2 FIELD, 6 FINAL
RIG: AKITA 58
CREW: T. RENNER AND S. MOYLES

AIT RAN ECCENTERED IN COMPUTE STANDOFF MODE
AIT RAN WITH TWO 250M STANDOFFS

PR HILT MAIN ECCENTERED WITH 90 DEGREE OFFSET HARDWARE
Remark Line 2
BHC RAN CENTERED WITH THREE CMEZ AND ONE MCD-G
R7 Remark Line 3
R8 Remark Line 4
RM= 0.26 OHMS @ 15.6 C RMF= 0.50 OHMS @ 14.00 C RMC= 0.26 OHMS @ 16.00 C
R9 Remark Line 5
STARTED IN HOLE 60.35, FIRST DH BOTTOM; XX.XX, LAST DH BOTTOM: XX.XX
RANG Range 0
RUN Run Number 1.070
RLAB Depth Shift Log
RMCS Resistivity of Mud Cake Sample 0.200 ohm.m
RMFS Resistivity of Mud Filtrate Sample 0.190 ohm.m
RTCO Resistivity of Mud Sample 0.260 ohm.m
RUN Hilt Acoustic Version Correction 2.000
RUN Run Number ONE
RDAT Resistivity of Connate Water 1.000 ohm.m
HDAT Hilt Depth Data Source SCHON
SECT Section 0
SEXP_HILT HILT Saturation Exponent 2.000
SAT Hilt Water Saturation 20.000 degC
SIMULATE_DELAY Borehole Acoustic Delay 0.000
SLAB Slate/Province Label
RADI Standoff Distance
RNOO Standoff Correction Option 3.175 mm
SCN Sensor Serial Number INCH
SPOLAN HILT SP Clear -200.000 mV
SPEO SP Offset 0.000 mV/in
SPES Sensitivity 1.000 in
SPMO North Departure of Starting Point 0.000 m
SPMW West Departure of Starting Point 0.000 m
SPSHALE HILT SP Shale -25.000 mV
SPVO TVD of Starting Point -120.000 mV
SPWO Hilt Spectral Log Control 0.000 m
STAT State or Province DRAFLLOW
STEM Surface Temperature
TBHT DTI Bhole Temperature 20.000 degC
TDAT DTI Stuck Threshold 1.524 m
TDR Time Circulation Stopped 0.000 deg
TDS DTB Telemetry Baud Rate 1000HZ
TLA Tool Centered Additive
TSTP Time Circulation Stopped 12:30
TUNI Tool Unit Type
TDD Total Depth 1990.0 m
TDI Total Depth - Driller 1990.0 m
TDL Total Depth - Logger 1990.0 m
TFIL DTB Telemetry Filete Rate AUTO
TIED East Departure of Tie-In Point 0.000 m
TIEW West Departure of Tie-In Point 0.000 m
TINO North Departure of Tie-In Point 581.0 m
TIVD TVD of Tie-In Point 0.000 m
TLAB Time Logger At Bottom 581.0 m
TLI Top Log Interval 01:30
TLIAB Time Logger At Bottom Label 535.5 m
TMRI Telemetry Error Req Repeat Interval (for SCP)
TOWR Tower 60 s
TREF Tool Station Reference N/A
TREC TECO Enable Corrected Depth Computation 1000 lbf
TSRI Telemetry Status Report Interval (for IO Main) YES
TUNI Tool Unit Type (for Telemetry Setup) 12 s
UWID Unique Well Identification Number 37.778 degC
VCEM Cumulated Cement Volum
VCEP Cumulated Hole Volume 10.774 m3
WTYS Wireline Service 46.686 m3
WMUD Mud Weight BRIAN HESTER
WT Mud Name 1.00 kg/m3
WTY Well Trajectory Flag SUNCOR NETLX K-77-60-50-110-30
VERTICAL
Format: PORO_S Vertical Scale: 1:240 Graphics File Created: 12-Apr-1999 11:33

OP System Version: 9C0-413

MCM

HILTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	SGTN	9C0-413
DTCH	9C0-413		

Input DLIS Files

CUST	HILTD .019	FN:21	CUSTOMER	12-Apr-1999 09:56	1937.8 M	517.1 M

Output DLIS Files

HILTD .014 FN:10 13-Apr-1999 11:23

Input DLIS Files

CUST	HILTD .021	FN:23	CUSTOMER	12-Apr-1999 09:58	1937.8 M	516.4 M

Output DLIS Files

HILTD .015 FN:11 13-Apr-1999 13:34 1937.8 M 519.4 M

Integrated Hole/Cement Volume Summary

Hole Volume = 46.69 m3
Cement Volume = 10.77 m3 (assuming 177.80 mm casing O.D.)
Computed from 1936.8 m to 535.5 m

OP System Version: 9C0-413

MCM

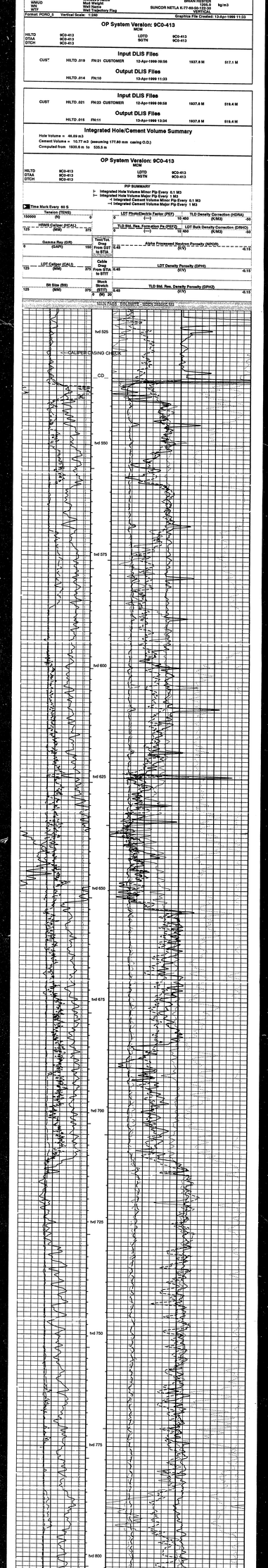
HILTD	9C0-413	LDTD	9C0-413
DTAA	9C0-413	SGTN	9C0-413
DTCH	9C0-413		

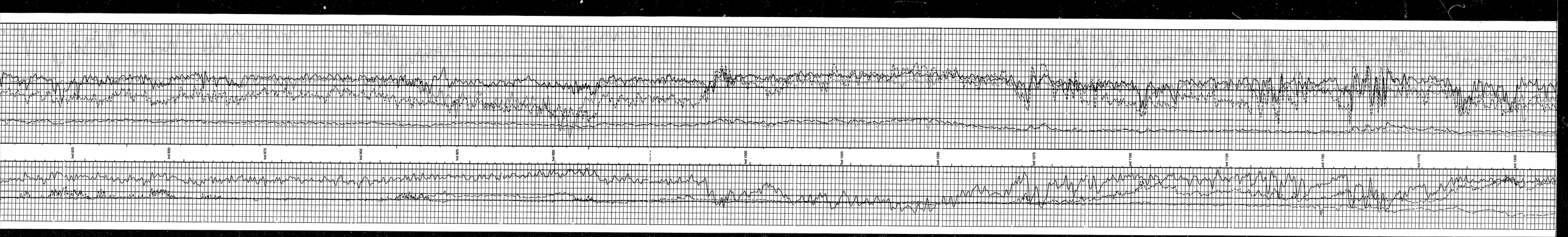
PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

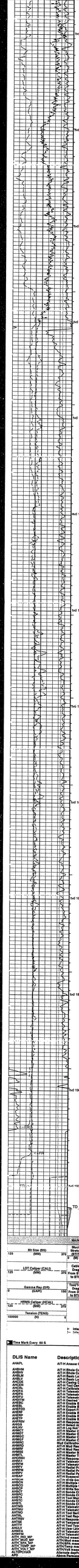
Tension (TENS) 1500000 (N) 0	LDT PhotoElectric Factor (PEF) 0 (---) 10	TLD Density Correction (HDRA) 450 (K/M3) -50	
HRMS Caliper (HCAL) 125 (MM) 375	TLD Bhd. Res. From Alloy Pe (HEFO) 0 (V/V) 12	LDT Bulk Density Correction (DRHO) 450 (K/M3) -50	
Gamma Ray (GR) 0 (GAPI) 150	Tool/Yok Drag from 0.07 to 0.45 in STDs	Alpha Processed Neutron Porosity (NPOR) 0.45 (V/V) -0.15	
LDT Caliper (CALI) 125 (MM) 375	Cable Drag from 0.45 to 0.7 in STDs	LDT Density Porosity (DPHI) 0.45 (V/V) -0.15	
Rt Star (RB) 125 (MM) 375	Stuck Sticker (STIC) 0 (IN) 30	TLD Bhd. Res. Density Porosity (DPHZ) 0.45 (V/V) -0.15	

HILTD PLAN 9C0-413(MCM) - 100% VERSION (1)




Jul 825
Jul 850
Jul 875
Jul 900
Jul 925
Jul 950
Jul 1000
Jul 1025
Jul 1050
Jul 1075
Jul 1100
Jul 1125
Jul 1150
Jul 1175
Jul 1200


3rd 1025
3rd 1050
3rd 1075
3rd 1100
3rd 1125
3rd 1150
3rd 1175
3rd 1200
3rd 1225
3rd 1250
3rd 1275
3rd 1300
3rd 1325
3rd 1350
3rd 1375
3rd 1400



Parameters

DLIS Name	Description	Value
AHAPL	AIT-H Answer Product Level(Depth Log/View only)	2_SBOX_RWOB_RABCLOGS_RADIALPROF_RADIALPAR
AHBHM	AIT-H Borehole Correction Mode	2_COMPUTED/TANDOFF
AHBLH	AIT-H Bhole Correction Code Version Number	872
AHBLV	AIT-H Bhole Logs Code Version	1_TWO
AHCEN	AIT-H Centrly Detection Enable	YES
AHCEN	AIT-H Centrly Detection Flag (In Borehole)	ECCENTERED
AHDFA	AIT-H Calibration Range Fix	FULL
AHDFA	AIT-H Telemetry Dump Frame Max Depth	19264.0 m
AHDFO	AIT-H Telemetry Dump Frame Start Sequence Number	0
AHDFU	AIT-H Telemetry Dump Frame Update Cycle	16
AHEBC	AIT-H Enable Bhole Correction	EBOX_LOG_ID
AHEBC	AIT-H Enable Bhole Correction	YES
AHEBD	AIT-H Enable Basic Logs	YES
AHEBD	AIT-H Enable Basic Logs Correction Directory	Frontside
AHEMF	AIT-H Enable Radial Profiling	YES
AHERP	AIT-H Enable Radial Parameterization	YES
AHFSW	AIT-H Responses Set Version For Four R Resolution	30.66.23.11
AHFSW	AIT-H Responses Set Version For Four S Resolution	30.66.23.11
AHGS	AIT-H Select Alpha Interpolation Gates	ON
AHHCN	AIT-H Hrms Caliber Code	LOG_VALID-NO_DEFAULT_PARAMETERS
AHMDT	AIT-H Master Cal Borehole Temperature	1.000 degC
AHMDT	AIT-H Master Date and Time	Mon Dec 31 31:59:59 1900
AHMDT	AIT-H Master Logged Mud Gain - Coarse	1.052
AHMDT	AIT-H Master Logged Mud Gain - Fine	1.051
AHMRC	Mud Calibration Resistivity	0.000 ohm.m
AHMSD	AIT-H Mud Resistivity Calibration Depth	0.000 m
AHMSE	AIT-H Mud Resistivity Factor	1.000
AHMTL	AIT-H Master Test Loop Correction	-58.000 mS/m
AHMTL	AIT-H Master Test Loop Gain Correction	1.030
AHOSW	AIT-H Responses Set Version For One R Resolution	30.66.23.11
AHRF1	AIT-H Telemetry Fixed Frame Max Depth	19264.0 m
AHRS4	AIT-H Telemetry Fixed Frame Max Number To Process	9999999
AHRFV	AIT-H Radial Profiling Code Version Number	700
AHRPV	AIT-H Radial Parameterization	1_TWO
AHRPV	AIT-H Radial Profiling Code Version Number	774
AHSAP	AIT-H Suspend Answer Product Processing	0_NOSUSPENSION
AHSCH	AIT-H Sonde Characterization Mode	SINGLETOOL
AHSCO	AIT-H Multiple Sonde Characterization Tool	ONE
AHSCP	AIT-H Sonde Characterization Pressure Sensitivity On	NEITHER
AHSCT	AIT-H Sonde Characterization Print Interval (feet)	20
AHSCU	AIT-H Sonde Characterization Time	Mon Jul 14 05:24:18 1997
AHSPC	AIT-H Sonde Characterization Pressure Coefficients	20.000
AHSTC	AIT-H Tool Standoff	30.000 mm
AHSTC	AIT-H Sonde Characterization Temperature Coefficients	-10.227
AHTMS	AIT-H Telemetry Monitor Start Sequence Number	8853784928
AHTNG	AIT-H Telemetry Monitor Update Cycle	16
AHTNG	AIT-H Telemetry Version	251
AHTRL	AIT-H Test Report Length	2511
AHTRW	AIT-H Response Set Version For Two R Resolution	30.66.23.11
AHTTE	AIT-H Temperature Selection(Sonde Error Correction)	INTERNAL
AHTTT	AIT-H Tool Type (of acquired data)	AIT
AHULV	AIT-H Uhrs Logs Version	NONE
AHWFA	AIT-H Telemetry Write Frame Max Depth	19264.0 m
AHWFA	AIT-H Telemetry Write Frame Max Number To Process	9999999
AHWFV	AIT-H Wireline Format Version	6.000
AITH_HPA_measure_point		0.000
AITH_HPA_measure_point		1.000
AITH_TEMP_measure_point		84.934
AITH_TEMP_measure_point		84.934
ALTCPCHAN	Alternate depth channel name	TVDE
APS	Above Pressure Monitor	0.000

APIH	API Barrier Number
ATTS	ATT IN (Indicates for ALLRES computation)
BFM	Borehole Fluid Medium
BFR	Borehole Fluid Resistivity
BHT	Bore Hole Status
BHT	Bore Hole Temperature (used in calculations)
BS	Bit Size
CBCO	Borehole Salinity Correction Option
CBD	Caliper Borehole Diameter
CBGR	Casing Grade
CBSR	Casing Siting Number
CBWT	Casing Weight/Foot
CCDC	Casing Collar Depth Correction
CCOO	Casing & Cement Thickness Correction Option
CCT	Casing Collar Thickness
CDT	Density Log Run No.
CLAB	Company Name
CN	Company Name
CONT	Company Name - Line 1
COUN	County
CTRY	County or Rig Name
DDL	Data Dictionary Level
DEN	Data as Month-Day-Year
DDS	Data Circulation - Stopped
DFD	Drilling Fluid Density
DFDI	Drilling Fluid Density
DFL	Drilling Fluid Loss
DFT	Drilling Fluid Type
DFV	Drilling Fluid Viscosity
DMF	Maximum Permitted Depth Difference
DREF	Depth Reference
DRIL	Drilling Measured From
DPM	Depth Offset
DPRM	Depth Quality Processing Mode
DUCO	UTC Log Code
DULM	UTC Uplink Mode
DUTC	UTC Offset
EKB	Elevation of Derrick Floor
EGL	Elevation of Ground Level
ELEV	Elevation of Kelly Bushing
ELS	Elevation of Log Zero
ENGI	Engineer
FL	Field Name
FPH	Elevation of Permanent Datum
FTEM	Flow Temperature
FD	Fluid Density
FDCP	Fluid Density Exponent
FL	Field Location
FL1	Field Location Line 1
FL2	Field Location Line 2
FLDHSTRM	Flow from selected streams to output.el end
FN	Field Name
FNAM	Formation Name
FPH	Form Factor Resistance
FSCO	Formation Salinity Correction Option
GDAT	Geodetic Datum Name
GSAG	Average Angular Deviation of Borehole from Normal
GSMAX	Maximum Deviation
HALY	Hilly Gamma Ray Mode
GRMF	Gamma Ray Matrix Density Selection
HACCD	Generalized Tension/pressure Selection
HACCE	Accelerometer coefficient
HACCI	Accelerometer Initial Calibration
HACCO	Accelerometer Serial Number
HACCT	Accelerometer Type (Manufacturer Code)
HACCU	Accelerometer Year of Calibration
HACCY	Accelerometer Y/N/R Presence
HAZI	Hole Azimuth Reference Datum
HAZM	Accelerometer Reference Temperature
HBSAD	HILT Density Coal detection
HBSAG	HILT Density Gas detection
HBSW	HILT Apply Wide Tolerance
HGNB_FICIU_MP	HGNB/FICIU measure_point
HGNB_HCNT_MP	HGNB/HCNT measure_point
HGNB_HCRT_MP	HGNB/HCRT measure_point
HGNB_HCNT_MP	HGNB/HCNT measure_point
HGNB_HCRT_MP	HGNB/HCRT measure_point
HGNB_NCNL_MP	HGNB/NCNL measure_point
HGNB_NCNL_MP	HGNB/NCNL measure_point
HID	Header Identifier
HIDI	Header Identifier Line 2
HIDT	Header Identifier
HIDT_EXTERN_BUFF_REQ	HILT auxiliary buffering requirement
HIDT_GAS_CORRECTION	HILT Gas Correction Density
HIDT_GAS_OPTION	HILT Gas Correction Option
HIDX	HDIM Centered/Eccentered
HLD	Header Logal Disclaimer
HLDC	HILT Log Density Code
HMAD	HILT Coal Detection
HNSAD	HILT Neutron Salt detection
HNSAG	HILT Neutron Gas detection
HPAR	HILT Parity Enable Word
HROC_CALI_MP	HROC/CALI Measure Point
HROC_HDIA_MP	HROC/HDIA Measure Point
HROC_LS_MP	HROC Low Scintillation Measure Point
HROC_SS_MP	HROC Short Spacing Measure Point
HRTA	HILT Activate Data Reduction
HRTB	HILT Activate Data Reduction
HRTC	HILT Activate Data Reduction
HSCN	HILT Speed Correction Mode
HSCN	HILT Speed Correction Mode
HSCN	HILT Speed Correction Mode
HSTA	HILT Status Word
HSTI	SITUese HILT Acceleration
HTCO	Hole Temperature Correction mSH cutoff
HWCA	HWCA - Cable Head Resistance
HYCS	Integrated Hole Volume Caliper Selection
IHVC	Integrated Hole Volume Caliper
IL1	Instrumentation Logs Line 1
IL2	Instrumentation Logs Line 2
JSTA	Job Status Auto Save
LAT	Latitude
LCC	Logging Company Code
LCN	Logging Latitude Length
LCM	LDT Calibration Mode
LDFT	LDT Fluid Type
LLAB	Logging Cable Head (Type)
LLAB	Section Latitude Label
LMF	Log Measured From
LOGMODE	Logging Mode
LONG	Longitude
LSN	LS Hardware Logging Control
LUN	Logging Unit Location
LUL	Logging Unit Location
MATR	Rock Matrix Type
MCOR	Mud Cake Correction Option
MCS_MP	Mud Cake Sensor Measure Point
MCSS	Mud Conductivity
MCSS	Mud Cake Sample Source
MDFT	Mud Filtrate Temperature
MDSS	Mantle Density
MFSS	Mud Filtrate Sample Source
MHCC	MCFL Mud Cake Correction Coefficient
MHCI	MCFL Borehole Correction Coefficient
MHCI	MCFL Pad Contact Correction Coefficient
MHCO	MCFL High Chloride Correction Option
MLLS	Maximum Hole Deviation
MLLS	Mud Log Service
MLOG	Mud Log - ID
MRDU	Magnetic Mark Depth Units
MRMT	Mud Resistivity Temp
MSTO	Mud Sample Source
MST	Mud Sample Temperature
MWTO	Mud Weight Correction Option
NAME	Name
NCIC	HROD Dead Time Correction
NCIC	HROD Dead Time Correction
NMT	HROD Activate MTA
NPRM	HROD Processing Mode
NPRM	HROD Processing Mode
NTCO	HROD Depth Sampling Rate
NTCO	HROD Temperature Correction Option
OBS	Operator's Depth
OBS	Other Services Line 1
OBS	Other Services Line 2
OBS	Other Services Line 3
OBS	Other Services Line 4
OBS	Other Services Line 5
PDSADP	Alternate Depth Channel playback enabled
PDATA	Permanent Datum
PDATAX	HILT max memory
PSAV	Programmable SS High Voltage
PSAV	Programmable SS High Voltage
PTCO	Pressure Temperature Correction Option
PVER	Program Version
Pt	Rig Number
	ALL MEASURALS AND PRESENTATIONS AS PER CLIENT REQUEST
Rm	Remark Line 10
	MEASURED TRANSMIT INTERVAL: XX-XX, BACK ON SURFACE: XX.XX
Rm1	Remark Line 11
	VISCOSITY was SO HIGH, THAT IT WAS NOT MEASURED.
Rm2	Remark Line 12
Rm3	Remark Line 13
Rm4	Remark Line 14
Rm5	Remark Line 15
Rm6	Remark Line 16

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Mag & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6070		0.6000	91.84		71.00
	Before	0.6182			92.54		
1	Master	1.246		1.270	50.94		70.00
	Before	1.257			51.52		
2	Master	0.6172		0.6200	47.28		69.00
	Before	0.6281			47.81		
3	Master	0.6884		0.7040	48.51		68.00
	Before	0.7042			47.04		
4	Master	1.305		1.337	40.93		58.00
	Before	1.318			40.82		
5	Master	1.886		1.955	38.47		57.00
	Before	1.913			38.88		
6	Master	1.901		1.419	36.45		57.00
	Before	1.918			36.97		
7	Master	1.353			34.91		57.00
	Before	1.360			34.99		

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	ATT-9 SPA Plus 'MV'	Value	Phase	ATT-9 SPA Zero 'MV'	Value
Nominal		994.1	Nominal		0.1408
Before		993.4	Before		0.1408
	994.0 Minimum	1040 Maximum		50.00 Minimum	50.00 Maximum

Phase	ATT-9 Temperature Plus 'V'	Value	Phase	ATT-9 Temperature Zero 'V'	Value
Master		0.6007	Master		0.5997849
Before		0.6000	Before		0.5997866
	0.5700 Minimum	0.6300 Maximum		0.0000 Minimum	0.0000 Maximum

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude 'V'	Value	Phase DEG	
0	1.026		0.4700	0.000	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	0.000 Minimum 0.000 Nominal 0.000 Maximum
1	1.029		1.050	-0.0340	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
2	1.024		1.050	-0.04187	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
3	1.020		1.050	-0.0318	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
4	1.013		1.050	-0.03506	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
5	1.007.1		1.050	-0.1134	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
6	1.003		1.050	0.0138	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
7	1.001		1.050	-0.0462	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction 'MHz'	Value	X Sonde Error Correction 'MHz'	
0	-58.52		114.5	133.3	289
		-89.00 Minimum	114.5 Nominal	289 Maximum	-89.00 Minimum 289 Nominal 289 Maximum
1	1462		137.20	-226.1	828.0
		114.5 Minimum	159.0 Nominal	204.0 Maximum	-828.0 Minimum -828.0 Nominal -828.0 Maximum
2	113.6		159.0	-39.61	292.0
		89.00 Minimum	114.5 Nominal	159.0 Maximum	-292.0 Minimum -292.0 Nominal -292.0 Maximum
3	63.31		159.0	-50.1	292.0
		24.00 Minimum	24.00 Nominal	89.00 Maximum	-292.0 Minimum -292.0 Nominal -292.0 Maximum
4	24.05		24.00	-22.81	63.50
		19.00 Minimum	24.00 Nominal	89.00 Maximum	-63.50 Minimum -63.50 Nominal -63.50 Maximum
5	12.18		24.00	11.76	63.50
		4.500 Minimum	24.00 Nominal	89.00 Maximum	-63.50 Minimum -63.50 Nominal -63.50 Maximum
6	9.657		24.00	1.299	30.00
		4.500 Minimum	19.00 Nominal	89.00 Maximum	-30.00 Minimum -30.00 Nominal -30.00 Maximum
7	-0.6874		19.00	0.2175	30.00
		-4.500 Minimum	19.00 Nominal	89.00 Maximum	-30.00 Minimum -30.00 Nominal -30.00 Maximum

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
Pulse Shape Calibration

Idx	Value	Coarse - Freq. Real Imag		Fine - Freq. Real Imag	
0	1.052		1.051		1.051
		0.6000 Minimum	1.000 Nominal	1.400 Maximum	0.6000 Minimum 1.000 Nominal 1.400 Maximum
1	1.064		1.051		1.051
		0.6000 Minimum	1.000 Nominal	1.400 Maximum	0.6000 Minimum 1.000 Nominal 1.400 Maximum
2	1.052		1.051		1.051
		0.6000 Minimum	1.000 Nominal	1.400 Maximum	0.6000 Minimum 1.000 Nominal 1.400 Maximum

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
Mud Measurement Summary

Phase	5E Xmitters Ratio	Value	Phase	5S Xmitters Ratio	Value	Phase	LS Window Ratio	Value
Before	2.9500 Minimum	2.9501 Maximum	Before	2.9500 Minimum	2.9501 Maximum	Before	0.7500 Minimum	0.8000 Maximum
Before	1.060 Minimum	1.060 Maximum	Before	1.060 Minimum	1.060 Maximum	Before	1.060 Minimum	1.060 Maximum

Phase	5S Window Sum CPS	Value	Phase	5D Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before	1000 Minimum	1500 Maximum	Before	1000 Minimum	1500 Maximum	Before	1000 Minimum	1500 Maximum

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
Proton-Proton High Voltage Calibration

Phase	5E PH High Voltage (Command) 'V'	Value	Phase	5S PH High Voltage (Command) 'V'	Value	Phase	LS PH High Voltage (Command) 'V'	Value
Before	1900 Minimum	2100 Maximum	Before	1900 Minimum	2100 Maximum	Before	1900 Minimum	2100 Maximum

Before: 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Crystal Quality Resolutions Calibration

Phase	5E Crystal Resolution %	Value	Phase	5S Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before	13.00 Minimum	14.00 Maximum	Before	11.00 Minimum	12.00 Maximum	Before	11.00 Minimum	12.00 Maximum

Before: 26-FEB-1999 20:24

High resolution Integrated Logging Tool-DTS Wellsite Calibration
MCFL Calibration

Phase	Res 5E Resistivity OHMM	Value	Phase	Res 5I Resistivity OHMM	Value	Phase	Res 5D Resistivity OHMM	Value
Before	3600 Minimum	4000 Maximum	Before	3600 Minimum	4000 Maximum	Before	3600 Minimum	4000 Maximum

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
HLT Caliper Zero Measurement

Phase	HLT Caliper Zero Measurement 'MV'	Value	Phase	HLT Caliper Flux Measurement 'MV'	Value
Before	192.6 Minimum	204.0 Maximum	Before	288.6 Minimum	304.8 Maximum

Before: 26-FEB-1999 20:26

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Cal. Mngt. GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before	0.000 Minimum	150.0 Maximum	Before	178.8 Minimum	186.7 Maximum	Before	21.43 Minimum	150.0 Maximum

Before: 26-FEB-1999 20:23

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		25.49	Master		28.59
Before		26.68	Before		29.64
	0.000 Minimum	25.49 Nominal	40.00 Maximum	0.000 Minimum	28.59 Nominal	40.00 Maximum

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High resolution Integrated Logging Tool-DTS Wellsite Calibration
Zero Measurement

Phase	Zero Measurement 'V'	Value
Master		9.900
Before		9.900
	9.900 Minimum	9.900 Maximum

Before: 26-FEB-1999 20:23

High resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Thru Cal Mag & Phase

Idx	Phase	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6070	0.6000	91.84		71.00
1	Master	1.246	1.270	50.94		70.00
2	Master	0.6172	0.6200	47.28		69.00
3	Master	0.6884	0.7040	48.51		68.00
4	Master	1.305	1.337	40.93		58.00
5	Master	1.886	1.955	38.47		57.00
6	Master	1.901	1.419	36.45		57.00
7	Master	1.353		34.91		57.00
		80.00 % Minimum	140.0 % Nominal	Nom -80.00 Maximum		Nom. + 80.00 Maximum

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High resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	ATT-9 SPA Plus 'MV'	Value	Phase	ATT-9 SPA Zero 'MV'	Value
Master		994.1	Master		0.1409
Before		993.4	Before		0.1408
	994.0 Minimum	1040 Maximum		50.00 Minimum	50.00 Maximum

Phase	ATT-9 Temperature Plus 'V'	Value	Phase	ATT-9 Temperature Zero 'V'	Value
Master		0.6007	Master		0.5997849
Before		0.6000	Before		0.5997866
	0.5700 Minimum	0.6300 Maximum		0.0000 Minimum	0.0000 Maximum

Master: 21-DEC-1998 13:54

High resolution Integrated Logging Tool-DTS Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude 'V'	Value	Phase DEG	
0	1.026		0.4700	0.000	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	0.000 Minimum 0.000 Nominal 0.000 Maximum
1	1.029		1.050	-0.0340	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
2	1.024		1.050	-0.04187	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
3	1.020		1.050	-0.0318	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
4	1.013		1.050	-0.03506	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
5	1.007.1		1.050	-0.1134	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
6	1.003		1.050	0.0138	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum
7	1.001		1.050	-0.0462	0.000
		0.9500 Minimum	1.000 Nominal	1.050 Maximum	-3.000 Minimum 0.000 Nominal 3.000 Maximum

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High resolution Integrated Logging Tool-DTS Master Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction 'MHz'	Value	X Sonde Error Correction 'MHz'	
0	-58.52		114.5	133.3	289
		-89.00 Minimum	114.5 Nominal	289 Maximum	-89.00 Minimum 289 Nominal 289 Maximum
1	1462		137.20	-226.1	828.0
		114.5 Minimum	159.0 Nominal	204.0 Maximum	-828.0 Minimum -828.0 Nominal -828.0 Maximum
2	113.6		159.0	-39.61	292.0
		89.00 Minimum	114.5 Nominal	159.0 Maximum	-292.0 Minimum -292.0 Nominal -292.0 Maximum
3	63.31		159.0	-50.1	292.0
		24.00 Minimum	24.00 Nominal	89.00 Maximum	-292.0 Minimum -292.0 Nominal -292.0 Maximum
4	24.05		24.00	-22.81	63.50
		19.00 Minimum	24.00 Nominal	89.00 Maximum	-63.50 Minimum -63.50 Nominal -63.50 Maximum
5	12.18		24.00	11.76	63.50
		4.500 Minimum	24.00 Nominal	89.00 Maximum	-63.50 Minimum -63.50 Nominal -63.50 Maximum
6	9.657		24.00	1.299	30.00
		4.500 Minimum	19.00 Nominal	89.00 Maximum	-30.00 Minimum -30.00 Nominal -30.00 Maximum
7	-0.6874		19.00	0.2175	30.00
		-4.500 Minimum	19.00 Nominal	89.00 Maximum	-30.00 Minimum -30.00 Nominal -30.00 Maximum

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High resolution Integrated Logging Tool-DTS Master Calibration
Mud Measurement

Idx	Value	Coarse - Freq. Real Imag		Fine - Freq. Real Imag	
0	1.052		1.051		1.051
		0.6000 Minimum	1.000 Nominal	1.400 Maximum	0.6000 Minimum 1.000 Nominal 1.400 Maximum
1	1.062		1.051		1.051
		0.6000 Minimum	1.000 Nominal	1.400 Maximum	0.6000 Minimum 1.000 Nominal 1.400 Maximum
2	1.052		1.051		1.051
		0.6000 Minimum	1.000 Nominal	1.400 Maximum	0.6000 Minimum 1.000 Nominal 1.400 Maximum

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High resolution Integrated Logging Tool-DTS Master Calibration
Pulse Shape Calibration

Phase	Thru Aluminum 'CM2'	Value	Phase	Thru Magnesium 'KM3'	Value
Master		2630	Master		1595
Before	2500 Minimum	2640 Maximum	Before	1470 Minimum	1600 Maximum

Phase	Pb Aluminum	Value	Phase	Pb Magnesium	Value
Master		2520	Master		2408
Before	2470 Minimum	2550 Maximum	Before	2350 Minimum	2450 Maximum

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High resolution Integrated Logging Tool-DTS Master Calibration
Neutron Summary

Phase	5S Average Deviation %	Value	Phase	5D Average Deviation %	Value	Phase	LS Average Deviation %	Value
Before	-0.8000 Minimum	0.8000 Maximum	Before	-1.000 Minimum	1.000 Maximum	Before	-1.000 Minimum	1.000 Maximum

Phase	5S Max Deviation %	Value	Phase	5D Max Deviation %	Value	Phase	LS Max Deviation %	Value
Before	-3.000 Minimum	3.000 Maximum	Before	-3.000 Minimum	3.000 Maximum	Before	-3.000 Minimum	3.000 Maximum

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High resolution Integrated Logging Tool-DTS Master Calibration
Calorimetry Measurement

Phase	Thermal Neut Corr. (Fans) CPS	Value	Phase	Thermal Fst Corr. (Fans) CPS	Value	Phase	CNTC-CFTC (Fans)	Value
Before	500 Minimum	1000 Maximum	Before	500 Minimum	1000 Maximum	Before	2.000 Minimum	2.500 Maximum

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Litho Density - D | Equipment Identification

Primary Equipment:		
Nuclear Sources Cartridge	NSC - E	2707
Gamma Source Cartridge	GSR - J	2050
Gamma Source Radioactive		
Auxiliary Equipment:		
Density Rackaxily Sonde	DRS -	4969
Electronics Cartridge Housing	ECH - MAA	
Powered Decentr Housing	PCH -	2950

Litho Density - D Wellsite Calibration
Background Measurement

Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LB Background CPS	Value
Master		19.88	Master		74.08	Master		56.97
Before		19.47	Before		74.08	Before		56.92
	20.00 Minimum	30.00 Maximum		45.00 Minimum	70.00 Maximum		45.00 Minimum	70.00 Maximum

Phase	LTH Background CPS	Value	Phase	SS1 Background CPS	Value	Phase	SS2 Background CPS	Value
Master		5.973	Master		17.33	Master		11.89
Before		6.046	Before		17.42	Before		11.76
	5.500 Minimum	7.000 Maximum		12.00 Minimum	14.00 Maximum		11.00 Minimum	13.00 Maximum

Master: 29-FEB-1999 13:24
Before: 26-FEB-1999 20:24

Litho Density - D Wellsite Calibration
Deflector Thickness Measurements

Phase	LB Resolution Background	Value	Phase	SS Resolution Background	Value
Master		8.663	Master		8.751
Before		8.741	Before		8.751
	8.000 Minimum	11.00 Maximum		8.000 Minimum	11.00 Maximum

Master: 26-FEB-1999 13:24
Before: 26-FEB-1999 20:24

Litho Density - D Master Calibration
Background Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LB Aluminum CPS	Value
Master		20.17	Master		141.1	Master		103.6
	20.00 Minimum	30.00 Maximum		120.0 Minimum	180.0 Maximum		90.00 Minimum	140.0 Maximum

Phase	LTH Aluminum CPS	Value	Phase	SS1 Aluminum CPS	Value	Phase	SS2 Aluminum CPS	Value
Master		16.36	Master		186.6	Master		261.9
	20.00 Minimum	30.00 Maximum		150.0 Minimum	210.0 Maximum		210.0 Minimum	320.0 Maximum

Master: 24-FEB-1999 17:48

Litho Density - D Master Calibration
Deflector Thickness Measurements

Phase	LL Iron CPS	Value	Phase	LU Iron CPS	Value	Phase	LB Iron CPS	Value
Master		92.51	Master		1372	Master		1141
	70.00 Minimum	110.0 Maximum		1200 Minimum	1800 Maximum		1000 Minimum	1600 Maximum

Phase	LTH Iron CPS	Value	Phase	SS1 Iron CPS	Value	Phase	SS2 Iron CPS	Value
Master		38.53	Master		1858	Master		2371
	15.00 Minimum	30.00 Maximum		1050 Minimum	1750 Maximum		1900 Minimum	2900 Maximum

Master: 24-FEB-1999 13:56

Litho Density - D Master Calibration
Spectrum Quality Ratios

Phase	QRLS Calculated	Value	Phase	QRBS Calculated	Value	Phase	QRU Calculated	Value
Master		0.9597	Master		0.7028	Master		0.3445
	0.8000 Minimum	1.000 Maximum		0.6000 Minimum	0.8000 Maximum		0.2500 Minimum	0.4000 Maximum

Phase	QLR Calculated	Value	Phase	QR Calculated	Value
Master		1.397	Master		1.012
	1.000 Minimum	1.500 Maximum		1.000 Minimum	1.500 Maximum

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	
Master: 24-FEB-1999 13:56						

Scintillation Gamma-Ray - N / Equipment Identification

Primary Equipment:		
Scintillation Gamma Cartridge	SGC - SA	
Scintillation Gamma Detector	SGD - TAA	
Auxiliary Equipment:		
Scintillation Gamma Housing	SGH - K	
Gamma Source Radioactive	GSR - U/Y	1072

Scintillation Gamma-Ray - N Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig - Bkg) GAPI		Value	Phase	Gamma Ray (Calibrated) GAPI		Value
Before			28.70	Before			155.4	Before			165.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		141.3 (Minimum)	155.4 (Nominal)	169.6 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)	
Before: 26-FEB-1999 20:23											

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point : Measured Depth True Vertical Depth

591.00 M 591.00 M

Depth	Deviation	True Vertical Depth	Depth	Deviation	True Vertical Depth
37.75 M	0.70 DEG	37.77 M	1486.94 M	30.40 DEG	1454.43 M
150.67 M	0.70 DEG	150.69 M	1496.20 M	29.70 DEG	1462.45 M
263.34 M	0.50 DEG	263.35 M	1505.80 M	28.50 DEG	1470.84 M
378.15 M	0.30 DEG	378.16 M	1515.40 M	27.80 DEG	1479.30 M
503.00 M	0.50 DEG	503.00 M	1525.00 M	28.10 DEG	1487.78 M
551.00 M	0.30 DEG	551.00 M	1534.41 M	29.30 DEG	1496.03 M
591.00 M	0.70 DEG	591.00 M	1543.97 M	29.70 DEG	1504.35 M
677.00 M	1.00 DEG	676.99 M	1553.50 M	29.20 DEG	1512.65 M
777.00 M	0.80 DEG	776.98 M	1563.01 M	28.89 DEG	1520.97 M
792.00 M	1.75 DEG	791.97 M	1572.60 M	28.50 DEG	1529.38 M
878.00 M	1.25 DEG	877.94 M	1582.20 M	28.20 DEG	1537.83 M
991.00 M	1.50 DEG	990.91 M	1591.80 M	28.30 DEG	1546.28 M
1093.10 M	1.90 DEG	1092.97 M	1601.40 M	28.00 DEG	1554.75 M
1102.90 M	2.10 DEG	1102.76 M	1610.60 M	27.20 DEG	1562.90 M
1111.40 M	3.20 DEG	1111.25 M	1619.90 M	26.20 DEG	1571.21 M
1121.50 M	4.40 DEG	1121.33 M	1629.60 M	25.60 DEG	1579.94 M
1131.50 M	5.70 DEG	1131.29 M	1639.20 M	25.50 DEG	1588.60 M
1141.84 M	7.30 DEG	1141.56 M	1648.60 M	25.00 DEG	1597.10 M
1151.02 M	8.90 DEG	1150.65 M	1658.30 M	24.30 DEG	1605.91 M
1161.00 M	10.10 DEG	1160.49 M	1668.00 M	23.90 DEG	1614.77 M
1170.75 M	11.20 DEG	1170.08 M	1677.70 M	23.70 DEG	1623.64 M
1180.60 M	12.00 DEG	1179.72 M	1687.30 M	22.60 DEG	1632.47 M
1189.28 M	13.60 DEG	1188.19 M	1696.90 M	20.30 DEG	1641.40 M
1199.24 M	15.80 DEG	1197.82 M	1706.70 M	18.90 DEG	1650.64 M
1208.92 M	17.50 DEG	1207.10 M	1716.20 M	18.80 DEG	1659.63 M
1218.46 M	19.30 DEG	1216.15 M	1725.70 M	18.50 DEG	1668.63 M
1228.22 M	21.10 DEG	1225.31 M	1735.30 M	16.90 DEG	1677.77 M
1237.62 M	22.70 DEG	1234.03 M	1744.90 M	15.20 DEG	1687.00 M
1246.75 M	23.90 DEG	1242.41 M	1754.40 M	12.80 DEG	1696.22 M
1256.52 M	25.00 DEG	1251.31 M	1764.10 M	10.20 DEG	1705.72 M
1266.27 M	26.20 DEG	1260.10 M	1773.60 M	8.60 DEG	1715.09 M
1276.27 M	27.10 DEG	1269.04 M	1783.20 M	8.30 DEG	1724.59 M
1285.74 M	27.90 DEG	1277.44 M	1792.80 M	8.40 DEG	1734.09 M
1295.49 M	28.50 DEG	1286.03 M	1802.30 M	8.40 DEG	1743.48 M
1305.15 M	28.70 DEG	1294.51 M	1811.80 M	7.90 DEG	1752.89 M
1314.72 M	28.90 DEG	1302.90 M	1821.40 M	7.20 DEG	1762.41 M
1324.31 M	29.20 DEG	1311.28 M	1831.00 M	6.50 DEG	1771.94 M
1334.00 M	29.60 DEG	1319.72 M	1840.60 M	6.10 DEG	1781.48 M
1343.38 M	29.80 DEG	1327.87 M	1850.10 M	5.80 DEG	1790.93 M
1353.04 M	29.80 DEG	1336.25 M	1859.70 M	4.90 DEG	1800.49 M
1362.59 M	28.70 DEG	1344.59 M	1869.30 M	3.70 DEG	1810.06 M
1371.99 M	27.20 DEG	1352.89 M	1878.70 M	2.90 DEG	1819.44 M
1381.70 M	26.50 DEG	1361.55 M	1888.20 M	2.20 DEG	1828.93 M
1391.10 M	26.40 DEG	1369.97 M	1897.80 M	1.90 DEG	1838.53 M
1400.75 M	26.90 DEG	1378.59 M	1906.90 M	2.30 DEG	1847.62 M
1410.30 M	27.30 DEG	1387.10 M	1916.60 M	2.60 DEG	1857.31 M
1420.00 M	28.00 DEG	1395.69 M	1926.20 M	2.80 DEG	1866.90 M
1429.60 M	28.80 DEG	1404.13 M	1945.40 M	2.00 DEG	1886.08 M
1439.20 M	28.20 DEG	1412.57 M	1955.10 M	1.50 DEG	1895.78 M
1448.90 M	27.60 DEG	1421.14 M	1974.20 M	0.60 DEG	1914.88 M
1458.60 M	28.00 DEG	1429.72 M	1976.00 M	0.60 DEG	1916.68 M
1467.90 M	28.90 DEG	1437.90 M	1990.00 M	0.60 DEG	1930.68 M
1477.30 M	29.80 DEG	1446.09 M			

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA

PROVINCE NORTHWEST TERRITORIES

TVD

BOTTOM LOG INTERVAL	1925.4 m
SCHLUMBERGER DEPTH	1931 m
DEPTH DRILLER	1930.67 m
KELLY BUSHING	625.2 m
DRILL FLOOR	624.9 m
GROUND LEVEL	618.4 m

Schlumberger

PLATFORM EXPRESS
COMPENSATED NEUTRON
DUAL DENSITY LOG

MER COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

PLATFORM EXPRESS
COMPENSATED NEUTRON
DUAL DENSITY LOG

60 deg-46', 122 deg-30' (SUR LOCATION)
263.69M, -90.17M (BOTTOM LOG)
300/K-77-60-50-122.30/00 (LWI)

Permanent Datum: GROUND LEVEL — Elev.: 616.4 M
Log Measured From: KELLY BUSHING — 6.8 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No. N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	10-MAR-1999			
Run Number	2			
Depth Driller	2119 M			
Schlumberger Depth	2117 M			
Bottom Log Interval	2111.3 M			
Top Log Interval	1999.5 M			
Casing Driller Size @ Depth	177.800 MM @ 1999 M	@	@	@
Casing Schlumberger	1996.8 M			
Bit Size	156.000 MM			
Type Fluid In Hole	POTASSIUM SULPHATE			
MUD Density	1045 KIM3 — Viscosity 53 S			
Fluid Loss — PH	8 C3 — 9.6			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.660 OHMM @ 22 DEGC	@	@	@
RMF @ Measured Temperature	2.900 OHMM @ 22 DEGC	@	@	@
RMC @ Measured Temperature	3.500 OHMM @ 21 DEGC	@	@	@
Source: RMF / RMC	MEASURED / MEASURED			
RM @ MRT — RMF @ MRT	1.870 @ 88 — 1.031	@ @	@ @	@ @
Maximum Recorded Temperatures	88 DEGC			
Circulation Stopped — Time	17-MAR-1999 — 17:30			
Logger On Bottom — Time	10-MAR-1999 — 12:45			
Unit Number — Location	3010 — 6840			
Recorded By	KIMBERLEY BAKER			
Witnessed By	BRIAN HESTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
MUD Density — Viscosity				
Fluid Loss — PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF / RMC				
RM @ MRT — RMF @ MRT	@ @	@ @	@ @	@ @
Maximum Recorded Temperatures				
Circulation Stopped — Time				
Logger On Bottom — Time				
Unit Number — Location				
Recorded By				
Witnessed By				

OTHER SERVICES
OTHER SERVICES
OBS; BHC-SONIC
OBS; DIL
OBS; MICT, CCL
OBS; NGT, CCL
REMARKS: RUN NUMBER 2

REMARKS:
ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST
ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST
4TH MAN WITNESS: STEVE MACDONALD
RUN 2 HB CHOKE @ 18.5C RW2, 4.5 OHMM @ 21.1 C, RMC 4.66 OHMM @ 22.0 C
TIME SINCE CIRCULATION: 5 HRS, TIME LAST CIR BOTTOM: 13.5
TIME SINCE CIRCULATION: 4 HRS, TIME LAST CIR BOTTOM: 12.5
LDT MAGNETIC CALS ENTERED BY HAND BEFORE RUN FOR DEPTH CONTROL
PRINTS 2 FIELD, 4 FINAL
TIED INTO OPEN HOLE LOG DATED 10-MAR-1999
BRIDGE OPENED @ 1999.5 M
PROGRAM VERSION: 5.2.3
LOGGED INTERVAL: START — STOP

	RUN 1	RUN 2
BRIDGE OPENED @	1999.5 M	
LOGGED INTERVAL	START	STOP

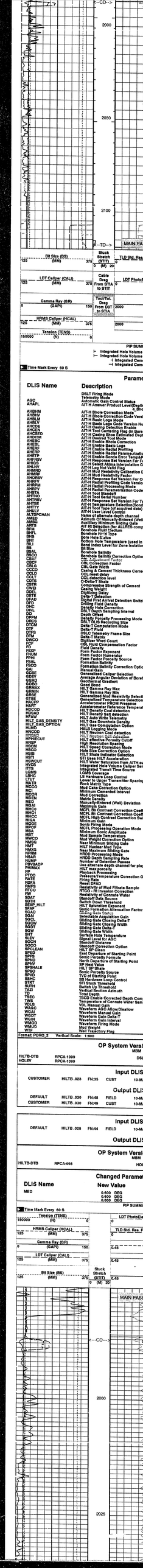
EQUIPMENT DESCRIPTION

RUN 1 — RUN 2

SURFACE EQUIPMENT

DOWNHOLE EQUIPMENT

| | | | |



PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Cement Volume Minor Pip Every 0.1 M3
- Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DSLT Firing Mode	BHC
	Telemetry Mode	DSLC_TCC
AGC	Automatic Gain Control Status	ON
AHAPL	AIT-H Answer Product Level(Depth Log/View only)	
AHBHM	AIT-H Bhole Correction Mode	2_ComputeBorehole
AHBHV	AIT-H Bhole Correction Code Version Number	2
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	750
AHCEN	AIT-H Casing Detection Enable	Yes
AHCSM	AIT-H Cool Correction Flag (In Borehole)	Eccentered
AHDTM	AIT-H Dialog Tool Mode Selected Depth	-50000 M
AHEAC	AIT-H Eccentering Code	0x00_Low_000
AHEBL	AIT-H Enable Basic Logs	Yes
AHENF	AIT-H Enable Radial Profiling	Yes
AHETP	AIT-H Enable Radial Parameterization	Yes
AHFRW	AIT-H Enable Borehole Error Temp&Pres Corr	Yes
AHGS	AIT-H Response Set Version For Four R Resolution	30.66,23,10
AHLAV	AIT-H Log Acquisition Compilation Gating	Yes
AHMRD	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMSF	AIT-H Mud Resistivity Calibration Depth	0 M
AHORW	AIT-H Mud Resistivity Factor	1
AHRAL	AIT-H Response Set Version For One R Resolution	30,66,23,10
AHRPM	AIT-H Radial Position Code Version Number	622
AHRPV	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHSTA	AIT-H Tool Configuration Code Version Number	813
AHTNO	AIT-H Tool Standoff	12.7 MM
AHTRW	AIT-H Tool Serial Number	1227
AHTSE	AIT-H Response Set Version For Two R Resolution	30,66,23,10
AHTSS	AIT-H Temperature Selection(Sonde Error Correction)	Internal
AHUV	AIT-H Tool Type (of associated data)	HMT
ALTDPCHAN	AIT-H User Level Control	Normal
AMED	Altitude Of Measure Point Channel	TVDE
AMSG	Azimuth Of Mandrel Shielded (Grd) Deviation	0 DEG
ANTF	Auxiliary Minimum Sliding Gate	100 US
BFM	AIT Fit Selection (for ALLRES computation)	13_AHT60
BHL	Borehole Fluid Sodium	LIQUID
BHS	Borehole Type	WATER
BHT	Bore Hole Salute	OPEN
BLI	Bore Hole Temperature (used in calculations)	818 DEGC
BS	Bond Index Level for Zone Isolation	12
BSAL	Bit Size	156.000 MM
BSCO	Borehole Salinity Correction Option	-50000.00 PPM
CACF	Caliper Adjusted Factor	NO
CBCF	CBL Correction Factor	1
CBLG	CBL Gain Channel	1.6
CCOO	Casing & Cement Thickness Correction Option	45 US
CCLO	CCL reset delay	NO
CCLT	CCL detection level	300 MM
CDTS	C-Delta-T Shale	0 U
CMTR	Compressive Strength of Cement	328.084 US/M
CWEI	Casing Weight	0 KPAA
DDEN	Delta-T Density	34.32 KG/M
DETE	Delta-T Eccentering	0 EZ
DFAD	Digital First Arrival Detection Switch	DSF
DFD	Drilling Fluid Density	1045.00 K/M3
DHC	Density Hole Correction	NO
DIVI	DSLT Depth Sampling Interval	25
DPH	Depth Offset	0.8 M
DPPM	DSLT Depth Density Processing Mode	HIRES
DRCS	DSLT DLIS Recording Size	20
DTCM	Delta-T Computation Mode	2 DTCL
DTF	Delta-T Fluid	620.079 US/M
DTFS	DSLC Telemetry Frame Size	1000 M/M
DTM	Delta-T Matrix	183.727 US/M
DWCO	Digitizer Word Count	20
ECFA	CBL Fluid Compensation Factor	3
FD	Bond Density	1000 K/M3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	2
FPHI	Form Factor Porosity Source	DPHZ
FRAL	Formation Salinity	-50000 PPM
FRCO	Formation Salinity Correction Option	NO
GAIN	Manual Gain	40
GCSE	Generalized Caliper Selection	BS
GDEV	Generalized Deviation of Borehole from Normal	0 DEG
GDBD	Geothermal Gradient	0.018227 DEG/M
GRMAX	Good Bond	2 MV
GRMIN	Gamma Ray Max	150 GAPI
GRMX	HILT Gamma Ray Min	0 GAPI
GTSE	Generalized Mud Resistivity Selection	AITH_RESIST
HACPP	Generalized Temperature Selection	LINEAR_ESTIMATE
HART	Hole Acceleration Pulse Percentage	PRESENT_DOWNHOLE
HDCOD	Accelerometer Hole Temperature	20 DEGC
HDSAD	HILT Density Coal detection	2100 K/M3
HFAD	HILT Density Set detection	2100 K/M3
HFAS	HILT Auto Write Telemetry	NO
HLT_GAS_DENSITY	HILT Gas Downhole Density	0 K/M3
HLT_GAS_OPTION	HILT Gas Computation Option	OFF
HLMG	HILT Logging Mode	HIRES
HNDCO	HILT Hardware Gain Control	0.45 V/V
HNSLC	HILT Hardware Salt detection	2100 K/M3
HPHVEOUT	HILT effective Porosity Cutoff	0.45 V/V
HRSP	High Resolution Spacing	126.997 MM
HSCO	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSIG	Hole Size Correction Option	YES
HSIS	HILT Shale Indicator Selection	0.45 V/V
HSTI	STI Linear Acceleration	NO
HSWCUT	HILT Water Saturation for AITH cutoff	100 %
HVOS	Integrated Hole Volume Caliper Selection	AUTOMATIC
ITTS	Integrated Transit Time Source	DTC
LGMS	LGMS Coverage	NONE
LSHV	LS Hardware Loop Control	DISALLOW
LSRT	LS Upper Transmitter Spacing Ratio	2
MATR	Mask Matrix Type	DOLOMITE
MCCO	Mud Cake Correction Option	NO
MCI	Minimum Cemented Interval	0.048 M
MCOR	Mud Correction	0.0762 M
MDEN	Matrix Density	2850 K/M3
MEA	Manually-Entered (Well) Deviation	0.650 DEG
MHOI	Maximum Gain	350
MHOO	MCFL BO Contrast Correction Coefficient	2.2e-05 OHMS
MHOC	MCFL Mud Resistivity Correction Coefficient	3.2e-03 OHMS
MHOC	MCFL High Contrast Correction Switch	NO
MIGA	Minimum Gain	0
MODE	Sonic Firing Mode	BHC
MPCF	MCFL Processing Operation Mode	ON
MRT	Minimum Sonic Amplitude	0 MV
MST	Mud Sample Temperature	22.22 DEGC
MWCO	Mud Weight Correction Option	0
NMSG	Near Minimum Sliding Gate	180 US
NMT	HILT Nuclear Mud Type	NOBARITE
NMXG	Near Maximum Sliding Gate	750 US
NPNM	HROD Processing Mode	Hires
NPSM	HROD Depth Sampling Rate	25.4 MM
NSMP	Number of Detection Passes	2
PBVBADP	Playback Processing Mode channel for playback	NO
PHMAX	HILT max porosity	0.35 V/V
PP	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RATE	Firing Rate	R10
RDFA	Read DFAD	OFF
RMFA	Receptivity of Mud Filtrate Sample	2.5800 OHMM
RTCO	RTCO Correction Option	YES
RW	Resistivity of Mud Filtrate Water	1.0000 OHMM
SDAT	Standoff Data Source	SCH
SDTH	Switch Down Threshold	16384
SEXP_HILT	HILT Saturation Exponent	2
SFAC	Sonic Formation Attenuation Factor	0 DB/M
SGAI	Sliding Gate Delta-T	CC
SGAU	Sliding Gate Correction Gain	AUTO
SGCL	Sliding Gate Closing Delta-T	820 US/M
SGCW	Sliding Gate Closing Width	20 US
SGDT	Sliding Gate Delay	184 US/M
SGW	Sliding Gate Width	184 US/M
SHT	Surface Hole Temperature	20 DEGC
SLEV	Signal Level for AGC	3000
SOCN	Standoff Distance	3.175 MM
SOCO	Standoff Correction Option	NO
SPCLEAN	Sand Porosity	0.000 M/M
SPEE	Reset Standoff Starting Point	0 M
SPPR	Sonic Porosity Formula	RAYMER_HUNT
SPND	North Departure of Starting Point	0 M
SPNH	SP Neat Value	0 MV
SPSHALE	HILT SP Shale	0 MV
SPSO	Sonic Porosity Source	DT
SPVC	SP Vertical Starting Point	0 M
SSHC	SS Yo-Yo Detection Control	DISALLOW
STKT	STI Shock Threshold	1024 M
SUTH	Switch Up Threshold	22.40 US
TAZI	Vertical Section Azimuth	0 DEG
TD	Total Depth	2118 M
TSCC	TSCD Enable Corrected Depth Computation	YES
TWS	Two-Way Travel Time Ultimate Water Sample	37.76 DEGC
VDLG	VDL Manual Gain	40
WAGC	Waveform AGC Allow/Disallow	OFF
WGAI	Waveform Manual Gain	0
WGDT	Waveform Gain Delta-T	787 US/M
WMOD	Waveform Gain Interval	22.40 US
WRCD	Waveform Firing Mode	DETECTION
WTF	Mud Weight	1048 K/M3
WTT	Well Trajectory Flag	VERTICAL

Format: PORO_2 Vertical Scale: 1:600 Graphics File Created: 10-MAR-1999 17:41

OP System Version: 7C0-713

MBM

HILTB-DTB	RPCA-1099		
HOLEV	RPCA-1099	DSLT-TCC	SKKA-997

Input DLIS Files

CUSTOMER	HILTB .023	FN:35	CUST	10-MAR-1999 15:54	2119.6 M	1806.7 M

Output DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41		
CUSTOMER	HILTB .030	FN:49	CUST	10-MAR-1999 17:41		

Input DLIS Files

DEFAULT	HILTB .028	FN:44	FIELD	10-MAR-1999 17:24	2120.3 M	1975.9 M

Output DLIS Files

OP System Version: 7C0-713

MBM

HILTB-DTB	RPCA-998	HOLEV	RPCA-998

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.000 DEG	2120.3 08:50:14
	0.600 DEG	0.600 DEG	1888.9 08:52:24
	0.600 DEG	0.600 DEG	1975.9 08:52:39

PIP SUMMARY

Time Mark Every 60 S

TENSION (TENS) (N)	1500000 0	LDT PhotoElectric Factor (PEF) (----)	0 10.450
HRMS Caliper (HCAL) (MM)	125 375	TLD Std. Res. Formation Pe (PEFZ)	0 10.450
Gamma Ray (GR) (GAPI)	0 150	Alpha Processed Neutron Porosity (NPOR) (V/V)	0.45 -0.15
LDT Caliper (CALI) (MM)	125 375	LDT Density Porosity (DPHI) (V/V)	0.45 -0.15
Bit Size (BS) (MM)	125 375	TLD Std. Res. Density Porosity (DPHZ) (V/V)	0.45 -0.15

Stuck Stretch (STIT) 0 (M) 20

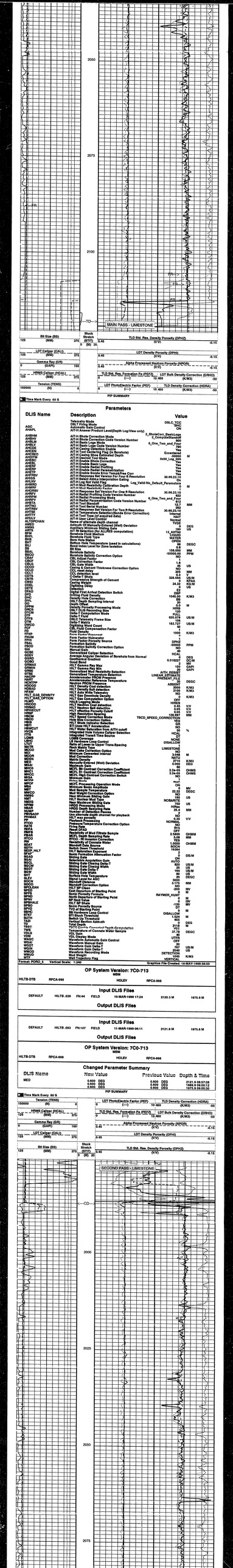
LDT Bulk Density Correction (DRHO) (K/M3) -50 50

TLD Bulk Density Correction (DRHO) (K/M3) -50 50

LDT Bulk Density (RHOB) (K/M3) 2000 3000

TLD Std. Res. Formation Density (RHOZ) (K/M3) 2000 3000

Tool/Tool Drag From DAT to RTA 2000 3000



Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC,TCC
	DNLT Filtering Mode	None
	Automatic Gain Control	ON
	AIT-H Answer Product Used(Depth Log/View only)	2_RiloriCorr_BestLog.pa
	AIT-H Sholn Correction Mode	2_CompDefStandOff
	AIT-H Basic Logging Mode Version Number	6
	AIT-H Basic Logs Mode Mnemonic	6_One_Two_and_Four
	AIT-H Deep Inversion Enable	Yes
	AIT-H Deep Filtering Flag (In Borehole)	Eccentered
	AIT-H Deep Inversion Invaded Depth	40.64 M
	AIT-H Deep Tool Mode	0x00_Log_Only
	AIT-H Enable Sholn Correction	Yes
	AIT-H Enable Radial Profiling	Yes
	AIT-H Enable Radial Parameterization	Yes
	AIT-H Enable Radial Profile Depth of Corr	Yes
	AIT-H Processes Set Version For Four R Resolution	30.48,23,10
	AIT-H Select Alpha Interpolation Gating	0.2
	AIT-H Mud Resistivity Calibration Depth	Log_Valid-No_Default_Parameters
	AIT-H Mud Resistivity Factor	0
	AIT-H Radial Processes Set Version For One R Resolution	30.48,23,10
	AIT-H Radial Profiling Code Version Number	3
	AIT-H Radial Profiling Mnemonic	6_One_Two_and_Four
	AIT-H Radial Parameterization Code Version Number	4
	AIT-H Tool Standoff	12.7 MM
	AIT-H Tool Version Number	4
	AIT-H Resistivity Set Version For Two R Resolution	30.48,23,10
	AIT-H Temperature Selection(Borehole Error Correction)	Internal
	AIT-H Use Logging Environmental Setup	Hole
	AIT-H User Environmental Setup	Normal
	Name of alternate depth channel	TVDE
	Azimuthal Standoff Error (mrad) (Well) Deviation	0 DEG
	Azimuthal Standoff Error Correction	30
	AIT fit Selection (for ALLRES computation)	13_AIT40
	Borehole Fluid Type	LIQUID
	Borehole Salinity Type	WATER
	Bore Hole Salinity	0
	Bore Hole Temperature (used in calculations)	60 DEGC
	Bond Index Level for Zone Isolation	0.25
	BS	158.008 MM
	Borehole Salinity	>0000.00 PPM
	Borehole Salinity Correction Option	NO
	CBL Amplitude	0
	CBL Correction Factor	1
	CBL Gate Width	40 US
	CBL Formation Thickness Correction Option	NO
	CCL1	305 MM
	CCL1 CCL detection level	0.5
	CCL1-Cable-T Shift	308.064 US/M
	Calibration Strength of Cement	0 KPAA
	Cement Evaluation	34.32 US/M
	Digitizing Delay	0
	Digital Fluid Arrival Detection Switch	ED
	Drilling Fluid Density	1040 K/M3
	Density Fluid Correction	NO
	DLC Telemetry Interval	0.25
	Depth Offset	0 M
	Density Porosity Processing Mode	HRES
	DTCM Delta-T Matrix Size	120
	DTF Delta-T Fluid Value	620.5
	DTSF Delta-T Telemetry Frame Size	60.5 US/M
	DWCO	163.727
	Digitizing Word Count	48 US/M
	CF	0
	Fluid Density	1000 K/M3
	FPHI Formation Porosity	0
	Form Factor Interpolation	0
	Form Factor Porosity Source	DPHZ
	Formation Porosity	0.3 PPM
	Formation Porosity Correction Option	NO
	GAI	0
	Gain Ranging Selection	AUTO
	GDEV Azimuthal Deviation of Borehole from Normal	0 DEG
	GSRO	0.018227 G/C3
	Geothermal Gradient	0 DEGM
	GWMAX HLT Gamma Ray Max	150 GAPI
	GWMIN HLT Gamma Ray Min	0 GAPI
	GTBE Generalized Bed Resistivity Selection	AITH_AIT40
	GTSE Generalized Temperature Selection	LINEAR_ESTIMATE
	GTYP Generalized Tool Type	PRESENT_PICK
	HDEC Accelerometer Sensing Temperature	0 DEGC
	HEDV Neutron PROM Presence	ABSENT
	HDAS HLT Density Acquisition Mode	2000 K/M3
	HFAW HLT Density Selection	2100 K/M3
	HLT Auto Wide Telemetry	NO
	HLT_SAS_DENSITY HLT Gas Correction Option	1.15 K/M3
	HLMO HLT Gas Density Option	OFF
	HNGO Hole Logging Mode	CASED
	HNSO HLT Neutron Cal selection	0.65 V/V
	HPHECUT HLT Neutron Porosity Cutoff	0.65 V/V
	HRHF HRA Processing Mode	0.65 V/V
	HSCN HLT Speed Correction Mode	128.991 MM
	HSEL HLT Shale Selection Mode	TSCD_SPEED_CORRECTION
	HSIF HLT Shale Selection Selection	YES
	HSTI Sonic HLT Acceleration	NO
	HTCO HLT Temperature Cutoff ATH cutoff	150 %
	HVCR HRA Volumetric Caliper Selection	NO
	ITTS Integrated Transit Time Source	HCAL
	LDMC Density Correction	34.32
	LDMO LDRA Density Porosity	NONE
	LTUT Units of Lenght for Upper Trans.Spacing	DISALLOW
	MATR Mud Matrix Type	LIMESTONE
	MCC Mud Cake Correction Option	NO
	MCCO Mud Cake Correction	0 M
	MDEN Mud Composition	NATU
	MEDH Matrix Density	2710 K/M3
	MEDV Mud Density (Well) Deviation	0.095 DEG
	MHCH Borehole Salinity	0
	MICR1 Bit Contrast Correction Coefficient	3.2e-05 OHMS
	MICR2 Bit Contrast Correction Coefficient	3.2e-05 OHMS
	MICR3 Bit Contrast Correction Switch	NO
	MIDA Minimum Gain	0.1
	MPOT Mud Potential	mv/
	MQFL Processing Calculation Mode	OIL
	MRA Mud Resistivity Amplitude	0 MV
	MRT Mud Resistivity Temperature	22.22 DEGC
	NMCO Net Weight Correction Option	NO
	NMEA Neutron Matrix Type	LS
	NMOD HLT Number Mud Type	NOMATRIX
	NSIG Near Maximum Sliding Gate	750 US
	NSLO Neutron Slope Type	Hilfer
	NSMP HRDO Depth Sample Rate	20.4 MM
	NUMP Number of Detection Passes	1
	NWAP Neutron Wave Channel for playback	HLT
	PF Playback Processing	0.15 V/V
	PFCO Pressure Correction Option	NONE
	PLTC	NO
	PRFA	2013
	PRFB	1.7e-05
	RADS Readings of Real Fillrate Sample	0.5000 OHMM
	RDTC Depth Sensing Offset	0.08 MM
	RM Mud Resistivity Interpretation	0.25 OHMM
	RMW Resistivity of Connate Water	0.1000 OHMM
	SDAT Standoff Data Source	SOCH
	SDEV Standoff Deviation	19264
	SDSO HLT Selection Exposed	
	SFAF Sonic Formation Attenuation Factor	0 DB/M
	SGAI Gain Selection	ON
	SGCL Sliding Gate Closing Delta-T	AUTO
	SGDT Sliding Gate Delta-T	120 US/M
	SGOP Sliding Gate Depth	184 US/M
	SGW Sliding Gate Width	120 US/M
	SHT Surface Hole Temperature	20 DEGC
	SLCT Signal Level for AGC	3002
	SOFF Sonic Offset	0.175 MM
	SOCO Sonic Correction Option	NO
	SPEEDFAN HLT SP Chan	-200 MV
	SPHF Sonic Porosity Factor	1
	SPHO Sonic Porosity Formula	RAYMER_HUNT
	SPNO North Departure of Starting Point	0 M
	SPOR Sonic Porosity	0 V/V
	SPRO Sonic Porosity Source	-120 MV
	SPVO TVD of Starting Point	0 M
	SS Hardware Loop Control	DISALLOW
	STCT Stuck Tool Caliper	1.524 M
	STUN Switch Up Threshold	1524
	TAZI Vertical Section Azimuth	0 DEG
	TDEP	2113 M
	TEDI Depth Zero for Depth Computation	1.7976
	TMCS Temperature of Connate Water Sample	37.78 DEGC
	TVDE	0
	VDL Display Mode	UTFR
	WAGC Waveform Automatic Gain Control	ON
	WAVO Waveform Manual Gain	0
	WGSO Waveform Gain Delta-T	347 US/M
	WGUN Waveform Gain Units	DECIBELS
	WMOD Waveform Sampling Mode	DETECTED
	WRC Mud Weight	1040 K/M3
	WTYP Logging Tool Chassis Type	VERTICAL

Format: PORO_3 Vertical Scale: 1:240 Graphics File Created: 18-MAY-1999 08:50

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-998	HOLEV	RPCA-998

Input DLIS Files

DEFAULT	HILTB..026	FN:44	FIELD	19-MAR-1999 17:24	2120.3 M	1975.9 M

Output DLIS Files

Input DLIS Files

DEFAULT	HILTB..053	FN:107	FIELD	11-MAR-1999 06:11	2121.4 M	1975.6 M

Output DLIS Files

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-998	HOLEV	RPCA-998

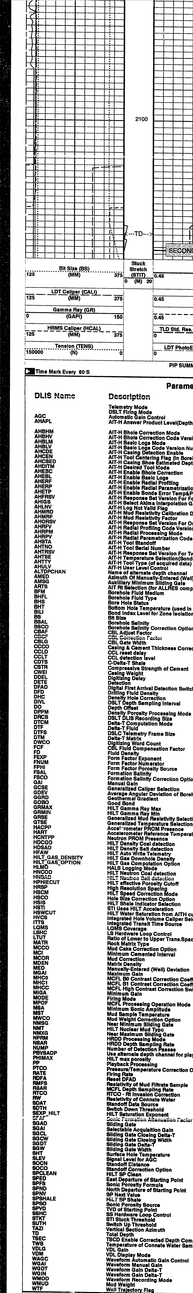
Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.800 DEG	2121.4 06:07:00
	0.600 DEG	0.800 DEG	1989.9 09:00:12
	0.600 DEG	0.800 DEG	1975.6 09:00:00

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS) (LB)	0	LDT PhotoElectric Factor (PEF) (V/V)	0 10.400	TLD Density Correction (HDRA) (K/M3)	-50 50
HRMS Caliber (HCAL) (MM)	125 375	TLD Std. Res. Formation Pe (PEFZ) (V/V)	0 10.400	LDT Bulk Density Correction (CORH) (K/M3)	-50 50
Gamma Ray (GR) (GAPI)	0 150	Alpha Processed Neutron Porosity (NPOR) (V/V)	0.45		-0.15
LDT Caliber (CALI) (MM)	125 375	LDT Density Porosity (DPOR) (V/V)	0.45		-0.15
Bit Size (BS) (MM)	Stuck Shock (STIT) 125 375 0 (M) 20	TLD Std. Res. Density Porosity (DPHZ) (V/V)	0.45		-0.15



Stuck Stretch (#) 0

Bit Size (BS) (MM) 375

TLD Std. Res. Density Porosity (DPHZ) (V/V) 0.45 -0.15

LDT Caliper (CAL) (MM) 125 375

LDT Density Porosity (DPHI) (V/V) 0.45 -0.15

Gamma Ray (GR) (GAPI) 0 150

Alpha Processed Neutron Porosity (NPOR) (V/V) 0.45 -0.15

HRMR Caliper (HCAL) (MM) 125 375

TLD Std. Res. Formation P. (RFZ) (—) 0 10 460

LDT Bulk Density Correction (DRHO) (K/M3) -50 50

Tension (TENS) (N) 1500000 0

LDT PhotoElectric Factor (PEF) (—) 0 10 460

TLD Density Correction (HDRA) (K/M3) -50 50

Time Mark Every 60 S

PIP SUMMARY

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC TCC
AGC	Automatic Gain Control	ON
ANAPL	Automatic Gain Control AIT-H Answer Product Level(Depth Log/View only)	ON 0
AHBHM	AIT-H Bhole Correction Mode	2_RhoSoCorr_BasicLogs
AHBHV	AIT-H Bhole Correction Code Version Number	7_CompositeBasic
AHELP	AIT-H Basic Logs Mode	600
AHELV	AIT-H Basic Logs Code Version Number	6_One_Two_and_Four
AHCBS	AIT-H Casing Correction Enable	Yes
AHCBD	AIT-H Casing Depth Flag (In Borehole)	Yes
AHCBO	AIT-H Casing Wear Exceeded Depth	Exceeded
AHDTM	AIT-H Depth Mode	0x00_Log_Data
AHEBC	AIT-H Enable Bhole Correction	Yes
AHEBS	AIT-H Enable Basic Logs	Yes
AHEDF	AIT-H Enable Depth Shifting	Yes
AHEHP	AIT-H Enable Hall Parametrization	Yes
AHETF	AIT-H Enable Bhole Error Temp&Pres Corr	Yes
AHFBD	AIT-H Frequency Selection For Port B Resolution	30.66,23,10
AHHAV	AIT-H Hostile Alpha Attenuation Casing	Yes
AHLNV	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMRF	AIT-H Mud Resistivity Calibration Depth	0 M
AHNRM	AIT-H Neutron Mode	Yes
AHORW	AIT-H Response Sel Version For One R Resolution	30.66,23,10
AHSHV	AIT-H Shallow Logs Code Version Number	6
AHSPV	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHSTL	AIT-H Temperature Logs Code Version Number	1
AHTMD	AIT-H Tool Bandcut	MM
AHTNO	AIT-H Tool Serial Number	293
AHTRD	AIT-H Transmitter Selection For Two R Resolution	30.66,23,10
AHTSE	AIT-H Temperature Selection(Bhole Error Correction)	Uncorrected
AHTTY	AIT-H Tool Type (of acquired data)	HAIT
AITSM	AIT-H Tool Version	Hostile
ALTGHCHAN	Name of alternate depth channel	TVDE
AMED	Azimuth Of Manually-Entered (Well) Deviation	0 DEG
ANGLE	Angle Between Hole And Tool	180 US
AITS	AIT-H Shallow Logs ALLRES computation)	13_AHTH0
BFR	Borehole Fluid Resistivity	0.1 OHMM
BHS	Borehole Fluid Type	WATER
BHT	Bore Hole Status	OPEN
BHT	Bore Hole Temperature (used in calculations)	0 DEGC
BIS	Bond Index Level for Bore Selection	0
BS	Bit Size	158.000 MM
CALI	Caliper Reading	-50000.00 PPM
CBOF	Borehole Salinity Correction Option	NO
CBSF	CBL Adjust Factor	1.2
CBSF	CBL Amplitude Scale Factor	1.2
CCDO	CBL Gate Width	5 US
CCOO	Casing & Cement Thickness Correction Option	NO
CDLT	CBL Head delay	300 MM
CDLT	CBL Tool Delay	5.5 US
CDTS	C-Delta-T Shale	328.084 US/M
CFSC	Compressive Strength of Cement	0 KPAA
CMBW	Casing Weight	34.32 KG/M
CODL	Cable Delay	0 US
DBTI	Datum Depth	0
DFAD	Digital First Arrival Detection Switch	DSP
DFD	Density Fluid Density	1040.00 K/M3
DHC	Density Hole Correction	0
DOL	DSLT Depth Sampling Interval	152.4 M
DPH	Depth Reference	Logger
DPHM	Name of alternate depth channel	TVDE
DRCS	DSLT ALIS Recording Size	HIRS
DRCT	DSLT Computations Mode	FULL
DTMF	DSLT Gamma Ray Filter	60 GAPI
DTRS	DSLT Transmitter Frame Size	8
DTSE	DSLT Velocity Frame Size	8
DWDO	Digitizing Word Count	183.727 US/M
EKB	Elev. of Kelly Bushing	40 M
FD	Fluid Density	1000 K/M3
FEXP	Formation Factor Exponent	2
FFAC	Formation Factor Factor	1
FFVI	Formula Factor Velocity Source	DPHZ
FSAL	Formation Salinity	35000 PPM
FSCO	Formula Salinity Correction Option	NO
GAI	Internal Gain	AI
GCSE	Generalized Caliper Selection	HCAL
GDEG	Average Angular Deviation of Borehole from Normal	0.0 DEG
GDSO	Good Signal Greatest	0.016227 DEG/M
GRMA	Gamma Max	150 GAPI
GRMI	DSLT Gamma Ray Min	0 GAPI
GTMF	Generalized Temperature Selection	LINEAR_ESTIMATE
HADP	Accel* rcnnator PROM Presence	PRESENT_FILE
HADT	Accel* rcnnator Temperature	0 DEGC
HCNT	Neutron PROM Presence	ABSENT
HDCO	HLT Density Cool detection	2000 K/M3
HDCT	HLT Density Cool Temperature	2100 K/M3
HFAV	HLT Gas Neutron Switch	NO
HILT_GAS_DENSITY	HLT Gas Dnnshole Density	0 K/M3
HILT_GAS_OPTION	HLT Gas Dnnshole Selection Option	OFF
HINCO	HNDS Logging Chart Detection	HIRES
HNGC	HLT Nachon Gain Correction	0.0 V/V
HNSCUT	HLT Nachon Gain Correction	0.02 V/V
HPEC	HLS effective Porosity Cutoff	0.65 V/V
HPSP	HLT Spacing Mode	128.000 MM
HRCM	HLT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCM	Hole Size Correction Option	NO
HSIG	HLT Signal Source Mode	GR
HSTI	STI (Uses HILT Accelerator)	NO
HSWCUT	HILT Water Saturation from ATRI cutoff	0.2 %
HTCO	Integrated Time Value Caliper Selection	HCAL
ITTS	Integrated Travel Time Source	DT
LGMB	LGMB Coverage	ROCK
LTCC	LS Hardware Loop Control	DISALLOW
LTUT	Ratio of Lower to Upper Trans.Spacing	1
MATR	Matrix Density	LIMESTONE
MCOO	Mud Cake Correction Option	NO
MCOR	Minimum Cemented Interval	3.048 M
MDEN	Mud Density	1077.7 K/M3
MEDI	Mech Deviation	0.0 DEG
MED	Manually-Entered (Well) Deviation	0.000 DEG
MFSS	MCFL Scale	15
MHCI	MCFL RI Contrast Correction Coefficient	0.0 OHMS
MHCL	MCFL RI Contrast Correction Coefficient	3.2 OHMS
MHCN	MCFL HRD Correction Selection Switch	NO
MODE	Fixing Mode	BHC
MOPE	MCFL Processing Operation Mode	ON
MRT	Minimum Recording Temperature	0 MV
MSCO	Mud Salinity Correction Option	22.5 DEGC
MWGO	Mud Weight Correction Option	NO
NMSG	Near Minimum Sliding Gate	152 US
NOBA	Neutron Borehole Algorithm	NOBAPR
NPAM	Near Maximum Sliding Gate	183 US
NPRM	HRDD Processing Mode	HSPC
NUMP	Number of Detector Pulses	20.5 MM
PBVSADP	Use alternate depth channel for playback	NO
PEMAX	PEF max possible	0.35 V/V
PP	Hardware Processing	NORMAL
PTCO	Pressure Correction Option	NO
RATI	Firing Ratio	8|3
RMFS	Reset Offset	OFF
RMFZ	Resistivity of Mud Filtrate Sample	2.600 OHMM
RTCO	MCFL Depth Sampling Rate	0.00 MM
RTCO	RTCO - RI Inversion Correction	YES
SAL	Salinity of Drilling Water	1.00000 OHMM
SDAT	Standoff Data Source	HCAL
SDTH	Switch Down Threshold	16384
SDTH_HLT	Switch Down Threshold	0
SECT	DSLT Precision Selection Factor	2 DEGM
SGAD	Sliding Gate	ON
SGCI	Selectable Acquisition Gain	AUTO
SGCW	Sliding Gate Closing Delta-T	820 US/M
SGDT	Sliding Gate Delay Width	1.5 US
SGDT	Sliding Gate Width	184 US
SGT	Sliding Gate Width	80 US
SLEV	Sonde Logging Temperature	0 DEGC
SOCN	Signal Level Acq	OFF
SOCN	Standoff Distance	3.175 MM
SPCC	Speed Correction Option	NO
SPCLEAN	HILT SP Clean	0 MV
SPED	Seal Departure of Starting Point	0 M
SPMO	Name of Starting Point	RAYMER_HART
SPNO	Name of Starting Point	0 M
SPNP	SP Neut Value	0 MV
SPSHALE	HILT SP Shale	-120 MV
SPVO	Sonic Penalty Source	DT
SRCC	SS Hardware Loop Control	NO
SRCC	SS Hardware Loop Control	DISALLOW
STSH	STI Stuck Threshold	1.524 M
TAZI	Tool Face Azimuth	0.0 DEG
TBC	Tension Section Active	NO
TDEC	Total Depth	2318 M
TMPB	Temperature Corrected Depth Computation	YES
TWS	Temperature Correcte Water Sample	37.78 DEGC
VDLD	VDL Data	1
VDLT	VDL Display Mode	WAVE
WBAC	Waveform Bandpass Gain Control	OFF
WDAI	Waveform Aquisition Gain	0
WDAT	Waveform Gain Delta-T	167 US/M
WMDO	Waveform Gain Delta-T	167 US
WMOD	Waveform Processing Mode	DETECTION
WTT	Wall Thickness	12.7 K/M3
WTT	Wall Thickness	VERTICAL

Format: PORO_5 Vertical Scale: 1:240 Graphics File Created: 18-MAY-1999 08:37

OP System Version: 7C0-713

MBM

HILTB-DTB	RPCA-999	HCLEV	RPCA-999	

Input DLIS Files

DEFAULT	HILTB .083	FN:107	FIELD	11-MAR-1999 06:11	2121.9 M

1975.6 M

Output DLIS Files

Input DLIS Files

DEFAULT	HILTB .079	FN:104	FIELD	11-MAR-1999 05:04	2121.9 M	1933.5 M
DEFAULT	HILTB .085	FN:109	FIELD	11-MAR-1999 06:19	2120.0 M	1975.4 M

Output DLIS Files

DEFAULT	HILTB .086	FN:110	FIELD	11-MAR-1999 06:25	2121.8 M	1975.1 M

OP System Version: 7C0-713

MBM

HILTB-DTB	RPCA-1099	DBLT-TOC	SKXA-997
HCLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000 DEG	0.850 DEG	2121.9 06:25:40
	0.000 DEG	0.000 DEG	1989.9 06:29:21
	0.000 DEG	0.850 DEG	1975.6 06:29:43

PIP SUMMARY

Time Mark Every 60 S

TRNS_REF Curve (TRNS_REF) (MM)		
150000	0	0

HCAL_REF Curve (HCAL_REF) (MM)		
125	0	375

GR_REF Curve (GR_REF) (GAPI)		
0	0	150

CALI_REF Curve (CALI_REF) (MM)		
125	0	375

BS_REF Curve (BS_REF) (MM)		
125	0	375

Tension (TENS) (N)		
1500000	0	0

HDMR Caliper (HCAL) (MM)		
125	0	375

Gamma Ray (GR) (GAPI)		
0	0	150

LDT Caliper (CAL) (MM)		
125	0	375

PEF_REF Curve (PEF_REF) (—)		
0	0	10

PEFZ_REF Curve (PEFZ_REF) (—)		
0	0	10

LDT PhotoElectric Factor (PEF) (—)		
0	0	10

TLD Std. Res. Formation Pe (PEFZ) (—)		
0	0	10

HDRA_REF Curve (HDRA_REF) (K/M3)		
-50	0	50

TLD Density Correction (HDRA) (K/M3)		
-50	0	50

DRHO_REF Curve (DRHO_REF) (K/M3)		
-50	0	50

LDT Bulk Density Correction (DRHO) (K/M3)		
-50	0	50

NPOR_REF Curve (NPOR_REF) (V/V)		
-0.15	0.45	0.45

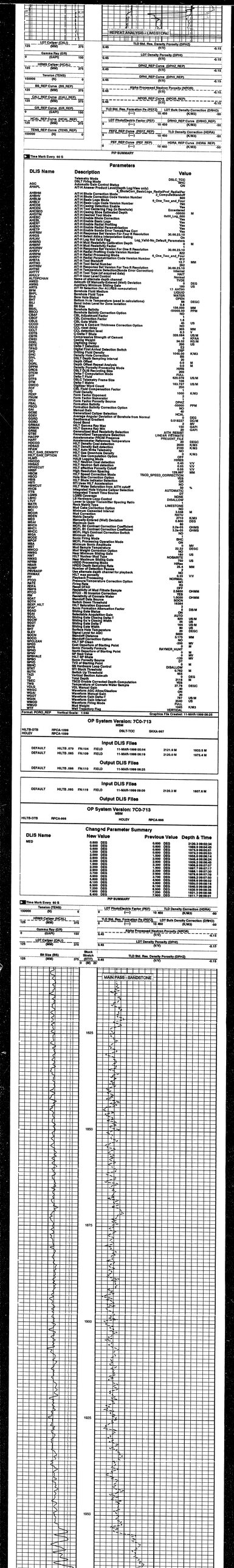
Alpha Processed Neutron Porosity (NPOR) (V/V)		
-0.15	0.45	0.45

DPHI_REF Curve (DPHI_REF) (V/V)		
-0.15	0.45	0.45

DPHZ_REF Curve (DPHZ_REF) (V/V)		
-0.15	0.45	0.45

LDT Density Porosity (DPHI) (V/V)		
-0.15	0.45	0.45

TLD Std. Res. Density Porosity (DPHZ) (V/V)		
-0.15	0.45	0.45



Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	
	DBLT Pdlog Mode	DSLC TDC
AQC	Acceleration Scan Control Status	OFF
ANAPL	ATI Answer Product Level(Depth Log/View only)	Real/Real/Pef_Real/aPer
	ATI Answer Product Code (Shoe/Con_Basis/Lge_E_Comp/Bed/Mud/Fl	0
ANHNM	ATI-H Shoe Correction Mode	2
ANHVM	ATI-H Shoe Correction Code Version Number	600
ANHLY	ATI-H Mud Logs Code Version Number	6_One_Two_and_Four
ANCEN	ATI-H Centring Detection Enable	Yes
ANCEM	ATI-H Centring Mode (Cased or Borehole)	Eccentred
ANDITM	ATI-H Desired Tool Mode	M
ANHVM	ATI-H Shoe Correction Code Version Number	0x00_Log_600
ANEBL	ATI-H Enable Bridging	Yes
ANERT	ATI-H Enable Radial Profiling	Yes
ANEVP	ATI-H Enable Vertical Profiling	Yes
ANFRW	ATI-H Enable Sonde Error Temp&Pres Corr	Yes
ANHRV	ATI-H Response Set Version For Rm Resolution	30.66.23.10
ANHSO	ATI-H Enable Alpha Interpolation Calling	On
ANMRO	ATI-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
ANMNF	ATI-H Minimum Filtration Depth	M
ANORW	ATI-H Response Set Version For Orm R Resolution	
ANRRV	ATI-H Response Set Version For Rm R Resolution	30.66.23.10
ANRPM	ATI-H Radial Processing Mode	6_One_Two_and_Four
ANRPV	ATI-H Radial Parameterization Code Version Number	7
ANTHC	ATI-H Tool Code	12.7
ANTRW	ATI-H Tool Type	LDT
ANTRV	ATI-H Response Set Version For Tnm R Resolution	30.66.23.10
ANSEL	ATI-H Shoe Correction Code(No Error Correction)	Internal
ANSLY	Log Type (of acquired data)	NAT
ANTUNCHAN	ATI-H Uncertainty	Enabled
ANAME	Name of alternate depth channel	TVD
ASBG	Azimuth Of Manually-Entered (Mid) Deviation	0
ASBG	Azimuth Of Mid Deviation	0
ATI	ATI (In tubular ALLIED computation)	11 ATI
BFWL	Borehole Fluid Medium	LIQUID
BHCO	Bore Hole Code	WATER
BHT	Bore Hole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	0 DEGC
BI	Bottom Interval for Zone Isolation	0.5
BSAL	Borehole Salinity	156.000 MM
BSAL	Borehole Salinity Correction Option	50000 PPM
CBCF	CBL Adjustment Factor	1
CBGF	CBL Gain Factor	1
CBL	CBL Gate Width	40 US
CCLC	Casing & Cement Thickness Correction Option	NO
CCLD	CCL Diameter	43 MM
CDTB	CCL detection level	0
CDTS	C-Delta-T Shale	328.084 US/M
CDWT	C-Delta-T Strength of Cement	0 KPAA
CDEL	Centre Mode	34.32 KG/M
CDEL	Digitizing Delay	0 US
CFAD	Digital Fluid Detection Switch	ON
DFD	Drilling Fluid Density	1040.00 K/M3
DFD	Drilling Mud Density	0
DSCD	DSLT Depth Sampling Interval	20
DO	Datum Offset	0 M
DOAL	Depth Offset Repeat Analysis	0.01 M
DPCS	Density Porosity Processing Mode	HIRS
EMOD	Echo Mode Description	OFF
EMOD	Echo-T Connection Mode	200
FDTF	Echo-T Fluid	620.070 US/M
FFHS	Fast Density Transmitter Frame Size	100
FMTO	Fluid Matrix Delta-T	183.727 US/M
FWDO	Delta-T Matrix	0
FD	Digitizer Word Count	128
FD	FDS Fluid Compensation Factor	207
FEXF	Form Density	1000 K/M3
FEXP	Form Factor Exponent	2
FFUN	Form Factor Function	1
FMAL	Form Factor Porosity Source	DPHZ
FRCO	Formation Caliper	0.000 PPM
FRCO	Formation Salinity Correction Option	NO
GCSE	Manual Gain	40
GDEV	Geometrical Caliper Selection	HCAL
GDRO	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GMAX	Gate Max	97 MV
GRMIN	HLDT Gamma Ray Max	150 GAPI
GRMIN	HLDT Gamma Ray Min	0 GAPI
HAFM	Generalized Porosity Selection	AITH_RESET
HAOPP	Accelerometer Porosity Selection	LINEAR_FETIMATE
HCPO	Accelerometer Porosity Presence	PRESENT_FOR_ALL
HDAGD	HALS Downhole Accelerometer Temperature	0 DEGC
HDSAD	HELT Density Coal detection	2000 K/M3
HFAV	HELT Density Sand Matrix	2650 K/M3
HFAV	HELT Auto Wells Tablepick	NO
HLT_GAS_DENSITY	HELT Gas Downhole Density	0 K/M3
HLT_FLUID_OPTION	HELT Fluid Compensation	OFF
HMCO	HALS Logging Mode	HIGH
HNOOD	HELT Neutron Coal detection	0.45 V/V
HNOSD	HELT Neutron Sand Matrix	0.03 V/V
HPHSVOLT	HELT effective Density Coal	1.55 V/V
HRSP	High Resolution Spacing	128.84 MM
HRSP	High Resolution Selection Mode	TSCD_SPEED_CORRECTION
HSIB	HELT Density Bias Max	150
HSIB	HELT Gamma Ray Min	0
HSTOUT	STI Over HELT Acceleration	0
HSTOUT	HELT Water Saturation from ATTH cutoff	50 %
HTTS	Accelerometer Porosity Method Selection	AUTOMATIC
HTTS	Integrated Travel Time Source	
LGMS	LGMS Coverage	150
LTU	Log Type Unit Control	NONE
LTU	Lower to Upper Transducer Spacing Ratio	DISALLOW
MATR	Rock Matrix Type	1
MCO	Mud Correction Option	LIMESTONE
MCI	Mud Correction Interval	NO
MCOR	Mud Correction	3.048 M
MDEN	Mud Density	1000 K/M3
MET	Metric Control	273 DEG
MGAI	Manually-Entered (Well) Deviation	0.600 DEG
MGAI	Mid Deviation	0.6 DEG
MRCC	MCFL Bit Contrast Correction Coefficient	3.2e-05 OHMS
MRCC	MCFL Bit Contrast Correction Coefficient	3.2e-05 OHMS
MRCO	Mud Resistivity Correction Switch	NO
MSCA	Minimum Gain	0
MOCS	Sonic Firing Mode	BHC
MSA	Minimum Scale Operation Mode	ON
MSA	Minimum Sonic Amplitude	40 MV
MST	Mud Sample Temperature	22.22 DEGC
MWCO	Mud Weight Correction Option	NO
MWGO	Mud Weight Gradient	0
NMT	HELT Nuclear Mud Type	WBM US
NBAR	Near Maximum Sliding Gate	NOBARITE
NPHM	HRMS Processing Mode	HiRes US
NUMB	HRDD Counter Number	72 MM
PDIAMAGR	Number of Detector Passes	4
PDMAX	Ultra alternate depth channel for playback	NO
PP	Peak Position	90 V/V
PTOD	Playback Processing	NORMAL
PTOD	Pressure/Temperature Correction Option	NO
RDFL	Read Data	ON
RDFO	Read DFSO	20
RMFG	Reactivity of Mud Filtrate Sample	2.0000 OHMM
RMFO	RHOB/Pe Correction Option	YES
RW	Resistivity of Formation Water	1.0000 OHMM
SDAT	Standoff Data Source	DISALLOW
SDAT	Switch Down Threshold	10240
SFAC	HELT Saturation Exponent	2
SFAC	HELT Porosity Correction Factor	1 DB/M
SGCS	Sliding Gate Status	ON
SGCS	Selective Acquisition Gate	AUTO
SGDO	Sliding Gate Delay Option	NO US/M
SGDT	Sliding Gate Delay Width	0 US/M
SGDT	Sliding Gate Delta-T	164 US/M
SHT	Surface Hole Type	60 US
SHT	Surface Hole Temperature	0 DEGC
SLAV	Signal Level for AGC	20
SMOO	Smooth Option	3.175 MM
SPCLEAN	Standoff Correction Option	NO
SPCLEAN	HELT SP Clean	0 MV
SPED	Esti Depository of Reading Point	0 M
SPMO	Spread Mode	RAYMER_HUNT
SPSD	Spread Start of Starting Point	0 M
SPSHALE	SP Host Value	0 MV
SPSHALE	HELT SP Shale	-120 MV
STRT	TVD of Starting Source	0 M
STRT	TVD of Starting Point	0 M
STRT	SS Hardware Loop Control	DISALLOW
STTH	Stick Up Threshold	0.762 M
STUH	Stick Up Threshold	665
TAZI	Vertical Section Azimuth	0 DEG
TD	Total Depth	2115 M
TEDC	TEDS Threshold Depth Computation	2115 M
TWS	Tension Switch Status	37.5 DEGC
VSCL	VDL Manual Gain	40
WAOC	Waveform AGC Attack/Shallow	ON
WGAI	Waveform Gain Interval	40
WGAT	Waveform Gate Delta-T	797 US/M
WGID	Waveform Gain Interval	2240 US
WMOD	Waveform Mode	1
WMOD	Mud Weight	1000 K/M3
WTF	Well Trajectory Flag	VERTICAL

Format: PORO_REP Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 09:25

OP System Version: 7C0-713

MSM

HLTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEY	RPCA-1099		

Input DLIS Files

DEFAULT	HLTB_079	FN:104	FIELD	11-MAR-1999 00:04	2121.9 M	1933.6 M
DEFAULT	HLTB_085	FN:109	FIELD	11-MAR-1999 06:19	2120.0 M	1970.4 M

Output DLIS Files

DEFAULT	HLTB_086	FN:110	FIELD	11-MAR-1999 06:25

Input DLIS Files

DEFAULT	HLTB_095	FN:119	FIELD	11-MAR-1999 09:09	2120.3 M	1607.6 M

Output DLIS Files

HLTB-DTB	RPCA-998			

OP System Version: 7C0-713

MSM

HOLEY RPCA-998

Chang'd Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.000 DEG	2120.3 09:02:34
	0.000 DEG	0.600 DEG	2119.2 09:02:34
	0.600 DEG	0.000 DEG	2117.9 09:05:01
	0.000 DEG	0.600 DEG	2116.2 09:05:01
	0.600 DEG	0.000 DEG	2114.7 09:06:14
	0.000 DEG	0.600 DEG	2113.0 09:06:14
	0.600 DEG	0.000 DEG	2111.4 09:06:24
	0.000 DEG	0.600 DEG	2109.8 09:06:40
	0.600 DEG	0.000 DEG	2108.2 09:06:40
	0.000 DEG	0.600 DEG	2106.7 09:07:17
	0.600 DEG	0.000 DEG	2105.1 09:07:30
	0.000 DEG	0.600 DEG	2103.5 09:07:30
	0.600 DEG	0.000 DEG	2101.9 09:07:50
	0.000 DEG	0.600 DEG	2100.4 09:08:10
	0.600 DEG	0.000 DEG	2098.8 09:08:10
	0.000 DEG	0.600 DEG	2097.2 09:08:48
	0.600 DEG	0.000 DEG	2095.6 09:08:48
	0.000 DEG	0.600 DEG	2094.1 09:09:06
	0.600 DEG	7.900 DEG	1911.7 09:09:01

PIP SUMMARY

Time Mark Every 60 S

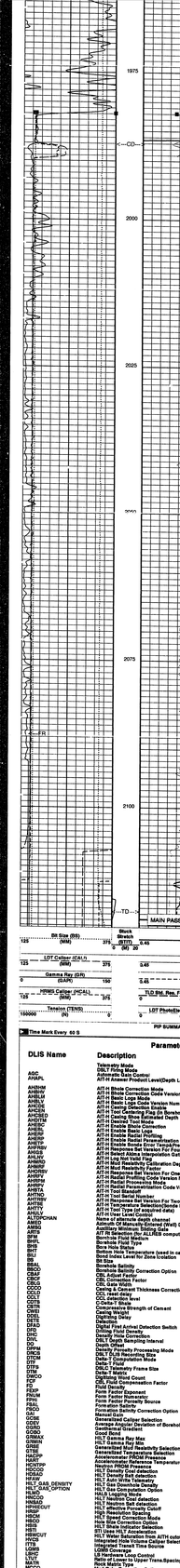
Tension (TENS) (N)		LDT PhotoElectric Factor (PEF) (---)		TLD Density Correction (HDRA) (K/M3)	
150000	0	0	10 460	1000	-50

HRMS Caliber (HCAL) (MM)		TLD Bld. Res. Formation Pe (PEFZ) (---)		LDT Bulk Density Correction (DRHO) (K/M3)	
125	375	0	10 460	1000	-50

Gamma Ray (GR) (GAPI)		Alpha Processed Neutron Porosity (NPOR) (V/V)	
0	150	0.45	-0.15

LDT Caliber (CALI) (MM)		LDT Density Porosity (DPHI) (V/V)	
125	375	0.45	-0.15

Bit Size (BS) (MM)		Stuck Sketch	TLD Bld. Res. Density Porosity (DPHZ) (V/V)	
125	375	0	0.45	-0.15
		0 (M) 20		



Time Mark Every 60 S

PIP SUMMARY

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLTCC
	Data Sampling Mode	SNC
ASC	Ascent Filter Control	OFF
JHAPL	AIT-H Answer Product Level(Depth Log-View only)	2_BholeCorr_BasicLogs_2_ComputedStandard
AHRHM	AIT-H Rhole Correction Mode	400
AHBHV	AIT-H Rhole Correction Code Version Number	0
AHBLH	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	0
AHCEN	AIT-H Centralization Flag	Yes
AHCRED	AIT-H Tool Centering Flag (In Borehole)	Eccentered
AHDFD	AIT-H Drilling Fluid Calculated Depth	0x00_Log_000
AHDPC	AIT-H Desired Tool Mode	0x00_Log_000
AHEPC	AIT-H Enable Pass Combination	Yes
AHFIP	AIT-H Enable Basic Logs	Yes
AHFP	AIT-H Enable Radial Profiling	Yes
AHFTP	AIT-H Enable Borehole Compensation	Yes
AHFVBV	AIT-H Enable Environmental Terms&Pres Corr	Yes
AHFV	AIT-H Response Set Version For Four R Resolution	30.66.23.10
AHGC	AIT-H Enable Depth Derivation Gating	Yes
AHLVV	AIT-H Log Hot Gate Control	Log_Valid-No_Default_Parameters
AHMRD	AIT-H Mud Resistivity Calibration Depth	0
AHMRF	AIT-H Mud Resistivity Factor	1
AHRHV	AIT-H Response Set Version For One R Resolution	30.66.23.10
AHRPV	AIT-H Radial Processing Code Version Number	0
AHRRC	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHSTA	AIT-H Radial Presentation Code Version Number	617
AHTAN	AIT-H Tank Radius	178 MM
AHTNBF	AIT-H Tool Model Number	0
AHTRF	AIT-H Response Set Version For Two R Resolution	30.66.23.10
AHTVV	AIT-H Tool Model Level for Zone Isolation	Internal
AHTYV	AIT-H Tool Type (of equipped cable)	HALS
AHVPCHAN	AIT-H Gear Level Control	Normal
AMSD	Azimuth Of Maximum Standard (Well) Deviation	0 DEG
AMSG	Auxiliary Minimum Sliding Gate	0 US
ATT	ATT Rt Borehole Corr (HALS computation)	13_AirHole
BHFL	Borehole Fluid Name	LIQUID
BHS	Borehole Shape	CIRCULAR
BHT	Bore Hole Temperature	OPEN
BHTC	Bottom Hole Temperature (used in calculations)	58 DEGC
BIL	Bit Hole Level for Zone Isolation	0
BS	Bit Size	158.800 MM
BSOL	Borehole Salinity	-50000.00 PPM
CBCO	CBL Borehole Correction Option	NO
CBLF	CBL Attiant Factor	1
CBOB	CBL Connection Factor	1.4
CCDS	Casing & Cement Thickness Correction Option	40 US
CCLC	Casing Collar Locator	NO
CCLT	CCL reset delay	0 MM
CDTS	CCL Detection level	0.5 DEGC
CETR	Cement Slurry Density	328.084 US/M
CFBC	Compressive Strength of Cement	0 PSI
CGCO	Casing Weight	34.10 KG/M
CGLD	Digitizing Delay	0 US
CGTD	Digitizing Gate	0
CIFD	Drilling Fluid Arrival Detection Switch	ENA
DFD	Drilling Fluid Density	1045.00 K/M3
DFV	Drilling Fluid Viscosity	55
DIG	DBL-T Depth Sampling Interval	20 M
DO	Depth Offset	0
DPRM	DBL-T Density Processing Mode	HIRES
DRCM	DBL-T ELD Recovery Gate	120
DTCM	Delta-T Computation Mode	FULL
DTF	Delta-T Factor	623.5173 US/M
DTM	Delta-T Telemetry Frame Size	128
DTNO	Delta-T Noise	183.730 US/M
DWO	Digitizing Word Count	6
FD	DBL-T Data Compression Factor	1
FDEP	Fluid Depth	1000 K/M3
FRFM	Form Factor Password	1
FRNM	Form Factor Numerator	1
FSAL	Formation Salinity Source	DPHZ
FSCO	Formation Salinity Correction Option	-50000 PPM
GCO	Gain Control	NO
GCSC	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDIG	Geodigitizer Gradient	0.018027 DC/M
GRMAX	HLT Gamma Ray Max	2 MV
GRMIN	HLT Gamma Ray Min	150 API
GTBE	Generalized Shot Reability Selection	AITH REBEST
GTSE	Generalized Shot Reability Selection	LINEAR_EXPERIMENTAL
HACRP	Accelerometer FROM Pressure	PRESENT_FLUID
HANT	Accelerometer Reference Temperature	0 DEGC
HCCSD	Caliper Correction Source	ABSENT
HDAX	HLT Density Excl maximum	2000 K/M3
HDAX	HLT Density Excl detection	2000 K/M3
HDCO	HLT Density Correction Velocity	HI
HDFC	HLT Gas Density Correction Factor	0 K/M3
HFCS	HALS Logging Mode	OFF
HNEU	HLT Neutron Excl detection	0.45 V/V
HNEUO	HLT Neutron Excl detection	0.45 V/V
HPHSTOT	HLT effective Porosity Cutoff	0.05 V/V
HSCN	HLT Rejection Space	128.937 MM
HSCW	HLT Rejection Space Width	WC_SC
HSI	Hole Size Correction Option	0
HSIS	HLT Shale Indicator Selection	GR
HSTO	HLT Stand Off Option	NO
HSWCUT	HLT Water fraction from ASTI cutoff	10 %
HVOL	Hydrocarbon Sensitive Volume Caliper Selection	HCAL
IDWS	Integrated Transit Time Source	DTCO
LBHC	Logging Barrel Type	NONE
LCC	LB Hardware Log Control	DISALLOW
LLVL	Ratio of Lower to Upper Trains/Spacing	1
MCCO	Neck Matrix Type	SANDSTONE
MDEN	Mud Density Correction Option	NO
MDIN	Minimum Connected Interval	0.500 M
MDTN	Mud Connection	NATU
MED	Mud Filtrate	2500 K/M3
MEO	Manually-Entered (Well) Deviation	0 DEG
MGAI	Maximum Gain	500
MHCC	MCFL Bit Contact Correction Coefficient	2.2e-02 OHMS
MHCC	MCFL Bit Contact Correction Coefficient	3.3e-05 OHMS
MHCO	MCFL High Contrast Correction Switch	NO
MIGA	Minimum Gain	1
MPCF	MCFL Processing Operation Mode	BHC
MPS	Minimum Sonic Amplitude	0 MV
MRT	Mud Remote Temperature	29.97 DEGC
MSCO	Mud Salinity Correction Mode	NO
MSFG	Mud Filtrate Salinity Gate	180 US
NMOG	HLT Neutron Mud Type	NORANITE
NPNM	HRDD Processing Mode Gate	750 US
NSAR	HRDD Depth Sampling Rate	152.4 MM
NSAR	HRDD Depth Sampling Rate	25.4
PBMASP	Low-resolution gamma channel for playback	NO
PHMAX	HLT max porosity	45 V/V
PTOO	Playback Processing	NORMAL
RATE	Temperature Temperature Correction Option	NO
RDFT	Fixed Set	0
RMFS	Resistivity of Mud Filtrate Sample	2.5800 OHMM
RMUD	Resistivity of Mud Sample	2.5800 MM
RTCO	RTCO - Rt Invasion Correction	NO
SDAT	Resistivity of Connate Water	1.0000 OHMM
SDTH	Sonic Data Threshold	SOCS
SEQF_HLT	Sonic Down Threshold	1536
SFAC	HLT Saturation Exponent	2
SGAI	Sliding Gate Attenuation Factor	0 DB/M
SGAI	Sliding Gate	0
SGAU	Selectable Acquisition Gain	AUTO
SGCN	Sliding Gate Closing Delta-T	60 US/M
SGDT	Sliding Gate Closing Width	24 US
SGOP	Sliding Gate Delta-T	60 US/M
SGW	Sliding Gate Width	60 US
SLEV	Surface Hole Temperature	80 DEGC
SOCH	Sonic Channel Set	0
SOCO	Standoff Correction Option	NO
SOFAN	Sonic Fan Angle	270 MV
SPED	Cast Departure of Starting Point	0 M
SPFS	Sonic Porosity Formula	RAYMER_HUNT
SPNO	Cast Departure of Starting Point	0 M
SPSKALE	HLT SP Skale	0 MV
SPSO	Sonic Porosity Source	-120
SPWO	Cast of Starting Point	0 M
SSHC	Sonic Shock Stop Control	DISALLOW
STBT	STI Stuck Threshold	1.524 M
STCO	Switch Up Threshold	60.5
STDE	Tool Deviation Azimuth	0 DEG
TD	Total Depth	2118 M
TMEC	TSCD Enable Corrected Depth Computation	YES
TVD	Vertical Depth of Comms Water Sample	37.79 DEGC
VDLG	VDL Gain	0
VDM	VDL Display Mode	(HTH)
WGAI	Waveform Manual Gain Control	OFF
WGDT	Waveform Gain Delta-T	72
WGOP	Waveform Gain Delta-T	72 US/M
WMOD	Waveform Recording Mode	2048 US
WMOD	Waveform Recording Mode	DETECTION
WSPD	Wireline Speed	1219.2 K/M3
WTF	Well Trajectory Flag	VERTICAL

Format: PORO_5 Vertical Scale: 1:240 Graphics File Created: 18-MAY-1999 09:02

OP System Version: 7C0-713

	MNM	
HILTB-DTB	RPCA-998	HOLEV RPCA-998

Input DLIS Files

DEFAULT	HILTB .095	FN:116	FIELD	11-MAR-1999 09:09	2120.3 M	1807.6 M

Output DLIS Files

Input DLIS Files

DEFAULT	HILTB .029	FN:40	FIELD	10-MAR-1999 17:30	2120.3 M	1975.9 M

Output DLIS Files

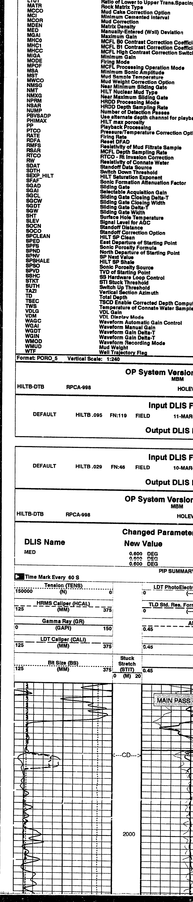
OP System Version: 7C0-713

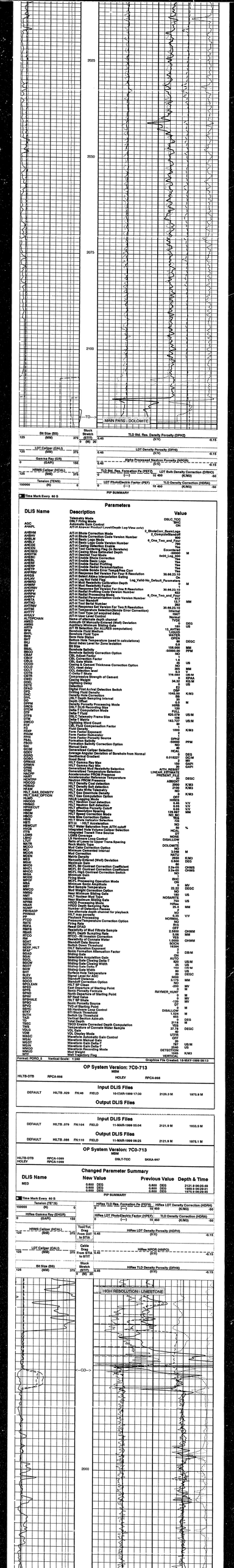
	MNM	
HILTB-DTB	RPCA-998	HOLEV RPCA-998

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000 DEG	0.000 DEG	2120.3 09:12:00
	0.000 DEG	0.000 DEG	2023.5 09:13:03
	0.000 DEG	0.000 DEG	1975.9 09:18:03

PIP SUMMARY





Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC_TCC
	DSLT FOCL Mode	SHIC
AGC	AIT-H Automatic Gain Control	ON
AHAPL	AIT-H Advance Horizontal Log/Depth Log View (ahlv)	2_WellsCorr_StackLogs 2_LogsSideBySide
AHBHM	AIT-H Bhole Correction Mode	0
AHBHV	AIT-H Bhole Correction Code Version Number	500
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	500
AHCEN	AIT-H Casing Detection Type (0=Standard)	Eccentered
AHCED	AIT-H Casing Eccentered Depth	-50000
AHDTM	AIT-H Decimate Tool Mode	0x00_Log_060
AHDTV	AIT-H Decimate Tool Version	500
AHEM	AIT-H Enable Basic Logs	Yes
AHEP	AIT-H Enable Radial Printing	Yes
AHET	AIT-H Enable Radial Quadrature	Yes
AHTP	AIT-H Enable Short Term Processing	Yes
AHTRV	AIT-H Response Set Version For Four R Resolution	30.66,23,10
AHTV	AIT-H Response Set Version For Two R Resolution	30.66,23,10
AHUN	AIT-H Log Header Unit Convention	On
AHMRD	AIT-H Mud Resistivity Calibration Depth. Log_Valid-No_Default_Parameters	0
AHMT	AIT-H Mud Resistivity Temperature	0
AHNRV	AIT-H Response Set Version For One R Resolution	30.66,23,10
AHNTV	AIT-H Radial Processing Mode Number	6_One_Two_and_Four
AHRPV	AIT-H Radial Processing Mode Code Version Number	512
AHSTA	AIT-H User Level Control	0
AHTBV	AIT-H Tool Serial Number	MM
AHTRV	AIT-H Responses Set Version For Two R Resolution	30.66,23,10
AHTV	AIT-H Tool Type (Unprocessed Data Correction)	Inverted
AHTY	AIT-H Tool Type (Unprocessed data)	HAIT
AHUN	AIT-H User Level Control	Normal
AIMD	Name of alternate depth channel	NONE
AIMSD	Automation Manually-Entered (Well) Deviation	0
AMBD	Mud Density Measured	10.0
APTM	AIT-H Temperature (for ALLHES computation)	13_AIT/H
BHPL	Borehole Fluid Medium	LIQUID
BHS	Bore Hole Salinity	70000
BHT	Bore Hole Status	OPEN
BIJ	Bottom Hole Temperature (used in calculations)	98
BIT	Bottom Hole Level for Depth Reduction	0
BS	Bit Size	120.000
BSAL	Borehole Salinity	MM
CBAF	CBL Azimuthal Correction Option	5000.00
CBAT	CBL Actual Factor	PPM
CBCF	CBL Correction Factor	NO
CBDO	CBL Gate Width	1.5
CCLO	CCL Cable Thickness Correction Option	45
CCLT	CCL Inner Delay	NO
CDTH	CCL Activation Level	MM
CSTR	Compressive Strength of Cement	0.3
DDEL	Casing Weight	34.32
DDEN	Digitizing Delay	US
DFD	Drill Fluid	0
DFSD	Drilling Fluid Actual Detection Switch	SEA
DFV	Drilling Fluid Density	1045.00
DTC	DLS Tool Compensation Option	K/M3
DTO	DSLT Depth Matching Interval	ON
DTP	Depth Offset	60
DTPM	DSLT Short Term Processing Mode	0
DTRC	DSLT Tool Processing Site	MM
DTSM	Delta-T Compensation Mode	HOU
DTT	Delta-T Fluid	0
DTTP	DSLC Telemetry Frame Size	FLU
DTU	DSLT Units	189
DWOO	Digitizing Word Count	183.72
FD	CBL Fluid Compensation Factor	US/M
FDC	Fluid Density	0
FDCF	Form Factor Operand	1000
FNUM	Form Factor Numerator	K/M3
FSAL	Formation Salinity	1
FSCO	Formation Salinity Correction Option	NONE
FSF	Formation Salinity Factor	PPM
GCNE	Generate Caliper	40
GDEV	Average Angular Deviation of Borehole from Normal	HCAL
GDIR	Geothermal Gradient	DEG
GRAD	Good Bond	0.018277
GRMX	Gamma Ray Max	DC/M
GRMN	Gamma Ray Min	60
GRNE	Generalized Mud Resistivity Selection	0
GRTP	Generalized Radioactivity Processor	AITH_RESIS
HACP	Accelerometer Pitch Processor	LINEAR_EXPANDER
HART	Accelerometer Reference Temperature	PRESENT_FILE
HBHO	Hole Bhole Correction	0
HDCOD	HRMS Density Cal Selection	ABSENT
HDRAD	HLT Density Bell detection	2000
HDRAT	HLT Auto Mills Telemetry	2000
HDRA	HLT Bld Res Density Porosity	1
HILT_GAS_DENSITY	HLT Gas Downhole Density	HIGH
HILT_GAS_OPTION	HLT Gas Downhole Density Option	0.45
HLMO	HALS Logging Mode	OFF
HMAT	HLT Neutron Cal Selection	HDRS
HNSAC	HLT Neutron Scale Factor	0.45
HPHECUT	HLT Auto Mills Telemetry	0.45
HRBF	HLT Gas Downhole Density	0.45
HRDC	HLT Density Correction Option	0.45
HSCO	HRMS Caliper Correction	OFF
HSSG	HLT Neutron Cal Selection	0.45
HSSP	HLT Neutron Cal Selection	0.45
HWAUT	HLT Auto Mills Telemetry	0.45
HYDI	HLT effective Porosity Cutoff	0.45
LCB	Integrated Hole Volume Caliper Selection	0.45
LDB	Integrated Toward Tire Source	HCAL
LSHC	Logging Concept	0
LTYP	LLD Hi Range Log Control	OFF
MATT	Ratio of Lower to Upper Trans Spacing	0
MCFO	Host Matrix Type	NONE
MCOO	Mud Cake Correction Option	DISALLOW
MDEN	Minimum Density Limit	DOLOMITE
MOOR	Mud Composition	1.500
MSAL	Mud Salinity	NATU
MSS	Manually-Entered Mud Salinity	2650
MSAI	Matrixside Gate	6.600
MSCC	HLT Mud Cal Correction Coefficient	0
MSCI	HLT Bit Correction Coefficient	2.2e-05
MSCL	MCFL High Range Correction Gain	3.2e-05
MSCO	MCFL High Range Correction Gain	NO
MSOR	Mud Salinity	0
MSOF	MCFL Processing Operation Mode	0HIC
MSS	Minimum Salinity Limit	ON
MTEM	Mud Sample Temperature	23.22
MWCO	Mud Weight Correction Option	0.000
NMSC	Near Minimum Sliding Gate	US
NMTC	HLT Nuclear Mud Type	NOSARITE
NSAM	Near Maximum Sliding Gate	750
NTEM	HRMS Recording Mode	HiRes
NSAR	HRDD Depth Sampling Rate	0.25
NSCO	Number of Centralizers Passes	2
PHSADP	Phase Shift Depth channel for playback	NO
PHTMAX	HLT3 max porosity	0.6
PTC	Playback Processing	V/V
PTCO	Pressure Temperature Correction Option	NORMAL
RATE	Tool Rate	NO
RDFA	Rate of Penetration	0
RDFO	Reed DFAD	OFF
RMFS	Resistivity of Mud Filtrate Sample	2.5500
RMSS	Resistivity of Mud Sample	0.08
RTCO	RTCC - RI Correction Correction	MM
RWCO	Resistivity of Connate Water	1.0000
SBHT	Static Bore Hole Temp	OHMM
SCCO	Surface Correction Option	80634
SEDP_HILT	HILT Saturation Exponent	19394
SFAC	Sonic Formation Compensation Factor	2
SGAD	Sonic Gate Adjustment	DB/M
SGAI	Selective Acquisition Gate	AUTO
SGCO	Sliding Gate Calculation Option	60
SGST	Sliding Gate Closing Width	US/M
SGSW	Sliding Gate Start	22
SGW	Sliding Gate Width	60
SLEV	Surface Hole Temperature	80
SMOO	Sonic Mode Option	20
SNCCN	Standoff Distance	DEGC
SNCLN	Standoff Correction Option	5.175
SPCO	Sonic Cal Option	MM
SPED	East Deviation of Starting Point	000
SPFS	Sonic Porosity Formula	M
SPNO	North Distance of Starting Point	RAYMER_HUNT
SPRV	Sonic Velocity	0
SPSALE	HILT SE Salinity	0
SPSO	Sonic Source	120
SPVC	TVD of Starting Point	21
SRVC	Sonic Receiver Cal Control	0
STAT	STI Stuck Threshold	DISALLOW
STTH	Stuck Up Threshold	1.024
TDEP	Total Depth	650
TDEC	Total Depth	DEG
TSEC	TGCO Enable Corrected Depth Computation	315.0
TVDS	Distance of Connate Water Sample	YES
TVDU	VDL Scale	20.78
VDM	VDL Display Mode	DEGC
VGAC	Waveform Automatic Gain Control	UTFR
WGAI	Waveform Manual Gain	OFF
WGAT	Waveform Gain Value	97
WGSL	Waveform Gate Select	US/M
WRDS	Waveform Recording Mode	2048
WSCO	Waveform Recording Mode	DETECTION
WTT	Wall Thickness	0.345
WVT	Wall Transducer Flag	VERTICAL

Format: PORO_S Vertical Scale: 1:240 Graphics File Created: 18-MAY-1999 09:13

OP System Version: 7C0-713

MEM

HILTB-DTB	RPCA-998		HOLEV	RPCA-998		

Input DLIS Files

DEFAULT	HILTB_029	FN:46	FIELD	10-STAR-1999 17:30	2120.3 M	1975.9 M

Output DLIS Files

Input DLIS Files

DEFAULT	HILTB_079	FN:104	FIELD	11-MAR-1999 00:04	2121.9 M	1933.5 M

Output DLIS Files

DEFAULT	HILTB_088	FN:110	FIELD	11-MAR-1999 08:25	2121.9 M	1975.1 M

OP System Version: 7C0-713

MEM

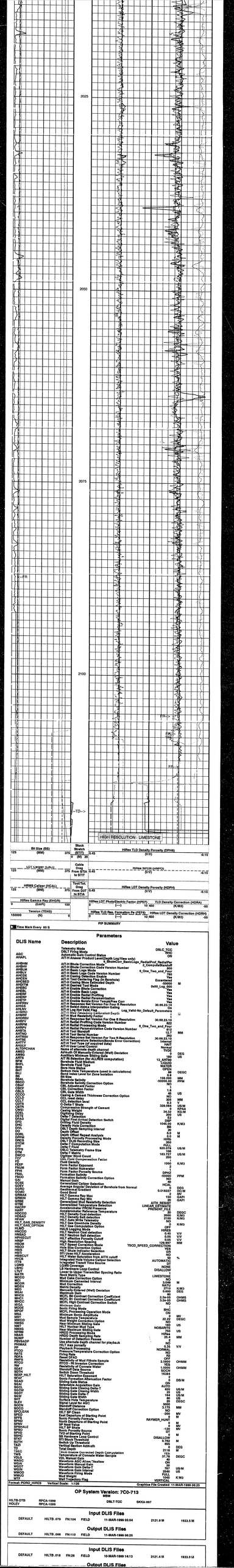
HILTB-DTB	RPCA-1099	DSLT-TCC SHXA-997
HOLEV	RPCA-1099	

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.650 DEG	0.800 DEG	2121.9 08:25:49
	0.650 DEG	0.800 DEG	1975.9 08:26:01
	0.650 DEG	0.800 DEG	1975.9 08:26:01

PIP SUMMARY

Time Mark Every 60 S



PIP SUMMARY

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DBLC_TOC
	DBLT Filing Mode	Stuck
	Automatic Gain Control Status	ON
	AITH Antenna Configuration Level (Length Log/View only)	4_BoreCor_BackLogs_RedialProf_RadialProf
AHBHM	AITH Mode Correction Mode	2_CompositeBandaid
AHBLM	AITH Basic Logging Code Version Number	7
AHBLV	AITH Basic Logs Code Version Number	7000
AHCEC	AITH Cesing Eccentering	Yes
AHCED	AITH Cesing Flag (In Borehole)	Eccentered
AHCEM	AITH Cesing Mode Estimated Depth	Measured
AHBEN	AITH Enable Depth Correction	0x00_Log_000
AHEGS	AITH Enable Basic Logging	Yes
AHEIS	AITH Enable Basic Shooting	Yes
AHETP	AITH Enable Radial Parameters	Yes
AHFRV	AITH Enable Radial Tool Backlobe Corr	Yes
AHGS	AITH Radial Tolerance For Four X Resolution	30.66,23.10
AHIGS	AITH Select Alpha Interpolation Gating	On
AHLM	AITH Logging Mode	Log_Valid-No_Default_Parameters
AHMH	AITH Mode Detection Calculation Depth	1
AHMV	AITH Mod Readability Factor	1
AHRGV	AITH Radial Tolerance For One R Resolution	30.66,23.10
AHRPM	AITH Radial Processing Mode	622
AHRPV	AITH Radial Publication Code Version Number	6_One_Two_and_Four
AHRTV	AITH Tool Status	13.7
ANTNO	AITH Antenna Number	4
ANTRV	AITH Tolerance Set Verson For Two R Resolution	30.66,23.10
ANTYP	AITH Tolerance Selection(Mode Error Correction)	Internal
AHVIS	AITH Vertical Resolution Setup	2 FT
AHVLC	AITH User Logging Mode	Normal
AHTCHAN	Name of channels depth channel	TVDC
AMBD	Auxiliary Mud Balance Density (Mud) Deviation	0 DEG
AMBI	Auxiliary Mud Balance Inside Gate	180 US
ARTR	ATT R0 Selection (for ALLBUS computation)	13_ANTBO
BHFL	Borehole Fluid Type	LIQUID
BHS	Bore Hole Status	WATER
BHT	Bottom Hole Temperature (used in calculations)	126.997 DEGC
BI	BI Index Level for Zone location	3
BS	Bit Size	10.625 MM
BWSC	Borehole Salinity	-50000.00 PPM
CBAF	Borehole Salinity Correction Option	NO
CBCF	CBL Correction Factor	1
CBCT	CBL Correction Factor	1.5
CBLG	CBL Gate Width	40 US
CCLC	CCL Casing Wall Thickness Correction Option	NO
CCLD	CCL Heat Delay	300 M
CCLT	CCL detection level	0.5
CDTH	C-Delta-T Mode	3
CBTR	CDT Transit Length of Cement	328.084 US/M
CWEI	Casing Weight	34.32 KPAS
DDTC	Checksum Delay	200 KPAS
DDTE	Delta-T Error	5
DFAD	Digital Fine Archival Detection Switch	SET
DFD	Drilling Fluid Density	1040.00 KG/M3
DFV	Drilling Fluid Viscosity	950
DI	Depth Sampling Interval	0.1 M
DO	Depth Offset	0.0 M
DOPL	Depth Offset Repeat Analysis	0.0 M
DPHZ	Density Porosity Correction Mode	HIRES
DRCS	DBLT Recording Step	200
DTCM	Delta-T Computation Mode	40 US
DTD	Delta-T Delay	0 US/M
DTFS	DBLC Telemetry Frame Size	625.274
DTM	Delta-T Matrix	189.125 US/M
DWCO	C-Server Word Count	200
EC	Environmental Compensation Factor	1
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
FSAL	Formation Salinity Source	DPHZ
FSAL	Formation Salinity	-50000 PPM
FSCO	Formation Salinity Correction Option	NO
GAIN	Gain Mode	AUTO
GCEC	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GOOD	Good Greatest	0.018227 SEC/M
GOOD	Good Bond	1
GRMAX	HILT Gamma Ray Max	150 GAPI
GRMI	HILT Gamma Ray Min	20 GAPI
GTBE	Generalized Mud Resistivity Selection	AITH_RESIST
GTEC	Generalized Caliper Selection	LINEAR_BEST_FIT
HACP	Accelerometer FROM Presence	PRESENT_ALL
HACR	Accelerometer Reference Temperature	20 DEGC
HDAD	HILT Density Data Detection	2000 K/M3
HDAF	HILT Density Soft detection	2000 K/M3
HEAW	HILT Auto Write Telemetry	NO
HFCL_GAS_DENSITY	HILT Gas Density Selection	0 K/M3
HFCL_GAS_OPTION	HILT Gas Correction Option	psi
HLMO	HALS Logging Mode	HIRES
HMAD	HILT Matrix Density Detection	6.45 V/V
HNAD	HILT Neutron Soft detection	0.65 V/V
HPRECUT	HILT effective Porosity Cutoff	0.05 V/V
HRGM	High Resolution Spacing	129.997 MM
HSCO	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSDI	HILT Shock Detector Inhibit	YES
HSI	HILT Shock Indicator Selection	YES
HSWCUT	HILT Shock Switch AITH cutoff	NO
HVOI	Integrated Hole Volume Caliper Selection	10 %
ITB	Increased Travel Time Source	DT
LCAL	Log Caliper	HCAL
LHC	LB Hardware Loop Control	DISALLOW
LTUT	Lower to Upper Transmitter Spacing Ratio	1
MATX	Matrix Density Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MDC	Mud Density Correction	0.45 M
MDSO	Mud Correction	NATU
MED	Matrix Density	2710 K/M3
MFD	Mud Filtrate Density (Well) Deviation	0.000 DEG
MHA	Maximum Gain	80
MHCI	MCFL Bit Contrast Correction Coefficient	2.2e-05 OHMS
MHCO	MCFL Bit Contrast Correction Coefficient	3.3e-05 OHMS
MHCS	MCFL High Contrast Correction Switch	NO
MHSA	Minimum Gain Mode	SHC
MHSM	MCFL Processing Operation Mode	OK
MIA	Minimum Sonic Amplitude	20 MV
MIAD	Mud Sonic Amplitude Detection	22.22 DEGC
MIGO	Mud Weight Correction Option	NO
NMSC	Near Monitor Sensitivity	80 US
NMSO	HILT Neutron Mud Type	NOBARITE
NPRM	Near Maximum Sliding Gate	750 US
NPRO	HILT Neutron Porosity Mode	LIME
NSSI	HNDS Depth Sampling Rate	25.4 MM
NWCUT	Number of Detection Passes	1
PBSADP	Pulse Base Sample Channel for playback	NO
PHMA	HILT max porosity	0.50 V/V
PP	Playback Processing	NORMAL
PTCO	Pressure Temperature Correction Option	NO
RATE	Firing Rate	20
RDFA	Reset DFAD	0.03
RMFR	Resistivity Of Mud Filtrate Sample	0.3500 OHMM
RTCO	RTCO - Rt Correction Option	YES
RW	Resistivity of Connate Water	1.0000 OHMM
SAT	Standoff Data Source	SCCH
SEDP_HILT	Switch Down Threshold	16384
SFAC	Sonic Formation Attenuation Factor	0 DB/M
SGAD	Sliding Gate Status	ON
SGAI	Sliding Gate Acquisition Gain	AUTO
SGDW	Sliding Gate Clearing Delta-T	520 US/M
SGDW	Sliding Gate Clearing Width	80 US/M
SHW	Sliding Gate Width	184 US/M
SHT	Surface Hole Temperature	80 DEGC
SIGL	Signal Level for AGC	0
SOCC	Standoff Correction	0000 MM
SOCO	Standoff Correction Option	3.175
SPACEAN	HILT SP Close	200 MV
SPBS	Cest Departure of Starting Point	0 M
SPDI	Sonic Depth Control	M
SPNO	North Departure of Starting Point	0 M
SPW	SP Test Value	20 MV
SPWALE	SP Test Value	120 MV
SRSO	Sonic Porosity Source	DT
SPVO	TVD of Starting Point	0 M
STAT	Sonic Telemetry Control	DISALLOW
STH	STI Noise Threshold	0.782 M
SWTH	Switch Up Threshold	0
TAZI	Vertical Section Azimuth	0 DEG
TD	Total Depth	2118 M
TDCC	Temperature Corrected Depth Computation	0.0000
TWS	Temperature of Concrete Water Sample	20.78 DEGC
VGAC	VDL Manual Gain	40
VHOA	Waveform Gain Allow/Teallow	ON
WDAT	Waveform Manual Gain	40
WDDT	Waveform Gate Delta-T	797 US/M
WDGT	Waveform Gate Width	2040 US
WMOD	Waveform Filing Mode	VERTICAL
WMUD	Mud Weight	1043 K/M3
WTT	Wait Trajectory Flag	VERTICAL

Format: PORO_HIRES Vertical Scale: 1/120 Graphics File Created: 11-MAR-1999 06:25

OP System Version: 7C0-713

HILTB-DTB	RPCA-1099	MRM		
HOLEV	RPCA-1099	DBLT-TOC	SKKA-997	

Input DLIS Files

DEFAULT	HILTB..079	FN:104	FIELD	11-MAR-1999 05:04	2121.9 M	1933.5 M

Output DLIS Files

DEFAULT	HILTB..000	FN:110	FIELD	11-MAR-1999 06:25			

Input DLIS Files

DEFAULT	HILTB..016	FN:28	FIELD	10-MAR-1999 14:13	2121.4 M	1933.0 M

Output DLIS Files

DEFAULT | HLTB .063 | FN:107 | FIELD | 11-MAR-1999 06:11 | 2121.9 M | 1975.6 M

OP System Version: 7C0-713

MSM

HLTB-DTB RPCA-1099
HOLEV RPCA-1099
DSLT-TCC SKXA-997

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2121.9 06:11:52
	0.600 DEG	0.600 DEG	1929.8 05:15:48
	0.600 DEG	0.600 DEG	1975.6 06:18:10

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS) 1500000 (lb) 0

Hilfes Gamma Ray (EHGR) 0 (GAPI) 150

HSMS Caliber (HCAL) 125 (MM) 375

LDT Caliber (CALI) 125 (MM) 375

Bit Size (BS) 125 (MM) 375

Tool/Tot. Drag From DST to STIA

Cable Drag From STIA to BTIT

Stuck Sketch (BTIT) 0 (lb) 20

Hilfes TLD Res. Formation Pe (PEFB) 0 (---) 10 400

Hilfes LDT Photoelectric Factor (HPEF) 0 (---) 10 400

Hilfes LDT Density Porosity (HDPH) 0.45 (V/V) -0.15

Hilfes NPOR (HNPO) 0.45 (V/V) -0.15

Hilfes TLD Density Porosity (DPHI) 0.45 (V/V) -0.15

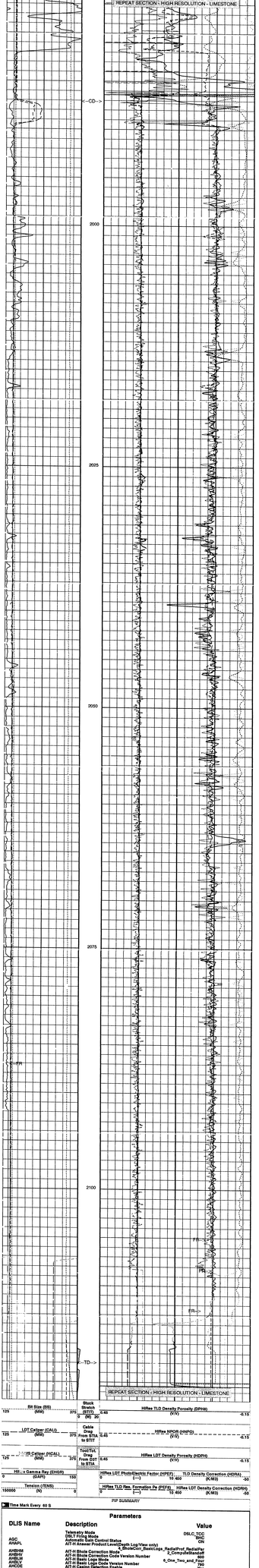
Hilfes TLD Density Correction (HDRA) (K/M3) -50

Hilfes TLD Density Correction (HDRA) (K/M3) -50

Hilfes LDT Density Porosity (HDPH) 0.45 (V/V) -0.15

Hilfes TLD Density Porosity (DPHI) 0.45 (V/V) -0.15

REPEAT SECTION - HIGH RESOLUTION - LIMESTONE



Bit Size (BS) 125 (MM) 375

Stuck Sketch (BTIT) 0 (lb) 20

Hilfes TLD Density Porosity (DPHI) 0.45 (V/V) -0.15

LDT Caliber (CALI) 125 (MM) 375

Cable Drag From STIA to BTIT

Tool/Tot. Drag From DST to STIA

Hilfes NPOR (HNPO) 0.45 (V/V) -0.15

HSMS Caliber (HCAL) 125 (MM) 375

Hilfes LDT Density Porosity (HDPH) 0.45 (V/V) -0.15

HSI - Gamma Ray (EHGR) 0 (GAPI) 150

Hilfes LDT Photoelectric Factor (HPEF) 0 (---) 10 400

TLD Density Correction (HDRA) (K/M3) -50

Tension (TENS) 1500000 (lb) 0

Hilfes TLD Res. Formation Pe (PEFB) 0 (---) 10 400

Hilfes LDT Density Correction (HDRA) (K/M3) -50

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	Telemetry Mode	DSLC_TCC	
AQC	Automatic Data Control Status	BHC	
ARAQPL	AIT-H Answer Product Level(Depth Log/View only)	4_Shale/Corr_Basic/Logs_RadialProf_RadialPlu	
AHBHM	AIT-H Shale Correction Mode	2_Compute&Display	
AHBHV	AIT-H Shale Correction Code Version Number	0	
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four	
AHBLV	AIT-H Basic Logs Code Version Number	0	
AHCDE	AIT-H Cal Detection Enable	Yes	
AHCSD	AIT-H Tool Centering Flag (to Borehole)	Eccentered	
AHDTM	AIT-H Detailed Tool Mode	dsted	M
AHEBC	AIT-H Enable Shale Correction	0x0/Log_500	
AHEBL	AIT-H Enable Basic Logs	Yes	
AHERI	AIT-H Enable Radial Processing	Yes	
AHERP	AIT-H Enable Radial Parameterization	Yes	
AHFEC	AIT-H Enable Sonde Error Temp&Pres Corr	Yes	
AHFHV	AIT-H Response Set Version For Four ft Resolution	30.66.23.10	
AHGS	AIT-H Log Hot Value Correction Gates	2	
AHLHV	AIT-H Log Hot Valid Flag	Log_Valid-No_Default_Parameters	
AHMRD	AIT-H Mud Resistivity Calibration Depth	0	M
AHMRV	AIT-H Mud Resistivity	0	
AHNHV	AIT-H Response Set Version For One ft Resolution	30.66.23.11	
AHPFV	AIT-H Radial Profiling Code Version Number	232	
AHRLM	AIT-H Radial Processing Mode	6_One_Two_and_Four	
AHRPV	AIT-H Radial Parameterization Code Version Number	0x2	
AHSTA	AIT-H Tool Standoff	0.0	MM
AHTNM	AIT-H Tool Serial Number	282	
AHTHV	AIT-H Response Set Version For Two ft Resolution	30.66.23.10	
AHTRE	AIT-H Temperature Correction (Sonde Error Correction)	13_AHTCC	DEG
AHTTY	AIT-H Tool Type (if acquired data)	HDIT	US
AHUCH	AIT-H User Level Control	Normal	
ALSYNCHAN	Array Induction Sync Channel	TVDE	
AMBD	Azimuth Of Manually Entered (Well) Deviation	0	DEG
AMBG	Auxiliary Minimum Sliding Gate	180	US
APIN	API Number (FOR ALLBIS computation)	13_AHTCC	
BFM	Borehole Fluid Medium	LIQUID	
BHFL	Borehole Fluid Type	WATER	
BHT	Bottom Hole Temp	OPEN	
BIT	Bottom Interval Reference (used in calculations)	BS	DEGC
BLI	Blocd Index Level for Zone Isolation	0.0	
BS	Bit Size	158.80	MM
BSAL	Borehole Salinity	60000.00	PPM
CBCO	Cable Conductivity Correction Option	NO	
CBFAV	CBL Adjustment Factor	1	
CBLG	CBL Correction Factor	1.0	
CCSO	Casing Collar	20	US
CCTO	Casing & Cement Thickness Correction Option	NO	
CCLD	CCL reset delay	300	MM
CDFV	CDL Standoff Offset	0.3	Y
CDTN	C-Delta-T Shale	328.084	US/M
CSTR	Compressive Strength of Cement	0	KPA
CWEI	Casing Weight	34.32	KG/M
DBTE	Delta-T Detection	300	US
DFAC	Digital Fluid Activat Detection Switch	OFF	
DFC	Drilling Fluid Density	1040.00	K/M3
DFL	Drilling Fluid Salinity	60000	
DOL	DSLT Depth Sampling Interval	0.1	

DVL	DBLT Depth Sampling Interval	30
DVS	Depth Offset	0.0
DPRM	DBLT Depth Processing Mode	0 M
GNCS	DBLT DUB Recording Size	HIRS
GNCM	DBLT DUB Recording Mode	HIRES
DTM	Delta-T Filter	FULL
DWCO	Delta-T Frame Size	620.078 US/M
DTM	Delta-T Mode	0
DWCO	Delta-T Matrix	183.727 US/M
DTC	Digitizer Word Count	200
FD	DBLT Digitizer Compensation Factor	1
FD	Fluid Density	1000 K/M3
FBXN	Form Factor Exponent	1
FBXM	Form Factor Multiplier	1
FBNS	Form Factor Velocity Source	1
FBAL	Formation Salinity	DPHZ PPM
FBAL	Formation Salinity	DPHZ PPM
SMC	Generalized Caliper Correction	NO
GCBS	Generalized Caliper Selection	NO
GCBS	Average Angular Position of Borehole from Normal	HCAL DEG
GOBG	Geobearing Gradient	0.018227 DEG/M
GOBO	Geobearing Offset	0 DEG
GRMN	HLT Gamma Ray Max	150 GAPI
GRMN	HLT Gamma Ray Min	20 GAPI
HAZM	Generalized Hole Azimuth	AHTA RESET
HAZSP	Generalized Tool Orientation	LINEAR ESTIMATE
HDCO	Accelerometer PROM Presence	PRESENT_FLAG
HDCO	Accelerometer Temperature	0 DEGC
HDBA0	HLT Density Calibration	2000 K/M3
HDBA0	HLT Density Set Point	2000 K/M3
HFLT	HLT Axis Wobble Frequency	0
HFLT	HLT Gas Downhole Density	0 K/M3
HFLT-GAS_OPTION	HLT Gas Option Selection	ON
HMAS	HLT Mandrel Size	HIRES
HNCOO	HLT Neutron Coal detection	0.45 V/V
HPHSOU	HLT effective Porosity	0.45 V/V
HPHSOUT	HLT effective Porosity Curve	0.45 V/V
HRSH	High Resolution Spacing	129.997 MM
HRSH	High Resolution Mode	TSCD_SPEED_CORRECTION NO
HSIB	Hole Size Bit Diameter	6 IN
HSIS	HLT Sheta Indicator Selection	YES
HSIS	HLT Sheta HLT Azimuth	90 DEG
HWHCUT	HLT Wall Hole Correction Cutoff	0.5 IN
HYCS	Integrated Hole/Caliper Caliper Selection	2 %
LDAS	Integrated Tool Status Code	AUTOMATIC
LDAS	LDAS Coverage	DT
LDAS	LDAS Curve Control	NONE
LTXT	Lower to Upper Transducer Spacing Ratio	DISALLOW
MATR	Rock Matrix Type	1
MATR	Rock Matrix Name Option	LIMESTONE
MIC	Minimum Caliper Interval	0.002 M
MCOR	Mud Correction	NO
MDEN	Mud Density	2710 K/M3
NEO	Mercedes Edited (Orbit) Deviation	0.698 DEG
MGAJ	Maximum Gain	2
MNCO	MCFL Bit Contrast Correction Coefficient	2.2e-05 OHMS
MNCC	MCFL Bit Contrast Correction Coefficient	3.3e-05 OHMS
MNCC	MCFL Hi/Lo Contrast Selection Mode	0
MOCI	Minimum Gain	1
MPOS	Sonic Firing Mode	BHC
MPOS	Sonic Firing Mode Operation Mode	ON
MSA	Minimum Sensitivity	0 MV
MXT	Mud Sample Temperature	22.22 DEGC
NMAT	Neutron Matrix Selection	1
NMTS	Near Minimum Sliding Gain	1500
NMT	HLT Nuclear Mud Type	69 US
NOBAR	HRDD Density Barite	NOBARITE
NRDS	HRDD Porosity Limestone	760 US
NSAR	HRDD Depth Sampling Rate	HRes MM
NSPA	Number of Centralizers	2
NUMAP	Use alternate depth channel for playback	0
PHMAX	Porosity Maximum	NO V/V
PP	Playback Processing	NONE
PTCO	Pressure/Temperature Correction Option	NO
RDFA	Read Format	CSU
RDFS	Read DFSR	CSU
RMFS	Readability of Mud Filtrate Sample	2.5800
RMW	Resistivity of Mud Filtrate	0.0000 OHMM
RW	Resistivity of Connate Water	1.0000 OHMM
SDAT	Standoff Data Source	0.2032 DEGC
SDCH	Sonic Down Threshold	1
SDTH	SL Transmitter Equipment	15264
SFAF	Sliding Gain Correction Factor	2 DB/M
SGAS	Sliding Gate Status	ON
SGCL	Selectable Acquisition Gain	AUTO
SGCU	Sliding Gate Closing Threshold	625 US/M
SGDT	Sliding Gate Delta-T	1500 US/M
SGST	Sliding Gate Delta-T	164 US/M
SIT	Surface Hole Interval	80 DEGC
SLEV	Surface Hole Temperature	20 DEGC
SLGO	Signal Level for AGC	2500
SOCO	Standoff Distance	0.813 IN
SPCLEAN	Sonic Correction Option	NO
SPD	HLT SP Gain	1 MV
SPHS	East Deviation of Starting Point	0 M
SPHS	North Penalty Formula	0 M
SPHS	North Deviation of Starting Point	0 M
SPMV	SP Mud Value	0 MV
SPSCALE	HLT SP Shale	-120 MV
SPSO	SP Correction Source	TVD
SPSO	TVD of Mudline Point	0
SSHC	SB Hardware Loop Control	M
SSTH	Sliding Gate Threshold	0.762
SWTH	Switch Up Threshold	655
TAZI	Vertical Section Azimuth	0 DEG
TBIT	Total Depth	2118 M
TWS	TSCD Enable Corrected Depth Computation	YES
TWSS	Waveform Acquisition Sample Rate	37.397 DEGC
VDCO	VDL Manual Gain	0
VGAC	Waveform AGC Allow/Disallow	ON
VGAT	Waveform AGC Target	1000
WGAT	Waveform Gate Delay	187 US/M
WGIN	Waveform Gate Interval	2040 US
WSPD	Waveform Sample Rate	10 US
WTYP	Mud Weight	2.542 K/M3
WTT	Well Trajectory Flag	VERTICAL

Format: PORO_HIRES Vertical Scale: 1:120 Graphics File Created: 11-MAR-1999 06:11

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-1099	DSL/TCC SKKA-997	
HOLEV	RPCA-1099		

Input DLIS Files

DEFAULT	HILTB .016	FN:26	FIELD	10-MAR-1999 14:13	2121.4 M 1933.0 M

Output DLIS Files

DEFAULT	HILTB .063	FN:107	FIELD	11-MAR-1999 06:01	

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase							
Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999							
Thru Cal Magnitude - 1	0	0.4100	0.4169	N/A	N/A	N/A	V
Thru Cal Magnitude - 2	0	1.050	1.050	N/A	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.7000	0.7048	N/A	N/A	N/A	V
Thru Cal Magnitude - 4	0	0.7029	0.7048	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.315	1.326	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.315	1.326	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.800	1.808	N/A	N/A	N/A	V
Phase - 1	0	0.1230	0.1230	N/A	N/A	N/A	DEG
Phase - 2	0	91.95	92.18	N/A	N/A	N/A	DEG
Phase - 3	0	89.99	89.77	N/A	N/A	N/A	DEG
Phase - 4	0	89.99	89.77	N/A	N/A	N/A	DEG
Phase - 5	0	90.41	90.46	N/A	N/A	N/A	DEG
Phase - 6	0	50.12	51.38	N/A	N/A	N/A	DEG
Phase - 7	0	48.20	48.47	N/A	N/A	N/A	DEG
Phase - 8	0	48.21	48.48	N/A	N/A	N/A	DEG
Phase - 9	0	48.21	48.65	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Auxiliary							
Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999							
ATT-4 SPA Plus	0	3803	3813	N/A	N/A	N/A	MV
ATT-4 SPA Zero	0	-0.01513	-0.009325	N/A	N/A	N/A	MV
ATT-4 Temperature Plus	0.9150	0.9150	0.9151	N/A	N/A	N/A	V
ATT-4 Temperature Zero	0	0.3295.00	1.210E-06	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Test Loop Gain Calibration							
Master: Feb 21 17:26 1999							
Test Loop Gain Magnitude - 0	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.026	1.024	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9929	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.024	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.013	N/A	N/A	N/A	N/A	V
Phase - 1	0	0.00000	N/A	N/A	N/A	N/A	DEG
Phase - 2	0	0.0246	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	-0.00681	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	-0.00681	N/A	N/A	N/A	N/A	DEG
Phase - 5	0	-0.00681	N/A	N/A	N/A	N/A	DEG
Phase - 6	0	-0.00858	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	-0.00858	N/A	N/A	N/A	N/A	DEG
Phase - 8	0	-0.1695	N/A	N/A	N/A	N/A	DEG
Sonde Error Correction - Sonde Error Correction Calibration - Sonde Error Correction							
Master: Feb 21 17:26 1999							
R Sonde Error Correction - 0	0	-44.75	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	138.2	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	107.3	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	84.16	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	24.85	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	71.22	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	3.494	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-10.46	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	-44.75	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	138.2	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	107.3	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	84.16	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	24.85	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	71.22	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	3.494	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	-10.46	N/A	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Test Gain Calibration							
Master: Feb 21 17:26 1999							
Coarse - Mag. Real, Imag - 0	0	1.022	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 1	0	1.023	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag - 2	0	1.023	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 0	0	1.022	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 1	0	1.022	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag - 2	0	1.022	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Stab Measurement Summary							
Master: Feb 21 17:26 1999							
SB Window Ratio	0.9904	N/A	0.9907	N/A	N/A	N/A	
SB Window Sum	19650	N/A	19652	N/A	N/A	N/A	CPS
SB Window Ratio	0.4908	N/A	0.4841	N/A	N/A	N/A	
SB Window Sum	11130	N/A	11120	N/A	N/A	N/A	CPS
LS Window Ratio	0.4979	N/A	0.4979	N/A	N/A	N/A	
LS Window Sum	1479	N/A	1479	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Photo-multiplier High Voltages Calibration							
Before: Mar 7 12:25 1999							
SB PM High Voltage (Command)	2058	N/A	2101	N/A	N/A	N/A	V
SB PM High Voltage (Command)	2165	N/A	2175	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1772	N/A	1777	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Crystal Quality Resolutions Calibration							
Before: Mar 7 12:25 1999							
SB Crystal Resolution	12.66	N/A	12.71	N/A	N/A	N/A	%
LS Crystal Resolution	10.41	N/A	10.39	N/A	N/A	N/A	%
LS Crystal Resolution	9.314	N/A	9.317	N/A	N/A	N/A	%
High resolution Integrated Logging Tool-CTS Wellsite Calibration - MCFL Calibration							
Before: Mar 7 12:25 1999							
Rxo Rt Reactivity	3875	N/A	3882	N/A	N/A	N/A	OHMM
Rxo Rt Reactivity	3930	N/A	3934	N/A	N/A	N/A	OHMM
Rxo Rt Reactivity	3930	N/A	3932	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool-CTS Wellsite Calibration - HILT Caliper Calibration							
Before: Mar 7 12:21 1999							
HILT Caliper Zero Measurement	203.2	N/A	194.9	N/A	N/A	N/A	MM
HILT Pad Plus Measurement	304.8	N/A	304.8	N/A	N/A	N/A	MM
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Detector Calibration							
Before: Mar 7 12:25 1999							
Gamma Ray Background	30.00	N/A	39.22	N/A	N/A	100	N/A GAPI
Gamma Ray (Lig - Sha)	129.6	N/A	129.6	N/A	N/A	11.76	GAPI
Gamma Ray Background	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Zero Measurement							
Master: Feb 21 17:26 1999 Before: Mar 7 12:25 1999							
CNTC Background	25.11	25.11	24.54	N/A	N/A	N/A	3.787 CPS
CFTC Background	23.65	23.65	24.53	N/A	N/A	N/A	3.552 CPS
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Accelerometer Calibration							
Before: Mar 7 12:25 1999							
Z Axis Acceleration	9.810	N/A	9.828	N/A	N/A	N/A	M/S2
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Orientation Results							
Master: Feb 25 18:23 1999							
Rxo Azimuth	2596	2596	--	--	--	--	K/M3
Rxo Magnetism	1666	1666	--	--	--	--	K/M3
Pe Aluminum	2.970	2.564	--	--	--	--	%
Pe Magnesium	2.650	2.650	--	--	--	--	%
High resolution Integrated Logging Tool-CTS Master Calibration - Deviation Summary							
Master: Feb 25 18:22 1999							
B5 Average Deviation	0	0.1779	--	--	--	--	%
B5 Max Deviation	0	0.2560	--	--	--	--	%
B6 Average Deviation	0	0.0960	--	--	--	--	%
B6 Max Deviation	0	0.1646	--	--	--	--	%
LS Max Deviation	0	0.5193	--	--	--	--	%
LS Min Deviation	0	1.404	--	--	--	--	%
High resolution Integrated Logging Tool-CTS Master Calibration - Tank Measurement							
Master: Feb 8 07:08 1999							
Thermal Fur.Conc (Tank)	6031	5483	--	--	--	--	CPS
Thermal Fur.Conc (Tank)	2793	2418	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.135	2.267	--	--	--	--	CPS
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Background Measurement							
Master: Calibration not done Before: Mar 7 12:25 1999							
LU Background	30.00	N/A	19.61	N/A	N/A	1.000	CPS
LU Background	76.00	N/A	75.38	N/A	N/A	1.000	CPS
LS Background	30.00	N/A	19.61	N/A	N/A	1.000	CPS
LSN Background	5.920	N/A	5.297	N/A	N/A	0.5000	CPS
SS1 Background	16.00	N/A	17.49	N/A	N/A	0.5000	CPS
SS2 Background	11.00	N/A	11.79	N/A	N/A	0.5000	CPS
Ultra Density - 0 Wellsite Calibration - Tool Quality Control Information HV							
Master: Calibration not done Before: Mar 7 12:25 1999							
LSHV Background	1500	N/A	1315	N/A	N/A	N/A	V
SSHV Background	1500	N/A	1315	N/A	N/A	N/A	V
Ultra Density - 0 Wellsite Calibration - Detectors Resolution From BKG Measurements							
Master: Calibration not done Before: Mar 7 12:25 1999							
LS Resolution Background	8.000	N/A	9.553	N/A	N/A	N/A	
SS Resolution Background	8.000	N/A	9.094	N/A	N/A	N/A	
Ultra Density - 0 Wellsite Calibration - Caliper Calibration							
Master: Calibration not done							
Caliper Dead Freq	209.2	N/A	199.2	N/A	N/A	N/A	MM
Caliper Large Ring	304.8	N/A	290.3	N/A	N/A	N/A	MM
Ultra Density - 0 Master Calibration - Aluminum Measurement							
Master: Calibration not done							
LU Aluminum	90.00	93.07	--	--	--	--	CPS
LS Aluminum	135.0	141.1	--	--	--	--	CPS
LSN Aluminum	50.00	52.38	--	--	--	--	CPS
SS1 Aluminum	175.0	188.5	--	--	--	--	CPS
SS2 Aluminum	350.0	351.8	--	--	--	--	CPS
Ultra Density - 0 Master Calibration - Lithology Measurement							
Master: Calibration not done							
LU Iron	65.00	62.51	--	--	--	--	CPS
LS Iron	100.0	94.51	--	--	--	--	CPS
LSN Iron	105.0	144.1	--	--	--	--	CPS
LITH Iron	30.00	35.33	--	--	--	--	CPS
SS1 Iron	150.0	185.8	--	--	--	--	CPS
SS2 Iron	300.0	337.1	--	--	--	--	CPS
Ultra Density - 0 Master Calibration - Spectrum Quality Ratios							
Master: Calibration not done							
GRLS Calibration	0.6500	N/A	--	--	--	--	N/A
GRSS Calibration	0.7200	N/A	--	--	--	--	N/A
GRU Calibrated	0.3900	N/A	--	--	--	--	N/A
GRL Calibrated	0.4700	N/A	--	--	--	--	N/A
GR Calculated	0.4000	N/A	--	--	--	--	N/A
Scintillation Gamma-Ray - L Wellsite Calibration - Detector Calibration							
Before: Mar 10 12:1999							
Gamma Ray Background	30.00	N/A	69.17	N/A	N/A	N/A	GAPI
Gamma Ray (Lig - Shg)	148.9	N/A	148.9	N/A	N/A	12.54	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

The GLS-U source activity is acceptable.

The HDNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 16.4 DEGC
Thermal Hoving Size 65.926 MM

High resolution Integrated Logging Tool-CTS / Equipment Identification

Primary Equipment:
Array Induction Tool - HI
Array Induction Sonde
HILT High Resolution Mechanical Sonde
HILT Nuclear Mandrel
HILT Nuclear Back-Scatter Detector
HILT Nuclear Short-Spacing Detector
HILT Nuclear Long-Spacing Detector
Micro-Cylindrically Focused Log Device

AIT - HI
AHSI - BA
HRMS - B
HDNS
HILT -
HILT -
MCFL -

Log Pass	Element	Value	Thru Cal Magnitude 1	Value	Phase DEG	Value	Nominal
1	Master	0.4130		0.4169		91.95	
	Before	0.4098		0.4169		93.18	71.00
	Master	1.050		1.050		89.99	
	Before	1.050		1.050		89.77	73.00
	Master	0.6929		0.7048		89.99	
	Before	0.6913		0.7048		89.77	68.00
	Master	0.7029		0.7048		90.41	
	Before	0.7029		0.7048		90.46	69.00
	Master	1.315		1.326		50.12	
	Before	1.315		1.326		51.38	59.10
	Master	1.315		1.326		48.20	
	Before	1.315		1.326		48.47	59.10
	Master	1.800		1.808		48.21	
	Before	1.800		1.808		48.48	57.10
	Master	1.800		1.808		48.21	
	Before	1.800		1.808		48.65	57.10
2	Master	0.4130		0.4169		0.1230	
	Before	0.4098		0.4169		0.1230	71.00
	Master	1.050		1.050		91.95	
	Before	1.050		1.050		92.18	73.00
	Master	0.6929		0.7048		89.99	
	Before	0.6913		0.7048		89.77	68.00
	Master	0.7029		0.7048		89.99	
	Before	0.7029		0.7048		89.77	69.00
	Master	1.315		1.326		90.41	
	Before	1.315		1.326		90.46	59.10
	Master	1.315		1.326		50.12	
	Before	1.315		1.326		51.38	59.10
	Master	1.800		1.808		48.21	
	Before	1.800		1.808		48.48	57.10
	Master	1.800		1.808		48.21	
	Before	1.800		1.808		48.65	57.10

Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Electronics Calibration Check - Auxiliary & Phase

Log Pass	Element	Value	ATT-4 SPA Plus MV	Value	ATT-4 SPA Zero MV	Value	Nominal
1	Master	3803		3813		-0.01513	
	Before	3813		3813		-0.009325	
	Master	3813		3813		-0.009325	
	Before	3813		3813		-0.009325	
Log Pass	Element	Value	ATT-4 Temperature Plus V	Value	ATT-4 Temperature Zero V	Value	Nominal
1	Master	0.9150		0.9151		3.295E-06	
	Before	0.9151		0.9151		1.210E-06	
	Master	0.9151		0.9151		1.210E-06	
	Before	0.9151		0.9151		1.210E-06	

Master: Feb 21 17:26 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Test Loop Gain Calibration

Log Pass	Value	Test Loop Gain Magnitude 1	Value	Phase DEG	Value
1	0.0000	1.024	0.0000	0.000	0.000
	0.0000 Nominal	1.024 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum
1	1.024	1.026	-0.2048	0.000	0.000
	0.0000 Nominal	1.024 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum
1	1.024	1.024	-0.0666	0.000	0.000
	0.0000 Nominal	1.024 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum
1	1.024	1.024	-0.0956	0.000	0.000
	0.0000 Nominal	1.024 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum
1	1.024	1.024	-0.0956	0.000	0.000
	0.0000 Nominal	1.024 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum
1	0.9929	0.9929	-0.0858	0.000	0.000
	0.0000 Nominal	0.9929 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum
1	1.024	1.024	-0.0956	0.000	0.000
	0.0000 Nominal	1.024 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum
1	1.013	1.013	-0.1695	N/A	N/A
	0.0000 Nominal	1.013 Nominal	0.0000 Minimum	0.000 Nominal	0.000 Maximum

Master: Feb 21 17:26 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Sonde Error Correction - Sonde Error Correction Calibration

Log Pass	Value	R Sonde Error Correction MM/M	Value	X Sonde Error Correction MM/M	Value
1	-44.75	-44.75	70.36	-44.75	70.36
	-50.00 Nominal	-50.00 Minimum	50.00 Nominal	-50.00 Minimum	50.00 Nominal
1	138.2	138.2	-69.71	138.2	-69.71
	114.0 Nominal	114.0 Minimum	204.0 Nominal	114.0 Minimum	204.0 Nominal
1	107.3	107.3	71.92	107.3	71.92
	88.00 Nominal	77.00 Minimum	156.0 Nominal	77.00 Minimum	156.0 Nominal
1	84.16	84.16	93.45	84.16	93.45
	69.00 Nominal	59.00 Minimum	134.0 Nominal	59.00 Minimum	134.0 Nominal
1	24.85	24.85	-19.46	24.85	-19.46
	11.00 Nominal	1.000 Minimum	43.00 Nominal	1.000 Minimum	43.00 Nominal
1	71.22	71.22	-43.57	71.22	-43.57
	54.00 Nominal	44.00 Minimum	90.00 Nominal	44.00 Minimum	90.00 Nominal
1	3.494	3.494	-3.502	3.494	-3.502
	0.0000 Nominal	-10.00 Minimum	20.00 Nominal	-10.00 Minimum	20.00 Nominal
1	-10.46	-10.46	3.502	-10.46	3.502
	-20.00 Nominal	-30.00 Minimum	0.0000 Nominal	-30.00 Minimum	0.0000 Nominal

Master: Feb 21 17:26 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Test Gain Calibration

Log Pass	Value	Coarse - Mag. Real, Imag - 0	Value	Coarse - Mag. Real, Imag - 1	Value	Coarse - Mag. Real, Imag - 2	Value
1	1.022	1.022	0.0000	1.023	0.0000	1.023	0.0000
	1.000 Nominal	1.000 Minimum	0.0000 Nominal	1.000 Minimum	0.0000 Nominal	1.000 Minimum	0.0000 Nominal
Log Pass	Value	Fine - Mag. Real, Imag - 0	Value	Fine - Mag. Real, Imag - 1	Value	Fine - Mag. Real, Imag - 2	Value
1	1.022	1.022	0.0000	1.022	0.0000	1.022	0.0000
	1.000 Nominal	1.000 Minimum	0.0000 Nominal	1.000 Minimum	0.0000 Nominal	1.000 Minimum	0.0000 Nominal

Master: Feb 21 17:26 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Mud Gain Correction

Mx	Value	Coarse - Mag. Real, Imag			Value	Fine - Mag. Real, Imag		
0	1.022				1.022			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)
1	1.023				1.022			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)
2	1.023				1.022			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)

Master Feb.21.17.58.1999

High resolution Integrated Logging Tool-CTS Website Calibration
Slab Measurement Summary

Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.9927	Before		0.4541	Before		0.3066
	0.9429 (Minimum)	0.9904 (Nominal)		0.4406 (Minimum)	0.4538 (Nominal)		0.4870 (Maximum)	
After		1.040	After			After	0.2897 (Minimum)	0.3049 (Nominal)	0.3202 (Maximum)

Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		19860	Before		11180	Before		1474
	19860 (Minimum)	19860 (Nominal)	20850 (Maximum)	10590 (Minimum)	11160 (Nominal)	11760 (Maximum)	1406 (Minimum)	1476 (Nominal)	1550 (Maximum)

Before Mar. 7 12:25 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Photo Multiplier High Voltages Calibration

Phase	BS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before		2131	Before		2175	Before		1770
	1950 (Minimum)	2059 (Nominal)	2150 (Maximum)	2040 (Minimum)	2160 (Nominal)	2280 (Maximum)	1677 (Minimum)	1777 (Nominal)	1877 (Maximum)

Before Mar. 7 12:26 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Density Logging Parameters Calibration

Phase	BS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before		12.71	Before		10.59	Before		9.917
	11.66 (Minimum)	12.66 (Nominal)	13.66 (Maximum)	9.409 (Minimum)	10.41 (Nominal)	11.41 (Maximum)	8.314 (Minimum)	9.314 (Nominal)	10.31 (Maximum)

Before Mar. 7 12:18 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Resistivity Calibration

Phase	Res BS Resistivity OHMM	Value	Phase	Res SS Resistivity OHMM	Value	Phase	Res BS Resistivity OHMM	Value
Before		3892	Before		3834	Before		3852
	3668 (Minimum)	3668 (Nominal)	4168 (Maximum)	3620 (Minimum)	3620 (Nominal)	47.96 (Maximum)	3524 (Minimum)	3630 (Nominal)	4136 (Maximum)

Before Mar. 7 12:26 1999

High resolution Integrated Logging Tool-CTS Website Calibration
HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement MM	Value	Phase	HILT Caliper Pos Measurement MM	Value
Before		194.9	Before		307.4
	152.4 (Minimum)	203.2 (Nominal)	254.0 (Maximum)	228.6 (Minimum)	304.8 (Nominal)	381.0 (Maximum)

Before Mar. 7 12:21 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Clip - Bkgd GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		31.32	Before		129.6	Before		145.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	117.8 (Minimum)	126.4 (Nominal)	141.3 (Maximum)	130.0 (Minimum)	145.0 (Nominal)	160.0 (Maximum)

Before Mar. 7 12:29 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Bin1 Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		25.11	Master		23.68
Before		24.31	Before		24.53
	6.000 (Minimum)	25.11 (Nominal)	75.00 (Maximum)	6.000 (Minimum)	23.68 (Nominal)	75.00 (Maximum)

Master: Jan. 8 00.07.1999 Before: Mar. 7 12:24 1999

High resolution Integrated Logging Tool-CTS Website Calibration
Accelerometer Calibration

Phase	Z-Axis Acceleration M.S2	Value
Before		9.826
	9.810 (Minimum)	9.810 (Nominal)	10.81 (Maximum)

Before: Mar.10 08:12 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Electronics Calibration Check - Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude			Nominal	Value	Phase DEG			Nominal
0	Master	0.8100				0.8050	81.95				71.00
1	Master	1.252				1.270	60.93				70.00
2	Master	0.6829				0.6230	57.19				66.00
3	Master	0.7028				0.7040	56.41				65.00
4	Master	1.315				1.337	50.12				59.00
5	Master	1.361				1.355	48.20				57.00
6	Master	1.909				1.955	49.25				57.00
7	Master	1.370				1.415	44.30				53.00
		80.00 % (Minimum)				140 % (Minimum)	Nom - 40.00 (Nominal)				Nom + 40.00 (Maximum)

Master: Feb.21.17.58.1999

High resolution Integrated Logging Tool-CTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	AFI-H SPA Plus MV	Value	Phase	AFI-H SPA Zero MV	Value
Master		990.9	Master		-0.01813
	924.3 (Minimum)	1040 (Nominal)	1090 (Maximum)	-50.00 (Minimum)	0.0000 (Nominal)	50.00 (Maximum)

Phase	AFI-H Temperature Deg C	Value	Phase	AFI-H Temperature Deg C	Value
Master		0.9177	Master		3.0251E-06
	0.8750 (Minimum)	0.9150 (Nominal)	0.9650 (Maximum)	-0.05000 (Minimum)	0.0000 (Nominal)	0.05000 (Maximum)

Master: Feb.21.17.58.1999

High resolution Integrated Logging Tool-CTS Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG		
0	1.024				-0.3545			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)
1	1.026				-0.3648			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)
2	1.024				-0.3668			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)
3	1.021				-0.3633			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)
4	1.004				-0.3589			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)
5	0.9939				-0.3608			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)
6	1.004				-0.3391			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)
7	1.013				-0.3185			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0.0000 (Nominal)	3.000 (Maximum)

Master: Feb.21.17.58.1999

High resolution Integrated Logging Tool-CTS Master Calibration
Sonde Error Correction

Idx	Value	R Sonde Error Correction MM.M			Value	T Sonde Error Correction MM.M		
0	44.75				70.38			
		28.00 (Minimum)	56.50 (Nominal)	113.0 (Maximum)		42.00 (Minimum)	84.50 (Nominal)	2280 (Maximum)
1	158.2				69.71			
		114.0 (Minimum)	158.0 (Nominal)	204.0 (Maximum)		426.0 (Minimum)	0.0000 (Nominal)	825.0 (Maximum)
2	127.3				71.22			
		68.00 (Minimum)	111.2 (Nominal)	158.0 (Maximum)		-80.00 (Minimum)	0.0000 (Nominal)	360.0 (Maximum)
3	58.15				93.45			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-280.0 (Minimum)	0.0000 (Nominal)	280.0 (Maximum)
4	24.85				-10.46			
		18.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0.0000 (Nominal)	63.00 (Maximum)
5	11.96				-2.57			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0.0000 (Nominal)	50.00 (Maximum)
6	9.864				3.932			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0.0000 (Nominal)	30.00 (Maximum)
7	-0.9083				4.448			
		-5.000 (Minimum)	0.0000 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0.0000 (Nominal)	30.00 (Maximum)

Master: Feb.21.17.58.1999

High resolution Integrated Logging Tool-CTS Master Calibration
Mud Gain Correction

Idx	Value	Coarse - Mag. Real, Imag			Value	Fine - Mag. Real, Imag		
0	1.022				1.022			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)
1	1.023				1.022			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)
2	1.023				1.022			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)

Master Feb.21.17.58.1999

High resolution Integrated Logging Tool-CTS Master Calibration
Inversion Inputs

Phase	Rho Aluminum K363	Value	Phase	Rho Magnesium K363	Value
Master		2529	Master		1685
	2500 (Minimum)	2606 (Nominal)	2700 (Maximum)	1676 (Minimum)	1696 (Nominal)	1698 (Maximum)

Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.564	Master		2.632
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)

Master Feb.25.18.22.1999

High resolution Integrated Logging Tool-CTS Master Calibration
Motion Summary

Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.1779	Master		0.2890	Master		0.5795
	-0.6500 (Minimum)	0 (Nominal)	0.6500 (Maximum)	-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)	-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)

Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		0.4007	Master		0.9345	Master		1.454
	-1.800 (Minimum)	0 (Nominal)	1.800 (Maximum)	-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)	-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)

Master Feb.25.18.22.1999

High resolution Integrated Logging Tool-CTS Master Calibration
Thermal Near Corr. (Tank)

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC CPTC (Tank)	Value
Master		1463	Master		2413	Master		2.267
	6000 (Minimum)	7200 (Nominal)	8400 (Maximum)	2075 (Minimum)	2793 (Nominal)	3126 (Maximum)	2.130 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: Jan. 8 00.07.1999

Litho Density - U / equipment identification

Primary Equipment:
- Nuclear Services Cartridge — NSC - E
- Powered Gamma Detector — PGD - D
- Gamma Source Radioactive — GSR - J

Auxiliary Equipment:
- Density Resistivity Sonde — DRS - C
- Electronics Cartridge Housing — ECH - MAA
- Powered Detector Housing — PDH - L

Litho Density - U / Website Calibration
Background Measurement

Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Master		NOT DONE	Master		NOT DONE	Master		NOT DONE
Before		19.91	Before		75.38	Before		57.50
	15.00 (Minimum)	20.00 (Nominal)	25.00 (Maximum)	58.00 (Minimum)	78.00 (Nominal)	84.00 (Maximum)	43.00 (Minimum)	57.00 (Nominal)	70.00 (Maximum)

Phase	LITH Background CPS	Value	Phase	SS1 Background CPS	Value	Phase	SS2 Background CPS	Value
Master		NOT DONE	Master		NOT DONE	Master		NOT DONE
Before		5.397	Before		17.49	Before		11.72
	4.000 (Minimum)	5.500 (Nominal)	7.000 (Maximum)	13.50 (Minimum)	18.00 (Nominal)	18.50 (Maximum)	8.000 (Minimum)	11.00 (Nominal)	13.50 (Maximum)

Before: Mar 7 12:26 1999
Master. Calibration not done

Litho Density - D Website Calibration
Detectors Resolution From BKG Measurements

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A
Before		8.853	Before		9.084
	8.000 (Minimum)	8.000 (Nominal)	11.50 (Maximum)	8.000 (Minimum)	8.000 (Nominal)	11.50 (Maximum)

Before: Mar 7 12:26 1998
Master. Calibration not done

Litho Density - D Master Calibration
Aluminum Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master		93.17	Master		141.1	Master		163.6
	70.00 (Minimum)	90.00 (Nominal)	128.0 (Maximum)	130.0 (Minimum)	184.0 (Nominal)	238.0 (Maximum)	126.0 (Minimum)	158.0 (Nominal)	217.0 (Maximum)

Phase	LITH Aluminum CPS	Value	Phase	SS1 Aluminum CPS	Value	Phase	SS2 Aluminum CPS	Value
Master		56.36	Master		189.5	Master		261.8
	40.00 (Minimum)	74.00 (Nominal)	128.0 (Maximum)	176.0 (Nominal)	296.0 (Maximum)	210.0 (Minimum)	260.0 (Nominal)	353.0 (Maximum)

Master. Calibration not done

Litho Density - D Master Calibration
Lithology Measurement

Phase	LL Ith CPS	Value	Phase	LU Ith CPS	Value	Phase	LS Ith CPS	Value
Master		82.51	Master		123.1	Master		144.1
	60.00 (Minimum)	80.00 (Nominal)	114.0 (Maximum)	85.00 (Minimum)	120.0 (Nominal)	177.0 (Maximum)	126.0 (Minimum)	139.0 (Nominal)	185.0 (Maximum)

Phase	LITH Ith CPS	Value	Phase	SS1 Ith CPS	Value	Phase	SS2 Ith CPS	Value
Master		35.53	Master		188.9	Master		237.1
	18.00 (Minimum)	32.00 (Nominal)	61.00 (Maximum)	100.0 (Minimum)	155.0 (Nominal)	224.0 (Maximum)	248.0 (Minimum)	328.0 (Nominal)	329.0 (Maximum)

Master. Calibration not done

Litho Density - D Master Calibration
Spectrum Quality Ratios

Phase	QRLS Calculated	Value	Phase	QRLU Calculated	Value	Phase	QRU Calculated	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
	0.6000 (Minimum)	0.8500 (Nominal)	0.7000 (Maximum)	0.5000 (Minimum)	0.7200 (Nominal)	0.8200 (Maximum)	0.2900 (Minimum)	0.3800 (Nominal)	0.4800 (Maximum)

Phase	QLIR Calculated	Value	Phase	QR Calculated	Value	Phase	QRIR Calculated	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
	1.250 (Minimum)	1.380 (Nominal)	1.450 (Maximum)	0.9800 (Minimum)	1.000 (Nominal)	1.000 (Maximum)			

Master. Calibration not done

Scintillation Gamma-Ray - L / Equipment Identification

Primary Equipment:
- Scintillation Gamma Cartridge — SGC - SA
- Scintillation Gamma Detector — SGD - TAA

Auxiliary Equipment:
- Scintillation Gamma Housing — SGH - K
- Gamma Source Radioactive — GSR - UV

Scintillation Gamma-Ray - L Website Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Clip - Bkgd GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		69.17	Before		148.9	Before		165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	135.8 (Minimum)	142.9 (Nominal)	182.4 (Maximum)	150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: Mar. 8 11:15 1999

COMPANY:	SUNCOR ENERGY INC.,
WELL:	SUNCOR NETLA K-77-60-50-122-30
FIELD:	NETLA
PROVINCE:	NORTHWEST TERRITORIES

Schlumberger

PLATFORM EXPRESS
COMPENSATED NEUTRON
DUAL DENSITY LOG

BOTTOM LOG INTERVAL	2111.3 M
SCHLUMBERGER DEPTH	2117 M
DEPTH DRILLER	2116 M
KELLY BUSHING	627.28 M
DRILL FLOOR	624.9 M
GROUND LEVEL	615.4 M

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA — TRUE VERTICAL DATA

PROVINCE: NORTHWEST TERRITORIES

PLATFORM EXPRESS
COMPENSATED NEUTRON
DUAL DENSITY LOG

Schlumberger

65 deg 46 12 deg 30	122 deg 30	FOR LOCATIONS
2603.6MM, -90.17M BOTTOM LOG		
(XXXX.17,60,16,122,30/65 LSD)		
Permanent Datum:	GROUND LEVEL	Elev.: 618.4 M
Log Measured From:	KELLY BUSHING	6.8 M above Perm. Datum
Drilling Measured From:	KELLY BUSHING	

API Serial No.

| | | |

DTP	Delta-T Phase	605.078	US/M
DTPS	DBLC-Telemetry Frame Size	108	
DTM	Delta-T Matrix	183.727	US/M
DTCOUNT	Delta-T Matrix Count	256	
FCF	CBL Transmission Factor	0	
FD	Fluid Density	1000	K/M3
FPNUM	Formation Resistivity Exponent	2	
FPWF	Form Factor Porosity Source	0	
FPWS	Formation Salinity	DPHZ	
FRACG	Formation Salinity Correction Option	00000	PPM
GAI	Gamma Ray Aperture	40	
GCBE	Generalized Caliper Selection	NO	
GDRO	Average Angular Deviation of Borehole from Normal	0	DEGS
GGRO	Gravel Pack Porosity	0.01829	M/M
GMAX	Good Bond	2000	UV
GRMAX	HILT Gamma Ray Max	150	GAPI
GRMIN	HILT Gamma Ray Min	0	GAPI
GRSE	Generalized Bad Hole Sensitivity Selection	AITH, RESIST	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HAMP	Accelerometer Pulse Response	PRESENT_FILE	
HANT	Accelerometer Temperature		DEGC
HCNTPW	Neutron PROM Presence	ABSENT	
HDCO	HILT Density Coal detection	2000	K/M3
HFAW	HILT Density Salt detection	2100	K/M3
HILT_GAS_DENSITY	HILT Gas Density Input	0	K/M3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCO	HILT Neutron Coal detection	0.45	
HNWC	HILT Neutron Salt detection	0.45	V/V
HRAT	HILT Raw Data Recording	YES	V/V
HRCC	High Resolution Spacing	129.997	MM
HSCC	HILT Speed Correction Mode	TOOL_CC	
HSCO	HILT Standoff Correction	NO	
HSTE	HILT Station Selection	*ES	
HWTC	HILT Weight Correction Factor	0.07	%
IDTS	Inclinometer Temperature Caliper Selection	HCAL	
IGRD	Integrated Travel Time Source	TOOL	
LCMB	LCMB Connected	NONE	
LTUF	LB Hardware Loop Control	DISALLOW	
MATR	Matrix Density Upper Transition Spacing	0	
MATS	Rock Matrix Type	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCSE	Mud Cake Selection Method	3.937	M
MDEN	Matrix Density	2710	K/M3
MHDI	Matrix Density (Wet) Deviation	0.4572	M
MHCO	MCFL BI Contrast Correction Coefficient	2.24-05	OHMS
MHCT	MCFL BI Contrast Correction Coefficient	3.34-05	OHMS
MHDN	Matrix Density (Wet)	2710	K/M3
MHSE	HILT Standoff Selection	0.4572	M
MHSO	HILT Standoff Correction Option	NO	
MINC	Mud Cake Thickness	0.127	M
MINS	Mud Cake Selection	0.127	M
MLTH	Multiple Thickness	1	
MNCO	Mud Cake Correction Option	NO	
MNSE	Mud Cake Selection Method	0.127	M
MSCO	Microspherical Correction	NO	
MSDN	Microspherical Density	2710	K/M3
MSPO	Microspherical Porosity	0	
MTHC	Matrix Thickness	0	
MTHS	Matrix Thickness Selection	0	
MUDC	Mud Cake Correction	NO	
MUDS	Mud Cake Selection	NO	
NCCO	Neutron Coal Correction	NO	
NCSE	Neutron Caliper Selection	HCAL	
NDCO	Neutron Density Correction	NO	
NDSE	Neutron Density Selection	HCAL	
NEUT	Neutron Type	LIMESTONE	
NFCO	Neutron Formation Correction	NO	
NFSE	Neutron Formation Selection	NO	
NHCO	HILT Neutron Coal correction	0.45	V/V
NHWC	HILT Neutron Salt correction	0.45	V/V
NMCO	Neutron Mud Correction	NO	
NMSE	Neutron Mud Selection	NO	
NPOR	Neutron Porosity Mode	NORMAL	
NSCO	Neutron Standoff Correction	NO	
NSSE	Neutron Standoff Selection	NO	
NTC	Neutron Temperature Correction	NO	
NTSE	Neutron Temperature Selection	NO	
NWCO	Neutron Wall Cake Correction	NO	
NWSE	Neutron Wall Cake Selection	NO	
OHMS	Ohms Mode	NO	
PCCO	Pressure Correction	NO	
PCSE	Pressure Correction Selection	NO	
PDCO	Porosity Density Correction	NO	
PDSE	Porosity Density Selection	NO	
PDSEAGP	Use alternate depth command for playback	YES	
PDWAX	HILT mud porosity	0.15	V/V
PHSE	Playback Processing	NORMAL	
PTCO	Porosity Temperature Correction Option	NO	
RATE	Firing Rate	60	
RDFA	Recall DFAO	OFF	
RDFS	Recall Delta-T Mud Filtrate Sample	0.0508	OHMM
RECO	RT/UD - RI Invasion Correction	NO	
RW	Resistivity of Connate Water	1.0000	OHMM
SDFH	Sidetrack Depth Hold	SOON	
SDTH	Switch Down Threshold	16384	
SESP_HILT	HILT Saturation Exponent	2	
SGAD	Shale Formation Attenuation Factor	0	DB/M
SGAI	Shale Gamma Aperture	40	
SGCO	Sliding Gate Compensation Gain	AUTO	
SGDT	Sliding Gate Closing Delta-T	420	US/M
SGDW	Sliding Gate Closing Width	25	US
SGOT	Sliding Gate Delay	60	US/M
SGW	Sliding Gate Width	60	US
SHT	Surface Hole Temperature	20	DEGC
SOCH	Standoff Change	NONE	
SOCN	Standoff Detected	3.175	MM
SOCO	Standoff Correction Option	NO	
SOCT	Standoff Type	-1270	
SPES	Esti Spectrum of Starting Point	0	
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	North Direction of Starting Point	0	
SPWO	Shot Type	3	MV
SPWVALE	HILT Voltage	-1270	MV
SPSO	Sonic Porosity Source	ES	
SPVO	TVD of Starting Point	0	M
SSTC	Sidetrack Tool Control	DISALLOW	
SVTH	Switch Up Threshold	800	
TAZI	Vertical Section Azimuth	0	
TBC	Tool Bias	2115	DEG
TDEC	TRCD Enable Correction Depth Computation	YES	M
TMG	Temperature at Console Station	37.78	DEGC
TOOL	Tool Type Being Run	20	
WGSC	Waveform AGC Gain Shallow	ON	
WGXI	Waveform Manual Gain	20	
WGXT	Waveform Gain Delta-T	767	US/M
WINT	Waveform Gain Interval	2250	US
WMOD	Waveform Gain Mode	AUTO	
WMUD	Mud Weight	1043	K/M3
WTF	Well Trajectory Flag	VERTICAL	

Record: RORO_2 Vertical Scale: 1:600 Graphic File Created: 11-MAR-1999 06:32

OP System Version: 7C0-713

MSM

HILTB-DTB	RPCA-1099	DSLT-TCC	SKXA-997	
HOLEV	RPCA-1099			

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB .030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M
					1607.6 M

Output DLIS Files

DEFAULT	HILTB .007	FN:111	FIELD	11-MAR-1999 06:32	

Input DLIS Files

DEFAULT	HILTB .087	FN:111	FIELD	11-MAR-1999 06:32	2061.1 M
					1915.7 M

Output DLIS Files

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

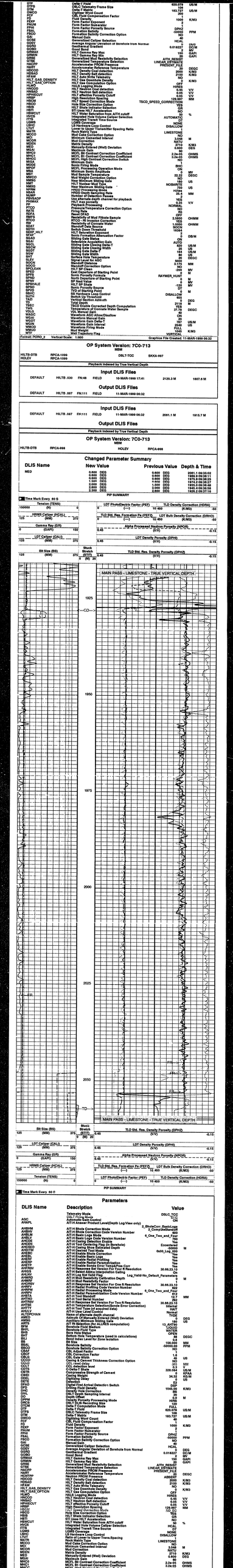
MSM

HILTB-DTB	RPCA-998	HOLEV	RPCA-998

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2061.1 06:35:02
	0.600 DEG	0.600 DEG	1959.9 06:36:11
	0.600 DEG	0.600 DEG	1873.3 06:36:20
	0.600 DEG	0.600 DEG	1815.7 06:36:26
	1.500 DEG	1.500 DEG	1805.9 06:36:46
	2.600 DEG	2.000 DEG	1948.0 06:38:56
	3.600 DEG	2.600 DEG	1928.3 06:37:19

PIP SUMMARY



PIP SUMMARY

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC_TCC
AGC	DBLC Firing Mode	HILT
ANGPL	Automatic Gate Control	ON
	AITH and Sonic Product Level(Depth Log/View only)	
AHBNM	AITH Hi Shots Correction Mode	2_PhotoCorr_BasicLogs_2_CompSiteStandoff
AHBLM	AITH Hi Basic Logs Code Version Number	600
AHBLW	AITH Hi Basic Logs Mode	0_One_Two_and_Four
AHELV	AITH Basic Logs Code Version Number	600
AHELW	AITH Basic Logs Mode	Four
AHCSEO	AITH Cool Centering Flag (In Borehole)	Eccentered
AHESTW	AITH Desired Tool Standoff	0.0
AHEWTW	AITH Desired Tool Weight	M
AHEBC	AITH Hi Enable Shots Correction	Yes
AHEBF	AITH Hi Enable Shots Filtering	Yes
AHEBP	AITH Hi Enable Shots Plotting	Yes
AHERP	AITH Hi Enable Radial Parameters	Yes
AHFCW	AITH Hi Response Matrix Code Version Corr	600
AHFSW	AITH Hi Response Matrix for Four-H Resolution	30.66,23.10
AHGES	AITH Hi Gelset Alpha Interpolation Gating	On
AHHLW	AITH Hi Log_Valid-No_Defaul_Parameters	Log_Valid-No_Default_Parameters
AHMWO	AITH Hi Mud Weight Override Option	0
AHMWW	AITH Hi Mud Resistivity Factor	M
AHOPW	AITH Hi Response Matrix For One R-Resolution	30.66,23.10
AHRPW	AITH Hi Radial Profiling Code Version Number	602
AHRPW	AITH Hi Radial Profiling Mode	0_One_Two_and_Four
AHSEW	AITH Hi Transmitter-Code Version Number	612
AHTSW	AITH Hi Tool Standoff	12.7
AHTTW	AITH Hi Tool Standoff Count	MM
AHTWW	AITH Hi Response Matrix For Two R Resolution	30.66,23.10
AHTSE	AITH Hi Temperature Selection(Sonde Error Correction)	Internal
AHTSW	AITH Hi Temperature Selection(Sonde Error Correction)	HMT
AHVLY	AITH User Limit Validation	Normal
ALTDPCHAN	Name of alternate depth channel	TENS
AMHO	Azimuth Of Maximum Hole Deviation	0
AMSG	AITH Hi Message Code Version	1180
ARFB	AIT Hi Selection (for ALLBIAS computation)	13_ALLBIAS
BHC	Borehole Fluid Conductivity	1.0000
BHSL	Borehole Fluid Type	WATER
BHT	Bottom Hole Temperature	93
BHT	Bottom Hole Temperature (used in calculations)	99
BIL	Bond Index Level for Zone Isolation	DEGC
BIL	Bias	0.0
BSA	Bias Salinity	150,000
BSCO	Borehole Salinity Correction Option	MM
CBCF	CBL Correlation Factor	NO
CBLC	CBL Correlation Factor	1.0
CBLG	CBL Gate Width	10
CCCO	Casing & Cement Thickness Correction Option	US
CCLT	CCL Detection Level	NO
CCLV	CCL detection level	0.3
CDEV	D-Cable-T Shots	0.3
CMIN	Compressive Strength of Cement	328.084
CSAI	Casing Inside	3.5
CSPS	Digitizing Delay	KPAA
DETS	Detector	0.0
DFAT	Delta-T Mud Actual Deviation Switch	EZ
DFTY	Drilling Fluid Density	NO
DHC	Density Hole Correction	1045.00
DIT	Delta-T Sampling Interval	K/M3
DOI	Depth Offset	60
DPFM	Density Porosity Processing Mode	20
DPHZ	DBLC DLIS Processing Mode	HRS
DTCM	Delta-T Computation Mode	120
DTF	Delta-T Filter	FULL
DTSM	Delta-T Density Frame Size	6096.00
DTTP	Delta-T Matrix	US/M
DUMPCO	Dump Record Count	183.727
FCF	CBL Fluid Correlation Factor	US/M
FD	Fluid Density	0
FEXP	Formation Resistivity Exponent	1000
FNUM	Form Factor Numerator	K/M3
FPWF	Form Factor Porosity Source	2
FPWS	Formation Salinity	0
FRACG	Formation Salinity Correction Option	DPHZ
GAI	Manual Gain	00000
GCBE	Generalized Caliper Selection	PPM
GDRO	Average Angular Deviation of Borehole from Normal	HCAL
GGRO	Generalized Temperature Gradient	0
GMAX	Good Bond	0.01829
GRMAX	HILT Gamma Ray Max	2000
GRMIN	HILT Gamma Ray Min	150
GRSE	Generalized Bad Hole Sensitivity Selection	0
GTSE	Generalized Temperature Selection	AITH, RESIST
HAMP	Accelerometer Pulse Response	LINEAR_ESTIMATE
HANT	Accelerometer Temperature	PRESENT_FILE
HCNTPW	Neutron PROM Presence	DEGC
HDCO	HILT Density Coal detection	ABSENT
HFAW	HILT Density Salt detection	2000
HILT_GAS_DENSITY	HILT Gas Density Input	2100
HILT_GAS_OPTION	HILT Gas Computation Option	K/M3
HNCO	HILT Neutron Coal detection	0
HNWC	HILT Neutron Salt detection	OFF
HRAT	HILT Raw Data Recording	0.45
HRCC	High Resolution Spacing	0.45
HSCC	HILT Speed Correction Mode	YES
HSCO	HILT Standoff Correction	129.997
HSTE	HILT Station Selection	TOOL_CC
HWTC	HILT Weight Correction Factor	NO
IDTS	Inclinometer Temperature Caliper Selection	*ES
IGRD	Integrated Travel Time Source	0.07
LCMB	LCMB Connected	HCAL
LTUF	LB Hardware Loop Control	TOOL
MATR	Matrix Density Upper Transition Spacing	NONE
MATS	Rock Matrix Type	DISALLOW
MCCO	Mud Cake Correction Option	0
MCSE	Mud Cake Selection Method	LIMESTONE
MDEN	Matrix Density	NO
MED	Matrix Density (Wet) Deviation	3.937
MHCO	MCFL BI Contrast Correction Coefficient	2710
MHCT	MCFL BI Contrast Correction Coefficient	0.600
MHDN	Matrix Density (Wet)	2.24-05
MHSE	HILT Standoff Selection	3.34-05
MHSO	HILT Standoff Correction Option	2710
MINC	Mud Cake Thickness	0.4572
MINS	Mud Cake Selection	NO
MLTH	Multiple Thickness	0.127
MNCO	Mud Cake Correction Option	0.127
MNSE	Mud Cake Selection Method	1
MSCO	Microspherical Correction	NO
MSDN	Microspherical Density	0.127
MSPO	Microspherical Porosity	NO
MTHC	Matrix Thickness	2710
MTHS	Matrix Thickness Selection	0
MUDC	Mud Cake Correction	0
MUDS	Mud Cake Selection	NO
NCCO	Neutron Coal Correction	NO
NCSE	Neutron Caliper Selection	HCAL
NDCO	Neutron Density Correction	NO
NDSE	Neutron Density Selection	HCAL
NEUT	Neutron Type	LIMESTONE
NFCO	Neutron Formation Correction	NO
NFSE	Neutron Formation Selection	NO
NHCO	HILT Neutron Coal correction	0.45
NHWC	HILT Neutron Salt correction	0.45
NMCO	Neutron Mud Correction	NO
NMSE	Neutron Mud Selection	NO
NPOR	Neutron Porosity Mode	NORMAL
NSCO	Neutron Standoff Correction	NO
NSSE	Neutron Standoff Selection	NO
NTC	Neutron Temperature Correction	NO
NTSE	Neutron Temperature Selection	NO
NWCO	Neutron Wall Cake Correction	NO
NWSE	Neutron Wall Cake Selection	NO
OHMS	Ohms Mode	NO
PCCO	Pressure Correction	NO
PCSE	Pressure Correction Selection	NO
PDCO	Porosity Density Correction	NO
PDSE	Porosity Density Selection	NO
PDSEAGP	Use alternate depth command for playback	YES
PDWAX	HILT mud porosity	0.15
PHSE	Playback Processing	NORMAL
PTCO	Porosity Temperature Correction Option	NO
RATE	Firing Rate	60
RDFA	Recall DFAO	OFF
RDFS	Recall Delta-T Mud Filtrate Sample	0.0508
RECO	RT/UD - RI Invasion Correction	NO
RW	Resistivity of Connate Water	1.0000
SDFH	Sidetrack Depth Hold	SOON
SDTH	Switch Down Threshold	16384
SESP_HILT	HILT Saturation Exponent	2
SGAD	Shale Formation Attenuation Factor	0
SGAI	Shale Gamma Aperture	40
SGCO	Sliding Gate Compensation Gain	AUTO
SGDT	Sliding Gate Closing Delta-T	420
SGDW	Sliding Gate Closing Width	25
SGOT	Sliding Gate Delay	60
SGW	Sliding Gate Width	60
SHT	Surface Hole Temperature	20
SOCH	Standoff Change	NONE
SOCN	Standoff Detected	3.175
SOCO	Standoff Correction Option	NO
SOCT	Standoff Type	-1270
SPES	Esti Spectrum of Starting Point	0
SPFS	Sonic Porosity Formula	RAYMER_HUNT
SPSO	North Direction of Starting Point	0
SPWO	Shot Type	3
SPWVALE	HILT Voltage	-1270
SPSO	Sonic Porosity Source	ES
SPVO	TVD of Starting Point	0
SSTC	Sidetrack Tool Control	DISALLOW
SVTH	Switch Up Threshold	800
TAZI	Vertical Section Azimuth	0
TBC	Tool Bias	2115
TDEC	TRCD Enable Correction Depth Computation	YES
TMG	Temperature at Console Station	37.78
TOOL	Tool Type Being Run	20
WGSC	Waveform AGC Gain Shallow	ON
WGXI	Waveform Manual Gain	20
WGXT	Waveform Gain Delta-T	767
WINT	Waveform Gain Interval	2250
WMOD	Waveform Gain Mode	AUTO
WMUD	Mud Weight	1043
WTF	Well Trajectory Flag	VERTICAL

MRGC		2.00	OHMS
MCFL		NO	
MSAS		0	
FPHZ		RHC	
MPDF		0	
MSI		0	MV
MRT		22.22	DEGC
MRTCO		0.00	
NMRG		0	US
HILT		NOBARITE	
MPRXG		750	US
NPRM		HRM-1	
NSAR		25.4	MM
MPHAV		0	
PRHMADP	Number of the depth channel for playback	3	
PHMAX	HILT max porosity	30	V/V
PTC	Playback Processing	NORMAL	
PTCO	Pressure/Temperature Correction Option	NO	
RUN2	Run Number	2	
RZFA	Reset DFAD	OFF	
RMFS	Resistivity of Mud Filtrate Sample	2.5800	OHMM
RMFSH	Resistivity of Mud Filtrate Sample	5.00	OHMM
RTCO	RTCO - Hi Invasion Correction	NO	
RW	Resistivity of Connate Water	1.0000	OHMM
SAMT	Sample Mode Type	SCAN	
SBHT	Switch Down Threshold	16384	
SEXP_HILT	HILT Saturation Exponent	2	
SFAC	Shock Sensitivity Attenuation Factor	0	DB/M
SGAO	Sonde Gain Offset	ON	
SGAI	Sensitivity Acquisition Gain	AUTO	
SGDT	Sliding Gate Closing Delta-T	12	US/F
SGDT	Sliding Gate Closing Width	24	US
SGOT	Sliding Gate Offset	60	US/M
SHT	Surface Hole Temperature	20	DEGC
SIGN	Standoff Distance	9000	
SOCO	Standoff Correction Option	3.175	MM
SPCO	Spectral Correction	NO	
SPED	Feet Deviation of Starting Point	-300	MV
SPFS	Sonic Porosity Formula	RAYMER_HUNT	M
SPHO	Starting Porosity Offset	0	M
SPSHALE	HILT SP Shale	-15	MV
SPSO	Sonic Porosity Source	DT	
SPVO	TVD of Starting Point	0	M
STCO	Stretch Correction Control	DISALLOW	
STHT	STI Shock Threshold	1.024	G
SVTH	Switch Up Threshold	600	
TDI	Tool Deviation Azimuth	0	DEG
TH	Total Depth	9142	
TSEC	TSCD Enable Corrected Depth Computation	YES	
TSGC	TSCD Sigma of Connate Water Sample	37.78	DEGC
VDL0	VDL 0 Delay	40	
VDR	VDL Display Mode	UTR	
WAGC	Waveform Automatic Gain Control	OFF	
WGDT	Waveform Manual Gain	20	
WGIN	Waveform Gain Delta-T	2	US/M
WGOT	Waveform Gain Delta-T	2048	US/M
WNCO	Waveform Recording Mode	DETECTION	
WRTI	Write Rate	0.5000	K/M3
WTT	Tool Trajectory Flag	VERTICAL	

Format: PORO_5 Vertical Scale: 1:240 Graphics File Created: 18-MAY-1999 09:34

OP System Version: 7C0-713

MRM

HILTB-DTB	RPCA-998	HOLEV	RPCA-998

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB_087	FN:111	FIELD	11-MAR-1999 00:32	2061.1 M	1915.7 M

Output DLIS Files

Input DLIS Files

DEFAULT	HILTB_090	FN:114	FIELD	11-MAR-1999 06:45	2062.6 M	1916.3 M

Output DLIS Files

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MRM

HILTB-DTB	RPCA-998	HOLEV	RPCA-998

Changed Parameter Summary

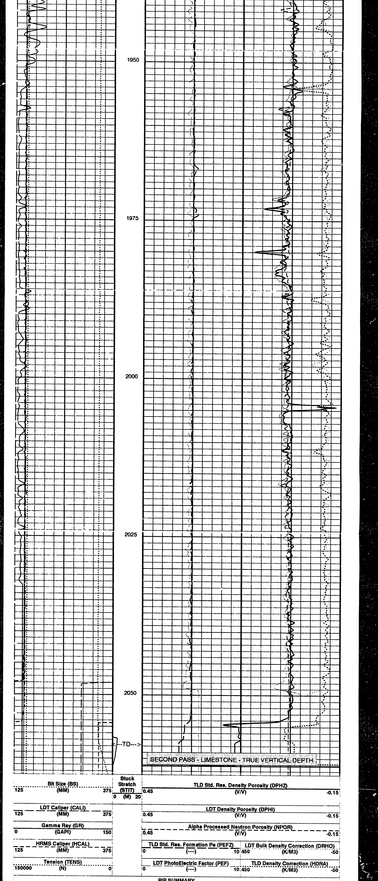
DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	0.600 DEG	2062.6 09:42:53
	0.600 DEG	0.600 DEG	1988.0 08:44:42
	0.600 DEG	0.600 DEG	1973.3 08:44:02
	0.600 DEG	0.600 DEG	1966.0 08:43:42
	2.000 DEG	1.000 DEG	1958.6 08:43:22
	2.600 DEG	2.000 DEG	1949.4 08:42:57
	0.600 DEG	2.600 DEG	1939.2 08:42:42

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)		LDT PhotoElectric Factor (PEF)		TLD Density Correction (HDRA)	
1500000	0	0	10.400	(K/M3)	-500
HRMR Caliper (HCAL)		TLD Std. Res. Formation Pe (PEFZ)		LDT Bulk Density Correction (DRHO)	
125 (MM)	375	0	10.400	(K/M3)	-500
Gamma Ray (GR)		Alpha Processed Neutron Porosity (NPOR)			
0 (GAPI)	150	0.45	(V/V)		-0.15
LDT Caliber (CALI)		LDT Density Porosity (DPHI)			
125 (MM)	375	0.45	(V/V)		-0.15
Bit Size (BS)	Stuck Stretch (STTT)	TLD Std. Res. Density Porosity (DPHZ)			
125 (MM)	375	0.45 (V/V)			-0.15

0 (M) 30



Bit Size (BS)	Stuck Stretch	TLD Std. Res. Density Porosity (DPHZ)	
125 (MM)	375 (STTT)	0.45 (V/V)	-0.15

0 (M) 30

LDT Caliber (CALI)		LDT Density Porosity (DPHI)	
125 (MM)	375	0.45 (V/V)	-0.15
Gamma Ray (GR)		Alpha Processed Neutron Porosity (NPOR)	
0 (GAPI)	150	0.45 (V/V)	-0.15
HRMR Caliper (HCAL)		TLD Std. Res. Formation Pe (PEFZ)	LDT Bulk Density Correction (DRHO)
125 (MM)	375	0 10.400	(K/M3) -500
Tension (TENS)		LDT PhotoElectric Factor (PEF)	TLD Density Correction (HDRA)
1500000	0	0 10.400	(K/M3) -500

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
ASC	Telemetry Mode	DSLC_TCC
ASCL	Data Sampling Rate Control	SHOT
ASQN	Alt Airborne Product Level(Depth Log/View only)	ON
AHBHM	AIT-H Borehole Correction Mode	2_ShlolCor_BasicLogs 2_CompSetBHCor
AHBHV	AIT-H Borehole Correction Version Number	1
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Mode Version Number	7900
AHCES	AIT-H Centralizer Flag	Yes
AHCED	AIT-H Centralizing Flag (In Borehole)	Eccentered
AHDSD	AIT-H Casing Shoe Estimated Depth	-50000
AHDTM	AIT-H Desired Test Mode	0x00_Log_500
AHEBF	AIT-H Enable Borehole Flag	Yes
AHEBL	AIT-H Enable Radial Logging	Yes
AHERP	AIT-H Enable Radial Porosity	Yes
AHETF	AIT-H Enable Tool Configuration	Yes
AHFDV	AIT-H Enable Bridle Error Terms&Pres Corr	Yes
AHFSV	AIT-H Response Set Version For Four R Resolution	10.44.23.14
AHHCO	AIT-H Hole Size Correction Option	On
AHLHV	AIT-H Logging Head Version Number	Log_Val-No_Default_Parameters
AHMND	AIT-H Mud Resistivity Calibration Depth	-50000.00
AHMNF	AIT-H Mud Resistivity Factor	1
AHMRV	AIT-H Radioactive Filter Version For One R Resolution	30.88.33.10
AHRPV	AIT-H Radial Logs Mode Version Number	7900
AHSLM	AIT-H Radial Logs Mode	6_One_Two_and_Four
AHSTA	AIT-H Radial Parameterization Code Version Number	617
AHTCO	AIT-H Tool Centralizer	Yes
AHTSV	AIT-H Tool Serial Number	202
AHTVC	AIT-H Response Set Version For Two R Resolution	30.88.25.10
AHTVV	AIT-H Tool Configuration Code (Sonde Error Correction)	0x0000
AHTY	AIT-H Tool Type (of Acquired Data)	HAIT
AHUV	AIT-H User Level Control	Normal
AHVMN	AIT-H Vertical Mode Number	TVDS
AMBD	Azimuth Of Mandrel Bubble (Well) Deviation	0 DEG
AMBG	Auxiliary Minimum Sliding Gate	180
ANHV	AIT Re-Selection Code (for Re-Log computation)	13_AHTSD
BHFL	Borehole Fluid Electron	LIQUID
BHS	Bore Hole Salinity	0 PPM
BHT	Bore Hole Status	OPEN
BIT	Bottom Hole Temperature (used in calculations)	68 DEGC
BS	Bottom Hole Temperature Option	On
BSAL	Bit Size	156.000 MM
BSCO	Borehole Salinity	-99999.00 PPM
CBCO	Cable Bridle Correction Option	NO
CBGF	CBL Adjust Factor	1
CBOF	CBL Correction Factor	1.8
CDCO	Caliper Correction	US
CDCO	Casing & Outer Thickness Correction Option	NO
CDLO	CDL reset delay	40 MM
CDTS	CDL Detection Level	0.3 V/V
CSTR	Compressive Strength of Cement	328.084 US/M
CWEI	Casing Weight	34.32 KG/M
DDEL	Digitizing Delay	0
DFAC	Drift Factor	12
DFAD	Digital Fast Actual Detection Switch	OFF
DFD	Drilling Fluid Density	1045.00 K/M3
DFPH	Drilling Fluid PH Value	8.5
DFSL	Drill Fluid Sampling Interval	50
DFV	Depth Offset	0.0 M
DPRO	Depth Playback Processing Mode	HYBR
DRCS	DRILTRAN Recording Rate	1000
DTCM	Delta-T Computation Mode	1_Pass
DTF	Delta-T Fluid	620.378 US/M
DTR	DSLC Telemetry Frame Size	1500 1/FT
DWCO	Drift Correction	NO
DWVO	Digitizing Word Count	40
FC	CBL Fluid Compensation Factor	0
FCF	Fluid Density	1000 K/M3
FMSF	Form Factor Component	1
FNSM	Form Factor Numerator	1
FSAL	Formation Salinity Source	DPHZ
FSAV	Formation Salinity	-50000 PPM
FSCO	Formation Salinity Correction Option	NO
GCO	General Gain	40
GCOM	General Gain Selector	HCAL
GSEV	Average Angular Deviation of Borehole from Normal	0.01827
GSRO	Geothermal Gradient	0 DEG/M
GSSO	Good Sond	NO
GWMX	Gate Window Ray Max	150 GAPI
GWMI	Gate Window Ray Min	20 GAPI
GWSE	Generalized Stud Resistivity Selection	AITH_RESIST
HAZI	Hole Azimuth Deviation (Well)	LINEAR_INTERPOLATION
HAZP	Accelerometer PRESM Processing	PRESENT_AT_SAMP
HDEP	Accelerometer Reference Temperature	22 DEGC
HDHCP	HDRD Density Correction	ABSENT
HDSAD	HDRD Density Selection	2100 K/M3
HDSD	HDRD Density Set Detection	2100
HDSO	HDRD Density Source	NO K/M3
HFSO	HILT Fast Sonic Source	DT
HILMO	HILT Low Resolution Mode	OFF
HNDCO	HILT Neutron Coal detection	0.45 V/V
HNDSO	HILT Neutron Density Source	0.45 V/V
HPEFCO	HILT nPerfex Porosity Cutoff	0.45 V/V
HRSP	High Resolution Spacing	125.997 MM
HSDS	HILT Sonic Density Source	TSCD_SPEED_CORRECTED
HSCO	Hole Size Correction Option	YES
HSIS	HILT Shale Indicator Selection	GR
HSSO	HILT Sonic Source	NO
HWHOT	HILT Water Saturation Alpha ATH cutoff	100 %
HVOE	Integrated Hole Volume Caliper Selection	HCAL
HVOS	Integrated Hole Volume Source	HCAL
IDNC	Inclinometer Direction	NONE
LSHC	LS Hardness Type Control	DISALLOW
LTUT	Ratio of Lower to Upper Trans.Spacing	1.5
MATR	Rock Matrix Type	LIMESTONE
MCDO	Mud Cake Correction Option	NO
MCDR	Minimum Cleanout Interval	3.048 M
MCOR	Mud Correction	NATU
MDEN	Mud Density	2710 K/M3
MDIO	Manually Entered (Well) Deviation	0.000 DEG
MGAI	Maximum Gain	60
MHCC	MCFL Bit Contact Correction Coefficient	2.2e-10 OHMS
MHCO	MCFL Hydr.Contact Correction Coefficient	3.2e-05 OHMS
MIGO	Minimum Gain	NO
MIGS	Minimum Gain	BHC
MPCF	MCFL Processing Operation Mode	0
MRA	Minimum Sonic Amplitude	20 MV
MRT	Mud Sample Temperature	22.22 DEGC
MSAS	Mud Sample Temperature Source	MRT
NMRG	Near Minimum Sliding Gate	180 US
NRT	HILT Nuclear Mud Type	NOBARITE
NSAR	Near Minimum Sliding Gate	750 US
NPHV	Number of Detection Passes	1
PRHMADP	Number of the depth channel for playback	NO
PHMAX	HILT max porosity	30 V/V
PTC	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RUN2	Run Number	2
RZFA	Reset DFAD	OFF
RMFS	Resistivity of Mud Filtrate Sample	2.5800 OHMM
RMFSH	Resistivity of Mud Filtrate Sample	5.00 OHMM
RTCO	RTCO - Hi Invasion Correction	NO
RW	Resistivity of Connate Water	1.0000 OHMM
SAMT	Sample Mode Type	SCAN
SBHT	Switch Down Threshold	16384
SEXP_HILT	HILT Saturation Exponent	2
SFAC	Shock Sensitivity Attenuation Factor	0 DB/M
SGAO	Sonde Gain Offset	ON
SGAI	Sensitivity Acquisition Gain	AUTO
SGDT	Sliding Gate Closing Delta-T	820 US/M
SGDT	Sliding Gate Closing Width	24 US
SGOT	Sliding Gate Offset	60 US/M
SHT	Surface Hole Temperature	20 DEGC
SIGN	Standoff Distance	9000
SOCO	Standoff Correction Option	3.175 MM
SPCO	Spectral Correction	NO
SPED	Feet Deviation of Starting Point	-300 M
SPFS	Sonic Porosity Formula	RAYMER_HUNT
SPHO	Starting Porosity Offset	0 M
SPSHALE	HILT SP Shale	-15 MV
SPSO	Sonic Porosity Source	DT
SPVO	TVD of Starting Point	0 M
STCO	Stretch Correction Control	DISALLOW
STHT	STI Shock Threshold	1.024 G
SVTH	Switch Up Threshold	600
TDI	Tool Deviation Azimuth	0 DEG
TH	Total Depth	9142
TSEC	TSCD Enable Corrected Depth Computation	YES
TSGC	TSCD Sigma of Connate Water Sample	37.78 DEGC
VDL0	VDL 0 Delay	40
VDR	VDL Display Mode	UTR
WAGC	Waveform Automatic Gain Control	OFF
WGDT	Waveform Manual Gain	20
WGIN	Waveform Gain Delta-T	2 US/M
WGOT	Waveform Gain Delta-T	2048 US/M
WNCO	Waveform Recording Mode	DETECTION
WRTI	Write Rate	0.5000 K/M3
WTT	Tool Trajectory Flag	VERTICAL

TWS	Temperature of Connate Water Sample	37.78 DEGC
VDL0	VDL Gain	0
VDM	VDL Display Mode	UTR
WGAC	Waveform Amplitude Gain Control	OFF
WGAT	Waveform Manual Gain	20
WGDT	Waveform Gain Delta-T	10 US/M
WGUX	Waveform Gain Delta-X	2540 US
WMOD	Waveform Recording Mode	DETECTION
WSPD	Wireline Speed	3.6 K/M3
WTT	Wait Trajectory Flag	VERTICAL

Format: PORO_9 Vertical Scale: 1:240 Graphics File Created: 18-MAY-1999 00:42

OP System Version: 7C0-713

MSM

HLTB-DTB	RPCA-998	HOLEV	RPCA-998

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HLTB .090	FN:116	FIELD	11-MAR-1999 00:45	2062.6 M	1916.3 M

Output DLIS Files

Input DLIS Files

DEFAULT	HLTB .021	FN:30	FIELD	10-MAR-1999 15:25	2120.0 M	1975.4 M

Output DLIS Files

DEFAULT	HLTB .091	FN:115	FIELD	11-MAR-1999 00:50	2060.8 M	1916.1 M

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MSM

HLTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.800 DEG	2.300 DEG	2060.8 06:50:27
	0.750 DEG	0.800 DEG	1977.8 06:53:33
	0.650 DEG	0.800 DEG	1975.8 06:53:35
	1.500 DEG	0.800 DEG	1974.2 06:53:53
	2.100 DEG	1.500 DEG	1969.2 06:54:06
	2.200 DEG	2.100 DEG	1955.2 06:54:09
	2.300 DEG	2.200 DEG	1918.8 06:55:14

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)		LDT PhotoElectric Factor (PEF)	TLD Density Correction (HDRA)
150000 (N)	0 (---)	10 450 (V/V)	0.45 -0.15 (K/M3) -50

HNRS Caliper (HCAL)		TLD Bit. Res. Formation Pe (PEFQ)	LDT Bulk Density Correction (DRHO)
125 (IN)	375	0 (---) 10 450 (V/V)	0.45 -0.15 (K/M3) -50

Gamma Ray (GR)		Alpha Processed Neutron Porosity (HNOR)	
0 (GAPI)	150	0.45 (V/V)	-0.15

LDT Caliper (CALI)		LDT Density Porosity (DPHI)	
125 (MM)	375	0.45 (V/V)	-0.15

Bit Size (BS)		TLD Bit. Res. Density Porosity (DPHZ)	
125 (MM)	375	0.45 (V/V)	-0.15

Bit Size (BS)		TLD Bit. Res. Density Porosity (DPHZ)	
125 (MM)	375	0.45 (V/V)	-0.15

LDT Caliper (CALI)		LDT Density Porosity (DPHI)	
125 (MM)	375	0.45 (V/V)	-0.15

Gamma Ray (GR)		Alpha Processed Neutron Porosity (HNOR)	
0 (GAPI)	150	0.45 (V/V)	-0.15

HNRS Caliper (HCAL)		TLD Bit. Res. Formation Pe (PEFQ)	LDT Bulk Density Correction (DRHO)
125 (IN)	375	0 (---) 10 450 (V/V)	0.45 -0.15 (K/M3) -50

Tension (TENS)		LDT PhotoElectric Factor (PEF)	TLD Density Correction (HDRA)
150000 (N)	0 (---)	10 450 (V/V)	0.45 -0.15 (K/M3) -50

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC_TCC
AGC	Automatic Gain Control Status	ON
ANAPL	API of Aware Product Level(Depth Log-View only)	1_Product_Name_RadialProf_RadialProf
AMBSM	API.H Mode Correction Mode	2_CompositeBandpass
AMBVM	API.H Mode Correction Mode Version Number	1
AMELM	API.H Mode Logs Used	6_One_Two_and_Four
AMELV	API.H Mode Logs Code Version Number	790
AMEPM	API.H Mode Processing Mode	1
AMCEN	API.H Tool Centering Flag (In Borehole)	Eccentred
AMCRED	API.H Casing Shoe Estimated Depth	99999
AMDEC	API.H Casing Shoe Mode	0x00_Log_Only
AMEBL	API.H Enable Basic Logs	Yes
AMEPI	API.H Enable Error Flagging	Yes
AMEPP	API.H Enable Error Parameters	Yes
AMETP	API.H Enable Sensor Error Temps&Pres Corr	Yes
AMFBW	API.H Enable Waveform Fan Four if Resolution	30.68,23,10
AMGS	API.H Gelset Xdata Interpolation Gating	On
AMLVL	API.H Log Validity Level	1_Log_Valid-No_Default_Parameters
AMMWD	API.H Mud Resistivity Calibration Data	M
AMNPV	API.H Mud Resistivity Factor	
AMSFW	API.H Sample Waveform Fan For One R Resolution	30.68,23,10
AMSPV	API.H Sample Processing Code Version Number	1
AMRPM	API.H Radial Processing Mode	4_One_Two_and_Four
AMRPV	API.H Radial Processing Code Version Number	1
AMTA	API.H Tool Ball Attitude	MM
AMTMQ	API.H Tool Serial Number	
AMTWF	API.H Waveform Resolution For Two R Resolution	30.68,23,10
AMTYV	API.H Waveform Selection(Sonde Error Correction)	Internal
AMTYY	API.H Tool Serial Number (aka)	1_Real
AMVLY	API.H User Label Mode	Normal
ALTDPCHAN	Name of alternate depth channel	TVDE
AMSD	Array Induction Standard (std) Deviation	DEG
AMSC	Auxiliary Computation Setting Data	US
ARTB	ART IN Selection (for ALL/MED computation)	13_ARTMD
ARTM	ART Mode Selection	MEDIUM
BHF	Borehole Fluid Type	SALINE
BHT	Bore Hole Temperature	70FN
BHTC	Bore Hole Temperature (used in calculations)	82 DEGC
BIS	Bond Index Limit for Zone Isolation	80
BS	Bit Size	156.000 MM
BSAL	Borehole Salinity	45000.00 PPM
CBAC	Calibration Density Correction Option	NO
CBAF	CBL Calibration Factor	1
CBCF	CBL Correction Factor	1.0
CBLG	CBL Gate Width	40 US
CBLO	CBL Open Hole Thickness Correction Option	NO
CCLO	CCL Head Gating	0.3 MM
CCTT	CCL Detected level	0.3 V
CDEP	CCL Log Depth	328.084 FT/M
CMTH	Compressive Strength of Cement	500 PSIA
CWEI	Casing Weight	34.32 KG/M
DBSI	Delta-T Base	200 US
DFD	Delta-T Gating	20
DFAD	Digital Fast Arrival Detection Switch	
DFSD	Drilling Fluid Density	1045.00 K/M3
DHC	Delta-T Hole Correction	BS
DOC	Delta-T Sampling Interval	5
DQ	Depth Offset	0.0 M
DPFM	Density Porosity Processing Mode	HIRS
DPHZ	Density Porosity Value	0.45
DTCM	Delta-T Compaction Mode	FIXC
DTF	Delta-T Fluid	620.079 US/M
DTFS	Delta-T Sensitivity Frame Size	100
DTM	Delta-T Matrix	183.727 US/M
DWCO	Digitizer Word Count	4
EA	Eccentring Compensation Factor	0.7
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	2
FFCM	Form Factor Mode	
FFSL	Form Factor Porosity Source	2DHZ
FMAT	Formation Matrix	SANDSTONE PPM
FPCO	Formation Salinity Correction Option	NO
GAI	Manual Gain	40
GDEV	Gamma Caliper Selection	HCAL DEGC
GGBD	Average Angular Deviation of Borehole from Normal	0
GGBO	Geothermal Gradient	0.018227 DC/M
GMAA	Gamma Ray Max	150 GAPI
GMAM	Gamma Ray Min	30 GAPI
GMIN	HDT Gamma Ray Min	30
GTEC	Generalized Tool Identity Selection	ATR_RESIS
GTPE	Generalized Tool Physics Selection	LINEAR_ESTIMATE
HACPP	Accelerometer Pulse Frequency	PHEIN_50_1_MHZ
HAOT	Accelerometer Reference Temperature	DEGC
HCDD	HALT Density Cal detection	2000 K/M3
HCDO	HALT Density Cal Offset	0 K/M3
HFAW	HALT Auto Write Telemetry	NO
HLT_GAS_DENSITY	HALT Gas Downhole Density	0.3 K/M3
HLT_GAS_OPTION	HALT Gas Density Correction Option	NO
HLWD	HALT Logging Mode	HIRES
HNCOD	HALT Neutron Cal detection	0.45 V/V
HNCOO	HALT Neutron Cal Offset	0.45 V/V
HPRECUT	HALT effective Porosity Cutoff	0.07 V/V
HRSP	HALT Resolution Spacing	128.937 MM
HRSM	HALT Resolution Mode	TSCD_SPEED_CORRECTION
HSCR	HALT Shale Correction Selection	ESS
HSIB	HALT Shale Indicator Deletion	0.45
HSWO	HALT Sonic HILT Activation	NO
HWMOUT	HALT Water Saturation from ATR cutoff	50 %
HWTC	HALT Water Type Correction Selection	AUTOMATIC
LDMS	Integrated Transit Time Source	DT
LGMS	LGMS Coverage	NONE
LTT	Lower Log Tension Control	DISALLOW
LTT1	Lower to Upper Transmitter Spacing Ratio	1
MATR	Rock Matrix Type	LIMESTONE
MCO	Mud Cake Correction Option	NO
MCSI	Minimum Consistent Interval	3.048 M
MDCR	Mud Correction	NATU
MDEN	Matrix Density	2710 K/M3
MDSI	Manually Entered (Well) Deviation	2.300 DEG
MEAS	Measure Point	0
MHCF	MCFL Bit Correction Correction Coefficient	3.2e-05 OHMS
MHCO	MCFL Bi Correction Correction Coefficient	3.2e-05 OHMS
MHCS	MCFL Bit Correction Correction Switch	NO
MIDA	Minimum Gain	0
MOCS	Sonic Fitting Mode	SVC
MPAS	Mud Pump Cycle Operation Mode	ON
MRI	Minimum Resistivity Amplitude	40 MV
MSP	Mud Sample Temperature	22.22 DEGC
MSPO	Mud Sample Temperature Option	NO
MWDS	Mud Weight(for Gelset)	1.2 US
NHT	HALT Nuclear Mud Type	NOBARITE
NRWD	Near Window Sliding Gate	100 US
NSAR	HRDD Processing Mode	HiRes
NSMP	Number of Detector Pulses	4 MM
PBVSADP	Number of Detectors Recorded	3
PF	Use alternate depth channel for playback	YES
PFOT	Pad Offset	0.0 V/V
PP	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
PTOT	Pad Type	CBF
RAPD	Raw Data	0
RMFS	Resistivity of Mud Filtrate Sample	2.5900 OHMM
RMSA	Rm at Surface Temperature	0.55 OHMM
RWT	Resistivity of Connate Water	0.0000 OHMM
SDAT	Standoff Data Channel	0
SDTH	Switch Down Threshold	10364
SFLU_HLT	HILT Saturation Exponent	2
SFXP	Shale Correction Porosity Exponent	2 DB/M
SHC	Shale Correction	0
SGAC	Selectable Acquisition Gain	AUTO
SGDW	Sliding Gate Detector Width	625 US/M
SGOW	Sliding Gate Offset Width	0 US
SGOT	Sliding Gate Delta-T	164 US/M
SGWT	Sliding Gate Width	50 US
SHT	Surface Hole Temperature	80 DEGC
SLEV	Signal Level for AGC	3000
SMOD	Sonic Mode	3.175
SOCO	Sonic Correction Option	NO
SPCLEAN	HILT SP Clean	-200 MV
SPD	Last Depth Sampling Point	M
SPND	Sonic Porosity Formula	RAYMER_HUNT
SPNO	Sonic Porosity Sampling Point	0 M
SPSHALE	SP Shale Value	0 MV
SPSL	HILT SP Slope	-120 MV
SPSO	SP Reference Source	SLOP
SPVO	TVD of Starting Point	M
SSHC	SS Hardware Loop Control	DISALLOW
TAZI	Tool Azimuth Mode	MSI
TDD	Vertical Section Direction	0 DEG
TEC	Total Depth	2118 M
TWS	TCD Salinity Corrected Depth Computation	YES
VDLG	Temperature of Connate Water Sample	37.78 DEGC
WGAC	VDL Manual Gain	0
WGDT	Waveform AGC Allow/Disallow	ON
WGUX	Waveform Manual Gain	20
WMOD	Waveform Gain Delta-T	10 US/M
WSPD	Waveform Gain Delta-X	2540 US
WTT	Wireline Speed	3.6 K/M3
	Wait Trajectory Flag	VERTICAL

Format: PORO_5 Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 00:50

OP System Version: 7C0-713

MSM

HLTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997
HOLEV	RPCA-1099		

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HLTB .021	FN:30	FIELD	10-MAR-1999 15:25	2120.0 M	1975.4 M

Output DLIS Files

DEFAULT	HLTB .091	FN:115	FIELD	11-MAR-1999 00:50		

Input DLIS Files

CCFAULT	HLTB .088	FN:112	FIELD	11-MAR-1999 06:36	2061.1 M	1915.7 M

Output DLIS Files

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MSM

HLTB-DTB	RPCA-998	HOLEV	RPCA-998

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.800 DEG	2.300 DEG	2061.1 06:51:20
	0.750 DEG	0.800 DEG	1978.2 06:53:27
	0.650 DEG	0.800 DEG	1975.8 06:53:35

		0.600	DEG	0.600	DEG
		1.500	DEG	1.500	DEG
		2.400	DEG	2.400	DEG
		3.300	DEG	3.300	DEG

1974.0 08:02:01
1974.5 08:22:31
1974.9 08:39:03
1975.0 08:53:13
1975.5 09:13:43
1976.0 09:33:43

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)		LDT PhotoElectric Factor (PEF)		TLD Density Correction (HDRA)	
150000	0	(---)	10 460	(K/M3)	-50

HRMS Caliper (HCAL)		TLD Std. Res. Formation Pe (PEFZ)		LDT Bulk Density Correction (DRHO)	
125	375	0	(---)	(K/M3)	-50

Gamma Ray (GR)		Alpha Processed Neutron Porosity (NPOR)		
0	150	0.45	(V/V)	-0.15

LDT Caliber (CALI)		Stuck Stretch (STIT)	LDT Density Porosity (DPHI)		
125	375	0.45	(V/V)		-0.15

Bit Size (BS)		Stuck Stretch (STIT)	TLD Std. Res. Density Porosity (DPHZ)	
125	375	0.45	(V/V)	-0.15

MAIN PASS - SANDSTONE - TRUE VERTICAL DEPTH

MAIN PASS - SANDSTONE - TRUE VERTICAL DEPTH

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC_TCC
AQC	DSLT Filling Mode	ZERO
AQCFL	Automatic Gain Control	ON
	AIT-H Array Induction Level(Depth Log/View only)	2_RiloCorr_BaseLogs
AHSHM	AIT-H Shale Correction Mode	2_CompSiteStandard
AHSHV	AIT-H Shale Correction Code Version Number	0
AHSLM	AIT-H Saltb Logs Mode	6_One_Two_and_Four
AHSLV	AIT-H Saltb Logs Code Version Number	700
AHEEM	AIT-H Enable Environmental Corr	Yes
AHCSED	AIT-H Enable Borehole Ring (Ex Borehole)	Excentered
AHCSED	AIT-H Casing Shoe Correction Depth	M
AHEDM	AIT-H Deadtime Tool Mode	0rKR_Log_200
AHEBL	AIT-H Enable Bitsize Correction	Yes
AHEHL	AIT-H Enable Hole Corr	Yes
AHEMN	AIT-H Enable Mudcake Corr	Yes
AHFMV	AIT-H Model Field Parameters	Yes
AHEBV	AIT-H Enable Bitsize Code Version Corr	Yes
AHSIS	AIT-H Sequence Version For Four & Resolution	30,60,23,10
AHTSE	AIT-H Select Altitrx Interpolation Gating	On
AHTSE	AIT-H Select Altitrx Mode	Log_Valid-No_Default_Parameters
AHMHQ	AIT-H Mod Resistivity Calculation Depth	M
AHMRF	AIT-H Mod Reelectrify Factor	1
AHMRV	AIT-H Mod Reelectrify Version For One 6 Resolution	Yes
AHRPM	AIT-H Mod Reelectrify Version Number	30,60,23,10
AHRPM	AIT-H Reelectrify Mode	6_One_Two_and_Four
AHRPV	AIT-H Reelectrify Code Version Number	700
AHTTM	AIT-H Tool Stand Off	12.7
AHTTV	AIT-H Tool Stand Number	MM
AHTRD	AIT-H Response Set Version For Two R Resolution	30,60,23,10
AHTSE	AIT-H Temperature Selected Data (Code Error Correction)	Internal
AHTSE	AIT-H Temperature Selected Gate	13_AUTO
AHLV	AIT-H User Level Correction	Normal
ALTDPCHAN	Name of alternate depth channel	TVDE
AMBD	Auxiliary Mineral Model Block (MMD) Deviation	0 DEG
AMBS	Auxiliary Mineral Model Strike	0 DEG
ARTS	AIT Rt Selection (for ALLRES computation)	13_AUTO
ATMD	Borehole Fluid Type	LIQUID
BHS	Borehole Salinity Type	WATER
BHS	Bore Hole Salinity	0 PPM
BHT	Bottom Hole Temperature (used in calculations)	93
BI	Bond Index Level for Zone Isolation	0
BS	Bit Size	155.575 MM
BSAL	Borehole Salinity	-50000.00 PPM
BSCO	Borehole Salinity Correction Option	NO
CBCF	CBL Correction Factor	1
CBCF	CBL Correction Factor	1.5
CBLG	CBL-Gate Width	42 US
CCCF	CCL Conductive Thickness Correction Option	NO
CCCO	CCL Head Delay	203 MM
CCCT	CCL detection level	0.1 V
CCTH	Chemical Cutter Size	324.004 US/M
CEPL	Cement Plug Length of Cement	100 KPAA
CMWI	Casing Weight	34.32 KPAA
CNFL	Clipping Delay	2 US
CSFD	Casing Fluid	SW
DFSD	Depth First Actual Detection Switch	0
DFS	Drilling Fluid Density	1045.99 K/M3
DHC	Density Hole Correction	SC
DI	Depth Sampling Interval	0.0254 M
DID	Depth Offset	0.0 M
DPRM	Density Porosity Processing Mode	HRD
DTCO	Delta T Compaction Code	120
DTCM	Delta T Compaction Mode	1
DTF	Delta-T Fluid	620.574 US/M
DTM	Delta-T Telemetry Frame Size	196
DTMF	Delta-T Matrix	183.727 US/M
DWCO	Digitizing Word Count	42
FCF	DSL Fluid Correction Factor	1
FDF	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	2
FPH	Form Factor Porosity Source	1
FSCO	Formation Salinity	DPHZ PPM
FSCO	Formation Salinity Correction Option	00000
GAI	Manual Gain	40
GCCF	Gamma Ray Caliper Selection	HCAL
GDEV	Average Angle Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018222 DEGM
GHOL	Good Hole	SP
GMMN	HLT Gamma Ray Max	150 GAPI
GMMX	HLT Gamma Ray Min	0 GAPI
GTEC	Generalized Mud Resistivity Selection	AITH_RESIST
GTEC	Generalized Temperature Selection	LINEAR_ESTIMATE
HAFD	Hole Angle Fixed Deviation	PRESENT 0 DEG
HDEV	Accelerometer Deviation Temperature	HART
HDSTPP	Neutron PROM Presence	ABSENT
HDTMP	HRD Density Temperature	24.444 K/M3
HDWZ	HRD Density Salt Selection	2700 K/M3
HFAW	HSLT Auto Wide Telemetry	NO
HFSK	HSLT Fluid Salinity Kcl	0 K/M3
HFSO	HSLT Gas Correction Option	gr
HLMD	HALS Logging Mode	HRES
HNVO	HSLT Neutron Detection	0.45 V/V
HPHE	HSLT Hole Enlargement	0.05 V/V
HPREC	HSLT Hole Enlargement Cutoff	0.05 V/V
HRSP	HSLT Resolution Spacing	120.997 MM
HSCR	HSLT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCV	HSLT Speed Correction Value	1524
HSE	HSLT Shale Correction Selection	YES
HSTI	STI Uses HSLT Acceleration	NO
HSTO	HSLT Stand Off Selection WITH cutoff	0.0 %
HSWC	Integrated Hole Volume Caliper Selection	HCAL
ITTS	Integrated Transit Time Source	DT
LBHC	LDS Hardware Control	DISALLOW
LTUT	Ratio of Lower to Upper Trans.Spacing	1
MATR	Rock Matrix Type	SANDSTONE
MCCO	Mud Cake Correction Option	042
MDEN	Mud Density Source	2.32 M
MDOR	Mud Correction Mode	AUTO
MFD	Matrix Density	2650 K/M3
MHDN	Mud Density (Weft) Deviation	2.300 DEG
MHGI	Maximum Gain	1
MHCI	MCFL Bit Contrast Correction Coefficient	2.2e-05 OHMS
MHCC	MCFL Hole Contrast Correction Coefficient	3.7e-05 OHMS
MHCO	MCFL High Contrast Correction Switch	1
MGA	Minimum Gain	0.5
MHOD	Mud Density	SWC MM
MCC	MCFE Processing Correction Mode	OK
MSA	Minimum Sonic Amplitude	40 MV
MSTT	Mud Sample Temperature	22.22 DEGC
NWGC	Mud Weight Correction Option	NO
NWSO	Mud Weight Source	SW US
NWU	HSLT Neutron Mud Type	NOMATRIX
NWXU	Near Maximum Sliding Gate	750 US
NWXU	Near Minimum Sliding Gate	300 US
NWXI	HRDD Depth Sampling Rate	25.4 MM
NWXP	Number of Detection Passes	2
PDMAX	Maximum Pressure Allowed for playback	15000
PI	HSLT max pressure	0 V/V
PP	Playback Processing	NORMAL
PTCO	Pressure Temperature Correction Option	NO
RATE	Rate	610
RDFA	Reset DFAD	0.45
RMFZ	Resistivity of Mud Filtrate Sample	0.2 OHMM
RTCC	HCFC Depth Sampling Rate	0.08 MM
RTCO	HCFC Resistivity Compensation	YES
RW	Resistivity of Formation Water	1.0000 OHMM
SDAT	Standoff Data Source	SOCH
SDAT	Standoff Data Source	16384
SELHT	HSLT Saturation Exponent	2
SFAC	Sonic Formation Attenuation Factor	2 DB/M
SGAI	Sonic Gain	0
SGCC	Sonic Borehole Acoustic Gain	AUTO
SGCL	Sliding Gate Closing Delta-T	40 US/M
SGCW	Sliding Gate Closing Width	25 US/M
SGIW	Sliding Gate Initial Width	184 US/M
SGW	Sliding Gate Width	25 US/M
SOTS	Surface Hole Temperature	20 DEGC
SQCH	Signal Level for AGC	3200
SSCH	Sonic Standoff	0 MM
SSCO	Standoff Correction Option	NO
SPELKAN	HSLT SP Chan	-350 MV
SPGI	Sonic Processing of Starting Point	1 M
SPPS	Sonic Porosity Formula	RAYMER_HUNT
SPRO	Sonic Porosity Processing Mode	1
SPRO	Sonic Porosity Processing Mode	0 MV
SPSHALE	HSLT SP Shale	-120 MV
SPSO	Sonic Porosity Source	120
SSGO	TSD of Starting Point	1 M
STCO	TSD Shoulder Loop Control	DISALLOW
STKT	STI Uses HSLT Acceleration	1 M
STOT	Switch Up Threshold	853
TDZI	Vertical Section Azimuth	0 DEG
TEC	Tool Code	2117 M
TSCC	TSCD Excite Compensated Depth Computation	YES
TWC	Temperature of Connate Water Sample	37.78 DEGC
VDEV	VDL Gain	0
VDMO	VDL Display Mode	UTFX
WAGC	Waveform Automatic Gain Control	OFF
WAGI	Waveform Gain Delta-T	20
WAGP	Waveform Gain Delta-T	747 US/M
WGIN	Waveform Gain Delta-T	1000 US/M
WMOD	Waveform Recording Mode	DETECTION
WSG	Wet Sample Gravity	1045 K/M3
WTF	Wet Telemetry Flag	VERTICAL

Format: PORO_1 Vertical Scale: 1:200 Graphics File Created: 19-MAY-1999 09:01

OP System Version: 7C0-713

MBM		HOLEV	RPCA-998

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HLTB_088	FN:112	FIELD	11-MAR-1999 06:36	2061.1 M	1915.7 M

Output DLIS Files

Input DLIS Files

DEFAULT	HLTB_089	FN:113	FIELD	11-MAR-1999 06:40	2061.1 M	1915.7 M

Output DLIS Files

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MBM		HOLEV	RPCA-998

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.600 DEG	2.200 DEG	1986.1 09:47:40
	0.600 DEG	0.600 DEG	1989.9 09:46:49
	1.500 DEG	0.600 DEG	1975.8 09:46:03
	1.500 DEG	2.000 DEG	1974.2 09:46:05
	2.400 DEG	1.500 DEG	1973.6 09:46:06
	2.400 DEG	2.000 DEG	1928.2 09:49:04

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)		LDT PhotoElectric Factor (PEF)		TLD Density Correction (HDRA)	
150000	0	(---)	10 460	(K/M3)	-50

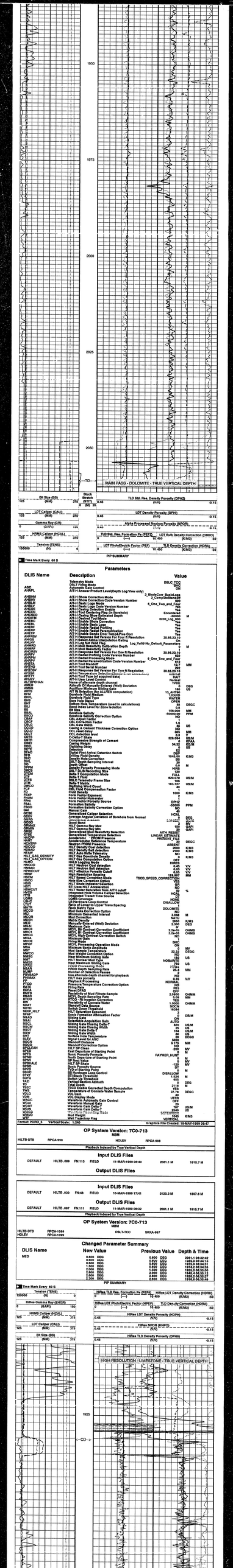
HRMS Caliper (HCAL)		TLD Std. Res. Formation Pe (PEFZ)		LDT Bulk Density Correction (DRHO)	
125	375	0	(---)	(K/M3)	-50

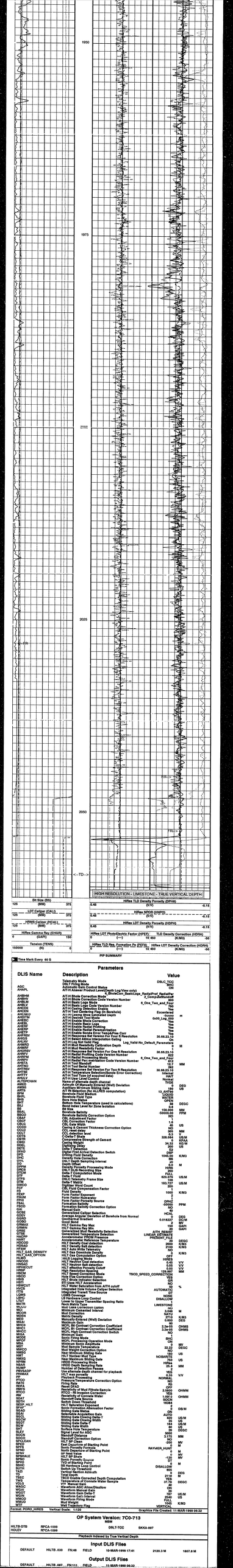
Gamma Ray (GR)		Alpha Processed Neutron Porosity (NPOR)		
0	150	0.45	(V/V)	-0.15

LDT Caliber (CALI)		Stuck Stretch (STIT)	LDT Density Porosity (DPHI)		
125	375	0.45	(V/V)		-0.15

Bit Size (BS)		Stuck Stretch (STIT)	TLD Std. Res. Density Porosity (DPHZ)	
125	375	0.45	(V/V)	-0.15

MAIN PASS - DOLOMITE - TRUE VERTICAL DEPTH


1950
1975
2000
2025
2050
<--TD--
MAIN PASS - DOLOMITE - TRUE VERTICAL DEPTH
Bit Size (BS)
125
(MM)
375
Stuck Stretch (STIT)
0.45
0
(M)
30
TLD Sht. Res. Density Porosity (DPHZ)
0.45
(V/V)
-0.15
LDT Caliper (CALI)
125
(MM)
375
LDT Density Porosity (DPHZ)
0.45
(V/V)
-0.15
Gamma Ray (GR)
0
(GAPI)
150
Alpha Processed Neutron Porosity (NPOR)
0.45
(V/V)
-0.15
HRMR Caliper (HCAL)
125
(MM)
375
TLD Bnd. Res. Formation Pe (PEFZ)
0
(---)
10.400
TLD Bnd Density Correction (HDRA)
0.45
(K/M3)
-50
Tension (TENS)
1500
(N)
0
LDT PhotoElectric Factor (PEF)
0
(---)
10.400
TLD Density Correction (HDRA)
0.45
(K/M3)
-50
PIP SUMMARY
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
DSLC_TCC
TMOD
ON
AHBVM
AIT-H Borehole Correction Mode
2_BholeCorr_BasicLogs
AHBVW
AIT-H Borehole Correction Mode Version Number
2_CompiledStandard
AHBLM
AIT-H Basic Logs Mode
6_One_Two_and_Four
AHBLV
AIT-H Basic Logs Code Version Number
760
AHCEM
AIT-H Centralization Mode
Eccentered
AHCEV
AIT-H Centralization Code Version Number
760
AHCMD
AIT-H Casing Shoe Estimated Depth
-50000
M
AHEBV
AIT-H Enable Basic Logs Version
0x00_1a4_000
AHEBL
AIT-H Enable Basic Logs
Yes
AHEBM
AIT-H Enable Basic Monitoring
Yes
AHEBW
AIT-H Enable Basic Error Terms
Yes
AHETW
AIT-H Enable Borehole Error Temp&Pres Corr
Yes
AHFSW
AIT-H Response Set Version For Foot # Resolution
30.60,23,10
AHIAS
AIT-H Select Alpha Interpolation Gating
On
AHIAV
AIT-H Mud Resistivity Version
Log_Valid-No_Default_Parameters_Depth
M
AHMRM
AIT-H Mud Resistivity Calibration Depth
AHMRV
AIT-H Mud Resistivity Factor
AHRFV
AIT-H Radial Response Set For One # Resolution
30.60,23,11
AHRPV
AIT-H Radial Profiling Code Version Number
850
AHRPM
AIT-H Radial Processing Mode
6_One_Two_and_Four
AHRPV
AIT-H Radial Processing Code Version Number
AHTAV
AIT-H Tool Calibration Version
AHTNO
AIT-H Tool Serial Number
AHTSV
AIT-H Response Set Version For Two ft Resolution
30.60,23,12
AHTTV
AIT-H Tool Type (if selected above)
HAIT
AHUCH
AIT-H User Level Checksum
Normal
AMEM
Name of alternate depth channel
YVOL
AMEO
AIT-H Mud Resistivity Offset (MRV) Deviation
DEG
AMSG
Auxiliary Minimum Speed
180
US
ARTS
AIT-H Section (for ALLRES computation)
13_AHTSO
ATCM
Automatic Tool Centering
YES
BHS
Borehole Fluid Type
WATER
BHS
Bore Hole Status
OPEN
BI
Borehole Temperature (used in calculations)
30
DEGC
BIJ
Bond Index Level for Zone Isolation
0
BS
Bit Size
158.000
MM
BSAL
Borehole Salinity
-50000.00
PPM
CBGC
Casing Hole Correction Option
NO
CBAF
CBL Amplitude Factor
1
CBCF
CBL Correction Factor
1.8
CCDS
CBL Gate Start
40
US
CCLO
CCL Casing Wall Thickness Correction Option
NO
CCLP
CCL reset delay
300
MM
CCT1
CCL detection level
0.3
V
CDTP
CDT Pulse Width
320.000
US/M
CEFA
Compressive Strength of Cement
0.0124
KG/M
CMEI
Casing Weight
34.32
KG/M
CSGO
Casing Offset
0
US
DFD
Drilling Fluid
BRINE
DFAD
Digital First Arrival Detection Switch
YVOL
DFC
Drilling Fluid Density
1045.00
K/M3
DHC
Delta T Hole Correction
NO
DIVL
DITE Logging Interval
180
DMF
Depth Offset
0.0
M
DPPC
Density Porosity Processing Mode
HIRE
DTCM
Delta T Correction Mode
FULL
DTCO
Delta T Correction Factor
1.0
DTF
DitBy Fluid
SALT MUD
US/M
DTFM
DitBy Telemetry Frame Size
1
DTM
DitBy T Matrix
182.727
US/M
DWCO
Digitizing Word Count
32
EDF
Elevation Of Depth Correction Factor
0
FT
Fluid Type
1000
K/M3
FEXP
Form Factor Exponent
1
FNUM
Form Factor Numerator
1
FSRC
Form Factor Density Source
DPHZ
FBAL
Formation Balance
PPM
FSOO
Formation Salinity Correction Option
NO
GCBE
Gamma Ray Caliper Selection
HCAL
GDEC
Average Angular Deviation of Borehole from Normal
DEG
GOBO
Geological Boundary
GRMAX
GR Max
GRMIN
GR Min
GTBE
Generalized Thickness Selection
HCAL
HACP
Accelerator - PROM Presence
PRESENT
DEGC
HBHP
Hydrogen Index Borehole Temperature
HCCO
HCNAV Calibration Coefficient
HCNC
HCNC High Contrast Correction Switch
NO
HCOA
Hmine Gain
BHC
HCPE
HCPE Processing Operation Mode
HSA
Minimum Sonic Amplitude
HSAV
Hole Size Correction Value
HWCO
Mud Weight Correction Option
NO
HWEI
Near Minimum Sliding Gate
HWTT
Hole Wall Thickness Type
NOMINATE
HWSS
Hmine Minimum Sliding Gate
HZSS
Hmine Maximum Sliding Gate
IDRR
HRDD Depth Sliding Rate
IDWS
Number of Detection Passes
IMPS
Image Processing Channel for playback
INRMAX
HLT max porosity
IPM
Playback Processing
NORMAL
IPTCO
HLT Temperature Correction Option
NO
IRATE
Firing Rate
IRV1
Reset DFAD
OFF
IRWA
HCNC Depth Mud Filtrate Sample
2.8000
OHMM
IRWR
HCNC Depth Formation Water
9.68
RTCO
RTCO - RI Inversion Correction
NO
IRWT
Resistivity of Formation Water
1.0000
OHMM
ISDT
Switch Down Threshold
SOCH
ISFW_HLT
HLT Saturation Equivalent
ISFW
Sonic Formation Attenuation Factor
ISGAD
Gamma Delay
ON
ISGCS
Selectable Acquisition Gain
AUTO
ISGCL
Sliding Gate Closing Delta-T
820
US/M
ISGOT
Sliding Gate Opening Width
180
US
ISGSP
Sliding Gate Delta-T Step
10
US
ISGW
Sliding Gate Width
80
US
ISLA
Sliding Gate Temperature
200
DEGC
ISLEV
Digital Level Value - LSC
40
ISOCN
Standoff Distance
0.175
MM
ISPCC
Spherical Correction Option
NO
ISPCGAN
Spherical Gain
-200
MV
SPED
Seat Departure of Starting Point
0
M
SPSO
Sonic Porosity Formula
RAYMER_HUNT
SPWV
North Departure of Starting Point
0
M
SPWVE
East Departure of Starting Point
0
M
SPSO
Sonic Porosity Source
DT
SSHC
SS Hardware Long Control
SSHC
SS Hardware Control
DISALLOW
M
STKT
ST1 Stack Threshold
1.524
M
TDD
Total Depth - Driller
2118
M
TLD
Vertical Section Azimuth
0.0
DEG
TMD
Total Depth
2118
M
TSCC
TSCD Enable Corrected Depth Computation
YES
TWS
Temperature of Connate Water Sample
37.78
DEGC
VDL0
VDL Delay
0
US
VDL1
VDL Display Mode
UTTR
WSAC
Waveform Automatic Gain Control
OFF
WSAV
Waveform Gain Value
0
WSDT
Waveform Gain Delta-T
167
US/M
WSIN
Waveform Gain Delta-T
2540
US
WSOU
Waveform Sampling Mode
EXTENDED
WWGD
Weight
1000
K/M3
WTF
Well Trajectory Flag
VERTICAL
Format: PORO_1
Vertical Scale: 1:240
Graphics File Created: 18-MAY-1999 09:47
OP System Version: 7C0-713
MSM
HOLEV
RPCA-998
Playback Indexed by True Vertical Depth
Input DLIS Files
DEFAULT
HLTB.000
FN:113
FIELD
11-MAR-1999 06:40
2061.1 M
1915.7 M
Output DLIS Files
Input DLIS Files
DEFAULT
HLTB.030
FN:48
FIELD
10-MAR-1999 17:41
2120.3 M
1897.6 M
Output DLIS Files
DEFAULT
HLTB.087
FN:111
FIELD
11-MAR-1999 06:32
2061.1 M
1915.7 M
Playback Indexed by True Vertical Depth
OP System Version: 7C0-713
MSM
HLTB-07B
RPCA-1099
DSLC-TCC
HOLEV
RPCA-1099
SKKA-997
Changed Parameter Summary
DLIS Name
New Value
Previous Value
Depth & Time
MEO
0.600 DEG
0.600 DEG
2061.1 06:32:42
0.600 DEG
0.600 DEG
1993.9 06:34:13
0.600 DEG
0.600 DEG
1975.9 06:34:31
2.500 DEG
2.500 DEG
1955.0 06:35:00
2.500 DEG
2.500 DEG
1935.0 06:35:30
2.500 DEG
2.500 DEG
1915.8 06:35:49
PIP SUMMARY
Time Mark Every 60 S
Tension (TENS)
1500000
(N)
0
HRes TLD Res. Formation Pe (PEFZ)
0
(---)
10.400
HRes LDT Density Correction (HDRO)
0.45
(K/M3)
-50
HRes GR (HGR)
0
(GAPI)
150
HRes LDT PhotoElectric Factor (HPEF)
0
(---)
10.400
HRes LDT Density Correction (HDRA)
0.45
(K/M3)
-50
HRMR Caliper (HCAL)
125
(MM)
375
HRes LDT Density Porosity (HDPO)
0.45
(V/V)
-0.15
LDT Caliper (CALI)
125
(MM)
375
HRes NPOR (HNPO)
0.45
(V/V)
-0.15
Bit Size (BS)
125
(MM)
375
HRes TLD Density Porosity (DPHH)
0.45
(V/V)
-0.15
<--CD-->
1925
HIGH RESOLUTION - LIMESTONE - TRUE VERTICAL DEPTH



Bit Size (BS) 125 (MM) 375
LDT Caliper (CALI) 125 (MM) 375
HDMA Caliper (HCAL) 125 (MM) 375
HiRes Gamma Ray (EHGR) 0 (GAPI) 150
Tension (TENS) 1500000 (N) 0
HiRes TLD Res. Formation Pe (PEFD) 0 (---) 10
HiRes TLD Density Porosity (DPHD) 0.45 (V/V) -0.15
HiRes HDCN (HDRH) 0.45 (V/V) -0.15
HiRes LDT PhotoElectric Factor (HPEF) 0 (---) 10
TLD Density Correction (HDRA) 0.45 (K/M3) -.50
HiRes LDT Density Porosity (HDPH) 0.45 (V/V) -0.15

Time Mark Every 60 S

PIP SUMMARY

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DBLC_TCC
	Tool Error Code	0
AGC	Automatic Gain Control Status	ON
ANAPL	AIT-H Answer Product Level(Depth Log/View only)	0
	AIT-H Answer_BasicLogs_RadialProf_RadialPer_Z_ComputedMandPass	0
AHBHW	AIT-H Bhole Correction Code Version Number	800
AHBLV	AIT-H Enable Bhole Logic	6_One_Two_and_Four
AHBLW	AIT-H Bhole Correction Version Number	790
AHCDE	AIT-H Casing Diameter Selection	Yes
AHCEN	AIT-H Tool Centering Flag (In Borehole)	Eccentered
AHCTU	AIT-H Casing Shoe Estimated Depth	-32000 m
AHDTU	AIT-H Delta Depth	0x00_Use_Tool_Zero
AHEBC	AIT-H Enable Borehole Correction	Yes
AHEBL	AIT-H Enable Basic Logs	Yes
AHEHP	AIT-H Enable Hybrid Processing	Yes
AHEHR	AIT-H Enable Radial Parameterization	Yes
AHETW	AIT-H Enable Bonde Error Temp&Pres Corr	Yes
AHHDU	AIT-H Hardware Resolution for Fine R Resolution	30.66,23,15
AHICC	AIT-H Invasion Correction Code Version Number	800
AHLVU	AIT-H Log Not Valid Flag	Log_Valid-No_Default_Parameters
AHMRU	AIT-H Mud Resistivity Calibration Depth	0 M
AHORV	AIT-H Mudcake Correction Code Version Number	800
AHRSU	AIT-H Resistivity Set Version For One R Resolution	30.66,23,15
AHRTU	AIT-H Resistivity Set Version Number	800
AHRVV	AIT-H Rugosity Processing Mode	6_One_Two_and_Four
AHSCU	AIT-H Shoulder Correction Code Version Number	800
AHTLU	AIT-H Tool Family	13.7
AHTNO	AIT-H Tool Serial Number	702
AHTRU	AIT-H Tool Set Version For Two R Resolution	30.66,23,15
AHTSV	AIT-H Tool Software Selection(Bonde Error Correction)	Internal
AHTTV	AIT-H Tool Type (of acquired data)	HAIT
ALTOPCNT	Number of altered channels	None
ALTOPCHAN	Name of altered depth channel	TVD
AMED	Azimuth Of Maxcality-Entered (Well) Deviation	0 DEG
AMTS	Auxiliary Measurements Status	US
ARTU	AIT-H Tool Family (ALLHES computation)	13_AHTSO
BFW	Borehole Fluid Water	1.000
BHFL	Borehole Fluid Type	WATER
BHT	Bore Hole Status	OPEN
BHTE	Bore Hole Temperature (used in calculations)	0 DEGC
BIL	Bond Index Level Up for Zone Isolation	6
BS	Bit Size	158.000 MM
BSAL	Borehole Salinity	-58000.000 PPM
BSCO	Borehole Bhole Correction Option	No
CBAF	CBL Adjustment Factor	1
CBLF	CBL Filter Length	1.5
CBLG	CBL Gate Width	40 US
CCCO	Casing & Cement Thickness Correction Option	No
CCLT	CCL Lead Delay	300 MM
CDTC	C-Delta-T Cement	0 US
CDTS	C-Delta-T Shale	328.084 US/M
CMTS	Compressive Strength of Cement	0 KPAA
CWEI	Casing Weight	34.32 KG/M
DATE	Date of Logging	2007
DETE	Delta-T Detection	No
DFAD	Digital Final Actual Detection Switch	DSP
DH	Density Hole Diameter	1045.000 MM
DHC	Density Hole Correction	On
DTI	DSLT Depth Sampling Interval	100 M
DTU	Delta-T Units	US/M
DPMB	Density Porosity Processing Mode	PERS
DRCB	DSLT DLIS Recording Side	PRIM
DTM	Delta-T Computation Mode	FULL
DTRP	DSLT Reference Pass	1
DTSB	DSLC Telemetry Frame Size	620.079 US/M
DTW	Delta-T Matrix	183.727 US/M
DWOO	Digitizer Word Count	300
EC	Eccentering Compensation Factor	1
ED	Fluid Density	1000 K/M3
EFXP	Force Factor Exponent	2
EFXR	Force Factor Resistivity	1
FFXP	Force Factor Porosity Source	DPHZ
FRAL	Formation Salinity	-50000 PPM
GAAL	Gamma Ray Salinity Correction Option	NO
GAI	Manual Gain	40
GCBE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0
GGDU	Geothermal Gradient	0.018227 DEGM
GOBD	Gobi Depth	0 M
GRMAX	HILT Gamma Ray Max	150 GAPI
GRMIN	HILT Gamma Ray Min	20 GAPI
GTEC	Generalized Temperature Selection	AITH_RESD
GTEE	Generalized Temperature Selection	LINEAR_EXTRAPE
HACFP	Accelerometer PROM Presence	PRESENT_FILE
HBHT	Hydrostatic Bore Hole Temperature	0 DEGC
HDCOD	HILT Density Coal detection	2100 K/M3
HDSAD	HILT Density Salt detection	2150 K/M3
HDSC	HILT Density Correction	No
HELF_GAS_DENSITY	HILT Gas Density	0 K/M3
HELF_GAS_OPTION	HILT Gas Computation Option	Off
HGEO	HILT Geology Mode	HIRES
HNCOD	HILT Neutron Coal detection	0.65 V/V
HNSAD	HILT Neutron Salt detection	0.03 V/V
HPHEGUT	HILT effective Porosity Cutoff	0.05 V/V
HRGH	High Resolution Spacing	129.997 MM
HRMO	HILT Resolution Mode	TSCD_SPEED_CORRECTED_HIRES
HSCP	Hole Size Correction Option	YES
HSHI	HILT Shale Indicator Selection	GR
HSHU	HILT Shale Indicator	GR
HWEUT	HILT Water Saturation from ATH cutoff	50 %
HYCS	Integrated Hole Volume Caliper Selection	AUTOMATIC
HYDT	Integrated Hole Volume Time Since Bit	0
LDBS	LDBHC Switch	NONE
LBHC	LB Hardware Loop Control	DISALLOWED
LIHT	Lower to Upper Transducer Spacing Ratio	1
MCLU	Rock Matrix Type	LIMESTONE
MCOU	Minimum Correction Option	1
MCI	Minimum Correlated Interval	3.048 M
MCOR	Mud Correction	NATU
MDEN	Mud Density	1000 K/M3
MED	Maxcality-Entered (Well) Deviation	0 DEG
MGAI	Maximum Gain	50
MHCC	MCFL Bi Contact Correction Coefficient	3.2e-05 OHMS
MHCS	MCFL Bi Contact Correction Coefficient	3.2e-05 OHMS
MHOC	MCFL High Contrast Correction Switch	No
MIGA	Minimum Gain	1
MPOF	Mudcake Offset	6mm M
MPOI	MCFL Processing Operation Mode	ON
MRI	Minimum Resistivity	0.2 MV
MWCO	Mud Sample Temperature	23.33 DEGC
MWGU	Mud Weight Correction Option	No
NMT	Minimum Shallow Reading Gate	152 US
NNTU	HILT Neutron Mod Type	NOBARITE
NPMI	Neutron Porosity Matrix Rate	182 US
NPMM	HRDD Processing Mode	HiRes
NSAR	HRDD Depth Sampling Rate	25.4 MM
OPENADP	Use alternate depth channel for playback	No
PHMAX	HILT max porosity	YES
PIC	Playback Processing Mode	0 V/V
PTCO	Playback Temperature Correction Option	NORMAL
RATE	Firing Rate	NO
RDFA	Read DFAD	60
RTCO	Reactivity of Mud Filtrate Sample	OFF
RW	Resistivity of Connate Water	2.5800 OHMM
SDAT	Standoff Data Source	1.000
SDCO	Standoff Data Source	SOCN
SEGP HILT	HILT Saturation Exponent	16384
SFAC	Sonic Formation Attenuation Factor	2
SGAF	Sigma Factor	0 DB/M
SGAI	Selectable Acquisition Gain	AUTO
SGCL	Sliding Gate Closing Delta-T	10 US/M
SGOP	Sliding Gate Opening Width	50 US
SGSP	Sliding Gate Start	184 US/M
SGW	Sliding Gate Width	152 US/M
SHT	Surface Hole Temperature	20 DEGC
SOCN	Signal Level for AGC	3000
SOCO	Sonic Correction	3.175
SPOLEAN	Standoff Correction Option	YES
SPSI	HILT SP Clean	-200 MV
SPSS	Sonic Porosity Source	M
SPWP	Sonic Porosity Parameter	0
SPWU	North Dependure of Starting Point	0 M
SPWV	Starting Point	600 MV
SPWVALE	HILT SP Shale	-120 MV
SPSO	Sonic Porosity Source	0
SPSS	TLD Density Porosity Control	0 M
SPWO	Switch Up Through Allow/Disallow	DISALLOW
TAD	Vertical Section Azimuth	0
TDEP	Total Depth	2115 M
TDEC	Time Double Corrected Depth Computation	0.000
TEMC	Temperature of Connate Water Sample	37.78 DEGC
TMUD	TTV Manual Gain	40
TOOC	Tool Orientation Allow/Disallow	ON
WGAI	Waveform Manual Gain	100
WGDT	Waveform Gain Delta-T	197 US/M
WGSP	Waveform Gain Spacing	2540 MM
WMOD	Waveform Firing Mode	FULL
WMUD	Mud Weight	1000 K/M3
WTT	Well Telemetry Flag	VERTICAL

Format: PORO_HIRES Vertical Scale: 1/120 Graphics File Created: 11-MAR-1999 00:32

OP System Version: 7C0-713

		MSN		
HILTB-DTB	RPCA-1099	DSLT-TCC	SKKA-997	
HULEY	RPCA-1099			

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB..030	FN:48	FIELD	19-MAR-1999 17:41	2120.3 M	1807.6 M

Output DLIS Files

DEFAULT	HILTB..047	FN:111	FIELD	11-MAR-1999 00:32		

Input DLIS Files

DEFAULT	HILTB .021	FB:00	FIELD	13-MAR-1999 15:25	2120.0 M	1875.4 M

Output DLIS Files

DEFAULT	HILTB .041	FB:115	FIELD	11-MAR-1999 06:50	2000.0 M	1915.1 M

Playback Indexed by True Vertical Depth

OP System Version: 7CD-713

Tools		
	DSLT-TOC	SKXA-997
HILTB-3170	RPCA-1099	
HDLD.EF	RPCA-1099	

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MECO	0.000 DEG	0.000 DEG	2000.0 06:50:57
	0.000 DEG	0.000 DEG	1958.0 06:53:03
	0.000 DEG	0.000 DEG	1956.0 06:53:09
	0.000 DEG	0.000 DEG	1954.0 06:53:15
	0.000 DEG	0.000 DEG	1952.0 06:53:21
	0.000 DEG	0.000 DEG	1950.0 06:53:27
	0.000 DEG	0.000 DEG	1948.0 06:53:33

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)		HRes TLD Res. Formation 2in (ETIM)	HRes LDT Density Correction (HDRH)
1500000	0	10 ohm	1 G/C3
		0	-.50
HRes Gamma Ray (EHGR)		HRes LDT PhotoElectric Factor (EPEF)	TLD Density Correction (HDRA)
0	150	0	1 G/C3
		10 ohm	-.50
HDAR Caliper (HCAL)		HRes LDT Density Porosity (HDPH)	
6 IN	16	0.45	-0.15
		(NV)	
LDT Caliper (CALI)		HRes SPOS (SNPO)	
6 IN	16	0.45	-0.15
		(NV)	
Bit Size (BS)		HRes TLD Density Porosity (DPHI)	
6 IN	16	0.45	-0.15
		(NV)	

REPEAT SECTION - HIGH RESOLUTION - LIMESTONE

TVD

TRUE VERTICAL DEPTH

REPEAT SECTION - HIGH RESOLUTION - LIMESTONE

TVD

TRUE VERTICAL DEPTH

Bit Size (BS)		HRes TLD Density Porosity (DPHI)	
6 IN	16	0.45	-0.15
		(NV)	
LDT Caliper (CALI)		HRes SPOS (SNPO)	
6 IN	16	0.45	-0.15
		(NV)	
HDAR Caliper (HCAL)		HRes LDT Density Porosity (HDPH)	
6 IN	16	0.45	-0.15
		(NV)	
		HRes LDT PhotoElectric Factor (EPEF)	HRes LDT Density Correction (HDRH)
0	150	0	1 G/C3
		10 ohm	-.50
Tension (TENS)		HRes TLD Res. Formation 2in (ETIM)	HRes LDT Density Correction (HDRA)
1500000	0	10 ohm	1 G/C3
		0	-.50

PIP SUMMARY

Time Mark Every 60 S

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB .101	FB:00	FIELD	13-MAR-1999 15:25	2120.0 M	1875.4 M

Output DLIS Files

DEFAULT	HILTB .091	FB:115	FIELD	13-MAR-1999 06:50		

Directional Survey Manually-Entered Deviation Summary

Depth	Deviation	Depth	Deviation
1850.30 M	0.40 DEG	1847.80 M	1.80 DEG
1811.80 M	1.00 DEG	1808.80 M	2.30 DEG
1821.40 M	7.30 DEG	1815.80 M	2.80 DEG
1834.80 M	8.00 DEG	1828.80 M	3.00 DEG
1840.80 M	8.10 DEG	1835.30 M	3.00 DEG
1856.10 M	5.00 DEG	1850.10 M	1.50 DEG
1859.10 M	4.00 DEG	1874.21 M	0.60 DEG
1868.30 M	3.70 DEG	1876.00 M	0.80 DEG
1878.10 M	3.50 DEG	1880.80 M	0.80 DEG
1908.20 M	2.00 DEG	1903.00 M	0.80 DEG

COMPANY:	SUNCOR ENERGY INC.
WELL:	SUNCOR NETLA K-77-60-50-122-30
FIELD:	NETLA
PROVINCE:	NORTHWEST TERRITORIES

Schlumberger

Parameters

DLIS Name	Description	Value
ASC	Telemetry Mode	DSLC.TOC
ANOPL	DSLT Filing Name ATI Number of Additional Analog Log-View units ATI Answer Product Identification (Log-View only)	SKXA.997 0 Netla_Basin_Analysis
AHBHM	ATI #1 Mode Correction Mode	0_CompositeHole
AHBLV	ATI #1 Mode Correction Date Version Number	1
AHBLX	ATI #1 Mode Correction Date	6_One_Two_and_Four
AHBLY	ATI #1 Mode Correction Source Number	1
AHBLZ	ATI #1 Mode Correction Source	1
AHEN1	ATI #1 Tool Centering Flag (In Sonde)	Eccentered
AHEN2	ATI #1 Tool Centering Flag (In Hole)	Centralized M
AHEN3	ATI #1 Enable Mode Logs	0x0_1_0_0_0_0_0_0
AHEN4	ATI #1 Enable Mode Logs	0
AHEN5	ATI #1 Enable Mode Logs	Yes
AHEN6	ATI #1 Enable Mode Logging	Yes
AHEN7	ATI #1 Measured Point Description	0
AHEN8	ATI #1 Measured Point Vertical Offset	30.48 CM
AHEN9	ATI #1 Response Set Version Tool Test Number	1
AHEP0	ATI #1 Response Set Version Tool Test & Resolution	30.48 CM
AHEP1	ATI #1 Response Set Version Tool Test & Resolution	1
AHEP2	ATI #1 Depth Reliability Calibration Depth	M
AHEP3	ATI #1 Radial Processing Mode	0
AHEP4	ATI #1 Response Set Version Tool Test & Resolution	30.48 CM
AHEP5	ATI #1 Radial Processing Mode	0
AHEP6	ATI #1 Response Set Version Tool Test & Resolution	6_One_Two_and_Four
AHEP7	ATI #1 Response Set Version Tool Test & Resolution	1
AHEP8	ATI #1 Response Set Version Tool Test & Resolution	MM
AHEP9	ATI #1 Response Set Version For Tool & Resolution	30.48 CM
AHEPA	ATI #1 Response Set Version For Tool & Resolution	1
AHEPB	ATI #1 Log Label Units	1
AHEPC	ATI #1 Log Label Units	Normal
AHEPD	ATI #1 Response Set Version Tool Test & Resolution	1
AHEPE	ATI #1 Response Set Version Tool Test & Resolution	Log_Field-No_Default_Parameters
AHEPF	ATI #1 Depth Reliability Calibration Depth	M
AHEPG	ATI #1 Radial Processing Mode	0
AHEPH	ATI #1 Response Set Version For Tool & Resolution	30.48 CM
AHEPI	ATI #1 Response Set Version Tool Test & Resolution	1
AHEPJ	ATI #1 Radial Processing Mode	6_One_Two_and_Four
AHEPK	ATI #1 Response Set Version Tool Test & Resolution	1
AHEPL	ATI #1 Response Set Version Tool Test & Resolution	MM
AHEPM	ATI #1 Response Set Version For Tool & Resolution	30.48 CM
AHEPN	ATI #1 Response Set Version For Tool & Resolution	1
AHEPO	ATI #1 Log Label Units	Normal
AHEPP	ATI #1 Log Label Units	1
AHEPQ	ATI #1 Depth Reliability Calibration Depth	DEG
AHEPR	ATI #1 Depth Reliability Calibration Depth	M
AHEPS	ATI #1 Depth Reliability Calibration Depth	DEG
AHEPT	ATI #1 Depth Reliability Calibration Depth	M
AHEPU	ATI #1 Log Label Units	Normal
AHEPV	ATI #1 Log Label Units	1
AHEPW	ATI #1 Depth Reliability Calibration Depth	DEG
AHEPX	ATI #1 Depth Reliability Calibration Depth	M
AHEPY	ATI #1 Log Label Units	Normal
AHEPZ	ATI #1 Log Label Units	1
AHEQ0	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQ1	ATI #1 Depth Reliability Calibration Depth	M
AHEQ2	ATI #1 Log Label Units	Normal
AHEQ3	ATI #1 Log Label Units	1
AHEQ4	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQ5	ATI #1 Depth Reliability Calibration Depth	M
AHEQ6	ATI #1 Log Label Units	Normal
AHEQ7	ATI #1 Log Label Units	1
AHEQ8	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQ9	ATI #1 Depth Reliability Calibration Depth	M
AHEQA	ATI #1 Log Label Units	Normal
AHEQB	ATI #1 Log Label Units	1
AHEQC	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQD	ATI #1 Depth Reliability Calibration Depth	M
AHEQE	ATI #1 Log Label Units	Normal
AHEQF	ATI #1 Log Label Units	1
AHEQG	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQH	ATI #1 Depth Reliability Calibration Depth	M
AHEQI	ATI #1 Log Label Units	Normal
AHEQJ	ATI #1 Log Label Units	1
AHEQK	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQL	ATI #1 Depth Reliability Calibration Depth	M
AHEQM	ATI #1 Log Label Units	Normal
AHEQN	ATI #1 Log Label Units	1
AHEQO	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQP	ATI #1 Depth Reliability Calibration Depth	M
AHEQQ	ATI #1 Log Label Units	Normal
AHEQR	ATI #1 Log Label Units	1
AHEQS	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQT	ATI #1 Depth Reliability Calibration Depth	M
AHEQU	ATI #1 Log Label Units	Normal
AHEQV	ATI #1 Log Label Units	1
AHEQW	ATI #1 Depth Reliability Calibration Depth	DEG
AHEQX	ATI #1 Depth Reliability Calibration Depth	M
AHEQY	ATI #1 Log Label Units	Normal
AHEQZ	ATI #1 Log Label Units	1
AHER0	ATI #1 Depth Reliability Calibration Depth	DEG
AHER1	ATI #1 Depth Reliability Calibration Depth	M
AHER2	ATI #1 Log Label Units	Normal
AHER3	ATI #1 Log Label Units	1
AHER4	ATI #1 Depth Reliability Calibration Depth	DEG
AHER5	ATI #1 Depth Reliability Calibration Depth	M
AHER6	ATI #1 Log Label Units	Normal
AHER7	ATI #1 Log Label Units	1
AHER8	ATI #1 Depth Reliability Calibration Depth	DEG
AHER9	ATI #1 Depth Reliability Calibration Depth	M
AHERA	ATI #1 Log Label Units	Normal
AHERB	ATI #1 Log Label Units	1
AHERC	ATI #1 Depth Reliability Calibration Depth	DEG
AHERD	ATI #1 Depth Reliability Calibration Depth	M
AHERE	ATI #1 Log Label Units	Normal
AHERF	ATI #1 Log Label Units	1
AHERG	ATI #1 Depth Reliability Calibration Depth	DEG
AHERH	ATI #1 Depth Reliability Calibration Depth	M
AHERI	ATI #1 Log Label Units	Normal
AHERJ	ATI #1 Log Label Units	1
AHERK	ATI #1 Depth Reliability Calibration Depth	DEG
AHERL	ATI #1 Depth Reliability Calibration Depth	M
AHERM	ATI #1 Log Label Units	Normal
AHERN	ATI #1 Log Label Units	1
AHERO	ATI #1 Depth Reliability Calibration Depth	DEG
AHERP	ATI #1 Depth Reliability Calibration Depth	M
AHERQ	ATI #1 Log Label Units	Normal
AHERR	ATI #1 Log Label Units	1
AHERS	ATI #1 Depth Reliability Calibration Depth	DEG
AHERT	ATI #1 Depth Reliability Calibration Depth	M
AHERU	ATI #1 Log Label Units	Normal
AHERV	ATI #1 Log Label Units	1
AHERW	ATI #1 Depth Reliability Calibration Depth	DEG
AHERX	ATI #1 Depth Reliability Calibration Depth	M
AHERY	ATI #1 Log Label Units	Normal
AHERZ	ATI #1 Log Label Units	1
AHES0	ATI #1 Depth Reliability Calibration Depth	DEG
AHES1	ATI #1 Depth Reliability Calibration Depth	M
AHES2	ATI #1 Log Label Units	Normal
AHES3	ATI #1 Log Label Units	1
AHES4	ATI #1 Depth Reliability Calibration Depth	DEG
AHES5	ATI #1 Depth Reliability Calibration Depth	M
AHES6	ATI #1 Log Label Units	Normal
AHES7	ATI #1 Log Label Units	1
AHES8	ATI #1 Depth Reliability Calibration Depth	DEG
AHES9	ATI #1 Depth Reliability Calibration Depth	M
AHESA	ATI #1 Log Label Units	Normal
AHESB	ATI #1 Log Label Units	1
AHESC	ATI #1 Depth Reliability Calibration Depth	DEG
AHESD	ATI #1 Depth Reliability Calibration Depth	M
AHESE	ATI #1 Log Label Units	Normal
AHESF	ATI #1 Log Label Units	1
AHESG	ATI #1 Depth Reliability Calibration Depth	DEG
AHESH	ATI #1 Depth Reliability Calibration Depth	M
AHESI	ATI #1 Log Label Units	Normal
AHESJ	ATI #1 Log Label Units	1
AHESK	ATI #1 Depth Reliability Calibration Depth	DEG
AHESL	ATI #1 Depth Reliability Calibration Depth	M
AHESM	ATI #1 Log Label Units	Normal
AHESN	ATI #1 Log Label Units	1
AHESO	ATI #1 Depth Reliability Calibration Depth	DEG
AHESP	ATI #1 Depth Reliability Calibration Depth	M
AHESQ	ATI #1 Log Label Units	Normal
AHESR	ATI #1 Log Label Units	1
AHES	ATI #1 Depth Reliability Calibration Depth	DEG
AHET	ATI #1 Depth Reliability Calibration Depth	M
AHEU	ATI #1 Log Label Units	Normal
AHEV	ATI #1 Log Label Units	1
AHEW	ATI #1 Depth Reliability Calibration Depth	DEG
AHEX	ATI #1 Depth Reliability Calibration Depth	M
AHEY	ATI #1 Log Label Units	Normal
AHEZ	ATI #1 Log Label Units	1
AHF0	ATI #1 Depth Reliability Calibration Depth	DEG
AHF1	ATI #1 Depth Reliability Calibration Depth	M
AHF2	ATI #1 Log Label Units	Normal
AHF3	ATI #1 Log Label Units	1
AHF4	ATI #1 Depth Reliability Calibration Depth	DEG
AHF5	ATI #1 Depth Reliability Calibration Depth	M
AHF6	ATI #1 Log Label Units	Normal
AHF7	ATI #1 Log Label Units	1
AHF8	ATI #1 Depth Reliability Calibration Depth	DEG
AHF9	ATI #1 Depth Reliability Calibration Depth	M
AHFA	ATI #1 Log Label Units	Normal
AHFB	ATI #1 Log Label Units	1
AHFC	ATI #1 Depth Reliability Calibration Depth	DEG
AHFD	ATI #1 Depth Reliability Calibration Depth	M
AHFE	ATI #1 Log Label Units	Normal
AHFF	ATI #1 Log Label Units	1
AHFG	ATI #1 Depth Reliability Calibration Depth	DEG
AHFH	ATI #1 Depth Reliability Calibration Depth	M
AHFI	ATI #1 Log Label Units	Normal
AHFJ	ATI #1 Log Label Units	1
AHFK	ATI #1 Depth Reliability Calibration Depth	DEG
AHFL	ATI #1 Depth Reliability Calibration Depth	M
AHFM	ATI #1 Log Label Units	Normal
AHFN	ATI #1 Log Label Units	1
AHFO	ATI #1 Depth Reliability Calibration Depth	DEG
AHFP	ATI #1 Depth Reliability Calibration Depth	M
AHFQ	ATI #1 Log Label Units	Normal
AHFR	ATI #1 Log Label Units	1
AHFS	ATI #1 Depth Reliability Calibration Depth	DEG
AHFT	ATI #1 Depth Reliability Calibration Depth	M
AHFU	ATI #1 Log Label Units	Normal
AHFV	ATI #1 Log Label Units	1
AHFW	ATI #1 Depth Reliability Calibration Depth	DEG
AHFX	ATI #1 Depth Reliability Calibration Depth	M
AHFY	ATI #1 Log Label Units	Normal
AHFZ	ATI #1 Log Label Units	1
AHG0	ATI #1 Depth Reliability Calibration Depth	DEG
AHG1	ATI #1 Depth Reliability Calibration Depth	M
AHG2	ATI #1 Log Label Units	Normal
AHG3	ATI #1 Log Label Units	1
AHG4	ATI #1 Depth Reliability Calibration Depth	DEG
AHG5	ATI #1 Depth Reliability Calibration Depth	M
AHG6	ATI #1 Log Label Units	Normal
AHG7	ATI #1 Log Label Units	1
AHG8	ATI #1 Depth Reliability Calibration Depth	DEG
AHG9	ATI #1 Depth Reliability Calibration Depth	M
AHGA	ATI #1 Log Label Units	Normal
AHGB	ATI #1 Log Label Units	1
AHGC	ATI #1 Depth Reliability Calibration Depth	DEG
AHGD	ATI #1 Depth Reliability Calibration Depth	M
AHGE	ATI #1 Log Label Units	Normal
AHGF	ATI #1 Log Label Units	1
AHGG	ATI #1 Depth Reliability Calibration Depth	DEG
AHGH	ATI #1 Depth Reliability Calibration Depth	M
AHGI	ATI #1 Log Label Units	Normal
AHGJ	ATI #1 Log Label Units	1
AHGK	ATI #1 Depth Reliability Calibration Depth	DEG
AHGL	ATI #1 Depth Reliability Calibration Depth	M
AHGM	ATI #1 Log Label Units	Normal
AHGN	ATI #1 Log Label Units	1
AHGO	ATI #1 Depth Reliability Calibration Depth	DEG
AHGP	ATI #1 Depth Reliability Calibration Depth	M
AHGQ	ATI #1 Log Label Units	Normal
AHGR	ATI #1 Log Label Units	1
AHGS	ATI #1 Depth Reliability Calibration Depth	DEG
AHGT	ATI #1 Depth Reliability Calibration Depth	M
AHGU	ATI #1 Log Label Units	Normal
AHGV	ATI #1 Log Label Units	1
AHGW	ATI #1 Depth Reliability Calibration Depth	DEG
AHGX	ATI #1 Depth Reliability Calibration Depth	M
AHGY	ATI #1 Log Label Units	Normal
AHGZ	ATI #1 Log Label Units	1
AHH0	ATI #1 Depth Reliability Calibration Depth	DEG
AHH1	ATI #1 Depth Reliability Calibration Depth	M
AHH2	ATI #1 Log Label Units	Normal
AHH3	ATI #1 Log Label Units	1
AHH4	ATI #1 Depth Reliability Calibration Depth	DEG
AHH5	ATI #1 Depth Reliability Calibration Depth	M
AHH6	ATI #1 Log Label Units	Normal
AHH7	ATI #1 Log Label Units	1
AHH8	ATI #1 Depth Reliability Calibration Depth	DEG
AHH9	ATI #1 Depth Reliability Calibration Depth	M
AHHA	ATI #1 Log Label Units	Normal
AHHB	ATI #1 Log Label Units	1
AHHC	ATI #1 Depth Reliability Calibration Depth	DEG
AHHD	ATI #1 Depth Reliability Calibration Depth	M
AHHE	ATI #1 Log Label Units	Normal
AHHF	ATI #1 Log Label Units	1
AHHG	ATI #1 Depth Reliability Calibration Depth	DEG
AHHH	ATI #1 Depth Reliability Calibration Depth	M
AHHI	ATI #1 Log Label Units	Normal
AHHJ	ATI #1 Log Label Units	1
AHHK	ATI #1 Depth Reliability Calibration Depth	DEG
AHHL	ATI #1 Depth Reliability Calibration Depth	M
AHHM	ATI #1 Log Label Units	Normal
AHHN	ATI #1 Log Label Units	1
AHHO	ATI #1 Depth Reliability Calibration Depth	DEG
AHHP	ATI #1 Depth Reliability Calibration Depth	M
AHHQ	ATI #1 Log Label Units	Normal
AHHR	ATI #1 Log Label Units	1
AHHS	ATI #1 Depth Reliability Calibration Depth	DEG
AHHT	ATI #1 Depth Reliability Calibration Depth	M
AHHU	ATI #1 Log Label Units	Normal
AHHV	ATI #1 Log Label Units	1
AHHW	ATI #1 Depth Reliability Calibration Depth	DEG
AHHX	ATI #1 Depth Reliability Calibration Depth	M
AHHY	ATI #1 Log Label Units	Normal
AHHZ	ATI #1 Log Label Units	1
AHI0	ATI #1 Depth Reliability Calibration Depth	DEG
AHI1	ATI #1 Depth Reliability Calibration Depth	M
AHI2	ATI #1 Log Label Units	Normal
AHI3	ATI #1 Log Label Units	1
AHI4	ATI #1 Depth Reliability Calibration Depth	DEG
AHI5	ATI #1 Depth Reliability Calibration Depth	M
AHI6	ATI #1 Log Label Units	Normal
AHI7	ATI #1 Log Label Units	1
AHI8	ATI #1 Depth Reliability Calibration Depth	DEG
AHI9	ATI #1 Depth Reliability Calibration Depth	M
AHIA	ATI #1 Log Label Units	Normal
AHIB	ATI #1 Log Label Units	1
AHIC	ATI #1 Depth Reliability Calibration Depth	DEG
AHID	ATI #1 Depth Reliability Calibration Depth	M
AHIE	ATI #1 Log Label Units	Normal
AHIF	ATI #1 Log Label Units	1
AHIG	ATI #1 Depth Reliability Calibration Depth	DEG
AHIH	ATI #1 Depth Reliability Calibration Depth	M
AHII	ATI #1 Log Label Units	Normal
AHIJ	ATI #1 Log Label Units	1
AHIK	ATI #1 Depth Reliability Calibration Depth	DEG
AHIL	ATI #1 Depth Reliability Calibration Depth	M
AHIM	ATI #1 Log Label Units	Normal
AHIN	ATI #1 Log Label Units	1
AHIO	ATI #1 Depth Reliability Calibration Depth	DEG
AHIP	ATI #1 Depth Reliability Calibration Depth	M
AHIQ	ATI #1 Log Label Units	Normal
AHIR	ATI #1 Log Label Units	1
AHIS	ATI #1 Depth Reliability Calibration Depth	DEG
AHIT	ATI #1 Depth Reliability Calibration Depth	M
AHIU	ATI #1 Log Label Units	Normal
AHIV	ATI #1 Log Label Units	1
AHIW	ATI #1 Depth Reliability Calibration Depth	DEG
AHIX	ATI #1 Depth Reliability Calibration Depth	M
AHIY	ATI #1 Log Label Units	Normal
AHIZ	ATI #1 Log Label Units	1
AHJ0	ATI #1 Depth Reliability Calibration Depth	DEG
AHJ1	ATI #1 Depth Reliability Calibration Depth	M
AHJ2	ATI #1 Log Label Units	Normal
AHJ3	ATI #1 Log Label Units	1
AHJ4	ATI #1 Depth Reliability Calibration Depth	DEG
AHJ5	ATI #1 Depth Reliability Calibration Depth	M
AHJ6	ATI #1 Log Label Units	Normal
AHJ7	ATI #1 Log Label Units	1
AHJ8	ATI #1 Depth Reliability Calibration Depth	DEG
AHJ9	ATI #1 Depth Reliability Calibration Depth	M
AHJA	ATI #1 Log Label Units	Normal
AHJB	ATI #1 Log Label Units	1
AHJC	ATI #1 Depth Reliability Calibration Depth	DEG
AHJD	ATI #1 Depth Reliability Calibration Depth	M
AHJE	ATI #1 Log Label Units	Normal
AHJF	ATI #1 Log Label Units	1
AHJG	ATI #1 Depth Reliability Calibration Depth	DEG
AHJH	ATI #1 Depth Reliability Calibration Depth	M
AHJI	ATI #1 Log Label Units	Normal
AHJJ	ATI #1 Log Label Units	1
AHJK	ATI #1 Depth Reliability Calibration Depth	DEG
AHJL	ATI #1 Depth Reliability Calibration Depth	M
AHJM	ATI #1 Log Label Units	Normal
AHJN	ATI #1 Log Label Units	1
AHJO	ATI #1 Depth Reliability Calibration Depth	DEG
AHJP	ATI #1 Depth Reliability Calibration Depth	M
AHJQ	ATI #1 Log Label Units	Normal
AHJR	ATI #1 Log Label Units	1
AHJS	ATI #1 Depth Reliability Calibration Depth	DEG
AHJT	ATI #1 Depth Reliability Calibration Depth	M
AHJU	ATI #1 Log Label Units	Normal
AHJV	ATI #1 Log Label Units	1
AHJW	ATI #1 Depth Reliability Calibration Depth	DEG
AHJX	ATI #1 Depth Reliability Calibration Depth	M
AHJY	ATI #1 Log Label Units	Normal
AHJZ	ATI #1 Log Label Units	1
AHK0	ATI #1 Depth Reliability Calibration Depth	DEG
AHK1	ATI #1 Depth Reliability Calibration Depth	M
AHK2	ATI #1 Log Label Units	Normal
AHK3	ATI #1 Log Label Units	1
AHK4	ATI #1 Depth Reliability Calibration Depth	DEG
AHK5	ATI #1 Depth Reliability Calibration Depth	M
AHK6	ATI #1 Log Label Units	Normal
AHK7	ATI #1 Log Label Units	1
AHK8	ATI #1 Depth Reliability Calibration Depth	DEG
AHK9	ATI #1 Depth Reliability Calibration Depth	M
AHKA	ATI #1 Log Label Units	Normal
AHKB	ATI #1 Log Label Units	1
AHKC	ATI #1 Depth Reliability Calibration Depth	DEG
AHKD	ATI #1 Depth Reliability Calibration Depth	M
AHKE	ATI #1 Log Label Units	Normal
AHKF	ATI #1 Log Label Units	1
AHKG	ATI #1 Depth Reliability Calibration Depth	DEG
AHKH	ATI #1 Depth Reliability Calibration Depth	M
AHKI	ATI #1 Log Label Units	Normal
AHKJ	ATI #1 Log Label Units	1
AHKK	ATI #1 Depth Reliability Calibration Depth	DEG
AHKL	ATI #1 Depth Reliability Calibration Depth	M
AHKM	ATI #1 Log Label Units	Normal
AHKN	ATI #1 Log Label Units	1
AHKO	ATI #1 Depth Reliability Calibration Depth	DEG
AHKP	ATI #1 Depth Reliability Calibration Depth	M
AHKQ	ATI #1 Log Label Units	Normal
AHKR	ATI #1 Log Label Units	1
AHKS	ATI #1 Depth Reliability Calibration Depth	DEG
AHKT	ATI #1 Depth Reliability Calibration Depth	M
AHKU	ATI #1 Log Label Units	Normal
AHKV	ATI #1 Log Label Units	1
AHKW	ATI #1 Depth Reliability Calibration Depth	DEG
AHKX	ATI #1 Depth Reliability Calibration Depth	M
AHKY	ATI #1 Log Label Units	Normal
AHKZ	ATI #1 Log Label Units	1
AHL0	ATI #1 Depth Reliability Calibration Depth	DEG
AHL1	ATI #1 Depth Reliability Calibration Depth	M
AHL2	ATI #1 Log Label Units	Normal
AHL3	ATI #1 Log Label Units	1
AHL4	ATI #1 Depth Reliability Calibration Depth	DEG
AHL5	ATI #1 Depth Reliability Calibration Depth	M
AHL6	ATI #1 Log Label Units	Normal
AHL7	ATI #1 Log Label Units	1
AHL8	ATI #1 Depth Reliability Calibration Depth	DEG
AHL9	ATI #1 Depth Reliability Calibration Depth	M
AHLA	ATI #1 Log Label Units	Normal
AHLB	ATI #1 Log Label Units	1
AHLC	ATI #1 Depth Reliability Calibration Depth	DEG
AHLD	ATI #1 Depth Reliability Calibration Depth	M
AHLE	ATI #1 Log Label Units	Normal
AHLF	ATI #1 Log Label Units	1
AHLG	ATI #1 Depth Reliability Calibration Depth	DEG
AHLH	ATI #1 Depth Reliability Calibration Depth	M
AHLI	ATI #1 Log Label Units	Normal
AHLJ	ATI #1 Log Label Units	1
AHLK	ATI #1 Depth Reliability Calibration Depth	DEG
AHLL	ATI #1 Depth Reliability Calibration Depth	M
AHLM	ATI #1 Log Label Units	Normal
AHLN	ATI #1 Log Label Units	1
AHLO	ATI #1 Depth Reliability Calibration Depth	DEG
AHLP	ATI #1 Depth Reliability Calibration Depth	M
AHLQ	ATI #1 Log Label Units	Normal
AHLR	ATI #1 Log Label Units	1
AHLS	ATI #1 Depth Reliability Calibration Depth	DEG
AHLT	ATI #1 Depth Reliability Calibration Depth	M
AHLU	ATI #1 Log Label Units	Normal
AHLV	ATI #1 Log Label Units	1
AHLW	ATI #1 Depth Reliability Calibration Depth	DEG
AHLX	ATI #1 Depth Reliability Calibration Depth	M
AHLY	ATI #1 Log Label Units	Normal
AHLZ	ATI #1 Log Label Units	1
AHM0	ATI #1 Depth Reliability Calibration Depth	DEG
AHM1	ATI #1 Depth Reliability Calibration Depth	M
AHM2	ATI #1 Log Label Units	Normal
AHM3	ATI #1 Log Label Units	1
AHM4	ATI #1 Depth Reliability Calibration Depth	DEG
AHM5	ATI #1 Depth Reliability Calibration Depth	M
AHM6	ATI #1 Log Label Units	Normal
AHM7	ATI #1 Log Label Units	1
AHM8	ATI #1 Depth Reliability Calibration Depth	DEG
AHM9	ATI #1 Depth Reliability Calibration Depth	M
AHMA	ATI #1 Log Label Units	Normal
AHMB	ATI #1 Log Label Units	1
AHMC	ATI #1 Depth Reliability Calibration Depth	DEG
AHMD	ATI #1 Depth Reliability Calibration Depth	M
AHME	ATI #1 Log Label Units	Normal
AHMF	ATI #1 Log Label Units	1
AHMG	ATI #1 Depth Reliability Calibration Depth	DEG
AHMH	ATI #1 Depth Reliability Calibration Depth	M
AHMI	ATI #1 Log Label Units	Normal
AHMJ	ATI #1 Log Label Units	1
AHMK	ATI #1 Depth Reliability Calibration Depth	DEG
AHML	ATI #1 Depth Reliability Calibration Depth	M
AHMM	ATI #1 Log Label Units	Normal
AHMN	ATI #1 Log Label Units	1
AHMO	ATI #1 Depth Reliability Calibration Depth	DEG
AHMP	ATI #1 Depth Reliability Calibration Depth	M
AHMQ	ATI #1 Log Label Units	Normal
AHMR	ATI #1 Log Label Units	1
AHMS	ATI #1 Depth Reliability Calibration Depth	DEG
AHMT	ATI #1 Depth Reliability Calibration Depth	M
AHMU	ATI #1 Log Label Units	Normal
AHMV	ATI #1 Log Label Units	1
AHMW	ATI #1 Depth Reliability Calibration Depth	DEG
AHMX	ATI #1 Depth Reliability Calibration Depth	M
AHMY	ATI #1 Log Label Units	Normal
AHMZ	ATI #1 Log Label Units	1
AHN0	ATI #1 Depth Reliability Calibration Depth	DEG
AHN1	ATI #1 Depth Reliability Calibration Depth	M
AHN2	ATI #1 Log Label Units	Normal
AHN3	ATI #1 Log Label Units	1
AHN4	ATI #1 Depth Reliability Calibration Depth	DEG
AHN5	ATI #1 Depth Reliability Calibration Depth	M
AHN6	ATI #1 Log Label Units	Normal
AHN7	ATI #1 Log Label Units	1
AHN8	ATI #1 Depth Reliability Calibration Depth	DEG
AHN9	ATI #1 Depth Reliability Calibration Depth	M
AHNA	ATI #1 Log Label Units	Normal
AHNB	ATI #1 Log Label Units	1
AHNC	ATI #1 Depth Reliability Calibration Depth	DEG
AHND	ATI #1 Depth Reliability Calibration Depth	M
AHNE	ATI #1 Log Label Units	Normal
AHNF	ATI #1 Log Label Units	1
AHNG	ATI #1 Depth Reliability Calibration Depth	DEG
AHNH	ATI #1 Depth Reliability Calibration Depth	M
AHNI	ATI #1 Log Label Units	Normal
AHNJ	ATI #1 Log Label Units	1
AHNK	ATI #1 Depth Reliability Calibration Depth	DEG
AHNL	ATI #1 Depth Reliability Calibration Depth	M
AHNM	ATI #1 Log Label Units	Normal
AHNN	ATI #1 Log Label Units	1
AHNO	ATI #1 Depth Reliability Calibration Depth	DEG
AHNP	ATI #1 Depth Reliability Calibration Depth	M
AHNQ	ATI #1 Log Label Units	Normal
AHNR	ATI #1 Log Label Units	1
AHNS	ATI #1 Depth Reliability Calibration Depth	DEG
AHNT	ATI #1 Depth Reliability Calibration Depth	M
AHNU	ATI #1 Log Label Units	Normal
AHN

MICRO RESISTIVITY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50:122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

PLATFORM EXPRESS
MICROLOG

60 deg-46', 122 deg-30' (SUR.LOCATION)
263.66M, -90.17M (BOTTOM LOG)
3000K:77-60.50-122.30/00 (UWI)

Elev.: K.B. 627.29 M
G.L. 618.4 M
D.F. 624.9 M

Permanent Datum: GROUND LEVEL Elev.: 618.4 M
Log Measured From: KELLY BUSHING 6.8 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.
N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	10-MAR-1999			
Run Number	2			
Depth Driller	2118 M			
Schlumberger Depth	2117 M			
Bottom Log Interval	2111.3 M			
Top Log Interval	1996.8 M			
Casing Driller Size @ Depth	177.800 MM @ 1999 M	@	@	@
Casing Schlumberger	1996.8 M			
Bit Size	155.000 MM			
Type Fluid In Hole	POTASSIUM SULPHATE			
Density / Viscosity	1045 KMS 53 S			
Fluid Loss / PH	8 C3 9.8			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.060 OHMM @ 22 DEGC	@	@	@
RMF @ Measured Temperature	2.390 OHMM @ 22 DEGC	@	@	@
RMC @ Measured Temperature	3.500 OHMM @ 21 DEGC	@	@	@
Source: RMF / RMC	MEASURED /	/	/	/
RM @ MRT / RMF @ MRT	1.870 @ 66 / 1.031 @ 66	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	68 DEGC			
Circulation Stopped / Time	10-MAR-1999 17:30			
Logger On Bottom / Time	10-MAR-1999 17:45			
Unit Number / Location	3010 6640			
Recorded By	KIMBERLEY BAKER			
Witnessed By	BRIAN HEISTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF / RMC	/	/	/	/
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

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OTHER SERVICES
OBI: NEUTRON-DENSITY GR
OBS: DSI GR
OBX: NGT, CCL
OBW: PACKER
OBY: MDT - 4 SAMPLES
ALL INTERVALS AND PRESENTATION AS REQUESTED

ATTACHMENTS
ATTACHMENT FOR DATA ON COMPLETE STANDOFF MODE
FILE TRAY CONTROLLED

REMARKS
RUN 1 WITH 4.5" & 3.5" DRILL PIPE IN HOLE. RUN 2 WITH 3.5" DRILL PIPE IN HOLE.
STARTED IN HOLE @ 18:30 HRS ON MAR 9/99. LOGGED RUN 1 WITH 4 ARM CALIPER @ 2117.3 M.
TIME CIRCULATION STOPPED: 17:30 HRS. TIME LOGGER ON BOTTOM: 17:45 HRS. MAX TEMP @ 2117.3 M.
TIED DOWN CALIPER AT 1996.8 M. RUN 1 LEFT IN HOLE DUE TO STUCK TOOLS AT 1996.8 M.
LEFT MDT-PS PLUS ENTIRELY IN CASING. SHOWS DO NOT DOWN ON PRESENTATIONS.

	RUN 1	RUN 2
TOOLS RUN IN HOLE (TOP DOWN)		
PEX-HNGS-ECS-HRLA	607/3934	
SERVICE ORDER #	607/3934	
LOGGER'S INTERVAL	2111.3 - 1996.8	
LOGGED INTERVAL	START	STOP

	RUN 1	RUN 2
TOOLS RUN IN HOLE (TOP DOWN)		
PEX-HNGS-ECS-HRLA	607/3934	
SERVICE ORDER #	607/3934	
LOGGER'S INTERVAL	2111.3 - 1996.8	
LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT
TOOLS

CBHJ-Y
NCS-B
NCS-YB

DOWNHOLE EQUIPMENT

TCC-BF		34.48	31.38
TCC-AP	Tipflange	30.19	30.46
SGC-SA	Gamma Ray		
SGC-SB			
CAL-Y	CCL	28.48	28.79
CAL-Z			
DSLT-TCC		27.72	27.72
SLC-B		13 MM Standoff	
SLS-W			
MCD-B		21.43	
MCD-D	HD	20.08	
AH-107		19.15	
AH-107		18.54	
LDT-D		17.93	
LDC-CNC			
HLDS-A			
HLDS-C			
AH-107		12.64	
HLTB-BTB	HNGS	11.48	12.03
HGD	Gamma Ray		
HGD-A/HNS	Neutron Y	10.27	
HGD-B	HGNS sens	9.61	
HGD-C		8.95	
HGD-D		8.29	
HGD-E		7.63	
HGD-F		6.98	
HGD-G		6.42	
HGD-H			
HGD-I			
HGD-J			
HGD-K			
HGD-L			
HGD-M			
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HGD-O			
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HGD-WR			
HGD-WS			
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HGD-WU			
HGD-WV			
HGD-WW			
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HGD-XA			
HGD-XB			
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HGD-XG			
HGD-XH			
HGD-XI			
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HGD-XR			
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HGD-XW			
HGD-XX			
HGD-XY			
HGD-XZ			
HGD-YA			
HGD-YB			
HGD-YC			
HGD-YD			
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HGD-YG			
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HGD-YL			
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HGD-ZW			
HGD-ZX			
HGD-ZY			
HGD-ZZ			

MEASURED FROM RT
ALL DEPTHS IN METERS

MUDCAKE STAND OFF		13 MM Standoff	
MEASUREMENTS RELATIVE TO TOOL ZERO			
ALL DEPTHS IN METERS	TOOL ZERO	0.00	13 MM Standoff
	HTEN / MAIN PASS		
	Mudcake		
	Standoff		

MUDCAKE STAND OFF		13 MM Standoff	
MEASUREMENTS RELATIVE TO TOOL ZERO			
ALL DEPTHS IN METERS	TOOL ZERO	0.00	13 MM Standoff
	HTEN / MAIN PASS		
	Mudcake		
	Standoff		

MAXIS 500 Rig: 4.0.5

DEFAULT	HLTB.015	FN:20
DEFAULT	HLTB.251	FN:30
CUSTOMER	HLTB.3301	FN:301

DEFAULT	FIELD	10-MAR-1999 15:36
DEFAULT	FIELD	10-MAR-1999 16:05
CUSTOMER	CUST	10-MAR-1999 16:05

HLTB.078	RPCA-1999
HOLEV	RPCH-1999

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000	2.000	2118.0 1520.0
	0.000	2.000	2118.0 1520.0
	0.000	2.000	1996.8 1520.0
			1975.4 1520.0

2116.4 M	1920.9 M	
2120.0 M	1975.4 M	
2120.0 M	1975.4 M	

Input DLIS Files
Output DLIS Files

Integrated Hole/Cement Volume Summary

Hole Volume = 2.18 M3 (assuming 0.00 MM casing O.D.)
Cement Volume = 2.18 M3 (assuming 0.00 MM casing O.D.)
Computed from 2117.3 M to 1996.8 M using data (downlog) (OA)

OP System Version: 7C0-713

HLTB.078	RPCA-1999	SKS4-997
HOLEV	RPCH-1999	

Changed Parameter Summary

DLIS Name	New Value	Previous Value
MED	0.000	2.000
	0.000	2.000
	0.000	2.000

PIP SUMMARY
Integrated Hole Volume Major Pip Every 1 HRS
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Cement Volume Major Pip Every 1 M3

Rm. Rm. Rmf. Rmc. Standoff
Density Correction (DRHO)
Caliper 1 (HCAL)
Gamma Ray (GR)
HRM Caliper (HCAL)
Tension (TENS)
Rm. Rm. Rmf. Rmc. Standoff
Density Correction (DRHO)
Caliper 1 (HCAL)
Gamma Ray (GR)
LDT Caliper (CALI)
Rm Wire (RW)
Tension (TENS)

Porosity Exponents From HNNA to HNNO

Computed Micro Normal (HMNO)

Computed Micro Inverse (HMIN)

Computed Micro Mud Cak (HMRO)

Caliper 2 (C2)
Caliper 1 (C1)
Bit Size (BS)
Rm Wire (RW)
Tension (TENS)

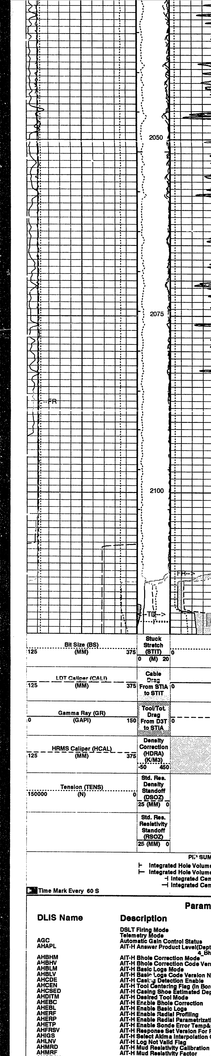
AT10: Mud Cak (AHOR)

Computed Micro Normal (HMNO)

Computed Micro Inverse (HMIN)

Computed Micro Mud Cak (HMRO)

MAIN PASS



Bit Size (BS) 125 (MM) 375
Stuck Stretch (STIT) 0 (M) 20
AIT-H Mud Full Cal (AHMF) 0 (OHMM) 40

LDT Caliper (CALI) 125 (MM) 375
Cable Drag From STIA to STIT 0
Computed Micro Inverse (HMINI) 0 (OHMM) 40

Gamma Ray (GR) 0 (GAPI) 150
Tool/Tot. Drag From STIT to STIA 0
Computed Micro Normal (HMNO) 0 (OHMM) 40

HRMS Caliper (HCAL) 125 (MM) 375
Decay Correction (HDRA) (K/M3) -50 450
Positive Separation From HMIN to HMNO

Tension (TENS) 1500000 (N) 0
Std. Res. Density Standoff (DRSO) 25 (MM) 0

Std. Res. Resistivity Standoff (RSSO) 25 (MM) 0

PU SUMMARY
Integrated Hole Volume +Incr Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Integrated Cement Volume Minor Pip Every 0.1 M3
Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DBLT Fldng Mode	BHC
	Telemetry Mode	DSLC_TCC
AGC	Automatic Gain Control Status	ON
AHAPL	AIT-H Answer Product Levels(Depth Log/View only)	4_SlicesCorr_BasicLogs_RadialProf_RadialMaps
AHBHM	AIT-H Blade Correction Mode	2_CompositeBlade
AHBHV	AIT-H Blade Correction Code Version Number	500
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	790
AHCEN	AIT-H Centralizer Present	Yes
AHCES	AIT-H Centralizer Ring (in Borehole)	Eccentered
AHCSD	AIT-H Casing Shoe Estimated Depth	M
AHDTM	AIT-H Desired Tool Mode	0x00_Log_000
AHEN	AIT-H Enable Basic Logs	Yes
AHERP	AIT-H Enable Basic Logs	Yes
AHESP	AIT-H Enable Radial Interpolation	Yes
AHETP	AIT-H Enable Sonde Error Temp&Pres Corr	Yes
AHHSP	AIT-H Deepest Hi Resolution For Four R Resolution	30.66.23.10
AHIEN	AIT-H Enable Inversion Gating	On
AHLNV	AIT-H Layer Algorithm	Log_Valid-No_Default_Parameters
AHMND	AIT-H Mud Resistivity Calibration Depth	0 M
AHMRF	AIT-H Mud Resistivity Factor	1
AHRHV	AIT-H Radial Resolution For One R Resolution	30.66.23.10
AHRPM	AIT-H Radial Profiling Code Version Number	622
AHRPV	AIT-H Radial Parameterization Mode	6_One_Two_and_Four
AHRPV	AIT-H Radial Parameterization Code Version Number	812
AHSTA	AIT-H Tool Standoff	12.7 MM
AHTNO	AIT-H Tool Serial Number	292
AHTRE	AIT-H Response Set Version For Two R Resolution	30.66.23.10
AHTSV	AIT-H Tool Software (Sonde Error Correction)	Invalid
AHTTY	AIT-H Tool Type (of acquired data)	HAG
AHULV	AIT-H User Level Control	Normal
ALIGNCHAN	Name of alternate depth channel	TVDE
AMEO	Azimuth Of Manually-Entered (Well) Deviation	0 DEG
AMSG	Auto Mud Salinity Gating	160
ARTB	BHT Reflection (for ALLHES computation)	13 ARTB
BFM	Borehole Fluid Medium	LIQUID
BFV	Borehole Fluid Type	WATER
BHO	Bore Hole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	0 DEGC
BIL	Bond Index Level for Zone location	20
BS	Bit Size	158.000 MM
BSAL	Borehole Salinity	-50000.00 PPM
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Attenuation Factor	1
CBCF	CBL Correction Factor	1.5
CBLG	CBL Gate Width	40 US
CCCO	Casing & Cement Thickness Correction Option	NO
CCLT	CCL reset delay	305 MM
CCLV	CCL Valve Opening	152
CDTB	C-Deltaf Shale	328.084 US/M
CMTH	Compressive Strength of Cement	0 KPaA
CSWT	Casing Weight	34.32 KG/M
DETC	Digitizing Delay	200 US
DFAD	Digital First Arrival Detection Switch	ON
DFD	Digital First Arrival Detection Switch	DSP
DFD	Drilling Fluid Density	1048.00 K/M3
DHC	Density Hole Correction	SB
DI	DBLT Depth Sampling Interval	24 M
DOFM	Depth Offset	0 M
DPCM	Density Porosity Processing Mode	HSU
DRCS	DBLT DLIS Recording Size	200
DTSM	Delta-T Computation Mode	FULL
DTT	Delta-T Unit	620.076 US/M
DTFS	Delta-T Sonicity Frame Size	10
DTH	Delta-T Matrix	183.727 US/M
DWCO	Digitizer Word Count	16
ECF	CBL Fluid Compensation Factor	1
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	2
FPHI	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	40000 PPM
FSCO	Formation Salinity Correction Option	NO
GAI	Gain Interval	1
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DEGM
GOOD	Good Bond	300 MV
GRMA	HILT Gamma Ray Max	150 GAPI
GRMIN	HILT Gamma Ray Min	30 GAPI
GRSE	Generalized Mud Resistivity Selection	AITH_REBIT
GTEM	Generalized Temperature Selection	LINEAR_ESTIMATE
HAPR	Accelerometer PROM Presence	PRESENT_DOWNHOLE
HART	Hole Average Resistivity Temperature	0 DEGC
HDCO	HILT Density Cont Interval Selection	3000 K/M3
HDBAD	HILT Density Bad detection	2100 K/M3
HFAW	HILT Auto Write Telemetry	NO
HFL_GAS_DENSITY	HILT Gas Downhole Density	200 K/M3
HFL_GAS_OPTION	HILT Gas Downhole Density Option	OFF
HLNO	HALB Logging Mode	HIRES
HNCOD	HILT Neutron Cool detection	0.48 V/V
HNBAD	HILT Neutron Bad detection	0.48 V/V
HNEFFCUT	HILT effective Porosity Cutoff	0.55 V/V
HRSM	HILT Resolution Mode	12in/5in MM
HSCH	HILT Speed Correction Mode	TBCD_SPEED_CORRECTION
HSCO	Hole Size Correction Option	YES
HSIB	HILT Shale Indicator Selection	SB
HSUT	STI uses HILT Acceleration	NO
HTCUT	HILT Temperature Cutoff for ATTH cutoff	0 °C
HVOI	Integrated Hole Volume Output Selection	AUTOMATIC
ITTS	Integrated Transit Time Source	DT
LGMS	LGMS Coverage	NONE
LRYC	LB Hardware Loop Control	DISALLOW
MATR	Rock Matrix Density	2650
MATR	Rock Matrix Type	SANDSTONE
MCCO	Mud Cake Correction Option	NO
MCIN	Minimum Cemented Interval	1.048 M
MDEN	Mud Correction	NATU
MDEN	Mud Density	1048 K/M3
MED	Manually-Entered (Well) Deviation	2.888 DEG
MGAI	Maximum Gain	360
MHCO	MCFL BD Contrast Correction Coefficient	2.2e-05 OHMS
MHCC	MCFL RI Contrast Correction Coefficient	3.2e-05 OHMS
MHDC	MCFL Hole Correction Option	NO
MHDA	Minimum Gain	0
MODE	Sonic Firing Mode	BHC
MPM	MCFL Processing Operation Mode	ON
MRS	Minimum Sonic Amplitude	20 MV
MSA	Mud Sound Velocity	22.22 DEGC
MWCO	Mud Weight Correction Option	NO
NMSO	Near Minimum Sliding Gate	182 US
NNL	HILT Nuclear Mud Type	NOBARITE
NNW	Near Maximum Sliding Gate	750 US
NSAH	Neutron Salinity Hole	HIGH
NSAH	HNCO Depth Sampling Rate	25.4 MM
NUMP	Number of Detection Passes	2
PBVSADP	Use alternate depth channel for playback	NO
PEMAX	HILT max porosity	0.55 V/V
PFN	Pressure Function	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RATE	Firing Rate	83
RDFA	Read DFAD	OFF
RECO	Resistivity of Calibrate Sample	2.54000 OHMM
RFOC	Rig Floor Offset Correction	0 M
RW	Resistivity of Connate Water	1.0000 OHMM
SDAT	Standoff Data Source	SOCN
SDTH	Switch Down Threshold	16384
SFAC	HILT Saturation Exponent	2
SFAF	Shale Formation Factor Correction Factor	1 DB/M
SGAI	Sliding Gate Status	ON
SGAI	Selectable Acquisition Gate	AUTO
SGCL	Sliding Gate Closing Delta-T	820 US/M
SGDT	Sliding Gate Closing Width	24 US
SGOP	Sliding Gate Open	152.4 US
SGW	Sliding Gate Width	60 US
SHT	Surface Hole Temperature	20 DEGC
SIGI	Sigma Interval for AIPC	4
SOD	Standoff Distance	3.173 MM
SOCO	Sonic Correction Option	NO
SPCLEAN	HILT SP Clean	0 MV
SPED	East Departure of Starting Point	0 M
SPEN	Sonic Porosity Source	RAYMER_HUNT
SPND	North Departure of Starting Point	0 M
SPNV	HILT SP Noise	20 MV
SPSHALE	HILT SP Shale	-120 MV
SPSO	Sonic Porosity Source	DT
SPVD	TVD of Starting Point	0 M
SSCO	SP Hardware Loop Control	DISALLOW
STNT	Stretch Tension	1500 N
SWT	Switch Up Threshold	825
TAZI	Vertical Section Azimuth	0 DEG
TD	Total Depth	2119 M
TDCC	TBCD Enable Corrected Depth Computation	YES
TWS	Tension While Stretch Sample	2729 DEGC
VOLG	VDL Manual Gain	20
WAGC	Waveform AGC Allow/Disallow	ON
WGAI	Waveform Manual Gain	20
WGDI	Waveform Gain Delta-T	787 US/M
WSPI	Waveform Sample Interval	10 US
WWCO	Waveform Firing Mode	FULL
WWUD	Mud Weight	1048 K/M3
WWVT	Well Trajectory Flag	VERTICAL

Format: MCFL_40 Vertical Scale: 1:240 Graphics File Created: 10-MAR-1999 15:25

OP System Version: 7C0-713

HILTB-DTB	RPCA-1099	DSLT-TCC	SKXA-997
HOLEV	RPCA-1099		

Input DLIS Files

DEFAULT	HILTB..015	FN:20	FIELD	10-MAR-1999 13:26	2119.6 M
					1932.9 M

Output DLIS Files

DEFAULT	HILTB..021	FN:30	FIELD	10-MAR-1999 15:25	
CUSTOMER	HILTB..021	FN:31	CUST	10-MAR-1999 15:26	

Input DLIS Files

DEFAULT	HILTB..079	FN:104	FIELD	11-MAR-1999 08:04	2121.9 M
					1933.5 M

Output DLIS Files

DEFAULT	HILTB..086	FN:110	FIELD	11-MAR-1999 08:25	2121.9 M
					1975.1 M

OP System Version: 7C0-713

MBM

HILTB-DTB	RPCA-1099	DSLT-TCC	SKXA-997
HOLEV	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000 DEG	0.000 DEG	2121.9 06:26:49
	0.000 DEG	0.000 DEG	1989.8 06:26:21
	0.000 DEG	0.000 DEG	1975.9 06:26:45

PIP SUMMARY

Time Mark Every 60 S

Bit Size (BS) 125 (MM) 375
Stuck Stretch (STIT) 0 (M) 20
AIT-H Mud Full Cal (AHMF) 0 (OHMM) 40

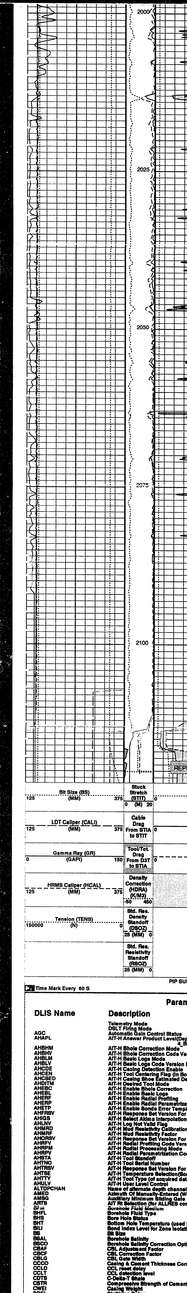
LDT Caliper (CALI) 125 (MM) 375
Cable Drag From STIA to STIT 0
Computed Micro Inverse (HMINI) 0 (OHMM) 40

Gamma Ray (GR) 0 (GAPI) 150
Tool/Tot. Drag From STIT to STIA 0
Computed Micro Normal (HMNO) 0 (OHMM) 40

HRMS Caliper (HCAL) 125 (MM) 375
Decay Correction (HDRA) (K/M3) -50 450
Positive Separation From HMIN to HMNO

Tension (TENS) 1500000 (N) 0
Std. Res. Density Standoff (DRSO) 25 (MM) 0

Std. Res. Resistivity Standoff (RSSO) 25 (MM) 0



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC TCC
AQC	Acquisition Quality	OK
ANAPL	Automatic Tuning Control Status AIT-H Answer Product Level(Depth Log/View only)	OK
	0_Shoulder_Sonic/Logs 1_RadialProf_RadialRes	
AHBHM	AIT-H Borehole Correction Mode	2_Compu/Medium/Fast
AHBHV	AIT-H Bhole Correction Code Version Number	600
AHEHM	AIT-H Enable Environ Corr	6_Cha_Two_and_Four
AHCSE	AIT-H Cells Logs Cells Disable Number	799
AHCSH	AIT-H Cells Logs Cells Shift	0
AHCEN	AIT-H Tool Centering (0 is Borehole)	Eccentered
AHDTM	AIT-H Casing Bhole Eccentered Depth	10000
AHDTV	AIT-H Casing Bhole Eccentered Depth	0x00_Log_Data
AHEBC	AIT-H Enable Bhole Corr	Yes
AHEBL	AIT-H Enable Basic Logs	Yes
AHEDP	AIT-H Enable Depth Shifting	Yes
AHEHP	AIT-H Enable Hybrid Processing	Yes
AHETF	AIT-H Enable Bandw Error Temp&Pres Corr	Yes
AHFRV	AIT-H Frequency Code Version Number For 0.1 Resolution	30.66.23.10
AHHAV	AIT-H Hybrid Addtive Interaction Code Version	1
AHLHV	AIT-H Log Valid Hdat Flag	Log_Valid-No_Default_Parameters
AHMEV	AIT-H Mud Resistivity Calibration Code Version	3
AHMHV	AIT-H Mud Hdat Version	M
AHORV	AIT-H Response Set Version For One R Resolution	30.66.23.12
AHRFV	AIT-H Resistivity Schlumberger Code Version Number	600
AHSEV	AIT-H Enable Skin Effect Correction Code Version Number	6_Cha_Two_and_Four
AHSPV	AIT-H Tool Type (if acquired data)	HAIT
AHTEV	AIT-H Tool Software Version	1.7
AHTNO	AIT-H Tool Serial Number	1.7
AHTRV	AIT-H Transmitter Calibration For Two R Resolution	30.66.23.12
AHTSE	AIT-H Transmitter Schlumberger Code Error Correction)	Interval
AHTTY	AIT-H Tool Type (if acquired data)	HAIT
ALTSPCHAN	Name of alternate channel	Normal
AMEC	Azimuth Of Manually-Entered (Well) Deviation	TYC
AMEU	Azimuth Of Manually-Entered (Well) Deviation	DEG
APITS	AIT-H Tension Sensor Zone Location	US
	Averaging Point (user adjusted computation)	11_HYTIO
BFAL	Borehole Fluid Level	0.000
BFLT	Borehole Fluid Type	WATER
BHT	BHT	OPEN
BHT	Bottom Hole Temperature (used in calculations)	0 DEGC
BIAS	Bond Index Level for Zone Isolation	0.5
BS	Bit Size	156.000 MM
BSAL	Borehole Salinity	50000.000 KPPM
CBCO	Cable Bandwidth Correction Option	0
CBSF	CBL Adjustment Factor	1
CBTC	CBL Attenuation	1.0
CBUN	CBL Logging Unit	US
CCCO	Casing & Cement Thickness Correction Option	NO
CCDI	CCL Depth Offset	0.000 MM
CCTB	CCL Table	0
CDTB	C-Delta-T Blade	328.084 US/M
CHKS	Compressive Strength of Cement	0 MPA
CSIZ	Casing Weight	34.32 KG/M
DDEL	Delta-T Delay	0 US
DFAD	Delta-T Adjustment	22
DFSD	Digital Fast Arrival Detection Switch	DSF
DFV	Density Fluid Value	1040.00 K/M3
DHC	Density Hole Correction	0
DIAL	DILT Depth Sampling Interval	20 M
DOC	Depth Offset	0.0 M
DOFF	Depth Offset Applied	0 M
DPPM	Density Porosity Processing Mode	HIRO
DPSH	DPHI Shale Correction Mode	2DC
DTCM	DT Compensation Mode	2DL
DTF	Delta-T Fluid	620.00 US/M
DTHO	DILT Telemetry Frame Size	32
DTM	Delta-T Matrix	183.727 US/M
DTMCO	DT Master Count	0
FCF	CBL Fluid Compensation Factor	0
FD	Fluid Density	1000 K/M3
FDEX	Fluid Density Exponent	2
FRUM	Form Factor Rumble	2
FWC	Form Factor Porosity Source	DPHZ
FWSA	Formation Water Salinity	35000 PPM
FXCO	Formation Density Correction Option	NO
GAI	Manual Gain	40
GEOE	Generalized Caliper Selection	HCAL
GSRO	Average Angular Deviation of Borehole from Normal	2.3 DEG
GSRR	Good Range	0.018837 DEGM
GSRT	Good Test	MV
GRMAX	HILT Gamma Ray Max	150 GAPI
GRMIN	HILT Gamma Ray Min	0 GAPI
GREE	Generalized Hole Quality Selection	ATR_RESIS
GTEM	Generalized Temperature	LINEAR_GETHATE
HAZI	Hole Azimuth (Well Deviation)	TYC(DIT_TAZI) DEG
HDCCO	Accelerometer Sensitive Temperature	DEGC
HDCCO	HILT Density Cool detection	2000 K/M3
HDCH	HILT Density Hole detection	2100 K/M3
HFAP	HILT Auto Wide Detection	0
HILT_GAS_DENSITY	HILT Gas Downhole Density	0 K/M3
HILT_MAC_OPTION	HILT Mudcake Correction Option	OFF
HNCCO	HILT Neutron Cool detection	HSRA
HNDCO	HILT Neutron Cool detection	0.45 V/V
HNHAO	HILT Hardrock Hole detection	0.45 V/V
HNHCUT	HILT detection Porosity Cutoff	0.45 V/V
HNPOR	HILT Neutron Porosity	338.583 US/M
HSCO	HILT Spectral Correction Option	TSCD_SPEED_CORRECTION
HSDI	Hole Size Correction Option	YES
HSIT	HILT Shunt Impedance	2 OHMS
HSTI	STI (Ave HILT Acceleration)	NO
HWHOUT	HILT Water Saturation from ATR cutoff	0 %
IDEN	Integrated Density Porosity Selection	AUTOMATIC
LGMB	Integrated Transit Time Source	MV
LGMS	LGMB Coverage	NONE
LTMT	Lithology Matrix Type	DISALLOW
MATH	Mud Cake Correction Method Sensing Ratio	0
MATR	Rock Matrix Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MCDI	Mud Cake Diameter Interval	0.000 M
MCOR	Mud Cake Correction	0.000 M
MDEN	Matrix Density	2710 K/M3
MEU	Manually-Entered (Well) Deviation	0.900 DEG
MHCO	Mud Hardness	0
MHCC	MCFL Bh Correction Coefficient	3.2e-05 OHMS
MHC1	MCFL Bh Contrast Correction Coefficient	3.2e-05 OHMS
MHC2	MCFL Bh Contrast Correction Switch	NO
MICR	Microres Switch	0
MOCE	Sonic Fitting Mode	ESC
MPHA	Matrix Porosity Operation Mode	OU
MRA	Microres Source	MV
MST	Mud Sample Temperature	22.22 DEGC
NMCO	Mud Weight Correction Option	NO
NMSP	Near Minimum Sliding Gate	152 US
NOBA	Near Monitor Baseline	NOBATT 152
NWMS	Near Maximum Sliding Gate	152 US
NRHM	HRDD Processing Mode	HiRes
OBS	Observation Depth Spacing	152 MM
PNUM	Number of Detector Passes	4
PSVSADP	Use alternate depth channel for playback	NO
PWAV	Pulse Waveform	PV
PP	Playback Processing	NORMAL
PTCO	Pressure/Temperature Correction Option	NO
RGAI	Real Gain	40
RGD	Read DFAD	DSF
RMFS	Resistivity of Mud Filtrate Sample	2.5000 OHMM
RTCC	RTCC - RI Invasion Correction	YES
RW	Resistivity of Connate Water	1.0000 OHMM
SDFH	Sonic Data Format	32
SDTT	Switch Down Threshold	16384
SEIF_HILT	HILT Saturation Exponent	2
SFAC	Sensitivity Compensation Factor	2 DB/M
SGAI	Sliding Gate Status	ON
SGCI	Selectable Acquisition Gain	AUTO
SGDP	Sliding Gate Depth Spacing	152 US/M
SGCW	Sliding Gate Closing Width	152 US/M
SGDT	Sliding Gate Delta-T	184 US/M
SGTH	Sliding Gate Width	152 US/M
SLEC	Slowness Time Coincidence	20 DEGC
SLEV	Signal Level Value	30.3125
SMCO	Standoff Correction	3.175
SPCLEAN	Mud Type Correction Option	NO
SPCO	HILT SP Correction	MV
SPFS	Spot Depth Sampling Point	0 M
SPRS	Sonic Porosity Formula	RAYMER_HUNT
SPSD	Spot Depth Sampling Point	0 M
SPSF	SP Mod Value	2 MV
SPSHALE	HILT SP Shale	-120 MV
SPSO	Spontaneous Source	SP
SPVO	SP Starting Point	0 M
SRHC	SR Hardware Loop Control	DISALLOW
SRTC	SR Hardware Threshold	0.782 M
TAZI	Tool Azimuth	665
TDEG	Tension Gradient Azimuth	0 DEG
TIED	Total Depth	2110 M
TSCD	TSCD Enable Corrected Depth Computation	YES
TSPA	Transmitter Spacing Array Sonde	3710 MM
VOLS	VOL Manual GCI	0
WSGC	Waveform AGC Attack/Shallow	ON
WSGD	Waveform AGC Decay	ON
WSGT	Waveform Gate Interval	787 US/M
WSGW	Waveform Gate Interval	2540 US
WSPD	Waveform Sliding Mode	NULL
WTD	Mud Weight	1040 K/M3
WTTP	Well Trajectory Flag	VERTICAL

Format: MCFL_40 Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 06:20

OP System Version: 7C0-713

		MBM	
		DSLT-TCC	
10LTB DTB	RPCA-1000		SKXA-997
HOLEY	RPCA-1009		

Input DLIS Files

DEFAULT	HLTB .079	FN:104	FIELD	11-MAR-1999 00:04	2121.0 M 1933.5 M

Output DLIS Files

DEFAULT	HLTB .086	FN:110	FIELD	11-MAR-1999 06:25

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Thru Gal Mag. & Phase							
Wartec: Feb 27 17:26 1999 Before: Mar 10 12:37 1999							
Thru Cal Magnitude - 0	0	0	0.8100	0.8099	N/A	N/A	V
Thru Cal Magnitude - 1	0	0	1.282	1.281	N/A	N/A	V
Thru Cal Magnitude - 2	0	0	0.8100	0.8099	N/A	N/A	V
Thru Cal Magnitude - 3	0	0	0.7029	0.7248	N/A	N/A	V
Thru Cal Magnitude - 4	0	0	1.315	1.358	N/A	N/A	V
Thru Cal Magnitude - 5	0	0	1.282	1.281	N/A	N/A	V
Thru Cal Magnitude - 6	0	0	1.809	1.866	N/A	N/A	V
Thru Cal Magnitude - 7	0	0	1.370	1.413	N/A	N/A	V
Phase - 0	0	0	61.80	63.15	N/A	N/A	DEG
Phase - 1	0	0	60.59	62.17	N/A	N/A	DEG
Phase - 2	0	0	61.80	63.15	N/A	N/A	DEG
Phase - 3	0	0	56.41	57.66	N/A	N/A	DEG
Phase - 4	0	0	50.12	51.38	N/A	N/A	DEG
Phase - 5	0	0	60.59	62.17	N/A	N/A	DEG
Phase - 6	0	0	45.21	46.48	N/A	N/A	DEG
Phase - 7	0	0	44.30	45.65	N/A	N/A	DEG
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Electronics Calibration Check - Auxiliary							
Wartec: Feb 27 17:26 1999 Before: Mar 10 12:37 1999							
AIT-H SPA Plus	0	0	992.9	991.3	N/A	N/A	MV
AIT-H SPA Zero	0	0	-0.0113	-0.03325	N/A	N/A	MV
AIT-H Temperature Plus	0.9100	0	0.9100	0.9100	N/A	N/A	V
AIT-H Temperature Zero	0	0	0.0202.06	0.0202.06	N/A	N/A	V
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Test Loop Gain Correction							
Test Loop Gain Magnitude - 0	0	0	1.024	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	0	1.026	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	0	1.024	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	0	1.026	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	0	1.004	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0	0.9928	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	0	1.013	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	0	1.013	N/A	N/A	N/A	V
Phase - 0	0	0	-0.3545	N/A	N/A	N/A	DEG
Phase - 1	0	0	-0.2846	N/A	N/A	N/A	DEG
Phase - 2	0	0	-0.0991	N/A	N/A	N/A	DEG
Phase - 3	0	0	-0.2846	N/A	N/A	N/A	DEG
Phase - 4	0	0	-0.0992	N/A	N/A	N/A	DEG
Phase - 5	0	0	-0.0808	N/A	N/A	N/A	DEG
Phase - 6	0	0	-0.1265	N/A	N/A	N/A	DEG
Phase - 7	0	0	-0.1265	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Sonde Error Correction							
Before: Mar 7 12:28 1999							
R-Sonde Error Correction - 0	0	0	-44.75	N/A	N/A	N/A	MM/M
R-Sonde Error Correction - 1	0	0	186.2	N/A	N/A	N/A	MM/M
R-Sonde Error Correction - 2	0	0	107.3	N/A	N/A	N/A	MM/M
R-Sonde Error Correction - 3	0	0	24.83	N/A	N/A	N/A	MM/M
R-Sonde Error Correction - 4	0	0	24.80	N/A	N/A	N/A	MM/M
R-Sonde Error Correction - 5	0	0	11.96	N/A	N/A	N/A	MM/M
R-Sonde Error Correction - 6	0	0	-0.6868	N/A	N/A	N/A	MM/M
R-Sonde Error Correction - 7	0	0	-0.6868	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 0	0	0	70.58	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 1	0	0	68.71	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 2	0	0	71.22	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 3	0	0	72.46	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 4	0	0	72.46	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 5	0	0	-0.67	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 6	0	0	-0.67	N/A	N/A	N/A	MM/M
X-Sonde Error Correction - 7	0	0	4.492	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Mud Gain Correction							
Before: Mar 7 12:28 1999							
Coarse - Mag. Red. Imag - 0	0	0	1.022	N/A	N/A	N/A	M
Coarse - Mag. Red. Imag - 1	0	0	1.020	N/A	N/A	N/A	M
Coarse - Mag. Red. Imag - 2	0	0	1.023	N/A	N/A	N/A	M
Fine - Mag. Red. Imag - 0	0	0	1.022	N/A	N/A	N/A	M
Fine - Mag. Red. Imag - 1	0	0	1.020	N/A	N/A	N/A	M
Fine - Mag. Red. Imag - 2	0	0	1.022	N/A	N/A	N/A	M
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Stab Measurement Summary							
Before: Mar 7 12:28 1999							
SS Window Ratio	0.9904	N/A	0.9837	N/A	N/A	N/A	
SS Window Sum	19800	N/A	19840	N/A	N/A	N/A	CPS
LS Window Ratio	0.9904	N/A	0.9837	N/A	N/A	N/A	
SS Window Sum	11100	N/A	11100	N/A	N/A	N/A	CPS
LS Window Ratio	0.3049	N/A	0.2008	N/A	N/A	N/A	
LS Window Sum	1474	N/A	1474	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations							
Before: Mar 7 12:28 1999							
SS PM High Voltage (Command)	2099	N/A	2121	N/A	N/A	N/A	V
SS PM High Voltage (Measured)	2099	N/A	2121	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1772	N/A	1772	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-CTS Wellsite Calibration - Crystal Quality Resolutions Calibration							
Before: Mar 7 12:28 1999							
SS Crystal Resolution	12.66	N/A	12.71	N/A	N/A	N/A	%
SS Crystal Resolution	10.41	N/A	10.59	N/A	N/A	N/A	%
LS Crystal Resolution	9.314	N/A	9.517	N/A	N/A	N/A	%
High resolution Integrated Logging Tool-CTS Wellsite Calibration - HCPL Calibrations							
Before: Mar 7 12:28 1999							
SS Bh Resistivity	3678	N/A	3682	N/A	N/A	N/A	OHMM
Raw SS Resistivity	3684	N/A	3684	N/A	N/A	N/A	OHMM
Raw SL Resistivity	3690	N/A	3652	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool-CTS Wellsite Calibration - HILT Caliper Calibration							
Before: Mar 7 12:27 1999							
HILT Caliper Zero Measurement	0	N/A	0.8837	N/A	184.9	N/A	MM

HLT Caliper Zero Measurement	203.2	N/A	184.9	N/A	N/A	N/A	MM
HLT Caliper Plus Measurement	304.8	N/A	307.8	N/A	N/A	N/A	MM

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Detector Calibration
Before Mar 7 10:28 1999

Gamma Ray Background	30.00	N/A	38.22	N/A	GAPI
Gamma Ray (Energy)	165.0	N/A	165.0	N/A	15.00 GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	15.00 GAPI

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Zero Measurement
Before Mar 10 03:27 1999 Before Mar 7 12:24 1999

CNTC Background	25.11	25.11	24.54	N/A	N/A	3.787 CPS
CFTC Background	23.68	23.68	24.03	N/A	N/A	3.552 CPS

High resolution Integrated Logging Tool-CTS Wellsite Calibration - Accelerometer Calibration
Before Mar 10 09:18 1999

Z-Axis Acceleration	9.810	N/A	9.826	N/A	N/A	M/S2

High resolution Integrated Logging Tool-CTS Master Calibration - Inclination results
Master: Feb 25 18:22 1999

Pho Aluminium	2596	2596	–	–	– KMS
Pho Magnesium	1800	1800	–	–	– KMS
Rho Aluminium	2.710	2.710	–	–	– G/C3
Pe Magnesium	2.602	2.602	–	–	–

High resolution Integrated Logging Tool-CTS Master Calibration - Derivation Summary
Master: Feb 25 18:22 1999

BE Average Deviation	0	0.1779	–	–	– %
SS Average Deviation	0	0.4027	–	–	– %
SS Near Deviation	0	0.2992	–	–	– %
SS Mid Deviation	0	0.4307	–	–	– %
LS Average Deviation	0	0.5782	–	–	– %
LS Mid Deviation	0	1.404	–	–	– %

High resolution Integrated Logging Tool-CTS Master Calibration - Tank Measurements
Master: Jan 6 00:07 1999

Tank Background (Unit)	6021	5483	–	–	–	CPS
Thermal Neutron (Tank)	2784	2419	–	–	–	CPS
CNTC/CFTC (Tank)	0.158	0.158	–	–	–	

Ultra Density - D Wellsite Calibration - Background Measurement
Before Mar 10 03:27 1999 Before Mar 7 12:24 1999

LLU Background	18.51	N/A	18.81	N/A	N/A	1.000 CPS
LU Background	76.00	N/A	75.38	N/A	N/A	1.000 CPS
SDU Background	57.00	N/A	57.00	N/A	N/A	1.000 CPS
LITH Background	16.00	N/A	15.97	N/A	N/A	0.3000 CPS
SS1 Background	16.00	N/A	16.00	N/A	N/A	0.3000 CPS
SS2 Background	11.00	N/A	11.79	N/A	N/A	0.3000 CPS

Ultra Density - D Wellsite Calibration - Tool Quality Control Information HV
Master Calibration not done Before Mar 7 12:25 1999

LSHV Background	1500	N/A	1515	N/A	N/A	N/A V
SSHV Background	1500	N/A	1505	N/A	N/A	N/A

Ultra Density - D Wellsite Calibration - Detector Resolution From BKG Measurements
Master Calibration not done Before Mar 7 12:25 1999

LS Resolution Background	8.000	N/A	8.653	N/A	N/A
SS Resolution Background	9.000	N/A	9.004	N/A	N/A

Ultra Density - D Wellsite Calibration - Caliper Calibration
Before Mar 7 12:25 1999

Caliper Small Ring	203.2	N/A	189.2	N/A	N/A	MM
Caliper Large Ring	304.8	N/A	290.2	N/A	N/A	MM

Ultra Density - D Master Calibration - Aluminium Measurement
Master: Calibration not done

LL Aluminium	90.00	93.07	–	–	–	CPS
LU Aluminium	135.0	141.1	–	–	–	CPS
SDU Aluminium	100.0	104.9	–	–	–	CPS
LITH Aluminium	52.00	56.58	–	–	–	CPS
SS1 Aluminium	175.0	188.5	–	–	–	CPS
SS2 Aluminium	260.0	281.8	–	–	–	CPS

Ultra Density - D Master Calibration - Lithology Measurement
Master: Calibration not done

LL high	93.00	82.51	–	–	– CPS
LU high	140.0	134.1	–	–	– CPS
LS high	120.0	142.1	–	–	– CPS
LITH high	30.00	35.93	–	–	– CPS
SS1 high	185.0	189.6	–	–	– CPS
SS2 high	245.0	237.1	–	–	– CPS

Ultra Density - D Master Calibration - Spectrum Quality Ratios
Master Calibration not done

GRLS Calculated	0.6500	N/A	–	–	–
GRSS Calculated	0.3000	N/A	–	–	–
GRLU Calculated	0.3900	N/A	–	–	–
GRSU Calculated	0.1700	N/A	–	–	–
GR Calculated	1.000	N/A	–	–	–

Scintillation Gamma Ray - L Wellsite Calibration - Detector Calibration
Before Mar 10 03:27 1999

Gamma Ray Background	30.00	N/A	69.17	N/A	N/A	GAPI
Gamma Ray (Sig / Bkg)	148.8	N/A	148.9	N/A	N/A	13.54
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00 GAPI

The DLS-XJ euro.x activity is acceptable.

The HDNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 18.4 DEGC
Thermal Housing Size 85.909 MM

High resolution Integrated Logging Tool-CTS / Equipment Identification

Primary Equipment:
Array Induction Tool - H
Array Induction Sonde - AHS - SA
HLT High Resolution Mechanical Sonde - HRMS - B
HLT Nuclear Shock Sonde - HNSS
HLT Nuclear Back-Up Detector - HLT-
HLT Nuclear Short-Spacing Detector - HNSS
HLT Nuclear Long-Spacing Detector - HLT-
Micro Cylindrically Focused Log Device - MCFL

Auxiliary Equipment:
ATT- H
AHS - SA
HRMS - B
HNSS
HLT-
HNSS
HLT-
MCFL

High resolution Integrated Logging Tool-CTS / Wellsite Calibration
Electronics Calibration Check - Thru Old Mag. & Press

Ub	Phase	Value	Thru Old Magnetics M	Value	Phase DEG	Nominal
1	Master	1.0130	0.4050	81.98		71.00
	Before	1.0260		83.19		
2	Master	1.282	1.275	82.83		79.00
	Before	1.290		82.17		
3	Master	0.8213	0.6250	57.18		66.00
	Before	0.8410		58.01		
4	Master	0.7038	0.7040	56.41		65.00
	Before	0.7048		57.66		
5	Master	1.315	1.337	82.13		59.00
	Before	1.356		81.38		
6	Master	1.911	1.955	48.30		51.00
	Before	1.970		49.47		
7	Master	1.908	1.956	48.27		57.00
	Before	1.966		48.48		
8	Master	1.370	1.418	44.30		53.00
	Before	1.466		43.65		
		80.00 % Nominal	1460.0 Nominal	Nom -80.00 Nominal	Num - 80.00 Nominal	

Master: Feb 21 17:38 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	ATT-H SPA Rx - MV	Value	ATT-H SPA Zero - MV	Value
Master		350.9	Master	-0.01813
Before	347.3 Minimum	350.9 Nominal	26.00 Maximum	-0.003306 Nominal

Phase	ATT-H Temperature Rx - V	Value	ATT-H Temperature Zero - V	Value
Master		0.8177	Master	0.02452.08
Before	0.8750 Minimum	0.8800 Nominal	-0.0500 Minimum	0.08000 Nominal

Master: Feb 21 17:38 1999 Before: Mar 10 12:27 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Two Loop Gain Correction

Ub	Value	Two Loop Gain Magnitude V	Value	Phase DEG	Value
1	1.024	2.4000 Minimum	1.080 Nominal	-0.3545	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.2954	3.000 Nominal
2	1.026	2.4000 Minimum	1.080 Nominal	-0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09985	3.000 Nominal
3	1.020	2.4000 Minimum	1.080 Nominal	0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	0.2999	3.000 Nominal
4	1.024	2.4000 Minimum	1.080 Nominal	-0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09985	3.000 Nominal
5	0.9623	2.4000 Minimum	1.080 Nominal	-0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09936	3.000 Nominal
6	1.025	2.4000 Minimum	1.080 Nominal	-0.2400	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09936	3.000 Nominal
7	1.013	2.4000 Minimum	1.080 Nominal	-0.1598	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09936	3.000 Nominal

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Rx Cross Correction

Ub	Value	R Sonde Error Correction MM.M	Value	X Sonde Error Correction MM.M	Value
1	44.15	22.1 Minimum	66.30 Nominal	110.50 Maximum	11.39
2	157.3	78.65 Minimum	118.0 Nominal	157.3 Maximum	71.32
3	59.17	29.59 Minimum	88.76 Nominal	147.9 Maximum	43.48
4	24.65	12.33 Minimum	49.30 Nominal	86.28 Maximum	-10.48
5	11.96	5.978 Minimum	23.91 Nominal	41.84 Maximum	-13.87
6	9.964	4.982 Minimum	19.93 Nominal	34.88 Maximum	3.902
7	-0.9143	-4.571 Minimum	13.96 Nominal	32.90 Maximum	4.448

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Time Correction

Ub	Value	Coarse - Mag. Ref. Imag	Value	Fine - Mag. Ref. Imag	Value
1	1.022	0.8000 Minimum	1.000 Nominal	0.400 Minimum	1.022
2	1.022	0.8000 Minimum	1.000 Nominal	0.400 Minimum	1.022
3	1.022	0.8000 Minimum	1.000 Nominal	0.400 Minimum	1.022

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Short Spacing Calibration

Phase	SS Wndw Ratio	Value	Phase	SS Wndw Ratio	Value	Phase	LS Wndw Ratio	Value
Before	0.8600 Minimum	0.9627	Before	0.8400 Minimum	0.4841	Before	0.0997 Minimum	0.3068
Master	0.9600 Minimum	1.000	Master	0.9400 Minimum	0.4870	Master	0.3049 Minimum	0.3068
Phase	SS Wndw Sum CPS	Value	Phase	SS Wndw Sum CPS	Value	Phase	LS Wndw Sum CPS	Value
Before	1800 Minimum	1992	Before	1400 Minimum	1150	Before	1400 Minimum	1474
Master	1800 Minimum	1992	Master	1400 Minimum	1150	Master	1400 Minimum	1483

Before Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Receiver Phase High Voltages Calibration

Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before	2000 Minimum	2131	Before	2000 Minimum	2178
Master	2100 Minimum	2100	Master	2100 Minimum	2100

Before Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Resolution Calibration

Phase	SS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before	11.96 Minimum	12.24 Nominal	Before	8.629 Minimum	10.41 Nominal	Before	8.213 Minimum	9.917 Nominal

Before Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Resolution Calibration

Phase	Rec SS Resistivity Ohmm	Value	Phase	Rec SS Resistivity Ohmm	Value	Phase	Rec SS Resistivity Ohmm	Value
Before	2675 Minimum	3092	Before	3524 Minimum	3830	Before	3524 Minimum	3850

Before Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
HLT Caliper Calibration

Phase	HLT Caliper Zero Measurement MM	Value	Phase	HLT Caliper Plus Measurement MM	Value
Before	182.4 Minimum	203.2 Nominal	Before	224.8 Minimum	307.8 Nominal

Before Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Gamma Ray Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Sig / Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before	30.00 Minimum	38.22 Nominal	Before	148.9 Minimum	129.5 Nominal	Before	165.0 Minimum	149.0 Nominal

Before Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		25.11	Master		23.68
Phase	24.54		Phase	24.03	
Before	9.00 Minimum	25.11 Nominal	Before	6.00 Minimum	40.00 Maximum

Master: Jan 6 00:07 1999 Before Mar 7 12:24 1999

High resolution Integrated Logging Tool-CTS Wellsite Calibration
Accelerometer Calibration

Phase	Z-Axis Acceleration M/S2	Value
Before	9.810 Minimum	9.826
Master	9.810 Nominal	
	10.00 Maximum	

Before Mar 10 09:18 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Electronics Calibration Check - Thru Old Mag. & Press

Ub	Phase	Value	Thru Old Magnetics M	Value	Phase DEG	Nominal
1	Master	0.8130	0.8050	81.98		71.00
	Before	1.282		1.275	82.83	79.00
2	Master	0.8213	0.6250	57.18		66.00
	Before	0.7029		0.7040	56.41	65.00
3	Master	1.315	1.337	82.13		59.00
	Before	1.911		1.955	48.30	51.00
4	Master	1.908	1.956	48.27		57.00
	Before	1.370		1.418	44.30	53.00
		80.00 % Nominal	1460.0 Nominal	Nom -80.00 Nominal	Num - 80.00 Nominal	

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	ATT-H SPA Rx - MV	Value	ATT-H SPA Zero - MV	Value
Master		350.9	Master	-0.01813
Before	347.3 Minimum	350.9 Nominal	26.00 Maximum	-0.003306 Nominal

Phase	ATT-H Temperature Rx - V	Value	ATT-H Temperature Zero - V	Value
Master		0.8177	Master	0.02452.08
Before	0.8750 Minimum	0.8800 Nominal	-0.0500 Minimum	0.08000 Nominal

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Two Loop Gain Correction

Ub	Value	Two Loop Gain Magnitude V	Value	Phase DEG	Value
1	1.024	2.4000 Minimum	1.080 Nominal	-0.3545	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.2954	3.000 Nominal
2	1.026	2.4000 Minimum	1.080 Nominal	-0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09985	3.000 Nominal
3	1.020	2.4000 Minimum	1.080 Nominal	0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	0.2999	3.000 Nominal
4	1.024	2.4000 Minimum	1.080 Nominal	-0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09985	3.000 Nominal
5	0.9623	2.4000 Minimum	1.080 Nominal	-0.3000	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09936	3.000 Nominal
6	1.025	2.4000 Minimum	1.080 Nominal	-0.2400	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09936	3.000 Nominal
7	1.013	2.4000 Minimum	1.080 Nominal	-0.1598	3.000 Minimum
		0.9600 Minimum	1.080 Nominal	-0.09936	3.000 Nominal

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Rx Cross Correction

Ub	Value	R Sonde Error Correction MM.M	Value	X Sonde Error Correction MM.M	Value
1	44.15	22.1 Minimum	66.30 Nominal	110.50 Maximum	11.39
2	157.3	78.65 Minimum	118.0 Nominal	157.3 Maximum	71.32
3	59.17	29.59 Minimum	88.76 Nominal	147.9 Maximum	43.48
4	24.65	12.33 Minimum	49.30 Nominal	86.28 Maximum	-10.48
5	11.96	5.978 Minimum	23.91 Nominal	41.84 Maximum	-13.87
6	9.964	4.982 Minimum	19.93 Nominal	34.88 Maximum	3.902
7	-0.9143	-4.571 Minimum	13.96 Nominal	32.90 Maximum	4.448

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Short Spacing Calibration

Phase	SS Wndw Ratio	Value	Phase	SS Wndw Ratio	Value	Phase	LS Wndw Ratio	Value
Before	0.8600 Minimum	0.9627	Before	0.8400 Minimum	0.4841	Before	0.0997 Minimum	0.3068
Master	0.9600 Minimum	1.000	Master	0.9400 Minimum	0.4870	Master	0.3049 Minimum	0.3068
Phase	SS Wndw Sum CPS	Value	Phase	SS Wndw Sum CPS	Value	Phase	LS Wndw Sum CPS	Value
Before	1800 Minimum	1992	Before	1400 Minimum	1150	Before	1400 Minimum	1474
Master	1800 Minimum	1992	Master	1400 Minimum	1150	Master	1400 Minimum	1483

Before Mar 7 12:25 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Time Correction

Ub	Value	Coarse - Mag. Ref. Imag	Value	Fine - Mag. Ref. Imag	Value
1	1.022	0.8000 Minimum	1.000 Nominal	0.400 Minimum	1.022
2	1.022	0.8000 Minimum	1.000 Nominal	0.400 Minimum	1.022
3	1.022	0.8000 Minimum	1.000 Nominal	0.400 Minimum	1.022

Master: Feb 21 17:38 1999

High resolution Integrated Logging Tool-CTS Master Calibration
Inversion Results

Phase	Pho Aluminium K/M3	Value	Phase	Rho Magnesium K/M3	Value
Master		2596	Master		1800
Phase	Pe Aluminium	Value	Phase	Pe Magnesium	Value
Master		2.564	Master		2.602

2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)

Master: Feb 25 18:22 1999

High resolution Integrated Logging Tool-CTS Master Calibration

Deviation Summary

Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.1779	Master		0.2680	Master		0.5785
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)	
Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		0.4007	Master		0.9348	Master		1.404
	-1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			-2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			-3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: Feb 25 18:22 1999

High resolution Integrated Logging Tool-CTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5483	Master		2419	Master		2.267
	5000 (Minimum) 6031 (Nominal) 7200 (Maximum)			2075 (Minimum) 2793 (Nominal) 3125 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: Jan 8 00:27 1999

Litho Density - D / Equipment Identification

Primary Equipment:	
Nuclear Services Cartridge	NSC - E
Powered Gamma Detector	PGD - G
Gamma Source Radioactive	GSR - J
Auxiliary Equipment:	
Density Resistivity Sonde	DRS - C
Electronics Cartridge Housing	ECH - MKA
Powered Detector Housing	PDH - L

Litho Density - D Wellsite Calibration

Background Measurement

Phase	LL Background CPS	Value	Phase	LU Background CPS	Value	Phase	LS Background CPS	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
Before		19.81	Before		75.38	Before		57.50
	15.00 (Minimum) 20.00 (Nominal) 25.00 (Maximum)			58.00 (Minimum) 76.00 (Nominal) 94.00 (Maximum)			43.00 (Minimum) 57.00 (Nominal) 72.00 (Maximum)	
Phase	LITH Background CPS	Value	Phase	SS1 Background CPS	Value	Phase	SS2 Background CPS	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
Before		5.357	Before		17.49	Before		11.79
	4.000 (Minimum) 5.500 (Nominal) 7.000 (Maximum)			12.00 (Minimum) 16.00 (Nominal) 19.50 (Maximum)			8.000 (Minimum) 11.00 (Nominal) 13.50 (Maximum)	

Master: Calibration not done Before: Mar 7 12:25 1999

Litho Density - D Wellsite Calibration

Detectors Resolution From BKG Measurments

Phase	LS Resolution Background	Value	Phase	SS Resolution Background	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A
Before		8.853	Before		9.064
	5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)			5.000 (Minimum) 8.000 (Nominal) 11.50 (Maximum)	

Master: Calibration not done Before: Mar 7 12:25 1999

Litho Density - D Master Calibration

Aluminum Measurement

Phase	LL Aluminum CPS	Value	Phase	LU Aluminum CPS	Value	Phase	LS Aluminum CPS	Value
Master		93.07	Master		141.1	Master		163.6
	70.00 (Minimum) 90.00 (Nominal) 125.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 194.0 (Maximum)			120.0 (Minimum) 155.0 (Nominal) 217.0 (Maximum)	
Phase	LITH Aluminum CPS	Value	Phase	SS1 Aluminum CPS	Value	Phase	SS2 Aluminum CPS	Value
Master		56.36	Master		189.5	Master		261.8
	35.00 (Minimum) 50.00 (Nominal) 74.00 (Maximum)			125.0 (Minimum) 175.0 (Nominal) 256.0 (Maximum)			210.0 (Minimum) 260.0 (Nominal) 353.0 (Maximum)	

Master: Calibration not done

Litho Density - D Master Calibration

Litholog Measurement

Phase	LL Iron CPS	Value	Phase	LU Iron CPS	Value	Phase	LS Iron CPS	Value
Master		82.51	Master		123.1	Master		144.1
	60.00 (Minimum) 80.00 (Nominal) 114.0 (Maximum)			85.00 (Minimum) 120.0 (Nominal) 177.0 (Maximum)			100.0 (Minimum) 135.0 (Nominal) 193.0 (Maximum)	
Phase	LITH Iron CPS	Value	Phase	SS1 Iron CPS	Value	Phase	SS2 Iron CPS	Value
Master		35.53	Master		168.8	Master		237.1
	15.00 (Minimum) 30.00 (Nominal) 51.00 (Maximum)			105.0 (Minimum) 155.0 (Nominal) 234.0 (Maximum)			190.0 (Minimum) 245.0 (Nominal) 325.0 (Maximum)	

Master: Calibration not done

Litho Density - D Master Calibration

Spectrum Quality Ratios

Phase	QRLS Calculated	Value	Phase	QRSS Calculated	Value	Phase	QRLI Calculated	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master	NOT DONE	N/A
	0.6000 (Minimum) 0.6500 (Nominal) 0.7000 (Maximum)			0.6200 (Minimum) 0.7200 (Nominal) 0.8200 (Maximum)			0.2900 (Minimum) 0.3900 (Nominal) 0.4500 (Maximum)	
Phase	QLIR Calculated	Value	Phase	QR Calculated	Value			
Master	NOT DONE	N/A	Master	NOT DONE	N/A			
	1.290 (Minimum) 1.390 (Nominal) 1.450 (Maximum)			0.9800 (Minimum) 1.000 (Nominal) 1.020 (Maximum)				

Master: Calibration not done

Scintillation Gamma-Ray - L / Equipment Identification

Primary Equipment:	
Scintillation Gamma Cartridge	SGC - SA
Scintillation Gamma Detector	SGD - TAA
Auxiliary Equipment:	
Scintillation Gamma Housing	SGH - K
Gamma Source Radioactive	GSR - U/Y

Scintillation Gamma-Ray - L Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		69.17	Before		148.9	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			135.4 (Minimum) 148.9 (Nominal) 162.4 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: Mar 9 11:10 1999

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA

PROVINCE NORTHWEST TERRITORIES

BOTTOM LOG INTERVAL	2111.3 M
SCHLUMBERGER DEPTH	2117 M
DEPTH DRILLER	2118 M
KELLY BUSHING	627.29 M
DRILL FLOOR	624.9 M
GROUND LEVEL	618.4 M

Schlumberger

PLATFORM EXPRESS
MICROLOG

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

PLATFORM EXPRESS
MICROLOG

60 deg-46', 122 deg-30' (SUR LOCATION)		Elev.: K.B.	627.29 M
353.66M, 40.17M (BOTTOM LOC)		G.L.	618.4 M
300K-77-60-50-122-30/00 (LWI)		D.F.	624.9 M
Permanent Datum:	GROUND LEVEL	Elev.:	618.4 M
Log Measured From:	KELLY BUSHING	6.8 M	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		

API Serial No.
N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	10-MAR-1999			
Run Number	2			
Depth Driller	2118 M	*** TVD DATA ***		
Schlumberger Depth	2117 M	2057.67 M		
Bottom Log Interval	2111.2 M	2058 M		
Top Log Interval	1996.8 M			
Casing Driller Size @ Depth	177.800 MM @ 1998 M	@	@	@
Casing Schlumberger	1996.8 M			
Bit Size	156.000 MM			
Type Fluid In Hole	POTASSIUM SULPHATE			
Density / Viscosity	1045 K/M3 / 53 S			
Fluid Loss / PH	9.0 / 9.8			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.680 OHMM @ 22 DEGC	@ @	@ @	@ @
RMF @ Measured Temperature	2.990 OHMM @ 22 DEGC	@ @	@ @	@ @
RMC @ Measured Temperature	3.500 OHMM @ 21 DEGC	@ @	@ @	@ @
Source: RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	1.670 @ 88 / 1.031 @ 88	@ @	@ @	@ @
Maximum Recorded Temperatures	88 DEGC			
Circulation Stopped / Time	10-MAR-1999 / 17:30			
Logger On Bottom / Time	10-MAR-1999 / 12:45			
Unit Number / Location	3010 / 6840			
Recorded By	KIMBERLEY BAKER			
Witnessed By	BRIAN HESTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid In Hole / Viscosity	MUD			
Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@ @	@ @	@ @	@ @
RMF @ Measured Temperature	@ @	@ @	@ @	@ @
RMC @ Measured Temperature	@ @	@ @	@ @	@ @
Source: RMF / RMC	RMC / RMC			
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

ALL MEASUREMENTS ARE CORRECTED FOR BOREHOLE CONDITIONS.
ALL MEASUREMENTS AND CALCULATIONS ARE BASED ON INFORMATION SUPPLIED BY OR ON BEHALF OF THE CUSTOMER. NEITHER SCHLUMBERGER NOR ANY OF ITS AGENTS MAKES ANY WARRANTY OR REPRESENTATION AS TO THE ACCURACY OR CORRECTNESS OF ANY SUCH INFORMATION. SCHLUMBERGER SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGE OR EXPENSE INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF ITS OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES
OBS: ARRAY INDUCTION
OBS: HNGT, CCL
OBS: PACKER
REMARKS: RUN NUMBER 2
ALL INTERVALS AND PRESSURES AS PER CLIENT RECKSET
ATH ROLL CENTRALIZED AND TO CENTRE STANDOFF MOOR
HLT MAX ECCENTRALIZED
RU 1 RD OHMI @ 1 ST, RNG 1 TO OHMI @ 21 C, RNG 4 RD OHMI @ 23.2 C
TAM FIRST ON BTTOM 10:45, TAM LAST ON BOTTOM 12:45, TAM FIRST ON SURFACE 17:30
TWO BOXES LOGGING TRANSMIT INTERVAL, HTEN, TAM BACK ON SURFACE 17:30
TWO BOXES LOGGING TRANSMIT INTERVAL, HTEN, TAM BACK ON SURFACE 17:30
TWO BOXES LOGGING TRANSMIT INTERVAL, HTEN, TAM BACK ON SURFACE 17:30
PRINTS: 2 FIELD, 2 FINAL
RG: BOX 2 OF 2

	RUN 1	RUN 2	RUN 3	RUN 4
SERVICE ORDER #	607254	SERVICE ORDER #		
FLOG UNIT NUMBER	PCH-B	FLOG UNIT NUMBER		
FLOG LOCATION	STOP	LOCATION	START	STOP
LOGGING INTERVAL	START	LOGGING INTERVAL		

EQUIPMENT DESCRIPTION

RUN 1 / RUN 2

SURFACE EQUIPMENT
HDAS

DOWNHOLE EQUIPMENT

GSH-27
OHS-AB
HCS-19

TCC-BF — 30.48 — 31.58
ECH-HC — 30.19 — 30.46
SGT-L — 28.48 — 28.79
SGC-SA — 27.72
CAL-Y — 13 MM Standoff
SGC-SA
DSLT-TCC — LSN — 23.62
SLDL-SA — SSN — 22.72
SLSW — LSS — 22.07
MCD-G — HD — 20.06 — 21.43
MCD-G
AH-107 — 19.15
AH-107 — 18.54
LDT-D — 17.93
SGC-SA
SLDL-SA — Gamma Ray — 13.43
SLSW — SGC — 13.28
AH-107 — 12.64
HILTB-DTB — HONs HRD — 11.48 — 12.03
HCS-19 — Gamma Ray — 10.01
HNGT-HC — Neutron H — 9.32
HCS-19 — HNGT-HC — 8.81
HILT-DTB — HILT-DTB — 8.68
HILT-DTB — HILT-DTB — 8.55
HILT-DTB — HILT-DTB — 8.42
HILT-DTB — HILT-DTB — 5.42
HILT-DTB — Inclination — 13 MM Standoff
HILT-DTB — Temperature — 0.63
HILT-DTB — SP SRSOLOG — 0.51
HTEN HMAB HV — Gamma Ray — 0.00
HTEN HMAB HV — Tension — TOOL ZERO — 0.00 — 13 MM Standoff
MAXIMUM STRING DIAMETER 194 MM.
MEASUREMENTS RELATIVE TO TOOL ZERO.
ALL LOGGING IN METERS

	DEFAULT	HILTB .000	FN:48	FIELD	10-MAR-1999 17:41	2130.3 M	1897.6 M
	DEFAULT	HILTB .487	FN:111	FIELD	11-MAR-1999 05:32	2681.1 M	1915.7 M

Pipass Interval 1 Top Interval 2681.1 M

OP System Version: 7C0i-713

HILTB-DTB	IRC4-1099	DSLT-TCC	SKXX-497
HCS-19	IRC4-1099		

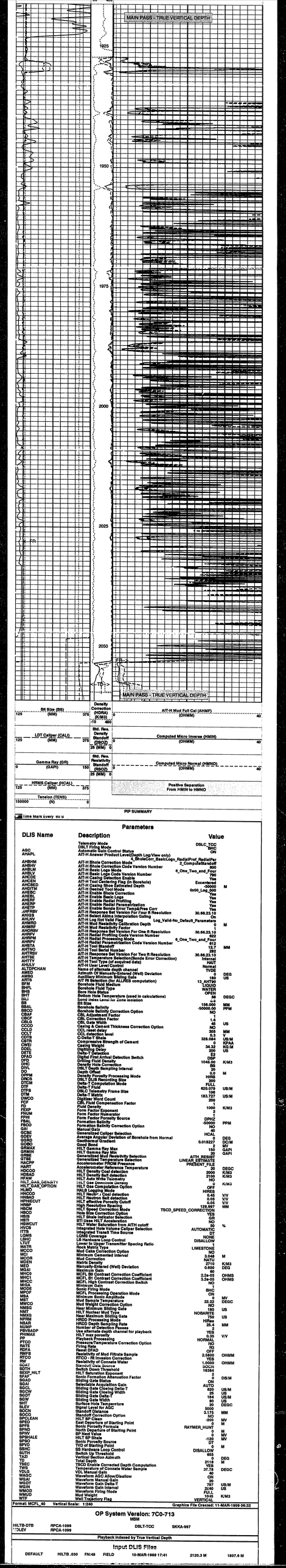
PIP SUMMARY

DLIS Name — Changed Parameter Summary — New Value — Previous Value — Depth & Time

MED	0.500 DEG	0.000 DEG	2681.1 1453:32	
	0.000 DEG	0.000 DEG	1978.5 0953:31	
	0.000 DEG	0.000 DEG	1978.5 0953:31	
	2.000 DEG	3.000 DEG	1982.0 0953:32	
	2.000 DEG	3.000 DEG	1982.0 0953:32	
	2.500 DEG	2.000 DEG	1978.5 0953:31	
	2.500 DEG	2.000 DEG	1978.5 0953:31	

Time Mark Every 60 S

| | | | |



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	Telemetry Mode	DSLC_TOC
	DSLT Firing Mode	TOC
AGC	Automatic Gain Control Status	ON
AHAPL	AIT-H Answer Product Level(Depth Log/View only)	6_BoreCorr_BasicLogs_RadialProf_RadialPer
AHBHM	AIT-H Bhole Correction Mode	2_ComputeStandoff
AHBHV	AIT-H Bhole Correction Code Version Number	600
AHBLM	AIT-H Basic Logs Mode	6_One_Two_and_Four
AHBLV	AIT-H Basic Logs Code Version Number	790
AHCDE	AIT-H Cond Correction Enable	Yes
AHCEN	AIT-H Tool Centered Flag (In Borehole)	Eccentered
AHCSED	AIT-H Casing Shoe Estimated Depth	0 M
AHDITM	AIT-H Desired Tool Mode	0x00_Log_2000
AHEBC	AIT-H Enable Bhole Correction	Yes
AHEBL	AIT-H Enable Basic Logs	Yes
AHEPF	AIT-H Enable Radial Profiling	Yes
AHEPP	AIT-H Enable Radial Parameterization	Yes
AHFBC	AIT-H Enable Borehole Error Temp&Pres Corr	Yes
AHFRP	AIT-H Response Set Version For Four ft Resolution	30.66,23,10
AHGIS	AIT-H Geometrical Integration Gates	6in
AHLVC	AIT-H Log Hd Valid Parameters Config	Log_Valid-No_Default_Parameters
AHMRD	AIT-H Mud Resistivity Calibration Depth	0 M
AHMRF	AIT-H Mud Resistivity Factor	1
AHORSV	AIT-H Response Set Version For One ft Resolution	30.66,23,10
AHRPV	AIT-H Radial Profiling Code Version Number	822
AHRPM	AIT-H Radial Processing Mode	6_One_Two_and_Four
AHRPV	AIT-H Radial Parameterization Code Version Number	812
AHST	AIT-H Tool Standoff	12.7 MM
AHTNO	AIT-H Tool Serial Number	292
AHTRV	AIT-H Response Set Version For Two ft Resolution	30.66,23,10
AHTSE	AIT-H Temperature Selection(Bhole Error Correction)	Internal
AHTTY	AIT-H Tool Type (of associated data)	HAIT
AHULV	AIT-H User Level Control	Normal
ALLOPCHAN	Name of alternate depth channel	TVDE
AMED	Azimuth Of Manually-Entered (Well) Deviation	0 DEG
AMIN	Auxiliary Minimum Sigma Gate	150 US
ATTY	AIT_H Selection (for ALLRES computation)	13_AHT90
BFM	Borehole Fluid Mode	LIQUID
BHFL	Borehole Fluid Type	WATER
BHS	Bore Hole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	0 DEGC
BIJ	Send index Level for Zone isolation	0
BS	Bit Size	184.000 MM
BSAL	Borehole Salinity	-50000.00 PPM
BSCO	Borehole Salinity Correction Option	NO
CBAF	CBL Adjustment Factor	1
CBGF	CBL Gain Correction Factor	1.6
CBLO	CBL Gate Offset	45 US
CCCO	Casing & Cement Thickness Correction Option	NO
CCLD	CCL reset delay	0.5 M
CCLT	CCL detection level	25 MV
CDTB	C-Delta-T Blank	325.084 US/M
CDTR	Compressive Strength of Cement	0 KPAA
CWEI	Casing Weight	34.32 KG.M
DDEL	Digitizing Delay	200 US
DDIF	Delta-T Detection	E2
DFAD	Digital First Arrival Detection Switch	DBP
DFD	Density Fluid Density	1045.00 K/M3
DHC	Density Hole Correction	BS
DIVL	DSLT Depth Sampling Interval	0.05 M
DO	Depth Offset	0.0 M
DPPM	Density Porosity Processing Mode	HIRB
DRCO	DSLT DLIS Recording Size	200
DTCM	Delta-T Computation Mode	FULL
DTF	Delta-T Fluid	620.079 US/M
DTH	DSLT Telemetry Frame Size	128
DTM	Delta-T Matrix	183.727 US/M
DWCO	Digitizer Word Count	200
FCF	CBL Fluid Compensation Factor	1
FD	Fluid Density	1000 K/M3
FEXP	Form Factor Exponent	1
FNUM	Form Factor Numerator	1
FPHI	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	-50000 PPM
FSC	Formation Salinity Correction Option	NO
GAC	Gas Correction	0
GDEC	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018222 DEGC/M
GOBQ	Good Bond	2 MV
GRMAX	HILT Gamma Ray Max	150 GAPI
GRMIN	HILT Gamma Ray Min	20 GAPI
GRSE	Generalized Mud Resistivity Selection	AITH_RESBIT
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
HACPP	Accelerometer Processing Presence	PRESENT_FILE
HART	Accelerometer Real Presence Temperature	20 DEGC
HDCCO	HILT Density Coal Correction	2000 K/M3
HDSAD	HILT Density Salt detection	2100 K/M3
HFAW	HILT Auto Write Telemetry	NO
HILT_GAS_DENSITY	HILT Gas Correction Density	0 K/M3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF
HLAD	HALD Logging Mode	HIRES
HNCCO	HILT Neutron Coal detection	0.45 V/V
HNSCO	HILT Neutron Salt detection	0.45 V/V
HPHSCUT	HILT Effective Porosity Cutoff	0.05 V/V
HRSF	HILT Shale Resistivity	120.000 MM
HSCM	HILT Speed Correction Mode	TSCD_SPEED_CORRECTION
HSCO	Hole Size Correction Option	YES
HSIS	HILT Shale Selection	GR
HSTI	STI Uses HILT Acceleration	NO
HSWCUT	HILT Water Saturation from AITH cutoff	50 %
HYCS	Integrated Hole Volume Caliper Selection	AUTOMATIC
IDEP	Integrated Transit Time Source	DT
LGAS	HRDD Coverage	NONE
LSHC	LS Hardware Control	DISALLOW
LTUT	Lower to Upper Transmitter Spacing Ratio	1
MATR	Rock Matrix Type	LIMESTONE
MCCO	Mud Cake Correction Option	NO
MC	Minimum Cemented Interval	2.048 M
MCOR	Mud Correction	NATIV
MDEN	Matrix Density	2710 K/M3
MED	Manually-Entered (Well) Deviation	0.000 DEG
MGJJ	Maximum Gain	80
MHC5	MCFL R5 Contrast Correction Coefficient	2.2e-05 OHMS
MHC1	MCFL R1 Contrast Correction Coefficient	3.2e-05 OHMS
MHCC	MCFL High Contrast Correction	NO
MIGA	Minimum Gain	0
MODE	Sonic Firing Mode	BHC
MPQF	MCFL Processing Operation Mode	ON
MSA	Minimum Sonic Amplitude	0 MV
MSD	Mud Sample Temperature	22.22 DEGC
MWCO	Mud Weight Correction Option	NO
NMSG	HILT Neutron Sampling Gate	1500 US
NMT	HILT Nucleus Matrix Type	NOBARITE
NMXG	Near Maximum Sampling Gate	750 US
NPHM	HRDD Processing Mode	Hires
NSAR	HRDD Depth Sampling Rate	25.4 MM
NUMP	Number of Detection Passes	2
PRVSADP	Use alternate depth channel for playback	YES
PRIMAX	HILT max porosity	0.35 V/V
PM	Playback Processing	NORMAL
PTCO	Pressure Temperature Correction Option	NO
RATE	Firing Rate	23
RDFA	Tuned DFAD	0
RMFS	Resistivity of Mud Filtrate Sample	2.000 OHMM
RTCO	RTCO - RI Invasion Correction	YES
RW	Resistivity of Connate Water	1.0000 OHMM
SDAT	Standoff Data Source	SOCN
SDTH	Switch Down Threshold	16384
SEXP_HILT	HILT Saturation Exponent	2
SFAC	Standoff Formation Attenuation Factor	2 DB/M
SGAD	Shale Gamma Ray	100
SQAI	Selected Acquisition Gain	AUTO
SQCL	Sliding Gate Closing Delta-T	625 US/M
SQCW	Sliding Gate Closing Width	80 US
SQDT	Sliding Gate Delta-T	104 US/M
SQW	Sliding Gate Width	80 US
SRT	Surface Hole Temperature	20 DEGC
SUEL	Signal Level for AGC	5000
SVCO	Standoff Distance	3.175 MM
SWCO	Standoff Correction Option	NO
SPCLEAN	Sonic Clean Up	DISALLOW
SPED	East Departure of Starting Point	0 M
SPFS	Sonic Porosity Formula	RAYMER_HUNT
SPND	North Departure of Starting Point	0 M
SPNV	SP Next Value	0 MV
SPSHALE	HILT SP Shale	-120 MV
SPSO	Sonic Porosity Source	DT
SPSV	TVD of Starting Point	0 M
SRCO	SS Hardware Loop Control	DISALLOW
SUTH	Switch Up Threshold	655
TAZI	Tool Deflection Azimuth	0 DEG
TD	Total Depth	2118 M
TSEC	TSCD Enable Corrected Depth Computation	YES
TWS	Temperature of Connate Water Sample	37.78 DEGC
VOLN	VOL Manual Gain	40
WAGC	Waveform AGC Allow/Disallow	ON
WGAI	Waveform Manual Gain	20
WGDT	Waveform Gain Delta-T	797 US/M
WGW	Waveform Gain Interval	2040 US
WMCO	Waveform Fitting Mode	FULL
WMUD	Mud Velocity	1535 K/M3
WTF	Well Trajectory Flag	VERTICAL

Format: MCFL_40 Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 06:32

OP System Version: 7C0-713

MBM

HLTB-DTB	RPCA-1099	DSLT-TCC	SIKKA-997	
*7DLEV	RPCA-1099			

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT	HILTB_030	FN:48	FIELD	10-MAR-1999 17:41	2120.3 M	1807.6 M

DEFAULT HLTB .087 FN:111 FIELD 11-MAR-1999 06:32

Input DLIS Files

DEFAULT HLTB .021 FN:30 FIELD 10-MAR-1999 15:25 2120.0 M 1975.4 M

Output DLIS Files

DEFAULT HLTB .091 FN:115 FIELD 11-MAR-1999 06:50 2060.8 M 1918.1 M

Playback Indexed by True Vertical Depth

OP System Version: 7C0-713

MBM

HLTB-DTB	RPCA-1099	DBLT-TCC	BKKA-997
HOLEY	RPCA-1099		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MED	0.000 DEG	0.200 DEG	2060.8 06:02:57
	0.400 DEG	0.400 DEG	1999.9 06:03:33
	0.200 DEG	0.400 DEG	1974.2 06:03:33
	0.400 DEG	0.600 DEG	1974.2 06:04:33
	2.000 DEG	1.800 DEG	1955.1 06:04:58
	1.800 DEG	2.000 DEG	1945.4 06:05:24
	2.000 DEG	2.400 DEG	1928.2 06:05:16
	2.300 DEG	2.600 DEG	1918.1 06:05:16

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS) (lb) 1000000 0

HDMA Caliper (HCAL) (MM) 125 375

Positive Separation From HMIN to HMNO

Rel. Res. Resistivity Standoff (SRAD) 0 150 20 (SIN) 0

Computed Micro Normal (HMIN) (OHMM) 0.2 40

Rel. Res. Density Standoff (DRDD) 20 (MIN) 0

LDT Caliper (CALI) (MM) 125 375

Computed Micro Inverse (HMIN) (OHMM) 0.2 40

Bit Size (BS) (MM) 125 375

Density Correction (HDRA) (K/M3) -50 450

ATT-H Mud Full Cal (AHMP) (OHMM) 0.2 40

REPEAT SECTION - TRUE VERTICAL DEPTH

1925
1950
1975
2000
2025
2050

REPEAT SECTION - TRUE VERTICAL DEPTH

Bit Size (BS) (MM) 125 375

Density Correction (HDRA) (K/M3) -50 450

ATT-H Mud Full Cal (AHMP) (OHMM) 0.2 40

LDT Caliper (CALI) (MM) 125 375

Rel. Res. Density Standoff (DRDD) 20 (MIN) 0

Computed Micro Inverse (HMIN) (OHMM) 0.2 40

Gamma Ray (GR) (GAPI) 0 150

Rel. Res. Resistivity Standoff (SRAD) 0 (SIN) 0

Computed Micro Normal (HMNO) (OHMM) 0.2 40

HMIN Caliper (HCAL) (MM) 125 375

Positive Separation From HMIN to HMNO

Tension (TENS) (lb) 1000000 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	Telemetry Mode	DSLC,TCC	
ASC	DBLT Filing Mode	ASC	
ANAPL	Automatic Gain Control Status	ON	
	ATT-H Array Induction Curve Length (Log/View only)	60	
	ATT-H Array Induction Curve Name	H_ShortCon_BasicLoga_RadialProf_RadialPer	
AHSHM	ATT-H Shale Correction Mode	2_CompSelfadjust	
AHSHV	ATT-H Shale Correction Curve Version Number	1	
AHBLM	ATT-H Basic Logs Mode	4_One_Two_and_Ap	
AHBCV	ATT-H Basic Logs Curve Version Number	700	
AHCRM	ATT-H Core Mode	Yes	
AHCRD	ATT-H Core Diameter (In Symbolic)	Exceeding	
AHCRD	ATT-H Casing Wear Calculated Depth	-99999	M
AHCRV	ATT-H Core Curve Version	0x00_Log_000	
AHEBM	ATT-H Enable Basic Correction	Yes	
AHEBC	ATT-H Enable Basic Logs	Yes	
AHERM	ATT-H Enable Radial Mode	Yes	
AHERP	ATT-H Enable Radial Parameter/Prec Corr	Yes	
AHRPV	ATT-H Radial Parameter Version For Four-R Resolution	30.66.23.12	
AHIAS	ATT-H Select Alpha Interpolation Gating	On	
AHRVM	ATT-H Radial Processing Mode	4_One_Two_and_Four	
AHMND	ATT-H Mud Resistivity Calibration Depth	Log_Valid-No_Default_Parameter	M
AHMNF	ATT-H Mud Resistivity Factor	1	
AHRFV	ATT-H Radial Parameter For One-R Resolution	30.66.23.10	
AHRFV	ATT-H Radial Processing Mode Curve Version Number	602	
AHRPM	ATT-H Radial Processing Mode	4_One_Two_and_Four	
AHRPV	ATT-H Radial Processing Mode Curve Version Number	1	
AHSTA	ATT-H Test Standoff	0	MM
AHTNC	ATT-H Tool Serial Number	202	
AHTRV	ATT-H Tool Parameter Version For Two-R Resolution	30.66.23.11	
AHTSV	ATT-H Temperature Selection (Service Error Correction)	Normal	
AHTTY	ATT-H Tool Type (of encoded data)	HAT	
AHTVM	ATT-H Vertical Mode	Normal	
AHTXCHAN	ATT-H Transmitter channel	TYPE	
AMED	Azimuth Of Manually Entered (Well) Deviation	0	DEG
AMSU	Automatic Mud Salinity Gate	180	US
APIN	Array Induction (for ALIAS computation)	13_ARTHO	
BPR	Borehole Pressure	183.1379	UB/M
BHS	Borehole Type	WATER	
BHS	Bore Hole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	90	DEGC
BU	Bond Index Level for Zone Isolation	6.8	
BS	Bit Size	156.000	MM
CABL	Cable Telemetry	32000	FT/M
CBAC	Borehole Salinity Correction Option	NO	
CBAF	CBL Adjustment Factor	1	
CBGA	CBL Gate Width	40	
CBSG	CBL Gate Start	40	UB
CCCO	Casing & Cement Thickness Correction Option	NO	MM
CCDI	CCL Distance	0.000	MM
CCFL	CCL Fixed Gain Level	0.000	
CDTS	C-Delta-T Shale	328.084	UB/M
CMFR	Computed Mud Weight of Cement	1.9	KG/M
CMFI	Cementing Delay	34.32	KG/M
DDEL	Cementing Delay	0.00	UB
DFD	Delta-T Detection Detection Switch	OFF	
DFSI	Digital Field Density	1048.000	K/M3
DIC	Density Hole Correction	NO	
DDL	DILT Depth Sampling Interval	20	M
DPM	Depth Mode	MEASURED	
DRCS	Density Processing Mode	HIRES	
DRCS	DILT DLIS Recording Size	262	
DTM	Delta-T Maximum Motion Mean	1.000	
DTR	Delta-T Float	625.078	US/M
DTRS	DILC Telemetry Frame Size	109	
DTS	Delta-T Shale	183.727	US/M
DWOD	Digitizer Word Count	251	
FCF	CBL Fluid Compensation Factor	0	
FDF	Form Density	1000	K/M3
FDOP	Form Factor Parameter	2	
FNOM	Form Factor Normalizer	2	
FSAL	Formation Salinity Source	DPHZ	PPM
FSCO	Formation Salinity	-99900	
GAI	Gamma Ray Activity Correction Option	NO	
GAI	Gamma Ray Calibration	0.00	
GDEV	Geographic Calliper Selection	HCAL	
GDEV	Geographic Deviation of Borehole from Normal	0	DEG
GEOT	Geothermal Gradient	0.016667	DC/M
GMAX	Gamma Ray Max	150	GAPI
GMIN	Gamma Ray Min	0	GAPI
GRBE	Generalized Mud Resistivity Selection	ATR_RESIST	
GRDE	Generalized Radial Resistivity Selection	LINEAR_RESIST	
HACM	Accelerometer Mnemonic	PRESENT_FILE	
HADT	Accelerometer Reference Temperature	30	DEGC
HAMOD	Accelerometer Sensitivity	2.000	K/M3
HAMOD	Accelerometer Sensitivity	2100	K/M3
HFAW	DILT Auto Write Telemetry	NO	
HFBL	DILT Formation Density Bulk	2.300	K/M3
HFSAL_GAS_DENSITY	Gas Density	0.2	
HFSAL_OPTION	Formation Salinity Correction Option	CHLORIDES	
HGLG	DILT Logging Mode	HIGH	
HHCO	HDMA Caliper Selection	2.00	V/V
HHFC	HDT Hardware Gain Control	2.00	V/V
HPRECUT	HDT effective Porosity Cutoff	0.00	V/V
HRGN	HDT Hardware Gain Mode	126.97	MM
HSCO	HDT Speed Correction Option	TSCO_SPEED_CORRECTION	
HSCO	Hole Size Correction Option	NO	
HSCT	HDT Shale Transition Selection	0.00	
HSCUT	HDT Uses HILT Acceleration	NO	
HVOI	Hydrogen Volume Interval Below AITH cutoff	0.00	%
HVOK	Integrated Hole Volume Caliper Selection	AUTOMATIC	
ITS	Integrated Transit Time Source	DT	
LBHC	LDT Borehole Correction	HCAL	
LBHC	LB Hardware Gain Control	DISALLOW	
LSUT	Lower to Upper Transmitter Spacing Ratio	1.000	
MATR	Matrix Density	LIMESTONE	
MCO	Mud Cake Correction Option	NO	
MDI	Minimum Cemented Interval	3.048	M
MDEN	Mud Density	1000.00	K/M3
MDEN	Matrix Density	2710	K/M3
MED	Manually-Entered (Well) Deviation	0.200	DEG
MFSA	Mud Filtrate Salinity	0	PPM
MHCC	MCFL SI Correction Coefficient	3.2e-02	OHMS
MHC1	MCFL SI Contrast Correction Coefficient	3.2e-02	OHMS
MHCO	MCFL Hole Correction Switch	NO	
MOCO	Sonic Fixing Mode	RHC	
MRSF	Mud Resistivity Operation Mode	ON	
MST	Maximum Sonic Amplitude	0.000	
MWCO	Mud Weight Correction	22.32	DEGC
MWCO	Mud Weight Compensation	ON	
NMSO	Near Minimum Sliding Gate	150	US
NMSO	Near Minimum Sliding Gate	NOMAD	US
NPMX	Near Maximum Sliding Gate	750	US
NPRM	HRDD Processing Mode	HiRes	
NPRM	Near Porosity Processing Mode	1	MM
NUMP	Number of Spaces	4	
PBVSADP	Use alternate depth channel for playback	YES	
PDAT	Pad Contact	0.000	V/V
PDMA	Playback Processing	NORMAL	
PTCO	Pressure/Temperature Correction Option	NO	
RGFA	Fixing Gain	200	
RGFA	Fixing DFSC	200	
RMFS	Resistivity of Mud Filtrate Sample	2.5800	OHMM
RMFSO	RFOC - RI Correction Option	YES	
RMFT	Mud Filtrate Sample Temperature	21.1000	OHMM
SDAY	Standoff Data Source	LOCK	
SDTH	Sonic Depth Threshold	10000	
SFAC	Sonic Porosity Salinity Correction Factor	1	DB/M
SGAI	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gate	AUTO	
SGCN	Sliding Gate Centre Width	60	UB/M
SGCN	Sliding Gate Sizing Width	60	UB/M
SGDT	Sliding Gate Delta-T	164	UB/M
SGST	Sliding Gate Start	40	UB/M
SHT	Surface Hole Temperature	20	DEGC
SLEV	Signal Level for AGC	3000	
SMOD	Sonic Mode Selection	2.00	
SOCO	Sonic Salinity Correction Option	NO	
SPEE	SLET SP Cleanup	200	MV
SPEO	Spell Operation at Starting Point	0	M
SPMO	Spell Mode	RAYMER_HUNT	
SPNO	North Departure of Starting Point	0	M
SPSA	Spell Salinity	0	PPM
SPSALE	SLET SP Edit	10	MV
SPSO	Sonic Porosity Source	0	M
SPTO	TVD of Starting Point	0	M
SSWI	Switch Up Threshold	DISABLED	
SUTH	Switch Up Threshold	0	
TAU	Thermal Decay Constant	0	DEG
TBHC	TBHC Depth	2318	M
TCDC	Temperature Corrected Depth Computation	1.000	
TWS	Temperature of Cementa Water Sample	37.78	DEGC
VDLG	VDL Manual Gain	40	
VDLO	Variable Density Offset/Deadtime	40	
WGAI	Waveform Manual Gate	20	
WGDT	Waveform Gate Delta-T	267	US/M
WGST	Waveform Gate Start	133	US/M
WMOD	Waveform Gate Mode	FULL	
WMUD	Mud Weight	1240	K/M3
WTF	Well Trajectory Flag	VERTICAL	

Format: MCFL_40 Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 06:50

OP System Version: 7C0-713

MBM

HLTB-DTB	RPCA-1099	DBLT-TCC	BKKA-997
HOLEY	RPCA-1099		

Playback Indexed by True Vertical Depth

Input DLIS Files

DEFAULT HLTB .021 FN:30 FIR D 10-MAR-1999 15:25 2120.0 M 1975.4 M

Output DLIS Files

DEFAULT HLTB .091 FN:115 FIELD 11-MAR-1999 06:50

Directional Survey Manually-Entered Deviation Summary

Depth	Deviation	Depth	Deviation
1802.30 M	0.40 DEG	1897.80 M	1.90 DEG
1811.40 M	7.90 DEG	1906.90 M	2.30 DEG
1821.40 M	7.30 DEG	1916.90 M	2.60 DEG
1831.00 M	6.50 DEG	1926.30 M	2.80 DEG
1840.60 M	6.10 DEG	1935.80 M	2.00 DEG
1850.10 M	5.80 DEG	1955.10 M	1.50 DEG
1859.70 M	4.90 DEG	1974.30 M	0.80 DEG
1869.30 M	3.70 DEG	1978.00 M	0.60 DEG
1878.70 M	2.90 DEG	1980.00 M	0.60 DEG
1888.20 M	2.30 DEG	1982.00 M	0.60 DEG

COMPANY	SUNCOR ENERGY INC.	BOTTOM LOG INTERVAL	2111.3 M
		SCHLUMBERGER DEPTH	2117 M
WELL	SUNCOR NETLA K-77-60-50-122-30	DEPTH DRILLER	2118 M
FIELD	NETLA	KELLY BUSHING	507.29 M
PROVINCE	NORTHWEST TERRITORIES	DRILL FLOOR	504.8 M
	TRUE VERTICAL DEPTH	GROUND LEVEL	518.4 M

Schlumberger

PLATFORM EXPRESS
MICROLOG

COMPLETION

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

PROVINCE:NORTHWEST TERRITORIES
Field: NETLA
Well: SUNCOR NETLA K-77-60-50-122-30-W6M (SURFACE LOC)
Company: SUNCOR ENERGY INC.
LOCATION

Schlumberger

PACKER SET RECORD

60 deg-48', 122 deg-30' (SURFACE LOC) — Elev.: K.B. 627.29 M
263.66M, -90.17M (BOTTOM LOC) — G.L. 618.4 M
300/K-77-60-50-122-30/00 (UWI) — D.F. 624.9 M

Permanent Datum: GROUND LEVEL — Elev.: 618.4 M
Log Measured From: KELLY BUSHING — 8.9 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.
N/A

Logging Date	12-MAR-1999
Run Number	1
Depth Driller	2118 M
Schlumberger Depth	2117 M
Bottom Log Interval	2110 M
Top Log Interval	800 M
Casing Fluid Type	POTASSIUM SULPHATE
Salinity	
Density	1045 K/M3
Fluid Level	
BIT/CASING/TUBING STRING	
Bit Size	156.000 MM
From	
To	
Casing/Tubing Size	177.800 MM
Weight	34.32 KG/M
Grade	L-80
From	0 M
To	1997 M
Maximum Recorded Temperatures	88 DEGC
Logger On Bottom — Time	12-MAR-1999 — 11:45
Unit Number — Location	3010 — 6940
Recorded By	KIMBERLEY BAKER \ JUSTIN EASTON
Witnessed By	MIKE PETROSKI

	Run 1	Run 2	Run 3	Run 4
Oil Density				
Water Salinity				
Gas Gravity				
Ro				
Rw				
Rflg				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Deviation	29 DEG			
CEMENTING DATA				
Primary/Squeeze	Primary			
Casing String No				
Lead Cement Type				
Volume				
Density				
Water Loss				
Additives				
Tail Cement Type				
Volume				
Density				
Water Loss				
Additives				
Expected Cement Top				
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Fluid Type				
Salinity				
Density				
Fluid Level				
BIT/CASING/TUBING STRING				
Bit Size				
From				
To				
Casing/Tubing Size				
Weight				
Grade				
From				
To				
Maximum Recorded Temperatures				
Logger On Bottom — Time				
Unit Number — Location				
Recorded By				
Witnessed By				

ALL INTERVALS / DEPTHS ARE MEASURED FROM KELLY BUSHING
MEASUREMENTS ARE CORRECTED FOR DIFFERENCES FROM ELECTRICAL OR OTHER
MECHANICAL ZERO POINTS. SCHLUMBERGER ASSUMES NO RESPONSIBILITY FOR LOSS OF
MEASUREMENT AND WILL CANNOT ACCEPT LIABILITY FOR ANY LOSS, DAMAGE OR
NEGLIGENCE OR OTHER, THAT BE LIABLE OR RESPONSIBLE FOR ANY INJURY, LOSS OR
DAMAGE SUFFERED BY ANY PERSON OR COMPANY AS A RESULT OF THE USE OF ANY
OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE OPINIONS BASED
ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT
GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION WE MAY MAKE.

OTHER SERVICES
OS1: NEUTRON-DENSITY-GR
OS2: PACKER SET-GR
OS3: MSCT, CCL, Pal
OS4: SBSMIC
OS5: MSCT

REMARKS: RUN NUMBER 1

CORRELATED TO BSC COLLAR LOG DATED 12 MAR 1999

RUN 1 MA GRADE RING

SET PACKER AT 1992 MKB

REMARKS: RUN NUMBER 2

RUN 1
SERVICE ORDER #: 907355
PROGRAM VERSION: PCD19
FLUID LEVEL
LOGGED INTERVAL — START — STOP

RUN 2
SERVICE ORDER #: 907355
PROGRAM VERSION: PCD19
FLUID LEVEL
LOGGED INTERVAL — START — STOP

EQUIPMENT DESCRIPTION

RUN 1 — RUN 2

SURFACE EQUIPMENT

SHM-EA

DOWNHOLE EQUIPMENT

REH-A
PEH-A

1.28

CAL-B
CAL-B

0.71

Tension CCL

TOOL ZERO

PLUG

0.00

TOOL BOTTOM

MAXIMUM STRING DIAMETER 60 MM
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

PERF02 Operational Summary Listing

Device Status Req Depth (M) Obs Depth (M) Time Used

PLUG1 Used 1982.0 1982.0 Sat Mar 13 06:07:19 1999
CCL TO BOTTOM OF TOOL 10.6 M
CCL TO BOTTOM OF PLUG 10.6 M

Output DLIS Files

DEFAULT PLUG .130 FN:165 FIELD 13-MAR-1999 06:01 1980.4 M 1915.1 M

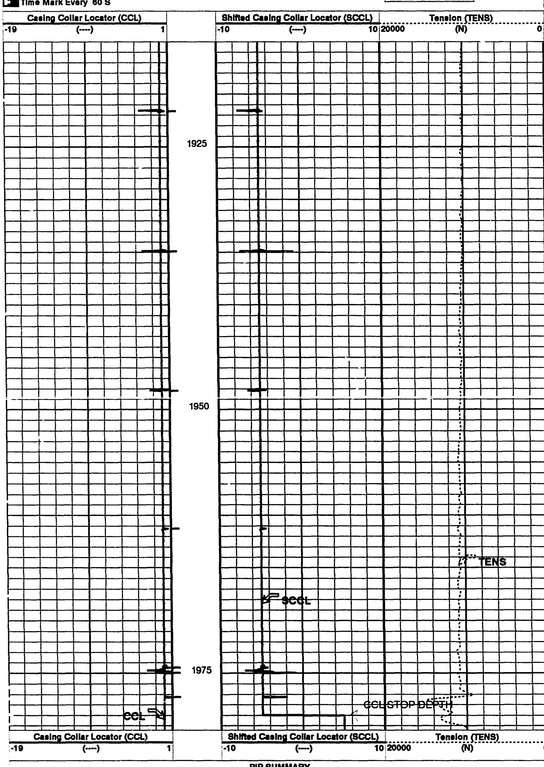
OP System Version: 7C0-713
MBM

PIP SUMMARY

Casing Collars

POSITION PASS

Time Mark Every 60 S



PIP SUMMARY

Casing Collars

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
CCLD	CCL reset delay	305 MM
CCLT	CCL detection level	0.3 V

Format: PERFO Vertical Scale: 1:240 Graphics File Created: 13-MAR-1999 06:01

OP System Version: 7C0-713
MBM

Output DLIS Files

DEFAULT PLUG .130 FN:165 FIELD 13-MAR-1999 06:01

Output DLIS Files

DEFAULT PLUG .129 FN:164 FIELD 13-MAR-1999 05:49 1976.9 M 1892.5 M

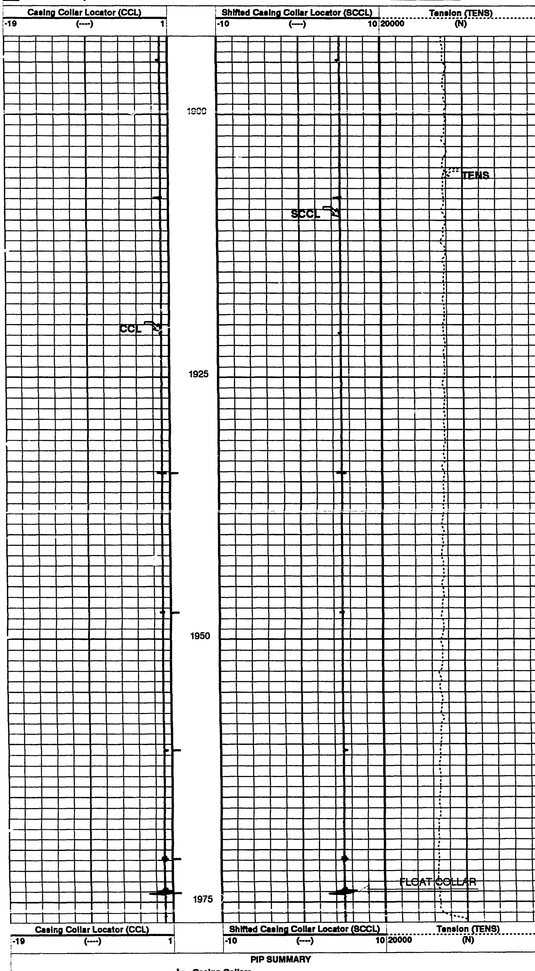
OP System Version: 7C0-713
MBM

PIP SUMMARY

Casing Collars

TIE IN PASS

Time Mark Every 60 S



PIP SUMMARY

Casing Collars

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
CCLD	CCL reset delay	305 MM
CCLT	CCL detection level	0.3 V

Format: PERFO Vertical Scale: 1:240 Graphics File Created: 13-MAR-1999 05:49

OP System Version: 7C0-713
MBM

Output DLIS Files

DEFAULT PLUG .129 FN:164 FIELD 13-MAR-1999 05:49

COMPANY	SUNCOR ENERGY INC.	BOTTOM LOG INTERVAL	2110 M
WELL	SUNCOR NETLA K-77-60-50-122-30	SCHLUMBERGER DEPTH	2117 M
FIELD	NETLA	DEPTH DRILLER	2118 M
PROVINCE	NORTHWEST TERRITORIES	KELLY BUSHING	627.29 M
		DRILL FLOOR	624.9 M
		GROUND LEVEL	618.4 M

Schlumberger

PACKER SET RECORD

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

COLLAR LOCATOR

PROJECTION: NORTHWEST TERRITORIES
Location: 60 deg-48', 120 deg-30' (SURFACE LOC)
Location: 60 deg-48', 120 deg-30' (SURFACE LOC)
Elevation: Elevation: SUNCOR ENERGY INC.

60 deg-48', 120 deg-30' (SURFACE LOC)
353.4MM, 49.1M (BOTTOM LOC)
3000N-77-60-50-120-3000O (UM)

Permanent Datum: GROUND LEVEL — Elev.: K.B. 627.29 M; D.F. 626.9 M; G.L. 616.14 M
Log Measured From: KELLY BUSHING — 0.0 M — Above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.: N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	12 MAR 1999			
Run Number	3			
Depth Driller	2118 M			
Schlumberger Depth	2117 M			
Bottom Log Interval	1998 M			
Top Log Interval	1000 M			
Casing Driller Size @ Depth	177.8MM.M @ 1998 M	@	@	@
Casing Schlumberger	1998.6 M			
Bit Size	149.2MM.MM			
Type Fluid In Hole	POLYMER GLYCOL			
Density / Viscosity	1.03 G/C3 / 70 S			
Fluid Loss / Ph	4.2 C3 / 9.5			
Source Of Sample	MEASURED			
RM @ Measured Temperature	0.360 OHMM @ 20 DEGC	@	@	@
RMF @ Measured Temperature	0.340 OHMM @ 20 DEGC	@	@	@
RMC @ Measured Temperature	0.340 OHMM @ 20 DEGC	@	@	@
Source: RMF / RMC	MEASURED / MEASURED			
RM @ MST / RMF @ MST	1.870 @ 68 / 0.925 @ 68	@ / @	@ / @	@ / @
Circulation Stopped / Time	11 MAR 1999 / 2330			ECH
Logger On Bottom / Time	12 MAR 1999 / 0010			TCH
Unit Number / Location	3010 / 6040			
Recorded By	KINSTELEY SAKOTA / ERAD JORDAN			
Witnessed By	BRIAN HEYDEN			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density / Viscosity				
Fluid Loss / Ph				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF / RMC				
RM @ MST / RMF @ MST	/	/	/	/
Maximum Recorded Temperature				
Circulation Stopped / Time				ECH
Logger On Bottom / Time				TCH
Unit Number / Location				
Recorded By				
Witnessed By				

RUN NUMBER | RUN 1 | RUN 2 | RUN 3
TIME LOGGER ON BOTTOM | 0010 | | |
TD DRILLER | 2118 | | |
TD LOGGER | 2117 | | |
BOTTOM LOG INTERVAL | 1998 | | |
TOP LOG INTERVAL | 1000 | | |
CASING DRILLER SIZE @ DEPTH | 177.8MM.M @ 1998 M | | |
CASING LOGGER | 1998.6 M | | |
BIT SIZE | 149.2MM.MM | | |
TYPE FLUID IN HOLE | POLYMER GLYCOL | | |
DENSITY / VISCOSITY | 1.03 G/C3 / 70 S | | |
PH / FLUID LOSS | 9.5 / 4.2 C3 | | |
SOURCE OF SAMPLE | MEASURED | | |
RM @ MEASURED TEMPERATURE | 0.360 OHMM @ 20 DEGC | | |
RMF @ MEASURED TEMPERATURE | 0.340 OHMM @ 20 DEGC | | |
RMC @ MEASURED TEMPERATURE | 0.340 OHMM @ 20 DEGC | | |
SOURCE: RMF / RMC | MEASURED / MEASURED | | |
RM @ MST / RMF @ MST | 1.870 @ 68 / 0.925 @ 68 | | |
MAXIMUM RECORDED TEMPERATURE | | | |
CIRCULATION STOPPED / TIME | 11 MAR 1999 / 2330 | | |
LOGGER ON BOTTOM / TIME | 12 MAR 1999 / 0010 | | |
UNIT NUMBER / LOCATION | 3010 / 6040 | | |
RECORDED BY | KINSTELEY SAKOTA / ERAD JORDAN | | |
WITNESSED BY | BRIAN HEYDEN | | |

RUN 1 — RUN 2 — RUN 3

RUN NUMBER
TIME LOGGER ON BOTTOM
TD DRILLER
TD LOGGER
BOTTOM LOG INTERVAL
TOP LOG INTERVAL
CASING DRILLER SIZE @ DEPTH
CASING LOGGER
BIT SIZE
TYPE FLUID IN HOLE
DENSITY / VISCOSITY
PH / FLUID LOSS
SOURCE OF SAMPLE
RM @ MEASURED TEMPERATURE
RMF @ MEASURED TEMPERATURE
RMC @ MEASURED TEMPERATURE
SOURCE: RMF / RMC
RM @ MST / RMF @ MST
MAXIMUM RECORDED TEMPERATURE
CIRCULATION STOPPED / TIME
LOGGER ON BOTTOM / TIME
UNIT NUMBER / LOCATION
RECORDED BY
WITNESSED BY

MISCELLANEOUS

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

DIPOLE SHEAR SONIC IMAGER LOG

PROVINCE:NORTHWEST TERRITORIES
Field: NETLA
Location: 60 deg-49', 122 deg-30' (SUR LOCATION)
Well: 284.06M, -91.08M (BOT LOCATION)
Company: SUNCOR ENERGY INC.
300K-77-60-50-122-30/00 (LMI)

60 deg-49', 122 deg-30' (SUR LOCATION) — Elev.: K.B. 625.2 m
284.06M, -91.08M (BOT LOCATION) — G.L. 618.4 m
300K-77-60-50-122-30/00 (LMI) — D.F. 624.0 m

Permanent Datum: GROUND LEVEL — Elev.: 618.4 m
Log Measured From: KELLY BUSHING — 6.8 m above Perm. Datum
Drilling Measured From: KELLY BUSHING

	API Serial No. N/A	N/A	N/A	N/A
Logging Date	26-FEB-1999			
Run Number	ONE			
Depth Driller	1900 m			
Schlumberger Depth	1900 m			
Bottom Log Interval	533.5 m			
Top Log Interval	0 m			
Casing Driller Size @ Depth	244.500 mm @ 535.5 m	@	@	
Casing Schlumberger	535.5 m			
Bit Size	222.000 mm			
Type Fluid in Hole	POTASSIUM SULPHATE			
MUD Density / Viscosity	1055 kg/m3			
Fluid Loss / PH	7.2 cm3 / 10			
Source Of Sample	FLOWLINE			
RM @ Measured Temperature	0.260 ohm.m @ 16 degC	@	@	
RMF @ Measured Temperature	0.180 ohm.m @ 16 degC	@	@	
RMC @ Measured Temperature	0.200 ohm.m @ 13 degC	@	@	
Source RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	0.095 @ 80 / 0.070 @ 80	@	@	
Maximum Recorded Temperatures	80 degC / 80 / 80			
Circulation Stopped / Time	26-FEB-1999 / 12:30			
Logger On Bottom / Time	27-FEB-1999 / 07:30			
Unit Number / Location	2028 / GRANDE PRAIRIE			
Recorded By	TONY DANIEL			
Witnessed By	BRIAN HESTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@		
Casing Schlumberger				
Bit Size				
Type Fluid in Hole				
MUD Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source RMF / RMC				
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

ALL INTERPRETATION (THE "INTERPRETATIONS") ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES: OBS: ARRAY INDUCTION RES OBS: ARRAY LATEROLOG RES OBS: DUAL DENSITY OBS: NEUTRON OBS: SONIC

REMARKS: RUN NUMBER 2

ALL INTERVALS AND PRESENTATIONS ARE AS PER CLIENT REQUEST

AT TIME OF RIG RELEASE THERE WERE 0 CENTRALIZERS RUN AND 0 CENTRALIZERS LEFT IN THE HOLE.
AT TIME OF RIG RELEASE THERE WERE 0 CENTRALIZERS RUN AND 0 CENTRALIZERS LEFT IN THE HOLE.
FILL TAKEN ESTIMATED WITH 20 BBL/JOINT DISPLACEMENT.
FILL TAKEN ESTIMATED WITH 20 BBL/JOINT DISPLACEMENT.

RUN 1 TOOLS: DTCH, DTSH, DTSM, DTSA, DTAA, MCD, DSST-B, DSST-A, DSST-C, DSST-D, DSST-E, DSST-F, DSST-G, DSST-H, DSST-I, DSST-J, DSST-K, DSST-L, DSST-M, DSST-N, DSST-O, DSST-P, DSST-Q, DSST-R, DSST-S, DSST-T, DSST-U, DSST-V, DSST-W, DSST-X, DSST-Y, DSST-Z, DSST-AA, DSST-AB, DSST-AC, DSST-AD, DSST-AE, DSST-AF, DSST-AG, DSST-AH, DSST-AI, DSST-AJ, DSST-AK, DSST-AL, DSST-AM, DSST-AN, DSST-AO, DSST-AP, DSST-AQ, DSST-AR, DSST-AS, DSST-AT, DSST-AU, DSST-AV, DSST-AW, DSST-AX, DSST-AY, DSST-AZ, DSST-BA, DSST-BB, DSST-BC, DSST-BD, DSST-BE, DSST-BF, DSST-BG, DSST-BH, DSST-BI, DSST-BJ, DSST-BK, DSST-BL, DSST-BM, DSST-BN, DSST-BO, DSST-BP, DSST-BQ, DSST-BR, DSST-BS, DSST-BT, DSST-BU, DSST-BV, DSST-BW, DSST-BX, DSST-BY, DSST-BZ, DSST-CA, DSST-CB, DSST-CC, DSST-CD, DSST-CE, DSST-CF, DSST-CG, DSST-CH, DSST-CI, DSST-CJ, DSST-CK, DSST-CL, DSST-CM, DSST-CN, DSST-CO, DSST-CP, DSST-CQ, DSST-CR, DSST-CS, DSST-CT, DSST-CU, DSST-CV, DSST-CW, DSST-CX, DSST-CY, DSST-CZ, DSST-DA, DSST-DB, DSST-DC, DSST-DD, DSST-DE, DSST-DF, DSST-DG, DSST-DH, DSST-DI, DSST-DJ, DSST-DK, DSST-DL, DSST-DM, DSST-DN, DSST-DO, DSST-DP, DSST-DQ, DSST-DR, DSST-DS, DSST-DT, DSST-DU, DSST-DV, DSST-DW, DSST-DX, DSST-DY, DSST-DZ, DSST-EA, DSST-EB, DSST-EC, DSST-ED, DSST-EE, DSST-EF, DSST-EG, DSST-EH, DSST-EI, DSST-EJ, DSST-EK, DSST-EL, DSST-EM, DSST-EN, DSST-EO, DSST-EP, DSST-EQ, DSST-ER, DSST-ES, DSST-ET, DSST-EU, DSST-EV, DSST-EW, DSST-EX, DSST-EY, DSST-EZ, DSST-FA, DSST-FB, DSST-FC, DSST-FD, DSST-FE, DSST-FF, DSST-FG, DSST-FH, DSST-FI, DSST-FJ, DSST-FK, DSST-FL, DSST-FM, DSST-FN, DSST-FO, DSST-FP, DSST-FQ, DSST-FR, DSST-FS, DSST-FT, DSST-FU, DSST-FV, DSST-FW, DSST-FX, DSST-FY, DSST-FZ, DSST-GA, DSST-GB, DSST-GC, DSST-GD, DSST-GE, DSST-GF, DSST-GG, DSST-GH, DSST-GI, DSST-GJ, DSST-GK, DSST-GL, DSST-GM, DSST-GN, DSST-GO, DSST-GP, DSST-GQ, DSST-GR, DSST-GS, DSST-GT, DSST-GU, DSST-GV, DSST-GW, DSST-GX, DSST-GY, DSST-GZ, DSST-HA, DSST-HB, DSST-HC, DSST-HD, DSST-HE, DSST-HF, DSST-HG, DSST-HH, DSST-HI, DSST-HJ, DSST-HK, DSST-HL, DSST-HM, DSST-HN, DSST-HO, DSST-HP, DSST-HQ, DSST-HR, DSST-HS, DSST-HT, DSST-HU, DSST-HV, DSST-HW, DSST-HX, DSST-HY, DSST-HZ, DSST-IA, DSST-IB, DSST-IC, DSST-ID, DSST-IE, DSST-IF, DSST-IG, DSST-IH, DSST-II, DSST-IJ, DSST-IK, DSST-IL, DSST-IM, DSST-IN, DSST-IO, DSST-IP, DSST-IQ, DSST-IR, DSST-IS, DSST-IT, DSST-IU, DSST-IV, DSST-IW, DSST-IX, DSST-IY, DSST-IZ, DSST-JA, DSST-JB, DSST-JC, DSST-JD, DSST-JE, DSST-JF, DSST-JG, DSST-JH, DSST-JI, DSST-JJ, DSST-JK, DSST-JL, DSST-JM, DSST-JN, DSST-JO, DSST-JP, DSST-JQ, DSST-JR, DSST-JS, DSST-JT, DSST-JU, DSST-JV, DSST-JW, DSST-JX, DSST-JY, DSST-JZ, DSST-KA, DSST-KB, DSST-KC, DSST-KD, DSST-KE, DSST-KF, DSST-KG, DSST-KH, DSST-KI, DSST-KJ, DSST-KK, DSST-KL, DSST-KM, DSST-KN, DSST-KO, DSST-KP, DSST-KQ, DSST-KR, DSST-KS, DSST-KT, DSST-KU, DSST-KV, DSST-KW, DSST-KX, DSST-KY, DSST-KZ, DSST-LA, DSST-LB, DSST-LC, DSST-LD, DSST-LE, DSST-LF, DSST-LG, DSST-LH, DSST-LI, DSST-LJ, DSST-LK, DSST-LL, DSST-LM, DSST-LN, DSST-LO, DSST-LP, DSST-LQ, DSST-LR, DSST-LS, DSST-LT, DSST-LU, DSST-LV, DSST-LW, DSST-LX, DSST-LY, DSST-LZ, DSST-MA, DSST-MB, DSST-MC, DSST-MD, DSST-ME, DSST-MF, DSST-MG, DSST-MH, DSST-MI, DSST-MJ, DSST-MK, DSST-ML, DSST-MM, DSST-MN, DSST-MO, DSST-MP, DSST-MQ, DSST-MR, DSST-MS, DSST-MT, DSST-MU, DSST-MV, DSST-MW, DSST-MX, DSST-MY, DSST-MZ, DSST-NA, DSST-NB, DSST-NC, DSST-ND, DSST-NE, DSST-NF, DSST-NG, DSST-NH, DSST-NI, DSST-NJ, DSST-NK, DSST-NL, DSST-NM, DSST-NN, DSST-NO, DSST-NP, DSST-NQ, DSST-NR, DSST-NS, DSST-NT, DSST-NU, DSST-NV, DSST-NW, DSST-NX, DSST-NY, DSST-NZ, DSST-OA, DSST-OB, DSST-OC, DSST-OD, DSST-OE, DSST-OF, DSST-OG, DSST-OH, DSST-OI, DSST-OJ, DSST-OK, DSST-OL, DSST-OM, DSST-ON, DSST-OO, DSST-OP, DSST-OQ, DSST-OR, DSST-OS, DSST-OT, DSST-OU, DSST-OV, DSST-OW, DSST-OX, DSST-OY, DSST-OZ, DSST-PA, DSST-PB, DSST-PC, DSST-PD, DSST-PE, DSST-PF, DSST-PG, DSST-PH, DSST-PI, DSST-PJ, DSST-PK, DSST-PL, DSST-PM, DSST-PN, DSST-PO, DSST-PP, DSST-PQ, DSST-PR, DSST-PS, DSST-PT, DSST-PU, DSST-PV, DSST-PW, DSST-PX, DSST-PY, DSST-PZ, DSST-QA, DSST-QB, DSST-QC, DSST-QD, DSST-QE, DSST-QF, DSST-QG, DSST-QH, DSST-QI, DSST-QJ, DSST-QK, DSST-QL, DSST-QM, DSST-QN, DSST-QO, DSST-QP, DSST-QQ, DSST-QR, DSST-QS, DSST-QT, DSST-QU, DSST-QV, DSST-QW, DSST-QX, DSST-QY, DSST-QZ, DSST-RA, DSST-RB, DSST-RC, DSST-RD, DSST-RE, DSST-RF, DSST-RG, DSST-RH, DSST-RI, DSST-RJ, DSST-RK, DSST-RL, DSST-RM, DSST-RN, DSST-RO, DSST-RP, DSST-RQ, DSST-RR, DSST-RS, DSST-RT, DSST-RU, DSST-RV, DSST-RW, DSST-RX, DSST-RY, DSST-RZ, DSST-SA, DSST-SB, DSST-SC, DSST-SD, DSST-SE, DSST-SF, DSST-SG, DSST-SH, DSST-SI, DSST-SJ, DSST-SK, DSST-SL, DSST-SM, DSST-SN, DSST-SO, DSST-SP, DSST-SQ, DSST-SR, DSST-SS, DSST-ST, DSST-SU, DSST-SV, DSST-SW, DSST-SX, DSST-SY, DSST-SZ, DSST-TA, DSST-TB, DSST-TC, DSST-TD, DSST-TE, DSST-TF, DSST-TG, DSST-TH, DSST-TI, DSST-TJ, DSST-TK, DSST-TL, DSST-TM, DSST-TN, DSST-TO, DSST-TP, DSST-TQ, DSST-TR, DSST-TS, DSST-TT, DSST-TU, DSST-TV, DSST-TW, DSST-TX, DSST-TY, DSST-TZ, DSST-UA, DSST-UB, DSST-UC, DSST-UD, DSST-UE, DSST-UF, DSST-UG, DSST-UH, DSST-UI, DSST-UJ, DSST-UK, DSST-UL, DSST-UM, DSST-UN, DSST-UO, DSST-UP, DSST-UQ, DSST-UR, DSST-US, DSST-UT, DSST-UU, DSST-UV, DSST-UW, DSST-UX, DSST-UY, DSST-UZ, DSST-VA, DSST-VB, DSST-VC, DSST-VD, DSST-VE, DSST-VF, DSST-VG, DSST-VH, DSST-VI, DSST-VJ, DSST-VK, DSST-VL, DSST-VM, DSST-VN, DSST-VO, DSST-VP, DSST-VQ, DSST-VR, DSST-VS, DSST-VT, DSST-VU, DSST-VV, DSST-VW, DSST-VX, DSST-VY, DSST-VZ, DSST-WA, DSST-WB, DSST-WC, DSST-WD, DSST-WE, DSST-WF, DSST-WG, DSST-WH, DSST-WI, DSST-WJ, DSST-WK, DSST-WL, DSST-WM, DSST-WN, DSST-WO, DSST-WP, DSST-WQ, DSST-WR, DSST-WS, DSST-WT, DSST-WU, DSST-WV, DSST-WW, DSST-WX, DSST-WY, DSST-WZ, DSST-XA, DSST-XB, DSST-XC, DSST-XD, DSST-XE, DSST-XF, DSST-XG, DSST-XH, DSST-XI, DSST-XJ, DSST-XK, DSST-XL, DSST-XM, DSST-XN, DSST-XO, DSST-XP, DSST-XQ, DSST-XR, DSST-XS, DSST-XT, DSST-XU, DSST-XV, DSST-XW, DSST-XX, DSST-XY, DSST-XZ, DSST-YA, DSST-YB, DSST-YC, DSST-YD, DSST-YE, DSST-YF, DSST-YG, DSST-YH, DSST-YI, DSST-YJ, DSST-YK, DSST-YL, DSST-YM, DSST-YN, DSST-YO, DSST-YP, DSST-YQ, DSST-YR, DSST-YS, DSST-YT, DSST-YU, DSST-YV, DSST-YW, DSST-YX, DSST-YY, DSST-YZ, DSST-ZA, DSST-ZB, DSST-ZC, DSST-ZD, DSST-ZE, DSST-ZF, DSST-ZG, DSST-ZH, DSST-ZI, DSST-ZJ, DSST-ZK, DSST-ZL, DSST-ZM, DSST-ZN, DSST-ZO, DSST-ZP, DSST-ZQ, DSST-ZR, DSST-ZS, DSST-ZT, DSST-ZU, DSST-ZV, DSST-ZW, DSST-ZX, DSST-ZY, DSST-ZZ

RUN 1 — RUN 2

SONICS UNDER-4-FL FLUID LEVEL INTERVAL — START — STOP

SONICS UNDER-4-FL FLUID LEVEL INTERVAL — START — STOP

PRINTS: 2 FIELD, 2 FINAL
PLOT: 3" = 100' MAIN AND 5" MODELED
DEPTH: 3" = 100' MAIN AND 5" MODELED

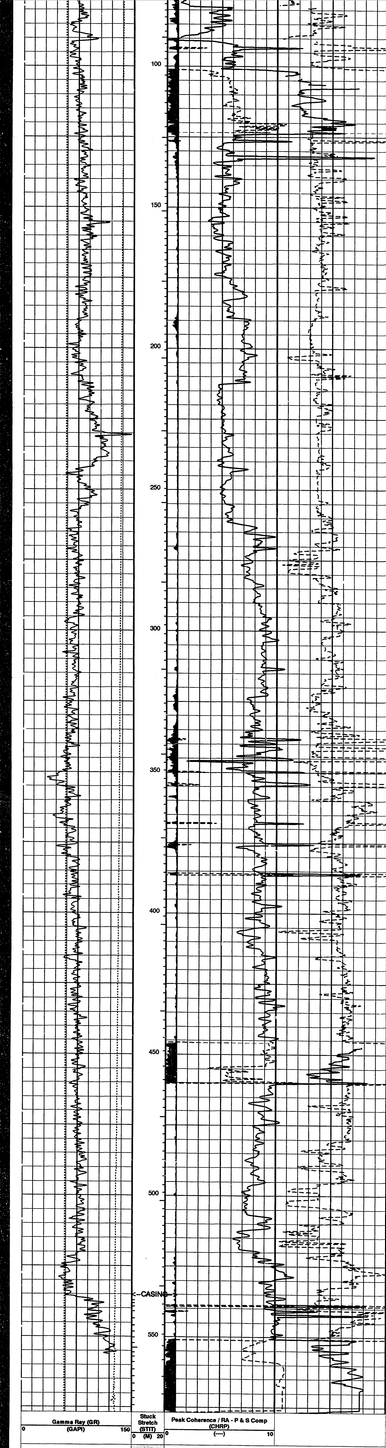
RUN 1 EQUIPMENT DESCRIPTION RUN 2

SURFACE EQUIPMENT

GRN-UN HTP
WRN GY-SP-2

DOWNHOLE EQUIPMENT

LEH-QT LEH-QT			22.53
DTCH DTCH-A	1038 1038	1038 1038	21.36 21.64
SSTH SSTH-A	2381 2381	2381 2381	20.73 20.64
SGC-SA SGC-SA	12166 12166	Gamma Ray	
DTA-A DTA-A	8312 8312		19.05
MCD-D MCD-D			17.83
DSST-B DSST-A	31 96		16.49 HD
DSST-C DSST-D	31 96		15.54
DSST-E DSST-F	31 96		
DSST-G DSST-H	31 96		
DSST-I DSST-J	31 96		
DSST-K DSST-L	31 96		
DSST-M DSST-N	31 96		
DSST-O DSST-P	31 96		
DSST-Q DSST-R	31 96		
DSST-S DSST-T	31 96		
DSST-U DSST-V	31 96		
DSST-W DSST-X	31 96		
DSST-Y DSST-Z	31 96		
DSST-AA DSST-AB	31 96		
DSST-AC DSST-AD	31 96		
DSST-AE DSST-AF	31 96		
DSST-AG DSST-AH	31 96		
DSST-AI DSST-AJ	31 96		
DSST-AK DSST-AL	31 96		
DSST-AM DSST-AN	31 96		
DSST-AO DSST-AP	31 96		
DSST-AQ DSST-AR	31 96		
DSST-AS DSST-AT	31 96		
DSST-AU DSST-AV	31 96		
DSST-AW DSST-AX	31 96		
DSST-AY DSST-AZ	31 96		
DSST-BA DSST-BB	31 96		
DSST-BC DSST-BD	31 96		
DSST-BE DSST-BF	31 96		
DSST-BG DSST-BH	31 96		
DSST-BI DSST-BJ	31 96		
DSST-BK DSST-BL	31 96		
DSST-BM DSST-BN	31 96		
DSST-BO DSST-BP	31 96		
DSST-BQ DSST-BR	31 96		
DSST-BS DSST-BT	31 96		
DSST-BU DSST-BV	31 96		
DSST-BW DSST-BX	31 96		
DSST-BY DSST-BZ	31 96		
DSST-CA DSST-CB	31 96		
DSST-CC DSST-CD	31 96		
DSST-CE DSST-CF	31 96		
DSST-CG DSST-CH	31 96		
DSST-CI DSST-CJ	31 96		
DSST-CK DSST-CL	31 96		
DSST-CM DSST-CN	31 96		
DSST-CO DSST-CP	31 96		
DSST-CQ DSST-CR	31 96		
DSST-CS DSST-CT	31 96		
DSST-CU DSST-CV	31 96		
DSST-CW DSST-CX	31 96		
DSST-CY DSST-CZ	31 96		
DSST-DA DSST-DB	31 96		
DSST-DC DSST-DD	31 96		
DSST-DE DSST-DF	31 96		
DSST-DG DSST-DH	31 96		
DSST-DI DSST-DJ	31 96		
DSST-DK DSST-DL	31 96		
DSST-DM DSST-DN	31 96		
DSST-DO DSST-DP	31 96		
DSST-DQ DSST-DR	31 96		
DSST-DS DSST-DT	31 96		
DSST-DU DSST-DV	31 96		
DSST-DW DSST-DX	31 96		
DSST-DY DSST-DZ	31 96		
DSST-EA DSST-EB	31 96		
DSST-EC DSST-ED	31 96		
DSST-EE DSST-EF	31 96		
DSST-EG DSST-EH	31 96		
DSST-EI DSST-EJ	31 96		
DSST-EK DSST-EL	31 96		
DSST-EM DSST-EN	31 96		
DSST-EO DSST-EP	31 96		
DSST-EQ DSST-ER	31 96		
DSST-ES DSST-ET	31 96		
DSST-EU DSST-EV	31 96		
DSST-EW DSST-EX	31 96		
DSST-EY DSST-EZ	31 96		
DSST-FA DSST-FB	31 96		
DSST-FC DSST-FD	31 96		
DSST-FE DSST-FF	31 96		
DSST-FG DSST-FH	31 96		
DSST-FI DSST-FJ	31 96		
DSST-FK DSST-FL	31 96		
DSST-FM DSST-FN	31 96		
DSST-FO DSST-FP	31 96		
DSST-FQ DSST-FR	31 96		
DSST-FS DSST-FT	31 96		
DSST-FU DSST-FV	31 96		
DSST-FW DSST-FX	31 96		
DSST-FY DSST-FZ	31 96		
DSST-GA DSST-GB	31 96		
DSST-GC DSST-GD	31 96		
DSST-GE DSST-GF	31 96		
DSST-GG DSST-GH	31 96		
DSST-GI DSST-GJ	31 96		
DSST-GK DSST-GL	31 96		
DSST-GM DSST-GN	31 96		
DSST-GO DSST-GP	31 96		
DSST-GQ DSST-GR	31 96		
DSST-GS DSST-GT	31 96		
DSST-GU DSST-GV	31 96		
DSST-GW DSST-GX	31 96		
DSST-GY DSST-GZ	31 96		
DSST-HA DSST-HB	31 96		
DSST-HC DSST-HD	31 96		
DSST-HE DSST-HF	31 96		
DSST-HG DSST-HH	31 96		
DSST-HI DSST-HJ	31 96		
DSST-HK DSST-HL	31 96		
DSST-HM DSST-HN	31 96		
DSST-HO DSST-HP	31 96		
DSST-HQ DSST-HR	31 96		
DSST-HS DSST-HT	31 96		
DSST-HU DSST-HV	31 96		
DSST-HW DSST-HX	31 96		
DSST-HY DSST-HZ	31 96		
DSST-IA DSST-IB	31 96		
DSST-IC DSST-ID	31 96		
DSST-IE DSST-IF	31 96		
DSST-IG DSST-IH	31 96		
DSST-II DSST-IJ	31 96		
DSST-IK DSST-IL	31 96		
DSST-IM DSST-IN	31 96		
DSST-IO DSST-IP	31 96		
DSST-IQ DSST-IR	31 96		
DSST-IS DSST-IT	31 96		
DSST-IU DSST-IV	31 96		
DSST-IW DSST-IX	31 96		
DSST-IY DSST-IZ	31 96		
DSST-JA DSST-JB	31 96		
DSST-JC DSST-JD	31 96		
DSST-JE DSST-JF	31 96		
DSST-JG DSST-JH	31 96		
DSST-JI DSST-JJ	31 96		
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DSST-JM DSST-JN	31 96		
DSST-JO DSST-JP	31 96		
DSST-JQ DSST-JR	31 96		
DSST-JS DSST-JT	31 96		
DSST-JU DSST-JV	31 96		
DSST-JW DSST-JX	31 96		
DSST-JY DSST-JZ	31 96		
DSST-KA DSST-KB	31 96		
DSST-KC DSST-KD	31 96		
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DSST-KG DSST-KH	31 96		
DSST-KI DSST-KJ	31 96		
DSST-KK DSST-KL	31 96		
DSST-KM DSST-KN	31 96		
DSST-KO DSST-KP	31 96		
DSST-KQ DSST-KR	31 96		
DSST-KS DSST-KT	31 96		
DSST-KU DSST-KV	31 96		
DSST-KW DSST-KX	31 96		
DSST-KY DSST-KZ	31 96		
DSST-LA DSST-LB	31 96		
DSST-LC DSST-LD	31 96		
DSST-LE DSST-LF	31 96		
DSST-LG DSST-LH	31 96		
DSST-LI DSST-LJ	31 96		
DSST-LK DSST-LL	31 96		
DSST-LM DSST-LN	31 96		
DSST-LO DSST-LP	31 96		
DSST-LQ DSST-LR	31 96		
DSST-LS DSST-LT	31 96		
DSST-LU DSST-LV	31 96		
DSST-LW DSST-LX	31 96		
DSST-LY DSST-LZ	31 96		
DSST-MA DSST-MB	31 96		
DSST-MC DSST-MD	31 96		
DSST-ME DSST-MF	31 96		
DSST-MG DSST-MH	31 96		
DSST-MI DSST-MJ	31 96		
DSST-MK DSST-ML	31 96		
DSST-MM DSST-MN	31 96		
DSST-MO DSST-MP	31 96		
DSST-MQ DSST-MR	31 96		
DSST-MS DSST-MT	31 96		
DSST-MU DSST-MV	31 96		
DSST-MW DSST-MX	31 96		
DSST-MY DSST-MZ	31 96		
DSST-NA DSST-NB	31 96		
DSST-NC DSST-ND	31 96		
DSST-NE DSST-NF	31 96		
DSST-NG DSST-NH	31 96		
DSST-NI DSST-NJ	31 96		
DSST-NK DSST-NL	31 96		
DSST-NM DSST-NN	31 96		
DSST-NO DSST-NP	31 96		
DSST-NQ DSST-NR	31 96		
DSST-NS DSST-NT	31 96		
DSST-NU DSST-NV	31 96		
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DSST-OE DSST-OF	31 96		
DSST-OG DSST-OH	31 96		
DSST-OI DSST-OJ	31 96		
DSST-OK DSST-OL	31 96		
DSST-OM DSST-ON	31 96		
DSST-OO DSST-OP	31 96		
DSST-OQ DSST-OR	31 96		
DSST-OS DSST-OT	31 96		
DSST-OU DSST-OV	31 96		
DSST-OW DSST-OX	31 96		
DSST-OY DSST-OZ	31 96		
DSST-PA DSST-PB	31 96		
DSST-PC DSST-PD	31 96		
DSST-PE DSST-PF	31 96		
DSST-PG DSST-PH	31 96		
DSST-PI DSST-PJ	31 96		
DSST-PK DSST-PL	31 96		
DSST-PM DSST-PN	31 96		
DSST-PO DSST-PP	31 96		
DSST-PQ DSST-PR	31 96		
DSST-PS DSST-PT	31 96		
DSST-PU DSST-PV	31 96		
DSST-PW DSST-PX	31 96		
DSST-PY DSST-PZ	31 96		
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DSST-QC DSST-QD	31 96		
DSST-QE DSST-QF	31 96		
DSST-QG DSST-QH	31 96		
DSST-QI DSST-QJ	31 96		
DSST-QK DSST-QL	31 96		
DSST-QM DSST-QN	31 96		
DSST-QO DSST-QP	31 96		
DSST-QQ DSST-QR	31 96		
DSST-QS DSST-QT	31 96		
DSST-QU DSST-QV	31 96		
DSST-QW DSST-QX	31 96		
DSST-QY DSST-QZ	31 96		
DSST-RA DSST-RB	31 96		
DSST-RC DSST-RD	31 96		
DSST-RE DSST-RF	31 96		
DSST-RG DSST-RH	31 96		
DSST-RI DSST-RJ	31 96		
DSST-RK DSST-RL	31 96		
DSST-RM DSST-RN	31 96		
DSST-RO DSST-RP	31 96		
DSST-RQ DSST-RR	31 96		
DSST-RS DSST-RT	31 96		
DSST-RU DSST-RV	31 96		
DSST-RW DSST-RX	31 96		
DSST-RY DSST-RZ	31 96		
DSST-SA DSST-SB	31 96		
DSST-SC DSST-SD	31 96		
DSST-SE DSST-SF	31 96		
DSST-SG DSST-SH	31 96		
DSST-SI DSST-SJ	31 96		
DSST-SK DSST-SL	31 96		
DSST-SM DSST-SN	31 96		
DSST-SO DSST-SP	31 96		
DSST-SQ DSST-SR	31 96		
DSST-SS DSST-ST	31 96		
DSST-SU DSST-SV	31 96		
DSST-SW DSST-SX	31 96		
DSST-SY DSST-SZ	31 96		
DSST-TA DSST-TB	31 96		
DSST-TC DSST-TD	31 96		
DSST-TE DSST-TF	31 96		
DSST-TG DSST-TH	31 96		
DSST-TI DSST-TJ	31 96		
DSST-TK DSST-TL	31 96		
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DSST-TO DSST-TP	31 96		
DSST-TQ DSST-TR	31 96		
DSST-TS DSST-TT	31 96		
DSST-TU DSST-TV	31 96		
DSST-TW DSST-TX	31 96		
DSST-TY DSST-TZ	31 96		
DSST-UA DSST-UB	31 96		
DSST-UC DSST-UD	31 96		
DSST-UE DSST-UF	31 96		
DSST-UG DSST-UH	31 96		
DSST-UI DSST-UJ	31 96		
DSST-UK DSST-UL	31 96		
DSST-UM DSST-UN	31 96		
DSST-UO DSST-UP	31 96		
DSST-UQ DSST-UR	31 96		
DSST-US DSST-UT	31 96		
DSST-UU DSST-UV	31 96		
DSST-UW DSST-UX	31 96		
DSST-UY DSST-UZ	31 96		
DSST-VA DSST-VB	31 96		
DSST-VC DSST-VD	31 96		
DSST-VE DSST-VF	31 96		
D



Parameters

DLIS Name	Description	Value
BHS	Bore Hole Status	CASED
BS	Bit Size	222.000 MM
CASF	Label Casing Function - Monopole P&S	1
CCUL	Label Slowness Lower Limit - Monopole P&S Compressional	100 US/M
CCUL	Label Slowness Upper Limit - Monopole P&S Compressional	700 US/M
DOFL	Depth Offset Repeat Analysis	0.0 M
FEC	Label Fifo Error Count	620.078 US/M
FEC	Label Fifo Gap Control - Monopole P&S	COMP_SHEAR
LBFR	Trigger for MAAM Fast Reading Label	FAST
LFC	Label Formation Character - Monopole P&S	DYNAMIC
MCG	Mean Casing Slowness	187.008 US/M
MFOC	Monopole Transmitter Geometry	4724 MM
RDMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.1
RDMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	1.12
RD1G	Receiver 1 Geometry	7668 MM
RD2G	Receiver 2 Geometry	7630 MM
RD4G	Receiver 3 Geometry	7772 MM
RD5G	Receiver 4 Geometry	8077 MM
RD6G	Receiver 5 Geometry	8077 MM
RD7G	Receiver 6 Geometry	8230 MM
RD8G	Receiver 7 Geometry	8382 MM
SAS4	STC Quality Analysis - Monopole P&S	8534 MM
SHLL	Label Slowness Lower Limit - Monopole P&S Shear	100 US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	700 US/M
STIT	STI Stuck Threshold	1.524 M
STLL	Label Slowness Lower Limit - Monopole Stoneley	390.551 US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	1558.00 US/M
TDD	Total Depth - Driller	1956.00 M
TDL	Total Depth - Logger	1960.00 M
TW4	STC Integration Time Window - Monopole P&S	500 US

Format: DSI_2 Vertical Scale: 1:600 Graphics File Created: 27-Feb-1999 05:38

OP System Version: 9C0-413

MCM

DSST-B	9C0-413	MCD-G	9C0-413
DTA-A	9C0-413	SGT-N	9C0-413
DTC-H	9C0-413		

Output DLIS Files

DEFAULT	DSSTB.022	FN:26	PRODUCER	27-Feb-1999 05:38	
CUST	DSSTB.022	FN:27	PRODUCER	27-Feb-1999 05:38	

Output DLIS Files

DEFAULT	DSSTB.022	FN:26	PRODUCER	27-Feb-1999 05:38	576.7 M 2.1 M
CUST	DSSTB.022	FN:27	PRODUCER	27-Feb-1999 05:38	576.7 M 2.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 1.98 M3

Cement Volume = 0.06 M3 (assuming 177.80 MM casing O.D.)

Computed from 576.7 M to 535.5 M using dt/ta channel(s) HD

OP System Version: 9C0-413

MCM

DSST-B	9C0-413	MCD-G	9C0-413
DTA-A	9C0-413	SGT-N	9C0-413
DTC-H	9C0-413		

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 0.1 M3

Integrated Hole Volume Major Pip Every 1 M3

Integrated Transit Time Minor Pip Every 1 MS

Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Tension (TENS) 25000 (#) | Tool/Tot. Drag From DIT to STIA 500 | Delta-T Shear - P & S (DT4S) (US/M) 500 100

Bit Size (BS) (MM) 125 375 | Cable Drag From STIA to STIT 500 | Delta-T Comp - P & S (DT4P) (US/M) 500 100

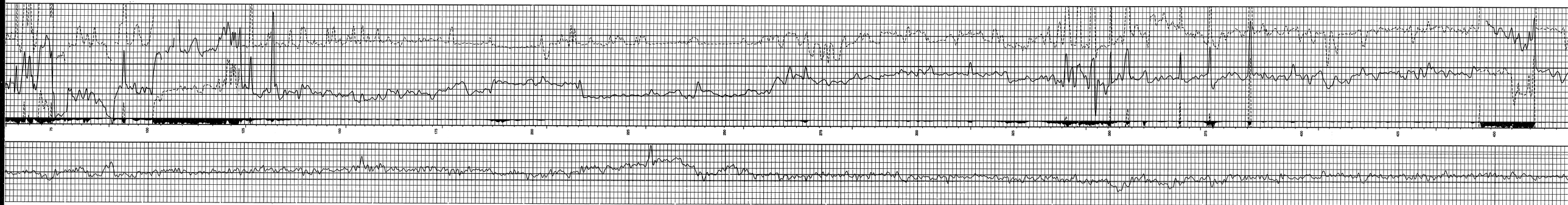
Gamma Ray (GR) (GAPI) 0 150 | Stuck Stretch (STIT) (IN) 0 20 | Peak Coherence / RA - P & S Comp (CHRP) (---) 0 10

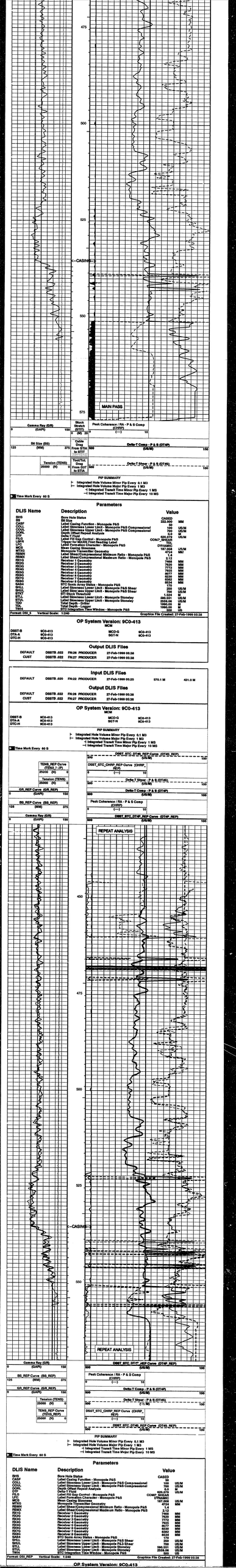
MAIN PASS

<-LAST READINGS->

25

50


75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450



Parameters

DLIS Name	Description	Value	
BHS	Bore Hole Status	CASED	
BS	Bit Size	222.000	MM
CHRF	Label Casing Function - Monopole P&S	50	
COLL	Label Slowness Limit - Monopole P&S Compressional	100	US/M
COUL	Label Slowness Upper Limit - Monopole P&S Compressional	700	US/M
DOFF	Depth Offset Repeat Analysis	0.0	M
DTP	Delta-T Plot	SHEAR	US/M
FILG	Label Fill Gap Control - Monopole P&S	COMP, SHEAR	
LFC	Label Formation Character - Monopole P&S	(OTHABBC	
MCG	Mean Casing Slowness	187.004	US/M
MTHG	Monopole Formation Geometry	FAST	MN
RBMX	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RBNX	Label Shear/Compressional Maximum Ratio - Monopole P&S	3.12	
RX10	Receiver 1 Geometry	7880	MM
RX6G	Receiver 6 Geometry	7920	MM
RX7G	Receiver 7 Geometry	7772	MM
RX8G	Receiver 8 Geometry	7925	MM
RX9G	Receiver 9 Geometry	8077	MM
RXAG	Receiver A Geometry	8229	MM
RXBG	Receiver B Geometry	8382	MM
RXCG	Receiver C Geometry	8534	MM
SHLL	Label Slowness Lower Limit - Monopole P&S Shear	200	US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	700	US/M
STNT	STC Stack Threshold	1.024	
STUL	Label Slowness Upper Limit - Monopole Stoneley	560.531	US/M
TDD	Total Depth - Driller	1996.00	M
TDL	Total Depth - Logger	1996.00	M
TWI4	STC Integration Time Window - Monopole P&S	500	US

Format: DBS_5 Vertical Scale: 1:240 Graphic File Created: 27-Feb-1999 00:38

OP System Version: 9C0-413

MCM

		MCD-G	9C0-413
		SGT-R	9C0-413
DBBT-B	9C0-413		
DTA-A	9C0-413		
DTC-H	9C0-412		

Output DLIS Files

DEFAULT	DBBTB .022	FN:26 PRODUCER	27-Feb-1999 00:38
CUST	DBBTB .022	FN:27 PRODUCER	27-Feb-1999 00:38

Input DLIS Files

DEFAULT	DBBTB .020	FN:22 PRODUCER	27-Feb-1999 00:25	570.1 M	431.0 M

Output DLIS Files

DEFAULT	DBBTB .022	FN:26 PRODUCER	27-Feb-1999 00:38
CUST	DBBTB .022	FN:27 PRODUCER	27-Feb-1999 00:38

OP System Version: 9C0-413

MCM

		MCD-G	9C0-413
		SGT-R	9C0-413
DBBT-B	9C0-413		
DTA-A	9C0-413		
DTC-H	9C0-412		

PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS
Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
BHS	Bore Hole Status	CASED	
BS	Bit Size	222.000	MM
CHRF	Label Casing Function - Monopole P&S	50	
COLL	Label Slowness Limit - Monopole P&S Compressional	100	US/M
COUL	Label Slowness Upper Limit - Monopole P&S Compressional	700	US/M
DOFF	Depth Offset Repeat Analysis	0.0	M
DTP	Delta-T Plot	SHEAR	US/M
FILG	Label Fill Gap Control - Monopole P&S	COMP, SHEAR	
LFC	Label Formation Character - Monopole P&S	(OTHABBC	
MCG	Mean Casing Slowness	187.004	US/M
MTHG	Monopole Formation Geometry	FAST	MN
RBMX	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RBNX	Label Shear/Compressional Maximum Ratio - Monopole P&S	3.12	
RX10	Receiver 1 Geometry	7880	MM
RX6G	Receiver 6 Geometry	7920	MM
RX7G	Receiver 7 Geometry	7772	MM
RX8G	Receiver 8 Geometry	7925	MM
RX9G	Receiver 9 Geometry	8077	MM
RXAG	Receiver A Geometry	8229	MM
RXBG	Receiver B Geometry	8382	MM
RXCG	Receiver C Geometry	8534	MM
SHLL	Label Slowness Lower Limit - Monopole P&S Shear	200	US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	700	US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	560.531	US/M
TDD	Total Depth - Driller	2508.28	M
TDL	Total Depth - Logger	2508.28	M
TWI4	STC Integration Time Window - Monopole P&S	500	US

Format: DBS_REP Vertical Scale: 1:240 Graphic File Created: 27-Feb-1999 00:38

OP System Version: 9C0-413

MCM

DSST-B	9C0-413	MCD-G	9C0-413	
DTA-A	9C0-413	SGT-N	9C0-413	
DTC-H	9C0-413			

Input DLIS Files

DEFAULT	DSSTB .020	FN:22	PRODUCER	27-Feb-1999 05:25	570.1 M	431.0 M

Output DLIS Files

DEFAULT	DSSTB .022	FN:26	PRODUCER	27-Feb-1999 05:38		
CUST	DSSTB .022	FN:27	PRODUCER	27-Feb-1999 05:38		

Output DLIS Files

DEFAULT	DSSTB .022	FN:26	PRODUCER	27-Feb-1999 05:38	576.7 M	2.1 M
CUST	DSSTB .022	FN:27	PRODUCER	27-Feb-1999 05:38	576.7 M	2.1 M

OP System Version: 9C0-413

MCM

DSST-B	9C0-413	MCD-G	9C0-413
DTA-A	9C0-413	SGT-N	9C0-413
DTC-H	9C0-413		

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS) 25000 (N) 0

Delta-T Shear - P & S (DTxS) 800 (US/M) 100

Bit Size (BS) 125 (MM) 375

ToolTek Drag From DLY to STIA 0

Delta-T Comp - P & S (DTxP) 600 (US/M) 100

Min Amplitude Max
Rec.Array P&S Slow Proj. CVOL (SPRN) 100 600

Gamma Ray (GR) (CLAM) 0 150

Cable Drag From STIA to STIT -1 (---) 9

Delta-T Shear / RA - P & S (DTRS) 100 (US/M) 600

Poisson's Ratio (PR) 0 (---) 0.5

Stuck Stretch (STIT) 0 (IN) 20.0

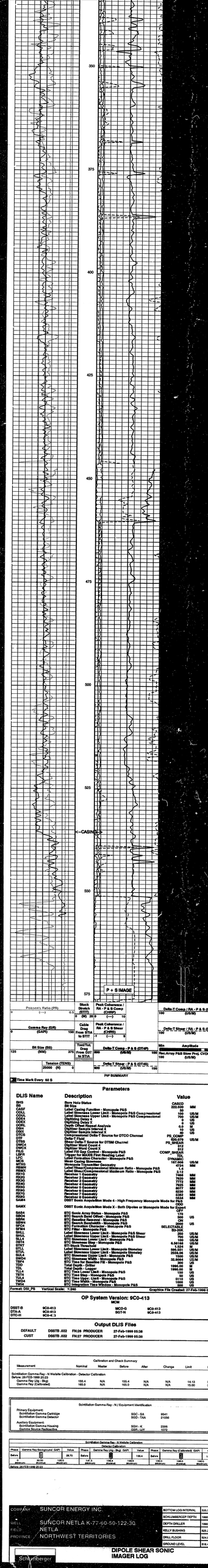
Peak Coherence / RA - P & S Comp (CHRP) 0 (---) 10

Delta-T Comp / RA - P & S (DTRP) 100 (US/M) 600

P + S IMAGE

<--LAST READINGS-->

25
50
75
100
125
150
175
200
225
250
275
300
325



Poisson's Ratio (PR)	Stuck Stretch (STIT)	Peak Coherence / RA - P & S Comp (CHRP)	Delta-T Comp / RA - P & S (DTRP)
0 (---) 0.5	0 (in) 20	0 (---) 10	100 (US/M) 600
Gamma Ray (GR)	**Cable Drag**	**Peak Coherence / RA - P & S Shear (CHRS)**	**Delta-T Shear / RA - P & S (DTRS)**
0 (GAPI) 150	from STIA to STIT	-1 (---) 9	100 (US/M) 600
Bit Size (BS)	**Tool/Tot. Drag**	**Delta-T Comp - P & S (DTCP)**	**Min Amplitude Max**
125 (MM) 375	from TOA to STA	600 (US/M) 100	Rec.Array P&S Slow Proc CVDL (SPRH) 100 (US/M) 600
Tension (TENS)		**Delta-T Shear - P & S (DTCS)**	
25000 (N) 0		600 (US/M) 100	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
BHS	Bore Hole Status	CASED	
BS	Bit Size	222.000	MM
CASI	Label Casing Function - Monopole P&S	90	
CASU	Label Sliowness Upper Limit - Monopole P&S Compressional	530	US/M
CASU	Label Sliowness Upper Limit - Monopole P&S Compressional	700	US/M
DDE1	Digitizing Delay 1	0	US
DDE2	Digitizing Delay 2	0	US
DDPL	Depth Offset Repeat Analysis	0.0	M
DDPU	Depth Offset Up Analysis	0.0	M
DSIC	Digitizer Sample Interval 2	40	US
DTCS	Compressional Delta-T Source for DTCO Channel	PS_COMP	
DTIM	Delta-T Lag	520.079	US/M
DTSS	Shear Delta-T Source for DTSM Channel	PS_SHEAR	
DWCC	Digitizer Word Count 0	512	
DWCW	Digitizer Word Count 2	512	
FSLC	Label Fill Gap Control - Monopole P&S	COMP_SHEAR	
LIC	Label Fluid Slowness Upper Limit	700.000	US/M
LIC	Label Formation Character - Monopole P&S	DTMAS	
MCS	Mean Casing Slowness	187.008	US/M
NTHG	Monopole Transmitter Geometry	4724	MM
RSMC	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	3.1	
RX1G	Receiver 1 Geometry	7402	MM
RX2G	Receiver 2 Geometry	7630	MM
RX3G	Receiver 3 Geometry	7772	MM
RX4G	Receiver 4 Geometry	7927	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8230	MM
RX7G	Receiver 7 Geometry	8382	MM
SAMA	DSST Sonic Acquisition Mode	PEX	
SAMX	DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Export	OMX	
SAS4	STC Sonic Array Status - Monopole P&S	0110	
SBO4	STC Search Beat Offset - Monopole P&S	500	US
SBR4	STC Baseline Removal - Monopole P&S	ON	
SBW4	STC Search Beat Width - Monopole P&S	1000	US
SFC4	STC Formation Character - Monopole P&S	SELECTABLE	
SFM4	STC Filter - Monopole P&S	B3-30K	
SHLL	Label Sliowness Lower Limit - Monopole P&S Shear	200	US/M
SHLU	Label Sliowness Upper Limit - Monopole P&S Shear	700	US/M
SLL4	STC Sliowness Lower Limit - Monopole P&S	200	US/M
SLU4	STC Sliowness Step - Monopole P&S	4.04194	US/M
STH7	STI Stack Threshold	0.024	M
STLL	STI Sliowness Lower Limit - Monopole Stoneley	200.191	US/M
STUL	STI Sliowness Upper Limit - Monopole Stoneley	3500.00	US/M
SUL4	STC Sliowness Upper Limit - Monopole P&S	530.000	US/M
SWD4	STC Sliowness Width - Monopole P&S	33.6064	US/M
TBF4	STC Time for Baseline Fill - Monopole P&S	200	US
TDL	Total Depth - Logger	1990.00	M
TDL	Total Depth - Logger	1990.00	M
TLL4	STC Time Lower Limit - Monopole P&S	150	US
TSL4	STC Time Step - Monopole P&S	50	US
TUL4	STC Time Upper Limit - Monopole P&S	5110	US
TWD4	STC Time Width - Monopole P&S	4960	US
TWI4	STC Integration Time Window - Monopole P&S	500	US

Format: DSI_PS Vertical Scale: 1:240 Graphics File Created: 27-Feb-1999 05:38

OP System Version: 9C0-613

		MCM	
DSST-B	9C0-613	MCD-G	9C0-613
DTA-A	9C0-613	SGT-N	9C0-613
DTC-H	9C0-613		

Output DLIS Files

DEFAULT	DSSTB .032	FN:26 PRODUCER	27-Feb-1999 05:38
CUST	DSSTB .032	FN:27 PRODUCER	27-Feb-1999 05:38

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Scintillation Gamma Ray - N Wellsite Calibration - Detector Calibration							
Before: 26-FEB-1999 20:23							
Gamma Ray (Ag - Bkg)	155.4	N/A	155.4	N/A	N/A	14.13	GAPI
Gamma Ray (Calibrated)	185.0	N/A	185.0	N/A	N/A	13.00	GAPI

Scintillation Gamma Ray - N / Equipment Identification

Detector Calibration

Primary Equipment		
Scintillation Gamma Cartridge	SGC - SA	8541
Scintillation Gamma Detector	SGD - TAA	21056
Auxiliary Equipment		
Scintillation Gamma Housing	SGH - K	2395
Gamma Source Radioactive	GSR - UV	1072

Scintillation Gamma Ray - N Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background (GAPI)	Value	Phase	Gamma Ray (Ag - Bkg) (GAPI)	Value	Phase	Gamma Ray (Calibrated) (GAPI)	Value
Before		20.70	Before		155.4	Before		185.0
	30.00 (Minimum)	1200 (Maximum)		1.00 (Minimum)	1999 (Maximum)		1.00 (Minimum)	1999 (Maximum)

Before: 26-FEB-1999 20:23

COMPANY	SUNCOR ENERGY INC.
WELL	SUNCOR NETLA K-77-60-50-122-3Q
FIELD	NETLA
PROVINCE	NORTHWEST TERRITORIES

BOTTOM LOG INTERVAL	535.5 m
SCHLUMBERGER DEPTH	1990 m
DEPTH DRILLER	1990 m
KELLY BUSHING	525.2 m
DRILL FLOOR	524.8 m
GROUND LEVEL	518.4 m

Schlumberger

DIPOLE SHEAR SONIC IMAGER LOG

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

N.E.B. COPY

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

Schlumberger

MECHANICAL SIDEWALL CORING TOOL

60 deg-46', 122 deg-30' (SUR LOCATION) | Elev.: K.B. 627.29 M, G.L. 618.4 M, D.F. 624.9 M

300ZK-77-60-50-122.3000 (LIN)

Permanent Datum: GROUND LEVEL | Elev.: 618.4 M

Log Measured From: KELLY BUSHING | 6.8 M above Perm. Datum

Drilling Measured From: KELLY BUSHING

API Serial No. N/A	SECTION	TOWNSHIP	RANGE

	Run 1	Run 2	Run 3	Run 4
Logging Date	10-MAR-1999			
Run Number	2			
Depth Driller	2118 M			
Schlumberger Depth	2117 M			
Bottom Log Interval	2066.5 M			
Top Log Interval	1967.5 M			
Casing Driller Size @ Depth	177.800 MM @	1969 M	@	@
Casing Schlumberger	1968 M			
Bit Size	156.000 MM			
Type Fluid In Hole	POTASSIUM SULPHATE			
MUD Density / Viscosity	1045 K/M3 / 53 S			
Fluid Loss / PH	8 C3 / 9.6			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.660 OHMM @ 22 DEGC	@	@	@
RMF @ Measured Temperature	3.580 OHMM @ 22 DEGC	@	@	@
RMC @ Measured Temperature	3.500 OHMM @ 21 DEGC	@	@	@
Source: RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	1.870 @ 66 / 1.031 @ 66	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	66 DEGC			
Circulation Stopped Time	10-MAR-1999 17:30			
Logger On Bottom Time	10-MAR-1999 20:30			
Unit Number / Location	3010 / 6840			
Recorded By	T.BEATTIE			
Witnessed By	BRIAN HESTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@		@	
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
MUD Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF / RMC				
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped Time				
Logger On Bottom Time				
Unit Number / Location				
Recorded By				
Witnessed By				

OTHER SERVICES
OS1: DSN
OS2: SGC
OS3: SDL
OS4: AIT
RECORDED RUN NUMBERS

OTHER EQUIPMENT
OE1: DIGITAL DENSITY/MFI
OE2: ARAY INDUCTION
OE3: AIT
OE4: MICT, CCL
OE5: MSCT, CCL

CORE RECOVERY
RUN 1 @ 1918 - CUT 1ST CORE @ 1918
RUN 1 @ 1918 - 2ND RUN @ 1918
RUN 1 @ 1918 - 3RD RUN @ 1918
RUN 1 @ 1918 - 4TH RUN @ 1918
RUN 1 @ 1918 - 5TH RUN @ 1918
RUN 1 @ 1918 - 6TH RUN @ 1918
RUN 1 @ 1918 - 7TH RUN @ 1918
RUN 1 @ 1918 - 8TH RUN @ 1918
RUN 1 @ 1918 - 9TH RUN @ 1918
RUN 1 @ 1918 - 10TH RUN @ 1918
RUN 1 @ 1918 - 11TH RUN @ 1918
RUN 1 @ 1918 - 12TH RUN @ 1918
RUN 1 @ 1918 - 13TH RUN @ 1918
RUN 1 @ 1918 - 14TH RUN @ 1918
RUN 1 @ 1918 - 15TH RUN @ 1918
RUN 1 @ 1918 - 16TH RUN @ 1918
RUN 1 @ 1918 - 17TH RUN @ 1918
RUN 1 @ 1918 - 18TH RUN @ 1918
RUN 1 @ 1918 - 19TH RUN @ 1918
RUN 1 @ 1918 - 20TH RUN @ 1918
RUN 1 @ 1918 - 21ST RUN @ 1918
RUN 1 @ 1918 - 22ND RUN @ 1918
RUN 1 @ 1918 - 23RD RUN @ 1918
RUN 1 @ 1918 - 24TH RUN @ 1918

PRINTS 2 FEET / 5 INS
RIG: IRON 235
RECORDED BY: BRIAN SCHLUMBERGER

SERVICE ORDER #	RUN #	STRING	RUN 2
PROGRAM VERSION:			
LOGGED INTERVAL	START	STOP	

EQUIPMENT DESCRIPTION — RUN 2

RUN 1
SURFACE EQUIPMENT
GR/SP

DOWNHOLE EQUIPMENT

MCCH-AA 29
MCCC-AA 594
MCGR-AA 62
MCAA-AA 62

SCHLE 3.245
SCHLC 4.105
SGCC-TC

MSCT-AA
MCCC-AA 29
MCGR-AA 62
SFTA-AA 30.5
MCCL-AA 25

Gamma Ray
Tension MSCT
TOOL ZERO
TOOL BOTTOM

10.34
4.29
8.61

MAXIMUM STRING DIAMETER: 156 MM
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METRES

ALL INTERPRETATION ARE, & WHICH ARE MADE ON, INFERENCES FROM, ELECTRICAL OR OTHER MEASUREMENTS MADE BY SCHLUMBERGER, AND SCHLUMBERGER WILL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON ITS PART, BE RESPONSIBLE FOR THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

MSCT CORE REPORT

Core	Depth	Time Bottom Begin	Descent Number	Formation Type	Formation	Recovery	Remark
1	1804.2 (M)	22:31:08	1	LIMESTONE	SLAVE POINT	Recovered Core	Available
2	1804.5 (M)	22:32:08	1	LIMESTONE	SLAVE POINT	Recovered Core	Available
3	2054.5 (M)	22:38:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
4	2055.0 (M)	22:39:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
5	2055.5 (M)	22:40:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
6	2054.5 (M)	23:01:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
7	2054.0 (M)	23:02:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
8	2053.5 (M)	23:03:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
9	2053.0 (M)	23:04:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
10	2052.5 (M)	23:05:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
11	2052.0 (M)	23:06:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
12	2051.5 (M)	23:07:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
13	2051.0 (M)	23:08:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
14	2050.5 (M)	23:09:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
15	2050.0 (M)	23:10:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
16	2049.5 (M)	23:11:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
17	2049.0 (M)	23:12:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
18	2048.5 (M)	23:13:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
19	2048.0 (M)	23:14:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
20	2047.5 (M)	23:15:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
21	2047.0 (M)	23:16:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
22	2046.5 (M)	23:17:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
23	2046.0 (M)	23:18:08	1	LIMESTONE	SLAVE POINT	Recovered Core	
24	1997.5 (M)	00:27:02	1	LIMESTONE	SLAVE POINT	Recovered Core	

Output DLIS Files

DEFAULT	MSCT .DFI	FRAT	FIELD	11-MAR-1999 00:58	1997.5 M	1997.5 M

Event Summary

Elapsed Time (H)		
222.0	Coring Stopped	
46.0	Coring Started	
46.0	Mainlog Pass	
80.5	Core 24 at 1997.5(M)	

PIP SUMMARY

The Main Event: 85 ft

Hydraulic Motor Downhole Voltage (VOLTS)		
0	500	1000

Coring Motor Downhole Voltage (VOLTS)		
0	500	1000

Hydraulic Motor Voltage (VOLTS)		
0	500	1000

Main Voltage Monitor From Surface (VOLTS)

Coring Motor Current (AMPS)		
0	15	30

Khaesstite Pressure (PSIG)		
0	2500	5000

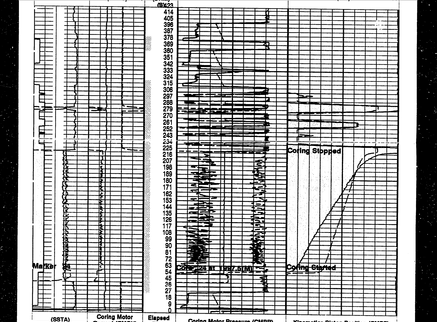
Hydraulic Pump Pressure (PSIG)		
0	2500	5000

Unit Pressure From DT - Sonic (PSIG)		
0	2500	5000

Coring Motor Linear Position (CMLP)		
0	50	100

Khaesstite Piston Position (CMPP)		
0	50	100

Elapsed Time (HRS)		
0	12	24



PIP SUMMARY

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 11-MAR-1999 00:55

OP System Version: 7C0-713

MSM

Output DLIS Files

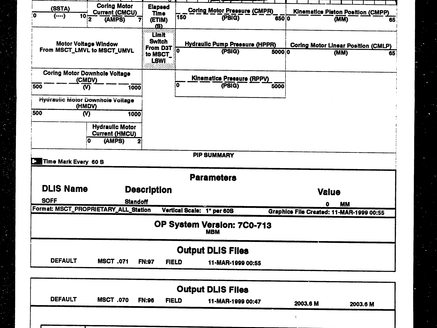
DEFAULT	MSCT .071	FN:97	FIELD	11-MAR-1999 00:55		

Output DLIS Files

DEFAULT	MSCT .070	FN:96	FIELD	11-MAR-1999 00:47	2003.6 M	2003.6 M

Elapsed Time (s)	Event Summary
233.6	Coring Stopped
62.0	Coring Started
48.8	Marker 23
48.8	Core 23 at 2003.6(M)

PIP SUMMARY



PIP SUMMARY

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 11-MAR-1999 00:47

OP System Version: 7C0-713

MSM

Output DLIS Files

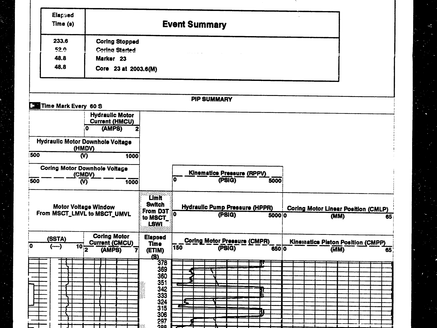
DEFAULT	MSCT .070	FN:96	FIELD	11-MAR-1999 00:47		

Output DLIS Files

DEFAULT	MSCT .069	FN:95	FIELD	11-MAR-1999 00:40	2010.5 M	2010.5 M

Elapsed Time (s)	Event Summary
224.8	Coring Stopped
64.4	Coring Started
58.8	Marker 22
58.8	Core 22 at 2010.5(M)

PIP SUMMARY



PIP SUMMARY

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 11-MAR-1999 00:40

OP System Version: 7C0-713

MSM

Output DLIS Files

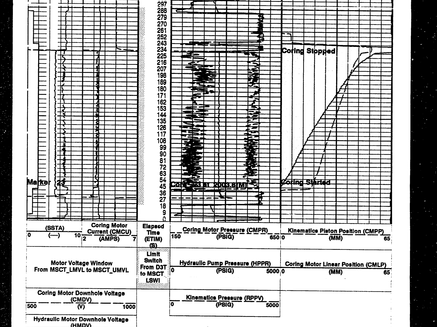
DEFAULT	MSCT .069	FN:95	FIELD	11-MAR-1999 00:40		

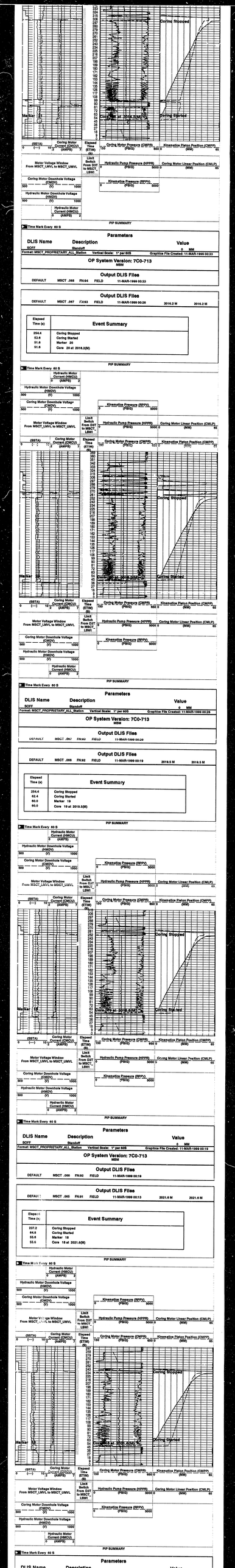
Output DLIS Files

DEFAULT	MSCT .068	FN:94	FIELD	11-MAR-1999 00:33	2014.5 M	2014.5 M

Elapsed Time (s)	Event Summary
302.4	Coring Stopped
62.0	Coring Started
57.2	Marker 21
57.2	Core 21 at 2014.5(M)

PIP SUMMARY




Coring Stopped
Coring Started
Core 19 at 2016.2(M)
Marker 18
(SSTA)
Coring Motor Current (CMCU) (AMPS)
Elapsed Time (ETIM) (S)
Coring Motor Pressure (CMPR) (PSIG)
Kinematics Piston Position (CMPP) (MM)
Limit Switch From DJT to MSCT_LSWI
Hydraulic Pump Pressure (HPPR) (PSIG)
Coring Motor Linear Position (CMLP) (MM)
Coring Motor Downhole Voltage (CMDV) (V)
Kinematics Pressure (RPPV) (PSIG)
Hydraulic Motor Downhole Voltage (HMDV) (V)
Hydraulic Motor Current (HMCU) (AMPS)
Motor Voltage Window From MSCT_LMVL to MSCT_LMVL
PIP SUMMARY
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
SOFT
Standoff
0 MM
Format: MSCT_PROPRIETARY_ALL_Station
Vertical Scale: 1" per 60S
Graphics File Created: 11-MAR-1999 00:33
OP System Version: 7C0-713
MBM
Output DLIS Files
DEFAULT
MSCT .066
FN:94
FIELD
11-MAR-1999 00:33
Output DLIS Files
DEFAULT
MSCT .067
FN:93
FIELD
11-MAR-1999 00:26
2016.2 M
2016.2 M
Elapsed Time (s)
Event Summary
204.4
Coring Stopped
62.4
Coring Started
60.0
Marker 20
60.0
Core 20 at 2016.2(M)
Format: MSCT_PROPRIETARY_ALL_Station
Vertical Scale: 1" per 60S
Graphics File Created: 11-MAR-1999 00:26
OP System Version: 7C0-713
MBM
Output DLIS Files
DEFAULT
MSCT .066
FN:92
FIELD
11-MAR-1999 00:19
2018.5 M
2018.5 M
Elapsed Time (s)
Event Summary
204.4
Coring Stopped
62.4
Coring Started
60.0
Marker 19
60.0
Core 19 at 2018.5(M)
Format: MSCT_PROPRIETARY_ALL_Station
Vertical Scale: 1" per 60S
Graphics File Created: 11-MAR-1999 00:19
OP System Version: 7C0-713
MBM
Output DLIS Files
DEFAULT
MSCT .066
FN:92
FIELD
11-MAR-1999 00:19
Output DLIS Files
DEFAULT
MSCT .065
FN:91
FIELD
11-MAR-1999 00:13
2021.6 M
2021.6 M
Elapsed Time (s)
Event Summary
237.2
Coring Stopped
64.8
Coring Started
55.8
Marker 18
55.0
Core 18 at 2021.6(M)
Format: MSCT_PROPRIETARY_ALL_Station
Vertical Scale: 1" per 60S
Graphics File Created: 11-MAR-1999 00:13

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 11-MAR-1999 00:13

OP System Version: 7C0-713
MSM

Output DLIS Files

DEFAULT	MSCT .060	FN:91	FIELD	11-MAR-1999 00:13

Output DLIS Files

DEFAULT	MSCT .064	FN:90	FIELD	11-MAR-1999 00:07	2023.2 M	2023.2 M

Event Summary

Elapsed Time (s)	
215.2	Coring Stopped
50.4	Coring Started
48.4	Marker 17
48.4	Core 17 at 2023.2(M)

PIP SUMMARY

Time Mark Every 60 S

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Limit Switch From DST to MSCT, LSW1 (S)

Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Hydraulic Pump Pressure (HPPP) 0 (PSIG) 5000.0

Coring Motor Linear Position (CMLP) 65 (MM)

(SSTA) 0 (---) 10

Coring Motor Current (CMCU) 0 (AMPS) 7

Elapsed Time (ETIM) (S)

Coring Motor Pressure (CMPP) 100 (PSIG) 600.0

Kinematics Piston Position (CMPP) 65 (MM)

Coring Stopped

Marker

Coring Started

Core 17 at 2023.2(M)

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 11-MAR-1999 00:07

OP System Version: 7C0-713
MSM

Output DLIS Files

DEFAULT	MSCT .064	FN:90	FIELD	11-MAR-1999 00:07

Output DLIS Files

DEFAULT	MSCT .063	FN:89	FIELD	11-MAR-1999 00:00	2026.3 M	2026.2 M

Event Summary

Elapsed Time (s)	
265.6	Coring Stopped
66.0	Coring Started
64.0	Marker 16
64.0	Core 16 at 2026.2(M)

PIP SUMMARY

Time Mark Every 60 S

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Limit Switch From DST to MSCT, LSW1 (S)

Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Hydraulic Pump Pressure (HPPP) 0 (PSIG) 5000.0

Coring Motor Linear Position (CMLP) 65 (MM)

(SSTA) 0 (---) 10

Coring Motor Current (CMCU) 0 (AMPS) 7

Elapsed Time (ETIM) (S)

Coring Motor Pressure (CMPP) 100 (PSIG) 600.0

Kinematics Piston Position (CMPP) 65 (MM)

Coring Stopped

Marker

Coring Started

Core 16 at 2026.2(M)

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 11-MAR-1999 00:00

OP System Version: 7C0-713
MSM

Output DLIS Files

DEFAULT	MSCT .063	FN:89	FIELD	11-MAR-1999 00:00

Output DLIS Files

DEFAULT	MSCT .062	FN:88	FIELD	10-MAR-1999 23:53	2028.6 M	2028.6 M

Event Summary

Elapsed Time (s)	
236.0	Coring Stopped
71.6	Coring Started
69.6	Marker 15
69.6	Core 15 at 2028.6(M)

PIP SUMMARY

Time Mark Every 60 S

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Limit Switch From DST to MSCT, LSW1 (S)

Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Hydraulic Pump Pressure (HPPP) 0 (PSIG) 5000.0

Coring Motor Linear Position (CMLP) 65 (MM)

(SSTA) 0 (---) 10

Coring Motor Current (CMCU) 0 (AMPS) 7

Elapsed Time (ETIM) (S)

Coring Motor Pressure (CMPP) 100 (PSIG) 600.0

Kinematics Piston Position (CMPP) 65 (MM)

Coring Stopped

Marker

Coring Started

Core 15 at 2028.6(M)

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 23:53

OP System Version: 7C0-713
MSM

Output DLIS Files

DEFAULT	MSCT .062	FN:88	FIELD	10-MAR-1999 23:53

Output DLIS Files

DEFAULT	MSCT .061	FN:87	FIELD	10-MAR-1999 23:47	2030.5 M	2030.5 M

Event Summary

Elapsed Time (s)	
238.4	Coring Stopped
74.8	Coring Started
72.4	Marker 14
72.4	Core 14 at 2030.5(M)

PIP SUMMARY

Time Mark Every 60 S

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Limit Switch From DST to MSCT, LSW1 (S)

Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Hydraulic Pump Pressure (HPPP) 0 (PSIG) 5000.0

Coring Motor Linear Position (CMLP) 65 (MM)

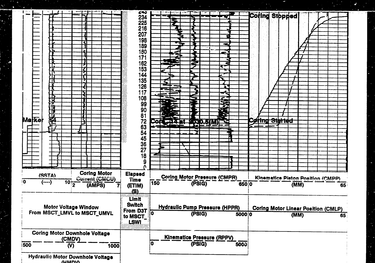
(SSTA) 0 (---) 10

Coring Motor Current (CMCU) 0 (AMPS) 7

Elapsed Time (ETIM) (S)

Coring Motor Pressure (CMPP) 100 (PSIG) 600.0

Kinematics Piston Position (CMPP) 65 (MM)



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFT	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 22:47

OP System Version: 7C0-713

MSM

Output DLIS Files

DEFAULT	MSCT .061	FN:87	FIELD	10-MAR-1999 22:47		

Output DLIS Files

DEFAULT	MSCT .060	FN:86	FIELD	10-MAR-1999 22:40	2032.0 M	2032.0 M

Elapsed Time (s)	Event Summary
225.2	Coring Stopped
52.4	Coring Started
59.4	Marker 13
60.4	Core 13 at 2032.0(M)

PIP SUMMARY

Time Mark Every 60 S

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFT	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 23:40

OP System Version: 7C0-713

MSM

Output DLIS Files

DEFAULT	MSCT .060	FN:86	FIELD	10-MAR-1999 22:40		

Output DLIS Files

DEFAULT	MSCT .059	FN:85	FIELD	10-MAR-1999 23:33	2034.5 M	2034.5 M

Elapsed Time (s)	Event Summary
282.4	Coring Stopped
63.6	Coring Started
61.6	Marker 12
61.6	Core 12 at 2034.5(M)

PIP SUMMARY

Time Mark Every 60 S

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFT	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 23:33

OP System Version: 7C0-713

MSM

Output DLIS Files

DEFAULT	MSCT .059	FN:85	FIELD	10-MAR-1999 23:33		

Output DLIS Files

DEFAULT	MSCT .058	FN:84	FIELD	10-MAR-1999 23:27	2036.6 M	2036.6 M

Elapsed Time (s)	Event Summary
231.2	Coring Stopped
51.0	Coring Started
49.2	Marker 11
49.2	Core 11 at 2036.6(M)

PIP SUMMARY

Time Mark Every 60 S

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFT	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 23:27

OP System Version: 7C0-713

MSM

Output DLIS Files

DEFAULT	MSCT .058	FN:84	FIELD	10-MAR-1999 23:27		

Output DLIS Files

DEFAULT	MSCT .057	FN:83	FIELD	10-MAR-1999 23:21	2038.0 M	2038.0 M

Elapsed Time (s)	Event Summary
230.8	Coring Stopped
52.4	Coring Started
50.0	Marker 10
50.0	Core 10 at 2039.0(M)

PIP SUMMARY

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 23:21

OP System Version: 7C0-713

MSM

Output DLIS Files

DEFAULT	MSCT .057	FN:83	FIELD	10-MAR-1999 23:01		

Output DLIS Files

DEFAULT	MSCT .056	FN:82	FIELD	10-MAR-1999 23:15	2041.5 M	2041.5 M

Elapsed Time (s)	Event Summary
258.8	Coring Stopped
76.4	Coring Started
76.4	Marker 9
76.4	Core 9 at 2041.5(M)

PIP SUMMARY

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 22:15

OP System Version: 7C0-713

MSM

Output DLIS Files

DEFAULT	MSCT .056	FN:82	FIELD	10-MAR-1999 22:15		

Output DLIS Files

DEFAULT	MSCT .055	FN:81	FIELD	10-MAR-1999 22:07	2043.5 M	2043.5 M

Elapsed Time (s)	Event Summary
259.2	Coring Stopped
70.8	Coring Started
64.8	Marker 8
64.8	Core 8 at 2043.5(M)

PIP SUMMARY

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station Vertical Scale: 1" per 60ft Graphics File Created: 10-MAR-1999 23:07

OP System Version: 7C0-713

MSM

Output DLIS Files

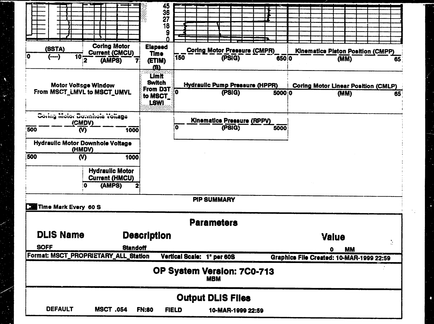
DEFAULT	MSCT .055	FN:81	FIELD	10-MAR-1999 22:07		

Output DLIS Files

DEFAULT	MSCT .054	FN:80	FIELD	10-MAR-1999 22:09	2046.7 M	2046.7 M

Elapsed Time (s)	Event Summary
270.8	Coring Stopped
73.2	Coring Started
67.2	Marker 7
67.2	Core 7 at 2046.7(M)

PIP SUMMARY



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station — Vertical Scale: 1" per 60S — Graphics File Created: 10-MAR-1999 22:59

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT	MSCT .054	FN:80	FIELD	10-MAR-1999 22:59	

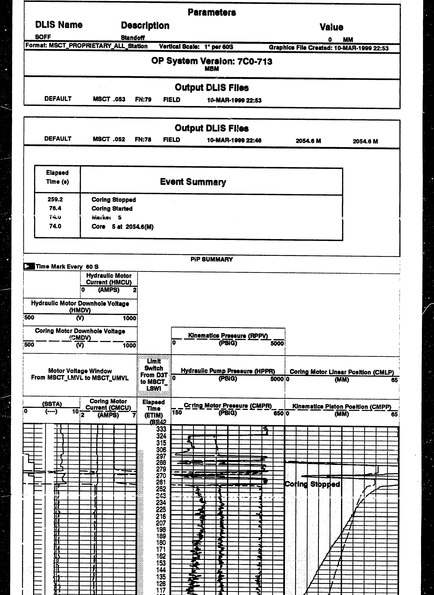
Output DLIS Files

DEFAULT	MSCT .053	FN:79	FIELD	10-MAR-1999 22:53	2050.5 M	2050.5 M

Elapsed Time (s)	Event Summary
221.6	Coring Stopped
63.6	Coring Started
61.6	Marker 6
61.6	Core 6 at 2050.5(M)

PIP SUMMARY

Time Mark Every 60 S



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station — Vertical Scale: 1" per 60S — Graphics File Created: 10-MAR-1999 22:53

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT	MSCT .053	FN:79	FIELD	10-MAR-1999 22:53	

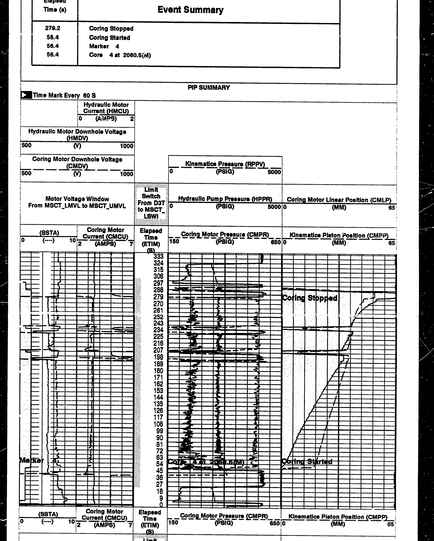
Output DLIS Files

DEFAULT	MSCT .052	FN:78	FIELD	10-MAR-1999 22:46	2054.6 M	2054.6 M

Elapsed Time (s)	Event Summary
259.2	Coring Stopped
76.4	Coring Started
74.0	Marker 5
74.0	Core 5 at 2054.6(M)

PIP SUMMARY

Time Mark Every 60 S



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRIETARY_ALL_Station — Vertical Scale: 1" per 60S — Graphics File Created: 10-MAR-1999 22:46

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT	MSCT .052	FN:78	FIELD	10-MAR-1999 22:46	

Output DLIS Files

DEFAULT	MSCT .051	FN:77	FIELD	10-MAR-1999 22:37	2060.5 M	2060.5 M

Elapsed Time (s)	Event Summary
279.2	Coring Stopped
58.4	Coring Started
58.4	Marker 4
58.4	Core 4 at 2060.5(M)

PIP SUMMARY

Time Mark Every 60 S

Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Limit Switch From DST to MSCT_LSWI

Hydraulic Pump Pressure (HPPR) 0 (PSIG) 5000

Coring Motor Linear Position (CMLP) 0 (MM) 65

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRETARY_ALL_Station | Vertical Scale: 1" per 60ft | Graphics File Created: 10-MAR-1999 22:37

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT	MSCT .051	FN:77	FIELD	10-MAR-1999 22:37	

Output DLIS Files

DEFAULT	MSCT .050	FN:76	FIELD	10-MAR-1999 22:29	2064.5 M	2064.5 M

Elapsed Time (s)	Event Summary
266.8	Coring Stopped
86.0	Coring Started
84.0	Marker 3
84.0	Core 3 at 2064.5(M)

PIP SUMMARY

Time Mark Every 60 S

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Limit Switch From DST to MSCT_LSWI

Hydraulic Pump Pressure (HPPR) 0 (PSIG) 5000

Coring Motor Linear Position (CMLP) 0 (MM) 65

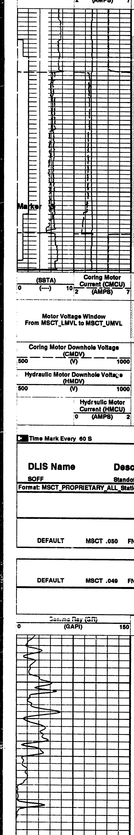
(BSTA) 0 (---) 10

Coring Motor Current (CMCU) 2 (AMPS) 7

Elapsed Time (ETIM) (S)

Coring Motor Pressure (CMPR) 150 (PSIG) 850

Kinematics Piston Position (CMPP) 0 (MM) 65



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRETARY_ALL_Station | Vertical Scale: 1" per 60ft | Graphics File Created: 10-MAR-1999 22:29

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT	MSCT .049	FN:75	FIELD	10-MAR-1999 22:22	2030.4 M	1993.5 M

OP System Version: 7C0-713

MBM

Gamma Ray (GR) (GAPI) 0 150

Tension (TENS) 10000 (LBF) 0

2000

2025

TENS

Gamma Ray (GR) (GAPI) 0 150

CORRELATION PASS

Tension (TENS) 10000 (LBF) 0

Format: CORRELATION | Vertical Scale: 1:240 | Graphics File Created: 10-MAR-1999 22:22

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT	MSCT .049	FN:75	FIELD	10-MAR-1999 22:22	

Output DLIS Files

DEFAULT	MSCT .045	FN:71	FIELD	10-MAR-1999 21:36	1604.3 M	1604.3 M

Elapsed Time (s)	Event Summary
181.2	Marker 2
181.2	Core 2 at 1604.3(M)
10.6	Marker 1
10.6	Core 1 at 1604.3(M)

PIP SUMMARY

Time Mark Every 60 S

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Limit Switch From DST to MSCT_LSWI

Hydraulic Pump Pressure (HPPR) 0 (PSIG) 5000

Coring Motor Linear Position (CMLP) 0 (MM) 65

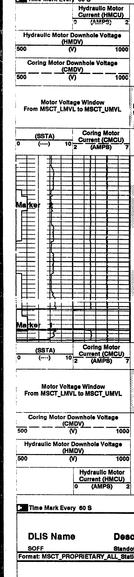
(BSTA) 0 (---) 10

Coring Motor Current (CMCU) 2 (AMPS) 7

Elapsed Time (ETIM) (S)

Coring Motor Pressure (CMPR) 150 (PSIG) 850

Kinematics Piston Position (CMPP) 0 (MM) 65



Motor Voltage Window From MSCT_LMVL to MSCT_UMVL

Limit Switch From DST to MSCT_LSWI

Hydraulic Pump Pressure (HPPR) 0 (PSIG) 5000

Coring Motor Linear Position (CMLP) 0 (MM) 65

Coring Motor Downhole Voltage (CMDV) 500 (V) 1000

Kinematics Pressure (RPPV) 0 (PSIG) 5000

Hydraulic Motor Downhole Voltage (HMDV) 500 (V) 1000

Hydraulic Motor Current (HMCU) 0 (AMPS) 2

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SOFF	Standoff	0 MM

Format: MSCT_PROPRETARY_ALL_Station | Vertical Scale: 1" per 60ft | Graphics File Created: 10-MAR-1999 21:36

OP System Version: 7C0-713

MBM

Output DLIS Files

DEFAULT	MSCT .045	FN:71	FIELD	10-MAR-1999 21:36		

Kinematics Piston Position 1.0004 -16.663
NAME GAIN OFFSET

~~Piston Position Computation 10-MAR-1999 20:46:12~~

Kinematics Piston Position MM 54.356 70.993 0.51765
NAME UNITS REFERENCE AVERAGE MAX DEVIATION

~~Piston Position Plus Measurement 10-MAR-1999 20:42:30~~

Kinematics Piston Position MM 0 16.657 0.44941
NAME UNITS REFERENCE AVERAGE MAX DEVIATION

~~Piston Position Zero Measurement 10-MAR-1999 20:41:00~~

COMPANY	SUNCOR ENERGY INC.
WELL	SUNCOR NETLA K-77-60-50-122-30
FIELD	NETLA
PROVINCE	NORTHWEST TERRITORIES

BOTTOM LOG INTERVAL	2064.5 M
SCHLUMBERGER DEPTH	2117 M
DEPTH DRILLER	2118 M
KELLY BUSHING	627.29 M
DRILL FLOOR	624.9 M
GROUND LEVEL	614.4 M

Schlumberger

MECHANICAL SIDEWALL CORING TOOL

COMPANY SUNCOR ENERGY INC.

WELL SUNCOR NETLA K-77-60-50-122-30

FIELD NETLA

PROVINCE NORTHWEST TERRITORIES

Schlumberger **FORMATION MICRO-IMAGER**

60 deg-48, 122 deg-30' (SURFACE LOC) Elev.: K.B. 627.29 M
283.89M, -90.17M (BOTTOM LOC) G.L. 618.4 M
300N,77-60,50-122,30W0 (LAT) D.F. 624.8 M

Permanent Datum: GROUND LEVEL Elev.: 618.4 M
Log Measured From: KELLY BUSHING 6.9 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

	Run 1	Run 2	Run 3	Run 4
API Serial No.	N/A			
Logging Date	11-MAR-1999			
Run Number	2			
Depth Driller	2118 M			
Schlumberger Depth	2113 M			
Bottom Log Interval	2113 M			
Top Log Interval	1998.6 M			
Casing Driller Size @ Depth	177.800 MM @ 1999 M	@	@	
Casing Schlumberger	1998.8 M			
Bit Size	156.000 MM			
Type Fluid In Hole	POTASSIUM SLPHATE			
Density / Viscosity	1040 KM/M / 53 S			
Fluid Loss / PH	8 C3 / 8 8			
Source Of Sample	MEASURED			
RM @ Measured Temperature	4.060 OHMM @ 20 DEGC	@	@	
RMF @ Measured Temperature	3.040 OHMM @ 20 DEGC	@	@	
RMC @ Measured Temperature	5.060 OHMM @ 20 DEGC	@	@	
Source RMF / RMC	MEASURED / MEASURED			
RM @ MFT / RMF @ MFT	1.670 @ 88 / 1.020 @ 88	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	88 DEGC			
Circulation Stopped / Time	10-MAR-1999 / 17:30			
Logger On Bottom / Time	11-MAR-1999 / 11:45			
Unit Number / Location	3019 / 6840			
Recorded By	KIMBERLEY BAKER			
Witnessed By	BRIAN HESTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@		@	
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density / Viscosity				
Fluid Loss / PH				
Source Of Sample				
RM @ Measured Temperature	@		@	
RMF @ Measured Temperature	@		@	
RMC @ Measured Temperature	@		@	
Source RMF / RMC				
RM @ MFT / RMF @ MFT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

ALL DEPTHS ARE IN METRES AND ARE BASED ON MEASUREMENTS FROM ELECTRICAL RECORDS

ALL TIMES ARE BASED ON CANADIAN STANDARD TIME (CST) OR CANADIAN DAYLIGHT SAVING TIME (CDST) AS RUN IN THE WELL

ALL DEPTH MEASUREMENTS ARE CORRECTED TO SCHLUMBERGER CASING DEPTH WHERE APPLICABLE

OTHER SERVICES

CBIL
DSI
CNL
LDL

REMARKS: FEN NUMBER 2

RUN 1 / RUN 2 / RUN 3

BRAKE CHECK A
BRAKE CHECK B
LOG ON DEPTH

START
STOP

PRIOR TO FIELD FINAL
RIG: BOAZ 28

RECEIVED IN NEBC - 15 JUL 1999 - TIME LOG FROM 1 HR
RECEIVED IN CALGARY - 15 JUL 1999 - TIME LOG FROM 1 HR

THIS WELL CONFORMS TO THE INFORMATION REQUIREMENTS SCHEDULE, 1996

RUN 1 — RUN 2

EQUIPMENT DESCRIPTION

SURFACE EQUIPMENT

GRAU/H
CPM-B

DOWNHOLE EQUIPMENT

CTEM — 11.95 — 11.92

LEH-QT
LEH-QT

TTC-H
TTC-H
DTCH-A

Tri-State Combo — 10.83 — 9.72

SGT-N
SGT-A
SGGK-A
SGGK-B

Gamma Ray — 9.72 — 9.44

FBHT-B
FBHT-A
RBCS-A
RBCS-B
RBBS-A
RBBS-B

8.04

FBHC
PROV 1500
Transducer

CAL1
CAL2
CAL3
TENS
TOOLZERO

HANGOFF POINT FOR ALL MEASUREMENTS RELATIVE TO TOOL ZERO
ALL DEPTHS IN METRES

Output DLIS Files

DEFAULT — FRTH 106 — FN:135 — FRTH 106 — FRTH 106

FILE ID: 11-MAR-1999 13:04
FILE SET: 11-MAR-1999 13:04

OP System Version: 7C0-713

FIELD: NETLA

WELL: K-77-60-50-122-30

DLIS Name: 30MD

Changed Parameter Summary
Parameter Value

Depth & Time

Time Mark Every 60 S

Tension (TENS) 0 — 50000 LBF

Rotation (ROTA) 0 — 360 DEG

Caliper 2 (C2) 6 — 16 IN

Caliper 1 (C1) 6 — 16 IN

Deviation (DEVI) 0 — 10 DEG

Azimuth (HAZI) 0 — 360 DEG

Pad 1 Azimuth (PAZI) 0 — 360 DEG

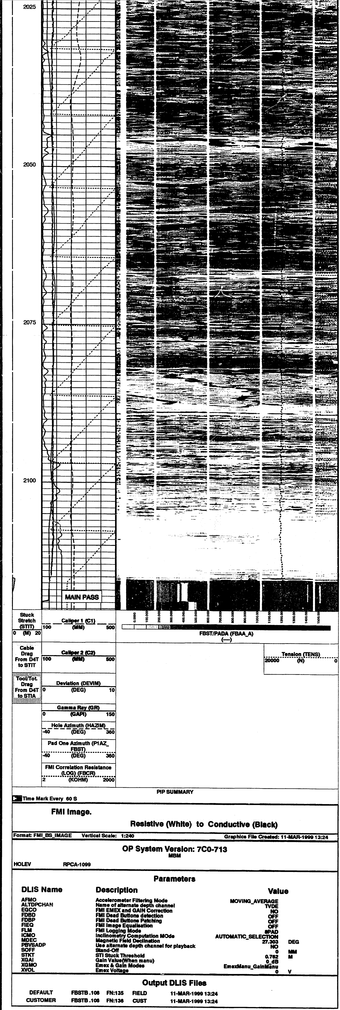
Pad 1 Inclination (PDEV) 0 — 10 DEG

Time Mark (TIME) 0 — 60 S

REPEAT PASS

MAIN PASS

2000



Time Mark Every 60 S

FMI Image.

Resistive (White) to Conductive (Black)

Format: FMI_6IN_IMAGE Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 13:24

OP System Version: 7C0-713

MSM

HOLEV RPCA-1099

Parameters

DLIS Name	Description	Value
APMO	Accelerometer Filtering Mode	MOVING_AVERAGE
ALTOPCHAN	Name of alternate depth channel	TVDE
FDBO	FMI Dead and Gain Correction	NO
FDBD	FMI Dead Buttons detection	OFF
FDBP	FMI Dead Buttons Patching	OFF
FIEQ	FMI Image Equalization	OFF
FLM	FMI Logging Mode	XPAD
IDMO	Inclinometry Computation MOde	AUTOMATIC_SELECTION
MDEC	Magnetic Field Declination	27.303 DEG
PRVSADP	Use alternate depth channel for playback	NO
SOFF	Stand-Off	0 MM
STKT	STI Stuck Threshold	0.782 M
XGAI	Gain Value(When manu)	0 dB
XGMO	Emes & Gain Modes	EmesMenu_GainMenu
XVOL	Emes Voltage	0 V

Output DLIS Files

DEFAULT	FBST9.108	FN:135	FIELD	11-MAR-1999 13:24
CUSTOMER	FBST9.108	FN:136	CUST	11-MAR-1999 13:24

Output DLIS Files

DEFAULT	FBST9.105	FN:133	FIELD	11-MAR-1999 12:58
CUSTOMER	FBST9.105	FN:134	CUST	11-MAR-1999 12:58

OP System Version: 7C0-713

MSM

HOLEV RPCA-1099

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
XGMO	EmesAuto_GainAutoHighRange	EmesMenu_GainMenu	2118.3 13:02:14

PIP SUMMARY

Time Mark Every 60 S

FMI Image.

Resistive (White) to Conductive (Black)

Format: FMI_6IN_IMAGE Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 12:24

OP System Version: 7C0-713

MSM

HOLEV RPCA-1099

Parameters

DLIS Name	Description	Value
APMO	Accelerometer Filtering Mode	MOVING_AVERAGE
ALTOPCHAN	Name of alternate depth channel	TVDE
FDBO	FMI DMEC and Gain Correction	NO
FDBD	FMI Dead Buttons detection	OFF
FDBP	FMI Dead Buttons Patching	OFF
FIEQ	FMI Image Equalization	OFF
FLM	FMI Logging Mode	XPAD
IDMO	Inclinometry Computation MOde	AUTOMATIC_SELECTION
MDEC	Magnetic Field Declination	27.303 DEG
PRVSADP	Use alternate depth channel for playback	NO
SOFF	Stand-Off	0 MM
STKT	STI Stuck Threshold	0.782 M
XGAI	Gain Value(When manu)	0 dB
XGMO	Emes & Gain Modes	EmesMenu_GainMenu
XVOL	Emes Voltage	0 V

Output DLIS Files

DEFAULT	FBST9.105	FN:133	FIELD	11-MAR-1999 12:58
CUSTOMER	FBST9.105	FN:134	CUST	11-MAR-1999 12:58

Output DLIS Files

DEFAULT	FBST9.106	FN:135	FIELD	11-MAR-1999 13:24
CUSTOMER	FBST9.106	FN:136	CUST	11-MAR-1999 13:24

OP System Version: 7C0-713
MBM

HOLEV RPCA-1099

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
XGMO	EmexManu_GainManu	EmexManu_GainManu	1985.0 13:25:00

PIP SUMMARY

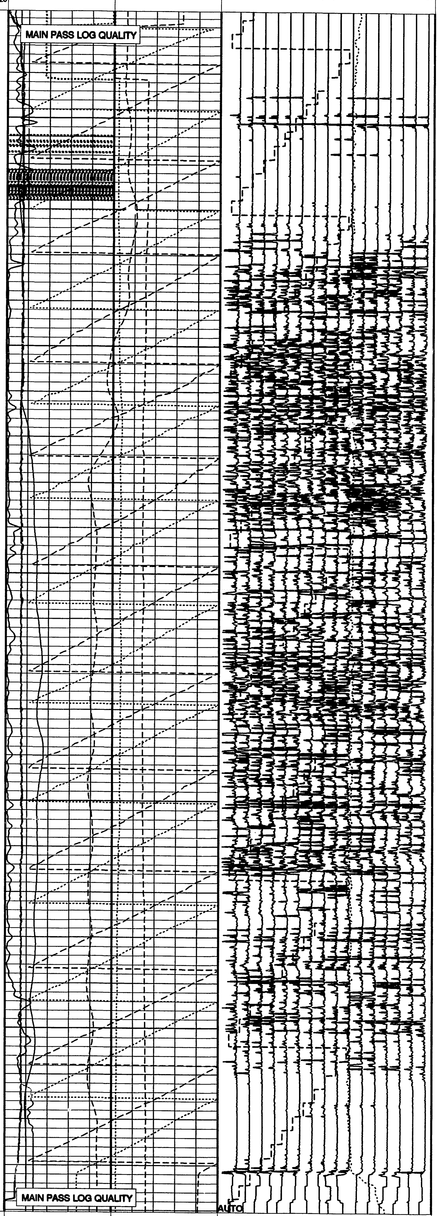
Time Mark Every 60 S

FMI Correlation Resistance (LOG) (FBCR) 2 (KOHM) 2000
Relative Bearing (RB_FBST) -40 (DEG) 360
Pad One Azimuth (P1AZ_FBST) -40 (DEG) 360
Hole Azimuth (HAZIM) -40 (DEG) 360
Gamma Ray (GR) 0 (GAPI) 150

Tool/ToL Drag From D4T to STIA: Deviation (DEVIM) 0 (DEG) 10; Tension (TENS) 20000 (N) 0

Cable Drag From D4T to STIT: Caliper 2 (C2) 100 (MM) 500; EMEX Intensity (EI) 0 (AMPS) 10; FMI resistivity buttons #1 to 16 RB16 RB15 RB14 RB13 RB12 RB11 RB10 RB9 RB8 RB7 RB6 RB5 RB4 RB3 RB2 RB1

Stuck Stretch (STIT): Caliper 1 (C1) 100 (MM) 500; EMEX Voltage (EV) 0 (V) 50; FMI RBS Value (RBSV) 0 (---) 20
0 (M) 20



Stuck Stretch (STIT): Caliper 1 (C1) 100 (MM) 500; EMEX Voltage (EV) 0 (V) 50; FMI RBS Value (RBSV) 0 (---) 20
0 (M) 20

Cable Drag From D4T to STIT: Caliper 2 (C2) 100 (MM) 500; EMEX Intensity (EI) 0 (AMPS) 10; FMI resistivity buttons #1 to 16 RB16 RB15 RB14 RB13 RB12 RB11 RB10 RB9 RB8 RB7 RB6 RB5 RB4 RB3 RB2 RB1

Tool/ToL Drag From D4T to STIA: Deviation (DEVIM) 0 (DEG) 10; Tension (TENS) 20000 (N) 0

Gamma Ray (GR) 0 (GAPI) 150
Hole Azimuth (HAZIM) -40 (DEG) 360
Pad One Azimuth (P1AZ_FBST) -40 (DEG) 360
Relative Bearing (RB_FBST) -40 (DEG) 360
FMI Correlation Resistance (LOG) (FBCR) 2 (KOHM) 2000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
FBEF	Emex filtering activation	OFF	
FLM	FMI Logging Mode	BPAD	
ICMO	Inclinometry Computation MOde	AUTOMATIC_SELECTION	
MDEC	Magnetic Field Declination	27.303	DEG
RBS	Resistivity Button Selection	AUTO	
RBSI	Auto RBS change interval	10	
SOFF	Stand-Off	0	MM
STKT	STI Stuck Threshold	0.782	M
XGMO	Emex & Gain Modes	EmexManu_GainManu	
XVOL	Emex Voltage	0	V

Format: FMI_LOC Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 13:24

OP System Version: 7C0-713
MBM

HOLEV RPCA-1099

Output DLIS Files

DEFAULT	FBSTB.106	FN:135	FIELD	11-MAR-1999 13:24
CUSTOMER	FBSTB.106	FN:136	CUST	11-MAR-1999 13:24

Output DLIS Files

DEFAULT	FBSTB.105	FN:133	FIELD	11-MAR-1999 12:58
CUSTOMER	FBSTB.105	FN:134	CUST	11-MAR-1999 12:58

OP System Version: 7C0-713
MBM

HOLEV RPCA-1099

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
XGMO	EmexAuto_GainAutoHighRange	EmexManu_GainManu	2118.3 13:02:14

PIP SUMMARY

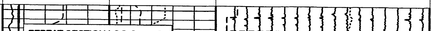
Time Mark Every 60 S

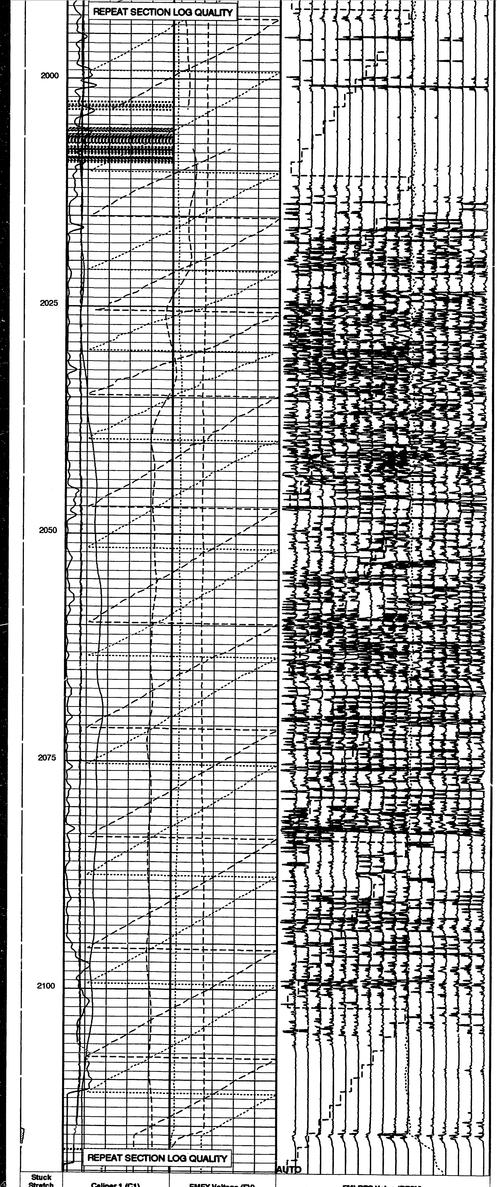
FMI Correlation Resistance (LOG) (FBCR) 2 (KOHM) 2000
Relative Bearing (RB_FBST) -40 (DEG) 360
Pad One Azimuth (P1AZ_FBST) -40 (DEG) 360
Hole Azimuth (HAZIM) -40 (DEG) 360
Gamma Ray (GR) 0 (GAPI) 150

Tool/ToL Drag From D4T to STIA: Deviation (DEVIM) 0 (DEG) 10; Tension (TENS) 20000 (N) 0

Cable Drag From D4T to STIT: Caliper 2 (C2) 100 (MM) 500; EMEX Intensity (EI) 0 (AMPS) 10; FMI resistivity buttons #1 to 16 RB16 RB15 RB14 RB13 RB12 RB11 RB10 RB9 RB8 RB7 RB6 RB5 RB4 RB3 RB2 RB1

Stuck Stretch (STIT): Caliper 1 (C1) 100 (MM) 500; EMEX Voltage (EV) 0 (V) 50; FMI RBS Value (RBSV) 0 (---) 20
0 (M) 20





Stuck Stretch (STIT)	Caliper 1 (C1) (MM) 100 500	EMEX Voltage (EV) (V) 0 50	FMI RBS Value (RBSV) 0 20
Cable Drag From D4T to STIT	Caliper 2 (C2) (MM) 100 500	EMEX Intensity (EI) (AMPS) 0 10	FMI resistivity buttons #1 to 16 RB16 RB15 RB14 RB13 RB12 RB11 RB10 RB9 RB8 RB7 RB6 RB5 RB4 RB3 RB2 RB1
Tool/Tot. Drag From D4T to STIA	Deviation (DEVIM) (DEG) 0 10		Tension (TENS) (N) 20000 0
	Gamma Ray (GR) (GAPI) 0 150		
	Hole Azimuth (HAZIM) (DEG) -40 360		
	Pad One Azimuth (P1AZ_FBST) (DEG) -40 360		
	Relative Bearing (RB_FBST) (DEG) -40 360		
	FMI Correlation Resistance (LOG) (FBCR) (KOHM) 2 2000		

Time Mark Every 60 S

PIP SUMMARY

Parameters

DLIS Name	Description	Value
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE
FBEF	Emex filtering activation	OFF
FLM	FMI Logging Mode	6PAD
ICMO	Inclinometry Computation MOde	AUTOMATIC_SELECTION
MDEC	Magnetic Field Declination	27.000 DEG
RBS	Realativity Button Selection	AUTO
RBSI	Auto RBS change interval	10
SOFF	Stand-Off	0 MM
STKT	STI Stuck Threshold	0.782 M
XGMO	Emex & Gain Modes	EmexManu_GainManu
XVOL	Emex Voltage	V

Format: FMI_LGC Vertical Scale: 1:240 Graphics File Created: 11-MAR-1999 12:58

OP System Version: 7C0-713

M2M

HOLEV RPCA-1099

Output DLIS Files

DEFAULT	FBSTB.105	FN:133	FIELD	11-MAR-1999 12:58
CUSTOMER	FBSTB.105	FN:134	CUST	11-MAR-1999 12:58

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Full-Bore Scanner - B Wellsite Calibration - Caliper Calibration							
Before: Mar 11 11:05 1999							
Caliper #1 Small Jig	203.2	N/A	203.1	N/A	N/A	N/A	MM
Caliper #2 Small Jig	203.2	N/A	200.2	N/A	N/A	N/A	MM
Caliper #1 Large Jig	304.8	N/A	299.0	N/A	N/A	N/A	MM
Caliper #2 Large Jig	304.8	N/A	294.5	N/A	N/A	N/A	MM
Full-Bore Scanner - B Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: Mar 11 10:54 1999							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	93	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	11	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	470	N/A	N/A	N/A	
Full-Bore Scanner - B Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: Mar 11 10:54 1999							
TEMPERATURE REFERENCE :	N/A	N/A	24	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	93	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	186	N/A	N/A	N/A	
Scintillation Gamma-Ray - N Wellsite Calibration - Detector Calibration							
Before: Mar 11 10:57 1999							
Gamma Ray (cfg - Bkg)	54.15	N/A	54.15	N/A	N/A	4.923	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

Full-Bore Scanner - B / Equipment Identification

Primary Equipment:	
FullBore Scanner Sonde	FBSB - B
FullBore Scanner Sonde Upper part	FBSH - A
FullBore Scanner Sonde Cartridge	FBSC - D
GPIT Cartridge - C	GPIC - C
Insulating Sub	AH - 185
Flex Joint	AH - 184
FullBore Scanner Control Cartridge	FBCC - A
Auxiliary Equipment:	
Electronics Cartridge Housing	ECH - MRA

Full-Bore Scanner - B Wellsite Calibration

Caliper Calibration

Phase	Caliper #1 Small Jig MM			Value	Phase	Caliper #2 Small Jig MM			Value
Before				203.1	Before				200.2
	172.7 (Minimum)	203.2 (Nominal)	233.7 (Maximum)			172.7 (Minimum)	203.2 (Nominal)	233.7 (Maximum)	
Phase	Caliper #1 Large Jig MM			Value	Phase	Caliper #2 Large Jig MM			Value
Before				299.0	Before				294.5
	258.1 (Minimum)	304.8 (Nominal)	350.5 (Maximum)			258.1 (Minimum)	304.8 (Nominal)	350.5 (Maximum)	

Before: Mar 11 11:05 1999

Scintillation Gamma-Ray - N / Equipment Identification

Primary Equipment:	
Scintillation Gamma Cartridge	SGC - SA
Scintillation Gamma Detector	SGD - TAA
Auxiliary Equipment:	
Scintillation Gamma Housing	SGH - K
Gamma Source Radioactive	GSR - UY

Scintillation Gamma-Ray - N Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (cfg - Bkg) GAPI			Value	Phase	Gamma Ray (Calibrated) GAPI			Value
Before				13.12	Before				54.15	Before				165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)			48.23 (Minimum)	54.15 (Nominal)	59.07 (Maximum)			150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)	

Before: Mar 11 10:57 1999

COMPANY	SUNCOR ENERGY INC.	BOTTOM LOG INTERVAL	2113 M
WELL	SUNCOR NETLA K-77-60-50-122-30	SCHLUMBERGER DEPTH	2117 M
FIELD	NETLA	DEPTH DRILLER	2118 M
PROVINCE	NORTHWEST TERRITORIES	KELLY BUSHING	627.29 M
		DRILL FLOOR	624.9 M
		GROUND LEVEL	618.4 M

Schlumberger

FORMATION MICRO-IMAGER

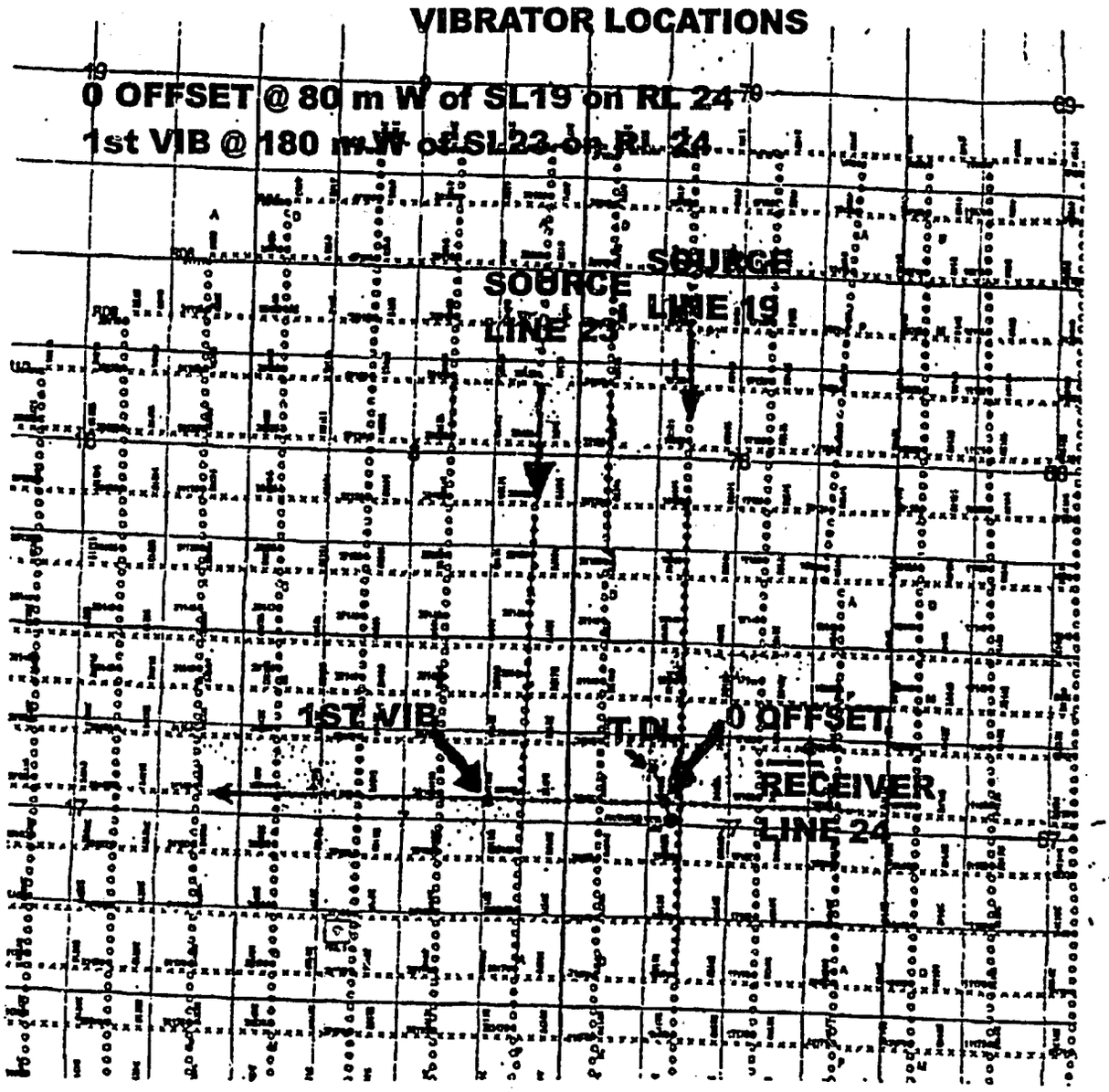
LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

VELOCITY SURVEY LOCATIONS

N.E.B. COF

SUNCOR NETLA K-77-60-50-122-30

VELOCITY SURVEY LOCATIONS



RELEASE DATE
DATE DE DIFFUSION:
March 12, 2002

SEISMIC

N.E.B. COPY

1862

9211 585-1-2

Schlumberger

GEOFRAME
PROCESSED
INTERPRETATION

WELL SEISMIC REPORT

*A Mark of Schlumberger

Using the following logs: NEUTRON-DENSITY-GR
ARRAY INDUCTION
MSCT, CCL

COMPANY: SUNCOR ENERGY INC.
WELL: SUNCOR NETLA K-77-60-50-RELEASE DATE
FIELD: NETLA
PROVINCE: NORTHWEST TERRITORIES DATE DE DIFFUSION
Mar 12, 2004

COUNTRY: CANADA
Date Logged: 11-MAR-1999 Date Processed: 18-MAR-1999
Well Location: 60 deg-46', 122 deg-30' (SURFACE LOC)
263.69M, -90.17M (BOTTOM LOC)

Elevations: KB: 627.29m DF: 624.9m GL: 618.4m

API Number: N/A Job Number: 6073534

FOLD HERE

The well name, location and purpose reference data were provided by the customer.

All interpretations, or opinions based on inferences from electrical or other measurements, are the opinions and views of those persons who are employed by Schlumberger and represent only the considered opinion of any interpretation, and as such may variant in the case of gross or wilful negligence as set out in Schlumberger's General Conditions. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.

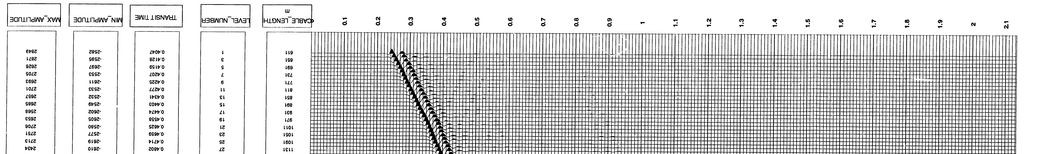
Field Recording:	Location: 6840	Software Version: 7CG-7.0.1.3	Engineer: KIMBERLEY BAKER
Office Recording:	IOS Owner: CALGARY	Baseline:	Log Analyst: STEPHANSON

Mud and Borehole Measurements:

Rm @ Measured Temperature:	@ 22.25degC	Rmf:	@ 22.25degC
Rmf @ Measured Temperature:	2.56ohm.m @ 20degC	Rmc:	2.56ohm.m @ 20degC
Rmc @ Measured Temperature:	@ 21degC	Mud Type:	Salt Fluid-to-Hole
Rm @ Measured Temperature:	3.05ohm.m @ 21degC	Mud Density:	1040kg/m3

Remarks: SEISMIC REFERENCE DATUM - SRD 627.29 M

COMPUTING CENTRE STACKS
VERTICAL COMPONENT



CHECKSHOT GEOMETRY & VELOCITY TABULATION

REFERENCE FOR POSITIVE DEPTHS
REFERENCE FOR POSITIVE TIMES
SRD : SEISMIC REFERENCE DATUM

ELEVATION OF TRUE SRD ABOVE MEAN SEA LEVEL : 627.29 M
ELEVATION OF TRUE SRD ABOVE RKB : -4.89 M
ELEVATION OF GROUND ABOVE SRD : 618.4 M/s

VELOCITY BETWEEN SOURCE AND SOURCE : 1848 M/s
VELOCITY BETWEEN SOURCE AND SRD : 1848 M/s

SOURCE AND SURFACE SENSOR POSITIONS:

	SOURCE	SURFACE SENSOR
	[+]	[+]
DEPTH	DOWN	DOWN
TIME	DOWN	DOWN
COORDINATE		[+]
COORDINATE		[+]

TIME CORRECTIONS :

SD-SRD : TIME FROM SURFACE SENSOR TO SOURCE
SRD-SD : TIME FROM SOURCE TO SURFACE SENSOR

SOURCE POSITION			SURFACE SENSOR POSITION			TIME CORRECTIONS	
						SD-SRD	SRD-SR
X-M	Y-M	Z-M	X-M	Y-M	Z-M	S	S
617	-35	87	617	-35	87	0.0	0.0

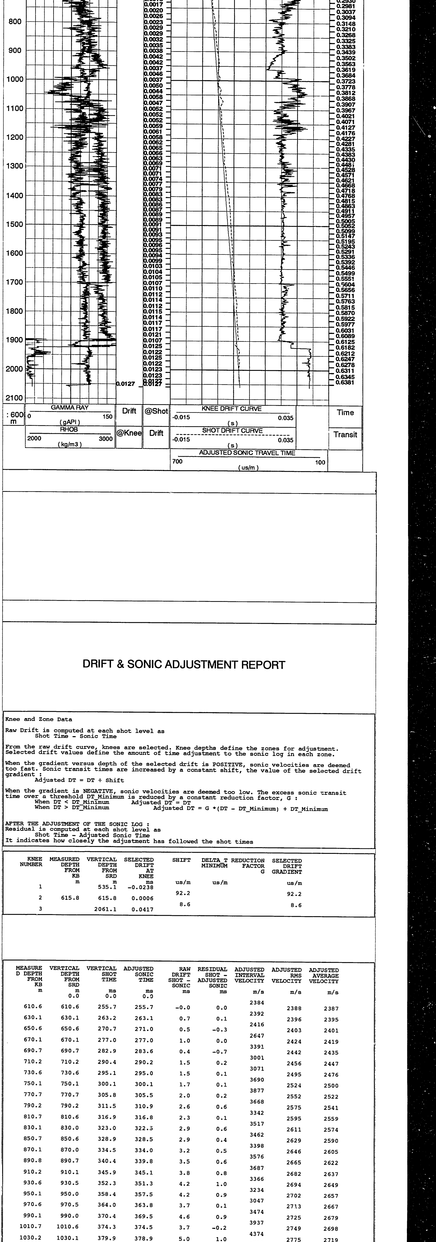
DOWNHOLE SENSOR POSITIONS:

	NO REF	WELL HEAD	SEISMIC REFERENCE DATUM
	NO REF	: MEASURED DEPTH FROM	LOGGING REFERENCE
	VD REF	: VERTICAL DEPTH FROM	LOGGING REFERENCE
	X-S	: EASTING (+) COORDINATE	
	Y-S	: NORTH (+) COORDINATE	

LEVEL NUMBER	VERTICAL DEPTH NO REF	MEASURED DEPTH WELL HEAD	OBSERVED TRAVEL TIME	TRANSIT TIME	DELTA DEPTH	DELTA TIME	ACOUSTIC VELOCITY	ACOUSTIC IMPEDANCE
	M	M	S	S	M	S	M/S	M/S
1	0.0			0.0000			n/a	n/a
2	610.6	610.6	0.2568	0.2557	19.5	0.0075	2597	2387
3	630.1	630.1	0.2642	0.2632	20.0	0.0075	2664	2450
4	649.6	649.6	0.2715	0.2707	19.5	0.0063	3103	2853
5	670.1	670.1	0.2789	0.2781	20.5	0.0074	2770	2546
6	689.7	689.7	0.2864	0.2859	20.6	0.0058	3525	3239
7	710.2	710.2	0.2938	0.2934	20.5	0.0075	2732	2511
8	730.6	730.6	0.2964	0.2951	19.5	0.0051	3824	3514
9	750.1	750.1	0.3038	0.3025	19.5	0.0074	2635	2422
10	770.7	770.7	0.3059	0.3051	20.6	0.0056	3674	3377
11	790.2	790.2	0.3116	0.3115	19.5	0.0057	3394	3120
12	810.6	810.7	0.3137	0.3143	20.4	0.0054	3777	3471
13	830.0	830.1	0.3210	0.3210	20.4	0.0058	3522	3237
14	850.5	850.6	0.3284	0.3277	20.5	0.0067	3060	2812
15	870.0	870.1	0.3343	0.3345	19.4	0.0056	3438	3160
16	890.7	890.8	0.3401	0.3404	20.7	0.0059	3538	3252
17	910.1	910.2	0.3456	0.3459	20.4	0.0054	3751	3448
18	930.5	930.6	0.3519	0.3523	19.5	0.0061	3241	3324
19	950.0	950.1	0.3574	0.3581	20.5	0.0056	3654	3358
20	970.4	970.5	0.3634	0.3643	20.5	0.0062	3324	3056
21	990.0	990.1	0.3698	0.3704	19.5	0.0064	3029	2784
22	1010.6	1010.7	0.3737	0.3763	19.5	0.0056	3500	3217
23	1030.1	1030.2	0.3795	0.3819	19.5	0.0056	3500	3217
24	1050.5	1050.6	0.3855	0.3879	20.4	0.0060	3412	3137
25	1070.0	1070.1	0.3880	0.3889	19.5	0.0034	5750	5286
26	1090.6	1090.7	0.3919	0.3928	20.6	0.0039	5277	4851
27	1110.0	1110.2	0.3978	0.3987	20.3	0.0059	3441	3164
28	1130.5	1130.7	0.4021	0.4041	19.5	0.0054	3612	3320
29	1150.1	1150.3	0.4061	0.4092	19.3	0.0050	3895	3581
30	1169.9	1170.4	0.4135	0.4147	19.8	0.0055	3601	3311
31	1189.0	1189.1	0.4184	0.4197	19.0	0.0050	3829	3520
32	1209.7	1210.4	0.4234	0.4248	20.4	0.0054	3778	3473
33	1229.2	1230.0	0.4284	0.4302	19.5	0.0054	3601	3311
34	1246.1	1250.7	0.4339	0.4356	19.0	0.0054	3494	3212
35	1263.7	1270.2	0.4386	0.4404	17.6	0.0048	3667	3371
36	1281.9	1290.7	0.4431	0.4450	17.1	0.0051	3359	3088
37	1300.8	1310.7	0.4482	0.4501	17.8	0.0047	3806	3499
38	1317.9	1330.7	0.4529	0.4550	16.9	0.0049	3449	3171
39	1333.8	1350.1	0.4571	0.4591	16.9	0.0043	3926	3609
40	1351.7	1370.6	0.4621	0.4641	16.9	0.0050	3390	3116
41	1368.1	1390.1	0.4669	0.4689	16.5	0.0048	3434	3157
42	1384.4	1409.6	0.4716	0.4736	16.3	0.0047	3462	3183
43	1404.8	1430.3	0.4766	0.4784	17.2	0.0048	3548	3262
44	1422.8	1450.7	0.4817	0.4835	16.9	0.0047	3545	3259
45	1440.0	1470.2	0.4866	0.4884	16.9	0.0048	3494	3212
46	1457.8	1490.7	0.4915	0.4932	16.9	0.0046	3596	3306
47	1474.9	1510.7	0.4962	0.4980	16.7	0.0047	3523	3239
48	1492.9	1530.7	0.5013	0.5030	17.2	0.0049	3483	3202
49	1509.9	1550.2	0.5061	0.5072	17.0	0.0046	3677	3381
50	1527.9	1570.6	0.5110	0.5119	17.2	0.0047	3684	3387
51	1545.1	1590.1	0.5158	0.5167	17.0	0.0048	3512	3229
52	1562.1	1609.6	0.5205	0.5214	16.9	0.0047	3612	3320

52	1563.0	1610.6	0.5210	0.5216	17.5	0.0048	2997	3712
53	1580.5	1630.1	0.5260	0.5263	17.5	0.0048	3003	3657
54	1599.1	1650.7	0.5310	0.5311	18.6	0.0048	3011	3884
55	1616.9	1670.2	0.5357	0.5357	17.8	0.0046	3018	3906
56	1635.7	1690.7	0.5415	0.5413	18.8	0.0056	3022	3373
57	1654.0	1710.1	0.5471	0.5466	18.2	0.0053	3026	3412
58	1673.6	1730.8	0.5526	0.5520	19.6	0.0054	3032	3644
59	1692.3	1750.3	0.5579	0.5572	18.8	0.0052	3037	3626
60	1712.2	1770.6	0.5633	0.5625	19.9	0.0053	3044	3738
61	1731.5	1790.1	0.5686	0.5677	19.3	0.0052	3050	3705
62	1751.8	1810.6	0.5741	0.5732	20.3	0.0055	3056	3717
63	1771.1	1830.1	0.5794	0.5784	19.3	0.0052	3062	3685
64	1791.6	1850.7	0.5846	0.5836	20.5	0.0052	3070	3962
65	1811.0	1870.1	0.5901	0.5890	19.3	0.0054	3075	3553
66	1831.5	1890.7	0.5953	0.5943	20.6	0.0053	3082	3914
67	1850.9	1910.1	0.6007	0.5997	19.4	0.0055	3086	3552
68	1871.5	1930.7	0.6061	0.6052	20.6	0.0054	3093	3765
69	1891.0	1950.2	0.6118	0.6109	19.5	0.0057	3095	3396
70	1911.5	1970.7	0.6155	0.6146	20.5	0.0037	3110	5555
71	1931.0	1990.2	0.6211	0.6203	19.5	0.0057	3113	3418
72	1951.4	2010.6	0.6240	0.6233	20.4	0.0030	3131	6898
73	1970.8	2030.0	0.6275	0.6268	19.4	0.0035	3144	5499
74	1991.4	2050.6	0.6306	0.6299	20.6	0.0031	3161	6617
75	2010.9	2070.1	0.6338	0.6332	19.5	0.0033	3176	5956
76	2031.5	2090.7	0.6372	0.6366	20.6	0.0034	3191	6083
77	2051.0	2110.2	0.6407	0.6401	19.5	0.0036	3204	5446

DRIFT & SONIC ADJUSTMENT LOG



DRIFT & SONIC ADJUSTMENT REPORT

Knee and Zone Data

Raw Drift is computed at each shot level as
Shot Time - Sonic Time

From the raw drift curve, knees are selected. Knee depths define the zones for adjustment.
Selected drift values define the amount of time adjustment to the sonic log in each zone.

When the gradient versus depth of the selected drift is POSITIVE, sonic velocities are deemed too fast. Sonic transit times are increased by a constant shift, the value of the selected drift gradient.

Adjusted DT = DT + Shift

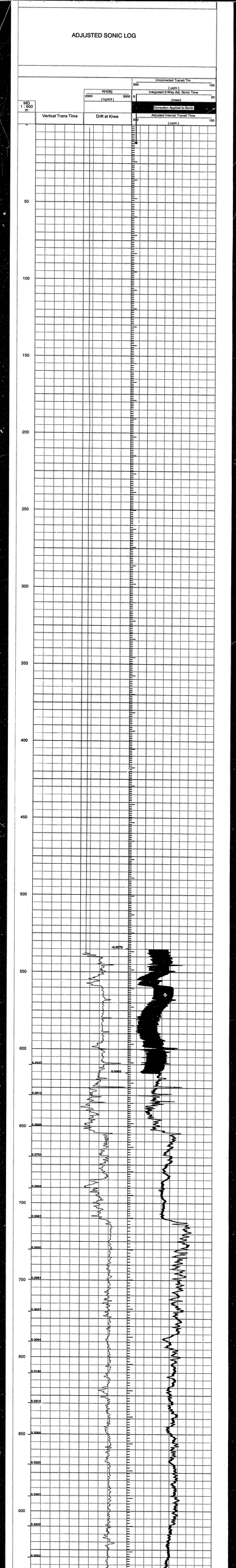
When the gradient is NEGATIVE, sonic velocities are deemed too low. The sonic scale transit time over a threshold DT_Minimum is reduced by a constant reduction factor, G :
When DT < DT_Minimum Adjusted DT' = DT
When DT > DT_Minimum Adjusted DT = G *(DT - DT_Minimum) + DT_Minimum

AFTER THE ADJUSTMENT OF THE SONIC LOG :
Residual is computed at each shot level as
Shot Time - Adjusted Sonic Time
It indicates how closely the adjustment has followed the shot times

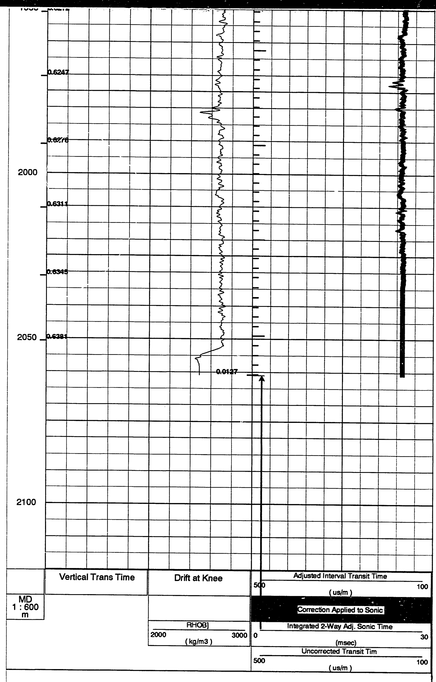
KNEE NUMBER	MEASURED DEPTH FROM KB m	VERTICAL DEPTH FROM SRD m	SELECTED DRIFT AT KNEE s	SHIFT us/m	DELTA_T MINIMUM us/m	REDUCTION FACTOR G	SELECTED DRIFT GRADIENT us/m
1		535.1	-0.0238	92.2			92.2
2	615.8	615.8	0.0006	8.6			8.6
3		2061.1	0.0417				

MEASURED DEPTH FROM KB m	VERTICAL DEPTH FROM SRD m	VERTICAL SHOT TIME ms	ADJUSTED SONIC TIME ms	RAW DRIFT SHOT - SONIC ms	RESIDUAL SHOT - ADJUSTED SONIC ms	ADJUSTED INTERVAL VELOCITY m/s	ADJUSTED RMS VELOCITY m/s	ADJUSTED AVERAGE VELOCITY m/s
0.0	0.0	0.0				2384	2388	2387
610.6	610.6	255.7	255.7	-0.0	0.0	2392	2396	2395
630.1	630.1	263.2	263.1	0.7	0.1	2416	2403	2401
650.6	650.6	270.7	271.0	0.5	-0.3	2647	2424	2419
670.1	670.1	277.0	277.0	1.0	0.0	3391	2442	2435
690.7	690.7	282.9	283.6	0.4	-0.7	3001	2456	2447
710.2	710.2	290.4	290.2	1.5	0.2	3071	2475	2476
730.6	730.6	295.1	295.0	1.5	0.1	3690	2524	2500
750.1	750.1	300.1	300.1	1.7	0.1	3877	2552	2522
770.7	770.7	305.8	305.5	2.0	0.2	3668	2575	2541
790.2	790.2	311.5	310.9	2.6	0.6	3342	2595	2559
810.7	810.6	316.9	316.8	2.3	0.1	3517	2611	2574
830.1	830.0	323.0	322.3	2.9	0.6	3462	2629	2590
850.7	850.6	328.9	328.5	2.9	0.4	3398	2646	2605
870.1	870.0	334.5	334.0	3.2	0.5	3576	2665	2622
890.8	890.7	340.4	339.8	3.5	0.6	3687	2682	2637
910.2	910.1	345.9	345.1	3.8	0.8	3366	2696	2649
930.6	930.5	352.3	351.3	4.2	1.0	3234	2702	2657
950.1	950.0	358.4	357.5	4.2	0.9	3047	2713	2667
970.6	970.5	364.0	363.8	3.7	0.1	3474	2725	2679
990.1	990.0	370.4	369.5	4.6	0.9	3937	2749	2698
1010.7	1010.6	376.3	374.5	3.7	-0.2	4374	2775	2719
1030.2	1030.1	379.9	378.9	5.0	1.0	4775	2807	2742
1050.6	1050.5	383.3	383.1	4.4	0.2	4838	2831	2761
1070.1	1070.0	388.9	387.5	5.8	1.4	3679	2849	2777
1090.7	1090.6	392.8	392.7	4.7	0.1	3889	2859	2787
1110.2	1110.0	398.7	398.3	5.2	0.4	3308	2870	2798
1130.6	1130.4	404.2	404.0	5.2	0.2	3282	2884	2811
1150.1	1149.7	409.2	409.0	5.2	0.1	3802	2901	2825
1170.6	1169.9	414.7	414.1	5.9	0.6	4212	2914	2837
1190.1	1189.0	419.7	419.0	6.1	0.7	3647	2924	2847
1210.6	1208.7	424.8	424.6	5.8	0.2	3609	2932	2855
1230.1	1227.1	430.2	429.8	6.2	0.4	3802	2941	2864
1250.7	1246.1	435.6	435.1	6.5	0.5	3622	2949	2872
1270.2	1263.7	440.4	439.9	6.6	0.5	3727	2957	2881
1290.7	1281.9	445.0	445.0	6.3	0.0	3730	2966	2889
1310.2	1299.0	450.1	449.6	6.9	0.5	3995	2977	2899
1330.6	1316.8	454.8	454.2	7.1	0.6	3616	2995	2907
1350.1	1333.8	459.1	458.7	7.1	0.4	4696	2994	2916
1370.6	1351.7	464.1	463.6	7.4	0.6	3581	3003	2925
1390.1	1369.1	468.9	468.1	7.7	0.7	3719	3011	2933
1410.8	1387.6	473.9	473.2	7.9	0.7	3561	3018	2940
1430.3	1404.8	478.9	477.9	8.3	1.0	3826	3026	2948
1450.7	1422.8	483.5	482.7	8.3	0.8	3595	3033	2955
1470.2	1440.0	488.4	487.4	8.6	1.0	3703	3040	2962
1490.7	1457.8	493.2	492.2	8.7	0.9	3679	3047	2969
1510.1	1474.7	497.8	496.8	8.9	1.0	3695	3054	2975
1530.7	1492.9	502.6	501.7	8.9	0.9	3711	3060	2982
1550.2	1509.9	507.2	506.3	9.1	0.9	3622	3066	2989
1570.8	1527.9	512.0	511.2	9.1	0.8	3684	3073	2995
1590.3	1545.1	516.7	515.9	9.3	0.8	3616	3085	3007
1610.6	1563.0	521.6	520.8	9.5	0.8	3668	3091	3012
1630.1	1580.5	526.3	525.5	9.6	0.8	3599	3101	3020
1650.7	1599.1	531.1	530.6	9.5	0.5	3700	3107	3025
1670.2	1616.9	535.7	535.5	9.4	0.2	3616	3097	3020
1690.7	1635.7	541.3	540.7	9.9	0.6	3596	3102	3025
1710.1	1654.0	546.6	545.8	10.3	0.9	3586	3107	3031
1730.8	1673.6	552.0	551.2	10.4	0.8	3571	3112	3036
1750.3	1692.3	557.2	556.4	10.5	0.7	3566	3117	3041
1770.6	1712.2	562.5	561.8	10.7	0.7	3862	3123	3048
1790.1	1731.5	567.7	566.8	11.0	0.9	3799	3130	3055
1810.6	1751.8	573.2	572.3	11.2	0.9	3700	3137	3061
1830.1	1771.1	578.4	577.4	11.4	1.0	3695	3142	3067
1850.7	1791.6	583.6	583.0	11.2	0.5	3566	3148	3073
1870.1	1811.0	589.0	588.3	11.5	0.7	3788	3153	3078
1890.7	1831.5	594.3	593.7	11.4	0.4	3788	3158	3084
1910.1	1850.9	599.7	599.2	11.7	0.6	3733	3163	3089
1930.7	1871.5	605.2	604.8	11.7	0.4	3744	3168	3094
1950.2	1891.0	610.9	610.3	12.1	0.6	3488	3172	3098
1970.7	1911.5	614.6	615.5	10.7	-0.9	4131	3179	3105
1990.2	1931.0	620.3	619.7	12.5	0.6	5798	3192	3116
2010.6	1951.4	623.5	623.1	12.2	0.2	5946	3214	3132
2030.0	1970.8	626.8	626.5	12.5	0.3	5662	3233	3146
2050.6	1991.4	629.9	630.1	12.2	-0.2	5824	3253	3161
2070.1	2010.9	633.2	633.4	12.3	-0.3	5669	3271	3175
2090.7	2031.5	636.6	[illegible]	12.3	-0.4	5891	3289	3189
2110.2	2051.0	640.1	640.3	12.7	-0.2	5824	3309	3203

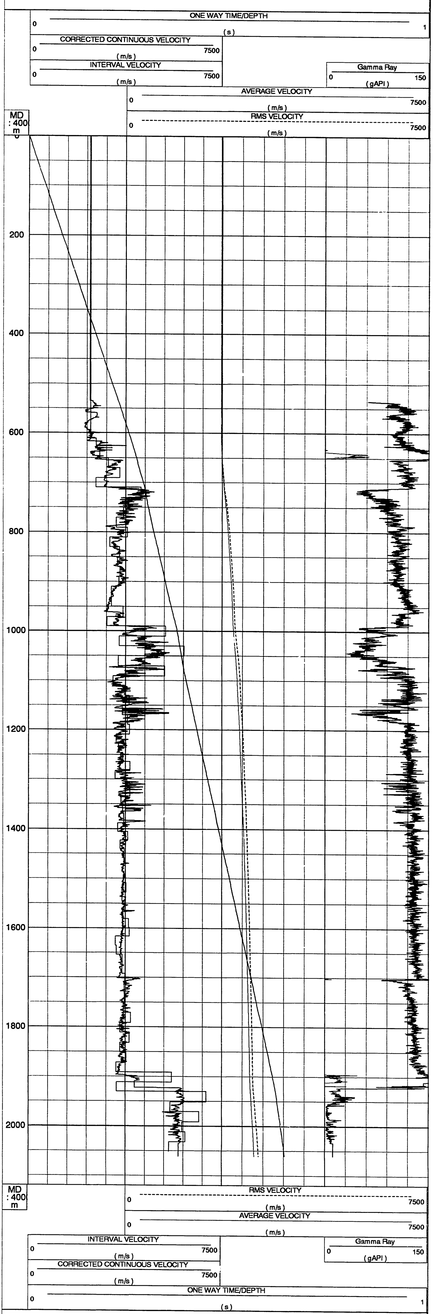
ADJUSTED SONIC LOG




950
1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950



TIME & VELOCITIES LOG



TIME/DEPTH REPORT

TIME/DEPTH REPORT

ONE WAY SONIC TIME FROM SRD ms	DEPTH AT TIME +0 ms m	DEPTH AT TIME +2 ms m	DEPTH AT TIME +4 ms m	DEPTH AT TIME +6 ms m	DEPTH AT TIME +8 ms m
0	0.0	4.8	9.5	14.3	19.1
10	23.8	28.6	33.4	38.2	42.9
20	47.7	52.5	57.2	62.0	66.8
30	71.6	76.4	81.2	85.9	90.6
40	95.4	100.1	104.9	109.6	114.3
50	119.2	124.0	128.8	133.5	138.2
60	143.1	147.8	152.6	157.4	162.1
70	166.9	171.7	176.4	181.2	186.0
80	190.8	195.5	200.3	205.1	209.8
90	214.6	219.4	224.1	228.9	233.7
100	238.4	243.2	248.0	252.8	257.5
110	262.3	267.1	271.8	276.6	281.4
120	286.1	290.9	295.7	300.4	305.2
130	310.0	314.7	319.5	324.3	329.1
140	333.8	338.6	343.4	348.1	352.9
150	357.7	362.4	367.2	372.0	376.7
160	381.5	386.3	391.1	395.8	400.6
170	405.4	410.1	414.9	419.7	424.4
180	429.2	434.0	438.7	443.5	448.3
190	453.0	457.8	462.6	467.4	472.1
200	476.9	481.7	486.4	491.2	496.0
210	500.7	505.5	510.3	515.0	519.8
220	524.6	529.3	534.1	538.9	543.7
230	548.4	553.2	558.0	562.8	567.6
240	572.3	577.1	581.9	586.7	591.5
250	596.7	601.5	606.4	611.2	616.0
260	621.8	627.1	632.4	637.6	642.8
270	648.1	653.9	660.4	666.8	673.1
280	679.4	685.6	691.8	697.7	703.7
290	709.7	717.8	726.2	734.3	742.0
300	749.8	757.3	764.9	772.4	779.6
310	786.8	793.9	801.0	808.0	814.9
320	821.6	828.4	835.3	842.1	848.9
330	855.6	863.0	870.0	877.2	884.4
340	891.6	898.8	906.0	913.0	919.6
350	926.2	932.7	938.3	943.9	949.5
360	958.0	964.5	971.0	977.9	984.7
370	991.9	1000.1	1008.3	1017.1	1026.1
380	1035.5	1045.2	1054.6	1063.4	1072.0
390	1080.0	1087.9	1095.2	1102.4	1109.0
400	1116.1	1123.3	1130.6	1138.2	1145.8
410	1153.6	1161.5	1169.4	1177.2	1184.9
420	1192.6	1199.6	1206.7	1213.8	1220.9
430	1228.1	1235.4	1242.8	1249.5	1256.7
440	1263.9	1271.1	1278.3	1285.6	1293.1
450	1300.5	1308.3	1316.0	1323.8	1331.6
460	1339.5	1345.9	1353.4	1361.0	1368.6
470	1376.0	1383.3	1390.7	1398.0	1405.4
480	1412.8	1420.2	1427.6	1434.9	1442.3
490	1449.6	1456.9	1464.3	1471.8	1479.2
500	1486.5	1493.9	1501.2	1508.6	1516.0
510	1523.3	1530.7	1538.0	1545.4	1552.8
520	1560.1	1567.5	1574.9	1582.2	1589.6
530	1596.9	1604.3	1611.7	1619.0	1626.0
540	1633.3	1640.5	1647.8	1655.2	1662.5
550	1669.2	1676.4	1683.6	1690.8	1698.0
560	1705.7	1713.2	1720.8	1728.4	1736.0
570	1743.4	1750.8	1758.3	1765.7	1773.2
580	1780.5	1787.8	1795.1	1802.4	1809.8
590	1817.2	1824.6	1832.0	1839.3	1846.7
600	1854.0	1861.3	1868.5	1875.7	1882.8
610	1889.8	1897.6	1905.4	1913.6	1923.0
620	1932.9	1944.8	1956.5	1968.1	1979.6
630	1991.0	2002.4	2014.1	2025.7	2037.3
640	2049.0	2060.6			

SYNTHETIC SEISMOGRAM FROM CHECKSHOT CORRECTED SONIC

LOCATION :300/K-77-60.5-122.30/00

TERRITORY : NORTHWEST TERRITORIES
COUNTRY : CANADA

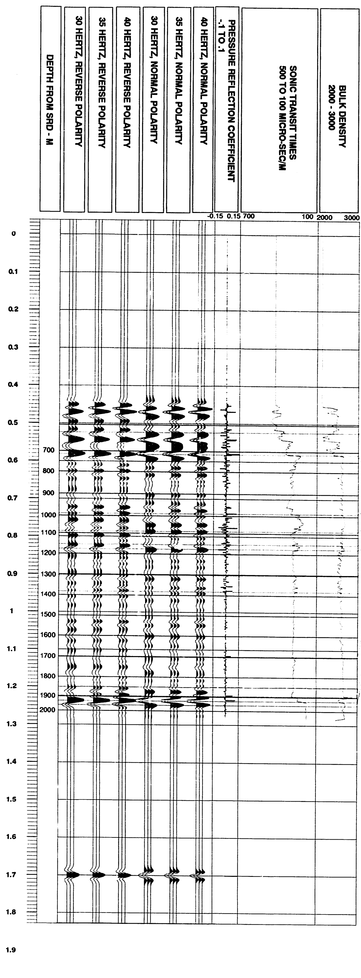
DATE COMPUTED :18-MAR-1999
JOB NUMBER :6073534

REFERENCE DATUM : KELLY BUSHING ELEVATION
ACOUSTIC IMPEDANCE : FROM SONIC AND DENSITY

SAMPLING RATE : 2 MSEC
WAVELET : RICKER ZERO PHASE - 30,35,40 HERTZ

POLARITY CONVENTION :
NORMAL POLARITY : AN INCREASE OF ACOUSTIC IMPEDANCE APPEARS AS A WHITE TROUGH

THE WAVELET IS DISPLAYED FOR A PRESSURE REFLECTION COEFFICIENT OF 0.2 (INCREASE OF IMPEDANCE)



Company:	SUNCOR ENERGY INC.		
Well:	SUNCOR NETLA K-77-60-50-122-30		
FIELD:	NETLA		
PROVINCE:	NORTHWEST TERRITORIES		
Date Logged:	11-MAR-1999	Date Processed:	18-MAR-1999
Well Location:	60 deg-46', 122 deg-30' (SURFACE LOC) 263.69M, -90.17M (BOTTOM LOC)		
Elevations:	KB: 627.29m	DF: 624.9m	GL: 618.4m
API Number:	N/A	Job Number:	6073534

Schlumberger

MISCELLANEOUS

N.E.B. COPY

1862

COMPANY: SUNCOR ENERGY INC.

WELL: SUNCOR NETLA K-77-60-50-122-30

FIELD: NETLA

PROVINCE: NORTHWEST TERRITORIES

9211-585.1-2

Schlumberger

DUAL CSI - VSP
MONITOR LOG

60 deg-46', 122 deg-30' (SURFACE LOC)
263.98M, -90.17M (BOTTOM LOC)
300K-77-60-50-122-30/00 (UWI)

Elev.: K.B. 627.29 M
G.L. 618.4 M
D.F. 624.9 M

Permanent Datum: GROUND LEVEL — Elev.: 618.4 M
Log Measured From: KELLY BUSHING — 6.0 M above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.: N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	12-MAR-1999			
Run Number	ONE			
Depth Driller	2118 M			
Schlumberger Depth	2117 M			
Bottom Log Interval	2109 M			
Top Log Interval	400 M			
Casing Driller Size-@ Depth	177.800 MM @ 1999 M	@	@	@
Casing Schlumberger	1999.2 M			
Bit Size	150.000 MM			
Type Fluid in Hole	POTASSIUM SULPHATE			
Density / Viscosity	1045 KG/M3 / 53 S			
Fluid Loss / PH	6 CC / 9.8			
Source Sample	MEASURED			
RM @ Measured Temperature	4.060 OHMM @ 22 DEGC	@	@	@
RMF @ Measured Temperature	2.560 OHMM @ 22 DEGC	@	@	@
RMC @ Measured Temperature	3.300 OHMM @ 21 DEGC	@	@	@
Source RMF / RMC	MEASURED / MEASURED			
RM @ MST / RMF @ MST	1.870 @ 69 / 1.909 @ 69	@ @	@ @	@ @
Maximum Recorded Temperatures	88 DEGC			
Circulation Stopped / Time	11-MAR-1999 / 0:00			
Logger On Bottom / Time	12-MAR-1999 / 11:45			
Unit Number / Location	3010 / BMO			
Recorded By	KIMERSLEY BAKER \ BRAD JORDAN			
Witnessed By	BRIAN HEISTER			

	Run 1	Run 2	Run 3	Run 4
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size-@ Depth	@	@	@	@
Casing Schlumberger				
Bit Size				
Type Fluid in Hole				
Density / Viscosity				
Fluid Loss / PH				
Source Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source RMF / RMC				
RM @ MST / RMF @ MST	@ @	@ @	@ @	@ @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

ALL INTERPRETATION, ARE OPINIONS, BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT, GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES
CBS
CBS
CBL
CBL
VERSION: 5.5.5 (VERIFIED)

RUN 1 — BOTTOM: 2118 — TOP: 400 — RUN 2 — BOTTOM: 2109 — TOP: 400

BRIDGE PLUG @ 1999 M (TOP OF CEMENT)
BRIDGE PLUG @ 1999 M (TOP OF CEMENT)

PRINTS 2 FILES, 4 FINAL
REL 9DEC98 2:05

EQUIPMENT DESCRIPTION

RUN 1 — SURFACE EQUIPMENT

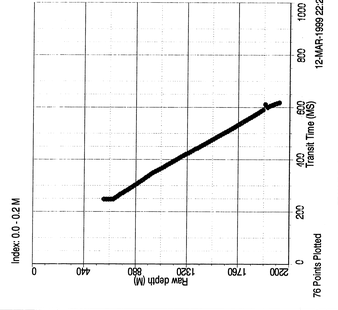
WSM4-783 WSM4-A37 1224-A9

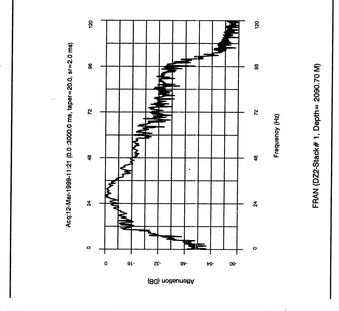
RUN 2 — DOWNHOLE EQUIPMENT

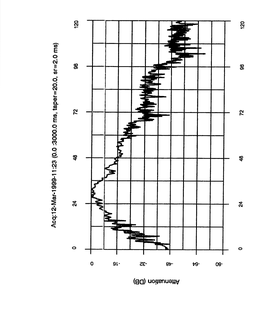
LEH-QT LEH-QT ECH-EB CAL-Y CBAT-2 CBAT-A

27.04	26.15		
Tailpiece	— 25.33	25.23	
CCL	— 24.93		
CBAT-F Ar	24.17		
CBAT-E Su	— 23.35		
	22.26		
19.47			
Ar-CSAU			
Ar-CSAU			
16.56			
Ar-CSAU			
Ar-CSAU			
AH-107	13.99		
Ar-CSAU	13.08		
Ar-CSAU			
9.73			
Ar-CSAU			
Ar-CSAU			
6.36			
Gamma Ray	— 4.19		
CBAT-I Ar	— 3.89		
CBAT-I Su	— 3.60		
4.70			
PZ			
Tension-Pressure	2.00		

MAXIMUM STRING DIAMETER 159 MM
MINIMUM RESTRICTION 150 MM
ALL LENGTHS IN METERS



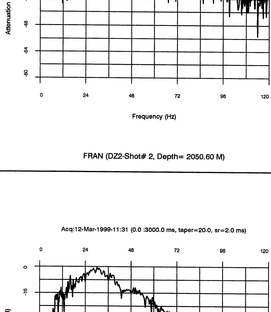




Frequency (Hz)

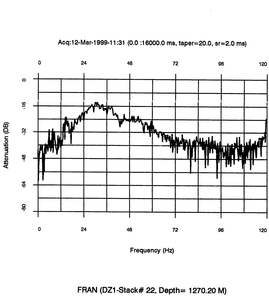
FRAN (DVZ2-Stack# 1, Depth= 2090.70 M)

Acq:12-Mar-1999-11:23 (0.0 :16000.0 ms, taper=20.0, sr=2.0 ms)



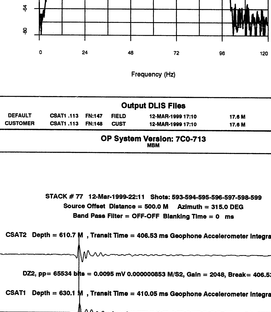
FRAN (DZ2-Shot# 2, Depth= 2050.60 M)

Acq:12-Mar-1999-11:31 (0.0 :3000.0 ms, taper=20.0, sr=2.0 ms)



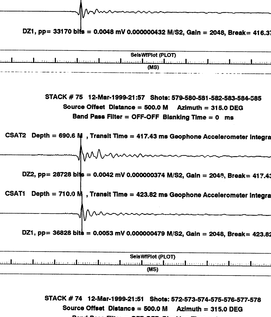
FRAN (DVZ2-Shot# 2, Depth= 2050.60 M)

Acq:12-Mar-1999-11:31 (0.0 :16000.0 ms, taper=20.0, sr=2.0 ms)



FRAN (DZ1-Stack# 22, Depth= 1270.20 M)

Acq:12-Mar-1999-14:09 (0.0 :3000.0 ms, taper=20.0, sr=2.0 ms)



Output DLIS Files

DEFAULT	CSAT\ .113	FN:147	FIELD	12-MAR-1999 17:10	17.6 M	5.3 M
CUSTOMER	CSAT\ .113	FN:148	CUST	12-MAR-1999 17:10	17.6 M	5.3 M

OP System Version: 7C0-713

MBM

STACK # 77 12-Mar-1999-22:11 Shots: 593-594-595-596-597-598-599
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 610.7 M , Transit Time = 406.53 ms Geophone Accelerometer Integration Done

DZ2, pp= 65534 bits = 0.0095 mV 0.000000853 M/S2, Gain = 2048, Break= 406.53 ms

CSAT1 Depth = 630.1 M , Transit Time = 410.05 ms Geophone Accelerometer Integration Done

DZ1, pp= 65072 bits = 0.0072 mV 0.000000647 M/S2, Gain = 2048, Break= 410.05 ms

SeisWPlot (PLOT)

0 (MS) 1500

STACK # 76 12-Mar-1999-22:04 Shots: 586-587-588-589-590-591-592
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 650.6 M , Transit Time = 427.83 ms Geophone Accelerometer Integration Done

DZ2, pp= 58255 bits = 0.0081 mV 0.000000732 M/S2, Gain = 2048, Break= 427.83 ms

CSAT1 Depth = 670.0 M , Transit Time = 416.37 ms Geophone Accelerometer Integration Done

DZ1, pp= 33170 bits = 0.0048 mV 0.000000432 M/S2, Gain = 2048, Break= 416.37 ms

SeisWPlot (PLOT)

0 (MS) 1500

STACK # 75 12-Mar-1999-21:57 Shots: 579-580-581-582-583-584-585
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 690.6 M , Transit Time = 417.43 ms Geophone Accelerometer Integration Done

DZ2, pp= 28728 bits = 0.0042 mV 0.000000374 M/S2, Gain = 2048, Break= 417.43 ms

CSAT1 Depth = 710.0 M , Transit Time = 423.82 ms Geophone Accelerometer Integration Done

DZ1, pp= 36828 bits = 0.0053 mV 0.000000479 M/S2, Gain = 2048, Break= 423.82 ms

SeisWPlot (PLOT)

0 (MS) 1500

STACK # 74 12-Mar-1999-21:51 Shots: 572-573-574-575-576-577-578
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 730.7 M , Transit Time = 425.13 ms Geophone Accelerometer Integration Done

DZ2, pp= 21455 bits = 0.0031 mV 0.000000279 M/S2, Gain = 2048, Break= 425.13 ms

CSAT1 Depth = 750.1 M , Transit Time = 421.99 ms Geophone Accelerometer Integration Done

DZ1, pp= 30175 bits = 0.0044 mV 0.000000393 M/S2, Gain = 2048, Break= 421.99 ms

SeisWPlot (PLOT)

0 (MS) 1500

STACK # 73 12-Mar-1999-21:44 Shots: 565-566-567-568-569-570-571
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 770.8 M , Transit Time = 424.29 ms Geophone Accelerometer Integration Done

DZ2, pp= 34466 bits = 0.0050 mV 0.000000449 M/S2, Gain = 2048, Break= 424.29 ms

CSAT1 Depth = 790.3 M , Transit Time = 426.60 ms Geophone Accelerometer Integration Done

DZ1, pp= 37324 bits = 0.0054 mV 0.000000486 M/S2, Gain = 2048, Break= 426.60 ms

SeisWPlot (PLOT)

0 (MS) 1500

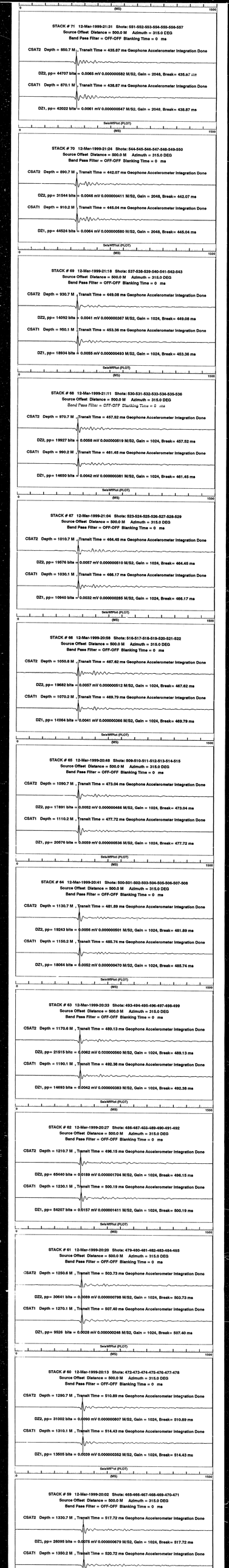
STACK # 72 12-Mar-1999-21:38 Shots: 558-559-560-561-562-563-564
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 810.7 M , Transit Time = 429.41 ms Geophone Accelerometer Integration Done

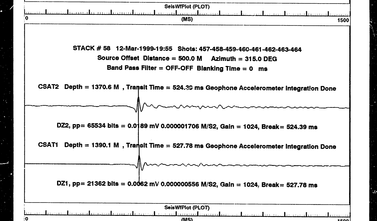
DZ2, pp= 44287 bits = 0.0064 mV 0.000000577 M/S2, Gain = 2048, Break= 429.41 ms

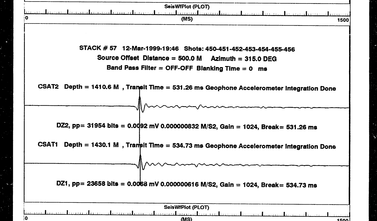
CSAT1 Depth = 830.2 M , Transit Time = 432.51 ms Geophone Accelerometer Integration Done

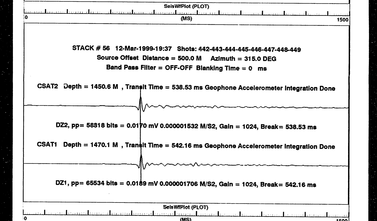
DZ1, pp= 30874 bits = 0.0045 mV 0.000000402 M/S2, Gain = 2048, Break= 432.51 ms

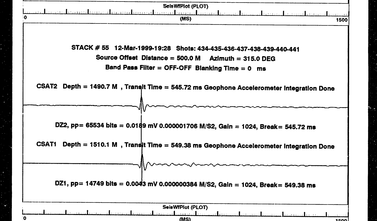

(MS)
0
1500
STACK # 71 12-Mar-1999-21:31 Shots: 551-552-553-554-555-556-557
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 850.7 M , Transit Time = 435.87 ms Geophone Accelerometer Integration Done
DZ2, pp= 44707 bits = 0.0065 mV 0.000000582 M/S2, Gain = 2048, Break= 435.97 ms
CSAT1 Depth = 870.1 M , Transit Time = 438.87 ms Geophone Accelerometer Integration Done
DZ1, pp= 42022 bits = 0.0061 mV 0.000000547 M/S2, Gain = 2048, Break= 438.87 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 70 12-Mar-1999-21:24 Shots: 544-545-546-547-548-549-550
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 890.7 M , Transit Time = 442.07 ms Geophone Accelerometer Integration Done
DZ2, pp= 31544 bits = 0.0046 mV 0.000000411 M/S2, Gain = 2048, Break= 442.07 ms
CSAT1 Depth = 910.2 M , Transit Time = 445.04 ms Geophone Accelerometer Integration Done
DZ1, pp= 44524 bits = 0.0064 mV 0.000000580 M/S2, Gain = 2048, Break= 445.04 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 69 12-Mar-1999-21:18 Shots: 537-538-539-540-541-542-543
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 930.7 M , Transit Time = 449.08 ms Geophone Accelerometer Integration Done
DZ2, pp= 14092 bits = 0.0041 mV 0.000000367 M/S2, Gain = 1024, Break= 449.08 ms
CSAT1 Depth = 950.1 M , Transit Time = 453.36 ms Geophone Accelerometer Integration Done
DZ1, pp= 18934 bits = 0.0055 mV 0.000000493 M/S2, Gain = 1024, Break= 453.36 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 68 12-Mar-1999-21:11 Shots: 530-531-532-533-534-535-536
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 970.7 M , Transit Time = 457.52 ms Geophone Accelerometer Integration Done
DZ2, pp= 19927 bits = 0.0058 mV 0.000000519 M/S2, Gain = 1024, Break= 457.52 ms
CSAT1 Depth = 990.2 M , Transit Time = 461.45 ms Geophone Accelerometer Integration Done
DZ1, pp= 14650 bits = 0.0042 mV 0.000000381 M/S2, Gain = 1024, Break= 461.45 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 67 12-Mar-1999-21:04 Shots: 523-524-525-526-527-528-529
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1010.7 M , Transit Time = 464.45 ms Geophone Accelerometer Integration Done
DZ2, pp= 19576 bits = 0.0057 mV 0.000000510 M/S2, Gain = 1024, Break= 464.45 ms
CSAT1 Depth = 1030.1 M , Transit Time = 466.17 ms Geophone Accelerometer Integration Done
DZ1, pp= 10940 bits = 0.0032 mV 0.000000285 M/S2, Gain = 1024, Break= 466.17 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 66 12-Mar-1999-20:58 Shots: 516-517-518-519-520-521-522
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1050.8 M , Transit Time = 467.62 ms Geophone Accelerometer Integration Done
DZ2, pp= 19682 bits = 0.0057 mV 0.000000512 M/S2, Gain = 1024, Break= 467.62 ms
CSAT1 Depth = 1070.2 M , Transit Time = 469.79 ms Geophone Accelerometer Integration Done
DZ1, pp= 14064 bits = 0.0041 mV 0.000000366 M/S2, Gain = 1024, Break= 469.79 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 65 12-Mar-1999-20:48 Shots: 509-510-511-512-513-514-515
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1090.7 M , Transit Time = 473.04 ms Geophone Accelerometer Integration Done
DZ2, pp= 17891 bits = 0.0052 mV 0.000000466 M/S2, Gain = 1024, Break= 473.04 ms
CSAT1 Depth = 1110.2 M , Transit Time = 477.72 ms Geophone Accelerometer Integration Done
DZ1, pp= 20576 bits = 0.0059 mV 0.000000536 M/S2, Gain = 1024, Break= 477.72 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 64 12-Mar-1999-20:41 Shots: 500-501-502-503-504-505-506-507-508
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1130.7 M , Transit Time = 481.89 ms Geophone Accelerometer Integration Done
DZ2, pp= 19243 bits = 0.0056 mV 0.000000501 M/S2, Gain = 1024, Break= 481.89 ms
CSAT1 Depth = 1150.2 M , Transit Time = 485.74 ms Geophone Accelerometer Integration Done
DZ1, pp= 18064 bits = 0.0052 mV 0.000000470 M/S2, Gain = 1024, Break= 485.74 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 63 12-Mar-1999-20:33 Shots: 493-494-495-496-497-498-499
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1170.6 M , Transit Time = 489.13 ms Geophone Accelerometer Integration Done
DZ2, pp= 21515 bits = 0.0062 mV 0.000000560 M/S2, Gain = 1024, Break= 489.13 ms
CSAT1 Depth = 1190.1 M , Transit Time = 492.38 ms Geophone Accelerometer Integration Done
DZ1, pp= 14693 bits = 0.0042 mV 0.000000383 M/S2, Gain = 1024, Break= 492.38 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 62 12-Mar-1999-20:27 Shots: 486-487-488-489-490-491-492
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1210.7 M , Transit Time = 496.15 ms Geophone Accelerometer Integration Done
DZ2, pp= 65440 bits = 0.0189 mV 0.000001704 M/S2, Gain = 1024, Break= 496.15 ms
CSAT1 Depth = 1230.1 M , Transit Time = 500.19 ms Geophone Accelerometer Integration Done
DZ1, pp= 54207 bits = 0.0157 mV 0.000001411 M/S2, Gain = 1024, Break= 500.19 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 61 12-Mar-1999-20:20 Shots: 479-480-481-482-483-484-485
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1250.6 M , Transit Time = 503.73 ms Geophone Accelerometer Integration Done
DZ2, pp= 30641 bits = 0.0089 mV 0.000000798 M/S2, Gain = 1024, Break= 503.73 ms
CSAT1 Depth = 1270.1 M , Transit Time = 507.40 ms Geophone Accelerometer Integration Done
DZ1, pp= 9526 bits = 0.0028 mV 0.000000248 M/S2, Gain = 1024, Break= 507.40 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 60 12-Mar-1999-20:13 Shots: 472-473-474-475-476-477-478
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1290.7 M , Transit Time = 510.89 ms Geophone Accelerometer Integration Done
DZ2, pp= 31002 bits = 0.0090 mV 0.000000807 M/S2, Gain = 1024, Break= 510.89 ms
CSAT1 Depth = 1310.1 M , Transit Time = 514.43 ms Geophone Accelerometer Integration Done
DZ1, pp= 13605 bits = 0.0039 mV 0.000000352 M/S2, Gain = 1024, Break= 514.43 ms
SeisWPlot (PLOT)
(MS)
0
1500
STACK # 59 12-Mar-1999-20:02 Shots: 465-466-467-468-469-470-471
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1330.7 M , Transit Time = 517.72 ms Geophone Accelerometer Integration Done
DZ2, pp= 26095 bits = 0.0075 mV 0.000000679 M/S2, Gain = 1024, Break= 517.72 ms
CSAT1 Depth = 1350.2 M , Transit Time = 520.72 ms Geophone Accelerometer Integration Done

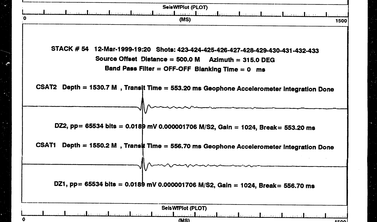

DZ1, pp= 11126 bits = 0.0032 mV 0.000000290 M/S2, Gain = 1024, Break = 520.72 ms

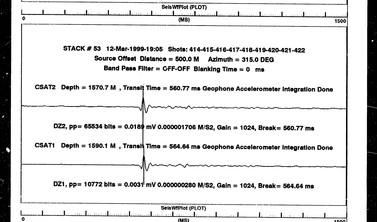

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 58 12-Mar-1999-19:55 Shots: 457-458-459-460-461-462-463-464
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1370.6 M , Transit Time = 524.32 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 524.39 ms
CSAT1 Depth = 1390.1 M , Transit Time = 527.78 ms Geophone Accelerometer Integration Done
DZ1, pp= 21362 bits = 0.0062 mV 0.000000556 M/S2, Gain = 1024, Break = 527.78 ms

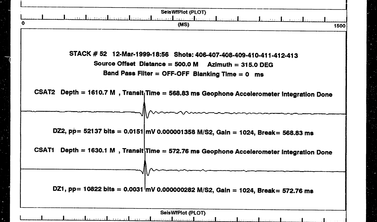

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 57 12-Mar-1999-19:46 Shots: 450-451-452-453-454-455-456
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1410.6 M , Transit Time = 531.26 ms Geophone Accelerometer Integration Done
DZ2, pp= 31954 bits = 0.0092 mV 0.000000832 M/S2, Gain = 1024, Break = 531.26 ms
CSAT1 Depth = 1430.1 M , Transit Time = 534.73 ms Geophone Accelerometer Integration Done
DZ1, pp= 23658 bits = 0.0068 mV 0.000000616 M/S2, Gain = 1024, Break = 534.73 ms

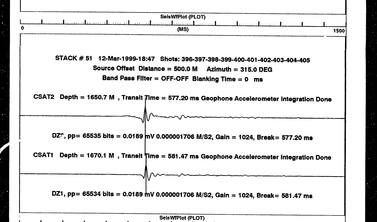

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 56 12-Mar-1999-19:37 Shots: 442-443-444-445-446-447-448-449
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1450.6 M , Transit Time = 538.53 ms Geophone Accelerometer Integration Done
DZ2, pp= 58818 bits = 0.0170 mV 0.000001532 M/S2, Gain = 1024, Break = 538.53 ms
CSAT1 Depth = 1470.1 M , Transit Time = 542.16 ms Geophone Accelerometer Integration Done
DZ1, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 542.16 ms

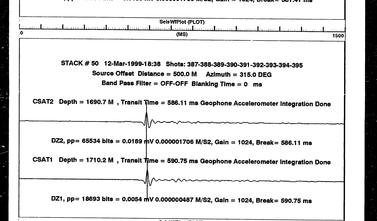

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 55 12-Mar-1999-19:28 Shots: 434-435-436-437-438-439-440-441
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1490.7 M , Transit Time = 545.72 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 545.72 ms
CSAT1 Depth = 1510.1 M , Transit Time = 549.38 ms Geophone Accelerometer Integration Done
DZ1, pp= 14749 bits = 0.0043 mV 0.000000384 M/S2, Gain = 1024, Break = 549.38 ms

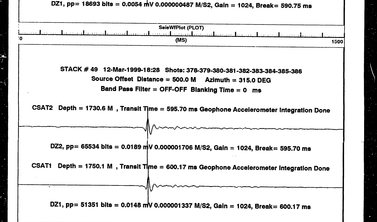

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 54 12-Mar-1999-19:20 Shots: 423-424-425-426-427-428-429-430-431-432-433
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1530.7 M , Transit Time = 553.20 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 553.20 ms
CSAT1 Depth = 1550.2 M , Transit Time = 556.70 ms Geophone Accelerometer Integration Done
DZ1, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 556.70 ms

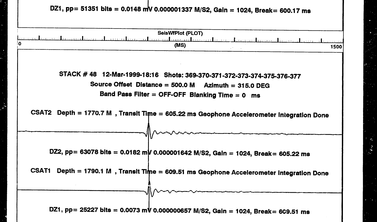

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 53 12-Mar-1999-19:05 Shots: 414-415-416-417-418-419-420-421-422
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1570.7 M , Transit Time = 560.77 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 560.77 ms
CSAT1 Depth = 1590.1 M , Transit Time = 564.64 ms Geophone Accelerometer Integration Done
DZ1, pp= 10772 bits = 0.0031 mV 0.000000280 M/S2, Gain = 1024, Break = 564.64 ms

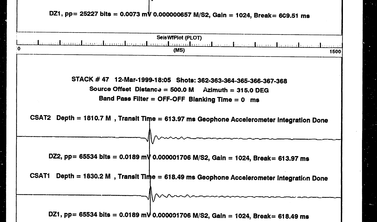

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 52 12-Mar-1999-18:56 Shots: 406-407-408-409-410-411-412-413
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1610.7 M , Transit Time = 568.83 ms Geophone Accelerometer Integration Done
DZ2, pp= 52137 bits = 0.0151 mV 0.000001358 M/S2, Gain = 1024, Break = 568.83 ms
CSAT1 Depth = 1630.1 M , Transit Time = 572.76 ms Geophone Accelerometer Integration Done
DZ1, pp= 10822 bits = 0.0031 mV 0.000000282 M/S2, Gain = 1024, Break = 572.76 ms

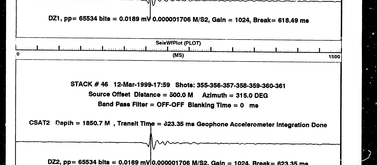

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 51 12-Mar-1999-18:47 Shots: 396-397-398-399-400-401-402-403-404-405
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1650.7 M , Transit Time = 577.20 ms Geophone Accelerometer Integration Done
DZ", pp= 65535 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 577.20 ms
CSAT1 Depth = 1670.1 M , Transit Time = 581.47 ms Geophone Accelerometer Integration Done
DZ1, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 581.47 ms

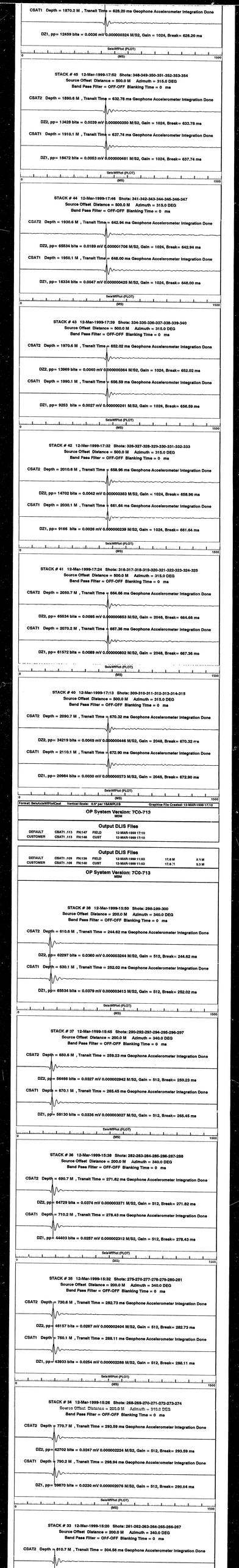

SeisWPlot (PLOT)
(MS)
0
1500
STACK # 50 12-Mar-1999-18:38 Shots: 387-388-389-390-391-392-393-394-395
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1690.7 M , Transit Time = 586.11 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 586.11 ms
CSAT1 Depth = 1710.2 M , Transit Time = 590.75 ms Geophone Accelerometer Integration Done
DZ1, pp= 18693 bits = 0.0054 mV 0.000000487 M/S2, Gain = 1024, Break = 590.75 ms


SeisWPlot (PLOT)
(MS)
0
1500
STACK # 49 12-Mar-1999-18:28 Shots: 378-379-380-381-382-383-384-385-386
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1730.6 M , Transit Time = 595.70 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 595.70 ms
CSAT1 Depth = 1750.1 M , Transit Time = 600.17 ms Geophone Accelerometer Integration Done
DZ1, pp= 51351 bits = 0.0148 mV 0.000001337 M/S2, Gain = 1024, Break = 600.17 ms


SeisWPlot (PLOT)
(MS)
0
1500
STACK # 48 12-Mar-1999-18:16 Shots: 369-370-371-372-373-374-375-376-377
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1770.7 M , Transit Time = 605.22 ms Geophone Accelerometer Integration Done
DZ2, pp= 63078 bits = 0.0182 mV 0.000001642 M/S2, Gain = 1024, Break = 605.22 ms
CSAT1 Depth = 1790.1 M , Transit Time = 609.91 ms Geophone Accelerometer Integration Done
DZ1, pp= 25227 bits = 0.0073 mV 0.000000657 M/S2, Gain = 1024, Break = 609.91 ms


SeisWPlot (PLOT)
(MS)
0
1500
STACK # 47 12-Mar-1999-18:05 Shots: 362-363-364-365-366-367-368
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1810.7 M , Transit Time = 613.97 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 613.97 ms
CSAT1 Depth = 1830.2 M , Transit Time = 618.49 ms Geophone Accelerometer Integration Done
DZ1, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 618.49 ms


SeisWPlot (PLOT)
(MS)
0
1500
STACK # 46 12-Mar-1999-17:59 Shots: 355-356-357-358-359-360-361
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1850.7 M , Transit Time = 623.35 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break = 623.35 ms


CSAT1 Depth = 1870.2 M , Transit Time = 628.20 ms Geophone Accelerometer Integration Done
DZ1, pp= 12459 bits = 0.0036 mV 0.000000324 M/S2, Gain = 1024, Break= 628.20 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 45 12-Mar-1999-17:52 Shots: 348-349-350-351-352-353-354
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1890.6 M , Transit Time = 632.78 ms Geophone Accelerometer Integration Done
DZ2, pp= 13428 bits = 0.0039 mV 0.000000350 M/S2, Gain = 1024, Break= 632.78 ms
CSAT1 Depth = 1910.1 M , Transit Time = 637.74 ms Geophone Accelerometer Integration Done
DZ1, pp= 18472 bits = 0.0053 mV 0.000000481 M/S2, Gain = 1024, Break= 637.74 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 44 12-Mar-1999-17:46 Shots: 341-342-343-344-345-346-347
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1930.6 M , Transit Time = 642.94 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break= 642.94 ms
CSAT1 Depth = 1950.1 M , Transit Time = 648.00 ms Geophone Accelerometer Integration Done
DZ1, pp= 16334 bits = 0.0047 mV 0.000000425 M/S2, Gain = 1024, Break= 648.00 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 43 12-Mar-1999-17:39 Shots: 334-335-336-337-338-339-340
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1970.6 M , Transit Time = 652.02 ms Geophone Accelerometer Integration Done
DZ2, pp= 13969 bits = 0.0040 mV 0.000000364 M/S2, Gain = 1024, Break= 652.02 ms
CSAT1 Depth = 1990.1 M , Transit Time = 656.59 ms Geophone Accelerometer Integration Done
DZ1, pp= 9253 bits = 0.0027 mV 0.000000241 M/S2, Gain = 1024, Break= 656.59 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 42 12-Mar-1999-17:32 Shots: 326-327-328-329-330-331-332-333
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 2010.6 M , Transit Time = 658.96 ms Geophone Accelerometer Integration Done
DZ2, pp= 14702 bits = 0.0042 mV 0.000000383 M/S2, Gain = 1024, Break= 658.96 ms
CSAT1 Depth = 2030.1 M , Transit Time = 661.64 ms Geophone Accelerometer Integration Done
DZ1, pp= 9166 bits = 0.0026 mV 0.000000239 M/S2, Gain = 1024, Break= 661.64 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 41 12-Mar-1999-17:24 Shots: 316-317-318-319-320-321-322-323-324-325
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 2050.7 M , Transit Time = 664.66 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0095 mV 0.000000853 M/S2, Gain = 2048, Break= 664.66 ms
CSAT1 Depth = 2070.2 M , Transit Time = 667.36 ms Geophone Accelerometer Integration Done
DZ1, pp= 61572 bits = 0.0089 mV 0.000000802 M/S2, Gain = 2048, Break= 667.36 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 40 12-Mar-1999-17:13 Shots: 309-310-311-312-313-314-315
Source Offset Distance = 500.0 M Azimuth = 315.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 2090.7 M , Transit Time = 670.32 ms Geophone Accelerometer Integration Done
DZ2, pp= 34219 bits = 0.0049 mV 0.000000446 M/S2, Gain = 2048, Break= 670.32 ms
CSAT1 Depth = 2110.1 M , Transit Time = 672.90 ms Geophone Accelerometer Integration Done
DZ1, pp= 20984 bits = 0.0030 mV 0.000000273 M/S2, Gain = 2048, Break= 672.90 ms
SeisWtPlot (PLOT)
0
(MS)
1500
Format: SeisAcisWTPlotCfg Vertical Scale: 0.5" per 1SAMPLE/B Graphics File Created: 12-MAR-1999 17:10
OP System Version: 7C0-713
MBM
Output DLIS Files
DEFAULT CBAT1 .113 FN:147 FIELD 12-MAR-1999 17:10
CUSTOMER CBAT1 .113 FN:148 CUST 12-MAR-1999 17:10
Output DLIS Files
DEFAULT CBAT1 .109 FN:139 FIELD 12-MAR-1999 11:03 17.6 M 5.1 M
CUSTOMER CBAT1 .109 FN:140 CUST 12-MAR-1999 11:03 17.6 M 5.3 M
OP System Version: 7C0-713
MBM
STACK # 38 12-Mar-1999-15:50 Shots: 298-299-300
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 610.6 M , Transit Time = 244.62 ms Geophone Accelerometer Integration Done
DZ2, pp= 62297 bits = 0.0360 mV 0.000003244 M/S2, Gain = 512, Break= 244.62 ms
CSAT1 Depth = 630.1 M , Transit Time = 252.02 ms Geophone Accelerometer Integration Done
DZ1, pp= 65534 bits = 0.0379 mV 0.000003413 M/S2, Gain = 512, Break= 252.02 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 37 12-Mar-1999-15:45 Shots: 290-292-293-294-295-296-297
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 650.6 M , Transit Time = 259.23 ms Geophone Accelerometer Integration Done
DZ2, pp= 56466 bits = 0.0327 mV 0.000002942 M/S2, Gain = 512, Break= 259.23 ms
CSAT1 Depth = 670.1 M , Transit Time = 265.45 ms Geophone Accelerometer Integration Done
DZ1, pp= 58130 bits = 0.0336 mV 0.000003027 M/S2, Gain = 512, Break= 265.45 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 36 12-Mar-1999-15:38 Shots: 282-283-284-285-286-287-288
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 690.7 M , Transit Time = 271.82 ms Geophone Accelerometer Integration Done
DZ2, pp= 64729 bits = 0.0374 mV 0.000003371 M/S2, Gain = 512, Break= 271.82 ms
CSAT1 Depth = 710.2 M , Transit Time = 278.43 ms Geophone Accelerometer Integration Done
DZ1, pp= 44403 bits = 0.0257 mV 0.000002312 M/S2, Gain = 512, Break= 278.43 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 35 12-Mar-1999-15:32 Shots: 275-276-277-278-279-280-281
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 730.6 M , Transit Time = 282.73 ms Geophone Accelerometer Integration Done
DZ2, pp= 46157 bits = 0.0267 mV 0.000002404 M/S2, Gain = 512, Break= 282.73 ms
CSAT1 Depth = 750.1 M , Transit Time = 288.11 ms Geophone Accelerometer Integration Done
DZ1, pp= 43933 bits = 0.0254 mV 0.000002288 M/S2, Gain = 512, Break= 288.11 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 34 12-Mar-1999-15:26 Shots: 268-269-270-271-272-273-274
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 770.7 M , Transit Time = 293.59 ms Geophone Accelerometer Integration Done
DZ2, pp= 42702 bits = 0.0247 mV 0.000002224 M/S2, Gain = 512, Break= 293.59 ms
CSAT1 Depth = 790.2 M , Transit Time = 298.94 ms Geophone Accelerometer Integration Done
DZ1, pp= 39870 bits = 0.0230 mV 0.000002076 M/S2, Gain = 512, Break= 298.94 ms
SeisWtPlot (PLOT)
0
(MS)
1500
STACK # 33 12-Mar-1999-15:20 Shots: 261-262-263-264-265-266-267
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 810.7 M , Transit Time = 304.56 ms Geophone Accelerometer Integration Done

DZ2, pp= 40791 bits = 0.0236 mV 0.000002124 M/S2, Gain = 512, Break= 304.56 ms

CSAT1 Depth = 830.1 M , Transit Time = 310.57 ms Geophone Accelerometer Integration Done

DZ1, pp= 39376 bits = 0.0228 mV 0.000002051 M/S2, Gain = 512, Break= 310.57 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 32 12-Mar-1999-15:13 Shots: 254-255-256-257-258-259-260

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 850.7 M , Transit Time = 316.25 ms Geophone Accelerometer Integration Done

DZ2, pp= 39607 bits = 0.0229 mV 0.000002063 M/S2, Gain = 512, Break= 316.25 ms

CSAT1 Depth = 870.1 M , Transit Time = 321.99 ms Geophone Accelerometer Integration Done

DZ1, pp= 35353 bits = 0.0204 mV 0.000001841 M/S2, Gain = 512, Break= 321.99 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 31 12-Mar-1999-15:07 Shots: 247-248-249-250-251-252-253

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 890.8 M , Transit Time = 327.52 ms Geophone Accelerometer Integration Done

DZ2, pp= 35370 bits = 0.0204 mV 0.000001842 M/S2, Gain = 512, Break= 327.52 ms

CSAT1 Depth = 910.2 M , Transit Time = 333.11 ms Geophone Accelerometer Integration Done

DZ1, pp= 33650 bits = 0.0194 mV 0.000001747 M/S2, Gain = 512, Break= 333.11 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 30 12-Mar-1999-15:01 Shots: 240-241-242-243-244-245-246

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 930.6 M , Transit Time = 339.01 ms Geophone Accelerometer Integration Done

DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break= 339.01 ms

CSAT1 Depth = 950.1 M , Transit Time = 345.10 ms Geophone Accelerometer Integration Done

DZ1, pp= 65091 bits = 0.0188 mV 0.000001695 M/S2, Gain = 1024, Break= 345.10 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 29 12-Mar-1999-14:55 Shots: 233-234-235-236-237-238-239

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 970.6 M , Transit Time = 351.26 ms Geophone Accelerometer Integration Done

DZ2, pp= 63860 bits = 0.0185 mV 0.000001663 M/S2, Gain = 1024, Break= 351.26 ms

CSAT1 Depth = 990.1 M , Transit Time = 357.27 ms Geophone Accelerometer Integration Done

DZ1, pp= 63897 bits = 0.0185 mV 0.000001663 M/S2, Gain = 1024, Break= 357.27 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 28 12-Mar-1999-14:49 Shots: 226-227-228-229-230-231-232

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1010.7 M , Transit Time = 361.72 ms Geophone Accelerometer Integration Done

DZ2, pp= 54351 bits = 0.0157 mV 0.000001415 M/S2, Gain = 1024, Break= 361.72 ms

CSAT1 Depth = 1030.2 M , Transit Time = 366.37 ms Geophone Accelerometer Integration Done

DZ1, pp= 43246 bits = 0.0125 mV 0.000001126 M/S2, Gain = 1024, Break= 366.37 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 27 12-Mar-1999-14:43 Shots: 219-220-221-222-223-224-225

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1050.6 M , Transit Time = 370.33 ms Geophone Accelerometer Integration Done

DZ2, pp= 47985 bits = 0.0139 mV 0.000001249 M/S2, Gain = 1024, Break= 370.33 ms

CSAT1 Depth = 1070.1 M , Transit Time = 375.03 ms Geophone Accelerometer Integration Done

DZ1, pp= 52074 bits = 0.0151 mV 0.000001356 M/S2, Gain = 1024, Break= 375.03 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 26 12-Mar-1999-14:36 Shots: 212-213-214-215-216-217-218

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1090.7 M , Transit Time = 379.63 ms Geophone Accelerometer Integration Done

DZ2, pp= 51363 bits = 0.0148 mV 0.000001337 M/S2, Gain = 1024, Break= 379.63 ms

CSAT1 Depth = 1110.2 M , Transit Time = 385.61 ms Geophone Accelerometer Integration Done

DZ1, pp= 52231 bits = 0.0151 mV 0.000001360 M/S2, Gain = 1024, Break= 385.61 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 25 12-Mar-1999-14:30 Shots: 205-206-207-208-209-210-211

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1130.6 M , Transit Time = 390.72 ms Geophone Accelerometer Integration Done

DZ2, pp= 53718 bits = 0.0155 mV 0.000001399 M/S2, Gain = 1024, Break= 390.72 ms

CSAT1 Depth = 1150.1 M , Transit Time = 395.84 ms Geophone Accelerometer Integration Done

DZ1, pp= 42043 bits = 0.0122 mV 0.000001095 M/S2, Gain = 1024, Break= 395.84 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 24 12-Mar-1999-14:23 Shots: 198-199-200-201-202-203-204

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1170.6 M , Transit Time = 401.03 ms Geophone Accelerometer Integration Done

DZ2, pp= 43659 bits = 0.0126 mV 0.000001137 M/S2, Gain = 1024, Break= 401.03 ms

CSAT1 Depth = 1190.1 M , Transit Time = 405.82 ms Geophone Accelerometer Integration Done

DZ1, pp= 42673 bits = 0.0123 mV 0.000001111 M/S2, Gain = 1024, Break= 405.82 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 23 12-Mar-1999-14:17 Shots: 191-192-193-194-195-196-197

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1210.6 M , Transit Time = 410.83 ms Geophone Accelerometer Integration Done

DZ2, pp= 49610 bits = 0.0143 mV 0.000001292 M/S2, Gain = 1024, Break= 410.83 ms

CSAT1 Depth = 1230.1 M , Transit Time = 416.23 ms Geophone Accelerometer Integration Done

DZ1, pp= 39221 bits = 0.0113 mV 0.000001021 M/S2, Gain = 1024, Break= 416.23 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 22 12-Mar-1999-14:09 Shots: 184-185-186-187-188-189-190

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1250.7 M , Transit Time = 421.21 ms Geophone Accelerometer Integration Done

DZ2, pp= 53859 bits = 0.0156 mV 0.000001402 M/S2, Gain = 1024, Break= 421.21 ms

CSAT1 Depth = 1270.2 M , Transit Time = 426.14 ms Geophone Accelerometer Integration Done

DZ1, pp= 50046 bits = 0.0145 mV 0.000001303 M/S2, Gain = 1024, Break= 426.14 ms

SeisWIPlot (PLOT)

0 (MS) 1500

STACK # 21 12-Mar-1999-14:00 Shots: 177-178-179-180-181-182-183

Source Offset Distance = 200.0 M Azimuth = 340.0 DEG

Band Pass Filter = OFF-OFF Blanking Time = 0 ms

CSAT2 Depth = 1290.7 M , Transit Time = 430.85 ms Geophone Accelerometer Integration Done

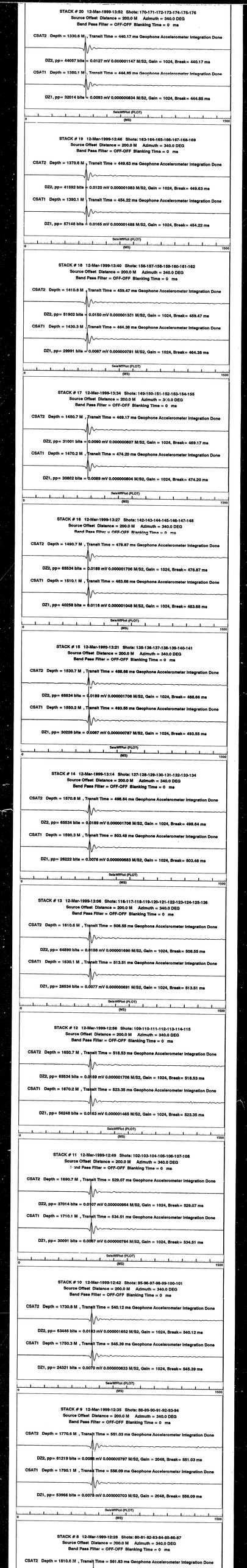
DZ2, pp= 34348 bits = 0.0099 mV 0.000000894 M/S2, Gain = 1024, Break= 430.85 ms

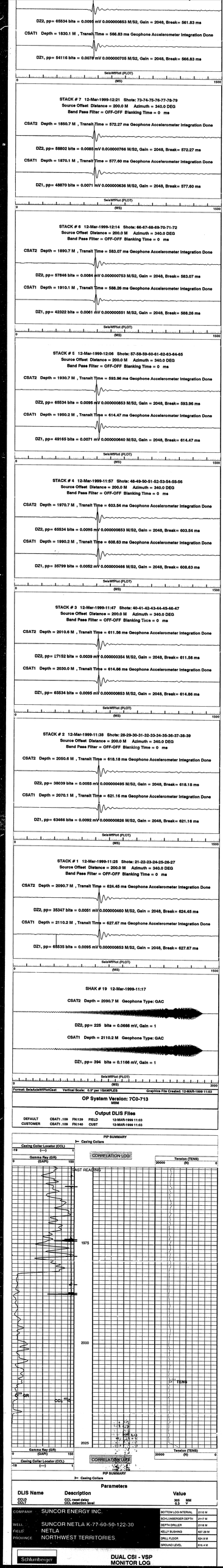
CSAT1 Depth = 1310.2 M , Transit Time = 435.54 ms Geophone Accelerometer Integration Done

DZ1, pp= 36444 bits = 0.0105 mV 0.000000949 M/S2, Gain = 1024, Break= 435.54 ms

SeisWIPlot (PLOT)

0 (MS) 1500


STACK # 20 12-Mar-1999-13:52 Shots: 170-171-172-173-174-175-176
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1330.6 M , Transit Time = 440.17 ms Geophone Accelerometer Integration Done
DZ2, pp= 44057 bits = 0.0127 mV 0.000001147 M/S2, Gain = 1024, Break= 440.17 ms
CSAT1 Depth = 1350.1 M , Transit Time = 444.85 ms Geophone Accelerometer Integration Done
DZ1, pp= 32014 bits = 0.0093 mV 0.000000834 M/S2, Gain = 1024, Break= 444.85 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 19 12-Mar-1999-13:46 Shots: 163-164-165-166-167-168-169
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1370.6 M , Transit Time = 449.63 ms Geophone Accelerometer Integration Done
DZ2, pp= 41592 bits = 0.0120 mV 0.000001083 M/S2, Gain = 1024, Break= 449.63 ms
CSAT1 Depth = 1390.1 M , Transit Time = 454.22 ms Geophone Accelerometer Integration Done
DZ1, pp= 57148 bits = 0.0165 mV 0.000001488 M/S2, Gain = 1024, Break= 454.22 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 18 12-Mar-1999-13:40 Shots: 156-157-158-159-160-161-162
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1410.8 M , Transit Time = 459.47 ms Geophone Accelerometer Integration Done
DZ2, pp= 51902 bits = 0.0150 mV 0.000001351 M/S2, Gain = 1024, Break= 459.47 ms
CSAT1 Depth = 1430.3 M , Transit Time = 464.38 ms Geophone Accelerometer Integration Done
DZ1, pp= 29991 bits = 0.0087 mV 0.000000781 M/S2, Gain = 1024, Break= 464.38 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 17 12-Mar-1999-13:34 Shots: 143-150-151-152-153-154-155
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1450.7 M , Transit Time = 469.17 ms Geophone Accelerometer Integration Done
DZ2, pp= 31001 bits = 0.0090 mV 0.000000807 M/S2, Gain = 1024, Break= 469.17 ms
CSAT1 Depth = 1470.2 M , Transit Time = 474.20 ms Geophone Accelerometer Integration Done
DZ1, pp= 30862 bits = 0.0089 mV 0.000000804 M/S2, Gain = 1024, Break= 474.20 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 16 12-Mar-1999-13:27 Shots: 140-143-144-145-146-147-148
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1490.7 M , Transit Time = 478.87 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break= 478.87 ms
CSAT1 Depth = 1510.1 M , Transit Time = 483.68 ms Geophone Accelerometer Integration Done
DZ1, pp= 40258 bits = 0.0116 mV 0.000001048 M/S2, Gain = 1024, Break= 483.68 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 15 12-Mar-1999-13:21 Shots: 135-136-137-138-139-140-141
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1530.7 M , Transit Time = 488.66 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break= 488.66 ms
CSAT1 Depth = 1550.2 M , Transit Time = 493.55 ms Geophone Accelerometer Integration Done
DZ1, pp= 30226 bits = 0.0087 mV 0.000000787 M/S2, Gain = 1024, Break= 493.55 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 14 12-Mar-1999-13:14 Shots: 127-128-129-130-131-132-133-134
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1570.8 M , Transit Time = 498.64 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break= 498.64 ms
CSAT1 Depth = 1590.3 M , Transit Time = 503.48 ms Geophone Accelerometer Integration Done
DZ1, pp= 26222 bits = 0.0076 mV 0.000000683 M/S2, Gain = 1024, Break= 503.48 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 13 12-Mar-1999-13:08 Shots: 116-117-118-119-120-121-122-123-124-125-126
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1610.6 M , Transit Time = 508.55 ms Geophone Accelerometer Integration Done
DZ2, pp= 64890 bits = 0.0188 mV 0.000001690 M/S2, Gain = 1024, Break= 508.55 ms
CSAT1 Depth = 1630.1 M , Transit Time = 513.51 ms Geophone Accelerometer Integration Done
DZ1, pp= 28534 bits = 0.0077 mV 0.000000691 M/S2, Gain = 1024, Break= 513.51 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 12 12-Mar-1999-12:56 Shots: 109-110-111-112-113-114-115
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1650.7 M , Transit Time = 518.53 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0189 mV 0.000001706 M/S2, Gain = 1024, Break= 518.53 ms
CSAT1 Depth = 1670.2 M , Transit Time = 523.35 ms Geophone Accelerometer Integration Done
DZ1, pp= 56248 bits = 0.0163 mV 0.000001465 M/S2, Gain = 1024, Break= 523.35 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 11 12-Mar-1999-12:49 Shots: 102-103-104-105-106-107-108
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1690.7 M , Transit Time = 529.07 ms Geophone Accelerometer Integration Done
DZ2, pp= 37014 bits = 0.0107 mV 0.000000964 M/S2, Gain = 1024, Break= 529.07 ms
CSAT1 Depth = 1710.1 M , Transit Time = 534.51 ms Geophone Accelerometer Integration Done
DZ1, pp= 30091 bits = 0.0087 mV 0.000000784 M/S2, Gain = 1024, Break= 534.51 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 10 12-Mar-1999-12:42 Shots: 95-96-97-98-99-100-101
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1730.8 M , Transit Time = 540.12 ms Geophone Accelerometer Integration Done
DZ2, pp= 63446 bits = 0.0183 mV 0.000001652 M/S2, Gain = 1024, Break= 540.12 ms
CSAT1 Depth = 1750.3 M , Transit Time = 545.39 ms Geophone Accelerometer Integration Done
DZ1, pp= 24321 bits = 0.0070 mV 0.000000633 M/S2, Gain = 1024, Break= 545.39 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 9 12-Mar-1999-12:35 Shots: 88-89-90-91-92-93-94
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1770.6 M , Transit Time = 551.03 ms Geophone Accelerometer Integration Done
DZ2, pp= 61219 bits = 0.0088 mV 0.000000797 M/S2, Gain = 2048, Break= 551.03 ms
CSAT1 Depth = 1790.1 M , Transit Time = 556.09 ms Geophone Accelerometer Integration Done
DZ1, pp= 53966 bits = 0.0078 mV 0.000000703 M/S2, Gain = 2048, Break= 556.09 ms
SeisWPlot (PLOT)
0 (MS) 1500
STACK # 8 12-Mar-1999-12:28 Shots: 80-81-82-83-84-85-86-87
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1810.6 M , Transit Time = 561.83 ms Geophone Accelerometer Integration Done


DZ2, pp= 65534 bits = 0.0095 mV 0.000000853 M/S2, Gain = 2048, Break= 561.83 ms
CSAT1 Depth = 1830.1 M , Transit Time = 566.83 ms Geophone Accelerometer Integration Done
DZ1, pp= 54116 bits = 0.0078 mV 0.000000705 M/S2, Gain = 2048, Break= 566.83 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
STACK # 7 12-Mar-1999-12:21 Shots: 73-74-75-76-77-78-79
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1850.7 M , Transit Time = 572.27 ms Geophone Accelerometer Integration Done
DZ2, pp= 58802 bits = 0.0085 mV 0.000000766 M/S2, Gain = 2048, Break= 572.27 ms
CSAT1 Depth = 1870.1 M , Transit Time = 577.60 ms Geophone Accelerometer Integration Done
DZ1, pp= 46870 bits = 0.0071 mV 0.000000636 M/S2, Gain = 2048, Break= 577.60 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
STACK # 6 12-Mar-1999-12:14 Shots: 66-67-68-69-70-71-72
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1890.7 M , Transit Time = 583.07 ms Geophone Accelerometer Integration Done
DZ2, pp= 57846 bits = 0.0084 mV 0.000000753 M/S2, Gain = 2048, Break= 583.07 ms
CSAT1 Depth = 1910.1 M , Transit Time = 588.26 ms Geophone Accelerometer Integration Done
DZ1, pp= 42322 bits = 0.0061 mV 0.000000551 M/S2, Gain = 2048, Break= 588.26 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
STACK # 5 12-Mar-1999-12:06 Shots: 57-58-59-60-61-62-63-64-65
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1930.7 M , Transit Time = 593.96 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0095 mV 0.000000853 M/S2, Gain = 2048, Break= 593.96 ms
CSAT1 Depth = 1950.2 M , Transit Time = 614.47 ms Geophone Accelerometer Integration Done
DZ1, pp= 49165 bits = 0.0071 mV 0.000000640 M/S2, Gain = 2048, Break= 614.47 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
STACK # 4 12-Mar-1999-11:57 Shots: 48-49-50-51-52-53-54-55-56
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 1970.7 M , Transit Time = 603.54 ms Geophone Accelerometer Integration Done
DZ2, pp= 65534 bits = 0.0095 mV 0.000000853 M/S2, Gain = 2048, Break= 603.54 ms
CSAT1 Depth = 1990.2 M , Transit Time = 608.63 ms Geophone Accelerometer Integration Done
DZ1, pp= 35799 bits = 0.0052 mV 0.000000466 M/S2, Gain = 2048, Break= 608.63 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
STACK # 3 12-Mar-1999-11:47 Shots: 40-41-42-43-44-45-46-47
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 2010.6 M , Transit Time = 611.56 ms Geophone Accelerometer Integration Done
DZ2, pp= 27152 bits = 0.0039 mV 0.000000354 M/S2, Gain = 2048, Break= 611.56 ms
CSAT1 Depth = 2030.0 M , Transit Time = 614.86 ms Geophone Accelerometer Integration Done
DZ1, pp= 65534 bits = 0.0095 mV 0.000000853 M/S2, Gain = 2048, Break= 614.86 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
STACK # 2 12-Mar-1999-11:38 Shots: 28-29-30-31-32-33-34-35-36-37-38-39
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 2050.6 M , Transit Time = 618.18 ms Geophone Accelerometer Integration Done
DZ2, pp= 38039 bits = 0.0055 mV 0.000000495 M/S2, Gain = 2048, Break= 618.18 ms
CSAT1 Depth = 2070.1 M , Transit Time = 621.16 ms Geophone Accelerometer Integration Done
DZ1, pp= 63466 bits = 0.0092 mV 0.000000826 M/S2, Gain = 2048, Break= 621.16 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
STACK # 1 12-Mar-1999-11:25 Shots: 21-22-23-24-25-26-27
Source Offset Distance = 200.0 M Azimuth = 340.0 DEG
Band Pass Filter = OFF-OFF Blanking Time = 0 ms
CSAT2 Depth = 2090.7 M , Transit Time = 624.45 ms Geophone Accelerometer Integration Done
DZ2, pp= 35347 bits = 0.0051 mV 0.000000460 M/S2, Gain = 2048, Break= 624.45 ms
CSAT1 Depth = 2110.2 M , Transit Time = 627.67 ms Geophone Accelerometer Integration Done
DZ1, pp= 65535 bits = 0.0095 mV 0.000000853 M/S2, Gain = 2048, Break= 627.67 ms
Seis/WfPlot (PLOT)
0
(MS)
1500
SHAK # 19 12-Mar-1999-11:17
CSAT2 Depth = 2090.7 M Geophone Type: GAC
DZ2, pp= 225 bits = 0.0666 mV, Gain = 1
CSAT1 Depth = 2110.2 M Geophone Type: GAC
DZ1, pp= 394 bits = 0.1166 mV, Gain = 1
Seis/WfPlot (PLOT)
0
(MS)
3000
Format: SeisAutoWfPlotCsat Vertical Scale: 0.5" per 1SAMPLES Graphics File Created: 12-MAR-1999 11:03
OP System Version: 7C0-713
MRM
Output DLIS Files
DEFAULT CSAT1 .109 FN:139 FIELD 12-MAR-1999 11:03
CUSTOMER CSAT1 .109 FN:140 CUST 12-MAR-1999 11:03
PIP SUMMARY
Casing Collars
Casing Collar Locator (CCL)
-10 (---) 1
CORRELATION LOG
Gamma Ray (GR)
0 (GAPI) 150
Tension (TENS)
20000 (N) 0
LAST READING
1975
2000
2025
TENS
GR
CCL
Gamma Ray (GR)
0 (GAPI) 150
Tension (TENS)
20000 (N) 0
Casing Collar Locator (CCL)
-10 (---) 1
CORRELATION LOG
PIP SUMMARY
Casing Collars
Parameters
DLIS Name Description Value
CCL reset delay 30.0 MM
CCL detection level 0.3 V
COMPANY: SUNCOR ENERGY INC.
WELL: SUNCOR NETLA K-77-60-50-122-30
FIELD: NETLA
PROVINCE: NORTHWEST TERRITORIES
BOTTOM LOG INTERVAL 2110 M
SCHLUMBERGER DEPTH 2117 M
DEPTH DRILLER 2119 M
KELLY BUSHING 627.28 M
DRILL FLOOR 624.8 M
GROUND LEVEL 616.4 M
Schlumberger
DUAL CSI - VSP
MONITOR LOG