RESISTIVITY/ CONDUCTIVITY

Schlumberger

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

PLATFORM EXPRESS

ARRAY INDUCTION LOG

COPY

Province:	NORTHWEST TERRITORIES
Field:	ARROWHEAD
Location:	UNIT I, SECTION: 75
Well:	ANADARKO ARROWHEAD RIVER I-75
Company:	ANADARKO CANADA CORPORATION

LOCATION:
UNIT: I, SECTION: 75
LAT: 60 34 42.3 N LONG: 122 58 32.6 W

Elev.: K.B. 517.9 m
G.L. 510.8 m
D.F. 517.6 m

Permanent Datum: GROUND LEVEL Elev.: 510.8 m
Log Measured From: KELLY BUSHING 7.1 m above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.
N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	13-Feb-2003			
Run Number	ONE			
Depth Driller	3586 m			
Schlumberger Depth	3586 m			
Bottom Log Interval	3585.5 m			
Top Log Interval	604 m			
Casing Driller Size @ Depth	244.500 mm @ 654.4 m	@	@	@
Casing Schlumberger	606 m			
Bit Size	216.000 mm			
Type Fluid In Hole	INVERT			
Density / Viscosity	965 kg/m3 / 45 s			
Fluid Loss / PH	/	/	/	/
Source Of Sample	NO SAMPLES			
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF / RMC	NO SAMPLES / NO SAMPLES			
RM @ MRT / RMF @ MRT	@ 103 / @ 103	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	103 degC			
Circulation Stopped / Time	13-Feb-2003 / 10:30			
Logger On Bottom / Time	13-Feb-2003 / 23:45			
Unit Number / Location	2016 / GRANDE PRAIRIE			
Recorded By	CURTIS MOFFAT			
Witnessed By	GORDON RICHMOND			

DEPTH SUMMARY LISTING

Date Created: 14-FEB-2003 1:04:55

	Run 1	Run 2	Run 3	Run 4
Logging Date	13-Feb-2003			
Run Number	ONE			
Depth Driller	3586 m			
Schlumberger Depth	3586 m			
Bottom Log Interval	3585.5 m			
Top Log Interval	604 m			
Casing Driller Size @ Depth	244.500 mm @ 654.4 m	@	@	@
Casing Schlumberger	606 m			
Bit Size	216.000 mm			
Type Fluid In Hole	INVERT			
Density / Viscosity	965 kg/m3 / 45 s			
Fluid Loss / PH	/	/	/	/
Source Of Sample	NO SAMPLES			
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF / RMC	NO SAMPLES / NO SAMPLES			
RM @ MRT / RMF @ MRT	@ 103 / @ 103	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	103 degC			
Circulation Stopped / Time	13-Feb-2003 / 10:30			
Logger On Bottom / Time	13-Feb-2003 / 23:45			
Unit Number / Location	2016 / GRANDE PRAIRIE			
Recorded By	CURTIS MOFFAT			
Witnessed By	GORDON RICHMOND			

Depth Measuring Device

Type: DWS
Schlumberger Depth Number: 15-NOV-2003
Calibration Cable Type: 7-46P
Calibration Cable Number: 4
Wheel Correction-2: -6

Depth System Equipment

Tension Device

Type: CMTD-B/A
Calibration Date: 29-JAN-2003
Calibration Number: 0.68
Calibration Check: 946.60

Logging Cable

Type: 7-46P
Serial Number: 4
Length: 7315.00 M
Dynamics Method: Meters
Tie Point: MAIN

Depth Control Parameters

Log Sequence: First Log In the Well
Rig Up Length At Surface: 74.00 M
Rig Up Length At Rig Floor: 74.00 M
Rig Up Length Correction: 0.00 M
Tool Zero Check At Surface: 0.00 M
Tool Zero Check At Surface: 0.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

THE USE OF AND RELIANCE UPON THIS RECORDED DEPTH IS SUBJECT TO THE TERMS AND CONDITIONS AS STATED IN THE AGREEMENT BETWEEN THE COMPANY NAMED COMPANY AND ANY OF ITS AFFILIATES AND SCHLUMBERGER AND/OR ITS AFFILIATES. ANY RELIANCE UPON THIS RECORDED DEPTH BY THE COMPANY NAMED COMPANY, OR BY ANYONE USING OR CLAIMING RELIANCE THROUGH THE COMPANY NAMED COMPANY, SHALL BE DEEMED AS CONFIRMATION BY SUCH PARTY OF ITS UNDERSTANDING AND ACCEPTANCE OF THE TERMS AND CONDITIONS OF SUCH AGREEMENT AND OF THE RESPONSIBILITY FOR ANY AND ALL LIABILITIES ARISING FROM OR RELATED TO THE USE OF OR RELIANCE UPON THIS RECORDED DEPTH.

OTHER SERVICES	
OBS	OTHER SERVICES
OBS	OBS
OBS	OBS
OBS	OBS
OBS	REMARKS: RUN NUMBER 2
ALL DEPTHS ARE REFERENCED TO DRILLERS DEPTH	
ALL DEPTHS ARE REFERENCED TO KELLY BUSHING	
ALL DEPTHS ARE REFERENCED TO KELLY BUSHING	
CASING COLLAR LOG OBTAINED WITH HCAL AND DAL2	
DIRECTIONAL SURVEYS TO BHA in, SPERRY-SUN TO TD	
DIRECTIONAL SURVEYS TO BHA in, SPERRY-SUN TO TD	
HOLE VOLUME = 79.97 M3	
HOLE VOLUME CALCULATED USING 11.7 EFFECTIVE CALIPER	
COMPUTED FROM TD TO BIT USING DATA OBTAINED WITH DAL2	
CREW # 1BOR2UE	
CREW # 2BOR2UE	
PRUDHOE FIELD	
SERVICE ORDER #: 1003234 RUN 1	SERVICE ORDER #: RUN 2
API NUMBER: 1003306	API NUMBER:
LOCATION:	LOCATION:
SURFACE LOCATION:	SURFACE LOCATION:
SECTION: TOWNSHIP: RANGE:	SECTION: TOWNSHIP: RANGE:
PERMANENT DATUM:	PERMANENT DATUM:
ELEVATION:	ELEVATION:
LOG MEASURED FROM:	LOG MEASURED FROM:
DRILLING MEASURED FROM:	DRILLING MEASURED FROM:
ELEV.: K.B.	ELEV.: K.B.
G.L.	G.L.
D.F.	D.F.

	RUN 1	RUN 2
EQUIPMENT	DESCRIPTION	
SURFACE EQUIPMENT		
WITM DTB-A		
DOWNHOLE EQUIPMENT		
LEH-QT		24.65
LEH-QT 2281		
DTC-H	23.68	23.96
DTC-H 2883	10.64	
DSLT-FTB	23.04	
DSLT-A 3453	25 MM Bimodel	
DSLT-B 3436		
ELEM 1636	18.24 25 MM	25 MM
LEH-QT 2281	18.64 Bimodel	Bimodel
LSH-QT 2281	18.92	
LSH-QT 2281	19.32 16.75	16.75
DSLT Mx	25 MM Bimodel	
AH-107		16.14
AH-107 2710		
AH-107		15.53
EDAC-C		
EDAC-C 240		
EDAC-B		12.28
EDAC-B 814		
AH-DTB	11.78	11.78
HILT-B FTB	11.58	11.48
HDGS-B 992	Gamma Ray	
HILT-B 3436	Neutron K	
HDGS-B 1169	9.47	
HDGS	9.27	
HDGS-A 1169	HDNS sens 8.61	
HDGS-A		
HRDD-H/T	7.39	
HILT-Trip	6.53	
HILT-Trip 3436	6.43	
HDGS-B 992	5.47	
HDGS-B 1169		
HDGS-A 1169		
HDGS-A		
HDGS-B 992	Induction	25 MM
HDGS-B 1169	Phase 2.62	Bimodel
HDGS-A 1169	Induction	2.61
HDGS-A 419	Deep 2.53	2.53
ECH-A	Centralizer	
MOVER	Arm 1.00	25 MM
	Centralizer	Bimodel
	Arm	
	TOOL ZERO	

MEASUREMENTS ARE TAKEN IN METRIC AND ARE RECORDED IN BOTH METRIC AND IMPERIAL UNITS.
ALL LENGTHS IN METERS

Input DLIS Files

DEFAULT	AIT_TUO_MCPL_CML_GAMJUP	PASS	PRODUCER	13-Feb-2003 23:35	2293.2 M

OP System Version: 10C0-306

		MCM	
HILTD	OP1A:OP1	DSLT	OP1A:OP1
DSLT-BB	OP1A:OP1	DITCH	10C0-306

PIP SUMMARY

Time Mark Every 30 S

Tool Hrs: 2.5
Data Start: 2293.2000
Data Stop: 604.1514

AIT-H 24 inch Investigation Conductivity (AIHTCOND) 0

AIT-H 24 inch Investigation (AIHTIN) 50

AIT-H 30 inch Investigation (AIHTIN) 50

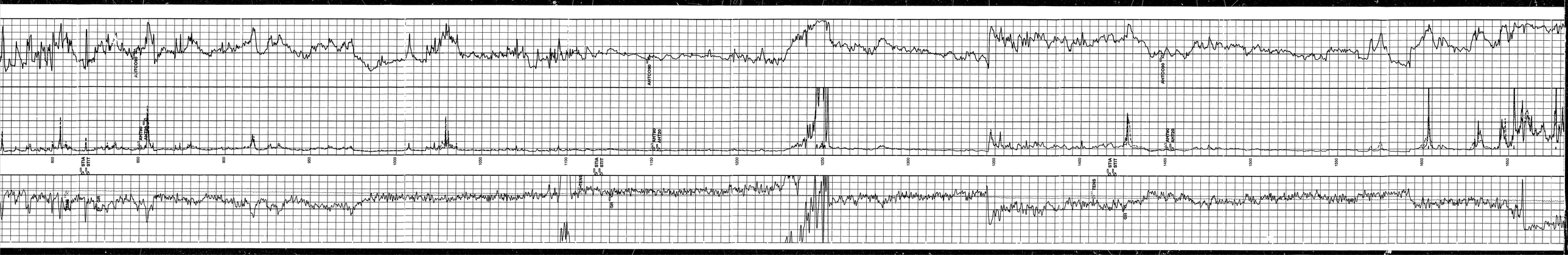
AIT-H 36 inch Investigation (AIHTIN) 50

Tension (TENS) 10000 (N) 0

Gamma Ray (GR) 0 (GAPI) 150

Bitsize (BITS) 100 (MM) 400

Depth (DEPTH) 600 (M) 2000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АНТСОЗ0
АНТСОЗ0
АНТПО
АМТ20
АНТПО
АМТ20
АНТПО
АМТ20
STIA
STIT
STIA
STIT
STIA
STIT
ENIS
ENIS
ENIS
GR
GR
GR
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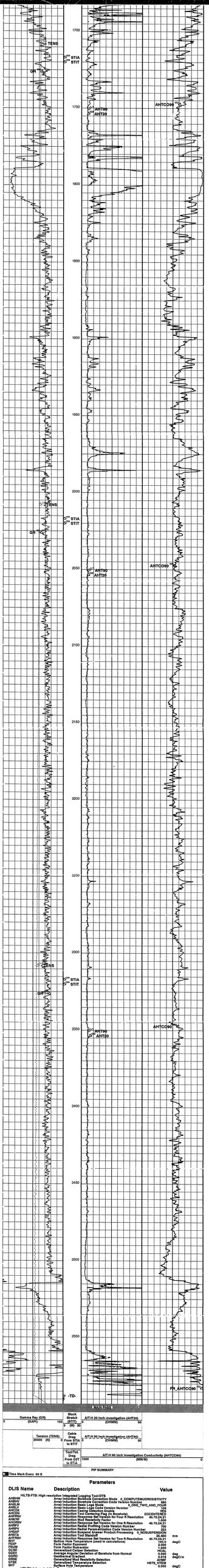
1500
1550
1600
1650



Parameters

DLIS Name	Description	Value
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
AHBHM	Array Induction Borehole Correction Mode	Q_COMPUTEMUDRESISTIVITY
AHBIV	Array Induction Borehole Correction Code Version Number	880
AHBLV	Array Induction Basic Logs Code Version	X_ONE_TWO_AND_FOUR
AHBLV	Array Induction Basic Logs Code Version Number	880
AHCDE	Array Induction Casing Detection Enable	YES
AHCEN	Array Induction Tool Centering Flag (In Borehole)	ECCENTERED
AHRRW	Array Induction Radial Resistivity Code for Four R Resolution	40.70.24.21
AHRRF	Array Induction Mud Resistivity Factor	1.000
AHSRW	Array Induction Response Set Version for One R Resolution	40.70.24.21
AHPRV	Array Induction Radial Profiling Code Version Number	703
AHPRV	Array Induction Response Set Version Number	703
AHSUP	Array Induction Suspend Answer Product Processing	S_NOSUSPENSION
AHSTA	Array Induction Tool Standoff	25.400 mm
AHSRW	Array Induction Response Set Version for Two R Resolution	40.70.24.21
BHT	Bottom Hole Temperature (used in calculations)	150.0 degC
FEXP	Form Factor Exponent	2.000
GCBR	Generalized Caliper Bore	1.000
GCSI	Generalized Caliper Selection	YCAL
GDEV	Average Angular Deviation of Borehole from Normal	0.000 deg
GDEV	Generalized Deviation	0.018 degCm
GSEL	Generalized Resistivity Selection	HSTS
GTSE	Generalized Temperature Selection	HSTS_HTEM
SHT	Surface Hole Temperature	5.000 degC

SHT		Surface Hole Temperature	0.000	degC
	HOLEV: Integrated Hole Volume			
BHT		Bottom Hole Temperature (used in calculations)	160.0	degC
GCEE		Generalized Caliper Selection	HCAL	
GDEV		Generalized Deviation of Borehole from Normal	0.000	deg
GGRD		Geological Gradient	0.000	degC/m
GRBE		Generalized Mud Resistivity Selection	AHMF	
GTEM		Generalized Temperature Selection	HSTE_HTEM	
SHT		Surface Hole Temperature	0.000	degC
	STI: Stuck Tool Indicator			
STKT		STI Stuck Threshold	1.524	m
TDD		Total Depth - Driller	2588.0	m
TDL		Total Depth - Logger	2588.0	m
	System and Miscellaneous			
BS		Bit Size	216.0	mm
MRT		Mud Sample Fluid Density	935.0	kg/m3
MST		Mud Sample Temperature		
TD		Total Depth	2588.0	m

Format: AIT_2LIN Vertical Scale: 1:600 Graphics File Created: 14-Feb-2003 00:41

OP System Version: 10C0-306

MCM

HILTD	OP10-KP1	EDAC	OP10-KP1	
DSLT-BB	OP10-KP1	DTCH	10C0-306	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_606LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_606LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M
REDUCED	AIT_TLD_MCFL_CNL_606LUP	FN:14	PRODUCER	13-Feb-2003 23:55		

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Changed Parameter Summary

DLIS Name	New Value		Previous Value		Depth & Time
BHT	103	DEGC	100	DEGC	2546.4 00:03:13
	103	DEGC	102	DEGC	2546.5 00:03:28

PIP SUMMARY

Time Mark Every 60 S

	Tool TVL Orig. From DIT to STA	0.2	AIT-H 90 Inch Investigation (AHT90) (OHMM) 2000
	Tension (TENS) Orig. From STA to STIT	0.2	AIT-H 30 Inch Investigation (AHT30) (OHMM) 2000
20000 (lb) 0			
	Stuck Stretch (STIT)	0.2	AIT-H 20 Inch Investigation (AHT20) (OHMM) 2000
Gamma Ray (GR) 0 (GAPI) 150	9 (IN) 20		

CONTINUED

GR

CS

650

AHT90

AHT30

AHT20

675

700

725

750

775

800

825

850

875

900

925

TENS

STIA

STIT

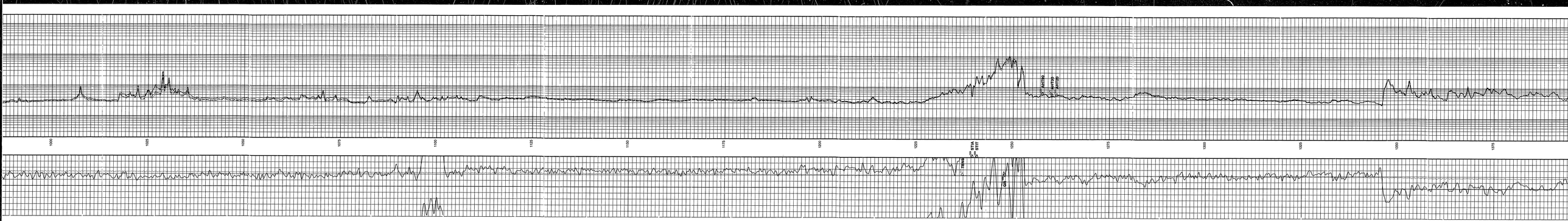
GR

950

AHT90

AHT30

AHT20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1300
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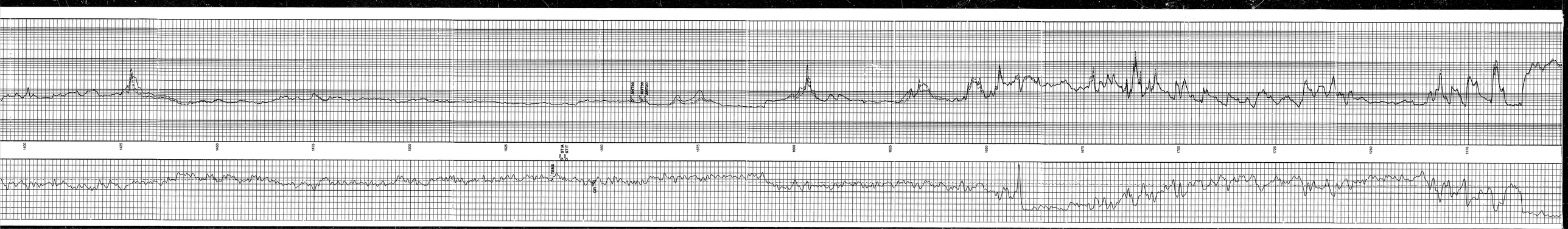
1350
1375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1425
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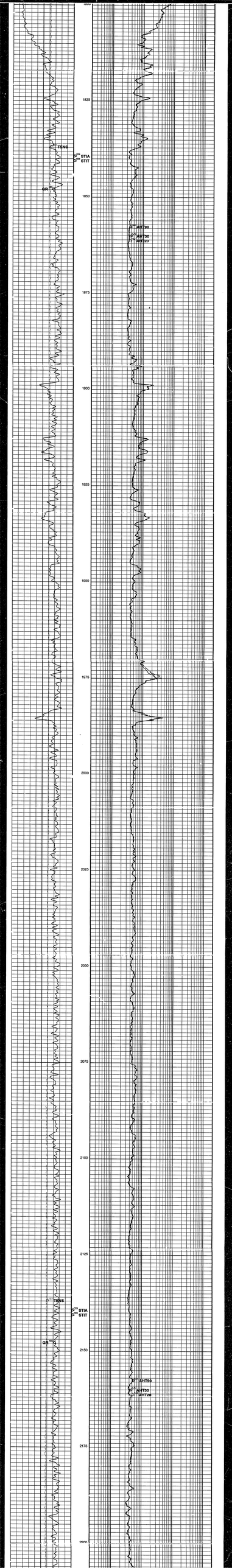
1750
1775
ETA
ETA
ETA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TENS
STIA
STIT
GR
1850
AHT90
AHT30
AHT20
1875
1900
1925
1950
1975
2000
2025
2050
2075
2100
2125
TENS
STIA
STIT
GR
2150
AHT90
AHT30
AHT20
2175

2225
2250
2275
2300
2325
2350
2375
2400
2425
2450
2475
2500
2525
2550
2575
TD

8 7/8" @ 2274
5" @ 2111

Gamma Ray (GR) (GAPI)
0
150

Resistivity (TRES) (OHMM)
0.2
2000

Black
AT10 (OHMM)
0.2
2000

Cobb
Sand 1 ILD
0.2
2000

Hatch
AT10 (OHMM)
0.2
2000

Pearl Fm
Dev Sand
Top @ 2274

PIP SUMMARY

AT10 (OHMM)
AT10 (OHMM)
AT10 (OHMM)

AIT-H Answer Product Processing Summary, Data taken with Tool # 419 (AHTNO)
...Acquired data from HILT/HAIT
***** Borehole Correction *****
Effective Mud Resistivity computed. Borehole diameter taken as input (see GCSG parameter)
Tool is run in ECCENTERED mode with a tool stand-off of 25.40 MM. Bit Size is 216.00 MM.
***** Input Selections to AIT-H Answer Product Processing *****
Caliper (GCSG): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): HTEM Porosity (FPHI): DPHZ
***** Other Parameters used by AIT-H Answer Product Processing *****
***** AIT-H Answer Product Processing Control Parameters *****
(AHAPL): 2_EholeCorr_BasicLogs
(AHMHM): 0_ComputeMudResistivity (AHSLM): 6_One_Two_and_Four

Parameters

DLIS Name	Description	Value
	HILTB-FTB: High resolution Integrated Logging Tool-DTB	
AHBHM	Array Induction Borehole Correction Mode	0_ComputeMudResistivity
AHBHV	Array Induction Borehole Correction Code Version Number	460
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	704
AHCDC	Array Induction Casing Correction Enable	Yes
AHCEN	Array Induction Tool Centering Flag (In Borehole)	Eccentered
AHHRV	Array Induction Response Set Version for Four R Resolution	40.70.24.21
AHMHV	Array Induction Mud Resistivity Factor	1
AHORV	Array Induction Response Set Version for One R Resolution	40.70.24.21
AHRFV	Array Induction Radial Profiling Code Version Number	700
AHSTA	Array Induction Tool Standoff	25.4 MM
AHTRV	Array Induction Response Set Version for Two R Resolution	40.70.24.21
BHT	Bottom Hole Temperature (used in calculations)	100 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSG	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDFV	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0 DEGC
	HOLEV: Integrated Hole/Cement Volume	
BHT	Bottom Hole Temperature (used in calculations)	100 DEGC
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDFV	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0 DEGC
	STI: Stuck Tool Indicator	
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	1.525 M
TDD	Total Depth - Driller	2686.09 M
TDL	Total Depth - Logger	2688.00 M
	Sys:Jam and Miscellaneous	
BS	Bit Size	216.000 MM
DFD	Drilling Fluid Density	909.00 K/M3
DOBL	Depth Offset for Repeat Analysis	0.0 M
MST	Mud Sample Temperature	0 DEGC
TD	Total Depth	2688 M

Format: AIT_ZLOG Vertical Scale: 1/240 Graphics File Created: 13-Feb-2003 23:55

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55
REDUCED	AIT_TLD_MCFL_CNL_006LUP	FN:14	PRODUCER	13-Feb-2003 23:55

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007PUP	FN:11	PRODUCER	13-Feb-2003 23:53	2693.4 M 2490.7 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55
REDUCED	AIT_TLD_MCFL_CNL_006LUP	FN:14	PRODUCER	13-Feb-2003 23:55

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BHT	102 DEGC	100 DEGC	2548.4 60:03:13
	103 DEGC	102 DEGC	2544.5 60:03:28

PIP SUMMARY

PIP SUMMARY

AIT-H Answer Product Processing Summary, Data taken with Tool # 419 (AHTNO)
...Acquired data from HILT/HAIT
***** Borehole Correction *****
Effective Mud Resistivity computed. Borehole diameter taken as input (see GCSG parameter)
Tool is run in ECC : INTERED mode with a tool stand-off of 25.40 MM. Bit Size is 216.00 MM.
***** Input Selections to AIT-H Answer Product Processing *****
Caliper (GCSG): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): HTEM Porosity (FPHI): DPHZ
***** Other Parameters used by AIT-H Answer Product Processing *****
Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000
Mud Filtrate Sample Resistivity (RMFS) -0000.00 OHMM Mud Filtrate Sample Temperature (MFST) -0000.00 DEGC
Resistivity Connate Water (RW) 1.000 OHMM
***** AIT-H Answer Product Processing Control Parameters *****
Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
	HILTB-FTB: High resolution Integrated Logging Tool-DTB	
AHBHM	Array Induction Borehole Correction Mode	0_ComputeMudResistivity
AHBHV	Array Induction Borehole Correction Code Version Number	460
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	704
AHCDC	Array Induction Casing Correction Enable	Yes
AHCEN	Array Induction Tool Centering Flag (In Borehole)	Eccentered
AHHRV	Array Induction Response Set Version for Four R Resolution	40.70.24.21
AHMHV	Array Induction Mud Resistivity Factor	1
AHORV	Array Induction Response Set Version for One R Resolution	40.70.24.21
AHRFV	Array Induction Radial Profiling Code Version Number	700
AHSTA	Array Induction Tool Standoff	25.4 MM
AHTRV	Array Induction Response Set Version for Two R Resolution	40.70.24.21
BHT	Bottom Hole Temperature (used in calculations)	102 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSG	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDFV	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0 DEGC
	HOLEV: Integrated Hole/Cement Volume	
BHT	Bottom Hole Temperature (used in calculations)	100 DEGC
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDFV	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0 DEGC
	Sys:Jam and Miscellaneous	
BS	Bit Size	216.000 MM
DFD	Drilling Fluid Density	909.00 K/M3
DOBL	Depth Offset for Repeat Analysis	0.0 M
MST	Mud Sample Temperature	-0000.00 DEGC
TD	Total Depth	2688 M

Format: AIT_ZLOG_REP Vertical Scale: 1/240 Graphics File Created: 13-Feb-2003 23:55

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007PUP	FN:11	PRODUCER	13-Feb-2003 23:53	2693.4 M 2490.7 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55
REDUCED	AIT_TLD_MCFL_CNL_006LUP	FN:14	PRODUCER	13-Feb-2003 23:55

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2693.2 M 0.0 M
REDUCED	AIT_TLD_MCFL_CNL_006LUP	FN:14	PRODUCER	13-Feb-2003 23:55	

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Changed Parameter Summary

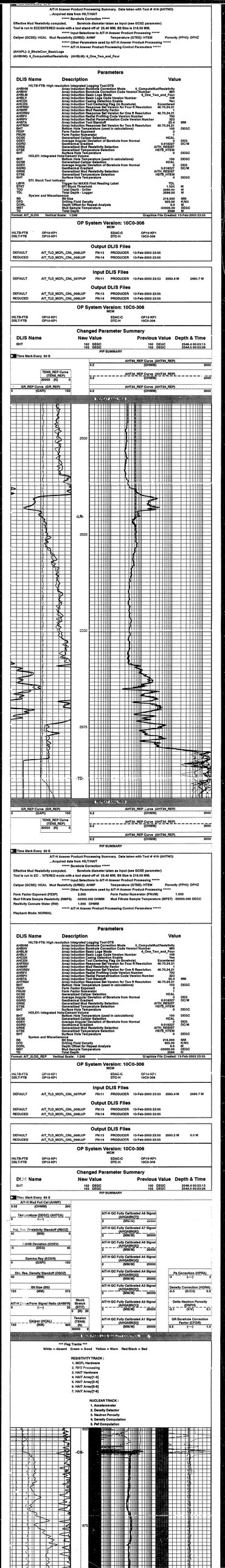
DLIS Name	New Value	Previous Value	Depth & Time
BHT	102 DEGC	100 DEGC	2548.4 60:03:13
	103 DEGC	102 DEGC	2544.5 60:03:28

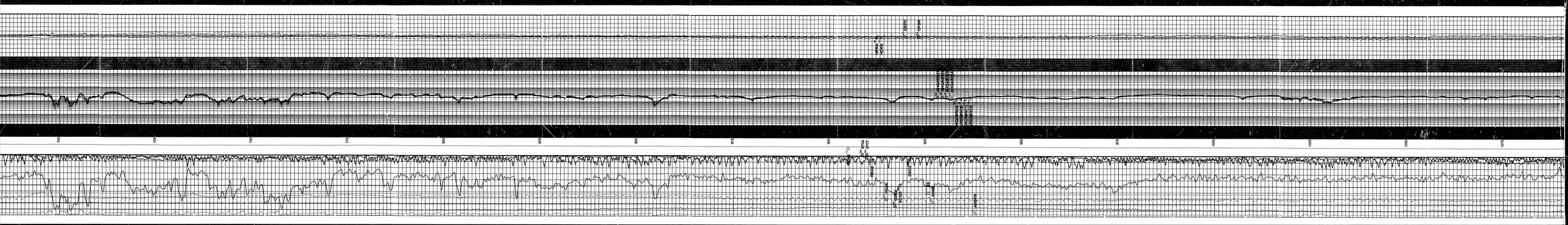
PIP SUMMARY

*** Flag Tracks ***
White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :
1. MCFL Hardware
2. RWO 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

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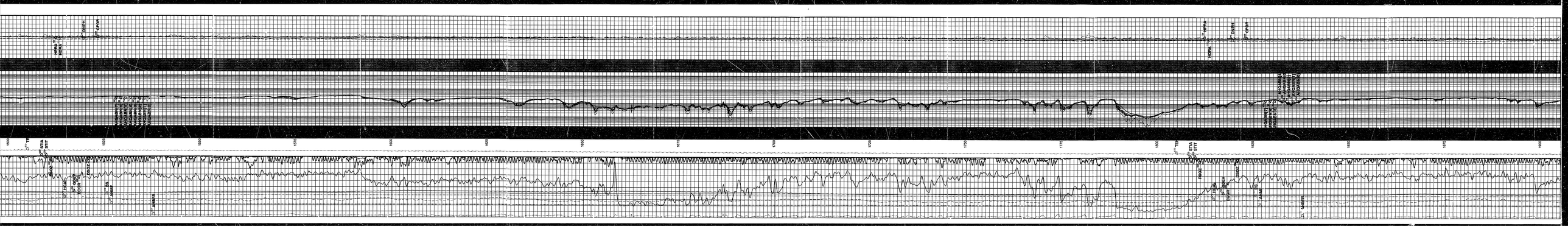
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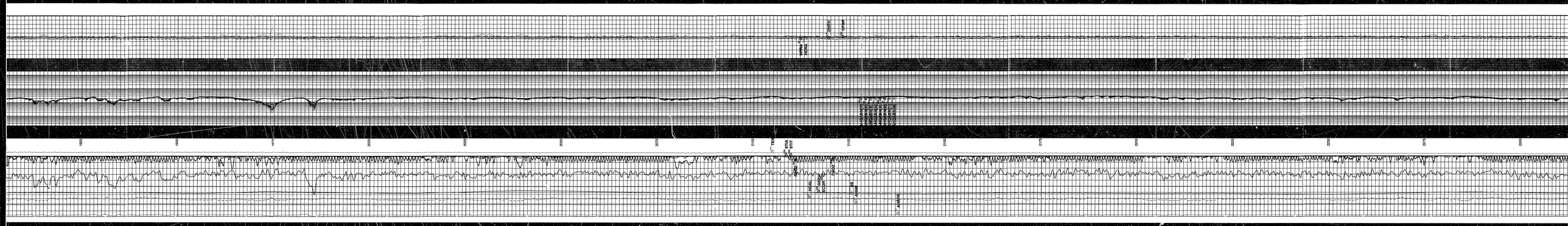
DEV
DSCR
ALARM
HARMFUL
ACCIDENT
ACCIDENT
ACCIDENT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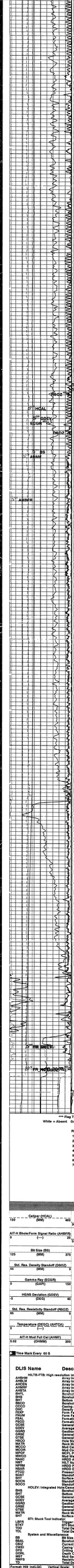
3RD DUBH
3RD DUBH



*** Flag Tracks ***

White = Absent Green = Good Yellow = Warn Red/Black = Bad

RESISTIVITY TRACK :

1. MCFL Hardware
2. RXO Processing
3. HMT Hardware
4. HMT Array[1-2]
5. HMT Array[3-4]
6. HMT Array[5-6]
7. HMT Array[7-8]

NUCLEAR TRACK :

1. Accelerometer
2. Density Detector
3. Neutron Porosity
4. Density Computation
5. Pef Computation

MAIN PASS LOG CURVES SECTION

Caliper (HCAL) (MIN) 150 / (MAX) 400	Tension (TENS) (N) 0 / (N) 30000	AIT-H GC Fully Calibrated A1 Signal (AHGAIM20) (MIN) 2 / (MAX) 20000	GR Borehole Correction Factor (CFGR) 0.5 / (---) 1.5
AIT-H Shock/Form Signal Ratio (AHSR) 0 / (---) 25	Shock Sensor (SSTT) 0 / (M) 20	AIT-H GC Fully Calibrated A2 Signal (AHGAIM10) (MIN) 2 / (MAX) 20000	Delta Neutron Porosity (DNPH) (V/V) -0.1 / (V/V) 0.1
Bit Size (BS) (MM) 125 / (MM) 375		AIT-H GC Fully Calibrated A3 Signal (AHGAIM30) (MIN) 2 / (MAX) 30000	Density Correction (HDRA) (G/C3) -0.5 / (G/C3) 0.5
Std. Res. Density Standoff (DSOZ) 65 / (MM) 0		AIT-H GC Fully Calibrated A4 Signal (AHGAIM120) (MIN) 2 / (MAX) 20000	Pe Correction (HPRA) -3 / (---) 3
Gamma Ray (ECGR) (GAPI) 0 / (GAPI) 150		AIT-H GC Fully Calibrated A5 Signal (AHGAIM240) (MIN) 2 / (MAX) 20000	
HGNS Deviation (GDEV) (DEG) -5 / (DEG) 45		AIT-H GC Fully Calibrated A6 Signal (AHGAIM300) (MIN) 2 / (MAX) 20000	
Std. Res. Resistivity Standoff (RSOZ) 65 / (MM) 0		AIT-H GC Fully Calibrated A7 Signal (AHGAIM360) (MIN) 2 / (MAX) 20000	
Temperature (DFSC) (AHTCA) 0 / (---) 1		AIT-H GC Fully Calibrated A8 Signal (AHGAIM420) (MIN) 2 / (MAX) 20000	
AIT-H Mud Full Cal (AHMF) 0.02 / (OHMM) 200			

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HLTB-FTB: High resolution Integrated Logging Tool-DTB			
AHBHM	Array Induction Basic Logs Mode	0_ComputeMudResistivity	
AHBLM	Array Induction Basic Logs Mode	5_One_Two_and_Four	
AHDEN	Array Induction Tool Centering Flag (In Borehole)	Eccentered	
AHMFR	Array Induction Mud Resistivity Factor	1	
AHSTA	Array Induction Tool Standoff	65.5	MM
BHTL	Borehole Fluid Type	SBM	
BHS	Borehole Status	OPEN	
BMCO	Bottom Hole Temperature (used in calculations)	100	DEGC
CCCO	Casing & Cement Thickness Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FMUD	Form Factor Mudcake	1	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	-50000	PPM
GCCO	Gravity Caliper Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GRMF	Generalized Mud Resistivity	0.018287	OHMM
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTE_HTEM	
HECO	Hole Size Correction Option	YES	
HLCO	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MPOC	MCFL Processing Operation Mode	ON	
NMAC	Neutron APS Activation Mode	ON	
NMAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NSAM	HRDD Depth Sampling Rate	Refine	
NSAR	HNGS Depth Sampling Rate	0.4	MM
PTCO	Pressure/Temperature Correction Option	NO	
RGT	Surface Rock Type	SOCN	
RGT	Surface Rock Texture		DEGC
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
HOLEV: Integrated Hole Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018287	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTE_HTEM	
MATN	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	0	DEGC
LBFS	Logger for MAIN Pass Reading Label	TDL	
STST	SIT Stuck Threshold	5.334	M
TDD	Total Depth - Driller	2584.00	M
TDL	Total Depth - Logger	2588.00	M
System and Miscellaneous			
BS	Bit Size	216.000	MM
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Casing Nominal Size	244.500	MM
CWEI	Casing Weight	59.00	KG/M
DFD	Drilling Fluid Density	920.00	K/M3
DFPH	Drilling Fluid Type Mud Analysis	9.50	
MST	Mud Sample Temperature	-9999.00	DEGC
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
TD	Total Depth	2588.00	M

Format: HR_IndLOG Vertical Scale: 1:240 Graphics File Created: 12-Feb-2003 23:55

OP System Version: 10C0-306

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Output DLIS Files

Schlumberger

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES *** TVD ***

PLATFORM EXPRESS

ARRAY INDUCTION LOG

COPY

LOCATION

UNIT: I, SECTION: 75 Elev.: K.B. 517.9 m

LAT: 60 34 42.3 N LONG: 122 58 32.6 W G.L. 510.8 m

D.F. 517.6 m

Permanent Datum: GROUND LEVEL Elev.: 510.8 m

Log Measured From: KELLY BUSHING 7.1 m above Perm. Datum

Drilling Measured From: KELLY BUSHING

API Serial No. N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	13-Feb-2003			
Run Number	ONE			
Depth Driller	2596 m	*** TVD *** 2540.5 m		
Schlumberger Depth	2588 m	2542.5 m		
Bottom Log Interval	2585.5 m	2540 m		
Top Log Interval	656 m			
Casing Driller Size @ Depth	244.500 mm @ 654.4 m	@	@	
Casing Schlumberger	656 m			
Bit Size	215.000 mm			
Type Fluid In Hole	INVERT			
MUD Density / Viscosity	925 kg/m3 / 45 s			
MUD Fluid Loss / PH	/			
Source Of Sample	NO SAMPLES			
RM @ Measured Temperature	@	@	@	
RMF @ Measured Temperature	@	@	@	
RMC @ Measured Temperature	@	@	@	
Source RMF / RMC	NO SAMPLES / NO SAMPLES			
RM @ MRT / RMF @ MRT	@ 103 / @ 103	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	103 degC			
Circulation Stopped / Time	13-Feb-2003 / 15:30			
Logger On Bottom / Time	13-Feb-2003 / 23:45			
Unit Number / Location	2016 / GRANDE PRAIRIE			
Recorded By	CURTIS MOFFAT			
Witnessed By	GORDON RICHMOND			

DEPTH SUMMARY LISTING

Data Created: 14-FEB-2003 1:04:55

Depth System Equipment

Depth Measuring Device

Type: IDW-3
Serial Number: 4
Calibration Date: 15-JAN-2003
Calibrator Serial Number: 4
Calibrator Value: 1.0, 4.0, 6P
Wheel Correction 1: -5
Wheel Correction 2: -6

Tension Device

Type: CMTD-B/A
Serial Number: 2546
Calibration Date: 29-JAN-2003
Calibrator Serial Number: -999
Calibration Value: 0.00, 1.00, 348.00
Calibration Offset: 346.00

Logging Cable

Type: 7-46P
Serial Number: 4999
Length: 7915.20 M

Conveyance Method: Wireline
Rig Type: LAND

Depth Control Parameters

Log Sequence: First Log In this Well

Rig Up Length At Surface:	74.10 M
Rig Up Length Above Kelly Bushing:	7.10 M
Rig Up Length Correction:	0.00 M
Stretch Correction:	2.00 M
Tool Zero Check At Surface:	0.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

DISCLAIMER
THE USE OF AND RELIANCE UPON THIS RECORDED DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING (I) RESTRICTIONS ON THE USE OF THE DATA, (II) LIMITATIONS ON SCHLUMBERGER'S LIABILITY AND (III) INDEMNITIES GIVEN BY THE COMPANY IN FAVOUR OF SCHLUMBERGER. THE COMPANY'S USE OF AND RELIANCE UPON THE RECORDED DATA, AND ITS CUSTOMER'S FULL AND SOLE RESPONSIBILITY TO ADVISE ITS CUSTOMER OF ANY LIMITATIONS, IS IN ACCORDANCE WITH THE LIMITATIONS SET FORTH IN THE LIST OF THIS RECORDED DATA.

OTHER SERVICES: ARRAY INDUCTION, NEUTRON DENSITY, SONIC, XY CALIPER

OS1:	ARRAY INDUCTION
OS2:	NEUTRON DENSITY
OS3:	SONIC
OS4:	XY CALIPER
OS5:	
OS6:	

REMARKS: RUN NUMBER 1
ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST
NEUTRON RUN WITH 3 STANDOFFS
NEUTRON RUN TO DESIRED OFFSET BOWSPRING
SONIC RUN WITH 3 STANDOFFS
SONIC RUN TO DESIRED OFFSET WITH HOAL AND CAL2
FROM TD TO SURFACE CASING
DIRECTIONAL SURVEYS TO 2488 m, EXTRAPOLATED TO TD
HOLE VOLUME = 29.87 M3
CEMENT VOLUME = 20.60 M3 (BASED ON 1.175 mm CASING JOB)
COMPUTED FROM 2 TO 0 USING DATA CHANNELS HOAL AND CAL2

DREW E. DICKRIZE	
PETER W. LEVEN - S	
PAYNE FIELD	

	RUN 1	RUN 2
SERVICE ORDER #:	10503254	
RECORDED FROM:	KELLY BUSHING	SERVICE ORDER #:
FLUID LEVEL:		FLUID LEVEL:
LOGGED INTERVAL	START	STOP
		LOGGED INTERVAL
		START
		STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

GSR-UV
NSG-AB
CNS-AB
NGS-HB

DOWNHOLE EQUIPMENT

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006UP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M 0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DISLT-FTB	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

Time Mark Every 60 S

Tool/Tot. Drag From STIT to STIA: 1000 (MM:M) 0

Tension (TENS): 20000 (N) 0 | Cable Drag From STIA to STIT: 2 (OHMM) 0 | AT-H 90 Inch Investigation (AHT90): 2 (OHMM) 0 | Stuck Sketch (STIT): 2 (M) 20 | AT-H 20 Inch Investigation (AHT20): 2 (OHMM) 0

Gamma Ray (GR): 0 (GAPI) 150

MAIN PASS

AHTC090

AHT90
AHT20

-CS-

TENS
STIA
STIT
GR

AHTC090

AHT90
AHT20

TENS
STIA
STIT
GR

AHT90
AHT20

AHTC090

TENS
STIA
STIT
GR

600 tvd
700 tvd
750 tvd
800 tvd
850 tvd
900 tvd
950 tvd
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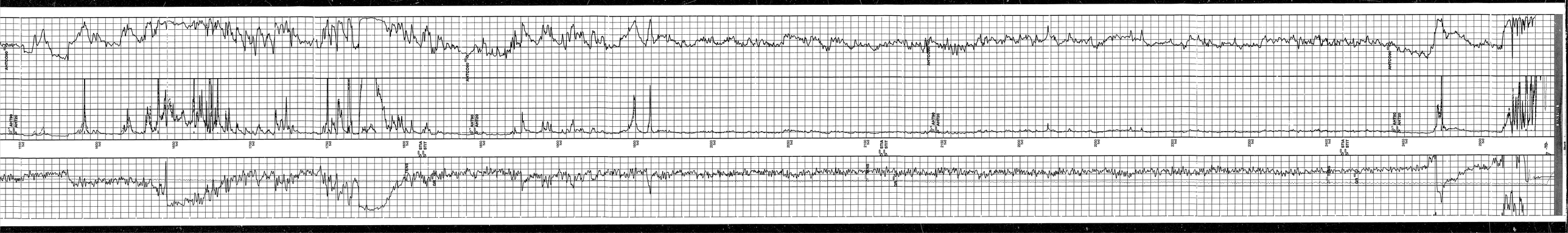
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STEK
STEL
STEM
STEN
STEO
STEP
STEQ
STER
STES
STET
STEU
STEV
STEW
STEX
STEY
STEZ

Gamma Ray (GR)	Stretch	AIT-H 20 Inch Investigation (AHT20)
0 (GAPI) 150	(STIT) 0	(OHMM) 50
0 (M) 20		

Tension (TENS)	Cable Drag	AIT-H 90 Inch Investigation (AHT90)
20000 (N) 0	From STIA to STIT	(OHMM) 50

	Tool/Tot. Drag	AIT-H 90 Inch Investigation Conductivity (AHTC090)
	From DIT to STIA	1000 (MM/M) 0

PIP SUMMARY

Time Mark Every: 60 S

Parameters

DLIS Nam:9	Description	Value	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS		
AHBHM	Array Induction Borehole Correction Mode	0_ComputeMudResistivity	
AHBLM	Array Induction Basic Logs Processing Code Version	8_One_Two_and_Four	
AHBLM	Array Induction Basic Logs Mode	8_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	105	
AHCEN	Array Induction Centering Flag	1	
AHCEN	Array Induction Tool Centering Flag (In Borehole)	Eccentered	
AHFRW	Array Induction Response Set Version for Four fI Resolution	40.70.24.21	
AHMFM	Array Induction Mud Resistivity Factor	1	
AHONW	Array Induction Response Set Version for One fI Resolution	40.70.24.21	
AHRFV	Array Induction Radial Parameter Code Version	223	
AHRFV	Array Induction Radial Parameter Code Version Number	223	
AHTSV	Array Induction Tool Standoff	28.4	MM
AHTRW	Array Induction Response Set Version for Two fI Resolution	40.70.24.21	
BHT	Bottom Hole Temperature (used in calculations)	183	DEGC
FEXP	Form Factor Exponent	2	
GCEM	Gen Caliper Measurement	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GMSV	Generalized Mud Salinity	0.015227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
	DJh: Directional Survey		
SPVD	TVD of Starting Point	0	M
TMD	Along-hole depth of Tie-In Point	605	M
TIVD	TVD of Tie-In Point	605	M
	HOLEv: Integrated Hole Volume		
BHT	Bottom Hole Temperature (used in calculations)	183	DEGC
GCES	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGNG	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
SHT	Surface Hole Temperature	0	DEGC
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS Find Reading Label	TDL	
STHT	STI Stuck Threshold	1.636	M
TDD	Total Depth - Driller	2593.2	M
TDL	Total Depth - Logger	2590.00	M
	System and Miscellaneous		
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth	
BS	Bit Size	215.000	MM
DFD	Drilling Fluid Density	925.00	K/M3
DFT	Drilling Fluid Type Playback	Mud	
MST	Mud Sample Temperature	-5000.00	DEGC
FEVSACP	Use alternate depth channel for playback	YES	
PP	Playback Processing	NORMAL	
TD	Total Depth	2588	M

Format: AIT_JLIN Vertical Scale: 1:600 Graphics File Created: 14-Feb-2003 00:48

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_606UP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48		
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48		

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_606UP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48		
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48		

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

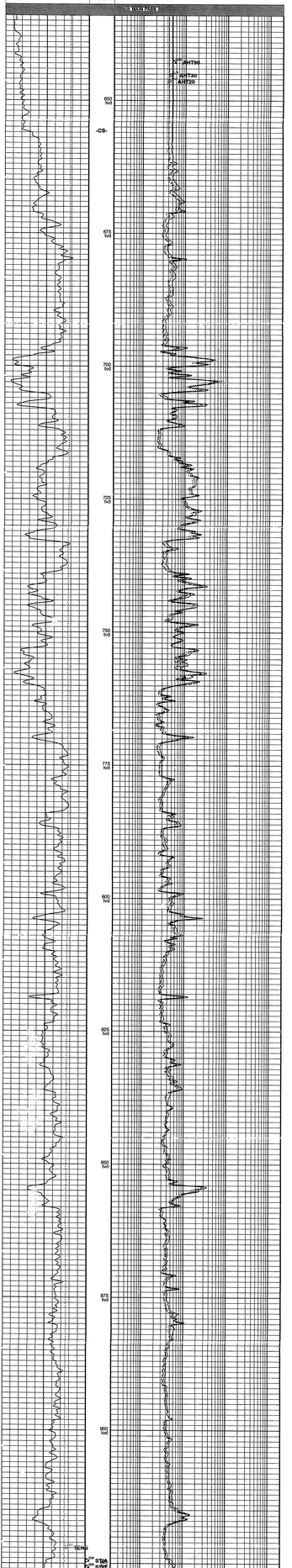
PIP SUMMARY

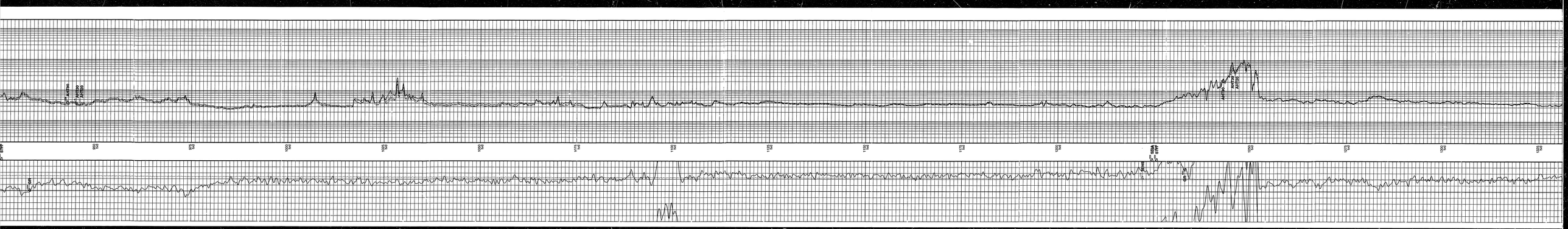
Time Mark Every: 60 S

	Tool/Tot. Drag	AIT-H 90 Inch Investigation (AHT90)
	From DIT to STIA	0.2 (OHMM) 3000

Tension (TENS)	Cable Drag	AIT-H 30 Inch Investigation (AHT30)
20000 (N) 0	From STIA to STIT	0.2 (OHMM) 2000

Gamma Ray (GR)	Stretch	AIT-H 20 Inch Investigation (AHT20)
0 (GAPI) 150	(STIT) 0	0.2 (OHMM) 2000
0 (M) 20		

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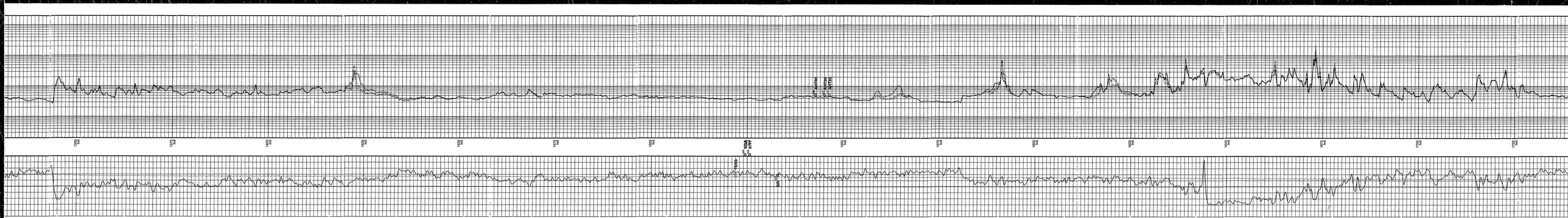
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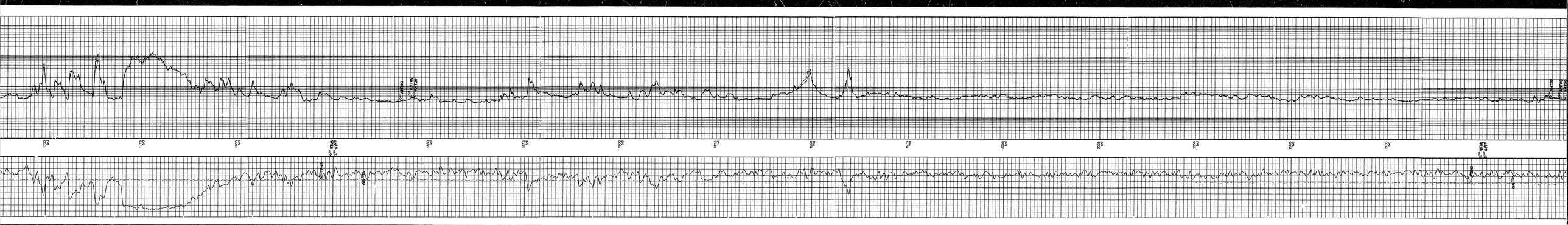
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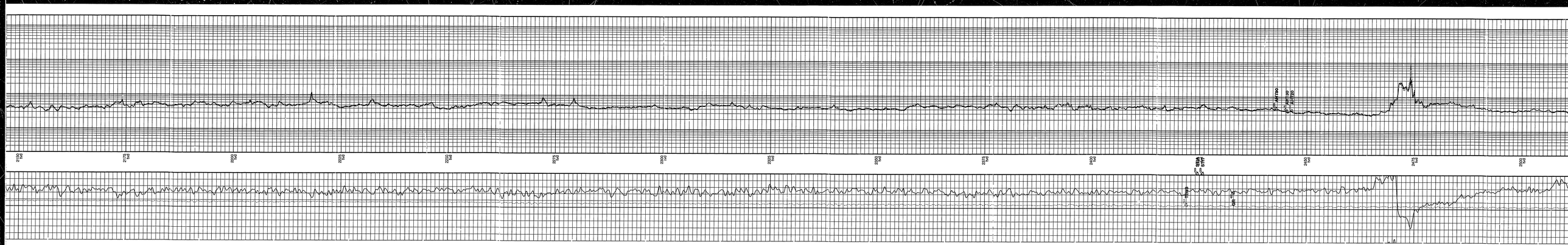
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2175 md
2200 md
2225 md
2250 md
2275 md
2300 md
2325 md
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2375 md
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2450 md
2475 md
2500 md
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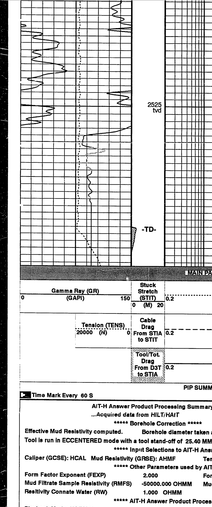
RT ohmm 250
GR API 150
RT ohmm 250



Gamma Ray (GR) (GAPI)
0 150

Stuck Stretch (STIT) (M)
0.2 0

AIT-H 20 Inch Investigation (AHT20) (OHMM)
2000

Tension (TENS) (N)
30000

Cable Drag From RTIA to STIT
0 0.2

AIT-H 30 Inch Investigation (AHT30) (OHMM)
2000

Tool/Tot. Drag From DST to RTIA
0.2 0.2

AIT-H 90 Inch Investigation (AHT90) (OHMM)
2000

PIP SUMMARY

Tlms Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with Tool # 419 (AHTNO)
Acquired data from HELTHAIT

***** Borehole Correction ******

Effective Mud Resistivity computed. Borehole diameter taken as input (see GCSE parameter)
Tool is run in ECCENTERED mode with a tool stand-off of 25.40 MM. Bit Size is 216.00 MM.

***** Input Selections to AIT-H Answer Product Processing *****

Caliper (GSBE): HCAL Mud Resistivity (GSBE): AHMF Temperature (GTSE): HTEM Porosity (FPHI): DPHZ

***** Other Parameters used by AIT-H Answer Product Processing *****

Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000
Mud Filtrate Sample Resistivity (RMFS) -50000.00 OHMM Mud Filtrate Sample Temperature (MFST) -50000.00 DEGC
Resitivity Connate Water (RW) 1.000 OHMM

***** AIT-H Answer Product Processing Control Parameters *****

Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
AHBHM	HILTB-FTB: High resolution Integrated Logging Tool-DTB	
AHBHV	Array Induction Borehole Correction Mode	0_ComputedMudResistivity
AHBLM	Array Induction Borehole Correction Code Version Number	4
AHBLV	Array Induction Logs Two_and_Four	Two_Two_and_Four
AHCDE	Array Induction Logs Code Version Number	106
AHCDS	Array Induction Casing Detection Enable	Yes
AHCSM	Array Induction Tool Centering Flag (In Borehole)	Eccentered
AHMRS	Array Induction Response Set Version for Four ft Resolution	40,70,24,21
AHMRV	Array Induction Radial Profiling Code Version	4
AHRSV	Array Induction Response Set Version for One ft Resolution	40,70,24,21
AHRFV	Array Induction Radial Profiling Code Version Number	700
AHSCV	Array Induction Parameterization Code Version Number	203
AHSFA	Array Induction Tool Standoff	25.4 MM
AHTRV	Array Induction Response Set Version for Two ft Resolution	40,70,24,21
BHT	Bottom Hole Temperature (used in calculations)	103 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliper Selection	HCAL
GDBH	Generalized Diameter of Borehole from Normal	0 DEG
GDRG	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	AHTM_HTEM
SHT	Surface Hole Temperature	0 DEGC
SPVO	DIR: Directional Surveys VVO of Starting Point	0 DEGC
TIMD	Along-hole depth of Tie-In Point	655 M
TVD	TVD of Tie-In Point	655 M
BHT	HOLEV: Integrated Hole Geometry Values Bottom Hole Temperature (used in calculations)	103 DEGC
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDRG	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0 DEGC
LBFD	STI: Stuck Tool Indicator Trigger for MAXIS First Reading Label	TDL
STKT	Stuck Tool Threshold	15.30 M
TDD	Tool Drag Applied	2585.00 M
TDL	Total Depth - Logger	2588.00 M
ALTOPCHAN	Dynamic and Miscellaneous Name of alternate depth channel	TrueVerticalDepth
BS	Bit Size	216.000 MM
DFD	Drilling Fluid Density	1.000 G/CM3
DO	Depth Offset for Playback	0.0 M
MST	Mud Sample Temperature	-50000.00 DEGC
PBVSADP	Use alternate depth channel for playback	TRUE
PD	Playback Processing	NORMAL
TD	Total Depth	2588 M

Format: AIT_ZLOG Vertical Scale: 1:240 Graphics File Created: 14-Feb-2003 00:48

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_0068.UP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48		
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48		

Directional Survey Manually-Entered Incilnometry Summary

Tie In Point : Measured Depth True Vertical Depth North Departure East Departure

655.00 M 655.00 M 0.00 M 0.00 M

Depth	Deviation	Azimuth	True Vertical Depth	North Departure	East Departure
0.00 M	0.00 DEG	0.00 DEG	0.00 M	0.00 M	0.00 M
655.00 M	0.00 DEG	0.00 DEG	655.00 M	0.00 M	0.00 M
668.70 M	1.00 DEG	5.10 DEG	668.70 M	0.21 M	0.01 M
678.20 M	1.90 DEG	359.90 DEG	678.19 M	0.52 M	0.03 M
706.20 M	1.30 DEG	349.00 DEG	706.79 M	1.32 M	-0.05 M
735.40 M	1.30 DEG	345.80 DEG	735.37 M	1.95 M	-0.19 M
754.40 M	1.30 DEG	322.80 DEG	754.37 M	2.33 M	-0.36 M
773.20 M	1.50 DEG	320.30 DEG	773.15 M	2.69 M	-0.66 M
792.20 M	2.00 DEG	310.60 DEG	792.15 M	3.10 M	-1.07 M
820.70 M	2.40 DEG	298.30 DEG	820.63 M	3.72 M	-1.97 M
849.20 M	2.70 DEG	299.60 DEG	849.11 M	4.33 M	-3.08 M
877.50 M	3.20 DEG	289.50 DEG	877.37 M	4.93 M	-4.41 M
906.10 M	3.10 DEG	289.10 DEG	905.93 M	5.46 M	-5.89 M
934.70 M	3.60 DEG	295.80 DEG	934.46 M	6.11 M	-7.43 M
963.70 M	3.40 DEG	307.90 DEG	963.44 M	6.72 M	-8.81 M
992.20 M	3.00 DEG	322.30 DEG	992.03 M	7.09 M	-9.79 M
1021.20 M	2.60 DEG	329.50 DEG	981.90 M	7.88 M	-9.33 M
1010.80 M	2.50 DEG	349.60 DEG	1010.47 M	9.12 M	-9.79 M
1039.30 M	2.60 DEG	14.10 DEG	1038.84 M	10.37 M	-9.75 M
1068.00 M	2.80 DEG	18.70 DEG	1067.61 M	11.67 M	-9.37 M
1096.80 M	2.90 DEG	25.10 DEG	1096.38 M	12.95 M	-8.91 M
1106.00 M	2.90 DEG	39.80 DEG	1105.56 M	13.35 M	-8.50 M
1115.50 M	3.30 DEG	47.60 DEG	1115.05 M	13.72 M	-8.14 M
1144.00 M	3.40 DEG	59.20 DEG	1143.49 M	14.77 M	-6.73 M
1163.10 M	3.60 DEG	63.90 DEG	1162.55 M	15.36 M	-5.64 M
1172.50 M	3.60 DEG	65.20 DEG	1171.94 M	15.60 M	-5.12 M
1182.10 M	3.20 DEG	73.40 DEG	1181.32 M	15.80 M	-4.59 M
1191.60 M	2.90 DEG	82.40 DEG	1190.81 M	15.91 M	-4.10 M
1201.10 M	2.90 DEG	100.70 DEG	1200.49 M	15.89 M	-3.63 M
1210.80 M	3.60 DEG	114.30 DEG	1209.98 M	15.73 M	-3.12 M
1220.10 M	4.60 DEG	123.60 DEG	1219.46 M	15.40 M	-2.63 M
1229.60 M	5.70 DEG	126.60 DEG	1228.92 M	14.91 M	-1.83 M
1239.10 M	6.00 DEG	125.00 DEG	1238.37 M	14.34 M	-1.05 M
1248.60 M	6.20 DEG	122.60 DEG	1247.81 M	13.78 M	-0.21 M
1258.20 M	6.20 DEG	123.10 DEG	1257.36 M	13.22 M	0.66 M
1267.50 M	6.50 DEG	122.20 DEG	1266.60 M	12.67 M	1.53 M
1277.00 M	7.00 DEG	121.30 DEG	1276.03 M	12.08 M	2.48 M
1286.50 M	7.40 DEG	117.60 DEG	1285.46 M	11.49 M	3.51 M
1296.10 M	8.00 DEG	113.30 DEG	1294.87 M	10.93 M	4.71 M
1305.60 M	9.40 DEG	111.30 DEG	1304.35 M	10.37 M	6.07 M
1315.10 M	10.70 DEG	113.50 DEG	1313.71 M	9.75 M	7.60 M
1324.60 M	11.80 DEG	113.70 DEG	1323.03 M	9.03 M	9.30 M
1334.00 M	12.80 DEG	114.80 DEG	1332.21 M	8.19 M	11.15 M
1343.50 M	13.70 DEG	117.00 DEG	1341.46 M	7.24 M	13.11 M
1353.10 M	14.60 DEG	117.20 DEG	1350.77 M	6.18 M	15.18 M
1362.50 M	14.50 DEG	116.40 DEG	1359.87 M	5.13 M	17.26 M
1372.40 M	14.30 DEG	115.40 DEG	1369.48 M	4.05 M	19.48 M
1381.90 M	14.30 DEG	116.80 DEG	1378.67 M	3.04 M	21.59 M
1391.40 M	14.80 DEG	116.70 DEG	1387.87 M	1.98 M	23.72 M
1400.90 M	15.30 DEG	117.00 DEG	1397.04 M	0.88 M	25.90 M
1410.40 M	16.00 DEG	117.10 DEG	1406.19 M	-0.29 M	28.19 M
1419.80 M	16.30 DEG	118.20 DEG	1415.32 M	-1.51 M	30.53 M
1429.40 M	16.30 DEG	120.40 DEG	1424.44 M	-2.82 M	32.85 M
1438.90 M	16.30 DEG	120.30 DEG	1433.56 M	-4.16 M	35.14 M
1448.40 M	16.20 DEG	119.60 DEG	1442.68 M	-5.49 M	37.44 M
1458.00 M	16.20 DEG	119.00 DEG	1451.80 M	-6.80 M	39.78 M
1467.50 M	16.20 DEG	117.10 DEG	1461.02 M	-8.04 M	42.12 M
1477.00 M	16.10 DEG	116.10 DEG	1470.15 M	-9.23 M	44.46 M
1486.50 M	16.10 DEG	117.30 DEG	1479.27 M	-10.41 M	46.83 M
1495.90 M	16.10 DEG	118.80 DEG	1488.39 M	-11.63 M	49.13 M
1505.50 M	16.00 DEG	121.40 DEG	1497.53 M	-12.97 M	51.43 M
1515.00 M	15.80 DEG	122.00 DEG	1506.67 M	-14.33 M	53.64 M
1524.50 M	15.60 DEG	122.00 DEG	1515.82 M	-15.67 M	55.82 M
1534.00 M	15.30 DEG	119.40 DEG	1524.98 M	-16.93 M	57.99 M
1543.50 M	15.40 DEG	120.1 DEG	1534.13 M	-18.19 M	60.19 M
1553.00 M	15.10 DEG	121.30 DEG	1543.27 M	-19.51 M	62.42 M
1562.50 M	16.30 DEG	123.40 DEG	1552.50 M	-20.96 M	64.66 M
1572.00 M	16.3o °EG	122.10 DEG	1561.52 M	-22.39 M	66.88 M
1581.50 M	16.00 DEG	122.70 DEG	1570.64 M	-23.82 M	69.10 M
1591.00 M	16.20 DEG	122.60 DEG	1579.77 M	-25.24 M	71.32 M
1600.50 M	16.20 DEG	123.40 DEG	1588.88 M	-26.72 M	73.58 M
1610.00 M	17.20 DEG	122.60 DEG	1597.98 M	-28.23 M	75.92 M
1619.50 M	17.00 DEG	122.20 DEG	1607.04 M	-29.73 M	78.28 M
1629.00 M	16.70 DEG	120.70 DEG	1616.13 M	-31.17 M	80.63 M
1638.50 M	16.50 DEG	118.60 DEG	1625.24 M	-32.51 M	82.99 M
1648.00 M	16.40 DEG	118.40 DEG	1634.34 M	-33.82 M	85.35 M
1657.50 M	17.00 DEG	121.30 DEG	1643.44 M	-35.21 M	87.72 M
1667.00 M	17.00 DEG	120.10 DEG	1652.53 M	-36.67 M	90.09 M
1676.50 M	16.90 DEG	121.80 DEG	1661.61 M	-38.13 M	92.44 M
1686.00 M	16.70 DEG	121.10 DEG	1670.70 M	-39.57 M	94.78 M
1695.50 M	16.60 DEG	121.20 DEG	1679.81 M	-40.97 M	97.10 M
1705.00 M	16.00 DEG	119.50 DEG	1688.93 M	-42.31 M	99.40 M
1714.50 M	16.60 DEG	117.70 DEG	1698.07 M	-43.54 M	101.65 M
1724.00 M	16.40 DEG	118.20 DEG	1707.24 M	-44.66 M	103.87 M
1733.50 M	15.10 DEG	115.60 DEG	1716.42 M	-45.72 M	106.09 M
1743.00 M	15.30 DEG	116.60 DEG	1725.59 M	-46.71 M	108.32 M
1752.50 M	14.90 DEG	118.20 DEG	1734.79 M	-47.95 M	110.51 M
1762.00 M	15.00 DEG	119.50 DEG	1743.94 M	-49.13 M	112.65 M
1771.50 M	15.10 DEG	121.50 DEG	1753.12 M	-50.38 M	114.77 M
1781.00 M	15.40 DEG	121.90 DEG	1762.29 M	-51.69 M	116.89 M
1790.50 M	15.60 DEG	121.40 DEG	1771.42 M	-53.03 M	119.07 M
1800.00 M	15.80 DEG	121.20 DEG	1780.58 M	-54.37 M	121.26 M
1809.50 M	15.50 DEG	121.70 DEG	1789.72 M	-55.71 M	123.46 M
1819.00 M	15.60 DEG	120.60 DEG	1798.89 M	-57.01 M	125.61 M
1828.50 M	14.70 DEG	120.30 DEG	1808.07 M	-58.25 M	127.71 M
1838.00 M	14.70 DEG	119.80 DEG	1817.28 M	-59.45 M	129.79 M
1847.50 M	14.70 DEG	119.80 DEG	1826.45 M	-60.64 M	131.86 M
1857.10 M	15.20 DEG	119.80 DEG	1835.73 M	-61.87 M	134.01 M
1866.60 M	15.70 DEG	120.30 DEG	1844.89 M	-63.13 M	136.20 M
1876.10 M	15.90 DEG	120.80 DEG	1854.04 M	-64.43 M	136.40 M
1885.60 M	15.20 DEG	120.40 DEG	1863.20 M	-65.71 M	140.37 M
1895.10 M	15.20 DEG	119.50 DEG	1872.37 M	-66.95 M	142.71 M
1904.60 M	15.20 DEG	119.60 DEG	1881.54 M	-68.17 M	144.86 M
1914.10 M	15.60 DEG	119.20 DEG	1890.70 M	-69.41 M	147.08 M
1923.50 M	15.50 DEG	119.10 DEG	1899.78 M	-70.63 M	149.29 M
1933.00 M	15.30 DEG	119.30 DEG	1908.92 M	-71.87 M	151.47 M
1942.50 M	14.90 DEG	118.30 DEG	1918.09 M	-73.06 M	153.63 M
1952.00 M	14.60 DEG	117.80 DEG	1927.27 M	-74.19 M	155.77 M
1961.50 M	15.00 DEG	119.10 DEG	1936.45 M	-75.35 M	157.90 M
1971.00 M	15.90 DEG	120.70 DEG	1945.62 M	-76.61 M	160.10 M
1980.50 M	15.90 DEG	121.20 DEG	1954.75 M	-77.95 M	162.33 M
1990.00 M	15.90 DEG	120.10 DEG	1963.90 M	-79.27 M	164.55 M
1999.50 M	15.10 DEG	119.20 DEG	1973.06 M	-80.51 M	166.73 M
2009.00 M	14.80 DEG	117.10 DEG	1982.23 M	-81.67 M	168.89 M
2018.50 M	14.80 DEG	116.50 DEG	1991.41 M	-82.77 M	171.08 M
2028.00 M	15.80 DEG	117.80 DEG	2000.57 M	-83.93 M	173.33 M
2037.50 M	16.60 DEG	120.20 DEG	2009.69 M	-85.20 M	175.68 M
2047.00 M	16.60 DEG	120.50 DEG	2018.80 M	-86.57 M	178.00 M
2056.50 M	16.10 DEG	119.70 DEG	2027.91 M	-87.91 M	180.31 M
2066.00 M	15.60 DEG	118.00 DEG	2037.05 M	-89.19 M	182.59 M
2075.50 M	15.40 DEG	118.50 DEG	2046.20 M	-90.42 M	184.83 M
2085.00 M	15.10 DEG	119.40 DEG	2055.38 M	-91.63 M	187.02 M
2094.50 M	15.20 DEG	121.40 DEG	2064.53 M	-92.88 M	189.16 M
2104.00 M	15.40 DEG	122.60 DEG	2073.70 M	-94.21 M	191.28 M
2113.50 M	15.30 DEG	122.60 DEG	2082.86 M	-95.57 M	193.40 M
2123.00 M	14.90 DEG	120.00 DEG	2092.03 M	-96.89 M	195.49 M
2132.60 M	14.50 DEG	118.70 DEG	2101.31 M	-98.16 M	197.57 M
2141.60 M	14.70 DEG	117.10 DEG	2110.52 M	-99.34 M	199.61 M
2151.10 M	14.60 DEG	115.80 DEG	2119.72 M	-100.44 M	201.70 M
2170.60 M	14.90 DEG	116.30 DEG	2128.91 M	-101.52 M	203.86 M
2180.10 M	14.80 DEG	117.30 DEG	2138.09 M	-102.59 M	206.06 M
2189.60 M	14.70 DEG	117.00 DEG	2147.27 M	-103.66 M	208.23 M
2199.10 M	14.40 DEG	116.50 DEG	2156.46 M	-104.70 M	210.38 M
2208.60 M	14.60 DEG	118.10 DEG	2165.65 M	-105.87 M	212.51 M
2218.10 M	14.60 DEG	119.50 DEG	2174.76 M	-106.94 M	214.59 M
2227.60 M	14.40 DEG	120.30 DEG	2184.05 M	-108.10 M	216.70 M
2237.10 M	14.60 DEG	120.30 DEG	2193.25 M	-109.20 M	218.76 M
2246.60 M	13.70 DEG	119.50 DEG	2202.46 M	-110.26 M	220.81 M
2256.10 M	13.90 DEG	118.30 DEG	2211.68 M	-111.60 M	222.74 M
2265.70 M	14.20 DEG	117.00 DEG	2221.00 M	-112.70 M	224.75 M
2275.20 M	15.20 DEG	117.10 DEG	2230.21 M	-113.79 M	226.81 M
2284.70 M	15.50 DEG	118.90 DEG	2239.40 M	-114.89 M	228.98 M
2294.20 M	15.20 DEG	118.90 DEG	2248.58 M	-116.07 M	231.20 M
2303.90 M	15.00 DEG	119.20 DEG	2257.72 M	-117.29 M	233.40 M
2313.40 M	14.50 DEG	118.20 DEG	2267.08 M	-118.51 M	235.61 M
2322.90 M	14.30 DEG	117.80 DEG	2276.27 M	-119.68 M	237.73 M
2332.40 M	14.60 DEG	118.00 DEG	2285.47 M	-120.79 M	239.82 M
2341.05 M	14.60 DEG	117.60 DEG	2294.07 M	-121.88 M	241.92 M
2351.40 M	14.60 DEG	119.00 DEG	2303.06 M	-122.91 M	244.16 M
2360.90 M	14.90 DEG	120.20 DEG	2312.25 M	-124.11 M	246.16 M
2370.40 M	14.60 DEG	120.70 DEG	2321.43 M	-125.30 M	248.25 M
2380.00 M	14.10 DEG	119.90 DEG	2330.73 M	-126.53 M	250.30 M
2389.50 M	13.90 DEG	118.50 DEG	2340.03 M	-127.73 M	252.40 M
2408.50 M	13.90 DEG	119.40 DEG	2349.00 M	-128.83 M	254.40 M
2418.00 M	14.00 DEG	120.10 DEG	2368.00 M	-131.05 M	256.38 M
2427.50 M	14.90 DEG	120.10 DEG	2377.81 M	-132.21 M	260.39 M
2437.00 M	15.10 DEG	120.70 DEG	2386.80 M	-133.41 M	262.47 M
2446.50 M	15.10 DEG	122.80 DEG	2395.98 M	-134.66 M	264.59 M
2456.00 M	15.00 0'EG	122.00 DEG	2405.15 M	-135.96 M	266.70 M
2465.50 M	14.80 DEG	122.40 DEG	2414.33 M	-137.28 M	268.78 M
2475.20 M	14.60 DEG	122.00 DEG	2423.51 M	-138.58 M	270.85 M
2484.70 M	14.20 DEG	122.20 DEG	2432.89 M	-139.89 M	272.93 M
2494.20 M	13.90 DEG	121.50 DEG	2442.09 M	-141.15 M	274.93 M
2511.20 M	13.50 DEG	120.00 DEG	2451.31 M	-142.37 M	276.89 M
2520.00 M	13.50 DEG	-999.25 DEG	2467.82 M	-144.42 M	280.35 M
			2478.38 M	-999.25 M	-999.25 M

Company:	ANADARKO CANADA CORPORATION
Well:	ANADARKO ARROWHEAD RIVER I-75
Field:	ARROWHEAD
Province:	NORTHWEST TERRITORIES

Schlumberger

*** TVD ***

PLATFORM EXPRESS
ARRAY INDUCTION LOG

Schlumberger

ANADARKO CANADA CORPORATION

ANADARKO ARROWHEAD RIVER I-75
ARROWHEAD
NORTHWEST TERRITORIES

PLATFORM EXPRESS
ARRAY INDUCTION LOG

NFR COPY

UNIT I, SECTION 75 — Elev.: K.B. 517.8 m; G.L. 510.8 m; D.F. 517.6 m

Permanent Datum: GROUND LEVEL — Elev.: 510.8 m
Log Measured From: KELLY BUSHING, 7.1 m above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.: N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	20-Feb-2003			
Run Number	TWO			
Depth Driller	2878 m			
Schlumberger Depth	2874.5 m			
Bottom Log Interval	2872 m			
Top Log Interval	2587.8 m			
Casing Driller Size @ Depth	177.800 mm @ 2583.8 m	@	@	
Casing Schlumberger	2587.8 m			
Bit Size	155.575 mm			
Type Fluid In Hole	HOLTMD-N			
Density / Viscosity	1100 kg/m3 / 51 s			
PH / Fluid Loss	8.5 pH3 / 10.5			
Source Of Sample	FLOW LINE			
RM @ Measured Temperature	1.350 ohm.m @ 12 degC	@	@	
RMF @ Measured Temperature	1.450 ohm.m @ 11 degC	@	@	
RMC @ Measured Temperature	1.660 ohm.m @ 12 degC	@	@	
Source RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	0.304 @ 125 / 0.305 @ 125	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	125 degC			
Circulation Stopped / Time	20-Feb-2003 / 17:00			
Logger On Bottom / Time	20-Feb-2003 / 3:15			
Unit Number / Location	2 / GRANDE PRAIRIE			
Witnessed By	CURTIS MEDFAI			
	GORDON RICHMOND			

LOCATION: Province: NORTHWEST TERRITORIES; Field: ARROWHEAD; Well: ANADARKO ARROWHEAD RIVER I-75; Company: ANADARKO CANADA CORPORATION

DEPTH SUMMARY LISTING

Date Created: 23-Feb-2003, 8:13:37

Depth System Equipment

Depth Measuring Device	
Type	Hoisting (TWIN)
Calibration Date	15-JAN-2003
Calibration Measure Point	KB
Calibration Cable Type	7-46P
Calibration Counter	0
Wheel Correction (+)	0

Logging Cable	
Type	7-46P
Outer Conductor Diameter	8.6 mm
Length	7315.20 M
Compressive Method	Wireline
Rig Type	LAND

Logging Data	Run 1	Run 2	Run 3
Run Number	ONE	TWO	
Depth Driller	2583.8 m	2878 m	
Schlumberger Depth	2583.8 m	2874.5 m	
Bottom Log Interval	2580 m	2872 m	
Top Log Interval	2100 m	2587.8 m	
Casing Driller Size @ Depth	177.800 mm @ 2583.8 m	@	@
Casing Schlumberger	2583.8 m	2587.8 m	
Bit Size	155.575 mm		
Type Fluid In Hole	HOLTMD-N		
Density / Viscosity	1100 kg/m3 / 51 s		
PH / Fluid Loss	8.5 pH3 / 10.5		
Source Of Sample	FLOW LINE		
RM @ Measured Temperature	1.350 ohm.m @ 12 degC	@	@
RMF @ Measured Temperature	1.450 ohm.m @ 11 degC	@	@
RMC @ Measured Temperature	1.660 ohm.m @ 12 degC	@	@
Source RMF / RMC	MEASURED / MEASURED		
RM @ MRT / RMF @ MRT	0.304 @ 125 / 0.305 @ 125	@ / @	@ / @
Maximum Recorded Temperatures	125 degC		
Circulation Stopped / Time	20-Feb-2003 / 17:00		
Logger On Bottom / Time	20-Feb-2003 / 3:15		
Unit Number / Location	2 / GRANDE PRAIRIE		
Witnessed By	CURTIS MEDFAI		
	GORDON RICHMOND		

Depth Control Parameters

Log Sequence: Subsequent Trip To the Well
Reference Log Name:
Reference Log Depth Matcher:
Reference Log Channel:
Reference Or Offset Log Correction: 0.0 m/Hydrostatic Head

Depth Control Remarks

1
2
3
4
5

MUD SAMPLE DATA	RUN 1	RUN 2
MUD TYPE	HOLTMD-N	
DENSITY	1100 kg/m3	
VISCOSITY	51 s	
PH	8.5 pH3	
FLUID LOSS	10.5	
SOURCE	FLOW LINE	
RM @ MEAS. TEMP.	1.350 ohm.m @ 12 degC	
RMF @ MEAS. TEMP.	1.450 ohm.m @ 11 degC	
RMC @ MEAS. TEMP.	1.660 ohm.m @ 12 degC	
RM @ BHT	0.304 @ 125	
TIME CIRC. ENDED	17:00	
TIME LOGGER ON BTM.	3:15	
MAX. REC. TEMP.	125 degC	
EQUIP. LOCATION	2 / GRANDE PRAIRIE	
RECORDED BY	CURTIS MEDFAI	
WITNESSED BY	GORDON RICHMOND	

	RUN 1	RUN 2
LOGGING DATE	20-Feb-2003	
LOGGING UNIT NUMBER	2	
LOGGING TRUCK	GRANDE PRAIRIE	
LOGGING ENGINEER	CURTIS MEDFAI	
LOGGING WITNESS	GORDON RICHMOND	
START	2100 m	
STOP	2580 m	2872 m
INTERVAL	480 m	292 m

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OTHER SERVICES: ARRAY INDUCTION, DSI, SDL, CNL, ZDL, CMR, APS, HNGS, MCFL, GPIT, CSNG, CSNT, CSNG, CSNT, CSNG, CSN

Gamma Ray (GR) | Stuck Stretch | AIT-H 20 Inch Investigation (AHT20)
0 (GAPI) 150 | (STIT) 0 | (OHMM) 50
0 (IN) 20

SP (SP) | Cable Drag | AIT-H 90 Inch Investigation (AHT90)
-160 (MV) 40 | From STIA 0 | (OHMM) 50
to STIT

Tension (TENS) | Tool/Tot. Drag | AIT-H 90 Inch Investigation Conductivity (AHTC090)
20000 (N) 0 | From DST 1000 | (MM/M) 0
to STTL

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HILTB-FTB: High resolution Integrated Logging Tool-DTB			
AHBHM	Array Induction Borehole Correction Mode	0_ComputedStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	7880	
AHELV	Array Induction Logs Code Version	0_One_Two_and_Four	
AHILV	Array Induction Main Logs Code Version Number	106	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCDV	Array Induction Casing Code Version Threshold	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHRSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
AHSPV	Array Induction Radial Profiling Code Version Number	320	
AHRPV	Array Induction Radial Parameterization Code Version Number	223	
AHSTA	Array Induction Tool Standoff	0.0	MM
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
AHTV	Array Induction Temperature (used in calculations)	0	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GDEV	Geothermal Gradient Selection	HOLE	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GSEL	Geothermal Gradient Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTB_HTEM	
SHT	Surface Hole Temperature	0	DEGC
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	120	DEGC
GDEV	Geothermal Gradient Selection	HOLE	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTB_HTEM	
SHT	Surface Hole Temperature	0	DEGC
STSI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STT Stuck Threshold	1.524	M
TDD	Total Depth - Driller	2878.00	M
TDL	Total Depth - Logger	2874.50	M
System and Miscellaneous:			
BS	Bit Size	158.000	MM
DFD	Drilling Fluid Density	1100.00	K/M3
DFPH	Depth Offset for Playback	0.4	M
DOFL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	11.94	DEGC
PD	Playback Processing	NORMAL	
TD	Total Depth	2874.5	M

Format: AIT_2LIN Vertical Scale: 1:600 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306
MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1	
DSST-B	OP10-KP1	DTC-H	10C0-306	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M 2536.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27	2882.6 M 2536.6 M

OP System Version: 10C0-306
MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

Time Mark Every 60 S

Std. Res. Invaded Zone Resistivity (RXO2)
0.2 (OHMM) 2000

Tension (TENS) | Tool/Tot. Drag | AIT-H 90 Inch Investigation (AHT90)
20000 (N) 0 | From DST 0.2 | (OHMM) 2000
to STIA

SP (SP) | Cable Drag | AIT-H 30 Inch Investigation (AHT30)
-160 (MV) 40 | From STIA 0.2 | (OHMM) 2000
to STIT

Gamma Ray (GR) | Stuck Stretch | AIT-H 20 Inch Investigation (AHT20)
0 (GAPI) 150 | (STIT) 0.2 | (OHMM) 2000
0 (IN) 20

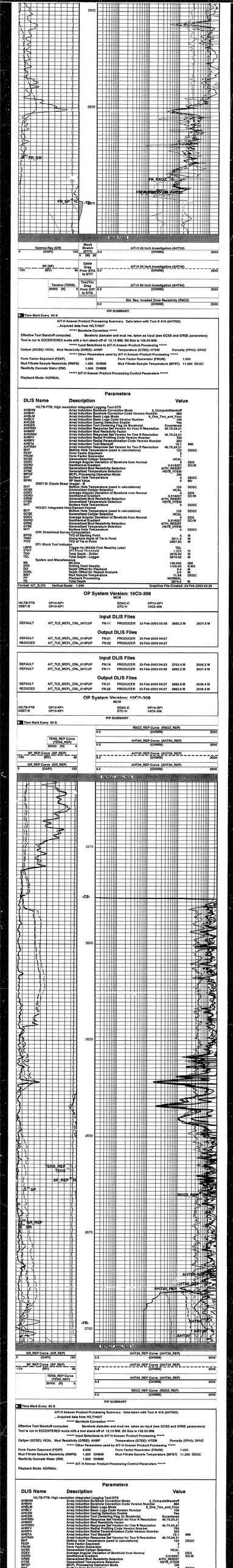
MAIN PASS

AHT20
AHT90
AHT30

-CS-

TENS
STIA
STIT
SP
GR

2550
2575
2600
2625
2650
2675
2700
2725
2750
2775
2800



Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with Tool # 419 (AHTHO)
...Acquired data from HILT/HAIT

***** Borehole 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 12.10 MM. Bit Size is 156.00 MM.

***** Input Selections to AIT-H Answer Product Processing *****

Caliper (GCSE): HCAL	Mud Resistivity (GRSE): AHMF	Temperature (GTSE): HTEM	Porosity (FPHI): DPHZ

***** Other Parameters used by AIT-H Answer Product Processing *****

Form Factor Exponent (FEXP)	2.000	Form Factor Numerator (FNUM)	1.000
Mud Filtrate Sample Resistivity (RMFS)	1.450 OHMM	Mud Filtrate Sample Temperature (MFST)	11.200 DEGC
Resitivity Connate Water (RW)	1.000 OHMM		

***** AIT-H Answer Product Processing Control Parameters *****

Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
AHBHW	Array Induction Borehole Correction Mode	2_ComputedStandoff
AHBLW	Array Induction Basic Logs Code Version Number	6_Obs_Two_and_Four
AHBLM	Array Induction Basic Logs Mode	6_Obs_Two_and_Four
AHDLV	Array Induction Basic Logs Code Version Number	106
AHFRV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21
AHCEN	Array Induction Tool Centering Flag (In Borehole)	Eccentered
AHFRW	Array Induction Response Set Version for Four ft Resolution	40.70.24.21
AHDNW	Array Induction Radial Profiling Factor for One ft Resolution	40.70.24.21
AHDNV	Array Induction Radial Profiling Code Version Number	220
AHRPV	Array Induction Radial Parameterization Code Version Number	223
AHSTA	Array Induction Tool Standoff	12.1 MM
AHONW	Array Induction Response Set Version for Two ft Resolution	40.70.24.21
SHT	Bottom Hole Temperature (used in calculations)	125 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDEVC	Generalized Deviation Selection	0 DCM
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
MPCP	MCFL Processing Operation Mode	ON
SHT	Surface Hole Temperature	0 DEGC
SPW	Salinity of Mud Filtrate	0
	DSST-B: Dipole Shear Imager - B	
BHT	Bottom Hole Temperature (used in calculations)	130 DEGC
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
HGDEV	Average Angular Deviation of Borehole from Normal	0
GSRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0 DEGC
	HOLEV: Integrated Hole Volume	
BHT	Bottom Hole Temperature (used in calculations)	125 DEGC
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GSRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0 DEGC
	DIR: Directional Survey Information	
SPVD	VVD of Starting Point	0 M
TMD	Along-hole depth of Tie-In Point	2511.2 M
TVD	TVD of Tie-In Point	2467.43 M
	STI: Stuck Tool Indicator	
LBFR	Trigger for MAXIS Flint Reading Label	TDL
STHY	Stuck Tool Threshold	1.227 M
TDD	Total Depth - Driller	2874.00 M
TDL	Total Depth - Logger	2874.00 M
	System and Miscellaneous	
BS	Bit Size	156.000 MM
DFD	Drilling Fluid Density	1.200 G/CM3
DO	Depth Offset for Playback	0.0 M
DSRL	Depth Offset for Repeat Analysis	0.0 M
MST	Mud Sample Temperature	11.2 DEGC
PP	Playback Processing	NORMAL
TD	Total Depth	2874.5 M

Format: AIT_ZLOG Vertical Scale: 1:240 Graphics File Created: 22-Feb-2003 04:28

OP System Version: 10CO-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B		DTC-H	10CO-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_005TUOP	FN:11	PRODUCER 23-Feb-2003 03:08	2883.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUOP	FN:21	PRODUCER 23-Feb-2003 04:27	
REDUCED	AIT_TLD_MCFL_CNL_014PUOP	FN:22	PRODUCER 23-Feb-2003 04:27	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_012PUOP	FN:18	PRODUCER 23-Feb-2003 04:22	3703.4 M 2858.2 M
DEFAULT	AIT_TLD_MCFL_CNL_005TUOP	FN:11	PRODUCER 23-Feb-2003 03:08	2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUOP	FN:21	PRODUCER 23-Feb-2003 04:27	2882.6 M 2538.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUOP	FN:22	PRODUCER 23-Feb-2003 04:27	2882.6 M 2538.4 M

OP System Version: 10CO-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10CO-306

PIP SUMMARY

Time Mark Every 60 S

TENS_REP Curve (TENS_REP)
SP_REP Curve (SP_REP)
GR_REP Curve (GR_REP)
RXOZ_REP Curve (RXOZ_REP)
AHT90_REP Curve (AHT90_REP)
AHT30_REP Curve (AHT30_REP)
AHT20_REP Curve (AHT20_REP)

AIT-H Answer Product Processing Summary. Data taken with Tool # 419 (AHTHO)
...Acquired data from HILT/HAIT
***** Borehole 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 12.10 MM. Bit Size is 156.00 MM.
***** Input Selections to AIT-H Answer Product Processing *****
Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): HTEM Porosity (FPHI): DPHZ
***** Other Parameters used by AIT-H Answer Product Processing *****
Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000
Mud Filtrate Sample Resistivity (RMFS) 1.450 OHMM Mud Filtrate Sample Temperature (MFST) 11.200 DEGC
Resitivity Connate Water (RW) 1.000 OHMM
***** AIT-H Answer Product Processing Control Parameters *****
Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
AHBHW	Array Induction Borehole Correction Mode	2_ComputedStandoff
AHBLW	Array Induction Basic Logs Code Version Number	6_Obs_Two_and_Four
AHBLM	Array Induction Basic Logs Mode	6_Obs_Two_and_Four
AHDLV	Array Induction Basic Logs Code Version Number	106
AHFRV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21
AHCEN	Array Induction Tool Centering Flag (In Borehole)	Eccentered
AHFRW	Array Induction Response Set Version for Four ft Resolution	40.70.24.21
AHDNW	Array Induction Radial Profiling Factor for One ft Resolution	40.70.24.21
AHDNV	Array Induction Radial Profiling Code Version Number	220
AHRPV	Array Induction Radial Parameterization Code Version Number	223
AHSTA	Array Induction Tool Standoff	12.1 MM
AHONW	Array Induction Response Set Version for Two ft Resolution	40.70.24.21
SHT	Bottom Hole Temperature (used in calculations)	125 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GSRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
MPCP	MCFL Processing Operation Mode	ON
SHT	Surface Hole Temperature	0 DEGC
SPW	Salinity of Mud Filtrate	0

SHT	Surface Hole Temperature	0	DEGC
SPHV	SP Head Value		MV
DSST-D: Dipole Shear Imager - D			
SHT	Borehole Hole Temperature (used in calculations)	125	DEGC
CCSS	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDEVR	Generalized Tool Eccentricity	0.018227	DECM
GRMS	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTB_HTEM	
SHT	Surface Hole Temperature	0	DEGC
SHT	HOLEV: Integrated Hole Cleaned Volume		
SHT	Bottom Hole Temperature (used in calculations)	125	DEGC
CCSS	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDEVR	Generalized Tool Eccentricity	0.018227	DECM
GRMS	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTB_HTEM	
SHT	Surface Hole Temperature	0	DEGC
DIR: Directional Survey Computation			
SPVO	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-In Point	251.2	M
TWO	TVD of Tie-In Point	2467.83	M
System and Miscellaneous			
BS	Bit Size	158.000	MM
DFD	Drilling Fluid Density	1150.00	KGM3
DO	Depth Offset for Playback	0.4	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	11.94	DEGC
RM	Playback Processing	NORMAL	
TD	Total Depth	3974.5	M

Format: AIT_ZLOG_REP Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_013PUP	FN:19	PRODUCER	23-Feb-2003 04:23	2703.4 M	2558.2 M
DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

Time Mark Every 60 S

AIT-H Mud Full Cal (AHMF)
(OHMM) 2000

Temperature (DEGC) (AHTCA)
0 (----) 1

Std. Res. Resistivity Standoff (RSOZ)
65 (MM) 0

HGNS Deviation (GDEV)
-5 (DEG) 45

Gamma Ray (EGSR)
0 (GAPI) 150

Std. Res. Density Standoff (DSOZ)
65 (MM) 0

Bit Size (BS)
125 (MM) 375

AIT-H Shale/Form Signal Ratio (AHSFR)
0 (----) 20

Caliper (HCAL)
110 (MM) 400

Stuck Stretch (STIT)
0 (M) 20

Tension (TENS)
0 (V) 20000

AIT-H IQC Fully Calibrated A1 Signal (AHQA8R[1])
2 (MM-M) 20000

AIT-H IQC Fully Calibrated A2 Signal (AHQA8R[2])
2 (MM-M) 20000

AIT-H IQC Fully Calibrated A3 Signal (AHQA8R[3])
2 (MM-M) 20000

AIT-H IQC Fully Calibrated A4 Signal (AHQA8R[4])
2 (MM-M) 20000

AIT-H IQC Fully Calibrated A5 Signal (AHQA8R[5])
2 (MM-M) 20000

AIT-H IQC Fully Calibrated A6 Signal (AHQA8R[6])
2 (MM-M) 20000

AIT-H IQC Fully Calibrated A7 Signal (AHQA8R[7])
2 (MM-M) 20000

AIT-H IQC Fully Calibrated A8 Signal (AHQA8R[8])
2 (MM-M) 20000

Pe Correction (HPRA)
-3 (----) 2

Density Correction (HDRA)
-0.5 (G/C3) 0.5

Delta Neutron Porosity (DNPO)
-0.1 (----) 0.1

GR Borehole Correction 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[1-2]
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	
HLTB-FTB: High resolution Integrated Logging Tool-DTS			
AHMM	Array Induction Borehole Correction Mode	2_CompositeStandoff	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHQUM	Array Induction Tool Centering Flag (In Borehole)	Excellent	
AHFA	Array Induction Mud Resistivity Factor	1	
AHETA	Array Induction Shoulder Effect	13.1	MM
BHTL	Borehole Fluid Type	WATER	
BHSM	Borehole Salinity	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	125	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CDCO	Casing & Cement Thickness Correction Option	NO	
CWEI	Casing Weight	26.70	KG/M
FSOI	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSCL	Formation Salinity	50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSS	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GRMS	Generalized Mud Resistivity Selection	AITH_RESIST	DC-M
GTSE	Generalized Temperature Selection	HSTB_HTEM	
HCSS	Hole Size Correction Option	CCE	
HMIN	Hole Size Correction Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOP	Mud Correction	NATU	
MHCO	Mud Filtrate Invading Operation Mode	1	
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APB Activation Correction	OFF	
NBAN	HRDD Near Bank Angle	NORMAL	
NRAN	HRDD Processing Mode	SMART	
NSAM	HRDD Depth Sampling Rate	25.4	MM
PTCO	Pressure/Temperature Correction Option	NO	
SHT	Standoff Data Source	SOCK	
SOCD	Standoff Deviation	0	DEGC
SOCH	Standoff Distance	3.175	MM
SOCC	Standoff Correction Option	YES	
DSST-B: Dipole Shear Imager - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	125	DEGC
BSCO	Borehole Salinity Correction Option	NO	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDEVR	Geotherm at Gradient	0.018227	DC/M
GRMS	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTB_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	0	DEGC
HOLEV: Integrated Hole Cleaned Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	125	DEGC
GCSS	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDEVR	Geotherm at Gradient	0.018227	DC/M
GRMS	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTB_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	0	DEGC
DIR: Directional Survey Computation			
SPVO	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-In Point	2511.2	M
TWO	TVD of Tie-In Point	2467.83	M
STI: Stuck Tool Indicator			
ETRT	Trigger for MAXIS First Reading Label	TDL	
STKT	BHI Stuck Hole Limit	1.024	M
TDD	Total Depth - Driller	2878.00	M
TDL	Total Depth - Logger	2874.50	M
System and Miscellaneous			
BS	Bit Size	158.002	MM
CBL	Casing Salinity	50000.00	PPM
CWEI	Casing Weight	177.000	KG/M
DFD	Drilling Fluid Density	26.70	KG/M
DO	Depth Offset for Playback	1150.00	KG/M3
DOPL	Depth Offset for Repeat Analysis	0.4	M
MST	Mud Sample Temperature	0.0	M
RM	Playback Processing	11.94	DEGC
RMFS	Resistivity of Mud Filtrate Sample	NORMAL	
TD	Total Depth	2874.5	OHMM

Format: HIR_INIT.QC Vertical Scale: 1:600 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27		
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27		

Schlumberger

COMPANY: ANADARKO CANADA CORPORATION

WELL: ANADARKO ARROWHEAD RIVER I-75

FIELD: ARROWHEAD

PROVINCE: NORTHWEST TERRITORIES

*** TVD ***

PLATFORM EXPRESS
ARRAY INDUCTION LOG

N.E.B. COPY

Province:	NORTHWEST TERRITORIES
Field:	ARROWHEAD
Location:	UNIT I, SECTION 75
Well:	ANADARKO ARROWHEAD RIVER I-75
Company:	ANADARKO CANADA CORPORATION

LOCATION

UNIT I, SECTION 75

Permanent Datum: GROUND LEVEL — Elev.: K.B. 517.9 m
Log Measured From: KELLY BUSHING — D.F. 516.9 m
Drilling Measured From: KELLY BUSHING — G.L. 517.0 m
Elev.: 517.0 m — 7.1 m above Perm. Datum

API Serial No.: N/A

	Run 1	Run 2	Run 3	Run 4
Service Order	23-FEB-2003			
Run Number	TWO			
Schlumberger Depth	2823.5 m			
Bottom Log Interval	2822 m			
Top Log Interval	2817 m			
Casing Driller Size @ Depth	177.800 mm @ 2816.5 m	@	@	@
Casing Schlumberger	2827.8 m			
Type Fluid in Hole	POLYMER			
Density	1100 kg/m3			
Viscosity	51 s			
PH	10.5			
Fluid Loss	FLOW LINE			
Source Of Sample	FLOW LINE			
RM @ Measured Temperature	1.300 ohm.m @ 12 degC	@	@	@
RMF @ Measured Temperature	1.000 ohm.m @ 12 degC	@	@	@
RMC @ Measured Temperature	1.690 ohm.m @ 12 degC	@	@	@
Source RMF / RMC	MEASURED / MEASURED			
Maximum Recorded Temperatures	126 degC @ 125	@	@	@
Circulation Stopped	23-FEB-2003			
Time	11:00			
Unit Number	2018			
Location	GRANDE PRAIRIE			
Recorded By	GURTIS NOFFAT			
Witnessed By	GORDON MACHADO			

	Run 1	Run 2	Run 3	Run 4
Logged Date				
Run Number				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
Type Fluid in Hole				
Density				
Viscosity				
PH				
Fluid Loss				
Source Of Sample				
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source RMF / RMC				
Maximum Recorded Temperatures	@	@	@	@
Circulation Stopped				
Time				
Unit Number				
Location				
Recorded By				
Witnessed By				

DEPTH SUMMARY LISTING

Date Created: 23-FEB-2003 4:14:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46P
Serial Number:	4930	Serial Number:	2449	Serial Number:	-999
Calibration Date:	15-JAN-2003	Calibration Date:	29-JAN-2003	Length:	7315.20 M
Calibrator Serial Number:	4	Calibrator Serial Number:	-999	Conveyance Method:	Wireline
Calibration Cable Type:	7-46P	Calibration Gain:	0.88	Rig Type:	LAND
Wheel Correction 1:	-5	Calibration Offset:	346.00		
Wheel Correction 2:	-6				

Depth Control Parameters

Log Sequence: Subsequent Trip To the Well

Reference Log Name:
Reference Log Run Number:
Reference Log Date: dd-Mmm-yyyy
Subsequent Trip Down Log Correction: 5.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANYS USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMERS FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1	OTHER SERVICES2
OS1: ARRAY INDUCTION	OS1:
OS2: NEUTRON / DENSITY	OS2:
OS3: DSI SONIC	OS3:
OS4: XY CALIPER	OS4:
OS5: FMI	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST	
AIT RUN WITH 2 12.1 mm STANDOFFS IN COMPUTE STANDOFF MODE	
NEUTRON RUN WITH 120 DEGREE OFFSET BOWSPRING	
DSI SONIC RUN WITH 3 STANDOFFS	
HOLE VOLUME CALCUATION DONE USING HCAL AND CAL2	
HOLE VOLUME = 5.46 m3	
REPEAT PASS DONE JUST BELOW CASING: DUE TO MAXIMUM TOOL TEMP	
BEING REACHED ON BOTTOM DURING FIRST PASS	
CREW: C. LONGMORE, J. WALLACE	
RIG: SHEHETA WILLSON 5	
PRINTS: 2 FIELD	

RUN 1			RUN 2		
SERVICE ORDER #:		10507228	SERVICE ORDER #:		
PROGRAM VERSION:		1029-306	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 / RUN 2

SURFACE EQUIPMENT
WITM (DTS)-A

GSR-U/Y
NCT-B
CNS-AB
NCS-VB

DOWNHOLE EQUIPMENT

MAXIMUM STRING DIAMETER 123 MM
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014'UP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44	2826.4 M	2496.6 M
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44	2826.4 M	2496.6 M

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

P/P SUMMARY

Time Mark Every 60 S

Tension (TENS) 20000 (lb) 0	Tool/Tol. Drag From DST to STIA	1000	AIT-H 90 Inch Investigation Conductivity (AHTC090) (MM/M) 0
SP (SP) -160 (MV) 40	Cable Drag From STIA to STIT	0	AIT-H 90 Inch Investigation (AHT90) (OHMM) 50
Gamma Ray (GR) 0 (GAPI) 150	Stuck Stretch (STIT) 0 (M) 20	0	AIT-H 20 Inch Investigation (AHT20) (OHMM) 50

MAIN PASS

2500 fvd

-CS-

2550 fvd

TENS

SP

STIA

STIT

GR

2600 fvd

AHTC090

AHT20

AHT90

2650 fvd

2700 fvd

2750 fvd

2800 fvd

-TD-

MAIN PASS

Gamma Ray (GR) 0 (GAPI) 150	Stuck Stretch (STIT) 0 (M) 20	0	AIT-H 20 Inch Investigation (AHT20) (OHMM) 50
SP (SP) -160 (MV) 40	Cable Drag From STIA to STIT	0	AIT-H 90 Inch Investigation (AHT90) (OHMM) 50
Tension (TENS) 20000 (lb) 0	Tool/Tol. Drag From DST to STIA	1000	AIT-H 90 Inch Investigation Conductivity (AHTC090) (MM/M) 0

P/P SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HLTB-FTB: High resolution Integrated Logging Tool-DTS	
AHBHV	Array Induction Borehole Mode	2_ConcyclicInvasion
AHBLV	Array Induction Borehole Correction Code Version Number	880
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	108
AHCBV	Array Induction Cable Correction Flag	1
AHCEN	Array Induction Tool Centering Flag On Borehole	Eccentered
AHFRSV	Array Induction Response Set Version for Four ft Resolution	40,70,24,21
AHMRF	Array Induction Mud Resistivity Factor	1
AHORSV	Array Induction Response Set Version for One ft Resolution	40,70,24,21
AHRAD	Array Induction Radial Processing Mode	2
AHRPV	Array Induction Radial Processing Code Version Number	220
AHSTA	Array Induction Tool Standoff	13.1	MM
AHTRSV	Array Induction Response Set Version for Two ft Resolution	40,70,24,21
BHT	Borehole Temperature (used in calculations)	120	DEGC
FEXP	Ferro Factor Exponent	2
FMUM	Ferro Factor Numerator	1
GDEV	Geometrical Deviation	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.015227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
MRT	Surface Mud Temperature	0	DEGC
SPMV	SP Neut Value	0	MV
	HNGS-A:	
BHT	Borehole Hole Temperature (used in calculations)	135	DEGC
CCSC	Generalized Caliper Selection	HCAL
DDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.015227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0	DEGC
	HOLEV: Integrated Hole Volume - Logger	
BHT	Bottom Hole Temperature (used in calculations)	135	DEGC
CCSC	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	DEG
GGRD	Geothermal Gradient	0.015227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTB_HTEM
SHT	Surface Hole Temperature	0	DEGC
	DIR: Directional Survey - Definitive	
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-In Point	2811.2	M
TIVD	TVD of Tie-In Point	2407.83	M
	STI: Stuck Tool Indicator	
LBFH	Trigger for MAXIS First Reading Label	TDL
STNT	STI Stuck Threshold	1.524	M
TDD	Total Depth - Driller	2878.00	M
TDL	Total Depth - Logger	2874.00	M
	System and Miscellaneous	
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth
DFD	Drilling Fluid	Water	MM
DFD	Drilling Density	1100.00	K/M3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	11.94	DEGC
PBVSADP	Use alternate depth channel for playback	YES
PP	Perform Preprocessing	NORMAL
TD	Total Depth	2874.0	M

Format: AIT_2LIN Vertical Scale: 1:600 Graphics File Created: 23-Feb-20**11**:04:44

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44		
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44	2826.4 M	2496.6 M
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44	2826.4 M	2496.6 M

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

P/P SUMMARY

Time Mark Every 60 S

		0.2	Std. Res. Invaded Zone Resistivity (RXOZ) (OHMM) 2000
Tension (TENS) 20000 (lb) 0	Tool/Tol. Drag From DST to STIA	0.2	AIT-H 90 Inch Investigation (AHT90) (OHMM) 2000
SP (SP) -160 (MV) 40	Cable Drag From STIA to STIT	0.2	AIT-H 30 Inch Investigation (AHT30) (OHMM) 2000
Gamma Ray (GR) 0 (GAPI) 150	Stuck Stretch (STIT) 0 (M) 20	0.2	AIT-H 20 Inch Investigation (AHT20) (OHMM) 2000

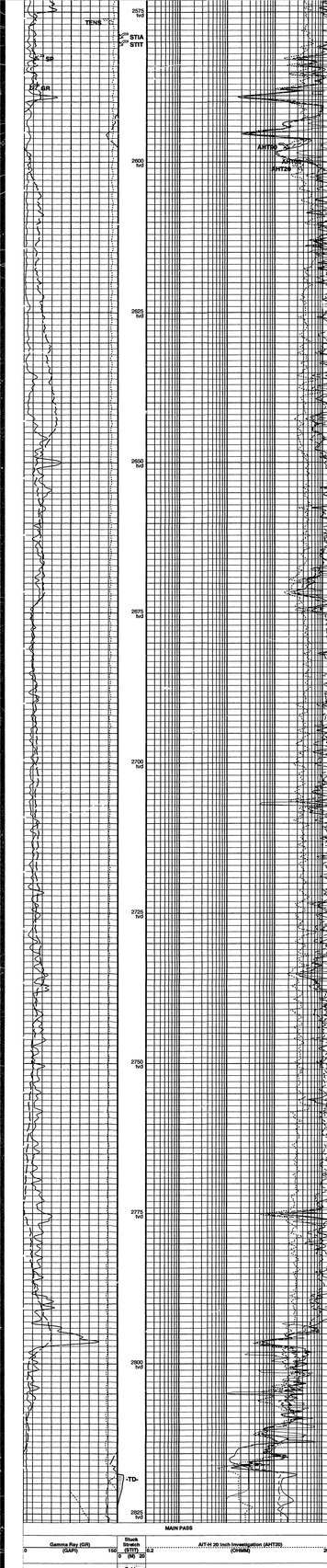
MAIN PASS

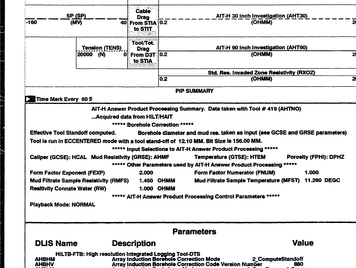
2500 fvd

2525 fvd

-CS-

2550 fvd





PIP SUMMARY

Time Mark Every 60 S

AIT-H Answer Product Processing Summary. Data taken with Tool # 419 (AHTHO)
...Acquired data from HILT/HAIT
***** Borehole 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 12.10 MM. Bit Size is 156.00 MM.
***** Input Selections to AIT-H Answer Product Processing *****
Caliper (GCSE): HCAL Mud Resistivity (GRSE): AHMF Temperature (GTSE): HTEM Porosity (FPHI): DPHZ
***** Other Parameters used by AIT-H Answer Product Processing *****
Form Factor Exponent (FEXP) 2.000 Form Factor Numerator (FNUM) 1.000
Mud Filtrate Sample Resistivity (RMFS) 1.400 OHMM Mud Filtrate Sample Temperature (MFST) 11.280 DEGC
Reality Connate Water (RW) 1.000 OHMM
***** AIT-H Answer Product Processing Control Parameters *****

Playback Mode: NORMAL

Parameters

DLIS Name	Description	Value
AHMHM	Integrated Logging Tool OTF	
AHSHV	Array Induction Borehole Correction Mode	2_ComputeStandoff
AHBHV	Array Induction Borehole Correction Code Version Number	660
AHMLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHSLV	Array Induction Basic Logs Code Version Number	106
AHCDE	Array Induction Casing Correction Mode	Yes
AHCDV	Array Induction Casing Flag (In Borehole)	Eccentered
AHFRSV	Array Induction Response Set Version for Four R Resolution	40,70,24,21
AHQRV	Array Induction Mud Resistivity Factor	1
AHRSV	Array Induction Response Set Version for One R Resolution	40,70,24,21
AHNPV	Array Induction Radial Profiling Code Version Number	700
AHSPV	Array Induction Radial Parameterization Code Version Number	223
AHSTA	Array Induction Tool Standoff	MM
AHTRSV	Array Induction Response Set Version for Two R Resolution	40,70,24,21
FEXP	Form Factor Exponent (used in calculations)	DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AHTK_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
MPOF	MCFL Processing Operation Mode	ON
SHT	Surface Hole Temperature	0 DEGC
SPHV	SP Heat Value	0 MV
DSST-B: Dipole Shear	DSST-B	
BHT	Bottom Hole Temperature (used in calculations)	128 DEGC
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
SHT	Surface Hole Temperature	0 DEGC
HOLEV: Integrated Hole Volume		
BHT	Bottom Hole Temperature (used in calculations)	128 DEGC
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
SHT	Surface Hole Temperature	0 DEGC
DIR: Directional Survey		
SPVD	TVD of Starting Point	0 M
TIMD	Along-hole depth of Tie-In Point	2811.2 M
TIVD	TVD of Tie-In Point	2467.83 M
STI: Stuck Tool Indicator		
LBFR	Trigger for MAXSS First Reading Label	TDL
STHT	Stuck Tool Threshold	1000 M
TDD	Total Depth - Driller	2878.00 M
TDL	Total Depth - Logger	2876.50 M
System and Miscellaneous		
ALTOPCHAN	Name of alternate depth channel	TrueVerticalDepth
DFD	Drilling Fluid Density	1100.00 K/M3
DFV	Drilling Fluid Viscosity	0.0 M
DID	Depth Offset for Playback	11.280 DEGC
MST	Mud Filtrate Sample Temperature	YES
PBVSADP	Use alternate depth channel for playback	NORMAL
PP	Playback Processing	2874.5 M
TD	Total Depth	

Format: AIT_2LOG Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:23	PRODUCER	23-Feb-2003 04:44		
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:24	PRODUCER	23-Feb-2003 04:44		

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point : Measured Depth True Vertical Depth North Departure East Departure

2811.20 M 2467.83 M 0.00 M 0.00 M

Depth	Deviation	Azimuth	True Vertical Depth	North Departure	East Departure
2811.20 M	13.00 DEG	120.00 DEG	2467.83 M	0.00 M	0.00 M
2855.00 M	12.12 DEG	106.90 DEG	2508.00 M	-12.72 M	29.19 M
2746.00 M	15.00 DEG	101.00 DEG	2590.87 M	-17.64 M	48.40 M
2864.00 M	20.00 DEG	96.90 DEG	2808.89 M	-23.06 M	85.24 M

Company : ANADARKO CANADA CORPORATION

Well : ANADARKO ARROWHEAD RIVER I-75

Field : ARROWHEAD

Province : NORTHWEST TERRITORIES

*** TVD ***

Schlumberger

PLATFORM EXPRESS
ARRAY INDUCTION LOG

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

SONIC

Schlumberger

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

BOREHOLE COMPENSATED

SONIC LOG

NEB COPY

UNIT: I, SECTION: 75

LAT: 60 34 42.3 N LONG: 122 58 32.6 W

Elev.: K.B. 517.9 m
G.L. 510.8 m
D.F. 517.6 m

Permanent Datum: GROUND LEVEL Elev.: 510.8 m

Log Measured From: KELLY BUSHING 7.1 m above Perm. Datum

Drilling Measured From: KELLY BUSHING

	Run 1	Run 2	Run 3	Run 4
API Serial No.	N/A			
Logging Date	13-Feb-2003			
Run Number	ONE			
Depth Driller	2596 m			
Schlumberger Depth	2598 m			
Bottom Log Interval	2569.5 m			
Top Log Interval	650 m			
Casing Driller Size @ Depth	244.500 mm @ 654.4 m	@	@	@
Casing Schlumberger	656 m			
Bit Size	216.000 mm			
Type Fluid In Hole	INVERT			
MUD Density / Viscosity	925 kg/m3 / 45 s			
Fluid Loss / PH				
Source Of Sample	NO SAMPLES			
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source RMF / RMC	NO SAMPLES / NO SAMPLES			
RM @ MRT / RMF @ MRT	@ 103 / @ 103	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	103 degC			
Circulation Stopped Time	13-Feb-2003 15:30			
Logger On Bottom Time	13-Feb-2003 23:45			
Unit Number Location	2016 GRANDE PRAIRIE			
Recorded By	CURTIS MCFFAT			
Witnessed By	GORDON RICHMOND			

	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				

DEPTH SUMMARY LISTING

Date Created: 14-FEB-2003 1:04:55

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	DW-B	Type:	CMTD-B/A	Type:	7-46P
Serial Number:	2588	Serial Number:	688	Serial Number:	7315.00 M
Calibration Date:	15-JAN-2003	Calibration Date:	29-JAN-2003	Length:	
Calibration Cable Type:	7-46P	Calibration Serial Number:	6988	Conveyance Method:	Wireline
Wheel Correction 1:	0	Calibration Offset:	346.00	Rig Type:	LAND
Wheel Correction 2:	0				

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	74.10 M
Rig Up Length At Sheave:	76.10 M
Rig Up Length Correction:	0.00 M
Total Zero Check At Surface:	0.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

THE USE OF AND RELIANCE UPON THIS RECORDED DATA BY ANADARKO CANADA CORPORATION AND ANY OF ITS AFFILIATES, OTHER THAN SCHLUMBERGER AFFILIATES AND JOINTLY AFFILIATED COMPANIES, IS SUBJECT TO THE TERMS AND CONDITIONS AGREED BETWEEN SCHLUMBERGER AND ANADARKO CANADA CORPORATION. ANY USE OR RELIANCE BY ANY OTHER PARTY IS AT THAT PARTY'S OWN RISK. NO LIABILITY FOR ANY DAMAGES HOWSOEVER INCURRED IN CONNECTION WITH THIS RECORDED DATA WILL BE ACCEPTED BY SCHLUMBERGER.

OTHER SERVICES1	OTHER SERVICES
OS1: ARRAY INDUCTION	OS1:
OS2: BHC SONIC/GR	OS2:
OS3: NGT	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST	
NEUTRON PLATFORM CALIBRATED WITH HOUSTON SANDSTONE	
NEUTRON MATRIX IS 0.035 FOR LIMESTONE	
GAMMA RAY CALIBRATED WITH API CALIBRATOR	
SONIC PROCESSED USING BHC ALGORITHM	
SONIC POROSITY CALCULATED WITH HGAL AND GALS	
HGAL EQUATION = 7.72 MS	
GSAND EQUATION = 6.38 MS	
GSANDY VOLUME = 26.00 MS ASSUMED TFA = mm CASING OD	
COMPUTED HOOK TO TD SC USING DATA CHANNELS T HGAL AND GALS	

DRIVE F. GEORGE
ANADARKO CANADA CORPORATION - 3
PRINTS 2 FIELD

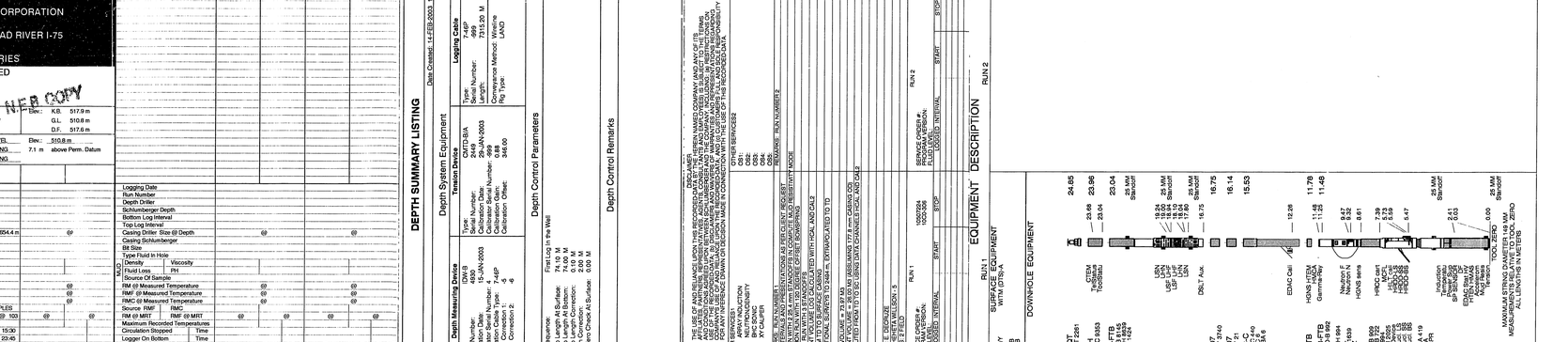
SERVICE ORDER #:	RUN 1	1000224	RUN 2
PRODUCT VERSION:		10CG-306	
LOGGED INTERVAL	START	STOP	START	STOP

RUN 1 EQUIPMENT DESCRIPTION RUN 2

SURFACE EQUIPMENT
WITH DTSI-A

GSLUY
NCC-B
NCS-YB

DOWNHOLE EQUIPMENT



Input DLIS Files

DEFAULT	AFT_TLD_MCFL_CRL_006.LIP	PROCUSER	Fb13	13-Feb-2003 23:05	2598.2 M	0.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 73.97 m3
Cement Volume = 28.00 m3 (assuming 177.80 mm casing O.D.)
Computed from 2597.9 m to 655.8 m.

OP System Version: 10CG-306

		MCM	EDAC
HILTD	OP16-HP1		OP10-HP1
DTSI-MP	OP16-HP1		10CG-306

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 1 M3
- Integrated Transit Time Major Pip Every 10 MS

Tension (TENS) 0 / 20000 LBF

CaliPer (HCAL) --- 6 / 16 IN

Gamma Ray (GR) 0 / 150 GAPI

CaliBor 2 (CAL2) 125 / 375 MM

Bit Size (BS) 125 / 375 MM

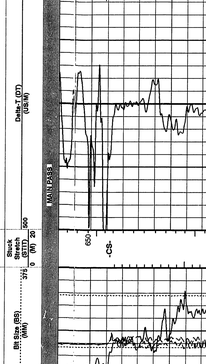
Cable Speed 3 / 5 / 3 / 5 M/MIN

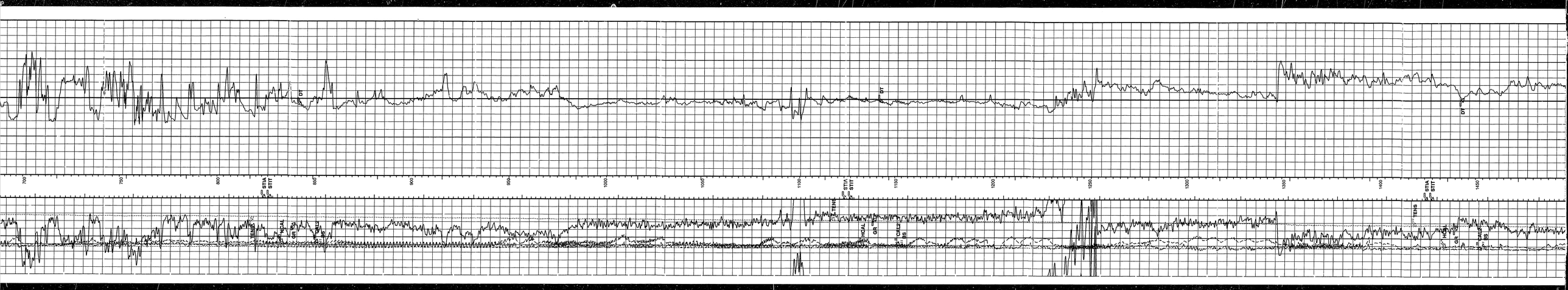
Stretch 0 / 50 / 20 M/100M

Delta-T (DT) 1000 / 100 (US/M)

MAIN PASS

650 / -CS-

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900
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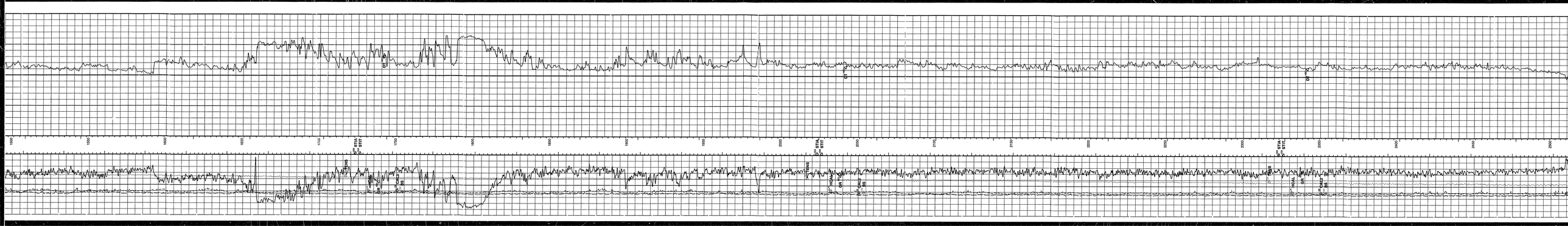
1400
1450
DT
STIA
STIT
TENS
HOAL
GR
CALF
BS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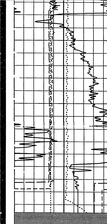
QT
QRS
QT
QRS
QT



MAIN PASS

Bit Size (BS) 125 (MM) 375
Stuck Stretch (STIT) 0 (IN) 20 1000
Delta-T (DT) (US/M) 100

Caliper 2 (CAL2) 125 (MM) 375
Cable Drag From STIA to STIT

Gamma Ray (GR) 0 (GAPI) 150

Caliper (CCAL) 125 (MM) 375

Tension (TENS) 20000 (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-FTB: Digitizing Sonic Logging Tool		
DDEL	Digitizing Delay	0	us
HEAD.TYPE	DFAD type	DFAD0	
DAC	DSLT Depth Sampling Interval	100	
DRCR	DSLT DLIS Recording Size	100	
DSIN	Digitizing Sample Interval	10	
DWSZ	DSLT Digitizing Window Size	200	
DWOC	Digitizing Word Count	100	
GI	Manual Gain	40	
GAMTR	Minimum High Threshold Reference	120	
MGAI	Maximum Gain	80	
MNHTR	Minimum High Threshold Reference	100	
MNSG	Near Minimum Sliding Gate	150	us
MMSG	Near Maximum Sliding Gate	700	us
RATE	Firing Rate	1.0	
SCAF	Sonic Formation Attenuation Factor	0	dB/m
SGCD	Sliding Gate Closing Delta-T	820	us/m
SGOT	Sliding Gate Offset	220	us/m
SGW	Sliding Gate Width	80	us
SLEV	Signal Level for AGC	5000	
WMOD	STI: Stuck Tool Indicator Waveform Firing Mode	FULL	
STKT	STI Stuck Threshold	1.524	m
TDD	Total Depth - Driller	2585.0	m
TDL	Total Depth - Logger	2588.0	m
	System and Miscellaneous		
BS	Bit Size	215.0	mm

Format: SLT_2 Vertical Scale: 1:600 Graphics File Created: 14-Feb-2003 00:41

OP System Version: 10C0-306

MCM

HLTD	OP10-KP1	EDAC	OP10-KP1	
DSLT-BE	OP10-KP1	DTCH	10C0-306	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M
REDUCED	AIT_TLD_MCFL_CNL_006LUP	FN:14	PRODUCER	13-Feb-2003 23:55	

0.0 M

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

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

Transit Time 4 (TT4) 1200 (US) 200
Transit Time 3 (TT3) 1200 (US) 200
Transit Time 2 (TT2) 1200 (US) 200
Transit Time 1 (TT1) 1200 (US) 200

Tension (TENS) 20000 (N) 0

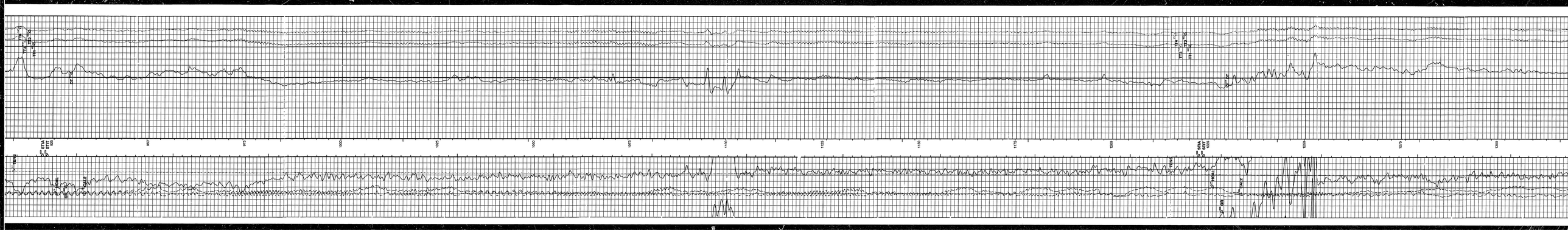
Caliper 2 (CAL2) 125 (MM) 375
Stuck Indicator Lagged (STIT) 0 (IN) 20
Cable Drag From STIA to STIT

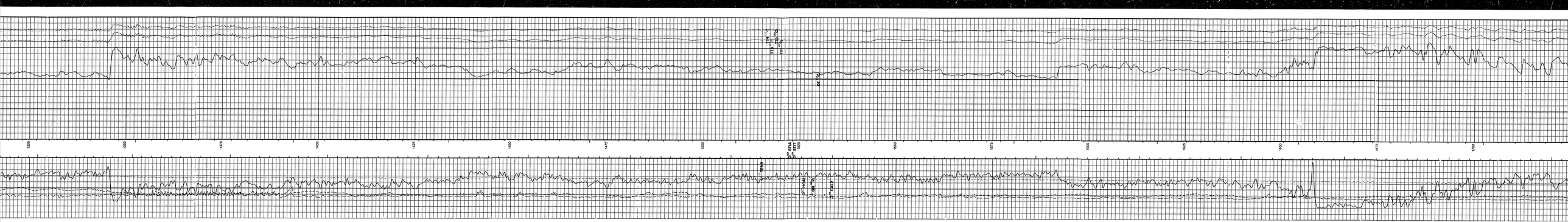
Gamma Ray (GR) 0 (GAPI) 150

Caliper (CCAL) 125 (MM) 375
Stuck Stretch (STIT) 0 (IN) 20 1000
Delta-T (DT) (US/M) 100

MAIN PASS

-CS-

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TT2 1502
TT3 1557
FT 1512
ST 1525
ST 1537
ST 1550
ST 1562
ST 1575
ST 1587
ST 1600
ST 1612
ST 1625
ST 1637
ST 1650
ST 1662
ST 1675
ST 1687
ST 1700
ST 1712
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ST 1750
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1825
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1925
1950
1975
2000
2025
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2100
2125
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ST1T
ST2
ST2A
ST2T
ST3
ST3A
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ST4T
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2250
2275
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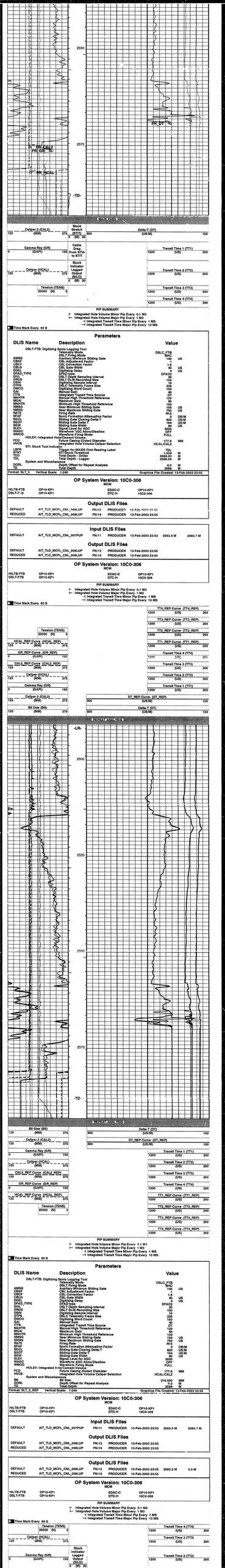
ETT
STA
ETT
STA
ETT


2550
2575
-TD-
FR_CALI
FR_GR
FR_ACAL
FR_DT_SL
MAIN PASS
Caliper 2 (CALI)
(MM)
Stuck Stretch (STIT)
(0) (60) (0)
Delta-T (DT)
(US/M)
Gamma Ray (GR)
(GAPI)
Cable Drag From STIA to STIT
Transit Time 1 (TT1)
(US)
Caliper (HCAL)
(MM)
Stuck Indicator Logged Output (SIO)
(0) (60) (0)
Transit Time 2 (TT2)
(US)
Tension (TENS)
Transit Time 3 (TT3)
(US)
Transit Time 4 (TT4)
(US)
PIP SUMMARY
Integrated Hole Volume Minor Plp Every 0.1 M3
Integrated Hole Volume Major Plp Every 1 M3
Integrated Transit Time Minor Plp Every 1 MS
Integrated Transit Time Major Plp Every 10 MS
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
DSLT-FTB: Digitizing Sonic Logging Tool
Telemetry Mode
DSLT Firing Mode
DSLC Auxiliary Minimum Sliding Gate
CBAF Auxiliary Amplitude Factor
CBCF CBL Correlation Factor
CBLG CBL Gate Width
CBLO CBL Gate Offset
DFAD_TYPE DFAD type
DVL Delay
DSRI Digitizing Sample Interval
DSRN Digitizing Sample Interval
DTFS DSLC Telemetry Frame Size
DWCO DSLC Word Count
GAIN Gain
ITS Integrated Transit Time Source
MSTR Manual High Threshold Reference
MXTR Maximum Ratio
MNHTR Manual High Threshold Reference
NMSG Near Minimum Sliding Gate
NMXG Near Maximum Sliding Gate
PFAT Pulse Fit
SFAT Semb Formation Attenuation Factor
SGCL Sliding Gate Closing Delta-T
SGOT Sliding Gate Offset
SGW Sliding Gate Width
SLEV Signal Level for AGC
WAVC Waveform AGC Allow/Disallow
WMOD Waveform Mode
HOLEV: Integrated Hole Volume/Cement Volume
FCD Failure Casing Diameter
HVCS Integrated Hole Volume Caliper Selection
STI: Stuck Tool Indicator
LSFS Trigger for MAXS Fast Reading Label
STAT STI Stuck Threshold
TDI Total Depth - Driller
TDL Total Depth - Logger
System and Miscellaneous
DDRL Depth Offset for Repeat Analysis
TD Total Depth
DSLT_FTB
1000
LIN
160
US
1.5
45
US
40
US
DFAD2
20
100
10
230
100
US
DT
0
R+
DB/M
800
US/M
1000
US/M
US
5000
OFF
FULL
177.8
MM
HCAL/CALI
0.0
M
3584
M
Format: SLT_5
Vertical Scale: 1:240
Graphics File Created: 13-Feb-2003 23:55
OP System Version: 10C0-306
MCM
HLTB-FTB
DSLT-FTB
OP10-KP1
OP10-KP1
EDAC-C
DTC-H
OP10-KP1
10C0-306
Output DLIS Files
DEFAULT
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AIT_TLD_MCFL_CNL_006LUP
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FN:14
PRODUCER
PRODUCER
13-Feb-2003 23:55
13-Feb-2003 23:55
Input DLIS Files
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PRODUCER
13-Feb-2003 23:53
2693.4 M
2490.7 M
Output DLIS Files
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REDUCED
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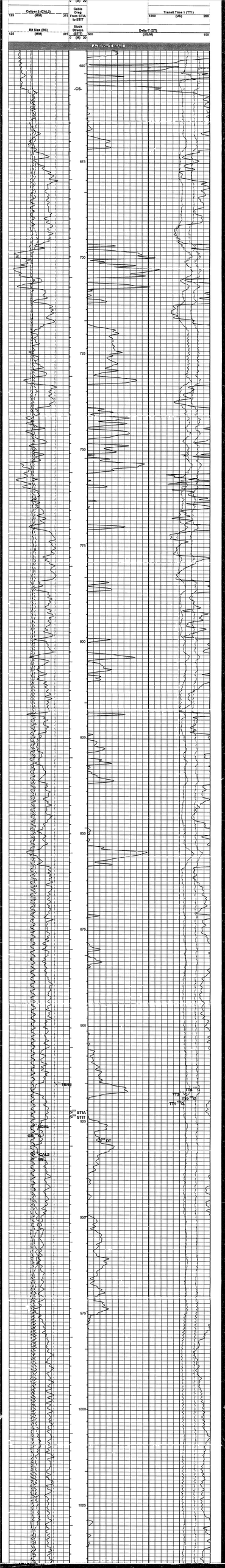
PRODUCER
PRODUCER
13-Feb-2003 23:55
13-Feb-2003 23:55
TT4_REP Curve (TT4_REP)
TT3_REP Curve (TT3_REP)
TT2_REP Curve (TT2_REP)
TT1_REP Curve (TT1_REP)
DT_REP Curve (DT_REP)
RESERVATION 8
RESERVATION 9
-LR-
2500
2525
2550
2575
-TD-
Bit Size (BS)
(IN)
HCAL_REP Curve (HCAL_REP)
(MM) 125 375
CALI_REP Curve (CALI_REP)
GR_REP Curve (GR_REP)
(GAPI) 0 150
TT4_REP Curve (TT4_REP)
(US) 1200 200
TT3_REP Curve (TT3_REP)
TT2_REP Curve (TT2_REP)
TT1_REP Curve (TT1_REP)
DT_REP Curve (DT_REP)
(US/M) 500 100


Caliper 2 (CAL2) (MM)
125
375
Cable Tension From STIA to STIT
0 (M) 20
Transit Time 1 (TT1) (US)
1200
200
Bit Size (BS) (MM)
125
375
Stuck Tension (STIT) (LB)
0 (M) 20
300
Delta-T (DT) (US/M)
100
FORMATION
650
-CS-
675
700
725
750
775
800
825
850
875
900
-TENS
STIA
STIT
AGAL
GR
DT
CAL2
BS
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1000
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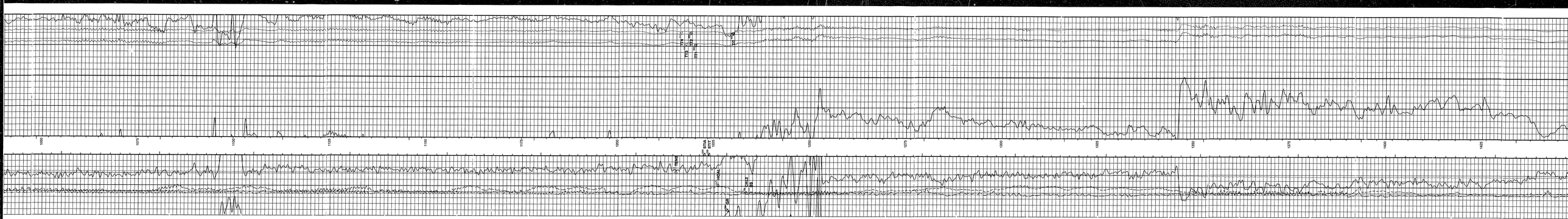
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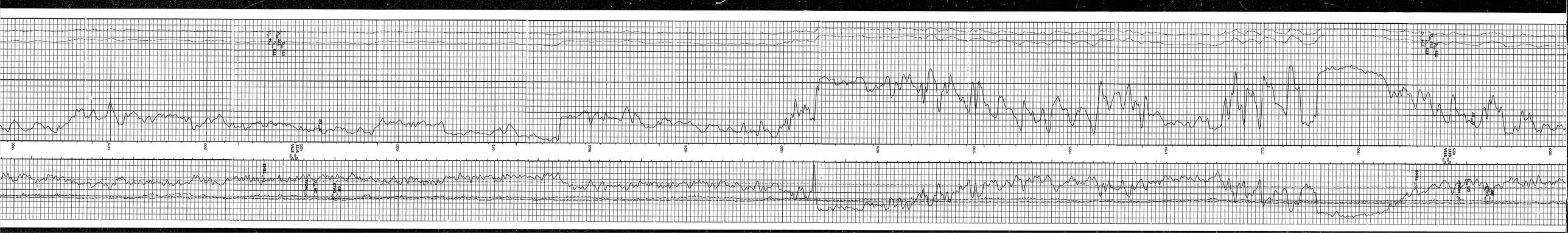
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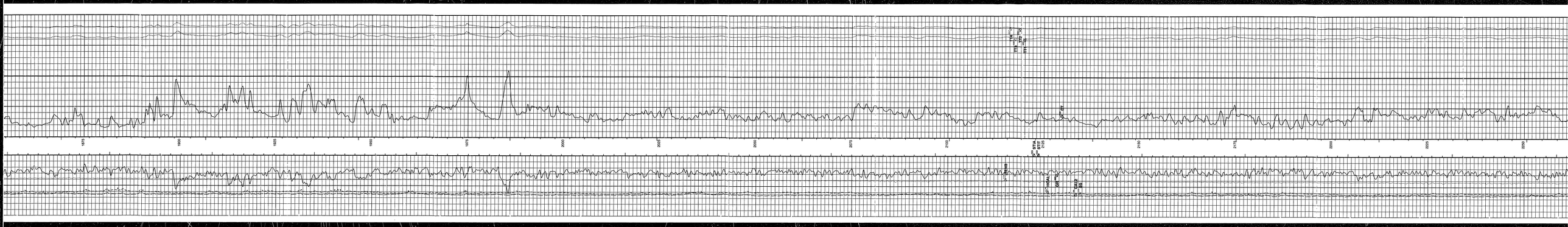
QH
QH
PEP


1973
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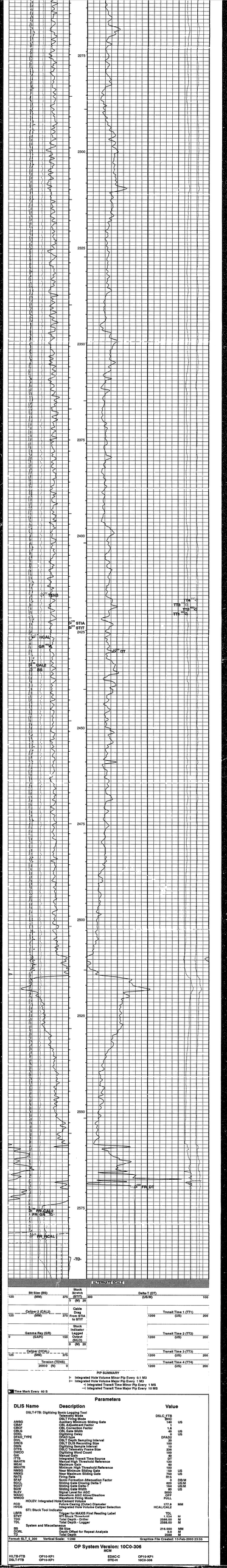
2205



Bit Size (BS) (MM)	375	Stuck Stretch (STIT) (IN)	300
	0		20
Caliper 2 (CALI) (MM)	375	Cable Drag From STIA to STIT	
Gamma Ray (GR) (GAPI)	150	Stuck Indicator Integer Output (0/1/2)	
	0		20
Caliper (HCAL) (MM)	375		
Tension (TENS)	20000	(N)	0
Delta-T (DT) (US/M)			100
Transit Time 1 (TT1) (US)	1200		200
Transit Time 2 (TT2) (US)	1200		200
Transit Time 3 (TT3) (US)	1200		200
Transit Time 4 (TT4) (US)	1200		200

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/FTB: Digitizing Sonic Logging Tool	DSLT_FTB	
	Telemetry Mode	10C0-306	
AMSG	Auxiliary Minimum Sliding Gate	140	US
CBAF	CBL Adjustment Factor	1	
CBLF	CBL Attenuation Factor	1.5	
CBLG	CBL Gate Width	40	US
DTAD	Digitizing Delay	0	US
DTAQ_TYPE	DTAQ type	DFADQ	
DRCI	DSLT DLIS Sampling Interval	20	
DRCS	DSLT DLIS Recording Size	60	
DWN	Digitizing Sample Interval	10	
DTFD	DSLT Telemetry Frame Size	256	
DTPC	DSLT Pulse Count	2048	
GAL	Manual Gain	40	
ITT	Integrated Transit Time Source	DT	
MHHTR	Minimum High Threshold Reference	100	
MSAH	Maximum Sensitivity	80	
MHHTR	Minimum High Threshold Reference	100	
MMSG	Main Minimum Sliding Gate	150	US
MMXG	Main Maximum Sliding Gate	750	US
RATE	Firing Rate	R15	
SFAF	Sonic Formation Attenuation Factor	0	DB/M
SGDT	Sliding Gate Tracking Delta-T	600	US/M
SGTD	Sliding Gate Delay	200	US/M
SGW	Sliding Gate Width	80	US
SLEV	Signal Level for AGC	5000	
WFAT	Waveform Fixing Above/Below	ABOV	
WINDO	Waveform Fixing Mode	FULL	
FCD	HOLEV: Integrated Hole/Cement Volume	177.8	MM
HVOL	Fixed Hole (Gauge) Diameter	HCALI_CALI2	
	Integrated Hole Volume Caliper Selection		
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STHT	STI Stuck Threshold	1.524	M
TDD	Total Depth - Driller	2586.00	M
TDL	Total Depth - Logger	2588.00	M
	System and Miscellaneous		
BS	Bit Size	216.000	MM
DCRL	Depth Offset for Repeat Analysis	0.0	M
TD	Total Depth	2588	M

Format: SLT_S_300 Vertical Scale: 1:240 Graphics File Created: 13-Feb-2003 23:55

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HILTR-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

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)	20000 (lb)	0
Caliper (HCAL)	125 (MM)	375
Gamma Ray (GR)	0 (GAPI)	150
Stuck Indicator Lagged Output (SILO)	0 (M)	20
Caliper 2 (CAL2)	125 (MM)	375
Cable Stretch From STIA to STIT	0 (M)	20
Bit Size (BS)	125 (MM)	375
Stuck Stretch (STIT)	0 (M)	20
Delta-T (DT)	500 (US/M)	100

MAIN PASS

CAL2
BS
-CS-
TENS
STIA
STIT
HCAL
GR
CAL3
BS
DT
TENS
STIA
STIT
HCAL
GR
CAL2
BS
DT

600 tvd
700 tvd
800 tvd
900 tvd
1000 tvd
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1100 tvd
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1200 tvd
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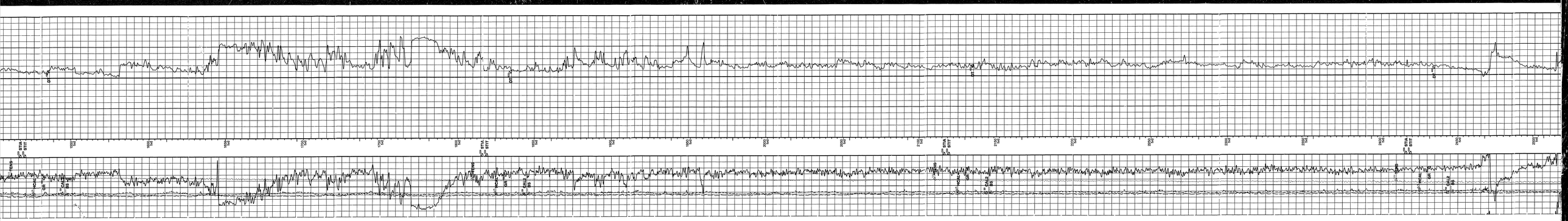
1450 tvd
1500 tvd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ST
ST
ST
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STIA
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STIT
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1650
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1900
1950
2000
2050
2100
2150
2200
2250
2300
2350
2400
2450
2500
TEND
HCAL
GR
CALI
BS
TEND
HCAL
GR
CALI
BS
TEND
HCAL
GR
CALI
BS
TEND
HCAL
GR
CALI
BS

MAIN PASS

Bit Size (BS)	Stuck Sensor (STIT)		Delta-T (DT)
125 (MM) 375	0 (M) 20	500	(US/M) 100
Caliper 2 (CAL2)	Cable Drag From STIA to STIT		
125 (MM) 375			
Gamma Ray (GR)	Stuck Indicator Lagged Output (SLO)		
0 (GAPI) 150	0 (M) 20		
Caliper (HCAL)			
125 (MM) 375			
Tension (TENS)			
20000 (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-FTB: Digitising Sonic Logging Tool		
	Telemetry Mode	DSLC_FTB	
	DSLT Firing Mode	Single	
DDEL	Digitising Delay	0	US
DFAD_TYPE	Digitising Type	DFADD	
DVL	DSLT Depth Sampling Interval	0.2	M
DWOS	DSLT DLIS Recording Size	150	
DTPS	Digitising Sample Interval	10	
DWOB	DSLT DLIS Recording Size	150	
DWCO	Digitising Word Count	150	
GAIN	Manual Gain	40	
GATS	Manual Gate Transit Time Source	0	
MANTR	Manual High Threshold Reference	100	
MGAI	Maximum Gain	80	
MHTR	Manual High Threshold Reference	100	
NMIN	Near Minimum Sliding Gate	150	US
NMXG	Near Maximum Sliding Gate	750	US
PFIR	Firing Rate	R15	
SFTS	Sonic Formation Attenuation Factor		DB/M
SGCS	Slowness Cursor Delta-T	400	US/M
SGIT	Sliding Gate Start	184	US/M
SGEY	Sliding Gate Width	50	US
SLSY	Slowness Cursor Sync	400	
WWOD	Waveform Firing Mode	FULL	
	DIR: Directional Survey Computation		
SPVD	Vertical Datum Point	0	M
TIMO	Along-hole depth of Tie-In Point	665	M
TIVD	TVD of Tie-In Point	665	M
	HCLEV: Integrated Hole Volume Caliper		
FCO	Future Casing(Tubular) Diameter	177.8	MM
HVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
	STI: Stuck Tool Indicator		
LSTS	Trigger for MAXS First Reading Label	TDL	
STRT	Top Depth - Driller	2593.2	M
TDD	Total Depth - Driller	2588.55	M
TDL	Total Depth - Logger	2588.00	M
	System and Miscellaneous		
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth	
BD	Bit Size	215.900	MM
DFD	Drilling Offset for Playback	0.0	M
PBVEADP	Use alternate depth channel for playback	YES	
PP	Playback Processing	NORMAL	
TD	Total Depth	3585	M

Format: SLT_2 Vertical Scale: 1:600 Graphics File Created: 14-Feb-2003 00:46

OP System Version: 10C0-306

		MCM	
HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13 PRODUCER 13-Feb-2003 23:55	2593.2 M	0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1 PRODUCER 14-Feb-2003 00:48		
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2 PRODUCER 14-Feb-2003 00:48		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13 PRODUCER 13-Feb-2003 23:55	2593.2 M	0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1 PRODUCER 14-Feb-2003 00:48		
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2 PRODUCER 14-Feb-2003 00:48		

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

		MCM	
HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-IOP1	DTC-H	10C0-306

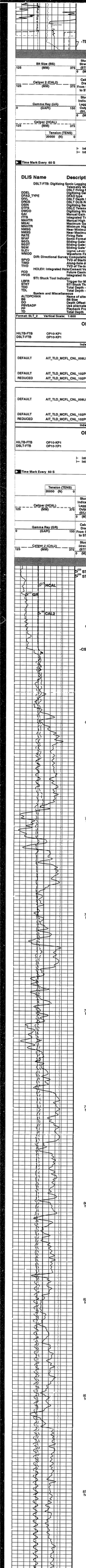
PIP SUMMARY

- 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)		Transit Time 4 (TT4)	
20000 (N) 0		1200 (US) 200	
		Transit Time 3 (TT3)	
		1200 (US) 200	
Caliper (HCAL)	Stuck Indicator Lagged Output (SLO)	Transit Time 2 (TT2)	
125 (MM) 375	0 (M) 20	1200 (US) 200	
Gamma Ray (GR)	Cable Drag From STIA to STIT	Transit Time 1 (TT1)	
0 (GAPI) 150		1200 (US) 200	
Caliper 2 (CAL2)	Stuck Sensor (STIT)	Delta-T (DT)	
125 (MM) 375	0 (M) 20	500 (US/M) 100	

MAIN PASS



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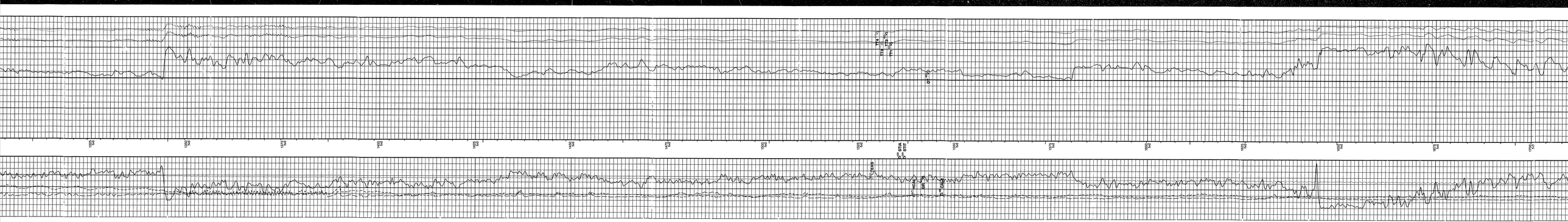
ST41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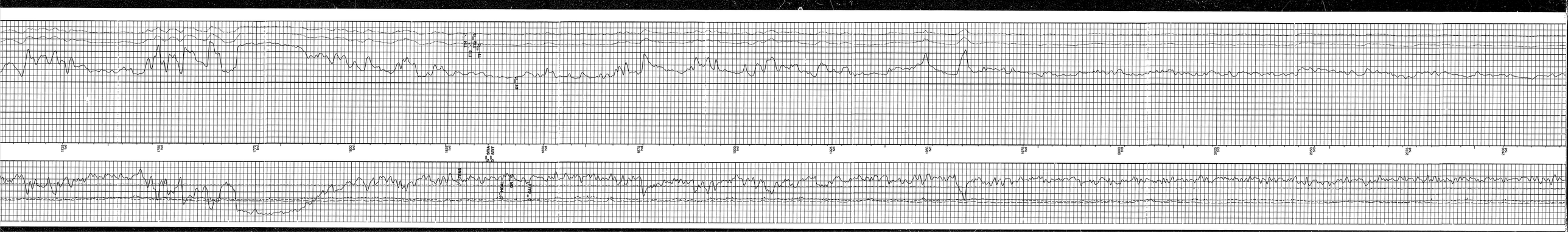
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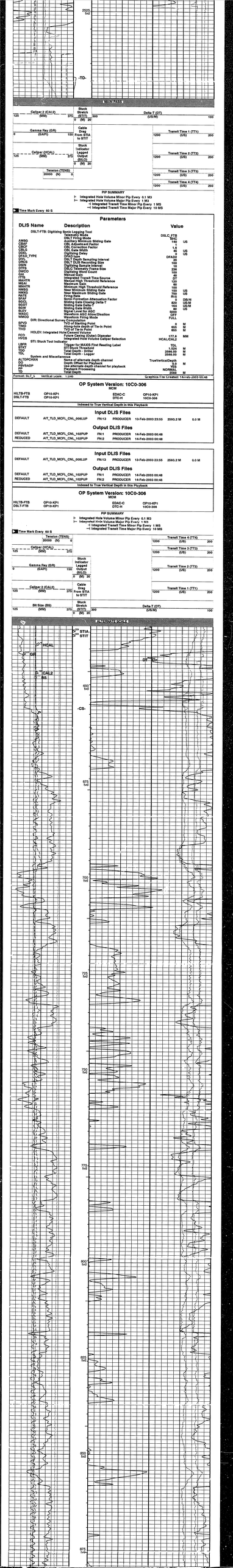
2525 tvd
-TD-
Caliper 2 (CAL2) (MM) 125 375
Stuck Stretch (STIT) From STIA to STIT 0 (M) 20 300
Delta-T (DT) (US/M) 100
Gamma Ray (GR) (GAPI) 0 150
Caliper (HCAL) (MM) 125 375
Tension (TENS) (N) 20000 0
Cable Drag From STIA to STIT 0 (M) 20
Stuck Indicator Lagged Output (SILO) 0 (M) 20
Transit Time 1 (TT1) (US) 1200 200
Transit Time 2 (TT2) (US) 1200 200
Transit Time 3 (TT3) (US) 1200 200
Transit Time 4 (TT4) (US) 1200 200
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
DSLC_FTB
DSLC
AMBO
CBOF
CBGF
CBLG
DFSL
DFAD_TYPE
DMIN
DMOI
DSIN
DTRG
DWOO
GAIJ
HAMF
HMNTR
MGAJ
MXATR
NMNTR
NMXO
PATH
SCAL
SGSO
SGST
SIZW
TDEP
WAGC
WMOD
SPIO
TIMD
TIYD
FCO_
HVOB
LBFR
STKT
TDD
TDL
ALTDPCHAN
PIP
PSWADP
PP
TD
Format: SLT_1
Vertical Scale: 1:240
DLIS Files Used to Create This Playback
DSLC-FTB: Digitizing Sonic Logging Tool
DSLC Firing Mode
Auxiliary Minimum Sliding Gate
CBL Attenuation Factor
CBL Gate Width
CBL Gate Width
Digitizing Delay
DFAD Type
DSLC Depth Sampling Interval
DSLC DLIS Sampling Rate
Digitizing Sample Interval
DSLC Digitizing Sample Size
Digitizing Word Count
Manual Gain
Manual Transit Time Source
Marquet High Threshold Reference
Maximum Gain
Minimum High Threshold Reference
Near Minimum Sliding Gate
Near Minimum Sliding Gate
Firing Rate
Sonic Formation Attenuation Factor
Sliding Gate Delta-T
Sliding Gate Delta-T
Sliding Gate Width
Stuck Tool Sliding Gate
Waveform AGC Allow/Disallow
Waveform Firing Mode
DIR: Directional Survey
TVD of Starting Point
Along-hole depth of Tie-In Point
TVD of Tie-In Point
HOLEV: Integrated Hole Volume
Future Casing (Outer) Diameter
Integrated Hole Volume Caliper Selection
STI: Stuck Tool Indicator
Trigger for MAXIS First Reading Label
STI Stuck Threshold
Total Depth - Driller
Total Depth - Logger
System and Miscellaneous
Name of alternate depth channel
Use alternate depth channel for playback
Use alternate pip channel for playback
Playback Processing
Total Depth
0
0
0

ST1A
ST1T
ST2A
ST2T
ST3A
ST3T
ST4A
ST4T
ST5A
ST5T
ST6A
ST6T
ST7A
ST7T
ST8A
ST8T
ST9A
ST9T
ST10A
ST10T
ST11A
ST11T
ST12A
ST12T
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ST14A
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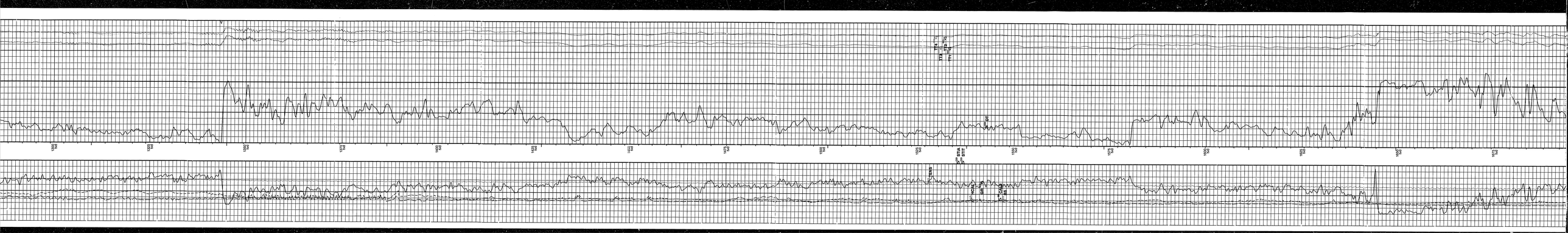
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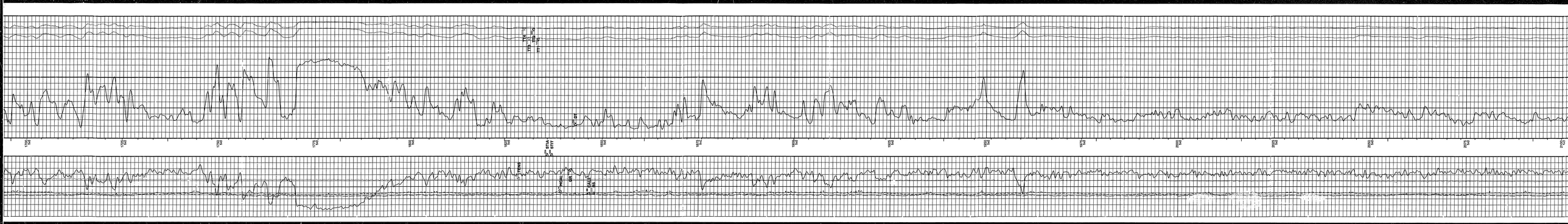
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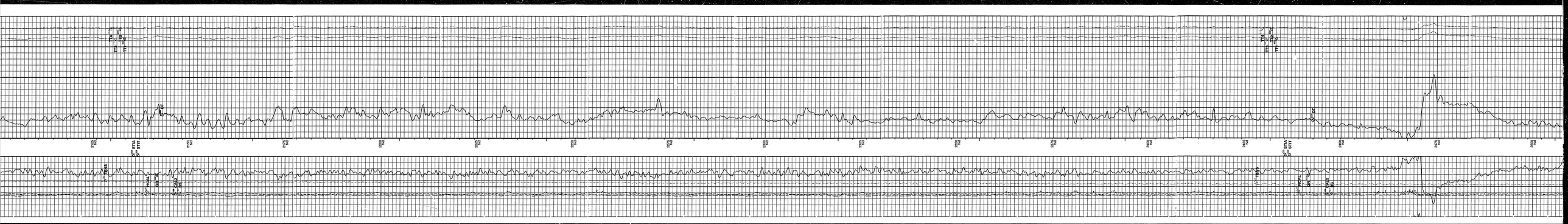
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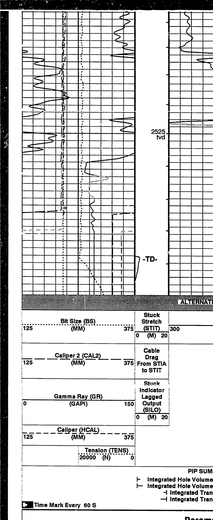


PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	DSLT-FTB: Digitizing Sonic Logging Tool	
	Telemetry Mode	DSLC_FTB
	DSLT Firing Mode	Sonic
AMSG	Auxiliary Minimum Sliding Gate	140 US
CBCF	CBL Correlation Factor	1
CBGF	CBL Gain Control	4
CBLG	CBL Gate Width	40 US
DOEL	Digitizing Delay	0 US
DFAD_TYPE	DFAD type	DFAD2
DNCS	DSLT Digitizer Sampling Interval	20
DNLS	DSLT DLIS Recording Size	160
DSIN	Digitizing Sample Interval	10
DTFS	DSLC Telemetry Frame Size	256
DWCO	Digitizing Word Count	100
ITG	Manual Gain	40
ITTS	Integrated Transit Time Source	DT
MANTR	Manual Transit Time Threshold Reference	100
MGAI	Maximum Gain	80
MNHTR	Minimum High Threshold Reference	100
NMSG	Near Minimum Sliding Gate	150 US
NTSG	Near Maximum Sliding Gate	700 US
RATE	Sonic Rate	1
SFAF	Sonic Formation Attenuation Factor	0 DB/M
SGCL	Sliding Gate Clocking Delta-T	830 US/M
SGDT	Sliding Gate Delta-T	584 US/M
SLEV	Sliding Gate Width	80 US
WAGC	Waveform AGC Mode	Sonic
WMOD	Waveform AGC Allow/Disallow	OFF
	Waveform Firing Mode	FULL
	DIR: Directional Survey Computation	
SPVD	TVD of Starting Point	0 M
TIED	TVD of Tie-In Point / Tie-In Point	655 M
TIVD	TVD of Tie-In Point	655 M
	HOLEV: Integrated Hole/Cement Volume	
FCD	Future Casing (Outer) Diameter	177.8 MM
HVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2
	STI: Stuck Tool Indicator	
LSTI	Trigger for MAXIS First Reading Label	TT4
STKT	STI Stuck Threshold	1324 M
TDD	Total Depth - Driller	2598.00 M
TDL	Total Depth - Logger	2598.00 M
	System and Miscellaneous	
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth
BS	Bit Size	311.404 MM
DO	Depth Offset for Playback	0.0 M
PBVSADP	Use alternate depth channel for playback	YES
PD	Playback Processing	NORMAL
TD	Total Depth	2598 M

Format: SLT_5_300 Vertical Scale: 1:240 Graphics File Created: 16-Feb-2003 00:48

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-XP1	EDAC-C	OP10-XP1
DSLT-FTB	OP10-XP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_008LUP	FN:13	PRODUCER	13-Feb-2003 23:55 2593.2 M 0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	16-Feb-2003 00:48
REDUXLU	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	16-Feb-2003 00:48

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point : Measured Depth True Vertical Depth North Departure East Departure

655.00 M 655.00 M 0.00 M 0.00 M

Depth	Deviation	Azimuth	True Vertical Depth	North Departure	East Departure
0.00 M	0.00 DEG	0.00 DEG	0.00 M	0.00 M	0.00 M
655.00 M	0.00 DEG	0.00 DEG	655.00 M	0.00 M	0.00 M
668.70 M	1.40 DEG	359.90 DEG	668.70 M	0.21 M	0.01 M
678.20 M	1.90 DEG	359.90 DEG	678.19 M	0.52 M	0.03 M
706.80 M	1.30 DEG	346.00 DEG	706.78 M	1.32 M	-0.09 M
735.40 M	1.30 DEG	345.50 DEG	735.37 M	1.95 M	-0.19 M
754.40 M	1.30 DEG	322.80 DEG	754.37 M	2.33 M	-0.38 M
773.20 M	1.40 DEG	320.30 DEG	773.16 M	2.69 M	-0.66 M
792.20 M	2.00 DEG	310.60 DEG	792.15 M	3.10 M	-1.07 M
820.70 M	2.40 DEG	296.30 DEG	820.63 M	3.72 M	-1.97 M
849.20 M	2.70 DEG	296.00 DEG	849.11 M	4.33 M	-3.08 M
877.50 M	3.20 DEG	289.50 DEG	877.37 M	4.93 M	-4.33 M
906.10 M	3.10 DEG	289.70 DEG	905.92 M	5.46 M	-5.69 M
934.70 M	3.60 DEG	295.60 DEG	934.48 M	6.11 M	-7.43 M
953.70 M	3.40 DEG	307.60 DEG	953.44 M	6.72 M	-8.51 M
963.20 M	3.00 DEG	322.30 DEG	962.93 M	7.09 M	-8.79 M
982.20 M	2.80 DEG	329.50 DEG	981.90 M	7.88 M	-9.33 M
1010.80 M	2.50 DEG	349.60 DEG	1010.47 M	9.12 M	-9.79 M
1039.30 M	2.60 DEG	14.10 DEG	1038.94 M	10.37 M	-9.73 M
1068.00 M	2.80 DEG	18.70 DEG	1067.61 M	11.67 M	-9.37 M
1087.00 M	2.90 DEG	25.10 DEG	1086.59 M	12.53 M	-9.01 M
1106.00 M	2.90 DEG	39.80 DEG	1105.56 M	13.35 M	-8.41 M
1115.50 M	3.30 DEG	47.60 DEG	1115.05 M	13.79 M	-8.14 M
1144.00 M	3.80 DEG	59.20 DEG	1143.49 M	14.77 M	-6.73 M
1163.10 M	3.60 DEG	63.90 DEG	1162.55 M	15.36 M	-5.64 M
1172.50 M	3.50 DEG	66.20 DEG	1171.94 M	15.60 M	-5.12 M
1182.10 M	3.30 DEG	73.40 DEG	1181.52 M	15.80 M	-4.59 M
1191.40 M	2.90 DEG	82.40 DEG	1191.01 M	15.91 M	-4.10 M
1201.10 M	2.80 DEG	100.70 DEG	1200.69 M	15.88 M	-3.63 M
1210.60 M	3.60 DEG	114.30 DEG	1210.08 M	15.73 M	-3.12 M
1220.10 M	4.60 DEG	123.60 DEG	1219.45 M	15.40 M	-2.53 M
1229.60 M	5.70 DEG	126.60 DEG	1228.82 M	14.91 M	-1.83 M
1239.10 M	6.00 DEG	125.00 DEG	1238.37 M	14.34 M	-1.05 M
1248.60 M	6.20 DEG	122.60 DEG	1247.81 M	13.78 M	-0.21 M
1258.20 M	6.30 DEG	123.10 DEG	1257.36 M	13.22 M	0.66 M
1267.50 M	6.50 DEG	122.20 DEG	1266.60 M	12.67 M	1.53 M
1277.00 M	7.00 DEG	121.30 DEG	1276.03 M	12.09 M	2.48 M
1286.50 M	7.40 DEG	117.60 DEG	1285.46 M	11.49 M	3.51 M
1296.10 M	8.40 DEG	113.30 DEG	1294.97 M	10.83 M	4.71 M
1305.60 M	9.40 DEG	111.30 DEG	1304.38 M	10.37 M	6.07 M
1315.10 M	10.70 DEG	112.50 DEG	1313.71 M	9.75 M	7.60 M
1324.50 M	11.90 DEG	113.70 DEG	1322.93 M	9.03 M	9.30 M
1334.00 M	12.70 DEG	114.60 DEG	1332.21 M	8.19 M	11.18 M
1343.50 M	13.70 DEG	117.00 DEG	1341.45 M	7.24 M	13.31 M
1353.10 M	14.30 DEG	117.20 DEG	1350.77 M	6.18 M	15.18 M
1362.50 M	14.50 DEG	116.40 DEG	1359.87 M	5.13 M	17.26 M
1372.40 M	14.30 DEG	115.40 DEG	1369.46 M	4.05 M	19.48 M
1381.90 M	14.30 DEG	116.00 DEG	1378.67 M	3.04 M	21.59 M
1391.40 M	14.60 DEG	116.70 DEG	1387.87 M	1.98 M	23.72 M
1400.90 M	15.30 DEG	117.00 DEG	1397.04 M	0.88 M	25.90 M
1410.40 M	16.00 DEG	117.10 DEG	1406.19 M	-0.29 M	28.18 M
1419.90 M	16.30 DEG	118.20 DEG	1415.32 M	-1.51 M	30.53 M
1429.40 M	16.30 DEG	120.40 DEG	1424.44 M	-2.82 M	32.83 M
1438.90 M	16.20 DEG	120.30 DEG	1433.58 M	-4.16 M	35.16 M
1448.40 M	16.20 DEG	119.90 DEG	1442.68 M	-5.49 M	37.44 M
1458.00 M	16.20 DEG	119.00 DEG	1451.90 M	-6.80 M	39.78 M
1467.50 M	16.30 DEG	117.10 DEG	1461.02 M	-8.04 M	42.12 M
1477.00 M	16.10 DEG	116.10 DEG	1470.15 M	-9.23 M	44.48 M
1486.50 M	16.10 DEG	117.30 DEG	1479.27 M	-10.41 M	46.83 M
1495.90 M	16.10 DEG	118.80 DEG	1488.30 M	-11.63 M	49.13 M
1505.50 M	16.00 DEG	121.40 DEG	1497.53 M	-12.97 M	51.43 M
1515.00 M	15.80 DEG	122.00 DEG	1506.67 M	-14.33 M	53.64 M
1524.50 M	15.40 DEG	121.00 DEG	1515.82 M	-15.67 M	55.82 M
1534.00 M	15.30 DEG	119.40 DEG	1524.98 M	-16.93 M	57.99 M
1543.50 M	15.60 DEG	120.10 DEG	1534.13 M	-18.19 M	60.19 M
1553.00 M	16.10 DEG	121.30 DEG	1543.27 M	-19.51 M	62.42 M
1562.50 M	16.30 DEG	122.40 DEG	1552.40 M	-20.93 M	64.66 M
1572.00 M	16.20 DEG	123.10 DEG	1561.52 M	-22.39 M	66.88 M
1581.50 M	16.00 DEG	122.70 DEG	1570.64 M	-23.82 M	69.10 M
1591.00 M	16.20 DEG	122.60 DEG	1579.77 M	-25.24 M	71.32 M
1600.50 M	16.90 DEG	123.40 DEG	1588.88 M	-26.72 M	73.58 M
1610.00 M	17.40 DEG	123.60 DEG	1597.96 M	-28.26 M	75.92 M
1619.50 M	17.00 DEG	122.20 DEG	1607.04 M	-29.73 M	78.28 M
1629.00 M	16.70 DEG	120.70 DEG	1616.13 M	-31.17 M	80.63 M
1638.50 M	16.50 DEG	118.60 DEG	1625.24 M	-32.51 M	82.99 M
1648.00 M	16.60 DEG	119.40 DEG	1634.34 M	-33.82 M	85.35 M
1657.50 M	17.00 DEG	121.30 DEG	1643.44 M	-35.21 M	87.72 M
1667.00 M	17.00 DEG	122.10 DEG	1652.52 M	-36.67 M	90.09 M
1676.50 M	16.90 DEG	121.80 DEG	1661.61 M	-38.13 M	92.44 M
1686.00 M	16.70 DEG	121.10 DEG	1670.70 M	-39.57 M	94.78 M
1695.50 M	16.50 DEG	121.20 DEG	1679.81 M	-40.97 M	97.10 M
1705.00 M	16.50 DEG	119.50 DEG	1688.93 M	-42.31 M	99.40 M
1714.50 M	16.40 DEG	117.70 DEG	1698.07 M	-43.54 M	101.65 M
1724.00 M	16.90 DEG	115.70 DEG	1707.24 M	-44.66 M	103.87 M
1733.50 M	16.90 DEG	115.60 DEG	1716.47 M	-45.72 M	106.09 M
1743.00 M	15.30 DEG	116.60 DEG	1725.59 M	-46.82 M	108.32 M
1752.50 M	14.90 DEG	118.20 DEG	1734.78 M	-47.95 M	110.51 M
1762.00 M	15.00 DEG	119.50 DEG	1743.94 M	-49.13 M	112.65 M
1771.50 M	15.00 DEG	121.50 DEG	1753.12 M	-50.38 M	114.77 M
1781.00 M	14.90 DEG	121.20 DEG	1762.29 M	-51.66 M	116.89 M
1790.50 M	15.80 DEG	121.40 DEG	1771.44 M	-53.03 M	119.07 M
1800.00 M	15.80 DEG	121.20 DEG	1780.58 M	-54.37 M	121.28 M
1809.50 M	15.60 DEG	121.70 DEG	1789.72 M	-55.71 M	123.45 M
1819.00 M	15.10 DEG	120.60 DEG	1798.89 M	-57.01 M	125.61 M
1828.50 M	14.70 DEG	120.30 DEG	1808.07 M	-58.25 M	127.71 M
1838.00 M	14.50 DEG	119.80 DEG	1817.26 M	-59.45 M	129.79 M
1847.50 M	14.70 DEG	119.80 DEG	1826.46 M	-60.64 M	131.86 M
1857.10 M	14.20 DEG	119.80 DEG	1835.73 M	-61.87 M	134.01 M
1866.80 M	15.70 DEG	120.30 DEG	1844.89 M	-63.13 M	136.20 M
1876.10 M	15.50 DEG	120.80 DEG	1854.04 M	-64.43 M	138.40 M
1885.60 M	15.20 DEG	120.40 DEG	1863.20 M	-65.71 M	140.57 M
1895.10 M	15.00 DEG	119.50 DEG	1872.37 M	-66.95 M	142.71 M
1904.60 M	15.20 DEG	119.60 DEG	1881.54 M	-68.17 M	144.86 M
1914.10 M	15.60 DEG	119.20 DEG	1890.70 M	-69.41 M	147.06 M
1923.50 M	15.50 DEG	119.10 DEG	1899.76 M	-70.63 M	149.26 M
1933.00 M	15.30 DEG	119.30 DEG	1908.92 M	-71.87 M	151.47 M
1942.50 M	14.90 DEG	118.30 DEG	1918.09 M	-73.06 M	153.63 M
1952.00 M	14.60 DEG	117.80 DEG	1927.27 M	-74.19 M	155.77 M
1961.50 M	15.00 DEG	118.10 DEG	1936.46 M	-75.33 M	157.90 M
1971.00 M	15.90 DEG	120.70 DEG	1945.62 M	-76.61 M	160.10 M
1980.50 M	15.90 DEG	121.20 DEG	1954.75 M	-77.95 M	162.33 M
1990.00 M	15.90 DEG	120.10 DEG	1963.90 M	-79.27 M	164.55 M
1999.50 M	15.10 DEG	119.20 DEG	1973.06 M	-80.51 M	166.73 M
2009.00 M	14.90 DEG	117.10 DEG	1982.23 M	-81.67 M	168.89 M
2018.50 M	15.10 DEG	116.50 DEG	1991.41 M	-82.77 M	171.06 M
2028.00 M	15.80 DEG	117.80 DEG	2000.57 M	-83.93 M	173.33 M
2037.50 M	16.40 DEG	118.50 DEG	2009.69 M	-85.20 M	175.65 M
2047.00 M	16.60 DEG	120.50 DEG	2018.80 M	-86.57 M	178.00 M
2056.50 M	16.10 DEG	119.70 DEG	2027.91 M	-87.91 M	180.31 M
2066.00 M	15.80 DEG	119.00 DEG	2037.05 M	-89.19 M	182.59 M
2075.50 M	15.40 DEG	118.50 DEG	2046.20 M	-90.42 M	184.83 M
2085.00 M	15.10 DEG	118.40 DEG	2055.36 M	-91.63 M	187.02 M
2094.50 M	15.30 DEG	121.40 DEG	2064.53 M	-92.84 M	189.16 M
2104.00 M	15.40 DEG	122.60 DEG	2073.70 M	-94.21 M	191.28 M
2113.50 M	15.30 DEG	122.60 DEG	2082.88 M	-95.57 M	193.40 M
2123.00 M	14.90 DEG	122.00 DEG	2092.03 M	-96.89 M	195.49 M
2132.60 M	14.50 DEG	121.20 DEG	2101.31 M	-98.16 M	197.57 M
2142.10 M	14.30 DEG	118.70 DEG	2110.52 M	-99.34 M	199.61 M
2151.60 M	14.60 DEG	117.10 DEG	2119.72 M	-100.44 M	201.70 M
2161.10 M	14.90 DEG	115.80 DEG	2128.91 M	-101.52 M	203.86 M
2170.60 M	14.90 DEG	116.30 DEG	2138.09 M	-102.62 M	206.04 M
2180.10 M	14.80 DEG	117.30 DEG	2147.27 M	-103.69 M	208.23 M
2189.60 M	14.70 DEG	117.00 DEG	2156.46 M	-104.80 M	210.38 M
2199.10 M	14.40 DEG	116.50 DEG	2165.65 M	-105.87 M	212.51 M
2208.50 M	14.40 DEG	118.10 DEG	2174.79 M	-106.94 M	214.59 M
2218.10 M	14.50 DEG	119.50 DEG	2184.05 M	-108.10 M	216.70 M
2227.60 M	14.40 DEG	120.30 DEG	2193.25 M	-109.29 M	218.76 M
2237.10 M	14.90 DEG	120.30 DEG	2202.46 M	-110.46 M	220.77 M
2246.60 M	13.70 DEG	119.50 DEG	2211.68 M	-111.60 M	222.74 M
2256.20 M	13.90 DEG	118.30 DEG	2221.00 M	-112.70 M	224.75 M
2265.70 M	14.50 DEG	117.00 DEG	2230.21 M	-113.79 M	226.81 M
2275.20 M	15.20 DEG	117.10 DEG	2239.40 M	-114.89 M	228.98 M
2284.70 M	15.50 DEG	118.50 DEG	2248.56 M	-116.07 M	231.20 M
2294.20 M	15.20 DEG	118.90 DEG	2257.72 M	-117.29 M	233.40 M
2303.90 M	15.00 DEG	119.20 DEG	2267.08 M	-118.51 M	235.61 M
2313.40 M	14.90 DEG	118.20 DEG	2276.27 M	-119.68 M	237.73 M
2322.90 M	14.30 DEG	117.80 DEG	2285.47 M	-120.79 M	239.82 M
2332.40 M	14.60 DEG	117.00 DEG	2294.67 M	-121.88 M	241.92 M
2341.90 M	14.60 DEG	117.60 DEG	2303.87 M	-122.97 M	244.05 M
2351.40 M	14.60 DEG	119.00 DEG	2313.06 M	-124.11 M	246.16 M
2360.90 M	14.90 DEG	120.20 DEG	2322.25 M	-125.30 M	248.26 M
2370.40 M	14.80 DEG	120.70 DEG	2331.43 M	-126.53 M	250.35 M
2380.10 M	14.90 DEG	119.90 DEG	2340.73 M	-127.73 M	252.40 M
2389.60 M	14.80 DEG	118.60 DEG	2349.95 M	-128.85 M	254.40 M
2408.50 M	13.90 DEG	119.40 DEG	2368.40 M	-131.05 M	258.38 M
2418.00 M	14.00 DEG	120.10 DEG	2377.61 M	-132.21 M	260.39 M
2427.50 M	14.20 DEG	120.10 DEG	2386.80 M	-133.41 M	262.47 M
2437.00 M	15.10 DEG	120.70 DEG	2395.98 M	-134.66 M	264.59 M
2446.50 M	15.10 DEG	122.80 DEG	2405.15 M	-135.96 M	266.70 M
2456.00 M	14.90 DEG	122.00 DEG	2414.33 M	-137.28 M	268.79 M
2465.50 M	14.80 DEG	122.40 DEG	2423.51 M	-138.58 M	270.85 M
2475.20 M	14.80 DEG	122.00 DEG	2432.89 M	-139.89 M	272.93 M
2484.70 M	14.20 DEG	122.20 DEG	2442.09 M	-141.15 M	274.93 M
2494.20 M	13.90 DEG	121.50 DEG	2451.31 M	-142.37 M	276.89 M
2511.20 M	13.50 DEG	121.50 DEG	2467.82 M	-144.62 M	280.53 M
2520.00 M	13.50 DEG	-999.25 DEG	2476.38 M	-999.25 M	-999.25 M

Company: ANADARKO CANADA CORPORATION
Well: ANADARKO ARROWHEAD RIVER I-75
Field: ARROWHEAD
Province: NORTHWEST TERRITORIES

Schlumberger

***TVD ***

BOREHOLE COMPENSATED
SONIC LOG

Province: NORTHWEST TERRITORIES
Field: ARROWHEAD
Location: UNIT-I, SECTION 75
Well: ANADARKO ARROWHEAD RIVER I-75
Company: ANADARKO CANADA CORPORATION

LOCATION
UNIT-I, SECTION 75
Permanent Datum: GROUND LEVEL
Elevation: 71 m
Log Measured From: ROTARY TABLE
Above Permanent Datum: 3.5 m
Elev.: K.B. 74.5 m
D.F. 73.0 m
G.L. 71.0 m

Run No. ONE
Depth Driller: 1000.0 m
Schlumberger Depth: 1000.0 m
Bottom Logged Interval: 1000.0 m
Top Logged Interval: 315.0 m
Type Fluid in Hole: LSND
Salinity: 4.0 PPM CL
Density: 1.20 KG/M3
Viscosity: 50.0 S
PH: 10.5
Fluid Loss: 5.0 C3
Source of Sample: FLOWLINE
Rm @ Meas. Temp: 0.200 @ 20.0 C
Rmf @ Meas. Temp: 0.150 @ 20.0 C
Rmc @ Meas. Temp: 0.300 @ 20.0 C
Source of Rmf and Rmc: CALC
Rm @ BHT: 0.100 @ 60.0 C
Time Since Circulation: 12.0 HR
Time Logger on Bottom: 0600 03-FEB-2003
Maximum Recorded Temperature: 60.0 C
Equipment Number: 1-10C0-306
Location: NORMAN WELLS
Recorded By: D. MCLEOD
Witnessed By: J. WALLACE

DUPLEX SPEAR-SONIC TOOL

ANADARKO CANADA CORPORATION
ARROWHEAD
ANADARKO ARROWHEAD RIVER I-75

Schlumberger

MUD
Density: 1.20 KG/M3
Viscosity: 50.0 S
PH: 10.5
Fluid Loss: 5.0 C3
Source: FLOWLINE
Rm @ Meas. Temp: 0.200 @ 20.0 C
Rmf @ Meas. Temp: 0.150 @ 20.0 C
Rmc @ Meas. Temp: 0.300 @ 20.0 C
Source of Rmf and Rmc: CALC
Rm @ BHT: 0.100 @ 60.0 C

Run 1
Run 2
Run 3
Run 4

DEPTH SUMMARY LISTING

Data Created: 23-FEB-2003 4:14:57

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: CDM-B	Type: CMTD-B/A	Type: 7-46F
Serial Number: 1630	Serial Number: 2449	Serial Number: 699
Calibration Date: 19-JAN-2003	Calibration Date: 29-JAN-2003	Length: 7315.20 M
Calibrator Serial Number: 4	Calibrator Serial Number: 699	Conveyance Method: Wireline
Calibration Cable Type: 7-46F	Calibration Gain: 0.68	Rig Type: LAND
Wheel Correction 1: -5	Calibration Offset: 346.00	
Wheel Correction 2: -6		

Depth Control Parameters

Log Sequence: Subsequent Trip To the Well

Reference Log Name:
Reference Log Run Number:
Reference Log Date: dd-Mmm-yyyy
Subsequent Trip Down Log Correction: 9.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

DISCLAIMER
THE USE OF AND RELIANCE UPON THIS RECORDED DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS SET OUT IN THE AGREEMENT BETWEEN SCHLUMBERGER AND SUCH COMPANY PERTAINING TO THE USE OF THIS RECORDED DATA, AS DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED DATA, AND AS CUSTOMERS FULL AND SOLE RESPONSIBILITY FOR ANY AND ALL DECISIONS MADE IN CONNECTION THEREWITH BASED IN WHOLE OR PART OF THE RECORDED DATA.

OTHER SERVICES	OTHER SERVICES
OS1: ARRAY INDUCTION	OS1:
OS2: NEUTRON / DENSITY	OS2:
OS3: DSI SONIC	OS3:
OS4: MICRO CALIPER	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2

ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST
AT RUN WITH 2 X 1 mm STANDOFFS IN COMPLETE STANDOFF MODE
NEUTRON RUN WITH 120 DEGREE OFFSET BOWSPRING
HOLE VOLUME = 5.48 m3
HOLE VOLUME CALCULATION DONE USING HCAL AND CAL2
HOLE VOLUME = 5.48 m3
REPEAT PASS DONE JUST BELOW CASING DUE TO MAXIMUM TOOL TEMP
BEING REACHED ON BOTTOM DURING FIRST PASS

CREW: C. LONGMORE, J. WALLACE
RIG: SHERITA WILSON 5
PRINTS: 2 FIELD

	RUN 1	RUN 2
SERVICE ORDER #:	10003588	10003588
PROGRAM VERSION:	10C0-306	
FLUID TYPE:		
LOGGED: INTERVAL	START / STOP	START / STOP

EQUIPMENT DESCRIPTION

RUN 1 / RUN 2

SURFACE EQUIPMENT
WITM (DTS)-A

GSR:UY
NDT: B
CNS:AB
NGS:VB

DOWNHOLE EQUIPMENT

LEH-QT		34.10
LEH-QT	CTEM	32.93
DTC-H	TeleBlue	33.21
EH-HC	ToolStatu	32.30
DSST-B		32.30
SDNUS		
SDNUS		
SNDHSD		
SSCSA		
SWDK-AA		
	12 MM Standoff	
	12 MM Standoff	
PWF		16.75
AH-107		16.75
AH-107		16.14
EDAC-C		15.53
EDCFD		
EDCSD		
EDAS-SA		
	EDAC-Cal	12.26
AH-DTB	HDNS-HTEM	11.78
	HNCA	11.48
HLTB-PTB	Gamma-Ray	11.25
HDNS-B		
HNDS	Neutron P	8.47
NCNT	Neutron N	8.47
NDEN	HDNS eins	8.61
NSCF	HDNS zwei	8.72
HDCC	HDCN	8.59
HDCL	HDCN 1/3	
HRHO-B	HDCN 2/3	
HRHO-B	HDCN Far	5.47
SDEV		
HLT1 Conf 1S	Induction	
HLT1 Conf 2S	Temperatu	
HLT1 Nucl SS	Power SSB	2.41
HLT1 Nucl SB	SP SSB/SB	0.03
AT10	SP	
AH85/BA	EDAC Rm/ W	
AH10/A	HTEM Temp	
NPHV	Accelerom	
	MuX Relay Tension	0.00
	TOOL ZERO	12 MM Standoff

MAXIMUM STRING DIAMETER 123 MM
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007.LUP	FN:11	PRODUCER 23-Feb-2003 03:08	3982.2 M 3537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_01-HPLUP	FN:21	PRODUCER 23-Feb-2003 04:27	3982.6 M 3536.4 M
REDUCED	AIT_TLD_MCFL_CNL_01-HPLUP	FN:22	PRODUCER 23-Feb-2003 04:27	3982.6 M 3536.4 M

Integrated Hole/Cement Volume Summary

Hole Volume = 5.47 M3
Cement Volume = 5.47 M3 (assuming 0.00 MM casing O.D.)
Computed from 2874.4 M to 2568.8 M using data channel(s) HCAL CAL2

OP System Version: 10C0-306

MCM

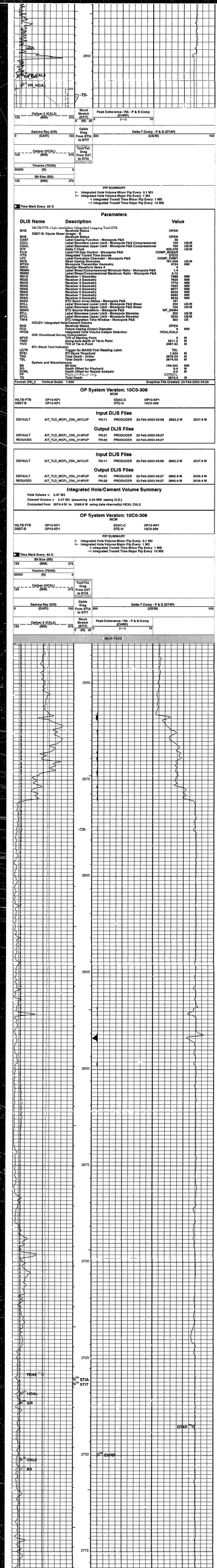
HLTB-PTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3
- Integrated Tinsel Line Minor Pip Every 1 TSS
- Integrated Tinsel Line Major Pip Every 10 TSS

Time Mark Every 60 S

Bit Size (BS) (MM)		
125		375
Tension (TENS) (N)		
50000		0
Caliper (HCAL) (MM)	Tool/Yok Dreg From DIT to STIA	
125	375	0
Gamma Ray (GR) (GAPI)	Delta-T Comp - P & S (DTAP) (US/M)	
0	150	300
	From STIA to STIT	100
Caliper 2 (CAL2) (MM)	Peak Coherence / RA - P & S Comp (CHRF)	
125	375	1
	Shock Sensitivity (STIT) (M/S2)	0
	20	10



Parameters

DLIS Name	Description	Value	
	HILTB-FTB High resolution Integrated Logging Tool-DTB		
BHS	Borehole Status	OPEN	
DSST-B: Dipole Shear Sonic Imager			
BHS	Borehole Status	OPEN	
CASF	Label Casing Function - Monopole P&S	50	
COSF	Label Borehole Compensated Function - Monopole P&S Compressional	100	US/M
COSL	Label Slowness Upper Limit - Monopole P&S Compressional	700	US/M
DTF	Delta-T Fluid	620.079	US/M
FCTC	Fast Acquisition Control - Monopole P&S	COMP_SHEAR	
ITTQ	Integrated Transit Time Source	SYNCO	
LFC	Label Formation Character - Monopole P&S	COMP_FIRST	
MCS	Mean Casing Slowness	187.006	US/M
MDEP	Measured Depth Geometry	4720	MM
NWFM	Number Waveform Items	4	
RBMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RBMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.12	
RG01	Receiver 1 Geometry	7620	MM
RG02	Receiver 2 Geometry	7620	MM
RG03	Receiver 3 Geometry	7772	MM
RG04	Receiver 4 Geometry	7772	MM
RG05	Receiver 5 Geometry	8077	MM
RG06	Receiver 6 Geometry	8230	MM
RG07	Receiver 7 Geometry	8382	MM
RG08	Receiver 8 Geometry	8382	MM
SASH	STC Sonic Array Status - Monopole P&S	187	
SFLL	Label Slowness Lower Limit - Monopole P&S Shear	200	US/M
SFUL	Label Slowness Upper Limit - Monopole P&S Shear	500	US/M
SMW4	Label Slowness Window - Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit - Monopole Stoneley	200	US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	3500	US/M
TWIN	Label Slowness Time Window - Monopole P&S	900	US
	HOLEV: Integrated Hole/Casing Volume		
BHS	Borehole Status	OPEN	
HDIA	Hole Size (Caliper) Diameter		MM
HVOL	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
DIR: Directional Survey Calculation			
SPUD	TVD of Starting Point	0	M
TIED	Vertical depth of Tie-In Point	2811.2	M
TIVD	TVD of Tie-In Point	2497.63	M
STI: Stuck Tool Indicator			
LEVR	Trigger for MAXIS First Reading Label	TDL	
TDD	Total Depth - Driller	2874.00	M
TDL	Total Depth - Logger	2874.00	M
TDL	Total Depth - Logger	2874.6	M
System and Miscellaneous			
BS	Bit Size	158.000	MM
DO	Depth Offset for Playback	0.4	M
DOAL	Depth Offset for Recent Analysis	0.4	M
DV	Driller's Depth Unit	NORMAL	
TD	Total Depth	2874.6	M

Format: DSI_2 Vertical Scale: 1:600 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER 23-Feb-2003 03:08	2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER 23-Feb-2003 04:27	
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER 23-Feb-2003 04:27	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER 23-Feb-2003 03:08	2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER 23-Feb-2003 04:27	2882.6 M 2539.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER 23-Feb-2003 04:27	2882.6 M 2539.4 M

Integrated Hole/Cement Volume Summary

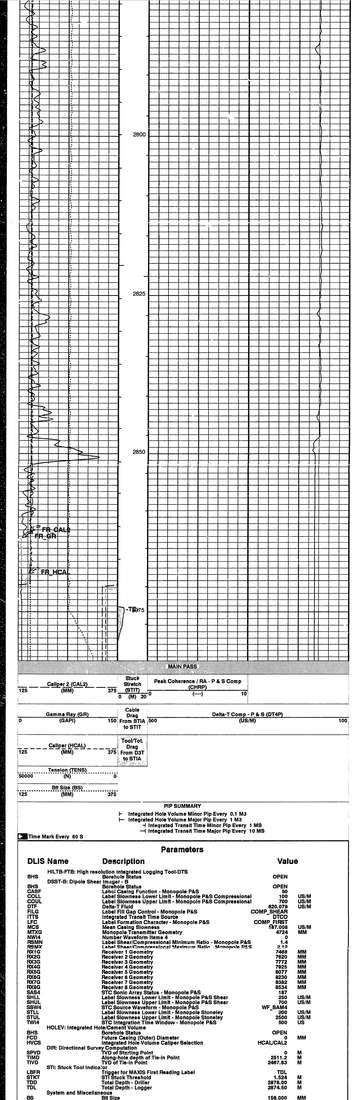
Hole Volume = 5.47 M3
Cement Volume = 5.47 M3 (assuming 0.00 MM casing O.D.)
Computed from 2874.4 M to 2588.8 M using data channel(s) HCAL CAL2

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY
Integrated Hole Volume Minor Plip Every 0.1 M3
Integrated Hole Volume Major Plip Every 1 M3
Integrated Transit Time Minor Plip Every 1 MS
Integrated Transit Time Major Plip Every 10 MS
Time Mark Every 60 S



MAIN PASS

Caliper 2 (CAL2) (MM) 125 375
Stuck Sticker (STIT) 0 (M) 20
Peak Coherence / RA - P & S Comp (CHRP) 0 (---) 10
Gamma Ray (GR) (GAPI) 0 150
Cable Drag (CSDA) from STIT to STIT
Delta-T Comp - P & S (DT4P) 500 (US/M) 100
Caliper (HCAL) (MM) 125 375
Tool/Txt. Drag (TDRA) from EOT to STIA
Tension (TENS) (N) 50000 0
Bit Size (BS) (MM) 125 375

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
	HILTB-FTB: High resolution integrated Logging Tool-DTS	
BHS	Borehole Status	OPEN
DSST-B: Dipole Shear	Borehole Status	
BHS	Borehole Status	OPEN
CAAF	Lehio Caving Function - Monopole P&S	60
CGCL	Label Slowness Lower Limit - Monopole P&S Compressional	200 US/M
CGCU	Label Slowness Upper Limit - Monopole P&S Compressional	700 US/M
DTF	Delta-T Fluid	620.379 US/M
FLU2	Label Fill Gap Control - Monopole P&S	COMP_SHEGN
FLU2	Label Fill Gap Control - Monopole P&S	COMP_SHEGN
UTC	Label Formation Character - Monopole P&S	COMP_FIRST
MCD	Mean Caving Biomeasa	57.006 US/M
MDIA	Mean Hole Diameter Geometry	0.254 MM
MMW	Nonopo Wavetrain Sense 4	1
RBMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4
RBMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	3.5
RGX0	Receiver 0 Geometry	7110 MM
RGX1	Receiver 1 Geometry	7620 MM
RGX2	Receiver 2 Geometry	7772 MM
RGX3	Receiver 3 Geometry	7925 MM
RGX4	Receiver 4 Geometry	8077 MM
RGX5	Receiver 5 Geometry	8230 MM
RGY0	Receiver 0 Geometry	8382 MM
RGY5	Receiver 5 Geometry	8534 MM
SASA	STC Sonic Array Status - Monopole P&S	1
SHLL	Label Slowness Lower Limit - Monopole P&S Shear	200 US/M
SHLU	Label Slowness Upper Limit - Monopole P&S Shear	700 US/M
SSWA	STC Source Waveform - Monopole P&S	WF_SAMP
STLL	Label Slowness Lower Limit - Monopole Stoneley	200 US/M
STLU	Label Slowness Upper Limit - Monopole Stoneley	2000 US/M
TWI4	STC Integration Time Window - Monopole P&S	500 US
	HOLEV: Integrated Hole Volume	
BHS	Borehole Status	OPEN
PCD	Future Caving (Outer) Diameter	0 MM
HVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2
	DIR: Directional Survey	
	Computation	
SPVD	TVD of Starting Point	0 M
TVD	TVD of Tie-in Point	2511.5 M
TVU	TVD of Tie-in Point	2487.83 M
	STI: Stuck Tool Indicator	
LBFR	Trigger for MAXIS First Reading Label	TDL
STAT	STT Stuck Threshold	1.038 M
TDD	Total Depth - Driller	2878.00 M
TDL	Total Depth - Logger	2874.00 M
	System and Miscellaneous	
BS	Bit Size	156.000 MM
DO	Depth Offset for Playback	0 M
DORL	Depth Offset for Repeat Analysis	0 M
LUL	Length Processing	NORMAL
TD	Total Depth	2874.5 M

Format: DIS_I Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306 MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-P	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11 PRODUCER	23-Feb-2003 03:08	2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21 PRODUCER	23-Feb-2003 04:27	
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22 PRODUCER	23-Feb-2003 04:27	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_013PUP	FN:19 PRODUCER	23-Feb-2003 04:23	2703.4 M 2559.2 M
DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11 PRODUCER	23-Feb-2003 03:08	2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21 PRODUCER	23-Feb-2003 04:27	2882.6 M 2539.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22 PRODUCER	23-Feb-2003 04:27	2882.6 M 2539.4 M

OP System Version: 10C0-306 MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-P	10C0-306

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

TENS_REP Curve (TENS_REP) (N) 50000 0
HCAL_REP Curve (HCAL_REP) (MM) 125 375
GR_REP Curve (GR_REP) (GAPI) 0 150
CAL2_REP Curve (CAL2_REP) (MM) 125 375
BS_REP Curve (BS_REP) (MM) 125 375
Tension (TENS) (N) 50000 0
Caliper (HCAL) (MM) 125 375
Gamma Ray (GR) (GAPI) 0 150
Caliper 2 (CAL2) (MM) 125 375
DSST_STC_CHRP_REP Curve (CHRP_REP) 0 (---) 10
Delta-T Comp - P & S (DT4P) 500 (US/M) 100
Peak Coherence / RA - P & S Comp (CHRP) 0 (---) 10
DSST_STC_DT4P_REP Curve (DT4P_REP) 500 (US/M) 100

REPEAT ANALYSIS

REPEAT ANALYSIS

Caliper 2 (CAL2) (MM) 125 375
DSST_STC_DT4P_REP Curve (DT4P_REP) (US/M) 500 100
Gamma Ray (GR) (GAPI) 0 150
Peak Coherence / RA - P & S Comp (CHRP) 0 (---) 10
Caliper (HCAL) (MM) 125 375
Delta-T Comp - P & S (DT4P) (US/M) 500 100
Tension (TENS) (N) 50000 0
DSST_STC_CHRP_REP Curve (CHRP_REP) 0 (---) 10

BS_REP Curve (BS_REP)
(MM)
12½ 22½

CAL2_REP Curve (CAL2_REP)
(MM)
12½ 37½

GR_REP Curve (GR_REP)
(GAPI)
0 150

HCAL_REP Curve (HCAL_REP)
(MM)
12½ 37½

TENS_REP Curve (TENS_REP)
(N)
50000 0

0 (---) 10

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	HILTB-FTB: High resolution Integrated Logging Tool-DTS Borehole Status	OPEN	
CASF	DSST-B: Dipole Shear Imager - B Borehole Status	OPEN	
CDEC	Label Casing Fourrtion - Monopole P&S	10	
COOL	Label Stoneley Lower Limit - Monopole P&S Compressional	700	US/M
DTF	Label Stoneley Upper Limit - Monopole P&S Compressional	750	US/M
FFVS	Delta T Fluid	620.078	US/M
LFC	Label Pick Control - Monopole P&S	COMP_FIRST	
MTSS	Integrated Transit Time Source	HTCO	
NW04	Label Formation Character - Monopole P&S	COMP_FIRST	
RBHX	Mean Casing Diameter	197.036	US/M
RBNN	Mean Hole Diameter Geometry	14.224	MM
RBNX	Number Waveform Items 4	0	
RDSG	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RDSX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.12	
RDXG	Receiver 1 Geometry	7620	MM
RDXS	Receiver 2 Geometry	7620	MM
RDXX	Receiver 3 Geometry	7772	MM
RDYG	Receiver 4 Geometry	8077	MM
RDYS	Receiver 5 Geometry	8077	MM
RDYX	Receiver 6 Geometry	8230	MM
RDZG	Receiver 7 Geometry	8534	MM
RDZX	Receiver 8 Geometry	8534	MM
SAS4	STC Sonic Array Status - Monopole P&S	167	
SFLL	Label Slowness Lower Limit - Monopole P&S Shear	200	US/M
SFUL	Label Slowness Upper Limit - Monopole P&S Shear	500	US/M
STAT	Label Stoneley Character - Monopole	WF_LARGE	
STLL	Label Slowness Lower Limit - Monopole Stoneley	200	US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	2500	US/M
TWIN	Number Waveform Time Window - Monopole P&S	500	US
BHS	HOLEV: Integrated Hole/Cement Volume Borehole Status	OPEN	
HCAL	Hole Caliper (Outer) Diameter	197	MM
HICS	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
SPVS	DIR: Directional Survey Computation Surface Reference Point	0	M
TIMD	Absolute depth of Tie-In Point	2511.2	M
TIVD	TVD of Tie-In Point	2467.83	M
DD	System and Miscellaneous Depth Offset for Playback	0.6	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	NORMAL	
TD	Total Depth	2874.5	M

Format: DSI_REP Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_013PUP	FN:19	PRODUCER	23-Feb-2003 04:23	2703.4 M	2558.2 M
DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27		
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2530.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27	2882.6 M	2536.4 M

Integrated Hole/Cement Volume Summary

Hole Volume = 5.47 M3
Cement Volume = 5.47 M3 (assuming 0.00 MM casing O.D.)
Computed from 2874.4 M to 2588.8 M using data channel(s) HCAL CAL2

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

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

BS Size (BS)
(MM)
12½ 22½

Tension (TENS)
(N)
50000 0

Caliper (HCAL)
(MM)
12½ 37½

Tool/Tot. Drag (DIST to STT)

Cable Drag

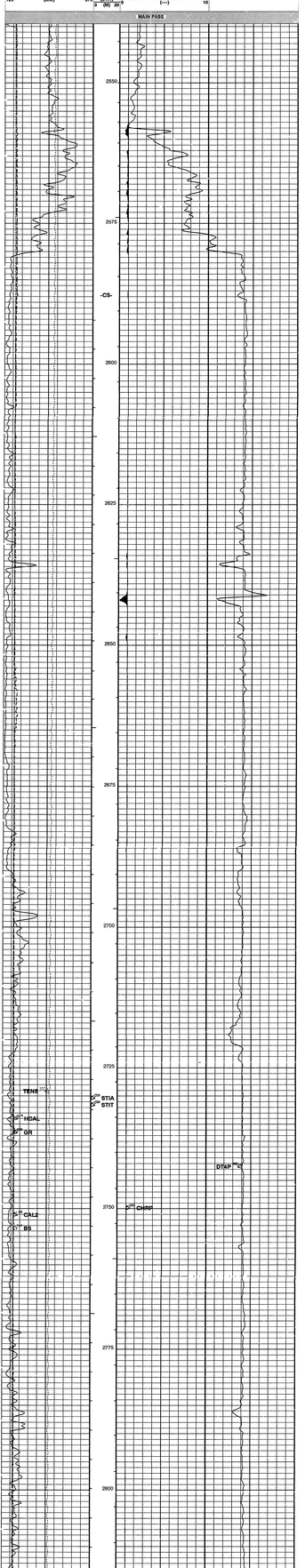
Gamma Ray (GR)
(GAPI)
0 150

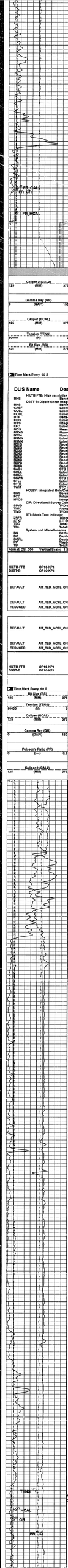
Delta-T Comp - P & S (DTdP)
(US/M)
From STNs 300 100

Stuck Tension (STIT)
(N)
0 (M) 20

Peak Coherence / RA - P & S Comp (COHP)
(---) 1 0

MAIN PASS





MAIN PASS

Caliper 2 (CAL2) (MM) 125 375

Stuck Stretch (STIT) 0 (M) 20 0

Prek Coherence / RA - P & S Comp (CHRP) (---) 10

Cable Drag From STIA to STIT

Tool/Tot. Drag From DIT to STIA

Gamma Ray (GR) (GAPI) 0 150

Delta-T Comp - P & S (DT4P) (US/M) 300 100

Caliper (HCAL) (MM) 125 375

Tension (TENS) (N) 50000 0

Bit Size (BS) (MM) 125 375

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	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS		
BHS	Borehole Status	OPEN	
	DSBT-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
CASF	Label Casing Function - Monopole P&S	50	
COLL	Label Sloweness Lower Limit - Monopole P&S Compressional	100	US/M
COU	Label Sloweness Upper Limit - Monopole P&S Compressional	400	US/M
FDU	Delta-T Fluid	607.59	US/M
FLG	Label Fill Rpp Control - Monopole P&S	COMP_SHEAR	
FTD	Integrated Transit Time Monopole	DTCO	
MCF	Label Formation Character - Monopole P&S	COMP_SHEAR	
MDEN	Mud Density	67.056	US/M
MTOO	Monopole Transmitter Geometry	4724	MM
NWIN	Number Waveform Items 4	4	
RMIN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RMIX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	7468	MM
RX2G	Receiver 2 Geometry	7620	MM
RX3G	Receiver 3 Geometry	7772	MM
RX4G	Receiver 4 Geometry	7925	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8230	MM
RCFG	Receiver 7 Geometry	8382	MM
RX8G	Receiver 8 Geometry	9534	MM
SHIL	STC Semi-Array Index	181	
SHLL	Label Sloweness Lower Limit - Monopole P&S Shear	100	US/M
SHUL	Label Sloweness Upper Limit - Monopole P&S Shear	700	US/M
SIWS	STC Source Waveform - Monopole P&S	WF_SAMS	
STLL	Label Sloweness Lower Limit - Monopole Stoneley	200	US/M
STUL	Label Sloweness Upper Limit - Monopole Stoneley	2500	US/M
TWI4	STC Integration Time Window - Monopole P&S	500	US
	HOLEV: Integrated Hole Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	0	MM
HVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
	CIR: Directional Surveying		
SPVD	TVD of Starting Point	0	M
TIED	Along-hole depth of Tie-in Point	2811.2	M
TIVD	TVD of Tie-in Point	2467.83	M
	STI: Stock Tool Indicator		
LSFB	Trigger for MAXIS First Reading Label	TDL	
STAT	STI Stock Threshold	1.525	M
TDL	Total Depth - Driller	2874.00	M
TDL	Total Depth - Logger	2874.00	M
	System. nnd Miscellaneous		
BS	Bit Size	156.000	MM
DO	Depth Offset for Flyback	0.4	M
DOAL	Depth Offset for Repeat Analysis	0.0	M
FD	Flyback Processing	NORMAL	
MD	Measured Depth	2874.3	M

Format: DSI_300 Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:27

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSBT-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08 2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08 2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSBT-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Mnjr. Pip Every 10 MS

Time Mark Every 60 S

Bit Size (BS) (MM) 125 375

Delta-T Shear - Upper Dipole (DT2) (US/M) 1000 200

Tension (TENS) (N) 50000 0

Delta-T Shear - Lower Dipole (DT1) (US/M) 1000 200

Caliper (HCAL) (MM) 125 375

Delta-T Shear - P & S (DT4S) (US/M) 500 100

Gamma Ray (GR) (GAPI) 0 150

Tool/Tot. Drag From DIT to STIA

Delta-T Comp - P & S (DT4P) (US/M) 600 100

Poisson's Ratio (PR) (---) 0 0.5

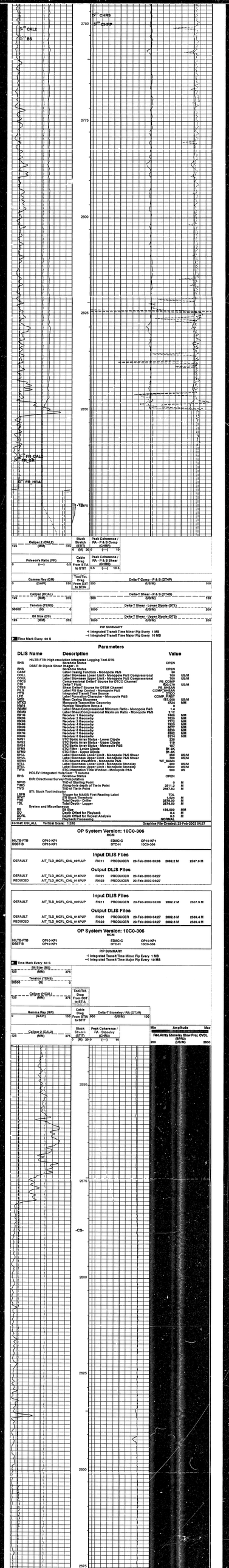
Cable Drag From STIA to STIT

Peak Coherence / RA - P & S Shear (CHRS) 0.5 (---) 10.5

Caliper 2 (CAL2) (MM) 125 375

Stuck Stretch (STIT) 0 (M) 20 0

Peak Coherence / RA - P & S Comp (CHRP) (---) 10



Parameters

DLIS Name	Description	Value
	HLTB-FTB: High resolution Integrated Logging Tool-DTS Borehole Status	
BHS	DSST-B: Dipole Sheet Imager - Borehole Status	OPEN
CASF	Label Caliper Function - Monopole P&S	50
COLL	Label Slowness Lower Limit - Monopole P&S Compressional	100 US/M
COUL	Label Slowness Upper Limit - Monopole P&S Compressional	500 US/M
DTCO	Compressional Delta-T Sonic Processing Channel	PS_CORR
DTF	Delta-T Fluid	626.079 US/M
DTSD	Sheet Delta-T Sonic for DTSM Channel	PS_SHEAR
LSHF	Label Shear Function - Monopole P&S	COMP_SHEAR
TTS	Label Coupled Time Source	SHEAR
UFC	Label Formation Character - Monopole P&S	COMP_FAST
MCSI	Mean Casing Slowness	187.008 US/M
NMEA	Number Caliper Geometry	4 MM
NMYA	Number Waveform Items 4	4
RSMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4
RSMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.5
RX1G	Receiver 1 Geometry	7432 MM
RX2G	Receiver 2 Geometry	7620 MM
RX3G	Receiver 3 Geometry	7772 MM
RX4G	Receiver 4 Geometry	7924 MM
RX5G	Receiver 5 Geometry	8077 MM
RX6G	Receiver 6 Geometry	8230 MM
RX7G	Receiver 7 Geometry	8382 MM
RX8G	Receiver 8 Geometry	8535 MM
SAS1	STC Sonic Array Status - Lower Dipole	228
SAS2	STC Sonic Array Status - Upper Dipole	119
SAS3	STC Sonic Array Status - Monopole P&S	102
SFB1	STC Filter - Lower Dipole	B1-3K
SFM2	STC Filter - Upper Dipole	B1-3K
SHSL	Label Shear/Slow Limit - Monopole P&S Shear	200 US/M
SHSU	Label Shear/Slow Limit - Monopole P&S Shear	800 US/M
SSW4	STC Source Waveform - Monopole P&S	WF_SAM44
STSL	Label Shear/Slow Limit - Monopole Stoneley	200 US/M
STSU	Label Shear/Slow Limit - Monopole Stoneley	800 US/M
TW14	STC Integration Time Window - Monopole P&S	500 US
BHS	HDLEV: Integrated Hole/Over- 'n Volume Borehole Status	OPEN
SPVO	DIR: Directional Survey Vertical TVD of Starting Point	0 M
TIMD	Along-hole depth of Tie-in Point	2811.2 M
TIVD	TVD of Tie-in Point	2497.83 M
LBFR	STI: Stuck Tool Indicator Trigger for MAXIS Fast Reading Label	TDL
TDEP	Total Depth - Driller	2874.50 M
TDL	Total Depth - Logger	2876.50 M
BS	Bit Size	158.800 MM
DO	Depth Offset for Playback	0.4 M
DOFN	Depth Offset for Revised Analysis	0.0 M
PP	Playback Processing	NORMAL

Format: DSI_ALL Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:37

OP System Version: 10C0-306

MCM

		EDAC-C	OP10-KP1
HLTB-FTB	OP10-KP1		
DSST-B	OP10-KP1	07C-H	10C0-306

PIP SUMMARY

Integrated Transit Time Minor Rip Every 1 MB

Integrated Transit Time Major Rip Every 10 MB

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007.UP	FN:11	PRODUCER	23-Feb-2003 03:08 2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007.UP	FN:11	PRODUCER	23-Feb-2003 03:08 2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

OP System Version: 10C0-306

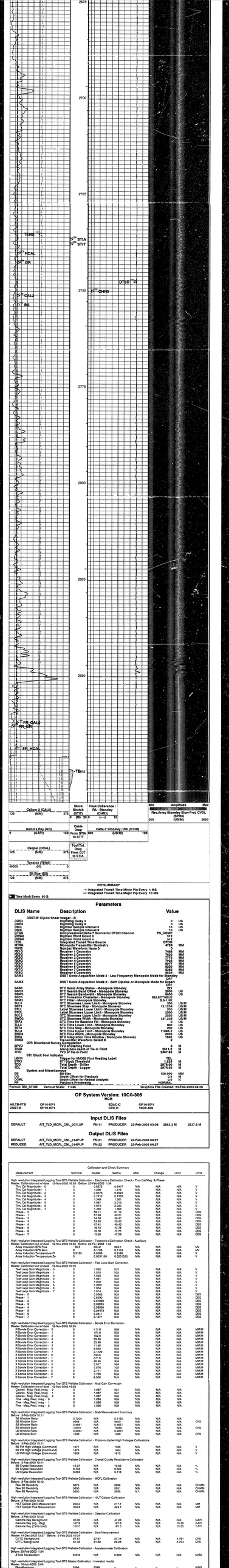
MCM

		EDAC-C	OP10-KP1
HLTB-FTB	OP10-KP1		
DSST-B	OP10-KP1	07C-H	10C0-306

PIP SUMMARY

Integrated Transit Time Minor Rip Every 1 MB

Integrated Transit Time Major Rip Every 10 MB



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
	DSST-B: Dipole Shear Imager - B	
DDE2	Digitizing Delay 2	0 US
DDE3	Digitizing Delay 3	0 US
DSI	Digitizer Sample Interval 3	10 US
DSIX	Digitizer Sample Interval X	10 US
DWCS	Digitizer Word Count Source for DTCO Channel	PS_COMB
DWCX	Digitizer Word Count X	512
DWLX	Logmaker Word Count x	512
MTSS	Monopole Transmitter Source	4724
MTX0	Monopole Transmitter Sequence	4724
NWI3	Number Waveform Items 3	0
RX1D	Receiver 1 Geometry	7468 MM
RX2D	Receiver 2 Geometry	7620 MM
RX3D	Receiver 3 Geometry	7772 MM
RX4D	Receiver 4 Geometry	7925 MM
RX5D	Receiver 5 Geometry	8077 MM
RX6D	Receiver 6 Geometry	8230 MM
RX7D	Receiver 7 Geometry	8382 MM
RX8D	Receiver 8 Geometry	8535 MM
SAM3	DSST Sonic Acquisition Mode 3 - Low Frequency Monopole Mode for Stoneley	OFF
SAMX	DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert	OFF
SAS3	STC Sonic Array Status - Monopole Stoneley	251
SBC3	STC Search Band Offset - Monopole Stoneley	2600 US
SBW3	STC Search Bandwidth - Monopole Stoneley	600 US
SCH3	STC Correlation Character - Monopole Stoneley	SELECTABLE
SFM3	STC Filter Mode - Monopole Stoneley	BAND
SLL3	STC Slowness Lower Limit - Monopole Stoneley	200 US/M
SST3	STC Slowness Step - Monopole Stoneley	13.1234 US/M
SUL3	STC Slowness Upper Limit - Monopole Stoneley	400 US/M
SWL3	STC Slowness Lower Limit - Monopole Stoneley	2500 US/M
SWU3	STC Slowness Upper Limit - Monopole Stoneley	2650 US/M
TDP3	STC Time Delay Projection - Monopole Stoneley	131.232 US
TWF3	STC Time for Window F02 - Monopole Stoneley	0 US
TWL3	STC Time Lower Limit - Monopole Stoneley	600 US
TWS3	STC Time Step - Monopole Stoneley	10 US
TWU3	STC Time Upper Limit - Monopole Stoneley	1900 US
TWW3	STC Time Window - Monopole Stoneley	2000 US
TWX3	STC Integration Time Window - Monopole Stoneley	1600 US
TWSX	Transmitter Waveform Select X	0
	DIR: Directional Survey Parameters	
DPID	TVD of Starting Point	0 M
TIMD	Kick-Off Point	3511.2 M
TVD	TVD of Tie-in Point	3497.82 M
	STI: Stuck Tool Indicator	
LBFR	Trigger for MAXIS First Reading Label	TDL
TIED	Tie-in Depth - Logger	3511.2 M
TMD	Total Depth - Driller	3974.00 M
TDL	Total Depth - Logger	3974.50 M
	System and Miscellaneous	
BS	Bit Size	158.000 MM
DD	Depth Offset for Playback	0.4 M
DOML	Depth Offset for Repeat Analysis	0.0 M
PROC	Playback Processing	NORMAL

Format: DSI_STON Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:26

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007.LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014P.UP	FN:25	PRODUCER	23-Feb-2003 04:27
REDUCED	AIT_TLD_MCFL_CNL_014P.UP	FN:32	PRODUCER	23-Feb-2003 04:27

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 Calibration out of date - 10-Nov-2002 16:05 Before: 23-Feb-2003 1:38						
Thru Cal Magnitude - 0	0	0.6272	0.6417	N/A	N/A	V
Thru Cal Magnitude - 1	0	0.7211	0.7378	N/A	N/A	V
Thru Cal Magnitude - 2	0	0.6870	0.6928	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.7212	0.7379	N/A	N/A	V
Thru Cal Magnitude - 4	0	1.349	1.381	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.987	2.013	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.453	1.460	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.453	1.460	N/A	N/A	V
Phase - 0	0	59.11	61.14	N/A	N/A	DEG
Phase - 1	0	54.39	56.41	N/A	N/A	DEG
Phase - 2	0	54.39	56.41	N/A	N/A	DEG
Phase - 3	0	53.60	55.83	N/A	N/A	DEG
Phase - 4	0	47.41	49.43	N/A	N/A	DEG
Phase - 5	0	-0.79	47.75	N/A	N/A	DEG
Phase - 6	0	-0.79	47.75	N/A	N/A	DEG
Phase - 7	0	1.08	47.08	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Tiedowns x Calibration Check - Auxiliary						
Master Calibration out of date - 10-Nov-2002 16:05 Before: 23-Feb-2003 1:38						
Array Induction SFA Flux	90.5	993.2	993.1	N/A	N/A	MV
Array Induction SFA Zero	0	0.1135	0.1133	N/A	N/A	MV
Array Induction Temperature Pr	0.9100	0.9092	0.9199	N/A	N/A	V
Array Induction Temperature Zo	0	0.003180	0.003200	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Test Loop Gain Correction						
Master Calibration out of date - 10-Nov-2002 16:05						
Test Loop Gain Magnitude - 0	0	1.020	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.018	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.022	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	0.9901	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9901	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	1.004	N/A	N/A	N/A	V
Phase - 0	0	0.0858	N/A	N/A	N/A	DEG
Phase - 1	0	0.6390	N/A	N/A	N/A	DEG
Phase - 2	0	0.01883	N/A	N/A	N/A	DEG
Phase - 3	0	0.06228	N/A	N/A	N/A	DEG
Phase - 4	0	0.04473	N/A	N/A	N/A	DEG
Phase - 5	0	0.04473	N/A	N/A	N/A	DEG
Phase - 6	0	0.3311	N/A	N/A	N/A	DEG
Phase - 7	0	0.1271	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Sonde Error Correction						
Master Calibration out of date - 10-Nov-2002 16:05						
Sonde Error Correction - 0	0	111.6	N/A	N/A	N/A	MM/M
Sonde Error Correction - 1	0	171.9	N/A	N/A	N/A	MM/M
Sonde Error Correction - 2	0	102.8	N/A	N/A	N/A	MM/M
Sonde Error Correction - 3	0	89.89	N/A	N/A	N/A	MM/M
Sonde Error Correction - 4	0	11.48	N/A	N/A	N/A	MM/M
Sonde Error Correction - 5	0	11.48	N/A	N/A	N/A	MM/M
Sonde Error Correction - 6	0	6.682	N/A	N/A	N/A	MM/M
Sonde Error Correction - 7	0	6.682	N/A	N/A	N/A	MM/M
Sonde Error Correction - 8	0	-3.043	N/A	N/A	N/A	MM/M
Sonde Error Correction - 1	0	-171.5	N/A	N/A	N/A	MM/M
Sonde Error Correction - 2	0	-46.45	N/A	N/A	N/A	MM/M
Sonde Error Correction - 3	0	2.017	N/A	N/A	N/A	MM/M
Sonde Error Correction - 4	0	2.017	N/A	N/A	N/A	MM/M
Sonde Error Correction - 5	0	0.111	N/A	N/A	N/A	MM/M
Sonde Error Correction - 6	0	1.768	N/A	N/A	N/A	MM/M
Sonde Error Correction - 7	0	0.208	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Gain Correction						
Master Calibration out of date - 10-Nov-2002 16:05						
Coarse - Mag, Real, Imag - 0	0	1.087	N/A	N/A	N/A	
Coarse - Mag, Real, Imag - 1	0	1.087	N/A	N/A	N/A	
Coarse - Mag, Real, Imag - 2	0	1.087	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 0	0	1.086	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 1	0	1.086	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 2	0	1.086	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Summary						
Before: 3-Feb-2003 10:11						
SB Window Sum	0.7204	N/A	0.7190	N/A	N/A	CPS
SB Window Num	9968	N/A	9950	N/A	N/A	
SB Window Ratio	0.4681	N/A	0.4677	N/A	N/A	
LB Window Sum	0.2067	N/A	0.2073	N/A	N/A	CPS
LB Window Ratio	0.2067	N/A	0.2073	N/A	N/A	M
LB Window Num	1299	N/A	1306	N/A	N/A	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltage Calibrations						
Before: 3-Feb-2003 10:11						
SS PM High Voltage (Command)	1371	N/A	1385	N/A	N/A	V
SS PM High Voltage (Command)	1475	N/A	1464	N/A	N/A	V
LS PM High Voltage (Command)	1924	N/A	1812	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolution x Calibration						
Before: 3-Feb-2003 10:11						
SS Crystal Resolution	10.27	N/A	10.59	N/A	N/A	%
SS Crystal Resolution	9.733	N/A	9.527	N/A	N/A	%
LS Crystal Resolution	8.899	N/A	9.116	N/A	N/A	%
High resolution Integrated Logging Tool-DTS Wellsite Calibration - MCFL Calibration						
Before: 3-Feb-2003 10:12						
Raw SE Resistivity	3670	N/A	3696	N/A	N/A	OHMM
Raw S1 Resistivity	3680	N/A	3691	N/A	N/A	OHMM
Raw S2 Resistivity	3680	N/A	3692	N/A	N/A	OHMM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - HILT Caliper Calibration						
Before: 3-Feb-2003 10:02						
HILT Caliper Pos Measurement	203.2	N/A	217.7	N/A	N/A	MM
HILT Caliper Pos Measurement	304.8	N/A	324.7	N/A	N/A	MM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Calibration						
Before: 3-Feb-2003 10:02						
Gamma Ray Background	30.00	N/A	47.06	N/A	N/A	GAPI
Gamma Ray (Dry Sting)	167.9	N/A	167.8	N/A	10.26	GAPI
Gamma Ray (Calibrator)	165.0	N/A	165.0	N/A	10.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement						
Master: 14-Dec-2002 12:27 Before: 3-Feb-2003 10:04						
DTCC Background	27.47	27.14	N/A	N/A	4.181	CPS
DTTC Background	31.38	29.28	N/A	N/A	4.704	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration						
Before: 23-Feb-2003 1:24						
Z-Axis Acceleration	9.810	N/A	9.804	N/A	N/A	M/S2
High resolution Integrated Logging Tool-DTS Master Calibration - Inversion results						
Master: 16-Jan-2003 3:05						
Inversion Frequency	2000					KHZ
Inversion Frequency	2000					KHZ
Inversion Frequency	2000					KHZ

Rho Magnesium	1680	1689	--	--	--	KJ/G
Pe Aluminum	2.870	2.055	--	--	--	
Pe Magnesium	2.650	2.615	--	--	--	

High resolution Integrated Logging Tool-OTS Master Calibration - Deviation Summary
Master: 16-Jun-2003 3:05

BS Average Deviation	0	0.3498	--	%
BS Window Count	1	1.000	--	%
BS Max Deviation	0	0.4081	--	%
SS Max Deviation	0	1.609	--	%
LS Average Deviation	0	0.6352	--	%
LS Max Deviation	0	0.308	--	%

High resolution Integrated Logging Tool-OTS Master Calibration - Tank Measurement
Master: 16-Jun-2003 3:05

Thermal Neut.Corr. (Tank)	6321	5203	--	CPS
Thermal Det.Corr. (Tank)	2793	2097	--	CPS
CNTC/CFTC (Tank)	2.109	2.266	--	

Eccentered Dual Axis Caliper Wallsite Calibration - Caliper 1 Calibration
Before: 3-Feb-2003 11:04

Caliper 1 Small Ring	203.2	N/A	358.3	N/A	N/A	MM
Caliper 1 Large Ring	304.8	N/A	510.7	N/A	N/A	MM

Eccentered Dual Axis Caliper Wallsite Calibration - Caliper 2 Calibration
Before: 3-Feb-2003 10:04

Caliper 2 Small Ring	203.2	N/A	181.6	N/A	N/A	MM
Caliper 2 Large Ring	304.8	N/A	361.7	N/A	N/A	MM

The GLS-IU source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Wear Temperature	16.0	DEGC
Thermal Housing Size	85.674	MM

High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:			
Electronics Cartridge - HI		AIT - H	
ResSFI Sonde None		AIHM - A	
Array Induction Sonde		AHSI - BA	419
HLT Hi-Fi Resolution Mechanical Sonde		HRMS - B	720
HLT Rev Gamma-ray Device		HRGD -	994
HLT Nuclear Short-Spacing Device		HSLT -	
HLT Nuclear Short-Spacing Detector		HSLT -	
HLT Nuclear Long-Spacing Detector		HLLT -	
Auxiliary Equipment:			

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Mag & Phase

Up	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase	DEG	Nominal
1	Before	0.6572	0.6050	71.00	0.6050	80.11		71.00
	Master	0.6417				81.14		
2	Before	1.266	1.270	70.00	1.270	87.89		70.00
	Master	1.318				87.89		
3	Before	0.6578	0.6250	66.00	0.6250	54.39		66.00
	Master	0.6578				54.39		
4	Before	0.6532	0.7040	65.00	0.7040	53.82		65.00
	Master	0.7312				53.82		
5	Before	0.7375	1.337	59.00	1.337	47.41		59.00
	Master	1.349				47.41		
6	Before	1.381	1.955	57.00	1.955	48.43		57.00
	Master	1.967				48.73		
7	Before	2.013	1.415	53.00	1.415	47.75		53.00
	Master	1.971				47.75		
8	Before	0.595	0.4600	50.00	0.4600	48.08		50.00
	Master	1.430				48.08		

Master: Calibration out of date - 12-Nov-2002 18:55 Before: 3-Feb-2003 1:36

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	Array Induction SFA Rxo WV	Value	Phase	Array Induction SFA Zero WV	Value
Master	0	993.1	Master	0	0.01128
Before	0	993.1	Before	0	0.01113
Diff (Minimum)	0.000 (Nominal)	0.000 (Nominal)	Diff (Minimum)	0.00000 (Nominal)	0.00015 (Nominal)

Phase	Array Induction Temperature Rxo	Value	Phase	Phase Delay Induction Temperature Zero	Value
Master	0	0.8000	Master	0	0.0001160
Before	0	0.8189	Before	0	0.0001208
Diff (Minimum)	0.0750 (Nominal)	0.8000 (Nominal)	Diff (Minimum)	0.00000 (Nominal)	0.00000 (Nominal)

Master: Calibration out of date - 12-Nov-2002 18:55 Before: 23-Feb-2003 1:36

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Test Loop Gain Magnitude - Phase

Up	Value	Test Loop Gain Magnitude V	Value	Phase	DEG
0	1.000		0.5682		
		0.8500	1.000	-0.000	0.000
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
1	1.319		0.5586		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
2	1.002		0.01963		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
3	1.001		0.04508		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
4	1.002		0.03099		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
5	0.9901		-0.04473		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
6	1.004		-0.01271		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
7	1.014		-0.01271		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)

Master: Calibration out of date - 12-Nov-2002 18:56

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Sonde Error Correction - MWM

Up	Value	R Sonde Error Correction MWM	Value	X Sonde Error Correction MWM	Value
0	-111.8		118.9	-194.5	
		-200.0	88.00	-200	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
1	171.8		118.9	-214.5	
		114.0	150.0	-200.0	628.0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
2	102.8		118.9	48.48	
		88.00	111.0	-200.0	350.0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
3	59.85		118.9	24.7	
		28.00	94.00	-200.0	250.0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
4	25.98		118.9	-7.576	
		15.00	28.00	-200.0	83.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
5	11.48		118.9	2.111	
		4.000	14.00	-200.0	53.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
6	9.852		118.9	1.769	
		8.000	10.00	-200.0	30.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
7	-0.1426		118.9	-8.308	
		0.000	5.000	-200.0	30.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)

Master: Calibration out of date - 13-Nov-2002 18:56

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Test Loop Gain Corrections

Up	Value	Coarse - Mag, Real, Imag	Value	Fine - Mag, Real, Imag	Value
0	1.097		1.096		
		0.8500	1.000	-0.000	1.200
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
1	1.097		1.096		
		0.8500	1.000	-0.000	1.200
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
2	1.097		1.096		
		0.8500	1.000	-0.000	1.200
		(Minimum)	(Nominal)	(Minimum)	(Nominal)

Master: Calibration out of date - 12-Nov-2002 18:56

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Crystal Window Ratio Corrections

Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Master	0.7790	0.7790	Master	0.4477	0.4477	Master	0.2975	0.2975
Before	0.7790	0.7790	Before	0.4477	0.4477	Before	0.2975	0.2975
Diff (Minimum)	0.0000 (Nominal)	0.0000 (Nominal)	Diff (Minimum)	0.00000 (Nominal)	0.00000 (Nominal)	Diff (Minimum)	0.0000 (Nominal)	0.0000 (Nominal)

Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Master	9900		Master	3911		Master	1306	
Before	9900		Before	3911		Before	1306	
Diff (Minimum)	1000 (Nominal)	0.000 (Nominal)	Diff (Minimum)	1000 (Nominal)	0.000 (Nominal)	Diff (Minimum)	1000 (Nominal)	0.000 (Nominal)

Before: 3-Feb-2003 10:31

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Crystal Window Ratio Corrections - HSGR

Press	SS High Voltage (Command) V	Value	Press	SS PM High Voltage (Command) V	Value	Press	LS PM High Voltage (Command) V	Value
Master	1388		Master	1404		Master	1412	
Before	1388		Before	1404		Before	1412	
Diff (Minimum)	1375 (Nominal)	0.000 (Nominal)	Diff (Minimum)	1375 (Nominal)	0.000 (Nominal)	Diff (Minimum)	1375 (Nominal)	0.000 (Nominal)

Before: 3-Feb-2003 10:31

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Crystal Resolution Corrections

Press	SS Crystal Resolution %	Value	Press	LS Crystal Resolution %	Value
Master	13.94	13.94	Master	8.537	8.537
Before	13.94	13.94	Before	8.537	8.537
Diff (Minimum)	8.750 (Nominal)	0.000 (Nominal)	Diff (Minimum)	7.500 (Nominal)	0.000 (Nominal)

Before: 3-Feb-2003 10:31

High resolution Integrated Logging Tool-OTS Wellsite Calibration
MCFL Calibration

Press	Rev SS Resistivity OHMM	Value	Press	Rev SS Resistivity OHMM	Value	Press	Rev SS Resistivity OHMM	Value
Before	3686		Before	3620		Before	3656	
Diff (Minimum)	0.00 (Nominal)	0.000 (Nominal)	Diff (Minimum)	0.00 (Nominal)	0.000 (Nominal)	Diff (Minimum)	0.00 (Nominal)	0.000 (Nominal)

Before: 3-Feb-2003 13:19

High resolution Integrated Logging Tool-OTS Wellsite Calibration
HLT Cellular Calibration

Press	HLT Cellular Zero Measurement MV	Value	Press	HLT Cellular Pad Measurement MV	Value
Before	217.7		Before	324.7	
Diff (Minimum)	192.4 (Nominal)	204.0 (Nominal)	Diff (Minimum)	304.8 (Nominal)	381.0 (Nominal)

Before: 3-Feb-2003 10:05

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Detector Calibration

Press	Gamma Ray Background CAPI	Value	Press	Gamma Ray Cty - Bkgd CAPI	Value	Press	Gamma Ray (Calibrator) CAPI	Value
Master	27.6		Master	157.6		Master	185.3	
Before	30.61		Before	152.8		Before	183.5	
Diff (Minimum)	0.000 (Nominal)	0.000 (Nominal)	Diff (Minimum)	147.8 (Nominal)	0.000 (Nominal)	Diff (Minimum)	180.0 (Nominal)	0.000 (Nominal)

Before: 3-Feb-2003 10:05

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Detector Calibration

Press	CNTC Background CPS	Value	Press	CFTC Background CPS	Value
Master	27.87		Master	20.38	
Before	27.14		Before	29.25	
Diff (Minimum)	0.00 (Nominal)	27.87 (Nominal)	Diff (Minimum)	0.00 (Nominal)	40.00 (Nominal)

Before: 14-Dec-2002 12:07 Before: 3-Feb-2003 13:06

High resolution Integrated Logging Tool-OTS Wellsite Calibration
Accelerometer Calibration

Press	Z Axis Acceleration WOZ	Value
Before		9.934
Diff (Minimum)	9.812 (Nominal)	10.00 (Nominal)

Before: 23-Feb-2003 1:34

High resolution Integrated Logging Tool-OTS Master Calibration
Electronics Calibration Check - Thru Cal Mag & Phase

Up	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase	DEG	Nominal
0	Master	0.6572	0.6050	71.00	0.6050	80.11		71.00
	Before	1.266				81.14		
1	Master	1.266	1.270	70.00	1.270	87.89		70.00
	Before	1.318				87.89		
2	Master	0.6578	0.6250	66.00	0.6250	54.39		66.00
	Before	0.6578				54.39		
3	Master	0.7312	0.7040	65.00	0.7040	53.82		65.00
	Before	0.7375				53.82		
4	Master	1.349	1.337	59.00	1.337	47.41		59.00
	Before	1.381				47.41		
5	Master	1.967	1.955	57.00	1.955	48.73		57.00
	Before	1.974				48.69		
6	Master	1.430	1.415	53.00	1.415	48.08		53.00
	Before	1.430				48.08		

	80.00 % (Minimum)	Thru Cal Magnitude V (Minimum)	140.0 % (Maximum)	Nom -80.00 (Minimum)	Nom + 80.00 (Maximum)

Master: Calibration out of date - 12-Nov-2002 18:55

High resolution Integrated Logging Tool-DTS Master Calibration
Array Induction SFA Rxo WV

Phase	Array Induction SFA Rxo WV	Value	Phase	Array Induction SFA Zero WV	Value
Master	0	993.0	Master	0	0.01128
Before	0	993.1	Before	0	0.01113
Diff (Minimum)	0.000 (Nominal)	0.000 (Nominal)	Diff (Minimum)	0.00000 (Nominal)	0.00015 (Nominal)

Phase	Array Induction Temperature Rxo	Value	Phase	Phase Delay Induction Temperature Zero	Value
Master	0	0.8000	Master	0	0.0001160
Before	0	0.8189	Before	0	0.0001208
Diff (Minimum)	0.0750 (Nominal)	0.8000 (Nominal)	Diff (Minimum)	0.00000 (Nominal)	0.00000 (Nominal)

Master: Calibration out of date - 12-Nov-2002 18:56

High resolution Integrated Logging Tool-DTS Master Calibration
Test Loop Gain Corrections

Up	Value	Test Loop Gain Magnitude V	Value	Phase	DEG
0	1.000		0.5682		
		0.8500	1.000	-0.000	0.000
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
1	1.319		0.5590		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
2	1.002		0.01963		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
3	1.001		0.04508		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
4	1.002		0.03099		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
5	0.9901		-0.04473		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
6	1.004		-0.01271		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
7	1.014		-0.01271		0.000
		0.8500	1.000	-0.000	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)

Master: Calibration out of date - 12-Nov-2002 18:56

High resolution Integrated Logging Tool-OTS Master Calibration
Sonde Error Correction

Up	Value	R Sonde Error Correction MWM	Value	X Sonde Error Correction MWM	Value
0	-111.8		118.9	-194.5	
		-200.0	88.00	-200	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
1	171.8		118.9	-214.5	
		114.0	150.0	-200.0	628.0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
2	102.8		118.9	48.48	
		88.00	111.0	-200.0	350.0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
3	59.85		118.9	24.7	
		28.00	94.00	-200.0	250.0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
4	25.98		118.9	-7.576	
		15.00	28.00	-200.0	83.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
5	11.48		118.9	2.111	
		4.000	14.00	-200.0	53.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
6	9.852		118.9	1.769	
		8.000	10.00	-200.0	30.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
7	-0.1426		118.9	-8.308	
		0.000	5.000	-200.0	30.00	
		(Minimum)	(Nominal)	(Minimum)	(Nominal)

Master: Calibration out of date - 13-Nov-2002 18:56

High resolution Integrated Logging Tool-OTS Master Calibration
Test Loop Gain Corrections

Up	Value	Coarse - Mag, Real, Imag	Value	Fine - Mag, Real, Imag	Value
0	1.096		1.096		
		0.8500	1.000	-0.000	1.200
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
1	1.097		1.096		
		0.8500	1.000	-0.000	1.200
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
2	1.097		1.096		
		0.8500	1.000	-0.000	1.200
		(Minimum)	(Nominal)	(Minimum)	(Nominal)

Master: Calibration out of date - 12-Nov-2002 18:56

High resolution Integrated Logging Tool-DTS Master Calibration
Invasion Corrections

Press	Rho Aluminum, KJKG	Value	Press	Rho Magnesium, KJKG	Value
Master	2698	2698	Master	1689	1689
Before	2698	2698	Before	1689	1689
Diff (Minimum)	2600 (Nominal)	0.000 (Nominal)	Diff (Minimum)	1600 (Nominal)	0.000 (Nominal)

Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master	2.870	2.870	Master	2.615	2.615
Before	2.870	2.870	Before	2.650	2.650
Diff (Minimum)	2.600 (Nominal)	0.000 (Nominal)	Diff (Minimum)	2.600 (Nominal)	0.000 (Nominal)

Master: 16-Jun-2003 3:05

High resolution Integrated Logging Tool-OTS Master Calibration
Neutron Corrections

Press	BS Average Deviation %	Value	Press	SS Average Deviation %	Value	Press	LS Average Deviation %	Value
Master	0	0.3498	Master	0	0.6352	Master	0.6352	
Before	0	0.3498	Before	0.000	0.6352	Before	0.000	0.6352
Diff (Minimum)	0.0000 (Nominal)	0.0000 (Nominal)	Diff (Minimum)	0.000 (Nominal)	0.0000 (Nominal)	Diff (Minimum)	0.000 (Nominal)	0.0000 (Nominal)

Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master	1.335		Master	1.609		Master	0.308	
Before	1.335	1.335	Before	0.000	1.609	Before	0.000	0.308
Diff (Minimum)	1.000 (Nominal)	0.000 (Nominal)	Diff (Minimum)	0.000 (Nominal)	0.000 (Nominal)	Diff (Minimum)	0.000 (Nominal)	0.000 (Nominal)

Master: 16-Jun-2003 3:05

High resolution Integrated Logging Tool-OTS Master Calibration
Tank Measurement

Press	Thermal Near Corr. (Tank) CPS	Value	Press	Thermal Far Corr. (Tank) CPS	Value	Press	CNTC/CFTC (Tank)	Value
Master	5203	5203	Master	2097	2097	Master	2.266	2.266
Before	4228	7201	Before	4750	3135	Before	2.134	2.543
Diff (Minimum)	800 (Nominal)	0.000 (Nominal)	Diff (Minimum)	800 (Nominal)	0.000 (Nominal)	Diff (Minimum)	0.000 (Nominal)	0.000 (Nominal)

Master: 16-Dec-2002 12:07

Eccentered Dual Axis Caliper / Equipment Identification

Primary Equipment:			
Eccentered Dual Axis Sonde - BA		EDAS - BA	8
Eccentered Dual Axis Electronics (part)		EDAE - C	1
Auxiliary Equipment:			
Electronics Cartridge Housing		EDAI - KC	440

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

DIPOLE SHEAR SONIC LOG

Schlumberger

Schlumberger

COMPANY: ANADARKO CANADA CORPORATION

WELL: ANADARKO ARROWHEAD RIVER I-75

FIELD: ARROWHEAD

COUNTY/PROVINCE: NORTHWEST TERRITORIES *** TVD ***

DIPOLE SHEAR SONIC LOG

UNIT:	UNIT L SECTION 75	Elev.: K.B.	517.9 m
		G.L.	510.8 m
		D.F.	517.0 m
Permanent Datum:	GROUND LEVEL	Elev.:	510.8 m
Log Measured From:	KELLY BUSHING	7.1 m	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		

API Serial No.: N/A

LOCATION: Unit: UNIT L SECTION 75 | Field: ARROWHEAD | Location: 60 deg 58 min 0 sec N 123 deg 30 min 0 sec W | County: NWT | Province: NORTHWEST TERRITORIES

	Run 1	Run 2	Run 3	Run 4
Logging Date	23-Feb-2003			
Run Number	TWO			
Depth Driller	2676 m			
Schlumberger Depth	2674.5 m			
Bottom Log Interval	2650.5 m			
Top Log Interval	2587.8 m			
Casing Driller Size @ Depth	177.800 mm @ 2583.8 m	@	@	@
Casing Schlumberger	2587.8 m			
Bit Size	156.000 mm			
Type Fluid In Hole	POLYMER			
Density / Viscosity	1100 kg/m3 / 51 s			
PH / Fluid Loss	6.5 cm3 / 10.5			
Source Of Sample	FLOW LINE			
RM @ Measured Temperature	1.350 ohm.m @ 12 degC	@	@	@
RMF @ Measured Temperature	1.450 ohm.m @ 12 degC	@	@	@
RMC @ Measured Temperature	1.100 ohm.m @ 13 degC	@	@	@
Source RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	0.304 @ 125 / 0.325 @ 125	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	125 degC			
Circulation Stopped / Time	22-Feb-2003 / 17:00			
Logger On Bottom / Time	23-Feb-2003 / 3:13			
Unit Number / Location	2016 / GRANDE PRAIRIE			
Recorded By	CURTIS MORAT			
Witnessed By	GORDON RICHMOND			

	Run 1	Run 2	Run 3	Run 4
Logging Date	23-Feb-2003			
Run Number	*** TVD ***			
Depth Driller	2623.5 m			
Schlumberger Depth	2619 m			
Bottom Log Interval	2599 m			
Top Log Interval				
Casing Driller Size @ Depth	@	@	@	@
Casing Schlumberger				
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 @ MRT / RMF @ MRT	@ / @	@ / @	@ / @	@ / @
Maximum Recorded Temperatures				
Circulation Stopped / Time				
Logger On Bottom / Time				
Unit Number / Location				
Recorded By				
Witnessed By				

DEPTH SUMMARY LISTING

Data Created: 23-FEB-2003 4:14:57

Depth System Equipment

Depth Measuring Device

Type	Tension Device
Serial Number	1830
Calibration Date	23-Feb-2003
Calibrator Serial Number	4
Calibrator Cable Weight	2.48P
Wheel Correction 1	-5
Wheel Correction 2	0

Logging Cable

Type	MONITA
Serial Number	2419
Diameter	7.130 in
Conveyance Method	Wireline
Rig Type	LAND

Depth Control Parameters

Log Bouncing	
Surface Log Tie Point Name	Subsequent Trip To the Well
Reference Log Run Number	
Reference Log Date	dd-MMM-YYYY
Subsequent Trip Down Log Correction	5.00 M

Depth Control Remarks

1.
2. THE DEPTH AND INTERVAL DATA THAT RECORDED ON THE TAPE(S) MARKED ORIGINAL AND ANY OF THE COPIES OF THE TAPE(S) MARKED ORIGINAL ARE THE DATA AS RECORDED BY SCHLUMBERGER EQUIPMENT AND ARE THE PROPERTY OF SCHLUMBERGER. ANY ALTERATION OF THE ORIGINAL DEPTH AND INTERVAL DATA RECORDED, OR FAILURE TO PRESERVE THE ORIGINAL TAPE(S) MARKED ORIGINAL, WHETHER DELIBERATE OR ACCIDENTAL, WILL RENDER ALL INTERPRETATIONS OF THE DATA THEREAFTER MADE BY ANYONE SUBJECT TO GREATER UNCERTAINTY THAN WOULD EXIST IF SUCH ALTERATION OR FAILURE HAD NOT OCCURRED. IN NO CASE WILL SCHLUMBERGER BE LIABLE FOR ANY INTERPRETATION, DECISION BASED OR ACTION TAKEN IN RELIANCE UPON THE DATA, INTERPRETATIONS OR OPINIONS CONTAINED IN ITS REPORTS OR LETTERS. TRADE SECRETS, CONFIDENTIAL INFORMATION, AND THE REPORTS OF SCHLUMBERGER SHALL NOT BE USED IN CONNECTION WITH ANY PROSPECTUS, PROPAGANDA MATERIAL OR ADVERTISEMENT WITHOUT THE PRIOR WRITTEN AND EXPRESS PERMISSION OF SCHLUMBERGER. NO PART OF THE REPORTS OR LETTERS OF SCHLUMBERGER SHALL BE USED, REPRODUCED OR PUBLISHED BY THE CLIENT IN ANY FORM, BY ANY MEANS, EXCEPT WITH THE EXPRESS PERMISSION OF SCHLUMBERGER. IN CONNECTION WITH THE USE OF THIS RECORDED DATA.

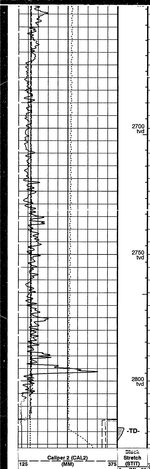
OTHER SERVICES	
OBI1	ARRAY INDUCTION
OBI2	DIPOLE SHEAR SONIC
OBI3	CBL-GR-CCL
OBI4	VSP-GR-CCL
REMARKS	1. RUN NUMBER 1
	ACQUIRED DIPOLE SHEAR SONIC DATA IN CASED HOLE
	ALL TIED INTO A 5 1/2" LINER AT 2587.8 m AND A 7" CASING AT 1500.0 m
	CBL RUN WITH 2,000 PSI ON CASING AND 1,000 PSI ON ANNULUS
	CBL DONE IN 5 1/2" LINER AND 7" CASING
	VSP DONE IN 5 1/2" LINER AND 7" CASING
	ROCK DISSUE AT 1,435 m3
	RIG DOWN CEMENT UNIT AND CHANGE OUT TO MAXIMUM TOOL TEMP
	RIG DOWN CEMENT UNIT
	BEAD RECORDED ON BOTTOM SURVEY PASS

DRILL COLLAR(S) / WEIGHT					
PRIVATE FIELD(S)					
SERVICE ORDER #	RUN 1	1002258		RUN 2	
FLUID SAMPLE #		1002258			
FLUID SAMPLE INTERVAL		BTM/MT	STOP		
SERVICE ORDER #				BTM/MT	STOP
FLUID SAMPLE #					
FLUID SAMPLE INTERVAL					

EQUIPMENT DESCRIPTION

	RUN 1	RUN 2
SURFACE EQUIPMENT		
WINCH DRUM		
DOWNHOLE EQUIPMENT		

LEH-QT
LEH-H
DITE-H
DSST-B
SDLT-A
EDAC-C
SUCRA
CSNG
CBL
AIH-107
AIH-107
EDAC-C
EDAC-A
AIH-CTB
HDAS-B
HDAS-B
HDAS-B



Caliper 2 (CAL2) (MM) 125 375

Stuck Stretch (STIT) 0 (N) 20

Peak Coherence / RA - P & S Comp (CHRP) 0 (---) 10

Gamma Ray (GR) (GAPI) 0 150

Cable Drag From STIA to STIT

Delta-T Comp - P & S (DT4P) 300 (US/M) 100

Caliper (HCAL) (MM) 125 375

Tool/Tub Drag From DIT to STIA

Tension (TENS) (N) 50000 0

Bit Size (BS) (MM) 125 375

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	HILTB-FTB: High resolution Integrated Logging Tool-DTB	OPEN
DSST-S	DSST-S: Dipole Shear Imager - S	
BHS	Borehole Status	OPEN
CDJ1	Label Caliper Function - Monopole P&S	1
CDLL	Label Slowness Lower Limit - Monopole P&S Compressional	150 US/M
CDUL	Label Slowness Upper Limit - Monopole P&S Compressional	700 US/M
FLS	Label Fast Slowness	620.00 US/M
FLG	Label FIR Gap Control - Monopole P&S	COMP_SHEAR
ITTS	Integrated Transit Time Source	DTCO
LFC	Label Correlation Linearity - Monopole P&S	COMP_HIRES
MTSL	Monopole Slowness Log Mnemonic	1DTSM US/M
MTXQ	Monopole Quality Identifier Geometry	FPZ4 MM
NWV4	Number Waveform Items 4	8
RBMN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4
RBMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	2.5
RX1S	Receiver 1 Geometry	7482 MM
RX2G	Receiver 2 Geometry	7920 MM
RX3G	Receiver 3 Geometry	7358 MM
RX4G	Receiver 4 Geometry	7925 MM
RX5G	Receiver 5 Geometry	8077 MM
RX6G	Receiver 6 Geometry	8520 MM
RX7G	Receiver 7 Geometry	8580 MM
RX8G	Receiver 8 Geometry	8534 MM
SASS	STC Sonic Array Status - Monopole P&S	187
SHJL	Label Slowness Lower Limit - Monopole P&S Shear	200 US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	700 US/M
SSWN	STC Source Waveform - Monopole P&S	WF_SASS4
STLL	Label Slowness Lower Limit - Monopole Stoneley	200 US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	700 US/M
TWI4	STC Integration Time Window - Monopole P&S	500 US
HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN
FCD	Fluted Casing (OD) Diameter	0 MM
HVCD	Integrated Hole Volume Caliper Selection	HCAL/CAL2
DIR: Directional Survey		
SPID	TVD of Starting Point	0 M
TIMD	Along-hole depth of Tie-in Point	2011.2 M
TVD	TVD of Tie-in Point	2007.83 M
LBFR	STI: Stuck Tool Indicator	
	Trigger for MAXIS First Reading Label	TDL
STCT	STI Stuck Threshold	1.024 M
TDD	Total Depth - Driller	2876.00 M
TDL	Total Depth - Logger	2874.50 M
	System and Miscellaneous	
ALTDPCHAN	Name of alternate depth channel '	TrueVerticalDepth
BS	Bit Size	156.00 MM
DD	Depth Offset for Playback	0 M
PBVBADP	Use alternate depth channel for playback	YES
PP	Playback Processing	NORMAL
TD	Total Depth	2874.5 M

Format: DSI_2 Vertical Scale: 1:600 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-S	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	A/T_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	A/T_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44
REDUCED	A/T_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44

Input DLIS Files

DEFAULT	A/T_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	A/T_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44 2826.4 M 2496.6 M
REDUCED	A/T_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44 2826.4 M 2496.6 M

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-S	OP10-KP1	DTC-H	10C0-306

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

Bit Size (BS) (MM) 125 375

Tension (TENS) (N) 50000 0

Caliper (HCAL) (MM) 125 375

Tool/Tub Drag From DIT to STIA

Gamma Ray (GR) (GAPI) 0 150

Cable Drag From STIA to STIT

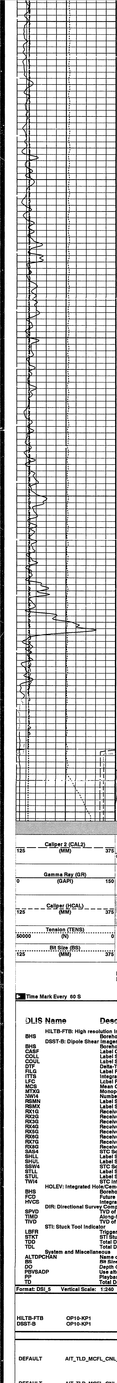
Delta-T Comp - P & S (DT4P) 300 (US/M) 100

Caliper 2 (CAL2) (MM) 125 375

Stuck Stretch (STIT) 0 (N) 20

Peak Coherence / RA - P & S Comp (CHRP) 0 (---) 10

MAIN PASS



MAIN PASS

Caliper 2 (CAL2) (MM) 125 375

Stuck Stretch (STIT) 0 (M) 30

Peak Coherence / RA - P & S Comp (CHRP) (---) 10

Gamma Ray (GR) (CAPI) 0 150

Cable Drag From STIA to STIT 300

Delta-T Comp - P & S (DT4P) (US/M) 100

Caliper (HCAL) (MM) 120 375

Tool/ToL Drag From DIT to STIA

Tension (TENS) (N) 50000 0

Bit Size (BS) (MM) 125 370

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	
	HLTB-FTB: High resolution Integrated Logging Tool-DTB		
BHS	Borehole Status	OPEN	
DSST-B: Dipole Shear	DSST-B		
BHS	Borehole Status	OPEN	
CASE	Label Casing Function - Monopole P&S	50	
COSH	Label Shoreface Upper Limit - Monopole P&S Compressional	150	US/M
COSL	Label Shoreface Upper Limit - Monopole P&S Compressional	700	US/M
DTF	Delta-T Fluid	850.079	US/M
DTC	Delta-T Comp Control - Monopole P&S	COMP_FIRST	
ITTB	Integrated Transit Time Source	DTCO	
LFC	Label Formation Character - Monopole P&S	COMP_FIRST	
MSLO	Label Slowness - Monopole	1200	US/M
MTXG	Monopole Transmitter Geometry	4.724	MM
NWV4	Number Waveform Stems 4	0	
RSHG	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RSHL	Label Shear/Compressional Maximum Ratio - Monopole P&S	1.65	
RX10	Receiver 1 Geometry	7368	MM
RX20	Receiver 2 Geometry	7520	MM
RX30	Receiver 3 Geometry	7772	MM
RX40	Receiver 4 Geometry	8024	MM
RX50	Receiver 5 Geometry	8077	MM
RX60	Receiver 6 Geometry	8230	MM
RX70	Receiver 7 Geometry	8382	MM
RX80	Receiver 8 Geometry	8534	MM
SAS4	STC Sonic Array Status - Monopole P&S	187	
SHSL	Label Shoreface Upper Limit - Monopole P&S Shear	700	US/M
SHUL	Label Shoreface Upper Limit - Monopole P&S Shear	850	US/M
SMWG	STC Source Waveform - Monopole P&S	WF_SAM4	
STLL	Label Stoneley Lower Limit - Monopole Stoneley	200	US/M
STUL	Label Stoneley Upper Limit - Monopole Stoneley	3500	US/M
TWW	Label Transit Time Window - Monopole P&S	600	US
HOLEV: Integrated Hole Caliper Volumes			
BHS	Borehole Status	OPEN	
BSIZ	Bit Size (Outer) Diameter	370	MM
HVCS	Integrated Hole Volume Caliper Selection	HCALICAL2	
DIR: Directional Survey Computation			
SPVD	Shallow Vertical Point	0	M
TMD	Along-hole depth of Tie-In Point	3511.2	M
TVD	TVD of Tie-In Point	3467.83	M
LSPD: Tension for MAXIS First Reading Label		TDL	
STKT	SIT Stuck Threshold	1.524	M
TDD	Total Depth - Driller	2874.00	M
TDL	Total Depth - Logger	2874.50	M
System and Miscellaneous			
ALTCHCMN	Name of alternate depth channel	TrueVerticalDepth	
BS	Bit Size	158.600	MM
DFD	Mud Density Offset for Playback	1.000	M
PDYBASP	Use alternate depth channel for playback	YES	
PP	Playback Processing	NORMAL	
TD	Total Depth	2874.5	M

Format: DSI_S Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTCO	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER 23-Feb-2003 04:27	2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER 23-Feb-2003 04:44	
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER 23-Feb-2003 04:44	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER 23-Feb-2003 04:27	2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER 23-Feb-2003 04:44	2826.4 M 2496.6 M
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER 23-Feb-2003 04:44	2826.4 M 2496.6 M

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTP-H	10C0-306

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

Bit Size (BS) (MM) 125 375

Tension (TENS) (N) 50000 0

Caliper (HCAL) (MM) 120 375

Tool/ToL Drag From DIT to STIA

Gamma Ray (GR) (CAPI) 0 150

Cable Drag From STIA to STIT 300

Delta-T Comp - P & S (DT4P) (US/M) 100

Caliper 2 (CAL2) (MM) 125 375

Stuck Stretch (STIT) 0 (M) 30

Peak Coherence / RA - P & S Comp (CHRP) (---) 10

MAIN PASS

Parameters

DLIS Name	Description	Value	
	HLTB-FTB: High resolution Integrated Logging Tool-DTS		
BHS	Borehole Status	OPEN	
	DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
CASF	Label Casing Function - Monopole P&S	50	
CCLL	Label Slowness Lower Limit - Monopole P&S Compressional	100	US/M
CCUL	Label Slowness Upper Limit - Monopole P&S Compressional	700	US/M
FILG	Label Fil Gap	620.000	US/M
FILS	Label Fil Sep Control - Monopole P&S	COMP_SHEAR	
ITTS	Integrated Transit Time Source	DTCO	
LRC	Label Formation Character - Monopole P&S	COMP_SHEAR	
MTSL	Label Mud Slowness	1470.00	US/M
MTXG	Monopole Transmitter Geometry	4725	MM
NMWA	Number Waveform Stacks 4	4	
RSMF	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio - Monopole P&S	3.12	
RX1G	Receiver 1 Geometry	7488	MM
RX2G	Receiver 2 Geometry	7563	MM
RX3G	Receiver 3 Geometry	7727	MM
RX4G	Receiver 4 Geometry	7620	MM
RX5G	Receiver 5 Geometry	8077	MM
RX6G	Receiver 6 Geometry	8152	MM
RX7G	Receiver 7 Geometry	8300	MM
RX8G	Receiver 8 Geometry	8530	MM
SHSA	STC Sonic Array Status - Monopole P&S	167	
SHSL	Label Slowness Lower Limit - Monopole P&S Shear	100	US/M
SHSU	Label Slowness Upper Limit - Monopole P&S Shear	700	US/M
SSWW	STC Source Waveform - Monopole P&S	WF_SAM4	
STSL	Label Slowness Lower Limit - Monopole Stoneley	200	US/M
STSU	Label Slowness Upper Limit - Monopole Stoneley	656.605	US/M
TWI4	STC Integration Time Window - Monopole P&S	500	US
	HOLEV: Integrated Hole Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	0	MM
WCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
	DIR: Directional Survey		
SPVD	TVD of Starting Point	0	M
TIND	Along-hole depth of Tie-In Point	2511.2	M
TIVD	TVD of Tie-In Point	2467.83	M
	STI: Stuck Tool Indicator		
LSRI	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	1.334	M
TDD	Total Depth - Driller	2874.50	M
TDL	Total Depth - Logger	2874.50	M
	System and Miscellaneous		
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth	
BS	Bit Size	155.575	MM
DD	Depth Offset for Playback	0.0	M
PBVBADP	Use alternate depth channel for playback	NO	
PD	Playback Processing	NOVMAS	
TD	Total Depth	2874.5	M

Format: DSI_300 Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:23	PRODUCER	23-Feb-2003 04:44
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:24	PRODUCER	23-Feb-2003 04:44

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44 2826.4 M 2496.5 M
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44 2826.4 M 2496.5 M

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

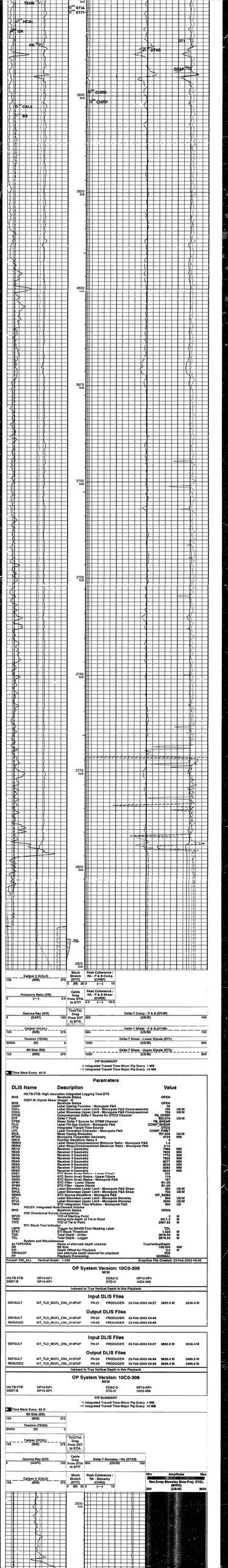
MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

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
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
BHS	Borehole Status	OPEN
	DSST-D: Dipole Shear Imager	
BHS	Borehole Status	OPEN
CASF	Label Casing Function - Monopole P&S	50
COLL	Label Slowness Lower Limit - Monopole P&S Compressional	160 US/M
COUL	Label Slowness Lower Limit - Monopole P&S Compressional	160 US/M
DTCD	Compensated Delta-T Source for DTCO Channel	PS_COMP
DTF	Delta-T Fluid	620.079
DTSRB	Delta-T Shear Source for DTSM Channel	PS_SHEAR US/M
FIL1	Label Fill Gap Control - Monopole P&S	COMP_SHEAR
ITTS	Integrated Transit Time Source	DTCO
LFC	Label Formation Character - Monopole P&S	COMP_FORM
MTSG	Mean Casing Slowness	187.008 US/M
NTSG	Number Casing Slowness Geometry	4 MM
NWFA	Number Waveform Items 4	4
RMIN	Label Shear/Compressional Minimum Ratio - Monopole P&S	1.4
RMXN	Label Shear/Compressional Maximum Ratio - Monopole P&S	3.2
RX1G	Receiver 1 Geometry	7800 MM
RX2G	Receiver 2 Geometry	7820 MM
RX3G	Receiver 3 Geometry	7845 MM
RX4G	Receiver 4 Geometry	7925 MM
RX5G	Receiver 5 Geometry	8077 MM
RX6G	Receiver 6 Geometry	8255 MM
RX7G	Receiver 7 Geometry	8352 MM
SAS1	STC Sonic Array Status - Upper Dipole	1111
SAS2	STC Sonic Array Status - Lower Dipole	559
SAS3	STC Sonic Array Status - Upper Dipole	119
SAS4	STC Sonic Array Status - Monopole P&S	119
SFM1	STC Filter - Lower Dipole	01.3C
SFM2	STC Filter - Upper Dipole	01.3C
SFM3	STC Filter - Monopole P&S	01.3C
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	700 US/M
SHUL	Label Slowness Upper Limit - Monopole P&S Shear	700 US/M
SSW4	STC Source Waveform - Monopole P&S	WF_RAM4
STLL	Label Slowness Lower Limit - Monopole Stoneley	200 US/M
STUL	Label Slowness Upper Limit - Monopole Stoneley	500 US/M
TW14	STC Integration Time Window - Monopole P&S	500 US
	HOLEV: Integrated Hole Caliper Volume	
BHS	Borehole Status	OPEN
	DIR: Directional Survey	
DMTD	TVD of Starting Point	0 M
TIMD	Along-hole depth of Tie-in Point	2811.2 M
TVD	TVD of Tie-in Point	2667.83 M
	STI: Stuck Tool Indicator	
LBFB	Trigger for MAXIS First Reading Label	TDL
TDD	Total Depth - Driller	2825.0 M
TDI	Total Depth - Drilled	2678.05 M
TDL	Total Depth - Logger	2674.50 M
	System and Miscellaneous	
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth
BS	Bit Size	155.600 MM
DD	Depth Offset for Playback	0.0 M
DPSASP	Use accurate depth channel for playback	NO
PP	Processing Path	NORMAL

Format: DIG_ALL Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27 2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44 2826.4 M 2496.6 M
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44 2826.4 M 2496.6 M

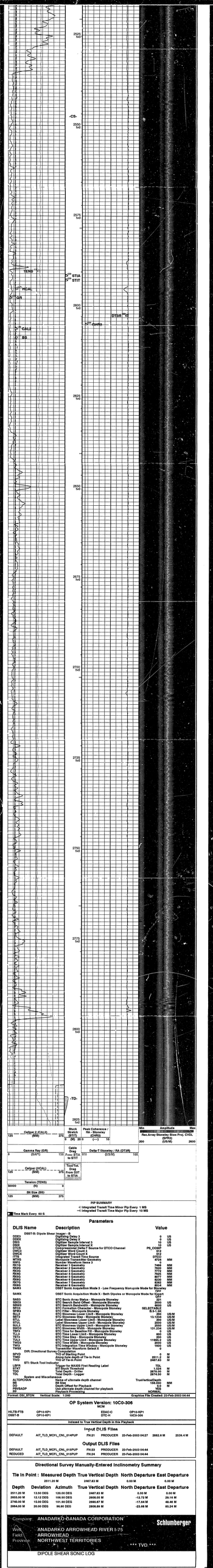
Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY
Integrated Transit Time Minor Pip Every 1 MB
Integrated Transit Time Major Pip Every 10 MB
Time Mark Every 60 S



Time Mark Every 60 S

PIP SUMMARY
-| Integrated Transit Time Minor Pip Every 1 MS
-|-| Integrated Transit Time Major Pip Every 10 MS

Parameters

DLIS Name	Description	Value	
	DSST-B: Dipole Shear Imager - B		
DDES	Digitizing Delay 3	0	US
DDE3	Digitizer Delay 3	10	US
DRS3	Digitizer Sample Interval 3	10	US
DRI3	Digitizer Sample Interval 4	20	US
DWCS	Digitizer Word Count 1 Source for DTCO Channel	PS_COMP	
DWC2	Digitizer Word Count 2	512	
DWC4	Digitizer Word Count 3	512	
DWC	Digitizer Word Count 4	2000	
MTSB	Monopole Transmitter Geometry	4724	MM
NXR2	Number Waveform Items 3	1	
RD3G	Receiver 1 Geometry	7486	MM
RD4G	Receiver 2 Geometry	7620	MM
RD5G	Receiver 3 Geometry	7772	MM
RD6G	Receiver 4 Geometry	8077	MM
RD7G	Receiver 5 Geometry	8077	MM
RD8G	Receiver 6 Geometry	8230	MM
RD9G	Receiver 7 Geometry	8230	MM
RD0G	Receiver 8 Geometry	8534	MM
SAM3	DSST Sonic Acquisition Mode 3 - Low Frequency Monopole Mode for Stoneley		
SAMX	DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert		
SAS3	STC Sonic Array Status - Monopole Stoneley	OFF	
SBO3	STC Search Band Offset - Monopole Stoneley	2050	US
SBW3	STC Search Bandwidth - Monopole Stoneley	8000	US
SFM3	STC Filter Selection Mode - Monopole Stoneley	SELECTED	
SFW3	STC Filter - Monopole Stoneley	5.1-4.35	
SLL3	STC Slowness Lower Limit - Monopole Stoneley	200	US/M
SLS3	STC Slowness Lower Limit Search - Monopole Stoneley	13.2-200	US/M
STL1	Label Slowness Lower Limit - Monopole Stoneley	200	US/M
STL5	Label Slowness Upper Limit - Monopole Stoneley	2000	US/M
SUL3	STC Slowness Upper Limit - Monopole Stoneley	2000	US/M
SWD3	STC Slowness Width - Monopole Stoneley	131.234	US/M
TBF3	STC Time for Baseline Fit0 - Monopole Stoneley	0	US
TBS3	STC Time for Baseline Fit1 - Monopole Stoneley	200	US
TEL3	STC Time Late - Monopole Stoneley	200	US
TUL3	STC Time Upper Limit - Monopole Stoneley	11960.2	US
TWD3	STC Time Window - Monopole Stoneley	1800	US
TWI3	STC Integration Time Window - Monopole Stoneley	1800	US
TWSX	Transmitter Waveform Select X	0	
	Diffr. Directional Survey Manually-Entered		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-In Point	2811.2	M
TVD	TVD of Tie-In Point	2497.83	M
	STI: Stuck Tool Indicator		
LBVR	Trigger for MAXIS Fast Reading Label	TDL	
TDL	TD - Driller - Logger	2811.2	M
TDR	TD - Driller	2679.00	M
TDL	Total Depth - Logger	2974.50	M
	System and Miscellaneous		
ALTDPCHAN	Name of ultimate depth channel	TrueVerticalDepth	
DO	Bit Size	156.500	MM
PD	Depth Offset for Playback	0.0	M
PDVSRADP	Use ultimate depth channel for playback	YES	
PP	Playback Processing	NORMAL	

Format: DSI_STCN Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10CO-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10CO-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCH_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCH_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44		
REDUCED	AIT_TLD_MCH_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44		

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point : Measured Depth 2811.20 M | True Vertical Depth 2497.83 M | North Departure 0.00 M | East Departure 0.00 M

Depth	Deviation	Azimuth	True Vertical Depth	North Departure	East Departure
2811.20 M	13.50 DEG	120.00 DEG	2497.83 M	0.00 M	0.00 M
2850.00 M	13.12 DEG	106.00 DEG	2535.55 M	-12.78 M	29.18 M
2740.00 M	15.00 DEG	101.00 DEG	2680.87 M	-17.64 M	48.48 M
2854.00 M	20.00 DEG	99.00 DEG	2828.89 M	-23.08 M	85.24 M

Company: ANADARKO CANADA CORPORATION
Well: ANADARKO ARROWHEAD RIVER I-75
Field: ARROWHEAD
Province: NORTHWEST TERRITORIES
*** TVD ***

Schlumberger

DIPOLE SHEAR SONIC LOG

N.E.B. COPY

Schlumberger

GEOFRAME
PROCESSED
INTERPRETATION

DIPOLE SHEAR SONIC IMAGER

Measured Depth

*A Mark of Schlumberger

Using the following logs: DSI-CALIPER-GR

COMPANY: ANADARKO CANADA CORPORATION
WELL: ANADARKO ARROWHEAD RIVER I-75
FIELD: ARROWHEAD
Province: NORTHWEST TERRITORIES

COUNTRY: CANADA
Date Logged: 23-Feb-2003 Date Processed: 28-Feb-2003
Well Location: UNIT I, SECTION 75

Elevations: KB: 517.9m DF: 517.6m GL: 510.8m

API Number: N/A Job Number: 10507228

FOLD HERE

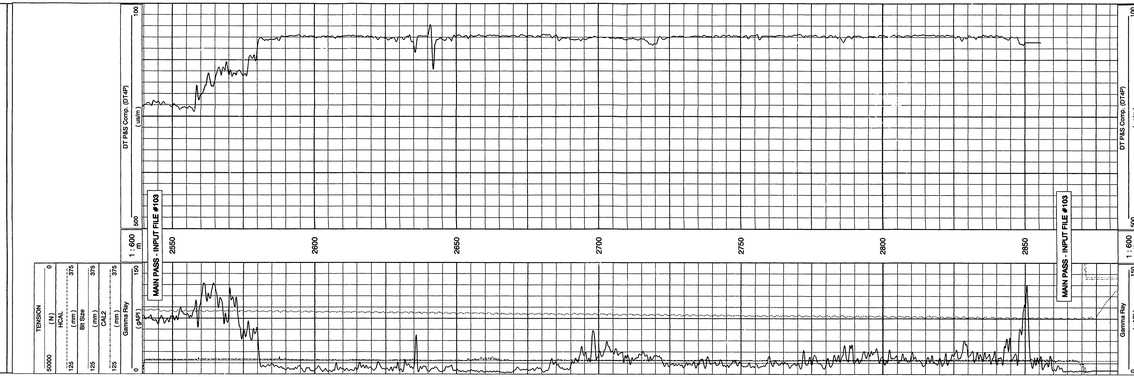
The well name, location and borehole reference data were furnished by the customer.

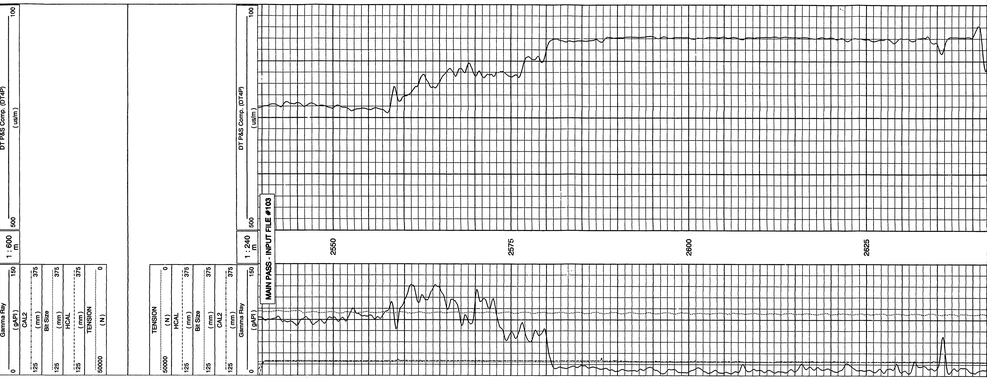
All interpretations, are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except to the extent of gross or wilful negligence on our part, be liable or responsible for any loss, 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 Clause 4 of our Customer Terms and Conditions in effect at the time of delivery.

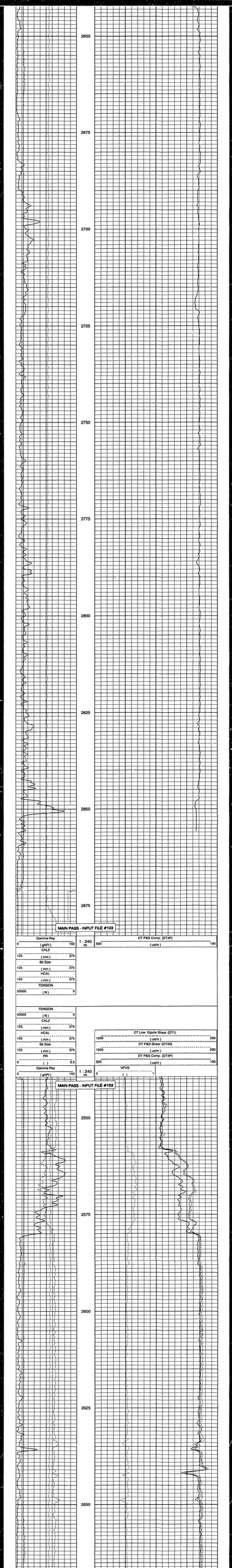
Field Recording:	Location: GRANDE PRAIRIE	Software Version: 1C0-308	Engineer: CURTIS MOFFAT
Office Processing:	ICS Center: DCS-Calgary	Baseline: GF # 8.1	Log Analyst: Nadim Youssef
Mud and Borehole Measurements:	Rm @ Measured Temperature: 1.330ohm.m @ 11.45degC	BHT: 125degC	Bitsize: 146mm
	Rmf @ Measured Temperature: 1.145ohm.m @ 11.35degC	Type Fluid in Hole:	POLYMER
	Rmc @ Measured Temperature: 1.08ohm.m @ 11.76degC	Mud Density: 1100kg/m3	

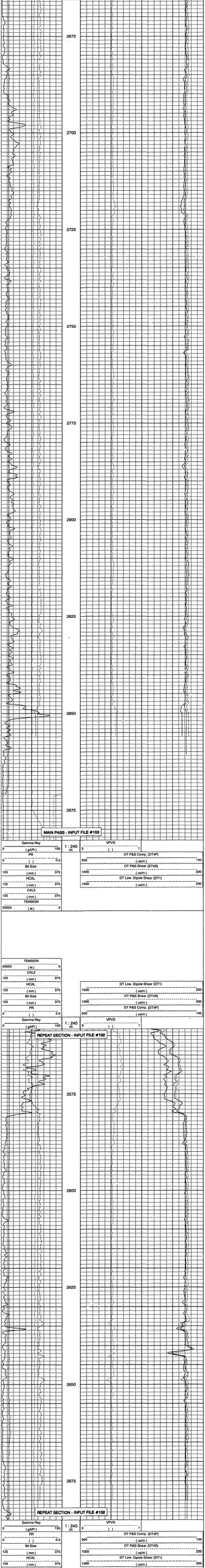
Remarks:

DSI SONIC RUN WITH 3 STANDOFFS
"DTT" AND "DTAP" WHERE USED IN "PR" AND "PWB" COMPUTATIONS.






2650
2675
2700
2725
2750
2775
2800
2825
2850
2875
MAIN PASS - INPUT FILE #103
Gamma Ray
0
(gAPI)
150
1 : 240
m
DT P&S Comp. (DT4P)
500
(us/m)
100
CAL2
125
(mm)
375
Bit Size
125
(mm)
375
HCAL
125
(mm)
375
TENSION
50000
(N)
0
TENSION
50000
(N)
0
CAL2
125
(mm)
375
HCAL
125
(mm)
375
Bit Size
125
(mm)
375
PR
0
( )
0.5
Gamma Ray
0
(gAPI)
150
1 : 240
m
DT Low. Dipole Shear (DT1)
1000
(us/m)
200
DT P&S Shear (DT4S)
1000
(us/m)
200
DT P&S Comp. (DT4P)
500
(us/m)
100
VPVS
3
( )
1
MAIN PASS - INPUT FILE #103
2550
2575
2600
2625
2650


2675
2700
2725
2750
2775
2800
2825
2850
2875
MAIN PASS - INPUT FILE #103
Gamma Ray
(gAPI)
0
150
PR
( )
0
0.5
Bit Size
(mm)
125
375
HCAL
(mm)
125
375
CAL2
(mm)
125
375
TENSION
(N)
50000
0
1 : 240
m
VPVS
3
( )
1
DT P&S Comp. (DT4P)
(us/m)
500
100
DT P&S Shear (DT4S)
(us/m)
1000
200
DT Low. Dipole Shear (DT1)
(us/m)
1000
200
TENSION
(N)
50000
0
CAL2
(mm)
125
375
HCAL
(mm)
125
375
Bit Size
(mm)
125
375
PR
( )
0
0.5
Gamma Ray
(gAPI)
0
150
1 : 240
m
VPVS
3
( )
1
DT Low. Dipole Shear (DT1)
(us/m)
1000
200
DT P&S Shear (DT4S)
(us/m)
1000
200
DT P&S Comp. (DT4P)
(us/m)
500
100
REPEAT SECTION - INPUT FILE #102
2575
2600
2625
2650
2675
REPEAT SECTION - INPUT FILE #102
Gamma Ray
(gAPI)
0
150
PR
( )
0
0.5
Bit Size
(mm)
125
375
HCAL
(mm)
125
375
1 : 240
m
VPVS
3
( )
1
DT P&S Comp. (DT4P)
(us/m)
500
100
DT P&S Shear (DT4S)
(us/m)
1000
200
DT Low. Dipole Shear (DT1)
(us/m)
1000
200

CALI
125 (mm) 375
TENSION
50000 (N) 0

TENSION
25000 (N) 0
CALI
125 (mm) 375
HCAL
125 (mm) 375
Bit Size
125 (mm) 375
Gamma Ray
0 (gAPI) 150

MD
1 : 240
m

DT P&S Comp. (DT4P)
600 (us/m) 100
DT P&S Shear (DT4S)
600 (us/m) 100

SPR4
100 (us/m) 900
DT P&S Comp. (DT4P)
100 (us/m) 900
DT P&S Shear (DT4S)
100 (us/m) 900

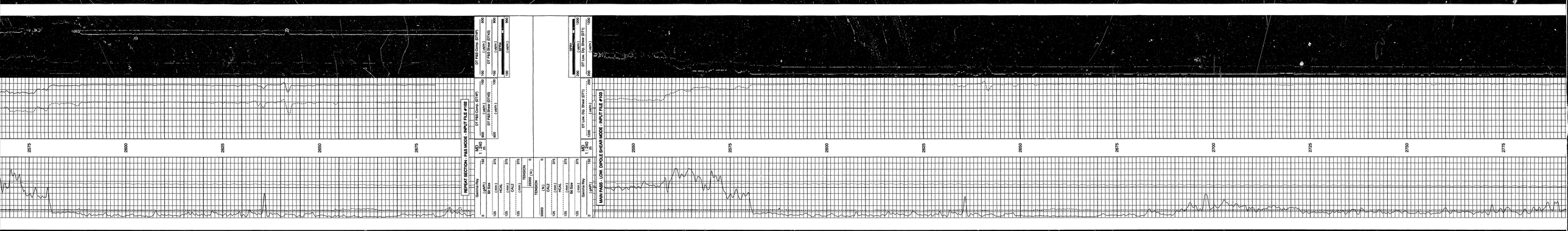
MAIN PASS - P&S MODE - INPUT FILE #103

2550
2575
2600
2625
2650
2675
2700
2725
2750
2775
2800
2825
2850

MAIN PASS - P&S MODE - INPUT FILE #103

Gamma Ray
0 (gAPI) 150
Bit Size
125 (mm) 375
HCAL
125 (mm) 375
CALI
125 (mm) 375
TENSION
25000 (N) 0
TENSION
25000 (N) 0
CALI
125 (mm) 375
HCAL
125 (mm) 375
Bit Size
125 (mm) 375
Gamma Ray
0 (gAPI) 150
MD
1 : 240
m
DT P&S Shear (DT4S)
600 (us/m) 100
DT P&S Comp. (DT4P)
600 (us/m) 100
DT P&S Shear (DT4S)
100 (us/m) 900
SPR4
100 (us/m) 900
DT P&S Comp. (DT4P)
100 (us/m) 900
SPR4
100 (us/m) 900
DT P&S Shear (DT4S)
100 (us/m) 900
DT P&S Comp. (DT4P)
100 (us/m) 900

REPEAT SECTION - P&S MODE - INPUT FILE #102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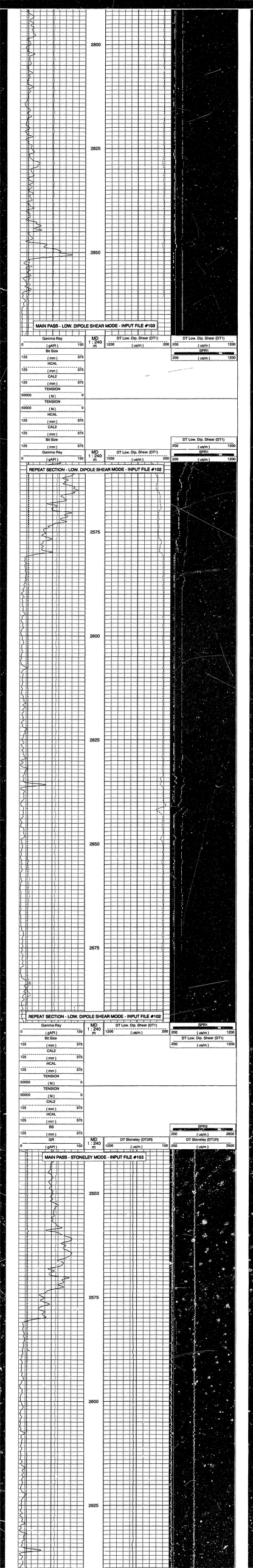
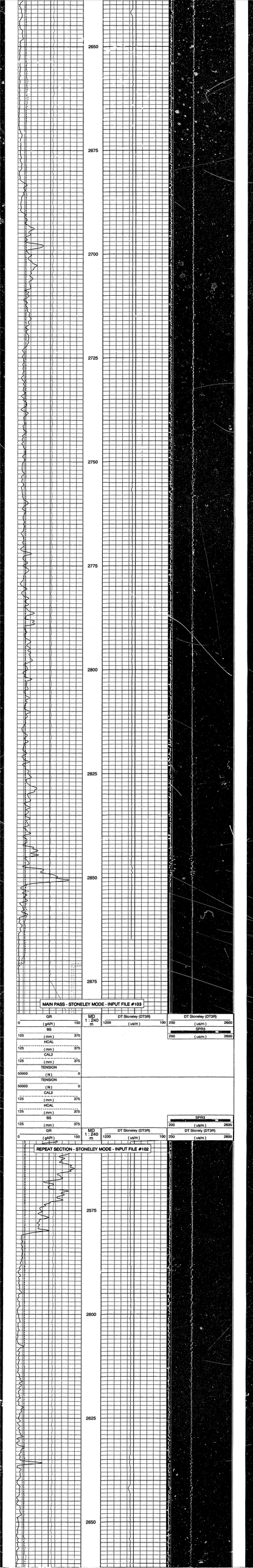
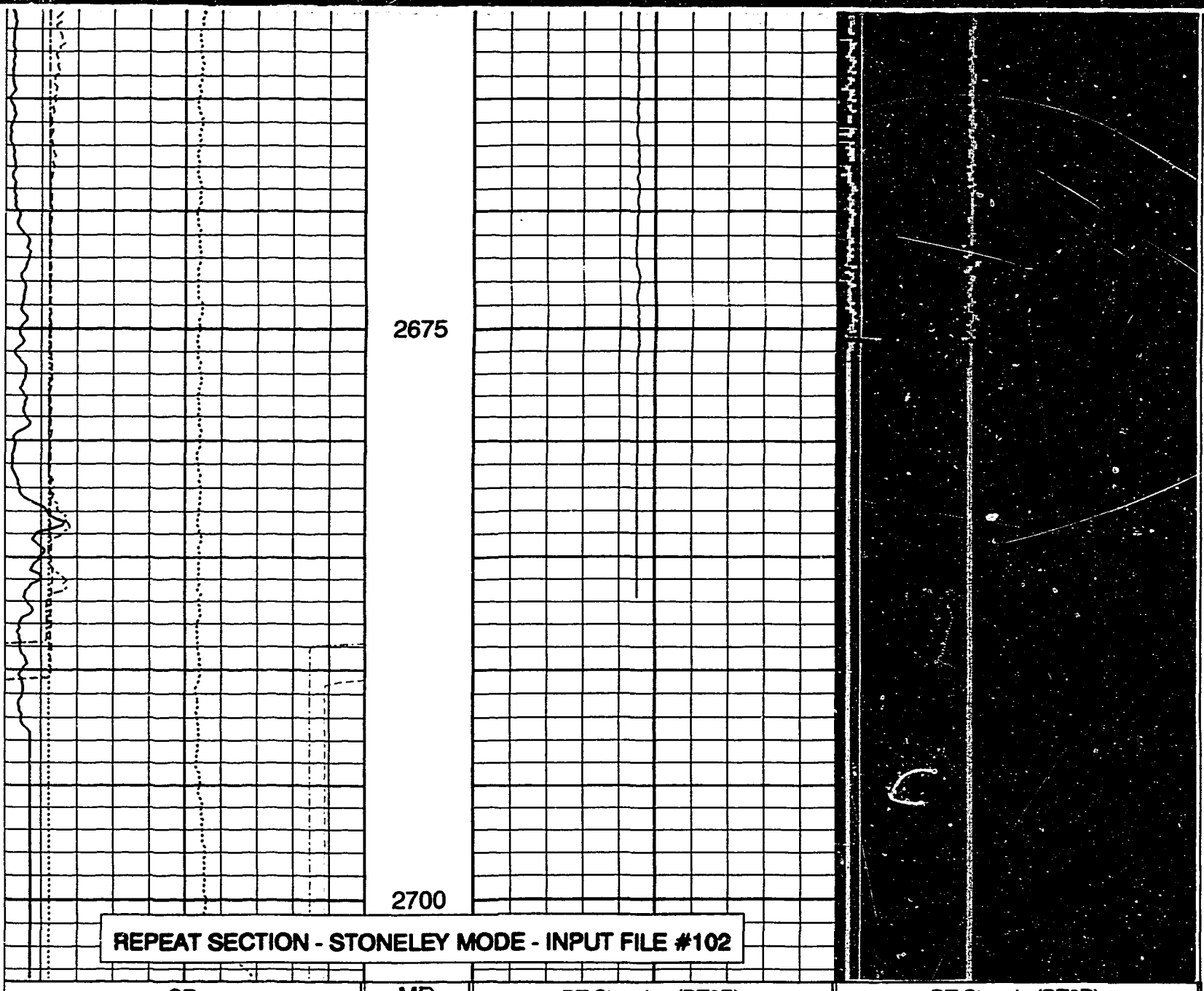
MAIN PASS - LOW DIPOLE SHEAR MODE - INPUT FILE #103
Gamma Ray (gAPI)
Bit Size (inch)
CAL2 (inch)
Bit Size (inch)
TENSION (lb)
DT P&S Curve (DTCP)
DT P&S Shear (DTSP)
DT Low Dip Shear (DT1)
DT P&S Curve (DTCP)
DT P&S Shear (DTSP)
DT Low Dip Shear (DT1)
MD 1:240 (ft)
2575
2600
2625
2650
2675
2550
2700
2725
2750
2775


MAIN PASS - LOW. DIPOLE SHEAR MODE - INPUT FILE #103
Gamma Ray
(gAPI)
Bit Size
(mm)
HCAL
(mm)
CAL2
(mm)
TENSION
(N)
MD
1 : 240
m
DT Low. Dip. Shear (DT1)
(us/m)
SPR1
2800
2825
2850
REPEAT SECTION - LOW. DIPOLE SHEAR MODE - INPUT FILE #102
2575
2600
2625
2650
2675
BS
GR
DT Stoneley (DT3R)
MAIN PASS - STONELEY MODE - INPUT FILE #103
2550
2575
2600
2625


MAIN PASS - STONELEY MODE - INPUT FILE #103
GR
(gAPI)
0
150
BS
125
(mm)
375
HCAL
125
(mm)
375
CAL2
125
(mm)
375
TENSION
50000
(N)
0
MD
1 : 240
m
DT Stoneley (DT3R)
1200
(us/m)
100
DT Stoneley (DT3R)
200
(us/m)
2600
SPR3
200
(us/m)
2600
2650
2675
2700
2725
2750
2775
2800
2825
2850
2875
REPEAT SECTION - STONELEY MODE - INPUT FILE #102
2575
2600
2625
2650



REPEAT SECTION - STONELEY MODE - INPUT FILE #102

GR	MD 1 : 240 m	DT Stoneley (DT3R)	DT Stonely (DT3R)
0 (gAPI) 150		1200 (us/m) 100	200 (us/m) 2600
BS			SPR3
125 (mm) 375			200 (us/m) 2600
HCAL			
125 (mm) 375			
CAL2			
125 (mm) 375			
TENSION			
50000 (N) 0			

Company:	ANADARKO CANADA CORPORATION		
Well:	ANADARKO ARROWHEAD RIVER I-75		
FIELD:	ARROWHEAD		
Province:	NORTHWEST TERRITORIES		
Date Logged:	23-Feb-2003	Date Processed:	28-Feb-2003
Well Location:	UNIT I, SECTION 75		
Elevations:	KB: 517.9m	DF: 517.6m	GL: 510.8m
API Number:	N/A	Job Number:	10507228

Schlumberger

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

Schlumberger

GEOFRAME
PROCESSED
INTERPRETATION

DIPOLE SHEAR SONIC IMAGER

True Vertical Depth

*A Mark of Schlumberger

COMPANY:	ANADARKO CANADA CORPORATION
WELL:	ANADARKO ARROWHEAD RIVER I-75
FIELD:	ARROWHEAD
Province:	NORTHWEST TERRITORIES
COUNTRY:	CANADA
Date Logged:	26-Nov-2003
Well Location:	UNIT I, SECTION 75
Elevations:	KB: 517.9m DF: 517.6m GL: 510.8m
API Number:	N/A
Job Number:	10507228
Date Processed:	28-Feb-2003
Using the following logs:	DSI-CALIPER-GR

FOLD HERE — The well name, location and borehole reference data were furnished by the customer.

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 interpretations made by any of our officers, agents or employees. 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:	GRANDE PRAIRIE	Software Version: 10C0-306		Engineer: CURTIS MOFFAT
Office Recording:	ICS Center:	DCS-Calgary	Baseline:	GF 3.8.1	Log Analyst: Nader Khosravi

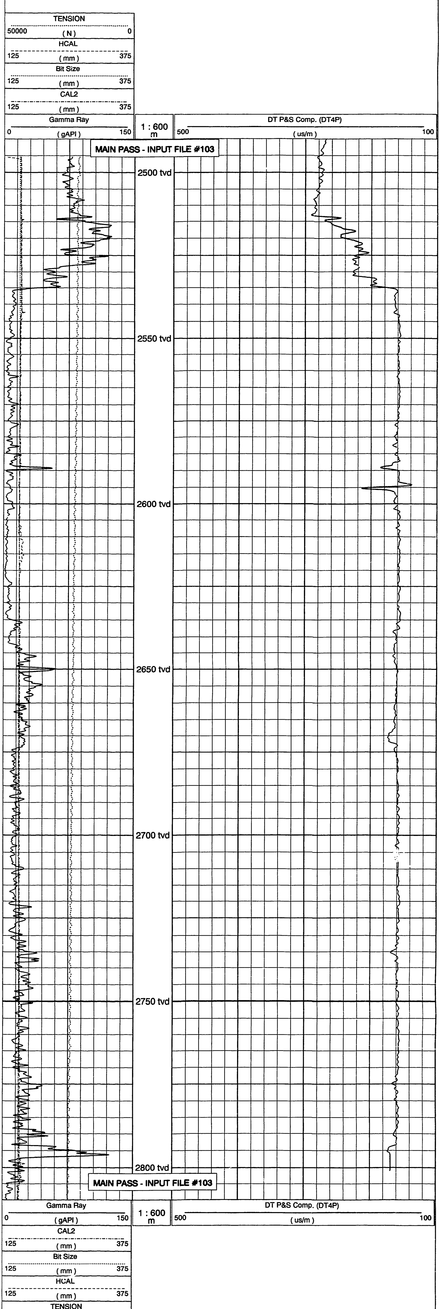
Mud and Borehole Measurements:

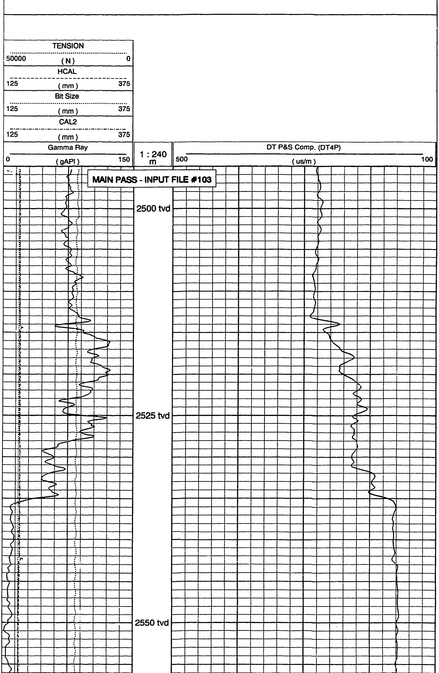
Rm @ Measured Temperature: 1.33ohm.m @ 11.94degC	BHT:	125degC	Bitsize: 156mm
Rmf @ Measured Temperature: 1.45ohm.m @ 11.26degC	Type Fluid in Hole:		POLYMER
Rmc @ Measured Temperature: 1.68ohm.m @ 11.76degC	Mud Density:	1100kg/m3	

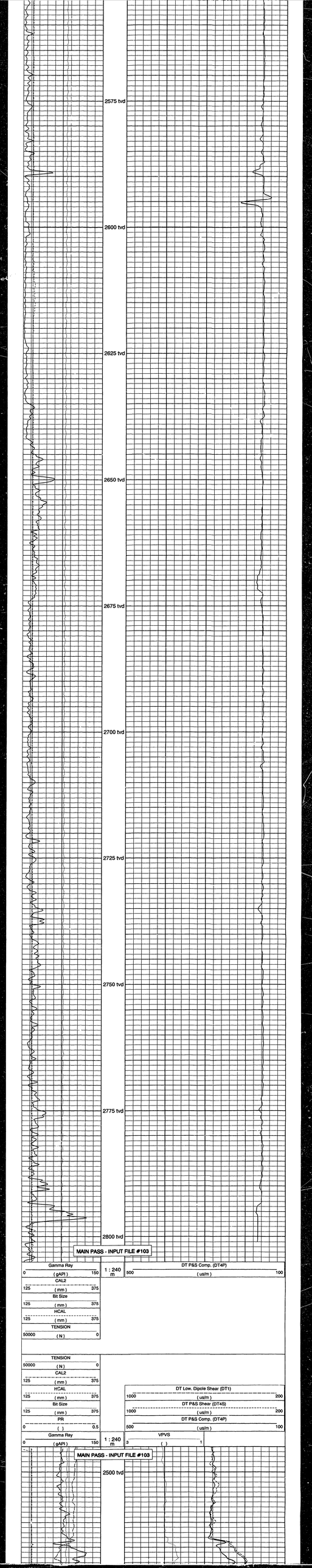
Remarks:

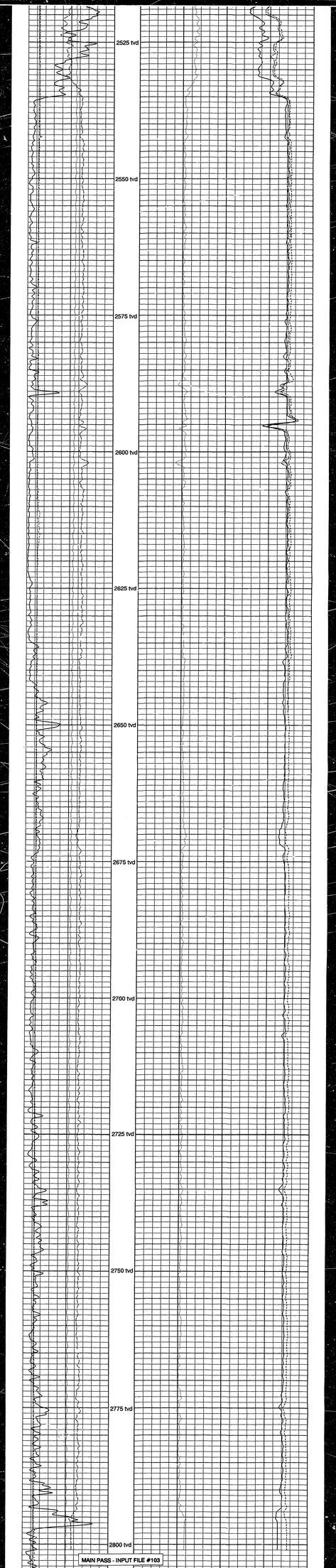
DSI SONIC RUN WITH 3 STANDOFFS

***DT1* AND *DT4P* WERE USED IN *PR* AND *VPVS* COMPUTATIONS.**






2575 tvd
2600 tvd
2625 tvd
2650 tvd
2675 tvd
2700 tvd
2725 tvd
2750 tvd
2775 tvd
2800 tvd
MAIN PASS - INPUT FILE #103
Gamma Ray
0
(gAPI)
150
1 : 240
m
DT P&S Comp. (DT4P)
500
(us/m)
100
CAL2
125
(mm)
375
Bit Size
125
(mm)
375
HCAL
125
(mm)
375
TENSION
50000
(N)
0
TENSION
50000
(N)
0
CAL2
125
(mm)
375
HCAL
125
(mm)
375
Bit Size
125
(mm)
375
PR
0
( )
0,5
DT Low. Dipole Shear (DT1)
1000
(us/m)
200
DT P&S Shear (DT4S)
1000
(us/m)
200
DT P&S Comp. (DT4P)
500
(us/m)
100
Gamma Ray
0
(gAPI)
150
1 : 240
m
VPVS
3
( )
1
MAIN PASS - INPUT FILE #103
2500 tvd



MAIN PASS - INPUT FILE #103

1 : 240 m

Gamma Ray	0	150
(gAPI)		
PR	0	0.5
( )		
Bit Size	125	375
(mm)		
HCAL	125	375
(mm)		
CAL2	125	375
(mm)		
TENSION	50000	0
(N)		

VPVS	3	1
( )		
DT P&S Comp. (DT4P)	500	100
(us/m)		
DT P&S Shear (DT4S)	1000	200
(us/m)		
DT Low. Dipole Shear (DT1)	1000	200
(us/m)		

Company:	ANADARKO CANADA CORPORATION
Well:	ANADARKO ARROWHEAD RIVER I-75
FIELD:	ARROWHEAD
Province:	NORTHWEST TERRITORIES

Schlumberger

Date Logged:	23-Feb-2003	Date Processed:	28-Feb-2003
Well Location:	UNIT I, SECTION 75		
Elevations:	KB: 517.9m	DF: 517.6m	GL: 510.8m
API Number:	N/A	Job Number:	10507228

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

DENSITY

Schlumberger

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

COMPENSATED NEUTRON LITHODENSITY LOG

PLATFORM EXPRESS

NORTHWEST TERRITORIES

ARROWHEAD

ANADARKO ARROWHEAD RIVER I-75

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

LOCATION

Permanent Datum: GROUND LEVEL — Elev.: K.B. 517.8 m

Log Measured From: KELLY BUSHING — G.L. 510.8 m

7.1 m above Perm. Datum — D.F. 517.8 m

API Serial No. NA

UNIT: I, SECTION: 75

LAT: 69° 36' 42.3" N LONG: 123° 58' 32.6" W

Logging Date: 13-Feb-2003

Run Number: ONE

Depth Driller: 2598 m

Depth Logger: 2598.5 m

Bottom Log Interval: 2598 m

Top Log Interval: 655 m

Casing Schlumberger: 244.5 mm @ 654.4 m

Casing Driller: 244.5 mm @ 656 m

Bit Size: 219.000 mm

Type Fluid in Hole: WBM

Density: 1.65 kg/m3

Viscosity: 45 s

Fluid Loss: NO SAMPLES

Source of Sample: PH

RM @ Measured Temperature: NO SAMPLES @

RMF @ Measured Temperature: @

RMC @ Measured Temperature: @

Source RMF: RMC: @ 10

RM @ BHT: 0.103 @ 93

Time Circulation Stopped: 13-Feb-2003 20:15

Time Logger on Bottom: 13-Feb-2003 23:30

Maximum Recorded Temperatures: 93

Unit Number: 2915

Location: GRANDE PRAIRIE

Recorded By: GORDON RICHMOND

Witnessed By: JOEL BUSHNIK

Run 1 | Run 2 | Run 3 | Run 4

DEPTH SUMMARY LISTING

Date Created: 14-FEB-2003 1:04:55

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46P
Serial Number:	4930	Serial Number:	2449	Serial Number:	-999
Calibration Date:	15-JAN-2003	Calibration Date:	29-JAN-2003	Length:	7315.20 M
Calibrator Serial Number:	4	Calibrator Serial Number:	-999	Conveyance Method:	Wireline
Calibration Cable Type:	7-46P	Calibration Gain:	0.88	Rig Type:	LAND
Wheel Correction 1:	-5	Calibration Offset:	346.00		
Wheel Correction 2:	-6				

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	74.10 M
Rig Up Length At Bottom:	74.00 M
Rig Up Length Correction:	0.10 M
Stretch Correction:	2.00 M
Tool Zero Check At Surface:	0.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) THE RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING THE COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1	OTHER SERVICES2
OS1: ARRAY INDUCTION	OS1:
OS2: NEUTRON/DENSITY	OS2:
OS3: BHC SONIC	OS3:
OS4: XY CALIPER	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST	
AIT RUN WITH 2 25.4 mm STANDOFFS IN COMPLETE MUD RESISTIVITY MODE	
NEUTRON RUN WITH 120 DEGREE OFFSET BOWSPRING	
SONIC RUN WITH 3 STANDOFFS	
CEMENT VOLUME LOG CALCULATED WITH HCAL AND CAL2	
FROM TD TO SURFACE CASING	
DIRECTIONAL SURVEYS TO 2484 m, EXTRAPOLATED TO TD	
HOLE VOLUME = 73.97 M3	
CEMENT VOLUME = 26.00 M3 (ASSUMING 177.8 mm CASING OD)	
COMPUTED FROM TD TO SC USING DATA CHANNELS HCAL AND CAL2	
CREW: E. DECRUZE	
RIG: SHEHETA WILLSON - 5	
PRINTS: 2 FIELD	

RUN 1		RUN 2	
SERVICE ORDER #:	10507224	SERVICE ORDER #:	
PROGRAM VERSION:	10C0-306	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 | RUN 2

SURFACE EQUIPMENT

WITM (DTS)-A

GSR-LIY
NCT-B
CNB-AB
NCS-VB

DOWNHOLE EQUIPMENT

LEH-QT LEH-QT 2261		24.85
DTC-H ECH-KC 9353	CTEM TenStatus ToolStatu	23.68 23.96 23.04
DSLT-FTB DSLC-B 8145 ECH-KH 9839 SLS-W 1424		23.04 25 MM Standoff
	USN LHN USF UHF LSF LHF UHN LSN	19.24 19.00 18.94 18.19 18.04 17.80 25 MM Standoff
	DSLT Aux.	16.75 25 MM Standoff
AH-107 AH-107 3740		16.75
AH-107 AH-107 21		16.14
EDAC-C ECH-KC 440 EDAE-C 6 EDAS-BA 6		15.53
	EDAC Cali	12.26
AH-DTB	HGNS HTEM HMCA	11.78
HILTB-FTB HGNSD-B 992 HMCA HGNS-H 994 NLS-KL NSR-F 1639 HACCZ HCNT HGR HRCC-B 909 HRCS-E 732 HRCU 984 HSGR-D 2025 MCFL Device HILT Nucl. SS HILT Nucl. SS HILT Nucl. BS AIT-H AHIS-BA 419 AHRM-A BOW-SPR NPV-N	Gamma Ray Neutron F Neutron N HGNS sens HRCC cart MCFL HILT cell HRDD-LS HRDD-SS HRDD-BS Induction Temperatu Power Sup SP SENSOR DC EDAC Stat HV HTEN HMRS Mud Resis Mud Resis Tension TOOL ZERO	11.48 11.25 11.48 9.47 9.32 8.61 7.39 5.73 5.59 5.47 25 MM Standoff 2.41 0.03 0.00 25 MM Standoff

MAXIMUM STRING DIAMETER 149 MM.
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_008LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M

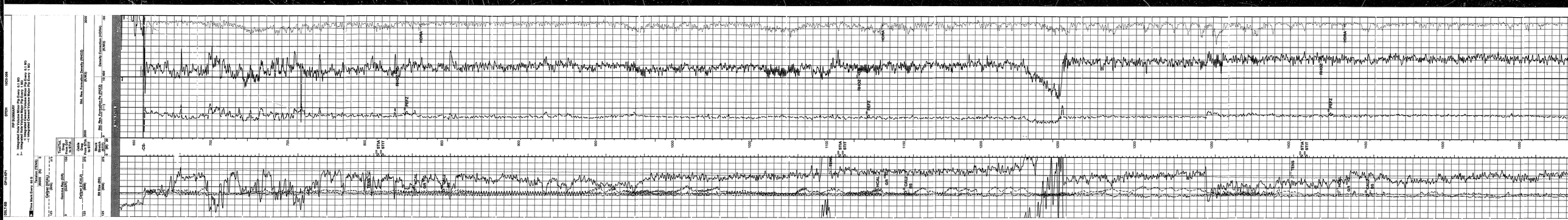
Integrated Hole/Cement Volume Summary

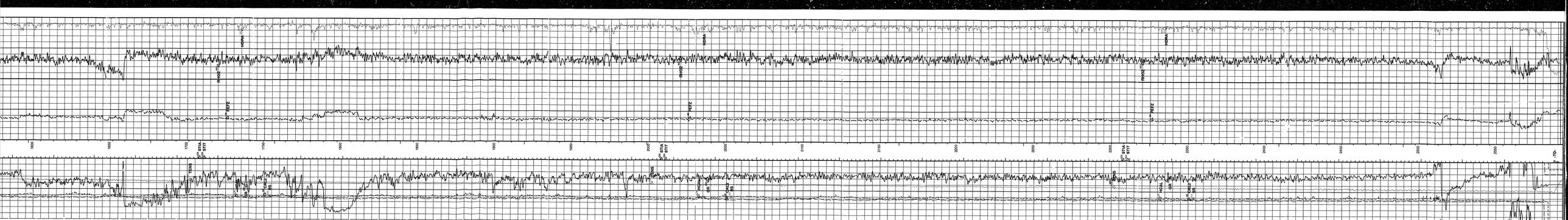
Hole Volume = 73.97 m3
Cement Volume = 26.00 m3 (assuming 177.80 mm casing O.D.)
Computed from 2587.9 m to 655.8 m

OP System Version: 10C0-306

MCM

HILTD	OP10-KP1	EDAC	OP10-KP1


DRILLING
GPHA-GPI
STOH
10CH-04
PP SUMMARY
Integrated Hole Volume Above Pp Every 1 Std
Integrated Hole Volume Above Pp Every 1 Std
—| Integrated Cement Volume Below Pp Every 1 Std
—| Integrated Cement Volume Above Pp Every 1 Std
New Mud Every 40 ft
Viscosity (VISC) (s/qt)
Caliper (HCAL) (in)
Gamma Ray (GR) (gAPI)
Caliper2 (CALI2) (in)
Bit Size (BS) (in)
Track Depth (MD) (ft)
Bit Res. Formation Pe (PEFZ) (b/e)
Bit Res. Formation Density (RHOZ) (g/cc)
Density Correction (HDRA) (g/cc)
RHOZ
HDRA
PEFZ
STIA
STIT
TENS
HCAL
CALI
GR
BS


HORN
RHOS
FREZE
1650
1700
1750
1800
1850
1900
1950
2000
2050
2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
STIA
SYIT
TENS
GR
CHLT
CHLO
HCAL
TD

Bit Size (BS) (MM)		Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ) (---)		Density Correction (HDRA) (K/M3)	
125	375	0 (M) 20	0	19.450		-50

Caliper 2 (CAL2) (MM)		Cable Drag From STIA to STIT	Std. Res. Formation Density (RHOZ) (K/M3)	
125	375		2000	3000

Gamma Ray (GR) (GAPI)		Tool/Tot. Drag From CGT to STIA		
0	150		1950	2950

Caliper (HCAL) (MM)	
125	375

Tension (TENS) (M) (W)	
20000	0

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
	HLTB-F : High resolution Integrated Logging Tool-DTS	
DHC	Density Hole Correction	BS
NAAC	HNDD APS Activation Correction	OFF
NPHI	HNDD Porosity Type	NORMITE
NPRM	HNDD Processing Mode	STD
NSAR	HNDD Depth Sampling Rate	25.400 mm
STIT	STI: Stuck Tool Indicator STI Stuck Threshold	1.524 m
TDD	Total Depth - Driller	2988.0 m
TDL	Total Depth - Logger	2988.0 m
	System and Miscellaneous	
BS	Bit Size	216.0 mm
DTD	Drilling Fluid Density	1025.0 kg/m3

Format: PORO_2 Vertical Scale: 1:600 Graphics File Created: 14-Feb-2003 00:01

OP System Version: 10CO-306

MCM

HLTD	OP10-KP1	EDAC	OP10-KP1
DBLT-BB	OP10-KP1	DTCH	10CO-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M

0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M
REDUCED	AIT_TLD_MCFL_CNL_006LUP	FN:14	PRODUCER	13-Feb-2003 23:55	2593.2 M

24.7 M

24.7 M

Integrated Hole/Cement Volume Summary

Hole Volume = 73.97 M3

Cement Volume = 26.00 M3 (assuming 177.80 MM casing O.D.)

Computed from 2587.9 M to 655.8 M using data channel(s) HCAL CAL2

OP System Version: 10CO-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DBLT-FTB	OP10-KP1	DTC-H	10CO-306

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) (M) (W)	
20000	0

Caliper (HCAL) (MM)	
125	375

Gamma Ray (GR) (GAPI)		Tool/Tot. Drag From CGT to STIA		
0	150		1950	2950

Caliper 2 (CAL2) (MM)		Cable Drag From STIA to STIT	Std. Res. Formation Pe (PEFZ) (---)		Density Correction (HDRA) (K/M3)	
125	375	0	0	19.450		-50

Bit Size (BS) (MM)		Stuck Stretch (STIT)	NPOR for LIME (NPOR_LIM) (V/V)	
125	375	0 (M) 20	0.45	-0.15

MAIN PASS: REAL-TIME HOLE/CEMENT VOLUMES

GR

CAL2

BS

TENS

STIA

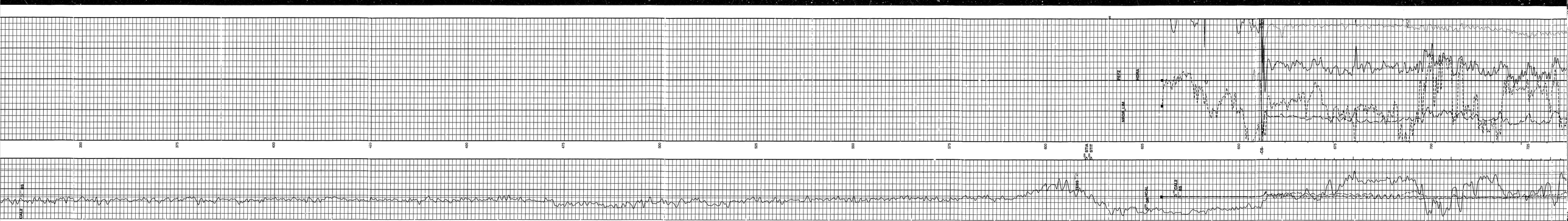
STIT

PEFZ

NPOR_LIM

HDRA

RHOB


PE/Z
KSKAL
HIGH LIM
STA
STIT
STRS
CALF
SS
SHIN CAL
CALS
SS
350
375
400
425
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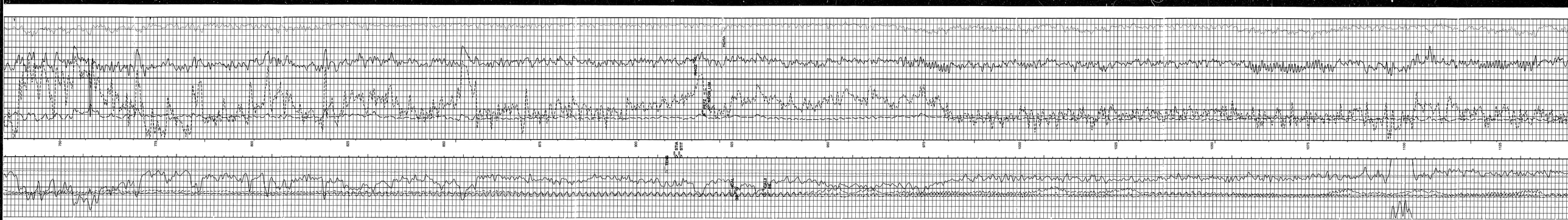
600
625
650
675
700
725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775
800
825
850
875
900
925
950
975
1000
1025
1050
1075
1100
1125
RHOB
NPHI
PEF
HROM_LIM
BTIA
BTIT
TCMR
CGR
CGTH
CGUR
CGTH

HORA
PHASE
PHASE LIM
1150
1175
1200
1225
1250
1275
1300
1325
1350
1375
1400
1425
1450
1475
1500
1525
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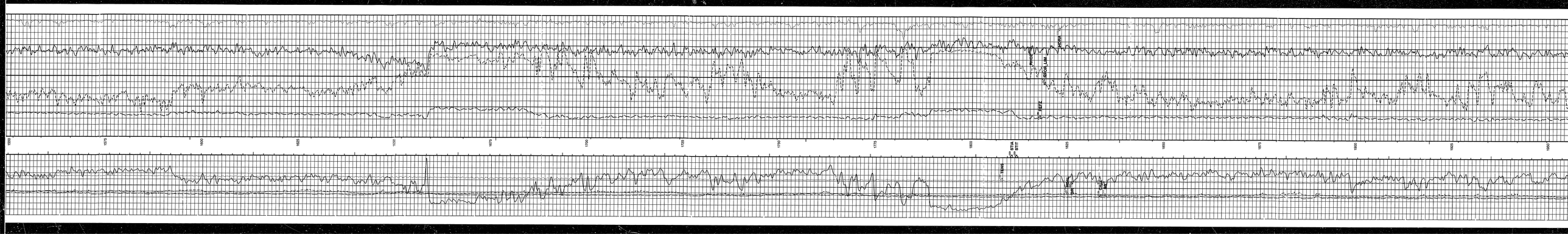
HCRA
GRR
CALC
RR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1575
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1675
1700
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1775
1800
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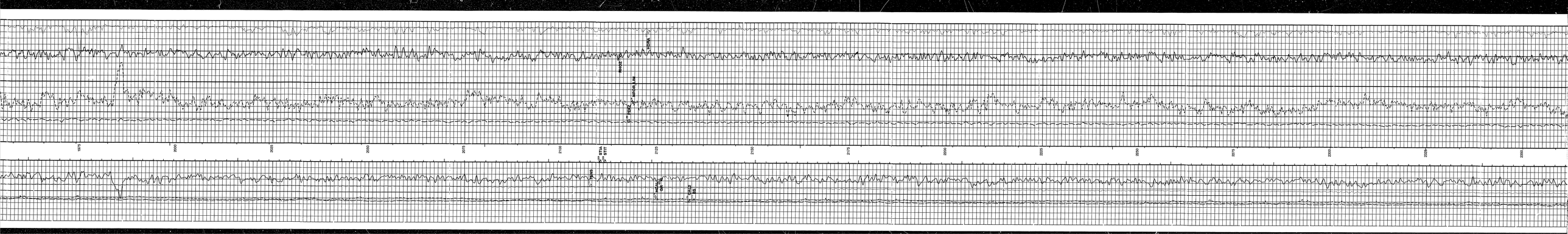
1925
1950
PWAVE
QRSOF LIM
PEAK
STIA
STIT
TRNE
PEAK
QRS
TRNE


1975
2000
2025
2050
2075
2100
2125
2150
2175
2200
2225
2250
2275
2300
2325
2350
TOP MIDDLE LIME
TOP BASAL LIME
TOP DEVONIAN
TOP SILURIAN
TOP ORDOVICIAN

BS Size (BS) (MM) 125 375

Stuck Sketch (STIT) 0 (M) 30 0.45

NPOR for LIME (NPOR_LIM) (V/V) 0.15 -0.15

Caliper 2 (CAL2) (MM) 125 375

Cable Drag From STIA to STIT 0 375

Std. Res. Formation Pe (PEFZ) (---) 0 10 400

Density Correction (HDRA) (K/M3) -50 50

Gamma Ray (GR) (GAPI) 0 150

Tool Tot. Drag From 2DT to STIA 1950 1950

Std. Res. Formation Density (RHOZ) (K/M3) 1950 2950

Caliper (HCAL) (MM) 125 375

Tension (TENS) 20000 (N) 0

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
HILTB-PTB: High resolution Integrated Logging Tool-OTS		
BHPL	Borehole Liquid Type	OIL
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	NO
CHCO	Borehole Compressibleness Correction Option	NO
DHC	Density Hole Correction	BS
FSCL	Formation Salinity	-50000 PPM
GDCO	Geothermal Gradient Correction Option	NO
GDDV	Average Angular Deviation of Borehole from Normal	0.018227 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
HCCO	Hole Size Correction Option	YES
MCCO	Mud Cake Correction Option	NO
MCGS	Mud Cake Status	NONE
MWCO	Mud Weight Correction Option	NO
NAPC	HNGO APS Activation Correction	GST
NHCO	HNGO Hole Corrections	NOBASE
NPMI	HNGO Processing Mode	Shifted
NSCO	HNGO Depth Sampling Rate	30.4 MM
RMCO	Mud Resistivity Correction Option	NO
STAT	Standoff Data Source	SCDC
SOCN	Standoff Distance	3.175 MM
SOCO	Standoff Correction Option	YES
HOLEV: Integrated Hole Volume Process		
BHS	Borehole Status	OPEN
CSD	Future Casing (Outer) Diameter	177.8 MM
GDDV	Average Angular Deviation of Borehole from Normal	DEG
GGRD	Geothermal Gradient	0.018227 DC/M
HVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2
STI: Stuck Tool Indicator		
LSFD	Trigger for MAXIS First Reading Label	TDL
STHT	STI Stuck Threshold	1.524 M
TDD	Total Depth - Driller	2586.00 M
TDL	Total Depth - Logger	2586.00 M
System and Miscellaneous		
BS	Bit Size	215.900 MM
CSAL	Casing Salinity	-50000.00 PPM
CWEI	Current Casing Size	244.500 MM
CWEI	Casing Weight	69.00 KG/M
DFD	Drilling Fluid Density	625.00 K/M3
DOFF	Depth Offset for Recent Analysis	0.0 M
MATR	Matrix Density for Recent Analysis	2650.00 KG/C
MHFS	Resistivity of Mud Filtrate Sample	-50000.0000 OHMM
TD	Total Depth	2586 M

Format: PORO_S_LIM Vertical Scale: 1/240 Graphics File Created: 13-Feb-2003 23:55

OP System Version: 10C0-306

MCM

HILTB-PTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-PTB	OP10-KP1	DTC-H	10C0-306

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006.UP	FN:13	PRODUCER	13-Feb-2003 23:55
REDUCED	AIT_TLD_MCFL_CNL_006.UP	FN:14	PRODUCER	13-Feb-2003 23:55

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007.PUP	FN:11	PRODUCER	13-Feb-2003 23:53	2693.4 M	2490.7 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006.UP	FN:13	PRODUCER	13-Feb-2003 23:55
REDUCED	AIT_TLD_MCFL_CNL_006.UP	FN:14	PRODUCER	13-Feb-2003 23:55

OP System Version: 10C0-306

MCM

HILTB-PTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-PTB	OP10-KP1	DTC-H	10C0-306

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) 20000 (N) 0

HCAL_REP Curve (HCAL_REP) (MM) 125 375

RHOZ_REP Curve (RHOZ_REP) (K/M3) 1950 2950

GR_REP Curve (GR_REP) (GAPI) 0 150

PEFZ_REP Curve (PEFZ_REP) (---) 0 10 400

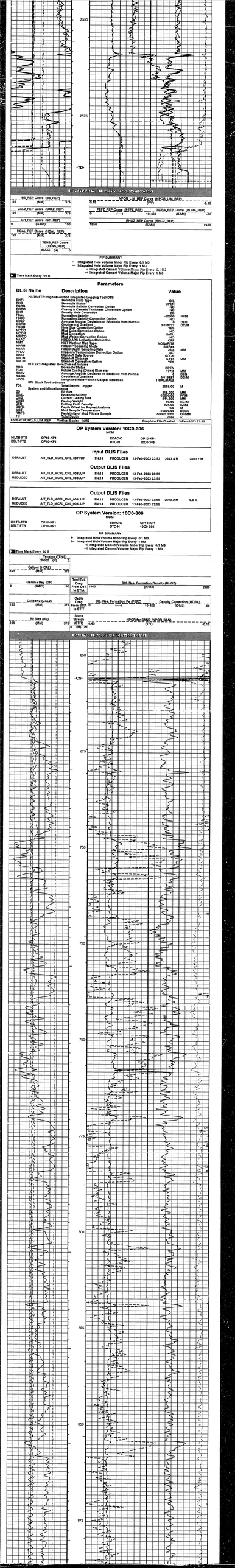
HDRA_REP Curve (HDRA_REP) (K/M3) -50 50

CAL2_REP Curve (CAL2_REP) (MM) 125 375

NPOR_LIM_REP Curve (NPOR_LIM_REP) (V/V) 0.45 -0.15

BS_REP Curve (BS_REP) (MM) 125 375

REPEAT ANALYSIS - BEFORE HOLE OPENED TO 8.5"



PIP SUMMARY

- Integrated Hole Volume Minor Plip Every 0.1 M3
- Integrated Hole Volume Major Plip Every 1 M3
- Integrated Cement Volume Minor Plip Every 0.1 M3
- Integrated Cement Volume Major Plip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
BHFL	HILTB-FTB: High resolution Integrated Logging Tool-DTS Borehole Fluid Type	OIL	
BHCO	Borehole Code	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CDCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GWV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HDCO	HRDD Density Correction Option	NO	
MCOS	Mud Cake Correction	NO	
MCOT	Mud Correction	NATU	
MSCO	Mud Salinity Correction Option	NO	
NACC	HRDD APS Activation Correction	NO	
NMT	HILT Nuclear Mud Type	NOBARITE	
NSAM	HRDD Depth Sampling	Stations	
NSAR	HRDD Depth Reference	BSL	MM
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCO	
SOCD	Standoff Distance	3.175	MM
SOCO	HCLIV: Integrated Hole Caliper Selection Option	YES	
BHS	Borehole Status	OPEN	
CDIV	Casing Nominal (Oder) Diameter	177.8	MM
GDIV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HVCB	Integrated Hole Volume Caliper Selection	HCAL/CALS	
TDL	STI: Stuck Tool Indicator Total Depth - Logger	2568.00	M
BS	System and Miscellaneous Bit Size	216.000	MM
BSAL	Borehole Salinity	-50000.000	PPM
CSIZ	Current Casing Size	244.500	MM
CWT	Casing Weight	59.50	KG/M
DFD	Drilling Fluid Density	999.50	KG/M
DOPL	Depth Offset for Repeat Analysis	0.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
MSTS	Temperature of Mud Filtrate Sample	-50000.0000	DEGM
TD	Total Depth	2568.00	M

Format: PORO_5_LIM_REP Vertical Scale: 1:240 Graphics File Created: 12-Feb-2003 23:55

OP System Version: 10C0-306

	MCM	
HILTB-FTB	EDAC-C	OP10-KP1
DSLT-FTB	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007PUP	FN:11	PRODUCER	13-Feb-2003 23:53	2593.4 M

2490.7 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55		
REDUCED	AIT_TLD_MCFL_CNL_006LUP	FN:14	PRODUCER	13-Feb-2003 23:55		

OP System Version: 10C0-306

	MCM	
HILTB-FTB	EDAC-C	OP10-KP1
DSLT-FTB	DTC-H	10C0-306

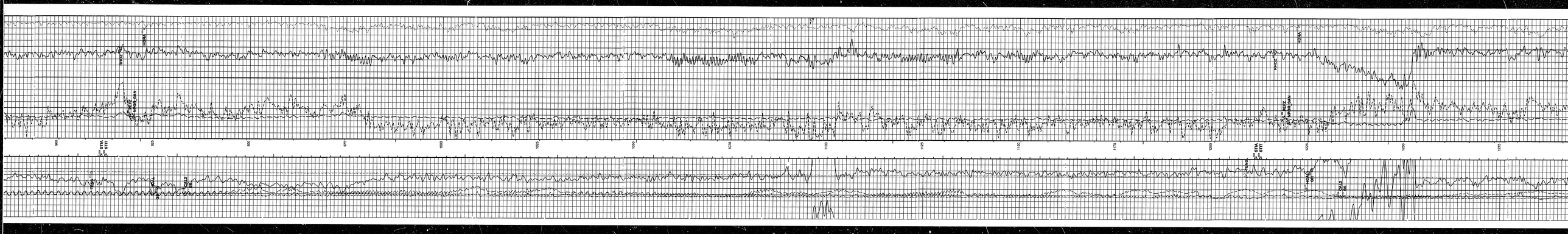
Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M	0.0 M
REDUCED	AIT_TLD_MCFL_CNL_004LUP	FN:14	PRODUCER	13-Feb-2003 23:55		

PIP SUMMARY

- Integrated Hole Volume Minor Plip Every 0.1 M3
- Integrated Hole Volume Major Plip Every 1 M3
- Integrated Cement Volume Minor Plip Every 0.1 M3
- Integrated Cement Volume Major Plip Every 1 M3

Time Mark Every 60 S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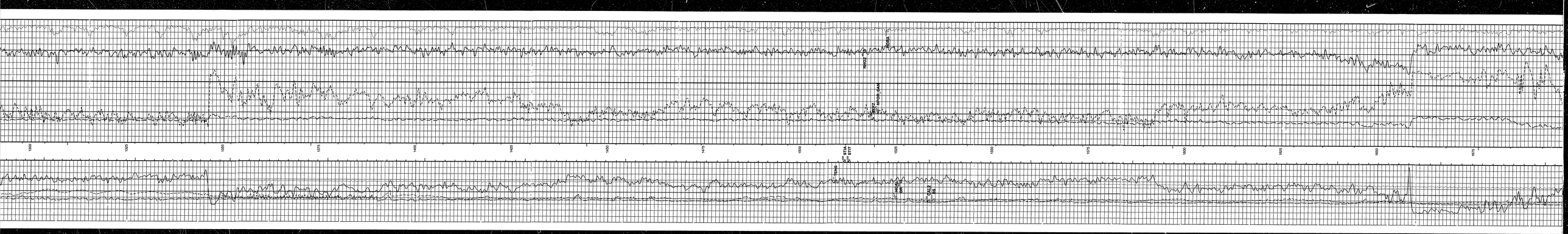
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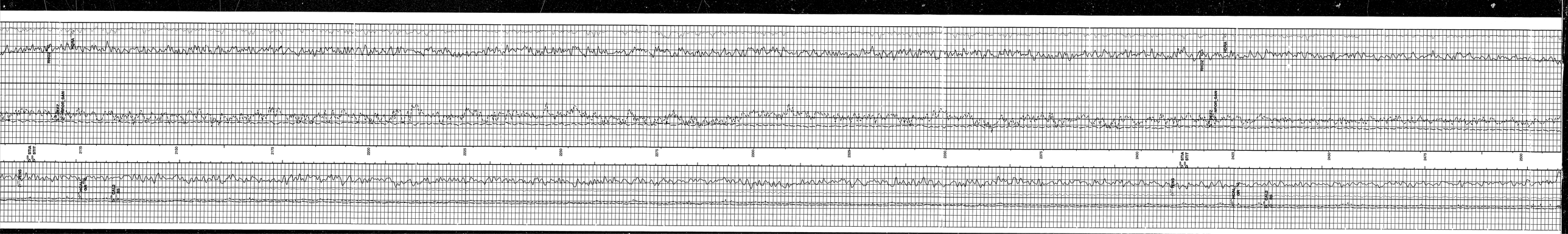
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APPROVAL TO DRILL A WELL

National Energy Board

Office national de l'énergie

Exploratory ☐ Delineation ☒

Development ☐ Service ☐

APPROVAL TO DRILL A WELL

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

Well Nar. ANADARKO ARROWHEAD RIVER I-75

Operator: ANADARKO CANADA CORPORATION Drilling Program No.:

Contractor: SHEHTAH DRILLING LTD. Interest Identifier:

Drilling Rig or Unit: 5E Estimated Well Cost: 4,200,000

Location-Unit: I Section: 75 Grid 60 40 122 45

Coordinates: Lat.: 60 34 42.3 N Long.: 122 58 32.6

Area: ARROWHEAD Field / Pool:

Elevation-KB/RT: 517.0 (ASL) GL / Seafloor: 512.0

Approx. Spud Date: JANUARY 2, 2003 Est. Days on Location: 45

Anticipated Total Depth: 2904mMD Target DEVONIAN SLAVE POINT

EVALUATION PROGRAM

Ten-metre sample: N/A

Five-metre sample: SURFACE CASING TO TD. VIALS: 2 Sets NEB: 1 Set ACC

Canned sample intervals: N/A BAGGED SAMPLES: 1 SET CLEANED & DRIED

Conventional cores at: N/A

Logs and Tests: See Other Information below

CASING AND CEMENTING PROGRAM

O.D. (mm)	Weight (kg/m)	Grade	Setting Depth (m KB)	Cementing
406.4 mm			+/- 25	Pressure cemented
244.5 mm	59.5	L80	+/- 600 m	46 T "G"
177.8 mm	38.7/43.2	L80	+/- 2530 m	28 T "1:1:2" 4.2 T "G"

B.O.P. Equipment: 1 ANNULAR PREVENTOR (279 mm x 34500 kPa), 1 SINGLE GATE RAM PREVENTER (279mm x 34500 kPa). 1 DOUBLE GATE RAM PREVENTER (279 mm x 34500 kPa). 1 CHOKE MANIFOLD (76 mm x 34500 kPa)

Other Information: Intermediate Casing Point #1: 600-2530m. AIT/GR/CNL/LDT/Sonic/DAC TD Logging Run: 2530-2904 CNL/LDT/AIT/DI-Pole Sonic/GR/DAC/FMI. SCALES 1:240 AND 1:600

Signed: *Responsible Officer* Title: DRILLING MANAGER

Name: Dave Brown Company: ANADARKO CANADA CORPORATION

Date: DECEMBER 13, 2002 Phone: (403) 231-0232

APPROVAL

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

Date: JAN 17/03 Signed: *Chief Conservation Officer*

File: 9211-A069-3-1

WID: 1981

UWI: 300I756040122450

Canada

WELL TERMINATION RECORD (with attachment)

526591

National Energy Board / Office national de l'énergie

2003 JUN 25 P 4:16

WELL TERMINATION RECORD

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

Well Name: ANADARKO ARROWHEAD RIVER I-75 Area: FORT LIARD

Grid Area: Field / Pool:

Interest 100% Final Lat 60 34 42.3 N Long: 122 58 32.6 W

Drilling SHEHTAH 5E Elevations- RT 517 (ASL GL/Seafloo 510

Spud Date: JANUARY 25, 2003 R.R.: March 20, 2003 Total Depth: 2878 m

O.D. (mm)	Weight (kg/m)	Grade	Depth Set (m KB)	Cement (m³)
244.5	59.5	L-80	655.3	29.5
178	38.7	L-80	2583.6	31.7
156	OPEN HOLE		2878	

PLUGGING PROGRAM

Approval of the following program was obtained by (person)

from (person) of the

by means of on N/A

Type of Plug	Interval (m KB)	Felt	Cement (m³)
N/A			

Lost Circulation/Overpressure Zones: N/A

Equipment left on Seafloor (Describe): N/A

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

Cores: Type: N'A Interval

Other Downhole Completion/Suspension N/A

CERTIFICATION

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

Signed: Title: Drilling Engineer

Name: Aidan Campbell Date: JUNE 24, 2003

Company: ANADARKO CANADA CORPORATION

Well Status

Suspended ☐

Completed ☐

Abandoned ☐

Acknowledged by:

Chief Conservation Officer

Date: July 3/03

File: 9211-A069-3-1

UWI: 300I756040122451 WID: 1981

Canada

Casing and Cementing Report

ll Name	ANADARKO ARROWHEAD RIVER I-75	**Well License Number**	1981
Event	ORIG COMPLETION 24/02/03	**Well License Date**	17/01/03
Objectives	DEVELOPMENT COMPLETION	**Field**	ARROWHEAD RIVER
Rig Name & No.	<no data> <no data>	**Event Final TMD / TVD**	2,878.00 m / 0.00 m
KB Elev.	517.90 m	**Sidetrack KO Depth / PB Depth**	0.00 m / 0.00 m
KB to GL	7.10 m **Deviation** D	**Event Final Well Plug Back Depth/PBTVD**	0.00 m / 0.00 m

Component Information	Depth	Equipment Diagram	Cement Interval
1 - CASING JOINT(S) - - 14.120 m			
47 - CASING JOINT(S) - - 640.460 m			
	0.28 m		
	0.56 m		
1 - CSG HANGER/ STUB CSG - - 1.490 m	7.45 m		
188 - CASING JOINT(S) - - 2,545.840 m	8.94 m		
	9.61 m		
	10.06 m		0.00 m - 655.00 m
	12.42 m		
	15.45 m		7.00 m - 2,200.00 m
1 - CASING FLOAT COLLAR - - 0.380 m	640.46 m		
1 - CASING JOINT(S) - - 13.990 m	640.84 m		
1 - CASING FLOAT SHOE - - 0.470 m	654.83 m		
	655.00 m		
	655.30 m		
	2,200.00 m		
	2,544.91 m		
	2,545.54 m		
	2,546.31 m		
	2,546.42 m		
	2,549.42 m		
	2,549.70 m		2,200.00 m - 2,990.27 m
1 - CASING FLOAT COLLAR - - 0.330 m	2,554.78 m		
2 - CASING JOINT(S) - - 28.280 m	2,555.11 m		
	2,559.32 m		
	2,559.52 m		
1 - CASING FLOAT SHOE - - 0.210 m	2,583.39 m		
	2,583.60 m		
	2,990.27 m		

FINAL WELL REPORT

Anadarko Arrowhead River I-75

Final Well Report

Anadarko Canada Corporation

N.E.B. COPY

Anadarko Arrowhead River I-75 – End of Well Report

60° 34' 42.3" N, 122° 58' 32.6" W

Table of Contents

- Well Summary

Appendices:

1. Drilling Operations Summary and Daily Drilling Reports
2. Final Wellbore Surveys
3. Completions Operations Summary
4. Well Testing Results

Introduction

Anadarko Arrowhead River I-75 was a directional exploration well targeting the Slave Point formation. It was drilled as part of Anadarko Canada Corporation's 2002-2003 winter drilling program near Fort Liard, NWT.

There were gas shows in tight fractured Sulfur Pt and dolomite porosity in the Landry. An inflatable bridge plug was set at 2862m in attempt to seal off possible wet zone. The well produced at a stabilized rate of 150E3m3/d with persistent formation water (6 bbl/MMcf) on slight decline. There were indications that produced water represents a volumetrically small or 'perched' water system

General Well Data

Wellname:	Anadarko Arrowhead River I-75
Key Drilling Data	
Rig:	Shehtah Wilson #5
Ground Elevation:	510.80m
KB	517.9m
TD	2878m MD (2822m TVD)
Spud	Jan 25, 2003
RR	March 20, 2003 (Completion run with rig)
Surface Hole:	311mm
Surface Casing	244.5mm @ 655.3m KB
Intermediate Hole:	215.9mm
Intermediate Casing	177.8mm @ 2583.6m KB
Production Casing	n/a
Terminal Hole	156 mm, open hole
Mud	invert (920 kg/m3) to Slave Point @ 2586m gel chem to TD (1100 kg/m3 @ TD)
Drill Breaks	Landry (2848-2950 mKB)
Lost Circulation	n/a
Gas Shows	Sulfur Point (2647, 2685-2735) minor Landry (2850-2862) diminishing to 0 at 2862
Key Completion Data	
Completion Date	March 20, 2003
Production String	88.9 mm tubing to surface 177.8mm Halliburton BSC permanent packer at 2554 mKB (ce) 60.3mm tail pipe to 2567.6 mKB
Stimulations	none
Production Tests	1 – 134 E3m3/d @ 7.8 MPa, 71.7 E3m3 gas, 21.3 m3 wtr, tp=10.5hrs 2 – 128 E3m3d/ @ 9.7 MPa, 33.8 E3m3 gas, 1.7 m3 wtr, tp=6.0 hrs 3 – 124 E3m3d/ @ 7.8 MPa, 557.9 E3m3 gas, 23.9 m3 wtr, tp=120 hrs ALL TESTS 633.4 E3m3 gas, 46.9 m3 wtr, tp=136.5 hrs
Final Flow	124 E3m3/d @ 7819 kPa fwhp (5 day main flow)
Gas Analysis	CO2=24.25%, H2S=0.18%, C1=71.78%, C2=0.05% gas gravity=0.80 (Mar 19)
Water Analysis	Final sample: 146,000 ppm and pH=7 (lab data pending)

See Appendix 1 for drilling details and Appendix 3 for completions details.

Summary of Drilling & Completions Operations

See Appendix 1 for drilling summary and drilling and completions daily reports.

Geological and Palaeontological Information

Sample Frequency	5 meters (210 m - 2878 m)
Distribution	4 sets of vials, 1 set of bags
Location	2 sets of vials and 1 set of bags to GSC, 3303 33rd Street N.W., Calgary, AB T2L 2A7 1 set retained by Anadarko Canada
Core	None
Lithology	Refer to the well Geological Report
Biostratigraphic Data	None

Directional Summary

Surface Location: 60° 34' 42.3" N, 122° 58' 32.6" W
Bottom Hole Location: 132.13mS, 302.32mE
Maximum Angle: 17.18°
Vertical Section: 329.93m
Azimuth: 113.61°

See Appendix 2 for detailed surveys and diagram.

Reservoir and Well Evaluation

Production Tests

The I-75 well was drilled during January and February 2003 The main hole was drilled with invert, then, after setting intermediate casing at the top of the Slave Point, the target section was drilled out with a gel-chem mud system and a 155.6mm hole size. Drilling was uneventful except for a minor drilling break and gas show in the Landry at about 2859m. The well was drilled to a final TD of 2878m KB (2822mKB TVD) in the Landry. Open hole logs, in corroboration with gas detector log, indicated fractured tight limestone over intervals 2638-47 and 2685-2735mKB, vuggy dolomite porosity with some fracturing in the Landry over interval 2850-62mKB, yielding to a probable water transition below 2862mKB.

In an effort to mitigate against free water inflow, an inflatable bridge plug was placed at 2862mKB above suspected wet porosity below 2865mKB.

The completion string, consisting of 88.9mm tubing to a wireline-set packer at 2545.5mKB (plugs in place), with 60.3mm tail joint to 2568mKB, was installed by the drilling rig. Some difficulty was encountered latching the tubing to the packer, due to LCM's.

A coiled tubing cleanout with nitrogen was required to remove wellbore debris to allow the plug to pulled from the packer on March 10. One hour from pulling the plug, the well reached a surface pressure of 19.93 MPa Fluid arrived at surface in 18 minutes, and the well achieved a flow of 157 E3m3/d at 8.9MPa flowing tubing pressure in 1.5 hours. The well was flowed a total of 8 hours to final rate of 134 E3m3/d at 7.8 MPa; a persistent water production 7-8m3/d accompanied the gas.

At this point, the well was shut in (March 11-14) in order to obtain a TDT log over the open hole interval. This was a calibration run (as open hole logs were obtained in this well) for the attempted TDT imaging of the O-38 open hole section.

Following logging, tandem recorders were set at 2558 mKB. The well was left shut in for 2 additional hours, flowed for 6 hours to a final rate of 128 E3m3/d at 9.65 MPa, then shut in for 24 hours in order to record an initial shut in buildup.

An extended single point flow test (120 hr), to final conditions of 122 E3m3/d gas, 4.9m3/d water at 7.66 MPa flowing tubing head pressure was conducted. The final water gas ratio was 7 bbl/MMcf, and the water displayed a salinity of 150,000 ppm and pH7.

In total, 633 E3m3 of gas and 18.42 m3 of water were produced over 182 hours.

For the duration of the test, formation water production was a concern. It is of interest to note, however that both the water production rate and the water gas ratio were gradually declining over the last 40+ hours of the flow test. This behavior is contrary to what might be expected in a "gas over aquifer" production scenario, which would normally lead to 'coning (where a (volumetrically) well-supported water leg advances quickly through the near-well pressure sink, continually reducing gas flow, resulting in a rapidly increasing water gas ratio). In contrast, in this case, the water system involved is of little volumetric significance, giving rise to a gradual reduction in produced water volumes and a declining water gas ratio. Existence of a 'perched' water accumulation could give rise to this production behavior.

See Appendix 4 for production test data.

Reservoir Pressure

No measured bottomhole pressure data is currently available. Reservoir pressure has been estimated from surface shut-in pressures to be 25,600 kPag. This estimate is subject to considerable error, however.

Once recorder data is retrieved (June 2003), these assumptions will be confirmed.

Pressure Transient Analysis

Pressure transient analysis of the drawdown data confirms that there are no boundaries within the radius of investigation.

Drawdown analysis for main flow March 15-20:

Note: Calculated Pwf data from tester's wellhead pressure data (using Fekete VirtuWell).

model	storage & skin, homogeneous, infinite reservoir
kh	9.1 mdm (@h=10m)
S	-3.6
Pi	25649 kPa
Rinv	190m

Full pressure transient analysis will be available once gauges are pulled in June 2003.

See Appendix 4 for pressure transient analysis.

Wireline Logging

Open hole logs previously submitted.

See Appendix 4 for through tubing neutron log of open hole section.

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Arrowhead River I-75

- Move in and rig up Shehtah Wilson #5 onto I-75 location on January 21, 2003.
- Spud surface hole at 00:01 on January 25, 2003.
- Drill 311 mm surface hole, with Water based mud (visc. 46, pH 9.5, density 1130 kg/m3), to 655 mMD. Problems: Mud rings 75 mMD, Sloughing 94 mMD, Pulling tight 210mMD-190 mMD and 630 mMD – 427 mMD. No other problems.
- Set 48 joints of 244.5 mm 59.53 kg/m L-80 LT&C surface casing with 39 tonne 0:1:0 Class "G" neat cement at 1901 kg/m3.
- Perform casing pressure test 1400 kPa low 21000 kPa high 10 minutes each.
- Drill out shoe, drill to 661 mMD and perform Leakoff test. Equivalent mud weight 2384 kg/m3.
- Drill 216 mm intermediate hole, with Oil Based Mud (visc. 40, density 920 kg/m3), to 2586 mMD. No problems.
- Run wireline to log. Run AIT/CNL/LDT/XY/ CAL/BHCS/GR.
- Run Gyro deviation survey.
- Set 191 joints of 177.8 mm 38.7 kg/m L-80 LT&C intermediate casing with 28 tonne 1:1:2 Class "G" lead cement + 0.5% CD-32 + 0.5% R-3 at 1682 kg/m3 and 7.3 tonne Thermal 40F Tail cement + 0.5% CD-32 + 0.4% FL-77 + 0.15% R-3 at 1876 kg/m3.
- Perform casing pressure test 1400 kPa low 21000 kPa high 10 minutes each.
- Drill out shoe, drill to 2591 mMD and perform Leakoff test. Equivalent mud weight 1121 kg/m3.
- Drill 156 mm main hole, with Water Based Mud (visc. 43, pH 11, density 1020 kg/m3), to2878 mMD. No problems.
- Run wireline to log. Run GR/AIT/DSI/HGNS/TLD/XY/CAL/FMI/DTC.
- Set inflatable open hole bridge plug at 2861 mMD.
- Wireline set Halliburton packer at 2554 mMD. Pressure test packer to 15000 kPa for 15 minutes.
- Rig turned over to completions.

Casing and Cementing Report

Well Name	ANADARKO ARROWHEAD RIVER I-75		**Well License Number**	1981	
Event	ORIG DRILLING	20/01/03	**Well License Date**	17/01/03	
Objectives	EXPLORATORY DRILLING		**Field**	ARROWHEAD RIVER	
Rig Name & No.	SHEHTAH	5E	**Event Final TMD / TVD**	2,878.00 m	/ 2,822.00 m
KB Elev.	517.90 m		**Sidetrack KO Depth / PB Depth**	0.00 m	/ 0.00 m
KB to GL	7.10 m	**Deviation** D	**Event Final Well Plug Back Depth/PBTVD**	0.00 m	/ 0.00 m

Component Information	Depth	Equipment Diagram	Cement Interval
1 - CASING JOINT(S) - - 14.120 m			
47 - CASING JOINT(S) - - 640.460 m			
1 - CSG HANGER/ STUB CSG - - 1.490 m	7.45 m		
188 - CASING JOINT(S) - - 2,545.840 m	8.94 m		
			0.00 m - 655.00 m
1 - CASING FLOAT COLLAR - - 0.380 m	640.46 m		
			7.00 m - 2,200.00 m
- CASING JOINT(S) - - 13.990 m	640.84 m		
1 - CASING FLOAT SHOE - - 0.470 m	654.83 m		
	655.00 m		
	655.30 m		
	2,200.00 m		
1 - CASING FLOAT COLLAR - - 0.330 m	2,554.78 m		
2 - CASING JOINT(S) - - 28.280 m	2,555.11 m		
			2,200.00 m - 2,990.27 m
1 - CASING FLOAT SHOE - - 0.210 m	2,583.39 m		
	2,583.60 m		
	2,990.27 m		

String Details

ANADARKO ARROWHEAD RIVER I-75 | **ORIG DRILLING** | **25/01/03** | **01/03/03**

String Name	Installed Date	String Status	Length	String Landed Depth	Suspension Point	String Depth Correction
SURFACE CASING	31/01/03	INSTALLED	655.3 m	655.3 m		0.0 m
INTERMEDIATE CA	15/02/03	INSTALLED	2,590.3 m	2,583.6 m		0.0 m

SURFACE CASING **Status:** INSTALLED **Install Date:** 31/01/03 **String Length:** 655.3 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
47	CASING JOINT(S)	640.460 m	0.00 mm	244.48 mm	L80	59.53 kg/m	0.00 m
1	CASING FLOAT COLLAR	0.380 m	0.00 mm	244.48 mm	L80	59.53 kg/m	640.46 m
1	CASING JOINT(S)	13.990 m	0.00 mm	244.48 mm	L80	59.53 kg/m	640.84 m
1	CASING FLOAT SHOE	0.470 m	0.00 mm	244.48 mm	L80	59.53 kg/m	654.83 m

INTERMEDIATE CASING **Status:** INSTALLED **Install Date:** 15/02/03 **String Length:** 2,590.3 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
1	CASING JOINT(S)	14.120 m	0.00 mm	177.80 mm	L80	38.69 kg/m	-6.67 m
1	CSG HANGER/ STUB CSG	1.490 m	0.00 mm	177.80 mm	L80	38.69 kg/m	7.45 m
188	CASING JOINT(S)	2,545.840 m	0.00 mm	177.80 mm	L80	38.69 kg/m	8.94 m
1	CASING FLOAT COLLAR	0.330 m	0.00 mm	177.80 mm	L80	38.69 kg/m	2,554.78 m
2	CASING JOINT(S)	28.280 m	0.00 mm	177.80 mm	L80	38.69 kg/m	2,555.11 m
1	CASING FLOAT SHOE	0.210 m	0.00 mm	177.80 mm	L80	38.69 kg/m	2,583.39 m

Cement Data

ANADARKO ARROWHEAD RIVER I-75 **ORIG DRILLING** **25/01/03** **01/03/03**

Job Type: Primary Date: 01/02/03 Contractor: B.J. SERVICES

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	TAIL	NEAT	CLASS G	0.00 m	655.00 m	29.5 m³

Job Type: Primary Date: 16/02/03 Contractor: B.J. SERVICES

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	LEAD	BENTONITE EXT	CLASS G	7.00 m	2,200.00 m	26.1 m³
SINGLE STAGE	TAIL	THERMAL 40F	G THERM40F	2,200.00 m	2,990.27 m	5.5 m³

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 — Spud Date: 01/25/2003
Event Name: ORIG DRILLING — Start: 01/20/2003 — End: 03/01/2003
Contractor Name: SHEHTAH — Rig Release: 03/01/2003 — Group:
Rig Name: SHEHTAH — Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
01/21/2003	07:30 - 19:30	12.00	24		MIRU	PINNED SUB & LEVELLED, CRANED DRAWWORKS & DERRICK ONTO SUB, OFF-LOADED TUBULARS, TRUCKS OFF LOCATION @ 18:00hrs **RIG MOVE STARTED 01/20/2003, SPOTTED MATTING, PIECED DERRICK TOGETHER, HAULED BUILDINGS** **DIRECTIONS: FROM JCT FT. LIARD, NWT -NE ON HWY #7, 34k TO 72km ROAD, RIGHT 33.5k, LEFT 1.4k** **ROAD USING LAD 2 RADIO FREQUENCY 158.94000**
01/22/2003	08:00 - 20:00	12.00	01	A	MIRU	RIG IN POWER LINES, GENERATOR RUNNING @ 09:00hrs, RIG IN STEAM LINES/ HAUL WATER, BOILER ON LINE @ 14:00hrs, RIG IN WATER LINES & CIRCULATING @ 16:00hrs, RIG TO/ INSPECT & RAISE DERRICK @ 19:00hrs, RIG IN FLOOR, SHUT DOWN FOR NIGHT
01/23/2003	08:00 - 14:30	6.50	01	A	MIRU	RIG UP TO SPUD, USING TWO CREWS
	14:30 - 16:00	1.50	21	A	MIRU	HOLD PRE-SPUD SAFETY MEETING w/ OFFICE- NEB- ON LOCATION PERSONNEL
	16:00 - 00:00	8.00	01	A	MIRU	RIG UP TO SPUD, SPOT RENTALS, WELD/ ADAPT 346mm DIVERTER TO FLARE TANK
01/24/2003	00:00 - 00:15	0.25	21	A	MIRU	SAFETY MEETING w/ CREW
	00:15 - 07:45	7.50	01	A	MIRU	RIG IN FLARE TANK TO DIVERTER, RIG TO SPUD
	07:45 - 08:00	0.25	07	A	MIRU	RIG SERVICE
	08:00 - 08:15	0.25	21	A	MIRU	SAFETY MEETING w/ CREW
	08:15 - 09:30	1.25	01	A	MIRU	PICK UP DIVERTER FLOW NIPPLE TO MODIFY
	09:30 - 09:45	0.25	07	A	MIRU	RIG SERVICE
	09:45 - 16:00	6.25	01	A	MIRU	RIG TO SPUD, PU SWIVEL/ KELLY/ KELLY SOCK
	16:00 - 20:00	4.00	01	A	MIRU	PICK UP 9" COLLAR, MAKE UP BHA, FUNCTION TEST DIVERTER & HCR VALVE
	20:00 - 20:15	0.25	07	A	MIRU	RIG SERVICE
	20:15 - 23:00	2.75	01	A	MIRU	RIG TO SPUD SURFACE HOLE
	23:00 - 23:15	0.25	15	A	MIRU	FUNCTION TEST DIVERTER & HCR VALVE
	23:15 - 23:30	0.25	15	A	MIRU	PRESSURE TEST DIVERTER/ HCR/ CONDUCTOR/ MUDLINES TO 1000kPa FOR 10min, OK
	23:30 - 23:45	0.25	21	A	MIRU	HOLD PRE-SPUD MEETING w/ CREW- RIG MANAGER- DRILLING FOREMAN
	23:45 - 00:00	0.25	05	A	MIRU	CONDITION MUD TO 55 s/l PRIOR TO SPUD
01/25/2003	00:00 - 02:00	2.00	02	B	DRLSUR	LEVEL KELLY BAR, DRILL 311mm HOLE 0- 42m **SPUD @ 00:01hrs, 03-01-25**
	02:00 - 02:15	0.25	07	A	DRLSUR	RIG SERVICE, FT DIVERTER
	02:15 - 02:30	0.25	10		DRLSUR	SURVEY
	02:30 - 04:15	1.75	02	B	DRLSUR	DRILL, 42- 70m
	04:15 - 04:30	0.25	10		DRLSUR	SURVEY
	04:30 - 05:15	0.75	02	B	DRLSUR	DRILL, 70-75
	05:15 - 08:45	3.50	05	A	DRLSUR	CIRC OUT MUDRING, UNPLUG FLOWLINE TWICE
	08:45 - 09:15	0.50	05	A	DRLSUR	CIRC HOLE CLEAN
	09:15 - 11:15	2.00	02	B	DRLSUR	DRILL, 75-94
	11:15 - 11:45	0.50	05	A	DRLSUR	CIRC, WORK CONNECTION
	11:45 - 13:15	1.50	05	A	DRLSUR	CIRC, CONDITION MUD/ HOLE, SLOUGHING
	13:15 - 14:00	0.75	02	B	DRLSUR	DRILL, 94-103
	14:00 - 14:15	0.25	07	A	DRLSUR	RIG SERVICE
	14:15 - 14:30	0.25	10		DRLSUR	SURVEY
	14:30 - 16:45	2.25	02	B	DRLSUR	DRILL, 103-131
	16:45 - 17:00	0.25	10		DRLSUR	SURVEY
	17:00 - 19:45	2.75	02	B	DRLSUR	DRILL, 131-159

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 — Spud Date: 01/25/2003
Event Name: ORIG DRILLING — Start: 01/20/2003 — End: 03/01/2003
Contractor Name: SHEHTAH — Rig Release: 03/01/2003 — Group:
Rig Name: SHEHTAH — Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
01/25/2003	19:45 - 20:00	0.25	10		DRLSUR	SURVEY
	20:00 - 22:30	2.50	02	B	DRLSUR	DRILL, 159-187
	22:30 - 22:45	0.25	07	A	DRLSUR	RIG SERVICE, FT DIVERTER
	22:45 - 23:00	0.25	10		DRLSUR	SURVEY
	23:00 - 00:00	1.00	02	B	DRLSUR	DRILL 311mm HOLE, 187-196
01/26/2003	00:00 - 01:45	1.75	02	B	DRLSUR	DRILL 311mm HOLE, 196-214
	01:45 - 02:00	0.25	10		DRLSUR	SURVEY
	02:00 - 04:30	2.50	02	B	DRLSUR	DRILL, 214-242
	04:30 - 04:45	0.25	10		DRLSUR	SURVEY
	04:45 - 05:15	0.50	05	K	DRLSUR	CIRC PRIOR TO BIT TRIP
	05:15 - 08:30	3.25	06	A	DRLSUR	ROUND TRIP,POOH w/ BIT #1A, STRAP +1.03m, TIGHT 210-190, RIH w/ BIT #2A TO 130m
	08:30 - 08:45	0.25	05	A	DRLSUR	WASH THROUGH 130-150
	08:45 - 09:15	0.50	06	A	DRLSUR	RIH TO BOTTOM
	09:15 - 15:30	6.25	02	B	DRLSUR	DRILL, 242-299
	15:30 - 15:45	0.25	07	A	DRLSUR	RIG SERVICE
	15:45 - 19:15	3.50	02	B	DRLSUR	DRILL, 299-335
	19:15 - 20:00	0.75	10		DRLSUR	ACCUMED SURVEY TIME
	20:00 - 23:00	3.00	02	B	DRLSUR	DRILL, 335-356
	23:00 - 23:15	0.25	07	A	DRLSUR	RIG SERVICE, FT DIVERTER
	23:15 - 23:30	0.25	10		DRLSUR	SURVEY
	23:30 - 00:00	0.50	02	B	DRLSUR	DRILL, 356-358
01/27/2003	00:00 - 00:15	0.25	07	A	DRLSUR	RIG SERVICE, CHECK BRAKE ASSEMBLY
	00:15 - 04:30	4.25	02	B	DRLSUR	DRILL 311mm HOLE, 358-384
	04:30 - 04:45	0.25	10		DRLSUR	SURVEY, .75d
	04:45 - 09:15	4.50	02	B	DRLSUR	DRILL, 384-413
	09:15 - 09:30	0.25	10		DRLSUR	SURVEY, 1.5d
	09:30 - 10:00	0.50	05	K	DRLSUR	CIRC BOTTOMS UP
	10:00 - 12:30	2.50	06	A	DRLSUR	POOH, PUMP OUT SGLS 390-356
	12:30 - 12:45	0.25	05	A	DRLSUR	CIRC HOLE CLEAN
	12:45 - 16:00	3.25	06	A	DRLSUR	POOH, PUMP OUT SGLS 356-298, PULL BHA
	16:00 - 16:15	0.25	07	A	DRLSUR	RIG SERVICE, FT ANNULAR DIVERTER, 12sec TO CLOSE
	16:15 - 20:45	4.50	06	A	DRLSUR	RIH w/ BIT #3A, WASH/ REAM TO BOTTOM 168-413
	20:45 - 23:00	2.25	02	B	DRLSUR	DRILL 311mm HOLE, 413-431
	23:00 - 23:15	0.25	10		DRLSUR	SURVEY, 1.5d
	23:15 - 00:00	0.75	02	B	DRLSUR	DRILL, 431-441
01/28/2003	00:00 - 01:45	1.75	02	B	DRLSUR	DRILL 311mm SURFACE HOLE, 441-450
	01:45 - 02:00	0.25	07	A	DRLSUR	RIG SERVICE
	02:00 - 07:30	5.50	02	B	DRLSUR	DRILL, 450-485
	07:30 - 08:00	0.50	10		DRLSUR	ACCUMED SURVEY TIME
	08:00 - 08:45	0.75	02	B	DRLSUR	DRILL, 485-488
	08:45 - 09:00	0.25	07	A	DRLSUR	RIG SERVICE, FT DIVERTER, FLOW CHECK
	09:00 - 09:15	0.25	10		DRLSUR	SURVEY
	09:15 - 09:45	0.50	05	K	DRLSUR	CIRC BOTTOMS UP/ HOLE CLEAN
	09:45 - 14:15	4.50	06	J	DRLSUR	POOH w/ BIT #3A
	14:15 - 20:00	5.75	06	J	DRLSUR	TRIP IN HOLE,PU/ MU SQUARE DRILLING MOTOR, RIH w/ BIT #3A,WASH/ REAM, 251-370
	20:00 - 20:15	0.25	07	A	DRLSUR	RIG SERVICE
	20:15 - 23:15	3.00	06	J	DRLSUR	WASH/ REAM, 370-488
	23:15 - 00:00	0.75	02	B	DRLSUR	DRILL 311mm HOLE, 488-492
01/29/2003	00:00 - 04:45	4.75	02	B	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 492 - 527 M.
	04:45 - 05:00	0.25	07	A	DRLSUR	RIG SERVICE
	05:00 - 07:00	2.00	02	B	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 527 - 545 M.

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
01/29/2003	07:00 - 08:00	1.00	10		DRLSUR	ACCUMULATED SURVEY TIME
	08:00 - 18:00	10.00	02	B	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 545 - 630 M. WIPER TRIP POINT.
	18:00 - 18:45	0.75	10		DRLSUR	DEVIATION SURVEYS W/ TOTCO: ACCUMULATED TIME.
	18:45 - 19:00	0.25	07	A	DRLSUR	RIG SERVICE. FUNCTION DIVERTER
	19:00 - 19:30	0.50	05	K	DRLSUR	CIRCULATE, CONDITION HOLE AND MUD FOR WIPER TRIP TO SURFACE.
	19:30 - 20:00	0.50	06	H	DRLSUR	FLOW CHECK @ 630 M. TRIP OUT TO 563 M. HOLE TIGHT, ALLOWED UP TO 10,000 DAN OVERPULL.
	20:00 - 20:15	0.25	07	A	DRLSUR	RIG SERVICE
	20:15 - 00:00	3.75	06	H	DRLSUR	TRIP OUT, PICK UP KELLY, CIRCULATE AND PUMP OUT SINGLES F/ 563 - 427 M.
01/30/2003	00:00 - 03:45	3.75	06	J	DRLSUR	PUMP OUT SINGLES F/ 427 - 238 M. HOLE DRAG: 8000 - 18000 DAN W/PUMP
	03:45 - 04:00	0.25	07	A	DRLSUR	RIG SERVICE
	04:00 - 04:45	0.75	06	J	DRLSUR	CONTINUE TO CIRCULATE SINGLES OUT TO 180 M. HOLE DRAG 2000 - 6000 DAN W/PUMP
	04:45 - 11:30	6.75	06	J	DRLSUR	ROUND TRIP,TRIP OUT OF HOLE, LAY DOWN SQUARE MUD MOTOR, MAKE UP STRING STABALIZER, RUN IN HOLE, PICK UP SINGLES OFF PIPE RACKS.
	11:30 - 12:15	0.75	03	A	DRLSUR	BREAK CIRCULATION @ 613 M. WASH TO BOTTOM. 6M. FILL
	12:15 - 15:15	3.00	02	B	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 630 - 655 M. TOTAL DEPTH FOR SURFACE HOLE.
	15:15 - 15:30	0.25	07	A	DRLSUR	RIG SERVICE, CHECK BREAK ASSEMBLY
	15:30 - 16:00	0.50	05	K	DRLSUR	CIRCULATE , CONDITION MUD AND HOLE FOR CASING.
	16:00 - 16:15	0.25	10		DRLSUR	SURVEY @ 655 M @ 2 DEG
	16:15 - 17:30	1.25	06	H	DRLSUR	FLOW CHECK @ 655 M. TRIP OUT TO HWDP. FLOW CHECK
	17:30 - 19:00	1.50	06	H	DRLSUR	PICK UP 24 SINGLES, RIH TO 655 M. HOLE GOOD.
	19:00 - 20:15	1.25	05	K	DRLSUR	CIRCULATE, CONDITION HOLE FOR CASING
	20:15 - 22:45	2.50	06	G	DRLSUR	FLOW CHECK, TRIP OUT TO RUN SURFACE CASING.
	22:45 - 23:00	0.25	07		DRLSUR	RIG SERVICE
	23:00 - 23:15	0.25	21	A	DRLSUR	HELD SAFETY MEETING W/ E-Z LAY PIPE HANDLERS PRIOR TO RIG UP LAY DOWN MACHINE.
	23:15 - 00:00	0.75	06	J	DRLSUR	LAY DOWN 228 MM DRILL COLLARS.
01/31/2003	00:00 - 01:30	1.50	12	A	DRLSUR	RIG UP HILL'S POWER TONGS, EZ-LAY PIPE HANDLERS.
	01:30 - 01:45	0.25	21	A	DRLSUR	HELD SAFETY MEETING W/ RIG CREW, HILL'S POWER TONGS, EZ-LAY PIPE HANDLERS.
	01:45 - 02:00	0.25	07		DRLSUR	RIG SERVICE
	02:00 - 08:30	6.50	12	A	DRLSUR	MAKE UP AND THREAD LOK FLOAT SHOE & FLOAT COLLAR, RUN SURFACE CASING: RAN: 48 JOINTS OF 244.5 MM, 59.53 KG/M, L-80, LT&C NEW ALGOMA CASING. TOTAL LENGTH: 655.3 M, LANDED @ 654.7 M. FLOAT COLLAR @ 639.86 M.
	08:30 - 11:30	3.00	12	C	DRLSUR	FLOW CHECK, CIRCULATE CASING, RIG OUT POWER TONGS, PIPE HANDLERS
	11:30 - 11:45	0.25	21	A	DRLSUR	HELD PRE-JOB SAFETY MEETING WITH IMPORT TOOL SUPERVISOR, RIG CREW.
	11:45 - 14:00	2.25	06	G	DRLSUR	RIG UP FLOOR, RUN 22 STANDS PLUS SINGLE INSIDE SURFACE CASING TO 638 M. (1.8 M ABOVE FLOAT COLLAR)
	14:00 - 14:45	0.75	12	C	DRLSUR	RIG UP PACK OFF HEAD AND IMPORT TYPE II CEMENT HEAD.
	14:45 - 15:00	0.25	07		DRLSUR	RIG SERVICE
	15:00 - 20:00	5.00	12	C	DRLSUR	CIRCULATE CASING THRU DRILL PIPE, CONDITION MUD FOR CEMENTING.
	20:00 - 20:15	0.25	21	A	DRLSUR	HELD SAFETY MEETING W/ BJ SERVICES PRIOR TO CEMENTING

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
01/31/2003	20:00 - 20:15	0.25	21	A	DRLSUR	CASING.
	20:15 - 22:15	2.00	12	C	DRLSUR	CEMENT SURFACE CASING WITH: 3.0 M3 WATER AHEAD, MIX AND PUMP 29.5 M3 0:1:0"G" NEAT CEMENT UNTIL WATER FLUSH TO SURFACE, STOP, DROP IMPORT PLUG, DISPLACE 4.7 M3 WATER THRU DRILL PIPE. PLUG DOWN @ 20:52 HRS. JAN. 31 / 03. BUMP PLUG W/ 3500 KPA OVER FINAL DISPLACEMENT PRESSURE TO 9400 KPA. BLEAD OFF PRESSURE, CHECK FLOATS, HELD OK. 2.0 M3 GOOD CEMENT RETURNS TO SURFACE CIRCULATE EXCESS CEMENT AND CONTAMINATED WATER FROM CASING. FLUSH DIVERTER W/ WATER.
	22:15 - 22:30	0.25	07		DRLSUR	RIG SERVICE
	22:30 - 23:30	1.00	12		DRLSUR	RIG OUT IMPORT TOOL PACK OFF ASSEMBLY AND CEMENT HEAD.
	23:30 - 00:00	0.50	13		DRLSUR	WOC. BLOW KELLY, MUD LINES. C LEAN TANKS.
02/01/2003	00:00 - 00:15	0.25	07	A	DRLSUR	RIG SERVICE
	00:15 - 02:15	2.00	13		DRLSUR	WOC, TRIP OUT 22 STANDS PLUS 1 SINGLE, CLEAN TANKS
	02:15 - 06:00	3.75	13		DRLSUR	WOC, NIPPLE DOWN DIVERTER, HCR, BLOUIE LINE, CLEAN TANKS
	06:00 - 08:00	2.00	13		DRLSUR	WOC, CLEAN AND FLUSH MUD PUMPS, CLEAN TANKS.
	08:00 - 08:15	0.25	07		DRLSUR	RIG SERVICE
	08:15 - 08:30	0.25	21	A	DRLSUR	SAFETY MEETING W/ CREW RE: NIPPLE UP BOP
	08:30 - 16:00	7.50	14	B	DRLSUR	LAY DOWN DIVERTER, CUT AND DRESS CASING, PRE-HEAT BOWL CASING, WELD CASING BOWL, POST-HEAT, WRAP W/ BLANKET, LET COOL, PRESSURE TEST CASING BOWL TO 7000 KPA, OK.
	16:00 - 00:00	8.00	14	B	DRLSUR	NIPPLE UP INTERMEDIATE SPOOL, DSA, BOP, HCR, RELIEF LINES, KILL LINES.
02/02/2003	00:00 - 02:30	2.50	14	B	DRLSUR	NIPPLE UP BOP, FLOW NIPPLE
	02:30 - 02:45	0.25	07		DRLSUR	RIG SERVICE
	02:45 - 03:00	0.25	21	A	DRLSUR	SAFETY MEETING W/ RIG CREW & INLAND PRESSURE TEST SERVICE.
	03:00 - 05:30	2.50	15	B	DRLSUR	PRESSURE TEST MANIFOLD VALVES, CHOKES TO 1400 KPA LOW / 21000 KPA HIGH
	05:30 - 16:00	10.50	15	A	DRLSUR	PRESSURE TEST STABBING VALVE, INSIDE BOP, HCR, KILL LINE VALVES, ANNULAR, UPPER LOWER PIPE RAMS, BLIND RAMS , RELIEF LINE VALVES, KELLY COCKS TO 1400 KPA LOW / 21000 KPA HIGH. ACCUMULATOR CHECK: 3 FUNCTION TEST. INSTALL WEAR BUSHING.
	16:00 - 16:15	0.25			DRLSUR	RIG SERVICE
	16:15 - 20:30	4.25	06	J	DRLSUR	TRIP IN HOLE,MAKE UP 7/8 MOTOR @ 1.5 DEG. BEND, DIRECTIONAL TOOLS, MAKE UP BHA, RUN IN HOLE TO 635m,RIG UP FLARE TANK WHILE TRIPPING IN
	20:30 - 20:45	0.25	07		DRLSUR	RIG SERVICE
	20:45 - 00:00	3.25	14		DRLSUR	MODIFY DEGASSER LINES AND RIG UP FLARE TANK. THAW PUMP SUCTION LINE.
02/03/2003	00:00 - 00:45	0.75	05	A	DRLSUR	DISPLACE CASING TO INVERT
	00:45 - 02:00	1.25	21	C	DRLSUR	CONDUCT CAODC RIG INSPECTION
	02:00 - 02:45	0.75	02	C	DRLSUR	DRILL OUT CEMENT, FLOAT COLLAR F/ 638 - 647 M
	02:45 - 03:00	0.25	07	A	DRLSUR	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE
	03:00 - 03:15	0.25	21	B	DRLSUR	SAFETY MEETING, HELD BOP DRILL W/ CREW, WELL SECURE IN 95 SECONDS
	03:15 - 03:45	0.50	02	C	DRLSUR	DRILL OUT CEMENT, FLOAT SHOE F/ 647 - 655 M.

Operations Summary Report

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Common Well Name: ARROWHEAD RIVER I-75 — Spud Date: 01/25/2003
Event Name: ORIG DRILLING — Start: 01/20/2003 — End: 03/01/2003
Contractor Name: SHEHTAH — Rig Release: 03/01/2003 — Group:
Rig Name: SHEHTAH — Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/03/2003	03:45 - 04:30	0.75	02	B	DRLIN1	DRILL 216 MM HOLE F/ 655 - 661 M.
	04:30 - 05:00	0.50	05	A	DRLIN1	CIRCULATE HOLE CLEAN.
	05:00 - 06:00	1.00	15	C	DRLIN1	CONDUCT FORMATION LEAK OFF TEST: HP @ 654.7 M: 5909 KPA / APPLIED SURFACE PRESSURE:9400 KPA TOTAL PRESSURE: 15309 KPA / LEAK OFF GRADIENT: 23.3 KPA/M.
	06:00 - 07:15	1.25	06	H	DRLIN1	LAY DOWN 24 EXCESS SINGLES, RUN IN 8 STANDS DP
	07:15 - 08:30	1.25	09		DRLIN1	SLIP AND CUT DRILLING LINE, CHECK BRAKE ASSEMBLY.
	08:30 - 08:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 8 SECONDS TO CLOSE
	08:45 - 09:45	1.00	02	B	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS / MOTOR F/ 661 - 666 M.
	09:45 - 10:00	0.25	21	B	DRLIN1	HELD BOP DRILL W/ CREW, FUNCTION ANNULAR: 12 SECONDS TO CLOSE, FUNCTION REMOTE CHOKE
	10:00 - 10:45	0.75	05	A	DRLIN1	CHANGE SHAKER SCREENS TO 84 MESH
	10:45 - 18:45	8.00	02	B	DRLIN1	ROTARY DRILL W/ DIR. TOOLS / MOTOR F/ 666 - 780 M.
	18:45 - 20:00	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	20:00 - 20:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 5 SECONDS TO CLOSE
	20:15 - 21:30	1.25	02	B	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS / MOTOR F/ 780 - 799 M.
	21:30 - 21:45	0.25	21	B	DRLIN1	BOP DRILL w/ RIG CREW
	21:45 - 22:00	0.25	06	J	DRLIN1	POOH 1std TO RETREIVE PIPE SCREEN
	22:00 - 22:15	0.25	21	A	DRLIN1	HANDLE 480l INVERT SPILL, CONTAIN w/SAWDUST BERM, SQUIGGY 380l TO CONTAINMENT DITCH, PUMP TO SHAKER BOX, COVER 48m2 w/SAWDUST TO SOAK UP RESIDUE
	22:15 - 23:15	1.00	02	B	DRLIN1	ROTARY DRILL W/ DIR. TOOLS / MOTOR F/ 799 - 834 M.
	23:15 - 00:00	0.75	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/04/2003	00:00 - 00:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 13 SECONDS TO CLOSE
	00:15 - 07:00	6.75	02	B	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS / MOTOR F/ 834 - 961 M.
	07:00 - 08:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	08:00 - 16:30	8.50	02	B	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS, F/ 961 - 1084 M. SLIDE 2 METERS FOR 2 SINGLES F/ 952 - 972 M TO CONTROL DEVIATION.
	16:30 - 16:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 10 SECONDS TO CLOSE
	16:45 - 18:15	1.50	02	B	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS F/ 1084 - 1123 M. CONTINUE TO SLIDE 2 METERS EVERY SECOND SINGLE F/ 1085 - 1123 M. TO CONTROL DEVIATION.
	18:15 - 20:00	1.75	10		DRLIN1	SURVEYS W/ MWD, ORIENT TOOL FACE (ACCUMULATED TIME)
	20:00 - 20:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 5 SECONDS TO CLOSE
	20:15 - 23:00	2.75	02	B	DRLIN1	ROTARY DRILL AHEAD W/ DIR TOOLS. F/ 1123 - 1174 M. CONTINUE TO SLIDE 2 METERS EVERY 2 SINGLES TO CONTROL DEVIATION
	23:00 - 23:15	0.25	21	B	DRLIN1	HELD SAFETY MEETING / BOP DRILL W/ CREW. WELL SECURE IN 98 SECONDS.
	23:15 - 00:00	0.75	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/05/2003	00:00 - 00:15	0.25	07		DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
	00:15 - 07:00	6.75	20	A	DRLIN1	ROTARY DRILL F/ 1174 - 1208 M. K.O.P. ORIENT DIRECTIONAL TOOLS, START BUILD SECTION F/ 1208 - 1251 M. SLIDE 2 - 4 M. W/ 12 - 15000 KPA DIFFERENTIAL THRU MOTOR.
	07:00 - 08:00	1.00	10		DRLIN1	SURVEYS W/ MWD. (ACCUMULATED TIME)
	08:00 - 16:45	8.75	20	A	DRLIN1	DIRECTIONAL DRILL F/ 1251 - 1303 M. BUILD INCLINATION F/ 3.6 TO 9.4 DEG, AZ @ 111.3

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/05/2003	16:45 - 17:00	0.25	07		DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS; 8 SECONDS TO CLOSE, FUNCTION REMOTE CHOKE
	17:00 - 18:45	1.75	20	A	DRLIN1	DIRECTIONAL DRILL F/ 1303 - 1322 M. CONTINUE BUILD INCLINATION TO 11.9 DEG. AZ @ 113.7
	18:45 - 20:00	1.25	10		DRLIN1	SURVEYS W/ MWD. (ACCUMULATED TIME)
	20:00 - 20:15	0.25	07		DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 6 SECONDS TO CLOSE
	20:15 - 23:00	2.75	20	A	DRLIN1	DIRECTIONAL DRILL F/ 1322 - 1351 MD. BUILD INCLINATION TO 14.6 DEG. 114.8 AZ
	23:00 - 00:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/06/2003	00:00 - 02:30	2.50	20	A	DRLIN1	DIR. DRILL F/ 1351 - 1370 MD. FINISH BUILD, MAINTAIN INCL. @ 14.3 DEG, AZ @ 115.4
	02:30 - 02:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE.
	02:45 - 04:45	2.00	20	A	DRLIN1	DIR. DRILL F/ 1370 - 1389 MD. MAINTAIN INCL. @ 14.6 DEG. / 116.7 AZ.
	04:45 - 05:30	0.75	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	05:30 - 06:30	1.00	20	A	DRLIN1	PUMP PRESSURE INCREASE, MWD FAILURE, UNABLE TO GET SURVEY.
	06:30 - 07:00	0.50	05	K	DRLIN1	CIRCULATE HOLE CLEAN
	07:00 - 11:00	4.00	06	J	DRLIN1	FLOW CHECK, PUMP PILL, TRIP OUT, FLOW CHECKS @ 1389, 1290, 862, DRILL COLLARS.
	11:00 - 12:15	1.25	06	J	DRLIN1	CHANGE OUT MWD AND MOTOR, XP 7/8 MOTOR SET @ 1.5 DEG
	12:15 - 15:30	3.25	06	J	DRLIN1	FLOW CHECK, RUN IN TO 685 M. TEST MWD
	15:30 - 15:45	0.25	07		DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
	15:45 - 19:30	3.75	20	A	DRLIN1	DIR. DRILL F/ 1389 - 1417 MD. MAINTAIN INCL. AND AZ.
	19:30 - 20:00	0.50	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	20:00 - 20:15	0.25	07		DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS; 7 SECONDS TO CLOSE
	20:15 - 23:00	2.75	20	A	DRLIN1	DIR. DRILL F/ 1417 - 1450 MD. MAINTAIN INCL. AND AZ.
	23:00 - 00:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/07/2003	00:00 - 02:15	2.25	20	A	DRLIN1	DIRECTIONAL DRILL AHEAD F/ 1450 - 1474 MD. MAINTAIN INCL. AND AZ.
	02:15 - 02:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
	02:30 - 06:45	4.25	20	A	DRLIN1	DIR. DRILL F/ 1474 - 1531 MD.
	06:45 - 08:00	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	08:00 - 18:30	10.50	20	A	DRLIN1	DIR. DRILL F/ 1531 - 1665 MD.
	18:30 - 18:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
	18:45 - 20:00	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	20:00 - 20:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
	20:15 - 23:00	2.75	20		DRLIN1	DIR. DRILL F/ 1665 - 1688 MD.
	23:00 - 00:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/08/2003	00:00 - 02:30	2.50	20	A	DRLIN1	DIR. DRILL AHEAD F/ 1688 - 1712 MD.
	02:30 - 02:45	0.25	07		DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
	02:45 - 06:45	4.00	20	A	DRLIN1	DIR. DRILL AHEAD F/ 1712 - 1769 MD.
	06:45 - 08:00	1.25	10		DRLIN1	SURVEYS W/ MWD, (ACCUMULATED TIME)
	08:00 - 18:00	10.00	20	A	DRLIN1	DIR. DRILL AHEAD F/ 1769 - 1826 MD
	18:00 - 18:15	0.25	07		DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
	18:15 - 18:45	0.50	20	A	DRLIN1	DIR. DRILL AHEAD F/ 1826 - 1845 MD
	18:45 - 20:00	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	S Code	Phase	Description of Operations
02/08/2003	20:00 - 22:45	2.75	20	A	DRLIN1	DIR. DRILL AHEAD F/ 1845 - 1893 MD.
	22:45 - 23:00	0.25	07		DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 8 SECONDS TO CLOSE
	23:00 - 00:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/09/2003	00:00 - 02:15	2.25	20	A	DRLIN1	DIRECTIONAL DRILL 216 MM HOLE F/ 1893 - 1912 MD
	02:15 - 02:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
	02:30 - 06:45	4.25	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 1912 - 1955 MD
	06:45 - 08:00	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	08:00 - 18:00	10.00	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 1955 - 2054 MD
	18:00 - 18:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 6 SECONDS TO CLOSE
	18:15 - 18:45	0.50	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2054 - 2083 MD
	18:45 - 20:00	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	20:00 - 22:45	2.75	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2083 - 2125 MD.
	22:45 - 23:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
	23:00 - 00:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/10/2003	00:00 - 00:15	0.25	21	B	DRLIN1	HELD BOP DRILL W/ CREW, WELL SECURE IN 98 SECONDS, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
	00:15 - 06:30	6.25	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2125 - 2187 MD
	06:30 - 06:45	0.25	07	A	DRLIN1	RIG SERVICE
	06:45 - 08:00	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	08:00 - 09:00	1.00	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2187 - 2206 MD
	09:00 - 09:15	0.25	21	B	DRLIN1	HELD BOP DRILL W/ CREW, FUNCTION ANNULAR, REMOTE CHOKE.
	09:15 - 13:45	4.50	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2206 - 2254 MD
	13:45 - 14:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
	14:00 - 15:00	1.00	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2254 - 2273 MD
	15:00 - 16:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	16:00 - 19:45	3.75	20	A	DRLIN1	DIR DRILL 216 MM HOLE F/ 2273 - 2301 MD
	19:45 - 20:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE, CHANGE OUT MUD SAVER VALVE
	20:00 - 23:00	3.00	20	A	DRLIN1	DIR DRILL 216 MM HOLE F/ 2301 - 2339 MD.
	23:00 - 00:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
02/11/2003	00:00 - 04:30	4.50	20	A	DRLIN1	DIRECTIONAL DRILL 216 MM HOLE F/ 2339 - 2387 MD
	04:30 - 04:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 12 SECONDS TO CLOSE
	04:45 - 07:00	2.25	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2387 - 2416 MD
	07:00 - 08:00	1.00	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	08:00 - 12:00	4.00	20	A	DRLIN1	DIR. DRILL AHEAD F/ 2416 - 2454 MD
	12:00 - 12:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
	12:15 - 17:00	4.75	20	A	DRLIN1	DIR. DRILL 216 MM HOLE F/ 2454 - 2511 MD.
	17:00 - 18:15	1.25	10		DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
	18:15 - 20:00	1.75	05	K	DRLIN1	CIRCULATE HOLE CLEAN
	20:00 - 21:45	1.75	06	H	DRLIN1	FLOW CHECK, PUMP PILL, WIPER TRIP 15 STANDS TO 2069 M. FLOW CHECK, RIH. HOLE GOOD
	21:45 - 22:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 14 SECONDS TO CLOSE
	22:00 - 00:00	2.00	05	K	DRLIN1	CIRCULATE, CONDITION HOLE PRIOR TO TRIP
02/12/2003	00:00 - 04:45	4.75	06	J	DRLIN1	FLOW CHECK @ 2511 M. PUMP PILL, TRIP OUT. FLOW CHECKS: 2411, DC'S, OUT OF HOLE
	04:45 - 05:00	0.25	07	B	DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS:
	05:00 - 05:15	0.25	21	A	DRLIN1	HELD SAFETY MEETING: LAY DOWN DIR. TOOLS

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/12/2003	05:15 - 06:30	1.25	06	J	DRLIN1	LAY DOWN DIRECTIONAL TOOLS
	06:30 - 08:30	2.00	06	J	DRLIN1	MAKE UP BIT, BHA, RUN IN BHA
	08:30 - 08:45	0.25	21	D	DRLIN1	SAFETY MEETING, CONDUCT 4 COMPONENT ACCUMULATOR FUNCTION TEST: SYSTEM PRESSURE BE-FOE FUNCTION: 19500 KPA / SYSTEM PRESSURE AFTER FUNCTION: 10250 KPA, RE-CHARGE TIME: 3 MIN. 4 SEC. PRE-CHARGE PRESSURE: 7000 KPA
	08:45 - 10:00	1.25	09		DRLIN1	SLIP AND CUT DRILLING LINE
	10:00 - 14:15	4.25	06	A	DRLIN1	RUN IN W/ BIT. FILL PIPE / FLOW CHECK @ 720, 1690 M.
	14:15 - 15:30	1.25	05	A	DRLIN1	BREAK CIRCULATION, WASH TO BOTTOM F/ 2472 - 2511 MD. .5 M. FILL
	15:30 - 15:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS; 7 SECONDS TO CLOSE, FLOW CHECK.
	15:45 - 16:45	1.00	05	A	DRLIN1	CIRCULATE BOTTOMS UP, RIG UP DDA NORTHERN SAFETY SERVICE EQUIPMENT
	16:45 - 20:00	3.25	20	B	DRLIN1	ROTARY DRILL 216 MM HOLE F/ 2511 - 2529 MD.
	20:00 - 20:45	0.75	05	A	DRLIN1	CIRCULATE UP SAMPLE
	20:45 - 21:00	0.25	21	A	DRLIN1	HELD SAFETY MEETING W/ DDA NORTHERN SAFETY SERVICES
	21:00 - 22:00	1.00	20	B	DRLIN1	ROTARY DRILL AHEAD F/ 2529 - 2540 MD
	22:00 - 23:00	1.00	05	A	DRLIN1	CIRCULATE UP 2540 SAMPLE
	23:00 - 23:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 13 SECONDS TO CLOSE
	23:15 - 00:00	0.75	20	B	DRLIN1	ROTARY DRILL F/ 2540 - 2548 MD.
02/13/2003	00:00 - 01:45	1.75	20	B	DRLIN1	ROTARY DRILL 216 MM HOLE F/ 2548 - 2562 MD
	01:45 - 03:00	1.25	05	A	DRLIN1	CIRCULATE SAMPLE UP @ 2562 MD
	03:00 - 04:00	1.00	20	B	DRLIN1	ROTARY DRILL AHEAD F/ 2562 - 2567 MD.
	04:00 - 05:15	1.25	05	A	DRLIN1	CIRCULATE UP SAMPLE @ 2567 M.
	05:15 - 05:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 13 SECONDS TO CLOSE
	05:30 - 06:45	1.25	20	B	DRLIN1	DRILL AHEAD F/ 2567 - 2572 MD
	06:45 - 08:00	1.25	05	A	DRLIN1	CIRCULATE UP SAMPLE @ 2572 MD. LOOKING FOR SLAVE POINT TOP
	08:00 - 08:15	0.25	21	A	DRLIN1	HELD SAFETY MEETING W/ DDA NORTHERN SAFETY SERVICES.
	08:15 - 12:00	3.75	20	B	DRLIN1	DRILL AHEAD F/ 2572 - 2586 MD. SLAVE POINT TOP @ 2579 MD.
	12:00 - 13:00	1.00	05	K	DRLIN1	CIRCULATE, CONDITION HOLE
	13:00 - 14:00	1.00	06	H	DRLIN1	FLOW CHECK, PUMP PILL, WIPER TRIP 5 STANDS TO 2429 MD. RUN IN TO BOTTOM, HOLE FILL: CALCULATED: .48 M3 / MEASURED .55 M3
	14:00 - 15:30	1.50	05	K	DRLIN1	CIRCULATE, CONDITION HOLE FOR LOGGING.
	15:30 - 21:00	5.50	06	C	DRLIN1	FLOW CHECK, PUMP PILL, TRIP OUT TO LOG. USE PIPE SPINNER. FLOW CHECKS @ 2573, 2429, 1403, AT BHA, OUT OF HOLE.
	21:00 - 21:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS: 9 SECONDS TO CLOSE
	21:15 - 21:45	0.50	21	C	DRLIN1	PULL WEAR BUSHING AND VISUALLY INSPECT, INSTALL WEAR BUSHING.
	21:45 - 00:00	2.25	11	A	DRLIN1	RIG UP SCHLUMBERGER, RUN IN W/ LOGS: LOGS ON BOTTOM @ 23:45 HRS. LOGGERS DEPTH: 2588 MD. RUN 1: AIT-CNL-TLD-GR-XY CAL-BHCS
02/14/2003	00:00 - 03:15	3.25	11	A	DRLIN1	LOG WELL W/ SCHLUMBERGER, LOGS OUT 02:30 HR. RIG OUT SCHLUMBERGER
	03:15 - 03:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS: 7 SECONDS TO CLOSE, REMOTE CHOKE
	03:30 - 08:00	4.50	06	H	DRLIN1	MAKE UP BIT 2RR, RUN IN HOLE, FLOW CHECKS / FILL PIPE @ 647, 1588 M.
	08:00 - 08:15	0.25	05	K	DRLIN1	BREAK CIRCULATION, WASH TO BOTTOM F/ 2568 - 2586 M.

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 — Spud Date: 01/25/2003
Event Name: ORIG DRILLING — Start: 01/20/2003 — End: 03/01/2003
Contractor Name: SHEHTAH — Rig Release: 03/01/2003 — Group:
Rig Name: SHEHTAH — Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/14/2003	08:15 - 12:45	4.50	05	K	DRLIN1	CIRCULATE, CONDITION HOLE.
	12:45 - 13:00	0.25	21	A	DRLIN1	HELD SAFETY MEETING W/ EZ-LAY PIPE HANDLERS, RIG CREW
	13:00 - 18:00	5.00	06	G	DRLIN1	DROP GYRO SURVEY TOOL, FLOW CHECK, PUMP PILL, LAY DOWN DRILL STRING, SURVEY EVERY 30 M.
	18:00 - 18:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
	18:15 - 20:00	1.75	06	G	DRLIN1	LAY DOWN DRILL STRING
	20:00 - 20:15	0.25	21	A	DRLIN1	CREW CHANGE, HELD SAFETY MEETING W/ EZ-LAY PIPE HANDLERS
	20:15 - 23:45	3.50	06	G	DRLIN1	LAY DOWN DRILL PIPE , DRILL COLLARS, RECOVER GYRO SURVEY TOOL, PULL WEAR BUSHING HOLE FILL: CALCULATED: 10.53 m3 / MEASURED: 11.26 m3
	23:45 - 00:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS; 7 SECONDS TO CLOSE
02/15/2003	00:00 - 02:00	2.00	14	B	DRLIN1	CHANGE OUT AND INSTALL 7" PIPE RAMS FOR CASING
	02:00 - 02:45	0.75	12	A	DRLIN1	RIG UP HILL'S POWER TONGS, RIG FLOOR.
	02:45 - 03:00	0.25	21	A	DRLIN1	HELD SAFETY MEETING W/ RIG CREW, HILL'S POWER TONGS
	03:00 - 03:30	0.50	15	A	DRLIN1	PRESSURE TEST 7" TOP PIPE RAMSTO 1500 KPA LOW, 5000 KPA HIGH
	03:30 - 03:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR
	03:45 - 08:00	4.25	12	A	DRLIN1	MAKE UP FLOAT SHOE AND FLOAT COLLAR, RUN 177.8 MM INTERMEDIATE CASING.
	08:00 - 08:15	0.25	21	A	DRLIN1	CREW CHANGE, HELD SAFETY MEETING W/ HILL; POWER TONGS, EZ-LAY PIPE HANDLERS.
	08:15 - 17:15	9.00	12	A	DRLIN1	RUN 177.8 MM INTERMEDIATE CASING. BREAK CIRCULATION @ 1000, 1800 M. RAN 191 JOINTS: 177.8 MM, 38.7 KG/M, L-80, LT&C NEW ALGOMA CASING.
	17:15 - 18:15	1.00	12	C	DRLIN1	BREAK CIRCULATION, CIRCULATE AND CONDITION HOLE.
	18:15 - 20:00	1.75	12	A	DRLIN1	RIG UP CASING HANGER ASSEMBLY, LAND CASING IN CASING HANGER SPOOL. CASING LANDED @ 2583.6 MD. W/ 75000 DAN TENSION. FLOAT COLLAR @ 2554.8 MD
	20:00 - 21:00	1.00	12	A	DRLIN1	RIG OUT POWER TONGS AND PIPE HANDLING EQUIPMENT
	21:00 - 22:00	1.00	12	C	DRLIN1	CIRCULATE CASING, HOLE CLEAN, RIG UP CEMENT HEAD.
	22:00 - 22:15	0.25	21	A	DRLIN1	HELD SAFETY MEETING W/ RIG CREW, BJ CEMENTING SERVICES.
	22:15 - 22:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 10 SECONDS TO CLOSE
	22:30 - 00:00	1.50	12	C	DRLIN1	PRESSURE TEST CEMENT LINES TO 40 MPA, CEMENT INTERMEDIATE CASING WITH: PRE-FLUSH/SPACER 6.0 M3 HT40 NT, 6.0 M3 NOWFLUSH, 3.0 M3 SCAVENGER AHEAD: LEAD: 28.0 TONNE 1:1:2 "G" + .5% CD-32 + .05% R-3. TAIL: 7.3 TONNE THERMAL 40F + .5% CD-32 + .4% FL-77 + .15% R-3 @ 900 LITRES / MIN. RATE. DROP TOP PLUG, START DISPACEMENT W/WATER @ 710 LITRES/MIN. 15 M3 INTO DISPLACEMENT VOLUME @ 24:00 HRS.
02/16/2003	00:00 - 02:30	2.50	12	C	DRLIN1	DISPLACE WITH TOTAL OF 51 M3 WATER, PLUG DOWN @ 00:49 HRS. BUMP PLUG WITH 3500 KPA OVER FINAL DISPLACEMENT PRESSURE TO 19000 KPA. CHECK FLOATS, HELD OK. 6.0 M3 HT40-NT AND APPROXIMATELTY 2.0 M3 NOWFLUSH BACK TO SURFACE, NO CEMENT RETURNS, CEMENT TOP ESTIMATED @ 470 M. RIG OUT BJ CEMENTING SERVICES.
	02:30 - 02:45	0.25	07	A	DRLIN1	RIG SERVICE
	02:45 - 07:00	4.25	23	B	DRLIN1	MAKE UP SEAL MANDRIL ASSEMBLY, INSTALL SEAL MANDRIL, ENERGIZE SEAL, PRESSURE TEST SEAL TO 34000 KPA FOR 15

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/16/2003	02:45 - 07:00	4.25	23	B	DRLIN1	MINUTES. TEST OK. TRANSFER TOTAL OF 181 M3 INVERT TO TANK FARM WHILE INSTALLING SEAL ASSEMBLY
	07:00 - 08:30	1.50	14	B	DRLIN1	CHANGE OUT TOP& BOTTOM PIPE RAMS TO 89 MM RAMS.
	08:30 - 08:45	0.25	07	A	DRLIN1	RIG SERVICE
	08:45 - 20:00	11.25	15	A	DRLIN1	PRESSURE TEST MANIFOLD 1400 KPA LOW / 34000 KPA HIGH, PRESSURE TEST UPPER / LOWER PIPE RAMS, BLIND RAMS, HCR, VALVES, KILL LINE LINE VALVES, INSIDE BOP, STAB VALVE 1400 KPA LOW / 34000 KPA HIGH. REPAIR LEAKS IN BOP FLANGE, PRESSURE TEST CASING TO 21000 KPA,
	20:00 - 20:30	0.50	21	D	DRLIN1	ACCUMULATOR FUNCTION TEST: ACCUMULATOR PRESSURE BEFORE FUNCTION: 19700 KPA / ACCUMULATOR PRESSURE AFTER FUNCTION: 10900 KPA / RE-CHARGE TIME: 2 MIN. 34 SECONDS / PRE-CHARGE PRESSURE: 7500 KPA.
	20:30 - 21:15	0.75	23	B	DRLIN1	INSTALL WEAR BUSHING.
	21:15 - 21:30	0.25	07	A	DRLIN1	RIG SERVICE
	21:30 - 22:30	1.00	15		DRLIN1	CHANGE OUT KELLY AND KELLY SOCK
	22:30 - 23:45	1.25	06		DRLIN1	RIG UP PIPE HANDLING MACHINE
	23:45 - 00:00	0.25	21	A	DRLIN1	HELD SAFETY MEETING W/ RIG CREW, EZ-LAY PIPE HANDLERS.
02/17/2003	00:00 - 00:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 14 SECONDS TO CLOSE
	00:15 - 05:45	5.50	06	A	DRLIN1	MAKE UP BHA, PICK UP 122 MM DRILL COLLARS, 89 MM DRILL PIPE, RUN IN HOLE. STRAP SAME
	05:45 - 06:45	1.00	06	A	DRLIN1	PICK UP KELLY, TORQUE CONNECTIONS, MAKE UP SAVER SUB, LOWER KELLY COCK
	06:45 - 07:45	1.00	06	A	DRLIN1	PICK UP 89 MM DRILL PIPE, STRAP SAME
	07:45 - 08:00	0.25	21	A	DRLIN1	CREW CHANGE, SAFETY MEETING W/ EZ-LAY PIPE HANDLERS
	08:00 - 15:30	7.50	06	A	DRLIN1	PICK UP 89 MM DRILL PIPE , STRAP. RUN IN TO 2246 M.
	15:30 - 15:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 4 SECONDS TO CLOSE
	15:45 - 16:45	1.00	09		DRLIN1	SLIP AND CUT DRILLING LINE
	16:45 - 19:00	2.25	06	A	DRLIN1	PICK UP 89 MM DRILL PIPE, STRAP, RIH TO 2526 M
	19:00 - 19:30	0.50	21	A	DRLIN1	HELD PRE-DRILL OUT SAFETY MEETING W/ RIG CREWS, DDA SAFETY, PERSONELL ON LOCATION. HELD BOP DRILL FOR SOUR OPERATIONS
	19:30 - 20:15	0.75	15		DRLIN1	PRESSURE TEST 114 MM KELLY, UPPER / LOWER KELLY COCKS: 1400 KPA LOW / 34000KPA HIGH
	20:15 - 20:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 4 SECONDS TO CLOSE
	20:30 - 23:00	2.50	02	C	DRLIN1	WASH TO 2555 M. DRILL OUT FLOAT COLLAR, CEMENT F/ 2555 - 2576 MD.
	23:00 - 00:00	1.00	05	A	DRLIN1	CIRCULATE TO CONDITION MUD PRIOR TO FINISH DRILLING OUT CEMENT AND FLOAT SHOE.
02/18/2003	00:00 - 00:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE
	00:15 - 00:30	0.25	21	B	DRLIN1	SAFETY MEETING, HELD BOP DRILL FOR SOUR OPERATIONS. WELL SECURE: 2 MIN. 30 SECONDS
	00:30 - 08:00	7.50	05	A	DRLIN1	CIRCULATE, CONDITON MUD PRIOR TO DRILLING OUT CEMENT
	08:00 - 08:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 4 SECONDS TO CLOSE
	08:15 - 10:30	2.25	05	A	DRLIN1	CIRCULATE TO CONDITION MUD PRIOR TO DRILLING OUT.
	10:30 - 10:45	0.25	21	A	DRLIN1	HELD SAFETY MEETING, REVIEW SOUR OPERATIONS W/ CREW PRIOR TO DRILLING OUT CEMENT.
	10:45 - 11:45	1.00	02	C	DRLIN1	DRILL OUT CEMENT F/ 2576 - 2586 M. SHOE @ 2583.5 MD.
	11:45 - 13:15	1.50	02	B	DRLPRO	DRILL 156 MM HOLE F/ 2586 - 2591 MD.

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 — Spud Date: 01/25/2003
Event Name: ORIG DRILLING — Start: 01/20/2003 — End: 03/01/2003
Contractor Name: SHEHTAH — Rig Release: 03/01/2003 — Group:
Rig Name: SHEHTAH — Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/18/2003	13:15 - 14:15	1.00	05	A	DRLPRO	CIRCULATE HOLE CLEAN PRIOR TO FLOT
	14:15 - 14:45	0.50	15	C	DRLPRO	F.L.O.T. HP @ CASING SHOE: 25527 KPA / APPLIED SURFACE PRESSURE: 2400 KPA (FORMATION LEAK OFF) TOTAL PRESSURE AT SHOE: 27937 KPA / PRESSURE GRADIENT: 11 KPA/M / EQUIVALENT MUD DENSITY: 1121 KG/M3
	14:45 - 20:00	5.25	02	B	DRLPRO	DRILL 156 MM HOLE F/ 2591 - 2615 MD.
	20:00 - 20:15	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 4 SECONDS TO CLOSE
	20:15 - 00:00	3.75	02	B	DRLPRO	DRILL 156 MM HOLE F/ 2615 - 2630 MD
02/19/2003	00:00 - 00:15	0.25	07	A	DRLPRO	RIG SERVICE F/T. HYDRILL C/ 17 SECS
	00:15 - 09:00	8.75	02	B	DRLPRO	DRILL 156MM HOLE F/ 2630 M TO 2662M
	09:00 - 09:15	0.25	07	A	DRLPRO	RIG SERVICE F/T UPPER PIPE RAMS 4 SECS TO CLOSE
	09:15 - 11:45	2.50	02	B	DRLPRO	DRILL 156MM HOLE F/ 2662M TO 2672M
	11:45 - 12:45	1.00	10		DRLPRO	DEV. SURVEY & 2655M @ INC. 1/2 1/8 AZM.106.9
	12:45 - 20:00	7.25	02	B	DRLPRO	DRILL 156MM HOLE F/ 2672M TO 2693M
	20:00 - 20:15	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION LOWER PIPE RAMS; 4 SECONDS TO CLOSE
	20:15 - 00:00	3.75	02	B	DRLPRO	DRILL 156 MM HOLE F/ 2693 - 2706 MD.
02/20/2003	00:00 - 00:15	0.25	07	A	DRLPRO	RIG SERVICE F/T HYDRILL CLOSE / 17 SECS
	00:15 - 10:30	10.25	02	B	DRLPRO	DRILL 156MM HOLE F/ 2706M TO 2738M
	10:30 - 10:45	0.25	07	A	DRLPRO	RIG SERVICE F/T UPPER PIPE RAMS CLOSE 4 SECS
	10:45 - 16:30	5.75	02	B	DRLPRO	DRILL 156MM HOLE F/ 2738M TO 2757M
	16:30 - 17:30	1.00	10		DRLPRO	DEV. SURVEY @ 2740M INC. 15 DEG. AZM. 101.9
	17:30 - 20:00	2.50	02	B	DRLPRO	DRILL 156 MM HOLE F/ 2757M TO 2765M
	20:00 - 20:15	0.25	07	A	DRLPRO	RIG SERVICE F/T LOWER PIPE RAMS CLOSE 4 SECONDS
	20:15 - 00:00	3.75	02	B	DRLPRO	DRILL 156 MM HOLE F/ 2765 - 2778 MD.
02/21/2003	00:00 - 00:15	0.25	07	A	DRLPRO	RIG SERVICE F/T. HYDRILL CLOSE 17 SECONDS
	00:15 - 08:00	7.75	02	B	DRLPRO	DRILL 156MM HOLE F/ 2778M TO 2804M
	08:00 - 08:15	0.25	07	A	DRLPRO	RIG SERVICE F/T. UPPER PIPE RAMS CLOSE 4 SECONDS
	08:15 - 20:00	11.75	02	B	DRLPRO	DRILL 156MM HOLE F/ 2804M TO 2842M
	20:00 - 20:15	0.25	07	A	DRLPRO	RIG SERVICE F/T. UPPER PIPE RAMS CLOSE 4 SECONDS
	20:15 - 22:30	2.25	02	B	DRLPRO	DRILL 156MM HOLE F/ 2842M TO 2850M
	22:30 - 00:00	1.50	05	K	DRLPRO	CIRCULATE SAMPLE, CONDITION HOLE.
02/22/2003	00:00 - 00:15	0.25	05	K	DRLPRO	CIRC. PRIOR WIPER TRIP
	00:15 - 00:30	0.25	07	A	DRLPRO	RIG SERVICE F/T. HYDRILL CLOSE17 SECONDS BLOW KELLY
	00:30 - 01:00	0.50	06	H	DRLPRO	WIPER TRIP TO 2790M FLOW CHECK @2850M,2790M, R.I.H.
	01:00 - 08:15	7.25	02	B	DRLPRO	DRILL 156MM HOLE F/ 2850M TO 2878M
	08:15 - 08:30	0.25	07	A	DRLPRO	RIG SERVICE F/T. UPPER PIPE RAMS 4SECONDS TO CLOSE
	08:30 - 09:15	0.75	05	I	DRLPRO	CIRC. SAMPLE
	09:15 - 10:15	1.00	10		DRLPRO	DEV. SURVEY @ 2864M INC.20 DEGREE AZM 96.9
	10:15 - 13:00	2.75	05	K	DRLPRO	CIRC. COND. MUD & HOLE, RAISE MUD DENSITY TO 1100 KG/M3
	13:00 - 15:15	2.25	06	H	DRLPRO	11 STD WIPER TRIP HOLE FILL CALCU..81m3 MEAS. .87m3 F.C./@2666M,2724M,2581M, / R.I.H.
	15:15 - 17:00	1.75	05	K	DRLPRO	CIRC. COND. MUD &HOLE, WIPER TRIP GAS: 7320 UNITS
	17:00 - 20:00	3.00	06	C	DRLPRO	FLOW CHECK, PUMP PILL, BLOW KELLY, TRIP OUT TO LOG. FLOW CHECKS @ 2866, 2724 M.
	20:00 - 20:15	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 4 SECONDS TO CLOSE
	20:15 - 00:00	3.75	06	C	DRLPRO	TRIP OUT TO LOG. FLOW CHECKS: 1584, 185, OUT OF HOLE. LAY DOWN MONEL, JARS, NB STAB S.L.M. TALLY: 2878.0 MD / STRAP: 2877.92 MD. / DIFF: .08 M HOLE FILL: CALCULATED: 7.38 M3 / MEASURED: 11.45 M3 / DIFF: + 4.07 M3

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/23/2003	00:00 - 00:15	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS: 4 SECONDS TO CLOSE
	00:15 - 00:30	0.25	21	A	DRLPRO	SAFETY MEETING W/ SCHLUMBERGER
	00:30 - 07:15	6.75	11	A	EVALPR	RIG UP SCHLUMBERGER, LOG WELL: RUN 1: AIT-DSI-HGNS-TLD-GR-XY CAL. LOGS ON BOTTOM @ 03:00 HR. LOGGERS DEPTH: 2874.5 MD.
	07:15 - 08:00	0.75	11	A	EVALPR	LOG W/ SCHLUMBERGER: RUN 2: FMI-GR-DTC.
	08:00 - 08:15	0.25	07	A	EVALPR	RIG SERVICE, FUNCTION BLIND RAMS: 4 SECONDS TO CLOSE
	08:15 - 14:00	5.75	11	A	EVALPR	LOG W/ SCHLUMBERGER: RUN 2: FMI-GR-DTC. LOGS ON BOTTOM @ 09:30 HR. DEPTH: 2869 MD.,RIG OUT LOGGERS
	14:00 - 19:30	5.50	06	A	EVALPR	TRIP IN HOLE, MAKE UP BIT &BIT SUB [RUN PORTED FLOAT] PICK UP JARS R.I.H. FILL PIPE 800M,1800M,2500M FLOW CHECK ON FILLS
	19:30 - 20:00	0.50	03	A	EVALPR	WASH & REAM F/ 2848M TO 2878M
	20:00 - 20:15	0.25	07	A	EVALPR	RIG SERVICE F/T. LOWER PIPE RAMS CLOSE 4 SECONDS
	20:15 - 22:15	2.00	05	K	EVALPR	CIRC. COND. MUD & HOLE
	22:15 - 00:00	1.75	06		EVALPR	FLOW CHECK, PUMP PILL, TRIP OUT OF HOLE, FLOW CHECKS @ 2866, 2722 M.
02/24/2003	00:00 - 00:15	0.25	07	A	EVALPR	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE
	00:15 - 00:30	0.25	21	B	EVALPR	HELD BOP DRILL, WELL SECURE IN 1 MIN. 35 SECONDS, SAFETY MEETING.
	00:30 - 03:45	3.25	06	H	EVALPR	TRIP OUT, FLOW CHECKS @ 1585, 169, OUT OF HOLE. HOLE FILL: CALCULATED: 8.66 M3 / MEASURED: 10.77 M3 FUNCTION BLIND RAMS OUT OF HOLE, 4 SECONDS TO CLOSE
	03:45 - 08:00	4.25	06		EVALPR	MAKE UP INFLATABLE PERMAMENT OPEN HOLE BRIDGE PLUG, RUN IN HOLE, DOUBLE STRAP
	08:00 - 08:15	0.25	07	A	EVALPR	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 4 SECONDS TO CLOSE
	08:15 - 14:00	5.75	06		EVALPR	RUN IN W/ BRIDGE PLUGTO 2841 M., FILL PIPE EVERY 400 METERS
	14:00 - 16:00	2.00	06		EVALPR	PICK UP SINGLE, KELLY, MEASURE IN TO 2861.0 M. (TOP OF BRIDGE PLUG ELEMENT) SET BRIDGE PLUG @ 2861.0 - 2862.37 MD. COME OFF BRIDGE PLUG.
	16:00 - 16:15	0.25	21	A	EVALPR	SAFETY MEETING, BOP DRILL W/ CREW:
	16:15 - 16:30	0.25	07	A	EVALPR	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 3 SECONDS TO CLOSE
	16:30 - 22:00	5.50	06		EVALPR	FLOW CHECK, PUMP PILL, BLOW KELLY. TRIP OUT, FLOW CHECKS @ 2790, 1565, OUT OF HOLE. HOLE FILL: CALCULATED: 8.11 M3 / MEASURED: 9.11 M3
	22:00 - 23:00	1.00	09		EVALPR	SLIP AND CUT DRILLING LINE
	23:00 - 00:00	1.00	22	D	EVALPR	WAIT ON CASING SCRAPER
02/25/2003	00:00 - 00:15	0.25	07	A	DRLPRO	RIG SERVICE, FT BLIND RAMS- 4sec
	00:15 - 00:30	0.25	21	A	DRLPRO	SAFETY MEETING w/ DDA NORTHERN SAFETY
	00:30 - 06:45	6.25	06	J	DRLPRO	RIH w/ CASING SCRAPER
	06:45 - 07:00	0.25	21	B	DRLPRO	BOP DRILL, MAN DOWN DRILL
	07:00 - 08:00	1.00	05	K	DRLPRO	CIRC BOTTOMS UP ON CASING SCRAPER RUN
	08:00 - 08:15	0.25	07	A	DRLPRO	RIG SERVICE, FT UPPER PIPE RAMS- 4sec
	08:15 - 15:15	7.00	05	K	DRLPRO	CIRC CASING SCRAPER,**WAIT ON LAYDOWN MACHINE**
	15:15 - 15:30	0.25	21	A	DRLPRO	SAFETY MEETING w/ E-Z LAY PIPE HANDLERS
	15:30 - 20:00	4.50	06	J	DRLPRO	LAY DOWN 89mm DP, HWDP, DC's & CASING SCRAPER
	20:00 - 20:15	0.25	21	A	DRLPRO	SAFETY MEETING w/ E-Z LAY PIPE HANDLERS
	20:15 - 20:30	0.25	07	A	DRLPRO	RIG SERVICE, FT LOWER PIPE RAMS- 4sec
	20:30 - 23:15	2.75	06	J	DRLPRO	LAY DOWN 89mm DP
	23:15 - 00:00	0.75	01	B	DRLPRO	BREAK DOWN KELLY BAR

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 01/25/2003
Event Name: ORIG DRILLING Start: 01/20/2003 End: 03/01/2003
Contractor Name: SHEHTAH Rig Release: 03/01/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/26/2003	00:00 - 00:15	0.25	07	A	DRLPRO	RIG SERVICE, FT ANNULARS- 22sec
	00:15 - 04:00	3.75	06	J	DRLPRO	RIH w/ 11 stds, LAYDOWN DP, HWDP & DC's
	04:00 - 04:30	0.50	23	B	DRLPRO	REMOVE WEAR BUSHING
	04:30 - 07:00	2.50	12	A	DRLPRO	STRAP TOP TIER TUBING, RIG IN TONG HAND w/ THREAD WASHING UNIT
	07:00 - 07:15	0.25	21	A	DRLPRO	SAFETY MEETING w/ TONG HAND/ LAYDOWN MACHINE/ THREAD COPS
	07:15 - 08:00	0.75	22	D	DRLPRO	W.O. CASING PACKER, CHANGE IN OPERATION
	08:00 - 08:15	0.25	07	A	DRLPRO	RIG SERVICE, FT BLIND RAMS- 6sec
	08:15 - 08:30	0.25	21	A	DRLPRO	SAFETY MEETING w/ WIRELINE UNIT **TURNED WELL OVER TO COMPLETIONS** ASKED TO PREPARE FOR GR/CCL RUN
	08:30 - 00:00	15.50	22	E	DRLPRO	SEE COMPLETIONS REPORTS
02/27/2003	00:00 - 00:00	24.00	22	E	EVALPR	SEE COMPLETIONS REPORTS
02/28/2003	00:00 - 17:30	17.50	22	E	DRLPRO	SEE COMPLETIONS REPORTS
	17:30 - 17:45	0.25	21	A	DRLPRO	SAFETY MEETING w/ RIG CREW & KERRY WILSON
	17:45 - 00:00	6.25	01	B	RDMO	TEAR OUT RIG TO MOVE TO F-56 LOCATION **RIG RELEASED @ 23:59 hrs; 2003-02-28** SOME RENTALS MOVED, OTHERS TOMORROW CRANE WORK TO COMMENCE SUNDAY MORNING
03/01/2003	00:00 - 00:15	0.25	07	A	RDMO	RIG SERVICE
	00:15 - 00:30	0.25	21	A	RDMO	SAFETY MEETING, RIGGING OUT
	00:30 - 08:00	7.50	01	B	RDMO	RIG OUT, MUD TANKS, PRE-FABS
	08:00 - 08:15	0.25	21	A	RDMO	SAFETY MEETING
	08:15 - 08:30	0.25	07	A	RDMO	RIG SERVICE, CHG BRASS INSERTS ON DRILL LINE ANCHOR
	08:30 - 11:30	3.00	01	B	RDMO	RIG OUT/ INSPECT/ LAYDOWN DERRICK @ 11:00 hrs
	11:30 - 00:00	12.50	01	B	RDMO	TEAR OUT TO MOVE, LOADING OUT RENTALS, COOL-DRAIN BOILER, TEAR OUT STEAM, WATER & POWER LINES, REMOVE SNOW & ICE

Anadarko Canada Corporation
Well Summary Report

Legal Name: ANADARKO ARROWHEAD RIVER I-75
Common Name: ARROWHEAD RIVER I-75

Well Location

Country: CANADA
API #: Well ID: State/Prov: NORTHWEST TERRITORIES County:
Location: 300/I- 75 Lat: 60° 34' Long: 122° 58'
Field Name: ARROWHEAD RIVER
Block: Slot No: Platform:
License No: 1981 License Date: 01/17/2003 Licensee: ACC
Spud Date/Time:01/25/2003 - 00:01 P&A Date:

Surface / Bottom Hole Coordinates

	Surface Location	Bottom Hole Location
Latitude:	60.57842	
Longitude:	-122.97572	
Distance North/(-)South:	(m)	(m)
Distance East/(-)West:	(m)	(m)
Measured From:	SURFACE CO-ORDINATES	

Reference Elevations

Permanent Datum: KELLY BUSHING Datum Elev: 517.90 (m)
Kelly Bushing: 517.90 (m) Water TMD: 100.00 (m)
Ground Level/Mudline:510.80 (m) Measured Depth:
Casing Flange: 510.94 (m) Date Measured: TVD:
Tubing Hanger: Date Measured: Plugback TMD:
KB to Datum: Fill: -1.20 (m)
KB to GL/Mudline: 7.10 (m) / 6.96 (m) Deviated Well: D

Operator / Well Information

Operator: ANADARKO CANADA CORPORATION
Region: FORT ST. JOHN Division: C-55 District: NWT
Well Type: NEW Status:
Geological Play:
Authorized TVD: 2,904.00 (m) Authorized TMD: (m)

Event Summary

Event Type	Objective	Start Date	End Date	Auth. Cost	Last Est.
ORIG COMPLETION	DEVELOPMENT COMPLETION	02/24/2003	03/20/2003		
ORIG DRILLING	EXPLORATORY DRILLING	01/20/2003	03/01/2003		01/21/2003

Anadarko Canada Corporation
Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/21/2003 | Report: 1 | DFS: | DOL: 1.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:		TVD:		Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:		Cum Cost:		AFE Est:	4,288,464	AFE No.:	400792

Current Status: PREPARING TO RIG UP

24hr Forecast: RIG IN POWER, STEAM & WATER, RIG TO & STAND DERRICK

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
07:30 - 19:30	12.00	24	P	MIRU	PINNED SUB & LEVELLED, CRANED DRAWWORKS & DERRICK ONTO SUB, OFF-LOADED TUBULARS, TRUCKS OFF LOCATION @ 18:00hrs **RIG MOVE STARTED 01/20/2003, SPOTTED MATTING, PIECED DERRICK TOGETHER, HAULED BUILDINGS** **DIRECTIONS: FROM JCT FT. LIARD, NWT -NE ON HWY #7, 34k TO 72km ROAD, RIGHT 33.5k, LEFT 1.4k** **ROAD USING LAD 2 RADIO FREQUENCY 158.94000** **DAILY OPERATIONAL COMMENTS(24hr Summary):** PINNED SUB, PLACED DRAWWORKS & DERRICK w/CRANES, SPOTTED BUILDINGS, OFF-LOADED TUBULARS

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/21/2003 Report: 1 DFS: DOL: 1.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:			
Time/Loc		Ca+	
Depth		K+	
Temp		Polymer	
Density		CaCl2	
ECD		NaCl	
Viscosity		Sand	
PV		Tot. Solids	
YP		% Oil	
GELS		% H2O	
API WL		Oil/H2O	
HTHP WL		HGSolid	
API FC		LGSolid	
MBT		ES	
Lime		Oil Ret	
pH			
Pm			
Pf/Mf			
Comment1:			

Mud Products

Additive	# Units

Mud Cost

Daily	$0.00
Cumulative	$0.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot	
Weight	
Pick-Up	
Weight	
Slack Off	
Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation
Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/22/2003 | Report: 2 | DFS: | DOL: 2.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:		TVD:		Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	852,738	Cum Cost:	852,738	AFE Est:	4,288,464	AFE No.:	400792

Current Status: SHUTDOWN RIG UP UNTIL 08:00hrs

24hr Forecast: RIG TO SPUD & WILL BREAK TOUR, TIE-IN RENTALS

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
08:00 - 20:00	12.00	01	A	P MIRU	RIG IN POWER LINES, GENERATOR RUNNING @ 09:00hrs, RIG IN STEAM LINES/ HAUL WATER, BOILER ON LINE @ 14:00hrs, RIG IN WATER LINES & CIRCULATING @ 16:00hrs, RIG TO/ INSPECT & RAISE DERRICK @ 19:00hrs, RIG IN FLOOR, SHUT DOWN FOR NIGHT

DAILY OPERATIONAL COMMENTS(24hr Summary):
RIGGED IN POWER, STEAM & WATER LINES, RIGGED TO & RAISED DERRICK @ 19:00hrs, BOTH CREWS ON TOUR, SHUTDOWN RIG UP FOR NIGHT

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud W(kg/m³)

Formation Data

Formation Name	Top (m)

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/22/2003 Report: 2 DFS: DCL: 2.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:			
Time/Loc		Ca+	
Depth		K+	
Temp		Polymer	
Density		CaCl2	
ECD		NaCl	
Viscosity		Sand	
PV		Tot. Solids	
YP		% Oil	
GELS		% H2O	
API WL		Oil/H2O	
HTHP WL		HGSolid	
API FC		LGSolid	
MBT		ES	
Lime		Oil Ret	
pH			
Pm			
Pf/Mf			
Comment1:			

Mud Products

Additive	# Units

Mud Cost

Daily	$16,590.00
Cumulative	$16,590.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/23/2003 | Report: 3 | DFS: | DOL: 3.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:		TVD:		Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	81,846	Cum Cost:	934,584	AFE Est:	4,288,464	AFE No.:	400792

Current Status: RIGGING UP TO SPUD IN VERY COLD WEATHER

24hr Forecast: COMPLETE RIG UP, SPUD & DRILL 311mm HOLE

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
08:00 - 14:30	6.50	01	A	P MIRU	RIG UP TO SPUD, USING TWO CREWS
14:30 - 16:00	1.50	21	A	P MIRU	HOLD PRE-SPUD SAFETY MEETING w/ OFFICE- NEB- ON LOCATION PERSONNEL
16:00 - 00:00	8.00	01	A	P MIRU	RIG UP TO SPUD, SPOT RENTALS, WELD/ ADAPT 346mm DIVERTER TO FLARE TANK

DAILY OPERATIONAL COMMENTS(24hr Summary):
RIGGING UP TO SPUD, HAD PRE-SPUD SAFETY MEETING w/ OFFICE-NEB STAFF, RIG IN 346mm DIVERTER TO FLARE TANK, RIG TO SPUD

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	
Trip Avg/Max	(mg/L)	
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/23/2003 Report: 3 DFS: DOL: 3.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:			
Time/Loc		Ca+	
Depth		K+	
Temp		Polymer	
Density		CaCl2	
ECD		NaCl	
Viscosity		Sand	
PV		Tot. Solids	
YP		% Oil	
GELS		% H2O	
API WL		Oil/H2O	
HTHP WL		HGSolid	
API FC		LGSolid	
MBT		ES	
Lime		Oil Ret	
pH			
Pm			
Pf/Mf			
Comment1:			

Mud Products

Additive	# Units

Mud Cost

Daily	$700.00
Cumulative	$17,290.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot	
Weight	
Pick-Up	
Weight	
Slack Off	
Weight	

BHA Desc.

Item	Jts	Length

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/24/2003 | Report: 4 | DFS: | DOL: 4.00

Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:		TVD:		Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	35,486	Cum Cost:	970,070	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILLING 311mm SURFACE HOLE @ 72m, MUD RING HAS PLUGGED FLOW LINE

24hr Forecast: DRILL AHEAD ON SURFACE HOLE

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	21	A	P MIRU	SAFETY MEETING w/ CREW
00:15 - 07:45	7.50	01	A	P MIRU	RIG IN FLARE TANK TO DIVERTER, RIG TO SPUD
07:45 - 08:00	0.25	07	A	P MIRU	RIG SERVICE
08:00 - 08:15	0.25	21	A	P MIRU	SAFETY MEETING w/ CREW
08:15 - 09:30	1.25	01	A	P MIRU	PICK UP DIVERTER FLOW NIPPLE TO MODIFY
09:30 - 09:45	0.25	07	A	P MIRU	RIG SERVICE
09:45 - 16:00	6.25	01	A	P MIRU	RIG TO SPUD, PU SWIVEL/ KELLY/ KELLY SOCK
16:00 - 20:00	4.00	01	A	P MIRU	PICK UP 9" COLLAR, MAKE UP BHA, FUNCTION TEST DIVERTER & HCR VALVE
20:00 - 20:15	0.25	07	A	P MIRU	RIG SERVICE
20:15 - 23:00	2.75	01	A	P MIRU	RIG TO SPUD SURFACE HOLE
23:00 - 23:15	0.25	15	A	P MIRU	FUNCTION TEST DIVERTER & HCR VALVE
23:15 - 23:30	0.25	15	A	P MIRU	PRESSURE TEST DIVERTER/ HCR/ CONDUCTOR/ MUDLINES TO 1000kPa FOR 10min, OK
23:30 - 23:45	0.25	21	A	P MIRU	HOLD PRE-SPUD MEETING w/ CREW- RIG MANAGER- DRILLING FOREMAN
23:45 - 00:00	0.25	05	A	P MIRU	CONDITION MUD TO 55 s/l PRIOR TO SPUD

DAILY OPERATIONAL COMMENTS(24hr Summary):
RIG IN DIVERTER TO FLARE TANK, RIG TO SPUD, PU/MU BHA, COMPLETE RIG IN TO SPUD, FT & PT DIVERTER/ HCR TO 1000kPa, CONDITION MUD TO 55 s/l TO SPUD

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	
Trip Avg/Max	(mg/L)	
H2S	(%)	

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Anadarko Canada Corporation
Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/24/2003 Report: 4 DFS: DCL: 4.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Risor	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:			
Time/Loc		Ca+	
Depth		K+	
Temp		Polymer	
Density		CaCl2	
ECD		NaCl	
Viscosity		Sand	
PV		Tot. Solids	
YP		% Oil	
GELS		% H2O	
API WL		Oil/H2O	
HTHP WL		HGSolid	
API FC		LGSolid	
MBT		ES	
Lime		Oil Ret	
pH			
Pm			
Pf/Mf			
Comment1:			

Mud Products

Additive	# Units

Mud Cost

Daily	$660.00
Cumulative	$17,950.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/25/2003 | Report: 5 | DFS: 1.00 | DOL: 5.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	196.00 (m)	TVD:	196.00 (m)	Progress:	196.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	15.75	AV ROP:	12.44	Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	315,100	Cum Cost:	1,285,170	AFE Est:	4,288,464	AFE No.:	400792

Current Status: POOH w/ BIT #1A @ 242m

24hr Forecast: RUN IN HOLE w/ BIT #2A, DRILL AHEAD

Operations Summary

From - To	Hours	Code	Sub Code	Phase		Description of Operations
00:00 - 02:00	2.00	02	B	P	DRLSUR	LEVEL KELLY BAR, DRILL 311mm HOLE 0- 42m **SPUD @ 00:01hrs, 03-01-25**
02:00 - 02:15	0.25	07	A	P	DRLSUR	RIG SERVICE, FT DIVERTER
02:15 - 02:30	0.25	10		P	DRLSUR	SURVEY
02:30 - 04:15	1.75	02	B	P	DRLSUR	DRILL, 42- 70m
04:15 - 04:30	0.25	10		P	DRLSUR	SURVEY
04:30 - 05:15	0.75	02	B	P	DRLSUR	DRILL, 70-75
05:15 - 08:45	3.50	05	A	P	DRLSUR	CIRC OUT MUDRING, UNPLUG FLOWLINE TWICE
08:45 - 09:15	0.50	05	A	P	DRLSUR	CIRC HOLE CLEAN
09:15 - 11:15	2.00	02	B	P	DRLSUR	DRILL, 75-94
11:15 - 11:45	0.50	05	A	P	DRLSUR	CIRC, WORK CONNECTION
11:45 - 13:15	1.50	05	A	P	DRLSUR	CIRC, CONDITION MUD/ HOLE, SLOUGHING
13:15 - 14:00	0.75	02	B	P	DRLSUR	DRILL, 94-103
14:00 - 14:15	0.25	07	A	P	DRLSUR	RIG SERVICE
14:15 - 14:30	0.25	10		P	DRLSUR	SURVEY
14:30 - 16:45	2.25	02	B	P	DRLSUR	DRILL, 103-131
16:45 - 17:00	0.25	10		P	DRLSUR	SURVEY
17:00 - 19:45	2.75	02	B	P	DRLSUR	DRILL, 131-159
19:45 - 20:00	0.25	10		P	DRLSUR	SURVEY
20:00 - 22:30	2.50	02	B	P	DRLSUR	DRILL, 159-187
22:30 - 22:45	0.25	07	A	P	DRLSUR	RIG SERVICE, FT DIVERTER
22:45 - 23:00	0.25	10		P	DRLSUR	SURVEY
23:00 - 00:00	1.00	02	B	P	DRLSUR	DRILL 311mm HOLE, 187-196

DAILY OPERATIONAL COMMENTS(24hr Summary):
SPUDDED @ 00:01hrs, DRILL 311mm SURFACE HOLE TO 196m w/ SURVEYS, MUDRING CIRC OUT @ 75m, RAISED VIS BACK UP TO 65 s/l @ 94m TO PREVENT SLOUGHING

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud W(kg/m³)

Formation Data

Formation Name	Top (m)
SURFACE	

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation
Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/25/2003 Report: 5 DFS: 1.00 DOL: 5.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	152.0
Stroke (mm)	254.0	254.0
EFF		98.0
Press (kPa)		3,070
SPM		120
Output (L/mi		1,626.07

Velocities

Drill Pipe	(m/min)	24.7
Drill Collar	(m/min)	30.5
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: GEL CHEM

Time	15:00 / OUT		Ca+ (mg/L)	40	
Depth	(m)	111.00	K+ (mg/L)		
Temp	(°C)	15	Polymer		
Density	(kg/m³)	1,105	CaCl2 (%)		
ECD	(kg/m³)		NaCl (%)		
Viscosity	(s/l)	68	Sand (%)	0.500	
PV	(mPa*s)	4.0	Tot. Solids		
YP	(Pa)	16.3	% Oil		
GELS	(Pa)	24.0/43.0/57.0	% H2O		
API WL	(mL)	13.0	Oil/H2O	/	
HTHP WL	(mL)		HGSolid	2	
API FC	(mm)	2.0	LGSolid	171.8	
MBT	(kg/m³)	63.0	ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		10.00			
Pm	(cm³)	1.1			
Pf/Mf	(cm³ / cm³)	0.20 / 0.35			

Comment1:

Mud Products

Additive	# Units
CAUSTIC SODA	1
BENTONITE- AQ	123
BARAFOS	2
SODA ASH	1
VAN RENTAL	2

Mud Cost

Daily	$1,278.72
Cumulative	$19,229.00

Bit Data

Bit No.	1A	
Run	1	
Size (mm)	311.00	
Manu.	Hughes	
Type	X1CXP	
Serial No.	J25767	
TFA (mm²)	1,211.4	
Depth In (m)		
Depth Out (m)	413.00	
Cum. Depth (m)	196.00	
Cum. Hours	15.75	
WOB (Min)daN	5,000	
WOB (Max)daN	8,000	
RPM (Min)	180	
RPM (Max)	190	
Cond (IODL)	4/3/WT/A	
Cond (BGOR)	E/ 2/RG/PR	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	28.0//	

Pipe Data

Min ID	(mm)	50.000
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		428.41
DP OD	(mm)	
String Rot Weight		
Pick-Up Weight		
Slack Off Weight		

BHA Desc.: SURFACE #1

Item	Jts	Length (m)
Tri-Cone Bit	1	0.30
Bit Sub	1	0.84
Drill Collar	3	27.11
Cross Over	1	0.67
Drill Collar	3	28.22
Drilling Jar	1	4.67
Drill Collar	9	84.18
Cross Over	1	0.56
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	21	198.97

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00
33.00	0.500	0.000	33.00	0.14	0.00	-0.07	0.45	0.45
61.00	0.750	0.000	61.00	0.45	0.00	-0.20	0.27	0.27
89.00	0.500	0.000	89.00	0.75	0.00	-0.34	0.27	-0.27
117.00	0.250	0.000	117.00	0.94	0.00	-0.43	0.27	-0.27
145.00	0.750	0.000	144.99	1.18	0.00	-0.54	0.54	0.54
178.00	0.500	0.000	177.99	1.54	0.00	-0.70	0.23	-0.23
205.00	0.750	0.000	204.99	1.84	0.00	-0.84	0.28	0.28
233.00	1.250	0.000	232.99	2.33	0.00	-1.06	0.54	0.54

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/26/2003 Report: 6 DFS: 2.00 DOL: 6.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	358.00 (m)	TVD:	358.00 (m)	Progress:	162.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	17.50	AV ROP:	9.26	Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	50,298	Cum Cost:	1,335,468	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILL 311mm HOLE @ 395m w/GEL-CHEM, DEVIATION PROBLEMS

24hr Forecast: DRILL AHEAD, BIT TRIP, DRILL AHEAD TO 650m (TD)

Operations Summary

From - To	Hours	Code	Sub Code	Phase		Description of Operations
00:00 - 01:45	1.75	02	B	P	DRLSUR	DRILL 311mm HOLE, 196-214
01:45 - 02:00	0.25	10		P	DRLSUR	SURVEY
02:00 - 04:30	2.50	02	B	P	DRLSUR	DRILL, 214-242
04:30 - 04:45	0.25	10		P	DRLSUR	SURVEY
04:45 - 05:15	0.50	05	K	P	DRLSUR	CIRC PRIOR TO BIT TRIP
05:15 - 08:30	3.25	06	A	P	DRLSUR	ROUND TRIP,POOH w/ BIT #1A, STRAP +1.03m, TIGHT 210-190, RIH w/ BIT #2A TO 130m
08:30 - 08:45	0.25	05	A	P	DRLSUR	WASH THROUGH 130-150
08:45 - 09:15	0.50	06	A	P	DRLSUR	RIH TO BOTTOM
09:15 - 15:30	6.25	02	B	P	DRLSUR	DRILL, 242-299
15:30 - 15:45	0.25	07	A	P	DRLSUR	RIG SERVICE
15:45 - 19:15	3.50	02	B	P	DRLSUR	DRILL, 299-335
19:15 - 20:00	0.75	10		P	DRLSUR	ACCUMED SURVEY TIME
20:00 - 23:00	3.00	02	B	P	DRLSUR	DRILL, 335-356
23:00 - 23:15	0.25	07	A	P	DRLSUR	RIG SERVICE, FT DIVERTER
23:15 - 23:30	0.25	10		P	DRLSUR	SURVEY
23:30 - 00:00	0.50	02	B	P	DRLSUR	DRILL, 356-358

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILLED AHEAD TO 242m, SURVEY OUT TO 1.25d, POOH w/ #1A, RIH w/ #2A, DRILL AHEAD w/ 5-8000 daN TO MAINTAIN VERTICAL TO 358m

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)
SURFACE	

Gas Readings

Conn Avg/Max (mg/L)	21/24
Bkgr Avg/Max (mg/L)	6/15
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/26/2003 Report: 6 DFS: 2.00 DOL: 6.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	152.0
Stroke (mm)	254.0	254.0
EFF	98.0	98.0
Press (kPa)	6,200	6,200
SPM	90	90
Output (L/mi	1,034.59	1,219.55

Velocities

Drill Pipe	(m/min)	34.3
Drill Collar	(m/min)	42.3
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	GEL CHEM				
Time/Date	10:45 / OUT		Ca+ (mg/L)	20	
Depth	(m)	257.00	K+ (mg/L)		
Temp	(°C)	21	Polymer (kg/m³)		
Density	(kg/m³)	1,130	CaCl2 (%)		
ECD	(kg/m³)		NaCl (%)		
Viscosity	(s/l)	46	Sand (%)	0.300	
PV	(mPa*s)	12.0	Tot. Solids		
YP	(Pa)	3.4	% Oil		
GELS	(Pa)	2.0/24.0/	% H2O		
API WL	(mL)	10.0	Oil/H2O	/	
HTHP WL	(mL)		HGSolid (kg/m³)	4	
API FC	(mm)	1.0	LGSolid (kg/m³)	209.4	
MBT	(kg/m³)	42.0	ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		9.50			
Pm	(cm³)	0.9			
Pf/Mf	(cm³ / cm³)	0.25 / 0.35			
Comment1:					

Mud Products

Additive	# Units
BENTONITE- AQ	54
BAROID DETER	2
VAN RENTAL	2

Mud Cost

Daily	$1,119.34
Cumulative	$20,348.00

Bit Data

Bit No.	2A	1A
Run	2	1
Size (mm)	311.00	311.00
Manu.	Hughes	Hughes
Type	X1GXP	X1CXP
Serial No.	J17733	J25767
TFA (mm²)	595.7	1,211.4
Depth In (m)	242.00	
Depth Out (m)	413.00	413.00
Cum. Depth (m)	116.00	242.00
Cum. Hours	13.25	20.00
WOB (Min)(daN)	5,000	6,000
WOB (Max)(daN)	8,000	7,000
RPM (Min)	180	180
RPM (Max)	190	180
Cond (IODL)	3/3/WT/A	4/3/WT/A
Cond (BGOR)	E/2/SS/HP	E/ 2/RG/PR
Jets 1/2/3	15.9/15.9/15.9	15.9/15.9/15.9
Jets 4/5/6		28.0//

Pipe Data

Min ID	(mm)	50.000
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		428.41
DP OD	(mm)	
String Rot Weight		
Pick-Up Weight		
Slack Off Weight		

BHA Desc.: SURFACE #1

Item	Jts	Length (m)
Tri-Cone Bit	1	0.30
Bit Sub	1	0.84
Drill Collar	3	27.11
Cross Over	1	0.67
Drill Collar	3	28.22
Drilling Jar	1	4.67
Drill Collar	9	84.18
Cross Over	1	0.56
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	21	198.97

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
256.00	1.250	0.000	255.98	2.83	0.00	-1.29	0.00	0.00
285.00	0.880	0.000	284.98	3.37	0.00	-1.53	0.38	-0.38
313.00	1.130	0.000	312.97	3.86	0.00	-1.76	0.27	0.27
346.00	0.750	0.000	345.97	4.40	0.00	-2.00	0.35	-0.35

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/27/2003 Report: 7 DFS: 3.00 DOL: 7.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	441.00 (m)	TVD:	441.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	11.75	AV ROP:		Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	58,904	Cum Cost:	1,394,372	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILLING 311mm HOLE @ 474m w/ GEL-CHEM USING SLICK ASSEMBLY

24hr Forecast: DRILL AHEAD, DROP DEV TO .75d, POOH FOR SQ MUDMOTOR

Operations Summary

From - To	Hours	Code	Sub Code	Phase		Description of Operations
00:00 - 00:15	0.25	07	A	P	DRLSUR	RIG SERVICE, CHECK BRAKE ASSEMBLY
00:15 - 04:30	4.25	02	B	P	DRLSUR	DRILL 311mm HOLE, 358-384
04:30 - 04:45	0.25	10		P	DRLSUR	SURVEY, .75d
04:45 - 09:15	4.50	02	B	P	DRLSUR	DRILL, 384-413
09:15 - 09:30	0.25	10		P	DRLSUR	SURVEY, 1.5d
09:30 - 10:00	0.50	05	K	P	DRLSUR	CIRC BOTTOMS UP
10:00 - 12:30	2.50	06	A	P	DRLSUR	POOH, PUMP OUT SGLS 390-356
12:30 - 12:45	0.25	05	A	P	DRLSUR	CIRC HOLE CLEAN
12:45 - 16:00	3.25	06	A	P	DRLSUR	POOH, PUMP OUT SGLS 356-298, PULL BHA
16:00 - 16:15	0.25	07	A	P	DRLSUR	RIG SERVICE, FT ANNULAR DIVERTER, 12sec TO CLOSE
16:15 - 20:45	4.50	06	A	P	DRLSUR	RIH w/ BIT #3A, WASH/ REAM TO BOTTOM 168-413
20:45 - 23:00	2.25	02	B	P	DRLSUR	DRILL 311mm HOLE, 413-431
23:00 - 23:15	0.25	10		P	DRLSUR	SURVEY, 1.5d
23:15 - 00:00	0.75	02	B	P	DRLSUR	DRILL, 431-441

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILLED AHEAD 358-413m, DEV 1.5d, POOH (pump out sgls 390-298), RIH w/ BIT #3A(wash to bottom 168-413), DRILL AHEAD, ATTEMPT TO DECREASE DEV ANGLE

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)
SURFACE	

Gas Readings

Conn Avg/Max (mg/L)	21/10
Bkgr Avg/Max (mg/L)	18/28
Trip Avg/Max (mg/L)	30/13
H2S (%)	

Anadarko Canada Corporation
Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/27/2003 Report: 7 DFS: 3.00 DOL: 7.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	152.0
Stroke (mm)	254.0	254.0
EFF	98.0	98.0
Press (kPa)	8,500	8,500
SPM	90	90
Output (L/mi	1,034.59	1,219.55

Velocities

Drill Pipe	(m/min)	34.3
Drill Collar	(m/min)	42.3
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: GEL CHEM			
Time/Date / OUT		Ca+ (mg/L)	20
Depth (m)	404.00	K+ (mg/L)	
Temp (°C)	32	Polymer (kg/m³)	
Density (kg/m³)	1,140	CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)	52	Sand (%)	0.400
PV (mPa*s)	15.0	Tot. Solids	
YP (Pa)	6.2	% Oil	
GELS (Pa)	2.0/28.0/34.0	% H2O	
API WL (mL)	10.4	Oil/H2O	/
HTHP WL (mL)		HGSolid (kg/m³)	10
API FC (mm)	2.0	LGSolid (kg/m³)	219.2
MBT (kg/m³)	49.0	ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH	9.00		
Pm (cm³)	0.7		
Pf/Mf (cm³ / cm³)	0.10 / 0.19		

Comment1:

Mud Products

Additive	# Units
BENTONITE- AQ	15
SAWDUST	3
VAN RENTAL	2

Mud Cost

Daily	$235.40
Cumulative	$20,583.00

Bit Data

Bit No.	2A	1A
Run	2	1
Size (mm)	311.00	311.00
Manu.	Hughes	Hughes
Type	X1GXP	X1CXP
Serial No.	J17733	J25767
TFA (mm²)	595.7	1,211.4
Depth In (m)	242.00	
Depth Out (m)	413.00	413.00
Cum. Depth (m)	287.00	
Cum. Hours	22.00	
WOB (Min)(daN)	6,000	
WOB (Max)(daN)	7,000	
RPM (Min)	190	
RPM (Max)	200	
Cond (IODL)	3/3/WT/A	4/3/WT/A
Cond (BGOR)	E/2/SS/HP	E/ 2/RG/PR
Jets 1/2/3	15.9/15.9/15.9	15.9/15.9/15.9
Jets 4/5/6		28.0//

Pipe Data

Min ID	(mm)	50.000
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		428.41
DP OD	(mm)	
String Rot Weight	(daN)	49,000
Pick-Up Weight	(daN)	53,000
Slack Off Weight	(daN)	47,000

BHA Desc.: SURFACE #1

Item	Jts	Length (m)
Tri-Cone Bit	1	0.30
Bit Sub	1	0.84
Drill Collar	3	27.11
Cross Over	1	0.67
Drill Collar	3	28.22
Drilling Jar	1	4.67
Drill Collar	9	84.18
Cross Over	1	0.56
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	21	198.97

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
374.00	0.750	0.000	373.96	4.77	0.00	-2.17	0.00	0.00
398.00	1.500	0.000	397.96	5.24	0.00	-2.39	0.94	0.94
419.00	1.500	0.000	418.95	5.79	0.00	-2.64	0.00	0.00

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/28/2003 Report: 8 DFS: 4.00 DOL: 8.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	492.00 (m)	TVD:	441.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	8.75	AV ROP:		Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	46,387	Cum Cost:	1,440,760	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILL 311mm SURFACE HOLE w/ BIT #3A ON MUDMOTOR @ 537m

24hr Forecast: DRILL AHEAD w/ MUDMOTOR TO 640m, WIPER TRIP, DRILL TO TD

Operations Summary

From - To	Hours	Code	Sub Code	Phase		Description of Operations
00:00 - 01:45	1.75	02	B	P	DRLSUR	DRILL 311mm SURFACE HOLE, 441-450
01:45 - 02:00	0.25	07	A	P	DRLSUR	RIG SERVICE
02:00 - 07:30	5.50	02	B	P	DRLSUR	DRILL, 450-485
07:30 - 08:00	0.50	10		P	DRLSUR	ACCUMED SURVEY TIME
08:00 - 08:45	0.75	02	B	P	DRLSUR	DRILL, 485-488
08:45 - 09:00	0.25	07	A	P	DRLSUR	RIG SERVICE, FT DIVERTER, FLOW CHECK
09:00 - 09:15	0.25	10		P	DRLSUR	SURVEY
09:15 - 09:45	0.50	05	K	P	DRLSUR	CIRC BOTTOMS UP/ HOLE CLEAN
09:45 - 14:15	4.50	06	J	P	DRLSUR	POOH w/ BIT #3A
14:15 - 20:00	5.75	06	J	P	DRLSUR	TRIP IN HOLE,PU/ MU SQUARE DRILLING MOTOR, RIH w/ BIT #3A,WASH/ REAM, 251-370
20:00 - 20:15	0.25	07	A	P	DRLSUR	RIG SERVICE
20:15 - 23:15	3.00	06	J	P	DRLSUR	WASH/ REAM, 370-488
23:15 - 00:00	0.75	02	B	P	DRLSUR	DRILL 311mm HOLE, 488-492

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILLED 441-488, SURVEY @ 1.5d, POOH, PU 311mm SQUARE MUDMOTOR, RIH, WASH & REAM 215-488, DRILL AHEAD 488-492

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)
SURFACE	

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	25/40
Trip Avg/Max	(mg/L)	
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/28/2003 | Report: 8 | DFS: 4.00 | DOL: 8.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	152.0
Stroke (mm)	254.0	254.0
EFF	98.0	98.0
Press (kPa)	10,900	10,900
SPM	95	95
Output (L/mi	1,092.07	1,287.31

Velocities

Drill Pipe	(m/min)	34.3
Drill Collar	(m/min)	42.3
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: GEL CHEM					
Time 03:30 / OUT			Ca+ (mg/L)		
Depth (m)		527.00	K+ (mg/L)		
Temp (°C)			Polymer (kg/m³)		
Density (kg/m³)		1,140	CaCl2 (%)		
ECD (kg/m³)			NaCl (%)		
Viscosity (s/l)		72	Sand (%)		
PV (mPa*s)			Tot. Solids		
YP (Pa)			% Oil		
GELS (Pa)			% H2O		
API WL (mL)		7.5	Oil/H2O		
HTHP WL (mL)			HGSolid (kg/m³)		
API FC (mm)			LGSolid (kg/m³)		
MBT (kg/m³)			ES (mV)		
Lime (kg/m³)			Oil Ret (%)		
pH		9.50			
Pm (cm³)					
Pf/Mf (cm³ / cm³)					
Comment1:					

Mud Products

Additive	# Units
CAUSTIC SODA	1
BENTONITE- AQ	16
VAN RENTAL	2
BARAZAN D PLU	5
DRISPAC REG	1
HUMALITE(Lignit	1

Mud Cost

Daily	$2,364.26
Cumulative	$22,948.00

Bit Data

Bit No.	3A	
Run	3	
Size (mm)	311.00	
Manu.	Hughes	
Type	M22	
Serial No.	TC3033	
TFA (mm²)	595.7	
Depth In (m)	488.00	
Depth Out (m)	630.00	
Cum. Depth (m)	79.00	
Cum. Hours	11.75	
WOB (Min)(daN)	2,000	
WOB (Max)(daN)	8,000	
RPM (Min)	30	
RPM (Max)	40	
Cond (IODL)	1/1/WT/A	
Cond (BGOR)	E/01/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6		

Pipe Data

Min ID (mm)		50.000
DC OD (mm)		
DC (m)		
HWDP OD (mm)		
HWDP (m)		
BHA		617.08
DP OD (mm)		
String Rot Weight (daN)		41,000
Pick-Up Weight (daN)		43,000
Slack Off Weight (daN)		39,000

BHA Desc.: SURFACE- MOTOR

Item	Jts	Length (m)
Tri-Cone Bit	1	0.30
Turbine	1	8.96
Spirall Drill Collar	3	27.11
Cross Over	1	0.67
Spirall Drill Collar	3	28.22
Drilling Jar	1	4.67
Spirall Drill Collar	9	84.18
Cross Over	1	0.56
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	40	379.52

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
436.00	1.500	0.000	435.95	6.23	0.00	-2.84	0.00	0.00
455.00	1.500	0.000	454.94	6.73	0.00	-3.07	0.00	0.00
479.00	1.250	0.000	478.93	7.30	0.00	-3.33	0.31	-0.31
492.00	1.250	0.000	491.93	7.59	0.00	-3.46	0.00	0.00

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/29/2003 | Report: 9 | DFS: 5.00 | DOL: 9.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	630.00 (m)	TVD:	630.00 (m)	Progress:	138.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	16.75	AV ROP:	8.24	Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	58,700	Cum Cost:	1,499,460	AFE Est:	4,288,464	AFE No.:	400792

Current Status: LAYING DOWN 311mm SQUARE MOTOR FOR REAMER RUN IN @ 630m

24hr Forecast: RIH w/ REAMER, DRILL TO TD, RE-WIPER TRIP, POOH FOR CASING

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 04:45	4.75	02	B	P	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 492 - 527 M.
04:45 - 05:00	0.25	07	A	P	DRLSUR	RIG SERVICE
05:00 - 07:00	2.00	02	B	P	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 527 - 545 M.
07:00 - 08:00	1.00	10		P	DRLSUR	ACCUMULATED SURVEY TIME
08:00 - 18:00	10.00	02	B	P	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 545 - 630 M. WIPER TRIP POINT.
18:00 - 18:45	0.75	10		P	DRLSUR	DEVIATION SURVEYS W/ TOTCO: ACCUMULATED TIME.
18:45 - 19:00	0.25	07	A	P	DRLSUR	RIG SERVICE. FUNCTION DIVERTER
19:00 - 19:30	0.50	05	K	P	DRLSUR	CIRCULATE, CONDITION HOLE AND MUD FOR WIPER TRIP TO SURFACE.
19:30 - 20:00	0.50	06	H	P	DRLSUR	FLOW CHECK @ 630 M. TRIP OUT TO 563 M. HOLE TIGHT, ALLOWED UP TO 10,000 DAN OVERPULL.
20:00 - 20:15	0.25	07	A	P	DRLSUR	RIG SERVICE
20:15 - 00:00	3.75	06	H	P	DRLSUR	TRIP OUT, PICK UP KELLY, CIRCULATE AND PUMP OUT SINGLES F/ 563 - 427 M.

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL 311 MM SURFACE HOLE W/ SQUARE MUD MOTOR F/ 492 - 630 M.
SURVEY : 2.75 DEG @ 611 M

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)
SURFACE	

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	25/40
Trip Avg/Max	(mg/L)	
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 01/29/2003 Report: 9 DFS: 5.00 DOL: 9.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	152.0
Stroke (mm)	254.0	254.0
EFF	100.0	100.0
Press (kPa)	10,000	10,000
SPM	100	100
Output (l/mi	1,173.01	1,382.71

Velocities

Drill Pipe	(m/min)	38.9
Drill Collar	(m/min)	48.0
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	GEL CHEM		
Time 08:40 / OUT		Ca+ (mg/L)	
Depth (m)	560.00	K+ (mg/L)	
Temp (°C)	40	Polymer (kg/m³)	
Density (kg/m³)	1,140	CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)	63	Sand (%)	
PV (mPa*s)	20.0	Tot. Solids	
YP (Pa)	10.1	% Oil	
GELS (Pa)	3.0/10.0/18.0	% H2O	
API WL (mL)	6.0	Oil/H2O	
HTHP WL (mL)		HG Solid (kg/m³)	
API FC (mm)	1.0	LG Solid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Filt (%)	
pH	9.00		
Pm (cm³)			
Pf/Mf (cm³ / cm³)			

Comment1:

Mud Products

Additive	# Units
BAROID DETER	1
VAN RENTAL	2
DRISPAC REG	2
PAC R	1
HUMALITE(Lignit	3

Mud Cost

Daily	$1,029.08
Cumulative	$23,977.00

Bit Data

Bit No.	3A	
Run	3	
Size (mm)	311.00	
Manu.	Hughes	
Type	M22	
Serial No.	TC3033	
TFA (mm²)	595.7	
Depth In (m)	488.00	
Depth Out (m)	630.00	
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)	1/1/WT/A	
Cond (BGOR)	E/01/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6		

Pipe Data

Min ID (mm)		50.000
DC OD (mm)		
DC (m)		
HWDP OD (mm)		
HWDP (m)		
BHA		617.08
DP OD (mm)		
String Rot Weight (daN)		43,000
Pick-Up Weight (daN)		45,000
Slack Off Weight (daN)		41,000

BHA Desc.: SURFACE-MOTOR

Item	Jts	Length (m)
Tri-Cone Bit	1	0.30
Turbine	1	8.96
Spirall Drill Collar	3	27.11
Cross Over	1	0.67
Spirall Drill Collar	3	28.22
Drilling Jar	1	4.67
Spirall Drill Collar	9	84.18
Cross Over	1	0.56
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	40	379.52

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
492.00	1.250	0.000	491.93	7.59	0.00	-3.46	0.00	0.00
530.00	1.250	0.000	529.92	8.42	0.00	-3.83	0.00	0.00
563.00	2.000	0.000	562.91	9.35	0.00	-4.26	0.68	0.68
591.00	2.750	0.000	590.88	10.51	0.00	-4.79	0.80	0.80
611.00	2.750	0.000	610.86	11.47	0.00	-5.23	0.00	0.00

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/30/2003 | Report: 10 | DFS: 6.00 | DOL: 10.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	655.00 (m)	TVD:	655.00 (m)	Progress:	25.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	3.00	AV ROP:	8.33	Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	42,836	Cum Cost:	1,542,296	AFE Est:	4,288,464	AFE No.:	400792

Current Status: RUN 244mm SURFACE CASING @ 655m

24hr Forecast: RUN & CEMENT CASING, WOC, WELD BOWL, NIPPLE UP BOP

Operations Summary

From - To	Hours	Code	Sub Code	Phase		Description of Operations
00:00 - 03:45	3.75	06	J	P	DRLSUR	PUMP OUT SINGLES F/ 427 - 238 M. HOLE DRAG: 8000 - 18000 DAN W/PUMP
03:45 - 04:00	0.25	07	A	P	DRLSUR	RIG SERVICE
04:00 - 04.45	0.75	06	J	P	DRLSUR	CONTINUE TO CIRCULATE SINGLES OUT TO 180 M. HOLE DRAG 2000 - 6000 DAN W/PUMP
04:45 - 11:30	6.75	06	J	P	DRLSUR	ROUND TRIP,TRIP OUT OF HOLE, LAY DOWN SQUARE MUD MOTOR, MAKE UP STRING STABALIZER, RUN IN HOLE, PICK UP SINGLES OFF PIPE RACKS.
11:30 - 12:15	0.75	03	A	P	DRLSUR	BREAK CIRCULATION @ 613 M. WASH TO BOTTOM. 6M. FILL
12:15 - 15:15	3.00	02	B	P	DRLSUR	DRILL 311 MM SURFACE HOLE F/ 630 - 655 M. TOTAL DEPTH FOR SURFACE HOLE.
15:15 - 15:30	0.25	07	A	P	DRLSUR	RIG SERVICE, CHECK BREAK ASSEMBLY
15:30 - 16:00	0.50	05	K	P	DRLSUR	CIRCULATE , CONDITION MUD AND HOLE FOR CASING.
16:00 - 16:15	0.25	10		P	DRLSUR	SURVEY @ 655 M @ 2 DEG
16:15 - 17:30	1.25	06	H	P	DRLSUR	FLOW CHECK @ 655 M. TRIP OUT TO HWDP. FLOW CHECK
17:30 - 19:00	1.50	06	H	P	DRLSUR	PICK UP 24 SINGLES, RIH TO 655 M. HOLE GOOD.
19:00 - 20:15	1.25	05	K	P	DRLSUR	CIRCULATE, CONDITION HOLE FOR CASING
20:15 - 22:45	2.50	06	G	P	DRLSUR	FLOW CHECK, TRIP OUT TO RUN SURFACE CASING.
22:45 - 23:00	0.25	07		P	DRLSUR	RIG SERVICE
23:00 - 23:15	0.25	21	A	P	DRLSUR	HELD SAFETY MEETING W/ E-Z LAY PIPE HANDLERS PRIOR TO RIG UP LAY DOWN MACHINE.
23:15 - 00:00	0.75	06	J	P	DRLSUR	LAY DOWN 228 MM DRILL COLLARS.

DAILY OPERATIONAL COMMENTS(24hr Summary):
TRIP OUT TO LAY DOWN MOTOR, RIH W/ STAB, DRILL TO TD. @ 655 M. WIPER TRIP, PICK UP 24 SINGLES, CIRCULATE & CONDITION HOLE, POOH TO RUN CASING.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)
BANFF	

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	10/30
Trip Avg/Max (mg/L)	50/146
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/30/2003 | Report: 10 | DFS: 6.00 | DOL: 10.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	1,520.0
Stroke (mm)	254.0	254.0
EFF	100.0	100.0
Press (kPa)	10,000	10,000
SPM	95	95
Output (L/mi	1,114.36	131,357.73

Velocities

Drill Pipe	(m/min)	38.9
Drill Collar	(m/min)	48.0
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: GEL CHEM					
Time	08:30 / OUT		Ca+ (mg/L)	20	
Depth	(m)	631.00	K+ (mg/L)		
Temp	(°C)		Polymer (kg/m³)		
Density	(kg/m³)	1,150	CaCl2 (%)		
ECD	(kg/m³)		NaCl (%)		
Viscosity	(s/l)	65	Sand (%)		
PV	(mPa*s)	17.0	Tot. Solids		
YP	(Pa)	6.2	% Oil		
GELS	(Pa)	3.0/10.0/17.0	% H2O		
API WL	(mL)	5.8	Oil/H2O		
HTHP WL	(mL)		HGSolid (kg/m³)	15	
API FC	(mm)	1.0	LGSolid (kg/m³)		
MBT	(kg/m³)		ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		8.00			
Pm	(cm³)				
Pf/Mf	(cm³ / cm³				

Comment1:

Mud Products

Additive	# Units
CAUSTIC SODA	1
BENTONITE- AQ	5
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$714.89
Cumulative	$24,692.00

Bit Data

Bit No.	3A-rr	3A
Run	4	3
Size (mm)	311.00	311.00
Manu.	Hughes	Hughes
Type	M22	M22
Serial No.	TC3033	TC3033
TFA (mm²)	595.7	595.7
Depth In (m)	630.00	488.00
Depth Out (m)	655.00	630.00
Cum. Depth (m)	167.00	217.00
Cum. Hours	20.50	11.75
WOB (Min)(daN)	11,000	2,000
WOB (Max)(daN)	15,000	8,000
RPM (Min)	180	30
RPM (Max)	180	40
Cond (IODL)	2/2/WT/A	1/1/WT/A
Cond (BGOR)	E/ I/BT/TD	E/01/NO/BHA
Jets 1/2/3	15.9/15.9/15.9	15.9/15.9/15.9
Jets 4/5/6		

Pipe Data

Min ID	(mm)	50.000
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		647.73
DP OD	(mm)	
String Rot Weight	(daN)	
Pick-Up Weight	(daN)	
Slack Off Weight	(daN)	

BHA Desc.: SURFACE STAB RUN

Item	Jts	Length (m)
Tri-Cone Bit	1	0.30
Bit Sub	1	0.84
Drill Collar	2	18.09
Intergral Blade Stabilizer	1	0.71
Drill Collar	1	9.02
Cross Over	1	0.67
Drill Collar	3	28.22
Drilling Jar	1	4.67
Drill Collar	9	84.18
Cross Over	1	0.56
Heavy Weight Drill Pipe	9	82.80
Drill Pipe	44	417.58

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
655.00	2.000	0.000	654.82	13.30	0.00	-6.06	0.51	-0.51

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/31/2003 | Report: 11 | DFS: 7.00 | DOL: 11.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	655.00 (m)	TVD:	655.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	165,407	Cum Cost:	1,707,703	AFE Est:	4,288,464	AFE No.:	400792

Current Status: WAIT ON CEMENT TO WELD BOWL @ 655m

24hr Forecast: CUT CSG/ WELD BOWL, NIPPLE/ PT BOP, CLEAN TANKS/ TRANSFER IN

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 01:30	1.50	12	A	P DRLSUR	RIG UP HILL'S POWER TONGS, EZ-LAY PIPE HANDLERS.
01:30 - 01:45	0.25	21	A	P DRLSUR	HELD SAFETY MEETING W/ RIG CREW, HILL'S POWER TONGS, EZ-LAY PIPE HANDLERS.
01:45 - 02:00	0.25	07		P DRLSUR	RIG SERVICE
02:00 - 08:30	6.50	12	A	P DRLSUR	MAKE UP AND THREAD LOK FLOAT SHOE & FLOAT COLLAR, RUN SURFACE CASING: RAN: 48 JOINTS OF 244.5 MM, 59.53 KG/M, L-80, LT&C NEW ALGOMA CASING. TOTAL LENGTH: 655.3 M, LANDED @ 654.7 M. FLOAT COLLAR @ 639.86 M.
08:30 - 11:30	3.00	12	C	P DRLSUR	FLOW CHECK, CIRCULATE CASING, RIG OUT POWER TONGS, PIPE HANDLERS
11:30 - 11:45	0.25	21	A	P DRLSUR	HELD PRE-JOB SAFETY MEETING WITH IMPORT TOOL SUPERVISOR, RIG CREW.
11:45 - 14:00	2.25	06	G	P DRLSUR	RIG UP FLOOR, RUN 22 STANDS PLUS SINGLE INSIDE SURFACE CASING TO 638 M. (1.8 M ABOVE FLOAT COLLAR)
14:00 - 14:45	0.75	12	C	P DRLSUR	RIG UP PACK OFF HEAD AND IMPORT TYPE II CEMENT HEAD.
14:45 - 15:00	0.25	07		P DRLSUR	RIG SERVICE
15:00 - 20:00	5.00	12	C	P DRLSUR	CIRCULATE CASING THRU DRILL PIPE, CONDITION MUD FOR CEMENTING.
20:00 - 20:15	0.25	21	A	P DRLSUR	HELD SAFETY MEETING W/ BJ SERVICES PRIOR TO CEMENTING CASING.
20:15 - 22:15	2.00	12	C	P DRLSUR	CEMENT SURFACE CASING WITH: 3.0 M3 WATER AHEAD, MIX AND PUMP 29.5 M3 0:1:0"G" NEAT CEMENT UNTIL WATER FLUSH TO SURFACE, STOP, DROP IMPORT PLUG, DISPLACE 4.7 M3 WATER THRU DRILL PIPE. PLUG DOWN @ 20:52 HRS. JAN. 31 / 03. BUMP PLUG W/ 3500 KPA OVER FINAL DISPLACEMENT PRESSURE TO 9400 KPA. BLEAD OFF PRESSURE, CHECK FLOATS, HELD OK. 2.0 M3 GOOD CEMENT RETURNS TO SURFACE CIRCULATE EXCESS CEMENT AND CONTAMINATED WATER FROM CASING. FLUSH DIVERTER W/ WATER.
22:15 - 22:30	0.25	07		P DRLSUR	RIG SERVICE
22:30 - 23:30	1.00	12		P DRLSUR	RIG OUT IMPORT TOOL PACK OFF ASSEMBLY AND CEMENT HEAD.
23:30 - 00:00	0.50	13		P DRLSUR	WOC. BLOW KELLY, MUD LINES. C LEAN TANKS.

DAILY OPERATIONAL COMMENTS(24hr Summary):
RUN 244 mm CASING, CIRCULATE CASING, RUN 22 STANDS DP TO 638 M. RIG UP CEMENT HEAD, CIRCULATE, RIG UP TO CEMENT, CEMENT SURFACE CASING, CIRCULATE OUT EXCESS CEMENT AND CONTAMINATED MUD FROM CASING ANNULUS, RIG OUT CEMENT HEAD, PULL DP, WOC.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)
BANFF	

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 01/31/2003 | Report: 11 | DFS: 7.00 | DOL: 11.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	152.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	2,810		
SPM	120		
Output (L/mi	1,659.26		

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	GEL CHEM				
Time	16:00 / OTH		Ca+ (mg/L)	40	
Depth	(m)	655.00	K+ (mg/L)		
Temp	(°C)	28	Polymer (kg/m³)		
Density	(kg/m³)	1,145	CaCl2 (%)		
ECD	(kg/m³)		NaCl (%)		
Viscosity	(s/l)	52	Sand (%)		
PV	(mPa*s)	14.0	Tot. Solids		
YP	(Pa)	4.8	% Oil		
GELS	(Pa)	2.0/14.0	% H2O		
API WL	(mL)	6.0	Oil/H2O	/	
HTHP WL	(mL)		HGSolid (kg/m³)	18	
API FC	(mm)	1.0	LGSolid (kg/m³)	216.3	
MBT	(kg/m³)	56.0	ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		8.00			
Pm	(cm³)				
Pf/Mf	(cm³ / cm³)	/ 0.30			

Comment1:

Mud Products

Additive	# Units
DESCO CF	1
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$703.15
Cumulative	$25,395.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/01/2003 Report: 12 DFS: 8.00 DOL: 12.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	655.00 (m)	TVD:	655.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	311.00 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	-199,265	Cum Cost:	1,508,438	AFE Est:	4,288,464	AFE No.:	400792

Current Status: PRESSURE TEST BOP, 1400 KPA LOW / 21000 KPA HIGH

24hr Forecast: PRESSURE TEST, DISPLACE TO INVERT, MAKE UP DIR. BHA, RIH,

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P DRLSUR	RIG SERVICE
00:15 - 02:15	2.00	13		P DRLSUR	WOC, TRIP OUT 22 STANDS PLUS 1 SINGLE, CLEAN TANKS
02:15 - 06:00	3.75	13		P DRLSUR	WOC, NIPPLE DOWN DIVERTER, HCR, BLOUIE LINE, CLEAN TANKS
06:00 - 08:00	2.00	13		P DRLSUR	WOC, CLEAN AND FLUSH MUD PUMPS, CLEAN TANKS.
08:00 - 08:15	0.25	07		P DRLSUR	RIG SERVICE
08:15 - 08:30	0.25	21	A	P DRLSUR	SAFETY MEETING W/ CREW RE: NIPPLE UP BOP
08:30 - 16:00	7.50	14	B	P DRLSUR	LAY DOWN DIVERTER, CUT AND DRESS CASING, PRE-HEAT BOWL CASING, WELD CASING BOWL, POST-HEAT, WRAP W/ BLANKET, LET COOL, PRESSURE TEST CASING BOWL TO 7000 KPA, OK.
16:00 - 00:00	8.00	14	B	P DRLSUR	NIPPLE UP INTERMEDIATE SPOOL, DSA, BOP, HCR, RELIEF LINES, KILL LINES.

DAILY OPERATIONAL COMMENTS(24hr Summary):
WOC, PULL OUT DRILL PIPE, NIPPLE DOWN AND LAY OUT DIVERTER, CUT CASING, WELD AND PRESSURE TEST CASING BOWL, NIPPLE UP BOP

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
			BANFF		Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/01/2003 Report: 12 DFS: 8.00 DOL: 12.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:			
Time/Loc		Ca+ (mg/L)	
Depth (m)		K+ (mg/L)	
Temp (°C)		Polymer (kg/m³)	
Density (kg/m³)		CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)		Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)		Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH			
Pm (cm³)			
Pf/Mf (cm³ / cm³)			
Comment1:			

Mud Products

Additive	# Units
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$635.00
Cumulative	$26,030.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/02/2003 Report: 13 DFS: 9.00 DOL: 13.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	655.00 (m)	TVD:	655.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	68,214	Cum Cost:	1,576,652	AFE Est:	4,288,464	AFE No.:	400792

Current Status: PERFORM FLOT @ 661m, PREPARE TO LAYDOWN EXCESS SINGLES

24hr Forecast: LD EXCESS DP, SLIP/CUT, DRILL 216mm HOLE w/MOTOR & DIR TOOLS

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 02:30	2.50	14	B	P DRLSUR	NIPPLE UP BOP, FLOW NIPPLE
02:30 - 02:45	0.25	07		P DRLSUR	RIG SERVICE
02:45 - 03:00	0.25	21	A	P DRLSUR	SAFETY MEETING W/ RIG CREW & INLAND PRESSURE TEST SERVICE.
03:00 - 05:30	2.50	15	B	P DRLSUR	PRESSURE TEST MANIFOLD VALVES, CHOKES TO 1400 KPA LOW / 21000 KPA HIGH
05:30 - 16:00	10.50	15	A	P DRLSUR	PRESSURE TEST STABBING VALVE, INSIDE BOP, HCR, KILL LINE VALVES, ANNULAR, UPPER LOWER PIPE RAMS, BLIND RAMS , RELIEF LINE VALVES, KELLY COCKS TO 1400 KPA LOW / 21000 KPA HIGH. ACCUMULATOR CHECK: 3 FUNCTION TEST. INSTALL WEAR BUSHING.
16:00 - 16:15	0.25			P DRLSUR	RIG SERVICE
16:15 - 20:30	4.25	06	J	P DRLSUR	TRIP IN HOLE,MAKE UP 7/8 MOTOR @ 1.5 DEG. BEND, DIRECTIONAL TOOLS, MAKE UP BHA, RUN IN HOLE TO 635m,RIG UP FLARE TANK WHILE TRIPPING IN
20:30 - 20:45	0.25	07		P DRLSUR	RIG SERVICE
20:45 - 00:00	3.25	14		P DRLSUR	MODIFY DEGASSER LINES AND RIG UP FLARE TANK. THAW PUMP SUCTION LINE.

DAILY OPERATIONAL COMMENTS(24hr Summary):
NIPPLE UP BOP, PRESSURE TEST BOP, MAKE UP DIR. BHA, RIH TO 635 M, RIG UP FLARE TANK.

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud W(kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
			BANFF		Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/02/2003 | Report: 13 | DFS: 9.00 | DOL: 13.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe (m/min)	
Drill Collar (m/min)	
Riser (m/min)	
Lag Time (min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: INVERT			
Time/13:00 / OUT		Ca+ (mg/L)	6,000
Depth (m)	655.00	K+ (mg/L)	
Temp (°C)		Polymer (kg/m³)	
Density (kg/m³)	920	CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)		Sand (%)	
PV (mPa*s)	4.0	Tot. Solids	
YP (Pa)	0.5	% Oil	88.0
GELS (Pa)	0.5/0.5/	% H2O	10.0
API WL (ml)		Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	65
API FC (mm)		LGSolid (kg/m³)	4.4
MBT (kg/m³)		ES (mV)	200
Lime (kg/m³)	9.6	Oil Ret (%)	
pH			
Pm (cm³)			
Pf/Mf (cm³ / cm³)			
Comment1:			

Mud Products

Additive	# Units
VAN RENTAL	2
ENVIRO-DRILL I	60
GELTONE V	11
MUD CHECK TE	1

Mud Cost

Daily	$635.00
Cumulative	$26,665.00

Bit Data

Bit No.	1
Run	5
Size (mm)	215.90
Manu.	UNITED DIA
Type	UD 513
Serial No.	00559
TFA (mm²)	992.8
Depth In (m)	655.00
Depth Out (m)	2,511.00
Cum. Depth	
Cum. Hours	
WOB (Min)	
WOB (Max)	
RPM (Min)	
RPM (Max)	
Cond (IODL)	1/2/CT/H
Cond (BGOR)	D/ 1/NO/BHA
Jets 1/2/3	15.9/15.9/15.9
Jets 4/5/6	15.9/15.9/

Pipe Data

Min ID	(mm)		
DC OD	(mm)		
DC	(m)		
HWDP OD	(mm)		
HWDP	(m)		
BHA		1,879.84	
DP OD	(mm)		
String Rot Weight			
Pick-Up Weight			
Slack Off Weight			

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/03/2003 | Report: 14 | DFS: 10.00 | DOL: 14.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	834.00 (m)	TVD:	834.00 (m)	Progress:	179.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	12.00	AV ROP:	14.92	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	72,663	Cum Cost:	1,649,315	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILLING 216mm HOLE @ 924m w/MOTOR & INVERT

24hr Forecast: DRILL TO KOP @ 1205m, ORIENT & DRILL AS PER PLAN

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 00:45	0.75	05	A	P	DRLSUR	DISPLACE CASING TO INVERT
00:45 - 02:00	1.25	21	C	P	DRLSUR	CONDUCT CAODC RIG INSPECTION
02:00 - 02:45	0.75	02	C	P	DRLSUR	DRILL OUT CEMENT, FLOAT COLLAR F/ 638 - 647 M
02:45 - 03:00	0.25	07	A	P	DRLSUR	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE
03:00 - 03:15	0.25	21	B	P	DRLSUR	SAFETY MEETING, HELD BOP DRILL W/ CREW, WELL SECURE IN 95 SECONDS
03:15 - 03:45	0.50	02	C	P	DRLSUR	DRILL OUT CEMENT, FLOAT SHOE F/ 647 - 655 M.
03:45 - 04:30	0.75	02	B	P	DRLIN1	DRILL 216 MM HOLE F/ 655 - 661 M.
04:30 - 05:00	0.50	05	A	P	DRLIN1	CIRCULATE HOLE CLEAN.
05:00 - 06:00	1.00	15	C	P	DRLIN1	CONDUCT FORMATION LEAK OFF TEST: HP @ 654.7 M: 5909 KPA / APPLIED SURFACE PRESSURE:9400 KPA - TOTAL PRESSURE: 15309 KPA / LEAK OFF GRADIENT: 23.3 KPA/M.
06:00 - 07:15	1.25	06	H	P	DRLIN1	LAY DOWN 24 EXCESS SINGLES, RUN IN 8 STANDS DP
07:15 - 08:30	1.25	09		P	DRLIN1	SLIP AND CUT DRILLING LINE, CHECK BRAKE ASSEMBLY.
08:30 - 08:45	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 8 SECONDS TO CLOSE
08:45 - 09:45	1.00	02	B	P	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS / MOTOR F/ 661 - 666 M.
09:45 - 10:00	0.25	21	B	P	DRLIN1	HELD BOP DRILL W/ CREW, FUNCTION ANNULAR: 12 SECONDS TO CLOSE, FUNCTION REMOTE CHOKE
10:00 - 10:45	0.75	05	A	P	DRLIN1	CHANGE SHAKER SCREENS TO 84 MESH
10:45 - 18:45	8.00	02	B	P	DRLIN1	ROTARY DRILL W/ DIR. TOOLS / MOTOR F/ 666 - 780 M.
18:45 - 20:00	1.25	10		P	DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
20:00 - 20:15	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 5 SECONDS TO CLOSE
20:15 - 21:30	1.25	02	B	P	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS / MOTOR F/ 780 - 799 M.
21:30 - 21:45	0.25	21	B	P	DRLIN1	BOP DRILL w/ RIG CREW
21:45 - 22:00	0.25	06	J		DRLIN1	POOH 1std TO RETREIVE PIPE SCREEN
22:00 - 22:15	0.25	21	A		DRLIN1	HANDLE 480l INVERT SPILL, CONTAIN w/SAWDUST BERM, SQUIGGY 380l TO CONTAINMENT DITCH, PUMP TO SHAKER BOX, COVER 48m2 w/SAWDUST TO SOAK UP RESIDUE
22:15 - 23:15	1.00	02	B	P	DRLIN1	ROTARY DRILL W/ DIR. TOOLS / MOTOR F/ 799 - 834 M.
23:15 - 00:00	0.75	10		P	DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
DISPLACE TO INVERT, DRILL OUT, LAY DOWN 24 SINGLES, RUN IN 8 STANDS DP, DRILL 6 M NEW HOLE, F.L.O.T., ROTARY DRILL AHEAD W/ DIR TOOLS. F/ 655 - 834 M.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,464	910.0

Formation Data

Formation Name	Top (m)
BANFF	

Gas Readings

Conn Avg/Max (mg/L)	25/30
Bkgr Avg/Max (mg/L)	15/40
Trip Avg/Max (mg/L)	80/186
H2S (%)	

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Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/03/2003 Report: 14 DFS: 10.00 DOL: 14.00
Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	140.0
Stroke (mm)	254.0	254.0
EFF	100.0	100.0
Press (kPa)	8,900	8,900
SPM	60	60
Output (L/mi	703.80	703.80

Velocities

Drill Pipe	(m/min)	53.4
Drill Collar	(m/min)	103.2
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	1,570 (kP	586.50 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: INVERT

Time	20:00 / OUT		Ca+ (mg/L)	14,000
Depth	(m)	791.00	K+ (mg/L)	
Temp	(°C)	26	Polymer (kg/m³)	
Density	(kg/m³)	910	CaCl2 (%)	
ECD	(kg/m³)		NaCl (%)	
Viscosity	(s/l)	43	Sand (%)	0.100
PV	(mPa*s)	6.0	Tot. Solids	
YP	(Pa)	0.5	% Oil	84.0
GELS	(Pa)	0.5/1.0/	% H2O	14.0
API WL	(mL)		Oil/H2O	
HTHP WL	(mL)	14.0	HGSolid (kg/m³)	
API FC	(mm)		LGSolid (kg/m³)	
MBT	(kg/m³)		ES (mV)	218
Lime	(kg/m³)	12.0	Oil Ret (%)	
pH				
Pm	(cm³)	2.9		
Pf/Mf	(cm³ / cm³			

Comment1:

Mud Products

Additive	# Units
BARITE	5
VAN RENTAL	2
GELTONE V	6
MUD CHECK TE	1

Mud Cost

Daily	$1,099.25
Cumulative	$27,764.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	179.00	
Cum. Hours	12.00	
WOB (Min)(daN)	4,000	
WOB (Max)(daN)	7,000	
RPM (Min)	25	
RPM (Max)	45	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	52,000
Pick-Up Weight	(daN)	52,000
Slack Off Weight	(daN)	52,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/03/2003
Last BOP Drill	02/03/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00
655.00	0.000	0.000	655.00	0.00	0.00	0.00	0.00	0.00
668.70	1.800	5.100	668.70	0.21	0.02	-0.08	3.94	3.94
678.20	1.900	359.900	678.19	0.52	0.03	-0.21	0.62	0.32
706.80	1.300	349.000	706.78	1.31	-0.03	-0.63	0.70	-0.63
735.40	1.300	345.500	735.37	1.95	-0.17	-1.04	0.08	0.00
754.40	1.300	322.800	754.37	2.33	-0.36	-1.38	0.81	0.00
773.20	1.500	320.300	773.16	2.69	-0.64	-1.80	0.33	0.32
792.20	2.000	310.600	792.15	3.09	-1.05	-2.35	0.91	0.79
820.70	2.400	298.300	820.63	3.70	-1.96	-3.43	0.65	0.42
849.20	2.700	299.600	849.11	4.31	-3.07	-4.69	0.32	0.32
877.50	3.200	289.500	877.37	4.91	-4.39	-6.14	0.76	0.53

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/04/2003 Report: 15 DFS: 11.00 DOL: 15.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	1,174.00 (m)	TVD:	1,173.40 (m)	Progress:	340.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	19.50	AV ROP:	17.44	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	70,161	Cum Cost:	1,719,476	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DIR DRILL 216mm HOLE w/MOTOR-MWD-INVERT @ 1242mMD

24hr Forecast: DIR DRILL AHEAD TO SLAVE PT TARGET @ 2521mMD

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 13 SECONDS TO CLOSE
00:15 - 07:00	6.75	02	B	P	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS / MOTOR F/ 834 - 961 M.
07:00 - 08:00	1.00	10		P	DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
08:00 - 16:30	8.50	02	B	P	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS, F/ 961 - 1084 M. SLIDE 2 METERS FOR 2 SINGLES F/ 952 - 972 M TO CONTROL DEVIATION.
16:30 - 16:45	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 10 SECONDS TO CLOSE
16:45 - 18:15	1.50	02	B	P	DRLIN1	ROTARY DRILL AHEAD W/ DIR. TOOLS F/ 1084 - 1123 M. CONTINUE TO SLIDE 2 METERS EVERY SECOND SINGLE F/ 1085 - 1123 M. TO CONTROL DEVIATION.
18:15 - 20:00	1.75	10		P	DRLIN1	SURVEYS W/ MWD, ORIENT TOOL FACE (ACCUMULATED TIME)
20:00 - 20:15	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 5 SECONDS TO CLOSE
20:15 - 23:00	2.75	02	B	P	DRLIN1	ROTARY DRILL AHEAD W/ DIR TOOLS. F/ 1123 - 1174 M. CONTINUE TO SLIDE 2 METERS EVERY 2 SINGLES TO CONTROL DEVIATION
23:00 - 23:15	0.25	21	B	P	DRLIN1	HELD SAFETY MEETING / BOP DRILL W/ CREW. WELL SECURE IN 98 SECONDS.
23:15 - 00:00	0.75	10		P	DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL 216 MM HOLE W/ DIR. TOOLS / MOTOR 834- 951M. DEVIATION 3.6 DEG. SLIDE 2 METERS EVERY SECOND SINGLE TO STRAIGHTEN AND TURN HOLE INC. & AZ. F/ 951 - 1174 MD.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,400	920.0

Formation Data

Formation Name	Top (m)
BANFF	597.00

Gas Readings

Conn Avg/Max (mg/L)	60/166
Bkgr Avg/Max (mg/L)	/80
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/04/2003 Report: 15 DFS: 11.00 DOL: 15.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	140.0
Stroke (mm)	254.0	254.0
EFF	100.0	100.0
Press (kPa)	7,700	7,700
SPM	65	65
Output (L/mi	762.46	762.46

Velocities

Drill Pipe	(m/min)	57.9
Drill Collar	(m/min)	111.8
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	2,090 (kP	633.42 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: INVERT

Time	15:20 / OUT		Ca+ (mg/L)	14,000
Depth	(m)	1,058.00	K+ (mg/L)	
Temp	(°C)	31	Polymer	
Density	(kg/m³)	920	CaCl2 (%)	
ECD	(kg/m³)	929	NaCl (%)	
Viscosity	(s/l)	40	Sand (%)	0.100
PV	(mPa*s)	5.0	Tot. Solids	
YP	(Pa)	1.0	% Oil	85.0
GELS	(Pa)	0.5/1.0/	% H2O	12.5
API WL	(mL)		Oil/H2O	
HTHP WL	(mL)	10.4	HGSolid (kg/m³)	13
API FC	(mm)	1.0	LGSolid (kg/m³)	35.2
MBT	(kg/m³)		ES (mV)	327
Lime	(kg/m³)	11.1	Oil Ret (%)	
pH				
Pm	(cm³)	3.0		
Pf/Mf	(cm³ / cm³			

Comment1:

Mud Products

Additive	# Units
VAN RENTAL	2
EZ-MUL NT	2
CAL CHLORIDE	10
RM-63	2
INVERMUL NT	3
LIME HYDRATED	10
MUD CHECK TE	1

Mud Cost

Daily	$6,438.28
Cumulative	$34,202.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	519.00	
Cum. Hours	31.50	
WOB (Min)(daN)	4,000	
WOB (Max)(daN)	7,000	
RPM (Min)	35	
RPM (Max)	45	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	57,000
Pick-Up Weight	(daN)	57,000
Slack Off Weight	(daN)	57,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/03/2003
Last BOP Drill	02/03/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	D!S (°/30m)	BUR (°/30m)
906.10	3.100	289.700	905.93	5.43	-5.87	-7.70	0.11	-0.10
934.70	3.600	295.800	934.48	6.08	-7.41	-9.37	0.64	0.52
953.70	3.400	307.600	953.44	6.69	-8.39	-10.52	1.18	-0.32
963.20	3.000	322.300	962.93	7.06	-8.77	-11.02	2.87	-1.26
982.20	2.800	329.500	981.90	7.85	-9.31	-11.86	0.66	-0.32
1,010.80	2.500	349.600	1,010.47	9.07	-9.77	-12.83	1.02	-0.31
1,039.30	2.600	14.100	1,038.94	10.30	-9.73	-13.35	1.14	0.11
1,068.00	2.800	18.700	1,067.61	11.60	-9.34	-13.60	0.31	0.21
1,087.00	2.900	25.100	1,086.59	12.47	-8.99	-13.69	0.53	0.16
1,106.00	2.900	39.800	1,105.57	13.28	-8.48	-13.60	1.17	0.00
1,115.50	3.300	47.600	1,115.05	13.65	-8.12	-13.45	1.83	1.26
1,144.00	3.800	59.200	1,143.50	14.68	-6.71	-12.66	0.92	0.53
1,163.10	3.600	63.900	1,162.56	15.27	-5.63	-11.97	0.57	-0.31
1,172.50	3.500	66.200	1,171.94	15.52	-5.10	-11.61	0.56	-0.32
1,182.10	3.200	73.400	1,181.52	15.71	-4.57	-11.23	1.61	-0.94
1,191.60	2.900	82.400	1,191.01	15.82	-4.08	-10.84	1.78	-0.95
1,201.10	2.800	100.700	1,200.50	15.81	-3.61	-10.42	2.88	-0.32

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/04/2003 Report: 15 DFS: 11.00 DOL: 15.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR
1,210.60	3.600	114.300	1,209.98	15.64	-3.11	-9.90	3.47	2.53
1,220.10	4.600	123.600	1,219.46	15.31	-2.53	-9.22	3.78	3.16

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/05/2003 | Report: 16 | DFS: 12.00 | DOL: 16.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	1,351.00 (m)	TVD:	1,348.60 (m)	Progress:	177.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	20.00	AV ROP:	8.85	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	63,216	Cum Cost:	1,782,693	AFE Est:	4,288,464	AFE No.:	400792

Current Status: CIRC, ATTEMPT TO GET SURVEY @ 389mMD, PLUGGED NOZZLE IN BIT

24hr Forecast: DRILL AHEAD OR TRIP FOR DIR TOOLS

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 00:15	0.25	07		P	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
00:15 - 07:00	6.75	20	A	P	DRLIN1	ROTARY DRILL F/ 1174 - 1208 M. K.O.P. ORIENT DIRECTIONAL TOOLS, START BUILD SECTION F/ 1208 - 1251 M. SLIDE 2 - 4 M. W/ 12 - 15000 KPA DIFFERENTIAL THRU MOTOR.
07:00 - 08:00	1.00	10		P	DRLIN1	SURVEYS W/ MWD. (ACCUMULATED TIME)
08:00 - 16:45	8.75	20	A	P	DRLIN1	DIRECTIONAL DRILL F/ 1251 - 1303 M. BUILD INCLINATION F/ 3.6 TO 9.4 DEG, AZ @ 111.3
16:45 - 17:00	0.25	07		P	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS; 8 SECONDS TO CLOSE, FUNCTION REMOTE CHOKE
17:00 - 18:45	1.75	20	A	P	DRLIN1	DIRECTIONAL DRILL F/ 1303 - 1322 M. CONTINUE BUILD INCLINATION TO 11.9 DEG. AZ @ 113.7
18:45 - 20:00	1.25	10		P	DRLIN1	SURVEYS W/ MWD. (ACCUMULATED TIME)
20:00 - 20:15	0.25	07		P	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 6 SECONDS TO CLOSE
20:15 - 23:00	2.75	20	A	P	DRLIN1	DIRECTIONAL DRILL F/ 1322 - 1351 MD. BUILD INCLINATION TO 14.6 DEG. 114.8 AZ
23:00 - 00:00	1.00	10		P	DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
ROTARY DRILL F/ 1174 M. - 1208 M. KOP. START BUILD AND AZ TO TARGET F/ 1208 - 1351 M.D. BUILD INCLINATION TO 14.6 DEG @ 114.8 AZ.

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAA (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,383.6	5,464	910.0	KOTCHO	1,255.00	Bkgr Avg/Max (mg/L)	15/180
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/05/2003 Report: 16 DFS: 12.00 DOL: 16.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	140.0
Stroke (mm)	254.0	254.0
EFF	100.0	100.0
Press (kPa)	7,900	7,900
SPM	65	65
Output (L/mi	762.46	762.46

Velocities

Drill Pipe	(m/min)	57.9
Drill Collar	(m/min)	111.8
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	1,850 (kP	586.50 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: INVERT			
Time 13:40 / OUT		Ca+ (mg/L)	14,000
Depth (m)	1,282.00	K+ (mg/L)	
Temp (°C)	32	Polymer (kg/m³)	
Density (kg/m³)	910	CaCl2 (%)	32.82
ECD (kg/m³)	917	NaCl (%)	
Viscosity (s/l)	42	Sand (%)	0.100
PV (mPa*s)	5.0	Tot. Solids	
YP (Pa)	1.0	% Oil	84.0
GELS (Pa)	1.0/1.5/	% H2O	14.0
API WL (mL)		Oil/H2O	
HTHP WL (mL)	11.0	HGSolid (kg/m³)	23
API FC (mm)		LGSolid (kg/m³)	28.6
MBT (kg/m³)		ES (mV)	500
Lime (kg/m³)	7.2	Oil Ret (%)	
pH			
Pm (cm³)	1.9		
Pf/Mf (cm³ / cm³)			
Comment1:			

Mud Products

Additive	# Units
VAN RENTAL	2
ENVIRO-DRILL I	4
HT-40-N	16
EZ-MUL NT	1
CAL CHLORIDE	20
INVERMUL NT	1
LIME HYDRATED	20
SUSPENTONE	10
MUD CHECK TE	1

Mud Cost

Daily	$16,602.37
Cumulative	$50,805.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	696.00	
Cum. Hours	51.50	
WOB (Min)(daN)	2,000	
WOB (Max)(daN)	6,000	
RPM (Min)	25	
RPM (Max)	35	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	62,000
Pick-Up Weight	(daN)	66,000
Slack Off Weight	(daN)	58,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bi	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/03/2003
Last BOP Drill	02/03/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
1,229.60	5.700	126.600	1,228.92	14.82	-1.83	-8.38	3.58	3.47
1,239.10	6.000	125.000	1,238.37	14.25	-1.04	-7.42	1.08	0.95
1,248.60	6.200	122.600	1,247.82	13.69	-0.21	-6.42	1.02	0.63
1,258.20	6.200	123.100	1,257.36	13.13	0.67	-5.39	0.17	0.00
1,267.50	6.500	122.200	1,266.60	12.57	1.53	-4.36	1.02	0.97
1,277.00	7.000	121.300	1,276.04	11.99	2.48	-3.25	1.61	1.58
1,286.50	7.400	117.600	1,285.46	11.40	3.52	-2.06	1.93	1.26
1,296.10	8.400	113.300	1,294.97	10.84	4.71	-0.74	3.63	3.13
1,305.60	9.400	111.300	1,304.36	10.28	6.07	0.72	3.31	3.16
1,315.10	10.700	112.500	1,313.71	9.66	7.61	2.37	4.16	4.11
1,324.50	11.900	113.700	1,322.93	8.94	9.30	4.21	3.90	3.83
1,334.00	12.800	114.800	1,332.21	8.10	11.15	6.24	2.94	2.84
1,343.50	13.700	117.000	1,341.46	7.15	13.11	8.41	3.26	2.84
1,353.10	14.300	117.200	1,350.77	6.09	15.18	10.74	1.88	1.88
1,362.50	14.500	116.400	1,359.88	5.04	17.27	13.07	0.90	0.64

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/06/2003 | Report: 17 | DFS: 13.00 | DOL: 17.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	1,450.00 (m)	TVD:	1,444.20 (m)	Progress:	99.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	11.00	AV ROP:	9.00	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	63,512	Cum Cost:	1,846,205	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DIR DRILL 216mm HOLE w/ PDC- INVERT @ 1512mMD

24hr Forecast: DIR DRILL AHEAD,MAINTAIN ANGLE/ AZ TO TARGET @ 2521mMD

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 02:30	2.50	20	A	P DRLIN1	DIR. DRILL F/ 1351 - 1370 MD. FINISH BUILD, MAINTAIN INCL. @ 14.3 DEG, AZ @ 115.4
02:30 - 02:45	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE.
02:45 - 04:45	2.00	20	A	P DRLIN1	DIR. DRILL F/ 1370 - 1389 MD. MAINTAIN INCL. @ 14.6 DEG. / 116.7 AZ.
04:45 - 05:30	0.75	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
05:30 - 06:30	1.00	20	A	P DRLIN1	PUMP PRESSURE INCREASE, MWD FAILURE, UNABLE TO GET SURVEY.
06:30 - 07:00	0.50	05	K	P DRLIN1	CIRCULATE HOLE CLEAN
07:00 - 11:00	4.00	06	J	P DRLIN1	FLOW CHECK, PUMP PILL, TRIP OUT, FLOW CHECKS @ 1389, 1290, 862, DRILL COLLARS.
11:00 - 12:15	1.25	06	J	P DRLIN1	CHANGE OUT MWD AND MOTOR, XP 7/8 MOTOR SET @ 1.5 DEG
12:15 - 15:30	3.25	06	J	P DRLIN1	FLOW CHECK, RUN IN TO 685 M. TEST MWD
15:30 - 15:45	0.25	07		P DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
15:45 - 19:30	3.75	20	A	P DRLIN1	DIR. DRILL F/ 1389 - 1417 MD. MAINTAIN INCL. AND AZ.
19:30 - 20:00	0.50	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
20:00 - 20:15	0.25	07		P DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS; 7 SECONDS TO CLOSE
20:15 - 23:00	2.75	20	A	P DRLIN1	DIR. DRILL F/ 1417 - 1450 MD. MAINTAIN INCL. AND AZ.
23:00 - 00:00	1.00	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
DIR. DRILL F/ 1351 - 1389 MD. MAINTAIN INCL. @ 14.6 DEG, AZ @ 116. MWD FAILURE, TRIP FOR MWD TOOL, CHANGE OUT MWD/ MOTOR, RIH. DIR DRILL AHEAD F/ 1389 - 1450 MD.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,454	910.0

Formation Data

Formation Name	Top (m)
KOTCHO	1,255.00

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	8/18
Trip Avg/Max	(mg/L)	5/36
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/06/2003 Report: 17 DFS: 13.00 DOL: 17.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	140.0
Stroke (mm)	254.0	254.0
EFF	100.0	100.0
Press (kPa)	8,000	8,000
SPM	65	65
Output (L/mi	762.46	762.46

Velocities

Drill Pipe	(m/min)	57.9
Drill Collar	(m/min)	111.8
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	2,050 (kP	574.77 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: INVERT

Time/Date	19:45 / OUT		Ca+ (mg/L)	14,000
Depth	(m)	1,408.00	K+ (mg/L)	
Temp	(°C)	32	Polymer (kg/m³)	
Density	(kg/m³)	910	CaCl2 (%)	38.70
ECD	(kg/m³)	929	NaCl (%)	
Viscosity	(s/l)	40	Sand (%)	0.100
PV	(mPa*s)	5.0	Tot. Solids	
YP	(Pa)	0.5	% Oil	85.0
GELS	(Pa)	1.0/1.5/	% H2O	13.0
API WL	(mL)		Oil/H2O	
HTHP WL	(mL)	11.0	HGSolid (kg/m³)	3
API FC	(mm)		LGSolid (kg/m³)	23.4
Mud T	(kg/m³)		ES (mV)	787
Line	(kg/m³)	10.7	Oil Ret (%)	
pH				
Pm	(cm³)	2.9		
Pf/Mf	(cm³ / cm³			

Comment1:

Mud Products

Additive	# Units
BARITE	12
VAN RENTAL	2
CAL CHLORIDE	10
MUD CHECK TE	1

Mud Cost

Daily	$1,148.06
Cumulative	$51,953.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	795.00	
Cum. Hours	62.50	
WOB (Min)(daN)	3,000	
WOB (Max)(daN)	6,000	
RPM (Min)	25	
RPM (Max)	35	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	64,000
Pick-Up Weight	(daN)	68,000
Slack Off Weight	(daN)	60,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/06/2003
Last BOP Drill	02/03/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
1,372.40	14.300	115.400	1,369.46	3.96	19.48	15.54	0.97	-0.61
1,381.90	14.300	116.000	1,378.67	2.95	21.59	17.88	0.47	0.00
1,391.40	14.600	116.700	1,387.87	1.89	23.72	20.25	1.10	0.95
1,400.90	15.300	117.000	1,397.05	0.79	25.91	22.70	2.22	2.21
1,410.40	16.000	117.100	1,406.20	-0.38	28.19	25.27	2.21	2.21
1,419.90	16.300	118.200	1,415.32	-1.61	30.53	27.91	1.35	0.95
1,429.40	16.300	120.400	1,424.44	-2.91	32.85	30.57	1.95	0.00
1,438.90	16.200	120.300	1,433.56	-4.25	35.15	33.23	0.33	-0.32
1,448.40	16.200	119.600	1,442.68	-5.58	37.44	35.87	0.62	0.00
1,458.00	16.200	119.000	1,451.90	-6.89	39.78	38.55	0.52	0.00
1,467.50	16.200	117.100	1,461.02	-8.13	42.12	41.20	1.67	0.00
1,477.00	16.100	116.100	1,470.15	-9.32	44.48	43.84	0.93	-0.32
1,486.50	16.100	117.300	1,479.28	-10.50	46.83	46.48	1.05	0.00

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/07/2003 Report: 18 DFS: 14.00 DOL: 18.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	1,688.00 (m)	TVD:	1,672.60 (m)	Progress:	238.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	19.75	AV ROP:	12.05	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	61,955	Cum Cost:	1,908,160	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DIR DRILL 216mm HOLE w/ PDC- MOTOR @ 1750mMD

24hr Forecast: DRILL AHEAD, MAINTAIN INC- AZ TO SLAVE PT TARGET @ 2520mMD

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 02:15	2.25	20	A	P DRLIN1	DIRECTIONAL DRILL AHEAD F/ 1450 - 1474 MD. MAINTAIN INCL. AND AZ.
02:15 - 02:30	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
02:30 - 06:45	4.25	20	A	P DRLIN1	DIR. DRILL F/ 1474 - 1531 MD.
06:45 - 08:00	1.25	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
08:00 - 18:30	10.50	20	A	P DRLIN1	DIR. DRILL F/ 1531 - 1665 MD.
18:30 - 18:45	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
18:45 - 20:00	1.25	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
20:00 - 20:15	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
20:15 - 23:00	2.75	20		P DRLIN1	DIR. DRILL F/ 1665 - 1688 MD.
23:00 - 00:00	1.00	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
DIRECTIONAL DRILL AHEAD F/ 1450 - 1688 MD. MAINTAIN INCL. @ 17 DEG. AZ @ 122.1 TOWARDS TARGET, SLIDING AS REQUIRED.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,336	930.0

Formation Data

Formation Name	Top (m)
TROUT RIVER	1,687.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	10/70
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/07/2003 | Report: 18 | DFS: 14.00 | DOL: 18.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT	1100-PT
Liner (mm)	140.0	14.0
Stroke (mm)	254.0	254.0
EFF	100.0	100.0
Press (kPa)	8,000	7,900
SPM	65	120
Output (L/mi	762.46	14.08

Velocities

Drill Pipe	(m/min)	29.5
Drill Collar	(m/min)	56.9
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	2,400 (kP	5,747.74 (L/min
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: INVERT

Time	15:00 / OUT		Ca+ (mg/L)	14,000
Depth	(m)	1,617.00	K+ (mg/L)	
Temp	(°C)	44	Polymer (kg/m³)	
Density	(kg/m³)	930	CaCl2 (%)	38.70
ECD	(kg/m³)	949	NaCl (%)	
Viscosity	(s/l)	44	Sand (%)	0.100
PV	(mPa*s)	5.0	Tot. Solids	
YP	(Pa)	1.0	% Oil	85.0
GELS	(Pa)	1.5/2.5/	% H2O	12.0
API WL	(mL)		Oil/H2O	
HTHP WL	(mL)	8.0	HGSolid (kg/m³)	14
API FC	(mm)		LGSolid (kg/m³)	42.2
MBT	(kg/m³)		ES (mV)	1,072
Lime	(kg/m³)	12.2	Oil Ret (%)	
pH				
Pm	(cm³)	3.3		
Pf/Mf	(cm³ / cm³)			

Comment1:

Mud Products

Additive	# Units
VAN RENTAL	2
CAL CARB #0	20
CAL CARB #325	20
GELTONE V	10
LIME HYDRATED	19
SUSPENTONE	25
MUD CHECK TE	1

Mud Cost

Daily	$3,415.94
Cumulative	$55,369.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	1,033.00	
Cum. Hours	82.25	
WOB (Min)(daN)	3,000	
WOB (Max)(daN)	6,000	
RPM (Min)	20	
RPM (Max)	25	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	68,000
Pick-Up Weight	(daN)	72,000
Slack Off Weight	(daN)	64,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/02/2003
Last BOP Test (F)	02/06/2003
Last BOP Drill	02/03/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
1,495.90	16.100	118.800	1,488.31	-11.73	49.13	49.08	1.33	0.00
1,505.50	16.000	121.400	1,497.53	-13.06	51.43	51.73	2.27	-0.31
1,515.00	15.800	122.000	1,506.67	-14.42	53.64	54.33	0.82	-0.63
1,524.50	15.400	121.000	1,515.82	-15.76	55.82	56.87	1.52	-1.26
1,534.00	15.300	119.400	1,524.98	-17.02	58.00	59.38	1.37	-0.32
1,543.50	15.600	120.100	1,534.14	-18.28	60.19	61.91	1.12	0.95
1,553.00	16.100	121.300	1,543.28	-19.60	62.42	64.50	1.89	1.58
1,562.50	16.300	123.400	1,552.40	-21.02	64.66	67.14	1.95	0.63
1,572.00	16.200	123.100	1,561.52	-22.48	66.89	69.78	0.41	-0.32
1,581.50	16.000	122.700	1,570.65	-23.91	69.10	72.40	0.72	-0.63
1,591.00	16.200	122.600	1,579.78	-25.33	71.32	75.03	0.64	0.63
1,600.50	16.900	123.400	1,588.88	-26.81	73.58	77.72	2.32	2.21
1,610.00	17.200	122.600	1,597.96	-28.32	75.92	80.49	1.20	0.95
1,619.50	17.000	122.200	1,607.04	-29.82	78.28	83.27	0.73	-0.63
1,629.00	16.700	120.700	1,616.14	-31.26	80.63	86.02	1.67	-0.95
1,638.50	16.500	118.600	1,625.24	-32.60	82.99	88.73	2.00	-0.63
1,648.00	16.600	119.400	1,634.35	-33.91	85.35	91.43	0.79	0.32

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/07/2003 Report: 18 DFS: 14.00 DOL: 18.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR
1,657.50	17.000	121.300	1,643.44	-35.30	87.72	94.17	2.15	1.26
1,667.00	17.000	122.100	1,652.53	-36.76	90.09	96.94	0.74	0.00
1,676.50	16.900	121.800	1,661.61	-38.22	92.43	99.70	0.42	-0.32
1,686.00	16.700	121.100	1,670.71	-39.66	94.78	102.44	0.90	-0.63
1,695.50	16.500	121.200	1,679.81	-41.06	97.10	105.14	0.64	-0.63
1,705.00	16.000	119.500	1,688.93	-42.41	99.39	107.80	2.18	-1.58
1,714.50	15.400	117.700	1,698.08	-43.64	101.65	110.37	2.44	-1.89

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/08/2003 Report: 19 DFS: 15.00 DOL: 19.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	1,893.00 (m)	TVD:	1,870.30 (m)	Progress:	205.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	19.75	AV ROP:	10.38	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	50,318	Cum Cost:	1,958,477	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DIR DRILL 216mm HOLE w/ PDC- MOTOR @ 1940mMD

24hr Forecast: DIR DRILL AHEAD TO SLAVE PT TARGET @ 2520mMD

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 02:30	2.50	20	A	P DRLIN1	DIR. DRILL AHEAD F/ 1688 - 1712 MD.
02:30 - 02:45	0.25	07		P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
02:45 - 06:45	4.00	20	A	P DRLIN1	DIR. DRILL AHEAD F/ 1712 - 1769 MD.
06:45 - 08:00	1.25	10		P DRLIN1	SURVEYS W/ MWD, (ACCUMULATED TIME)
08:00 - 18:00	10.00	20	A	P DRLIN1	DIR. DRILL AHEAD F/ 1769 - 1826 MD
18:00 - 18:15	0.25	07		P DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
18:15 - 18:45	0.50	20	A	P DRLIN1	DIR. DRILL AHEAD F/ 1826 - 1845 MD
18:45 - 20:00	1.25	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
20:00 - 22:45	2.75	20	A	P DRLIN1	DIR. DRILL AHEAD F/ 1845 - 1893 MD.
22:45 - 23:00	0.25	07		P DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 8 SECONDS TO CLOSE
23:00 - 00:00	1.00	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
DIRECTIONAL DRILL AHEAD F/ 1688 - 1893 MD. MAINTAIN INCL. @ 15.5 DEG. AZ @ 120.8 TOWARDS TARGET, SLIDING AS REQUIRED.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,336	930.0

Formation Data

Formation Name	Top (m)
FT. SIMPSON	1,826.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	5/30
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/08/2003 Report: 19 DFS: 15.00 DOL: 19.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT	
Liner (mm)	140.0	
Stroke (mm)	254.0	
EFF	100.0	
Press (kPa)	7,700	
SPM	120	
Output (L/mi	1,407.61	

Velocities

Drill Pipe	(m/min)	53.4
Drill Collar	(m/min)	103.2
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	2,780 (kP	680.34 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	INVERT			
Time/15:00 / OUT		Ca+ (mg/L)	14,000	
Depth (m)	1,800.00	K+ (mg/L)		
Temp (°C)	44	Polymer (kg/m³)		
Density (kg/m³)	930	CaCl2 (%)	38.71	
ECD (kg/m³)	949	NaCl (%)		
Viscosity (s/l)	43	Sand (%)	0.100	
PV (mPa*s)	7.0	Tot. Solids		
YP (Pa)	0.5	% Oil	85.0	
GELS (Pa)	1.5/2.5/	% H2O	12.0	
API WL (mL)		Oil/H2O		
HTHP WL (mL)	8.0	HGSolid (kg/m³)	15	
API FC (mm)		LGSolid (kg/m³)	40.2	
MBT (kg/m³)		ES (mV)	1,088	
Lime (kg/m³)	12.2	Oil Ret (%)		
pH				
Pm (cm³)	3.3			
Pf/Mf (cm³ / cm³)				
Comment1:				

Mud Products

Additive	# Units
VAN RENTAL	2
CAL CARB #0	10
CAL CARB #325	10
LIME HYDRATED	5
SUSPENTONE	10
MUD CHECK TE	1

Mud Cost

Daily	$1,381.65
Cumulative	$56,750.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	1,238.00	
Cum. Hours	102.00	
WOB (Min)(daN)	3,000	
WOB (Max)(daN)	12,000	
RPM (Min)	20	
RPM (Max)	25	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID (mm)		
DC OD (mm)		
DC (m)		
HWDP OD (mm)		
HWDP (m)		
BHA		1,879.84
DP OD (mm)		
String Rot Weight (daN)		73,000
Pick-Up Weight (daN)		81,000
Slack Off Weight (daN)		68,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/06/2003
Last BOP Drill	02/03/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
1,724.00	14.900	115.700	1,707.25	-44.75	103.87	112.85	2.28	-1.58
1,733.50	15.100	115.600	1,716.42	-45.82	106.08	115.31	0.64	0.63
1,743.00	15.200	116.600	1,725.59	-46.91	108.31	117.79	0.88	0.32
1,752.50	14.900	118.200	1,734.77	-48.04	110.50	120.26	1.62	-0.95
1,762.00	15.000	119.500	1,743.95	-49.23	112.65	122.71	1.11	0.32
1,771.50	15.000	121.500	1,753.12	-50.47	114.77	125.16	1.63	0.00
1,781.00	15.400	121.900	1,762.29	-51.78	116.89	127.64	1.31	1.26
1,790.50	15.800	121.400	1,771.44	-53.12	119.06	130.19	1.33	1.26
1,800.00	15.800	121.200	1,780.58	-54.47	121.27	132.77	0.17	0.00
1,809.50	15.500	121.700	1,789.73	-55.80	123.46	135.33	1.04	-0.95
1,819.00	15.100	120.600	1,798.89	-57.10	125.60	137.83	1.56	-1.26
1,828.50	14.700	120.300	1,808.07	-58.34	127.71	140.26	1.29	-1.26
1,838.00	14.500	119.800	1,817.27	-59.54	129.78	142.66	0.75	-0.63
1,847.50	14.700	119.800	1,826.46	-60.73	131.86	145.05	0.63	0.63
1,857.10	15.200	119.800	1,835.74	-61.96	134.01	147.52	1.56	1.56
1,866.60	15.700	120.300	1,844.89	-63.23	136.20	150.05	1.63	1.58
1,876.10	15.500	120.800	1,854.04	-64.52	138.40	152.60	0.70	-0.63

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/08/2003 Report: 19 DFS: 15.00 DOL: 19.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR
1,885.60	15.200	120.400	1,863.20	-65.81	140.56	155.11	1.00	-0.95
1,895.10	15.000	119.500	1,872.38	-67.04	142.71	157.58	0.97	-0.63
1,904.60	15.200	119.600	1,881.55	-68.26	144.86	160.05	0.64	0.63
1,914.10	15.600	119.200	1,890.71	-69.50	147.06	162.57	1.31	1.26

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/09/2003 Report: 20 DFS: 16.00 DOL: 20.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,125.00 (m)	TVD:	2,094.00 (m)	Progress:	232.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	19.75	AV ROP:	11.75	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	62,280	Cum Cost:	2,020,758	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DIR DRILL 216mm HOLE w/ PDC-MOTOR-INVERT @ 2178mMD

24hr Forecast: DIR DRILL AHEAD, MAINTAIN INCL-AZ TO SLAVE PT TARGET @ 2520m

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 02:15	2.25	20	A	P DRLIN1	DIRECTIONAL DRILL 216 MM HOLE F/ 1893 - 1912 MD
02:15 - 02:30	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
02:30 - 06:45	4.25	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 1912 - 1955 MD
06:45 - 08:00	1.25	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
08:00 - 18:00	10.00	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 1955 - 2054 MD
18:00 - 18:15	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 6 SECONDS TO CLOSE
18:15 - 18:45	0.50	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2054 - 2083 MD
18:45 - 20:00	1.25	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
20:00 - 22:45	2.75	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2083 - 2125 MD.
22:45 - 23:00	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
23:00 - 00:00	1.00	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
DIRECTIONAL DRILL AHEAD F/ 1893 - 2125 MD. MAINTAIN INCL. @ 15.4 DEG. AZ @ 122.6 TOWARDS TARGET, SLIDING AS REQUIRED.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,368	925.0

Formation Data

Formation Name	Top (m)
FT. SIMPSON	1,826.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	10/30
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/09/2003 | Report: 20 | DFS: 16.00 | DOL: 20.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	8,000		
SPM	120		
Output (L/mi	1,407.61		

Velocities

Drill Pipe	(m/min)	53.4
Drill Collar	(m/min)	103.2
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	2,730 (kP	609.96 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: INVERT

Time/Loc	13:25 /		Ca+ (mg/L)	14,500	
Depth	(m)	2,017.00	K+ (mg/L)		
Temp	(°C)	44	Polymer (kg/m³)		
Density	(kg/m³)	925	CaCl2 (%)	39.07	
ECD	(kg/m³)	943	NaCl (%)		
Viscosity	(s/l)	44	Sand (%)	0.100	
PV	(mPa*s)	6.0	Tot. Solids		
YP	(Pa)	1.0	% Oil	87.0	
GELS	(Pa)	1.5/2.5/	% H2O	10.0	
API WL	(mL)		Oil/H2O		
HTHP WL	(mL)	11.8	HGSolid (kg/m³)	11	
API FC	(mm)		LGSolid (kg/m³)	43.6	
MBT	(kg/m³)		ES (mV)	1,352	
Lime	(kg/m³)	11.1	Oil Ret (%)		
pH					
Pm	(cm³)	3.0			
Pf/Mf	(cm³ / cm³				

Comment1:

Mud Products

Additive	# Units
VAN RENTAL	2
CAL CARB #0	10
CAL CARB #325	10
RM-63	1
DURATONE HT	14
GELTONE V	10
LIME HYDRATED	10
SUSPENTONE	5
MUD CHECK TE	1

Mud Cost

Daily	$3,969.15
Cumulative	$60,720.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	1,470.00	
Cum. Hours	121.75	
WOB (Min)(daN)	3,000	
WOB (Max)(daN)	12,000	
RPM (Min)	20	
RPM (Max)	25	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	78,000
Pick-Up Weight	(daN)	88,000
Slack Off Weight	(daN)	73,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/06/2003
Last BOP Drill	02/03/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
1,923.50	15.500	119.100	1,899.76	-70.73	149.26	165.09	0.33	-0.32
1,933.00	15.300	119.300	1,908.92	-71.96	151.46	167.61	0.65	-0.63
1,942.50	14.900	118.300	1,918.09	-73.15	153.63	170.09	1.51	-1.26
1,952.00	14.600	117.800	1,927.28	-74.29	155.77	172.51	1.03	-0.95
1,961.50	15.000	119.100	1,936.46	-75.44	157.90	174.93	1.64	1.26
1,971.00	15.900	120.700	1,945.62	-76.71	160.09	177.46	3.14	2.84
1,980.50	15.900	121.200	1,954.76	-78.04	162.32	180.06	0.43	0.00
1,990.00	15.600	120.100	1,963.90	-79.36	164.54	182.63	1.34	-0.95
1,999.50	15.100	119.200	1,973.06	-80.60	166.73	185.14	1.75	-1.58
2,009.00	14.800	117.100	1,982.24	-81.76	168.89	187.59	1.96	-0.95
2,018.50	15.100	116.500	1,991.42	-82.87	171.08	190.04	1.07	0.95
2,028.00	15.800	117.800	2,000.58	-84.02	173.33	192.57	2.47	2.21
2,037.50	16.600	119.800	2,009.70	-85.30	175.65	195.22	3.08	2.53
2,047.00	16.600	120.500	2,018.80	-86.66	178.00	197.93	0.63	0.00
2,056.50	16.100	119.700	2,027.92	-88.00	180.31	200.60	1.73	-1.58
2,066.00	15.800	119.000	2,037.05	-89.28	182.58	203.21	1.13	-0.95
2,075.50	15.400	118.500	2,046.20	-90.51	184.82	205.76	1.33	-1.26

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/09/2003 Report: 20 DFS: 16.00 DOL: 20.00
Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR
2,085.00	15.100	119.400	2,055.37	-91.72	187.01	208.26	1.21	-0.95
2,094.50	15.200	121.400	2,064.54	-92.98	189.15	210.74	1.68	0.32
2,104.00	15.400	122.600	2,073.70	-94.31	191.28	213.24	1.18	0.63
2,113.50	15.300	122.600	2,082.86	-95.66	193.40	215.74	0.32	-0.32
2,123.00	14.900	122.000	2,092.03	-96.98	195.49	218.21	1.36	-1.26
2,132.60	14.500	121.200	2,101.32	-98.26	197.56	220.63	1.40	-1.25
2,142.10	14.200	118.700	2,110.52	-99.44	199.60	222.98	2.17	-0.95
2,151.60	14.600	117.100	2,119.73	-100.54	201.69	225.35	1.78	1.26
2,161.10	14.900	115.800	2,128.91	-101.62	203.85	227.77	1.41	0.95

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/10/2003 | Report: 21 | DFS: 17.00 | DOL: 21.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,339.00 (m)	TVD:	2,301.10 (m)	Progress:	214.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	19.50	AV ROP:	10.97	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	83,067	Cum Cost:	2,103,825	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DIR DRILL 216mm HOLE w/ PDC-MOTOR-INVERT @ 2398mMD

24hr Forecast: DIR DRILL AHEAD TO SLAVE PT TARGET @ 2520mMD

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	21	B	P DRLIN1	HELD BOP DRILL W/ CREW, WELL SECURE IN 98 SECONDS, FUNCTION ANNULAR: 15 SECONDS TO CLOSE
00:15 - 06:30	6.25	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2125 - 2187 MD
06:30 - 06:45	0.25	07	A	P DRLIN1	RIG SERVICE
06:45 - 08:00	1.25	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
08:00 - 09:00	1.00	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2187 - 2206 MD
09:00 - 09:15	0.25	21	B	P DRLIN1	HELD BOP DRILL W/ CREW, FUNCTION ANNULAR, REMOTE CHOKE.
09:15 - 13:45	4.50	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2206 - 2254 MD
13:45 - 14:00	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
14:00 - 15:00	1.00	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2254 - 2273 MD
15:00 - 16:00	1.00	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
16:00 - 19:45	3.75	20	A	P DRLIN1	DIR DRILL 216 MM HOLE F/ 2273 - 2301 MD
19:45 - 20:00	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE, CHANGE OUT MUD SAVER VALVE
20:00 - 23:00	3.00	20	A	P DRLIN1	DIR DRILL 216 MM HOLE F/ 2301 - 2339 MD.
23:00 - 00:00	1.00	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)

DAILY OPERATIONAL COMMENTS(24hr Summary):
DIRECTIONAL DRILL AHEAD F/ 2125 - 2339 MD. MAINTAIN INCL. @ 14.3 DEG. AZ @ 117.8 TOWARDS TARGET, SLIDING AS REQUIRED.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,368	925.0

Formation Data

Formation Name	Top (m)
FT. SIMPSON	1,826.00

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	1.1/25
Trip Avg/Max	(mg/L)	
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/10/2003 Report: 21 DFS: 17.00 DOL: 21.00
Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	8,200		
SPM	120		
Output (L/mi	1,407.61		

Velocities

Drill Pipe	(m/min)	53.4
Drill Collar	(m/min)	103.2
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	2,780 (kP	656.98 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	INVERT				
Time	08:30 / OUT		Ca+	(mg/L)	14,500
Depth	(m)	2,179.00	K+	(mg/L)	
Temp	(°C)	47	Polymer	(kg/m³)	
Density	(kg/m³)	925	CaCl2	(%)	39.07
ECD	(kg/m³)	944	NaCl	(%)	
Viscosity	(s/l)	44	Sand	(%)	0.100
PV	(mPa*s)	6.0	Tot. Solids		
YP	(Pa)	1.0	% Oil		85.5
GELS	(Pa)	1.5/2.5/	% H2O		11.5
API WL	(mL)		Oil/H2O		
HTHP WL	(mL)	8.0	HGSolid	(kg/m³)	4
API FC	(mm)		LGSolid	(kg/m³)	48.9
MBT	(kg/m³)		ES	(mV)	1,327
Lime	(kg/m³)		Oil Ret	(%)	
pH					
Pm	(cm³)	2.8			
Pf/Mf	(cm³ / cm³				

Comment1:

Mud Products

Additive	# Units
VAN RENTAL	2
CAL CARB #0	10
CAL CARB #325	10
GELTONE V	13
LIME HYDRATED	10
MUD CHECK TE	1

Mud Cost

Daily	$1,531.40
Cumulative	$62,251.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	1,684.00	
Cum. Hours	141.25	
WOB (Min)(daN)	2,000	
WOB (Max)(daN)	12,000	
RPM (Min)	20	
RPM (Max)	25	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	82,000
Pick-Up Weight	(daN)	97,000
Slack Off Weight	(daN)	74,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/10/2003
Last BOP Drill	02/10/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
2,170.60	14.900	116.300	2,138.09	-102.69	206.05	230.21	0.41	0.00
2,180.10	14.800	117.300	2,147.28	-103.79	208.22	232.64	0.87	-0.32
2,189.60	14.700	117.000	2,156.46	-104.89	210.37	235.06	0.40	-0.32
2,199.10	14.400	116.500	2,165.66	-105.97	212.51	237.45	1.03	-0.95
2,208.50	14.400	118.100	2,174.76	-107.04	214.58	239.79	1.27	0.00
2,218.10	14.600	119.500	2,184.06	-108.20	216.69	242.19	1.26	0.63
2,227.60	14.400	120.300	2,193.25	-109.38	218.75	244.56	0.89	-0.63
2,237.10	14.000	120.300	2,202.46	-110.56	220.76	246.89	1.26	-1.26
2,246.60	13.700	119.500	2,211.63	-111.69	222.73	249.16	1.12	-0.95
2,256.20	13.900	118.300	2,221.01	-112.80	224.74	251.45	1.09	0.63
2,265.70	14.500	117.000	2,230.22	-113.88	226.80	253.78	2.15	1.89
2,275.20	15.200	117.100	2,239.40	-114.99	228.97	256.21	2.21	2.21
2,284.70	15.500	118.900	2,248.56	-116.17	231.19	258.73	1.78	0.95
2,294.20	15.200	118.900	2,257.73	-117.38	233.39	261.24	0.95	-0.95
2,303.90	15.000	119.200	2,267.09	-118.61	235.60	263.77	0.66	-0.62
2,313.40	14.500	118.200	2,276.28	-119.77	237.72	266.19	1.77	-1.58
2,322.90	14.300	117.800	2,285.48	-120.88	239.81	268.55	0.71	-0.63

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/10/2003 Report: 21 DFS: 17.00 DOL: 21.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR
2,332.40	14.600	117.000	2,294.68	-121.97	241.91	270.92	1.14	0.95
2,341.90	14.600	117.600	2,303.87	-123.07	244.04	273.31	0.48	0.00
2,351.40	14.600	119.000	2,313.07	-124.20	246.15	275.71	1.11	0.00
2,360.90	14.900	120.200	2,322.25	-125.40	248.25	278.12	1.35	0.95
2,370.40	14.600	120.700	2,331.44	-126.62	250.34	280.54	1.03	-0.95

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/11/2003 | Report: 22 | DFS: 18.00 | DOL: 22.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,511.00 (m)	TVD:	2,467.80 (m)	Progress:	172.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	15.50	AV ROP:	11.10	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	144,288	Cum Cost:	2,248,113	AFE Est:	4,288,464	AFE No.:	400792

Current Status: LAYING DOWN DIR TOOLS FOR BHA CHANGE @ 2511mMD

24hr Forecast: RIH, DRILL TO INT TD, CONDITION HOLE, POOH TO LOG

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 04:30	4.50	20	A	P DRLIN1	DIRECTIONAL DRILL 216 MM HOLE F/ 2339 - 2387 MD
04:30 - 04:45	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 12 SECONDS TO CLOSE
04:45 - 07:00	2.25	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2387 - 2416 MD
07:00 - 08:00	1.00	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
08:00 - 12:00	4.00	20	A	P DRLIN1	DIR. DRILL AHEAD F/ 2416 - 2454 MD
12:00 - 12:15	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 7 SECONDS TO CLOSE
12:15 - 17:00	4.75	20	A	P DRLIN1	DIR. DRILL 216 MM HOLE F/ 2454 - 2511 MD.
17:00 - 18:15	1.25	10		P DRLIN1	SURVEYS W/ MWD (ACCUMULATED TIME)
18:15 - 20:00	1.75	05	K	P DRLIN1	CIRCULATE HOLE CLEAN
20:00 - 21:45	1.75	06	H	P DRLIN1	FLOW CHECK, PUMP PILL, WIPER TRIP 15 STANDS TO 2069 M. FLOW CHECK, RIH. HOLE GOOD
21:45 - 22:00	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 14 SECONDS TO CLOSE
22:00 - 00:00	2.00	05	K	P DRLIN1	CIRCULATE, CONDITION HOLE PRIOR TO TRIP

DAILY OPERATIONAL COMMENTS(24hr Summary):
DIRECTIONAL DRILL AHEAD F/ 2339 - 2511 MD. MAINTAIN INCL. @ 13.9 DEG. AZ @ 121.5 TOWARDS TARGET, SLIDING AS REQUIRED. CIRCULATE HOLE CLEAN, WIPER TRIP 15 STANDS, CIRC.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,368	925.0

Formation Data

Formation Name	Top (m)
MUSKWA	2,502.00

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	40/107
Trip Avg/Max	(mg/L)	
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/11/2003 Report: 22 DFS: 18.00 DOL: 22.00
Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	8,300		
SPM	120		
Output (L/mi	1,407.61		

Velocities

Drill Pipe	(m/min)	53.4
Drill Collar	(m/min)	103.2
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	2,740 (kP	645.15 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	INVERT			
Time/18:00 / OUT			Ca+ (mg/L)	14,000
Depth	(m)	2,423.00	K+ (mg/L)	
Temp	(°C)	48	Polymer (kg/m³)	
Density	(kg/m³)	920	CaCl2 (%)	38.29
ECD	(kg/m³)	931	NaCl (%)	
Viscosity	(s/l)	43	Sand (%)	0.100
PV	(mPa*s)	7.0	Tot. Solids	
YP	(Pa)	1.4	% Oil	87.6
GELS	(Pa)	1.0/2.0/	% H2O	9.4
API WL	(mL)		Oil/H2O	
HTHP WL	(mL)	9.0	HGSolid (kg/m³)	2
API FC	(mm)		LGSolid (kg/m³)	49.9
MBT	(kg/m³)		ES (mV)	1,500
Lime	(kg/m³)	9.9	Oil Ret (%)	
pH				
Pm	(cm³)	2.7		
Pf/Mf	(cm³ / cm³			
Comment1:				

Mud Products

Additive	# Units
BARITE	35
SAWDUST	62
VAN RENTAL	2
RM-63	1
GELTONE V	19
INVERMUL NT	1
LIME HYDRATED	15
SUSPENTONE	6
MUD CHECK TE	1

Mud Cost

Daily	$4,689.84
Cumulative	$66,941.00

Bit Data

Bit No.	1	
Run	5	
Size (mm)	215.90	
Manu.	UNITED DIA	
Type	UD 513	
Serial No.	00559	
TFA (mm²)	992.8	
Depth In (m)	655.00	
Depth Out (m)	2,511.00	
Cum. Depth (m)	1,856.00	
Cum. Hours	156.75	
WOB (Min)daN	2,000	
WOB (Max)daN	12,000	
RPM (Min)	20	
RPM (Max)	25	
Cond (IODL)	1/2/CT/H	
Cond (BGOR)	D/ 1/NO/BHA	
Jets 1/2/3	15.9/15.9/15.9	
Jets 4/5/6	15.9/15.9/	

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		1,879.84
DP OD	(mm)	
String Rot Weight	(daN)	86,000
Pick-Up Weight	(daN)	104,000
Slack Off Weight	(daN)	82,000

BHA Desc.: INTERMEDIATE RUN

Item	Jts	Length (m)
Polycrystalline Diamond Bit	1	0.16
Bent Housing	1	7.83
Float Sub	1	0.77
Hang-Off Sub	1	0.67
Non-Mag Pony Collar	1	2.90
Non-Mag Drill Collar	2	17.68
6 Point Reamer	1	1.35
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	10	93.66
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	174	1,652.73

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/10/2003
Last BOP Drill	02/10/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
2,380.00	14.100	119.900	2,340.74	-127.83	252.39	282.91	1.68	-1.56
2,389.50	13.800	118.600	2,349.96	-128.94	254.39	285.20	1.37	-0.95
2,408.50	13.900	119.400	2,368.41	-131.15	258.37	289.75	0.34	0.16
2,418.00	14.400	120.100	2,377.62	-132.30	260.38	292.07	1.67	1.58
2,427.50	14.900	120.100	2,386.81	-133.51	262.46	294.47	1.58	1.58
2,437.00	15.100	120.700	2,395.99	-134.75	264.58	296.92	0.60	0.63
2,446.50	15.100	122.800	2,405.16	-136.05	266.69	299.39	1.73	0.00
2,456.00	15.000	122.000	2,414.33	-137.37	268.77	301.84	0.73	-0.32
2,465.50	14.800	122.400	2,423.51	-138.68	270.84	304.28	0.71	-0.63
2,475.20	14.600	122.000	2,432.90	-139.99	272.92	306.73	0.69	-0.62
2,484.70	14.200	122.200	2,442.10	-141.24	274.92	309.08	1.27	-1.26
2,494.20	13.900	121.500	2,451.31	-142.46	276.88	311.38	1.09	-0.95
2,511.20	13.500	120.000	2,467.83	-144.52	280.34	315.40	0.94	-0.71
2,528.00	13.500	120.000	2,484.16	-146.48	283.74	319.31	0.00	0.00

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/12/2003 Report: 23 DFS: 19.00 DOL: 23.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,548.00 (m)	TVD:	2,505.00 (m)	Progress:	37.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	5.00	AV ROP:	7.40	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	73,216	Cum Cost:	2,321,329	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILLING 216mm HOLE LOOKING FOR SLAVE PT TOP @ 2568mMD

24hr Forecast: DRILL TO SLAVE PT TOP, CIRC, POOH TO LOG

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 04:45	4.75	06	J	P DRLIN1	FLOW CHECK @ 2511 M. PUMP PILL, TRIP OUT. FLOW CHECKS: 2411, DC'S, OUT OF HOLE
04:45 - 05:00	0.25	07	B	P DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS:
05:00 - 05:15	0.25	21	A	P DRLIN1	HELD SAFETY MEETING: LAY DOWN DIR. TOOLS
05:15 - 06:30	1.25	06	J	P DRLIN1	LAY DOWN DIRECTIONAL TOOLS
06:30 - 08:30	2.00	06	J	P DRLIN1	MAKE UP BIT, BHA, RUN IN BHA
08:30 - 08:45	0.25	21	D	P DRLIN1	SAFETY MEETING, CONDUCT 4 COMPONENT ACCUMULATOR FUNCTION TEST: SYSTEM PRESSURE BE-FOE FUNCTION: 19500 KPA / SYSTEM PRESSURE AFTER FUNCTION: 10250 KPA, RE-CHARGE TIME: 3 MIN. 4 SEC. PRE-CHARGE PRESSURE: 7000 KPA
08:45 - 10:00	1.25	09		P DRLIN1	SLIP AND CUT DRILLING LINE
10:00 - 14:15	4.25	06	A	P DRLIN1	RUN IN W/ BIT. FILL PIPE / FLOW CHECK @ 720, 1690 M.
14:15 - 15:30	1.25	05	A	P DRLIN1	BREAK CIRCULATION, WASH TO BOTTOM F/ 2472 - 2511 MD. .5 M. FILL
15:30 - 15:45	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS; 7 SECONDS TO CLOSE, FLOW CHECK.
15:45 - 16:45	1.00	05	A	P DRLIN1	CIRCULATE BOTTOMS UP, RIG UP DDA NORTHERN SAFETY SERVICE EQUIPMENT
16:45 - 20:00	3.25	20	B	P DRLIN1	ROTARY DRILL 216 MM HOLE F/ 2511 - 2529 MD.
20:00 - 20:45	0.75	05	A	P DRLIN1	CIRCULATE UP SAMPLE
20:45 - 21:00	0.25	21	A	P DRLIN1	HELD SAFETY MEETING W/ DDA NORTHERN SAFETY SERVICES
21:00 - 22:00	1.00	20	B	P DRLIN1	ROTARY DRILL AHEAD F/ 2529 - 2540 MD
22:00 - 23:00	1.00	05	A	P DRLIN1	CIRCULATE UP 2540 SAMPLE
23:00 - 23:15	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 13 SECONDS TO CLOSE
23:15 - 00:00	0.75	20	B	P DRLIN1	ROTARY DRILL F/ 2540 - 2548 MD.

DAILY OPERATIONAL COMMENTS(24hr Summary):
TRIP OUT, LAY DOWN DIRECTIONAL TOOLS, MAKE UP TRICONE INSERT BIT & BHA, RUN IN BHA, SLIP & CUT DRLG LINE, RIH, ROTARY DRILL AHEAD F/ 2511 - 2548 MD. CIRC UP SAMPLES @ 2529, 2540 M. HOLE FILL: CACL: 10.81 m3/ ACTUAL: 10.59 m3 .

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,304	935.0

Formation Data

Formation Name	Top (m)
MUSKWA	2,502.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	15/79
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/12/2003 Report: 23 DFS: 19.00 DOL: 23.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	7,500		
SPM	120		
Output (L/mi	1,407.61		

Velocities

Drill Pipe	(m/min)	53.4
Drill Collar	(m/min)	94.0
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	1,950 (kP	903.22 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	INVERT			
Time/Depth / OUT			Ca+ (mg/L)	12,800
Depth (m)		2,511.00	K+ (mg/L)	
Temp (°C)		44	Polymer (kg/m³)	
Density (kg/m³)		935	CaCl2 (%)	35.39
ECD (kg/m³)		945	NaCl (%)	
Viscosity (s/l)		48	Sand (%)	0.100
PV (mPa*s)		7.0	Tot. Solids	
YP (Pa)		1.4	% Oil	87.1
GELS (Pa)		2.0/3.0/	% H2O	9.0
API WL (mL)			Oil/H2O	
HTHP WL (mL)		10.0	HGSolid (kg/m³)	4
API FC (mm)			LGSolid (kg/m³)	71.7
MBT (kg/m³)			ES (mV)	1,600
Lime (kg/m³)		9.9	Oil Ret (%)	
pH				
Pm (cm³)		2.7		
Pf/Mf (cm³ / cm³				
Comment1:				

Mud Products

Additive	# Units
VAN RENTAL	2
LIME HYDRATED	9
SUSPENTONE	10
MUD CHECK TE	1

Mud Cost

Daily	$1,325.19
Cumulative	$68,266.00

Bit Data

Bit No.	2	1
Run	6	5
Size (mm)	216.00	215.90
Manu.	Reed	UNITED DIA
Type	EHP43ALK	UD 513
Serial No.	TC1043	C0559
TFA (mm²)	290.3	992.8
Depth In (m)	2,511.00	655.00
Depth Out (m)	2,586.00	2,511.00
Cum. Depth (m)	37.00	
Cum. Hours	5.00	
WOB (Min)(daN)	10,000	
WOB (Max)(daN)	12,000	
RPM (Min)	70	
RPM (Max)	75	
Cond (IODL)	4/4/CT/H	1/2/CT/H
Cond (BGOR)	E/ 1/FC/TD	D/ 1/NO/BHA
Jets 1/2/3	11.1/11.1/11.1	15.9/15.9/15.9
Jets 4/5/6		15.9/15.9/

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,573.58
DP OD	(mm)	
String Rot Weight	(daN)	86,000
Pick-Up Weight	(daN)	101,000
Slack Off Weight	(daN)	80,000

BHA Desc.: INTERMEDIATE 2

Item	Jts	Length (m)
Tri-Cone Bit	1	0.25
Bit Sub	1	0.93
3 PT ROLLER RMR	1	1.35
Spirall Drill Collar	1	9.37
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	9	84.29
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	250	2,375.30

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/12/2003
Last BOP Drill	02/10/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/13/2003 | Report: 24 | DFS: 20.00 | DOL: 24.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,586.00 (m)	TVD:	2,541.00 (m)	Progress:	38.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:	7.75	AV ROP:	4.90	Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	91,075	Cum Cost:	2,412,404	AFE Est:	4,288,464	AFE No.:	400792

Current Status: RIH w/ BIT #2 TO CIRC/ CLEAN OUT TO LD PIPE- RUN CASING @ 2586m

24hr Forecast: CONDITION HOLE, LAYDOWN PIPE, RUN CASING

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 01:45	1.75	20	B	P	DRLIN1 ROTARY DRILL 216 MM HOLE F/ 2548 - 2562 MD
01:45 - 03:00	1.25	05	A	P	DRLIN1 CIRCULATE SAMPLE UP @ 2562 MD
03:00 - 04:00	1.00	20	B	P	DRLIN1 ROTARY DRILL AHEAD F/ 2562 - 2567 MD.
04:00 - 05:15	1.25	05	A	P	DRLIN1 CIRCULATE UP SAMPLE @ 2567 M.
05:15 - 05:30	0.25	07	A	P	DRLIN1 RIG SERVICE, FUNCTION ANNULAR: 13 SECONDS TO CLOSE
05:30 - 06:45	1.25	20	B	P	DRLIN1 DRILL AHEAD F/ 2567 - 2572 MD
06:45 - 08:00	1.25	05	A	P	DRLIN1 CIRCULATE UP SAMPLE @ 2572 MD. LOOKING FOR SLAVE POINT TOP
08:00 - 08:15	0.25	21	A	P	DRLIN1 HELD SAFETY MEETING W/ DDA NORTHERN SAFETY SERVICES.
08:15 - 12:00	3.75	20	B	P	DRLIN1 DRILL AHEAD F/ 2572 - 2586 MD. SLAVE POINT TOP @ 2579 MD.
12:00 - 13:00	1.00	05	K	P	DRLIN1 CIRCULATE, CONDITION HOLE
13:00 - 14:00	1.00	06	H	P	DRLIN1 FLOW CHECK, PUMP PILL, WIPER TRIP 5 STANDS TO 2429 MD. RUN IN TO BOTTOM, HOLE FILL: CALCULATED: .48 M3 / MEASURED .55 M3
14:00 - 15:30	1.50	05	K	P	DRLIN1 CIRCULATE, CONDITION HOLE FOR LOGGING.
15:30 - 21:00	5.50	06	C	P	DRLIN1 FLOW CHECK, PUMP PILL, TRIP OUT TO LOG. USE PIPE SPINNER. FLOW CHECKS @ 2573, 2429, 1403, AT BHA, OUT OF HOLE.
21:00 - 21:15	0.25	07	A	P	DRLIN1 RIG SERVICE, FUNCTION BLIND RAMS: 9 SECONDS TO CLOSE
21:15 - 21:45	0.50	21	C	P	DRLIN1 PULL WEAR BUSHING AND VISUALLY INSPECT, INSTALL WEAR BUSHING.
21:45 - 00:00	2.25	11	A	P	DRLIN1 RIG UP SCHLUMBERGER, RUN IN W/ LOGS: LOGS ON BOTTOM @ 23:45 HRS. LOGGERS DEPTH: 2588 MD. RUN 1: AIT-CNL-TLD-GR-XY CAL-BHCS

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL AHEAD F/ 2548 - 2586 MD. CIRCULATE BOTTOM HOLE SAMPLES @ 2562, 2567, 2572, 2586 M. SLAVE POINT TOP @ 2579 MD. CIRCULATE, POOH, RIG UP SCHLUMBERGER, RUN IN W/LOGS, LOG WELL.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,368	925.0

Formation Data

Formation Name	Top (m)
SLAVE POINT	2,579.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	15/60
Trip Avg/Max (mg/L)	16/30
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/13/2003 Report: 24 DFS: 20.00 DOL: 24.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	7,200		
SPM	120		
Output (L/mi	1,407.61		

Velocities

Drill Pipe	(m/min)	53.4
Drill Collar	(m/min)	94.0
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	1,650 (kP	563.04 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: INVERT

Time	13:00 / OUT		Ca+	(mg/L)	14,400
Depth	(m)	2,575.00	K+	(mg/L)	
Temp	(°C)	48	Polymer	(kg/m³)	
Density	(kg/m³)	925	CaCl2	(%)	39.07
ECD	(kg/m³)	936	NaCl	(%)	
Viscosity	(s/l)	45	Sand	(%)	0.200
PV	(mPa*s)	9.0	Tot. Solids		
YP	(Pa)	1.4	% Oil		87.0
GELS	(Pa)	2.0/3.0/	% H2O		9.8
API WL	(mL)		Oil/H2O		
HTHP WL	(mL)	11.0	HGSolid	(kg/m³)	3
API FC	(mm)		LGSolid	(kg/m³)	54.0
MBT	(kg/m³)		ES	(mV)	1,450
Lime	(kg/m³)	10.7	Oil Ret	(%)	
pH					
Pm	(cm³)	2.9			
Pf/Mf	(cm³ / cm³				

Comment1:

Mud Products

Additive	# Units
BARITE	30
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$800.90
Cumulative	$69,067.00

Bit Data

Bit No.	2	
Run	6	
Size (mm)	216.00	
Manu.	Reed	
Type	EHP42ALK	
Serial No.	TC1043	
TFA (mm²)	290.3	
Depth In (m)	2,511.00	
Depth Out (m)	2,586.00	
Cum. Depth (m)	75.00	
Cum. Hours	12.75	
WOB (Min)(daN)	10,000	
WOB (Max)(daN)	12,000	
RPM (Min)	70	
RPM (Max)	75	
Cond (IODL)	4/4/CT/H	
Cond (BGOR)	E/ 1/FC/TD	
Jets 1/2/3	11.1/11.1/11.1	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,573.58
DP OD	(mm)	
String Rot Weight	(daN)	86,000
Pick-Up Weight	(daN)	106,000
Slack Off Weight	(daN)	76,000

BHA Desc.: INTERMEDIATE 2

Item	Jts	Length (m)
Tri-Cone Bit	1	0.25
Bit Sub	1	0.93
3 PT ROLLER RMR	1	1.35
Spirall Drill Collar	1	9.37
Square Drill Collar	1	4.14
Spirall Drill Collar	1	9.37
Drilling Jar	1	4.90
Spirall Drill Collar	9	84.29
Cross Over	1	0.79
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	250	2,375.30

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/13/2003
Last BOP Drill	02/10/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
2,586.00	13.000	120.000	2,540.62	-153.13	295.25	332.59	0.26	-0.26

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/14/2003 | Report: 25 | DFS: 21.00 | DOL: 25.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,586.00 (m)	TVD:	2,541.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	244.5 (mm)	Shoe TMD:	654.70 (m)	Shoe TVD:	654.70 (m)
Daily Cost:	82,078	Cum Cost:	2,494,482	AFE Est:	4,288,464	AFE No.:	400792

Current Status: RUN 178mm INTERMEDIATE CASING TO 2586mMD @ 321m

24hr Forecast: RUN CASING, CIRC, CEMENT, CLEAN TANKS

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 03:15	3.25	11	A	P DRLIN1	LOG WELL W/ SCHLUMBERGER, LOGS OUT 02:30 HR. RIG OUT SCHLUMBERGER
03:15 - 03:30	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS: 7 SECONDS TO CLOSE, REMOTE CHOKE
03:30 - 08:00	4.50	06	H	P DRLIN1	MAKE UP BIT 2RR, RUN IN HOLE, FLOW CHECKS / FILL PIPE @ 647, 1588 M.
08:00 - 08:15	0.25	05	K	P DRLIN1	BREAK CIRCULATION, WASH TO BOTTOM F/ 2568 - 2586 M.
08:15 - 12:45	4.50	05	K	P DRLIN1	CIRCULATE, CONDITION HOLE.
12:45 - 13:00	0.25	21	A	P DRLIN1	HELD SAFETY MEETING W/ EZ-LAY PIPE HANDLERS, RIG CREW
13:00 - 18:00	5.00	06	G	P DRLIN1	DROP GYRO SURVEY TOOL, FLOW CHECK, PUMP PILL, LAY DOWN DRILL STRING, SURVEY EVERY 30 M.
18:00 - 18:15	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 7 SECONDS TO CLOSE
18:15 - 20:00	1.75	06	G	P DRLIN1	LAY DOWN DRILL STRING
20:00 - 20:15	0.25	21	A	P DRLIN1	CREW CHANGE, HELD SAFETY MEETING W/ EZ-LAY PIPE HANDLERS
20:15 - 23:45	3.50	06	G	P DRLIN1	LAY DOWN DRILL PIPE , DRILL COLLARS, RECOVER GYRO SURVEY TOOL, PULL WEAR BUSHING HOLE FILL: CALCULATED: 10.53 m3 / MEASURED: 11.26 m3
23:45 - 00:00	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS; 7 SECONDS TO CLOSE

DAILY OPERATIONAL COMMENTS(24hr Summary):
LOG WELL, RUN IN HOLE W/BIT, CIRCULATE CONDITION HOLE, LAY DOWN DRILL STRING, PULL WEAR BUSHING

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
2,383.6	9,272	940.0

Formation Data

Formation Name	Top (m)
SLAVE POINT	2,579.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/14/2003 | Report: 25 | DFS: 21.00 | DOL: 25.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT	
Liner (mm)	140.0	
Stroke (mm)	254.0	
EFF	100.0	
Press (kPa)	7,350	
SPM	120	
Output (L/mi	1,407.61	

Velocities

Drill Pipe	(m/min)	53.3
Drill Collar	(m/min)	94.0
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: INVERT

Time	18:00 / OUT		Ca+ (mg/L)	13,200
Depth	(m)	2,586.00	K+ (mg/L)	
Temp	(°C)	34	Polymer (kg/m³)	
Density	(kg/m³)	940	CaCl2 (%)	36.50
ECD	(kg/m³)	952	NaCl (%)	
Viscosity	(s/l)	58	Sand (%)	0.100
PV	(mPa*s)	9.0	Tot. Solids	
YP	(Pa)	1.4	% Oil	86.0
GELS	(Pa)	2.0/3.0/	% H2O	10.0
API WL	(mL)		Oil/H2O	
HTHP WL	(mL)	12.0	HGSolid (kg/m³)	6
API FC	(mm)		LGSolid (kg/m³)	73.7
MBT	(kg/m³)		ES (mV)	1,420
Lime	(kg/m³)	9.9	Oil Ret (%)	
pH				
Pm	(cm³)	2.7		
Pf/Mf	(cm³ / cm³)			

Comment1:

Mud Products

Additive	# Units
BARITE	15
VAN RENTAL	2
GELTONE V	2
LIME HYDRATED	1
SUSPENTONE	4
MUD CHECK TE	1

Mud Cost

Daily	$1,098.00
Cumulative	$70,165.00

Bit Data

Bit No.	2RR	
Run	7	
Size (mm)	216.00	
Manu.	Reed	
Type	EHP43AALK	
Serial No.	TC1043	
TFA (mm²)	290.3	
Depth In (m)	2,586.00	
Depth Out (m)	2,586.00	
Cum. Depth (m)		
Cum. Hours		
WOB (Min)(daN)		
WOB (Max)(daN)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3	11.1/11.1/11.1	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,577.20
DP OD	(mm)	
String Rot Weight	(daN)	86,000
Pick-Up Weight	(daN)	96,000
Slack Off Weight	(daN)	76,000

BHA Desc.: WIPER TRIP

Item	Jts	Length (m)
Tri-Cone Bit	1	0.25
Bit Sub	1	0.93
Spiral Drill Collar	3	28.11
Drilling Jar	1	4.90
Spiral Drill Collar	8	74.92
Cross Over	1	0.73
Heavy Weight Drill Pipe	9	82.89
Drill Pipe	251	2,384.47

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/14/2003
Last BOP Drill	02/10/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75			Date: 02/15/2003	Report: 26	DFS: 22.00	DOL: 26.00	
Event Name: ORIG DRILLING			Spud: 01/25/2003	RR: 03/01/2003			
Rig Name:	SHEHTAH 5E	TMD:	2,586.00 (m)	TVD:	2,541.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	287,303	Cum Cost:	2,781,785	AFE Est:	4,288,464	AFE No.:	400792

Current Status: TRANSFER INVERT/ CLEAN TANKS, CHANGE PIPE RAMS @ 2586mMD

24hr Forecast: TEST BOP/ MANIFOLD, PU 89mm DRILLSTRING, MIX POLYMER MUD

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 02:00	2.00	14	B	P DRLIN1	CHANGE OUT AND INSTALL 7' PIPE RAMS FOR CASING
02:00 - 02:45	0.75	12	A	P DRLIN1	RIG UP HILL'S POWER TONGS, RIG FLOOR.
02:45 - 03:00	0.25	21	A	P DRLIN1	HELD SAFETY MEETING W/ RIG CREW, HILL'S POWER TONGS
03:00 - 03:30	0.50	15	A	P DRLIN1	PRESSURE TEST 7" TOP PIPE RAMSTO 1500 KPA LOW, 5000 KPA HIGH
03:30 - 03:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR
03:45 - 08:00	4.25	12	A	P DRLIN1	MAKE UP FLOAT SHOE AND FLOAT COLLAR, RUN 177.8 MM INTERMEDIATE CASING.
08:00 - 08:15	0.25	21	A	P DRLIN1	CREW CHANGE, HELD SAFETY MEETING W/ HILL; POWER TONGS, EZ-LAY PIPE HANDLERS.
08:15 - 17:15	9.00	12	A	P DRLIN1	RUN 177.8 MM INTERMEDIATE CASING. BREAK CIRCULATION @ 1000, 1800 M. RAN 191 JOINTS: 177.8 MM, 38.7 KG/M, L-80, LT&C NEW ALGOMA CASING.
17:15 - 18:15	1.00	12	C	P DRLIN1	BREAK CIRCULATION, CIRCULATE AND CONDITION HOLE.
18:15 - 20:00	1.75	12	A	P DRLIN1	RIG UP CASING HANGER ASSEMBLY, LAND CASING IN CASING HANGER SPOOL. CASING LANDED @ 2583.6 MD. W/ 75000 DAN TENSION. FLOAT COLLAR @ 2554.8 MD
20:00 - 21:00	1.00	12	A	P DRLIN1	RIG OUT POWER TONGS AND PIPE HANDLING EQUIPMENT
21:00 - 22:00	1.00	12	C	P DRLIN1	CIRCULATE CASING, HOLE CLEAN, RIG UP CEMENT HEAD.
22:00 - 22:15	0.25	21	A	P DRLIN1	HELD SAFETY MEETING W/ RIG CREW, BJ CEMENTING SERVICES.
22:15 - 22:30	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 10 SECONDS TO CLOSE
22:30 - 00:00	1.50	12	C	P DRLIN1	PRESSURE TEST CEMENT LINES TO 40 MPA, CEMENT INTERMEDIATE CASING WITH: PRE-FLUSH/SPACER 6.0 M3 HT40 NT, 6.0 M3 NOWFLUSH, 3.0 M3 SCAVENGER AHEAD: LEAD: 28.0 TONNE 1:1:2 "G" + .5% CD-32 + .05% R-3. TAIL: 7.3 TONNE THERMAL 40F + .5% CD-32 + .4% FL-77 + .15% R-3 @ 900 LITRES / MIN. RATE. DROP TOP PLUG, START DISPACEMENT W/WATER @ 710 LITRES/MIN. 15 M3 INTO DISPLACEMENT VOLUME @ 24:00 HRS.

DAILY OPERATIONAL COMMENTS(24hr Summary):
CHANGE OUT TOP PIPE RAMS TO 7", PRESSURE TEST TOP PIPE RAM, SAFETY MEETING, RUN 177 MM INTERMEDIATE CASING, CIRCULATE CASING, LAND CASING IN INTERMEDIATE SPOOL, CEMENT CASING.

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
			SLAVE POINT	2,579.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/15/2003 Report: 26 DFS: 22.00 DOL: 26.00
Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	5,800		
SPM	85		
Output (L/mi	997.06		

Velocities

Drill Pipe	(m/min)	84.9
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump		
Pump		
Pump		

Mud Check

Type 1:	INVERT				
Time/Loc			Ca+	(mg/L)	
Depth	(m)		K+	(mg/L)	
Temp	(°C)		Polymer	(kg/m³)	
Density	(kg/m³)		CaCl2	(%)	
ECD	(kg/m³)		NaCl	(%)	
Viscosity	(s/l)		Sand	(%)	
PV	(mPa*s)		Tot. Solids		
YP	(Pa)		% Oil		
GELS	(Pa)		% H2O		
API WL	(mL)		Oil/H2O		
HTHP WL	(mL)		HGSolid	(kg/m³)	
API FC	(mm)		LGSolid	(kg/m³)	
MBT	(kg/m³)		ES	(mV)	
Lime	(kg/m³)		Oil Ret	(%)	
pH					
Pm	(cm³)				
Pf/Mf	(cm³ / cm³				
Comment1:					

Mud Products

Additive	# Units
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$485.00
Cumulative	$70,650.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	02/03/2003
Last BOP Test (F)	02/15/2003
Last BOP Drill	02/10/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/16/2003 | Report: 27 | DFS: 23.00 | DOL: 27.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,586.00 (m)	TVD:	2,541.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:		AV ROP:		Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	106,167	Cum Cost:	2,887,952	AFE Est:	4,288,464	AFE No.:	400792

Current Status: PICKING UP 89mm TUBULARS TO DRILLOUT INTERMEDIATE @ 2586mMD

24hr Forecast: PICK UP TUBULARS, CIRC- MIX POLYMER SYSTEM, DRILLOUT, FLOT

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 02:30	2.50	12	C	P	DRLIN1	DISPLACE WITH TOTAL OF 51 M3 WATER, PLUG DOWN @ 00:49 HRS. BUMP PLUG WITH 3500 KPA OVER FINAL DISPLACEMENT PRESSURE TO 19000 KPA. CHECK FLOATS, HELD OK. 6.0 M3 HT40-NT AND APPROXIMATELTY 2.0 M3 NOWFLUSH BACK TO SURFACE, NO CEMENT RETURNS, CEMENT TOP ESTIMATED @ 470 M. RIG OUT BJ CEMENTING SERVICES.
02:30 - 02:45	0.25	07	A	P	DRLIN1	RIG SERVICE
02:45 - 07:00	4.25	23	B	P	DRLIN1	MAKE UP SEAL MANDRIL ASSEMBLY, INSTALL SEAL MANDRIL, ENERGIZE SEAL, PRESSURE TEST SEAL TO 34000 KPA FOR 15 MINUTES. TEST OK. TRANSFER TOTAL OF 181 M3 INVERT TO TANK FARM WHILE INSTALLING SEAL ASSEMBLY
07:00 - 08:30	1.50	14	B	P	DRLIN1	CHANGE OUT TOP& BOTTOM PIPE RAMS TO 89 MM RAMS.
08:30 - 08:45	0.25	07	A	P	DRLIN1	RIG SERVICE
08:45 - 20:00	11.25	15	A	P	DRLIN1	PRESSURE TEST MANIFOLD 1400 KPA LOW / 34000 KPA HIGH, PRESSURE TEST UPPER / LOWER PIPE RAMS, BLIND RAMS, HCR, VALVES, KILL LINE LINE VALVES, INSIDE BOP, STAB VALVE 1400 KPA LOW / 34000 KPA HIGH. REPAIR LEAKS IN BOP FLANGE, PRESSURE TEST CASING TO 21000 KPA,
20:00 - 20:30	0.50	21	D	P	DRLIN1	ACCUMULATOR FUNCTION TEST: ACCUMULATOR PRESSURE BEFORE FUNCTION: 19700 KPA / ACCUMULATOR PRESSURE AFTER FUNCTION: 10900 KPA / RE-CHARGE TIME: 2 MIN. 34 SECONDS / PRE-CHARGE PRESSURE: 7500 KPA.
20:30 - 21:15	0.75	23	B	P	DRLIN1	INSTALL WEAR BUSHING.
21:15 - 21:30	0.25	07	A	P	DRLIN1	RIG SERVICE
21:30 - 22:30	1.00	15		P	DRLIN1	CHANGE OUT KELLY AND KELLY SOCK
22:30 - 23:45	1.25	06		P	DRLIN1	RIG UP PIPE HANDLING MACHINE
23:45 - 00:00	0.25	21	A	P	DRLIN1	HELD SAFETY MEETING W/ RIG CREW, EZ-LAY PIPE HANDLERS.

DAILY OPERATIONAL COMMENTS(24hr Summary):
FINISH CEMENTING INTERMEDIATE CASING, INSTALL CAMERON SEAL MANDRIL, CHANGE OUT PIPE RAMS, TRANSFER 181 M3 INVERT TO TANK FARM,, PRESSURE TEST MANIFOLD, BOP, CHANGE OUT KELLY, CLEAN MUD TANKS & EQUIPMENT W/ PRESSURE STEAM CLEANER

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)

Formation Data

Formation Name	Top (m)
SLAVE POINT	2,579.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/16/2003 Report: 27 DFS: 23.00 DOL: 27.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	INVERT		
Time/Loc		Ca+ (mg/L)	
Depth	(m)	K+ (mg/L)	
Temp	(°C)	Polymer (kg/m³)	
Density	(kg/m³)	CaCl2 (%)	
ECD	(kg/m³)	NaCl (%)	
Viscosity	(s/l)	Sand (%)	
PV	(mPa*s)	Tot. Solids	
YP	(Pa)	% Oil	
GELS	(Pa)	% H2O	
API WL	(mL)	Oil/H2O	
HTHP WL	(mL)	HGSolid (kg/m³)	
API FC	(mm)	LGSolid (kg/m³)	
MBT	(kg/m³)	ES (mV)	
Lime	(kg/m³)	Oil Ret (%)	
pH			
Pm	(cm³)		
Pf/Mf	(cm³ / cm³)		
Comment1:			

Mud Products

Additive	# Units
VAN RENTAL	2
ENVIRO-DRILL I	32
HT-40-N	13
MUD CHECK TE	1

Mud Cost

Daily	$35,078.00
Cumulative	$105,728.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/16/2003
Last BOP Drill	02/10/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/17/2003 Report: 28 DFS: 24.00 DOL: 28.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,586.00 (m)	TVD:	2,541.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:		AV ROP:		Hole Size:	215.90 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	84,378	Cum Cost:	2,972,330	AFE Est:	4,288,464	AFE No.:	400792

Current Status: CIRCULATE TO CONDITION MUD @ 2576 M. PRIOR TO DRILLING OUT

24hr Forecast: CONDITION MUD, DRILL OUT, FLOT, DRILL 156 MM HOLE AHEAD

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 14 SECONDS TO CLOSE
00:15 - 05:45	5.50	06	A	P	DRLIN1	MAKE UP BHA, PICK UP 122 MM DRILL COLLARS, 89 MM DRILL PIPE, RUN IN HOLE. STRAP SAME
05:45 - 06:45	1.00	06	A	P	DRLIN1	PICK UP KELLY, TORQUE CONNECTIONS, MAKE UP SAVER SUB, LOWER KELLY COCK
06:45 - 07:45	1.00	06	A	P	DRLIN1	PICK UP 89 MM DRILL PIPE, STRAP SAME
07:45 - 08:00	0.25	21	A	P	DRLIN1	CREW CHANGE, SAFETY MEETING W/ EZ-LAY PIPE HANDLERS
08:00 - 15:30	7.50	06	A	P	DRLIN1	PICK UP 89 MM DRILL PIPE , STRAP. RUN IN TO 2246 M.
15:30 - 15:45	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 4 SECONDS TO CLOSE
15:45 - 16:45	1.00	09		P	DRLIN1	SLIP AND CUT DRILLING LINE
16:45 - 19:00	2.25	06	A	P	DRLIN1	PICK UP 89 MM DRILL PIPE, STRAP, RIH TO 2526 M
19:00 - 19:30	0.50	21	A	P	DRLIN1	HELD PRE-DRILL OUT SAFETY MEETING W/ RIG CREWS, DDA SAFETY, PERSONELL ON LOCATION. HELD BOP DRILL FOR SOUR OPERATIONS
19:30 - 20:15	0.75	15		P	DRLIN1	PRESSURE TEST 114 MM KELLY, UPPER / LOWER KELLY COCKS: 1400 KPA LOW / 34000KPA HIGH
20:15 - 20:30	0.25	07	A	P	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 4 SECONDS TO CLOSE
20:30 - 23:00	2.50	02	C	P	DRLIN1	WASH TO 2555 M. DRILL OUT FLOAT COLLAR, CEMENT F/ 2555 - 2576 MD.
23:00 - 00:00	1.00	05	A	P	DRLIN1	CIRCULATE TO CONDITION MUD PRIOR TO FINISH DRILLING OUT CEMENT AND FLOAT SHOE.

DAILY OPERATIONAL COMMENTS(24hr Summary):
PICK UP 122 MM DRILL COLLARS, 89 MM DRILL PIPE, STRAP, RUN IN HOLE TO 2555 M. DRILL OUT FLOAT COLLAR & CEMENT F/ 2555 - 2576 MD. CIRCULATE CONDITION MUD. HELD PRE-DRILL OUT SAFETY MEETING.

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
			SLAVE POINT	2,579.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/17/2003 Report: 28 DFS: 24.00 DOL: 28.00
Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	6,450		
SPM	70		
Output (L/mi	821.11		

Velocities

Drill Pipe	(m/min)	27.0
Drill Collar	(m/min)	32.9
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	3,800 (kP	598.23 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:			
Time/Loc	: /	Ca+ (mg/L)	
Depth	(m)	K+ (mg/L)	
Temp	(°C)	Polymer (kg/m³)	
Density	(kg/m³)	CaCl2 (%)	
ECD	(kg/m³)	NaCl (%)	
Viscosity	(s/l)	Sand (%)	
PV	(mPa*s)	Tot. Solids	
YP	(Pa)	% Oil	
GELS	(Pa)	% H2O	
API WL	(mL)	Oil/H2O	
HTHP WL	(mL)	HGSolid (kg/m³)	
API FC	(mm)	LGSolid (kg/m³)	
MBT	(kg/m³)	ES (mV)	
Lime	(kg/m³)	Oil Ret (%)	
pH			
Pm	(cm³)		
Pf/Mf	(cm³ / cm³		
Comment1:			

Mud Products

Additive	# Units
PALLETS (DELIV	19
SHRINK WRAP	38
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$1,625.00
Cumulative	$107,353.00

Bit Data

Bit No.	3	
Run	8	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,586.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)		
Cum. Hours		
WOB (Min)(daN)		
WOB (Max)(daN)		
RPM (Min)		
RPM (Max)		
Cond (IODL)	3/4/WT/A	
Cond (BGOR)	E/ I/FC/TD	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,867.90
DP OD	(mm)	
String Rot Weight	(daN)	74,000
Pick-Up Weight	(daN)	74,000
Slack Off Weight	(daN)	74,000

BHA Desc.: MAINHOLE

Item	Jts	Length (m)
Tri-Cone Bit	1	0.17
Near Bit Stabilizer	1	1.25
Non-Mag Drill Collar	1	9.48
Drill Collar	2	18.95
Drilling Jar	1	5.02
Drill Collar	15	141.50
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	275	2,609.78

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/17/2003
Last BOP Drill	02/17/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75			Date: 02/18/2003	Report: 29	DFS: 25.00	DOL: 29.00	
Event Name: ORIG DRILLING			Spud: 01/25/2003	RR: 03/01/2003			
Rig Name:	SHEHTAH 5E	TMD:	2,630.00 (m)	TVD:	2,585.00 (m)	Progress:	44.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	10.50	AV ROP:	4.19	Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	94,671	Cum Cost:	3,067,001	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILLING 156 MM HOLE @ 2653 MD.

24hr Forecast: ROTARY DRILL 156 MM HOLE AHEAD.

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE
00:15 - 00:30	0.25	21	B	P DRLIN1	SAFETY MEETING, HELD BOP DRILL FOR SOUR OPERATIONS. WELL SECURE: 2 MIN. 30 SECONDS
00:30 - 08:00	7.50	05	A	P DRLIN1	CIRCULATE, CONDITON MUD PRIOR TO DRILLING OUT CEMENT
08:00 - 08:15	0.25	07	A	P DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 4 SECONDS TO CLOSE
08:15 - 10:30	2.25	05	A	P DRLIN1	CIRCULATE TO CONDITION MUD PRIOR TO DRILLING OUT.
10:30 - 10:45	0.25	21	A	P DRLIN1	HELD SAFETY MEETING, REVIEW SOUR OPERATIONS W/ CREW PRIOR TO DRILLING OUT CEMENT.
10:45 - 11:45	1.00	02	C	P DRLIN1	DRILL OUT CEMENT F/ 2576 - 2586 M. SHOE @ 2583.5 MD.
11:45 - 13:15	1.50	02	B	P DRLPRO	DRILL 156 MM HOLE F/ 2586 - 2591 MD.
13:15 - 14:15	1.00	05	A	P DRLPRO	CIRCULATE HOLE CLEAN PRIOR TO FLOT
14:15 - 14:45	0.50	15	C	P DRLPRO	F.L.O.T. HP @ CASING SHOE: 25527 KPA / APPLIED SURFACE PRESSURE: 2400 KPA (FORMATION LEAK OFF) TOTAL PRESSURE AT SHOE: 2793/ XPA / PRESSURE GRADIENT: 11 KPA/M / EQUIVALENT MUD DENSITY: 1121 KG/M3
14:45 - 20:00	5.25	02	B	P DRLPRO	DRILL 156 MM HOLE F/ 2591 - 2615 MD.
20:00 - 20:15	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 4 SECONDS TO CLOSE
20:15 - 00:00	3.75	02	B	P DRLPRO	DRILL 156 MM HOLE F/ 2615 - 2630 MD

DAILY OPERATIONAL COMMENTS(24hr Summary):
CIRCULATE CONDITION MUD PRIOR TO DRILLING OUT, HELD BOP DRILL, SAFETY MEETING, DRILL OUT, FLOT, DRILL 156 MM HOLE F/ 2586 - 2630 MD.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	2,525	1,020.0

Formation Data

Formation Name	Top (m)
SLAVE POINT	2,579.00

Gas Readings

Conn Avg/Max	(mg/L)	5/35
Bkgr Avg/Max	(mg/L)	5/42
Trip Avg/Max	(mg/L)	
H2S	(%)	

Printed: 05/09/2003 10:48:01 AM

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/18/2003 Report: 29 DFS: 25.00 DOL: 29.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	8,080		
SPM	69		
Output (L/mi	809.38		

Velocities

Drill Pipe	(m/min)	26.6
Drill Collar	(m/min)	32.5
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	3,550 (kP	422.28 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: BARADRIL-N

Time/Date	20 / OUT		Ca+	(mg/L)	80
Depth	(m)	2,602.00	K+	(mg/L)	
Temp	(°C)	51	Polymer	(kg/m³)	
Density	(kg/m³)	1,020	CaCl2	(%)	
ECD	(kg/m³)		NaCl	(%)	
Viscosity	(s/l)	430	Sand	(%)	
PV	(mPa*s)	10.0	Tot. Solids		
YP	(Pa)	9.6	% Oil		
GELS	(Pa)	3.0/4.0/	% H2O		
API WL	(mL)	7.0	Oil/H2O		/
HTHP WL	(mL)		HGSolid	(kg/m³)	2
API FC	(mm)	1.0	LGSolid	(kg/m³)	33.4
MBT	(kg/m³)		ES	(mV)	
Lime	(kg/m³)		Oil Ret	(%)	
pH		11.00			
Pm	(cm³)	1.9			
Pf/Mf	(cm³ / cm³)	0.30 / 0.45			

Comment1:

Mud Products

Additive	# Units
BARACARB 150	35
BARACARB 5	95
BARACARB 50	270
BARABUFF	11
N-VIS P PLUS	70
FILTER-CHEK	40
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$38,956.86
Cumulative	$146,310.00

Bit Data

Bit No.	3	
Run	8	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,586.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)	44.00	
Cum. Hours	10.50	
WOB (Min)(daN)	10,000	
WOB (Max)(daN)	11,000	
RPM (Min)	55	
RPM (Max)	60	
Cond (IODL)	3/4/WT/A	
Cond (BGOFI)	E/ I/FC/TD	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,867.90
DP OD	(mm)	
String Rot Weight	(daN)	74,000
Pick-Up Weight	(daN)	87,000
Slack Off Weight	(daN)	63,000

BHA Desc.: MAINHOLE

Item	Jts	Length (m)
Tri-Cone Bit	1	0.17
Near Bit Stabilizer	1	1.25
Non-Mag Drill Collar	1	9.48
Drill Collar	2	18.95
Drilling Jar	1	5.02
Drill Collar	15	141.50
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	275	2,609.78

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/18/2003
Last BOP Drill	02/18/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

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Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/19/2003 | Report: 30 | DFS: 26.00 | DOL: 30.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,706.00 (m)	TVD:	2,656.00 (m)	Progress:	76.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	22.25	AV ROP:	3.42	Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	51,013	Cum Cost:	3,118,014	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILLING AHEAD @ 2724 MD.

24hr Forecast: DRILL TO TD, CIRC, WIPER TRIP, POOH, LOG.

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A	PDRLPRO	RIG SERVICE F/T. HYDRILL C/ 17 SECS
00:15 - 09:00	8.75	02	B	PDRLPRO	DRILL 156MM HOLE F/ 2630 M TO 2662M
09:00 - 09:15	0.25	07	A	PDRLPRO	RIG SERVICE F/T UPPER PIPE RAMS 4 SECS TO CLOSE
09:15 - 11:45	2.50	02	B	PDRLPRO	DRILL 156MM HOLE F/ 2662M TO 2672M
11:45 - 12:45	1.00	10		PDRLPRO	DEV. SURVEY & 2655M @ INC. 12 1/8 AZM.106.9
12:45 - 20:00	7.25	02	B	PDRLPRO	DRILL 156MM HOLE F/ 2672M TO 2693M
20:00 - 20:15	0.25	07	A	PDRLPRO	RIG SERVICE, FUNCTION LOWER PIPE RAMS; 4 SECONDS TO CLOSE
20:15 - 00:00	3.75	02	B	PDRLPRO	DRILL 156 MM HOLE F/ 2693 - 2706 MD.

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL AHEAD F/ 2630 - 2706 MD. SURVEY @ 2655 MD: 12.125 DEG / AZ 106.9, ESTIMATE FLUID LOSSES IN LAST 24 HRS. TO BE 6 M^3 DUE TO SEEPAGE.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	2,026	1,040.0

Formation Data

Formation Name	Top (m)
KEG RIVER	2,690.00

Gas Readings

Conn Avg/Max	(mg/L)	5/5,940
Bkgr Avg/Max	(mg/L)	5/25
Trip Avg/Max	(mg/L)	
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/19/2003 | Report: 30 | DFS: 26.00 | DOL: 30.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	8,420		
SPM	68		
Output (L/mi	797.65		

Velocities

Drill Pipe	(m/min)	62.3
Drill Collar	(m/min)	108.9
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	3,750 (kP	410.55 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	BARADRIL-N			
Time/Loc	08:20 /		Ca+ (mg/L)	40
Depth	(m)	2,661.00	K+ (mg/L)	
Temp	(°C)	51	Polymer (kg/m³)	
Density	(kg/m³)	1,040	CaCl2 (%)	
ECD	(kg/m³)	1,130	NaCl (%)	
Viscosity	(s/l)	49	Sand (%)	
PV	(mPa*s)	11.0	Tot. Solids	2.600
YP	(Pa)	10.5	% Oil	
GELS	(Pa)	3.0/4.0/	% H2O	
API WL	(mL)	6.0	Oil/H2O	/
HTHP WL	(mL)		HGSolid (kg/m³)	46
API FC	(mm)	1.0	LGSolid (kg/m³)	22.1
MBT	(kg/m³)		ES (mV)	
Lime	(kg/m³)		Oil Ret (%)	
pH		11.50		
Pm	(cm³)	2.8		
Pf/Mf	(cm³ / cm³	0.90 / 1.90		
Comment1:				

Mud Products

Additive	# Units
BARACARB 5	20
FILTER-CHEK	5
SODIUM SULPHI	16
VAN RENTAL	2
MUD CHECK TE	1
TRIETHANOLAMI	1

Mud Cost

Daily	$3,365.03
Cumulative	$149,675.00

Bit Data

Bit No.	3	
Run	8	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,586.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)	120.00	
Cum. Hours	32.75	
WOB (Min)(daN)	10,000	
WOB (Max)(daN)	11,000	
RPM (Min)	55	
RPM (Max)	60	
Cond (IODL)	3/4/WT/A	
Cond (BGOR)	E/ I/FC/TD	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,867.90
DP OD	(mm)	
String Rot Weight	(daN)	75,000
Pick-Up Weight	(daN)	90,000
Slack Off Weight	(daN)	65,000

BHA Desc.: MAINHOLE

Item	Jts	Length (m)
Tri-Cone Bit	1	0.17
Near Bit Stabilizer	1	1.25
Non-Mag Drill Collar	1	9.48
Drill Collar	2	18.95
Drilling Jar	1	5.02
Drill Collar	15	141.50
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	275	2,609.78

Safety Drills

Last BOP Test (F)	02/16/2003
Last BOP Test (F)	02/19/2003
Last BOP Drill	02/18/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
2,655.00	12.125	106.900	2,607.98	-159.12	308.91	347.48	1.29	-0.38

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/20/2003 | Report: 31 | DFS: 27.00 | DOL: 31.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,778.00 (m)	TVD:	2,727.30 (m)	Progress:	72.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	22.25	AV ROP:	3.24	Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	59,667	Cum Cost:	3,177,681	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILL 156 MM HOLE @ 2797 MD.

24hr Forecast: DRILL AHEAD TD, CIRC, WIPER TRIP, POOH, LOG.

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A P	DRLPRO	RIG SERVICE F/T HYDRILL CLOSE / 17 SECS
00:15 - 10:30	10.25	02	B P	DRLPRO	DRILL 156MM HOLE F/ 2706M TO 2738M
10:30 - 10:45	0.25	07	A P	DRLPRO	RIG SERVICE F/T UPPER PIPE RAMS CLOSE 4 SECS
10:45 - 16:30	5.75	02	B P	DRLPRO	DRILL 156MM HOLE F/ 2738M TO 2757M
16:30 - 17:30	1.00	10	P	DRLPRO	DEV. SURVEY @ 2740M INC. 15 DEG. AZM. 101.9
17:30 - 20:00	2.50	02	B P	DRLPRO	DRILL 156 MM HOLE F/ 2757M TO 2765M
20:00 - 20:15	0.25	07	A P	DRLPRO	RIG SERVICE F/T LOWER PIPE RAMS CLOSE 4 SECONDS
20:15 - 00:00	3.75	02	B P	DRLPRO	DRILL 156 MM HOLE F/ 2765 - 2778 MD.

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL AHEAD F/ 2706 - 2778 MD. SURVEY @ 2740 M. INCL: 15 DEG./ AZ 101.9 SURVEY GAS PEAK @ 4945 UNITS. TOTAL FLUID LOSSES DUE TO SEEPAGE: 12.4 M^3

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	1,278	1,070.0

Formation Data

Formation Name	Top (m)
KEG RIVER	2,690.00

Gas Readings

Conn Avg/Max (mg/L)	1,581/5,386
Bkgr Avg/Max (mg/L)	4/18
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/20/2003 Report: 31 DFS: 27.00 DOL: 31.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	9,200		
SPM	68		
Output (L/mi	797.65		

Velocities

Drill Pipe	(m/min)	62.3
Drill Collar	(m/min)	108.9
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	3,780 (kP	398.82 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	BARADRIL-N				
Time/Loc	08:00 /		Ca+	(mg/L)	40
Depth	(m)	2,730.00	K+	(mg/L)	
Temp	(°C)	51	Polymer	(kg/m³)	
Density	(kg/m³)	1,060	CaCl2	(%)	
ECD	(kg/m³)	1,158	NaCl	(%)	
Viscosity	(s/l)	50	Sand	(%)	
PV	(mPa*s)	13.0	Tot. Solids		
YP	(Pa)	11.0	% Oil		
GELS	(Pa)	3.0/4.0/	% H2O		
API WL	(mL)	6.0	Oil/H2O		
HTHP WL	(mL)		HGSolid	(kg/m³)	20
API FC	(mm)	1.0	LGSolid	(kg/m³)	80.2
MBT	(kg/m³)		ES	(mV)	
Lime	(kg/m³)		Oil Ret	(%)	
pH		11.00			
Pm	(cm³)	3.8			
Pf/Mf	(cm³ / cm³				
Comment1:					

Mud Products

Additive	# Units
BARACARB 150	21
BARACARB 5	40
BARACARB 50	120
BARACARB 600	28
VAN RENTAL	2
MUD CHECK TE	1
TRIETHANOLAMI	1

Mud Cost

Daily	$7,123.15
Cumulative	$156,798.00

Bit Data

Bit No.	3	
Run	8	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,586.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)	192.00	
Cum. Hours	55.00	
WOB (Min)(daN)	10,000	
WOB (Max)(daN)	11,000	
RPM (Min)	60	
RPM (Max)	65	
Cond (IODL)	3/4/WT/A	
Cond (BGOR)	E/ I/FC/TD	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,867.90
DP OD	(mm)	
String Rot Weight	(daN)	77,000
Pick-Up Weight	(daN)	92,000
Slack Off Weight	(daN)	67,000

BHA Desc.: MAINHOLE

Item	Jts	Length (m)
Tri-Cone Bit	1	0.17
Near Bit Stabilizer	1	1.25
Non-Mag Drill Collar	1	9.48
Drill Collar	2	18.95
Drilling Jar	1	5.02
Drill Collar	15	141.50
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	275	2,609.78

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/20/2003
Last BOP Drill	02/18/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
2,740.00	15.000	101.900	2,690.61	-163.98	328.22	366.88	1.09	1.01

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/21/2003 Report: 32 DFS: 28.00 DOL: 32.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,850.00 (m)	TVD:	2,796.50 (m)	Progress:	72.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	21.75	AV ROP:	3.31	Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	48,901	Cum Cost:	3,226,581	AFE Est:	4,288,464	AFE No.:	400792

Current Status: DRILLING AHEAD @ 2869 MD.

24hr Forecast: DRILL TO TD. CIRC, WIPER TRIP, POOH, LOG.

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P DRLPRO	RIG SERVICE F/T. HYDRILL CLOSE 17 SECONDS
00:15 - 08:00	7.75	02	B	P DRLPRO	DRILL 156MM HOLE F/ 2778M TO 2804M
08:00 - 08:15	0.25	07	A	P DRLPRO	RIG SERVICE F/T. UPPER PIPE RAMS CLOSE 4 SECONDS
08:15 - 20:00	11.75	02	B	P DRLPRO	DRILL 156MM HOLE F/ 2804M TO 2842M
20:00 - 20:15	0.25	07	A	P DRLPRO	RIG SERVICE F/T. UPPER PIPE RAMS CLOSE 4 SECONDS
20:15 - 22:30	2.25	02	B	P DRLPRO	DRILL 156MM HOLE F/ 2842M TO 2850M
22:30 - 00:00	1.50	05	K	P DRLPRO	CIRCULATE SAMPLE, CONDITION HOLE.

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL AHEAD F/ 2778 - 2850 MD. DRILLING BREAK F/ 2848.5 - 2950 M.
GAS PEAK @ 242 UNITS. TOTAL FLUID LOSSES; 16.3 M^3.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	1,154	1,075.0

Formation Data

Formation Name	Top (m)
KEG RIVER	2,690.00

Gas Readings

Conn Avg/Max (mg/L)	703/2,928
Bkgr Avg/Max (mg/L)	6/65
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/21/2003 Report: 32 DFS: 28.00 DOL: 32.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	9,600		
SPM	68		
Output (L/mi	797.65		

Velocities

Drill Pipe	(m/min)	62.3
Drill Collar	(m/min)	108.9
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	4,400 (kP	425.33 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	BARADRIL-N				
Time	09:00 / OUT		Ca+ (mg/L)	60	
Depth	(m)	2,805.00	K+ (mg/L)		
Temp	(°C)	52	Polymer (kg/m³)		
Density	(kg/m³)	1,075	CaCl2 (%)		
ECD	(kg/m³)	1,177	NaCl (%)		
Viscosity	(s/l)	52	Sand (%)		
PV	(mPa*s)	13.0	Tot. Solids		
YP	(Pa)	12.0	% Oil		
GELS	(Pa)	3.0/4.0/	% H2O		
API WL	(mL)	5.6	Oil/H2O	/	
HTHP WL	(mL)		HGSolid (kg/m³)	122	
API FC	(mm)	1.0	LGSolid (kg/m³)	0.8	
MBT	(kg/m³)		ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		10.50			
Pm	(cm³)	3.2			
Pf/Mf	(cm³ / cm³)	0.95 / 1.40			
Comment1:					

Mud Products

Additive	# Units
BARACARB 150	20
BARACARB 5	20
BARACARB 50	60
BARACARB 600	28
GEN BIOCIDE	2
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$4,456.60
Cumulative	$161,255.00

Bit Data

Bit No.	3	
Run	8	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,586.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)	264.00	
Cum. Hours	76.75	
WOB (Min)(daN)	10,000	
WOB (Max)(daN)	11,000	
RPM (Min)	60	
RPM (Max)	65	
Cond (IODL)	3/4/WT/A	
Cond (BGOR)	E/ I/FC/TD	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,867.90
DP OD	(mm)	
String Rot Weight	(daN)	77,000
Pick-Up Weight	(daN)	97,000
Slack Off Weight	(daN)	65,000

BHA Desc.: MAINHOLE

Item	Jts	Length (m)
Tri-Cone Bit	1	0.17
Near Bit Stabilizer	1	1.25
Non-Mag Drill Collar	1	9.48
Drill Collar	2	18.95
Drilling Jar	1	5.02
Drill Collar	15	141.50
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	275	2,609.78

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/21/2003
Last BOP Drill	02/18/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/22/2003 | Report: 33 | DFS: 29.00 | DOL: 33.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	28.00 (m)
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	7.25	AV ROP:	3.86	Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	50,107	Cum Cost:	3,276,688	AFE Est:	4,288,464	AFE No.:	400792

Current Status: LOGGING WITH SCHLUMBERGER

24hr Forecast: LOG WELL, WAIT FOR ORDERS

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	05	K	P DRLPRO	CIRC. PRIOR WIPER TRIP
00:15 - 00:30	0.25	07	A	P DRLPRO	RIG SERVICE F/T. HYDRILL CLOSE17 SECONDS BLOW KELLY
00:30 - 01:00	0.50	06	H	P DRLPRO	WIPER TRIP TO 2790M FLOW CHECK @2850M,2790M, R.I.H.
01:00 - 08:15	7.25	02	B	P DRLPRO	DRILL 156MM HOLE F/ 2850M TO 2878M
08:15 - 08:30	0.25	07	A	P DRLPRO	RIG SERVICE F/T. UPPER PIPE RAMS 4SECONDS TO CLOSE
08:30 - 09:15	0.75	05	I	P DRLPRO	CIRC. SAMPLE
09:15 - 10:15	1.00	10		P DRLPRO	DEV. SURVEY @ 2864M INC.20 DEGREE AZM 96.9
10:15 - 13:00	2.75	05	K	P DRLPRO	CIRC. COND. MUD & HOLE, RAISE MUD DENSITY TO 1100 KG/M3
13:00 - 15:15	2.25	06	H	P DRLPRO	11 STD WIPER TRIP HOLE FILL CALCU..81m3 MEAS. .87m3 F.C./@2866M,2724M,2581M, / R.I.H.
15:15 - 17:00	1.75	05	K	P DRLPRO	CIRC. COND. MUD &HOLE, WIPER TRIP GAS: 7320 UNITS
17:00 - 20:00	3.00	06	C	P DRLPRO	FLOW CHECK, PUMP PILL, BLOW KELLY, TRIP OUT TO LOG. FLOW CHECKS @ 2866, 2724 M.
20:00 - 20:15	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 4 SECONDS TO CLOSE
20:15 - 00:00	3.75	06	C	P DRLPRO	TRIP OUT TO LOG. FLOW CHECKS: 1584, 185, OUT OF HOLE. LAY DOWN MONEL, JARS, NB STAB S.L.M. TALLY: 2878.0 MD / STRAP: 2877.92 MD. / DIFF: .08 M HOLE FILL: CALCULATED: 7.38 M3 / MEASURED: 11.45 M3 / DIFF: + 4.07 M3

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL 156 MM HOLE F/ 2850 - 2878 MD. SURVEY @ 2864 MD: 20 DEG @ 96.9 AZ. CIRC, WIPER TRIP TO CASING SHOE, TRIP GAS 7320 UNITS, CIRC, POOH TO LOG.
TOTAL FLUID LOSSES: 21.9 M63

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	530	1,100.0

Formation Data

Formation Name	Top (m)
KEG RIVER	2,690.00

Gas Readings

Conn Avg/Max	(mg/L)	343/2,028
Bkgr Avg/Max	(mg/L)	15/65
Trip Avg/Max	(mg/L)	15/7,320
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/22/2003 | Report: 33 | DFS: 29.00 | DOL: 33.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	98.0		
Press (kPa)	9,450		
SPM	68		
Output (L/mi	781.69		

Velocities

Drill Pipe	(m/min)	61.1
Drill Collar	(m/min)	106.7
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	3,700 (kP	434.01 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	BARADRIL-N				
Time/Date	18:00 / OUT		Ca+ (mg/L)	60	
Depth	(m)	2,878.00	K+ (mg/L)		
Temp	(°C)	52	Polymer (kg/m³)		
Density	(kg/m³)	1,100	CaCl2 (%)		
ECD	(kg/m³)		NaCl (%)		
Viscosity	(s/l)	50	Sand (%)		
PV	(mPa*s)	13.0	Tot. Solids		
YP	(Pa)	10.5	% Oil		
GELS	(Pa)	3.0/4.0/	% H2O		
API WL	(mL)	5.2	Oil/H2O	/	
HTHP WL	(mL)		HGSolid (kg/m³)	103	
API FC	(mm)	1.0	LGSolid (kg/m³)	60.8	
MBT	(kg/m³)		ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		11.00			
Pm	(cm³)	3.1			
Pf/Mf	(cm³ / cm³	0.90 / 1.25			
Comment1:					

Mud Products

Additive	# Units
BARACARB 150	10
BARACARB 5	42
BARACARB 50	128
BARABUFF	5
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$5,652.70
Cumulative	$166,917.00

Bit Data

Bit No.	3	
Run	8	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,586.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)	292.00	
Cum. Hours	84.00	
WOB (Min)(daN)	10	
WOB (Max)(daN)	11	
RPM (Min)	55	
RPM (Max)	65	
Cond (IODL)	3/4/WT/A	
Cond (BGOR)	E/ I/FC/TD	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,867.90
DP OD	(mm)	
String Rot Weight	(daN)	78,000
Pick-Up Weight	(daN)	98,000
Slack Off Weight	(daN)	68,000

BHA Desc.: MAINHOLE

Item	Jts	Length (m)
Tri-Cone Bit	1	0.17
Near Bit Stabilizer	1	1.25
Non-Mag Drill Collar	1	9.48
Drill Collar	2	18.95
Drilling Jar	1	5.02
Drill Collar	15	141.50
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	275	2,609.78

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/22/2003
Last BOP Drill	02/18/2003

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
2,864.00	20.000	96.900	2,808.84	-169.84	365.00	402.29	1.26	1.21

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/23/2003 Report: 34 DFS: 30.00 DOL: 34.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:		AV ROP:		Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	97,753	Cum Cost:	3,374,441	AFE Est:	4,288,464	AFE No.:	400792

Current Status: RUN IN HOLE W/ PERMANENT OPEN HOLE BRIDGE PLUG

24hr Forecast: RIH & SET BRIDGE PLUG, POOH,

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS: 4 SECONDS TO CLOSE
00:15 - 00:30	0.25	21	A	P DRLPRO	SAFETY MEETING W/ SCHLUMBERGER
00:30 - 07:15	6.75	11	A	P EVALPR	RIG UP SCHLUMBERGER, LOG WELL: RUN 1: AIT-DSI-HGNS-TLD-GR-XY CAL. LOGS ON BOTTOM @ 03:00 HR. LOGGERS DEPTH: 2874.5 MD.
07:15 - 08:00	0.75	11	A	P EVALPR	LOG W/ SCHLUMBERGER: RUN 2: FMI-GR-DTC.
08:00 - 08:15	0.25	07	A	P EVALPR	RIG SERVICE, FUNCTION BLIND RAMS. 4 SECONDS TO CLOSE
08:15 - 14:00	5.75	11	A	P EVALPR	LOG W/ SCHLUMBERGER: RUN 2: FMI-GR-DTC. LOGS ON BOTTOM @ 09:30 HR. DEPTH: 2869 MD.,RIG OUT LOGGERS
14:00 - 19:30	5.50	06	A	P EVALPR	TRIP IN HOLE, MAKE UP BIT &BIT SUB [RUN PORTED FLOAT] PICK UP JARS R.I.H. FILL PIPE 800M,1800M,2500M FLOW CHECK ON FILLS
19:30 - 20:00	0.50	03	A	P EVALPR	WASH & REAM F/ 2848M TO 2878M
20:00 - 20:15	0.25	07	A	P EVALPR	RIG SERVICE F/T. LOWER PIPE RAMS CLOSE 4 SECONDS
20:15 - 22:15	2.00	05	K	P EVALPR	CIRC. COND. MUD & HOLE
22:15 - 00:00	1.75	06		P EVALPR	FLOW CHECK, PUMP PILL, TRIP OUT OF HOLE, FLOW CHECKS @ 2866, 2722 M.

DAILY OPERATIONAL COMMENTS(24hr Summary):
LOG WELL W/ SCHLUMBERGER, RUN IN HOLE W/BIT, CIRCULATE CONDITION HOLE, TRIP GAS PEAK @ 5115 UNITS. TRIP OUT TO RUN PERMANENT BRIDGE PLUG.

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	530	1,100.0

Formation Data

Formation Name	Top (m)
KEG RIVER	2,690.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	5,115/
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/23/2003 Report: 34 DFS: 30.00 DOL: 34.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	100.0		
Press (kPa)	9,400		
SPM	68		
Output (L/mi	797.65		

Velocities

Drill Pipe	(m/min)	62.3
Drill Collar	(m/min)	108.9
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump 1100-PT	4,530 (kP	445.74 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	BARADRIL-N				
Time/Loc	00 / OUT		Ca+ (mg/L)	60	
Depth	(m)	2,878.00	K+ (mg/L)		
Temp	(°C)	52	Polymer (kg/m³)		
Density	(kg/m³)	1,100	CaCl2 (%)		
ECD	(kg/m³)		NaCl (%)		
Viscosity	(s/l)	62	Sand (%)		
PV	(mPa*s)	13.0	Tot. Solids		
YP	(Pa)	11.5	% Oil		
GELS	(Pa)	3.0/5.0/	% H2O		
API WL	(mL)	6.0	Oil/H2O	/	
HTHP WL	(mL)		HGSolid (kg/m³)	58	
API FC	(mm)	1.0	LGSolid (kg/m³)	106.3	
MBT	(kg/m³)		ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		10.50			
Pm	(cm³)	3.2			
Pf/Mf	(cm³ / cm³)	0.95 / 1.20			
Comment1:					

Mud Products

Additive	# Units
BARITE	5
BARACARB 50	10
SODIUM SULPHI	2
SAWDUST	45
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$813.44
Cumulative	$167,731.00

Bit Data

Bit No.	RR3	
Run	9	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,878.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)		
Cum. Hours		
WOB (Min) (daN)		
WOB (Max) (daN)		
RPM (Min)		
RPM (Max)		
Cond (IODL)	3/4/WT/A	
Cond (BGOR)	E/ I/FC/BHA	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID	(mm)	
DC OD	(mm)	
DC	(m)	
HWDP OD	(mm)	
HWDP	(m)	
BHA		2,867.59
DP OD	(mm)	
String Rot Weight	(daN)	78,000
Pick-Up Weight	(daN)	98,000
Slack Off Weight	(daN)	68,000

BHA Desc.: MAIN HOLE

Item	Jts	Length (m)
Tri-Cone Bit	1	0.17
Bit Sub	1	0.92
Drill Collar	3	28.24
Drilling Jar	1	5.02
Drill Collar	15	132.21
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	276	2,619.28

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/23/2003
Last BOP Drill	02/18/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/24/2003 Report: 35 DFS: 31.00 DOL: 35.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	59,769	Cum Cost:	3,434,210	AFE Est:	4,288,464	AFE No.:	400792

Current Status: RIH w/ CASING SCRAPER TO 2550mMD @ 2271mMD

24hr Forecast: CIRC CASING CLEAN, WO CASING PACKER, ETA @ 06:00hrs TOMORROW

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P	EVALPR	RIG SERVICE, FUNCTION ANNULAR: 17 SECONDS TO CLOSE
00:15 - 00:30	0.25	21	B	P	EVALPR	HELD BOP DRILL, WELL SECURE IN 1 MIN. 35 SECONDS, SAFETY MEETING.
00:30 - 03:45	3.25	06	H	P	EVALPR	TRIP OUT, FLOW CHECKS @ 1585, 169, OUT OF HOLE. HOLE FILL: CALCULATED: 8.66 M3 / MEASURED: 10.77 M3 FUNCTION BLIND RAMS OUT OF HOLE, 4 SECONDS TO CLOSE
03:45 - 08:00	4.25	06		P	EVALPR	MAKE UP INFLATABLE PERMAMENT OPEN HOLE BRIDGE PLUG, RUN IN HOLE, DOUBLE STRAP
08:00 - 08:15	0.25	07	A	P	EVALPR	RIG SERVICE, FUNCTION UPPER PIPE RAMS: 4 SECONDS TO CLOSE
08:15 - 14:00	5.75	06		P	EVALPR	RUN IN W/ BRIDGE PLUGTO 2841 M., FILL PIPE EVERY 400 METERS
14:00 - 16:00	2.00	06		P	EVALPR	PICK UP SINGLE, KELLY, MEASURE IN TO 2861.0 M. (TOP OF BRIDGE PLUG ELEMENT) SET BRIDGE PLUG @ 2861.0 - 2862.37 MD. COME OFF BRIDGE PLUG.
16:00 - 16:15	0.25	21	A	P	EVALPR	SAFETY MEETING, BOP DRILL W/ CREW:
16:15 - 16:30	0.25	07	A	P	EVALPR	RIG SERVICE, FUNCTION LOWER PIPE RAMS: 3 SECONDS TO CLOSE
16:30 - 22:00	5.50	06		P	EVALPR	FLOW CHECK, PUMP PILL, BLOW KELLY. TRIP OUT, FLOW CHECKS @ 2790, 1565, OUT OF HOLE. HOLE FILL: CALCULATED: 8.11 M3 / MEASURED: 9.11 M3
22:00 - 23:00	1.00	09		P	EVALPR	SLIP AND CUT DRILLING LINE
23:00 - 00:00	1.00	22	D	P	EVALPR	WAIT ON CASING SCRAPER

DAILY OPERATIONAL COMMENTS(24hr Summary):
POOH, MAKE UP PERMANENT INFLATABLE OPEN HOLE BRIDGE PLUG, RIH, SET BRIDGE PLUG @ 2861.0 - 2862.37 MD. POOH, SLIP & CUT DRLG LINE, WAIT ON CASING SCRAPER.
TOTAL FLUID LOSSESS: 25.4 M3

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
1,121.3	530	1,100.0	LANDRY	2,851.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Printed: 05/09/2003 10:48:39 AM

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/24/2003 Report: 35 DFS: 31.00 DOL: 35.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: BARADRIL-N

Time/Loc		Ca+ (mg/L)	
Depth (m)		K+ (mg/L)	
Temp (°C)		Polymer (kg/m³)	
Density (kg/m³)		CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)		Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)		Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH			
Pm (cm³)			
Pf/Mf (cm³ / cm³)			

Comment1:

Mud Products

Additive	# Units
BARACARB 5	20
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$1,045.60
Cumulative	$168,776.00

Bit Data

Bit No.	RR3	
Run	9	
Size (mm)	156.00	
Manu.	RBI	
Type	C15LRGSP	
Serial No.	CF687	
TFA (mm²)	721.6	
Depth In (m)	2,878.00	
Depth Out (m)	2,878.00	
Cum. Depth (m)		
Cum. Hours		
WOB (Min)(daN)		
WOB (Max)(daN)		
RPM (Min)		
RPM (Max)		
Cond (IODL)	3/4/WT/A	
Cond (BGOR)	E/ I/FC/BHA	
Jets 1/2/3	17.5/17.5/17.5	
Jets 4/5/6		

Pipe Data

Min ID (mm)		
DC OD (mm)		
DC (m)		
HWDP OD (mm)		
HWDP (m)		
BHA		2,850.86
DP OD (mm)		
String Rot Weight (daN)		78,000
Pick-Up Weight (daN)		96,000
Slack Off Weight (daN)		58,000

BHA Desc.: SET BRIDGE PLUG

Item	Jts	Length (m)
BRIDGE PLUG	1	3.38
Drill Collar	2	18.95
Drilling Jar	1	5.02
Drill Collar	15	141.50
Heavy Weight Drill Pipe	9	81.75
Drill Pipe	274	2,600.26

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/24/2003
Last BOP Drill	02/24/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/25/2003 | Report: 36 | DFS: 32.00 | DOL: 36.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Supvr:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	45,764	Cum Cost:	3,479,975	AFE Est:	4,288,464	AFE No.:	400792

Current Status: RIGGING IN TO PICK UP 89mm PROD TUBING, W.O. HALLIBURTON PACKER

24hr Forecast: RIG IN WIRELINE, RUN GAUGE RING/ CCL, SET PACKER, RIH w/ TBG

Operations Summary

From - To	Hours	Code	Sub Code	Phase		Description of Operations
00:00 - 00:15	0.25	07	A	P	DRLPRO	RIG SERVICE, FT BLIND RAMS- 4sec
00:15 - 00:30	0.25	21	A	P	DRLPRO	SAFETY MEETING w/ DDA NORTHERN SAFETY
00:30 - 06:45	6.25	06	J	P	DRLPRO	RIH w/ CASING SCRAPER
06:45 - 07:00	0.25	21	B	P	DRLPRO	BOP DRILL, MAN DOWN DRILL
07:00 - 08:00	1.00	05	K	P	DRLPRO	CIRC BOTTOMS UP ON CASING SCRAPER RUN
08:00 - 08:15	0.25	07	A	P	DRLPRO	RIG SERVICE, FT UPPER PIPE RAMS- 4sec
08:15 - 15:15	7.00	05	K	P	DRLPRO	CIRC CASING SCRAPER,**WAIT ON LAYDOWN MACHINE**
15:15 - 15:30	0.25	21	A	P	DRLPRO	SAFETY MEETING w/ E-Z LAY PIPE HANDLERS
15:30 - 20:00	4.50	06	J	P	DRLPRO	LAY DOWN 89mm DP, HWDP, DC's & CASING SCRAPER
20:00 - 20:15	0.25	21	A	P	DRLPRO	SAFETY MEETING w/ E-Z LAY PIPE HANDLERS
20:15 - 20:30	0.25	07	A	P	DRLPRO	RIG SERVICE, FT LOWER PIPE RAMS- 4sec
20:30 - 23:15	2.75	06	J	P	DRLPRO	LAY DOWN 89mm DP
23:15 - 00:00	0.75	01	B	P	DRLPRO	BREAK DOWN KELLY BAR

DAILY OPERATIONAL COMMENTS(24hr Summary):
RIH w/ CASING SCRAPER, CIRC BOTTOMS UP, LAY DOWN 89mm DP
WHILE WAITING ON HALLIBURTON PACKER TO COMPLETE WELL

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
1,121.3	530	1,100.0	LANDRY	2,851.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/25/2003 Report: 36 DFS: 32.00 DOL: 36.00
Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump	1100-PT		
Liner (mm)	140.0		
Stroke (mm)	254.0		
EFF	98.0		
Press (kPa)	5,670		
SPM	48		
Output (L/mi	551.78		

Velocities

Drill Pipe	(m/min)	43.1
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	BARADRIL-N				
Time	09:00 / OUT		Ca+	(mg/L)	60
Depth	(m)	2,878.00	K+	(mg/L)	
Temp	(°C)	34	Polymer	(kg/m³)	
Density	(kg/m³)	1,095	CaCl2	(%)	
ECD	(kg/m³)		NaCl	(%)	
Viscosity	(s/l)	52	Sand	(%)	
PV	(mPa*s)	12.0	Tot. Solids		
YP	(Pa)	10.1	% Oil		
GELS	(Pa)	3.0/3.0/	% H2O		
API WL	(mL)	4.8	Oil/H2O		/
HTHP WL	(mL)		HGSolid	(kg/m³)	142
API FC	(mm)	1.0	LGSolid	(kg/m³)	13.3
MBT	(kg/m³)		ES	(mV)	
Lime	(kg/m³)		Oil Ret	(%)	
pH		10.50			
Pm	(cm³)	2.8			
Pf/Mf	(cm³ / cm³	0.85 / 1.95			
Comment1:					

Mud Products

Additive	# Units
BARACARB 5	15
VAN RENTAL	1
MUD CHECK TE	1

Mud Cost

Daily	$850.45
Cumulative	$169,627.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IQDL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	02/16/2003
Last BOP Test (F)	02/24/2003
Last BOP Drill	02/24/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Printed: 05/09/2003 10:48:46 AM

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/26/2003 | Report: 37 | DFS: 33.00 | DOL: 37.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	42,784	Cum Cost:	3,522,759	AFE Est:	4,288,464	AFE No.:	400792

Current Status: PICK UP/ MAKE UP 89mm HYDRIL TUBING @ 1370m of 2554m RUN

24hr Forecast: RUN 89mm TBG, CHG WELL TO WATER,SET DOGNUT, NIPPLE DOWN BOP

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P DRLPRO	RIG SERVICE, FT ANNULARS- 22sec
00:15 - 04:00	3.75	06	J	P DRLPRO	RIH w/ 11 stds, LAYDOWN DP, HWDP & DC's
04:00 - 04:30	0.50	23	B	P DRLPRO	REMOVE WEAR BUSHING
04:30 - 07:00	2.50	12	A	P DRLPRO	STRAP TOP TIER TUBING, RIG IN TONG HAND w/ THREAD WASHING UNIT
07:00 - 07:15	0.25	21	A	P DRLPRO	SAFETY MEETING w/ TONG HAND/ LAYDOWN MACHINE/ THREAD COPS
07:15 - 08:00	0.75	22	D	P DRLPRO	W.O. CASING PACKER, CHANGE IN OPERATION
08:00 - 08:15	0.25	07	A	P DRLPRO	RIG SERVICE, FT BLIND RAMS- 6sec
08:15 - 08:30	0.25	21	A	P DRLPRO	SAFETY MEETING w/ WIRELINE UNIT **TURNED WELL OVER TO COMPLETIONS** ASKED TO PREPARE FOR GR/CCL RUN
08:30 - 00:00	15.50	22	E	P DRLPRO	SEE COMPLETIONS REPORTS

DAILY OPERATIONAL COMMENTS(24hr Summary):
LAYDOWN 89mm DP/HWDP/DC's, RIG OUT LAYDOWN, RIG IN WIRELINE, RUN GAUGE RING/ CASING COLLAR LOCATOR, RUN HALLIBURTON PACKER TO 2554mMD, TEAR OUT WIRELINE, RIG IN LAY DOWN MACHINE, RUN 89mm TUBING

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
1,121.3	530	1,100.0	LANDRY	2,851.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/26/2003 Report: 37 DFS: 33.00 DOL: 37.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	BARADRIL-N		
Time/Loc		Ca+ (mg/L)	
Depth	(m)	K+ (mg/L)	
Temp	(°C)	Polymer (kg/m³)	
Density	(kg/m³)	CaCl2 (%)	
ECD	(kg/m³)	NaCl (%)	
Viscosity	(s/l)	Sand (%)	
PV	(mPa*s)	Tot. Solids	
YP	(Pa)	% Oil	
GELS	(Pa)	% H2O	
API WL	(mL)	Oil/H2O	
HTHP WL	(mL)	HGSolid (kg/m³)	
API FC	(mm)	LGSolid (kg/m³)	
MBT	(kg/m³)	ES (mV)	
Lime	(kg/m³)	Oil Ret (%)	
pH			
Pm	(cm³)		
Pf/Mf	(cm³ / cm³)		
Comment1:			

Mud Products

Additive	# Units
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$485.00
Cumulative	$170,112.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HW'DP	
BHA	
DP OD	
String Rot	
Weight	
Pick-Up	
Weight	
Slack Off	
Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	02/26/2003
Last BOP Test (F)	02/26/2003
Last BOP Drill	02/25/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/27/2003 Report: 38 DFS: 34.00 DOL: 38.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	53,541	Cum Cost:	3,576,300	AFE Est:	4,288,464	AFE No.:	400792

Current Status: ATTEMPTING TO LAND 89mm TUBING OVER HALLIBURTON PACKER

Q

24hr Forecast: LAND TUBING, TEAR BOP, SET WELLHEAD, TEAR OUT TO MOVE

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:00	24.00	22	E P	EVALPR	SEE COMPLETIONS REPORTS

DAILY OPERATIONAL COMMENTS(24hr Summary):
RUN 89mm HYDRIL PRODUCTION TUBING, DISPLACE TUBING/CASING TO INHIBITED WATER, CIRC DOWN TO HALLIBURTON PACKER, ATTEMPT TO SLIDE OVER

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	530	1,100.0

Formation Data

Formation Name	Top (m)
LANDRY	2,351.00

Gas Readings

Conn Avg/Max	(mg/L)	
Bkgr Avg/Max	(mg/L)	
Trip Avg/Max	(mg/L)	
H2S	(%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/27/2003 | Report: 38 | DFS: 34.00 | DOL: 38.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	BARADRIL-N		
Time/Loc		Ca+ (mg/L)	
Depth (m)		K+ (mg/L)	
Temp (°C)		Polymer (kg/m³)	
Density (kg/m³)		CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)		Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)		Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH			
Pm (cm³)			
Pf/Mf (cm³ / cm³)			
Comment1:			

Mud Products

Additive	# Units
VAN RENTAL	2
MUD CHECK TE	1

Mud Cost

Daily	$485.00
Cumulative	$170,597.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	02/26/2003
Last BOP Test (F)	02/27/2003
Last BOP Drill	02/25/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 02/28/2003 Report: 39 DFS: 35.00 DOL: 39.00
Event Name: ORIG DRILLING Spud: 01/25/2003 RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	149,950	Cum Cost:	3,726,250	AFE Est:	4,288,464	AFE No.:	400792

Current Status: TEARING OUT TO MOVE, RIG RELEASED, SOME MOVING UNDERWAY

24hr Forecast: LAY DOWN DERRICK, COMPLETE TEAR OUT FOR SUNDAY MOVE

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 17:30	17.50	22	E P	DRLPRO	SEE COMPLETIONS REPORTS
17:30 - 17:45	0.25	21	A P	DRLPRO	SAFETY MEETING w/ RIG CREW & KERRY WILSON
17:45 - 00:00	6.25	01	B P	RDMO	TEAR OUT RIG TO MOVE TO F-56 LOCATION **RIG RELEASED @ 23:59 hrs; 2003-02-28** SOME RENTALS MOVED, OTHERS TOMORROW CRANE WORK TO COMMENCE SUNDAY MORNING

DAILY OPERATIONAL COMMENTS(24hr Summary):
CONTINUE TO WASH ONTO PACKER, RE-LAND DOGNUT w/9500 daN, PT TO 15,000 kPa, INSTALL BACK PRESSURE VALVE, NIPPLE DOWN BOP, INSTALL WELLHEAD, TEAR OUT TO MOVE TO F-56, RIG RELEASED @ 23:59 hrs; 2003-02-28

LOT/FIT

EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)
1,121.3	530	1,100.0

Formation Data

Formation Name	Top (m)
LANDRY	2,851.00

Gas Readings

Conn Avg/Max (mg/L)	
Bkgr Avg/Max (mg/L)	
Trip Avg/Max (mg/L)	
H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 02/28/2003 | Report: 39 | DFS: 35.00 | DOL: 39.00

Event Name: ORIG DRILLING | Start: 01/25/2003 | End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	BARADRIL-N		
Time/Loc		Ca+ (mg/L)	
Depth	(m)	K+ (mg/L)	
Temp	(°C)	Polymer (kg/m³)	
Density	(kg/m³)	CaCl2 (%)	
ECD	(kg/m³)	NaCl (%)	
Viscosity	(s/l)	Sand (%)	
PV	(mPa*s)	Tot. Solids	
YP	(Pa)	% Oil	
GELS	(Pa)	% H2O	
API WL	(mL)	Oil/H2O	
HTHP WL	(mL)	HGSolid (kg/m³)	
API FC	(mm)	LGSolid (kg/m³)	
MBT	(kg/m³)	ES (mV)	
Lime	(kg/m³)	Oil Ret (%)	
pH			
Pm	(cm³)		
Pf/Mf	(cm³ / cm³)		
Comment1:			

Mud Products

Additive	# Units
VAN RENTAL	1
MUD CHECK TE	1

Mud Cost

Daily	$430.00
Cumulative	$171,027.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	02/26/2003
Last BOP Test (F)	02/27/2003
Last BOP Drill	02/25/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 | Date: 03/01/2003 | Report: 40 | DFS: 36.00 | DOL: 40.00
Event Name: ORIG DRILLING | Spud: 01/25/2003 | RR: 03/01/2003

Rig Name:	SHEHTAH 5E	TMD:	2,878.00 (m)	TVD:	2,822.00 (m)	Progress:	
		KB:	517.90 (m)	GL:	510.80 (m)	KB to GL:	7.10 (m)
Rig Super:	KERRY GENEST 780-446-0770	Rot. Hours:		AV ROP:		Hole Size:	155.60 (mm)
Wellsite Eng:	STAN WEICH 403-231-0190	Last Casing:	177.8 (mm)	Shoe TMD:	2,583.60 (m)	Shoe TVD:	2,538.00 (m)
Daily Cost:	25,290	Cum Cost:	3,751,540	AFE Est:	4,288,464	AFE No.:	400792

Current Status: WAIT FOR TRUCKS/ CRANES TO MOVE

24hr Forecast: LOAD/ MOVE/ SPOT RIG ON ARROWHEAD F-56 LOCATION

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A P	RDMO	RIG SERVICE
00:15 - 00:30	0.25	21	A P	RDMO	SAFETY MEETING, RIGGING OUT
00:30 - 08:00	7.50	01	B P	RDMO	RIG OUT, MUD TANKS, PRE-FABS
08:00 - 08:15	0.25	21	A P	RDMO	SAFETY MEETING
08:15 - 08:30	0.25	07	A P	RDMO	RIG SERVICE, CHG BRASS INSERTS ON DRILL LINE ANCHOR
08:30 - 11:30	3.00	01	B P	RDMO	RIG OUT/ INSPECT/ LAYDOWN DERRICK @ 11:00 hrs
11:30 - 00:00	12.50	01	B P	RDMO	TEAR OUT TO MOVE, LOADING OUT RENTALS, COOL-DRAIN BOILER, TEAR OUT STEAM, WATER & POWER LINES, REMOVE SNOW & ICE

DAILY OPERATIONAL COMMENTS(24hr Summary):
RIG RELEASED, TEARING OUT TO MOVE, DERRICK DOWN @ 11:00 hrs, BOILER DOWN @ 14:00 hrs, SWITCH TO ALTERNATE POWER @ 16:00 hrs, COMPLETE TEAR OUT

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
1,121.3	530	1,100.0	LANDRY	2,851.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER I-75 Date: 03/01/2003 Report: 40 DFS: 36.00 DOL: 40.00

Event Name: ORIG DRILLING Start: 01/25/2003 End: 03/01/2003

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe (m/min)	
Drill Collar (m/min)	
Riser (m/min)	
Lag Time (min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1: BARADRIL-N

Time/Loc		Ca+ (mg/L)	
Depth (m)		K+ (mg/L)	
Temp (°C)		Polymer (kg/m³)	
Density (kg/m³)		CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)		Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)		Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH			
Pm (cm³)			
Pf/Mf (cm³ / cm³)			

Comment1:

Mud Products

Additive	# Units

Mud Cost

Daily	$0.00
Cumulative	$171,027.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

Pipe Data

Min ID	
DC OD	
DC	
HWDP OD	
HWDP	
BHA	
DP OD	
String Rot	
Weight	
Pick-Up	
Weight	
Slack Off	
Weight	

BHA Desc.:

Item	Jts	Length

Safety Drills

Last BOP Test (P)	02/26/2003
Last BOP Test (F)	02/27/2003
Last BOP Drill	02/25/2003

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Baroid

Anadarko Canada Corporation

Baroid Drilling Fluids

Post Well Audit

ANADARKO et al Ft Liard

I-75

May 14, 2003

HALLIBURTON

Post Well Audit

Operator	Anadarko
Well Name	ACC Arrowhead River I-75
Field / Block	Arrowhead/
Country	Canada
Legal Description	Ft. Liard NWT I-75
Geographic Area / County	
District	
Contractor	Shehtah Drilling Ltd
Rig Name	Shehtah Wilson 5 E
Recap Date	5/25/2003
Reference Number	
Prepared By	Allen Toney

Cover Letter

Anadarko Canada Corporation
400, 425 - 1st Street S.W.
Calgary, Alberta, T2P 4V4

Re: ACC Fort Liard.

Mr. Aiden Campbell,

The following post well audit summarizes the activities of Baroid of Canada Drilling Fluids during drilling of this ACC Fort Liard well. The activities surrounding the operations of the drilling fluid are documented along with the associated costs to Anadarko. These costs are field estimates and additional incidental costs are included in the original invoice generated by the Halliburton accounting department. If any discrepancies in the cost of products and services are apparent between this document and the original invoice, please consider the original invoice to be correct.

Thank you,

Allen R. Toney,

Technical Professional
BAROID
1000, 333 - 5 Avenue SW
Calgary, Alberta T2P 3B6

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Executive Summary

311 mm Surface Hole to 654.7 m - From Jan 25 To Jan 31
Drilling Fluid: AQUAGEL Caustic
Formations: Scatter Sand, Garbutt and Banff

Trips while running bit #3 required extensive reaming and pumping out. Tightened up the filter cake with PAC and Lignite in a 1:1 ratio and raised yield point with BARAZAN D PLUS.

216 mm Intermediate Hole - From: 654.7 m **To:** 2583.6 m
From: Feb 2 **To:** Feb 16
Drilling Fluid: ENVIROMUL Mineral Oil Based Invert
Formations: Banff, Exshaw, Kotcho, Trout River, Kakisa, Fort Simpson, Muskwa and Slave Point.

Drilled out with invert and performed the leak off test. Aggressively mixed emulsifiers and viscosifiers while drilling ahead. An invert spill from a leaking rig tank was caught in the ditches with most of the mud returned to the active system. Drilled to 2511 m with no issues. Drilled ahead at intervals to circulate up samples, looking for casing point. Found the casing point at 2586 m, on Feb 14. Ran 177.8 mm casing without difficulty and cemented with BJ.

156 mm - Production Hole - From: 2584 **To:** 2878 m MD
From: Feb 17 **To:** Feb 28
Drilling Fluid: BARADRIL-N Sized Calcium Carbonate Polymer Water Based Mud
Formations: Slave Point, Watt Mountain, Keg River, Headless, and Devonian Bsl Clastics

Mixed products for viscosity and filtration control while drilling cement. Programmed properties were obtained before drilling out of the shoe and performing the formation integrity test. Drilled 156-mm hole to 2805 m without issues. Began running the centrifuge periodically over 1 circulation to control density and ECD at the bit. Drilled to TD at 2878 m MD. Set a bridge plug at 2861 m on Feb 24. Ran packer with wireline. Ran production string to the packer.

Well Summary

Well : ACC Arrowhead River I-75
Operator: Anadarko

Well Data

Spud Date		Jan/25/03	Products/Fluids Drilling Cost		$231,164.47
TD Date		Feb/21/03	Products/Fluids Completion Cost		$0.00
Project			Solids Control/ Waste Management Cost		$286.77
Days on Well		35	Products/Fluids Cementing Cost		$0.00
From Date		Jan/24/03	Products Lost/Damaged Cost		$199.65
To Date		Feb/28/03	Engineering Services Cost		$20,475.00
Drilling Days		24	Equipment Cost		$0.00
Rotating Hours		347.62	Transport / Packaging		$3,850.00
Average ROP	m/hr	8.4	Other Cost		$606.26
Maximum Density	kg/m3	1,150	Total Well Cost		$256,582.15
Total Measured Depth	m	2,878.0	Planned Cost		$0.00
True Vertical Depth	m	2,822.0	Cost per Fluid Volume	$ / m3	563.87
Distance Drilled	m	2,878.0	Cost per m Drilled	$ / m	89.15
Maximum Deviation	degrees	20.00	Cost / Volume of Hole Drilled	$ / m3	1,763.33
Maximum Horiz. Displacement	m	0.0	Fluid Volume / Hole Volume	m3 / m3	3.127
Bottom Hole Temperature	Deg C	125.00	Fluid Volume / Length Drilled	m3/m	0.160

Casing Design

Casing Description	Set Date and Time	Top MD m	Top TVD m	End MD m	End TVD m	Csg OD mm	Csg ID mm	Hole Size mm	Hole MD m	Hole TVD m
9.625 L-80 40.0	01/31/2003 22:15	0.0	0.0	654.7	654.7	244	224	311	654.7	654.7
7 L-80 26.0	02/16/2003 00:00	0.0	0.0	2,583.6	2,538.0	177	159	216	2,583.6	2,538.0

Mud Program

Interval #	Mud Type	Interval Days	BHT Deg C	Max. Dens kg/m3	Planned Fluid Cost	Actual Fluids and Products Cost	Variance
01	AQUAGEL Mud	9		1,150	$ 0.00	$ 5,561.84	$ 5,561.84
02	ENVIROMUL	15	68	940	$ 0.00	$ 167,285.39	$ 167,285.39
03	BARADRIL-N	12	125	1,100	$ 0.00	$ 58,317.24	$ 58,317.24

Time Breakdown Summary

Well : ACC Arrowhead River I-75
Operator: Anadarko

Rpt No	Rpt Date	MD m	Drilg (Hr)	Circ (Hr)	Trip (Hr)	Rig Serv (Hr)	Rig Repair (Hr)	Rig Up/Dw (Hr)	R.Csg (Hr)	Core (Hr)	Ream (Hr)	DST (Hr)	Test BOP (Hr)	N. Up BOP (Hr)	WOC (Hr)	Fish (Hr)	Log (Hr)	Dir Work (Hr)	Dir Svys (Hr)	Other (Hr)	Total (Hr)	Rotate (Hr)	Avg ROP
001	1/24/03	0.0						24.00													24.00		
002	1/25/03	111.0		0.25		0.75		21.75					0.25							1.00	24.00		
003	1/26/03	258.0	15.75	2.00		0.75													1.50	4.00	24.00	15.75	8.30
004	1/27/03	404.0	17.50	0.50	3.75	0.50					0.25								1.50		24.00	17.75	8.30
005	1/28/03	488.0	11.75	0.75	10.25	0.50													0.75		24.00	11.75	7.10
006	1/29/03	560.0	8.75	0.50	10.25	0.75					3.00								0.75		24.00	11.75	8.20
007	1/30/03	631.0	16.75	0.50	4.25	0.75													1.75		24.00	16.75	4.20
008	1/31/03	655.0	3.00	1.75	17.25	0.75					0.75								0.25	0.25	24.00	3.75	8.00
009	2/01/03	655.0		8.00	2.25	0.75			11.75											1.25	24.00		
010	2/02/03	655.0				0.75								7.75	7.75					7.75	24.00		
011	2/03/03	791.0	12.00	2.50	0.25				1.25				1.72	8.00					1.25	3.75	30.72	12.00	11.30
012	2/04/03	1,058.0	17.00			0.75													1.25	0.32	19.32	17.00	15.70
013	2/05/03	1,282.0	18.75			1.00													2.00	0.27	22.02	18.75	11.90
014	2/06/03	1,408.0	20.00	0.35	5.00	0.75													3.25	0.25	29.60	20.00	6.30
015	2/07/03	1,617.0	14.12			1.00												2.25	2.25	0.25	19.87	16.37	12.80
016	2/08/03	1,800.0	19.75			1.00													2.77		23.52	19.75	9.30
017	2/09/03	2,017.0	20.78			1.00													1.25	0.25	23.28	20.78	10.40
018	2/10/03	2,179.0	11.97			0.75													3.50		16.22	11.97	13.50
019	2/11/03	2,423.0	19.50			0.75													3.25	0.50	24.00	19.50	12.50
020	2/12/03	2,530.0	15.50	3.75	1.75	0.75													2.25		24.00	15.50	6.90
021	2/13/03	2,575.0	5.00	2.75	11.00	0.75												1.25		3.25	24.00	6.25	7.20
022	2/14/03	2,586.0	7.75	6.25	6.50	0.50											2.25			0.75	24.00	7.75	1.40
023	2/16/03	2,586.0		6.50	14.75	1.25			18.25				0.50	2.00			3.25			1.50	48.00		
024	2/17/03	2,586.0												1.00							1.00		
025	2/18/03	2,602.0		1.00	17.25	0.75							0.75							4.25	24.00		
026	2/19/03	2,661.0	10.50	10.75		0.75							0.50							1.50	24.00	10.50	5.60
027	2/20/03	2,730.0	22.25			0.75													1.00		24.00	22.25	3.10
028	2/21/03	2,805.0	22.25			0.75													1.00		24.00	22.25	3.40
029	2/22/03	2,878.0	21.75	1.50		0.75															24.00	21.75	3.40
030	2/23/03	2,878.0	7.25	5.50	9.50	0.75													1.00		24.00	7.25	
031	2/25/03	2,878.0		2.00	26.00	1.50					0.50						13.25			4.75	48.00	0.50	
032	2/28/03	2,878.0						1.00													1.00		
Total Hours			339.62	57.10	140.00	22.50		46.75	31.25		4.50		3.72	18.75	7.75		18.75	3.50	32.52	35.84	31.8 d	347.62	

Canada
Arrowhead
Northwest Territory

Halliburton Baroid Canada
Ft. Liard NWT I-75

Printed 5/14/2003

Well Issues Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

From report 002 on 1/25/2003 @ 50.0 m
To report 002 on 1/25/2003 @ 90.0 m Drilled: 40.0 m

Report No	Drlgn Issue No	Issue Causes	Depth From m	Depth To m	Formation Names	Fluid Name	Action(s) Taken		Results
			DepthFrom	DepthTo					
002	1	Pump Pressure : Packing Off	50.0	90.0		AQUAGEL Mud	1/25/2003	Mud Properties - Additives- Rotate and Work pipe-	Resolve Resolve

Net Well Cost Breakdown

Well : ACC Arrowhead River I-75
Operator: Anadarko

Cost Breakdown I $	Interval 01	Interval 02	Interval 03	Total
Fluids/Products : Drilling	5,561.84	167,285.39	58,317.24	231,164.47
Fluids Products : Comp/Filtration				
Solids Control/Waste Managment	21.12	213.90	51.75	286.77
Fluids/Products : Cementing				
Engineering Services	20,475.00			20,475.00
Fluids/Products : Lost Damaged			199.65	199.65
Other Cost		144.21	462.05	606.26
Equipment cost				
Transport / Packaging Cost	3,850.00			3,850.00
Total Cost	29,907.96	167,643.50	59,030.69	256,582.15

Cost Breakdown II $	Interval 01	Interval 02	Interval 03	Total
Total Products Cost	5,582.96	26,425.15	59,030.69	91,038.80
Total Fluids Cost		141,218.35		141,218.35
Total Charges Cost	24,325.00			24,325.00
Total Cost	29,907.96	167,643.50	59,030.69	256,582.15
Planned Cost				
Variance	29,907.96	167,643.50	59,030.69	256,582.15

Volumes Breakdown m3	Interval 01	Interval 02	Interval 03	Total
Total Base Fluids Additions				
Total Chemical Additions	4.15	6.82	10.78	21.75
Total Barite Additions		0.78		0.78
Total Water Additions	181.43	28.49	160.05	369.97
Total Fluid Built	185.58	36.09	170.83	392.50
Total Fluids Received		62.55		62.55
Total Mixing Additions				
Total Influx Additions				
Total Other Additions		14.25		14.25
Total Fluid Volume	185.58	98.64	170.83	455.05

Products List

Well : ACC Arrowhead River I-75

Operator: Anadarko

Product Name	Product Primary Function	Packaging	SG	Unit Price
BARACARB 50	Lost Circulation/Bridging Agent	50 lb bag	2.700	$ 28.03
AQUAGEL	Viscosifier/Suspension Agent	45 Kg bag	2.500	$ 7.67
BARABUF	Alkalinity Control	50 lb bag	3.560	$ 26.46
BARAFOS	Thinner/Deflocculant	23 Kg bag	1.500	$ 85.65
barite	Weighting Material	40 Kg bag	4.200	$ 10.53
BAROFIBRE	Lost Circulation/Bridging Agent	25 lb bag	1.300	$ 58.25
BAROID DETERGENT	Detergent/Surfactanct	20 l pail	1.000	$ 35.08
BARAZAN D PLUS	Viscosifier/Suspension Agent	25 lb bag	1.600	$ 249.54
caustic soda	Alkalinity Control	25 Kg bag	2.130	$ 41.54
Desco CF	Thinner/Deflocculant	25 lb bag	0.500	$ 68.15
STEELSEAL	Lost Circulation/Bridging Agent	50 lb bag	2.100	$ 111.82
DRILTREAT	Wetting Agent	5 gal pail	1.000	$ 57.23
DURATONE HT	Filtration Control	50 lb bag	1.800	$ 84.11
EZ MUL NT	Emulsifier	55 gal drum	0.960	$ 783.95
FILTER-CHEK	Filtration Control	50 lb bag	1.200	$ 72.71
GELTONE	Viscosifier/Suspension Agent	50 lb bag	1.700	$ 68.60
BARACARB 150	Lost Circulation/Bridging Agent	50 lb bag	2.700	$ 28.03
BARACARB 5	Lost Circulation/Bridging Agent	50 lb bag	2.700	$ 28.03
BARACARB 600	Lost Circulation/Bridging Agent	50 lb bag	2.700	$ 28.03
BARO-SEAL MEDIUM	Lost Circulation/Bridging Agent	16 Kg bag	1.100	$ 24.15
calcium carbonate 325	Lost Circulation/Bridging Agent	25 Kg bag	2.700	$ 4.20
calcium carbonate fine	Lost Circulation/Bridging Agent	25 Kg bag	2.700	$ 4.20
calcium chloride pellet	Weighting Material	22.68 Kg bag	2.200	$ 53.67
INVERMUL NT	Emulsifier	55 gal drum	0.940	$ 670.12
lignite	Filtration Control	50 lb bag	1.700	$ 8.00
lime	Alkalinity Control	20 Kg bag	2.400	$ 7.01
N-VIS P PLUS	Viscosifier/Suspension Agent	50 lb bag	1.900	$ 343.72
PAC-R	Filtration Control	50 lb bag	1.600	$ 250.00
RM-63	Viscosifier/Suspension Agent	55 gal drum	0.950	$ 1,077.46
sawdust	Lost Circulation/Bridging Agent	20 lb bag	0.900	$ 3.45
soda ash	Alkalinity Control	25 Kg bag	2.533	$ 12.47
sodium sulfite	Corrosion Inhibitor	25 Kg bag	1.350	$ 73.50
SUSPENTONE	Viscosifier/Suspension Agent	50 lb bag	1.600	$ 77.71
Cellophane (Cellophane)	Lost Circulation/Bridging Agent	11 Kg bag	0.000	$ 46.88
BARO-TROL PLUS	Shale Control	22.68 Kg bag	1.400	$ 107.80
Triethanolamine 85%	Temperature Stability	205 l drum	1.000	$ 779.88
B1007 Econocide	Bactericides	1 Kg bag	1.000	$ 192.20
HW4935-3 Sulphide Scavenger	Other	22.68 Kg pail	0.000	$ 186.36

Total Cost Breakdown

Well : ACC Arrowhead River I-75
Operator: Anadarko

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	day(s)	39.00	$	20,475.00
		Subtotal	**$**	**20,475.00**
Lost/Damaged				
barite	40 Kg bag	5.00	$	52.65
sodium sulfite	25 Kg bag	2.00	$	147.00
		Subtotal	**$**	**199.65**
Other				
AQUAGEL	45 Kg bag	40.00	$	306.80
GELTONE	50 lb bag	2.00	$	137.20
lime	20 Kg bag	1.00	$	7.01
sawdust	20 lb bag	45.00	$	155.25
		Subtotal	**$**	**606.26**
Prod/Fluids : Drilling				
AQUAGEL	45 Kg bag	210.00	$	2,567.88
B1007 Eco nocide	1 Kg bag	2.00	$	384.40
BARABUF	50 lb bag	16.00	$	423.36
BARACARB 150	50 lb bag	76.00	$	2,130.28
BARACARB 5	50 lb bag	252.00	$	7,063.56
BARACARB 50	50 lb bag	588.00	$	16,481.64
BARACARB 600	50 lb bag	63.00	$	1,765.89
BARAFOS	23 Kg bag	2.00	$	171.30
BARAZAN D PLUS	25 lb bag	5.00	$	1,247.70
barite	40 Kg bag	82.00	$	863.46
BAROID DETERGENT	20 l pail	4.00	$	213.36
calcium carbonate 325	25 Kg bag	50.00	$	210.00
calcium carbonate fine	25 Kg bag	50.00	$	210.00
calcium chloride pellet	22.68 Kg bag	40.00	$	2,146.80
caustic soda	25 Kg bag	3.00	$	167.86
Desco CF	25 lb bag	2.00	$	136.30
DURATONE HT	50 lb bag	14.00	$	1,177.54
ENVIROMUL	1 m3 bulk	211.00	$	24,570.00
EZ MUL NT	55 gal drum	3.00	$	2,351.85
FILTER-CHEK	50 lb bag	45.00	$	3,271.95
GELTONE	50 lb bag	48.00	$	3,292.80
HT-40-NT	1 m3 bulk	29.00	$	19,672.50
INVERMUL NT	55 gal drum	5.00	$	3,350.60
lignite	50 lb bag	4.00	$	32.00
lime	20 Kg bag	99.00	$	693.99
N-VIS P PLUS	50 lb bag	70.00	$	24,060.40
PAC-R	50 lb bag	4.00	$	1,000.00
RM-63	55 gal drum	4.00	$	4,309.84
soda ash	25 Kg bag	1.00	$	25.44
sodium sulfite	25 Kg bag	16.00	$	1,176.00
SUSPENTONE	50 lb bag	96.00	$	7,460.16

Total Cost Breakdown

Well : ACC Arrowhead River I-75
Operator: Anadarko

Material	Unit Size	Quantity	Total Cost
Triethanolamine 85%	205 l drum	2.00	$ 1,559.76
		Subtotal	**$ 134,188.62**
Solids Control/Waste Mgnt			
sawdust	20 lb bag	80.00	$ 286.77
		Subtotal	**$ 286.77**
Transport/Packaging			
Hi - Boy Rental	day(s)	70.00	$ 3,850.00
		Subtotal	**$ 3,850.00**
		Total Well Cost	**$ 159,606.30**

Losses / Gains Summary Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

From Report	1	on	1/25/2003	@	111.0	m				
To Report	32	on	2/28/2003	@	2,878.0	m	Drilled:	2,767.0	m	

Estimated Additions m3

Base Fluids / Chemicals	AQUAGEL Mud	BARADRIL-N	ENVIROMUL
Barite			0.78
Chemicals	4.16	10.77	6.83
Drill Water	181.43	160.05	28.49
Total	**185.59**	**170.82**	**36.10**

Other	ENVIROMUL
Recovered from the hole	14.25
Total	**14.25**

Received	ENVIROMUL	HT-40-NT
O-38	36.00	30.50
Onoway	231.00	43.00
tank farm	~~85.55~~	
Total	**352.55**	**73.50**

Estimated Losses m3

Downhole	AQUAGEL Mud	BARADRIL-N	ENVIROMUL
Exshaw (shale)			-5.00
Ft. Simpson (shale)			-8.91
Garbutt	-2.00		
Headless		-2.50	
Kakiska (lmst)			-1.00
Keg River		-4.50	
Kotcho (shale)			-11.70
Muskwa (shale)			-4.00
Scatter Sand	-23.00		
Slave Point		-3.37	
Trout River (siltstone)			-2.00
Watt Mountain		-4.50	
Total	**-25.00**	**-14.87**	**-32.61**

Losses / Gains Summary Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

From Report	1	on	1/25/2003	@	111.0	m				
To Report	32	on	2/28/2003	@	2,878.0	m	Drilled:	2,767.0	m	

Dumped

	AQUAGEL Mud	ENVIROMUL
ditch water		-24 30
remote sump	-33 83	
REMOTE SUMP	-2 00	
Sump	-20 45	
Total	-56.28	-24.30

Operational

	AQUAGEL Mud	BARADRIL-N	ENVIROMUL
Evaporation		-4 50	-4 88
Filtration	-9 00	-8 53	-7 15
Left Behind Casing	-10 00		-1 00
Other/IF			-0 43
Pit Residual	-3 00	-4 00	-3 00
Pumps/Hoses			-1 14
Retained on Cuttings			-4 50
Tripping	-11 00	-4 54	-8 10
Total	-33.00	-21.57	-30.20

Other

	ENVIROMUL
correction	-23 10
PVT deleted	-62 20
Total	-85.30

Returned

	AQUAGEL Mud	BARADRIL-N	ENVIROMUL	HT-40-NT
Stored on location			-237 00	-44 50
Transfer	-40 00			
Transfer to C-55		-79 55		
Transfered to O-38		-44 34		
Total	-40.00	-123.89	-237.00	-44.50

Losses / Gains Summary Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

From Report	1	on	1/25/2003	@	111.0	m				
To Report	32	on	2/28/2003	@	2,878.0	m	Drilled:	2,767.0	m	

SCE Losses	AQUAGEL Mud	BARADRIL-N	ENVIROMUL
SCE : Centrifuge	-15.00	-0.50	-11.50
SCE : Shaker Lost on Cuttings	-16.00	-10.00	-10.98
Total	-31.00	-10.50	-22.48

Mixing m3

Fluid Sets	ENVIROMUL	HT-40-NT
ENVIROMUL	29.00	
HT-40-NT		-29.00
Total	29.00	-29.00

CONCLUSIONS & RECOMMENDATIONS

General Well Conclusions: All three of the mud systems used performed well under the conditions encountered. No extraordinary issues occurred that could not be remedied with the materials on hand.

311 mm - Surface Hole - AQUAGEL Mud - 0 to 655 m

Conclusions:

Use of BARAFOS and BAROID Drilling Detergent, as well as careful drilling practices, were employed to deal with mud rings. BARAZAN, PAC and Lignite were mixed to tighten the filtercake and help make it easier to trip out with the square motor. The 244.5-mm casing was set without difficulty.

Recommendations:

Highly reactive clays associated with mud rings and bit balling should be expected and pretreated for in this area. When spudding with water is not a viable option, spud with a low viscosity AQUAGEL slurry, and control ROP through the first 150-m of surface hole. Consider using concentrated BARAFOS / Detergent pills in whole mud or water, but avoid over treatment with BARAFOS (SAPP), which can promote wellbore washout, or Detergent which can cause foaming. Over treatment with either BARAFOS or Detergent may cause failure of environmental tests for disposal. As another alternative, consider using WALL-NUT pills in whole mud to mechanically erode reactive clays from the bit and string.

215.9 mm - Intermediate Hole - ENVIROMUL Mineral Oil Invert - 655 m to 2584 m

Conclusions:

With the exception of the yield point, programmed properties were achieved with consistent tourly additions of emulsifiers and viscosifiers. Tourly additions also included fine and medium fine grades of calcium carbonate to control seepage losses. No drilling issues were encountered during this interval.

Recommendations:

In addition to being more environmentally friendly than diesel, the HT-40-NT ENVIROMUL mineral oil based invert system used here was also found to be much friendlier for the rig crew. The mineral oil base is much less irritating to skin and emits less noxious vapor as it heats up. This

Conclusions & Recommendations

makes working on the mud tanks and around the shakers easier on the eyes and respiratory tract. All hands agreed that mineral oil based invert will be preferred in the future. With this said, the high concentrations of calcium chloride in the water phase of the invert fluid demand that care be taken to protect skin and especially eyes. Frequent reminders to wear PPE were required, and were often neglected.

155.6 mm - Production Hole - BARADRIL-N Polymer - 2584 m to 2878 m

Conclusions:

N-VIS-P-PLUS and FILTER-CHEK, as well as a prescribed ratio of sized BARACARB (high-grade calcium carbonate) were mixed while drilling cement. Programmed properties were obtained before drilling out of the shoe and performing the formation integrity test. Drilled 156-mm hole to TD at 2878 m without encountering any drilling or fluid issues. The BARADRIL-N system performed very well for this interval right from drillout to TD.

Recommendations:

On both O-38 and C-55 this mud system proved effective for providing the required rheological and filtration control properties. These drilling results, combined with the BARADRIL-N system's track record of success with improved return permeability suggests that this is an ideal system for this application.

Interval Summary

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval # 01	Bit Size 311 mm	Hole Size Maximum 345.00 mm

Interval Start Date		Jan/24/2003	Planned Cost	$	0.00
Interval End Date		Feb/01/2003	Total Interval Cost	$	29,907.96
Interval TD Date		Jan/31/2003	Programmed Variance	$	29,907.96
Drilling Days		6.00	Total Products Cost	$	5,582.96
Rotating / Drilling Hours		77.50 / 73.50	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	0.0 /	Total Charges Cost	$	24,325.00
End of Int. MD/TVD	m	655.0 / 655.0	Total Cementing Cost	$	0.00
Footage	m	655.0	Fluid Cost per Vol unit	$/m3	160.14
Average ROP	m/hr	8.9	Fluid Cost / Hole Drilled	$/m	45.66
Max. Hole Angle	degrees	2.75	Fluid Cost / Vol Drilled	$/m3	485.35
Casing Size	mm	244	Total Fluid Volume	m3	185.58
Casing Shoe MD	m	654.7	Vol Fluid / Vol Drilled	m3/m3	3.03
Casing Length	m	654.7	Vol Fluid / Hole Drilled	m3/m	0.28
Bottom Hole Temp	Deg C	125	Fluid Loss / Vol Drilled	m3/m3	2.37
Max. Fluid Density	kg/m3	1,150	Fluid Loss / Hole Drilled	m3/m	0.22

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Packaging	Drilling Fluid	Total Used		Product Cost
Alkalinity Control					
caustic soda	25 Kg bag	AQUAGEL Mud	3.00	$	167.86
soda ash	25 Kg bag	AQUAGEL Mud	1.00	$	25.44
			Total	**$**	**193.30**
Filtration Control					
lignite	50 lb bag	AQUAGEL Mud	4.00	$	32.00
PAC-R	50 lb bag	AQUAGEL Mud	4.00	$	1,000.00
			Total	**$**	**1,032.00**
Lost Circulation/Bridging Agent					
sawdust	20 lb bag	No Fluid	3.00	$	21.12
			Total	**$**	**21.12**
Thinner/Deflocculant					
BARAFOS	23 Kg bag	AQUAGEL Mud	2.00	$	171.30
Desco CF	25 lb bag	AQUAGEL Mud	2.00	$	136.30
			Total	**$**	**307.60**
Viscosifier/Suspension Agent					
BARAZAN D PLUS	25 lb bag	AQUAGEL Mud	5.00	$	1,247.70
AQUAGEL	45 Kg bag	AQUAGEL Mud	210.00	$	2,567.88
			Total	**$**	**3,815.58**
Detergent/Surfactanct					
BAROID DETERGENT	20 l pail	AQUAGEL Mud	4.00	$	213.36
			Total	**$**	**213.36**

Total Products and Base Fluids Cost	**$**	**5,582.96**

Interval Summary

Well : ACC Arrowhead River I-75

Operator: Anadarko

Interval # 02	Bit Size 240 mm	Hole Size Maximum 345.00 mm

Interval Start Date		Feb/02/2003	Planned Cost	$	0.00
Interval End Date		Feb/16/2003	Total Interval Cost	$	167,643.50
Interval TD Date		Feb/14/2003	Programmed Variance	$	167,643.50
Drilling Days		12.00	Total Products Cost	$	26,425.15
Rotating / Drilling Hours		185.62 / 185.62	Total Fluids Cost	$	141,218.35
Top of Int. MD/TVD	m	655.0 / 655.0	Total Charges Cost	$	0.00
End of Int. MD/TVD	m	2,584.0 / 2,584.0	Total Cementing Cost	$	0.00
Footage	m	1,929.0	Fluid Cost per Vol unit	$/m3	1,688.82
Average ROP	m/hr	10.4	Fluid Cost / Hole Drilled	$/m	86.91
Max. Hole Angle	degrees	17.20	Fluid Cost / Vol Drilled	$/m3	2,133.78
Casing Size	mm	177	Total Fluid Volume	m3	98.64
Casing Shoe MD	m	2,583.6	Vol Fluid / Vol Drilled	m3/m3	1.26
Casing Length	m	2,583.6	Vol Fluid / Hole Drilled	m3/m	0.05
Bottom Hole Temp.	Deg C	125	Fluid Loss / Vol Drilled	m3/m3	2.50
Max. Fluid Density	kg/m3	940	Fluid Loss / Hole Drilled	m3/m	0.10

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Packaging	Drilling Fluid	Total Used	Product Cost	
Alkalinity Control					
lime	20 Kg bag	ENVIROMUL	99.00	$	693.99
lime	20 Kg bag	No Fluid	1.00	$	7.01
			Total	**$**	**701.00**
Emulsifier					
EZ MUL NT	55 gal drum	ENVIROMUL	3.00	$	2,351.85
INVERMUL NT	55 gal drum	ENVIROMUL	5.00	$	3,350.60
			Total	**$**	**5,702.45**
Filtration Control					
DURATONE HT	50 lb bag	ENVIROMUL	14.00	$	1,177.54
			Total	**$**	**1,177.54**
Lost Circulation/Bridging Agent					
calcium carbonate fine	25 Kg bag	ENVIROMUL	50.00	$	210.00
calcium carbonate 325	25 Kg bag	ENVIROMUL	50.00	$	210.00
sawdust	20 lb bag	No Fluid	62.00	$	213.90
			Total	**$**	**633.90**
Viscosifier/Suspension Agent					
GELTONE	50 lb bag	No Fluid	2.00	$	137.20
RM-63	55 gal drum	ENVIROMUL	4.00	$	4,309.84
SUSPENTONE	50 lb bag	ENVIROMUL	96.00	$	7,460.16
GELTONE	50 lb bag	ENVIROMUL	48.00	$	3,292.80
			Total	**$**	**15,200.00**
Weighting Material					
barite	40 Kg bag	ENVIROMUL	82.00	$	863.46
calcium chloride pellet	22.68 Kg ba	ENVIROMUL	40.00	$	2,146.80
			Total	**$**	**3,010.26**

Total Products and Base Fluids Cost	$	26,425.15

Interval Summary

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval # 03	Bit Size 156 mm	Hole Size Maximum 164.00 mm

Interval Start Date		Feb/17/2003	Planned Cost	$	0.00
Interval End Date		Feb/28/2003	Total Interval Cost	$	59,030.69
Interval TD Date		Feb/25/2003	Programmed Variance	$	59,030.69
Drilling Days		6.00	Total Products Cost	$	59,030.69
Rotating / Drilling Hours		84.50 / 84.00	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	2,584.0 / 2,541.0	Total Charges Cost	$	0.00
End of Int. MD/TVD	m	2,878.0 / 2,822.0	Total Cementing Cost	$	0.00
Footage	m	294.0	Fluid Cost per Vol unit	$ m3	343.37
Average ROP	m/hr	3.5	Fluid Cost / Hole Drilled	$/m	200.78
Max. Hole Angle	degrees	20.00	Fluid Cost / Vol Drilled	$/m3	9,444.73
Casing Size	mm	177	Total Fluid Volume	m3	170.83
Casing Shoe MD	m	2,583.6	Vol Fluid / Vol Drilled	m3/m3	27.51
Casing Length	m	2,583.6	Vol Fluid / Hole Drilled	m3/m	0.58
Bottom Hole Temp.	Deg C	125	Fluid Loss / Vol Drilled	m3/m3	7.56
Max. Fluid Density	kg/m3	1,100	Fluid Loss / Hole Drilled	m3/m	0.16

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Packaging	Drilling Fluid	Total Used		Product Cost
Alkalinity Control					
BARABUF	50 lb bag	BARADRIL-N	16.00	$	423.36
			Total	$	423.36
Bactericides					
B1007 Econocide	1 Kg bag	BARADRIL-N	2.00	$	384.40
			Total	$	384.40
Filtration Control					
FILTER-CHEK	50 lb bag	BARADRIL-N	45.00	$	3,271.95
			Total	$	3,271.95
Lost Circulation/Bridging Agent					
BARACARB 150	50 lb bag	BARADRIL-N	76.00	$	2,130.28
BARACARB 5	50 lb bag	BARADRIL-N	252.00	$	7,063.56
BARACARB 50	50 lb bag	BARADRIL-N	588.00	$	16,481.64
sawdust	20 lb bag	No Fluid	60.00	$	207.00
BARACARB 600	50 lb bag	BARADRIL-N	63.00	$	1,765.89
			Total	$	27,648.37
Temperature Stability					
Triethanolamine 85%	205 l drum	BARADRIL-N	2.00	$	1,559.76
			Total	$	1,559.76
Viscosifier/Suspension Agent					
N-VIS P PLUS	50 lb bag	BARADRIL-N	70.00	$	24,060.40
AQUAGEL	45 Kg bag	No Fluid	40.00	$	306.80
			Total	$	24,367.20
Weighting Material					
barite	40 Kg bag	No Fluid	5.00	$	52.65
			Total	$	52.65
Corrosion Inhibitor					
sodium sulfite	25 Kg bag	No Fluid	2.00	$	147.00
sodium sulfite	25 Kg bag	BARADRIL-N	16.00	$	1,176.00

Interval Summary

Well : ACC Arrowhead River I-75

Operator: Anadarko

Interval #	03	Bit Size	156 mm	Hole Size Maximum	164.00 mm

			Total	$	1,323.00

Total Products and Base Fluids Cost	$	59,030.69

Well: ACC Arrowhead River I-75
Operator: Anadarko

Interval Discussion

Interval No: 1

Top of Interval: m
Bottom of Interval: 655.0 m

INTERVAL DISCUSSION

311 mm Surface Hole to 654.7 m - From Jan 25 To Jan 31

Drilling Fluid: AQUAGEL Caustic

Formations: Scatter Sand, Garbutt and Banff

Average ROP: 9 m/hr.

Objectives:

Drill to 244.5 mm casing point at approx. 650 m.
Achieve optimum ROP
Improve hole cleaning practices and capabilities
Maintain wellbore stability
Be prepared for possible water influx
Drill the interval without incident and as planned within cost and time estimates

Summary:

Spudded the 311-mm hole at 00:01 hours on Jan 25/03. Encountered mud rings above 80 m. Treated with Detergent and BARAFOS and controlled drilled to below 150 m to avoid overloading the annulus. Tripped for bits at 242 m, and 413 m. Picked up a square motor and drilled from 488 m to 631 m, in order to control deviation. Reaming and pumping out required on trips in the bottom half of the hole. Achieved casing point at 655 m. Wiper tripped and POOH to run casing. Ran 244.5 mm casing without difficulty and cemented with BJ.

Issues Discussion:

Trips while running bit #3 required extensive reaming and pumping out. Tightened up the filter cake with PAC and Lignite in a 1:1 ratio and raised yield point with BARAZAN D PLUS. These products also served to improve lubricity. Both centrifuges were also brought online to lower the concentration of drilled solids, and thus further tighten up the filter cake. It should be noted that even before reaming became necessary, the filter cake was no more than 2 mm in thickness and very tight for spud mud, with a fluid loss of 10 ml/30 min. Much of the difficulty tripping was attributed to the square motor. Reaming proved the only effective remedy for the tight hole conditions, and no indications of wellbore instability were evident.

Well: ACC Arrowhead River I-75
Operator: Anadarko

Interval Discussion

Fluid Properties Summary:

Properties	Programmed		Actual (Typical)		Conformance
	Min	Max	Min	Max	
Density, kg/m3			1040	1100	1100	1150	No
Viscosity, sec/L			40	65	46	68	Yes
pH	8.5	9	8	10	Yes		
Calcium, mg/L			20	100	20	40	Yes

Zero Defects Tracking Summary / Explanation of Non-Conformance:

Density was allowed to build as no problems were anticipated and some weight was wanted to control potential water influxes. Viscosity varied with solids loading and ROP. Aside from the encounter with mud rings, viscosity was not a problem.

Maintenance Treatments:

Small daily additions of AQUAGEL maintained desired viscosity. 3 sacks of Caustic were sufficient for alkalinity. Calcium levels remained low without treatment. 5 - 25 lb. sacks of BARAZAN, 4 sacks of PAC R, and 4 sacks of Lignite were mixed to tighten the filter cake and reduce filtration rate.

Solids Control Evaluation:

The King Cobra shakers with 120 screens and 2 Hutchison-Hayes 5500 centrifuges proved effective for this interval, though the cut on the centrifuges may have posed a challenge if much lower density was required. In this event higher dilution rates would have been required.

Interval Discussion

Interval No: 2

Top of Interval: 655.0 m
Bottom of Interval: 2584.0 m

INTERVAL DISCUSSION

216 mm Intermediate Hole - From: 654.7 m **To:** 2583.6 m

From: Feb 2 **To:** Feb 16

Drilling Fluid: ENVIROMUL Mineral Oil Based Invert

Formations: Banff, Exshaw, Kotcho, Trout River, Kakisa, Fort Simpson, Muskwa and Slave Point.

Average ROP: 10.4 m/hr.

Objectives:

Drill to 177.8 mm casing point at approx. 2525 m.
Achieve optimum ROP
Improve hole cleaning practices and capabilities
Maintain wellbore stability
Control seepage losses
Drill the interval without incident and as planned within cost and time estimates

Summary:

Drilled out with invert and performed the leak off test. Aggressively mixed emulsifiers and viscosifiers while drilling ahead. Drilled to 1282 m with no drilling issues. An invert spill from a leaking rig tank was caught in the ditches with most of the mud returned to the active system. Tripped due to a failed MWD at 1389 m. RIH with the same PDC bit. Drilled to 2511 m with no issues. Tripped to lay down directional tools and pick up a new bit at 2511 m. Drilled ahead at intervals to circulate up samples, looking for casing point. Found the casing point at 2586 m, on Feb 14. Wireline logged with Schlumberger and gyro logged with Gyro Data. Ran 177.8 mm casing without difficulty and cemented with BJ.

Issues Discussion:

Until the new invert mud had time to shear and heat up, and a sufficient quantity of emulsifiers were mixed, blinding of the shaker screens required consistent monitoring and washing of the screens with base oil through the wash gun.

No other mud related drilling issues were encountered.

Well: ACC Arrowhead River I-75
Operator: Anadarko

Interval Discussion

Fluid Properties Summary:

Properties	Programmed		Actual (Typical)		Conformance
	Min Max	Min Max			
Density, kg/m3		900 1000	910	940	YES
Viscosity, sec/L		35 55	40	58	YES
O/W Ratio	90/10	85/15 91/9	86/14	YES	
YP, Pa	2	8 0.5	1.4	NO	
Elec. Stability, volts		600 2000	200	1600	NO
HTHP, mm/30		6 12	8	14	YES

Zero Defects Tracking Summary / Explanation of Non-Conformance:

Despite generous additions, yield point remained below targeted levels, but no hole cleaning issues were evident and no problems resulted. Electrical stability was low initially, but was soon raised to well within programmed range with additions of INVERMUL NT and EZ-MUL NT.

Maintenance Treatments:

Tourly additions of Calcium Carbonate 325 and 0 were mixed for seepage control. 14 sacks of DURATONE HT were mixed to improve filtration control and help emulsify the water phase. 100 sacks of lime were mixed for alkalinity and to support the emulsion stability. 3 drums of EZ-MUL NT and 5 drums of INVERMUL NT were mixed to strengthen the emulsion and raise the electrical stability. 50 sack of GELTONE V and 96 sacks of SUSPENTONE were mixed for viscosity and particle suspension. 4 drums of RM-63 were mixed to support low-end rheology and hole cleaning.

Solids Control Evaluation:

The King Cobra shakers with 175 screens and the 2 Hutchison-Hayes 5500 centrifuges proved effective for this interval. The centrifuges were run consistently to keep the density as low as possible, as it was not necessary to weight up.

Interval Discussion

Interval No: 3

Top of Interval: 2584.0 m
Bottom of Interval: 2878.0 m

INTERVAL DISCUSSION

156 mm - Production Hole - From: 2584 **To:** 2878 m MD

From: Feb 17 **To:** Feb 28

Drilling Fluid: BARADRIL-N Sized Calcium Carbonate Polymer Water Based Mud

Formations: Slave Point, Watt Mountain, Keg River, Headless, and Devonian Bsl Clastics

Average ROP: 3.5 mph

Objectives:

Drill to TD at approximately 2905 m TVD
Achieve optimum ROP
Improve hole cleaning practices and capabilities
Anticipate severe seepage losses or lost circulation
Maximize return permeability from the producing formation by using a fully acid soluble mud system
Drill the interval without incident and as planned within cost and time estimates

Summary:

RIH with 3.5 drill pipe. Mixed products for viscosity and filtration control while drilling cement. Programmed properties were obtained before drilling out of the shoe and performing the formation integrity test. Drilled 156-mm hole to 2805 m without issues. Began running the centrifuge periodically over 1 circulation to control density and ECD at the bit. Drilled to TD at 2878 m MD. Wiper tripped and POOH to log with Schlumberger. Set a bridge plug at 2861 m on Feb 24. Tripped with casing scraper. Ran packer with wireline. Ran production string to the packer.

Issues Discussion:

No drilling issues were encountered during this interval.

Fluid Properties Summary:

Properties	Programmed		Actual (Typical)		Conformance
	Min	Max	Min	Max	

Well: ACC Arrowhead River I-75
Operator: Anadarko

Interval Discussion

Density, kg/m3	1010	1050	1020	1100	NO
Viscosity sec/L	40	65	43	52	YES
pH 10 11	10.5	11.5	NO		
Yield Point, Pa	4	8	9.6	12	NO
Fluid Loss, ml/30 min	6	8	4.8	7.0	YES

Zero Defects Tracking Summary / Explanation of Non-Conformance:

Density was allowed to increase to control connection gas. pH was high after drilling out cement from the casing, but the BARADRIL-N system is tolerant of cement contamination, so fluid properties were not adversely affected. Yield point was higher than programmed targets once desired viscosity was established and served to better clean the hole. Overall the mud properties were not problematic. In fact the BARADRIL-N system performed very well throughout this interval, from drillout to TD.

Maintenance Treatments:

Products were mixed to establish the programmed properties prior to drilling out. 70 sacks of N VIS P PLUS were mixed to provide viscosity and help lower filtration rates. 45 sacks of FILTER-CHEK were mixed to lower filtration rates. 16 sacks of BARABUF were mixed to provide a buffered minimum pH of 10. 76 sacks of BARACARB 150, 252 sacks of BARACARB 5, and 588 sacks of BARACARB 50 were mixed as a bridging agent for seepage and filtration control. 63 sacks of BARACARB 600 were mixed to assist with controlling periodic increases in seepage losses. 16 sacks of Sodium Sulphite and 2 drums of Triethanolamine were mixed to help preserve the polymers at increasing bottom hole temperatures.

Solids Control Evaluation:

The 2 Swaco shakers, with 110 screens, were adequate for this interval. One centrifuge was required periodically to control the density near the end of the interval.

Interval Cost Breakdown

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	**01**	**From Report Date**	**1/24/2003**	**Top of Interval**	**0.0 m**
Hole Size	**345 m**	**To Report Date**	**2/1/2003**	**Bottom of Interval**	**655.0 m**

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	day(s)	10.00	$	5,250.00
		Subtotal	**$**	**5,250.00**
Prod/Fluids : Drilling				
AQUAGEL	45 Kg bag	210.00	$	2,567.88
BARAFOS	23 Kg bag	2.00	$	171.30
BARAZAN D PLUS	25 lb bag	5.00	$	1,247.70
BAROID DETERGENT	20 l pail	4.00	$	213.36
caustic soda	25 Kg bag	3.00	$	167.86
Desco CF	25 lb bag	2.00	$	136.30
lignite	50 lb bag	4.00	$	32.00
PAC-R	50 lb bag	4.00	$	1,000.00
soda ash	25 Kg bag	1.00	$	25.44
		Subtotal	**$**	**5,561.84**
Solids Control/Waste Mgnt				
sawdust	20 lb bag	3.00	$	21.12
		Subtotal	**$**	**21.12**
Transport/Packaging				
Hi - Boy Rental	day(s)	18.00	$	990.00
		Subtotal	**$**	**990.00**
		Interval Cost	**$**	**11,822.96**
		Programmed Cost	**$**	**0.00**
		Programmed Variance	**$**	**11,822.96**

Interval Cost Breakdown

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	02	**From Report Date**	2/2/2003	**Top of Interval**	655.0 m
Hole Size	345 m	**To Report Date**	2/15/2003	**Bottom of Interval**	2,584.0 m

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	day(s)	17.00	$	8,925.00
		Subtotal	**$**	**8,925.00**
Other				
GELTONE	50 lb bag	2.00	$	137.20
lime	20 Kg bag	1.00	$	7.01
		Subtotal	**$**	**144.21**
Prod/Fluids : Drilling				
barite	40 Kg bag	82.00	$	863.46
calcium carbonate 325	25 Kg bag	50.00	$	210.00
calcium carbonate fine	25 Kg bag	50.00	$	210.00
calcium chloride pellet	22.68 Kg bag	40.00	$	2,146.80
DURATONE HT	50 lb bag	14.00	$	1,177.54
ENVIROMUL	1 m3 bulk	211.00	$	172,809.00
EZ MUL NT	55 gal drum	3.00	$	2,351.85
GELTONE	50 lb bag	48.00	$	3,292.80
HT-40-NT	1 m3 bulk	26.00	$	17,737.50
INVERMUL NT	55 gal drum	5.00	$	3,350.60
lime	20 Kg bag	99.00	$	693.99
RM-63	55 gal drum	4.00	$	4,309.84
SUSPENTONE	50 lb bag	66.00	$	5,128.86
		Subtotal	**$**	**214,282.24**
Solids Control/Waste Mgnt				
sawdust	20 lb bag	62.00	$	213.90
		Subtotal	**$**	**213.90**
Transport/Packaging				
Hi - Boy Rental	day(s)	28.00	$	1,540.00
		Subtotal	**$**	**1,540.00**
		Interval Cost	**$**	**225,105.35**
		Programmed Cost	**$**	**0.00**
		Programmed Variance	**$**	**225,105.35**

Interval Cost Breakdown

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	03	From Report Date	2/17/2003	Top of Interval	2,584.0 m
Hole Size	164 m	To Report Date	2/28/2003	Bottom of Interval	2,878.0 m

Material	Unit Size	Quantity		Total Cost
Engineering/Services				
Drilling Fluids Engineer	day(s)	12.00	$	6,300.00
		Subtotal	$	6,300.00
Lost/Damaged				
barite	40 Kg bag	5.00	$	52.65
sodium sulfite	25 Kg bag	2.00	$	147.00
		Subtotal	$	199.65
Other				
AQUAGEL	45 Kg bag	40.00	$	306.80
sawdust	20 lb bag	45.00	$	155.25
		Subtotal	$	462.05
Prod/Fluids : Drilling				
B1007 Econocide	1 Kg bag	2.00	$	384.40
BARABUF	50 lb bag	16.00	$	423.36
BARACARB 150	50 lb bag	76.00	$	2,130.28
BARACARB 5	50 lb bag	252.00	$	7,063.56
BARACARB 50	50 lb bag	588.00	$	16,481.64
BARACARB 600	50 lb bag	63.00	$	1,765.89
ENVIROMUL	1 m3 bulk	0.00	$	-148,239.00
FILTER-CHEK	50 lb bag	45.00	$	3,271.95
HT-40-NT	1 m3 bulk	3.00	$	1,935.00
N-VIS P PLUS	50 lb bag	70.00	$	24,060.40
sodium sulfite	25 Kg bag	16.00	$	1,176.00
SUSPENTONE	50 lb bag	30.00	$	2,331.30
Triethanolamine 85%	205 l drum	2.00	$	1,559.76
		Subtotal	-$	85,655.46
Solids Control/Waste Mgnt				
sawdust	20 lb bag	15.00	$	51.75
		Subtotal	$	51.75
Transport/Packaging				
Hi - Boy Rental	day(s)	24.00	$	1,320.00
		Subtotal	$	1,320.00
		Interval Cost	-$	77,322.01
		Programmed Cost	$	0.00
		Programmed Variance	$	-77,322.01

Interval Chemical Concentrations

Well : ACC Arrowhead R
Operator: Anadarko

Interval #	**01**	**From Report Date**	**1/24/2003**	**Top of Interval**	**0.0 m**
Hole Size	**345 mm**	**To Report Date**	**2/1/2003**	**Bottom of Interval**	**655.0 m**

Fluid Name: AQUAGEL Mud

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
AQUAGEL	56.38	45.22	73.87
BARAFOS	0.28	0.18	0.61
BARAZAN D PLUS	0.42	0.39	0.47
BAROID DETERGENT	0.43	0.27	0.53
caustic soda	0.36	0.14	0.63
Desco CF	0.20	0.20	0.20
lignite	0.56	0.19	0.72
PAC-R	0.56	0.19	0.72
soda ash	0.21	0.10	0.63

Interval Chemical Concentrations

Well : ACC Arrowhead R
Operator: Anadarko

Interval #	**02**	**From Report Date**	**2/2/2003**	**Top of Interval**	**655.0 m**
Hole Size	**345 mm**	**To Report Date**	**2/16/2003**	**Bottom of Interval**	**2,584.0 m**

Fluid Name: AQUAGEL Mud

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
AQUAGEL	45.22	45.22	45.22
BARAFOS	0.18	0.18	0.18
BARAZAN D PLUS	0.39	0.39	0.39
BAROID DETERGENT	0.46	0.46	0.46
caustic soda	0.48	0.48	0.48
Desco CF	0.20	0.20	0.20
lignite	0.67	0.67	0.67
PAC-R	0.67	0.67	0.67
soda ash	0.10	0.10	0.10

Fluid Name: ENVIROMUL

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
barite	5.30	0.59	15.73
calcium carbonate 325	4.73	2.33	5.86
calcium carbonate fine	4.73	2.33	5.86
calcium chloride pellet	2.95	0.67	3.53
DURATONE HT	1.45	1.26	1.55
EZ MUL NT	1.84	1.17	2.06
GELTONE	2.34	0.40	5.02
INVERMUL NT	2.72	1.72	3.39
lime	5.01	0.59	8.30
RM-63	2.01	1.16	3.08
SUSPENTONE	4.39	0.88	6.56

Interval Chemical Concentrations

Well : ACC Arrowhead R
Operator: Anadarko

Interval #	03	**From Report Date**	2/17/2003	**Top of Interval**	2,584.0 m
Hole Size	164 mm	**To Report Date**	2/28/2003	**Bottom of Interval**	2,878.0 m

Fluid Name: BARADRIL-N

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
B1007 Econocide	0.01	0.01	0.01
BARABUF	1.86	1.47	2.37
BARACARB 150	8.91	5.30	10.87
BARACARB 5	26.20	14.62	38.44
BARACARB 50	65.42	40.86	84.43
BARACARB 600	8.03	4.54	10.35
FILTER-CHEK	6.23	5.94	6.84
N-VIS P PLUS	9.83	9.21	10.77
sodium sulfite	2.52	2.40	2.76
Triethanolamine 85%	2.67	2.59	2.93

Fluid Name: ENVIROMUL

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
barite	13.58	11.70	13.82
calcium carbonate 325	4.72	4.07	4.80
calcium carbonate fine	4.72	4.07	4.80
calcium chloride pellet	2.68	2.31	2.73
DURATONE HT	1.24	1.06	1.26
EZ MUL NT	1.55	1.34	1.58
GELTONE	4.19	3.61	4.26
INVERMUL NT	2.83	2.43	2.88
lime	7.16	6.17	7.29
RM-63	2.57	2.21	2.61
SUSPENTONE	6.63	5.66	9.03

Interval Inventory Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	01	From Report Date	1/24/2003	Top of Interval	0.0 m
Hole Size	311 mm	To Report Date	2/1/2003	Bottom of Interval	655.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight kg
AQUAGEL	45 Kg bag		1,080.00	210.00	870.00		
BARAFOS	23 Kg bag		20.00	2.00	18.00		
BARAZAN D PLUS	25 lb bag		40.00	5.00	35.00		
barite	40 Kg bag		966.00				
BAROFIBRE	25 lb bag		100.00				
BAROID DETERGENT	20 l pail		32.00	4.00	28.00		
BARO-SEAL MEDIUM	16 Kg bag		120.00		120.00		
BARO-TROL PLUS	22.68 Kg bag		50.00				
calcium carbonate 325	25 Kg bag		280.00				
calcium carbonate fine	25 Kg bag		336.00				
calcium chloride pellet	22.68 Kg bag		50.00				
caustic soda	25 Kg bag		30.00	3.00	27.00		
Cellophane (Cellophane)	11 Kg bag		100.00		100.00		
Desco CF	25 lb bag		20.00	2.00	18.00		
DRILTREAT	5 gal pail		32.00				
DURATONE HT	50 lb bag		50.00				
GELTONE	50 lb bag		50.00				
INVERMUL NT	55 gal drum		8.00				
lignite	50 lb bag		20.00	4.00	16.00		
lime	20 Kg bag		50.00				
PAC-R	50 lb bag		25.00	4.00	21.00		
RM-63	55 gal drum		4.00				
sawdust	20 lb bag		375.00	3.00	150.00	222.00	2,014.0
soda ash	25 Kg bag		28.00	1.00	27.00		
STEELSEAL	50 lb bag		50.00				
SUSPENTONE	50 lb bag		50.00				

Total Weight of Products in Stock, kg **2,014.0**
Total Weight of Products in Stock, Metric Tons **2.01**

Interval Inventory Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	02	**From Report Date**	2/2/2003	**Top of Interval**	655.0	m	
Hole Size	240 mm	**To Report Date**	2/16/2003	**Bottom of Interval**	2,584.0	m	

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight kg
AQUAGEL	45 Kg bag		40.00				
B1007 Econocide	1 Kg bag						
BARABUF	50 lb bag		50.00				
BARACARB 150	50 lb bag		140.00				
BARACARB 5	50 lb bag		224.00				
BARACARB 50	50 lb bag		336.00				
BARACARB 600	50 lb bag		126.00				
BARAFOS	23 Kg bag						
BARAZAN D PLUS	25 lb bag						
barite	40 Kg bag			97.00		869.00	34,759.6
BAROFIBRE	25 lb bag						
BAROID DETERGENT	20 l pail						
BARO-SEAL MEDIUM	16 Kg bag						
BARO-TROL PLUS	22.68 Kg bag						
calcium carbonate 325	25 Kg bag			50.00			
calcium carbonate fine	25 Kg bag			50.00			
calcium chloride pellet	22.68 Kg bag		35.00	40.00			
caustic soda	25 Kg bag						
Cellophane (Cellophane)	11 Kg bag						
Desco CF	25 lb bag						
DRILTREAT	5 gal pail						
DURATONE HT	50 lb bag			14.00			
EZ MUL NT	55 gal drum		4.00	3.00	1.00		
FILTER-CHEK	50 lb bag		80.00				
GELTONE	50 lb bag			50.00			
HW4935-3 Sulphide	22.68 Kg pail						
INVERMUL NT	55 gal drum			5.00	1.00	2.00	391.2
lignite	50 lb bag						
lime	20 Kg bag		65.00	100.00	15.00		
N-VIS P PLUS	50 lb bag		100.00				
PAC-R	50 lb bag						
RM-63	55 gal drum			4.00			
sawdust	20 lb bag			62.00			
soda ash	25 Kg bag						
sodium sulfite	25 Kg bag		47.00				
STEELSEAL	50 lb bag						
SUSPENTONE	50 lb bag		50.00	70.00		30.00	680.4
Triethanolamine 85%	205 l drum						

Interval Inventory Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	02	From Report Date	2/2/2003	Top of Interval	655.0 m
Hole Size	240 mm	To Report Date	2/16/2003	Bottom of Interval	2,584.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight kg
						Total Weight of Products In Stock, kg	35,831.2
						Total Weight of Products In Stock, Metric Tons	35.83

Interval Inventory Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	03	From Report Date	2/17/2003	Top of Interval	2,584.0 m
Hole Size	156 mm	To Report Date	2/28/2003	Bottom of Interval	2,878.0 m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight kg
AQUAGEL	45 Kg bag	40.00		40.00			
B1007 Econocide	1 Kg bag		320.00	2.00			
BARABUF	50 lb bag	50.00	50.00	16.00		84.00	1,905.1
BARACARB 150	50 lb bag	140.00	140.00	76.00	204.00		
BARACARB 5	50 lb bag	224.00	189.00	252.00		161.00	3,651.4
BARACARB 50	50 lb bag	336.00	315.00	588.00			
BARACARB 600	50 lb bag	126.00		63.00	63.00		
BARAFOS	23 Kg bag						
BARAZAN D PLUS	25 lb bag						
barite	40 Kg bag	869.00		5.00			
BAROFIBRE	25 lb bag	100.00			100.00		
BAROID DETERGENT	20 l pail						
BARO-SEAL MEDIUM	16 Kg bag						
BARO-TROL PLUS	22.68 Kg bag	50.00			50.00		
calcium carbonate 325	25 Kg bag	230.00			230.00		
calcium carbonate fine	25 Kg bag	286.00			286.00		
calcium chloride pellet	22.68 Kg bag	45.00			45.00		
caustic soda	25 Kg bag						
Cellophane (Cellophane)	11 Kg bag						
Desco CF	25 lb bag						
DRILTREAT	5 gal pail	32.00			32.00		
DURATONE HT	50 lb bag	36.00			36.00		
EZ MUL NT	55 gal drum						
FILTER-CHEK	50 lb bag	80.00	80.00	45.00			
GELTONE	50 lb bag						
HW4935-3 Sulphide	22.68 Kg pail		64.00				
INVERMUL NT	55 gal drum	2.00			2.00		
lignite	50 lb bag						
lime	20 Kg bag						
N-VIS P PLUS	50 lb bag	100.00	100.00	70.00			
PAC-R	50 lb bag						
RM-63	55 gal drum						
sawdust	20 lb bag	160.00		60.00		100.00	907.2
soda ash	25 Kg bag						
sodium sulfite	25 Kg bag	47.00		18.00			
STEELSEAL	50 lb bag	50.00			50.00		
SUSPENTONE	50 lb bag	30.00		30.00			
Triethanolamine 85%	205 l drum		8.00	2.00			

Interval Inventory Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval #	03		From Report Date	2/17/2003	Top of Interval	2,584.0	m
Hole Size	156	mm	To Report Date	2/28/2003	Bottom of Interval	2,878.0	m

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight kg

Total Weight of Products In Stock, kg	6,463.7
Total Weight of Products In Stock, Metric Tons	6.46

Fluid Volume Record

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval # 01

		m3	ADDITIONS m3							LOSSES m3					VOLUMES m3			
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
Fluid Name: AQUAGEL Mud																		
002	1/25/2003				38.52		1.11		39.63						7.64	32.00		39.64
003	1/26/2003	39.64			34.11		1.18		35.29	5.00	10.00	9.00		24.00	19.93	31.00		50.93
004	1/27/2003	50.93			48.70		1.01		49.71	4.00	5.00			9.00	32.64	59.00		91.64
005	1/28/2003	91.64			20.64		0.27		20.91	5.00	3.00	2.00		10.00	39.95	62.60		102.55
006	1/29/2003	102.55			18.30		0.37		18.67	5.00	4.00	3.00		12.00	45.91	59.00	4.00	108.91
007	1/30/2003	108.91			13.42		0.12		13.54	5.00	3.00	4.00		12.00	53.44	57.00		110.44
008	1/31/2003	110.44			7.74		0.05		7.79	5.00		2.00		7.00	61.23	50.00		111.23
009	2/1/2003	111.23					0.05		0.05	2.00		33.45	40.00	75.45	25.83	10.00		35.83
	Cummulative Volumes:				181.40		4.20		185.60	31.00	25.00	53.50	40.00	149.50				
Fluid Name: ENVIROMUL																		
003	1/26/2003		231.00						231.00								231.00	231.00
	Cummulative Volumes:		231.00						231.00									
Fluid Name: HT-40-NT																		
003	1/26/2003		43.00						43.00								43.00	43.00
	Cummulative Volumes:		43.00						43.00									

Fluid Volume Record

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval # 02

		m3	ADDITIONS m3							LOSSES m3					VOLUMES m3			
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
Fluid Name: AQUAGEL Mud																		
010	2/2/2003	35.83										33.83		33.83			2.00	2.00
011	2/3/2003	2.00										2.00		2.00				
	Cummulative Volumes:											35.80		35.80				
Fluid Name: ENVIROMUL																		
010	2/2/2003	231.00										1.14		1.14	20.86	38.00	171.00	229.86
011	2/3/2003	229.86	59.17						59.17						33.16	39.30	216.56	289.02
012	2/4/2003	289.02	3.08			0.05	0.08		3.21						57.33	38.10	202.30	297.73
013	2/5/2003	297.73	33.30		8.00		1.63		42.93			62.20		62.20	77.60	62.20	138.66	278.46
014	2/6/2003	278.46	0.50				0.93		1.43	2.00	10.00	53.00		65.00	49.07	58.80	107.02	214.89
015	2/7/2003	214.89	1.50			0.11	0.10		1.71	1.50	2.21	2.00		5.71	56.91	55.30	98.68	210.89
016	2/8/2003	210.89	1.50		1.20		1.02		3.72	1.50	2.49	2.00		5.99	63.77	64.10	80.75	208.62
017	2/9/2003	208.62	2.00		1.28		0.38		3.66	2.00	5.00	2.88		9.88	71.90	52.20	78.30	202.40
018	2/10/2003	202.40	0.50		1.30		0.72		2.52	2.00	4.91	2.50		9.41	77.98	55.00	62.53	195.51
019	2/11/2003	195.51	1.50				0.49		1.99	3.79	4.00	1.00		8.79	87.12	60.10	41.49	188.71
020	2/12/2003	188.71			5.71	0.33	0.75		6.79	2.00	1.00	1.00		4.00	91.91	67.20	32.40	191.51
021	2/13/2003	191.51			3.00		0.22		3.22	3.69	1.00	3.00		7.69	93.54	66.50	27.00	187.04
022	2/14/2003	187.04	3.00			0.29	0.08		3.37	2.00	2.00	3.65		7.65	93.95	59.80	29.00	182.75
023	2/16/2003	182.75	3.00		8.00				11.00	2.00		5.00		7.00			201.00	201.00
	Cummulative Volumes:		109.10		28.50	0.80	6.40		144.70	22.50	32.60	139.40		194.50				
Fluid Name: HT-40-NT																		
011	2/3/2003	43.00											6.50	6.50			36.50	36.50
012	2/4/2003	36.50											5.50	5.50			31.00	31.00
013	2/5/2003	31.00											3.50	3.50			27.50	27.50
014	2/6/2003	27.50											0.50	0.50			27.00	27.00

Fluid Volume Record

Well : ACC Arrowhead River I-75
Operator: Anadarko

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Fluid Volume Record

Well : ACC Arrowhead River I-75
Operator: Anadarko

Interval # 03

		m3	ADDITIONS m3							LOSSES m3					VOLUMES m3			
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume
Fluid Name: ENVIROMUL																		
030	2/23/2003	201.00					0.43		0.43			0.43		0.43			201.00	201.00
032	2/28/2003	201.00	36.00						36.00				237.00	237.00				
Cummulative Volumes:			36.00				0.40		36.40			0.40	237.00	237.40				
Fluid Name: BARADRIL-N																		
024	2/17/2003				121.08				121.08						43.08	78.00		121.08
025	2/18/2003	121.08			13.23				13.23	1.00		1.00		2.00	43.31	89.00		132.31
026	2/19/2003	132.31			10.04		5.04		15.08	2.00		3.00		5.00	44.39	98.00		142.39
027	2/20/2003	142.39			1.81		0.57		2.38	2.00	4.00	1.12		7.12	45.65	92.00		137.65
028	2/21/2003	137.65					2.16		2.16	2.00	6.37	2.41		10.78	47.03	82.00		129.03
029	2/22/2003	129.03			13.89		1.10		14.99	1.50	1.50	1.50		4.50	57.52	82.00		139.52
030	2/23/2003	139.52					1.54		1.54			2.54		2.54	57.52	81.00		138.52
031	2/25/2003	138.52					0.17		0.17	2.00	3.00	10.00	44.34	59.34	49.36	30.00		79.36
032	2/28/2003	79.36					0.19		0.19				79.55	79.55				
Cummulative Volumes:					160.10		10.80		170.80	10.50	14.90	21.60	123.90	170.80				
Fluid Name: HT-40-NT																		
032	2/28/2003	14.00	30.50						30.50				44.50	44.50				
Cummulative Volumes:			30.50						30.50				44.50	44.50				

Fluid Property Recap:Water-Based Fluid

Well : ACC Arrowhead River I-75
Operator: Anadarko

Date	Depth	FL Temp	Density	Fun Visc	Rheology @ 48.89C					Filtration				Filtrate Analysis						Sand % by Vol	Retort Analysis				MBT	Rheometer Dial Reading					
					PV	YP	Gels Pa			API ml/30 min	HTHP ml/30 min	Cake API/HTHP mm	Temp	pH	Pm ml	Pf ml	Mf ml	Cl mg/l	Total Hard mg/l		Corr Sol % by Vol	LGS % by Vol	Oil % by Vol	Water% by Vol							
	m	Deg C	kg/m3	sec/l	mPa.		10s	10m	30m				Deg C												kg/m3 E	600	300	200	100	6	3
01/25/03	111.0	15	1105	68	4	16	24	43	57	13.0		2.0		10.00	1.10	0.20	0.35	200	40	0.50	6.70	6.6		93.1	63.00	42	38	28	24	18.0	17.0
01/26/03	257.0	21	1130	46	12	3	2	24		10.0		1.0		9.50	0.90	0.25	0.35	250	20	0.30	8.20	8.1		91.6	42.00	31	19	15	10	5.0	2.0
01/27/03	404.0	32	1140	52	15	6	2	28	34	10.4		2.0		9.00	0.70	0.10	0.19	200	20	0.40	8.70	8.4		91.1	49.00	43	28	22	14	5.0	3.0
01/28/03	488.0	34	1150	57	17	7	2	25	32	8.0		2.0		8.50	0.60	0.05	0.15	250	20	0.30	9.40	9.2		90.4	53.00	48	31	24	15	5.0	3.0
01/29/03	560.0	40	1140	63	20	10	3	10	18	6.0		1.0		9.00	0.50	0.10	0.30	200	30	0.20	8.80	8.6		91.0	63.00	61	41	32	22	9.0	6.0
01/30/03	631.0		1150	65	17	6	3	10	17	5.8		1.0		8.00	0.30		0.40	200	20		9.20	8.8		90.6	63.00	47	30	24	16	6.0	4.0
01/31/03	655.0	28	1145	52	14	5	2	14		6.0		1.0		8.00	0.30		0.30	200	40		8.80	8.3		91.0	56.00	38	24	19	12	4.0	3.0
02/18/03	2,602.0	51	1020	43	10	10	3	4		7.0		1.0		11.00	1.90	0.30	0.45	300	80		1.30	1.3		98.4	0.00	40	30	25	19	10.0	6.0
02/19/03	2,661.0	51	1040	49	11	11	3	4		6.0		1.0		11.50	2.80	0.90	1.90	300	40		2.60	0.9		97.2	0.00	44	33	28	21	9.0	5.0
02/20/03	2,730.0	51	1060	50	13	11	3	4		6.0		1.0		11.00	3.80	1.00	2.00	350	40		3.90	3.1		95.9	0.00	49	36	30	23	9.0	5.0
02/21/03	2,805.0	52	1075	52	13	12	3	4		5.6		1.0		10.50	3.20	0.95	1.40	350	60		4.60	0.0		95.2	0.00	51	38	32	24	8.0	6.0
02/22/03	2,878.0	52	1100	50	13	11	3	4		5.2		1.0		11.00	3.10	0.90	1.25	350	60		6.20	2.3		93.6	0.00	48	35	30	22	8.0	5.0
02/23/03	2,878.0	52	1100	62	13	12	3	5		6.0		1.0		10.50	3.20	0.95	1.20	400	60		6.30	4.1		93.5	0.00	50	37	31	23	7.0	5.0
02/25/03	2,878.0	34	1095	52	12	10	3	3		4.8		1.0		10.50	2.60	0.85	1.95	350	60		5.80	0.5		94.0	0.00	45	33	28	21	7.0	5.0

Canada | Arrowhead | Northwest Territory | Halliburton Baroid Canada | Ft. Liard NWT I-75

Printed:5/14/2003

Fluid Property Recap:NAP-Based Fluid (API Titrations)

Well : ACC Arrowhead River I-75
Operator: Anadarko

Date	Depth	Fl. Temp	Densit	Fun Vis	Rheology @ 120F					Elect Stab	Filtration			Whole Fluid Alk	Whole Fluid Cl	Whole Fluid Ca	Excess Lime	Sand % by Vol	Retort Analysis					Rheometer Dial Reading					
					PV	YP	Gels Pa				HTHP ml/30 min	Cake	Temp						Corr Sol % by Vol	LGS % by Vol	NAP % by Vol	Water % by Vol	NAP Water Ratio						
	m	Deg C	kg/m3	sec/l	mPa.s		10s	10m	30m	Volts		mm	Deg C	ml	mg/l	mg/l	kg/m3							600	300	200	100	6	3
02/02/03	655.0		920	0	4	1.0	1.0	1.0	0.0	200	0.0	0/0		2.60	7,000	6,000	9.61	0.00	1.7	0.2	88.0	10.0	89.8/10.2	9	5	3	2	1.0	0.0
02/03/03	791.0	26	910	43	6	1.0	1.0	1.0	0.0	218	14.0	0/1	93	2.90	21,000	14,000	10.71	0.10	1.2	1.0	85.0	13.0	86.7/13.3	13	7	4	2	1.0	5.0
02/04/03	1,058.0	31	920	40	5	1.0	1.0	1.0	0.0	327	10.4	0/1	93	3.00	21,000	14,000	11.08	0.10	1.7	1.4	85.0	12.5	87.2/12.8	12	7	5	3	1.0	1.0
02/05/03	1,282.0	32	910	42	5	1.0	1.0	2.0	0.0	500	11.0	0/1	93	1.90	21,000	14,000	7.02	0.10	1.2	1.1	84.0	14.0	85.7/14.3	12	7	5	3	1.0	1.0
02/06/03	1,408.0	32	910	40	5	1.0	1.0	2.0	0.0	787	11.0	0/1	93	2.90	25,000	14,000	10.71	0.10	1.0	0.9	85.0	13.0	86.7/13.3	11	6	5	3	1.0	1.0
02/07/03	1,617.0	44	930	44	5	1.0	2.0	3.0	0.0	1,072	8.0	0/1	93	3.30	25,000	14,000	12.19	0.10	2.0	1.6	85.0	12.0	87.6/12.4	12	7	5	3	1.0	1.0
02/08/03	1,800.0	44	930	43	7	1.0	2.0	3.0	0.0	1,088	8.0	0/1	93	3.30	26,000	14,000	12.19	0.10	1.9	1.5	85.0	12.0	87.6/12.4	15	8	6	4	1.0	1.0
02/09/03	2,017.0	44	925	44	6	1.0	2.0	3.0	0.0	1,352	11.8	0/1	93	3.00	25,000	14,500	11.08	0.10	2.0	1.7	87.0	10.0	89.7/10.3	14	8	6	4	1.0	1.0
02/10/03	2,179.0	47	925	44	6	1.0	2.0	3.0	0.0	1,327	8.0	0/1	93	2.80	25,000	14,500	10.35	0.10	2.0	1.9	85.5	11.5	88.1/11.9	14	8	6	4	1.0	1.0
02/11/03	2,423.0	48	920	43	7	1.0	1.0	2.0	0.0	1,500	9.0	0/1	93	2.70	24,500	14,000	9.98	0.10	2.0	1.9	87.6	9.4	90.3/9.7	17	10	7	4	2.0	1.0
02/12/03	2,511.0	44	935	48	7	1.0	2.0	3.0	0.0	1,600	10.0	0/1	93	2.70	24,000	12,800	9.98	0.10	2.9	2.8	87.1	9.0	90.6/9.4	17	10	7	4	2.0	1.0
02/13/03	2,575.0	48	925	45	9	1.0	2.0	3.0	0.0	1,450	11.0	0/1	93	2.90	25,000	14,400	10.71	0.20	2.1	2.1	87.0	9.8	89.9/10.1	21	12	9	5	2.0	1.0
02/14/03	2,586.0	34	940	58	9	1.0	2.0	3.0	0.0	1,420	12.0	0/1	93	2.70	24,000	13,200	9.98	0.10	3.0	2.8	86.0	10.0	89.6/10.4	21	12	9	6	3.0	2.0

Fluid Program Exceptions Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
002	01/25/03	15:00	111	Density	kg/m3	1,105	High	1,040	1,100
002	01/25/03	15:00	111	pH	-	10.00	High	8.00	9.00
002	01/25/03	15:00	111	Funnel Viscosity	sec/l	68	High	40	60
003	01/26/03	10:45	257	Density	kg/m3	1,130	High	1,040	1,100
003	01/26/03	10:45	257	Total Hardness	mg/l	20	Low	40	100
003	01/26/03	10:45	257	pH	-	9.50	High	8.00	9.00
004	01/27/03	08:00	404	Total Hardness	mg/l	20	Low	40	100
004	01/27/03	08:00	404	Density	kg/m3	1,140	High	1,040	1,100
005	01/28/03	09:00	488	Total Hardness	mg/l	20	Low	40	100
005	01/28/03	09:00	488	Density	kg/m3	1,150	High	1,040	1,100
006	01/29/03	08:40	560	Density	kg/m3	1,140	High	1,040	1,100
006	01/29/03	08:40	560	Funnel Viscosity	sec/l	63	High	40	60
006	01/29/03	08:40	560	Total Hardness	mg/l	30	Low	40	100
007	01/30/03	08:30	631	Funnel Viscosity	sec/l	65	High	40	60
007	01/30/03	08:30	631	Density	kg/m3	1,150	High	1,040	1,100
007	01/30/03	08:30	631	Total Hardness	mg/l	20	Low	40	100
008	01/31/03	16:00	655	Density	kg/m3	1,145	High	1,040	1,100
010	02/02/03	13:00	655	Density	kg/m3	920	Low	1,040	1,100
011	02/03/03	20:50	791	Yield Point	Pa	0.5	Low	2.0	8.0
011	02/03/03	20:50	791	Electrical Stability	volt	218	Low	600	
011	02/03/03	20:50	791	Gel, 10 seconds	Pa	0.5	Low	1.0	3.0
011	02/03/03	20:50	791	HTHP Filtrate	ml/30 min	14.0	High	10.0	12.0
011	02/03/03	20:50	791	Gel, 10 minutes	Pa	1.0	Low	2.0	4.0
011	02/03/03	20:50	791	Excess (Total) lime	kg/m3	10.71	High	10.00	
012	02/04/03	15:20	1,058	Gel, 10 seconds	Pa	0.5	Low	1.0	3.0
012	02/04/03	15:20	1,058	Excess (Total) lime	kg/m3	11.08	High	10.00	
012	02/04/03	15:20	1,058	Electrical Stability	volt	327	Low	600	
012	02/04/03	15:20	1,058	Yield Point	Pa	1.0	Low	2.0	8.0
012	02/04/03	15:20	1,058	Gel, 10 minutes	Pa	1.0	Low	2.0	4.0
013	02/05/03	13:40	1,282	Gel, 10 seconds	Pa	1.0	High	1.0	3.0
013	02/05/03	13:40	1,282	Electrical Stability	volt	500	Low	600	
013	02/05/03	13:40	1,282	Excess (Total) lime	kg/m3	7.02	Low	10.00	
013	02/05/03	13:40	1,282	Gel, 10 minutes	Pa	1.5	Low	2.0	4.0
013	02/05/03	13:40	1,282	Yield Point	Pa	1.0	Low	2.0	8.0
014	02/06/03	19:15	1,408	Electrical Stability	volt	787	High	600	
014	02/06/03	19:15	1,408	Excess (Total) lime	kg/m3	10.71	High	10.00	
014	02/06/03	19:15	1,408	Gel, 10 minutes	Pa	1.5	Low	2.0	4.0
014	02/06/03	19:15	1,408	Gel, 10 seconds	Pa	1.0	High	1.0	3.0
014	02/06/03	19:15	1,408	Yield Point	Pa	0.5	Low	2.0	8.0
015	02/07/03	15:20	1,617	Excess (Total) lime	kg/m3	12.19	High	10.00	
015	02/07/03	15:20	1,617	Electrical Stability	volt	1,072	High	600	

Fluid Program Exceptions Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
015	02/07/03	15:20	1,617	HTHP Filtrate	ml/30 min	8.0	Low	10.0	12.0
015	02/07/03	15:20	1,617	Yield Point	Pa	1.0	Low	2.0	8.0
016	02/08/03	15:00	1,800	Excess (Total) lime	kg/m3	12.19	High	10.00	
016	02/08/03	15:00	1,800	HTHP Filtrate	ml/30 min	8.0	Low	10.0	12.0
016	02/08/03	15:00	1,800	Electrical Stability	volt	1,088	High	600	
016	02/08/03	15:00	1,800	Yield Point	Pa	0.5	Low	2.0	8.0
017	02/09/03	13:25	2,017	Yield Point	Pa	1.0	Low	2.0	8.0
017	02/09/03	13:25	2,017	Excess (Total) lime	kg/m3	11.08	High	10.00	
017	02/09/03	13:25	2,017	Electrical Stability	volt	1,352	High	600	
018	02/10/03	06:30	2,179	Yield Point	Pa	1.0	Low	2.0	8.0
018	02/10/03	06:30	2,179	Excess (Total) lime	kg/m3	10.35	High	10.00	
018	02/10/03	06:30	2,179	HTHP Filtrate	ml/30 min	8.0	Low	10.0	12.0
018	02/10/03	06:30	2,179	Electrical Stability	volt	1,327	High	600	
019	02/11/03	08:30	2,423	HTHP Filtrate	ml/30 min	9.0	Low	10.0	12.0
019	02/11/03	08:30	2,423	Electrical Stability	volt	1,500	High	600	
019	02/11/03	08:30	2,423	Excess (Total) lime	kg/m3	9.98	Low	10.00	
019	02/11/03	08:30	2,423	Gel, 10 seconds	Pa	1.0	High	1.0	3.0
019	02/11/03	08:30	2,423	Yield Point	Pa	1.4	Low	2.0	8.0
020	02/12/03	17:00	2,511	Excess (Total) lime	kg/m3	9.98	Low	10.00	
020	02/12/03	17:00	2,511	Electrical Stability	volt	1,600	High	600	
020	02/12/03	17:00	2,511	Yield Point	Pa	1.4	Low	2.0	8.0
021	02/13/03	09:00	2,575	Excess (Total) lime	kg/m3	10.71	High	10.00	
021	02/13/03	09:00	2,575	Electrical Stability	volt	1,450	High	600	
021	02/13/03	09:00	2,575	Yield Point	Pa	1.4	Low	2.0	8.0
022	02/14/03	08:00	2,586	Yield Point	Pa	1.4	Low	2.0	8.0
022	02/14/03	08:00	2,586	Electrical Stability	volt	1,420	High	600	
022	02/14/03	08:00	2,586	Excess (Total) lime	kg/m3	9.98	Low	10.00	
022	02/14/03	08:00	2,586	Funnel Viscosity	sec/l	58	High	35	50
023	02/16/03	00:01	2,586	Electrical Stability	volt	1,380	High	600	
023	02/16/03	00:01	2,586	Yield Point	Pa	1.0	Low	2.0	8.0
023	02/16/03	00:01	2,586	Excess (Total) lime	kg/m3	9.61	Low	10.00	
023	02/16/03	00:01	2,586	Funnel Viscosity	sec/l	57	High	35	50
025	02/18/03	17:20	2,602	Yield Point	Pa	9.6	High	4.0	6.0
025	02/18/03	17:20	2,602	pH	-	11.00	High	10.00	
026	02/19/03	08:20	2,661	pH	-	11.50	High	10.00	
026	02/19/03	08:20	2,661	Yield Point	Pa	10.5	High	4.0	6.0
027	02/20/03	08:00	2,730	pH	-	11.00	High	10.00	
027	02/20/03	08:00	2,730	Density	kg/m3	1,060	High	1,010	1,050
027	02/20/03	08:00	2,730	Yield Point	Pa	11.0	High	4.0	6.0
028	02/21/03	09:00	2,805	pH	-	10.50	High	10.00	
028	02/21/03	09:00	2,805	Density	kg/m3	1,075	High	1,010	1,050

Fluid Program Exceptions Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
028	02/21/03	09:00	2,805	Yield Point	Pa	12.0	High	4.0	6.0
029	02/22/03	08:00	2,878	Yield Point	Pa	10.5	High	4.0	6.0
029	02/22/03	08:00	2,878	Density	kg/m3	1,100	High	1,010	1,050
029	02/22/03	08:00	2,878	pH	-	11.00	High	10.00	
030	02/23/03	21:00	2,878	pH	-	10.50	High	10.00	
030	02/23/03	21:00	2,878	Yield Point	Pa	11.5	High	4.0	6.0
030	02/23/03	21:00	2,878	Density	kg/m3	1,100	High	1,010	1,050
031	02/25/03	09:00	2,878	Gel, 10 minutes	Pa	3.0	Low	4.0	8.0
031	02/25/03	09:00	2,878	pH	-	10.50	High	10.00	
031	02/25/03	09:00	2,878	Density	kg/m3	1,095	High	1,010	1,050
031	02/25/03	09:00	2,878	Yield Point	Pa	10.1	High	4.0	6.0

Product Concentrations Summary

Well : ACC Arrowhead River I-75
Operator: Anadarko

From report	002	on	1/25/2003	@	111.0	m		
To report	032	on	2/28/2003	@	2,878.0	m	Drilled:	2,767.0 m

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
AQUAGEL Mud			
AQUAGEL	54.15	45.22	73.87
BARAFOS	0.25	0.18	0.61
BARAZAN D PLUS	0.41	0.39	0.47
BAROID DETERGENT	0.44	0.27	0.53
caustic soda	0.38	0.14	0.63
Desco CF	0.20	0.20	0.20
lignite	0.60	0.19	0.72
PAC-R	0.60	0.19	0.72
soda ash	0.19	0.10	0.63
BARADRIL-N			
B1007 Econocide	0.01	0.01	0.01
BARABUF	1.86	1.47	2.37
BARACARB 150	8.91	5.30	10.87
BARACARB 5	26.20	14.62	38.44
BARACARB 50	65.42	40.86	84.43
BARACARB 600	8.03	4.54	10.35
FILTER-CHEK	6.23	5.94	6.84
N-VIS P PLUS	9.83	9.21	10.77
sodium sulfite	2.52	2.40	2.76
Triethanolamine 85%	2.67	2.59	2.93
ENVIROMUL			
barite	8.90	0.59	15.73
calcium carbonate 325	4.72	2.33	5.86
calcium carbonate fine	4.72	2.33	5.86
calcium chloride pellet	2.83	0.67	3.53
DURATONE HT	1.32	1.06	1.55
EZ MUL NT	1.71	1.17	2.06
GELTONE	3.13	0.40	5.02
INVERMUL NT	2.77	1.72	3.39
lime	5.98	0.59	8.30
RM-63	2.26	1.16	3.08
SUSPENTONE	5.45	0.88	9.03

Canada	Arrowhead Northwest Territory	Halliburton Baroid Canada Ft. Liard NWT I-75

Printed:5/14/2003

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #001A on 1/24/2003	**Operation at depth(m) 0**
Activity	Rig up and rig down
Rig Activity	IN CASE OF LOST CIRCULATION: Mix a 15 m3 LCM pill starting with 80 - 100 vis AQUAGEL mud. Add Sawdust, BAROSEAL medium, and Cellophane in a 5:2:1 ratio. Spot the pill above the loss zone. IN CASE OF MUD RINGS: Mix 1 sx of BARAFOS (SAPP) and 1 pail of detergent over 1 circulation. Add 1 vis cup of BARAFOS in the stump on connections as required. Curtis Scoville (403) 852-0317
Fluid Treatments	SPUD REPORT: Spud with a light AQUAGEL slurry with viscosity 40 - 45 sec/L. Add 1 sx of Soda Ash and 1 sx of Caustic to the make up water. Mix AQUAGEL as required for viscosity with maximum agitation. Maintain pH 8 - 9 with very gradual addition of Caustic through the chemical barrel. Maintain density as low as possible with SCE and water dilution, or as directed by the Drilling Supervisor to control flow. Prior to casing point raise viscosity by 20+ sec/L or as required to clean the hole.
For report #002A on 1/25/2003	**Operation at depth(m) 111**
Activity	Drilling
Rig Activity	IN CASE OF LOST CIRCULATION: Mix a 15 m3 LCM pill starting with 80 - 100 vis AQUAGEL mud. Add Sawdust, BAROSEAL medium, and Cellophane in a 5:2:1 ratio. Spot the pill above the loss zone. IN CASE OF MUD RINGS: Mix 1 sx of BARAFOS (SAPP) and 1 pail of detergent over 1 circulation. Add 1 vis cup of BARAFOS in the stump on connections as required. Curtis Scoville (403) 852-0317
Fluid Treatments	Maintain viscosity 55 - 65 sec/L or as required to clean the hole, with AQUAGEL at 5 min per sack. Allow the pH to come down with dilution then maintain at 8.5 - 9.0 with slow additions of Caustic Soda through the chemical barrel. Maintain density below 1100 kg/m3 with water dilution and SCE - finest possible screens and centrifuges. Consult the Drilling Foreman about mixing 1 sx of Desco over 1 circulation to control high gel strengths and viscosity for drilling ahead. Prior to casing point raise viscosity by at least 20+ sec/L or as required to condition the hole for running casing.
Issues	Mud rings attributed to rapid ROP, cold mud, high viscosity and gel content required to prevent washing out of the conductor barrel. Directed to control drill to avoid over-loading the annulus with cold mud from the surface formations. Treated mud rings as usual with BARAFOS and Detergent. Lowering viscosity as MD approaches 100 m.
For report #003A on 1/26/2003	**Operation at depth(m) 258**
Activity	Drilling
Rig Activity	IN CASE OF LOST CIRCULATION: Mix a 15 m3 LCM pill starting with 80 - 100 vis AQUAGEL mud. Add Sawdust, BAROSEAL medium, and Cellophane in a 5:2:1 ratio. Spot the pill above the loss zone. Drilled 311 surface hole to 242 m. Encountered mud rings above 80 m. Treated with BARAFOS (SAPP) and Detergent, worked pipe, and spent 3.5 hours clearing the flowline. Control drilled ahead to avoid over-loading the annulus. Tripped for bit #2 at 242 m. Drilling ahead at report time. Curtis Scoville (403) 852-0317.
Fluid Treatments	Maintain viscosity 55 - 65 sec/L or as required to clean the hole, with AQUAGEL at 3 - 5 min per sack. Allow the pH to come down with dilution then maintain at 8.5 - 9.0 with slow additions of Caustic Soda through the chemical barrel. Maintain density below 1100 kg/m3 with water dilution and SCE - finest possible screens and centrifuges. Prior to casing point raise viscosity by at least 20+ sec/L or as required to condition the hole for running casing.
For report #004A on 1/27/2003	**Operation at depth(m) 404**
Activity	Drilling

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #004A on 1/27/2003	**Operation at depth(m) 404**
Rig Activity	IN CASE OF LOST CIRCULATION: Mix a 15 m3 LCM pill starting with 80 - 100 vis AQUAGEL mud. Add Sawdust, BAROSEAL medium, and Cellophane in a 5:2:1 ratio. Spot the pill above the loss zone. Drilled 311 surface hole to 404 m. Drilling ahead at report time. Curtis Scoville (403) 852-0317.
Fluid Treatments	Maintain viscosity 55 - 65 sec/L or as required to clean the hole, with AQUAGEL at 5 min per sack. Maintain pH between 8.5 - 9.0 with slow additions of Caustic Soda through the chemical barrel. Maintain density as low as possible with water dilution and SCE - finest possible screens and centrifuges. IN CASE OF MUD RINGS: Mix 1 sx of BARAFOS (SAPP) and 1 pail of detergent over 1 circulation. Add 1 vis cup of BARAFOS in the stump on connections as required. PRIOR TO CASING POINT - raise the viscosity by at least 20+ sec/L or as required to condition the mud and hole for running casing.
For report #005A on 1/28/2003	**Operation at depth(m) 488**
Activity	Drilling
Rig Activity	IN CASE OF LOST CIRCULATION: Mix a 15 m3 LCM pill starting with 80 - 100 vis AQUAGEL mud. Add Sawdust, BAROSEAL medium, and Cellophane in a 5:2:1 ratio. Spot the pill above the loss zone. Drilled 311 surface hole to 488 m. Tripped for bit #3 at 413 m. Had to ream back in. Drilling ahead at report time. Curtis Scoville (403) 852-0317.
Fluid Treatments	Lower water loss to 6 - 8 ml per 30 min with PAC and Lignite in a 1:1 ratio. Mix 5 sx of BARAZAN at 30 min per sx (3 circs). Maintain viscosity 60 - 65 sec/L or as required to clean the hole, with AQUAGEL at 5 min per sack. Maintain pH between 8.5 - 9.0 with slow additions of Caustic Soda through the chemical barrel. Maintain density as low as possible with water dilution and SCE - finest possible screens and centrifuges. IN CASE OF MUD RINGS: Mix 1 sx of BARAFOS (SAPP) and 1 pail of detergent over 1 circulation. Add 1 vis cup of BARAFOS in the stump on connections as required. PRIOR TO CASING POINT - raise the viscosity by at least 20+ sec/L or as required to condition the mud and hole for running casing.
For report #006A on 1/29/2003	**Operation at depth(m) 560**
Activity	Drilling
Rig Activity	IN CASE OF LOST CIRCULATION: Mix a 15 m3 LCM pill starting with 80 - 100 vis AQUAGEL mud. Add Sawdust, BAROSEAL medium, and Cellophane in a 5:2:1 ratio. Spot the pill above the loss zone. POOH to pick up a square motor. RIH. Drilled ahead to 560 m. Drilling ahead at report time. Curtis Scoville (403) 852-0317.
Fluid Treatments	Maintain water loss to 6 - 7 ml per 30 min with PAC and Lignite in a 1:1 ratio. Maintain viscosity 60 - 65 sec/L or as required to clean the hole, with 3 sx of AQUAGEL and 1 sx of BARAZAN over 1 circ (45 min). Maintain pH between 8.5 - 9.0 with slow additions of Caustic Soda through the chemical barrel. Maintain density as low as possible with water dilution and SCE - finest possible screens and centrifuges. Run fresh water below the shaker at 10 - 15 L/min or as required to maintain PVT as directed. PRIOR TO CASING POINT - raise the viscosity by at least 20+ sec/L or as required to condition the mud and hole for running casing.
For report #007A on 1/30/2003	**Operation at depth(m) 631**
Activity	Tripping

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #007A on 1/30/2003	Operation at depth(m) 631
Rig Activity	IN CASE OF LOST CIRCULATION: Mix a 15 m3 LCM pill starting with 80 - 100 vis AQUAGEL mud. Add Sawdust, BAROSEAL medium, and Cellophane in a 5:2:1 ratio. Spot the pill above the loss zone. Drilled 311 mm hole to 631 m with square motor. Dev = 2.75. POOH to MU new BHA. Extensive reaming and pumping on the trip out.
Fluid Treatments	Curtis Scoville (403) 852-0317. When back on bottom - Mix 1 sx of Lime over 1 circ. Maintain water loss to 6 - 7 ml per 30 min with PAC and Lignite in a 1:1 ratio. Maintain viscosity 60 - 65 sec/L or as required to clean the hole, with 3 sx of AQUAGEL and 1 sx of BARAZAN over 1 circ (45 min). Maintain pH between 8.5 - 9.0 with slow additions of Caustic Soda through the chemical barrel. Maintain density as low as possible with water dilution and SCE - finest possible screens and centrifuges. Run fresh water below the shaker at 5 - 10 L/min or as required to maintain PVT as directed. PRIOR TO CASING POINT - raise the viscosity by at least 20+ sec/L or as required to condition the mud and hole for running casing.

For report #008A on 1/31/2003	Operation at depth(m) 655
Activity	Run casing and cement
Rig Activity	POOH at 631 m to lay down the motor and add a reamer to the BHA. RIH and drilled ahead to casing point at 655 m. Wiper tripped and circulated the hole clean. POOH to run casing. Ran 244.5 mm casing. Ran pipe into casing. Circulated and reciprocated casing and pipe while conditioning mud for the cement job.
Fluid Treatments	Curtis Scoville (403) 852-0317. FOR CEMENTING: Lower viscosity to 50 - 55 sec/L with water at 30 - 40 L/min and 2 sx of Desco through chemical barrel. Yield point to be checked by the mudman prior to cementing. WHILE WOC: Clean rig tanks of all water based mud. Flush all lines and blow dry. Fill rig tanks with Enviro-Drill Invert as directed. Prepare a high vis spacer in the pill tank - fill pill tank with Invert and mix 6 sx of GELTONE V into the pill with maximum agitation and sheer. Displace water based mud from the casing with consistent pump strokes, while rotating and reciprocating the pipe to reduce channeling. As soon as the spacer is observed at the flowline, close in the Invert (active) system, allowing the spacer to circulate into the active suction. No Invert mud should be discarded as waste.

For report #009A on 2/1/2003	Operation at depth(m) 655
Activity	Nipple up B.O.P.
Rig Activity	Cemented 244.5 mm casing at 22:15 Jan 31, set at 354.7 m. Pulled pipe. Rig for BOP's. Dumped and cleaning tanks at report time.
Fluid Treatments	Curtis Scoville (403) 852-0317. WHILE WOC: Clean rig tanks of all water based mud. Flush all lines and blow dry. Fill rig tanks with Enviro-Drill Invert as directed. Prepare a high vis spacer in the pill tank - fill pill tank with Invert and mix 6 sx of GELTONE V into the pill with maximum agitation and sheer. Displace water based mud from the casing with consistent pump strokes, while rotating and reciprocating the pipe to reduce channeling. As soon as the spacer is observed at the flowline, close in the Invert (active) system, allowing the spacer to circulate into the active suction. No Invert mud should be discarded as waste.
Losses & Gains	Approximately 40 m3 of whole mud was transferred to O-38 for use as spud mud.
Product Concentration	This interval was not originally programmed to include BARAZAN, PAC and Lignite, but it was decided while drilling to introduce these products in order to tighten up the filter cake and improve lubricity.

For report #010A on 2/2/2003	Operation at depth(m) 655
Activity	Testing B.O.P.
Rig Activity	TREAT DOWNHOLE SEEPAGE LOSSES-
Fluid Treatments	AFTER DISPLACING THE HOLE TO INVERT:

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #011A on 2/3/2003	**Operation at depth(m) 791**
Activity	Drilling
Rig Activity	Drilled the shoe with a mud/Invert slurry. Leak-off gradient 23.3 kPa/m. Drilling ahead building the system. Heavy sand/shale volumes plus the ROP require that the shaker screens be constantly washed with a spray gun to reduce the blinding of the screens.
Fluid Treatments	John S.Heppleston (403) 852-0317 1) Warm-up & add 2 drums of INVERMUL NT, 1 drum of EZ-MUL NT & 1 drum of RM-63 over 4-6 hours. 2) Mix 10 sx Calcium Chloride over a circulation. 3) Should connections become tight, due to improper hole cleaning make up a sweeper pill in the pill tank, 3-5 m3 of Invert with 3-5 sx GELTONE V & 5 sx BARO-FIBRE (m)Sweep the hole as required. 4) Should seepage losses exceed 5 m3 / day, mix up a pill with 5 sx GELTONE V, 10 sx BARO-FIBRE (m), 10 sx STEEL-SEAL, 10 sx Calcium Carbonate 325. Reduce the pump strokes as the pill exits the bit, this will allow the pill time to plug the thief zones.
For report #012A on 2/4/2003	**Operation at depth(m) 1058**
Activity	Drilling
Rig Activity	...10 sx BARO-FIBRE (m), 10 sx STEEL-SEAL, 10 sx Calcium Carbonate. Reduce the rate of pumping as the pill exits the bit, this will allow the pill time to seep into the thief zones. repeat as required and note at what depth the pill were used. Drilling ahead, sand & shale volume on the shakers continue to be a problem. Pressure washer is required at all times.
Fluid Treatments	John S.Heppleston (403) 852-0317 1) WARM-UP & ADD 2 drums of INVERMUL NT, 1 drum of EZ-MUL NT & 1 drum of RM-63 over 5-6 hours, for an improved emulsion. 2) Add 10 sx Lime over a circulation, then maintain with 5 sx Lime /tour, over a circulation, for Alkalinity control. 3) Mix 15 sx Calcium Chloride over two (2) circulations (120 min), to raise the Chlorides content. 4) Mix 10 sx SUSPENTONE @ 30+ min/sx, to raise the low end rheology. 5) Monitor/record additions of fluid to the system, from the tank farm and any losses to the formations. Should the losses exceed 5 m3/day mix a LCM pill in the pill tank, 3-5 m3 of Invert with.....
For report #013A on 2/5/2003	**Operation at depth(m) 1282**
Activity	Drilling
Rig Activity	Drilled from 1058 m to 1282 m, without problems. Leaking mud tank compartment was caught in the drainage ditches and pumped back into the main system c/w ditch water. Total Invert delivered to date...239.0 m3 Active system.....139.8 m3 Storage.....95.0 m3 Shortages/losses to-date.....4.2 m3 Total HT-40 delivered to-date...43.0 m3 Storage.....27.5 m3 Shortages/losses to-date.....15.5 m3
Fluid Treatments	1) Add 20 sx Lime over a circulation, then 10 sx / tour over a circulation to increase the Alkalinity. 2) Add 15 sx Calcium Chloride over two circulations (3 hours) to raise the Chloride content of the Invert. 3) Add 1 drum of INVERMUL NT & 1 drum OF EZ-MUL NT over 5-6 hours for a tighter emulsion. 4) Change the shaker screens as needed to increase the efficiency of the solids equipment in reducing the drilled solids in the system.

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #014A on 2/6/2003	Operation at depth(m) 1408
Activity	Drilling
Rig Activity	Drilled from 1282 m, no problems.Tripped for a defective MWD at 1389 m. RIH with the same PDC. Drilled to 1408 m without problems. A correction (23.1 m3) to the systems' actual volume was required due to a stuck float. Total Invert delivered to-date...239.0 m3 Active system.....107.9 m3 Storage.....107.2 m3 Shortages/losses to-date.....23.9 m3
Fluid Treatments	1) Add 10 sx Lime over a circulation (90 min), then 5 sx Lime / tour over a circulation, to maintain the Alkalinity. 2) Mix 10 sx GELTONE V & 20 sx SUSPENTONE @ 30+ min/sx, to raise the YP. 3) Transfer 10 m3 of Invert from the tank farm to the main system over 2+ complete circulations to maintain the working volume at 65 m3. 4) Add 10 sx Calcium Carbonate (0 & 325) over a circulation to reduce the seepage losses.
Losses & Gains	Volume corrections were made on this report, as follows - 23.1 m3 due to a stuck float, counted in total volume, when in fact the compartment was empty. - 23.9 m3 Invert charged as shortages/losses - 24.3 m3 dilution over 3 days of drilling (ditch water, etc) - 16.0 m3 accumulated use of HT-40, mostly for washing the shaker screens.
For report #015A on 2/7/2003	**Operation at depth(m) 1617**
Activity	Drilling
Rig Activity	Drilled from 1408 m to 1617 m without problems. Total Invert delivered to-date...239.0 m3 Active system.....112.2 m3 Storage.....98.7 m3 Shortages/losses to-date.....28.1 m3 Total HT-40 delivered to-date.....43.0 m3 Storage.....25.5 m3 Shortages/losses to-date.....17.5 m3
Fluid Treatments	1) Add 10 sx Lime over a circulation. 2) Mix 15 sx SUSPENTONE @ 30+ min/sx, with a spray of water (1-3 L/min), to raise the YP. 3) Transfer Invert from the tank farm into the main system, over complete circulations, to maintain a working volume of 65 m3. 4) Change the shaker screens from 84's to 140's or better to ensure a more effective cut of drilled solids. Keep the skimmers as high as volume permits. 5) Mix 10 sx Calcium Carbonate (0 & 325) over a circulation to help reduce the seepage losses.
For report #016A on 2/8/2003	**Operation at depth(m) 1800**
Activity	Drilling
Rig Activity	Drilled from 1617 m to 1800 m without problems. Total Invert delivered to-date....239.0 m3 Active system.....127.8 m3 Storage.....80.75 m3 Shortages/losses.....30.45 m3 Total HT-40 delivered.....43.0 m3 Storage.....24.0 m3 Shortages/losses to-date.....19.0 m3

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #016A on 2/8/2003	Operation at depth(m) 1800
Fluid Treatments	1) Mix 5 sx Lime/tour over a circulation, to maintain the Alkalinity. 2) Mix 10 sx SUSPENTONE & 10 sx GELTONE V @ 30+ min/sx, with a spray of water (1-3 L/min) to increase the YP. 3) Add water to the active system at the rate of 16 L/min for one circulation (80 min) to increase the water content. This procedure must be regulated & monitored to be accurate & uniform for the entire system. 4) Add 10 sx Calcium Carbonate (0 & 325) over a circulation/tour to control seepage losses.
For report #017A on 2/9/2003	**Operation at depth(m) 2017**
Activity	Drilling
Rig Activity	Drilled from 1800 m to 2017 m, no problems. Total Invert delivered to-date..239.0 m3 Active system.....124.1 m3 Storage.....78.3 m3 Shortages/losses to-date.....36.6 m3 Total HT-40 delivered to-date..43.0 m3 Storage.....22.0 m3 Shortages/losses to-date.....21.0 m3
Fluid Treatments	1) Reduce the fluid loss with 15 sx of, DURATONE HT @ 30+ min/sx. 2) Add 1 drum of RM-63 over 2-3 complete circulations to improve the low end rheology. 3) Add 10 sx Calcium Carbonate (0 & 325) over a circulation, to help reduce the seepage losses. 4) DENSITY, <1000 kg/m3 with SCE. Change the screens as required to have the finest mesh working, this will enhance the effectiveness of the centrifuge. Keep the skimmers as high as volume permits. 5) Continue to add Invert from the tank farm as required to maintain the desired working volume.
For report #018A on 2/10/2003	**Operation at depth(m) 2179**
Activity	Drilling
Rig Activity	Drilled from 2017 m to 2179 m, no problems. Total Invert delivered to-date ..239.0 m3 Active system.....133.0 m3 Storage.....62.5 m3 Shortages/losses to-date.....43.5 m3 Total HT-40 delivered to-date....43.0 m3 Storage.....21.5 m3 Shortages/losses to-date.....21.5 m3
Fluid Treatments	1) Maintain the working volume 65.0 m3 with additions of Invert from the tank farm. Make all additions over complete circulations. 2) Add 10 sx Calcium Carbonate (0 & 325) / tour, over a circulation, to reduce the seepage losses. 3) DENSITY, <1000 kg/m3 with SCE. Keep the skimmers as high as volume permits. 4) Mix 10 sx GELTONE V @ 30+ min/sx.
For report #019A on 2/11/2003	**Operation at depth(m) 2423**
Activity	Drilling

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #019A on 2/11/2003	Operation at depth(m) 2423
Rig Activity	Drilled 216 mm hole from 2179 m to 2423 m at check time. Drilling ahead at report time. Total Invert delivered to-date .. 231.0 m3 Active system..... 147.2 m3 Storage.....41.5 m3 Shortages/losses to-date.....42.3 m3 Total HT-40 delivered to-date....43.0 m3 Storage.....20.0 m3 Total Used to-date.....23.0 m3 Curtis Scoville (403) 852-0317.
Fluid Treatments	1) Maintain surface volume >60 m3 with additions of Invert from the tank farm. Make all additions over complete circulations. Add the static mud in the shaker tank to the active over 1 - 2 circulations. 2) Add 10 sx Calcium Carbonate (0 & 325) / tour, over a circulation, to reduce seepage losses. 3) DENSITY, <1000 kg/m3 with SCE. Keep the skimmers as high as volume permits. 4) Mix 10 sx of SUSPENTONE per tour @ 30+ min/sx. 5) Mix 10 sx of Lime per tour over 1 circulation. 6) Mix 1 drum of RM 63 over 1 circulation.
For report #020A on 2/12/2003	**Operation at depth(m) 2530**
Activity	Drilling
Rig Activity	Drilled 216 mm hole from 2423 m to 2511 m. POOH to lay down directional tools and make up new BHA. RIH with collars and an insert bit. Drilling ahead and circulating up samples to locate casing point at report time. Total Invert delivered to-date .. 231 m3 Active system..... 191 m3 Storage.....20 m3 Shortages/losses to-date.....20 m3 Total HT-40 delivered to-date....43.0 m3 Storage.....20.0 m3 Total Used to-date.....23.0 m3 Curtis Scoville (403) 852-0317.
Fluid Treatments	1) Maintain surface volume >60 m3 with additions of Invert from the tank farm. Make all additions over complete circulations. Add the static mud in the shaker tank to the active over 1 - 2 circulations. 2) Add 10 sx Calcium Carbonate (0 & 325) / tour, over a circulation, to reduce seepage losses. 3) DENSITY, <1000 kg/m3 with SCE. Keep the skimmers as high as volume permits. 4) Mix 10 sx of SUSPENTONE per tour @ 30 min/sx. Run a small stream of water at the hopper while mixing. 5) Mix 10 sx of Lime per tour over 1 circulation.
For report #021A on 2/13/2003	**Operation at depth(m) 2575**
Activity	Drilling

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #021A on 2/13/2003	Operation at depth(m) 2575
Rig Activity	Drilled 216 mm hole from 2511 m to 2575 m. Drilling ahead and circulating up samples to locate casing point at report time. Total Invert delivered to-date .. 231 m3 Active system..... 167 m3 Storage.....20 m3 Shortages/losses to-date.....44 m3 Total HT-40 delivered to-date....43.0 m3 Storage..... .....20.0 m3 Total Used to-date.....23.0 m3
Fluid Treatments	Curtis Scoville (403) 852-0317. 1) Maintain surface volume >60 m3 with additions of salvaged water from the slop tank at 10 L/min. 2) DENSITY, <1000 kg/m3 with SCE. Keep the skimmers as high as volume permits. 3) Mix 10 sx of SUSPENTONE per tour @ 30 min/sx. Run a small stream of water at the hopper while mixing and don't run the centrifuges while mixing. 4) Mix 10 sx of Lime over 1 circulation.
For report #022A on 2/14/2003	**Operation at depth(m) 2586**
Activity	Cond. mud & Circ.
Rig Activity	Drilled 216 mm hole from 2575 m to 2586 m. Drilled ahead and circulated up samples to locate casing point. Achieved casing point at 2586 m. 5 stand wiper trip. POOH to log. RIH to clean for running casing. Total Invert delivered to-date ... 231 m3 Active system..... 163 m3 Storage.....20 m3 Shortages/losses to-date.....48 m3 Total HT-40 delivered to-date.....43 m3 Storage.....17 m3 Total Used to-date.....26 m3
Fluid Treatments	Curtis Scoville (403) 852-0317. Mix 1 sack of lime through the chemical barrel. Mix 2 sx of GELTONE V at 2 hours per sack. Mix 4 sx of SUSPENTONE at 30 min per sack. Run water from the slop tank at 15 - 20 L/min while circulating. Recover mud from beneath the KETEK shaker. Ensure that there is 100 m3 of space in the rig tanks to accept Invert returns during the cement job. WHILE WOC: Clean all tanks, and flush mud lines with base oil, followed by fresh water.
For report #023A on 2/16/2003	**Operation at depth(m) 2586**
Activity	Testing B.O.P.

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #023A on 2/16/2003
Rig Activity

Operation at depth(m) 2586
Wire line logged with Schlumberger. RIH to circulate. Washed 2 singles to bottom with 0.5 m of fill. Logged while POOH sideways with Gyro Data. Ran and circulated 177.8 mm casing. Cemented with BJ while returning Invert to the tank farm. Cleaning tanks and pressure testing at report time.
Total Invert delivered to-date ... 231 m3
Invert Unused.....20 m3
Invert Returned.....181 m3
Shortages/losses.....30 m3
Total HT-40 delivered to-date.....43 m3
Storage.....14 m3
Total Used to-date.....29 m3

Curtis Scoville (403) 852-0317.

Fluid Treatments

Move 2 drums of Triethanolamine inside to warm. While RIH - direct water from the casing into suction tanks. Top up tanks as directed and mix BARABUF for a pH of 10. Mix N-VIS-P-PLUS and FILTER CHEK in a 2:1 ratio as required for a viscosity of 55 - 60 sec/L. Mix 15 sx of Sodium Sulphite, and 2 warm drums of Triethanolamine (run with a steam hose as the pour point is high). Maintain pH >10 with BARABUF. Maintain water loss 6 - 8 ml/30 min with FILTER CHEK. Run the finest possible screens and run the centrifuges only as directed. Run water as required to maintain surface volume.
TOURLY ADDITIONS: Mix 10 sx of BARACARB 5, 30 sx of BARACARB 50, and 5 sx of BARACARB 150. Perform HACH test as directed and report any positive result to the Mudman and Drilling Foreman immediately.

For report #024A on 2/17/2003
Activity
Rig Activity

Operation at depth(m) 2586
Drill out
MONITOR FOR H2S: Perform HACH test every 2 hours and report any positive result to the Mudman and Drilling Foreman immediately.

FOR EXTRA SEEPAGE CONTROL: Mix 30 sx of BARACARB 600 over 1 full circulation as required.

RIG ACTIVITY: Pressure tested. Cleaned tanks and lines. PU 3.5 inch DP. RIH. Drilling cement and building mud properties for drilling out.

Curtis Scoville (403) 852-0317.

Fluid Treatments

TODAY: Mix 15 sx of Sodium Sulphite, and 2 warm drums of Triethanolamine (run with a steam hose as the pour point is high). ONGOING: Maintain viscosity 55 - 60 sec/L with 5 sx of N-VIS-P-PLUS at 30 min per sack. Maintain water loss 6 - 8 ml/30 min with 5 sx of FILTER CHEK at 30 min per sack. Maintain pH at 10 with 5 sx of BARABUF at 30 min per sack. Run the finest possible screens and run the centrifuges only as directed. Run water as required to maintain surface volume and record the rate of water additions.

TOURLY ADDITIONS: Mix 20 sx of BARACARB 5, 60 sx of BARACARB 50, and 10 sx of BARACARB 150 over a full circulation.

For report #025A on 2/18/2003
Activity

Operation at depth(m) 2602
Drilling

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #025A on 2/18/2003	Operation at depth(m) 2602
Rig Activity	MONITOR FOR H2S: Perform HACH test every 2 - 3 hours and report any positive result to the Mudman and Drilling Foreman immediately. Maintain pH 10+ with BARABUF. FOR SEVERE SEEPAGE LOSSES: Mix 30 sx of BARACARB 600 at 6 min per sack - only as directed by the Drilling Foreman. RIG ACTIVITY: Drilled cement to 2576 m MD. Circulated while building mud properties. Drilled out. Leak off test. Drilled 156 mm hole to 2602 m MD. Drilling ahead at report time. Curtis Scoville (403) 852-0317.
Fluid Treatments	TODAY: Mix 15 sx of Sodium Sulphite, and 2 warm drums of Triethanolamine (run with a steam hose as the pour point is high). ONGOING: Maintain viscosity 45+ sec/L with 5 sx of N-VIS-P-PLUS at 30 min per sack. Maintain water loss 6 - 8 ml/30 min with 5 sx of FILTER CHEK at 30 min per sack. Maintain pH at 10 with 5 sx of BARABUF at 30 min per sack. Run the finest possible screens (up to 180's) and run the centrifuges only when directed. Run water as required to maintain surface volume and record the water additions in the tour book. TOURLY ADDITIONS: Mix 20 sx of BARACARB 5 at 8 min per sack, 60 sx of BARACARB 50 at 3 min per sack, and 10 sx of BARACARB 150 at 17 min per sack.
For report #026A on 2/19/2003	**Operation at depth(m) 2661**
Activity	Drilling
Rig Activity	MONITOR FOR H2S: Perform HACH test every 2 - 3 hours and report any positive result to the Mudman and Drilling Foreman immediately. Maintain pH 10 with BARABUF. FOR SEVERE SEEPAGE LOSSES: Mix 30 sx of BARACARB 600 at 6 min per sack - only as directed by the Drilling Foreman. RIG ACTIVITY: Drilled 156 mm hole from 2602 to 2661m MD at check time. Drilling ahead at report time. Curtis Scoville (403) 852-0317.
Fluid Treatments	Maintain viscosity 45 - 50 sec/L with 5 sx of N-VIS-P-PLUS at 30 min per sack. Maintain water loss 6 - 8 ml/30 min with 5 sx of FILTER CHEK at 30 min per sack. Maintain pH at 10 with 5 sx of BARABUF at 30 min per sack. Run the finest possible screens (up to 180's) and run the centrifuges only when directed. Run water ONLY as required to maintain surface volume and record the water additions in the tour book. TOURLY ADDITIONS: Mix 10 sx of BARACARB 5 at 18 min per sack, 30 sx of BARACARB 50 at 6 min per sack, and 5 sx of BARACARB 150 at 36 min per sack.
For report #027A on 2/20/2003	**Operation at depth(m) 2730**
Activity	Drilling
Rig Activity	Drilled ahead to 2730 m MD. Curtis Scoville (403) 852-0317.

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #027A on 2/20/2003	**Operation at depth(m) 2730**
Fluid Treatments	Maintain viscosity 45 - 50 sec/L with 5 sx of N-VIS-P-PLUS at 30 min per sack. Maintain water loss 6 - 8 ml/30 min with 5 sx of FILTER CHEK at 30 min per sack. Maintain pH at 10 with 5 sx of BARABUF at 30 min per sack. Run the finest possible screens (up to 180's) and run the centrifuges only when directed. Run water ONLY as required to maintain surface volume and record the water additions in the tour book. TOURLY ADDITIONS: Mix 20 sx of BARACARB 5 at 9 min per sack, 60 sx of BARACARB 50 at 3 min per sack, and 10 sx of BARACARB 150 at 18 min per sack.
For report #028A on 2/21/2003	**Operation at depth(m) 2805**
Activity	Drilling
Rig Activity	Drilled ahead to 2805 m MD. Running the centrifuge over 1 circ to control density.
	Curtis Scoville (403) 852-0317.
Fluid Treatments	DO NOT MIX BARITE FOR TRIPPING PILLS - Mix 3 sx of BARACARB 5 into 2 m3 of mud for every 10 kg of weight required in the pill. Run water at the shaker at 20 L per min for 1 circulation (165 min). Run 1 centrifuge for 1 circulation, but don't lower the density below 1060 kg/m3. Maintain viscosity 48 - 52 sec/L with 5 sx of N-VIS-P-PLUS at 30 min per sack. Maintain water loss 6 - 8 ml/30 min with 5 sx of FILTER CHEK at 30 min per sack. Maintain pH at 10 with 5 sx of BARABUF at 30 min per sack. TOURLY ADDITIONS: Mix 20 sx of BARACARB 5 at 8 min per sack, 60 sx of BARACARB 50 at 3 min per sack, and 10 sx of BARACARB 150 at 17 min per sack.
For report #029A on 2/22/2003	**Operation at depth(m) 2878**
Activity	Logging
Rig Activity	Drilled ahead to 2878 m MD. Wiper tripped. No hole problems reported on the trip. POOH to log with Schlumberger.
	Curtis Scoville (403) 852-0317.
Fluid Treatments	No treatments required for logging. If required to weight up - it will take 105 sx of BARACARB (70 sx of BARACARB 50, 25 sx of BARACARB 5, and 10 sx of BARACARB 150) to increase the entire active system by 10 kg/m3. Run 15 - 20 L/min of water at the shaker when circulating.
For report #030A on 2/23/2003	**Operation at depth(m) 2878**
Activity	Circulating after logging
Rig Activity	Logging with Schlumberger at report time.
	Curtis Scoville (403) 852-0317.
Fluid Treatments	No treatments required for logging. If required to weight up - it will take 105 sx of BARACARB (70 sx of BARACARB 50, 25 sx of BARACARB 5, and 10 sx of BARACARB 150) to increase the entire active system by 10 kg/m3. Run 15 - 20 L/min of water at the shaker when circulating.
For report #031A on 2/25/2003	**Operation at depth(m) 2878**
Activity	Circulating

Well: ACC Arrowhead River I-75
Operator: Anadarko

Operations Log Recap

For report #031A on 2/25/2003	Operation at depth(m) 2878
Rig Activity	Logged. Ran and set bridge plug at 2861 m MD at 16:00 on Feb 24. RIH with scraper. Circulating at 2558 m at report time.
	Curtis Scoville (403) 852-0317.
Fluid Treatments	Run 10 L/min of water for 2 circulations.

For report #032A on 2/28/2003	Operation at depth(m) 2878
Activity	Installing Wellhead
Rig Activity	Ran packer on wireline. Ran production string to packer at 2554 m. Displaced to inhibited water. Latched into packer. Installing well head at report time.
	Curtis Scoville (403) 852-0317.
Fluid Treatments	Transfer BARADRIL-N water based mud to C-55.

Bit Record

Well : ACC Arrowhead River I-75

Operator: Anadarko

Run No	Bit No	Bit Size mm	Bit Manufacturer	Bit Type	Bit Style	IADC Code	Serial No	Jet or TFA	Depth Out m	Run Length m	ROP m / hr	WOB kg	Bit RPM	Pump Pres kPa	Pump Output m3/min	Fluid Type	Fluid Density kg/m3	Dev Angle	Bit Grading	Reason Pulled
1	1A	311	WESTERN	X1CXP	MT		J25767	3x15.9|1x28	242.0	242.0	0.0	0.0	0	2,420	1.600	AQUAGEL Mud	1,100	0.50		
2	2A	311	WESTERN	X1GXP	MT		J17733	3x15.9	413.0	171.0	0.0	0.0	0	6,400	2.300	AQUAGEL Mud	1,140	1.50		
3	3A	311	WESTERN	M22WESTERN	IN		TC3033	3x15 9	488.0	75.0	0.0	0 0	0	11,000	2 500	AQUAGEL Mud	1,150	2.00		
4	3ARR	311	WESTERN	M22WESTERN	IN		TC3033	3x15.9	631.0	143.0	0.0	0.0	0	11,000	2.500	AQUAGEL Mud	1,150	2.00		
5	3ARR	311	WESTERN	M22WESTERN	IN		tc3033	3x15.9	655.0	24.0	0.0	0 0	0	11,000	2.500	AQUAGEL Mud	1,150	2 00		
6	4	216	HCC	UD 513	FC		00559	5x15.9	2,511.0	1,856.0	0.0	0.0	0	8,050	1.300	ENVIROMUL	935	14.00		
7	2	216	RTC	EHP43A	IN	437	TC1043	3x11.1	2,586.0	75.0	0.0	0.0	0	7,600	1.390	ENVIROMUL	930	14.00		
8	3	156	RBI	C15LRG	IN	437X	CF687	3x17.5|1x30	2,874.0	288.0	0.0	0.0	0	9,600	0.780	BARADRIL-N	1,090	20.00		

Hydraulics Summary Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Rpt No	Rpt Date	Hole MD	Hole Size	ECD @ Csg Shoe	ECD @ Bit	Flow Rate	Btms Up Time	Total Circ Time	Pres Drop Pipe	Pres Drop Bit	Pres Drop Ann	Total Pres Drop	Hyd Meth	Circ Pres	Ann Vel Riser	Ann Vel DP	Ann Vel DC	Bit HHSI	Bit Jet Vel	Bit Imp Force
		m	mm	kg/m3	kg/m3	m3/min	Min	Min	kPa	kPa	kPa	kPa		kPa	m/min	m/min	m/min	kW/mm	m/sec	N
001	1/24/03	0.0	0																	
002	1/25/03	111.0	345		1,135	1.610	4.53	24.58	1,118	299	33	1,540	HB	2,420			30.8	1,138.50	22.1	656.84
003	1/26/03	258.0	345		1,137	2.190	8.70	23.23	5,515	2,337	17	8,086	HB	5,200		26.3	41.8	841.26	61.2	2,523.27
004	1/27/03	404.0	345		1,148	2.280	13.69	40.17	7,707	2,552	32	10,526	HB	6,400		27.4	43.5	955.92	63.6	2,755.71
005	1/28/03	488.0	345		1,150	2.270	16.82	45.14	9,205	2,553	38	12,041	HB	8,390		27.3	43.3	952.38	63.4	2,756.92
006	1/29/03	560.0	345		1,154	2.490	17.65	42.15	12,011	3,038	76	15,914	HB	11,850		29.9	47.5	1,241.59	69.4	3,280.49
007	1/30/03	631.0	345		1,159	2.510	19.90	44.09	8,315	3,104	57	12,263	HB	11,000		30.1	47.8	1,276.19	69.9	3,350.89
008	1/31/03	655.0	345																	
009	2/01/03	655.0	345																	
010	2/02/03	655.0	345	920	920	1.290	13.29	45.72		236		1,736	HB	2,600		44.2	78.9	103.52	21.6	425.04
011	2/03/03	791.0	345	910	910	1.630	17.46	44.51		374		2,374	HB	7,880		55.9	99.7	207.11	27.3	672.40
012	2/04/03	1,058.0	345	934	929	1.650	30.64	57.73	3,723	390	91	6,299	HB	9,540		19.9	23.5	219.20	27.7	700.87
013	2/05/03	1,282.0	345	923	917	1.630	42.56	85.87	3,878	374	90	6,434	HB	8,130		19.6	23.1	207.11	27.3	672.40
014	2/06/03	1,408.0	227	923	929	1.630	24.47	66.26	3,968	374	256	6,689	HB	8,590		53.9	93.6	207.11	27.3	672.40
015	2/07/03	1,617.0	227	943	949	1.630	28.35	68.92	4,374	382	292	7,142	HB	8,850		53.9	93.6	211.66	27.3	687.18
016	2/08/03	1,800.0	227	944	949	1.630	31.78	78.63	5,025	381	336	7,844	HB	9,250		53.8	93.5	210.91	27.2	685.56
017	2/09/03	2,017.0	227	939	943	1.650	35.23	75.07	5,034	392	360	7,883	HB	8,900		54.7	95.1	220.45	27.7	704.79
018	2/10/03	2,179.0	227	940	944	1.680	37.57	79.14	5,399	405	391	8,294	HB	9,500		55.6	96.7	231.47	28.1	728.08
019	2/11/03	2,423.0	227	928	931	1.380	51.11	106.72	4,595	271	268	7,214	HB	8,050		45.7	79.4	127.39	23.1	488.07
020	2/12/03	2,530.0	227	943	945	1.380	53.42	114.78	4,333	3,233	243	7,989	HB	7,080		45.7	79.4	3,292.49	79.1	1,698.48
021	2/13/03	2,575.0	227	934	936	1.380	54.82	116.02	4,527	3,193	277	8,085	HB	7,210		45.7	79.4	1,501.67	79.1	1,680.31
022	2/14/03	2,586.0	227	950	952	1.390	54.60	110.54	4,764	3,305	305	8,960	HB	7,600		46.0	80.0	1,564.49	79.7	1,736.14
023	2/16/03	2,586.0	227																	
024	2/17/03	2,586.0	227			0.810	42.62	150.25						5,000		59.0	95.5		9.4	
025	2/18/03	2,602.0	164	1,106	1,106	0.820	42.41	162.10	6,755	51	2,159	9,000	HB	7,720		59.8	96.9	27.12	9.5	131.73
026	2/19/03	2,661.0	164	1,130	1,132	0.780	45.41	182.15	6,436	48	2,354	8,872	HB	8,240		57.3	92.8	24.29	9.1	123.20
027	2/20/03	2,730.0	164	1,153	1,158	0.790	46.05	173.54	7,269	50	2,576	9,932	HB	8,900		58.1	94.2	25.87	9.2	129.29
028	2/21/03	2,805.0	164	1,171	1,177	0.780	48.16	165.06	7,313	49	2,749	10,149	HB	9,600		52.4	80.7	25.11	9.1	127.35
029	2/22/03	2,878.0	164																	

Hydraulics Summary Report

Well : ACC Arrowhead River I-75
Operator: Anadarko

Rpt No	Rpt Date	Hole MD	Hole Size	ECD @ Csg Shoe	ECD @ Bit	Flow Rate	Btms Up Time	Total Circ Time	Pres Drop Pipe	Pres Drop Bit	Pres Drop Ann	Total Pres Drop	Hyd Meth	Circ Pres	Ann Vel Riser	Ann Vel DP	Ann Vel DC	Bit HHSI	Bit Jet Vel	Bit Imp Force
		m	mm	kg/m3	kg/m3	m3/min	Min	Min	kPa	kPa	kPa	kPa		kPa	m/min	m/min	m/min	kW/mm	m/sec	N
030	2/23/03	2,878.0	164																	
031	2/25/03	2,878.0	164	1,174	1,174	0.560	60.50	128.94	4,054	6	1,958	6,042	HB	5,620		41.3	66.9	2.17	3.1	32.06
032	2/28/03	2,878.0	164																	

Deviation Actual

Well : ACC Arrowhead River I-75
Operator: Anadarko

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
1/25/2003	33.0	33.0	0.50	0.0	
1/25/2003	61.0	61.0	0.75	0.0	
1/26/2003	89.0	89.0	0.50	0.0	
1/26/2003	117.0	117.0	0.25	0.0	
1/26/2003	145.0	145.0	0.75	0.0	
1/26/2003	178.0	178.0	0.50	0.0	
1/27/2003	205.0	205.0	0.75	0.0	
1/27/2003	233.0	233.0	1.25	0.0	
1/27/2003	256.0	256.0	1.25	0.0	
1/27/2003	285.0	285.0	0.88	0.0	
1/27/2003	313.0	313.0	1.13	0.0	
1/27/2003	346.0	346.0	0.75	0.0	
1/28/2003	374.0	374.0	0.75	0.0	
1/28/2003	398.0	398.0	1.50	0.0	
1/28/2003	419.0	419.0	1.50	0.0	
1/29/2003	436.0	436.0	1.50	0.0	
1/29/2003	455.0	455.0	1.50	0.0	
1/29/2003	479.0	479.0	1.25	0.0	
1/30/2003	492.0	492.0	1.25	0.0	
1/30/2003	530.0	530.0	1.25	0.0	
1/30/2003	563.0	563.0	2.00	0.0	
1/30/2003	591.0	591.0	2.75	0.0	
1/30/2003	611.0	611.0	2.75	0.0	
1/31/2003	655.0	655.0	2.00	0.0	
2/3/2003	668.7	668.7	1.80	5.1	
2/3/2003	678.2	678.2	1.90	359.9	
2/3/2003	706.8	706.7	1.30	349.0	
2/3/2003	735.4	735.4	1.30	345.5	
2/3/2003	754.4	754.4	1.30	322.8	
2/3/2003	773.2	773.1	1.50	320.3	
2/3/2003	792.2	792.2	2.00	310.6	
2/3/2003	820.7	820.6	2.40	298.3	
2/3/2003	849.2	849.1	2.70	299.6	
2/3/2003	877.5	877.4	3.20	289.5	
2/3/2003	906.1	905.9	3.10	289.7	
2/4/2003	934.7	934.5	3.60	295.8	
2/4/2003	953.7	953.4	3.40	307.6	
2/4/2003	963.2	962.9	3.00	322.3	
2/4/2003	982.2	981.9	2.80	329.5	
2/4/2003	1,010.8	1,010.5	2.50	349.6	
2/4/2003	1,039.3	1,038.9	2.60	14.1	

Deviation Actual

Well : ACC Arrowhead River I-75
Operator: Anadarko

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
2/4/2003	1,068.0	1,067.6	2.80	18.7	
2/4/2003	1,087.0	1,086.6	2.90	25.1	
2/4/2003	1,106.0	1,105.6	2.90	39.8	
2/4/2003	1,115.5	1,115.1	3.30	47.6	
2/4/2003	1,144.0	1,143.5	3.80	59.2	
2/4/2003	1,163.1	1,162.6	3.60	63.9	
2/4/2003	1,172.5	1,171.9	3.50	66.2	
2/4/2003	1,182.1	1,181.5	3.20	73.4	
2/4/2003	1,191.6	1,191.0	2.90	82.4	
2/5/2003	1,201.1	1,200.5	2.80	100.7	
2/5/2003	1,210.6	1,210.0	3.60	114.3	
2/5/2003	1,220.1	1,219.5	4.60	123.6	
2/5/2003	1,229.6	1,228.9	5.70	126.6	
2/5/2003	1,239.1	1,238.4	6.00	125.0	
2/5/2003	1,248.6	1,247.8	6.20	122.6	
2/5/2003	1,258.2	1,257.4	6.20	123.1	
2/5/2003	1,267.5	1,266.6	6.50	122.2	
2/5/2003	1,277.0	1,276.0	7.00	121.3	
2/5/2003	1,286.5	1,285.5	7.40	117.6	
2/5/2003	1,296.1	1,295.0	8.40	113.3	
2/5/2003	1,305.6	1,304.4	9.40	111.3	
2/6/2003	1,315.1	1,313.7	10.70	112.5	
2/6/2003	1,324.5	1,322.9	11.90	113.7	
2/6/2003	1,334.0	1,332.2	12.80	114.8	
2/6/2003	1,343.5	1,341.5	13.70	117.0	
2/6/2003	1,353.1	1,350.8	14.30	117.2	
2/6/2003	1,362.5	1,359.9	14.50	116.4	
2/6/2003	1,372.4	1,369.5	14.30	115.4	
2/6/2003	1,381.9	1,378.7	14.30	116.0	
2/6/2003	1,391.4	1,387.9	14.60	116.7	
2/6/2003	1,400.9	1,397.1	15.30	117.0	
2/6/2003	1,410.4	1,406.2	16.00	117.1	
2/6/2003	1,419.9	1,415.3	16.30	118.2	
2/6/2003	1,429.4	1,424.4	16.30	120.4	
2/6/2003	1,438.9	1,433.6	16.20	120.3	
2/7/2003	1,448.4	1,442.7	16.20	119.6	
2/7/2003	1,458.0	1,451.9	16.20	119.0	
2/7/2003	1,467.5	1,461.0	16.20	117.1	
2/7/2003	1,477.0	1,470.2	16.10	116.1	
2/7/2003	1,486.5	1,479.3	16.10	117.3	
2/7/2003	1,495.9	1,488.3	16.10	118.8	

Deviation Actual

Well : ACC Arrowhead River I-75
Operator: Anadarko

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
2/7/2003	1,505.5	1,497.3	16.00	121.4	
2/7/2003	1,515.0	1,506.7	15.80	122.0	
2/7/2003	1,524.5	1,515.8	15.40	121.0	
2/7/2003	1,534.0	1,525.0	15.30	119.4	
2/7/2003	1,543.5	1,534.1	15.60	120.1	
2/7/2003	1,553.0	1,543.3	16.10	121.3	
2/7/2003	1,562.5	1,552.4	16.30	123.4	
2/7/2003	1,572.0	1,561.5	16.20	123.1	
2/7/2003	1,581.5	1,570.7	16.00	122.7	
2/7/2003	1,591.0	1,579.8	16.20	122.6	
2/7/2003	1,610.0	1,598.0	17.20	122.6	
2/7/2003	1,619.5	1,607.0	17.00	122.2	
2/7/2003	1,629.0	1,616.1	16.70	120.7	
2/7/2003	1,638.5	1,625.2	16.50	118.6	
2/7/2003	1,648.0	1,634.4	16.60	119.4	
2/7/2003	1,657.5	1,643.4	17.00	121.3	
2/7/2003	1,667.0	1,652.5	17.00	122.1	
2/7/2003	1,676.5	1,661.6	16.90	121.8	
2/8/2003	1,686.0	1,670.7	16.70	121.1	
2/8/2003	1,695.5	1,679.8	16.50	121.2	
2/8/2003	1,705.0	1,688.9	16.00	119.5	
2/8/2003	1,714.5	1,698.1	15.40	117.7	
2/8/2003	1,724.0	1,707.3	14.90	115.7	
2/8/2003	1,733.5	1,716.4	15.10	115.6	
2/8/2003	1,743.0	1,725.6	15.20	116.6	
2/8/2003	1,752.5	1,734.8	14.90	118.2	
2/8/2003	1,762.0	1,744.0	15.00	119.5	
2/8/2003	1,771.5	1,753.1	15.00	121.5	
2/8/2003	1,781.0	1,762.3	15.40	121.9	
2/8/2003	1,790.5	1,771.4	15.80	121.4	
2/8/2003	1,800.0	1,780.6	15.80	121.2	
2/8/2003	1,809.5	1,789.7	15.50	121.7	
2/8/2003	1,819.0	1,798.9	15.10	120.6	
2/8/2003	1,828.5	1,808.1	14.70	120.3	
2/8/2003	1,838.0	1,817.3	14.50	119.8	
2/8/2003	1,847.5	1,826.5	14.70	119.8	
2/8/2003	1,857.1	1,835.7	15.20	119.8	
2/8/2003	1,866.6	1,844.9	15.70	120.3	
2/9/2003	1,876.1	1,854.0	15.50	120.8	
2/9/2003	1,885.6	1,863.2	15.20	120.4	
2/9/2003	1,895.1	1,872.4	15.00	119.5	

Deviation Actual

Well : ACC Arrowhead River I-75
Operator: Anadarko

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
2/9/2003	1,904.6	1,881.6	15.20	119.6	
2/9/2003	1,914.1	1,890.7	15.60	119.2	
2/9/2003	1,923.5	1,899.8	15.50	119.1	
2/9/2003	1,933.0	1,908.9	15.30	119.3	
2/9/2003	1,942.5	1,918.1	14.91	118.3	
2/9/2003	1,952.0	1,927.3	14.60	117.8	
2/9/2003	1,961.5	1,936.5	15.00	119.1	
2/9/2003	1,971.0	1,945.6	15.90	120.7	
2/9/2003	1,980.5	1,954.8	15.90	121.2	
2/9/2003	1,990.0	1,963.9	15.60	120.1	
2/9/2003	1,999.5	1,973.1	15.10	119.2	
2/9/2003	2,009.0	1,982.2	14.80	117.1	
2/9/2003	2,018.5	1,991.4	15.10	116.5	
2/9/2003	2,028.0	2,000.6	15.80	117.8	
2/9/2003	2,037.5	2,009.7	16.60	119.8	
2/9/2003	2,047.0	2,018.8	16.60	120.5	
2/9/2003	2,056.5	2,027.9	16.10	119.7	
2/9/2003	2,066.0	2,037.1	15.80	119.0	
2/9/2003	2,075.5	2,046.2	15.40	118.5	
2/9/2003	2,085.0	2,055.4	15.10	119.4	
2/9/2003	2,094.5	2,064.5	15.20	121.4	
2/10/2003	2,104.0	2,073.7	15.40	122.6	
2/10/2003	2,113.5	2,082.9	15.30	122.6	
2/10/2003	2,123.0	2,092.0	14.90	122.0	
2/10/2003	2,132.6	2,101.3	14.50	121.2	
2/10/2003	2,142.1	2,110.5	14.20	118.7	
2/10/2003	2,151.6	2,119.7	14.60	117.1	
2/10/2003	2,161.1	2,128.9	14.90	115.8	
2/12/2003	2,208.5	2,174.7	14.40	118.1	
2/12/2003	2,256.2	2,221.0	13.90	118.3	
2/12/2003	2,303.9	2,267.1	15.00	119.2	
2/12/2003	2,351.4	2,313.1	14.60	119.0	
2/12/2003	2,408.5	2,368.4	13.90	119.4	
2/12/2003	2,456.0	2,414.3	15.00	122.0	
2/12/2003	2,484.7	2,442.1	14.20	122.2	
2/12/2003	2,511.2	2,467.8	13.50	120.0	
2/19/2003	2,548.0	2,503.0	11.02	119.8	
2/19/2003	2,576.0	2,531.0	9.55	118.3	
2/20/2003	2,655.0	2,608.0	12.12	106.9	
2/21/2003	2,740.0	2,692.0	15.00	101.9	
2/22/2003	2,864.0	2,809.0	20.00	96.9	

Well: ACC Arrowhead River I-75
Operator: Anadarko

Personnel Register

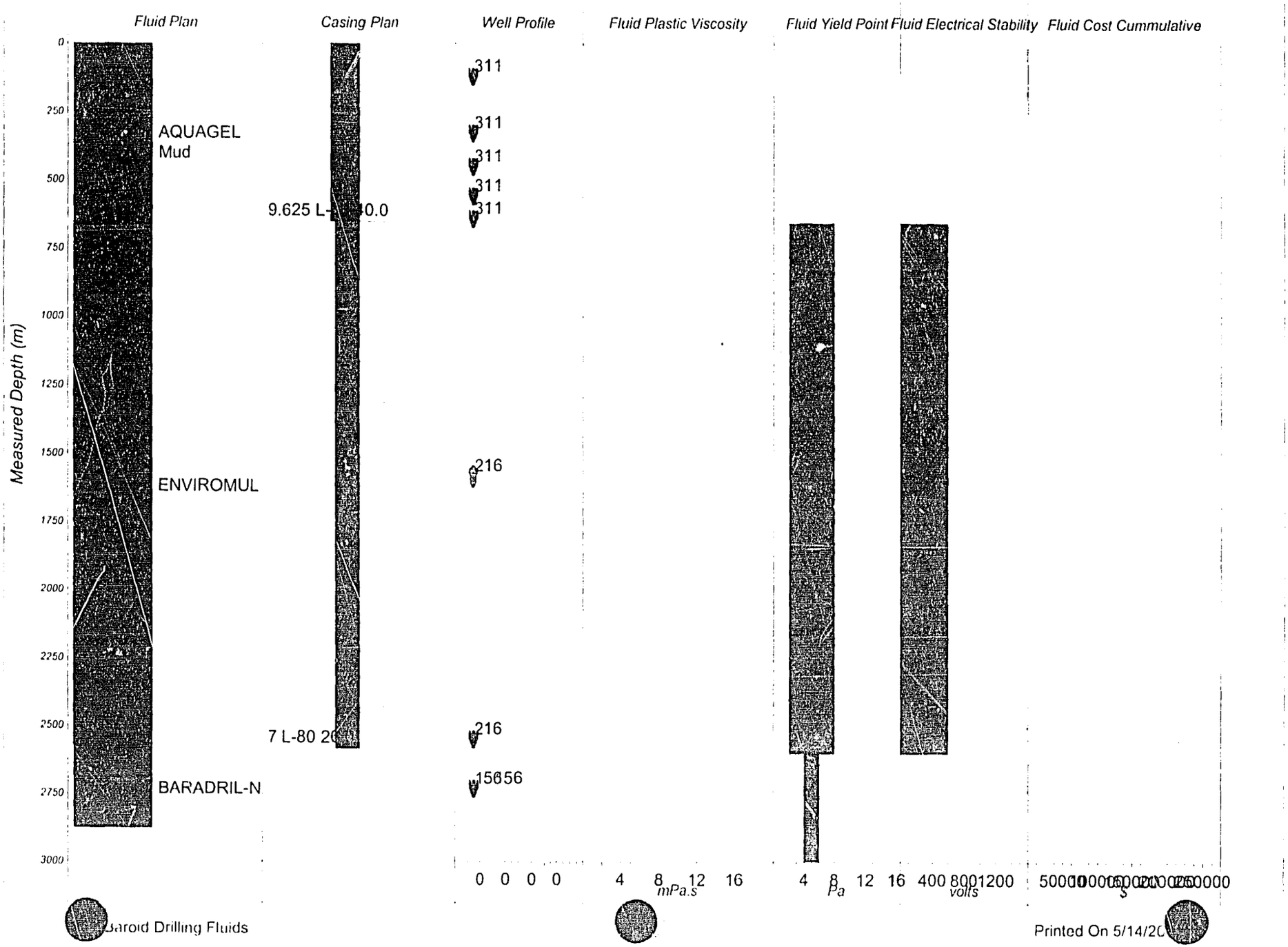
Baroid Field Service Representatives: Curtis Scoville and John Heppleston

Baroid Technical Representative: Al Toney

Well Profile vs Properties and Cost

Well : ACC Arrowhead River I-75

Operator : Anadarko



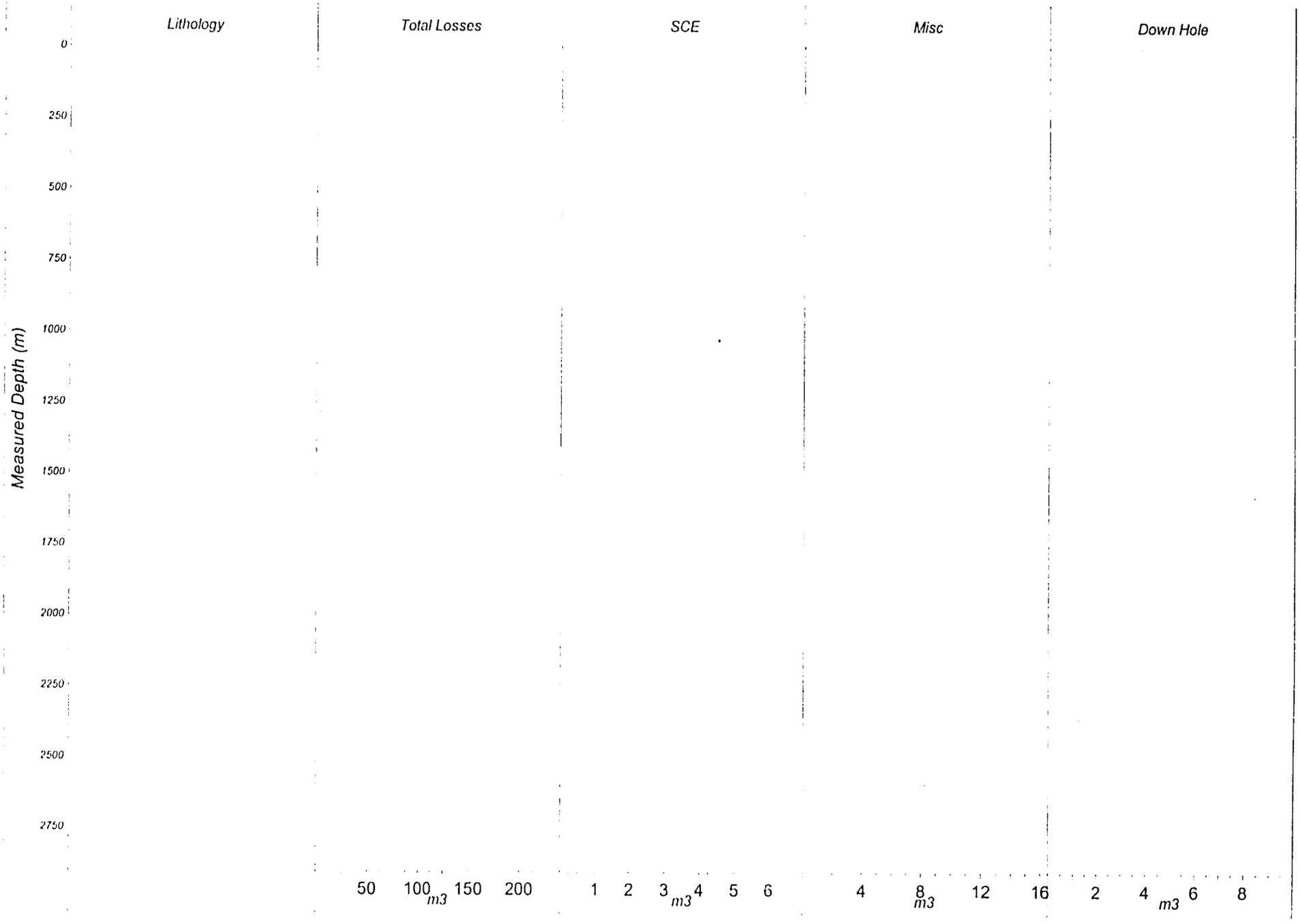
Baroid Drilling Fluids

Printed On 5/14/20

cdw std Fluid Losses vs Depth

Well : ACC Arrowhead River I-75

Operator : Anadarko



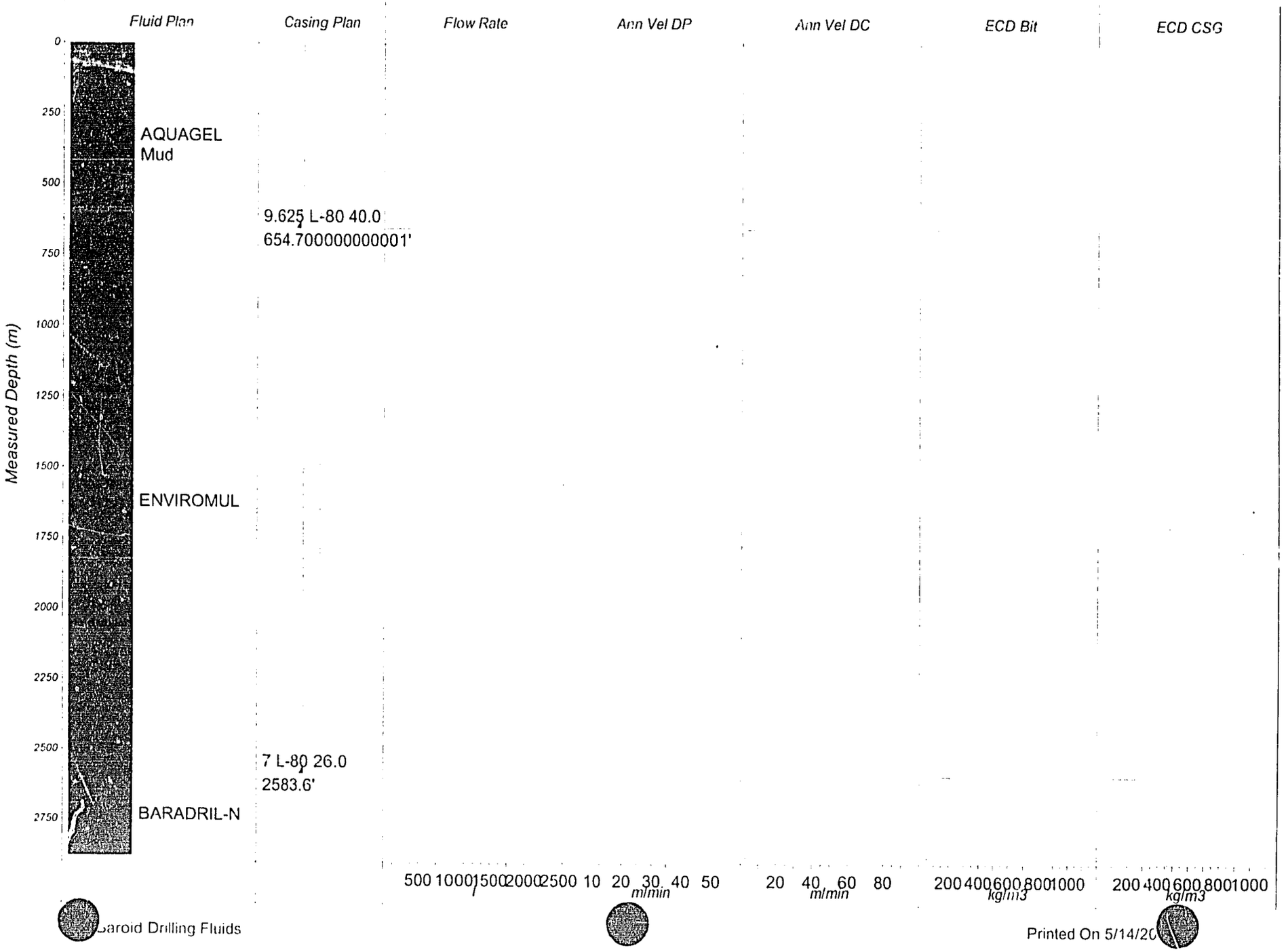
Baroid Drilling Fluids

Printed On 5/14/2003

Hydraulics vs Depth Set 2

Well : ACC Arrowhead River I-75

Operator : Anadarko



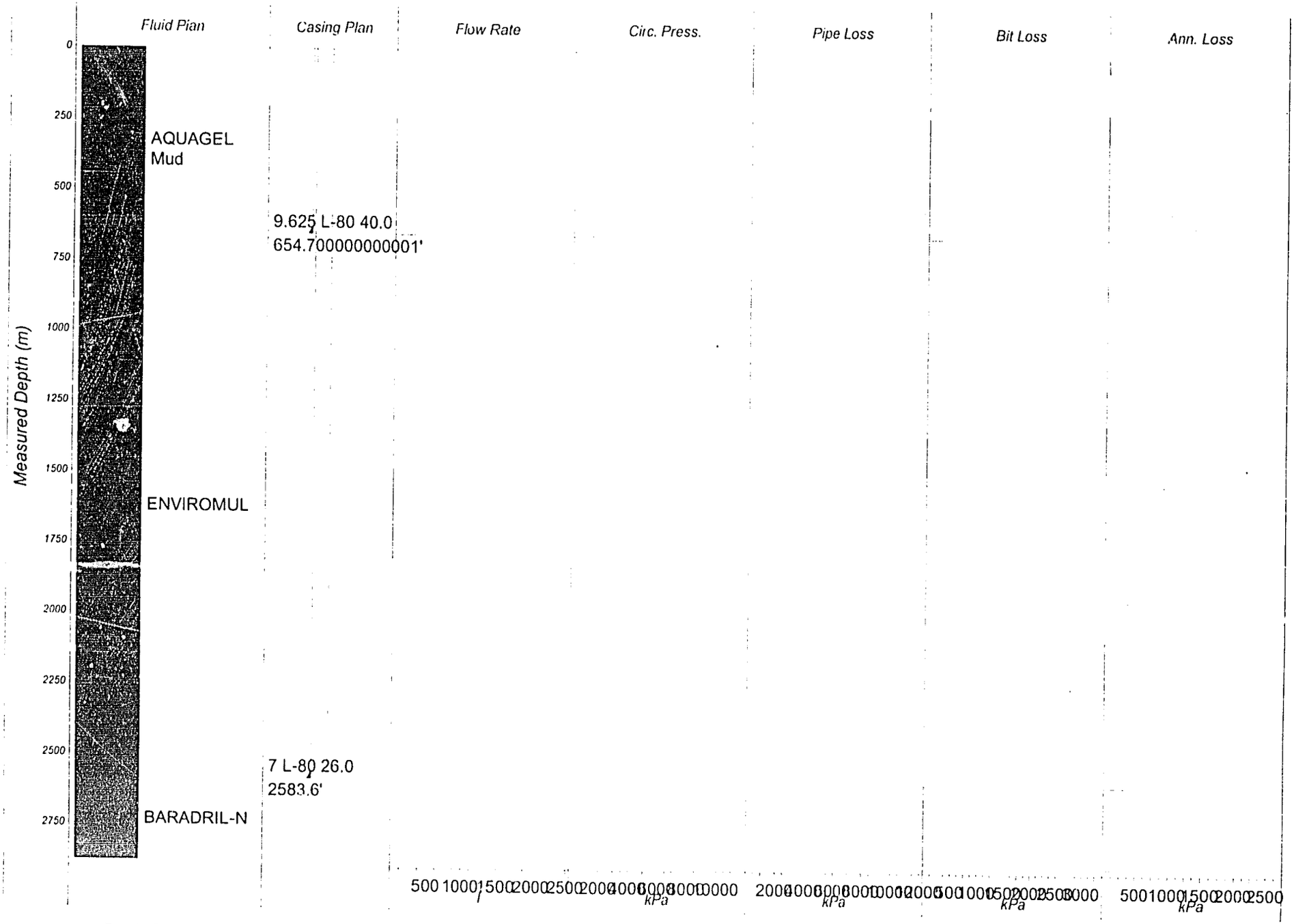
Baroid Drilling Fluids

Printed On 5/14/20

Hydraulics vs Depth Set 1

Well : ACC Arrowhead River I-75

Operator : Anadarko



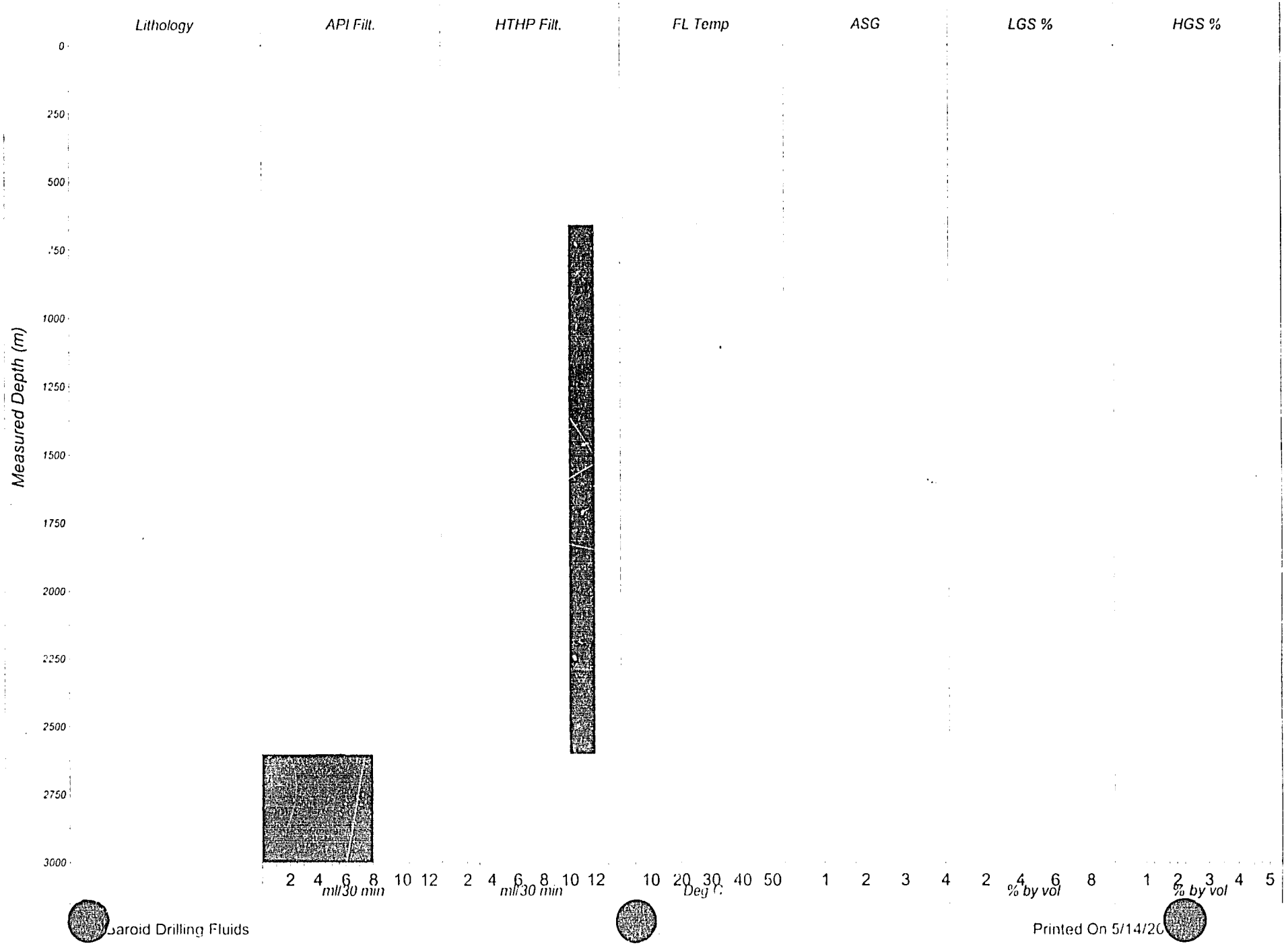
Baroid Drilling Fluids

Printed On 5/14/2003

Recap Properties Water Based vs Depth Set 3

Well : ACC Arrowhead River I-75

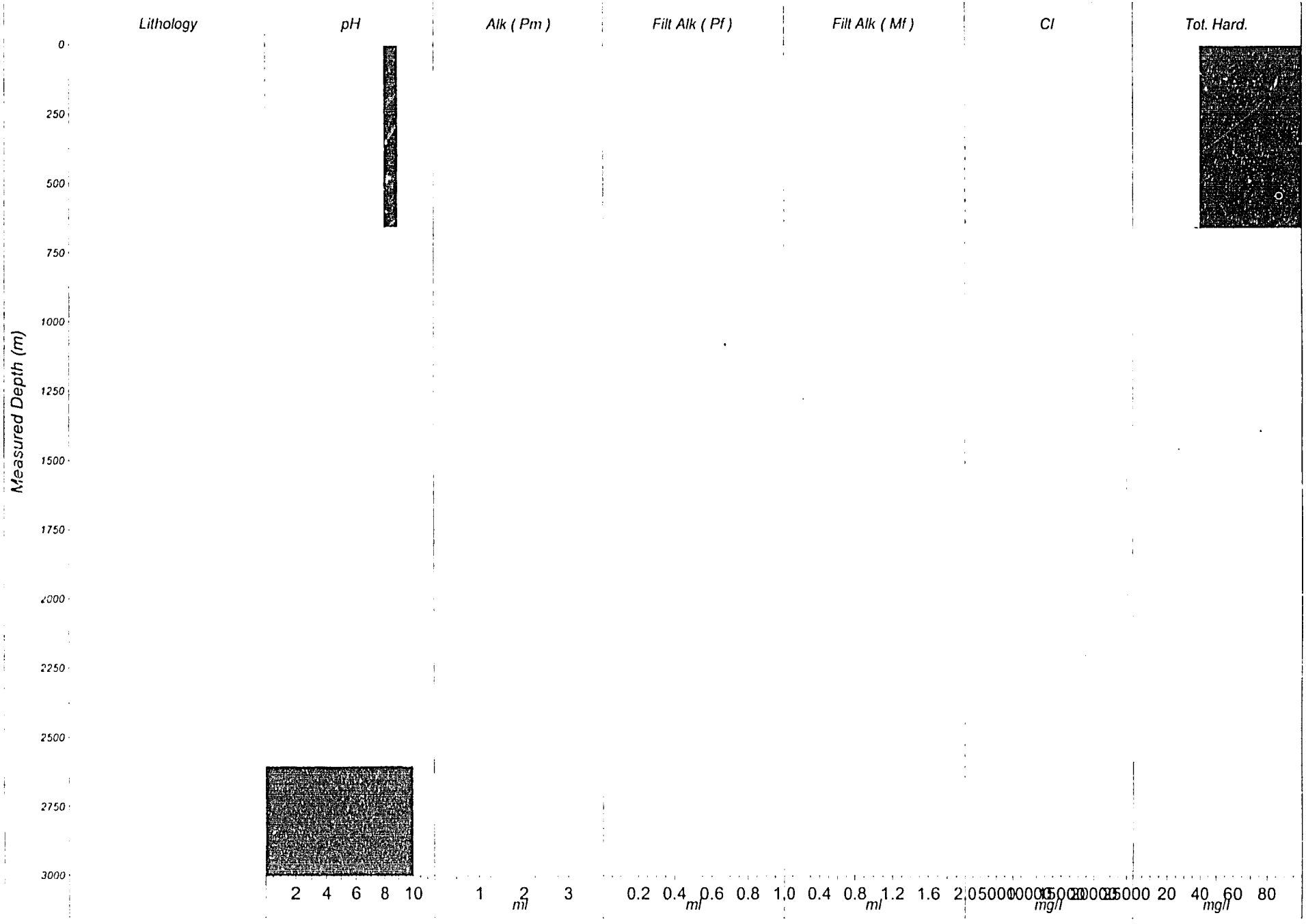
Operator : Anadarko



Recap Properties Water Based vs Depth Set 2

Well : ACC Arrowhead River I-75

Operator : Anadarko



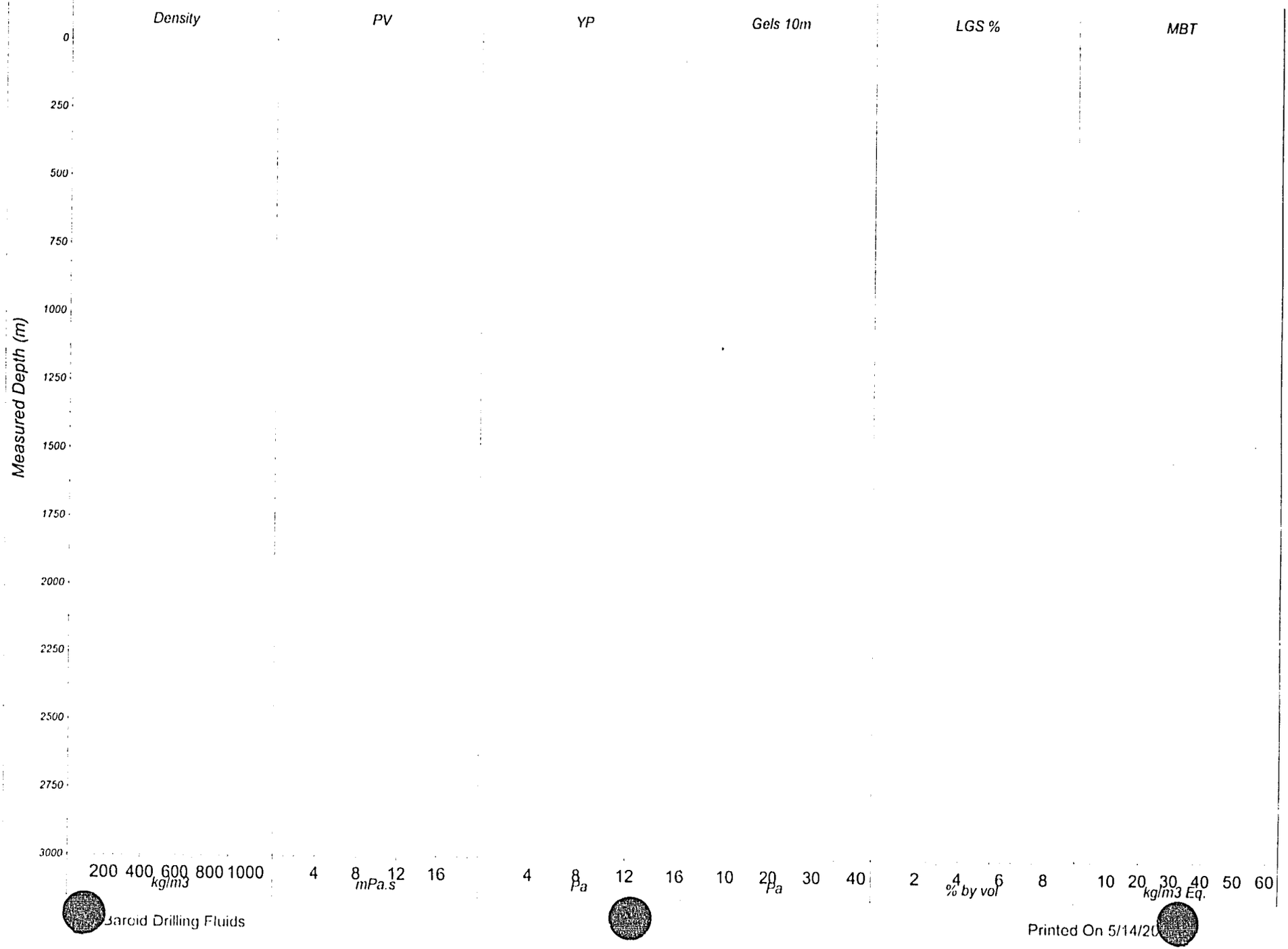
Baroid Drilling Fluids

Printed On 5/14/2003

Recap Properties Water Based vs Depth Set 1

Well : ACC Arrowhead River I-75

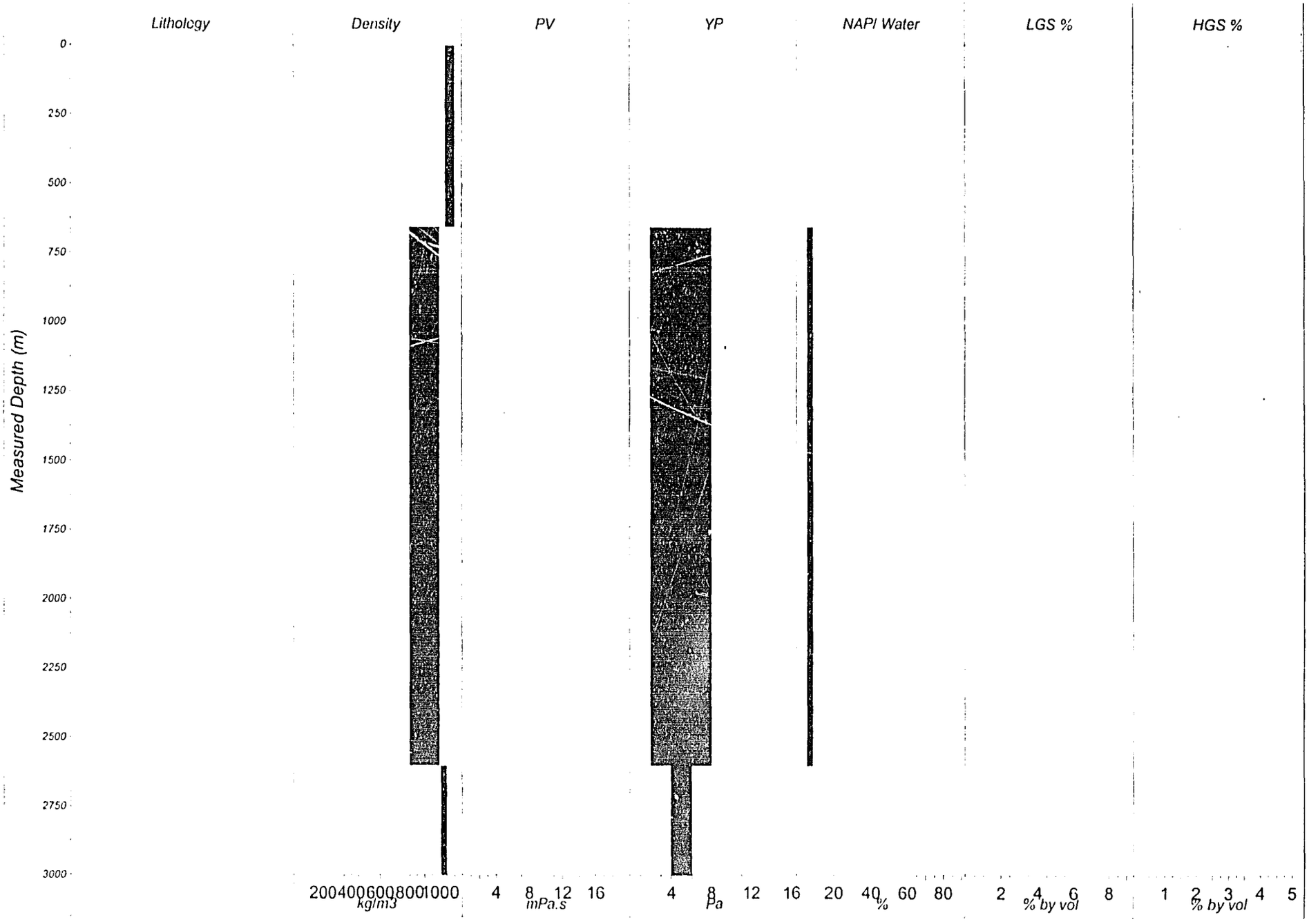
Operator : Anadarko



Recap Properties NAP Based Set 2

Well : ACC Arrowhead River I-75

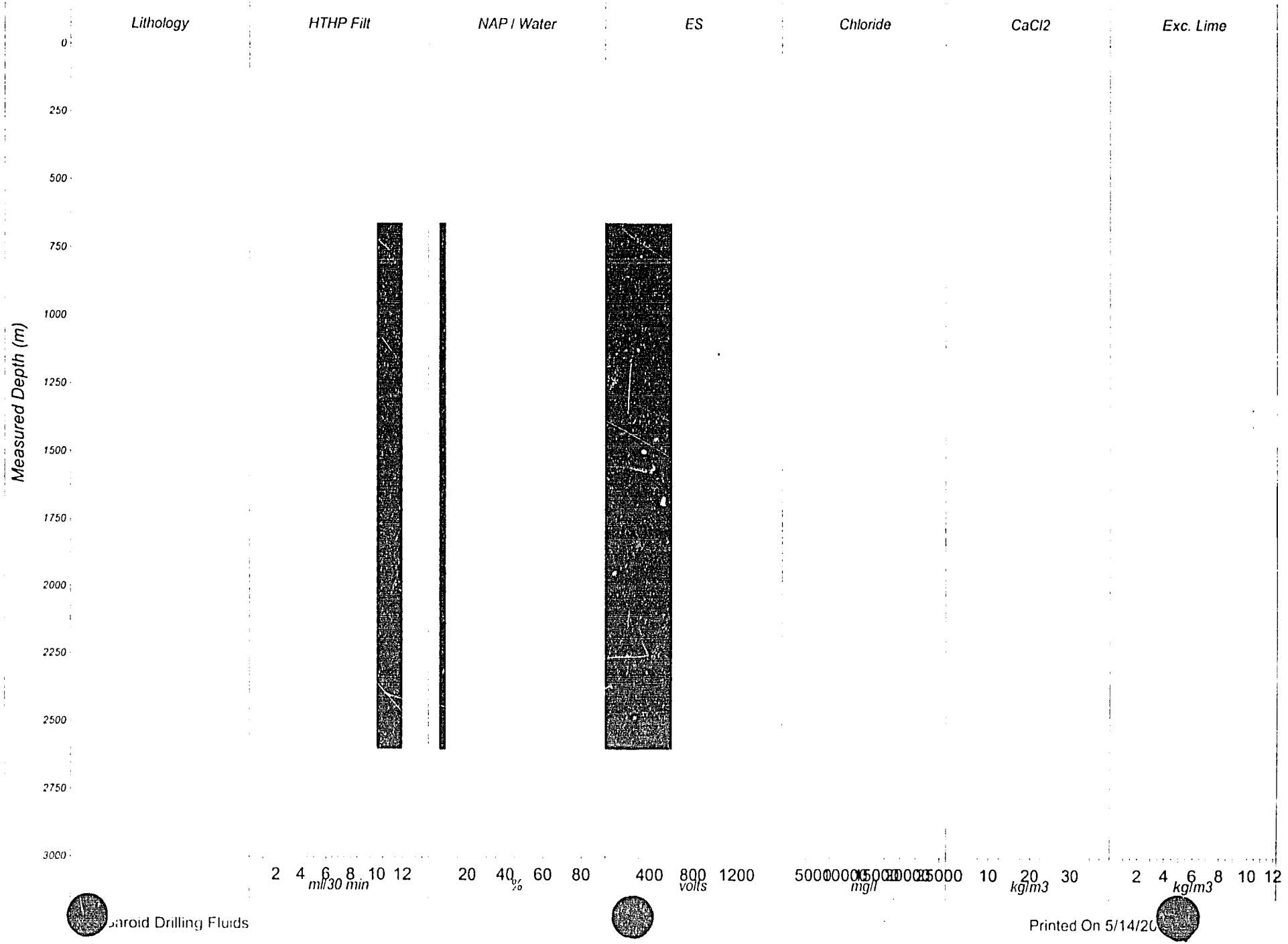
Operator : Anadarko



Recap Properties NAP Based API Method

Well : ACC Arrowhead River I-75

Operator : Anadarko



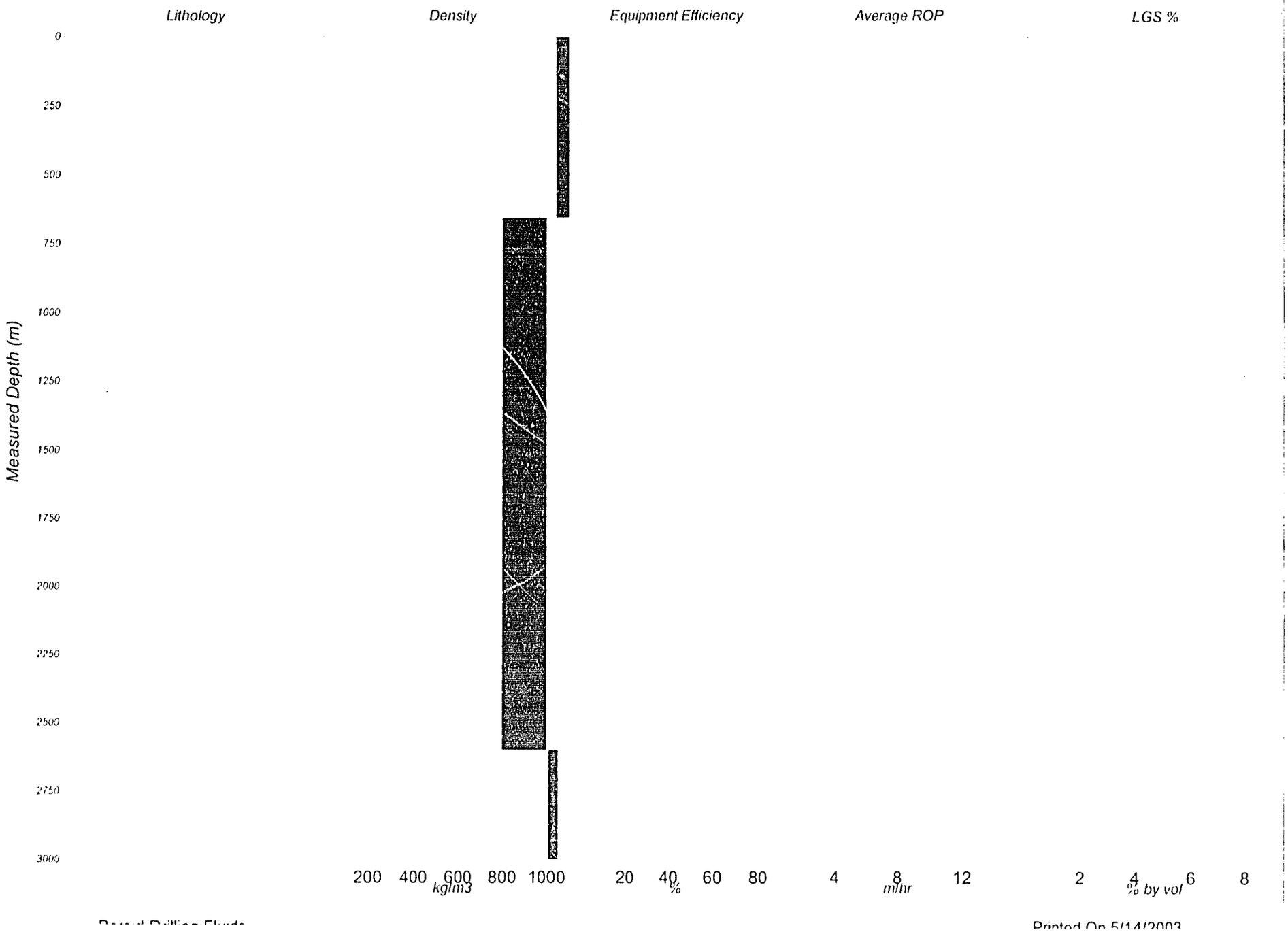
Baroid Drilling Fluids

Printed On 5/14/20

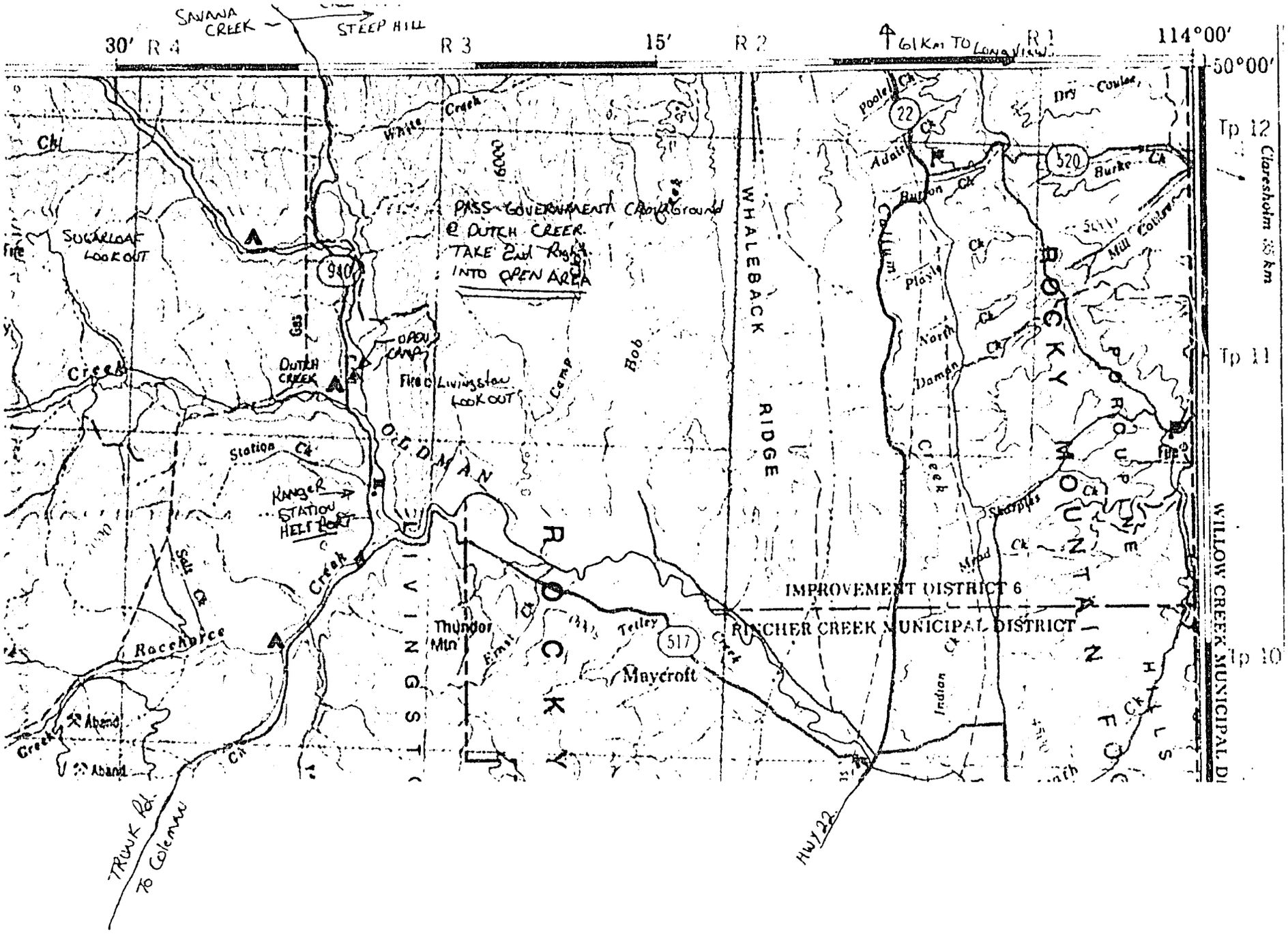
cdw std Solids Control vs Depth

Well : ACC Arrowhead River I-75

Operator : Anadarko



Printed On 5/14/2003


SAWANA CREEK
STEEP HILL
30'
R 4
R 3
15'
R 2
61 Km TO LONGVIEW
R 1
114°00'
50°00'
Tp 12
Tp 11
Tp 10
Clareholm 35 km
WILLOW CREEK MUNICIPAL DI
PASS GOVERNMENT CAMPGROUND
@ DUTCH CREEK.
TAKE 2nd Right
INTO OPEN AREA
SUGARLOAF LOOKOUT
940
Dutch Creek
OPEN CAMP
Fire
Livingstone LOOKOUT
Camp
Hob
WHALEBACK RIDGE
Station Ck
RANGER STATION HELIPORT
OLDMAN
ROCKY
RANGE
Thunder Mtn
Timber
517
Maycroft
Rocky Rapids
Abnd
TRUNK Rd.
To Colemen
HWY 22
Poole Ck
22
Dry Coulee
Adair
Burton Ck
520
Burke Ck
Mill Coulee
Plovie
North Dampen Ck
Creek
Skeeples
Mud Ck
IMPROVEMENT DISTRICT 6
RANCHER CREEK MUNICIPAL DISTRICT
Indian Ck
FOOTHILLS

Gyro Surveys and SS to TD

Schlumberger

Report Date:	May 23, 2003	Survey / DLS Computation Method:	Minimum Curvature / Lubinski
Client:	Anadarko Canada Energy Ltd.	Vertical Section Azimuth:	0.000°
Field:	ARROWHEAD (CDN-NAD27)	Vertical Section Origin:	N 0.000 m, E 0.000 m
Structure / Slot:	Anadarko/I-75 / Job #40008468	TVD Reference Datum:	KB
Well:	Arrowhead I-75	TVD Reference Elevation:	517.0 m relative to MSL
Borehole:	New Borehole	Sea Bed / Ground Level Elevation:	512.000 m relative to MSL
UWI/API#:		Magnetic Declination:	24.766°
Survey Name / Date:	Gyro Surveys / May 23, 2003	Total Field Strength:	58828.436 nT
Tort / AHD / DDI / ERD ratio:	84.011° / 457.15 m / 5.109 / 0.162	Magnetic Dip:	78.734°
Grid Coordinate System:	NAD27 UTM Zone 10N	Declination Date:	May 23, 2003
Location Lat/Long:	N 60 34 42.278, W 122 58 32.628	Magnetic Declination Model:	BGGM 2002
Location Grid N/E Y/X:	N 6715625.280 m, E 501330.080 m	North Reference:	True North
Grid Convergence Angle:	+0.02113993°	Total Corr Mag North -> True North:	+24.766°
Grid Scale Factor:	0.99960002	Local Coordinates Referenced To:	Well Head

Comments	Measured Depth (m)	Inclination (deg)	Azimuth (deg)	TVD (m)	Vertical Section (m)	NS (m)	EW (m)	Closure (m)	Closure Azimuth (deg)	DLS (deg/30 m)	Tool Face (deg)	Survey Type (Markers)
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	150.86M	GYR
	35.60	0.39	150.86	35.60	-0.11	-0.11	0.06	0.12	150.86	0.33	150.35M	GYR
	64.40	0.28	150.35	64.40	-0.25	-0.25	0.14	0.29	150.74	0.11	164.94M	GYR
	93.20	0.40	164.94	93.20	-0.41	-0.41	0.20	0.46	153.76	0.15	-41.67M	GYR
	121.20	0.12	318.33	121.20	-0.48	-0.48	0.21	0.53	156.68	0.55	11.72M	GYR
	149.00	0.34	11.72	149.00	-0.38	-0.38	0.21	0.43	151.61	0.31	29.03M	GYR
	176.60	0.73	29.03	176.60	-0.15	-0.15	0.31	0.34	115.52	0.45	35.47M	GYR
	204.30	0.86	35.47	204.29	0.18	0.18	0.51	0.54	71.03	0.17	31.20M	GYR
	232.90	0.88	31.20	232.89	0.54	0.54	0.75	0.93	54.36	0.07	29.53M	GYR
	261.40	0.73	29.53	261.39	0.88	0.88	0.96	1.30	47.20	0.16	32.57M	GYR
	281.80	0.97	32.57	281.79	1.14	1.14	1.11	1.59	44.21	0.36	30.21M	GYR
	318.30	0.91	30.21	318.28	1.65	1.65	1.42	2.18	40.73	0.06	32.86M	GYR
	346.80	1.00	32.86	346.78	2.06	2.06	1.67	2.65	39.10	0.11	34.25M	GYR
	375.20	1.12	34.25	375.17	2.50	2.50	1.96	3.18	38.19	0.13	33.49M	GYR
	403.40	1.26	33.49	403.37	2.98	2.98	2.29	3.76	37.52	0.15	37.45M	GYR
	432.10	1.56	37.45	432.06	3.56	3.56	2.70	4.47	37.23	0.33	35.39M	GYR
	460.40	1.52	35.39	460.35	4.17	4.17	3.15	5.23	37.11	0.07	24.81M	GYR
	488.90	1.58	24.81	488.84	4.83	4.83	3.54	5.99	36.20	0.31	21.35M	GYR
	517.30	1.87	21.35	517.22	5.62	5.62	3.87	6.82	34.56	0.33	24.41M	GYR
	545.80	2.11	24.41	545.71	6.53	6.53	4.26	7.79	33.10	0.28	24.36M	GYR
	574.30	2.52	24.36	574.18	7.58	7.58	4.73	8.93	31.98	0.43	26.78M	GYR
	602.80	2.93	26.78	602.65	8.80	8.80	5.32	10.28	31.15	0.45	24.19M	GYR
	631.50	3.18	24.19	631.31	10.18	10.18	5.97	11.80	30.41	0.30	15.37M	GYR
	660.00	2.20	15.37	659.78	11.43	11.43	6.44	13.12	29.41	1.12	1.76M	GYR
	688.00	2.02	1.76	687.76	12.44	12.44	6.60	14.08	27.95	0.57	-6.87M	GYR
	716.60	1.41	353.13	716.35	13.29	13.29	6.57	14.83	26.32	0.69	-14.85M	GYR
	745.10	1.26	345.15	744.84	13.94	13.94	6.45	15.37	24.83	0.25	-31.94M	GYR
	773.60	1.60	328.06	773.33	14.59	14.59	6.16	15.83	22.90	0.57	-49.39M	GYR
	802.10	2.10	310.61	801.82	15.26	15.26	5.55	16.24	20.00	0.79	-58.86M	GYR
	830.30	2.51	301.14	829.99	15.92	15.92	4.63	16.58	16.23	0.59	-65.20M	GYR
	858.80	2.96	294.80	858.46	16.55	16.55	3.43	16.90	11.71	0.57	-69.69M	GYR
	887.40	3.35	290.31	887.02	17.15	17.15	1.98	17.26	6.58	0.48	-67.05M	GYR
	915.90	3.44	292.95	915.47	17.77	17.77	0.41	17.78	1.32	0.19	-66.04M	GYR
	944.40	3.63	293.96	943.91	18.47	18.47	-1.20	18.51	356.28	0.21	-40.37M	GYR
	972.90	3.03	319.63	972.37	19.41	19.41	-2.51	19.57	352.62	1.67	-24.81M	GYR
	1001.30	2.85	335.19	1000.73	20.63	20.63	-3.30	20.89	350.92	0.86	-7.38M	GYR
	1029.60	2.41	352.62	1029.00	21.85	21.85	-3.67	22.16	350.47	0.96	13.69M	GYR
	1058.20	2.74	13.69	1057.57	23.11	23.11	-3.58	23.39	351.19	1.04	18.07M	GYR
	1086.60	3.05	18.07	1085.94	24.49	24.49	-3.19	24.70	352.58	0.40	42.07M	GYR
	1115.20	3.28	42.07	1114.49	25.82	25.82	-2.41	25.93	354.68	1.40	54.43M	GYR

	1143.50	3.85	54.43	1142.74	26.98	26.98	-1.09	27.00	357.69	1.01	62.09M	GYR
	1172.00	3.75	62.09	1171.18	27.97	27.97	0.51	27.97	1.05	0.54	82.40M	GYR
	1200.40	2.82	82.40	1199.53	28.50	28.50	2.03	28.57	4.07	1.56	126.65M	GYR
	1228.60	4.64	126.65	1227.67	27.91	27.91	3.63	28.14	7.41	3.48	123.11M	GYR
	1257.10	6.24	123.11	1256.05	26.37	26.37	5.85	27.01	12.51	1.72	-9.55G	GYR
	1285.60	7.16	121.87	1284.35	24.59	24.59	8.66	26.07	19.39	0.98	-34.48G	GYR
	1313.90	9.85	111.64	1312.34	22.76	22.76	12.41	25.93	28.59	3.26	3.12G	GYR
	1342.10	13.21	112.44	1339.97	20.64	20.64	17.63	27.15	40.49	3.58	21.28G	GYR
	1370.60	14.70	114.71	1367.62	17.89	17.89	23.92	29.87	53.21	1.67	2.96G	GYR
	1399.10	15.00	114.77	1395.17	14.83	14.83	30.56	33.97	64.11	0.32	18.57G	GYR
	1427.60	16.57	116.61	1422.60	11.47	11.47	37.54	39.25	73.01	1.73	129.31G	GYR
	1456.10	16.38	117.44	1449.93	7.80	7.80	44.74	45.41	80.12	0.32	-112.09G	GYR
	1484.60	16.12	115.01	1477.29	4.27	4.27	51.89	52.07	85.30	0.77	99.47G	GYR
	1512.90	15.92	121.53	1504.49	0.58	0.58	58.76	58.76	89.43	1.92	-133.31G	GYR
	1541.40	15.33	119.11	1531.94	-3.30	-3.30	65.38	65.47	92.89	0.93	48.49G	GYR
	1569.90	16.48	123.51	1559.35	-7.36	-7.36	72.05	72.42	95.83	1.75	-76.48G	GYR
	1598.30	16.58	122.12	1586.57	-11.74	-11.74	78.84	79.71	98.47	0.43	-5.90G	GYR
	1626.70	17.18	121.91	1613.75	-16.11	-16.11	85.83	87.33	100.63	0.64	-108.49G	GYR
	1655.10	16.99	119.86	1640.90	-20.40	-20.40	92.99	95.20	102.37	0.67	84.47G	GYR
	1683.50	17.06	121.95	1668.05	-24.67	-24.67	100.12	103.11	103.84	0.65	-141.91G	GYR
	1711.90	16.14	119.31	1695.27	-28.80	-28.80	107.10	110.90	105.05	1.26	-118.59G	GYR
	1740.40	15.49	114.48	1722.69	-32.32	-32.32	114.02	118.51	105.83	1.54	104.25G	GYR
	1768.90	15.27	118.24	1750.17	-35.67	-35.67	120.79	125.94	106.45	1.07	17.46G	GYR
	1797.40	16.11	119.19	1777.61	-39.38	-39.38	127.55	133.48	107.16	0.92	-161.33G	GYR
	1825.80	15.33	118.19	1804.95	-43.07	-43.07	134.29	141.03	107.78	0.87	-159.93G	GYR
	1854.30	14.97	117.68	1832.46	-46.56	-46.56	140.87	148.37	108.29	0.40	32.76G	GYR
	1882.80	15.58	119.13	1859.95	-50.13	-50.13	147.48	155.77	108.78	0.76	-110.31G	GYR
	1911.10	15.44	117.66	1887.22	-53.73	-53.73	154.13	163.23	109.22	0.44	157.79G	GYR
	1939.70	15.33	117.83	1914.79	-57.27	-57.27	160.85	170.74	109.60	0.12	138.30G	GYR
	1968.10	15.23	118.17	1942.19	-60.78	-60.78	167.46	178.15	109.95	0.14	36.47G	GYR
	1996.50	15.63	119.26	1969.57	-64.41	-64.41	174.08	185.62	110.30	0.52	-105.87G	GYR
	2024.90	15.41	116.04	1996.93	-67.94	-67.94	180.81	193.15	110.59	0.94	37.05G	GYR
	2053.30	16.56	119.03	2024.23	-71.56	-71.56	187.74	200.92	110.86	1.49	-152.43G	GYR
	2081.80	15.43	116.79	2051.63	-75.24	-75.24	194.68	208.71	111.13	1.36	89.48G	GYR
	2110.40	15.48	121.00	2079.20	-78.92	-78.92	201.34	216.26	111.40	1.18	-146.42G	GYR
	2138.80	14.52	118.42	2106.63	-82.56	-82.56	207.72	223.52	111.68	1.24	-70.88G	GYR
	2167.40	14.93	114.25	2134.29	-85.78	-85.78	214.24	230.77	111.82	1.19	123.67G	GYR
	2195.90	14.68	115.76	2161.84	-88.86	-88.86	220.84	238.04	111.92	0.48	113.13G	GYR
	2234.00	14.43	118.23	2198.72	-93.20	-93.20	229.37	247.58	112.11	0.53	-119.96G	GYR
	2262.60	14.11	115.87	2226.44	-96.41	-96.41	235.64	254.60	112.25	0.70	10.79G	GYR
	2291.10	15.61	116.93	2253.99	-99.66	-99.66	242.19	261.89	112.37	1.60	-174.92G	GYR
	2319.40	14.51	116.54	2281.31	-102.97	-102.97	248.76	269.23	112.49	1.17	-75.65G	GYR
	2348.10	14.55	115.93	2309.10	-106.16	-106.16	255.21	276.41	112.58	0.17	88.66G	GYR
	2376.60	14.59	119.10	2336.68	-109.47	-109.47	261.57	283.55	112.71	0.84	-161.38G	GYR
	2405.20	13.59	117.66	2364.42	-112.78	-112.78	267.69	290.48	112.85	1.11	2.29G	GYR
	2433.70	15.16	117.90	2392.03	-116.08	-116.08	273.95	297.53	112.96	1.65	96.65G	GYR
	2462.30	15.10	120.29	2419.63	-119.71	-119.71	280.48	304.95	113.11	0.66	-177.51G	GYR
	2490.90	14.25	120.14	2447.30	-123.35	-123.35	286.74	312.14	113.28	0.89	-165.95G	GYR
	2519.50	13.22	119.01	2475.08	-126.71	-126.71	292.64	318.89	113.41	1.12	176.07G	GYR
	2548.10	11.02	119.80	2503.04	-129.65	-129.65	297.87	324.87	113.52	2.31	-170.22G	GYR
	2576.60	9.55	118.27	2531.08	-132.12	-132.12	302.32	329.93	113.61	1.57	-45.38G	GYR
	2655.00	12.13	106.90	2608.09	-137.60	-137.60	315.93	344.59	113.54	1.28	-24.63G	SS
	2740.00	15.00	101.90	2690.71	-142.46	-142.46	335.24	364.25	113.02	1.09	-19.14G	SS
	2864.00	20.00	96.90	2808.94	-148.32	-148.32	372.02	400.50	111.74	1.26	0.00G	SS
Projection to TD	2878.00	20.00	96.90	2822.10	-148.90	-148.90	376.77	405.13	111.56	0.00	0.00G	SS

Survey Type: Raw Survey

Survey Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog: MD From (m)	MD To (m)	EOU Freq	Survey Tool Type
0.00	2576.60	Act-Stns	SLB_NSG+BATTERY
2576.60	2878.00	Act-Stns	SLB_PHOTO-MSS

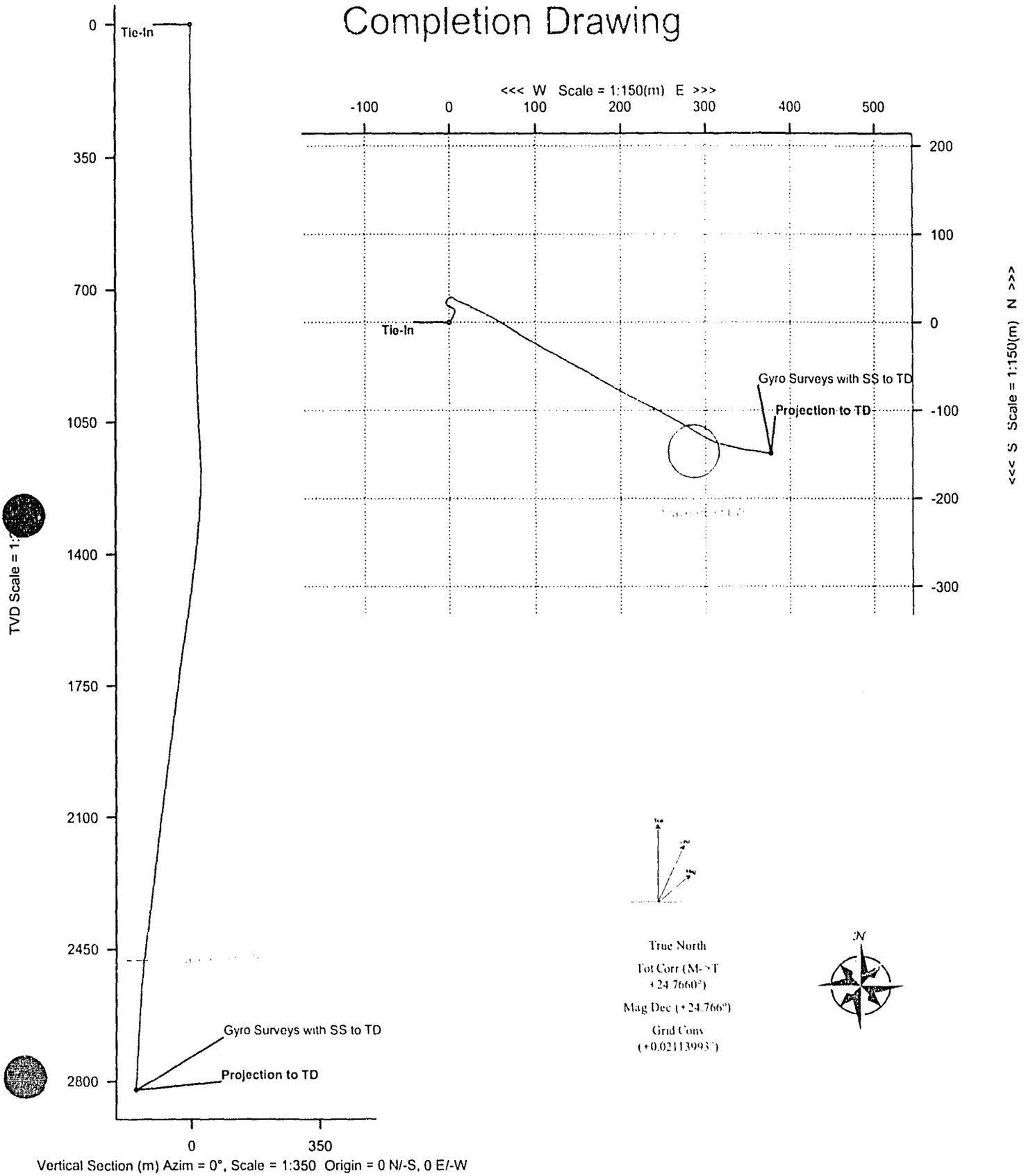
Schlumberger

Anadarko Canada Energy Ltd.

WELL	FIELD	STRUCTURE
Arrowhead I-75	ARROWHEAD (CDN-NAD27)	Anadarko/I-75

Magnetic Parameters						Surface Location		NAD27 UTM Zone 10N				Miscellaneous			
BGGM 2002	Dip	78.734°	Date	May 23, 2003		Lat	N60 34 42.278	Northing	6715625.28 m	Grid Conv	+0.02113993°	Slot	Job #AKX08468	TVD Ref	KB (517.00 m above MSL)
	Mag Dec	+24.766°	FS	58521.4 nT		Lon	W122 58 32.628	Easting	501330.78 m	Scale Fact	0.99960910217	Plan	Gyro Surveys	Srvy Date	May 23, 2003

Completion Drawing



True North

Tot Corr (M->T +24.7660°)

Mag Dec (+24.766°)

Grid Conv (+0.02113993°)

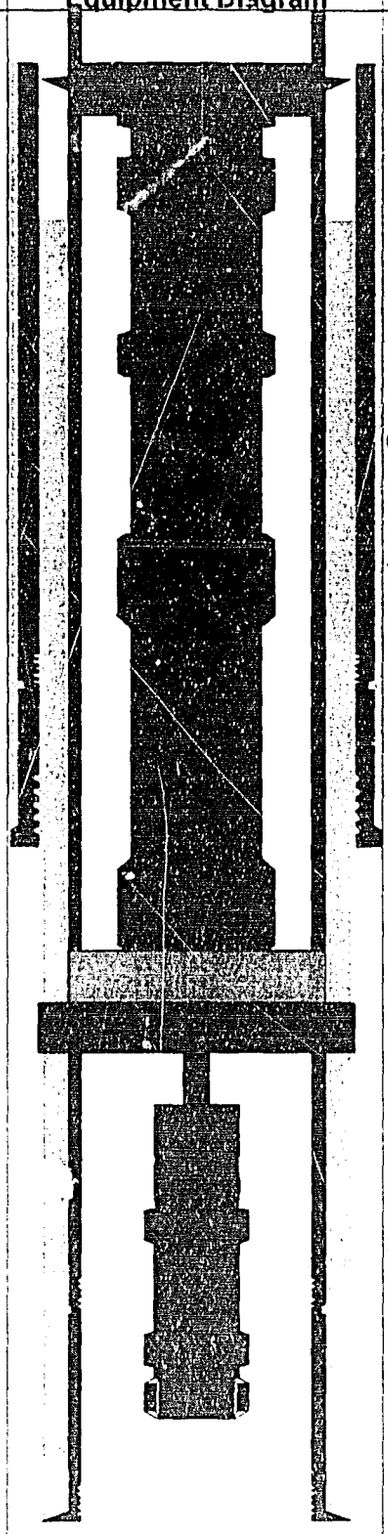
N

Casing and Cementing Report

Well Name	ANADARKO ARROWHEAD RIVER I-75		**Well License Number**	1981	
Event	ORIG COMPLETION	24/02/03	**Well License Date**	17/01/03	
Objectives	DEVELOPMENT COMPLETION		**Field**	ARROWHEAD RIVER	
Rig Name & No.	<no data>	<no data>	**Event Final TMD / TVD**	2,878.00 m	/ 0.00 m
KB Elev.	517.90 m		**Sidetrack KO Depth / PB Depth**	0.00 m	/ 0.00 m
KB to GL	7.10 m	**Deviation** D	**Event Final Well Plug Back Depth/PBTVD**	0.00 m	/ 0.00 m

Component Information	Depth
1 - CASING JOINT(S) - - 14.120 m	
47 - CASING JOINT(S) - - 640.460 m	
	0.28 m
	0.56 m
1 - CSG HANGER/ STUB CSG - - 1.490 m	7.45 m
188 - CASING JOINT(S) - - 2,54[illegible].840 m	8.94 m
	9.61 m
	10.06 m
	12.42 m
	15.45 m
- CASING FLOAT COLLAR - - 0.380 m	640.46 m
1 - CASING JOINT(S) - - 13.990 m	640.84 m
1 - CASING FLOAT SHOE - - 0.470 m	654.83 m
	655.00 m
	655.30 m
	2,200.00 m
	2,544.91 m
	2,545.54 m
	2,546.31 m
	2,546.42 m
	2,549.42 m
	2,549.70 m
1 - CASING FLOAT COLLAR - - 0.330 m	2,554.78 m
2 - CASING JOINT(S) - - 28.280 m	2,555.11 m
	2,559.32 m
	2,559.52 m
- CASING FLOAT SHOE - - 0.210 m	2,583.39 m
	2,583.60 m
	2,990.27 m

Equipment Diagram



Cement Interval
0.00 m - 655.00 m
7.00 m - 2 200.00 m
2,200.00 m - 2,990.27 m

String Details

ANADARKO ARROWHEAD RIVER I-75 **ORIG COMPLETION 25/01/03** **<no data>**

String Name	Installed Date	String Status	Length	String Landed Depth	Suspension Point	String Depth Correction
SURFACE CASING	31/01/03	INSTALLED	655.3 m	655.3 m		0.0 m
INTERMEDIATE CA	15/02/03	INSTALLED	2,590.3 m	2,583.6 m		0.0 m
PACKER ASSEMBL	28/02/03	INSTALLED	2,559.5 m	2,559.5 m	SURFACE EQUIPME	0.0 m

SURFACE CASING **Status:** INSTALLED **Install Date:** 31/01/03 **String Length:** 655.3 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
47	CASING JOINT(S)	640.460 m	0.00 mm	244.48 mm	L80	59.53 kg/m	0.00 m
1	CASING FLOAT COLLAR	0.380 m	0.00 mm	244.48 mm	L80	59.53 kg/m	640.46 m
1	CASING JOINT(S)	13.990 m	0.00 mm	244.48 mm	L80	59.53 kg/m	640.84 m
1	CASING FLOAT SHOE	0.470 m	0.00 mm	244.48 mm	L80	59.53 kg/m	654.83 m

INTERMEDIATE CASING **Status:** INSTALLED **Install Date:** 15/02/03 **String Length:** 2,590.3 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
1	CASING JOINT(S)	14.120 m	0.00 mm	177.80 mm	L80	38.69 kg/m	-6.67 m
1	CSG HANGER/ STUB CSG	1.490 m	0.00 mm	177.80 mm	L80	38.69 kg/m	7.45 m
188	CASING JOINT(S)	2,545.840 m	0.00 mm	177.80 mm	L80	38.69 kg/m	8.94 m
1	CASING FLOAT COLLAR	0.330 m	0.00 mm	177.80 mm	L80	38.69 kg/m	2,554.78 m
2	CASING JOINT(S)	28.280 m	0.00 mm	177.80 mm	L80	38.69 kg/m	2,555.11 m
1	CASING FLOAT SHOE	0.210 m	0.00 mm	177.80 mm	L80	38.69 kg/m	2,583.39 m

PACKER ASSEMBLY **Status:** INSTALLED **Install Date:** 28/02/03 **String Length:** 2,559.5 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
1	TUBING HANGER	0.280 m	153.90 mm	177.80 mm	L80	43.16 kg/m	0.00 m
1	TUBING JOINT(S)	0.280 m	0.00 mm	88.90 mm		0.00 kg/m	0.28 m
1	TUBING JOINT(S)	9.050 m	74.75 mm	88.90 mm	L80	11.46 kg/m	0.56 m
1	PUP JOINT	0.450 m	74.75 mm	88.90 mm	L80	11.46 kg/m	9.61 m
1	PUP JOINT	2.360 m	74.75 mm	88.90 mm	L80	11.46 kg/m	10.06 m
1	PUP JOINT	3.030 m	74.75 mm	88.90 mm	L80	11.46 kg/m	12.42 m
268	TUBING JOINT(S)	2,529.460 m	74.75 mm	88.90 mm	N80	11.46 kg/m	15.45 m
1	ON-OFF TOOL	0.630 m	162.89 mm	177.80 mm	H40	25.30 kg/m	2,544.91 m
1	PACKER	0.770 m	0.00 mm	219.08 mm		35.72 kg/m	2,545.54 m
1	CROSSOVER	0.110 m	0.00 mm	19.05 mm		0.00 kg/m	2,546.31 m
1	PUP JOINT	3.000 m	0.00 mm	60.33 mm		0.00 kg/m	2,546.42 m
1	PROFILE NIPPLE	0.280 m	48.29 mm	60.33 mm	L80	6.99 kg/m	2,549.42 m
1	TUBING JOINT(S)	9.620 m	48.29 mm	60.33 mm	L80	6.99 kg/m	2,549.70 m
1	RE-ENTRY GUIDE	0.200 m	48.29 mm	60.33 mm	L80	6.99 kg/m	2,559.32 m

Cement Data

ANADARKO ARROWHEAD RIVER I-75 **ORIG COMPLETION25/01/03** **<no data>**

Job Type: Primary Date: 01/02/03 Contractor: B.J. SERVICES

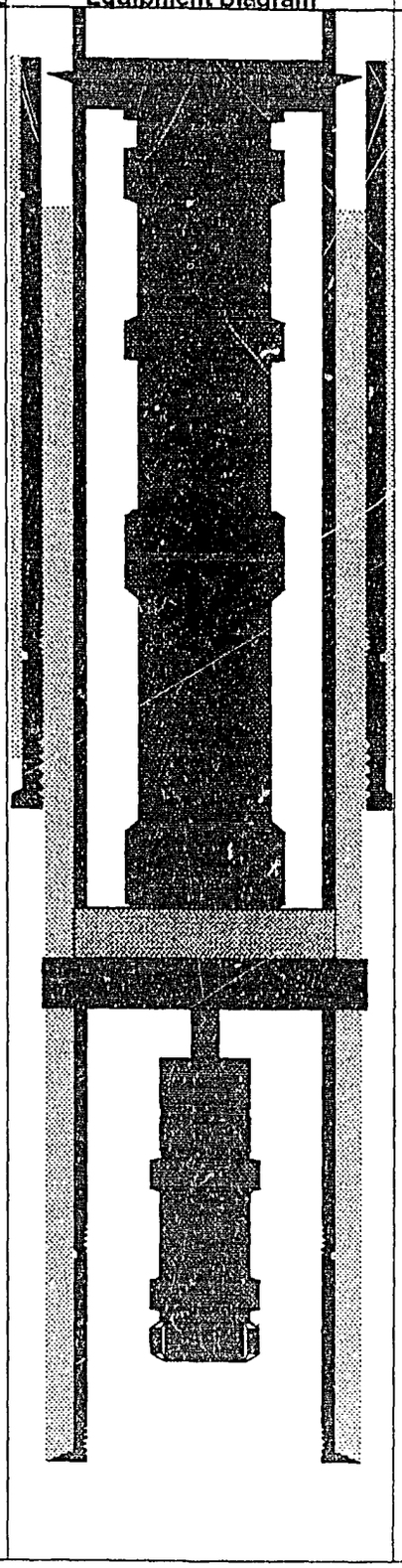
Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	TAIL	NEAT	CLASS G	0.00 m	655.00 m	29.5 m³

Job Type: Primary Date: 16/02/03 Contractor: B.J. SERVICES

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	LEAD	BENTONITE EX	CLASS G	7.00 m	2,200.00 m	26.1 m³
SINGLE STAGE	TAIL	THERMAL 40F	G THERM40F	2,200.00 m	2,990.27 m	5.5 m³

Summary Information

Well Name	ANADARKO ARROWHEAD RIVER I-75	**Well License #**	1981
Event	ORIG COMPLETION 24/02/2003	**Spud Date**	25/01/2003
Event 2nd Obj	COMPLETION - GAS	**Rig Name**	<no data> <no dat
Field	ARROWHEAD RIVER	**TMD**	2,878.00 m
Lahee	OUT	**TVD**	0.00 m
KB Elev.	517.90 m	**AFE Cost**	0

	PERF INTVL	Equipment Diagram	TMD
COOPER CAMERON - PRUDENTIAL - IMPRAGLON COATED			
HYDRIL - HYDRIL - IMPRAGLON COATED			0.28 m
HYDRIL - HYDRIL - IMPRAGLON COATED			0.56 m
HYDRIL - HYDRIL - IMPRAGLON COATED			9.61 m
HYDRIL - HYDRIL - IMPRAGLON COATED			10.06 m
HYDRIL - HYDRIL - IMPRAGLON COATED			12.42 m
HYDRIL - HYDRIL -			15.45 m
			655.00 m
			2,200.00 m
177.8 MM OVERSHOT C/W 47.63 MM BAKER "F" - HYDRIL - IMPRAGLON COATED			2,544.91 m
177.8 MM HALLIBURTON BWC PERMANANT - HYDRIL - IMPRAGLON COATED			2,545.54 m
BWC 88.9 MM TO 60.3 MM - HYDRIL - IMPRAGLON COATED			2,546.31 m
HYDRIL - HYDRIL - IMPRAGLON COATED			2,546.42 m
BAKER PROFILE 45.97 MM "F" - HYDRIL - IMPRAGLON COATED			2,549.42 m
PERFORATED TUBING JOINT - HYDRIL - IMPRAGLON COATED			2,549.70 m
C/W 45.49 NO/GO - HYDRIL - IMPRAGLON COATED			2,559.32 m
			2,559.52 m
			2,990.27 m

Anadarko Arrowhead River

I-75

Well Summary

Initial Completion

February 24/03 To April 7/03

Supervisors: Mike Tkachanko
Joe Graves

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 1/25/2003
Event Name: ORIG COMPLETION Start: 2/24/2003 End: 3/20/2003
Contractor Name: SHEHTAH Rig Release: 3/1/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
2/24/2003	23:59 - 00:00	0.02	48		EVALPR	HOLD PREJOB SAFETY MEETING WITH ALL PERSONNEL, FILL OUT THE ACC SAFE WORK PERMIT.
	00:00 - 01:00	1.00	31	K	EVALPR	MAKE UP AND RUN IN THE HOLE WITH A 177.8 MM CASING SCRAPER C/W A 155.57 MM TOOTH BIT, TO THE FLOAT COLLAR AT 2550.0 MKB.
2/25/2003	01:00 - 06:30	5.50	31	K	EVALPR	CONTINUE IN THE HOLE WITH THE CASING SCRAPER, TO THE FLOAT COLLAR AT 2550.0 MKB.
	06:30 - 15:30	9.00	31	K	EVALPR	CIRCULATE AT 2550.0 MKB, WHILE WAITING FOR TOOLS.
	15:30 - 00:00	8.50	31	K	EVALPR	PULL OUT OF THE HOLE, STAND 300 M OF DRILL PIPE IN THE DERRICK AND LAY DOWN THE REMAINING 88.9 MM DRILL PIPE.
2/26/2003	00:00 - 04:00	4.00	31	K	EVALPR	CONTINUE PULLING OUT OF THE HOLE AND LAYING DOWN THE 88.9 MM DRILL PIPE.
	04:00 - 08:45	4.75	30	A	EVALPR	PULL AND RECOVER THE WEAR BUSHING, RIG IN SERVICES TO RUN THE 88.9 MM HYDRIL TUBING
	08:45 - 09:00	0.25	48		EVALPR	HOLD PREJOB SAFETY MEETING WITH ALL PERSONNEL, FILL OUT THE ACC SAFE WORK PERMIT.
	09:00 - 10:00	1.00	30	A	EVALPR	RIG OUT LAYDOWN UNIT TO RIG IN IPS EWL UNIT.
	10:00 - 13:45	3.75	30	A	EVALPR	MOVE IN AND RIG UP IPS EWL UNIT, MAKE UP AND RUN IN THE HOLE WITH A 154.94 MM GAUGE RING AND JUNK BASKET. LOG GAMMA-RAY FROM 2560.0 MKB TO 2430.0 MKB, CORRELATE TO THE SCHLUMBERGER PLATFORM EXPRESS COMPENSATED NEUTRON LITHODENSITY LOG DATED FEBRUARY 23/2003. FLOAT COLLAR LOGGED IN AT 2557.8 MKB, PULL OUT OF THE HOLE.
	13:45 - 15:15	1.50	47		EVALPR	WAIT ON PACKER ASSEMBLY TO ARRIVE.
	15:15 - 19:00	3.75	33	I	EVALPR	MAKE UP AND RUN IN THE HOLE WITH THE PACKER ASSEMBLY AS FOLLOWS, 1 - 60.3 MM COATED HYDRIL 553 CB L-80 WIRELINE RE-ENTRY GUIDE, C/W 45.47 MM NO/GO, .20 M. 1- 60.3 MM COATED HYDRIL 553 CB L-80 6.99 KG/M PERFORATED TUBING JOINT, 9.62 M. 1 - 60.3 MM COATED HYDRIL 553 CB L-80 LANDING NIPPLE C/W A BAKER 45.97 MM "F" PROFILE, .28 M. 1 - 60.3 MM COATED HYDRIL 553 CB L-80 6.99 KG/M PUP JOINT, 3.00 M. 1 - BWC COATED TUBING ADAPTER C/W 60.3 MM HYDRIL 553 PIN DOWN, .11 M. 1 - 177.8 MM COATED HALLIBURTON BWC PERMANANT PACKER C/W AFLAS ELEMENTS, .77 M. LOG CCL FROM 2553.0 MKB TO 2455.0 MKB, CORRELATE TO THE IPS GR/CCL LOG DATED FEBUARY 26/2003. LOG INTO POSITION AND SET THE HALLIBURTON PERMANANT PACKER AT 2554.0 MKB (CE), WITH THE TAIL PIPE AT 2567.63 MKB. PULL OUT OF THE HOLE AND RIG OUT SLICKLINE.
	19:00 - 19:30	0.50	32	C	EVALPR	WITH THE HOLE FULL, PRESSURE TEST THE HALLIBURTON PACKER TO 14, 620 KPA FOR 15 MINUTES. LOOKS GOOD.
	19:30 - 21:30	2.00	30	A	EVALPR	MOVE IN AND RIG UP LAYDOWN UNIT
	21:30 - 00:00	2.50	31	K	EVALPR	MAKE UP AND RUN IN THE HOLE WITH THE 88.9 MM HYDRIL 553 CB PRODUCTION TUBING
2/27/2003	12:59 - 13:15	0.27	31	K	EVALPR	CONTINUE TO RUN IN THE HOLE WITH 268 JOINTS OF 88.9 MM HYDRIL 553 CB L-80 9.69 KG/M PRODUCTION TUBING. TAG PACKER AT 2543.18 MKB, PACKER SETTING DEPTH MAY BE IN ERROR DUE TO A FROZEN COUNTER WHEEL ON THE EWL UNIT, LATCH ON, SET 5000 DAN COMPRESSION ON THE PACKER AND PULL 5000 DAN TENSION INTO THE PACKER. SETTING DEPTH STILL IN QUESTION, RIG TO CIRCULATE.
	13:15 - 15:30	2.25	31	J	EVALPR	RIG IN CIRCULATING EQUIPMENT, DISPLACE WELL OVER TO FRESH INHIBITED WATER.

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 1/25/2003
Event Name: ORIG COMPLETION Start: 2/24/2003 End: 3/20/2003
Contractor Name: SHEHTAH Rig Release: 3/1/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
2/27/2003	15:30 - 23:00	7.50	31	K	EVALPR	ATTEMPT TO GO DOWN, LOOSING STRING WIEGHT. WORK TUBING STRING WITH NO SUCSESS. RIG IN THE KELLY AND BREAK CIRCULATION, CIRCULATE DOWN THROUGH THE BRIDGE AT 2543.18 MKB AND ONTO THE PACKER AT 2554.0 MKB, FOR 55 MINUTES, SHUT DOWN PUMPS, LARGE DEPOSITS OF CAL-CARB WAS FOUND TO BE GOING OVER THE SHAKER SCREEN WHILE CIRCULATING. RIG OUT AND BREAK THE KELLY DOWN. SET 8000 DAN COMPRESSION ON THE PACKER FOR SPACE-OUT, RELEASE AND COME OFF OF THE PACKER. ADD PUP JOINTS FOR THE SPACE OUT AND INSTALL THE TUBING HANGER, ATTEMPT TO LATCH ONTO THE PACKER WITH NO SUCESS. CONTINUE TO WORK THE TUBING STRING
	23:00 - 00:00	1.00	30	A	EVALPR	RE-ASSEMBLE THE KELLY AND START TO CIRCULATE, CAL-CARB IS STILL PRESENT IN THE FLUID RETURNS.
	00:00 - 03:00	3.00	31	C	EVALPR	CONTINUE TRYING TO LATCH ON, OVERSHOT WILL SLIDE OVER BUT WILL NOT LATCH.
2/28/2003	00:00 - 03:00	3.00	31	C	EVALPR	CONTINUE TRYING TO LATCH ONTO THE PACKER, OVER SHOT WILL NOT SLIDE OVER THE SLICK JOINT.
	03:00 - 06:00	3.00	31	J	EVALPR	INSTALL THE KELLY, CIRCULATE DOWN ONTO THE PACKER AND LATCH ON. ATTEMPT TO COME OFF OF THE PACKER, NO LUCK. CONTINUE TO WORK THE TUBING STRING AND THE ON/OFF RELEASES, CONTINUE TO CIRCULATE ON TOP OF THE PACKER. RIG OUT THE KELLY.
	06:00 - 07:00	1.00	31	C	EVALPR	SPACE OUT TUBING STRING AND LAND THE TUBING HANGER LEAVING 9500 DAN COMPRESSION ON THE PACKER.
	07:00 - 08:00	1.00	32	C	EVALPR	WITH THE CASING FULL, RIG IN THE DRILLING RIG PUMP. PRESSURE TEST THE PACKER TO 15,000 KPA FOR 15 MINUTES, LOOKS GOOD. INSTALL BACK PRESSURE VALVE.
	08:00 -		30	F	EVALPR	NIPPLE DOWN BOP. BLOW WATER FROM THE TUBING AND THE CASING. INSTALL WELLHEAD,SECURE WELL. RELEASE DRILLING RIG AT 21:00 HRS.
3/8/2003	08:00 - 11:00	3.00	32	D	MIRU	CONDUCT SAFETY MEETING AT 0800 HRS AND MOVE TEST EQUIPMENT AND FOUR 400 BBL STORAGE TANKS ONTO LOCATION. (RAPID WIRELINE ARRIVED ON LOCATION AT 0915 HRS.)
	09:15 - 18:00	8.75	33	G	MIRU	RIG IN WIRELINE AND TEST EQUIPMENT. RUN IN HOLE WITH OVERSHOT FOR FSG PLUG, TAG SOLID AT 2521.55 MCF, POOH AND RUN IMPRESSION BLOCK, TAGGED SAME SPOT AND IMPRESSION BLOCK INDICATES FILL. RAN EIGHT BAILER RUNS, AND MADE 1.5 M PROGRESS TO 2523.05 MCF. (PLUG AT 2546.5 MCF.) SHUT DOWN FOR NIGHT AT 1800 HRS.
3/9/2003	08:00 - 08:30	0.50	48			CONDUCT SAFETY MEETING
	08:30 - 18:00	9.50	33	G	EVALPR	RIG IN RAPID WIRELINE AND BAIL OUT FILL, MADE 17 RUNS AND BAILED OUT FILL TO 2528.55 MCF (PLUG AT 2546.5 MCF) MADE 5.5 M TODAY, LEAVING 17.95 M OF FILL LEFT IN HOLE ON TOP OF FSG PLUG. SHUT DOWN FOR NIGHT AT 1800 HRS. RIG OUT RAPID WIRELINE AND SPOT SCHLUMBERGER CTU AND N2 TRUCKS.
3/10/2003	07:30 - 07:50	0.33	47		MIRU	CONDUCT SAFETY MEETING WITH ALL PERSONNEL
	07:50 - 14:25	6.58	48		MIRU	RIG IN SCHLUMBERGER CTU AND N2 PUMPER, RUN IN HOLE, DISPLACE WATER WITH N2 AND CLEAN OUT TO 2543.7 MKB, PRESSURE UP TUBING TO 20000 KPA, POOH, SHUT IN WELL AND RIG OUT COIL TUBING AND N2 TRUCKS. RETURNED 16.5 M3 OF FLUID FROM WELL.

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 1/25/2003
Event Name: ORIG COMPLETION Start: 2/24/2003 End: 3/20/2003
Contractor Name: SHEHTAH Rig Release: 3/1/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/10/2003	14:25 - 19:30	5.08	32		MIRU	RIG IN RAPID WIRELINE TO PULL PRONG AND PLUG FROM "R" NIPPLE AT 2553.65 MKB. RAN IMPRESSION BLOCK FIRST, THEN RETRIEVED PRONG ON NEXT RUN. OUT WITH PLUG AT 1900 HRS. RIG OUT WIRELINE AT 1930 HRS.
	19:30 - 22:30	3.00	32	A	EVALPR	RIG IN TESTERS AND OPENED WELL AT 2200 HRS. ON 12.7 MM CHOKE WITH 3" ORFICE PLATE IN PLACE. OPENING TUBING PRESSURE 19926 KPA, FLUID TO SURFACE AT 2220 HRS. GAS RATE 189.10 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE 11032 KPA, RECOVERED .33 M3 OF DRILLING FLUID IN FIRST HALF HOUR. FLOW WELL OVERNIGHT ON CLEAN UP.
3/11/2003	00:00 - 08:30	8.50	32	A	EVALPR	FLOW WELL OVERNIGHT ON 12.7 MM CHOKE, FINAL GAS RATE 134.138 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE 7791 KPA, MADE 3.32 M3 OF FLUID IN LAST EIGHT AND A HALF HOURS, SALINITY 42000 PPM AND PH 7, H2S AT 3000 PPM. SHUT IN AT 0830 HRS
	08:30 - 12:00	3.50	32	E	RDMO	RIG OUT TEST UNIT AND MOVE TO 0-36
	12:00 - 15:00	3.00	32	D	EVALPR	MOVE ON TEST UNIT AND RIG UP TO FLOW TEST WELL
	15:00 - 18:00	3.00	32	D	EVALPR	WAIT ON SCHLUMBERGER ELECTRIC LINE TO LOG HOLE PRIOR TO TESTING. SDFN AT 1800 HRS.

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75 Spud Date: 1/25/2003
Event Name: ORIG COMPLETION Start: 2/24/2003 End: 3/20/2003
Contractor Name: SHEHTAH Rig Release: 3/1/2003 Group:
Rig Name: SHEHTAH Rig Number: 5E

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/12/2003	08:00 - 12:00	4.00	33		MIRU	MOVE ON SCHLUMBERGER ELECTRIC LINE TO RUN PRODUCTION LOG, TRUCK BROKE DOWN, ATTEMPT TO REPAIR TRUCK, LOAD UP TRUCK ON LOW BED AT 1200 HRS AND HAUL TO FORT NELSON FOR REPAIRS. SDFD AT 1200 HRS.
3/13/2003	00:00 - 19:30	19.50				WAIT ON SCHLUMBERGER
	19:30 - 23:59	4.48	33		EVALPR	SCHLUMBERGER ARRIVED ON LOCATION AT 1930 HRS. RIG IN WITH GREASE HEAD ETC AND RUN PRODUCTION LOG (LOG TO BE COMPLETED IN AM)
3/14/2003	00:00 - 03:30	3.50	39	B	EVALPR	POOH WITH ELECTRIC LINE, FINISHED RUNNING PRODUCTION LOG WITH SCHLUMBERGER AT 0330 HRS.
	03:30 - 04:30	1.00	39	B	EVALPR	RIG OUT SCHLUMBERGER AND RIG IN RAPID WIRELINE SLICK LINE TRUCK TO RUN RECORDERS
	04:30 - 07:30	3.00	33		EVALPR	RUN IN HOLE WITH SLICK LINE AND SET COLLAR STOP AT 2551 MCF, SECOND RUN SET TANDEM RECORDERS ON BOMBWELL ON TOP OF COLLAR STOP. ON BOTTOM AT 0649 HRS. POOH AND RIG OUT RAPID SLICK LINE TRUCK AND PICKER
	07:30 - 09:30	2.00	32	D	EVALPR	TWO HOUR SHUT IN FOR RECORDER BASE LINE
	09:30 - 12:00	2.50	32	A	EVALPR	SITP 19699 KPA, OPEN WELL AT 0930 HRS ON 9.53 MM CHOKE, TROUBLE WITH LINE HEATER. BYPASS LINE HEATER AND ESTABLISH STABLE RATE AT 1230 HRS. CHOKE AT 9.53 MM AND OR4FICE PLATE 76.2 MM, GAS RATE 128.226 10/3-M/3 AND BACK PRESSURE AT 9335 KPA AT 1400 HRS. RECOVERED 1.53 M3 OF FLUID, SALINITY 40000 PPM AND PH 7, NO H2S. CONTINUE TO FLOW TEST WELL
	12:00 - 15:30	3.50	32	D	EVALPR	SHUT IN WELL AT 1530 FOR 24 HR SHUT IN. FINAL GAS RATE 127.593 10/3-M/3 PER DAY ON 9.53 MM CHOKE WITH 76.2 MM ORFICE PLATE IN PLACE, TUBING FLOWING PRESSURE 9653 KPA. PRODUCED 1.66 M3 OF FLUID IN SIX HR FLOW, SALINITY 55000 PPM AND PH 7. NO H2S. RECORD BUILD UPS OVERNIGHT.
3/15/2003	00:00 - 06:00	6.00	32	D	EVALPR	RECORD PRESSURE BUILD UPS, MIDNIGHT PRESSURE AT 19647 KPA, 0600 HRS PRESSURE AT 19643 KPA
	06:00 - 15:00	9.00	32	D	EVALPR	1500 HRS TUBING SHUT IN PRESSURE 19665 KPA. OPEN WELL ON 7.14 MM CHOKE WITH 76.2 MM ORFICE PLATE IN PLACE.
	15:00 - 19:00	4.00	32	D	EVALPR	METER IN SERVICE 1545 HRS, INCREASE CHOKE TO 8.73 MM AT 1740 HRS. 1800 HRS GAS RATE 118.702 10/3-M/3, FLOWING PRESSURE 13238 KPA 1900 HRS GAS RATE 114.040 10/3-M/3, FLOWING PRESSURE 12031 KPA PRODUCED 1.33 M3 OF FLUID IN THREE AND A HALF HRS, SALINITY 78000 PPM PH . CONTINUE TO FLOW TEST WELL OVERNIGHT.
3/16/2003	00:00 - 06:00	6.00	32	D	EVALPR	FLOWED WELL OVERNIGHT ON 8.73 MM CHOKE WITH 76.02 MM ORFICE PLATE IN PLACE. GAS RATE 113.440 10/3-M/3 PER DAY AT 0600 HRS. PRODUCED 3.75 M3 OF FLUID IN LAST 15.5 HRS, SALINITY 118000 PPM AND PH 7
	06:00 - 19:00	13.00	32	D	EVALPR	DECREASE ORFICE PLATE TO 63.5 MM AT 0745 HRS, GAS RATE AT 118.320 10/3-M/3 PER DAY AT 1900 HRS WITH TUBING PRESSURE AT 9812 KPA. PRODUCED 2.36 M3 OF WATER IN LAST 12 HRS, SALINITY 114000 PPM AND PH 7. CONTINUE TO FLOW TEST WELL OVERNIGHT
3/17/2003	00:00 - 06:00	6.00	32	D	EVALPR	FLOWED WELL OVERNIGHT ON 8.73 MM CHOKE WITH 63.50 MM ORFICE PLATE IN PLACE. GAS RATE 124.612 10/3-M/3 PER DAY WITH BACK PRESSURE AT 8839 KPA, RECOVERED 5.13 M3 OF FLUID IN LAST 24 HRS, SALINITY 116000 PPM AND PH 7
	06:00 - 19:00	13.00			EVALPR	GAS RATE AT 123.844 10/3-M/3 PER DAY AND TUBING FLOWING

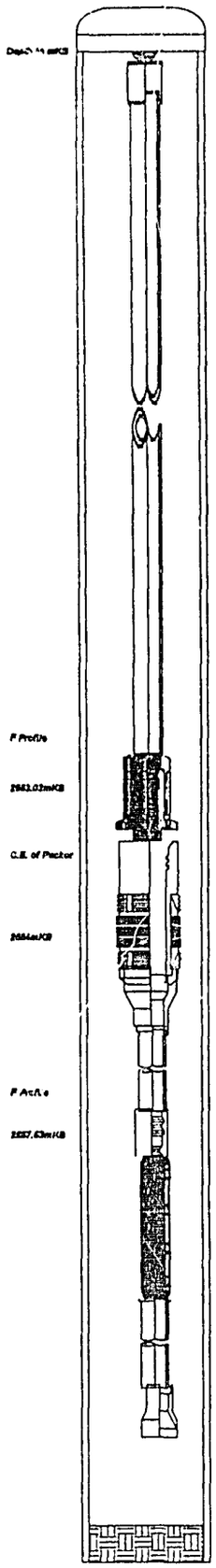
Anadarko Canada Corporation

Operations Summary Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER I-75				
Common Well Name:	ARROWHEAD RIVER I-75			Spud Date:	1/25/2003
Event Name:	ORIG COMPLETION	Start:	2/24/2003	End:	3/20/2003
Contractor Name:	SHEHTAH	Rig Release:	3/1/2003	Group:	
Rig Name:	SHEHTAH	Rig Number:	5E		

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/17/2003	06:00 - 19:00	13.00			EVALPR	PRESSURE 8757 KPA FLOWING ON 8.73 MM CHOKE WITH 63.50 MM ORFICE PLATE IN PLACE, PRODUCED 2.62 M3 OF WATER IN LAST 12 HRS, SALINITY 178000 PPM AND PH 7, CONTINUE TO FLOW TEST WELL OVERNIGHT
3/18/2003	00:00 - 06:00	6.00	32	D	EVALPR	FLOWED WELL OVERNIGHT ON 8.73 MM CHOKE WITH 63.50 MM ORFICE PLATE IN PLACE, GAS RATE 125.618 10/3-M/3 PER DAY AND TUBING FLOWING PRESSURE 8287 KPA, PRODUCED 5.03 M3 OF FLUID IN LAST 24 HRS. SALINITY AT 122000 PPM AND PH 7, H2S 3000 PPM.
	06:00 - 19:00	13.00	32	D	EVALPR	1900 HRS GAS RATE AT 122.997 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE 8315 KPA. PRODUCED 2.46 M3 OF FLUID IN LAST 12 HRS, SALINITY 200000 PPM AND PH . CONTINUE TO FLOW TEST WELL.
3/19/2003	00:00 - 06:00	6.00	32	D	EVALPR	FLOWED WELL OVER NIGHT ON 8.73 MM CHOKE WITH 63.50 MM ORFICE PLATE IN PLACE. GAS RATE AT 123.673 10/3-M/3 PER DAY AT 0600 HRS WITH BACK PRESSURE OF 8032 KPA. PRODUCED 5.11 M3 OF FLUID IN LAST 24 HRS. SALINITY 136000 PPM AND PH 7, H2S 3000 PPM
	06:00 - 19:00	13.00	32	D	EVALPR	1900 HRS GAS RATE 124.897 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE 7906 KPA. PRODUCED 2.39 M3 OF FLUID IN LAST 12 HRS, SALINITY 174000 PPM AND PH 7, H2S 1000 PPM. CONTINUE TO FLOW TEST WELL
3/20/2003	00:00 - 06:00	6.00	32	D	EVALPR	FLOWED WELL OVERNIGHT ON 8.73 MM CHOKE WITH 63.50 MM ORFICE PLATE IN PLACE, GAS RATE 124.174 10/3-M/3 PER DAY AT 0600 HRS, PRODUCED 4.87 M3 OF FLUID IN LAST 24 HRS. SALINITY 146000 PPM AND PH 7 AND H2S 2500 PPM
	06:00 - 17:30	11.50	32	D	EVALPR	SHUT IN WELL AT 1730 HRS, FINAL GAS RATE 121.672 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE 7660 KPA. PRODUCED 2.23 M3 OF WATER IN LAST 11 HRS, SALINITY 150,000 PPM AND PH 7.
	17:30 - 19:00	1.50	32	D	EVALPR	SITP AT 1800 HRS = 13576 KPA, 1830 HRS PRESSURE = 15645 KPA AND 1930 HRS PRESSURE = 17478 KPA
4/7/2003	19:30 - 19:45	0.25	48		EVALPR	HOLD PREJOB SAFETY MEETING WITH ALL PERSONNEL, FILL OUT THE ACC SAFE WORK PERMIT.
	19:45 - 22:30	2.75	33	J	EVALPR	SITP = 18,499 KPA. MAKE UP AND RUN IN THE HOLE WITH A JDC PULLING TOOL, LATCH ONTO THE RECORDERS AT 2551.0 MCF. PERFORM A REVERSE STATIC GRADIENT MAKING 5 MINUTE STOPS AT 2500.0 M, 2400.0 M, 2200.0 M, 2000.0 M, 1800.0 M, 1200.0 M, 600.0 M, AND SURFACE. DOWN LOAD RECORDERS, BOTTOM RECORDER FAILED MARCH 26, MAX BHP = 24,991 KPA, MAX BHT = 139.0 C. RE-RUN A NEW SET OF TANDEM CALSCAN RECORDERS IN BOMBWELL, SET ON THE COLLAR STOP AT 2551.0 MCF. RECORDERS ON BOTTOM AT 22:01 HRS, PULL OUT OF THE HOLE. SECURE THE WELL AND RIG OUT SERVICES.

HALLIBURTON



					S.O. #	2280330	
	ANADARKO CANADA ENERGY		MIKE TKACHANKO		250 261 0406	2/25/2003	
<—— 1	LIARD		LIARD I-75		NWT	Packer	
<—— 2	Tubular	Size mm	Weight & Grade kg/m	Thread	Depth mkB	I.D. mm	Drift I.D. mm
<—— 3	Casing	177.80	L-80	LT&C		159.41	156.24
<—— 4	Liner	0.00	0.00				
	Tubing	88.90	L-80	553CB	2529.46	76.00	72.82
	Tubing	60.33	6.99kg/m L-80	553CB	2567.63	50.67	46.29
	Weights	Initial String WT	Transfer Weight	Slackoff WT	Hole Drag		
	DaN						
	Fluids	Fluid Type	Fluid WT kg/m3	Spec. Grav.	Pressure tested		Hydrostatic
	Tubing				MPA		
	Annulus	Water	1000.00	1.00	14 MPA		
	Data	Kickoff Depth	Deviation Angle	H2S	Co2	BHT	BHP
<—— 5	Perfs						
	Collars						

Item	Description	I.D. mm	O.D. mm	Length m	Top depth mKB
	KB to THF	N/A	N/A	6.83	-6.83
	Wireline Correction	N/A	N/A	1.12	6.83
1.	Dognut	76.00	N/A	0.28	7.95
2.	Pup Joint 88.90mm Hydril 563CB L-80 13.84kg/m Pin x Pin	76.00	88.90	0.44	8.23
3.	Joint 88.90mm Hydril 563CB L-80 13.84kg/m	76.00	88.90	9.05	8.67
4.	Pup Joints 88.90mm Hydril 563CB L-80 13.84kg/m (in order top down 3.03m, 2.36m, 0.45m)	76.00	88.90	5.84	17.72
5.	268 Joints 88.90mm Hydril 563CB L-80 13.84kg/m	76.00	88.90	2529.46	23.56
6.	177.80mm Halliburton Overshot w/ Atlas Seals Impregion 222M Coated ID/OD c/w 47.63mm Baker 'F' Profile (plug in place)	47.63	128.90	0.63	2553.02
<—— 2 7.	177.80mm 34.23-66.55kg/m Halliburton BWC Permanent Packer w/ Atlas Elements Impregion 222M Coated (top to CE 0.35m)	82.55	144.17	0.77	2553.65
8.	BWC Tubing Adapter c/w 60.33mm Hydril 563CB Pin down Impregion 222M Coated	50.67	108.60	0.11	2554.42
<—— 3 9.	60. 3mm Hydril 563CB L-80 Pup Joint Impregion 222M Coated 6.99kg/m	50.67	60.33	3.00	2554.53
<—— 4 10.	60.3mm Hydril 563CB Landing Nipple c/w 45.97mm Baker 'F' Profile Impregion 222M Coated	45.97	70.91	0.28	2557.53
11.	60.3mm Hydril 563CB L-80 Joint Impregion 222M Coated Perforated 6.99kg/m	50.67	60.33	9.62	2557.81
<—— 5 12.	60.3mm Hydril 563CB L-80 Wireline Re-entry Guide w/ 45.49mm No-Go Impregion 222M Coated	45.47	61.42	0.20	2567.43
<—— 6					2567.63
<—— 7					
<—— 8					

Directions:

Anadarko Canada Corporation

Wellbore Equipment Report

Legal Well Name: ANADARKO ARROWHEAD RIVER I-75
Common Well Name: ARROWHEAD RIVER I-75
Event Name: ORIG COMPLETION

Report #: 1
Start: 2/24/2003

Spud Date: 1/25/2003
Report Date: 2/28/2003
End: 3/20/2003

Assembly Name: PACKER ASSEMBLY
Suspended From: SURFACE EQUIPMENT @ (m)
TMD Correction: (m)
Landed TMD: 2,559.52 (m)

Install Date: 2/28/2003
Pull Date:
Final String Weight: (daN)
Landed Weight: (daN)

Nom. Size (mm)	Component	Description	# Jts	I.D. (mm)	O.D. (mm)	Weight (kg/m)	Grade	Length (m)	Top Set (m)	Manufacturer	Model #	Connection	Comments
177.80	TUBING HANGER	COOPER CAMERON	1	153.90	177.80	43.16	L80	0.28		PRUDENTIAL		HYDRIL	IMPRAGLON COATED
88.90	TUBING JOINT(S)	HYDRIL	1					0.28	0.28	HYDRIL		HYDRIL	IMPRAGLON COATED
88.90	TUBING JOINT(S)	HYDRIL	1	74.75	88.90	11.46	L80	9.05	0.56	HYDRIL		HYDRIL	IMPRAGLON COATED
88.90	PUP JOINT	HYDRIL	1	74.75	88.90	11.46	L80	0.45	9.61	HYDRIL		HYDRIL	IMPRAGLON COATED
88.90	PUP JOINT	HYDRIL	1	74.75	88.90	11.46	L80	2.36	10.06	HYDRIL		HYDRIL	IMPRAGLON COATED
88.90	PUP JOINT	HYDRIL	1	74.75	88.90	11.46	L80	3.03	12.42	HYDRIL		HYDRIL	IMPRAGLON COATED
88.90	TUBING JOINT(S)	HYDRIL	268	74.75	88.90	11.46	N80	2,529.46	15.45	HYDRIL		HYDRIL	
177.80	ON-OFF TOOL	177.8 MM OVERSHOT C/W 47.63 MM BAKER "F"	1	162.89	177.80	25.30	H40	0.63	2,544.91	HYDRIL		HYDRIL	IMPRAGLON COATED
219.08	PACKER	177.8 MM HALLIBURTON BWC PERMANANT	1			35.72		0.77	2,545.54	HYDRIL		HYDRIL	IMPRAGLON COATED
19.05	CROSSOVER	BWC 88.9 MM TO 60.3 MM	1					0.11	2,546.31	HYDRIL		HYDRIL	IMPRAGLON COATED
60.33	PUP JOINT	HYDRIL	1					3.00	2,546.42	HYDRIL		HYDRIL	IMPRAGLON COATED
60.33	PROFILE NIPPLE	BAKER PROFILE 45.97 MM "F"	1	48.29	60.33	6.99	L80	0.28	2,549.42	HYDRIL		HYDRIL	IMPRAGLON COATED
60.33	TUBING JOINT(S)	PERFORATED TUBING JOINT	1	48.29	60.33	6.99	L80	9.62	2,549.70	HYDRIL		HYDRIL	IMPRAGLON COATED
60.33	RE-ENTRY GUIDE	C/W 45.49 NO/GO	1	48.29	60.33	6.99	L80	0.20	2,559.32	HYDRIL		HYDRIL	IMPRAGLON COATED

Anadarko Canada Corporation

Final Pipe Tally Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER I-75			Spud Date:	1/25/2003
Common Well Name:	ARROWHEAD RIVER I-75	Report #:	1	Report Date:	2/26/2003
Event Name:	ORIG COMPLETION	Start:	2/24/2003	End:	2/28/2003

Date Run: 2/26/2003
Buoyancy Factor:

Proposed Setting TMD: (m)
Block Weight: (daN)

Pipe Information

Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct	Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct
1			9.51	9.51		45			9.50	425.85	
2			9.46	18.97		46			9.51	435.36	
3			9.56	28.53		47			9.39	444.75	
4			9.51	38.04		48			9.53	454.28	
5			9.54	47.58		49			9.42	463.70	
6			9.52	57.10		50			9.50	473.20	
7			9.49	66.59		51			9.50	482.70	
8			9.49	76.08		52			9.50	492.20	
9			9.48	85.56		53			9.50	501.70	
10			9.50	95.06		54			9.50	511.20	
11			9.38	104.44		55			9.46	520.66	
12			9.51	113.95		56			9.52	530.18	
13			9.35	123.30		57			9.52	539.70	
14			9.51	132.81		58			9.48	549.18	
15			9.52	142.33		59			9.50	558.68	
16			9.52	151.85		60			9.47	568.15	
17			9.49	161.34		61			9.53	577.68	
18			9.47	170.81		62			9.51	587.19	
19			9.47	180.28		63			9.52	596.71	
20			9.52	189.80		64			8.66	605.37	
21			9.49	199.29		65			9.46	614.83	
22			9.35	208.64		66			9.48	624.31	
23			9.36	218.00		67			9.49	633.80	
24			9.53	227.53		68			9.50	643.30	
25			9.36	236.89		69			9.50	652.80	
26			9.52	246.41		70			9.49	662.29	
27			9.49	255.90		71			9.52	671.81	
28			8.89	264.79		72			9.50	681.31	
29			9.52	274.31		73			9.52	690.83	
30			9.53	283.84		74			9.49	700.32	
31			9.39	293.23		75			9.54	709.86	
32			9.48	302.71		76			9.50	719.36	
33			9.54	312.25		77			9.51	728.87	
34			9.50	321.75		78			9.51	738.38	
35			9.49	331.24		79			9.47	747.85	
36			9.53	340.77		80			9.49	757.34	
37			9.47	350.24		81			9.52	766.86	
38			9.48	359.72		82			9.48	776.34	
39			9.36	369.08		83			8.50	784.84	
40			9.37	378.45		84			9.45	794.29	
41			9.48	387.93		85			9.48	803.77	
42			9.49	397.42		86			9.47	813.24	
43			9.38	406.80		87			9.25	822.49	
44			9.55	416.35		88			9.45	831.94	

Anadarko Canada Corporation

Final Pipe Tally Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER I-75			Spud Date:	1/25/2003
Common Well Name:	ARROWHEAD RIVER I-75	Report #:	1	Report Date:	2/26/2003
Event Name:	ORIG COMPLETION	Start:	2/24/2003	End:	2/28/2003

Pipe Information

Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct	Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct
89			9.47	841.41		136			9.51	1,285.58	
90			9.50	850.91		137			9.48	1,295.06	
91			9.48	860.39		138			9.46	1,304.52	
92			9.45	869.84		139			9.48	1,314.00	
93			9.26	879.10		140			9.52	1,323.52	
94			9.28	888.38		141			9.50	1,333.02	
95			9.38	897.76		142			9.53	1,342.55	
96			9.47	907.23		143			9.47	1,352.02	
97			9.52	916.75		144			9.49	1,361.51	
98			9.34	926.09		145			9.49	1,371.00	
99			9.54	935.63		146			9.48	1,380.48	
100			9.49	945.12		147			9.05	1,389.53	
101			9.32	954.44		148			9.51	1,399.04	
102			9.53	963.97		149			9.53	1,408.57	
103			9.50	973.47		150			9.50	1,418.07	
104			9.53	983.00		151			9.16	1,427.23	
105			9.50	992.50		152			9.52	1,436.75	
106			9.49	1,001.99		153			9.55	1,446.30	
107			9.48	1,011.47		154			9.48	1,455.78	
108			9.43	1,020.90		155			9.53	1,465.31	
109			9.43	1,030.33		156			9.56	1,474.87	
110			9.49	1,039.82		157			9.50	1,484.37	
111			9.48	1,049.30		158			9.49	1,493.86	
112			9.30	1,058.60		159			9.50	1,503.36	
113			9.51	1,068.11		160			9.52	1,512.88	
114			9.49	1,077.60		161			9.50	1,522.38	
115			8.76	1,086.36		162			9.50	1,531.88	
116			9.50	1,095.86		163			9.48	1,541.36	
117			9.48	1,105.34		164			9.52	1,550.88	
118			9.36	1,114.70		165			9.49	1,560.37	
119			9.48	1,124.18		166			9.49	1,569.86	
120			9.47	1,133.65		167			9.51	1,579.37	
121			9.46	1,143.11		168			9.48	1,588.85	
122			9.52	1,152.63		169			9.50	1,598.35	
123			9.52	1,162.15		170			9.46	1,607.81	
124			9.52	1,171.67		171			9.49	1,617.30	
125			9.49	1,181.16		172			9.48	1,626.78	
126			9.55	1,190.71		173			9.49	1,636.27	
127			9.51	1,200.22		174			9.48	1,645.75	
128			9.50	1,209.72		175			9.49	1,655.24	
129			9.49	1,219.21		176			9.52	1,664.76	
130			9.44	1,228.65		177			9.49	1,674.25	
131			9.46	1,238.11		178			9.51	1,683.76	
132			9.51	1,247.62		179			9.48	1,693.24	
133			9.51	1,257.13		180			9.48	1,702.72	
134			9.43	1,266.56		181			9.57	1,712.29	
135			9.51	1,276.07		182			9.49	1,721.78	

Anadarko Canada Corporation

Final Pipe Tally Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER I-75			Spud Date:	1/25/2003
Common Well Name:	ARROWHEAD RIVER I-75	Report #:	1	Report Date:	2/26/2003
Event Name:	ORIG COMPLETION	Start:	2/24/2003	End:	2/28/2003

Pipe Information

Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct	Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct
183			9.52	1,731.30		230			9.56	2,176.57	
184			9.48	1,740.78		231			9.51	2,186.08	
185			9.44	1,750.22		232			9.51	2,195.59	
186			9.52	1,759.74		233			9.54	2,205.13	
187			9.47	1,769.21		234			9.51	2,214.64	
188			9.49	1,778.70		235			9.51	2,224.15	
189			9.50	1,788.20		236			9.51	2,233.66	
190			9.48	1,797.68		237			9.49	2,243.15	
191			9.52	1,807.20		238			9.53	2,252.68	
192			9.48	1,816.68		239			9.49	2,262.17	
193			9.07	1,825.75		240			9.49	2,271.66	
194			9.48	1,835.23		241			9.54	2,281.20	
195			8.70	1,843.93		242			9.53	2,290.73	
196			9.49	1,853.42		243			9.48	2,300.21	
197			9.50	1,862.92		244			9.51	2,309.72	
198			9.51	1,872.43		245			9.50	2,319.22	
199			9.48	1,881.91		246			9.50	2,328.72	
200			9.54	1,891.45		247			9.45	2,338.17	
201			9.49	1,900.94		248			9.51	2,347.68	
202			9.51	1,910.45		249			9.51	2,357.19	
203			9.50	1,919.95		250			9.49	2,366.68	
204			9.55	1,929.50		251			9.56	2,376.24	
205			9.54	1,939.04		252			9.60	2,385.84	
206			9.49	1,948.53		253			9.54	2,395.38	
207			9.53	1,958.06		254			9.51	2,404.89	
208			9.53	1,967.59		255			9.52	2,414.41	
209			9.51	1,977.10		256			9.52	2,423.93	
210			9.49	1,986.59		257			9.50	2,433.43	
211			9.53	1,996.12		258			9.57	2,443.00	
212			9.52	2,005.64		259			9.49	2,452.49	
213			9.31	2,014.95		260			9.50	2,461.99	
214			9.54	2,024.49		261			9.50	2,471.49	
215			9.55	2,034.04		262			9.51	2,481.00	
216			9.51	2,043.55		263			9.50	2,490.50	
217			9.51	2,053.06		264			9.50	2,500.00	
218			9.51	2,062.57		265			9.51	2,509.51	
219			9.46	2,072.03		266			8.96	2,518.47	
220			9.51	2,081.54		267			9.51	2,527.98	
221			9.50	2,091.04		268			9.05	2,537.03	
222			9.51	2,100.55		269			9.50	2,546.53	
223			9.50	2,110.05		OUT			9.49		
224			9.41	2,119.46		OUT			9.54		
225			9.50	2,128.96		OUT			9.48		
226			9.51	2,138.47		OUT			9.52		
227			9.51	2,147.98		OUT			9.55		
228			9.51	2,157.49		OUT			9.57		
229			9.52	2,167.01		OUT			9.45		

Anadarko Canada Corporation

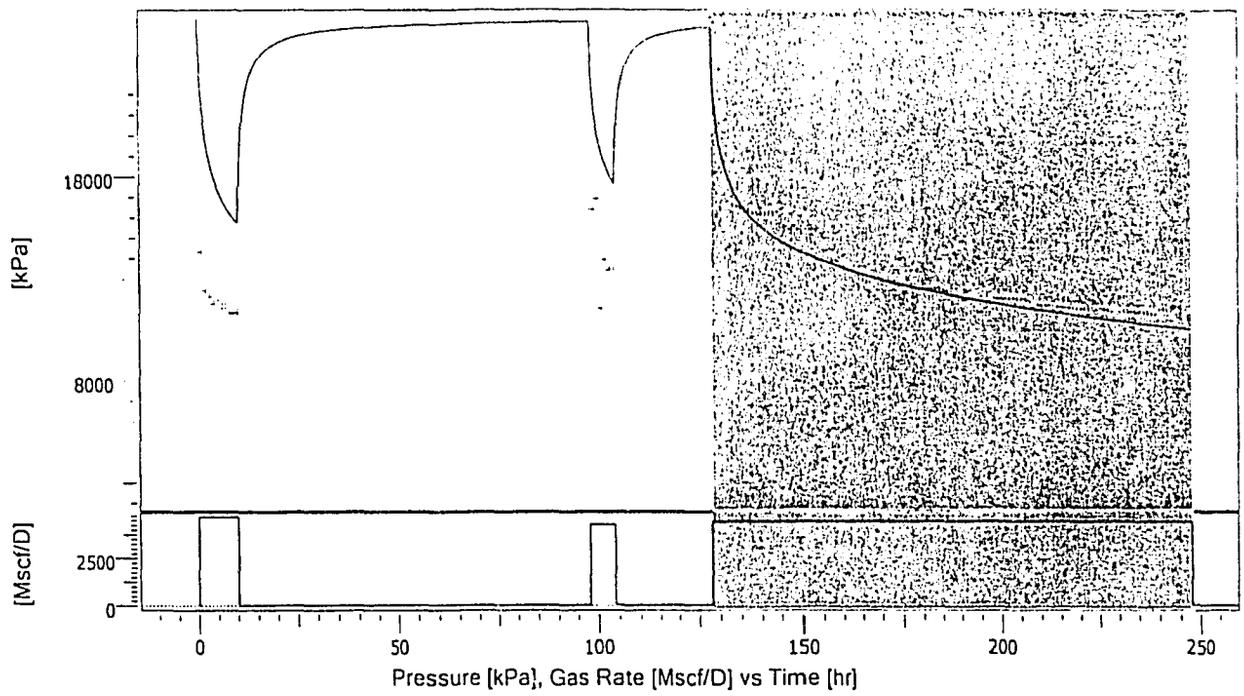
Final Pipe Tally Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER I-75			Spud Date:	1/25/2003
Common Well Name:	ARROWHEAD RIVER I-75	Report #:	1	Report Date:	2/26/2003
Event Name:	ORIG COMPLETION	Start:	2/24/2003	End:	2/28/2003

Pipe Information

Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct	Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct
OUT			9.50			OUT			9.48		
OUT			9.51			OUT			9.51		

KAPPA	History plot	dd 1
	Company Anadarko Well I 75	Field Arrowhead Test Name / # Mod 1



I75 dd data for Saphir Mar20 production #3

Rate	4400 Mscf/D
Rate Change	4400 Mscf/D
P@dt=0	25649 kPa
Pi	25649 kPa
Smoothing	0.8

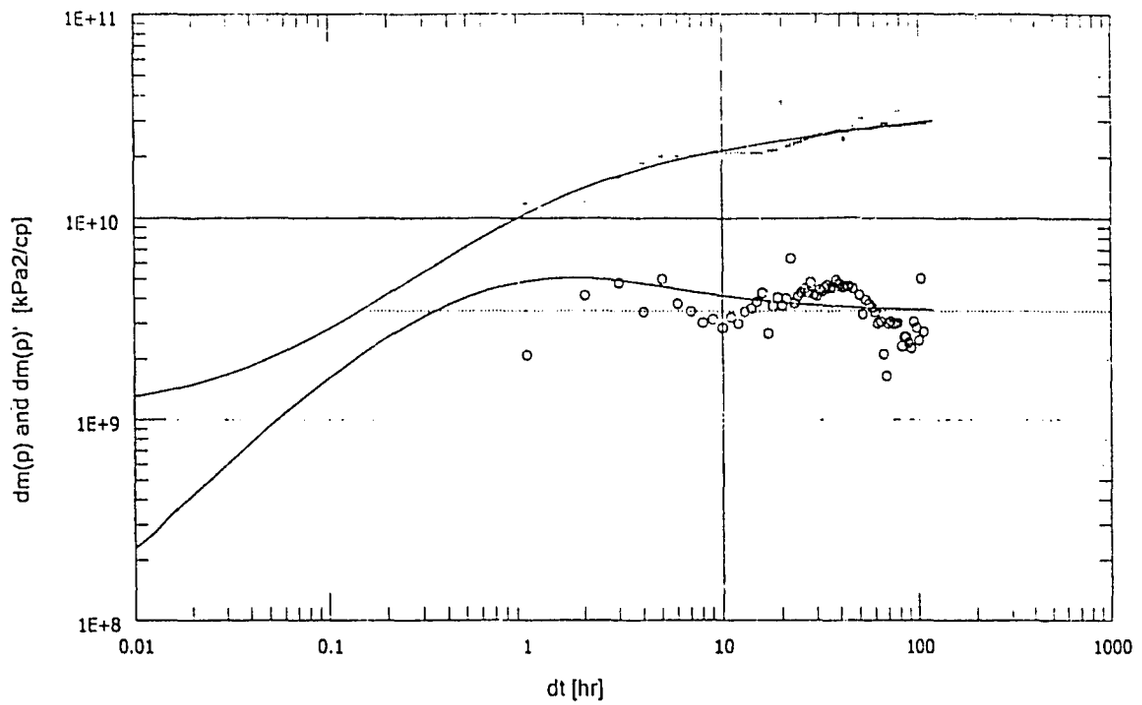
Selected Model

Model Option	Standard Model
Well	Storage + Skin
Reservoir	Homogeneous
Boundary	Infinite

Results

TMatch	3.08 [hr]**-1
PMatch	1.44E-10 [kPa2/cp]**-1
C	0.00334 m3/kPa
Skin	-3.37
Delta P Skin	-9163.33 kPa
Pi	25649 kPa
k.h	9.14 md.m
k	0.914 md
Rinv	189 m
Test. Vol.	56407 m3

Log-Log plot	dd 1
Company Anadarko	Field Arrowhead
Well I 75	Test Name / # Mod 1



I75 dd data for Saphir Mar20 production #3

Rate	4400 Mscf/D
Rate Change	4400 Mscf/D
P@dt=0	25649 kPa
Pi	25649 kPa
Smoothing	0.8

Selected Model

Model Option	Standard Model
Well	Storage + Skin
Reservoir	Homogeneous
Boundary	Infinite

Results

TMatch	3.08 [hr]**-1
PMatch	1.44E-10 [kPa2/cp]**-1
C	0.00334 m3/kPa
Skin	-3.37
Delta P Skin	-9163.33 kPa
Pi	25649 kPa
k.h	9.14 md.m
k	0.914 md
Rinv	189 m
Test. Vol.	56407 m3

KAPPA	Main Results	dd 1	
	Company Anadarko	Field Arrowhead	
	Well I 75	Test Name / # Mod 1	

Test date / time	March 2003
Formation interval	Slave Point
Perforated interval	2850-60 Landry (open hole)
Gauge type / #	
Gauge depth	2560
TEST TYPE	Standard
Porosity Phi (%)	5
Well Radius rw	0.078 m
Pay Zone h	10 m
Water Salt (ppm)	10000
Rock compr.	4.35113E-7 kPa-1
Reservoir T	115 °C
Reservoir P	22000 kPa
FLUID TYPE	Gas

Gas

Gas Gravity	0.69
Pseudo-Critical P	4784.65 kPa
Pseudo-Critical T	193.004 °K

Sour gas composition

Hydrogen sulphide	4E-4
Carbon dioxide	0.12
Nitrogen	0.04

Water

Salinity, ppm	10000
Temperature	115 °C
Pressure	22000 kPa
Properties	@ Reservoir T&P

Gas

Z	0.97715
Mug	0.0198266 cp
Bg	0.00604957 cf/scf
cg	4.15264E-5 kPa-1
Rhog	139.696 kg/m3

Water

Rsw	3.08479 m3/m3
Bw	1.04298 B/STB
cw	5.41979E-7 kPa-1
Muw	0.25172 cp
Rhow	966.167 kg/m3
Total Compr. ct	3.17154E-5 kPa-1
Connate Water (%)	25

Selected Model

Model Option	Standard Model
Well	Storage + Skin
Reservoir	Homogeneous
Boundary	Infinite

Results

TMatch	3.08 [hr]**-1
PMatch	1.44E-10 [kPa2/cp]**-1
C	0.00334 m3/kPa
Skin	-3.37
Delta P Skin	-9163.33 kPa
Pi	25649 kPa
k h	9.14 md.m
k	0.914 md
Rinv	189 m
Test. Vol.	56407 m3

Customer Name: Anadarko

Wellhead Specification Form
Configuration # 53

Well Name: NWT | Well Location: I-75 | Date Ordered:

A.F.E. | Ordered By: Hugh. | Date at Destination:

P.O. No.: | Release No: | Rig / No.:

Ship To: | Ship Via

Special Instructions: | Paint Colour:

Sales Order No.: | P.P.S. No.:

Wing Valve

Size: ____ mm 2 in
Pressure: ____ mPa 5M psi
Trim: T-37
Mfr.: WKM
P/N: 2059716-06-01
S/N: 1100328556-1
Tag: ____

Tubing Head Adapter Flange

Size: ____ mm 11 in
Pressure: ____ mPa 6M psi
Mfr.: Cameron
P/N: 213*4005-03-52
S/N: 1100357539-1
Tag: ____

Tubing Hanger

Size: 11 x 3½ Hydril
BPV Thrd. No ☐ Yes ☑
Extended Neck No ☐ Yes ☑
Mfr.: Cameron.
P/N: 2134008-04-52
Tag: ____

Tubing Head

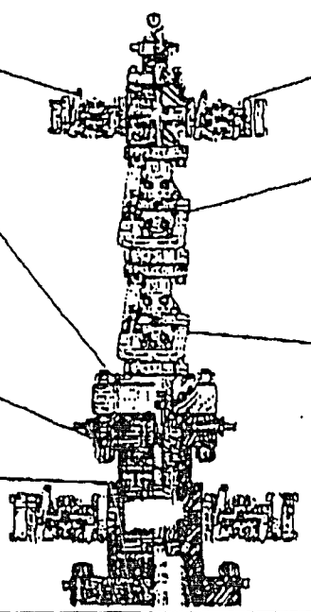
Top Connection
Size: ____ mm ____ In
Pressure: ____ mPa ____ psi
Bottom Connection
Size: ____ mm ____ in
Pressure: ____ mPa ____ psi
Mfr.: ____
P/N: ____
S/N: ____
Tag(s): ____

Top Adapter

Size: 3⅛ 5M
Mfr.: ____
P/N: 2712029-04-52
S/N: ____

Studded Cross

Size: 3⅛ x 3⅛ x 3⅛ x 2⅛ 5M
P/N: 2133538-03-92
S/N: ____



Secondary Seal / Intermediate Casing Program

Size: ____ mm ____ in
Mfr.: ____
P/N: ____
S/N: ____
Tag: ____

Wing Valve

Size: ____ mm 3⅛ in
Pressure: ____ mPa 5M psi
Trim: T-37
Mfr.: WKM
P/N: 2133073-12-52
S/N: 1100350078-2
Tag: ____

Upper Master Valve

Size: ____ mm 3⅛ in
Pressure: ____ mPa 5M psi
Trim: T-37
Mfr.: WKM
P/N: 2133073-12-52
S/N: 1100350078-3
Tag: ____

Lower Master Valve

Size: ____ mm 3⅛ in
Pressure: ____ mPa 5M psi
Trim: T-37
Mfr.: WKM
P/N: 2133073-12-52
S/N: 1100350078-1
Tag: ____

Annulus Valves

Size: ____ mm ____ in
Pressure: ____ mPa ____ psi
Trim: ____
Mfr(s): ____
P/N(s): ____
S/N(s): ____
Tag(s): ____

API 6A | Temp.: ____ | Matl. Class: ____ | P.S.L. ____

Ring Gasket: M.S. ☐ S.S. ☐ | Type: R ☐ RX ☐ | Bolting: B7 ☐ L7 ☐ B7M ☐ L7M ☐

Top Flange Accessories | Studs / Nuts ☐ | Ring Gasket ☐

Misc.:

Schlumberger

Anadarko

CCAT
Treatment Report

Well: I-75

Field
Arrowhead
Formation
Slave Point
Location
I-75

Country
Canada
State Province City
Northwest Territories
County Parish

Prepared for *Joe Graves*

Service Point Grande Prairie

Treatment No. 811-6756
Date Prepared 03-10-2003

Business Phone 1 780 539 4220
FAX No. 1 780 539 7532

Prepared by Andy Branchi
Phone 1 780 518 4677
E-Mail Address branchi@grande-prairie.oilfield.slb.com

Comments Cleanout sand from on top of plug with Nitrogen.
( )

Disclaimer Notice

This information is presented in good faith, but no warranty is given by and Dowell assumes no liability for advice or recommendations made concerning results to be obtained from the use of any product or service. The results given are estimates based on calculations produced by a computer model including various assumptions on the well, reservoir and treatment. The results depend on input data provided by the Operator and estimates as to unknown data and can be no more accurate than the model, the assumptions and such input data. The information presented is Dowell's best estimate of the actual results that may be achieved and should be used for comparison purposes rather than absolute values. The quality of input data, and hence results, may be improved through the use of certain tests and procedures which Dowell can assist in selecting.

The Operator has superior knowledge of the well, the reservoir, the field and conditions affecting them. If the Operator is aware of any conditions whereby a neighboring well or wells might be affected by the treatment proposed herein it is the Operator's responsibility to notify the owner or owners of the well or wells accordingly.

Prices quoted are estimates only and are good for 30 days from the date of issue. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services.

Freedom from infringement of patents of Dowell or others is not to be inferred.

Client : Anadarko
Well : I-75
Formation : Slave Point
District : Grande Prairie
Country : Canada
Loadcase : Acq Load Case

Schlumberger

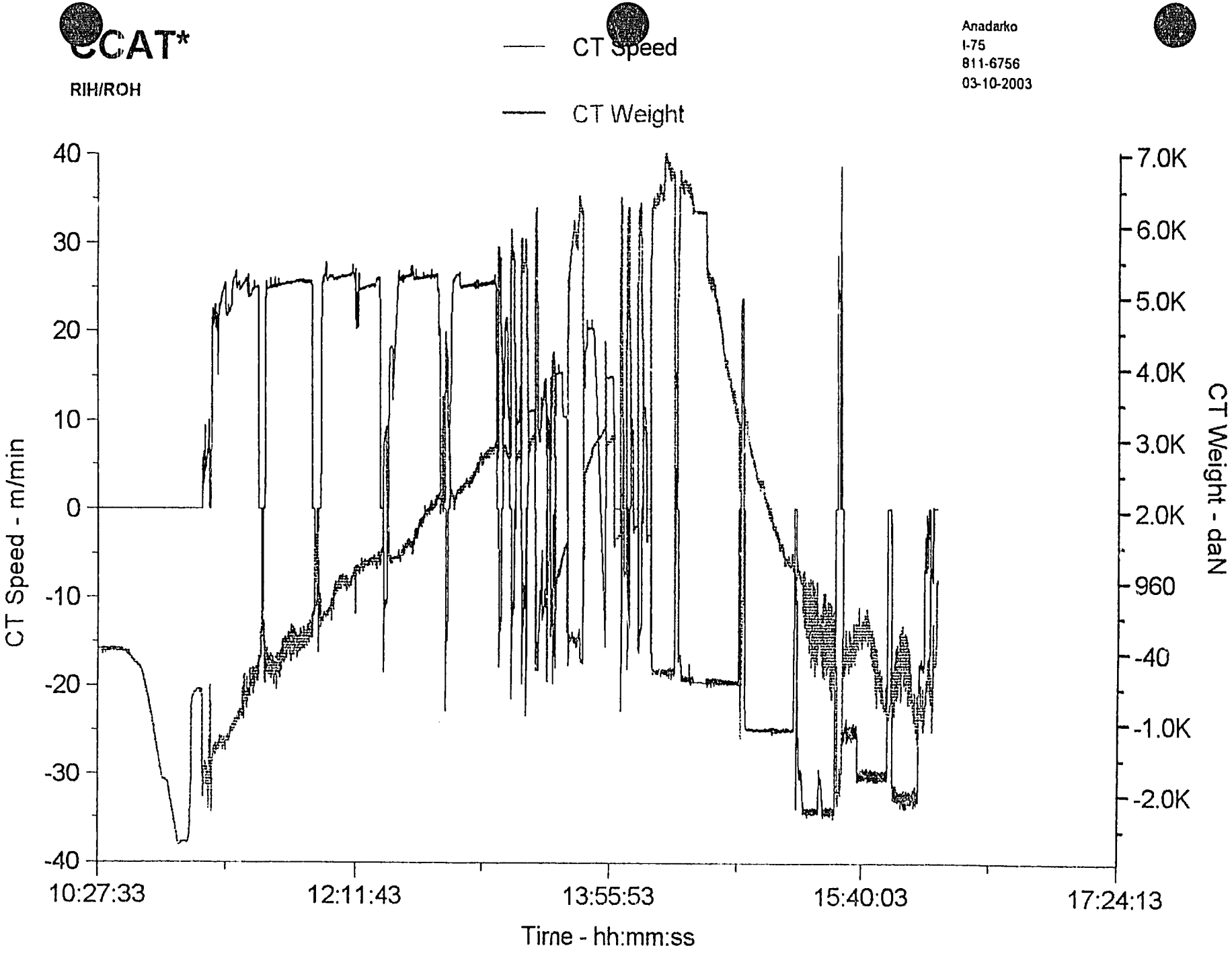
Section 1: Job Messages

#	Time	Message	Corr Depth (m)	CT Weight (daN)	Circ Pres (kPa)	Wellhead Press (kPa)	N2 Rate (scm/min)
1	7:30:36	Arrive on Location	0.0	0.00	0	0	0
2	7:50:51	Have safety meeting	0.0	0.00	0	0	0
3	8:00:01	Start Rig up	0.0	0.00	0	0	0
4	9:49:46	Zeroed Weight	0.0	0.00	0	0	0
5	9:51:36	Have safety meeting	0.0	0.00	0	0	0
6	10:27:12	Zeroed Depth	0.0	0.00	0	0	0
7	10:27:58	Start PT	3.0	16.20	-2	20	0
8	11:06:48	PT Good	3.0	-596.70	20721	2146	0
9	11:07:01	Open well	3.0	-592.80	20022	2103	0
10	11:09:16	RIH	3.0	-578.70	14270	1476	0
11	11:20:45	Fluid to surface	176.5	-1241.50	3151	767	0
12	11:22:14	Start N2 @ 10 scm	210.1	-1091.00	2626	664	0
13	11:34:19	Pull Test at Meters	476.5	316.78	3252	607	11
14	11:55:12	Pull Test at Meters	936.6	1505.30	4642	531	11
15	12:11:50	Raise N2 @ 15 scm	1307.3	1114.00	5448	397	15
16	12:23:10	Pull Test at Meters	1533.5	3023.60	7452	640	16
17	12:49:03	Pull Test at Meters	2035.0	4322.60	7229	1074	15
18	13:01:27	Raise N2 @ 30 scm	2303.9	2570.00	7249	864	16
19	13:02:52	11.4m3 returned so far	2339.8	2714.40	8287	611	24
20	13:10:32	Pull Test at Meters	2493.6	5405.90	10901	1021	30
21	13:15:20	Pull Test @ 2530m	2527.0	5756.20	11763	1335	30
22	13:19:40	Pull Test @ 2535m	2531.1	5594.50	11849	1974	30
23	13:26:25	Pull Test @ 2540m	2521.6	3049.70	11002	2068	30
24	13:33:38	Mud To Surface	2488.3	953.90	16300	5008	31
25	13:38:16	Tag Out @ PB	2543.8	1669.00	16494	4850	29
26	13:38:52	Pull Test @ PB	2536.9	5143.50	16297	4415	30
27	13:49:12	Tag PB @ 2543.6m	2528.0	2892.60	11805	2032	31
28	13:57:54	Tag PB	2543.6	1490.00	10344	1765	29
29	14:00:52	Pull Test at Meters	2540.1	6271.40	10130	1829	29
30	14:01:56	Tag PB	2543.9	1156.33	10077	1785	30
31	14:03:58	Pull Test at Meters	2535.4	6171.80	10101	1826	30
32	14:05:44	Tag PB	2543.4	2767.50	10081	1793	30
33	14:08:24	Pull Test at Meters	2536.4	6151.60	10011	1802	30
34	14:11:09	Tag PB	2543.7	1631.50	10002	1802	30
35	14:11:56	POOH	2543.7	1638.00	9988	1743	30
36	14:24:45	Shut in Well and Pressure up to 20 MPa	2367.7	6423.00	9740	1842	30
37	14:28:12	16.1m3 Total returned	2302.2	6430.20	9828	4955	30
38	15:06:16	N2 down	1544.2	1460.40	21493	20101	3
39	16:09:48	At surface	-4.0	-175.00	18869	19586	0
40	16:10:00	Bleed off and rig out	-4.0	197.40	18068	12542	0

CCAT*

RIH/ROH

Anadarko
I-75
811-6756
03-10-2003



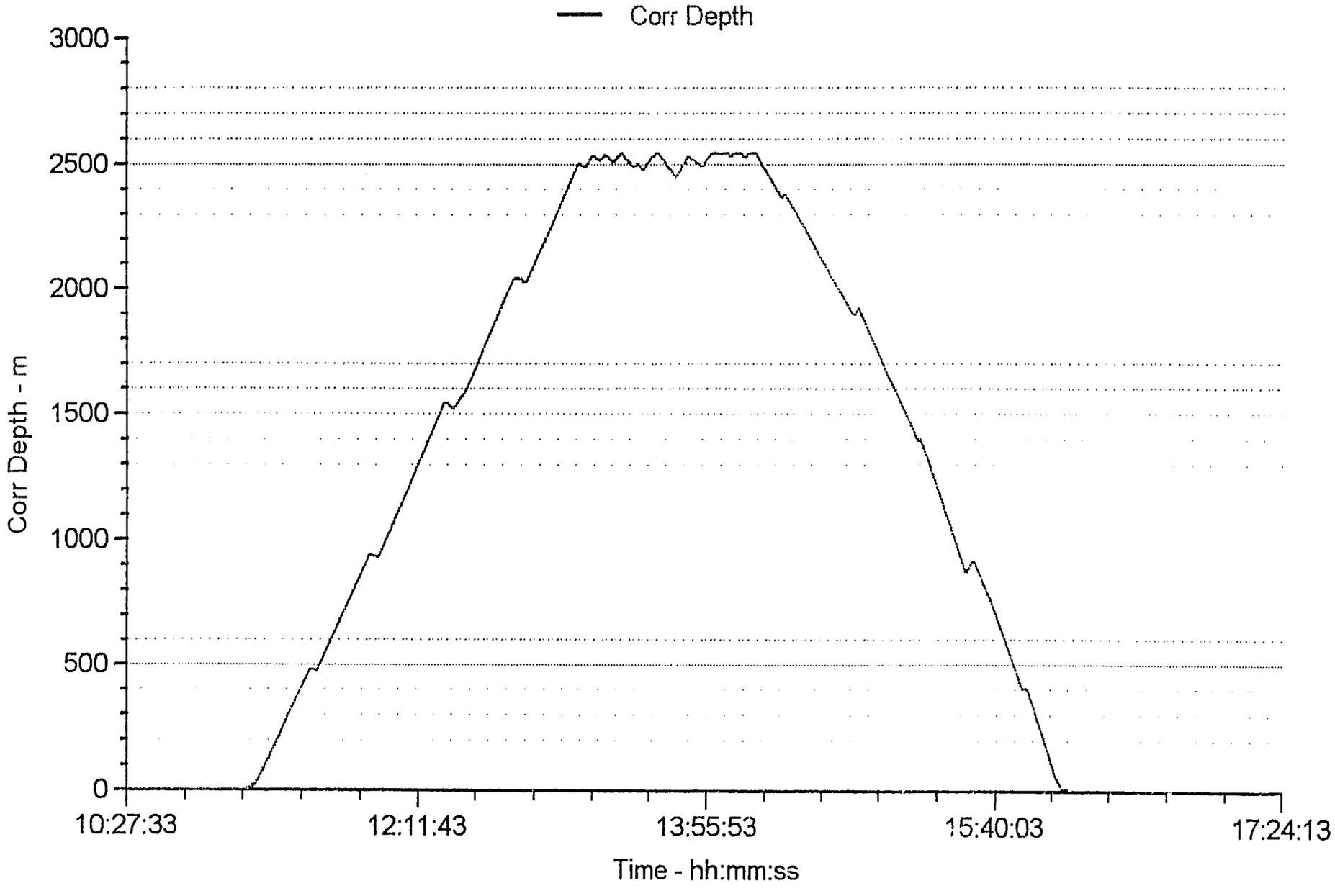
Schlumberger

(c) Schlumberger Dowell 1994-99

CCAT*

Depth Vs Time

Anadarko
I-75
811-6756
03-10-2003



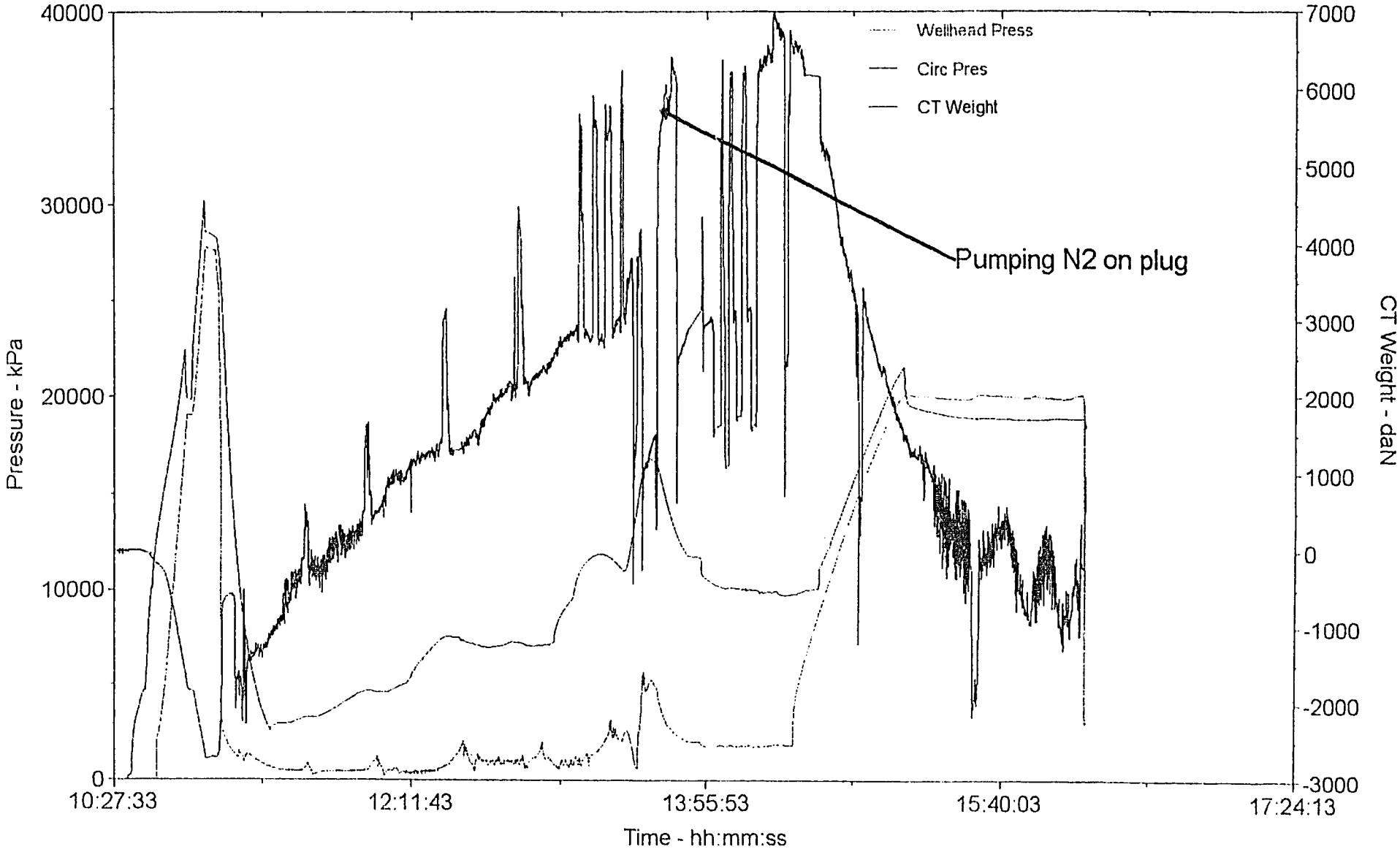
Schlumberger

(c) Schlumberger Dowell 1994-99

CCAT*

Acq Panel Plot - Post Job

Anadarko
I-75
811-6756
03-10-2003



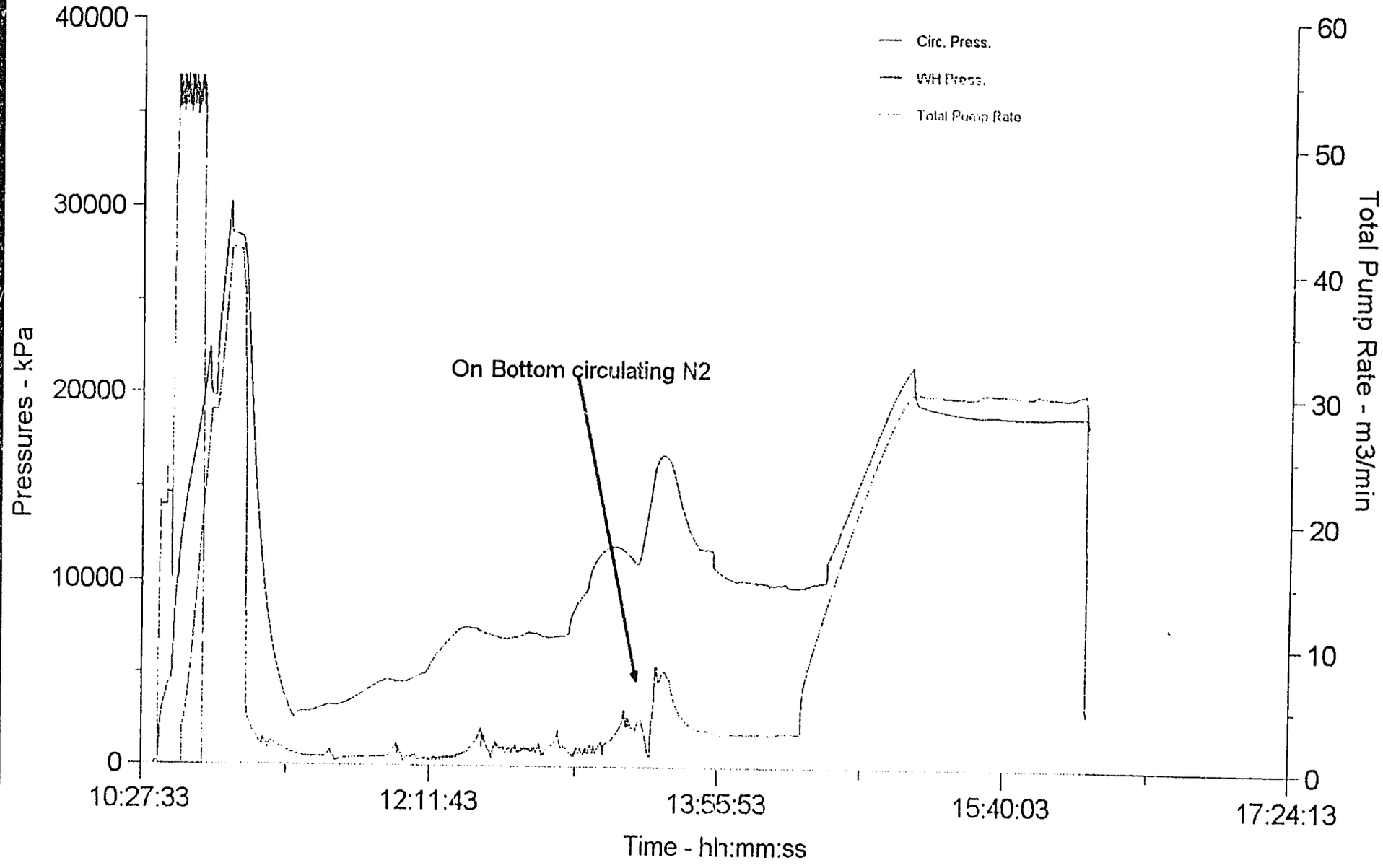
Schlumberger

(c) Schlumberger Dowell 1994-99

CAT*

Pressure and Rate

Anadarko
I-75
811-6756
03-10-2003



Schlumberger

(c) Schlumberger Dowell 1994-99

Company: ANADARKO CANADA ENERGY LTD.
Well name: ANADARKO ARROWHEAD
Location: I-75
Date of test: 03/14/03 TO 04/07/03
Test by RAPID WIRELINE SERVICES LTD.
Interp. by P.D.Q. Services Ltd.

Subsurface Pressure Measurements

Company: ANADARKO CANADA ENERGY LTD.
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / SLAVEPOINT
Type of test: SINGLE POINT
Prod. Int KB: 2538.27 to 2822.19
Elev. (CF) 510.8 (KB) 517.9
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: I-75
Status: GAS
Date of test: 03/14/03 TO 04/07/03
Prod. through: 88.9MM TUBING
Mid-point prod.int. KB: 2680.23
Datum depth of well KB:

Tubing pres: INITIAL: 19261 FIN: N/A
Shut in time: 03/20/03 17:30 HRS
Temperature at run depth: 138.289
Deviated well: Y

Casing pres:
Duration of Shut in: 433.3167 HRS
On/off btm: 03/14/03 / 04/07/03
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9471
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/12/02
Reading Interval: 30 SECONDS
Gauge started: 03/14/03 05:42
Gauge stopped: 04/07/03 20:06
Run depth (KB): 2513

BOTTOM RECORDER

Element serial#: 9472
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/12/02
Reading Interval: 30 SECONDS
Gauge started: 03/14/03 05:42
Gauge stopped: 04/07/03 20:06
Run depth (KB): 2513.5

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
	03/14/2003	06:53:00	ON BOTTOM		
3/14/2003 06:53:00	0.0000	0.0000	108.657	25072.35	
3/14/2003 09:38:30	2.7583	2.7583	136.768	25039.25	
	03/14/2003	09:38:30	OPENED WELL TO FLOW		
3/14/2003 09:38:30	2.7583	0.0000	136.768	25039.25	
3/14/2003 09:40:00	2.7833	0.0250	136.715	23913.03	
3/14/2003 09:41:30	2.8083	0.0500	136.501	22890.69	
3/14/2003 09:43:30	2.8417	0.0833	136.209	21779.93	
3/14/2003 09:46:00	2.8833	0.1250	136.105	20752.54	
3/14/2003 09:49:30	2.9417	0.1833	135.958	19635.90	
3/14/2003 09:54:00	3.0167	0.2583	135.903	18551.51	
3/14/2003 09:59:30	3.1083	0.3500	135.953	17498.08	
3/14/2003 10:07:00	3.2333	0.4750	136.073	16442.89	
3/14/2003 10:21:30	3.4750	0.7167	136.269	15431.18	
3/14/2003 11:15:00	4.3667	1.6083	137.203	16516.33	
3/14/2003 11:20:00	4.4500	1.6917	138.100	17519.06	
3/14/2003 11:25:00	4.5333	1.7750	137.490	16374.96	
3/14/2003 11:31:30	4.6417	1.8833	136.184	15322.32	
3/14/2003 11:42:00	4.8167	2.0583	136.681	16331.19	
3/14/2003 11:44:30	4.8583	2.1000	136.778	15090.88	
3/14/2003 11:46:30	4.8917	2.1333	135.858	13951.74	

Company: ANADARKO CANADA ENERGY LTD.
Date of test: 03/14/03 TO 04/07/03
Element serial#: 9471

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/14/2003 11:49:30	4.9417	2.1833	134.784	12865.05	
3/14/2003 11:57:30	5.0750	2.3167	134.945	11856.36	
3/14/2003 12:11:00	5.3000	2.5417	135.199	10833.24	
3/14/2003 12:45:00	5.8667	3.1083	135.793	11884.03	
3/14/2003 13:18:00	6.4167	3.6583	135.657	12904.87	
3/14/2003 14:23:30	7.5083	4.7500	135.801	13930.63	
3/14/2003 14:28:00	7.5833	4.8250	136.789	15017.23	
3/14/2003 14:34:00	7.6833	4.9250	135.276	13980.36	
3/14/2003 14:53:00	8.0000	5.2417	134.614	13119.97	
3/14/2003 15:38:30	8.7583	6.0000	134.421	12865.91	
	03/14/2003	15:38:30	SHUT WELL IN		
3/14/2003 15:38:30	8.7583	0.0000	134.421	12865.91	
3/14/2003 15:41:30	8.8083	0.0500	135.074	14033.64	
3/14/2003 15:45:00	8.8667	0.1083	136.512	15173.10	
3/14/2003 15:49:00	8.9333	0.1750	137.580	16251.39	
3/14/2003 15:53:30	9.0083	0.2500	138.204	17274.93	
3/14/2003 15:59:00	9.1000	0.3417	138.625	18362.05	
3/14/2003 16:05:00	9.2000	0.4417	138.857	19381.04	
3/14/2003 16:12:00	9.3167	0.5583	138.981	20391.85	
3/14/2003 16:20:30	9.4583	0.7000	139.016	21402.55	
3/14/2003 16:31:30	9.6417	0.8833	138.966	22417.00	
3/14/2003 16:48:00	9.9167	1.1583	138.418	23429.40	
3/14/2003 17:41:30	10.8083	2.0500	137.571	24431.49	
3/14/2003 22:53:00	16.0000	7.2417	136.936	24745.46	
3/15/2003 06:53:00	24.0000	15.2417	136.907	24910.21	
3/15/2003 14:53:00	32.0000	23.2417	136.926	24981.24	
3/15/2003 15:36:00	32.7167	23.9583	136.943	24953.40	
	03/15/2003	15:36:00	OPENED WELL TO FLOW		
3/15/2003 15:36:00	32.7167	0.0000	136.943	24953.40	
3/15/2003 15:39:00	32.7667	0.0500	136.518	23871.45	
3/15/2003 15:43:30	32.8417	0.1250	136.183	22852.43	
3/15/2003 15:50:00	32.9500	0.2333	136.327	21820.45	
3/15/2003 16:00:00	33.1167	0.4000	136.469	20818.22	
3/15/2003 16:16:00	33.3833	0.6667	136.403	19817.74	
3/15/2003 16:50:30	33.9583	1.2417	136.361	18809.91	
3/15/2003 18:05:00	35.2000	2.4833	135.723	17776.50	
3/15/2003 18:28:30	35.5917	2.8750	135.821	16755.66	
3/15/2003 19:22:00	36.4833	3.7667	135.921	15750.85	
3/15/2003 22:53:00	40.0000	7.2833	136.048	15168.40	
3/16/2003 06:53:00	48.0000	15.2833	135.296	14971.73	
3/16/2003 14:46:30	55.8917	23.1750	134.945	13970.33	
3/16/2003 14:53:00	56.0000	23.2833	134.936	13961.24	
3/16/2003 21:38:00	62.7500	30.0333	134.066	12960.38	
3/16/2003 22:53:00	64.0000	31.2833	133.907	12838.00	
3/17/2003 06:53:00	72.0000	39.2833	132.976	12073.29	
3/17/2003 08:06:00	73.2167	40.5000	133.077	13073.98	
3/17/2003 14:53:00	80.0000	47.2833	132.795	12134.71	

Company: ANADARKO CANADA ENERGY LTD.
Date of test: 03/14/03 TO 04/07/03
Element serial#: 9471

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/17/2003 22:53:00	88.0000	55.2833	132.425	11954.71	
3/18/2003 06:53:00	96.0000	63.2833	131.991	11475.36	
3/18/2003 14:53:00	104.0000	71.2833	131.723	11601.65	
3/18/2003 22:53:00	112.0000	79.2833	131.751	11393.96	
3/19/2003 06:53:00	120.0000	87.2833	131.500	11171.92	
3/19/2003 14:53:00	128.0000	95.2833	131.327	11045.78	
3/19/2003 22:53:00	136.0000	103.2833	131.199	10910.36	
3/20/2003 06:53:00	144.0000	111.2833	131.082	10845.55	
3/20/2003 14:53:00	152.0000	119.2833	130.945	10644.30	
3/20/2003 17:30:00	154.6167	121.9000	130.892	10622.89	
	03/20/2003	17:30:00	SHUT WELL IN	FOR BUILD UP	
3/20/2003 17:30:00	154.6167	0.0000	130.892	10622.89	
3/20/2003 17:32:30	154.6583	0.0417	131.381	11623.24	
3/20/2003 17:35:30	154.7083	0.0917	132.743	12652.06	
3/20/2003 17:39:00	154.7667	0.1500	133.840	13655.39	
3/20/2003 17:43:30	154.8417	0.2250	134.666	14727.44	
3/20/2003 17:49:00	154.9333	0.3167	135.178	15775.77	
3/20/2003 17:55:30	155.0417	0.4250	135.517	16840.72	
3/20/2003 18:03:00	155.1667	0.5500	135.713	17859.96	
3/20/2003 18:12:30	155.3250	0.7083	135.805	18890.59	
3/20/2003 18:25:00	155.5333	0.9167	135.639	19890.84	
3/20/2003 18:45:30	155.8750	1.2583	135.330	20890.85	
3/20/2003 22:20:00	159.4500	4.8333	134.928	21892.02	
3/20/2003 22:53:00	160.0000	5.3833	135.088	21965.14	
3/21/2003 06:53:00	168.0000	13.3833	135.849	22647.49	
3/21/2003 14:53:00	176.0000	21.3833	136.208	22920.08	
3/21/2003 22:53:00	184.0000	29.3833	136.445	23093.96	
3/22/2003 06:53:00	192.0000	37.3833	136.626	23216.95	
3/22/2003 14:53:00	200.0000	45.3833	136.760	23310.54	
3/22/2003 22:53:00	208.0000	53.3833	136.866	23381.99	
3/23/2003 06:53:00	216.0000	61.3833	136.965	23445.40	
3/23/2003 14:53:00	224.0000	69.3833	137.049	23500.12	
3/23/2003 22:53:00	232.0000	77.3833	137.125	23547.30	
3/24/2003 06:53:00	240.0000	85.3833	137.186	23588.38	
3/24/2003 14:53:00	248.0000	93.3833	137.258	23625.28	
3/24/2003 22:53:00	256.0000	101.3833	137.313	23657.38	
3/25/2003 06:53:00	264.0000	109.3833	137.363	23686.35	
3/25/2003 14:53:00	272.0000	117.3833	137.405	23712.10	
3/25/2003 22:53:00	280.0000	125.3833	137.455	23734.54	
3/26/2003 06:53:00	288.0000	133.3833	137.489	23754.41	
3/26/2003 14:53:00	296.0000	141.3833	137.547	23772.01	
3/26/2003 22:53:00	304.0000	149.3833	137.590	23786.91	
3/27/2003 06:53:00	312.0000	157.3833	137.632	23800.38	
3/27/2003 14:53:00	320.0000	165.3833	137.663	23812.46	
3/27/2003 22:53:00	328.0000	173.3833	137.700	23823.54	
3/28/2003 06:53:00	336.0000	181.3833	137.732	23833.90	
3/28/2003 14:53:00	344.0000	189.3833	137.753	23842.95	

Company: ANADARKO CANADA ENERGY LTD.
Date of test: 03/14/03 TO 04/07/03
Element serial#: 9471

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/28/2003 22:53:00	352.0000	197.3833	137.783	23851.60	
3/29/2003 06:53:00	360.0000	205.3833	137.811	23859.69	
3/29/2003 14:53:00	368.0000	213.3833	137.840	23867.21	
3/29/2003 22:53:00	376.0000	221.3833	137.859	23873.97	
3/30/2003 06:53:00	384.0000	229.3833	137.879	23880.63	
3/30/2003 14:53:00	392.0000	237.3833	137.904	23887.08	
3/30/2003 22:53:00	400.0000	245.3833	137.925	23893.17	
3/31/2003 06:53:00	408.0000	253.3833	137.946	23898.71	
3/31/2003 14:53:00	416.0000	261.3833	137.964	23904.09	
3/31/2003 22:53:00	424.0000	269.3833	137.977	23909.20	
4/1/2003 06:53:00	432.0000	277.3833	138.003	23914.20	
4/1/2003 14:53:00	440.0000	285.3833	138.020	23918.66	
4/1/2003 22:53:00	448.0000	293.3833	138.039	23923.19	
4/2/2003 06:53:00	456.0000	301.3833	138.059	23927.29	
4/2/2003 14:53:00	464.0000	309.3833	138.071	23930.91	
4/2/2003 22:53:00	472.0000	317.3833	138.090	23935.07	
4/3/2003 06:53:00	480.0000	325.3833	138.105	23939.10	
4/3/2003 14:53:00	488.0000	333.3833	138.121	23943.46	
4/3/2003 22:53:00	496.0000	341.3833	138.136	23947.74	
4/4/2003 06:53:00	504.0000	349.3833	138.155	23952.23	
4/4/2003 14:53:00	512.0000	357.3833	138.170	23956.65	
4/4/2003 22:53:00	520.0000	365.3833	138.180	23960.73	
4/5/2003 06:53:00	528.0000	373.3833	138.187	23964.76	
4/5/2003 14:53:00	536.0000	381.3833	138.207	23969.43	
4/5/2003 22:53:00	544.0000	389.3833	138.222	23973.46	
4/6/2003 06:53:00	552.0000	397.3833	138.226	23977.39	
4/6/2003 14:53:00	560.0000	405.3833	138.233	23981.10	
4/6/2003 22:53:00	568.0000	413.3833	138.248	23985.31	
4/7/2003 06:53:00	576.0000	421.3833	138.260	23989.25	
4/7/2003 14:53:00	584.0000	429.3833	138.272	23993.14	
4/7/2003 18:49:00	587.9333	433.3167	138.289	23960.19	
	04/07/2003 18:49:00 OFF BOTTOM				
4/7/2003 18:49:00	587.9333	0.0000	138.289	23960.19	

Remarks:
HORIZONTAL WELL - OPEN HOLE COMPLETION. BOTTOM GAUGE STOPPED TAKING READINGS 03/26/03 @ 05:42 HRS - DUE TO TRANSDUCER MALFUNCTION.

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

Subsurface Pressure Measurements

Company: ANADARKO CANADA ENERGY LTD.
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / SLAVEPOINT
Type of test: SINGLE POINT
Prod. Int KB: 2538.27 to 2822.19
Elev. (CF) 510.8 (KB) 517.9
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: I-75
Status: GAS
Date of test: 03/14/03 TO 04/07/03
Prod. through: 88.9MM TUBING
Mid-point prod.int. KB: 2680.23
Datum depth of well KB:

Tubing pres: INITIAL: 19261 FIN: N/A
Shut in time: 03/20/03 17:30 HRS
Temperature at run depth: 138.289
Deviated well: Y

Casing pres:
Duration of Shut in: 433.3167 HRS
On/off btm: 03/14/03 / 04/07/03
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9471
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/12/02
Reading Interval: 30 SECONDS
Gauge started: 03/14/03 05:42
Gauge stopped: 04/07/03 20:06
Run depth (KB): 2513

BOTTOM RECORDER

Element serial#: 9472
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/12/02
Reading Interval: 30 SECONDS
Gauge started: 03/14/03 05:42
Gauge stopped: 04/07/03 20:06
Run depth (KB): 2513.5

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
	03/14/2003	06:53:00	ON BOTTOM		
3/14/2003 06:53:00	0.0000	0.0000	97.212	25056.90	
3/14/2003 09:38:30	2.7583	2.7583	136.819	25050.38	
	03/14/2003	09:38:30	OPENED WELL TO FLOW		
3/14/2003 09:38:30	2.7583	0.0000	136.819	25050.38	
3/14/2003 09:40:00	2.7833	0.0250	136.746	23728.56	
3/14/2003 09:42:00	2.8167	0.0583	136.454	22447.31	
3/14/2003 09:44:30	2.8583	0.1000	136.244	21244.31	
3/14/2003 09:47:30	2.9083	0.1500	136.101	20161.12	
3/14/2003 09:51:30	2.9750	0.2167	136.003	19069.17	
3/14/2003 09:56:30	3.0583	0.3000	136.010	18009.94	
3/14/2003 10:02:30	3.1583	0.4000	136.102	16998.89	
3/14/2003 10:13:00	3.3333	0.5750	136.309	15965.64	
3/14/2003 10:31:00	3.6333	0.8750	136.420	14950.69	
3/14/2003 11:12:30	4.3250	1.5667	137.215	16019.44	
3/14/2003 11:17:00	4.4000	1.6417	138.138	17035.20	
3/14/2003 11:26:00	4.5500	1.7917	136.645	16025.34	
3/14/2003 11:44:30	4.8583	2.1000	136.809	14791.76	
3/14/2003 11:46:30	4.8917	2.1333	135.742	13754.11	
3/14/2003 11:52:00	4.9833	2.2250	135.063	12697.19	
3/14/2003 11:58:30	5.0917	2.3333	135.209	11693.58	

Company: ANADARKO CANADA ENERGY LTD.
Date of test: 03/14/03 TO 04/07/03
Element serial#: 9472

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513.5

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/14/2003 12:13:30	5.3417	2.5833	135.425	10683.63	
3/14/2003 12:41:30	5.8083	3.0500	135.998	11691.30	
3/14/2003 13:07:30	6.2417	3.4833	135.835	12704.28	
3/14/2003 14:22:30	7.4917	4.7333	135.653	13842.60	
3/14/2003 14:27:00	7.5667	4.8083	136.612	14865.99	
3/14/2003 14:35:00	7.7000	4.9417	135.202	13833.73	
3/14/2003 14:53:00	8.0000	5.2417	134.748	13113.57	
3/14/2003 15:38:30	8.7583	6.0000	134.542	12939.14	
	03/14/2003	15:38:30	SHUT WELL IN		
3/14/2003 15:38:30	8.7583	0.0000	134.542	12939.14	
3/14/2003 15:41:00	8.8000	0.0417	135.012	13957.54	
3/14/2003 15:44:00	8.8500	0.0917	136.223	14958.60	
3/14/2003 15:48:00	8.9167	0.1583	137.402	16078.07	
3/14/2003 15:52:30	8.9917	0.2333	138.118	17126.66	
3/14/2003 15:57:30	9.0750	0.3167	138.559	18141.68	
3/14/2003 16:03:30	9.1750	0.4167	138.830	19192.88	
3/14/2003 16:10:30	9.2917	0.5333	138.979	20235.71	
3/14/2003 16:19:00	9.4333	0.6750	139.029	21278.83	
3/14/2003 16:29:30	9.6083	0.8500	138.988	22286.24	
3/14/2003 16:45:00	9.8667	1.1083	138.526	23306.11	
3/14/2003 17:22:00	10.4833	1.7250	137.903	24306.76	
3/14/2003 22:53:00	16.0000	7.2417	136.982	24752.92	
3/15/2003 06:53:00	24.0000	15.2417	136.953	24914.77	
3/15/2003 14:53:00	32.0000	23.2417	136.982	24984.06	
3/15/2003 15:36:00	32.7167	23.9583	136.992	24957.10	
	03/15/2003	15:36:00	OPENED WELL TO FLOW		
3/15/2003 15:36:00	32.7167	0.0000	136.992	24957.10	
3/15/2003 15:38:30	32.7583	0.0417	136.607	23936.61	
3/15/2003 15:43:00	32.8333	0.1167	136.244	22898.31	
3/15/2003 15:49:30	32.9417	0.2250	136.372	21854.46	
3/15/2003 15:59:30	33.1083	0.3917	136.525	20839.10	
3/15/2003 16:15:30	33.3750	0.6583	136.451	19832.95	
3/15/2003 16:49:00	33.9333	1.2167	136.403	18831.95	
3/15/2003 18:04:00	35.1833	2.4667	135.776	17826.44	
3/15/2003 18:27:00	35.5667	2.8500	135.873	16811.48	
3/15/2003 19:16:00	36.3833	3.6667	135.976	15806.42	
3/15/2003 22:53:00	40.0000	7.2833	136.120	15170.52	
3/16/2003 06:53:00	48.0000	15.2833	135.370	14972.30	
3/16/2003 14:46:30	55.8917	23.1750	135.030	13970.57	
3/16/2003 14:53:00	56.0000	23.2833	135.022	13960.15	
3/16/2003 21:35:00	62.7000	29.9833	134.192	12957.91	
3/16/2003 22:53:00	64.0000	31.2833	134.025	12837.70	
3/17/2003 06:53:00	72.0000	39.2833	133.102	12062.62	
3/17/2003 08:06:30	73.2250	40.5083	133.173	13071.66	
3/17/2003 14:53:00	80.0000	47.2833	132.920	12121.46	
3/17/2003 22:53:00	88.0000	55.2833	132.539	11932.23	
3/18/2003 06:53:00	96.0000	63.2833	132.122	11463.56	

Company: ANADARKO CANADA ENERGY LTD.
Date of test: 03/14/03 TO 04/07/03
Element serial#: 9472

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513.5

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/18/2003 14:53:00	104.0000	71.2833	131.847	11593.54	
3/18/2003 22:53:00	112.0000	79.2833	131.874	11395.03	
3/19/2003 06:53:00	120.0000	87.2833	131.634	11184.16	
3/19/2003 14:53:00	128.0000	95.2833	131.470	11041.59	
3/19/2003 22:53:00	136.0000	103.2833	131.331	10902.65	
3/20/2003 06:53:00	144.0000	111.2833	131.214	10826.32	
3/20/2003 14:53:00	152.0000	119.2833	131.093	10660.84	
3/20/2003 17:30:00	154.6167	121.9000	131.034	10648.03	
	03/20/2003 17:30:00 SHUT WELL IN FOR BUILD UP				
3/20/2003 17:30:00	154.6167	0.0000	131.034	10648.03	
3/20/2003 17:32:30	154.6583	0.0417	131.552	11727.00	
3/20/2003 17:35:30	154.7083	0.0917	132.830	12736.56	
3/20/2003 17:39:30	154.7750	0.1583	134.013	13852.62	
3/20/2003 17:44:00	154.8500	0.2333	134.755	14880.82	
3/20/2003 17:49:30	154.9417	0.3250	135.226	15905.51	
3/20/2003 17:56:00	155.0500	0.4333	135.531	16946.97	
3/20/2003 18:04:00	155.1833	0.5667	135.712	18004.62	
3/20/2003 18:14:00	155.3500	0.7333	135.785	19045.80	
3/20/2003 18:27:30	155.5750	0.9583	135.564	20057.58	
3/20/2003 18:51:30	155.9750	1.3583	135.300	21067.68	
3/20/2003 22:53:00	160.0000	5.3833	135.032	21953.34	
3/21/2003 06:53:00	168.0000	13.3833	135.775	22634.79	
3/21/2003 14:53:00	176.0000	21.3833	136.155	22907.23	
3/21/2003 22:53:00	184.0000	29.3833	136.402	23080.99	
3/22/2003 06:53:00	192.0000	37.3833	136.589	23204.40	
3/22/2003 14:53:00	200.0000	45.3833	136.739	23299.52	
3/22/2003 22:53:00	208.0000	53.3833	136.853	23376.56	
3/23/2003 06:53:00	216.0000	61.3833	136.956	23441.15	
3/23/2003 14:53:00	224.0000	69.3833	137.045	23496.27	
3/23/2003 22:53:00	232.0000	77.3833	137.128	23544.40	
3/24/2003 06:53:00	240.0000	85.3833	137.188	23585.96	
3/24/2003 14:53:00	248.0000	93.3833	137.259	23623.38	
3/24/2003 22:53:00	256.0000	101.3833	137.314	23656.07	
3/25/2003 06:53:00	264.0000	109.3833	137.371	23685.69	
3/25/2003 14:53:00	272.0000	117.3833	137.418	23711.68	
3/25/2003 22:53:00	280.0000	125.3833	137.531	23735.84	

Company: ANADARKO CANADA ENERGY LTD.
Date of test: 03/14/03 TO 04/07/03
Element serial#: 9472

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513.5

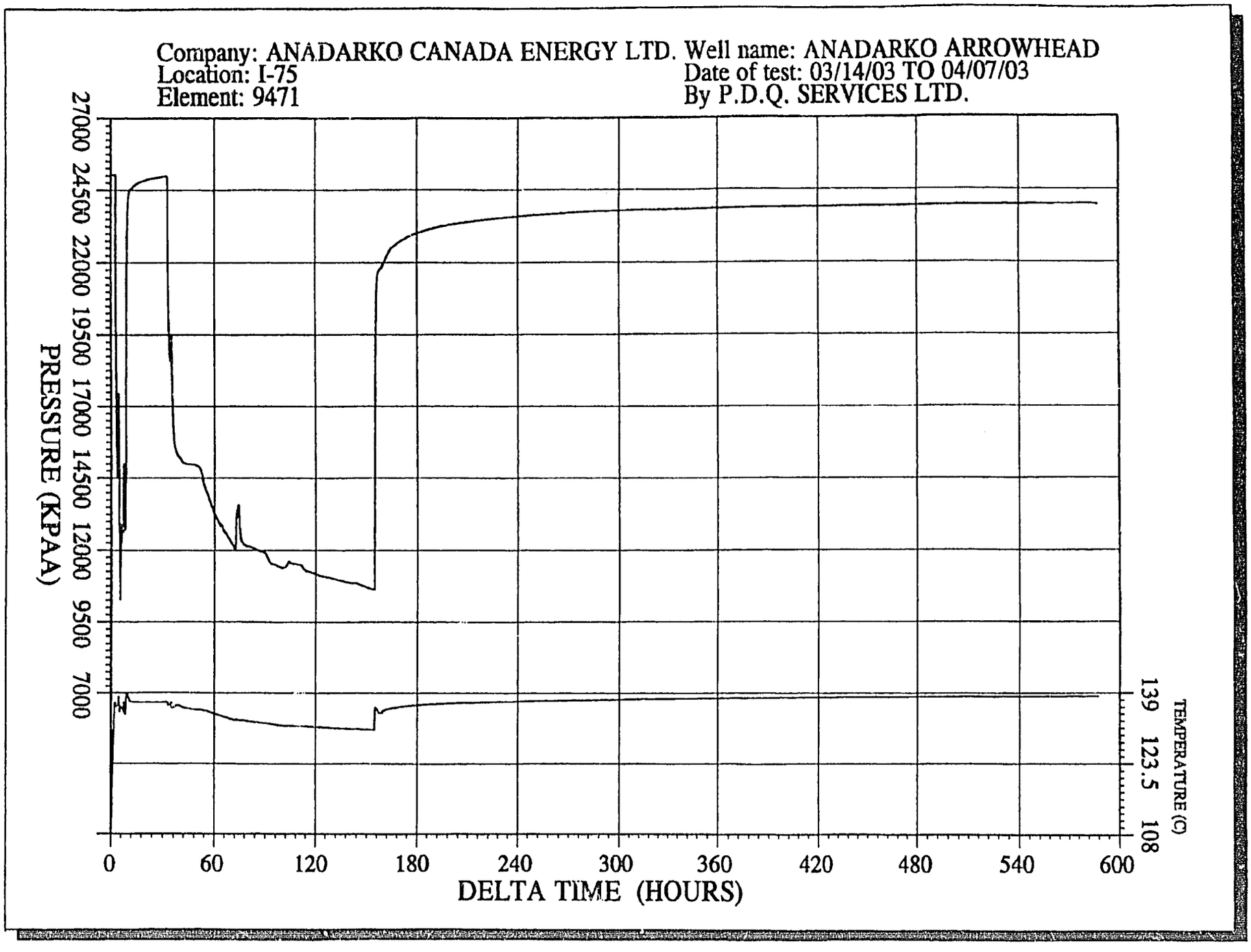
BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/26/2003 05:42:00	286.8167	132.2000	146.804	25449.42	
	03/26/2003 05:42:00 GAUGE STOPPED TAKING READINGS				
3/26/2003 05:42:00	286.8167	0.0000	146.804	25449.42	

Remarks:
HORIZONTAL WELL - OPEN HOLE COMPLETION. BOTTOM GAUGE STOPPED TAKING READINGS 03/26/03 @ 05:42 HRS - DUE TO TRANSDUCER MALFUNCTION.

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.


Company: ANADARKO CANADA ENERGY LTD.
Well name: ANADARKO ARROWHEAD
Location: I-75
Date of test: 03/14/03 TO 04/07/03
Element: 9471
By P.D.Q. SERVICES LTD.
PRESSURE (KPAA)
27000 24500 22000 19500 17000 14500 12000 9500 7000
TEMPERATURE (C)
139 123.5 108
0 60 120 180 240 300 360 420 480 540 600
DELTA TIME (HOURS)

Subsurface Pressure Measurements

Company: ANADARKO CANADA ENERGY LTD.
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / SLAVEPOINT
Type of test: STATIC GRADIENT
Prod. Int KB: 2538.27 to 2822.19
Elev. (CF) 510.8 (KB) 517.9
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: I-75
Status: GAS
Date of test: 04/07/03
Prod. through: 88.9MM TUBING
Mid-point prod.int. KB: 2680.23
Datum depth of well KB:

Tubing pres:
Shut in time: 03/20/03 17:30 HRS
Temperature at run depth: 138.289
Deviated well: Y

Casing pres:
Duration of Shut in: 433.3167 HRS
On bottom/off bottom: 18:39 / 18:49
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9471
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/12/02

Gauge started: 03/14/03 05:42
Gauge stopped: 04/07/03 20:06
Run depth (KB): 2513
Grad. at run depth: 1.427
Pres. at run depth: 23960.2
Pres. at mid point perf.: 24198.8
Pres. at datum depth:

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
6.6	36.90	20298.4	0.000
606.6	54.11	20974.3	1.127
1206.0	72.42	21609.6	1.060
1786.9	100.67	22724.6	1.919
1979.9	111.63	23071.8	1.799
2172.9	122.57	23407.0	1.736
2366.6	132.23	23731.7	1.677
2463.4	136.39	23889.4	1.629
2513.0	138.29	23960.2	1.427

Fluid level at N/A
Final pressure on bottom:23960.2 KPAA

BOTTOM RECORDER

Element serial#: 9472
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/12/02

Gauge started: 03/14/03 05:42
Gauge stopped: 04/07/03 20:06
Run depth (KB): 2513.5
Grad. at run depth: 0.000
Pres. at run depth: 0.0
Pres. at mid point perf.: 0.0
Pres. at datum depth:

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
7.1	0.00	0.0	0.000
607.1	0.00	0.0	0.000
1206.5	0.00	0.0	0.000
1787.4	0.00	0.0	0.000
1980.4	0.00	0.0	0.000
2173.4	0.00	0.0	0.000
2367.1	0.00	0.0	0.000
2463.9	0.00	0.0	0.000
2513.5	0.00	0.0	0.000

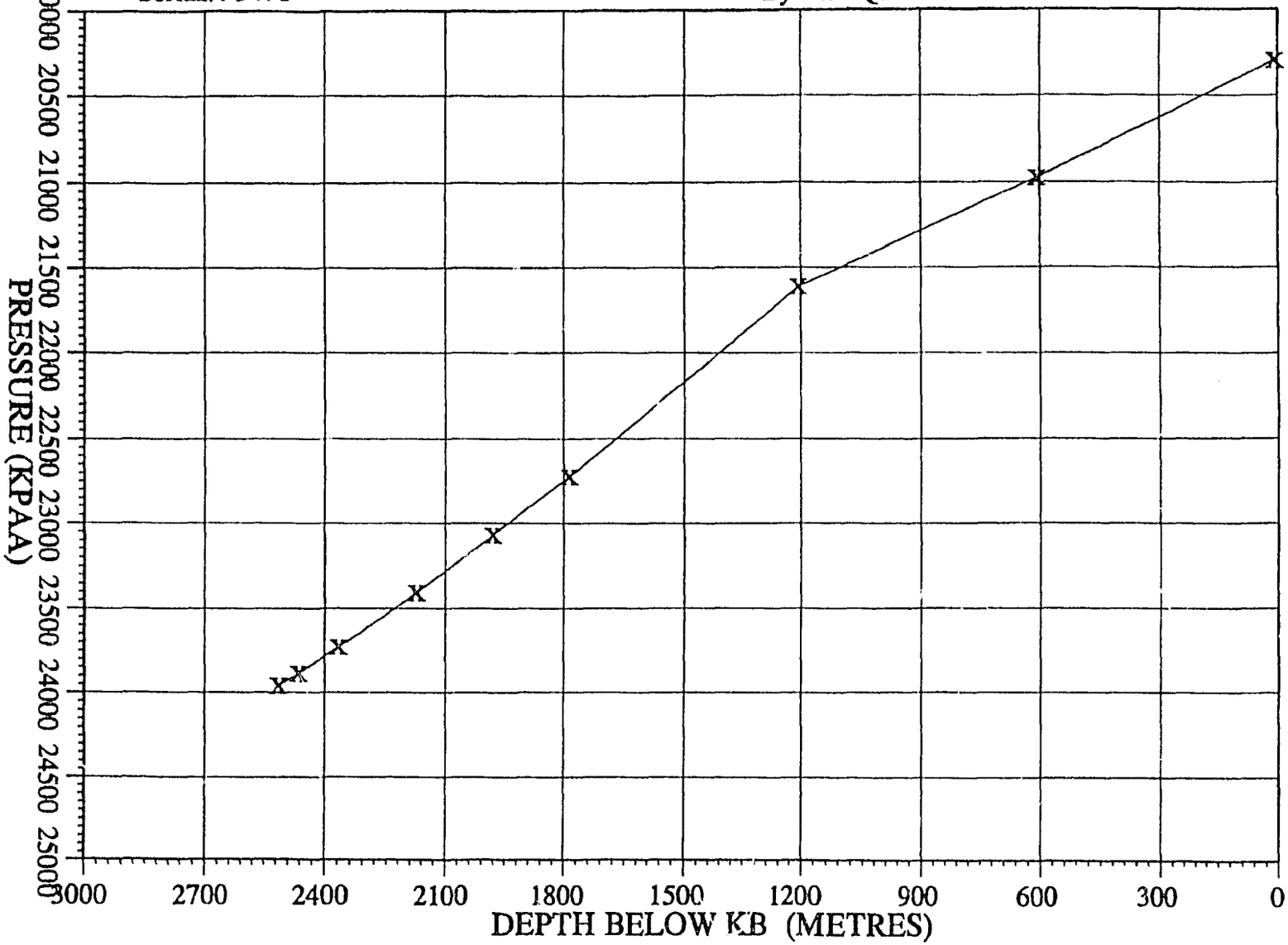
Fluid level at N/A
Final pressure on bottom: 0.0 KPAA

Remarks:
REVERSE GRADIENT. HORIZONTAL WELL - OPEN HOLE COMPLETION.
BOTTOM GAUGE STOPPED TAKING READINGS 03/26/03 @ 05:42 HRS.

Test by: RAPID

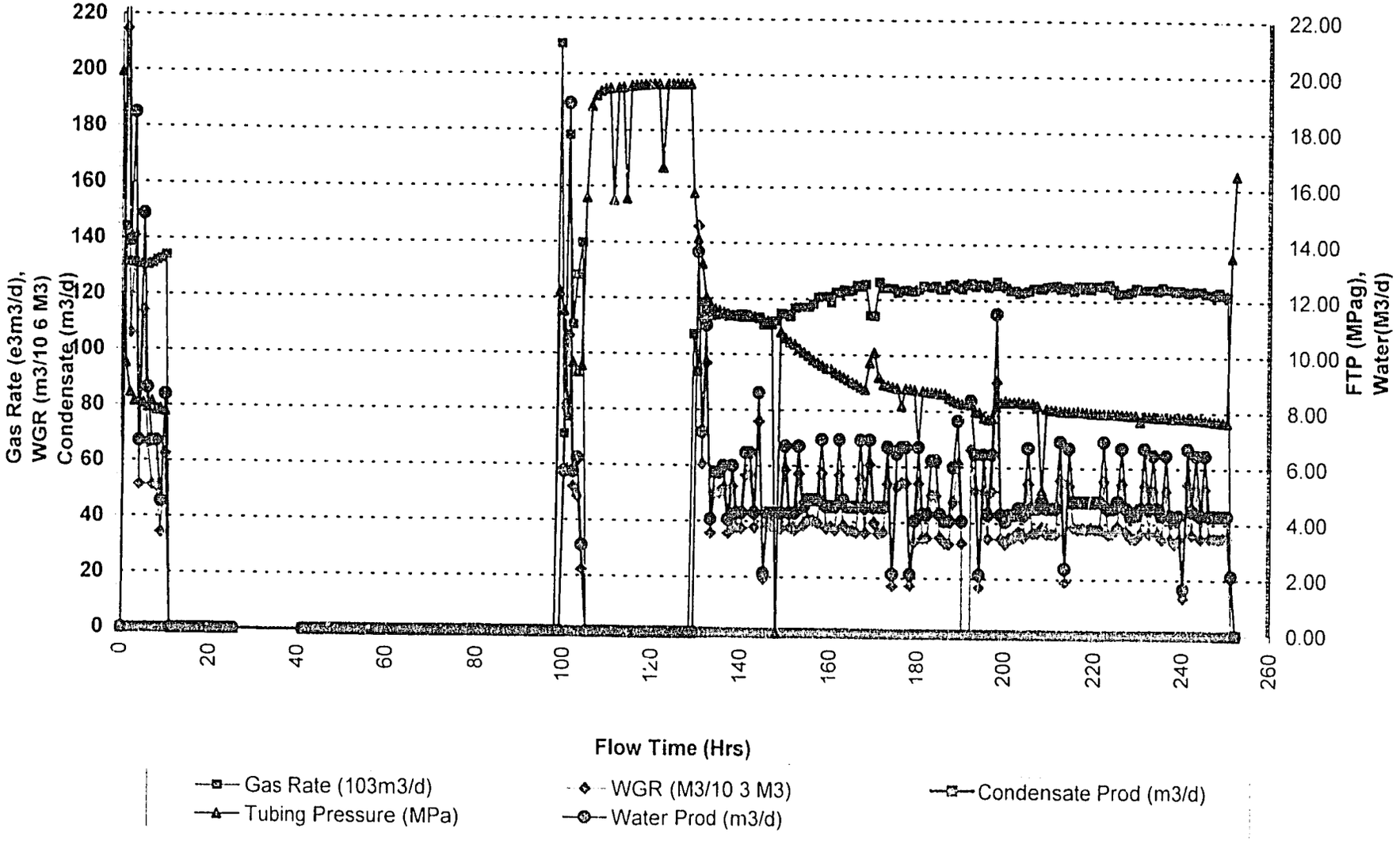
Interpretation by P.D.Q. SERVICES LTD.

Company: ANADARKO CANADA ENERGY LTD. Well name: ANADARKO ARROWHEAD
Location: I-75 Date of test: 04/07/03
Pressure at run depth 23960.2 Fluid level N/A
Serial#: 9471 By P.D.Q. SERVICES LTD.



GRADIENT TEST

Anadarko Arrowhead I-75 Metric
Landry Formation



WELLTEST SPECIALISTS

eREPORT

ARCTIC ENERGY SYSTEMS INC. PRODUCTION TESTING

Prepared for:

Mike Varga
Anadarko Canada Corporation
#1, 875–100th Avenue sw
Fort St John, BC, V1J 1W9

Anadarko Arrowhead
I-75
Slave Point

Single Point Test
March 10–20, 2003

WELLTEST SPECIALISTS

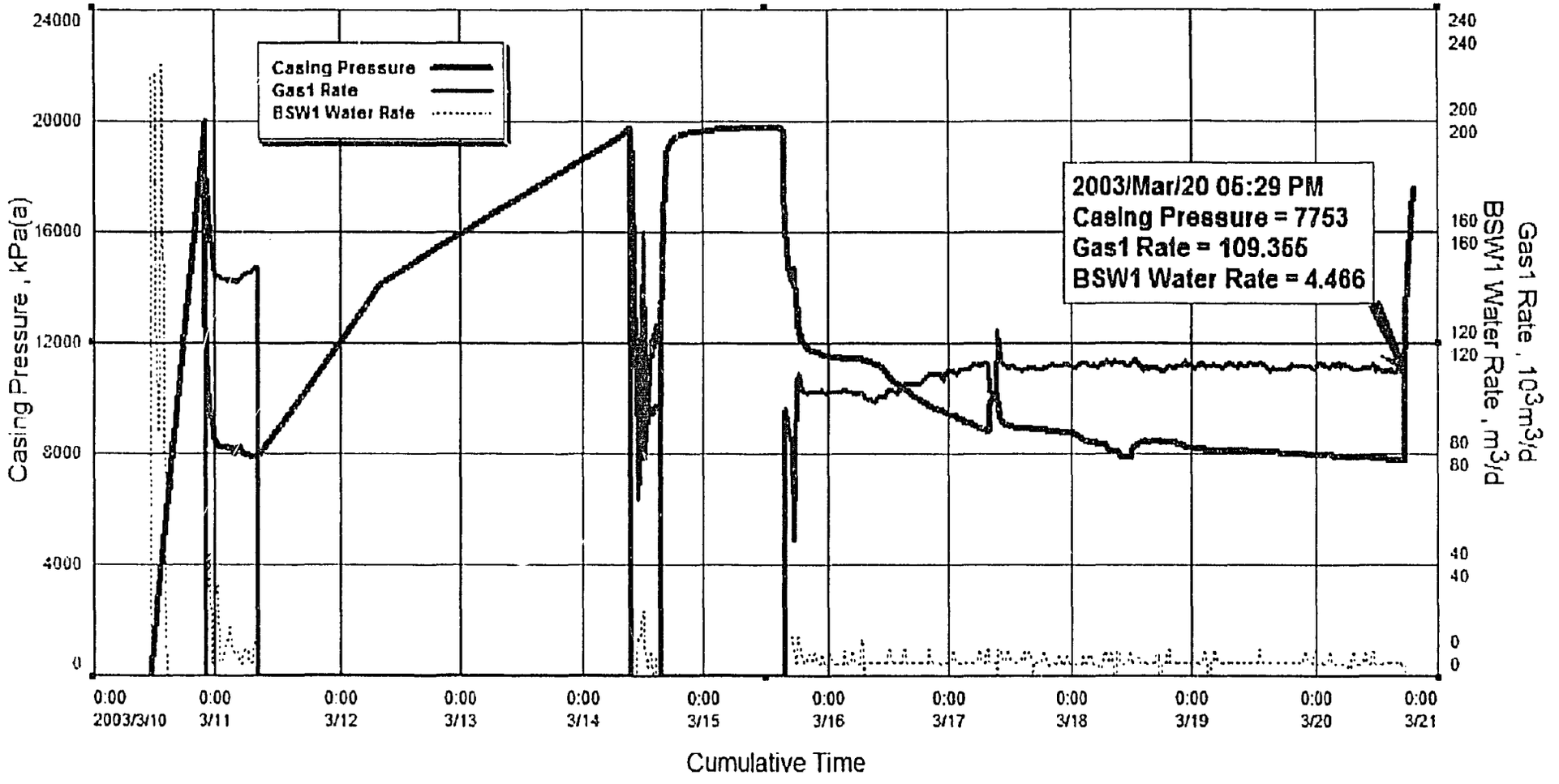
Data Validation

ARCTIC ENERGY SYSTEMS INC. PRODUCTION TESTING

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

Production Validation



GENERAL INFORMATION

Client Information

Company:	Anadarko Canada Corporation		
Street Address:	#1, 100th Avenue S.W.		
City:	Fort St John	Province/State:	British Columbia
Country:	Canada	Postal Code:	V1J 1W9
Contact:	Mike Varga	Phone:	250-785-8509
E-Mail:	mike_varga@anadarko.com	Fax:	250-785-9183

Site Information

Contact:	Joe Graves	Phone:	
E-Mail:		Fax:	

Well Information

Well Name:	Anadarko Arrowhead
Operator:	Anadarko Canada Corporation
Surface Location:	
Downhole Location:	I-75

Test Information

Company:	Arctic Energy Systems Inc.		
Test Rep:	Cory Young	Supervisor:	Peter Duhan
Test Type:	Single Point Test	Test Unit:	PT-03
Start Date:	2003/03/10	Start Time:	00:59:59
End Date:	2003/03/20	End Time:	19:30:00
Report Date:	2003/04/07	Job Number:	1364
Prepared By:	Lizzy Davies	Qualified By:	David Leech

Remarks:

Equipment change with PT-05 on March 11 / 03 to PT-03.

WELL INFORMATION

Well Information

Well Name:	Anadarko Arrowhead
Operator:	Anadarko Canada Corporation
Well Location:	I-75
Surface Location:	
Field:	Arrowhead
Well Type:	Vertical
Pool:	2583.6 - 2861.0 mKB
Formation:	Slave Point

Perforation Type:				
Pool Datum:		m		
Datum Depth:		mm		
Producing Through:		Size:		mm
Elevation Referenced From:	510.80	m	GL	
Elevation Referenced To:	517.90	m	KB	
Offset:	7.10	m		

Remarks:

Production Intervals

Production Interval & MPP Reference To: KB MPP Pressure Reference:

	From - m	To - m		Depth - m	Pressure - kPa
1	2583.60	2861.00	1	2722.30	

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FieldNotes
METER REPORT

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

Orifice Meter 1

Meter Type:	Orifice	Gas Gravity(G):	0.805
Meter Size:	97.33 mm	CO2:	24.25 %
Previous Gas Production:	0.000 10^3m^3	H2S:	0.18 %
Tap Type:	F	N2:	3.58 %
Tap Location:	D	Critical Temperature (Tc):	215.90 K
		Critical Pressure (PC):	5230.00 kPa

Orifice Meter 2

Meter Type:	Orifice	Gas Gravity(G):	0.805
Meter Size:	mm	CO2:	24.25 %
Previous Gas Production:	0.000 10^3m^3	H2S:	0.18 %
Tap Type:	F	N2:	3.58 %
Tap Location:	D	Critical Temperature (Tc):	215.90 K
		Critical Pressure (PC):	5230.00 kPa

Produced Volume 1

Meter Type:	Produced Volume
Measurement Type:	C
Previous Oil Production:	0.000 m^3
Previous Water Production:	0.000 m^3
Oil Gravity:	

Anadarko Canada Corporation
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Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
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Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
1	2003/03/10	00:59:59	0.0000		ARRIVE ON LOCATION FOR COIL TUBING CLEAN OUT																	
2		10:15:00	9.2503		HOLD SAFETY MEETING																	
3		10:50:00	9.8336		PRESSURE TEST SURFACE LINE'S																	
4		11:15:00	10.2503		93	93			93	0.00	0				0.00	0.00		0.00	0.00	0.00	0.00	0.00
5		11:15:00	10.2503	0.0000	BEGIN TO RUN INTO HOLE WITH COIL TUBING																	
6		11:20:00	10.3336	0.0833	FLUID TO SURFACE																	
7		12:00:00	11.0003	0.7500											6.80	6.80	100	6.80	6.80	0.00	0.00	6.80
8		12:10:00	11.1669	0.9167	COIL @ 1300m																	
9		12:30:00	11.5003	1.2500											9.39	2.59	100	2.59	9.39	0.00	0.00	9.39
10		12:55:00	11.9169	1.6667	COIL @ 2160m																	
11		13:00:00	12.0003	1.7500											11.21	1.82	100	1.82	11.21	0.00	0.00	11.21
12		13:10:00	12.1669	1.9167	SOLID'S TO SURFACE																	
13		13:30:00	12.5003	2.2500											15.80	4.59	100	4.59	15.80	0.00	0.00	15.80
14		13:35:00	12.5836	2.3333	STRAIGHT N2 TO SURFACE																	
15		14:05:00	13.0836	2.8333	PULL COIL OUT OF HOLE																	
16		14:25:00	13.4169	3.1667	SHUT IN TO TEST VESSEL AND PRESSURE UP WELL																	
17		14:25:00	13.4169	3.1667											16.10	0.30	100	0.30	16.10	0.00	0.00	16.10
18		16:00:00	15.0003		COIL OUT OF THE HOLE RIG OUT INJECTOR																	
19		16:45:00	15.7503		RIG UP RAPID WIRELINE TO PULL DOWN HOLE PLUG																	
20		21:00:00	20.0003		PLUG RETREEVED																	
21		22:00:00	21.0003			20019			93	0.00	0	76.20	0.000	0.000	16.10	0.00		0.00	16.10	0.00	0.00	16.10
22		22:02:00	21.0336	3.2000	OPEN WELL TO FLOW ON A 32/64, 12.7mm BEAN CHOKE																	
23		22:05:00	21.0836	3.2500		17330																
24		22:10:00	21.1669	3.3333		13883																
25		22:15:00	21.2503	3.4167		12504																
26		22:20:00	21.3336	3.5000	FLUID TO SURFACE																	
27		22:30:00	21.5003	3.6667		11125	16	12.70	969	17.42	7	76.20	178.970	3.729	16.46	0.36	100	0.36	16.46	0.00	0.00	16.46
28		22:45:00	21.7503	3.9167		10159	18		913	16.17	10		166.397	5.527								
29		23:00:00	22.0003	4.1667		9608	16		851	15.93	14		158.103	7.217	17.39	0.93	100	0.93	17.39	0.00	0.00	17.39
30					BS&W= 98.9% H2O, SALINITY= 32,000ppm, ph= 7, 1.1% SAND / H2S= 1900 ppm																	
31		23:30:00	22.5003	4.6667		8987	15		817	14.68	15		148.355	10.410	17.47	0.08	100	0.08	17.47	0.00	0.00	17.47
32	2003/03/11	00:00:00	23.0003	5.1667		8539	16		782	14.18	10		143.988	13.455	17.97	0.50	100	0.50	17.97	0.00	0.00	17.97
33					TRACE OF SAND, SALINITY = 41,000ppm, ph = 7.																	
34		00:30:00	23.5003	5.6667		8367	16		776	14.18	6		144.432	16.459	18.66	0.69	100	0.69	18.66	0.00	0.00	18.66
35		01:00:00	24.0003	6.1667		8229	15	12.70	762	14.18	4	76.20	143.670	19.460	18.74	0.08	100	0.08	18.74	0.00	0.00	18.74
36					TRACE OF SAND, SALINITY = 37,000ppm, ph = 7.																	
37		01:30:00	24.5003	6.6667		8229	14		762	13.94	1		143.232	22.449	18.83	0.09	100	0.09	18.83	0.00	0.00	18.83
38		02:00:00	25.0003	7.1667		8229	14	12.70	762	13.94	1	76.20	143.232	25.433	19.02	0.19	100	0.19	19.02	0.00	0.00	19.02
39					TRACE OF SAND, SALINITY = 34,000ppm, ph = 7.																	

Anadarko Canada Corporation
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Start Test Date: 2003/03/10
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FieldNotes
Field Measurements

Anadarko Arrowhead
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Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
40	2003/03/11	02:30:00	25.5003	7.6667		8229	14		762	13.94	3		142.676	28.411	19.28	0.26	100	0.26	19.28	0.00	0.00	19.28
41		03:00:00	26.0003	8.1667		8160	14	12.70	769	13.94	4	76.20	143.056	31.388	19.64	0.36	100	0.36	19.64	0.00	0.00	19.64
42					TRACE OF SAND, SALINITY = 31,000ppm, ph = 7.																	
43		03:30:00	26.5003	8.6667		8160	14		769	13.94	5		142.781	34.365	19.83	0.19	100	0.19	19.83	0.00	0.00	19.83
44		04:00:00	27.0003	9.1667		8022	14	12.70	769	13.94	5	76.20	142.781	37.340	20.00	0.17	100	0.17	20.00	0.00	0.00	20.00
45					TRACE OF SAND, SALINITY = 33,000ppm, ph = 7.																	
46		04:30:00	27.5003	9.6667		8229	16		769	13.94	7		142.236	40.309	20.19	0.19	100	0.19	20.19	0.00	0.00	20.19
47		05:00:00	28.0003	10.1667		8229	16	12.70	782	13.94	7	76.20	143.529	43.285	20.28	0.09	100	0.09	20.28	0.00	0.00	20.28
48					TRACE OF SAND, SALINITY = 33,000ppm, ph = 7.																	
49		05:30:00	28.5003	10.6667		8091	16		782	14.18	8		144.532	46.286	20.37	0.09	100	0.09	20.37	0.00	0.00	20.37
50		06:00:00	29.0003	11.1667		8022	16	12.70	782	14.18	7	76.20	144.807	49.300	20.56	0.19	100	0.19	20.56	0.00	0.00	20.56
51					TRACE OF SAND, SALINITY = 41,000ppm, ph = 7, H2S = 3000ppm.																	
52					PRODUCTION SUMMARY SINCE MARCH 10, 2003 @ 22:02HRS.																	
53					GAS PRODUCTION (7HRS 58MIN) = 52.097 10^3m^3. CUMM GAS PRODUCTION = 52.097 10^3m^3.																	
54					BSW PRODUCTION (7HRS 58MIN) = 4.46m^3. CUMM BSW PRODUCTION = 20.56m^3.																	
55		06:00:00	29.0003	11.1667	NO OIL PRODUCTION.																	
56		06:30:00	29.5003	11.6667		7953	15		782	14.18	5		145.362	52.322	20.75	0.19	100	0.19	20.75	0.00	0.00	20.75
57		07:00:00	30.0003	12.1667		7953	15	12.70	782	14.18	4	76.20	145.642	55.354	20.84	0.09	100	0.09	20.84	0.00	0.00	20.84
58					TRACE OF SAND, SALINITY = 42,000ppm, ph = 7.																	
59		07:30:00	30.5003	12.6667		7884	15		782	14.18	2	76.20	146.208	58.394	20.94	0.10	100	0.10	20.94	0.00	0.00	20.94
60		08:00:00	31.0003	13.1667		7884	16		782	14.18	-1		147.070	61.449	21.22	0.28	100	0.28	21.22	0.00	0.00	21.22
61					BS&W= 100% H2O, SALINITY= 42,000ppm, ph= 7																	
62		08:30:00	31.5003	13.6667		7884	16		782	14.18	-1		147.070	64.513	21.29	0.07	100	0.07	21.29	0.00	0.00	21.29
63		08:30:00	31.5003		SHUT IN WELL AND RIG OUT TEST EQUIPMENT																	
64	2003/03/11	09:00:00	32.0003		Attend safety meeting, Rig up Pt-03.																	
65	2003/03/12	08:00:00	55.0003			14168																
66		08:00:00	55.0003		Attend safety meeting, Wait on Schlumberger to log.																	
67		10:00:00	57.0003		Schlumber malfuction, suspend operations.																	
68	2003/03/14	08:00:00	103.0003																			
69		08:00:00	103.0003			19564																
70		08:00:00	103.0003		Attend safety meeting, Tie into wellhead.																	
71		08:45:00	103.7503		Pressure test flowline, wait on instruction.																	
72		09:30:00	104.5003			19792																
73		09:30:00	104.5003		Open well on 9.53mm Choke.																	
74		09:35:00	104.5836	13.7500		17509	2	9.53							0.00	0.00		0.00	21.29	0.00	0.00	21.29
75		09:40:00	104.6669	13.8333		15689	2	9.53														
76		09:45:00	104.7503	13.9167		14524	2	9.53														
77		09:45:00	104.7503	13.9167	Small gas head at opening, currently trace of burnable gas, No sign of fluid. Meter in service on 76.2mm Orifice.																	
78		10:00:00	105.0003	14.1667		12331	3	9.53	920	19.90	-2	76.20	189.685	68.465	0.00	0.00		0.00	21.29	0.00	0.00	21.29

Anadarko Canada Corporation
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Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
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Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
79	2003/03/14	10:00:00	105.0003	14.1667	Trace of burnable gas, Mist of fluid, Salinity - 103,000ppm, Ph - 7.																	
80		10:15:00	105.2503	14.4167		11593	2	9.53	541	17.91	6	76.20	135.294	70.157	0.00	0.00		0.00	21.29	0.00	0.00	21.29
81		10:30:00	105.5003	14.6667		11118	6	9.53	506	16.42	10	76.20	124.301	71.509	0.00	0.00		0.00	21.29	0.00	0.00	21.29
82		10:30:00	105.5003	14.6667	Estimated 20% burnable gas, Mist of fluid, Salinity - 40,000ppm, Ph - 7.																	
83		11:00:00	106.0003	15.1667		11608	7	9.53	265	8.46	15	76.20	63.851	73.469	0.24	0.24	100	0.24	21.53	0.00	0.00	21.53
84		11:00:00	106.0003	15.1667	Estimated 20% burnable gas, Salinity - 40,000ppm, Ph - 7, Hydrate at wellhead begin pumping methanol.																	
85		11:07:00	106.1169	15.2833	Pressure still rising, Open choke to 38.1mm.																	
86		11:25:00	106.4169	15.5833	Decrease choke to 12.7mm. Bypass lineheater due to obstruction.																	
87		11:30:00	106.5003	15.6667		12290	6	12.70	396	9.95	11	76.20	85.305	75.023	0.54	0.30	100	0.30	21.83	0.00	0.00	21.83
88		12:00:00	107.0003	16.1667		7822	8	12.70	645	19.90	-8	76.20	160.203	77.580	1.02	0.49	100	0.49	22.31	0.00	0.00	22.31
89		12:00:00	107.0003	16.1667	Estimated 20% burnable gas, Salinity - 41,000ppm, Ph - 7.																	
90		12:15:00	107.2503	16.4167	Decrease choke size to 9.53mm.																	
91		12:30:00	107.5003	16.6667		8443	8	9.53	417	13.68	-10	76.20	106.885	80.362	1.21	0.18	100	0.18	22.49	0.00	0.00	22.49
92		13:00:00	108.0003	17.1667		9759	2	9.53	396	12.19	-15	76.20	99.266	82.510	1.27	0.06	100	0.06	22.56	0.00	0.00	22.56
93		13:00:00	108.0003	17.1667	Estimated 20% burnable gas, Salinity - 41,000ppm, Ph - 7.																	
94		13:30:00	108.5003	17.6667		9435	2	9.53	465	15.43	-15	76.20	121.169	84.806	1.46	0.19	100	0.19	22.75	0.00	0.00	22.75
95		14:00:00	109.0003	18.1667		9428	12	9.53	452	14.43	-14	76.20	115.260	87.269	1.53	0.07	100	0.07	22.82	0.00	0.00	22.82
96		14:00:00	109.0003	18.1667	Estimated 20% burnable gas, Salinity - 40,000ppm, Ph - 7.																	
97		14:30:00	109.5003	18.6667		9753	10	9.53	490	15.67	-18	76.20	126.161	89.784	1.53	0.00		0.00	22.82	0.00	0.00	22.82
98		15:00:00	110.0003	19.1667		9642	10	9.53	490	15.67	-16	76.20	125.642	92.407	1.66	0.13	100	0.13	22.95	0.00	0.00	22.95
99		15:00:00	110.0003	19.1667	Estimated 20% burnable gas, Salinity - 55,000ppm, Ph - 7.																	
100		15:30:00	110.5003	19.6667		9746	10	9.53	444	14.43	-16	76.20	114.691	94.910	1.66	-0.00		-0.00	22.95	0.00	0.00	22.95
101		15:30:00	110.5003		Shut in well, begin monitoring build-ups.																	
102		15:35:00	110.5836			11648																
103		15:40:00	110.6669			12683																
104		15:45:00	110.7503			13600																
105		16:00:00	111.0003			15668																
106		16:15:00	111.2503			17083																
107		16:30:00	111.5003			18013																
108		17:00:00	112.0003			18938																
109		17:30:00	112.5003			19213																
110		18:00:00	113.0003			19323																
111		19:00:00	114.0003			19478																
112		20:00:00	115.0003			19550																
113		21:00:00	116.0003			19592																
114		22:00:00	117.0003			19598																
115		23:00:00	118.0003			19605																
116	2003/03/15	00:00:00	119.0003			19640																
117		01:00:00	120.0003			19667																

Anadarko Canada Corporation
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FieldNotes
Field Measurements

Anadarko Arrowhead
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Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C	TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr		kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
118	2003/03/15	02:00:00	121.0003				19688																
119		03:00:00	122.0003				19709																
120		04:00:00	123.0003				19716																
121		05:00:00	124.0003				19729																
122		06:00:00	125.0003				19736																
123		06:00:00	125.0003	Flow summary since 9:30 Mar 14/2003																			
124				Total gas produced 6 hrs of flow= 33.815 10^3m^3 Cum gas= 105.573 10^3m^3																			
125				Total fluid produced 6 hrs of flow = 1.66m^3 Cum fluid= 22.95m^3																			
126		07:00:00	126.0003				19744																
127		08:00:00	127.0003				19744																
128		09:00:00	128.0003				19758																
129		10:00:00	129.0003				19758																
130		11:00:00	130.0003				19758																
131		12:00:00	131.0003				19758																
132		13:00:00	132.0003				19758																
133		14:00:00	133.0003				19758																
134		15:00:00	134.0003				19758																
135		15:25:00	134.4169	Attend safety meeeting, Pressure test flowline.																			
136		15:30:00	134.5003				19668		7.14														
137		15:30:00	134.5003	Open well on 7.14mm Choke.																			
138		15:35:00	134.5836	19.7500			18330																
139		15:40:00	134.6669	19.8333			17578																
140		15:45:00	134.7503	19.9167			17013			438	10.95	3	76.20	95.554	95.905	1.66	0.00		0.00	22.95	0.00	0.00	22.95
141		15:45:00	134.7503	19.9167	No sign of fluid.																		
142		16:00:00	135.0003	20.1667			15855		7.14	452	10.95	7	76.20	96.359	96.905	1.66	0.00		0.00	22.95	0.00	0.00	22.95
143		16:00:00	135.0003	20.1667	Estimated 20% burnable gas, No sign of fluid.																		
144		16:15:00	135.2503	20.4167			15152	6		424	10.44	9		90.768	97.880								
145		16:30:00	135.5003	20.6667			14676	7		417	9.95	11		87.548	98.808								
146		17:00:00	136.0003	21.1667			14242	8		390	9.95	14		84.197	100.597	2.23	0.57	100	0.57	23.52	0.00	0.00	23.52
147		17:00:00	136.0003	21.1667	Estimated 20% burnable gas, Salinity - 52,000ppm, Ph - 7.																		
148		17:30:00	136.5003	21.6667			14724	8		238	5.47	16		48.547	101.980	2.45	0.22	100	0.22	23.74	0.00	0.00	23.74
149		17:30:00	136.5003	21.6667	Hydrate forming at wellhead, begin pumping methanol to clear.																		
150		17:40:00	136.6669	21.8333	Increase choke size to 8.73mm.																		
151		18:00:00	137.0003	22.1667			13331	8	8.73	507	12.44	18	76.20	106.687	103.597	2.53	0.08	100	0.08	23.82	0.00	0.00	23.82
152		18:00:00	137.0003	22.1667	Estimated 50% burnable gas, Salinity 78,000ppm, Ph - 7.																		
153		18:30:00	137.5003	22.6667			12553	8		507	12.94	18		108.817	105.842	2.84	0.31	100	0.31	24.13	0.00	0.00	24.13
154		19:00:00	138.0003	23.1667			12124	10	8.73	486	11.94	17	76.20	102.496	108.043	2.99	0.15	100	0.15	24.28	0.00	0.00	24.28
155		19:00:00	138.0003	23.1667	Estimated 50% burnable gas, Salinity - 77,000ppm, Ph - 7.																		
156		19:30:00	138.5003	23.6667			11952	10		486	11.94	16		102.679	110.180	3.08	0.09	100	0.09	24.37	0.00	0.00	24.37

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	TBG Pres	CSG Pres	WH °C	Choke Size	Static Pres	Diff Pres	MR °C	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
		yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
157	2003/03/15	20:00:00	139.0003	24.1667		11835	12	8.73	479	11.94	14	76.20	102.299	112.315	3.16	0.08	100	0.08	24.45	0.00	0.00	24.45
158		20:00:00	139.0003	24.1667	Estimated 60% burnable gas, Salinity- 112,000ppm, Ph-7																	
159		20:30:00	139.5003	24.6667		11759	12		479	11.94	13		102.484	114.449	3.32	0.16	100	0.16	24.61	0.00	0.00	24.61
160		21:00:00	140.0003	25.1667		11717	12	8.73	479	11.94	12	76.20	102.670	116.586	3.41	0.08	100	0.08	24.70	0.00	0.00	24.70
161		21:00:00	140.0003	25.1667	Estimated 60% burnable gas, Salinity- 120,000ppm, Ph-7																	
162		21:30:00	140.5003	25.6667		11683	12		479	11.94	11		102.858	118.727	3.57	0.16	100	0.16	24.86	0.00	0.00	24.86
163		22:00:00	141.0003	26.1667		11655	14	8.73	479	11.94	11	76.20	102.858	120.869	3.65	0.08	100	0.08	24.95	0.00	0.00	24.95
164		22:00:00	141.0003	26.1667	Estimated 60% burnable gas, Salinity- 140,000ppm, Ph-7																	
165		22:30:00	141.5003	26.6667		11628	14		479	11.94	11		102.858	123.012	3.74	0.08	100	0.08	25.03	0.00	0.00	25.03
166		23:00:00	142.0003	27.1667		11600	14	8.73	479	11.94	10	76.20	103.046	125.157	3.91	0.17	100	0.17	25.20	0.00	0.00	25.20
167		23:00:00	142.0003	27.1667	Estimated 60% burnable gas, Salinity- 110,000ppm, Ph-7																	
168		23:30:00	142.5003	27.6667		11565	14		479	11.69	9		102.145	127.295	3.99	0.08	100	0.08	25.28	0.00	0.00	25.28
169	2003/03/16	00:00:00	143.0003	28.1667		11531	14	8.73	479	11.69	8	76.20	102.334	129.425	4.08	0.09	100	0.09	25.37	0.00	0.00	25.37
170		00:00:00	143.0003	28.1667	Gas sample=0.3% h2s																	
171		00:00:00	143.0003	28.1667	Estimated 60% burnable gas, Salinity- 122,000ppm, Ph-7																	
172		00:30:00	143.5003	28.6667		11511	14		479	11.69	8		102.334	131.556	4.25	0.17	100	0.17	25.54	0.00	0.00	25.54
173		01:00:00	144.0003	29.1667		11490	14	8.73	479	11.69	7	76.20	102.523	133.690	4.34	0.09	100	0.09	25.63	0.00	0.00	25.63
174		01:00:00	144.0003	29.1667	Estimated 60% burnable gas, Salinity- 96,000ppm, Ph-7																	
175		01:30:00	144.5003	29.6667		11483	14		479	11.69	7		102.523	135.826	4.42	0.09	100	0.09	25.72	0.00	0.00	25.72
176		02:00:00	145.0003	30.1667		11476	15	8.73	479	11.69	7	76.20	102.523	137.962	4.51	0.09	100	0.09	25.80	0.00	0.00	25.80
177		02:00:00	145.0003	30.1667	Estimated 70% burnable gas, Salinity- 104,000ppm, Ph-7																	
178		02:30:00	145.5003	30.6667		11469	16		479	11.69	6		102.714	140.100	4.60	0.09	100	0.09	25.89	0.00	0.00	25.89
179		03:00:00	146.0003	31.1667		11449	16	8.73	479	11.69	5	76.20	102.906	142.242	4.69	0.09	100	0.09	25.98	0.00	0.00	25.98
180		03:00:00	146.0003	31.1667	Estimated 70% burnable gas, Salinity- 112,000ppm, Ph-7																	
181		03:30:00	146.5003	31.6667		11442	16		479	11.69	4		103.099	144.388	4.87	0.18	100	0.18	26.16	0.00	0.00	26.16
182		04:00:00	147.0003	32.1667		11442	16	8.73	479	11.69	6	76.20	102.714	146.532	4.96	0.09	100	0.09	26.25	0.00	0.00	26.25
183		04:00:00	147.0003	32.1667	Estimated 75% burnable gas, Salinity- 110,000ppm, Ph-7																	
184		04:30:00	147.5003	32.6667		11442	16		479	11.69	8		102.334	148.668	5.05	0.09	100	0.09	26.34	0.00	0.00	26.34
185		05:00:00	148.0003	33.1667		11442	16	8.73	479	11.69	9	76.20	102.145	150.798	5.23	0.18	100	0.18	26.52	0.00	0.00	26.52
186		05:00:00	148.0003	33.1667	Estimated 75% burnable gas, Salinity- 118,000ppm, Ph-7																	
187		05:30:00	148.5003	33.6667		11442	16		479	11.69	9		102.145	152.926	5.32	0.09	100	0.09	26.61	0.00	0.00	26.61
188		06:00:00	149.0003	34.1667		11442	16	8.73	479	11.69	10	76.20	101.958	155.052	5.41	0.09	100	0.09	26.70	0.00	0.00	26.70
189					Flow summary since 15:30hrs March 15/2003																	
190					Total gas produced(15.5hrs of flow)= 66.915 10 3m3 Cum gas produced= 172.488 10 3m3																	
191					Total fluid produced(15.5hrs of flow)= 3.75m3 Cum fluid produced=26.70m3																	
192		06:30:00	149.5003	34.6667		11418	17		479	11.69	10		101.958	157.176	5.50	0.09	100	0.09	26.79	0.00	0.00	26.79
193		07:00:00	150.0003	35.1667		11401	18	8.73	479	11.69	10	76.20	101.958	159.300	5.77	0.27	100	0.27	27.06	0.00	0.00	27.06
194		07:00:00	150.0003	35.1667	Estimated 75% burnable gas, Salinity - 122,000ppm, Ph - 7.																	
195		07:30:00	150.5003	35.6667		11380	17		479	11.45	10		100.903	161.413	5.77	0.00		0.00	27.06	0.00	0.00	27.06

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	3S	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
196	2003/03/16	07:45:00	150.7503	35.9167	Decrease orifice plate size to 63.5mm, Decrease back-pressure.																	
197		08:00:00	151.0003	36.1667		11352	18	8.73	369	37.82	10	63.50	99.505	163.501	5.87	0.09	100	0.09	27.16	0.00	0.00	27.16
198		08:00:00	151.0003	36.1667	Estimated 75% burnable gas, Slight mist of fluid, unable to catch sample.																	
199		08:30:00	151.5003	36.6667		11332	19		369	37.82	10		99.505	165.574	5.96	0.09	100	0.09	27.25	0.00	0.00	27.25
200		09:00:00	152.0003	37.1667		11304	18	8.73	369	38.07	11	63.50	99.662	167.648	6.05	0.09	100	0.09	27.34	0.00	0.00	27.34
201		09:00:00	152.0003	37.1667	Estimated 75% burnable gas, Slight mist of fluid, unable to catch sample.																	
202		09:30:00	152.5003	37.6667		11270	19		369	37.57	12		98.808	169.716	6.14	0.09	100	0.09	27.44	0.00	0.00	27.44
203		10:00:00	153.0003	38.1667		11188	19	8.73	369	39.06	12	63.50	100.805	171.795	6.24	0.09	100	0.09	27.53	0.00	0.00	27.53
204		10:00:00	153.0003	38.1667	Estimated 75% burnable gas, Trace of sediment, Salinity - 110,000ppm, Ph - 7.																	
205		10:30:00	153.5003	38.6667		11188	19		369	39.06	13		100.624	173.893	6.33	0.09	100	0.09	27.62	0.00	0.00	27.62
206		11:00:00	154.0003	39.1667		11111	19	8.73	369	39.31	14	63.50	100.774	175.991	6.42	0.09	100	0.09	27.72	0.00	0.00	27.72
207		11:00:00	154.0003	39.1667	Estimated 75% burnable gas, 40% sediment, Salinity - 110,000ppm, Ph - 7.																	
208		11:30:00	154.5003	39.6667		11028	19		369	39.56	14		101.104	178.094	6.52	0.09	100	0.09	27.81	0.00	0.00	27.81
209		12:00:00	155.0003	40.1667		10911	20	8.73	383	39.81	14	63.50	103.297	180.223	6.61	0.09	100	0.09	27.90	0.00	0.00	27.90
210		12:00:00	155.0003	40.1667	Estimated 50% burnable gas, 40% sediment, Salinity - 110,000ppm, Ph - 7. H2S = 0.3% or 3000ppm.																	
211		12:30:00	155.5003	40.6667		10787	20		383	39.81	15		103.112	182.373	6.80	0.19	100	0.19	28.09	0.00	0.00	28.09
212		13:00:00	156.0003	41.1667		10684	20	8.73	383	39.81	16	63.50	102.929	184.520	6.89	0.09	100	0.09	28.19	0.00	0.00	28.19
213		13:00:00	156.0003	41.1667	Estimated 50% burnable gas, 20% sediment, Salinity - 130,000ppm, Ph - 7.																	
214		13:30:00	156.5003	41.6667		10608	20		380	39.81	16		102.533	186.660	6.99	0.09	100	0.09	28.28	0.00	0.00	28.28
215		14:00:00	157.0003	42.1667		10546	20	8.73	380	39.56	16	63.50	102.201	188.793	7.08	0.09	100	0.09	28.37	0.00	0.00	28.37
216		14:00:00	157.0003	42.1667	Estimated 50% burnable gas, 20% sediment, Salinity - 130,000ppm, Ph -7.																	
217		14:30:00	157.5003	42.6667		10491	20		396	39.56	16		104.287	190.943	7.18	0.09	100	0.09	28.47	0.00	0.00	28.47
218		15:00:00	158.0003	43.1667		10456	21	8.73	403	39.56	17	63.50	105.000	193.124	7.27	0.09	100	0.09	28.56	0.00	0.00	28.56
219		15:00:00	158.0003	43.1667	Estimated 50% burnable gas, 20% sediment, Salinity - 130,000ppm, Ph - 7.																	
220		15:30:00	158.5003	43.6667		10367	20		403	39.81	17		105.340	195.315	7.46	0.19	100	0.19	28.75	0.00	0.00	28.75
221		16:00:00	159.0003	44.1667		10305	20	8.73	403	39.81	17	63.50	105.340	197.509	7.56	0.09	100	0.09	28.85	0.00	0.00	28.85
222		16:00:00	159.0003	44.1667	Estimated 50% burnable gas, 15% sediment, Salinity - 120,000ppm, Ph -7.																	
223		16:30:00	159.5003	44.6667		10249	20		403	39.81	17		105.340	199.704	7.66	0.10	100	0.10	28.95	0.00	0.00	28.95
224		17:00:00	160.0003	45.1667		10173	20	8.73	403	39.81	17	63.50	105.340	201.898	7.75	0.09	100	0.09	29.04	0.00	0.00	29.04
225		17:00:00	160.0003	45.1667	Estimated 50% burnable gas, 12% sediment, Salinity 108,000ppm, Ph - 7.																	
226		17:30:00	160.5003	45.6667		10098	21		403	39.81	17		105.340	204.093	7.85	0.10	100	0.10	29.14	0.00	0.00	29.14
227	2003/03/16	18:00:00	161.0003	46.1667		10049	21	8.73	403	39.81	17	63.50	105.340	206.288	7.94	0.10	100	0.10	29.23	0.00	0.00	29.23
228		18:00:00	161.0003	46.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 122,000ppm, Ph - 7, H2S = 0.3% or 3000ppm.																	
229		18:30:00	161.5003	46.6667		9967	21		403	39.81	17		105.340	208.482	8.04	0.10	100	0.10	29.33	0.00	0.00	29.33
230		19:00:00	162.0003	47.1667		9905	20	8.73	403	40.55	17	63.50	106.342	210.687	8.13	0.10	100	0.10	29.42	0.00	0.00	29.42
231		19:00:00	162.0003	47.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 114,000ppm, Ph - 7.																	
232		19:30:00	162.5003	47.6667		9856	20		410	41.05	17		107.942	212.919	8.23	0.10	100	0.10	29.52	0.00	0.00	29.52
233		20:00:00	163.0003	48.1667		9808	20	8.73	410	41.30	16	63.50	108.472	215.174	8.33	0.10	100	0.10	29.62	0.00	0.00	29.62
234		20:00:00	163.0003	48.1667	Estimated 50% burnable gas, 10% Sediment, Salinity - 116,000ppm, Ph - 7.																	

Anadarko Canada Corporation
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Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
235	2003/03/16	20:30:00	163.5003	48.6667		9753	20		410	41.55	16		108.810	217.437	8.52	0.19	100	0.19	29.81	0.00	0.00	29.81
236		21:00:00	164.0003	49.1667		9704	20	8.73	410	41.55	16	63.50	108.810	219.704	8.62	0.10	100	0.10	29.91	0.00	0.00	29.91
237		21:00:00	164.0003	49.1667	Estimated 50% burnable gas, 10% Sediment, Salinity - 108,000ppm, Ph - 7.																	
238		21:30:00	164.5003	49.6667		9642	20		410	41.56	16		108.819	221.971	8.71	0.09	100	0.09	30.00	0.00	0.00	30.00
239		22:00:00	165.0003	50.1667		9601	20	8.73	410	41.56	16	63.50	108.819	224.238	8.81	0.10	100	0.10	30.10	0.00	0.00	30.10
240		22:00:00	165.0003	50.1667	Estimated 50% burnable gas, 10% Sediment, Salinity - 108,000ppm, Ph - 7.																	
241		22:30:00	165.5003	50.6667		9553	20		410	41.56	16		108.819	226.505	8.90	0.09	100	0.09	30.19	0.00	0.00	30.19
242		23:00:00	166.0003	51.1667		9580	20	8.73	410	40.06	16	63.50	106.791	228.751	9.00	0.10	100	0.10	30.29	0.00	0.00	30.29
243		23:00:00	166.0003	51.1667	Estimated 50% burnable gas, 10% Sediment, Salinity - 116,000ppm, Ph - 7.																	
244		23:30:00	166.5003	51.6667		9504	20		410	41.81	15		109.348	231.002	9.10	0.10	100	0.10	30.39	0.00	0.00	30.39
245	2003/03/17	00:00:00	167.0003	52.1667		9442	20	8.73	417	41.81	15	63.50	110.246	233.290	9.19	0.09	100	0.09	30.48	0.00	0.00	30.48
246		00:00:00	167.0003	52.1667	Estimated 50% burnable gas, 10% Sediment, Salinity - 113,000ppm, Ph - 7.																	
247		00:30:00	167.5003	52.6667		9394	20		417	41.56	15		109.908	235.583	9.29	0.10	100	0.10	30.58	0.00	0.00	30.58
248		01:00:00	168.0003	53.1667		9373	20	8.73	417	41.56	15	63.50	109.908	237.873	9.48	0.19	100	0.19	30.77	0.00	0.00	30.77
249		01:00:00	168.0003	53.1667	Estimated 50% burnable gas, 8% Sediment, Salinity - 120,000ppm, Ph - 7.																	
250		01:30:00	168.5003	53.6667		9373	20		424	40.31	15		109.080	240.154	9.58	0.10	100	0.10	30.87	0.00	0.00	30.87
251		02:00:00	169.0003	54.1667		9291	20	8.73	438	40.31	14	63.50	111.009	242.446	9.68	0.10	100	0.10	30.97	0.00	0.00	30.97
252		02:00:00	169.0003	54.1667	Estimated 50% burnable gas, 10% Sediment, Salinity - 122,000ppm, Ph - 7.																	
253		02:30:00	169.5003	54.6667		9256	20		438	40.31	15		110.810	244.757	9.77	0.09	100	0.09	31.06	0.00	0.00	31.06
254		03:00:00	170.0003	55.1667		9208	20	8.73	438	40.06	15	63.50	110.459	247.062	9.87	0.10	100	0.10	31.16	0.00	0.00	31.16
255		03:00:00	170.0003	55.1667	Estimated 50% burnable gas, 6% Sediment, Salinity - 126,000ppm, Ph - 7.																	
256		03:30:00	170.5003	55.6667		9160	20		438	40.31	15		110.810	249.367	9.97	0.10	100	0.10	31.26	0.00	0.00	31.26
257		04:00:00	171.0003	56.1667		9111	20	8.73	438	40.31	15	63.50	110.810	251.675	10.06	0.09	100	0.09	31.35	0.00	0.00	31.35
258		04:00:00	171.0003	56.1667	Estimated 50% burnable gas, 8% Sediment, Salinity - 132,000ppm, Ph - 7.																	
259		04:30:00	171.5003	56.6667		9111	20		452	40.31	15		112.515	254.002	10.16	0.10	100	0.10	31.45	0.00	0.00	31.45
260		05:00:00	172.0003	57.1667		9049	20	8.73	452	40.31	15	63.50	112.515	256.346	10.25	0.09	100	0.09	31.54	0.00	0.00	31.54
261		05:00:00	172.0003	57.1667	Estimated 50% burnable gas, 10% Sediment, Salinity - 116,000ppm, Ph - 7.																	
262		05:30:00	172.5003	57.6667		9008	20		452	40.31	15		112.515	258.690	10.35	0.10	100	0.10	31.64	0.00	0.00	31.64
263		06:00:00	173.0003	58.1667		8932	18	8.73	452	39.81	14	63.50	112.002	261.029	10.54	0.19	100	0.19	31.83	0.00	0.00	31.83
264					Flow summary since 15:30 March 15/2003																	
265					Total gas produced(24hrs of flow)= 117.913 10 3m3 Cum gas produced= 290.401 10 3m3																	
266					Total fluid produced(24hrs of flow)= 5.13 m3 Cum fluid produced= 31.83 m3																	
267		06:30:00	173.5003	58.6667		8905	20		452	39.81	12		112.459	263.367	10.64	0.10	100	0.10	31.93	0.00	0.00	31.93
268		07:00:00	174.0003	59.1667		8857	19	8.73	452	40.06	12	63.50	112.820	265.713	10.73	0.10	100	0.10	32.02	0.00	0.00	32.02
269		07:00:00	174.0003	59.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 139,000ppm, Ph - 7.																	
270		07:30:00	174.5003	59.6667		8815	19		452	39.81	12		112.459	268.060	10.92	0.19	100	0.19	32.21	0.00	0.00	32.21
271		07:30:00	174.5003	59.6667	Decrease choke size to 7.14mm. Check 8.73mm for washing.																	
272		08:00:00	175.0003	60.1667		9815	15	7.14	417	36.08	12	63.50	102.769	270.302	11.02	0.10	100	0.10	32.31	0.00	0.00	32.31
273		08:00:00	175.0003	60.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 139,000ppm, Ph - 7.																	

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
274	2003/03/17	08:30:00	175.5003	60.6667		10077	20		396	37.82	15		102.087	272.436	11.12	0.10	100	0.10	32.41	0.00	0.00	32.41
275		09:00:00	176.0003	61.1667		10187	20	7.14	403	37.82	17	63.50	102.603	274.568	11.21	0.09	100	0.09	32.50	0.00	0.00	32.50
276		09:00:00	176.0003	61.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 142,000ppm, Ph - 7.																	
277		09:25:00	176.4169	61.5833	Increase choke size to 8.73mm																	
278		09:30:00	176.5003	61.6667		9891	21		486	46.28	18		124.554	276.934	11.21	0.00		0.00	32.50	0.00	0.00	32.50
279		10:00:00	177.0003	62.1667		9297	20	8.73	438	43.04	20	63.50	113.617	279.415	11.40	0.19	100	0.19	32.69	0.00	0.00	32.69
280		10:00:00	177.0003	62.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 148,000ppm, Ph - 7.																	
281		10:30:00	177.5003	62.6667		9146	20		438	42.30	20		112.610	281.772	11.49	0.09		0.09	32.79	0.00	0.00	32.79
282		11:00:00	178.0003	63.1667		9043	20	8.73	438	41.80	21	63.50	111.728	284.109	11.59	0.10	100	0.10	32.88	0.00	0.00	32.88
283		11:00:00	178.0003	63.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 146,000ppm, Ph - 7.																	
284		11:30:00	178.5003	63.6667		9029	20		438	41.55	22		111.189	286.431	11.78	0.19	100	0.19	33.07	0.00	0.00	33.07
285		12:00:00	179.0003	64.1667		9008	20	8.73	438	42.05	23	63.50	111.679	288.752	11.87	0.09	100	0.09	33.16	0.00	0.00	33.16
286		12:00:00	179.0003	64.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 156,000ppm, Ph - 7.																	
287		12:30:00	179.5003	64.6667		8981	21		438	42.05	23		111.679	291.079	11.97	0.09	100	0.09	33.26	0.00	0.00	33.26
288		13:00:00	180.0003	65.1667		8953	21	8.73	438	41.80	25	63.50	110.953	293.398	12.06	0.09	100	0.09	33.35	0.00	0.00	33.35
289		13:00:00	180.0003	65.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 174,000ppm, Ph - 7.																	
290		13:30:00	180.5003	65.6667		8939	21		438	41.80	25		110.953	295.709	12.15	0.09	100	0.09	33.44	0.00	0.00	33.44
291		14:00:00	181.0003	66.1667		8932	21	8.73	438	41.55	26	63.50	110.421	298.015	12.25	0.09	100	0.09	33.54	0.00	0.00	33.54
292		14:00:00	181.0003	66.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 182,000ppm, Ph - 7.																	
293		14:30:00	181.5003	66.6667		8932	21		445	41.55	28		110.903	300.321	12.43	0.19	100	0.19	33.72	0.00	0.00	33.72
294		15:00:00	182.0003	67.1667		8919	22	8.73	445	41.55	28	63.50	110.903	302.631	12.53	0.09	100	0.09	33.82	0.00	0.00	33.82
295		15:00:00	182.0003	67.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 188,000ppm, Ph - 7.																	
296		15:30:00	182.5003	67.6667		8919	23		452	41.05	28		111.065	304.944	12.71	0.19	100	0.19	34.00	0.00	0.00	34.00
297		16:00:00	183.0003	68.1667		8905	24	8.73	452	41.05	28	63.50	111.065	307.257	12.80	0.09	100	0.09	34.09	0.00	0.00	34.09
298		16:00:00	183.0003	68.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 190,000ppm, Ph - 7.																	
299		16:30:00	183.5003	68.6667		8898	24		458	40.55	28		111.088	309.571	12.80	0.00	100	0.00	34.09	0.00	0.00	34.09
300		17:00:00	184.0003	69.1667		8884	24	8.73	458	40.31	28	63.50	110.750	311.882	12.89	0.09	100	0.09	34.18	0.00	0.00	34.18
301		17:00:00	184.0003	69.1667	Estimated 50% burnable gas, 10% sediment, Salinity - 206,000ppm, Ph - 7.																	
302		17:30:00	184.5003	69.6667		8877	24		458	40.31	28		110.750	314.190	12.98	0.09	100	0.09	34.28	0.00	0.00	34.28
303		18:00:00	185.0003	70.1667		8877	24	8.73	458	40.31	29	63.50	110.561	316.495	13.07	0.08	100	0.08	34.36	0.00	0.00	34.36
304		18:00:00	185.0003	70.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 196,000ppm, Ph - 7, H2S = 0.3% or 3000ppm.																	
305		18:30:00	185.5003	70.6667		8863	24		472	39.81	30		111.308	318.806	13.26	0.19	100	0.19	34.55	0.00	0.00	34.55
306		19:00:00	186.0003	71.1667		8850	24	8.73	472	39.81	30	63.50	111.308	321.125	13.35	0.09	100	0.09	34.64	0.00	0.00	34.64
307		19:00:00	186.0003	71.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 178,000ppm, Ph - 7.																	
308		19:30:00	186.5003	71.6667		8836	22		472	39.81	28		111.720	323.448	13.42	0.07	100	0.07	34.71	0.00	0.00	34.71
309		20:00:00	187.0003	72.1667		8822	22	8.73	479	39.81	28	63.50	112.521	325.784	13.53	0.11	100	0.11	34.82	0.00	0.00	34.82
310		20:00:00	187.0003	72.1667	Estimated 50% burnable gas, 1% sediment, Salinity - 124,000ppm, Ph - 7.																	
311		20:30:00	187.5003	72.6667		8808	22		479	39.57	28		112.161	328.124	13.62	0.09	100	0.09	34.91	0.00	0.00	34.91
312		21:00:00	188.0003	73.1667		8794	22	8.73	479	39.57	28	63.50	112.161	330.461	13.71	0.09	100	0.09	35.00	0.00	0.00	35.00

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
313	2003/03/17	21:00:00	188.0003	73.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 132,000ppm, Ph - 7.																	
314		21:30:00	188.5003	73.6667		8794	22		479	39.57	28		112.161	332.798	13.88	0.17	100	0.17	35.17	0.00	0.00	35.17
315		22:00:00	189.0003	74.1667		8780	22	8.73	486	39.07	29	63.50	112.034	335.133	13.97	0.09	100	0.09	35.26	0.00	0.00	35.26
316		22:00:00	189.0003	74.1667	Estimated 50% burnable gas, 8% sediment, Salinity - 136,000ppm, Ph - 7.																	
317		22:30:00	189.5003	74.6667		8774	22		479	39.81	29		112.329	337.470	14.06	0.09	100	0.09	35.35	0.00	0.00	35.35
318		23:00:00	190.0003	75.1667		8767	22	8.73	479	39.81	28	63.50	112.521	339.812	14.23	0.17	100	0.17	35.52	0.00	0.00	35.52
319		23:00:00	190.0003	75.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 146,000ppm, Ph - 7.																	
320		23:30:00	190.5003	75.6667		8760	22		479	39.57	29		111.969	342.151	14.32	0.09	100	0.09	35.61	0.00	0.00	35.61
321	2003/03/18	00:00:00	191.0003	76.1667		8739	22	8.73	486	38.57	29	63.50	111.302	344.477	14.41	0.09	100	0.09	35.70	0.00	0.00	35.70
322		00:00:00	191.0003	76.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 140,000ppm, Ph - 7. H2S - 0.3% or 3000ppm																	
323		00:30:00	191.5003	76.6667		8732	22		486	38.57	29		111.302	346.795	14.49	0.08	100	0.08	35.78	0.00	0.00	35.78
324		01:00:00	192.0003	77.1667		8718	22	8.73	493	38.07	29	63.50	111.338	349.115	14.58	0.09	100	0.09	35.87	0.00	0.00	35.87
325		01:00:00	192.0003	77.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 142,000ppm, Ph - 7.																	
326		01:30:00	192.5003	77.6667		8656	22		500	38.32	28		112.671	351.448	14.66	0.08	100	0.08	35.95	0.00	0.00	35.95
327		02:00:00	193.0003	78.1667		8580	22	8.73	486	39.32	27	63.50	112.784	353.797	14.75	0.09	100	0.09	36.04	0.00	0.00	36.04
328		02:00:00	193.0003	78.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 146,000ppm, Ph - 7.																	
329		02:30:00	193.5003	78.6667		8539	22		486	39.32	26		112.978	356.148	14.91	0.16	100	0.16	36.20	0.00	0.00	36.20
330		03:00:00	194.0003	79.1667		8491	22	8.73	486	39.32	25	63.50	113.174	358.504	15.00	0.09	100	0.09	36.29	0.00	0.00	36.29
331		03:00:00	194.0003	79.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 126,000ppm, Ph - 7.																	
332		03:30:00	194.5003	79.6667		8449	22		486	38.32	24		111.895	360.848	15.16	0.16	100	0.16	36.45	0.00	0.00	36.45
333		04:00:00	195.0003	80.1667		8422	22	8.73	486	38.32	23	63.50	112.090	363.182	15.32	0.16	100	0.16	36.61	0.00	0.00	36.61
334		04:00:00	195.0003	80.1667	Estimated 50% burnable gas, 3% sediment, Salinity - 120,000ppm, Ph - 7.																	
335		04:30:00	195.5003	80.6667		8415	22		486	38.32	22		112.286	365.519	15.41	0.09	100	0.09	36.70	0.00	0.00	36.70
336		05:00:00	196.0003	81.1667		8381	22	8.73	479	38.07	20	63.50	111.517	367.850	15.49	0.08	100	0.08	36.78	0.00	0.00	36.78
337		05:00:00	196.0003	81.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 132,000ppm, Ph - 7.																	
338		05:30:00	196.5003	81.6667		8374	22		479	37.82	18		111.539	370.174	3.91	11.58	100	-11.58	36.78	0.00	0.00	36.78
339		06:00:00	197.0003	82.1667		8381	22	8.73	486	38.07	17	63.50	112.908	372.512	3.99	0.08	100	0.08	36.86	0.00	0.00	36.86
340		06:00:00	197.0003	82.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 122,000ppm, Ph - 7.H2S- 0.3%or 3000ppm																	
341					Flow summary since 15:30 March 15/2003																	
342					Total gas produced(24hrs of flow)= 124.038 10 3m3 Cum gas produced= 290.401 10 3m3																	
343					Total fluid produced(24hrs of flow)= 5.03 m3 Cum fluid produced= 36.86 m3																	
344		06:30:00	197.5003	82.6667		8360	22		486	38.07	18		112.702	374.862	4.16	0.17	100	0.17	37.03	0.00	0.00	37.03
345		07:00:00	198.0003	83.1667		8346	22	8.73	493	38.07	18	63.50	113.502	377.218	4.34	0.18	100	0.18	37.21	0.00	0.00	37.21
346		07:00:00	198.0003	83.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 130,000ppm, Ph - 7.																	
347		07:30:00	198.5003	83.6667		8[illegible]			493	37.82	18		113.120	379.579	4.42	0.09	100	0.09	37.30	0.00	0.00	37.30
348		08:00:00	199.0003	84.1667		[illegible]				37.82	18	63.50	112.323	381.927	4.60	0.18	100	0.18	37.47	0.00	0.00	37.47
349		08:00:00	199.0003	84.1667	Estimated 50% burnable gas, 3% sediment, Salinity - 154,000ppm, Ph - 7.																	
350		08:30:00	199.5003	84.6667		8084	23		493	38.07	18		113.502	384.279	4.69	0.09	100	0.09	37.56	0.00	0.00	37.56
351		09:00:00	200.0003	85.1667		8064	23	8.73	493	37.82	18	63.50	113.120	386.640	4.69	0.00		0.00	37.56	0.00	0.00	37.56

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
352	2003/03/18	09:00:00	200.0003	85.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 170,000ppm, Ph - 7.																	
353		09:30:00	200.5003	85.6667		8050	24		493	37.82	18		113.120	388.997	4.87	0.18	100	0.18	37.74	0.00	0.00	37.74
354		10:00:00	201.0003	86.1667		7884	23	8.73	500	37.32	18	63.50	113.141	391.354	4.96	0.09	100	0.09	37.83	0.00	0.00	37.83
355		10:00:00	201.0003	86.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 170,000ppm, Ph - 7.																	
356		10:30:00	201.5003	86.6667		7878	24		500	37.32	19		112.940	393.709	5.05	0.09	100	0.09	37.92	0.00	0.00	37.92
357		11:00:00	202.0003	87.1667		7878	24	8.73	507	36.33	19	63.50	112.172	396.053	5.14	0.09	100	0.09	38.01	0.00	0.00	38.01
358		11:00:00	202.0003	87.1667	Estimated 50% burnable gas, 3% sediment, Salinity - 180,000ppm, Ph - 7.																	
359		11:30:00	202.5003	87.6667		7871	24		514	35.83	20		111.943	398.388	5.23	0.09	100	0.09	38.10	0.00	0.00	38.10
360		12:00:00	203.0003	88.1667		7884	24	8.73	521	35.83	20	63.50	112.697	400.728	5.41	0.18	100	0.18	38.28	0.00	0.00	38.28
361		12:00:00	203.0003	88.1667	Estimated 50% burnable gas, 3% sediment, Salinity - 194,000ppm, Ph - 7, H2S = 0.3% or 3000ppm.																	
362		12:30:00	203.5003	88.6667		8153	24		534	35.33	20		113.270	403.082	5.50	0.09	100	0.09	38.37	0.00	0.00	38.37
363		13:00:00	204.0003	89.1667		8284	24	8.73	534	35.83	20	63.50	114.084	405.450								
364		13:00:00	204.0003	89.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 198,000ppm, Ph - 7.																	
365		13:30:00	204.5003	89.6667		8367	25		521	35.83	24		111.907	407.804	5.77	0.28	100	0.28	38.64	0.00	0.00	38.64
366		14:00:00	205.0003	90.1667		8429	25	8.73	507	37.82	28	63.50	112.710	410.144	5.89	0.11	100	0.11	38.76	0.00	0.00	38.76
367		14:00:00	205.0003	90.1667	Estimated 25% burnable gas, 4% sediment, Salinity - 198,000ppm, Ph - 7.																	
368		14:30:00	205.5003	90.6667		8463	25		486	38.07	32		109.999	412.464	5.96	0.07	100	0.07	38.83	0.00	0.00	38.83
369		15:00:00	206.0003	91.1667		8484	25	8.73	479	39.81	30	63.50	112.118	414.778	6.06	0.10	100	0.10	38.93	0.00	0.00	38.93
370		15:00:00	206.0003	91.1667	No burnable gas, 2% sediment, Salinity - 200,000ppm, Ph - 7.																	
371		15:25:00	206.4169	91.5833	Trace of burnable gas. ANADARKO safety inspection conducted.																	
372		15:30:00	206.5003	91.6667		8429	25		472	39.56	30		110.950	417.101	6.14	0.09	100	0.09	39.01	0.00	0.00	39.01
373		16:00:00	207.0003	92.1667		8443	26	8.73	479	38.81	28	63.50	111.048	419.414	6.24	0.09	100	0.09	39.11	0.00	0.00	39.11
374		16:00:00	207.0003	92.1667	Trace of burnable gas, 4% sediment, Salinity - 206,000ppm, Ph - 7.																	
375		16:30:00	207.5003	92.6667		8457	25		479	39.56	32		111.379	421.731	6.33	0.09	100	0.09	39.20	0.00	0.00	39.20
376		17:00:00	208.0003	93.1667		8450	26	8.73	493	38.32	32	63.50	111.150	424.049	6.42	0.09	100	0.09	39.29	0.00	0.00	39.29
377		17:00:00	208.0003	93.1667	Estimated 25% burnable gas, 7% sediment, Salinity - 204,000ppm, Ph - 7.																	
378		17:30:00	208.5003	93.6667		8470	25		500	37.82	33		110.991	426.363	6.61	0.19	100	0.19	39.48	0.00	0.00	39.48
379		18:00:00	209.0003	94.1667		8457	25	8.73	486	38.32	33	63.50	110.182	428.666	6.61	0.00		0.00	39.48	0.00	0.00	39.48
380		18:00:00	209.0003	94.1667	Estimated 25% burnable gas, 5% sediment, Salinity - 230,000ppm, Ph - 7, H2S = 0.3% or 3000ppm.																	
381		18:30:00	209.5003	94.6667		8415	25		472	39.56	34		110.203	430.962	6.71	0.09	100	0.09	39.58	0.00	0.00	39.58
382		19:00:00	210.0003	95.1667		8408	25	8.73	472	39.80	34	63.50	110.545	433.262	6.80	0.09	100	0.09	39.67	0.00	0.00	39.67
383		19:00:00	210.0003	95.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 200,000ppm, Ph - 7.																	
384		19:30:00	210.5003	95.6667		8394	25		479	40.06	34		111.738	435.577	6.99	0.19	100	0.19	39.86	0.00	0.00	39.86
385		20:00:00	211.0003	96.1667		8401	24	8.73	479	39.57	34	63.50	111.026	437.898	7.08	0.09	100	0.09	39.95	0.00	0.00	39.95
386		20:00:00	211.0003	96.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 256,000ppm, Ph - 7.																	
387		20:30:00	211.5003	96.6667		8408	24		479	39.81	34		111.383	440.214	7.18	0.10	100	0.10	40.05	0.00	0.00	40.05
388		21:00:00	212.0003	97.1667		8401	24	8.73	486	39.57	34	63.50	111.811	442.539	7.27	0.09	100	0.09	40.14	0.00	0.00	40.14
389		21:00:00	212.0003	97.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 206,000ppm, Ph - 7.																	
390		21:30:00	212.5003	97.6667		8360	24		500	38.57	34		111.898	444.869	7.37	0.10	100	0.10	40.24	0.00	0.00	40.24

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
391	2003/03/18	22:00:00	213.0003	98.1667		8332	24	8.73	507	37.82	32	63.50	111.917	447.201	7.46	0.09	100	0.09	40.33	0.00	0.00	40.33
392		22:00:00	213.0003	98.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 200,000ppm, Ph - 7.																	
393		22:30:00	213.5003	98.6667		8284	24		500	39.32	30		113.766	449.552	7.56	0.10	100	0.10	40.43	0.00	0.00	40.43
394		23:00:00	214.0003	99.1667		8256	24	8.73	500	37.82	29	63.50	111.730	451.901	7.66	0.10	100	0.10	40.53	0.00	0.00	40.53
395		23:00:00	214.0003	99.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 166,000ppm, Ph - 7.																	
396		23:30:00	214.5003	99.6667		8236	24		507	37.82	29		112.489	454.236	7.75	0.09	100	0.09	40.62	0.00	0.00	40.62
397	2003/03/19	00:00:00	215.0003	100.1667		8215	24	8.73	507	37.82	29	63.50	112.489	456.580	7.85	0.10	100	0.10	40.72	0.00	0.00	40.72
398		00:00:00	215.0003	100.1667	Estimated 60% burnable gas, 5% sediment, Salinity - 184,000ppm, Ph - 7.																	
399		00:30:00	215.5003	100.6667		8187	24		514	36.08	29		110.554	458.903	7.94	0.09	100	0.09	40.81	0.00	0.00	40.81
400		01:00:00	216.0003	101.1667		8181	24	8.73	514	37.33	28	63.50	112.674	461.228	8.04	0.10	100	0.10	40.91	0.00	0.00	40.91
401		01:00:00	216.0003	101.1667	Estimated 60% burnable gas, 5% sediment, Salinity - 162,000ppm, Ph - 7.																	
402		01:30:00	216.5003	101.6667		8160	24		507	37.33	28		111.923	463.568	8.13	0.09	100	0.09	41.00	0.00	0.00	41.00
403		02:00:00	217.0003	102.1667		8167	24	8.73	479	40.06	28	63.50	112.880	465.910	8.23	0.10	100	0.10	41.10	0.00	0.00	41.10
404		02:00:00	217.0003	102.1667	Estimated 60% burnable gas, 4% sediment, Salinity - 136,000ppm, Ph - 7.																	
405		02:30:00	217.5003	102.6667		8153	24		472	39.57	28		111.362	468.246	8.42	0.19	100	0.19	41.29	0.00	0.00	41.29
406		03:00:00	218.0003	103.1667		8139	24	8.73	479	39.32	28	63.50	111.800	470.570	8.52	0.10	100	0.10	41.39	0.00	0.00	41.39
407		03:00:00	218.0003	103.1667	Estimated 60% burnable gas, 5% sediment, Salinity - 130,000ppm, Ph - 7.																	
408		03:30:00	218.5003	103.6667		8146	24		493	38.32	28		111.900	472.900	8.52	0.00	100	0.00	41.39	0.00	0.00	41.39
409		04:00:00	219.0003	104.1667		8132	24	8.73	500	38.07	28	63.50	112.297	475.236	8.62	0.10	100	0.10	41.49	0.00	0.00	41.49
410		04:00:00	219.0003	104.1667	Estimated 70% burnable gas, 3% sediment, Salinity - 128,000ppm, Ph - 7.																	
411		04:30:00	219.5003	104.6667		8132	24		500	37.82	28		111.921	477.571	8.81	0.19	100	0.19	41.68	0.00	0.00	41.68
412		05:00:00	220.0003	105.1667		8125	24	8.73	479	39.57	28	63.50	112.161	479.906	8.90	0.09	100	0.09	41.77	0.00	0.00	41.77
413		05:00:00	220.0003	105.1667	Estimated 70% burnable gas, 4% sediment, Salinity - 136,000ppm, Ph - 7.																	
414		05:30:00	220.5003	105.6667		8125	24		493	38.07	28		111.528	482.236	9.00	0.10	100	0.10	41.87	0.00	0.00	41.87
415		06:00:00	221.0003	106.1667		8125	24	8.73	493	37.82	28	63.50	111.156	484.555	9.10	0.10	100	0.10	41.97	0.00	0.00	41.97
416					Flow summary since 15:30 March 15/2003																	
417					Total gas produced(24hrs of flow)= 248.698 10 3m3 Cum gas produced= 539.099 10 3m3 H2s- 0.3% or 3000ppm																	
418					Total fluid produced(24hrs of flow)= 5.11 m3 Cum fluid produced= 41.97 m3																	
419		06:30:00	221.5003	106.6667		8119	24		500	37.82	26		112.324	486.883	9.19	0.10	100	0.10	42.06	0.00	0.00	42.06
420		07:00:00	222.0003	107.1667		8146	24	8.73	403	47.27	28	63.50	112.906	489.229	9.29	0.10	100	0.10	42.16	0.00	0.00	42.16
421		07:00:00	222.0003	107.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 138,000ppm, Ph - 7.																	
422		07:30:00	222.5003	107.6667		8133	24		403	46.77	28		112.287	491.575	9.39	0.10	100	0.10	42.26	0.00	0.00	42.26
423		08:00:00	223.0003	108.1667		8126	24	8.73	403	46.28	27	63.50	111.869	493.910	9.48	0.10	100	0.10	42.35	0.00	0.00	42.35
424		08:00:00	223.0003	108.1667	Estimated 50% burnable gas, 5% sediment, Salinity - 140,000ppm, Ph - 7.																	
425		08:30:00	223.5003	108.6667		8119	24		403	46.03	27		111.557	496.237	9.58	0.10	100	0.10	42.45	0.00	0.00	42.45
426		09:00:00	224.0003	109.1667		8105	24	8.73	417	45.78	28	63.50	112.320	498.576	9.68	0.10	100	0.10	42.55	0.00	0.00	42.55
427		09:00:00	224.0003	109.1667	Estimated 50% burnable gas, 4% sediment, Salinity - 168,000ppm, Ph - 7.																	
428		09:30:00	224.5003	109.6667		8091	25		424	44.29	28		111.915	500.918	9.77	0.10	100	0.10	42.64	0.00	0.00	42.64
429		10:00:00	225.0003	110.1667		8091	24	8.73	424	44.29	29	63.50	111.728	503.247	9.87	0.10	100	0.10	42.74	0.00	0.00	42.74

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
430	2003/03/19	10:00:00	225.0003	110.1667	Estimated 40% burnable gas, 4% sediment, Salinity - 220,000ppm, Ph - 7.																	
431		10:30:00	225.5003	110.6667		8091	25		424	44.29	28		111.919	505.577	9.96	0.10		0.10	42.84	0.00	0.00	42.84
432		11:00:00	226.0003	111.1667		8084	25	8.73	438	43.79	29	63.50	112.859	507.919	10.06	0.10	100	0.10	42.93	0.00	0.00	42.93
433		11:00:00	226.0003	111.1667	Estimated 40% burnable gas, 4% sediment, Salinity - 200,000ppm, Ph - 7.																	
434		11:30:00	226.5003	111.6667		8077	25		438	43.79	30		112.667	510.268	10.16	0.10	100	0.10	43.03	0.00	0.00	43.03
435		12:00:00	227.0003	112.1667		8064	25	8.73	438	43.79	30	63.50	112.667	512.615	10.25	0.10	100	0.10	43.12	0.00	0.00	43.12
436		12:00:00	227.0003	112.1667	Estimated 40% burnable gas, 4% sediment, Salinity - 202,000ppm, Ph - 7, H2S = 0.3% or 3000ppm.																	
437		12:30:00	227.5003	112.6667		8071	25		438	43.79	30		112.667	514.962	10.35	0.10	100	0.10	43.22	0.00	0.00	43.22
438		13:00:00	228.0003	113.1667		8057	25	8.73	438	44.29	30	63.50	113.327	517.316	10.54	0.19	100	0.19	43.41	0.00	0.00	43.41
439		13:00:00	228.0003	113.1667	Estimated 40% burnable gas, 2% sediment, Salinity - 202,000ppm, Ph - 7.																	
440		13:30:00	228.5003	113.6667		8050	25		438	43.79	30		112.667	519.670	10.64	0.09	100	0.09	43.51	0.00	0.00	43.51
441		14:00:00	229.0003	114.1667		8050	26	8.73	438	43.29	31	63.50	111.815	522.009	10.73	0.10	100	0.10	43.60	0.00	0.00	43.60
442		14:00:00	229.0003	114.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 204,000ppm, Ph - 7.																	
443		14:30:00	229.5003	114.6667		8050	26		438	42.55	31		110.828	524.328	10.83	0.10	100	0.10	43.70	0.00	0.00	43.70
444		15:00:00	230.0003	115.1667		8050	26	8.73	438	42.05	31	63.50	110.158	526.630	10.92	0.09	100	0.09	43.79	0.00	0.00	43.79
445		15:00:00	230.0003	115.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 200,000ppm, Ph - 7.																	
446		15:30:00	230.5003	115.6667		8036	26		445	42.30	31		111.356	528.937	11.02	0.10	100	0.10	43.89	0.00	0.00	43.89
447		16:00:00	231.0003	116.1667		8036	26	8.73	445	41.80	32	63.50	110.492	531.248	11.12	0.10	100	0.10	43.99	0.00	0.00	43.99
448		16:00:00	231.0003	116.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 148,000ppm, Ph - 7.																	
449		16:30:00	231.5003	116.6667		8029	26		445	41.80	32		110.492	533.550	11.21	0.09	100	0.09	44.08	0.00	0.00	44.08
450		17:00:00	232.0003	117.1667		8022	26	8.73	445	41.80	32	63.50	110.492	535.852	11.30	0.09	100	0.09	44.18	0.00	0.00	44.18
451		17:00:00	232.0003	117.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 134,000ppm, Ph - 7.																	
452		17:30:00	232.5003	117.6667		8022	26		445	41.80	32		110.492	538.154	11.40	0.10	100	0.10	44.27	0.00	0.00	44.27
453		18:00:00	233.0003	118.1667		8015	26	8.73	452	41.55	32	63.50	111.000	540.461	11.49	0.09	100	0.09	44.37	0.00	0.00	44.37
454		18:00:00	233.0003	118.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 188,000ppm, Ph - 7, H2S = 0.3% or 3000ppm.																	
455		18:30:00	233.5003	118.6667		8015	26		458	40.80	32		110.683	542.770	11.59	0.10	100	0.10	44.46	0.00	0.00	44.46
456		19:00:00	234.0003	119.1667		7999	26	8.73	458	41.80	31	63.50	112.252	545.093	11.68	0.09	100	0.09	44.55	0.00	0.00	44.55
457		19:00:00	234.0003	119.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 174,000ppm, Ph - 7.																	
458		19:30:00	234.5003	119.6667		8001	26		465	40.31	28		111.621	547.425	11.78	0.09	100	0.09	44.65	0.00	0.00	44.65
459		20:00:00	235.0003	120.1667		8001	25	8.73	465	40.31	28	63.50	111.621	549.750	11.87	0.09	100	0.09	44.74	0.00	0.00	44.74
460		20:00:00	235.0003	120.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 218,000ppm, Ph - 7.																	
461		20:30:00	235.5003	120.6667		7988	25		465	40.31	28		111.621	552.076	11.97	0.10	100	0.10	44.84	0.00	0.00	44.84
462		21:00:00	236.0003	121.1667		7988	25	8.73	465	40.31	28	63.50	111.621	554.401	12.06	0.09	100	0.09	44.93	0.00	0.00	44.93
463		21:00:00	236.0003	121.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 156,000ppm, Ph - 7.																	
464		21:30:00	236.5003	121.6667		7981	26		472	39.81	28		111.720	556.728	12.15	0.09	100	0.09	45.02	0.00	0.00	45.02
465		22:00:00	237.0003	122.1667		7974	26	8.73	472	39.81	28	63.50	111.720	559.055	12.34	0.19	100	0.19	45.21	0.00	0.00	45.21
466		22:00:00	237.0003	122.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 160,000ppm, Ph - 7.																	
467		22:30:00	237.5003	122.6667		7967	26		472	39.81	28		111.720	561.383	12.43	0.09	100	0.09	45.30	0.00	0.00	45.30
468		23:00:00	238.0003	123.1667		7960	26	8.73	472	39.81	28	63.50	111.720	563.710	12.53	0.10	100	0.10	45.40	0.00	0.00	45.40

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
469	2003/03/19	23:00:00	238.0003	123.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 186,000ppm, Ph - 7.																	
470		23:30:00	238.5003	123.6667		7953	25		472	39.32	28		111.003	566.030	12.62	0.09	100	0.09	45.49	0.00	0.00	45.49
471	2003/03/20	00:00:00	239.0003	124.1667		7946	25	8.73	486	38.32	28	63.50	111.124	568.344	12.80	0.18	100	0.18	45.67	0.00	0.00	45.67
472		00:00:00	239.0003	124.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 156,000ppm, Ph - 7. H2s taken by norwest lab 2418ppm.																	
473		00:30:00	239.5003	124.6667		7946	24		507	37.82	27		112.876	570.677	12.89	0.09	100	0.09	45.76	0.00	0.00	45.76
474		01:00:00	240.0003	125.1667		7939	24	8.73	500	38.32	27	63.50	112.865	573.029	12.99	0.10	100	0.10	45.86	0.00	0.00	45.86
475		01:00:00	240.0003	125.1667	Estimated 30% burnable gas, 3% sediment, Salinity - 198,000ppm, Ph - 7.																	
476		01:30:00	240.5003	125.6667		7939	24		493	38.32	27		112.093	575.372	13.08	0.09	100	0.09	45.95	0.00	0.00	45.95
477		02:00:00	241.0003	126.1667		7925	24	8.73	493	38.57	27	63.50	112.464	577.711	13.17	0.09	100	0.09	46.04	0.00	0.00	46.04
478		02:00:00	241.0003	126.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 180,000ppm, Ph - 7.																	
479		02:30:00	241.5003	126.6667		7919	24		493	37.82	27		111.347	580.043	13.26	0.09	100	0.09	46.13	0.00	0.00	46.13
480		03:00:00	242.0003	127.1667		7925	24	8.73	493	38.32	29	63.50	111.709	582.366	13.44	0.18	100	0.18	46.31	0.00	0.00	46.31
481		03:00:00	242.0003	127.1667	Estimated 30% burnable gas, 5% sediment, Salinity - 192,000ppm, Ph - 7.																	
482		03:30:00	242.5003	127.6667		7919	24		507	37.82	29		112.489	584.701	13.53	0.09	100	0.09	46.40	0.00	0.00	46.40
483		04:00:00	243.0003	128.1667		7912	24	8.73	500	37.82	29	63.50	111.730	587.037	13.62	0.09	100	0.09	46.49	0.00	0.00	46.49
484		04:00:00	243.0003	128.1667	Estimated 30% burnable gas, 3% sediment, Salinity - 186,000ppm, Ph - 7.																	
485		04:30:00	243.5003	128.6667		7912	24		486	39.57	28		112.954	589.377	13.70	0.08	100	0.08	46.57	0.00	0.00	46.57
486		05:00:00	244.0003	129.1667		7912	24	8.73	479	38.82	28	63.50	111.074	591.711	13.79	0.09	100	0.09	46.66	0.00	0.00	46.66
487		05:00:00	244.0003	129.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 146,000ppm, Ph - 7.																	
488		05:30:00	244.5003	129.6667		7905	24		479	39.81	28		112.521	594.040	13.88	0.09	100	0.09	46.75	0.00	0.00	46.75
489		06:00:00	245.0003	130.1667		7912	24	8.73	438	42.30	25	63.50	111.604	596.375	13.97	0.09	100	0.09	46.84	0.00	0.00	46.84
490					Flow summary since 15:30 March 15/2003																	
491					Total gas produced(24hrs of flow)= 124.414 10 3m3 Cum gas produced= 663.513 10 3m3 H2s- 0.25% or 2500ppm																	
492					Total fluid produced(24hrs of flow)= 4.87 m3 Cum fluid produced= 46.84 m3																	
493		06:30:00	245.5003	130.6667		7905	24		438	42.30	24		111.825	598.702	3.82	10.15	100	-10.15	46.84	0.00	0.00	46.84
494		07:00:00	246.0003	131.1667		7905	24	8.73	438	42.30	27	63.50	111.249	601.026	3.89	0.07	100	0.07	46.91	0.00	0.00	46.91
495		07:00:00	246.0003	131.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 162,000ppm, Ph - 7.																	
496		07:30:00	246.5003	131.6667		7898	25		438	42.30	30		110.681	603.338	4.08	0.19	100	0.19	47.10	0.00	0.00	47.10
497		08:00:00	247.0003	132.1667		7898	25	8.73	438	42.30	30	63.50	110.681	605.644	4.16	0.09	100	0.09	47.18	0.00	0.00	47.18
498		08:00:00	247.0003	132.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 182,000ppm, Ph - 7.																	
499		08:30:00	247.5003	132.6667		7891	25		445	41.80	30		110.866	607.951	4.25	0.09	100	0.09	47.27	0.00	0.00	47.27
500		09:00:00	248.0003	133.1667		7884	25	8.73	449	41.55	30	63.50	111.013	610.263	4.34	0.09	100	0.09	47.36	0.00	0.00	47.36
501		09:00:00	248.0003	133.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 204,000ppm, Ph - 7.																	
502		09:30:00	248.5003	133.6667		7884	25		458	40.80	30		111.059	612.576	4.42	0.09	100	0.09	47.44	0.00	0.00	47.44
503		10:00:00	249.0003	134.1667		7871	24	8.73	472	39.81	30	63.50	111.308	614.892	4.60	0.18	100	0.18	47.62	0.00	0.00	47.62
504		10:00:00	249.0003	134.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 190,000ppm, Ph - 7.																	
505		10:30:00	249.5003	134.6667		7871	24		472	39.81	30		111.308	617.211	4.69	0.09	100	0.09	47.71	0.00	0.00	47.71
506		11:00:00	250.0003	135.1667		7864	24	8.73	472	39.81	30	63.50	111.308	619.530	4.78	0.09	100	0.09	47.80	0.00	0.00	47.80
507		11:00:00	250.0003	135.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 194,000ppm, Ph - 7.																	

Anadarko Canada Corporation
I-75
Start Test Date: 2003/03/10
Final Test Date: 2003/03/20

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Slave Point
Pool: 2583.6 - 2861.0 mKB
Job Number: 1364

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
508	2003/03/20	11:30:00	250.5003	135.6667		7850	24		486	39.31	30		112.196	621.858	4.96	0.18	100	0.18	47.97	0.00	0.00	47.97
509		12:00:00	251.0003	136.1667		7836	24	8.73	438	41.80	28	63.50	110.382	624.177	5.05	0.09	100	0.09	48.06	0.00	0.00	48.06
510		12:00:00	251.0003	136.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 190,000ppm, Ph - 7. H2S = 0.25% or 2500ppm.																	
511		12:30:00	251.5003	136.6667		7829	24		458	40.80	28		111.438	626.487	5.14	0.09	100	0.09	48.15	0.00	0.00	48.15
512		13:00:00	252.0003	137.1667		7829	25	8.73	438	41.80	28	63.50	110.382	628.798	5.23	0.09	100	0.09	48.24	0.00	0.00	48.24
513		13:00:00	252.0003	137.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 184,000ppm, Ph - 7.																	
514		13:30:00	252.5003	137.6667		7808	22		438	41.80	28		110.382	631.098	5.32	0.09	100	0.09	48.34	0.00	0.00	48.34
515		14:00:00	253.0003	138.1667		7802	22	8.73	445	40.80	28	63.50	109.872	633.392	5.41	0.09	100	0.09	48.43	0.00	0.00	48.43
516		14:00:00	253.0003	138.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 186,000ppm, Ph - 7.																	
517		14:30:00	253.5003	138.6667		7795	22		458	39.81	28		110.044	635.683	5.50	0.09	100	0.09	48.52	0.00	0.00	48.52
518		15:00:00	254.0003	139.1667		7788	22	8.73	472	39.31	28	63.50	110.968	637.985	5.59	0.09	100	0.09	48.61	0.00	0.00	48.61
519		15:00:00	254.0003	139.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 158,000ppm, Ph - 7.																	
520		15:30:00	254.5003	139.6667		7774	24		472	38.32	28		109.530	640.282	5.68	0.09	100	0.09	48.70	0.00	0.00	48.70
521		16:00:00	255.0003	140.1667		7774	24	8.73	458	39.81	28	63.50	110.044	642.569	5.77	0.09	100	0.09	48.79	0.00	0.00	48.79
522		16:00:00	255.0003	140.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 146,000ppm, Ph - 7.																	
523		16:30:00	255.5003	140.6667		7767	25		465	39.81	28		110.869	644.870	5.89	0.11	100	0.11	48.90	0.00	0.00	48.90
524		17:00:00	256.0003	141.1667		7760	25	8.73	452	39.81	26	63.50	109.709	647.168	5.96	0.07	100	0.07	48.98	0.00	0.00	48.98
525		17:00:00	256.0003	141.1667	Estimated 30% burnable gas, 2% sediment, Salinity - 150,000ppm, Ph - 7. 2 H2O samples taken.																	
526		17:29:59	256.5000	141.6664		7753	24		452	39.56	26		109.355	649.448	6.05	0.09	100	0.09	49.07	0.00	0.00	49.07
527		17:30:00	256.5003	141.6667											0.00	-6.05	100	-6.05	49.07	0.00	0.00	49.07
528		17:30:00	256.5003		Shut in well, monitor build-ups.																	
529					Flow summary since 15:30 March 15/2003																	
530					Total gas produced(11hrs 30min of flow)= 59.053 10^3m^3 Cum gas produced= 722.566 10^3m^3.																	
531					Total fluid produced(11hrs 30min of flow)= 2.23 m^3 Cum fluid produced= 49.07 m^3																	
532		17:35:00	256.5836			9767																
533		17:40:00	256.6669			10918																
534		17:45:00	256.7503			11800																
535		18:00:00	257.0003			13669																
536		18:15:00	257.2503			14910																
537		18:30:00	257.5003			15738																
538		19:00:00	258.0003			16600																
539		19:30:00	258.5003			17571									0.00	0.00		0.00	49.07	0.00	0.00	49.07
540		19:30:00	258.5003		Shut in secure well.																	

NORWEST LABS
Energy Resource Group
9958 - 67 Avenue, Edmonton, Alberta T6E 0P5
Phone (780) 438-5522

GAS ANALYSIS

F03-05891-01
Laboratory Report Number

Anadarko Canada Corporation (Operator)			NWL 30608 (Container Identity)
I-75 (Location)	Anadarko Arrowhead I-75 (Well Name)		KB Elev, m / GR Elev, m
Arrowhead (Field/Area)	(Pool / Zone)	L. Price (Sampler)	Norwest Labs (Company)

Test Type / No
Multiple Recovery

Test Recovery:

Test Interval, m

Perforations, m

Test Unit-Meter Run (Sample Point) / (Meter # / Sample ID)

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					390	440
Temperature, °C					26	20

Date Sampled (Y-M-D)	Date Received (Y-M-D)	Date Reported (Y-M-D)	Analyst	Other Information
2003-03-19	2003-03-19	2003-03-27	D. Aebig	

Comp.	Mole Fraction (Air Free) As Received	Mole Fraction (Air Free) Acid Gas Free	Petroleum Liquid Content mL/m³
H2	0.0000	0.0000	
He	0.0015	0.0020	
N2	0.0358	0.0474	
CO2	0.2425	0.0000	
H2S	0.0018	0.0000	
C1	0.7178	0.9498	
C2	0.0005	0.0007	1.8
C3	0.0001	0.0001	0.4
iC4	Trace	Trace	0.0
nC4	Trace	Trace	0.0
iC5	Trace	Trace	0.0
nC5	Trace	Trace	0.0
C6	0.0000	0.0000	0.0
C7	0.0000	0.0000	0.0
C8	Trace	Trace	0.0
C9	Trace	Trace	0.0
C10+	Trace	Trace	0.0
Total	1.0000	1.0000	2.2

Gross Heating Value - Moisture Free
MJ/m³ @ 15°C, 101.325 kPa

AGA #5 As Received	AGA #5 Acid Gas Free	GPA #2172 As Received
27.22	35.93	27.21

Pseudo-critical Properties

Pressure, kPa	Temperature, K
5230	215.9

Density - Moisture Free, As Sampled

Ideal Gas Absolute, kg/m³	Ideal Gas Relative	Real Gas (GPA 2172) Absolute, kg/m³	Real Gas (GPA 2172) Relative
0.985	0.804	0.986	0.805

Relative Molecular Mass Total Gas	Relative Molecular Mass C7+	Hydrogen Sulphide g/m³	Vapour Pressure Pentanes Plus, kPa
23.28		2.65	0

H2S determined by GC/SCD: 1830 ppm (mol/mol)

Note: Physical constants used in calculations from GPA Standard 2145-00

Supervisor R. Peters Approved S. Montgomery

Accredited by the Standards Council of Canada for specific tests registered with the council

NORWEST LABS
Energy Resource Group

9958 - 67 Avenue, Edmonton, Alberta T6E 0P5
Phone (780) 438-5522

F03-05891-02
Laboratory Report Number

Anadarko Canada Corporation — Operator
TEDLAR — Container Identity

I-75 — Location
Anadarko Arrowhead I-75 — Well Name
KB Elev, m ____ GR Elev, m ____

Arrowhead — Field/Area
Pool / Zone ____
L. Price — Sampler
Norwest Labs — Company

Test Type ____ No ____
Multiple Recovery ____

Test Recovery:

Test Interval, m

Perforations, m

Test Unit-Meter Run — Sample Point
Meter # / Sample ID ____

Type of Production: Pumping ____ Flowing ____ Gas Lift ____ Swab ____

Production Rates: Water ____ m^3/d Oil ____ m^3/d Gas ____ $10^3 m^3/d$

Gauge Pressure, kPa
Temperature, °C
Separator Treater Reservoir Source Sampled Received

2003-03-19 — Date Sampled (Y-M-D)
2003-03-19 — Date Received (Y-M-D)
2003-03-27 — Date Reported (Y-M-D)
D. Aebig — Analyst
Other Information ____

H2S determined by GC/SCD: 1830 ppm (mol/mol)

Supervisor ____ R. Peters Approved ____ S. Montgomery

Accredited by the Standards Council of Canada for specific tests registered with the council

OVERSIZED DOCUMENT FILMED ON 35mm

Logs from this section can be found in the log section of the fiche

GEOLOGICAL REPORT

Geological Report

ANADARKO ARROWHEAD
I - 75
60 - 34' - 42.3"N
122 - 58' -32.6"W
FILE NO: 03N 3470

CL Consultants Limited

MAIL ROOM
2003 MAR 12 A 11:24
316339

N.E.B. COPY

ANADARKO ARROWHEAD
I - 75
60 - 34' - 42.3"N
122 - 58' -32.6"W
FILE NO: 03N-3479

NATIONAL ENERGY BOARD
Exploration and Production
MAR 13 2003

Prepared by:

GORDON RICHMOND

Geologist
CL Consultants Limited

Prepared for:

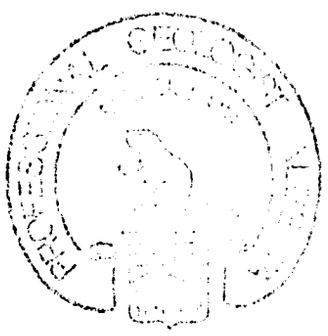
DAVE THOMAS
ANADARKO CANADA COPORATION

PERMIT TO PRACTICE
CL CONSULTANTS LIMITED

Signature: _____

Date: March 7, 2003

PERMIT NUMBER: P2911
The Association of Professional Engineers
Geologists and Geophysicists of Alberta



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SYNOPSIS

OPERATOR	Anadarko Canada Corporation
WELL NAME	Anadarko Arrowhead I-75
UWI	300I756040122450
LOCATION	60° 34′ 42.3″ N. Lat. 122° 58′ 32.6″ W. Long.
FIELD	Arrowhead
PROVINCE	Northwest Territories
AFE NUMBER	400792
LICENCE NUMBER	MV2002A0068 (land use permit no.)
ELEVATIONS	G.L.: 510.8m K.B.: 517.9m
SPUD DATE	Jan. 25, 2003
T.D. DATE	Feb. 22, 2003
CONTRACTOR	Shehtah Drilling Rig No. 5
HOLE SIZE	311 mm, surface, 216 mm, intermediate, 156 mm, main hole
SURFACE CASING	48 joints of 244.4 mm, 53.6 kg/m L-80, LT & C New Algoma casing, landed at 654.7 mKb.
INTERMEDIATE CASING:	191 joints of 177.8 mm, 38.7 kg/m L-80, LT&C New Algoma casing, landed at 2583.6 mKb
MUD COMPANY	Halliburton
MUD TYPE	Gel-chem, surface; invert, intermediate; cal-carb - polymer, main hole
WIRELINE LOGGING CO.	Schlumberger
LOG RECORD	Intermediate: AIT - CNL - BHC sonic - CAL - GR - TLD Main: Run No. 1 AIT - TLD - DSI sonic - CAL - CNL. Run No. 2 FMI

SYNOPSIS

DRILLING SUPERVISION	Kerry Genest, Barry Goodrich, and Julian Kerekanich
GEOLOGICAL SUPERVISION	Gordon Richmond
TOTAL DEPTH	2878.0m (driller) 2874.5m (logger)

FORMATION TOPS (m)

K.B. = 517.9
G.L. = 510.8

FORMATION	PROGNOSIS			SAMPLES			LOGS		
	MD	TVD	SS	MD	TVD	SS	MD	TVD	SS
Scatter	-	446.0	71.90	459.0	459.0	58.90	464.0	464.0	53.90
Garbutt	-	501.0	16.90	526.0	526.0	-8.10	537.0	537.0	-19.10
Banff	-	597.0	-79.10	609.0	609.0	-91.10	615.0	615.0	-97.10
Exshaw	-	1257.0	-739.10	1223.0	1222.4	-704.50	1227.0	1226.3	-708.40
Kotcho	-	1282.0	-764.10	1253.0	1252.2	-734.30	1253.0	1252.2	-734.30
Tetcho	-	-	-	1656.0	1642.0	-1124.10	1658.0	1643.9	-1126.00
Trout River	-	1682.0	-1164.10	1687.0	1671.7	-1153.80	1743.0	1725.6	-1207.70
Kakisa-Redknife	-	1817.0	-1299.10	1788.0	1769.0	-1251.10	1789.0	1770.0	-1252.10
Ft. Simpson	-	1837.0	-1319.10	1826.0	1805.7	-1287.80	1819.0	1798.9	-1281.00
Ft. Simpson Mkr.	-	2407.0	-1889.10	2528.0	2484.2	-1966.30	2514.0	2470.6	-1952.70
Muskwa	-	2449.0	-1931.10	2550.0	2505.5	-1987.60	2552.0	2507.5	-1989.60
Slave Point (1)	-	2480.0	-1962.10	2579.0	2533.7	-2015.80	2580.0	2534.7	-2016.80
Watt Mountain	-	2585.0	-2067.10	-	-	-	2635.5	2688.8	-2170.90
Keg River	-	2615.0	-2097.10	-	-	-	-	-	-
Headless	-	2735.0	-2217.10	-	-	-	2828.0	2775.0	-2257.10
Landry	-	2762.0	-2244.10	-	-	-	2851.0	2797.0	-2279.10
Arnica	-	2812.0	-2294.10	-	-	-	-	-	-
Basal Clastics	-	2847.0	-2329.10	-	-	-	-	-	-
Total Depth	-	-	-	2878.0	2823.5	-2305.60	2874.5	2819.0	-2301.10

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
33	0.50						
61	0.75						
89	0.50						
117	0.25						
145	0.75						
178	0.50						
205	0.75						
233	1.25						
256	1.25						
285	0.88						
313	1.13						
346	0.75						
374	0.75						
398	1.50						
419	1.50						

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
436	1.50						
455	1.50						
479	1.25						
492	1.25						
530	1.25						
563	2.00						
591	2.75						
611	2.75						
653	2.00						
655.00	0.00	0.0	655.00	0.00	0.00	0.00	0.00
668.70	1.80	5.1	668.70	0.21	0.02	-0.08	3.94
678.20	1.90	359.9	678.19	0.52	0.03	-0.21	0.62
706.80	1.30	349.0	706.78	1.31	-0.03	-0.63	0.70
735.40	1.30	345.5	735.37	1.95	-0.17	-1.04	0.08
754.40	1.30	322.8	754.37	2.33	-0.36	-1.38	0.81

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
773.20	1.50	320.3	773.16	2.69	-0.64	-1.80	0.33
792.20	2.00	310.6	792.15	3.09	-1.05	-2.35	0.91
820.70	2.40	298.3	820.63	3.70	-1.96	-3.43	0.65
849.20	2.70	299.6	849.11	4.31	-3.07	-4.69	0.32
877.50	3.20	289.5	877.37	4.91	-4.39	-6.14	0.76
906.10	3.10	289.7	905.93	5.43	-5.87	-7.70	0.11
934.70	3.60	295.8	934.48	6.08	-7.41	-9.37	0.64
953.70	3.40	307.6	953.44	6.69	-8.39	-10.52	1.18
963.20	3.00	322.3	962.93	7.06	-8.77	-11.02	2.87
982.20	2.80	329.5	981.90	7.85	-9.31	-11.86	0.66
1010.80	2.50	349.6	1010.47	9.07	-9.77	-12.83	1.02
1039.30	2.60	14.1	1038.94	10.30	-9.73	-13.35	1.14
1068.00	2.80	18.7	1067.61	11.60	-9.34	-13.60	0.31
1087.00	2.90	25.1	1086.59	12.47	-8.99	-13.69	0.53
1106.00	2.90	39.8	1105.57	13.28	-8.48	-13.60	1.17
1115.50	3.30	47.6	1115.05	13.65	-8.12	-13.45	1.83
1144.00	3.80	59.2	1143.50	14.68	-6.71	-12.66	0.92
1163.10	3.60	63.9	1162.56	15.27	-5.63	-11.97	0.57

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
1172.50	3.50	66.2	1171.94	15.52	-5.10	-11.61	0.56
1182.10	3.20	73.4	1181.52	15.71	-4.57	-11.23	1.61
1191.60	2.90	82.4	1191.01	15.82	-4.08	-10.84	1.78
1201.10	2.80	100.7	1200.50	15.81	-3.61	-10.42	2.88
1210.60	3.60	114.3	1209.98	15.64	-3.11	-9.90	3.47
1220.10	4.60	123.6	1219.46	15.31	-2.53	-9.22	3.78
1229.60	5.70	126.6	1228.92	14.82	-1.83	-8.38	3.58
1239.10	6.00	125.0	1238.37	14.25	-1.04	-7.42	1.08
1248.60	6.20	122.6	1247.82	13.69	-0.21	-6.42	1.02
1258.20	6.20	123.1	1257.36	13.13	0.67	-5.39	0.17
1267.50	6.50	122.2	1266.60	12.57	1.53	-4.36	1.02
1277.00	7.00	121.3	1276.04	11.99	2.48	-3.25	1.61
1286.50	7.40	117.6	1285.46	11.40	3.52	-2.06	1.93
1296.10	8.40	113.3	1294.97	10.84	4.71	-0.74	3.63
1305.60	9.40	111.3	1304.36	10.28	6.07	0.72	3.31

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
1315.10	10.70	112.5	1313.71	9.66	7.61	2.37	4.16
1324.50	11.90	113.7	1322.93	8.94	9.30	4.21	3.90
1334.00	12.80	114.8	1332.21	8.10	11.15	6.24	2.94
1343.50	13.70	117.0	1341.46	7.15	13.11	8.41	3.26
1353.10	14.30	117.2	1350.77	6.09	15.18	10.74	1.88
1362.50	14.50	116.4	1359.88	5.04	17.27	13.07	0.90
1372.40	14.30	115.4	1369.46	3.96	19.48	15.54	0.97
1381.90	14.30	116.0	1378.67	2.95	21.59	17.88	0.47
1391.40	14.60	116.7	1387.87	1.89	23.72	20.25	1.10
1400.90	15.30	117.0	1397.05	0.79	25.91	22.70	2.22
1410.40	16.00	117.1	1406.20	-0.38	28.19	25.27	2.21
1419.90	16.30	118.2	1415.32	-1.61	30.53	27.91	1.35
1429.40	16.30	120.4	1424.44	-2.91	32.85	30.57	1.95
1438.90	16.20	120.3	1433.56	-4.25	35.15	33.23	0.33
1448.40	16.20	119.6	1442.68	-5.58	37.44	35.87	0.62

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
1458.00	16.20	119.0	1451.90	-6.89	39.78	38.55	0.52
1467.50	16.20	117.1	1461.02	-8.13	42.12	41.20	1.67
1477.00	16.10	116.1	1470.15	-9.32	44.48	43.84	0.93
1486.50	16.10	117.3	1479.28	-10.50	46.83	46.48	1.05
1495.90	16.10	118.8	1488.31	-11.73	49.13	49.08	1.33
1505.50	16.00	121.4	1497.53	-13.06	51.43	51.73	2.27
1515.00	15.80	122.0	1506.67	-14.42	53.64	54.33	0.82
1524.50	15.40	121.0	1515.82	-15.76	55.82	56.87	1.52
1534.00	15.30	119.4	1524.98	-17.02	58.00	59.38	1.37
1543.50	15.60	120.1	1534.14	-18.28	60.19	61.91	1.12
1553.00	16.10	121.3	1543.28	-19.60	62.42	64.50	1.89
1562.50	16.30	123.4	1552.40	-21.02	64.66	67.14	1.95
1572.00	16.20	123.1	1561.52	-22.48	66.89	69.78	0.41
1581.50	16.00	122.7	1570.65	-23.91	69.10	72.40	0.72
1591.00	16.20	122.6	1579.78	-25.33	71.32	75.03	0.64

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
1600.50	16.90	123.4	1588.88	-26.81	73.58	77.72	2.32
1610.00	17.20	122.6	1597.96	-28.32	75.92	80.49	1.20
1619.50	17.00	122.2	1607.04	-29.82	78.28	83.27	0.73
1629.00	16.70	120.7	1616.14	-31.26	80.63	86.02	1.67
1638.50	16.50	118.6	1625.24	-32.60	82.99	88.73	2.00
1648.00	16.60	119.4	1634.35	-33.91	85.35	91.43	0.79
1657.50	17.00	121.3	1643.44	-35.30	87.72	94.17	2.15
1667.00	17.00	122.1	1652.53	-36.76	90.08	96.94	0.74
1676.50	16.90	121.8	1661.61	-38.22	92.43	99.70	0.42
1686.00	16.70	121.1	1670.71	-39.66	94.78	102.44	0.90
1695.50	16.50	121.2	1679.81	-41.06	97.10	105.14	0.64
1705.00	16.00	119.5	1688.93	-42.41	99.39	107.80	2.18
1714.50	15.40	117.7	1698.08	-43.64	101.65	110.37	2.44
1724.00	14.90	115.7	1707.25	-44.75	103.87	112.85	2.28
1733.50	15.10	115.6	1716.42	-45.82	106.08	115.31	0.64

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
1743.00	15.20	116.6	1725.59	-46.91	108.31	117.79	0.88
1752.50	14.90	118.2	1734.77	-48.04	110.50	120.26	1.62
1762.00	15.00	119.5	1743.95	-49.23	112.65	122.71	1.11
1771.50	15.00	121.5	1753.12	-50.47	114.77	125.16	1.63
1781.00	15.40	121.9	1762.29	-51.78	116.89	127.64	1.31
1790.50	15.80	121.4	1771.44	-53.12	119.06	130.19	1.33
1800.00	15.80	121.2	1780.58	-54.47	121.27	132.77	0.17
1809.50	15.50	121.7	1789.73	-55.80	123.46	135.33	1.04
1819.00	15.10	120.6	1798.89	-57.10	125.60	137.83	1.56
1828.50	14.70	120.3	1808.07	-58.34	127.71	140.26	1.29
1838.00	14.50	119.8	1817.27	-59.54	129.78	142.66	0.75
1847.50	14.70	119.8	1826.46	-60.73	131.86	145.05	0.63
1857.10	15.20	119.8	1835.74	-61.96	134.01	147.52	1.56
1866.60	15.70	120.3	1844.89	-63.23	136.20	150.05	1.63
1876.10	15.50	120.8	1854.04	-64.52	138.40	152.60	0.76

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
1885.60	15.20	120.4	1863.20	-65.81	140.56	155.11	1.00
1895.10	15.00	119.5	1872.38	-67.04	142.71	157.58	0.97
1904.60	15.20	119.6	1881.55	-68.26	144.86	160.05	0.64
1914.10	15.60	119.2	1890.71	-69.50	147.06	162.57	1.31
1923.50	15.50	119.1	1899.76	-70.73	149.26	165.09	0.33
1933.00	15.30	119.3	1908.92	-71.96	151.46	167.61	0.65
1942.50	14.90	118.3	1918.09	-73.15	153.63	170.09	1.51
1952.00	14.60	117.8	1927.28	-74.29	155.77	172.51	1.03
1961.50	15.00	119.1	1936.46	-75.44	157.90	174.93	1.64
1971.00	15.90	120.7	1945.62	-76.71	160.09	177.46	3.14
1980.50	15.90	121.2	1954.76	-78.04	162.32	180.06	0.43
1990.00	15.60	120.1	1963.90	-79.36	164.54	182.63	1.34
1999.50	15.10	119.2	1973.06	-80.60	166.73	185.14	1.75
2009.00	14.80	117.1	1982.24	-81.76	168.89	187.59	1.96
2018.50	15.10	116.5	1991.42	-82.87	171.08	190.04	1.07

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
2028.00	15.80	117.8	2000.58	-84.02	173.33	192.57	2.47
2037.50	16.60	119.8	2009.70	-85.30	175.65	195.22	3.08
2047.00	16.60	120.5	2018.80	-86.66	178.00	197.93	0.63
2056.50	16.10	119.7	2027.92	-88.00	180.31	200.60	1.73
2066.00	15.80	119.0	2037.05	-89.28	182.58	203.21	1.13
2075.50	15.40	118.5	2046.20	-90.51	184.82	205.76	1.33
2085.00	15.10	119.4	2055.37	-91.72	187.01	208.26	1.21
2094.50	15.20	121.4	2064.54	-92.98	189.15	210.74	1.68
2104.00	15.40	122.6	2073.70	-94.31	191.28	213.24	1.18
2113.50	15.30	122.6	2082.86	-95.66	193.40	215.74	0.32
2123.00	14.90	122.0	2092.03	-96.98	195.49	218.21	1.36
2132.60	14.50	121.2	2101.32	-98.26	197.56	220.63	1.40
2142.10	14.20	118.7	2110.52	-99.44	199.60	222.98	2.17
2151.60	14.60	117.1	2119.73	-100.54	201.69	225.35	1.78
2161.10	14.90	115.8	2128.91	-101.62	203.85	227.77	1.41

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
2170.60	14.90	116.3	2138.09	-102.69	206.05	230.21	0.41
2180.10	14.80	117.3	2147.28	-103.79	208.22	232.64	0.87
2189.60	14.70	117.0	2156.46	-104.89	210.37	235.06	0.40
2199.10	14.40	116.5	2165.66	-105.97	212.51	237.45	1.03
2208.50	14.40	118.1	2174.76	-107.04	214.58	239.79	1.27
2218.10	14.60	119.5	2184.06	-108.20	216.69	242.19	1.26
2227.60	14.40	120.3	2193.25	-109.38	218.75	244.56	0.89
2237.10	14.00	120.3	2202.46	-110.56	220.76	246.89	1.26
2246.60	13.70	119.5	2211.69	-111.69	222.73	249.16	1.12
2256.20	13.90	118.3	2221.01	-112.80	224.74	251.45	1.09
2265.70	14.50	117.0	2230.22	-113.88	226.80	253.78	2.15
2275.20	15.20	117.1	2239.40	-114.99	228.97	256.21	2.21
2284.70	15.50	118.9	2248.56	-116.17	231.19	258.73	1.78
2294.20	15.20	118.9	2257.73	-117.38	233.39	261.24	0.95
2303.90	15.00	119.2	2267.09	-118.61	235.60	263.77	0.66

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
2313.40	14.50	118.2	2276.28	-119.77	237.72	266.19	1.77
2322.90	14.30	117.8	2285.48	-120.88	239.81	268.55	0.71
2332.40	14.60	117.0	2294.68	-121.97	241.91	270.92	1.14
2341.90	14.60	117.6	2303.87	-123.07	244.04	273.31	0.48
2351.40	14.60	119.0	2313.07	-124.20	246.15	275.71	1.11
2360.90	14.90	120.2	2322.25	-125.40	248.25	278.12	1.35
2370.40	14.60	120.7	2331.44	-126.62	250.34	280.54	1.03
2380.00	14.10	119.9	2340.74	-127.83	252.39	282.91	1.68
2389.50	13.80	118.6	2349.96	-128.94	254.39	285.20	1.37
2408.50	13.90	119.4	2368.41	-131.15	258.37	289.75	0.34
2418.00	14.40	120.1	2377.62	-132.30	260.38	292.07	1.67
2427.50	14.90	120.1	2386.81	-133.51	262.46	294.47	1.58
2437.00	15.10	120.7	2395.99	-134.75	264.58	296.92	0.80
2446.50	15.10	122.8	2405.16	-136.05	266.69	299.39	1.73
2456.00	15.00	122.0	2414.33	-137.37	268.77	301.84	0.73

DEVIATION SURVEY RECORD (Teledrift and Wireline Data)

MEASURED DEPTH (m)	DEVIATION (DEGREES)	DIRECTION (DEGREES)	TVD METERS	LATITUDE METERS	DEPARTURE METERS	VERTICAL SECTION	DOG LEG SEVERITY
2465.50	14.80	122.4	2423.51	-138.68	270.84	304.28	0.71
2475.20	14.60	122.0	2432.90	-139.99	272.92	306.73	0.69
2484.70	14.20	122.2	2442.10	-141.24	274.92	309.08	1.27
2494.20	13.90	121.5	2451.31	-142.46	276.88	311.38	1.09
2511.20	13.50	120.0	2467.83	-144.52	280.34	315.40	0.94
2655.0	12.12	106.9					
2740.0	15.0	101.9					
2864.0	20.0	96.9					

BIT RECORD

#	Type	Size (mm)	Depth In (m)	Depth Out (m)	Total (m)	Hours Drilled	F.O.B. (kdaN)	R.P.M.	Condition I/O/ D/L/B/ G/ O/ R
1a	Hughes X1CXP	311	0	242	242	20.0	5-8	180-190	4-3-WT-A / E-2-RG-PR
2a	Hughes X1CXP	311	242	413	171	22.0	5-8	180-200	3-3-WT-A / E-2-SS-HP
3a	Hughes M22	311	413	630	217	11.75	2-8	30-130	1-1-WT-A / E-01-NO-BHA
3a-rr	Hughes M22	311	630	655	25	3.0	2-15	30-180	2-2-WT-A / E-I-BT-TD
1	U. Diam. UD-513	216	655	2511	1856	156.75	2-12	20-45	1-2-CT-H / D-1-NO-BHA
2	Reed EHP43AL	216	2511	2586	75.0	12.75	10-12	70-75	4-4-CT-H / E-1-FC-TD
3	RBI C15LRGS	156	2586	2878	292	84.0	10-11	60-65	3-4-WT-A / E-I-FC-TD

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
25/01/03	196	196	15.75	0000 - 0200	Level kelly bar, spud 311 mm hole, drill from 0 - 42 m
				0200 - 0215	Rig service, f/t converter
				0215 - 0230	Dev. survey
				0230 - 0415	Drill 42 - 70 m
				0415 - 0430	Dev. survey
				0430 - 0515	Drill 70 - 75 m
				0515 - 0800	Unplug flow line mud ring
				0800 - 0845	Take flow line off and clean out
				0845 - 0915	Circ. hole clean
				0915 - 1115	Drill from 75 - 94 m
				1115 - 1145	Work connection
				1145 - 1315	Condition mud and circulate
				1315 - 1400	Drill 94 - 103 m
				1400 - 1415	Rig service
				1415 - 1430	Dev. survey
				1430 - 1645	Drill 103 - 131 m
				1645 - 1700	Dev. survey
				1700 - 1945	Drill 131 - 159 m
				1945 - 2000	Dev. survey
				2000 - 2230	Drill 311 mm hole 159 - 187 m
				2230 - 2245	Rig service, f/t converter
				245 - 2300	Dev. survey
				2300 - 2400	Drill 187 - 196 m

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
26/01/03	358	162	17.5	0000 - 0145	Drill 196 - 214 m
				0145 - 0200	Dev. survey
				0200 - 0430	Drill 214 - 242 m
				0430 - 0445	Dev. survey
				0445 - 0515	Condition mud and circulate, prior to bit trip for deviation
				0515 - 0800	Flow check, POOH, strap, check bit, flow check
				0800 - 0830	Continue trip in to 130 m
				0830 - 0845	Wash from 130 - 150 m
				0845 - 0915	Trip in to bottom
				0915 - 1530	Drill 242 - 299 m
				1530 - 1545	Rig service
				1545 - 1915	Drill 299 - 335 m
				1915 - 2000	Acc. survey time
				2000 - 2300	Drill 335 - 356 m
				2300 - 2315	Rig service, f/t diverter
				2315 - 2330	Dev. survey
				2330 - 2400	Drill 356 - 358 m

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
27/01/03	441	83	11.75	0000 - 0015	Rig service, check brake assembly
				0015 - 0430	Drill 358 - 384 m
				0430 - 0445	Dev. survey
				0445 - 0915	Drill 384 - 413 m
				0915 - 0930	Dev. survey
				0930 - 1000	Circulate hole clean
				1000 - 1230	Trip out bit #2, pump out singles from 390 to 356 m
				1230 - 1245	Circulate hole clean
				1245 - 1600	Trip out, pump out singles from 356 to 298, trip out BHA
				1600 - 1615	Rig service, function diverter, 12 secs.
				1615 - 2045	Make up bit and RIH, ream and wash to bottom, 168 - 413 m
				2045 - 2300	Drill 413 - 431 m
				2300 - 2315	Dev. survey at 419 m
				2315 - 2400	Drill 431 - 441 m

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
28/01/03	492	51	8.75	0000 - 0145	Drill 441 - 450 m
				0145 - 0200	Rig service
				0200 - 0730	Drill 450 - 485 m
				0730 - 0800	Acc. survey time
				0800 - 0845	Drill 485 - 488 m
				0845 - 0900	Rig service, function diverter, flow check
				0900 - 0915	Dev. survey
				0915 - 0945	Condition mud and circulate, prior to POOH for BHA
				0945 - 1415	Flow check 488 m, POOH, flow check on bank
				1415 - 2000	Pick up and make up square mud motor, RIH, ream and wash 251 - 370 m
				2000 - 2015	Rig service
				2015 - 2315	Wash and ream 370 m to bottom
				2315 - 2400	Drill 488 - 492 m

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
29/01/03	630	138	16.75	0000 - 0445	Drill 492 - 527 m
				0445 - 0500	Rig service
				0500 - 0700	Drill 527 - 545 m
				0700 - 0800	Acc. survey time
				0800 - 1800	Drill 545 - 630 m
				1800 - 1845	Acc. survey time
				1845 - 1900	Rig service, function diverter
				1900 - 1930	Condition mud and circulate, prior to POOH
				1930 - 2000	Flow check 630 m, POOH
				2000 - 2015	Rig service
				2015 - 2400	Trip out, pump out singles 583 - 427 m
30/01/03	655	25	3.0	0000 - 0345	Pump out singles, 427 - 238 m
				0345 - 0400	Rig service
				0400 - 0445	Pump out singles, 238 - 180 m
				0445 - 0800	Trip out BHA, lay down square motor, make up new BHA
				0800 - 1130	Make up bit, reamer, RIH, pick up pipe from racks

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
				1130 - 1215	Ream, wash from 613 - 630, 6 m fill
				1215 - 1515	Drill 311 mm hole from 630 - 655 m T.D.
				1515 - 1530	Rig service, check brake assembly
				1530 - 1600	Condition mud and circulate hole clean, work pipe
				1600 - 1615	Dev. survey
				1615 - 1730	Flow check at 655, POOH to HWDP, flow check
				1730 - 1900	Pick up 24 jts drill pipe, RIH to 655 m
				1900 - 2000	Condition mud and circulate at 655, prior to casing run
				2000 - 2015	Continue to circ. hole clean
				2015 - 2245	Trip out to run casing
				2245 - 2300	Rig service
				2300 - 2315	Safety meeting, pre rig up power tongs and laydown machine
				2315 - 2400	Lay down 9" DC

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
31/01/03	655	0	0	0000 - 0130	Rig up power tongs and laydown machine
				0130 - 0145	Rig service
				0145 - 0200	Safety meeting with power tongs and pipe handlers
				0200 - 0800	Make up shoe and float, run casing
				0800 - 0830	Continue to run casing, swage up
				0830 - 1130	Flow check, circulate casing, rig out tongs and laydown machine
				1130 - 1145	Pre-job safety meeting with crew, rig manager, company man, Import Tool hand
				1145 - 1400	Rig floor to run DP inside casing, RIH pipe to 655 m
				1400 - 1445	Head up for cement job
				1445 - 1500	Rig service
				1500 - 2000	Condition mud and circulate casing, prior to cement job
				2000 - 2015	Safety meeting with BJ Hughes cementers
				2015 - 2215	Cement surface casing
				2215 - 2230	Rig service
				2230 - 2330	Rig out pack-off head and service
				2330 - 2400	Blow out kelly and mud line

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
01/02/03	655	0	0	0000 - 0015	Rig service
				0015 - 0215	WOC, trip out pipe from in casing
				0215 - 0600	WOC, tear out diverter blouie line, HCR, get ready to cut casing
				0600 - 0800	WOC, flush pumps, clean tanks
				0800 - 0815	Rig service
				0815 - 0830	Safety meeting with crew, nipple up
				0830 - 1600	Tear out diverter, cut conductor barrel and casing, dress casing, weld and pressure test bowl, 7000 kPa, OK
				1600 - 2000	Nipple up BOP flanges, DSA spool, sweep lines, all other related, clean mud tanks
				2000 - 2015	Rig service
				2015 - 2400	Nipple up BOP, annular, HCR, and sweep lines, kill lines

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
02/02/03	655	0	0	0000 - 0230	Nipple up BOP, flow nipple
				0230 - 0245	Rig service
				0245 - 0300	Safety meeting with pressure tester
				0300 - 0530	Pressure test all manifold valves, chokes, and sweep lines, all tests 1400 kPa low, 21000 kPa high
				0530 - 0800	Test BOP, stabbing valve, annular, inside kill-line valves, HCR
				0800 - 1530	Continue pressure testing: hydrill kill line + valves, HCR kill line + valves, upper, lower kelly cock, upper, lower pipe rams, check valves, mud lines, kelly bar, swivel, etc., all other related BOP equipment. Accum. 3 function test, 1400 kPa low, 21000 kPa high
				1530 - 1600	Install wear bushing
				1600 - 1615	Rig service, check brake assembly
				1615 - 2000	Pick up and make up BHA, RIH, set 1.5° bend in motor, scribe tools
				2000 - 2030	Run in to 635 m, weld degasser lines to flare tank
				2030 - 2045	Rig service
				2045 - 2400	Continue to rig up flare tank

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
03/02/03	834	179	12.0	0000 - 0045	Displace to invert
				0045 - 0200	Circulate, conduct rig inspection
				0200 - 0245	Drill cement from 638 to 640 m, float collar, cement from 640 to 647 m
				0245 - 0300	Rig service, f/t hydrill c/ 17 secs
				0300 - 0315	Safety meeting, BOP drill, well secure in 1 minute, 35 secs
				0315 - 0345	Drill cement from 647 - 655, float collar
				0345 - 0430	Drill 655 - 661 m
				0430 - 0500	Circulate hole clean
				0500 - 0600	Casing integrity test; hole pressure at shoe, 5909 kPa, applied surface pressure 9400 kPa, total pressure 15309 kPa, leak-off gradient 23.3 kPa/m
				0600 - 0715	Lay down 24 singles, run in 8 stands
				0715 - 0830	Slip and cut, check brake assembly
				0830 - 0845	Rig service, upper pipe rams, 8 sec
				0845 - 0945	Drill 661 - 666 m
				0945 - 1000	BOP drill w/ crew, f/t hydrill, 12 sec close, f/t remote choke
				1000 - 1045	Change shaker screens
				1045 - 1845	Drill 666 - 780 m

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
				1845 - 2000	Acc. survey time
				2000 - 2015	Rig service, f/t lower pipe rams, 5 sec c/o
				2015 - 2130	Drill 780 - 799 m
				2130 - 2145	BOP drill
				2145 - 2200	Pull 3 singles to retrieve pipe screen
				2200 - 2215	Spill (contain and clean up)
				2215 - 2315	Drill 799 - 834 m
				2315 - 2400	Acc. survey time
04/02/03	1174	340	19.5	0000 - 0015	Rig service, f/t hydrill c/ 13 sec
				0015 - 0700	Drill 834 - 961 m
				0700 - 0800	Acc. survey time
				0800 - 1630	Drill 961 - 1084 m
				1630 - 1645	Rig service, f/t lower pipe rams, 10 sec. close
				1645 - 1815	Drill 1084 - 1123 m
				1815 - 2000	Acc. time, survey and orient tools
				2000 - 2015	Rig service, f/t upper pipe rams, 5 sec. close
				2015 - 2300	Drill 1123 - 1174 m
				2300 - 2315	Safety meeting and BOP drill with crew, well shut in 98 seconds
				2315 - 2400	Acc. time, survey and orient tools

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
05/02/03	1351	177	20.0	0000 - 0015	Rig service, f/t hydrill 15 sec, c/o
				0015 - 0700	Drill-slide-rotate 1174 - 1251 m
				0700 - 0800	Acc. time, survey and orient tools
				0800 - 1645	Drill 1251 - 1303 m
				1645 - 1700	Rig service, f/t upper pipe rams, 8 sec. close, f/t remote choke
				1700 - 1845	Drill 1303 - 1322 m
				1845 - 2000	Acc. time, survey and orient tools
				2000 - 2015	Rig service, f/t lower pipe rams, 6 sec. close
				2015 - 2300	Drill 1322 - 1351 m
				2300 - 2400	Acc. time, survey and orient tools
06/02/03	1450	99	11.0	0000 - 0230	Drill 1351 - 1370 m
				0230 - 0245	Rig service, f/t hydrill 17 sec, c/o
				0245 - 0445	Drill 1370 - 1389 m
				0445 - 0530	Acc. time, survey and orient tools
				0530 - 0630	Directional work, MWD tool failure, no surveys
				0630 - 0700	Condition mud and circulate hole clean, work string
				0700 - 1100	Flow check, pump pill, POOH

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
				1100 - 1215	Directional work, change MWD tools, remove bend, lay down motor, pick up motor
				1215 - 1530	Flow check, RIH to 685 m, flow check, shallow test MWD, run in hole
				1530 - 1545	Rig service, f/t lower pipe rams, 7 sec. close
				1545 - 1930	Drill 1389 - 1417 m
				1930 - 2000	Acc. time, survey and orient tools
				2000 - 2015	Rig service, f/t upper pipe rams, 7 sec. close
				2015 - 2300	Drill 1417 - 1450 m
				2300 - 2400	Acc. time, survey and orient tools
07/02/03	1688	238	19.75	0000 - 0215	Drill 1450 - 1474 m
				0215 - 0230	Rig service, f/t hydrill 15 sec, c/o
				0230 - 0645	Drill 1474 - 1531 m
				0645 - 0800	Acc. time, survey and orient tools
				0800 - 1830	Drill 1531 - 1665 m
				1830 - 1845	Rig service, f/t lower pipe rams, 7 sec. close
				1845 - 2000	Acc. time, survey and orient tools
				2000 - 2015	Rig service, f/t upper pipe rams, 7 sec. close
				2015 - 2300	Drill 1665 - 1688 m
				2300 - 2400	Acc. time, survey and orient tools

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
08/02/03	1893	205	19.75	0000 - 0230	Drill 1688 - 1712 m
				0230 - 0245	Rig service, f/t hydrill 15 sec, c/o
				0245 - 0645	Drill 1712 - 1769 m
				0645 - 0800	Acc. time, survey and orient tools
				0800 - 1800	Drill 1769 - 1826 m
				1800 - 1815	Rig service, f/t upper pipe rams, 7 sec. close
				1815 - 1845	Drill 1526 - 1845 m
				1845 - 2000	Acc. time, survey and orient tools
				2000 - 2245	Drill 1845 - 1893 m
				2245 - 2300	Rig service, f/t lower pipe rams, 8 sec. close
				2300 - 2400	Acc. time, survey and orient tools
09/02/03	2125	232	19.75	0000 - 0215	Drill 1893 - 1912 m
				0215 - 0230	Rig service, f/t hydrill 15 sec, c/o
				0230 - 0645	Drill 1912 - 1955 m
				0645 - 0800	Acc. time, survey and orient tools
				0800 - 1800	Drill 1955 - 2054 m
				1800 - 1815	Rig service, f/t lower pipe rams, 6 sec. close
				1815 - 1845	Drill 2054 - 2083 m
				1845 - 2000	Acc. time, survey and orient tools

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
				2000 - 2245	Drill 2083 - 2125 m
				2245 - 2300	Rig service, f/t upper pipe rams, 7 sec. close
				2300 - 2400	Acc. time, survey and orient tools
10/02/03	2339	214	19.5	0000 - 0015	BOP drill w/ crew, well shut in 98 sec.
				0015 - 0630	Drill 2125 - 2187 m
				0630 - 0645	Rig service, f/t hydrill 15 sec, c/o
				0645 - 0800	Acc. time, survey and orient tools
				0800 - 0900	Drill 2187 - 2206 m
				0900 - 0915	BOP drill w/ crew, f/t hydrill, remote choke
				0915 - 1345	Drill 2206 - 2254 m
				1345 - 1400	Rig service, f/t lower pipe rams, 7 sec. close
				1400 - 1500	Drill 2254 - 2273 m
				1500 - 1600	Acc. time, survey and orient tools
				1600 - 1945	Drill 2273 - 2301 m
				1945 - 2000	Rig service, f/t upper pipe rams, 7 sec. close
				2000 - 2300	Drill 2301 - 2339 m
				2300 - 2400	Acc. time, survey and orient tools

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
11/02/03	2511	172	15.5	0000 - 0430	Drill 2339 - 2387 m
				0430 - 0445	Rig service, f/t hydrill, 12 sec. close
				0445 - 0700	Drill 2387 - 2416 m
				0700 - 0800	Acc. time, survey and orient tools
				0800 - 1200	Drill 2416 - 2454 m
				1200 - 1215	Rig service, f/t lower pipe rams, 7 sec. close
				1215 - 1700	Drill 2454 - 2511 m
				1700 - 1815	Acc. time, survey and orient tools
				1815 - 2000	Condition mud and circulate up sample, work string
				2000 - 2145	Flow check, pump pill, wiper trip from 2511 - 2069 m
				2145 - 2200	Rig service, f/t hydrill, 14 sec. close
				2200 - 2400	Condition mud and circulate prior to POOH, mix and pump pill

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
12/02/03	2548	37	4.25	0000 - 0045	Flow check 2511 m, POOH, strap, flow check 2411 m, DCs, on bank
				0045 - 0500	Rig service, f/t blind rams
				0500 - 0515	Pre-job safety meeting
				0515 - 0630	Lay down directional and MWD tools
				0630 - 0800	Make up bit & BHA, RIH with tools
				0800 - 0830	RIH DC & HWDP, change out working singles
				0830 - 0845	Safety meeting, four function accumulator check
				0845 - 1000	Slip and cut 27.5 m drilling line
				1000 - 1415	Trip in, fill pipe, flow checks 720, 1690
				1415 - 1530	Wash to bottom 2472 - 2511, 0.5 m fill
				1530 - 1545	Rig service, f/t lower pipe rams, 7 sec. close, flow check
				1545 - 1645	Condition mud and circulate bottom up, work string
				1645 - 2000	Drill 2511 - 2529 m
				2000 - 2045	Circulate sample, geo. request
				2045 - 2100	Safety meeting with safety hand and crew, possible H2S, Slave Point
				2100 - 2200	Drill 2529 - 2540 m
				2200 - 2300	Circulate sample, geo. request
				2300 - 2315	Rig service, f/t hydrill, 13 sec. close, flow check
				2315 - 2400	Drill 2540 - 2548 m

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
13/02/03	2586	38	7.75	0000 - 0145	Drill 2548 - 2562 m
				0145 - 0300	Circulate 2562 sample
				0300 - 0400	Drill 2562 - 2567m
				0400 - 0515	Circulate 2567 sample
				0515 - 0530	Rig service, f/t hydrill, 13 sec. close
				0530 - 0645	Drill 2567 - 2572 m
				0645 - 0800	Circulate 2572 sample
				0800 - 0815	Safety meeting with safety hand and crew, possible H2S, Slave Point
				0815 - 1200	Drill ahead, 2572 - 2586 m
				1200 - 1300	Condition mud and circulate bottom up, work string
				1300 - 1400	5 stand wiper trip, pump pill, flow check at 2573 m, 2429 m, run to bottom, calc. 0.48 m3, meas. 0.55m3, .07 diff.
				1400 - 1530	Condition mud and circulate hole clean, work string
				1530 - 2000	POOH to log, chain out, pump pill
				2000 - 2100	continue POOH, flow check @ DC, on bank
				2100 - 2115	Rig service, f/t blind rams, 9 sec. close
				2115 - 2145	Pull wear bushing, inspect, re-install
				2145 - 2400	Rig in Schlumberger, BHC sonic, cal, GR, CNL, TLD, AIT logs

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
14/02/03	2586	0	0	0000 - 0015	Rig service, f/t blind rams, 7 sec. close, f/t remote choke
				0015 - 0330	Rig out loggers
				0330 - 0800	Make up bit, BHA, RIH, fill pipe at shoe, flow check at 647 m
				0800 - 0815	Wash 2 singles to bottom, .5 m fill
				0815 - 1245	Condition mud and circulate hole clean, work string, pump gyro tool down at 19 spm for 520 strokes
				1245 - 1300	Safety meeting with EZ-Lay pipe handlers
				1300 - 1800	Pump pill flow check, come out of hole sideways, survey every 3 singles, flow checks 2579, 2481, 1200
				1800 - 1815	Rig service, f/t upper pipe rams, 7 sec. close
				1815 - 2000	continue out of hole with laydown machine
				2000 - 2015	Safety meeting w/ crew, pipe handlers, gyrodata hand
				2015 - 2145	Flow check 1885 m, continue laydown, flow check DC, 124 m
				2145 - 2345	Lay down HW, DCs, retrieve gyro tool, f/t blind rams
				2345 - 2400	Rig service, f/t blind rams, 7 sec. close

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
15/02/03	2586	0	0	0000 - 0200	Pull wear bushing, change pipe rams to 7 inch
				0200 - 0245	Rig in tong hand, rig floor for casing
				0245 - 0300	Safety meeting with crew, tong hand, laydown operators
				0300 - 0330	Pressure test 7" pipe rams, 5000 kPa OK
				0330 - 0745	Run casing, break circ., flow check 1000 m
				0745 - 0800	Rig service, f/t hydrill
				0800 - 0815	Safety meeting with crew, tong hand, laydown operators
				0815 - 1715	Run casing with Hills Casing Services
				1715 - 1815	Break circ. at 1800 m, continue to run casing to bottom, condition mud and circulate casing to bottom, work string
				1815 - 2000	Rig in hanger
				2000 - 2100	Rig out tong hand and laydown machine, rig floor for circulating casing
				2100 - 2200	Condition mud and circulate casing prior to cement job
				2200 - 2215	Safety meeting with crew and cementers prior to heading up
				2215 - 2230	Rig service, f/t hydrill, 10 sec close
				2230 - 2400	Head up, pressure test cement lines, cement casing

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
16/02/03	2586	0	0	0000 - 0230	Continue cementing casing, rig out cementers
				0230 - 0245	Rig service
				0245 - 0700	Install seal mandrel with Cameron, pressure test 5000 psi, flush sta
				0700 - 0830	Remove 4.5 pipe rams, install 3.5 rams
				0830 - 0845	Rig service
				0845 - 2000	Pressure test manifold valves and chokes, 1400 low - 35000 high, 10 min each, casing 1400 low, 21000 high, annular 1400 low, 17500 high; BOP rams and accessories, 1400 low, 35000 high, 10 min each
				2000 - 2030	Accumulator 3 function test, pull test plug
				2030 - 2115	Install wear bushing
				2115 - 2130	Rig service, function blind rams
				2130 - 2230	Change kelly bar and sock out, pick up same
				2230 - 2345	Rig in laydown machine, ready floor to pick up BHA, drill pipe
				2345 - 2400	Safety meeting with crew and laydown hands

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
17/02/03	2586	0	0	0000 - 0015	Rig service, f/t hydrill, 14 sec close
				0015 - 0300	Pick up and make up BHA, run in
				0300 - 0545	Pick up and make up DP, run in, tally pipe
				0545 - 0645	P/U kelly, torque, install lower kelly cock, saver sub, table bushing
				0645 - 0745	Tally pipe, P/U pipe, run in hole
				0745 - 0800	Safety meeting, BOP drill with crew
				0800 - 1500	Tally pipe and p/u, RIH to 2246 with 3.5" string
				1500 - 1545	Rig service, f/t upper pipe rams, 4 sec
				1545 - 1645	Slip and cut 18 m
				1645 - 1900	Tally 3.5 inch DP, pick up, RIH to 2526
				1900 - 1930	Pre-drillout safety meeting with crew and DDA safety
				1930 - 2015	Pressure test upper and lower kelly cock, 1400 low, 35000 high
				2015 - 2030	Rig service, f/t lower pipe rams, 4 sec
				2030 - 2300	Drill out plugs, float collar, and cement to 2576 m, tag float
				2300 - 2400	Condition mud and circulate

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
18/02/03	2630	44	10.5	0000 - 0015	Rig service, f/t hydrill, 17 sec close
				0015 - 0030	Safety meeting, BOP drill, sour, well secure in 2 min, 30 sec.
				0030 - 0800	Circulate and condition mud
				0800 - 0815	Rig service, f/t upper pipe rams, 4 sec
				0815 - 1030	Circulate and condition mud
				1030 - 1045	H2S safety meeting with crew prior to drill-out
				1045 - 1145	Drill out cement from 2579 to 2586 m, tag shoe at 2583.5 m
				1145 - 1315	Drill ahead from 2586 - 2591 m
				1315- 1415	Condition mud and circulate bottom up
				1415 - 1445	Formation leak-off test
				1445 - 2000	Drill 2591 - 2615 m
				2000 - 2015	Rig service, f/t lower pipe rams, 4 sec
				2015 - 2400	Drill from 2615 - 2630 m
19/02/03	2706	76	22.25	0000 - 0015	Rig service, f/t hydrill, 17 sec close
				0015 - 0900	Drill from 2630 - 2662 m
				0900 - 0915	Rig service, f/t upper pipe rams, 4 sec
				0915 - 1145	Drill from 2662 - 2772 m
				1145 - 1245	Deviation survey
				1245 - 2000	Drill from 2672 - 2693 m
				2000 - 2015	Rig service, f/t lower pipe rams, 4 sec
				2015 - 2400	Drill from 2693 - 2706 m

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
20/02/03	2778	72	22.25	0000 - 0015	Rig service, f/t hydrill, 17 sec close
				0015 - 1030	Drill from 2706 - 2738 m
				1030 - 1045	Rig service, f/t upper pipe rams, 4 sec
				1045 - 1630	Drill from 2738 - 2757 m
				1630 - 1730	Deviation survey
				1730 - 2000	Drill from 2757 - 2765 m
				2000 - 2015	Rig service, f/t lower pipe rams, 4 sec
				2015 - 2400	Drill from 2765 - 2778 m
21/02/03	2850	72	21.75	0000 - 0015	Rig service, f/t hydrill, 17 sec close
				0015 - 0800	Drill from 2778 - 2804 m
				0800 - 0815	Rig service, f/t upper pipe rams, 4 sec
				0815 - 2000	Drill from 2804 - 2842 m
				2000 - 2015	Rig service, f/t lower pipe rams, 4 sec
				2015 - 2230	Drill from 2842 - 2850 m
				2230 - 2400	Circulate hole clean

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
22/02/03	2878	28	7.25	0000 - 0015	Circulate hole clean
				0015 - 0030	Rig service, f/t hydrill, 17 sec close, blow kelly
				0030 - 0100	Wiper trip to 2790 m, flow check at 2850, 2790, RIH
				0100 - 0815	Drill from 2850 - 2878 m
				0815 - 0830	Rig service, f/t upper pipe rams, 4 sec
				0830 - 0915	Condition mud, circulate bottom hole sample
				0915 - 1015	Deviation survey
				1015 - 1300	Condition mud, circulate hole clean, work string
				1300 - 1515	11 stand wiper trip, flow check 2866, 2724, 2581, RIH
				1515 - 1700	Condition mud, circulate hole clean, work string
				1700 - 2000	POOH to log, strap and chain out, pump pill, flow check 2866, 2724 m
				2000 - 2015	Rig service, f/t lower pipe rams, 4 sec
				2015 - 2400	Continue trip out, flow check at 1584, 185, surface; lay down jars, monel, and near-bit reamer

DAILY DRILLING CHRONOLOGY

Date (d/m/y)	Depth @ 24:00	Progress (24 hrs)	Drilling hours	00:00 - 24:00	Rig Activity
23/02/03	2878	0	0	0000 - 0015	Rig service, close blind ram out of hole, 4 sec.
				0015 - 0030	Safety meeting with Schlumberger
				0030 - 0715	Rig to and log with Schlumberger, Log #1 DSI/XY/HGNS/TLD/AIT on bottom at 0315 hr
				0715 - 0800	Rig to and run log #2, FMI
				0800 - 0815	Rig service
				0815 - 1400	Run log #2 FMI/FMICART/GR/DTC/HEAD
				1400 - 1930	Make up bit and bit sub, ported float and Totco ring, pick up jars, RIH
				1930 - 2000	Wash and ream 2848 - 2878 m
				2000 - 2015	Rig service, f/t lower pipe rams, 4 sec.
				2015 -	Condition mud, circulate
					end of record for this report

TOTAL GAS DATA

SHOW INTERVAL FROM - TO (m)	Bkgd (u)	Show (u)	BRIEF DESCRIPTION (Rock type, porosity visual show, etc.)
200 - 2586	0 - 60	nil	
2639.6 - 2640.0	5 - 10	42	no visual show, fracture in limestone
2849.7 - 2850.1	35 - 65	242	dolomite, fracture & intercrystalline porosity
2853.2 - 2853.5	35 - 65	2000	as above
2854.4 - 2854.7	35 - 65	1520	as above
2856.6 - 2857.2	35 - 65	3346	as above

SNEIDER'S ROCK CLASSIFICATION

IA > 100 md

IB 10 md – 100 md

IC 1 md – 10 md

ID 0.5 md – 1 md

II 0.07 md – 0.5 md

III < 0.07 md

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
210 - 215	**SANDSTONE**: white to brown to gray, trace pink, very fine to fine grained, moderately sorted, subrounded, predominantly quartz, minor chert, trace kaolin, trace mica, silica plus common spotty calcite cement, fair relief, 6 to 9% visible porosity, **Sneider type IC**, no visual shows; **SHALE**: medium gray, massive, subfissile, slightly micromicaceous, silty in part.
215 - 220	**SHALE**: as above, common sandy partings; **SANDSTONE**: white to brown to gray, very fine to fine grained, moderately sorted, subrounded, common medium to very coarse floating quartz plus lithic grains, silica plus trace spotty calcite cement, poor relief, 3 to 6% visible porosity, **Sneider type IC**, trace mineral fluorescence, no cut.
220 - 225	**SANDSTONE**: light to medium gray, very fine grained, well sorted, subrounded, quartz plus chert, commonly argillaceous, common glauconite specks, silty, silica plus trace spotty calcite cement, fair relief, 3 to 6% visible porosity, **Sneider type IC**, no visual shows; **SHALE**: as above.
225 - 230	**SANDSTONE**: white to gray, very fine to fine grained, moderately sorted, subrounded, quartz plus trace chert, argillaceous in part, trace medium to coarse floating quartz grains, common glauconite specks, trace kaolinite, trace shale partings, silica overgrowth plus minor spotty calcite cement, fair relief, 6% visible porosity, **Sneider type IC**, no visual shows.
230 - 235	**SANDSTONE**: white to gray, very fine to fine grained, moderately sorted, subrounded, quartz plus trace chert, argillaceous in part, trace medium to coarse floating quartz grains, common glauconite specks, trace kaolinite, trace shale partings, silica overgrowth plus minor spotty calcite cement, fair relief, 6% visible porosity, **Sneider type IC**, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
235 - 240	**SANDSTONE**: white, very fine grained, well sorted, subrounded, predominantly clear quartz, trace lithic grains, common glauconite specks, trace kaolinite, minor shale partings , silica overgrowth cement grading to point contact cement in part, trace spotty calcite cement, good relief, 6 to 12% visible porosity, **Sneider type IC**, no visual shows.
240 - 245	**SANDSTONE**: white, very fine grained, well sorted, subrounded, predominantly clear quartz, trace very coarse lithic grains, common glauconite specks, trace kaolinite, minor shale partings, silica overgrowth cement grading to point contact cement in part, trace spotty calcite cement, good relief, 6 to 12% visible porosity, **Sneider type IC**, common orange mineral fluorescence, no cut.
245 - 250	**SHALE**: medium to dark gray, massive to platy, moderately fissile, silty in part, trace pyritic laminations; **SANDSTONE**: white to faint green, moderately sorted, subangular to subrounded, quartz, trace lithic grains, common glauconite specks, trace kaolinite, silica overgrowth plus common patchy calcite cement, fair relief, 6 to 9% visible porosity, **Sneider type IC**, no fluorescence, trace spotty yellow streaming cut.
250 - 255	**SANDSTONE**: white to gray, very fine to fine grained, moderately sorted, subangular to subrounded, clear quartz, common glauconite, trace kaolinite, common shale partings, argillaceous in part, trace ferroan dolomite nodules, trace faceted quartz grains, trace coarse rounded floating quartz grains, silica plus minor spotty calcite cement, fair to good relief, 6 to rarely 18% visible porosity, **Sneider type IB**, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
255 - 260	**SHALE**: light to dark gray, platy to blocky, moderately fissile, silty in part, common sandstone partings; **SANDSTONE**: white to buff to gray, very fine to fine grained, subangular to subrounded, quartz, minor kaolinite, minor glauconite, trace shale partings, silica overgrowth plus minor spotty calcite cement, fair relief, 6 to 12% visible porosity, **Sneider type IC**, no visual shows.
260 - 265	**SANDSTONE**: white to medium gray, silt to very fine grained, moderately sorted, subrounded, quartz plus trace chert, common shale partings, minor kaolinite, common glauconite, trace pyrite, silica overgrowth plus trace spotty calcite cement, fair relief, 6 to 9% visible porosity, **Sneider type IC**, no visual shows.
265 - 270	**SHALE**: medium gray, massive to platy, subfissile, moderately sandy; **SANDSTONE**: white to buff, very fine grained, well sorted, subangular to subrounded, quartz, trace glauconite, trace kaolinite, silica plus common patchy calcite cement, fair relief, 6 to 9% visible porosity, **Sneider type IC**, no visual shows.
270 - 275	**SHALE**: medium gray, massive to platy, subfissile, common brown ferroan dolomite nodules, moderately sandy; **SANDSTONE**: white to buff, very fine grained, well sorted, subangular to subrounded, quartz, trace glauconite, trace kaolinite, silica plus common patchy calcite cement, fair relief, 6 to 9% visible porosity, **Sneider type IC**, no visual shows.
275 - 280	**SANDSTONE**: white to buff, very fine grained, well sorted, subangular to subrounded, quartz, trace glauconite, trace kaolinite, common brown ferroan dolomite nodules, common shale partings, silica plus common patchy calcite cement, fair relief, 6 to 9% visible porosity, **Sneider type IC**, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
280 - 285	**SHALE**: medium gray, massive to platy, subfissile, trace burrowed, trace nodular pyrite, trace fish remains; **SANDSTONE**: white to buff, silt to very fine grained, moderately sorted, subangular to subrounded, predominantly quartz, trace chert grains, trace kaolinite, minor glauconite, common brown ferroan dolomite nodules, silica overgrowth cement, fair relief, 6 to 9% visible porosity, **Sneider type IC**, no visual shows.
285 - 290	**SANDSTONE**: white to brown, very fine to fine grained, moderately sorted, subangular to subrounded, predominantly quartz, trace kaolinite, trace pyrite, trace glauconite, abundant shale partings, silica plus common calcite cement, fair relief, 6 to 9% visible porosity, **Sneider type IC, no visual shows.**
290 - 295	**SHALE**: medium gray, platy to massive, subfissile, slightly sandy; **SANDSTONE**: white to gray, silt to very fine grained, moderately sorted, subrounded, quartz, trace glauconite, trace kaolinite, common shale partings, silica cement, poor relief, tight to 3% visible porosity, **Sneider type IC**, no visual shows.
300 - 310	**SHALE**: light to medium gray, platy to massive, subfissile, slightly micromicaceous, trace glauconite pellets, slightly banded, trace pyrite; **SANDSTONE**: white to brown, very fine grained, well sorted, subangular to subrounded, quartz, common glauconite grains, trace kaolinite, common ferroan dolomite grains plus cement, silica plus minor calcite cement, poor relief, tight to 3% visible porosity, **Sneider type IC**, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
310 - 320	**SHALE**: medium gray, massive to platy, subfissile, trace glauconite pellets, commonly sandy; **SANDSTONE**: white to gray, silt to very fine grained, moderately sorted, subangular to subrounded, predominantly quartz, common glauconite, trace kaolinite, moderately silty, trace disseminated pyrite, silica cement, poor relief, tight to 3% visible porosity, **Sneider type IC**, trace mineral fluorescence, no cut.
320 - 325	**SHALE**: medium gray, massive to subblocky, slightly micromicaceous, moderately fissile, minor sandstone partings, trace disseminated pyrite, no visual shows.
325 - 330	**SHALE**: medium gray, massive to subblocky, slightly micromicaceous, moderately fissile, minor sandstone partings, trace nodular pyrite, no visual shows.
330 - 335	**SHALE**: light to medium gray, massive to subblocky, moderately fissile, slightly bentonitic in part, trace nodular pyrite, common very fine grained glauconitic sandstone partings, no visual shows.
335 - 350	**SHALE**: medium gray, massive to platy, subfissile, silty in part, trace brown ferroan dolomite nodules; **SANDSTONE**: white, very fine grained, well sorted, rounded, predominantly quartz, trace kaolinite, trace glauconite, silica cement, poor relief, tight to 3% visible porosity, **Sneider type IC**, no visual shows.
350 - 360	**SHALE**: medium gray, massive, clean to moderately silty, subfissile, trace disseminated pyrite; **SANDSTONE**: white to gray, banded in part, silt to very fine grained, moderately sorted, subrounded, predominantly quartz, trace kaolinite, trace glauconite, common shale partings, silica plus common spotty calcite cement, poor relief, tight to 3% visible porosity, **Sneider type IC**, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
360 - 365	**SHALE**: light to dark gray, massive to platy, commonly silty grading to siltstone, common very fine grained glauconitic sandstone partings, no visual shows.
365 - 370	**SHALE**: medium gray, platy to blocky, subfissile, trace disseminated pyrite, trace glauconite pellets, minor sandstone partings, no visual shows.
370 - 380	**SHALE**: medium gray, platy to blocky, subfissile, trace disseminated pyrite, trace glauconite pellets, trace brown ferroan dolomite nodules, common sandstone partings, no visual shows.
380 - 385	**SHALE**: medium gray, massive to blocky, moderately soft, silty, trace glauconite pellets, common sandstone partings, no visual shows.
385 - 395	**SHALE**: medium to dark gray, massive to subblocky, moderately firm, commonly silty, trace glauconite pellets, trace nodular pyrite, trace ferroan dolomite nodules, minor very fine grained sandstone partings, no visual shows.
395 - 400	**SHALE**: as above, trace burrowed, trace sandstone partings, no visual shows.
400 - 405	**SHALE**: medium grey to very dark gray, massive to blocky, moderately fissile in part, minor nodular pyrite, trace brown ferroan dolomite nodules, minor very fine grained sandstone partings, no visual shows.
405 - 410	**SHALE**: as above, no visual shows.
410 - 415	**SHALE**: grey, massive to subblocky, commonly silty, trace nodular pyrite, no visual shows.
415 - 420	**SHALE**: grey, massive to subblocky, commonly silty, trace nodular pyrite, minor very fine grained sandstone partings, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
420 - 430	**SHALE**: medium gray, subblocky, subfissile, slightly silty, trace disseminated pyrite, trace sandstone partings, trace ferroan dolomite nodules, no visual shows.
430 - 440	**SHALE**: medium to dark gray, massive, moderately fissile, slightly bentonitic in part, trace sandy partings, trace disseminated pyrite, no visual shows.
440 - 445	**SHALE**: medium to dark gray, massive, moderately fissile, slightly bentonitic in part, trace sandy partings, trace disseminated pyrite, trace fish scales, no visual shows.
445 - 450	**SHALE**: light to medium gray, massive to platy, moderately bentonitic, commonly slightly silty, trace sandstone partings, no visual shows.
450 - 455	**SHALE**: light to medium gray, massive to platy, moderately bentonitic, commonly slightly silty, trace sandstone partings, trace nodular pyrite, no visual shows.
455 - 465	**SHALE**: medium gray, subblocky, subfissile, slightly glauconitic, trace disseminated pyrite, common very fine grained white sandstone partings, no visual shows.
465 - 470	**SHALE**: medium to dark gray, blocky to platy, trace disseminated pyrite, silty in part, trace glauconite, no visual shows.
470 - 475	**SANDSTONE**: white to light green, speckled, very fine grained, well sorted, subrounded, quartz plus trace chert, common glauconite grains, trace kaolinite, trace shale partings, silica overgrowth plus common spotty calcite cement, fair relief, 3 to 6% visible porosity, **Sneider type IC**, no visual shows; **SHALE**: medium to dark gray, blocky to platy, trace disseminated pyrite, silty in part, trace glauconite pellets, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
475 - 480	**SANDSTONE**: white to light green, speckled, very fine grained, well sorted, subrounded, quartz plus trace chert, abundant glauconite grains, common kaolinite, trace shale partings, predominantly silica overgrowth cement, platy fabric, fair relief, 3 to 6% visible porosity, **Sneider type IC**, faint spotty dull orange fluorescence, fair slow massive yellow cut; **SHALE**: as above.
480 - 485	**SANDSTONE**: greenish white, very fine grained, well sorted, subrounded, quartz, trace chert, abundant glauconite grains, trace kaolinite, minor illite, minor pyrite cement, common light brown ferroan dolomite nodules, silica overgrowth cement, fair relief, 3 to 6% visible porosity, **Sneider type IC**, no fluorescence, faint slow massive yellow cut.
485 - 490	**SHALE**: light to medium gray, massive to platy, predominantly subfissile, slightly silty, common very fine grained glauconitic sandstone partings, common nodular pyrite, no visual shows.
490 - 495	**SANDSTONE**: buff to light green, very fine grained, well sorted, subrounded, quartz plus minor chert, trace kaolinite, common glauconite, minor illite, common shale partings, silica plus minor spotty calcite cement, fair relief, 3 to 6% visible porosity, **Sneider type IC**, no fluorescence, minor spotty streaming yellow cut; **SHALE**: light to medium gray, massive to platy, predominantly subfissile, slightly silty, common very fine grained glauconitic sandstone partings, common nodular pyrite.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
495 - 500	**SANDSTONE**: buff to light green, very fine grained, well sorted, subrounded, quartz plus minor chert, trace kaolinite, common glauconite, minor illite, common shale partings, silica plus minor spotty calcite cement, fair relief, 3 to 6% visible porosity, **Sneider type IC**, no fluorescence, good streaming yellow cut; **SHALE**: light to medium gray, massive to platy, predominantly subfissile, slightly silty, common very fine grained glauconitic sandstone partings, common nodular pyrite.
500 - 505	**SHALE**: medium gray, massive to platy, slightly micromicaceous in part, subfissile, trace coal grains, common sandy partings; **SANDSTONE**: light brown, speckled, very fine grained, well sorted, subrounded, quartz plus lithic grains, minor glauconite, minor illite, trace pyrite, silica overgrowth cement, fair relief, 3 to 6% visible porosity, **Sneider type IC**, common light brown oil stain, no fluorescence, good streaming yellow cut.
505 - 510	**SHALE**: medium gray, massive to platy, slightly micromicaceous in part, subfissile, trace coal grains, common sandy partings; **SANDSTONE**: light brown, speckled, very fine grained, well sorted, subrounded, quartz plus lithic grains, minor glauconite, minor illite, abundant shale partings, trace brown ferroan dolomite nodules, trace pyrite, silica overgrowth cement, fair relief, 3 to 6% visible porosity, **Sneider type IC**, common light brown oil stain, no fluorescence, good streaming yellow cut.
510 - 520	**SANDSTONE**: light brown, very fine grained, well sorted, subrounded, predominantly quartz, minor lithic grains, common glauconite, trace kaolinite, common illite, common brown ferroan dolomite nodules, minor shale partings, trace nodular pyrite, silica cement, poor relief, tight to 3% visible porosity, **Sneider type IC**, common oil stain, spotty dull yellow fluorescence, very good fast streaming yellow cut.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
520 - 525	**SANDSTONE**: light brown, very fine grained, well sorted, subrounded, predominantly quartz, minor lithic grains, common glauconite, trace kaolinite, common illite, common brown ferroan dolomite nodules, minor shale partings, trace nodular pyrite, silica cement, poor relief, tight to 3% visible porosity, **Sneider type IC**, common oil stain, common spotty dull yellow fluorescence, fair fast streaming yellow cut; **SHALE**: medium gray, massive to subblocky, subfissile, slightly micromicaceous in part, trace sandstone partings.
525 - 535	**SHALE**: light to dark gray, platy to blocky, moderately fissile, trace brown ferroan dolomite nodules, trace sandstone partings, trace spotty yellow fluorescence, rare spotty streaming yellow cut.
535 - 545	**SHALE**: medium gray, massive to rarely splintery, moderately fissile, trace brown ferroan dolomite nodules, trace sandstone partings, no visual shows.
545 - 550	**SHALE**: light to medium gray, platy to blocky, slightly micromicaceous, moderately fissile, trace sandstone partings, trace brown ferroan dolomite nodules, no visual shows.
550 - 555	**SHALE**: light to dark gray, platy to blocky, moderately fissile, slightly micromicaceous, sooty texture in part, minor brown ferroan dolomite nodules, no visual shows.
555 - 560	**SHALE**: light to dark gray, platy to blocky, moderately fissile, slightly micromicaceous, sooty texture in part, minor brown ferroan dolomite nodules, trace nodular pyrite, no visual shows.
560 - 565	**SHALE**: medium to dark gray, platy, moderately fissile, slightly micromicaceous, slightly sandy in part, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
565 - 570	**SHALE**: medium to dark gray, platy, moderately fissile, slightly micromicaceous, slightly sandy in part, common brown ferroan dolomite nodules, trace sandstone partings, no visual shows.
570 - 575	**SHALE**: light to dark gray, platy, fissile, slightly micromicaceous, trace brown ferroan dolomite nodules, minor very fine grained sandstone partings, no fluorescence, common faint spotty yellow streaming cut.
575 - 580	**SHALE**: light to dark gray, platy, fissile, slightly micromicaceous, trace brown ferroan dolomite nodules, trace very fine grained sandstone partings, no visual shows.
580 - 585	**SHALE**: medium to dark gray, very platy, fissile, slightly micromicaceous, trace very fine grained brown sandstone partings, no fluorescence, trace spotty yellow cut.
585 - 590	**SHALE**: dark gray, very platy, sooty lustre, moderately fissile, trace sandstone partings, non calcareous, no visual shows.
590 - 595	**SHALE**: medium to dark gray, very platy, slightly micromicaceous, very fissile, non calcareous, no visual shows.
595 - 600	**SHALE**: light to medium gray, very platy, slightly micromicaceous, very fissile, non calcareous, no visual shows.
600 - 605	**SHALE**: light to dark gray, massive to platy, fissile, common bentonitic partings, trace glauconite pellets, trace coal partings, non calcareous, no fluorescence, very faint slow white cut.
605 - 610	**SHALE**: light to medium gray, massive to platy, commonly moderately bentonitic, trace medium grained glauconite pellets, trace nodular pyrite, non calcareous, no fluorescence, trace spotty streaming yellow cut.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
610 - 615	**SHALE**: light to medium gray, platy to massive, commonly bentonitic, sandy and glauconitic in part, trace nodular pyrite, trace coal partings, non calcareous, no fluorescence, trace spotty streaming yellow cut.
615 - 620	**SHALE**: light to medium gray, platy to massive, commonly bentonitic, sandy and glauconitic in part, trace nodular pyrite, non calcareous, no fluorescence, trace spotty streaming yellow cut; **LIMESTONE**: white to brown, fine to medium grained, trace calcite crystal fracture fill, trace disseminated pyrite, tight, spotty yellow fluorescence, trace spotty streaming yellow cut.
620 - 625	**SHALE**: light to very dark gray, platy to blocky, trace disseminated pyrite, fissile; **LIMESTONE**: white to buff, fine granular texture to medium crystalline texture, relic fragmental texture in part, trace disseminated pyrite, tight, common faint mineral fluorescence, no cut.
625 - 630	**SHALE**: as above; **LIMESTONE**: white to buff, fine granular texture to medium crystalline texture, relic fragmental texture in part, trace fossil, common pyrite crystal, tight, common bright yellow mineral fluorescence, no cut.
630 - 635	**LIMESTONE**: buff to light gray, medium grained to crystalline, faint fragmental texture in part, trace disseminated pyrite, trace calcite crystal fracture fill, tight, common spotty mineral fluorescence, no cut; **SHALE**: light to dark gray, blocky to platy, moderately fissile, slightly bentonitic in part, trace disseminated pyrite.
635 - 640	**SHALE**: light to dark gray, blocky to platy, moderately fissile, slightly bentonitic in part, trace nodular pyrite; **LIMESTONE**: buff to gray, fine to coarse grained, bioclastic, common coral, argillaceous, common shale partings, tight, spotty mineral fluorescence, no cut.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
640 - 645	**SHALE**: light gray, massive to platy, moderately fissile, very calcareous, grading to argillaceous limestone in part, trace nodular pyrite; **LIMESTONE**: buff to gray, micritic to fine crystalline, predominantly very argillaceous, trace coral, tight, no visual shows.
645 - 650	**SHALE**: light to medium gray, massive to blocky, subfissile, very calcareous, grading to argillaceous limestone in part, trace coral, trace disseminated pyrite, no visual shows.
650 - 655	**SHALE**: light to medium gray, platy to blocky, subfissile to fissile, very calcareous in part, grading to argillaceous limestone, no visual shows.
655 - 660	**SHALE**: light gray, soft, massive to platy, moderately bentonitic, moderately calcareous, fissile, no visual shows.
660 - 670	**SHALE**: light gray, platy to blocky, subfissile, trace crystalline pyrite, moderately calcareous, no visual shows.
670 - 680	**SHALE**: light gray, blocky, subfissile, slightly bentonitic in part, trace pyritic laminations, moderately calcareous, no visual shows.
680 - 685	**SHALE**: dark gray, slightly micromicaceous, platy, moderately fissile, abundant nodular pyrite, predominantly non calcareous, no visual shows.
685 - 690	**SHALE**: medium to dark gray, platy to blocky, moderately fissile, minor nodular pyrite, trace ferroan dolomite nodules, non calcareous, no visual shows.
690 - 695	**SHALE**: medium to dark gray, platy to blocky, moderately fissile, minor nodular pyrite, trace ferroan dolomite nodules, slightly bentonitic in part, trace limestone partings, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
695 - 700	**SHALE**: light gray, very soft, moderately bentonitic, trace nodular pyrite; **LIMESTONE**: white to buff, fine to medium grained, trace dolomite crystal, tight, common spotty yellow fluorescence, very faint slow yellow cut.
700 - 705	**SHALE**: light gray, very soft, moderately bentonitic, trace nodular pyrite; **LIMESTONE**: white to buff to gray, commonly mottled, fine grained, moderately dolomitic in part, trace dolomite crystal, tight, common spotty yellow fluorescence, very faint slow yellow cut.
705 - 710	**LIMESTONE**: white to buff to gray, commonly mottled, fine grained, moderately dolomitic in part, trace dolomite crystal, tight, trace spotty yellow fluorescence, no cut; **SHALE**: light to medium gray, platy to blocky, moderately fissile in part, slightly bentonitic in part, trace pyrite.
710 - 715	**SHALE**: light to medium gray, platy, fissile, moderately bentonitic; **LIMESTONE**: white to brown, fine to medium grained, bioclastic texture in part, trace Crinoid, trace disseminated pyrite, tight, spotty yellow fluorescence, no cut.
715 - 720	**SHALE**: medium to dark gray, platy to blocky, earthy texture in part, subfissile, slightly micromicaceous, slightly sandy in part, common nodular pyrite, abundant calcareous speck in part, common silty limestone partings, trace Crinoid, no visual shows.
720 - 725	**SHALE**: medium gray, massive to earthy, abundant calcareous fossil fragments, trace nodular pyrite; **LIMESTONE**: white to brown, fine to coarse grained, bioclastic, rubbly in part, trace Crinoid, trace calcite crystal, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
725 - 730	**SHALE**: light to medium gray, commonly banded, massive to blocky, subfissile, common calcareous specks in part, trace limestone partings, trace disseminated pyrite; **LIMESTONE**: buff to brown, fine grained to medium crystalline, trace fossil, moderately dolomitic, grading to microsucrosic dolomite in part, trace nodular pyrite, tight to 6% intercrystalline porosity, no visual shows.
730 - 735	**SHALE**: light to medium gray, predominantly blocky, subfissile, slightly bentonitic in part, common nodular pyrite; **LIMESTONE**: buff to brown, fine grained to medium crystalline, trace fossil, moderately dolomitic, grading to microsucrosic dolomite in part, trace nodular pyrite, tight to 6% intercrystalline porosity, no visual shows.
735 - 740	**SHALE**: light to medium gray, platy to blocky, moderately bentonitic; **LIMESTONE**: white to buff, medium grained to crystalline, commonly very sandy, grading to calcareous sandstone in part, tight, no visual shows.
740 - 745	**LIMESTONE**: white to gray, mottled, fine crystalline, sandy in part, common scattered dolomite crystals, grading to dolomite in part, trace nodular pyrite, tight to 3% intercrystalline porosity, trace spotty yellow fluorescence, no cut; **SHALE**: medium gray, massive, slightly earthy texture, common calcareous specks, sandy in part.
745 - 750	**SHALE**: light to medium gray, platy to massive, bentonitic in part, moderately fissile, moderately calcareous in part; **LIMESTONE**: white to buff fine to medium grained, common scattered dolomite crystals, no visual shows.
750 - 755	**SHALE**: light to medium gray, platy to massive, bentonitic in part, moderately fissile, moderately calcareous in part; **LIMESTONE**: white to buff fine to medium grained, common scattered dolomite crystals, common spotty yellow fluorescence, no cut.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
755 - 760	**LIMESTONE**: white to gray, medium crystalline to medium grained, bioclastic in part, moderately friable, trace scattered dolomite crystals, trace disseminated pyrite, trace Crinoid, common spotty yellow fluorescence, no cut; **SHALE**: medium gray, massive to platy, slightly bentonitic in part.
760 - 765	**SHALE**: dark gray, massive to platy, earthy texture in part, trace nodular pyrite; **LIMESTONE**: white to buff, mottled, fine to medium grained, bioclastic, trace coral, trace echinoid spine (?), scattered dolomite grains, tight, common spotty yellow fluorescence, no cut.
765 - 770	**SHALE**: light to medium gray, massive to platy, subfissile, trace pyritic laminations, trace burrowed, trace limestone partings, trace fossil, trace spotty yellow fluorescence, no cut.
770 - 780	**SHALE**: light to medium gray, platy, moderately fissile, trace limestone partings, trace fossil, trace nodular pyrite, predominantly non calcareous, no visual shows.
780 - 785	**SHALE**: light to medium gray, platy, moderately fissile, trace limestone partings, trace fossil, trace nodular pyrite, common limestone partings, no visual shows.
785 - 790	**SHALE**: light to dark gray, platy to blocky, moderately fissile, trace slickenside, trace nodular pyrite, common limestone partings, predominantly non calcareous, no visual shows.
790 - 795	**SHALE**: light to dark gray, platy to blocky, moderately fissile, trace slickenside, trace nodular pyrite, trace limestone partings, trace carbonaceous specks, predominantly non calcareous, no visual shows.
795 - 805	**SHALE**: light to medium gray, platy, moderately fissile, common carbonaceous specks, trace Crinoid, trace limestone partings, trace nodular pyrite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
805 - 810	**SHALE**: light to medium gray, platy, moderately fissile, common limestone partings, trace fossil, trace disseminated pyrite, no visual shows.
810 - 815	**SHALE**: medium gray, platy to blocky, trace limestone partings, slightly micromicaceous, trace carbonaceous specks, no visual shows.
815 - 820	**SHALE**: light to medium gray, platy, moderately fissile, trace carbonaceous specks, slightly micromicaceous, no visual shows.
820 - 825	**SHALE**: light to medium gray, platy, moderately fissile, trace carbonaceous specks, slightly micromicaceous, trace calcareous fossil fragments, no visual shows.
825 - 830	**SHALE**: medium gray, platy, moderately fissile, slightly micromicaceous, trace limestone partings, trace disseminated pyrite, trace Ostracod, no visual shows.
830 - 835	**SHALE**: light gray, platy, moderately fissile, slightly bentonitic in part, moderately calcareous, trace Crinoid, minor limestone partings, no visual shows.
835 - 840	**SHALE**: light gray, platy to subblocky, moderately fissile, slightly calcareous, trace nodular pyrite, trace limestone partings, trace Crinoid, no visual shows.
840 - 845	**SHALE**: light gray, platy, moderately fissile, moderately calcareous, no visual shows.
845 - 850	**SHALE**: light to medium gray, platy to blocky, moderately fissile, trace disseminated pyrite, abundant fine grained limestone partings, no visual shows.
850 - 855	**SHALE**: light to medium gray, platy to blocky, moderately fissile, trace disseminated pyrite, abundant fine grained limestone partings, trace fossil, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
855 - 860	**SHALE**: light to medium gray, platy to blocky, moderately fissile, trace disseminated pyrite, abundant fine grained limestone partings, trace coral, no visual shows.
860 - 870	**SHALE**: light to medium gray, platy, slightly bentonitic, moderately fissile, trace limestone partings, no visual shows.
870 - 875	**SHALE**: light to medium gray, platy, slightly bentonitic, moderately fissile, common limestone partings, trace coral, no visual shows.
875 - 880	**SHALE**: light to medium gray, platy, slightly bentonitic, moderately fissile, common limestone partings, no visual shows.
880 - 885	**SHALE**: light gray, platy to subblocky, subfissile, slightly bentonitic in part, trace disseminated pyrite, trace limestone partings, no visual shows.
885 - 895	**SHALE**: light gray, platy, moderately fissile, slightly calcareous, trace limestone partings, no visual shows.
895 - 900	**SHALE**: light gray, platy, moderately fissile, slightly calcareous, trace limestone partings, trace Ostracod, no visual shows.
900 - 905	**SHALE**: light to medium gray, platy to blocky, moderately fissile, minor disseminated pyrite, moderately calcareous, trace fossil (spicule?), no visual shows.
905 - 910	**SHALE**: light to medium gray, platy to blocky, moderately fissile, minor disseminated pyrite, moderately calcareous, no visual shows.
910 - 915	**SHALE**: light to medium gray, blocky, subfissile, trace fossil, trace limestone partings, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
915 - 925	**SHALE**: medium gray, massive to platy, trace fossil (spicule?), moderately calcareous, trace limestone partings, no visual shows.
925 - 930	**SHALE**: light gray, massive to platy, slightly bentonitic in part, moderately calcareous, trace limestone partings, trace fossil, no visual shows.
930 - 935	**SHALE**: light to medium gray, platy to blocky, trace limestone partings, trace disseminated pyrite, no visual shows.
935 - 945	**SHALE**: medium gray, blocky, subfissile, trace disseminated pyrite, trace limestone partings, slightly calcareous, no visual shows.
945 - 955	**SHALE**: light to medium gray, platy to blocky, moderately fissile, slightly bentonitic in part, trace disseminated pyrite, slightly calcareous, no visual shows.
955 - 960	**SHALE**: light to medium gray, platy to blocky, moderately fissile, slightly bentonitic in part, very calcareous, trace disseminated pyrite, no visual shows.
960 - 965	**SHALE**: buff to light gray to medium gray, platy, moderately fissile, very calcareous, trace disseminated pyrite, no visual shows.
965 - 970	**SHALE**: light gray, platy to blocky, moderately calcareous, no visual shows.
970 - 975	**SHALE**: medium gray, platy, moderately fissile, moderately calcareous, minor limestone partings, trace fossil, no visual shows.
975 - 980	**SHALE**: light gray, platy, moderately fissile, slightly bentonitic, very calcareous, trace limestone partings, no visual shows.
980 - 985	**SHALE**: light grey platy to blocky, moderately fissile, trace carbonaceous specks, trace nodular pyrite, slightly calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
985 - 990	**SHALE**: light gray, platy, subfissile, slightly calcareous, no visual shows.
990 - 1000	**SHALE**: light gray, platy, subfissile, slightly calcareous, trace nodular pyrite, no visual shows.
1000 - 1005	**SHALE**: buff to light gray, platy to blocky, moderately calcareous, minor nodular pyrite, no visual shows.
1005 - 1010	**SHALE**: buff to light gray, platy to blocky, moderately calcareous, minor nodular pyrite, trace limestone partings, no visual shows.
1010 - 1015	**SHALE**: light gray, platy, moderately fissile, slightly bentonitic, moderately calcareous, no visual shows.
1015 - 1020	**SHALE**: medium gray, platy, slightly micromicaceous in part, moderately fissile, trace limestone partings, no visual shows.
1020 - 1025	**SHALE**: medium gray, platy, slightly micromicaceous in part, moderately fissile, trace limestone partings, minor nodular pyrite, no visual shows.
1025 - 1030	**SHALE**: medium gray, platy, fissile, trace limestone partings, no visual shows.
1030 - 1035	**SHALE**: medium gray, platy, fissile, trace limestone partings, slightly micromicaceous, trace nodular pyrite, no visual shows.
1035 - 1040	**SHALE**: light to medium gray, platy to blocky, moderately fissile, slightly micromicaceous, slightly calcareous, no visual shows.
1040 - 1045	**SHALE**: buff to light gray, platy, subfissile, slightly calcareous, no visual shows.
1045 - 1050	**SHALE**: buff to light gray, platy, subfissile, slightly calcareous, trace nodular pyrite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1050 - 1060	**SHALE**: medium gray, platy, fissile, trace nodular pyrite, slightly calcareous, no visual shows.
1060 - 1065	**SHALE**: light to dark gray, platy, slightly micromicaceous, slightly calcareous, no visual shows.
1065 - 1070	**SHALE**: light to dark gray, platy, slightly micromicaceous, slightly calcareous, trace limestone partings, no visual shows.
1070 - 1075	**SHALE**: light brown grey to dark gray, platy, moderately fissile, slightly micromicaceous in part, slightly calcareous in part, no visual shows.
1075 - 1080	**SHALE**: light to medium gray, platy to blocky, subfissile, trace limestone partings, trace nodular pyrite, no visual shows.
1080 - 1085	**SHALE**: light to dark gray, platy, moderately fissile, slightly micromicaceous in part, slightly calcareous in part, no visual shows.
1085 - 1090	**SHALE**: light to dark gray, platy, moderately fissile, slightly micromicaceous in part, slightly calcareous in part, trace nodular pyrite, no visual shows.
1090 - 1095	**SHALE**: dark gray, platy, moderately micromicaceous, trace carbonaceous specks, fissile, trace fossil, slightly calcareous in part, no visual shows.
1095 - 1105	**SHALE**: dark grey to black, platy to blocky, subfissile, trace nodular pyrite, moderately micromicaceous, trace fossil, non calcareous, no visual shows.
1105 - 1110	**SHALE**: medium grey to black, platy to blocky, moderately fissile, slightly micromicaceous in part, common nodular pyrite, non calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1110 - 1120	**SHALE**: medium gray, platy, moderately fissile, slightly micromicaceous, trace nodular pyrite, non calcareous, no visual shows.
1120 - 1130	**SHALE**: dark gray, platy to slightly earthy, moderately micromicaceous, subfissile, trace nodular pyrite, non calcareous, no visual shows.
1130 - 1135	**SHALE**: dark gray, platy, moderately fissile, slightly micromicaceous, trace disseminated pyrite, trace Ostracod, non calcareous, no visual shows.
1135 - 1140	**SHALE**: dark gray, platy, moderately fissile, slightly micromicaceous, trace disseminated pyrite, trace Ostracod, non calcareous, trace nodular pyrite, trace coarse floating sand grains, no visual shows. Common cement cuttings; gunned out shaker box?
1140 - 1145	**SHALE**: medium gray, platy, moderately fissile, slightly micromicaceous, trace nodular pyrite, non calcareous, no visual shows.
1145 - 1155	**SHALE**: medium gray, platy, fissile, slightly micromicaceous, trace ferroan dolomite nodules, no visual shows.
1155 - 1160	**SHALE**: medium gray, platy, fissile, slightly micromicaceous, trace fine grained limestone partings, no visual shows.
1160 - 1165	**SHALE**: light to medium gray, platy, fissile, slightly micromicaceous, trace limestone partings, no visual shows.
1165 - 1170	**SHALE**: light gray, platy, fissile, slightly bentonitic, trace limestone partings, no visual shows.
1170 - 1175	**SHALE**: medium to dark gray, platy to subblocky, moderately fissile, slightly micromicaceous, trace disseminated pyrite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1175 - 1180	**SHALE**: medium to dark gray, platy to subblocky, moderately fissile, slightly micromicaceous, trace nodular pyrite, trace limestone partings, no visual shows.
1180 - 1185	**SHALE**: medium gray, platy to blocky, moderately fissile, slightly micromicaceous, trace ferroan dolomite nodules, trace disseminated pyrite, no visual shows.
1185 - 1190	**SHALE**: medium gray, platy, moderately fissile, slightly micromicaceous, very clean, non calcareous, no visual shows.
1190 - 1195	**SHALE**: medium to dark gray, platy to subblocky, fissile, slightly earthy texture in part, trace disseminated pyrite, no visual shows.
1195 - 1205	**SHALE**: dark grey to black, platy to blocky, slightly sooty lustre in part, slightly micromicaceous, moderately fissile, no visual shows.
1205 - 1210	**SHALE**: dark grey to black, platy to blocky, slightly sooty lustre in part, slightly micromicaceous, moderately fissile, trace nodular pyrite, no visual shows.
1210 - 1215	**SHALE**: dark grey to black, platy, moderately fissile, slightly earthy texture, common silt-size red specks, no visual shows.
1215 - 1220	**SHALE**: light to medium gray, platy to massive, moderately fissile, slightly micromicaceous, trace nodular pyrite, no visual shows.
1220 - 1225	**SHALE**: light gray, platy, slightly bentonitic, fissile, no fluorescence, faint slow massive yellow cut.
1225 - 1230	**SHALE**: light gray, platy, slightly bentonitic, fissile, trace fine grained dolomite partings, common spotty mineral fluorescence, faint slow massive yellow cut.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1230 - 1235	**SHALE**: medium brown gray, massive to subblocky, earthy in part, slightly micromicaceous, trace fossil, trace nodular pyrite, moderately bituminous, no fluorescence, good slow massive milky yellow cut.
1235 - 1240	**SHALE**: medium brown grey to dark gray, massive to platy, commonly earthy, common nodular pyrite, common calcareous partings, common spotty mineral fluorescence, good slow massive milky yellow cut. Very common bit-damaged cuttings.
1240 - 1245	**SHALE**: medium brown grey to dark gray, massive to platy, commonly earthy, common nodular pyrite, common calcareous partings, trace spotty mineral fluorescence, faint slow massive cut.
1245 - 1250	**SHALE**: medium brown to dark gray, massive to platy, moderately fissile, moderately micromicaceous in part, slightly bituminous, trace nodular pyrite, common calcareous partings, no fluorescence, faint slow massive cut.
1250 - 1255	**DOLOMITE**: light gray, microcrystalline to very fine crystalline, moderately to very argillaceous, commonly grading to dolomitic shale, slightly to moderately calcareous, very calcareous in part grading to limestone, minor disseminated pyrite, tight, trace spotty mineral fluorescence, faint slow massive cut; **SHALE**: as above, common nodular pyrite.
1255 - 1260	**DOLOMITE**: light to medium gray, microcrystalline to very fine crystalline, commonly moderately chalky, patchy intercrystalline calcite, trace calcite crystal fracture fill, trace Crinoid, moderately argillaceous, grading to dolomitic shale, tight, no visual shows.
1260 - 1270	**DOLOMITIC SHALE**: light to medium gray, platy, subfissile, very dolomitic in part, grading to dolomite, trace limestone partings, trace burrowed, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1270 - 1275	**SHALE**: light to dark gray, platy to subblocky, subfissile, slightly micromicaceous in part, moderately calcareous in part, commonly moderately dolomitic, trace disseminated pyrite, no visual shows.
1275 - 1280	**SHALE**: light to medium gray, subblocky, moderately dolomitic, trace limestone partings, trace Crinoid, no visual shows.
1280 - 1285	**SHALE**: light to medium gray, subblocky, moderately dolomitic, trace limestone partings, trace nodular pyrite, no visual shows.
1285 - 1290	**SHALE**: light gray, platy, subfissile, moderately to very dolomitic, grading to argillaceous dolomite in part, commonly slightly to moderately calcareous, trace nodular pyrite, no visual shows.
1290 - 1295	**SHALE**: light gray, platy, subfissile, moderately to very dolomitic, grading to argillaceous dolomite in part, slightly calcareous in part, trace nodular pyrite, no visual shows.
1295 - 1300	**SHALE**: light gray, platy, subfissile, moderately dolomitic, trace limestone partings, trace Crinoid, no visual shows.
1300 - 1315	**SHALE**: light to medium gray, platy, subfissile to moderately fissile, slightly micromicaceous in part, moderately dolomitic, trace calcareous specks, no visual shows.
1315 - 1320	**SHALE**: medium gray, minor light gray, platy, moderately fissile, slightly micromicaceous, trace calcareous partings, slightly dolomitic, no visual shows.
1320 - 1325	**SHALE**: medium gray, platy, subfissile, slightly micromicaceous, trace nodular pyrite, moderately dolomitic, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1325 - 1330	**SHALE**: medium gray, platy, subfissile, slightly micromicaceous, trace nodular pyrite, moderately dolomitic, trace limestone partings, no visual shows.
1330 - 1340	**SHALE**: light to dark gray, platy to subblocky, slightly micromicaceous, trace calcareous shale partings, slightly dolomitic, no visual shows.
1340 - 1345	**SHALE**: as above, in part; medium to development gray, blocky to earthy, moderately fissile, trace disseminated pyrite, trace carbonaceous speck, slightly bituminous, no fluorescence, fair slow massive yellow white cut; **LIMESTONE**: white to light gray, chalky to very fine crystalline, faint granular texture in part, moderately dolomitic in part, trace disseminated pyrite, no visual shows. Conspicuous bit-damaged chips.
1345 - 1350	**LIMESTONE**: white to buff to dark gray, chalky to fine grained, commonly recrystallized, moderately dolomitic in part, grading to microcrystalline dolomite; **SHALE**: light gray to black, platy to earthy, subfissile, trace disseminated pyrite, slightly bituminous in part, no visual shows. Numerous bit-damaged cuttings.
1350 - 1355	**LIMESTONE**: white to buff to dark gray, chalky to fine grained, commonly recrystallized, moderately dolomitic in part, grading to microcrystalline dolomite, trace disseminated pyrite; **SHALE**: light to medium gray, platy, moderately dolomitic, subfissile, trace nodular pyrite, no visual shows.
1355 - 1360	**SHALE**: light to medium gray, platy, moderately dolomitic, subfissile, trace nodular pyrite; **DOLOMITE**: white to gray, microcrystalline to very fine crystalline, common intercrystalline calcite, grading to limestone in part, trace Brachiopod, trace disseminated pyrite, tight to 3% estimated porosity, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1360 - 1365	**LIMESTONE**: white, microcrystalline to fine grained, chalky in part, moderately dolomitic, grading to dolomite in part; **SHALE**: light gray, platy, subfissile, very dolomitic, commonly grading to microcrystalline dolomite, no visual shows.
1365 - 1370	**DOLOMITE**: white to dark gray, microcrystalline to very fine crystalline, argillaceous in part, common intercrystalline calcite, trace limestone partings, tight to 3% estimated intercrystalline porosity, no visual shows; **SHALE**: light to medium gray, platy, subfissile, moderately to very dolomitic, grading to dolomite in part.
1370 - 1375	**DOLOMITE**: white to dark gray, microcrystalline, faint fragmental texture in part, commonly moderately calcareous, grading to limestone in part, common intercrystalline calcite, moderately argillaceous, rarely grading to dolomitic shale, tight to 3% intercrystalline porosity, no visual shows.
1375 - 1380	**DOLOMITIC SHALE**: light gray, platy, soft, bentonitic in part, very fissile; **DOLOMITE**: as above, no visual shows.
1380 - 1385	**DOLOMITE**: white to gray, microcrystalline, faint fragmental texture in part, common intercrystalline calcite, becoming very calcareous in part, grading to limestone, commonly argillaceous, grading to shale in part, trace disseminated pyrite, 3% estimated intercrystalline porosity, no visual shows; **DOLOMITIC SHALE**: as above.
1385 - 1390	**DOLOMITIC SHALE**: white to medium gray, platy, subfissile, moderately to very dolomitic, commonly grading to microcrystalline dolomite, calcareous in part, trace limestone partings, no visual shows.
1390 - 1395	**DOLOMITIC SHALE**: white to medium gray, platy, subfissile, moderately to very dolomitic, commonly grading to microcrystalline dolomite, calcareous in part, trace limestone partings, trace fossil, trace disseminated pyrite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1395 - 1400	**DOLOMITIC SHALE**: light to dark gray, platy to blocky, trace limestone partings, very dolomitic, grading to microcrystalline dolomite in part, trace coral, no visual shows.
1400 - 1415	**DOLOMITIC SHALE**: medium gray, subblocky, trace limestone partings, moderately dolomitic, trace disseminated pyrite, no visual shows.
1415 - 1420	**SHALE**: medium gray, platy to blocky, subfissile, moderately to very dolomitic, grading to dolomite in part, trace limestone partings, trace fossil, trace disseminated pyrite, no visual shows.
1420 - 1425	**SHALE**: light gray, platy to subblocky, subfissile, moderately to very dolomitic, grading to dolomite in part, common limestone partings, no visual shows.
1425 - 1430	**SHALE**: light gray, platy to subblocky, subfissile, moderately to very dolomitic, grading to dolomite in part, trace limestone partings, trace disseminated pyrite, no visual shows.
1430 - 1435	**SHALE**: light to dark gray, platy to blocky, subfissile, moderately to very dolomitic, grading to microcrystalline dolomite in part, trace calcareous fragments, no visual shows.
1435 - 1440	**SHALE**: light to dark gray, platy, subfissile, moderately dolomitic, grading to microcrystalline dolomite in part, trace calcite crystal fracture fill, trace disseminated pyrite, no visual shows.
1440 - 1445	**SHALE**: light to dark gray, platy to blocky, subfissile, moderately dolomitic, grading to microcrystalline dolomite in part, trace fossil, trace disseminated pyrite, trace galena veinlet, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1445 - 1455	**SHALE**: light to medium gray, platy to blocky, subfissile, moderately to very dolomitic, grading to microcrystalline dolomite in part, trace calcite fossil fragment, trace disseminated pyrite, no visual shows.
1455 - 1460	**SHALE**: light to dark gray, platy to blocky, moderately fissile, moderately dolomitic, rarely grading to microcrystalline dolomite, trace pyritic laminations, trace calcareous partings, no visual shows.
1460 - 1465	**SHALE**: light to dark gray, platy, moderately fissile, slightly bentonitic in part, moderately dolomitic, trace disseminated pyrite, trace coral, no visual shows.
1465 - 1470	**SHALE**: light gray, platy to subblocky, slightly bentonitic in part, moderately fissile, moderately dolomitic, grading to microcrystalline dolomite in part, moderately calcareous in part, trace calcite fossil fragments, trace disseminated pyrite, no visual shows.
1470 - 1475	**SHALE**: light gray, platy, subfissile, moderately to very dolomitic, grading to microcrystalline dolomite in part, slightly calcareous in part, no visual shows.
1475 - 1480	**SHALE**: light gray, platy, subfissile, moderately to very dolomitic, grading to microcrystalline dolomite in part, slightly calcareous in part, trace disseminated pyrite, no visual shows.
1480 - 1490	**SHALE**: light gray, platy, moderately fissile, moderately dolomitic, rarely grading to dolomite, slightly to moderately calcareous, trace disseminated pyrite, no visual shows.
1490 - 1495	**SHALE**: light gray, platy, moderately fissile, moderately dolomitic, rarely grading to dolomite, trace calcareous partings, trace disseminated pyrite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1495 - 1505	**SHALE**: white to light gray, platy to blocky, subfissile, moderately dolomitic, trace limestone partings, trace nodular pyrite, no visual shows.
1505 - 1515	**SHALE**: medium to dark gray, predominantly platy, minor blocky, moderately fissile, slightly dolomitic, trace disseminated pyrite, no visual shows.
1515 - 1520	**SHALE**: medium to dark gray, very platy, fissile, slightly micromicaceous, trace calcareous partings, slightly dolomitic, trace disseminated pyrite, no visual shows.
1520 - 1530	**SHALE**: light to dark gray, platy, fissile, slightly micromicaceous, moderately dolomitic, no visual shows.
1530 - 1535	**SHALE**: light to dark gray, platy, fissile, slightly micromicaceous, moderately dolomitic, grading to microcrystalline dolomite in part, trace limestone partings, no visual shows.
1535 - 1540	**SHALE**: light gray, platy to blocky, subfissile, moderately to very dolomitic, grading to chalky dolomite in part, no visual shows.
1540 - 1545	**SHALE**: dark grey to brown gray, platy, fissile, slightly micromicaceous, trace disseminated pyrite, slightly dolomitic, no visual shows.
1545 - 1550	**SHALE**: medium gray, platy, fissile, slightly micromicaceous, trace nodular pyrite, slightly dolomitic, no visual shows.
1550 - 1555	**SHALE**: medium gray, platy to blocky, fissile in part, predominantly subfissile, trace nodular pyrite, moderately dolomitic, grading to chalky dolomite in part, no visual shows.
1555 - 1565	**SHALE**: medium to dark gray, platy, fissile, slightly micromicaceous, trace calcareous partings, commonly moderately dolomitic, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1565 - 1570	**SHALE**: light to medium gray, platy to subblocky, subfissile, slightly dolomitic, minor disseminated pyrite, no visual shows.
1570 - 1575	**SHALE**: light to medium gray, platy, fissile, slightly micromicaceous, faintly mottled in part, slightly calcareous in part, commonly slightly dolomitic, no visual shows.
1575 - 1590	**SHALE**: medium gray, platy to subblocky, slightly earthy texture in part, slightly micromicaceous, trace limestone partings, trace disseminated pyrite, commonly slightly dolomitic, no visual shows.
1590 - 1595	**SHALE**: light to medium gray, platy to blocky, subfissile to moderately fissile, slightly micromicaceous in part, slightly dolomitic, minor limestone partings, trace nodular pyrite, no visual shows.
1595 - 1600	**SHALE**: medium gray, platy, fissile, slightly dolomitic, trace limestone partings, trace nodular pyrite, no visual shows.
1600 - 1605	**SHALE**: medium gray, platy to blocky, slightly bentonitic in part, commonly moderately dolomitic, trace calcareous partings, no visual shows.
1605 - 1610	**SHALE**: medium gray, platy, fissile, trace pyrite, trace limestone partings, commonly slightly dolomitic, no visual shows.
1610 - 1620	**SHALE**: dark gray, platy to massive, subfissile, moderately micromicaceous, commonly slightly dolomitic, no visual shows.
1620 - 1630	**SHALE**: light to medium gray, platy, fissile, trace limestone partings, moderately dolomitic, grading to microcrystalline dolomite in part, trace disseminated pyrite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1630 - 1635	**SHALE**: medium to dark gray, platy, slightly micromicaceous in part, fissile, slightly mottled in part, moderately dolomitic, trace calcareous partings, no visual shows.
1635 - 1645	**SHALE**: dark gray, platy, fissile, moderately micromicaceous, soft to rarely hard, slightly bentonitic in part, trace disseminated pyrite, commonly slightly dolomitic, no visual shows.
1645 - 1650	**SHALE**: medium brown to dark gray, massive to blocky, fissile, commonly very soft and bentonitic, moderately calcareous in part, trace nodular pyrite, no visual shows.
1650 - 1655	**SHALE**: medium brown to dark gray, blocky, fissile, predominantly very soft and bentonitic, minor hard, common calcareous specks and partings, trace porous dolomite partings, no visual shows.
1655 - 1660	**DOLOMITE**: white, chalky to very fine crystalline, soft, moderately argillaceous, grading to marlstone in part, moderately calcareous in part, faint pellet texture in part, 6 to 12% estimated porosity, faint dull yellow fluorescence, fair slow massive yellow white cut (absorbed invert?); **SHALE**: as above.
1660 - 1665	**DOLOMITE**: white to buff to gray, chalky to microcrystalline, faint pelletoidal texture in part, soft, moderately calcareous, grading to microcrystalline limestone in part, common fissile gray shale partings, common bit-damaged cuttings, trace disseminated pyrite, 6 to 12% estimated porosity, no visual shows.
1665 - 1670	**DOLOMITE**: white to buff to gray, chalky to microcrystalline, faint granular texture in part, commonly soft, moderately calcareous, grading to limestone in part, trace disseminated pyrite, 6 to 12% estimated porosity, no visual shows; **SHALE**: medium gray, platy, moderately to very dolomitic, subfissile, bentonitic in part.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1670 - 1675	**SHALE**: dark gray, platy, moderately fissile, dolomitic, slightly bentonitic; **DOLOMITE**: white to gray, chalky to microcrystalline, slightly silty in part, commonly slightly calcareous, trace limestone partings, trace disseminated pyrite, 3 to 6% estimated intercrystalline porosity, no visual shows.
1675 - 1680	**LIMESTONE**: white to gray, chalky to microcrystalline, moderately to very dolomitic, grading to dolomite in part, moderately argillaceous in part, grading to marlstone, 3 to 6% intercrystalline porosity, no visual shows; **SHALE**: as above.
1680 - 1685	**DOLOMITE**: white to light gray, chalky to very fine crystalline, soft, commonly very friable, moderately to very calcareous, grading to limestone in part, trace bitumen specks, trace disseminated pyrite, trace shale partings, 6 to 12% intercrystalline porosity, no fluorescence, faint milky invert cut.
1685 - 1690	**SILTSTONE**: light gray, platy to massive, quartzose, trace dark mineral grains, trace kaolinite, silica and dolomite cement, moderately firm, tight, no visual shows; **DOLOMITE**: as above.
1690 - 1695	**SILTSTONE**: light gray, platy to massive, quartzose, minor dark mineral grains, trace mica grains, trace kaolinite, common calcareous dolomite partings, silica and dolomite cement, moderately firm, tight, no visual shows.
1695 - 1700	**SILTSTONE**: light to medium gray, slightly banded in part, quartzose, common dark mineral grains, slightly micromicaceous, hard, massive to blocky, common chalky dolomitic limestone partings, silica plus trace dolomite cement, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1700 - 1705	**SILTSTONE**: light to medium gray, slightly banded in part, quartzose, common dark mineral grains, slightly micromicaceous, hard, massive to blocky, trace chalky dolomitic limestone partings, trace light gray claystone partings, silica plus trace dolomite cement, tight, no visual shows.
1705 - 1715	**SILTSTONE**: light to medium gray, banded in part, hard, quartzose, minor dark mineral grains, silica plus dolomite cement, trace limestone partings, minor light gray bentonitic claystone partings, tight, no visual shows.
1715 - 1720	**SILTSTONE**: light to medium gray, banded in part, hard, quartzose, minor dark mineral grains, slightly sandy in part, silica plus dolomite cement, trace limestone partings, minor light gray bentonitic claystone partings, tight, no visual shows; **SHALE**: light to medium gray, platy, fissile, slightly bentonitic, very soft.
1720 - 1725	**SILTSTONE**: medium gray, moderately firm, quartzose, common dark lithic grains, common chalky limestone partings, silica cement, tight, no visual shows.
1725 - 1730	**SILTSTONE**: medium gray, moderately firm, quartzose, common dark lithic grains, common chalky limestone partings, trace medium to coarse mica grains, silica cement, tight, no visual shows.
1730 - 1735	**SILTSTONE**: light to dark gray, moderately hard, quartzose, common lithic grains, moderately argillaceous, grading to shale in part, common chalky limestone partings, silica cement, tight, no visual shows.
1735 - 1740	**DOLOMITE**: white to gray, chalky to very fine crystalline, argillaceous in part, silty in part, commonly moderately to very calcareous, grading to limestone in part, 3 to 6% intercrystalline porosity, no visual shows; **SILTSTONE**: as above.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1740 - 1745	**DOLOMITE:** white to gray, chalky to very fine crystalline, argillaceous in part, silty in part, commonly moderately to very calcareous, grading to limestone in part, 3 to 6% intercrystalline porosity, no visual shows; **SILTSTONE:** white to dark gray, moderately hard, quartzose, minor to common lithic grains, silica cement, tight.
1745 - 1755	**SILTSTONE:** medium to dark gray, moderately firm, quartzose, common dark lithic grains, trace medium to coarse mica grains, silica cement, common chalky limestone partings, tight, no visual shows.
1755 - 1760	**SILTSTONE:** light to dark gray, soft to hard, platy to blocky, quartzose, common lithic grains, moderately argillaceous in part, grading to shale, silica cement, tight, no visual shows; **LIMESTONE:** cream to white, chalky to fine grained, moderately dolomitic in part, trace microcrystalline dolomite partings.
1760 - 1765	**SILTSTONE:** light to medium gray, platy to blocky, soft to hard, quartzose, common lithic grains, commonly argillaceous, grading to shale, trace disseminated pyrite, silica plus trace dolomite cement, tight, no visual shows.
1765 - 1770	**SILTSTONE:** light gray, predominantly soft, minor hard, quartzose, common lithic grains, commonly very argillaceous grading to shale, trace dolomitic limestone partings, silica plus dolomite cement, tight, no visual shows.
1770 - 1775	**SILTSTONE:** light gray, predominantly soft, minor hard, quartzose, common lithic grains, commonly very argillaceous grading to shale, trace dolomitic limestone partings, silica plus dolomite cement, tight; **DOLOMITE:** white to light gray, very fine crystalline, slightly chalky in part, commonly moderately calcareous, grading to limestone in part, common intercrystalline calcite, tight to rarely 6% intercrystalline porosity, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1775 - 1780	**SILTSTONE**: dark gray, massive, moderately firm, quartzose, common lithic grains, predominantly silica cement, slightly argillaceous in part, trace disseminated pyrite, tight, no visual shows; **DOLOMITE**: as above.
1780 - 1785	**DOLOMITIC LIMESTONE**: white to gray, slightly brown in part, chalky to rarely medium grained, commonly recrystallized, moderately to very dolomitic, grading to very fine crystalline dolomite in part, trace breccia fragments, silty in part, tight, no visual shows; **SILTSTONE**: as above.
1785 - 1790	**DOLOMITIC LIMESTONE**: white to gray, slightly brown in part, chalky to rarely medium grained, commonly recrystallized, moderately to very dolomitic, grading to very fine crystalline dolomite in part, trace breccia fragments, silty in part, tight, no visual shows; **SILTSTONE**: as above, argillaceous, grading to shale in part.
1790 - 1795	**LIMESTONE**: white to buff, chalky to fine grained, dense, scattered dolomite grains, trace microcrystalline dolomite partings, tight, faint mineral fluorescence, no cut.
1795 - 1805	**LIMESTONE**: white to gray, chalky to fine grained, fine laminated in part, minor microcrystalline dolomite partings, common siltstone partings, commonly slightly dolomitic, tight, no visual shows.
1805 - 1810	**SILTSTONE**: dark gray, massive to blocky, moderately firm, quartzose, common dark grains, moderately argillaceous, grading to shale in part, silica plus minor dolomite cement, tight, no visual shows; white to gray, chalky to fine grained, fine laminated in part, minor microcrystalline dolomite partings, common siltstone partings, commonly slightly dolomitic, tight.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1810 - 1820	**SILTSTONE**: dark gray, massive to blocky, moderately firm, quartzose, common dark grains, moderately argillaceous, grading to shale in part, common chalky limestone partings, silica plus minor dolomite cement, tight, no visual shows;
1820 - 1825	**SILTSTONE**: medium to dark gray, massive to blocky, hard, quartzose, common lithic grains, moderately to very argillaceous, commonly grading to gray shale, silica plus minor dolomite cement, tight, no visual shows.
1825 - 1830	**SHALE**: light gray, platy, moderately fissile, soft; **SILTSTONE**: medium to dark gray, massive to blocky, hard, quartzose, common lithic grains, moderately to very argillaceous, commonly grading to gray shale, silica plus minor dolomite cement, tight, no visual shows.
1830 - 1835	**SHALE**: light gray, platy, fissile, soft, slightly waxy lustre in part, trace siltstone partings, no visual shows.
1835 - 1840	**SHALE**: light to dark gray, platy, moderately fissile, waxy in part, silty in part grading to siltstone, trace disseminated pyrite, no visual shows.
1840 - 1845	**SHALE**: light to dark gray, platy, moderately fissile, waxy in part, silty in part grading to siltstone, trace disseminated pyrite, slightly calcareous in part, no visual shows.
1845 - 1850	**SHALE**: light gray, platy to massive, fissile, soft and waxy in part, moderately silty in part, grading to siltstone, trace limestone partings, trace floating sand grains, no visual shows.
1850 - 1860	**SHALE**: light gray, predominantly platy, rarely massive, soft, very fissile, slightly bentonitic, predominantly non calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1860 - 1865	**SHALE**: light to medium gray, platy, fissile, soft, slightly bentonitic in part, trace siltstone partings, commonly slightly dolomitic, no visual shows.
1865 - 1870	**SHALE**: light to medium gray, platy, fissile, soft, common bentonitic claystone partings, trace siltstone partings, commonly slightly dolomitic, no visual shows.
1870 - 1875	**SHALE**: light to medium gray, commonly mottled, platy, fissile, slightly bentonitic, trace limestone partings, silty in part, no visual shows.
1875 - 1885	**SHALE**: light to medium gray, platy to subblocky, fissile, soft, trace siltstone partings, trace limestone partings, trace disseminated pyrite, no visual shows.
1885 - 1890	**SHALE**: light to medium gray, slightly mottled in part, platy to subblocky, fissile, soft, trace siltstone partings, trace limestone partings, trace disseminated pyrite, no visual shows.
1890 - 1895	**SHALE**: light gray, platy to massive, fissile, soft, abundant light gray silty microcrystalline dolomite partings, trace limestone partings, no visual shows.
1895 - 1900	**SHALE**: light gray, platy to subblocky, moderately fissile, soft, common siltstone dolomite and limestone partings, no visual shows.
1900 - 1905	**SHALE**: light gray, platy to subblocky, moderately fissile, soft, common siltstone dolomite and limestone partings, no visual shows.
1905 - 1910	**SHALE**: light gray, platy, fissile soft, slightly bentonitic, non calcareous, no visual shows.
1910 - 1915	**SHALE**: light gray, platy, fissile soft, slightly bentonitic, non calcareous, common fine to medium grained limestone partings, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1915 - 1920	**SHALE:** as above; **LIMESTONE:** white to brown, fine grained, sandy, moderately dolomitic in part, grading to fine crystalline dolomite, tight to 3% intercrystalline porosity, no visual shows.
1920 - 1925	**SHALE:** light gray, platy to massive, subfissile, trace very fine crystalline dolomite partings, no visual shows.
1925 - 1930	**SHALE:** light gray, platy to massive, subfissile, common very fine crystalline dolomite partings, no visual shows.
1930 - 1935	**SHALE:** light to medium gray, platy to subblocky, moderately fissile, slightly silty in part, trace disseminated pyrite, common fine grained dolomitic limestone partings, no visual shows.
1935 - 1940	**SHALE:** light to medium gray, platy to massive, fissile, slightly silty in part, trace fine grained dolomitic limestone partings, trace calcite crystal fracture fill, no visual shows.
1940 - 1945	**SHALE:** light grey platy to massive, fissile, moderately silty in part, no visual shows.
1945 - 1950	**SHALE:** light gray, platy to massive, fissile, slightly silty in part, trace dolomitic limestone partings, no visual shows.
1950 - 1955	**SHALE:** light to medium gray, platy to massive, moderately fissile, slightly bentonitic in part, slightly silty, trace disseminated pyrite, no visual shows.
1955 - 1960	**SHALE:** light to medium gray, platy to blocky, moderately fissile, slightly silty in part, trace dolomitic limestone partings, predominantly non calcareous, no visual shows.
1960 - 1965	**SHALE:** medium gray, very platy, commonly slightly mottled, slightly micromicaceous, fissile, slightly silty in part, predominantly non calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
1965 - 1970	**SHALE**: light gray, platy to rubbly, mottled, moderately fissile, trace silty dolomite partings, no visual shows.
1970 - 1975	**SHALE**: light gray, platy to blocky, moderately fissile, slightly silty in part, trace calcite crystal fracture fill, no visual shows.
1975 - 1980	**SHALE**: light to medium gray, platy to blocky, fissile, slightly micromicaceous in part, trace dolomitic siltstone partings, no visual shows.
1980 - 1985	**SHALE**: light to medium gray, platy to blocky, fissile, slightly micromicaceous in part, common dolomitic siltstone partings, no visual shows.
1985 - 1990	**SHALE**: light to medium gray, platy to blocky, fissile, slightly micromicaceous in part, common dolomitic siltstone partings, no visual shows. Common bit-damaged chips.
1990 - 1995	**SHALE**: medium gray, platy to massive, commonly mottled, trace disseminated pyrite, subfissile, trace silty dolomite partings, no visual shows.
1995 - 2000	**SHALE**: light to medium gray, platy to massive, commonly rubbly, fissile, slightly bentonitic in part, trace very fine crystalline dolomite partings, no visual shows.
2000 - 2005	**SHALE**: light to medium gray, massive to platy, moderately fissile, commonly slightly silty, bentonitic in part, trace very fine crystalline dolomite partings, no visual shows
2005 - 2015	**SHALE**: medium gray to medium brown gray, rubbly to very platy, trace disseminated pyrite, trace microcrystalline dolomitic limestone partings, no visual shows.
2015 - 2020	**SHALE**: light gray, platy to blocky, moderately fissile, slightly waxy texture in part, slightly micromicaceous, trace dolomitic limestone partings, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2020 - 2025	**SHALE**: light to medium gray, platy to blocky, moderately fissile, trace disseminated pyrite, trace dolomitic limestone partings, no visual shows.
2025 - 2035	**SHALE**: medium gray, platy to rubbly, fissile, trace dolomitic limestone partings, no visual shows.
2035 - 2045	**SHALE**: light to medium gray, platy, rubbly in part, moderately bentonitic in part, slightly silty, trace silty dolomitic limestone partings, no visual shows.
2045 - 2050	**SHALE**: medium gray, platy, slightly micromicaceous, fissile, slightly mottled in part, trace disseminated pyrite, trace calcareous partings, no visual shows.
2050 - 2060	**SHALE**: light to medium gray, platy to subblocky, fissile, slightly bentonitic in part, no visual shows.
2060 - 2065	**SHALE**: light gray, platy to blocky, soft, moderately fissile, slightly silty in part, non calcareous, no visual shows.
2065 - 2070	**SHALE**: light gray, platy, moderately to very bentonitic, slightly silty in part, no visual shows.
2070 - 2075	**SHALE**: light to medium gray, flaky, soft, moderately bentonitic, fissile, no visual shows.
2075 - 2080	**SHALE**: medium gray, platy, moderately fissile, commonly slightly silty, trace silty limestone partings, no visual shows.
2080 - 2095	**SHALE**: light gray, platy, soft, moderately bentonitic, fissile, trace dolomitic limestone partings, no visual shows.
2095 - 2100	**SHALE**: buff to medium gray, platy, soft, very bentonitic in part, slightly silty in part, predominantly non calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2100 - 2110	**SHALE**: light to medium gray, platy, very soft, bentonitic, slightly silty in part, no visual shows.
2110 - 2115	**SHALE**: medium gray, platy, fissile, trace disseminated pyrite, slightly bentonitic in part, predominantly non calcareous, no visual shows.
2115 - 2120	**SHALE**: light to medium gray, platy to subblocky, fissile, slightly mottled in part, trace calcareous nodules, no visual shows.
2120 - 2125	**SHALE**: light to medium gray, platy to blocky, moderately fissile, very bentonitic in part, slightly silty in part, no visual shows.
2125 - 2130	**SHALE**: light to dark gray, platy, moderately fissile, slightly micromicaceous in part, trace silty limestone partings, no visual shows.
2130 - 2135	**SHALE**: light to medium gray, platy, very soft, commonly very bentonitic, trace limestone partings, no visual shows.
2135 - 2145	**SHALE**: light to medium gray, platy, very soft, commonly very bentonitic, no visual shows.
2145 - 2150	**SHALE**: light gray, platy, fissile, slightly micromicaceous, slightly silty in part, no visual shows.
2150 - 2155	**SHALE**: light to medium gray, platy to subblocky, fissile, slightly bentonitic in part, moderately silty, grading to siltstone in part, no visual shows.
2155 - 2160	**SHALE**: light to medium gray, platy to subblocky, fissile, slightly bentonitic in part, moderately silty, grading to siltstone in part, trace calcite crystal fracture fill, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2160 - 2165	**SHALE**: light to medium gray, platy to massive, fissile, slightly micromicaceous in part, commonly moderately silty, rarely grading to siltstone, trace silty limestone partings, trace disseminated pyrite, no visual shows.
2165 - 2170	**SHALE**: light to medium gray, platy to massive, fissile, slightly micromicaceous in part, commonly moderately silty, rarely grading to siltstone, trace silty limestone partings, trace buff bentonitic claystone partings, trace disseminated pyrite, no visual shows.
2170 - 2175	**SHALE**: light gray, platy, fissile, slightly bentonitic in part, trace calcareous partings, no visual shows.
2175 - 2180	**SHALE**: light to medium gray, faintly mottled in part, platy, fissile, trace calcareous partings, no visual shows.
2180 - 2185	**SHALE**: light to medium gray, faintly mottled in part, platy, fissile, trace nodular pyrite, no visual shows.
2185 - 2190	**SHALE**: light to medium gray, platy to subblocky, moderately fissile, slightly silty in part, trace calcite crystal fracture fill, no visual shows.
2190 - 2195	**SHALE**: medium gray, platy to massive, fissile, slightly micromicaceous, trace disseminated pyrite, non calcareous, no visual shows.
2195 - 2205	**SHALE**: light to medium gray, platy to blocky, moderately fissile, slightly silty in part, trace limestone partings, no visual shows.
2205 - 2210	**SHALE**: light to medium gray, minor buff, platy to massive, subfissile, moderately bentonitic in part, slightly silty in part, no visual shows.
2210 - 2215	**SHALE**: light gray, predominantly platy, fissile, trace very fine crystalline dolomite partings, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2215 - 2220	**SHALE**: light gray, platy, fissile, moderately bentonitic, moderately silty in part, non calcareous, no visual shows.
2220 - 2230	**SHALE**: buff to light gray, platy, fissile, commonly moderately bentonitic, slightly silty in part, non calcareous, no visual shows.
2230 - 2235	**SHALE**: light to medium gray, platy to blocky, fissile, slightly mottled in part, slightly micromicaceous in part, trace limestone partings, no visual shows.
2235 - 2240	**SHALE**: light gray, platy, fissile, slightly micromicaceous in part, silty in part, trace calcite grains, no visual shows.
2240 - 2245	**SHALE**: light to medium gray, platy to blocky, moderately fissile, silty in part, no visual shows.
2245 - 2250	**SHALE**: light gray, platy to massive, moderately fissile, commonly moderately bentonitic, slightly silty in part, no visual shows.
2250 - 2260	**SHALE**: light to medium gray, platy to massive, fissile, slightly micromicaceous, slightly bentonitic in part, no visual shows.
2260 - 2265	**SHALE**: light gray, platy, fissile, slightly micromicaceous, moderately bentonitic in part, trace chalky limestone partings, no visual shows.
2265 - 2270	**SHALE**: buff to medium gray, platy, moderately fissile, very bentonitic in part, non calcareous, no visual shows.
2270 - 2275	**SHALE**: light to medium gray, platy, fissile, moderately to very bentonitic, trace limestone partings, no visual shows.
2275 - 2280	**SHALE**: light to medium gray, platy to massive, moderately fissile, slightly micromicaceous, slightly silty in part, trace disseminated pyrite, non calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2280 - 2285	**SHALE**: light gray, platy, fissile, moderately to very bentonitic, no visual shows.
2285 - 2290	**SHALE**: medium gray, platy to blocky, moderately fissile, trace buff bentonitic claystone partings, trace black phosphate pellet, trace calcareous nodules, no visual shows.
2290 - 2300	**SHALE**: buff to medium gray, massive to blocky, fissile, common buff bentonitic claystone partings, slightly micromicaceous, trace black phosphate pellets, no visual shows.
2300 - 2305	**SHALE**: medium gray, abundant buff bentonitic claystone partings, moderately fissile, slightly micromicaceous, no visual shows.
2305 - 2310	**SHALE**: light gray, platy to massive, fissile, slightly bentonitic, common buff bentonitic claystone partings, slightly micromicaceous, slightly calcareous in part, no visual shows.
2310 - 2315	**SHALE**: light to medium gray, slightly banded in part, common buff bentonitic claystone partings, slightly micromicaceous, moderately fissile, slightly silty in part, no visual shows.
2315 - 2320	**SHALE**: light to medium gray, slightly banded in part, common buff bentonitic claystone partings, slightly micromicaceous, moderately fissile, slightly silty in part, trace disseminated pyrite, no visual shows.
2320 - 2325	**SHALE**: light gray, platy, fissile, predominantly very bentonitic, slightly silty in part, no visual shows.
2325 - 2335	**SHALE**: light to medium gray, platy to blocky, fissile, slightly micromicaceous, common buff bentonitic claystone partings, non calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2335 - 2340	**SHALE**: light gray, flaky to platy, very bentonitic, fissile, slightly silty in part, non calcareous, no visual shows.
2340 - 2345	**SHALE**: light to dark gray, platy to massive, fissile, common buff bentonitic claystone partings, slightly micromicaceous, slightly silty, non calcareous, no visual shows.
2345 - 2355	**SHALE**: medium gray, platy to blocky, trace bentonitic claystone partings, predominantly fissile, slightly micromicaceous, trace limestone partings, no visual shows.
2355 - 2365	**SHALE**: light to medium gray, platy, moderately fissile, common buff bentonitic claystone partings, non calcareous, no visual shows.
2365 - 2370	**SHALE**: light to medium gray, platy to subblocky, fissile, slightly silty in part, common buff bentonitic claystone partings, non calcareous, no visual shows.
2370 - 2380	**SHALE**: light gray, platy, fissile, minor buff bentonitic claystone partings, non calcareous, no visual shows.
2380 - 2390	**SHALE**: light gray, platy, fissile, common buff bentonitic claystone partings, non calcareous, no visual shows.
2390 - 2395	**SHALE**: light gray, platy to massive, fissile, common buff bentonitic claystone partings, trace limestone partings, predominantly non calcareous, no visual shows.
2395 - 2405	**SHALE**: light to medium gray, platy, fissile, slightly micromicaceous, common buff bentonitic claystone partings, non calcareous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2405 - 2410	**SHALE**: light gray, common buff bentonitic claystone partings, platy, fissile, slightly micromicaceous, slightly silty in part, non calcareous, no visual shows.
2410 - 2415	**SHALE**: light gray, platy to subblocky, slightly silty, fissile, minor slightly calcareous bentonitic claystone partings, no visual shows.
2415 - 2420	**SHALE**: light to medium gray, platy to massive, moderately fissile, slightly micromicaceous in part, minor buff bentonitic claystone partings, non calcareous, no visual shows.
2420 - 2425	**SHALE**: light gray, platy, fissile, moderately bentonitic in part, slightly silty in part, trace buff bentonitic claystone partings, non calcareous, no visual shows.
2425 - 2430	**SHALE**: light gray, platy, fissile, moderately bentonitic in part, slightly silty in part, trace buff bentonitic claystone partings, non calcareous, but very slightly dolomitic, no visual shows.
2430 - 2435	**SHALE**: light gray, platy to blocky, fissile, slightly silty in part, moderately bentonitic in part, slightly dolomitic, no visual shows.
2435 - 2440	**SHALE**: light gray, platy to massive, fissile, slightly micromicaceous, slightly bentonitic in part, trace calcareous grains, commonly very slightly dolomitic, no visual shows.
2440 - 2445	**SHALE**: light gray, blocky, platy in part, moderately fissile, slightly bentonitic in part, very slightly dolomitic in part, no visual shows.
2445 - 2450	**SHALE**: light gray, platy to blocky, fissile, slightly bentonitic in part, slightly micromicaceous in part, slightly dolomitic in part, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2450 - 2460	**SHALE**: light gray, platy to blocky, fissile, minor buff bentonitic claystone partings, slightly micromicaceous in part, slightly dolomitic in part, no visual shows.
2460 - 2465	**SHALE**: light to medium gray, platy to blocky, fissile, slightly micromicaceous, slightly bentonitic in part, very slightly dolomitic in part, no visual shows.
2465 - 2470	**SHALE**: light to medium gray, slightly mottled in part, platy to massive, moderately fissile, trace bentonitic claystone partings, trace chalky to silty limestone partings, predominantly non calcareous, no visual shows.
2470 - 2475	**SHALE**: medium gray, platy, fissile, moderately micromicaceous. trace bentonitic claystone partings, trace marlstone (?) partings, predominantly non calcareous, no visual shows.
2475 - 2480	**SHALE**: light to medium gray, platy to blocky, fissile, slightly micromicaceous, non calcareous, no visual shows.
2480 - 2485	**SHALE**: light to medium gray, platy to massive, fissile, slightly micromicaceous, minor buff bentonitic claystone partings, non calcareous, no visual shows.
2485 - 2490	**SHALE**: light to medium gray, blocky, minor platy, fissile, slightly micromicaceous in part, faint granular texture in part, non calcareous, no visual shows.
2490 - 2495	**SHALE**: light to medium gray, predominantly platy, fissile, slightly micromicaceous in part, slightly bentonitic in part, non calcareous, trace slightly dolomitic partings, no visual shows.
2495 - 2500	**SHALE**: light to medium gray, platy to massive, fissile, slightly micromicaceous in part, slightly bentonitic in part, non calcareous, trace slightly dolomitic partings, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2500 - 2505	**SHALE**: light gray, platy, fissile, bentonitic in part, common buff bentonitic claystone partings, trace silty marlstone partings, no visual shows.
2505 - 2510	**SHALE**: very light to medium gray, platy, minor massive, fissile, trace bentonitic claystone partings, trace disseminated pyrite, predominantly non calcareous, no fluorescence, very faint slow green white cut.
2510 - 2515	**SHALE**: dark gray, massive to subblocky, slightly earthy texture, moderately hard, trace disseminated pyrite, moderately calcareous, no visual shows.
2515 - 2520	**SHALE**: medium to dark gray, massive to platy, commonly mottled, trace nodular pyrite, moderately calcareous, no fluorescence, very faint slow white massive cut.
2520 - 2525	**SHALE**: medium gray, platy to blocky, slightly mottled in part, subfissile, trace disseminated pyrite, slightly silty, slightly calcareous in part, no visual shows.
2525 - 2530	**SHALE**: medium brown grey to black, blocky to massive, fissile, trace nodular pyrite, trace calcite crystal fracture fill, scattered calcareous partings, scattered silt-size dolomite grains, overall carbonate content is quite low, no visual shows.
2530 - 2535	**SHALE**: light grey to black, platy to massive, fissile, trace black phosphatic nodules; **DOLOMITIC MARLSTONE**: white to light gray, platy, fissile, slightly calcareous in part, common scattered very fine crystalline dolomite rhombs, moderately to very argillaceous, no macro porosity, no visual shows.
2535 - 2540	**SHALE**: light to dark gray, platy to blocky, slightly micromicaceous, fissile, trace dolomitic marlstone partings, trace calcareous bands, trace black earthy phosphate nodules, trace nodular pyrite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2540 - 2545	**SHALE**: light to medium gray, platy to blocky, mottled in part, fissile, trace pyritic laminations, trace black phosphatic nodules, trace gray tripolitic chert shards (nodules?), no visual shows.
2545 - 2550	**SHALE**: medium gray, platy to blocky, fissile, trace white specks in part, trace pyritic laminations, trace buff dolomitic marlstone partings, slightly silty in part, non calcareous, very slightly dolomitic in part, no visual shows.
2550 - 2555	**SHALE**: light to dark gray, platy to blocky to massive, subfissile to fissile, slightly micromicaceous in part, slightly bentonitic in part, trace dolomitic marlstone partings, trace disseminated pyrite, very slightly dolomitic in part, non calcareous, no visual shows.
2555 - 2560	**SHALE**: dark grey to black, blocky to earthy, subfissile, moderately micromicaceous, slightly calcareous, minor disseminated pyrite, trace pyrite cubes, scattered dolomite grains in part, trace fine grained brown pyritic dolomite partings (nodules?), no visual shows.
2560 - 2562	**SHALE**: medium gray to very dark gray, moderately micromicaceous, blocky to earthy, subfissile, slightly calcareous in part, trace disseminated pyrite; **LIMESTONE**: (trace) light brown, fine grained, chalky, soft, slightly silty, no visual shows.
2562 - 2565	**SHALE**: dark brown gray to black, platy to massive, moderately micromicaceous, predominantly subfissile, common pyritic bands, grading to nodular pyrite and pyrite - calcite intergrowths, predominantly non calcareous, possible slightly bituminous, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2565 - 2567	**SHALE**: dark gray to black, earthy to blocky, subfissile, slightly micromicaceous, common disseminated plus nodular pyrite, trace calcareous nodules, rare scattered dolomite crystals, no visual shows.
2567 - 2570	**SHALE**: dark gray to black, blocky, minor massive, subfissile, finely laminated in part, common disseminated plus nodular pyrite, and pyritic laminations, trace calcite crystal fracture fill, trace calcareous fossil fragments, predominantly non calcareous, no visual shows.
2570 - 2572	**SHALE**: black, blocky to massive, commonly banded, trace pyritic laminations, moderately micromicaceous in part, fissile in part, moderately calcareous in part, common disseminated pyrite, no visual shows.
2572 - 2575	**SHALE**: black, massive to blocky, earthy to sooty lustre, subfissile, moderately micromicaceous, moderately calcareous, common limestone partings, common disseminated pyrite; **LIMESTONE**: white, very fine crystalline to fine crystalline, faint granular texture in part, moderately argillaceous, minor disseminated pyrite, tight, no visual shows.
2575 - 2577.5	**SHALE**: dark brown to black, blocky to massive, moderately fissile, very micromicaceous, common disseminated plus nodular pyrite, trace white specks, moderately calcareous in part, common limestone partings; **LIMESTONE**: white to light brown, fine grained, recrystallized in part, commonly moderately argillaceous, occurs predominantly as partings, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2577.5 to 2580	**SHALE:** dark brown to black, blocky, subfissile, moderately micromicaceous in part, banded in part, trace disseminated plus minor nodular pyrite, moderately to very calcareous, grading to limestone in part; **LIMESTONE:** white to brown to gray, fine to medium grained, commonly recrystallized, slightly chalky in part, trace stylolite, trace shale clasts, trace disseminated pyrite, tight, spotty mineral fluorescence, no cut.
2580 - 2582.5	**LIMESTONE:** white to medium brown gray, fine to medium grained, recrystallized in part, faint pelletoidal texture in part, trace very fine crystalline dolomite partings, predominantly dense, trace shale clasts, tight, common spotty mineral fluorescence, no cut; **SHALE:** as above.
2582.5 to 2585	**LIMESTONE:** white to brown to finely, mottled in part, very fine to medium grained, predominantly recrystallized, scattered dolomite rhombs, pelletoidal texture in part, trace white very fine crystalline dolomite partings, trace disseminated pyrite, tight, common spotty mineral fluorescence, no cut; **SHALE:** black, blocky, micromicaceous, subfissile, trace disseminated pyrite, very calcareous in part.
2585 - 2586	**LIMESTONE:** white to brown to gray, mottled in part, pelletoidal texture in part, commonly fine grained, recrystallized in part, trace stylolite, trace fine crystalline dolomite partings, trace fossil, common spotty mineral fluorescence, no cut.
2586 - 2591	**LIMESTONE:** white to brown gray, commonly mottled, fine to medium grained, recrystallized in part, predominantly pelletoidal texture, trace intergranular pyrobitumen, trace quartz cemented limestone breccia, moderately dolomitic in part grading to fine crystalline dolomite, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2591 - 2595	**LIMESTONE**: white to dark brown gray, fine to medium grained, predominantly pelletoidal, recrystallized in part, commonly moderately dolomitic, grading to very fine crystalline dolomite in part, trace chert nodules, trace stylolite, tight; **DOLOMITE**: white, very fine to fine crystalline, faint pelletoidal texture in part, minor limestone partings, predominantly dense, tight, no visual shows.
2595 - 2600	**LIMESTONE**: cream to brown to gray, fine grained, pelletoidal, commonly recrystallized, moderately dolomitic in part grading to dolomite, trace pyrobitumen specks, tight; **DOLOMITE**: white to gray, pelletal texture in part, predominantly very fine to fine crystalline, minor intercrystalline calcite in part, faint spotty yellow fluorescence, no cut.
2600 - 2605	**LIMESTONE**: white to dark gray, predominantly brown, fine grained, pelletoidal texture, slightly chalky in part, trace quartz crystal fracture fill, moderately dolomitic in part, trace pyrobitumen, trace stylolite, tight, no visual shows.
2605 - 2610	**LIMESTONE**: white to dark gray, predominantly brown, fine grained, pelletoidal texture, trace fragmental texture, slightly chalky in part, trace quartz crystal fracture fill, slightly dolomitic in part, trace pyrobitumen, trace stylolite, tight, no visual shows.
2610 - 2615	**LIMESTONE**: predominantly tan to brown, minor white, cryptocrystalline to minor fine grained, trace pelletoidal texture, predominantly dense, trace stylolite, trace dolomite crystal fracture fill, tight, no visual shows.
2615 - 2620	**LIMESTONE**: white to dark brown, cryptocrystalline to fine grained, minor pelletoidal, trace chalky, trace disseminated pyrite, trace chert shards, minor fine crystalline dolomite partings, trace pyrobitumen, tight to rarely 3% intercrystalline porosity in dolomite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2620 - 2625	**DOLOMITE**: white, very fine to fine crystalline, faint pelletoidal texture in part, tight to rarely 18% intercrystalline porosity, abundant pyrobitumen infill, trace spotty mineral fluorescence, no cut, occurs as stringers in limestone white to brown to gray, cryptocrystalline to fine grained, rarely chalky, common pelletoidal texture, trace stylolite, trace disseminated pyrite, common dolomite partings.
2625 - 2630	**LIMESTONE**: white to brown to gray, cryptocrystalline to fine grained, rarely chalky, common pelletoidal texture, trace stylolite, trace to minor disseminated pyrite, common dolomite partings, common spotty mineral fluorescence (Baracarb?), no cut.
2630 - 2635	**LIMESTONE**: white to brown, minor dark gray, predominantly fine grained, faint pelletoidal texture in part, minor cryptocrystalline, trace fine crystalline dolomite fracture fill, trace dolomitic claystone partings with common disseminated pyrite, trace stylolite, trace pyrobitumen, tight to rarely 3% intercrystalline porosity, no visual shows.
2635 - 2640	**LIMESTONE**: white to brown, predominantly fine grained, commonly recrystallized, minor pelletoidal texture, minor cryptocrystalline, trace fine crystalline dolomite fracture fill, trace stylolite, trace disseminated pyrite; **DOLOMITE**: white, very fine to medium crystalline, granular texture in part, common patchy intercrystalline calcite, trace coarse dolomite rhombs, trace pyrobitumen, predominantly tight, possible fair fracture porosity, trace spotty mineral fluorescence, no cut.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2640 - 2645	**DOLOMITE**: white, very fine to medium crystalline, granular texture in part, common patchy intercrystalline calcite, trace coarse dolomite rhombs, trace pyrobitumen, predominantly tight, possible fair fracture porosity, trace spotty mineral fluorescence, no cut; **LIMESTONE**: white to gray, commonly platy to rubbly, predominantly fine to medium grained, minor chalky, common pelletoidal texture, scattered dolomite rhombs, trace stylolite, trace pyrobitumen, tight, no visual shows.
2645 - 2650	**LIMESTONE**: white to light brown, chalky to medium grained, rare pelletoidal texture, trace scattered dolomite rhombs, trace pyrobitumen, tight, no visual shows; **DOLOMITE**: white, very fine to medium crystalline, faint granular texture in part, trace intercrystalline calcite, tight to rarely 3% intercrystalline porosity, no visual shows.
2650 - 2660	**DOLOMITE**: white to minor light brown, chalky to fine crystalline, commonly relic granular texture, moderately calcareous, grading to limestone in part, trace stylolite, trace pyrobitumen on grain boundaries, tight, no visual shows.
2660 - 2665	**DOLOMITE**: white, microcrystalline to medium crystalline, faint granular texture in part, trace cryptocrystalline limestone partings, predominantly slightly calcareous, grading to limestone in part, trace stylolite, tight, no visual shows.
2665 - 2670	**DOLOMITE**: white, microcrystalline to medium crystalline, faint granular texture in part, common cryptocrystalline limestone partings, predominantly slightly calcareous, grading to limestone in part, trace stylolite, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2670 - 2675	**LIMESTONE**: white to dark gray, brown in part, cryptocrystalline to fine grained, chalky in part, slightly argillaceous in part, common stylolite, common dolomite partings as above, common scattered very fine dolomite crystal, trace disseminated pyrite, tight to rarely 3% intercrystalline porosity in dolomite, no visual shows.
2675 - 2680	**LIMESTONE**: light brown, mottled, predominantly pelletoidal texture, trace cryptocrystalline, fine grained, moderately dolomitic in part, grading to fine crystalline dolomite, trace pyrobitumen, trace stylolite, tight to rarely 6% intercrystalline porosity in dolomite, no visual shows.
2680 - 2685	**LIMESTONE**: as above, common fine crystalline dolomite partings, porosity is associated with dolomite stringers, tight to 6% intercrystalline porosity, no visual shows.
2685 - 2690	**LIMESTONE**: white to brown to gray, cryptocrystalline to medium grained, fragmental texture in part, trace pellet, trace calcisphere (?), trace fossil, moderately dolomitic in part, grading to fine crystalline dolomite, common scattered very fine grained dolomite rhombs, trace pyrobitumen, predominantly tight, trace intercrystalline porosity in dolomite, no visual shows.
2690 - 2695	**LIMESTONE**: light to dark gray, rarely white, very fine to medium grained, commonly recrystallized, slightly argillaceous in part, common pyrobitumen, slightly dolomitic, sparsely scattered dolomite rhombs, trace dolomite crystal fracture fill, tight, no visual shows.
2695 - 2700	**LIMESTONE**: light to dark gray, predominantly fine grained, chalky in part, commonly pelletoidal texture, trace stylolite, trace disseminated pyrite, trace pyrobitumen, trace Stromatoporoid, trace Brachiopod, slightly dolomitic in part, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2700 - 2705	**LIMESTONE**: light to dark gray, fine grained, pelletoidal texture, trace cryptocrystalline, trace pyrobitumen, slightly argillaceous in part, trace fossil, slightly dolomitic in part, tight, no visual shows. Lots of 0.5 to 1.0 mm Baracarb particles in this sample.
2705 - 2710	**LIMESTONE**: light to dark gray, fine to minor medium grained, predominantly pelletoidal, trace fragmental, slightly bituminous, trace Stromatoporoid, tight, no visual shows. Common Baracarb as above.
2710 - 2715	**LIMESTONE**: medium to dark gray, minor light gray, very fine to medium grained, fragmental texture in part, trace pellet, trace Algae, trace disseminated pyrite, trace black shale partings, trace calcite sparite, tight, no visual shows. Common Baracarb as above.
2715 - 2720	**LIMESTONE**: light brown to dark gray, cryptocrystalline to fine grained, trace pelletoidal texture, slightly bituminous in part, trace dolomite crystal fracture fill, trace shale partings, tight, no visual shows. Baracarb, again.
2720 - 2725	**LIMESTONE**: light brown to dark gray, cryptocrystalline to fine grained, trace pelletoidal texture, slightly bituminous in part, trace dolomite crystal fracture fill, trace scattered dolomite crystal, trace shale partings, tight, no visual shows.
2725 - 2730	**LIMESTONE**: light brown to gray, very fine grained to medium grained, minor cryptocrystalline, pelletoidal texture in part, minor fragmental, trace fine crystalline dolomite partings, no visible porosity, trace stylolite, trace Algae, trace pyrobitumen, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2730 - 2735	**LIMESTONE**: cream to brown, predominantly cryptocrystalline, fine grained in part, minor calcite sparite, trace scattered very fine dolomite crystals, trace black shale partings, tight, no visual shows.
2735 - 2740	**LIMESTONE**: cream to brown, cryptocrystalline to medium grained, trace pellets, commonly recrystallized, trace nodular pyrite, trace pyrobitumen, trace scattered very fine dolomite crystals, tight, no visual shows
2740 - 2745	**LIMESTONE**: white to light brown predominantly cryptocrystalline, trace pelletoidal, minor fine to medium grained, trace stylolite, trace disseminated pyrite, tight, no visual shows.
2745 - 2750	**LIMESTONE**: white to brown to gray, cryptocrystalline to fine grained, commonly recrystallized, trace very fine crystalline dolomite partings, trace black argillaceous partings, trace calcite crystal fracture fill, tight, no visual shows.
2750 - 2755	**LIMESTONE**: white to light brown, cryptocrystalline to fine grained, minor pelletoidal texture, recrystallized to calcite sparite in part, trace Algae, common scattered very fine to fine crystalline dolomite rhombs, rarely grading to calcareous dolomite, tight, no visual shows.
2755 - 2760	**LIMESTONE**: white to light brown, commonly fine grained, minor cryptocrystalline, pelletoidal texture in part, trace black argillaceous partings, trace scattered dolomite rhombs, trace calcite crystal fracture fill, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2760 - 2765	**LIMESTONE**: white to light brown, commonly fine grained, minor cryptocrystalline, pelletoidal texture in part, trace black argillaceous partings, trace scattered dolomite rhombs, trace calcite crystal fracture fill, tight, no visual shows. Abundant 0.5 to 1.0 mm Baracarb in this one.
2765 - 2770	**LIMESTONE**: tan to brown, cryptocrystalline to medium grained, trace pellets, trace Algae laminations, trace dark gray fine crystalline tight dolomite partings, tight, no visual shows. Sample is >50% Baracarb grains.
2770 - 2775	**LIMESTONE**: white to light brown, mottled, cryptocrystalline, blocky, trace pellets, trace stylolite, trace disseminated pyrite, trace pyrobitumen, trace tight dolomite partings as above, tight, no visual shows. Much less Baracarb.
2775 - 2780	**LIMESTONE**: white to light brown, banded in part, commonly cryptocrystalline, pelletoidal in part, fragmental in part, trace disseminated pyrite, trace calcite sparite, trace patchy very fine crystalline dolomite, trace fracture, tight to trace fracture porosity, no visual shows.
2780 - 2785	**LIMESTONE**: light gray to brown, cryptocrystalline to fine grained, trace pellets, trace Calcisphaera, trace disseminated pyrite, common light gray to black shale partings, tight, no visual shows.
2785 - 2790	**LIMESTONE**: light brown to gray, mottled in part, predominantly cryptocrystalline, minor fine grained, trace pellets, trace disseminated pyrite, trace pyrite bitumen, slightly dolomitized in part, trace fine crystalline dolomite partings, tight to trace intercrystalline porosity, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2790 - 2795	**LIMESTONE**: buff to gray, commonly brown, cryptocrystalline to fine grained, commonly pelletoidal, slightly argillaceous in part, trace carbonaceous partings trace disseminated pyrite, trace scattered dolomite grains, tight, no visual shows.
2795 - 2800	**LIMESTONE**: white to brown, mottled, cryptocrystalline to grained, common fine grained pelletoidal texture, trace fossil, trace disseminated pyrite, trace scattered dolomite grains, trace shale partings, tight, no visual shows. Common Baracarb in this sample and the prior one.
2800 - 2805	**LIMESTONE**: cream to brown, cryptocrystalline to medium grained, minor pelletoidal, trace disseminated pyrite, trace carbonaceous partings, tight, no visual shows.
2805 - 2810	**LIMESTONE**: white to brown to dark gray, cryptocrystalline to fine grained, minor pelletoidal texture, trace fossil, trace gray shale partings, trace carbonaceous partings, trace very fine crystalline dolomite partings, tight, no visual shows.
2810 - 2815	**LIMESTONE**: white to brown, predominantly fine to medium grained, minor cryptocrystalline, commonly pelletoidal, trace chalky, trace very fine crystalline dolomite partings, trace Algae, trace carbonaceous partings, tight to trace intercrystalline porosity in dolomite, no visual shows.
2815 - 2820	**LIMESTONE**: white to brown, cryptocrystalline to medium grained, minor chalky, trace pellets, trace fossil, common very fine to fine crystalline dolomite partings, tight to rarely 6% intercrystalline porosity in dolomite, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2820 - 2825	**LIMESTONE**: white to brown, minor dark gray, predominantly cryptocrystalline, minor fine to medium grained, trace pyrobitumen, minor very fine crystalline dolomite partings, scattered dolomite crystals, tight, no visual shows.
2825 - 2830	**LIMESTONE**: white to light brown, predominantly cryptocrystalline, chalky to medium grained in part, trace pelletoidal, slightly sandy in part, trace disseminated pyrite, trace Brachiopod, trace Algae, trace pyrobitumen, grading to graphite in part, trace scattered dolomite grains, tight, no visual shows.
2830 - 2835	**LIMESTONE**: white to light brown, predominantly cryptocrystalline, chalky to medium grained in part, trace pelletoidal, slightly sandy in part, trace very fine crystalline dolomite partings, trace scattered dolomite grains, tight, no visual shows. Common Baracarb particles.
2835 - 2840	**LIMESTONE**: white to light brown, predominantly cryptocrystalline, chalky to medium grained in part, trace pelletoidal, slightly sandy in part, trace very fine crystalline dolomite partings, trace scattered dolomite grains, trace pyritic gray shale partings, trace stylolite, tight, no visual shows. Common Baracarb particles, over half the bulk of the sample.
2840 - 2845	**LIMESTONE**: white to brown, chalky to cryptocrystalline, fine to medium grained in part, trace pellets, trace fossil (spicule?), trace scattered dolomite crystal, trace disseminated pyrite, trace light green dolomitic shale partings, tight, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2845 - 2850	**SHALE**: light green, grading to white in part, hard, blocky, subfissile, slightly dolomitic in part, clean to moderately silty, common very fine grained disseminated pyrite, trace limestone partings; **DOLOMITE**: white, platy, medium to very coarse crystalline, sparry, trace embedded quartz grains, trace embedded shale grains, trace nodular pyrite, tight to 6% intercrystalline porosity, trace mineral fluorescence, no cut; **LIMESTONE**:, as above.
2850 - 2855	**DOLOMITE**: white, clear in part, minor gray to brown, fine to very coarse grained, slightly argillaceous in part, predominantly very clean, common relic pelletoidal texture, trace quartz-pyrite-dolomite intergrowths, smoky quartz in part, trace mineral crystal, possible tourmaline, trace pyrobitumen on grain boundaries, tight to 3% visible intercrystalline porosity, possible fracture porosity, no visual shows.
2855 - 2865	**DOLOMITE**: white to light gray, fine crystalline to very coarse crystalline, minor sparry, relic pelletoidal texture in part, trace disseminated pyrite, slightly argillaceous, trace to minor euhedral quartz crystal, trace loose dolomite rhombs, trace olive green mineral crystals, trace pyrobitumen on grain boundaries, tight to rarely 6% intercrystalline porosity, trace vuggy or fracture porosity associated with quartz, no visual shows.
2865 - 2870	**DOLOMITE**: white, minor gray, medium to very coarse crystalline, relic granular texture in part, trace dolomite sparite, trace quartz crystal fragments, trace disseminated pyrite, tight, trace fracture porosity, no visual shows.

LITHOLOGY

Formation tops Sample interval (in meters)	SAMPLE DESCRIPTION
2870 - 2875	**DOLOMITE:** white, minor gray, predominantly medium to very coarse crystalline, minor fine crystalline, relic limestone texture in part, trace crystal quartz and dolomite sparite fracture fill, commonly with pyrite, tight to rarely 3% intercrystalline porosity, trace fracture porosity, no visual shows.
2875 - 2878	**DOLOMITE:** white, minor gray mottled, medium to very coarse crystalline, minor relic granular texture, trace dolomite sparite, trace disseminated pyrite, minor to common clear crystalline quartz, scattered prisms to 2 millimeters, tight to 3% intercrystalline porosity, trace fracture porosity, no visual shows.

GEOLOGICAL SUMMARY AND CONCLUSIONS

Anadarko Arrowhead I-75 was spudded on January 25, 2003 as a New Pool Wildcat. Primary target was the Devonian Slave Point dolomite. A Continental Laboratories mud logger was on line from 200 meters to a total depth of 2878 meters, with total gas detection and gas chromatography services. Cuttings samples were collected and described from 215 meters to total depth.

311 surface hole reached total depth of 655 meters on January 30, 2003. No zones of interest were expected or encountered during this phase of the drilling. Gel - chem mud was used, and no problems were experienced other than some hole deviation, which necessitated a trip to pick up a square motor at 488 meters.

Drilling on the 216 mm intermediate hole commenced on February 3, 2003, once surface casing was set and cemented. Invert mud with a mineral oil base was used for this hole section, and no hole stability problems were encountered. The lion's share of the intermediate hole was drilled in a single bitrun of 1856 meters with a United Diamond UD 513 bit which almost certainly would have made it all the way to intermediate casing point, had it not been pulled to change the bottom hole assembly. Other than a possible Chinkeh sand, at the base of the Banff, no zones of interest were expected or encountered in the intermediate hole. This hole section was drilled directionally, building to an angle of 15 degrees on an azimuth of 120 degrees.

On February 15, 2003 intermediate casing was landed at the programmed 5 meters into the Slave Point limestone at 2583.6 meters, although the Slave Point top did come in 53 meters lower than expected. There were indications of faulting and repeats over the Trout River - Fort Simpson interval. The casing was cemented, and the mud system changed over to a water-base calcium carbonate - polymer for the main hole section.

Drillout for the 156 mm main hole took place on February 18, 2003, and this hole section was drilled with a conventional BHA, using the polymer mud system described above. No significant Slave Point porosity was encountered, and a monotonous section of limestone and impure dolomite persisted from drillout to 2847 meters. No reservoir quality rock was observed through this 250 meter interval, although a fracture at 2639 meters yielded a substantial gas peak when first penetrated, as well as producing gas at every pump shutdown thereafter.

At 2847 meters a narrow stringer of hard green shale was encountered, succeeded by white crystalline dolomite. At this time, a decision had been made to finished. the well at 2850 meters, but a gas anomaly from 2849 meters, coupled with the presence of fractured dolomite in the 2850 sample provided reason enough to drill ahead to a final total depth of 2878 meters. Gas data and logs indicate an interval from 2850 to 2861 meters has some potential to be productive. Intercrystalline porosity in

GEOLOGICAL SUMMARY AND CONCLUSIONS

the dolomite ranges from nil to 3 percent, both visually and by logs, but fracturing, as evidenced by euhedral quartz crystals and on sparry dolomite crystals, occurs throughout this interval and beyond. If this zone tests as productive, it will probably be the fracturing that provides the necessary permeability. The gas background dropped off dramatically below 2860 meters, and the resistivity log indicates that the dolomite is water saturated below that point. Lithologically speaking, the dolomite is virtually uniform from 2850 to total depth. This dolomite has been identified as the Landry Formation by the play geologist.

A bridge plug is to be set from 2861 to 2862.5 meters to isolate the water leg in the Landry dolomite, and the zone is to be flow-tested.

Logs from this section can be found in the log section of the fiche

DIRECTIONAL SURVEY

gyrodata

2003 APR -9 A 10:37

325229

ANADARKO CANADA ENERGY INC.

ANADARKO ARROWHEAD I-75
I-75

gyrodata

A Gyrodata Directional Survey

for

ANADARKO CANADA ENERGY INC.

Well: **ANADARKO ARROWHEAD I-75**
Location: I-75

Job Number: **C0203GDM042**

Run Date: 02/21/2003 2:11:10 PM

Surveyor: Shawn Orne

Calculation Method: MINIMUM CURVATURE

Survey Latitude: **60.344230 °N** Longitude: **122.583260 °W**

Azimuth Correction: **None**

Gyro: Bearings are Relative to True North

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

gyrodata

A Gyrodata Directional Survey

ANADARKO CANADA ENERGY INC.
Well: ANADARKO ARROWHEAD I-75
Location: I-75
Job Number: C0203GDM042

MEASURED DEPTH meters	INCL deg.	AZIMUTH deg.	VERTICAL DEPTH meters	CLOSURE DIST. meters	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES meters		DOGLEG SEVERITY deg/30m
0.0	0.00	0.00	0.0	0.0	0.0	0.00 N	0.00 E	0.00
ALL SURVEY DEPTHS ARE REFERNCED TO WILSON 5E R.K.B. OF 6.96 METERS.								
35.6	0.39	150.86	35.6	0.1	150.9	0.11 S	0.06 E	0.33
64.4	0.28	150.35	64.4	0.3	150.7	0.25 S	0.14 E	0.11
93.2	0.40	164.94	93.2	0.5	153.7	0.41 S	0.20 E	0.15
121.2	0.12	318.33	121.2	0.5	156.7	0.48 S	0.21 E	0.54
149.0	0.34	11.72	149.0	0.4	151.7	0.38 S	0.21 E	0.30
176.6	0.73	29.03	176.6	0.3	115.6	0.15 S	0.31 E	0.46
204.3	0.86	35.47	204.3	0.5	71.0	0.18 N	0.51 E	0.17
232.9	0.88	31.20	232.9	0.9	54.3	0.54 N	0.75 E	0.07
261.4	0.73	29.53	261.4	1.3	47.2	0.89 N	0.96 E	0.16
281.8	0.97	32.57	281.8	1.6	44.2	1.14 N	1.11 E	0.35
318.3	0.91	30.21	318.3	2.2	40.7	1.65 N	1.42 E	0.06
346.8	1.00	32.86	346.8	2.7	39.1	2.06 N	1.67 E	0.11
375.2	1.12	34.25	375.2	3.2	38.2	2.50 N	1.96 E	0.14
403.4	1.26	33.49	403.4	3.8	37.5	2.98 N	2.29 E	0.15
432.1	1.56	37.45	432.0	4.5	37.2	3.56 N	2.70 E	0.33
460.4	1.52	35.39	460.4	5.2	37.1	4.17 N	3.16 E	0.07
488.9	1.58	24.81	488.8	6.0	36.2	4.83 N	3.54 E	0.31
517.3	1.87	21.35	517.2	6.8	34.6	5.62 N	3.87 E	0.32
545.8	2.11	24.41	545.7	7.8	33.1	6.53 N	4.26 E	0.27
574.3	2.52	24.36	574.2	8.9	32.0	7.58 N	4.73 E	0.43
602.8	2.93	26.78	602.7	10.3	31.1	8.80 N	5.32 E	0.45
631.5	3.18	24.19	631.3	11.8	30.4	10.18 N	5.97 E	0.30
660.0	2.20	15.37	659.7	13.1	29.4	11.42 N	6.44 E	1.11
688.0	2.02	1.76	687.8	14.1	28.0	12.44 N	6.60 E	0.57
716.6	1.41	353.13	716.4	14.8	26.3	13.29 N	6.57 E	0.69
745.1	1.26	345.15	744.8	15.4	24.8	13.94 N	6.45 E	0.25
773.6	1.60	328.06	773.3	15.8	22.9	14.58 N	6.16 E	0.57
802.1	2.10	310.61	801.9	16.2	20.0	15.26 N	5.55 E	0.78
830.3	2.51	301.14	830.0	16.6	16.2	15.91 N	4.64 E	0.60
858.8	2.96	294.80	858.4	16.9	11.7	16.54 N	3.43 E	0.57
887.4	3.35	290.31	887.0	17.3	6.6	17.14 N	1.98 E	0.48
915.9	3.44	292.95	915.4	17.8	1.3	17.76 N	0.41 E	0.19
944.4	3.63	293.96	943.9	18.5	356.3	18.46 N	1.20 W	0.21
972.9	3.03	319.63	972.3	19.6	352.6	19.40 N	2.51 W	1.67
1001.3	2.85	335.19	1000.7	20.9	350.9	20.62 N	3.29 W	0.86
1029.6	2.41	352.62	1029.0	22.2	350.5	21.85 N	3.66 W	0.96
1058.2	2.74	13.69	1057.6	23.4	351.2	23.11 N	3.58 W	1.04
1086.6	3.05	18.07	1086.0	24.7	352.6	24.48 N	3.19 W	0.40
1115.2	3.28	42.07	1114.5	25.9	354.7	25.81 N	2.40 W	1.40
1143.5	3.85	54.43	1142.7	27.0	357.7	26.97 N	1.09 W	1.01

ANADARKO CANADA ENERGY INC.
Well: ANADARKO ARROWHEAD I-75
Location: I-75
Job Number: C0203GDM042

MEASURED DEPTH meters	I N C L deg.	AZIMUTH deg.	VERTICAL DEPTH meters	CLOSURE DIST. meters	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES meters		DOGLEG SEVERITY deg/30m
1172.0	3.75	62.09	1171.2	28.0	1.1	27.96 N	0.52 E	0.54
1200.4	2.82	82.40	1199.6	28.6	4.1	28.49 N	2.03 E	1.56
1228.6	4.64	126.65	1227.7	28.1	7.4	27.90 N	3.63 E	3.49
1257.1	6.24	123.11	1256.0	27.0	12.5	26.36 N	5.86 E	1.72
1285.6	7.16	121.87	1284.3	26.1	19.4	24.58 N	8.66 E	0.98
1313.9	9.85	111.64	1312.3	25.9	28.6	22.76 N	12.41 E	3.26
1342.1	13.21	112.44	1340.0	27.1	40.5	20.63 N	17.64 E	3.57
1370.6	14.70	114.71	1367.6	29.9	53.2	17.88 N	23.93 E	1.68
1399.1	15.00	114.77	1395.2	34.0	64.1	14.82 N	30.56 E	0.31
1427.6	16.57	116.61	1422.6	39.3	73.0	11.46 N	37.54 E	1.73
1456.1	16.38	117.44	1449.9	45.4	80.1	7.78 N	44.75 E	0.31
1484.6	16.12	115.01	1477.3	52.1	85.3	4.26 N	51.89 E	0.77
1512.9	15.92	121.53	1504.5	58.8	89.4	0.57 N	58.77 E	1.92
1541.4	15.33	119.11	1531.9	65.5	92.9	3.31 S	65.39 E	0.92
1569.9	16.48	123.51	1559.3	72.4	95.8	7.37 S	72.04 E	1.75
1598.3	16.58	122.12	1586.5	79.7	98.5	11.74 S	78.83 E	0.43
1626.7	17.18	121.91	1613.8	87.3	100.6	16.12 S	85.84 E	0.64
1655.1	16.99	119.86	1640.9	95.2	102.4	20.40 S	92.99 E	0.67
1683.5	17.06	121.95	1668.0	103.1	103.8	24.67 S	100.13 E	0.65
1711.9	16.14	119.31	1695.3	110.9	105.1	28.81 S	107.11 E	1.25
1740.4	15.49	114.48	1722.7	118.5	105.8	32.33 S	114.02 E	1.55
1768.9	15.27	118.24	1750.2	126.0	106.5	35.69 S	120.80 E	1.07
1797.4	16.11	119.19	1777.6	133.5	107.2	39.39 S	127.56 E	0.93
1825.8	15.33	118.19	1804.9	141.0	107.8	43.08 S	134.30 E	0.87
1854.3	14.97	117.68	1832.5	148.4	108.3	46.57 S	140.89 E	0.40
1882.8	15.58	119.13	1860.0	155.8	108.8	50.14 S	147.48 E	0.76
1911.1	15.44	117.66	1887.2	163.2	109.2	53.74 S	154.14 E	0.44
1939.7	15.33	117.83	1914.8	170.7	109.6	57.27 S	160.85 E	0.12
1968.1	15.23	118.17	1942.2	178.2	110.0	60.79 S	167.47 E	0.14
1996.5	15.63	119.26	1969.6	185.6	110.3	64.42 S	174.09 E	0.52
2024.9	15.41	116.04	1997.0	193.2	110.6	67.95 S	180.82 E	0.94
2053.3	16.56	119.03	2024.3	200.9	110.9	71.57 S	187.75 E	1.50
2081.8	15.43	116.79	2051.6	208.7	111.1	75.24 S	194.67 E	1.35
2110.4	15.48	121.00	2079.2	216.3	111.4	78.92 S	201.34 E	1.18
2138.8	14.52	118.42	2106.6	223.5	111.7	82.57 S	207.73 E	1.24
2167.4	14.93	114.25	2134.3	230.8	111.8	85.79 S	214.24 E	1.19
2195.9	14.68	115.76	2161.8	238.0	111.9	88.87 S	220.84 E	0.49
2234.0	14.43	118.23	2198.7	247.6	112.1	93.21 S	229.37 E	0.53
2262.6	14.11	115.87	2226.4	254.6	112.3	96.41 S	235.64 E	0.70
2291.1	15.61	116.93	2254.0	261.9	112.4	99.67 S	242.19 E	1.61

gyrodata

ANADARKO CANADA ENERGY INC.
Well: ANADARKO ARROWHEAD I-75
Location: I-75
Job Number: C0203GDM042

MEASURED DEPTH meters	I N C L deg.	AZIMUTH deg.	VERTICAL DEPTH meters	CLOSURE DIST. meters	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES meters		DOGLEG SEVERITY deg/30m
2319.4	14.51	116.54	2281.3	269.2	112.5	102.98 S	248.76 E	1.17
2348.1	14.55	115.93	2309.1	276.4	112.6	106.16 S	255.22 E	0.16
2376.6	14.59	119.10	2336.7	283.6	112.7	109.47 S	261.57 E	0.84
2405.2	13.59	117.66	2364.4	290.5	112.8	112.79 S	267.70 E	1.11
2433.7	15.16	117.90	2392.0	297.5	113.0	116.08 S	273.95 E	1.66
2462.3	15.10	120.29	2419.6	305.0	113.1	119.71 S	280.48 E	0.66
2490.9	14.25	120.14	2447.3	312.2	113.3	123.36 S	286.74 E	0.89
2519.5	13.22	119.01	2475.1	318.9	113.4	126.71 S	292.64 E	1.12
2548.1	11.02	119.80	2503.0	324.9	113.5	129.66 S	297.87 E	2.31
2576.6	9.55	118.27	2531.1	329.9	113.6	132.13 S	302.32 E	1.58

Final Station Closure: Distance: 329.93 m Az: 113.61 °

WIRELINE TESTING

N.E.B. COPY

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COPY

Company: ANADARKO CANADA CORPORATION
Well name: ANADARKO ARROWHEAD
Location: I-75
Date of test: 04/07/03 TO 06/13/03
Test by RAPID WIRELINE SERVICES LTD.
Interp. by P.D.Q. Services Ltd.

Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / SLAVE POINT
Type of test: SINGLE POINT
Prod. Int KB: 2538.27 to 2822.19
Elev. (CF) 510.8 (KB) 517.9
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: I-75
Status: GAS
Date of test: 04/07/03 TO 06/13/03
Prod. through: 88.9MM TUBING
Mid-point prod.int. KB: 2680.23
Datum depth of well KB:

Tubing pres: INITIAL: N/A FIN: 19054
Shut in time: 03/20/03 17:30 HRS
Temperature at run depth: 139.013
Deviated well: Y

Casing pres: INITIAL: N/A FIN: 437
Duration of Shut in: 1132.3500 HRS
On/off btm: 04/07/03 / 06/10/03
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9494
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/17/02
Reading Interval: 30 SECONDS
Gauge started: 04/07/03 19:26
Gauge stopped: 06/10/03 11:40
Run depth (KB): 2513

BOTTOM RECORDER

Element serial#: 9495
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 12/17/02
Reading Interval: 30 SECONDS
Gauge started: 04/07/03 19:26
Gauge stopped: 06/10/03 11:40
Run depth (KB): 2513.5

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
	04/07/2003	20:01:00 ON BOTTOM			
4/7/2003 20:01:00	0.0000	0.0000	132.562	23967.29	
4/8/2003 02:01:00	6.0000	6.0000	138.281	24012.66	
4/8/2003 08:01:00	12.0000	12.0000	138.308	24014.21	
4/8/2003 14:01:00	18.0000	18.0000	138.325	24016.14	
4/8/2003 20:01:00	24.0000	24.0000	138.338	24018.89	
4/9/2003 02:01:00	30.0000	30.0000	138.349	24021.59	
4/9/2003 08:01:00	36.0000	36.0000	138.357	24024.07	
4/9/2003 14:01:00	42.0000	42.0000	138.371	24027.23	
4/9/2003 20:01:00	48.0000	48.0000	138.380	24030.07	
4/10/2003 02:01:00	54.0000	54.0000	138.393	24033.15	
4/10/2003 08:01:00	60.0000	60.0000	138.400	24035.86	
4/10/2003 14:01:00	66.0000	66.0000	138.409	24038.66	
4/10/2003 20:01:00	72.0000	72.0000	138.419	24041.48	
4/11/2003 02:01:00	78.0000	78.0000	138.432	24044.43	
4/11/2003 08:01:00	84.0000	84.0000	138.433	24047.01	
4/11/2003 14:01:00	90.0000	90.0000	138.443	24049.85	
4/11/2003 20:01:00	96.0000	96.0000	138.456	24052.78	
4/12/2003 02:01:00	102.0000	102.0000	138.463	24055.04	
4/12/2003 08:01:00	108.0000	108.0000	138.471	24057.86	
4/12/2003 14:01:00	114.0000	114.0000	138.483	24060.61	

Company: ANADARKO CANADA CORPORATION
Date of test: 04/07/03 TO 06/13/03
Element serial#: 9495

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513.5

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
4/12/2003 20:01:00	120.0000	120.0000	138.485	24063.12	
4/13/2003 02:01:00	126.0000	126.0000	138.498	24065.99	
4/13/2003 08:01:00	132.0000	132.0000	138.500	24068.26	
4/13/2003 14:01:00	138.0000	138.0000	138.516	24071.28	
4/13/2003 20:01:00	144.0000	144.0000	138.524	24073.83	
4/14/2003 02:01:00	150.0000	150.0000	138.532	24076.46	
4/14/2003 08:01:00	156.0000	156.0000	138.534	24079.21	
4/14/2003 14:01:00	162.0000	162.0000	138.540	24081.94	
4/14/2003 20:01:00	168.0000	168.0000	138.552	24084.81	
4/15/2003 02:01:00	174.0000	174.0000	138.558	24087.39	
4/15/2003 08:01:00	180.0000	180.0000	138.563	24090.00	
4/15/2003 14:01:00	186.0000	186.0000	138.570	24092.76	
4/15/2003 20:01:00	192.0000	192.0000	138.577	24095.34	
4/16/2003 02:01:00	198.0000	198.0000	138.581	24097.67	
4/16/2003 08:01:00	204.0000	204.0000	138.591	24100.72	
4/16/2003 14:01:00	210.0000	210.0000	138.600	24103.60	
4/16/2003 20:01:00	216.0000	216.0000	138.600	24105.95	
4/17/2003 02:01:00	222.0000	222.0000	138.608	24108.49	
4/17/2003 08:01:00	228.0000	228.0000	138.614	24111.19	
4/17/2003 14:01:00	234.0000	234.0000	138.619	24113.73	
4/17/2003 20:01:00	240.0000	240.0000	138.630	24116.34	
4/18/2003 02:01:00	246.0000	246.0000	138.635	24118.89	
4/18/2003 08:01:00	252.0000	252.0000	138.645	24121.83	
4/18/2003 14:01:00	258.0000	258.0000	138.652	24124.28	
4/18/2003 20:01:00	264.0000	264.0000	138.657	24126.67	
4/19/2003 02:01:00	270.0000	270.0000	138.655	24128.87	
4/19/2003 08:01:00	276.0000	276.0000	138.669	24131.57	
4/19/2003 14:01:00	282.0000	282.0000	138.672	24133.83	
4/19/2003 20:01:00	288.0000	288.0000	138.678	24136.15	
4/20/2003 02:01:00	294.0000	294.0000	138.684	24138.79	
4/20/2003 08:01:00	300.0000	300.0000	138.692	24141.49	
4/20/2003 14:01:00	306.0000	306.0000	138.692	24143.54	
4/20/2003 20:01:00	312.0000	312.0000	138.699	24145.98	
4/21/2003 02:01:00	318.0000	318.0000	138.707	24148.68	
4/21/2003 08:01:00	324.0000	324.0000	138.711	24151.01	
4/21/2003 14:01:00	330.0000	330.0000	138.718	24153.22	
4/21/2003 20:01:00	336.0000	336.0000	138.749	24165.38	
4/22/2003 02:01:00	342.0000	342.0000	138.748	24167.27	
4/22/2003 08:01:00	348.0000	348.0000	138.756	24169.58	
4/22/2003 14:01:00	354.0000	354.0000	138.753	24171.57	
4/22/2003 20:01:00	360.0000	360.0000	138.768	24174.49	
4/23/2003 02:01:00	366.0000	366.0000	138.770	24176.60	
4/23/2003 08:01:00	372.0000	372.0000	138.768	24178.84	
4/23/2003 14:01:00	378.0000	378.0000	138.777	24180.79	
4/23/2003 20:01:00	384.0000	384.0000	138.782	24182.80	
4/24/2003 02:01:00	390.0000	390.0000	138.789	24184.97	
4/24/2003 08:01:00	396.0000	396.0000	138.789	24186.60	

Company: ANADARKO CANADA CORPORATION
Date of test: 04/07/03 TO 06/13/03
Element serial#: 9495

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513.5

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
4/24/2003 14:01:00	402.0000	402.0000	138.792	24188.22	
4/24/2003 20:01:00	408.0000	408.0000	138.797	24190.62	
4/25/2003 02:01:00	414.0000	414.0000	138.808	24192.55	
4/25/2003 08:01:00	420.0000	420.0000	138.812	24194.91	
4/25/2003 14:01:00	426.0000	426.0000	138.815	24196.79	
4/25/2003 20:01:00	432.0000	432.0000	138.814	24198.45	
4/26/2003 02:01:00	438.0000	438.0000	138.821	24200.71	
4/26/2003 08:01:00	444.0000	444.0000	138.825	24202.95	
4/26/2003 14:01:00	450.0000	450.0000	138.826	24204.99	
4/26/2003 20:01:00	456.0000	456.0000	138.836	24207.33	
4/27/2003 02:01:00	462.0000	462.0000	138.839	24209.34	
4/27/2003 08:01:00	468.0000	468.0000	138.839	24211.17	
4/27/2003 14:01:00	474.0000	474.0000	138.845	24213.45	
4/27/2003 20:01:00	480.0000	480.0000	138.847	24215.27	
4/28/2003 02:01:00	486.0000	486.0000	138.855	24217.57	
4/28/2003 08:01:00	492.0000	492.0000	138.865	24219.85	
4/28/2003 14:01:00	498.0000	498.0000	138.872	24222.12	
4/28/2003 20:01:00	504.0000	504.0000	138.876	24224.22	
4/29/2003 02:01:00	510.0000	510.0000	138.879	24226.19	
4/29/2003 08:01:00	516.0000	516.0000	138.885	24228.43	
4/29/2003 14:01:00	522.0000	522.0000	138.886	24230.30	
4/29/2003 20:01:00	528.0000	528.0000	138.884	24232.30	
4/30/2003 02:01:00	534.0000	534.0000	138.896	24234.56	
4/30/2003 08:01:00	540.0000	540.0000	138.896	24236.55	
4/30/2003 14:01:00	546.0000	546.0000	138.901	24238.57	
4/30/2003 20:01:00	552.0000	552.0000	138.900	24240.42	
5/1/2003 02:01:00	558.0000	558.0000	138.909	24242.73	
5/1/2003 08:01:00	564.0000	564.0000	138.915	24244.86	
5/1/2003 14:01:00	570.0000	570.0000	138.921	24247.02	
5/1/2003 20:01:00	576.0000	576.0000	138.919	24248.81	
5/2/2003 02:01:00	582.0000	582.0000	138.920	24250.64	
5/2/2003 08:01:00	588.0000	588.0000	138.930	24252.78	
5/2/2003 14:01:00	594.0000	594.0000	138.929	24254.56	
5/2/2003 20:01:00	600.0000	600.0000	138.932	24256.50	
5/3/2003 02:01:00	606.0000	606.0000	138.936	24258.48	
5/3/2003 08:01:00	612.0000	612.0000	138.945	24260.76	
5/3/2003 14:01:00	618.0000	618.0000	138.946	24262.65	
5/3/2003 20:01:00	624.0000	624.0000	138.952	24264.50	
5/4/2003 02:01:00	630.0000	630.0000	138.955	24266.58	
5/4/2003 08:01:00	636.0000	636.0000	138.956	24268.34	
5/4/2003 14:01:00	642.0000	642.0000	138.968	24270.68	
5/4/2003 20:01:00	648.0000	648.0000	138.968	24272.20	
5/5/2003 02:01:00	654.0000	654.0000	138.972	24274.28	
5/5/2003 08:01:00	660.0000	660.0000	138.974	24276.24	
5/5/2003 14:01:00	666.0000	666.0000	138.982	24278.16	
5/5/2003 20:01:00	672.0000	672.0000	138.986	24280.26	
5/6/2003 02:01:00	678.0000	678.0000	138.990	24282.05	

Company: ANADARKO CANADA CORPORATION
Date of test: 04/07/03 TO 06/13/03
Element serial#: 9495

Well name: ANADARKO ARROWHEAD
Location: I-75
Run Depth (KB): 2513.5

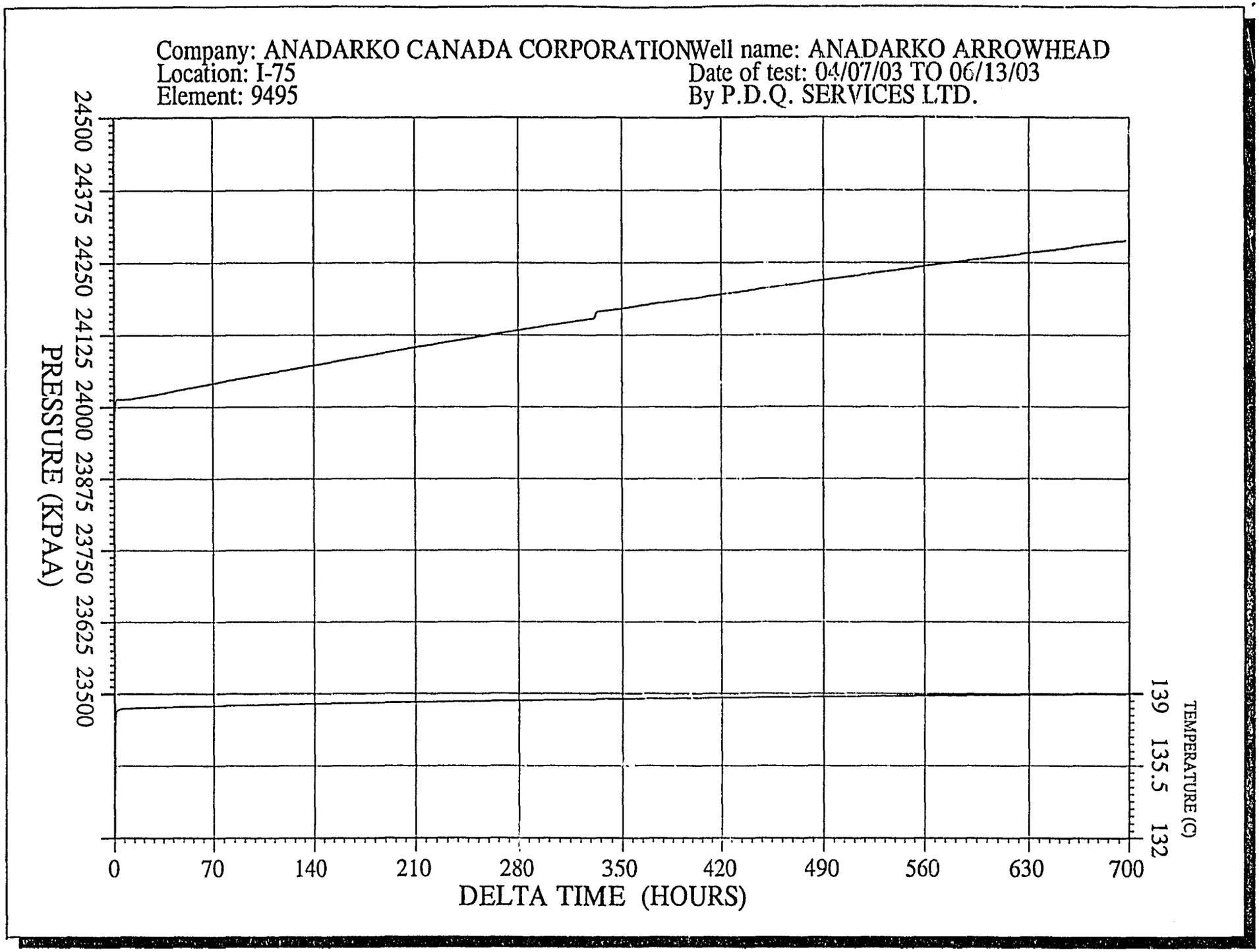
BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
5/6/2003 08:01:00	684.0000	684.0000	138.991	24283.88	
5/6/2003 14:01:00	690.0000	690.0000	139.001	24286.35	
5/6/2003 20:01:00	696.0000	696.0000	138.999	24287.56	
5/6/2003 21:51:00	697.8333	697.8333	139.010	24288.73	
	05/06/2003 21:51:00 GAUGE STOPPED TAKING SAMPLES				
5/6/2003 21:51:00	697.8333	0.0000	139.010	24288.73	

Remarks:
HORIZONTAL WELL - OPEN HOLE COMPLETION.
COULD NOT RETRIEVE DATA FROM TOP GAUGE (GAUGE LEAKED DURING TEST)
BOTTOM GAUGE STOPPED TAKING SAMPLES 05/06/03 @ 21:51 HRS. - DUE TO BATTERY MALFUNCTION.

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.


Company: ANADARKO CANADA CORPORATION
Well name: ANADARKO ARROWHEAD
Location: I-75
Date of test: 04/07/03 TO 06/13/03
Element: 9495
By P.D.Q. SERVICES LTD.
PRESSURE (KPAA)
24500 24375 24250 24125 24000 23875 23750 23625 23500
TEMPERATURE (C)
139 135.5 132
0 70 140 210 280 350 420 490 560 630 700
DELTA TIME (HOURS)

Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / SLAVE POINT
Type of test: STATIC GRADIENT
Prod. Int KB: 2538.27 to 2822.19
Elev. (CF) 510.8 (KB) 517.9
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: I-75
Status: GAS
Date of test: 06/13/03
Prod. through: 88.9MM TUBING
Mid-point prod.int. KB: 2680.23
Datum depth of well KB:

Tubing pres: 19026
Shut in time: 03/20/03 17:30 HRS
Temperature at run depth: 138.895
Deviated well: Y

Casing pres: 492
Duration of Shut in: 2032.1833 HRS
On bottom/off bottom: 09:31 / 09:41
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9804
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 06/11/03

Gauge started: 06/13/03 08:25
Gauge stopped: 06/13/03 10:04
Run depth (KB): 2513
Grad. at run depth: 1.696
Pres. at run depth: 24388.3
Pres. at mid point perf.: 24672.0
Pres. at datum depth:

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
6.6	13.76	18992.5	0.000
606.6	28.44	20591.9	2.666
1206.0	64.14	21955.4	2.275
1786.9	95.76	23102.8	1.975
1979.9	106.19	23462.7	1.865
2172.9	117.75	23806.3	1.780
2366.6	129.30	24140.4	1.725
2463.4	135.05	24304.2	1.692
2513.0	138.77	24388.3	1.696

Fluid level at N/A
Final pressure on bottom:24388.3 KPAA

BOTTOM RECORDER

Element serial#: 9805
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 06/11/03

Gauge started: 06/13/03 08:25
Gauge stopped: 06/13/03 10:04
Run depth (KB): 2513.5
Grad. at run depth: 1.716
Pres. at run depth: 24394.0
Pres. at mid point perf.: 24680.2
Pres. at datum depth:

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
7.1	11.09	18997.8	0.000
607.1	28.57	20590.3	2.654
1206.5	64.28	21952.9	2.273
1787.4	95.92	23102.3	1.979
1980.4	106.37	23461.7	1.862
2173.4	117.93	23806.1	1.785
2367.1	129.54	24143.1	1.739
2463.9	135.24	24308.9	1.713
2513.5	138.90	24394.0	1.716

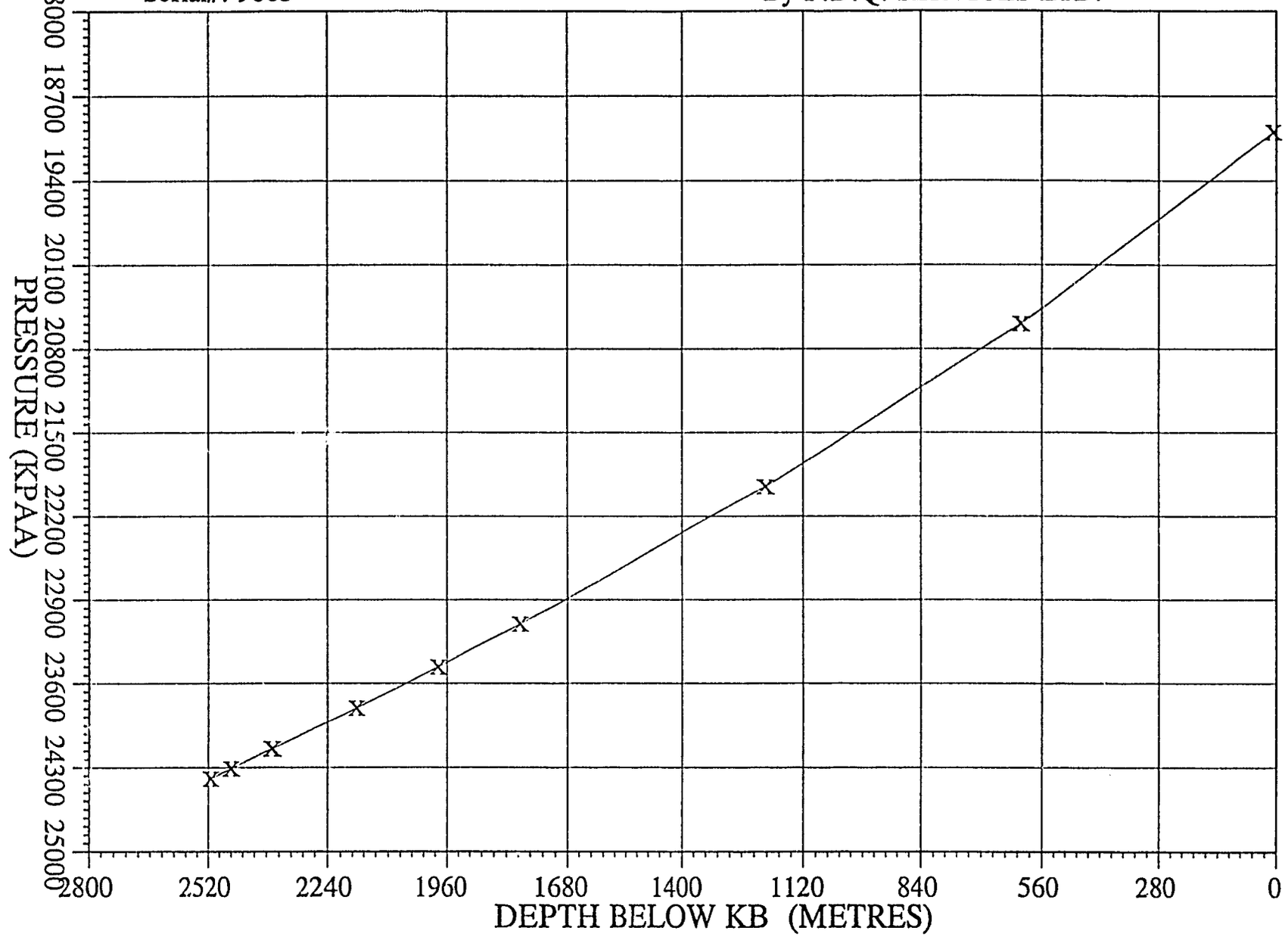
Fluid level at N/A
Final pressure on bottom:24394.0 KPAA

Remarks:
REVERSE GRADIENT. HORIZONTAL WELL - OPEN HOLE COMPLETION.

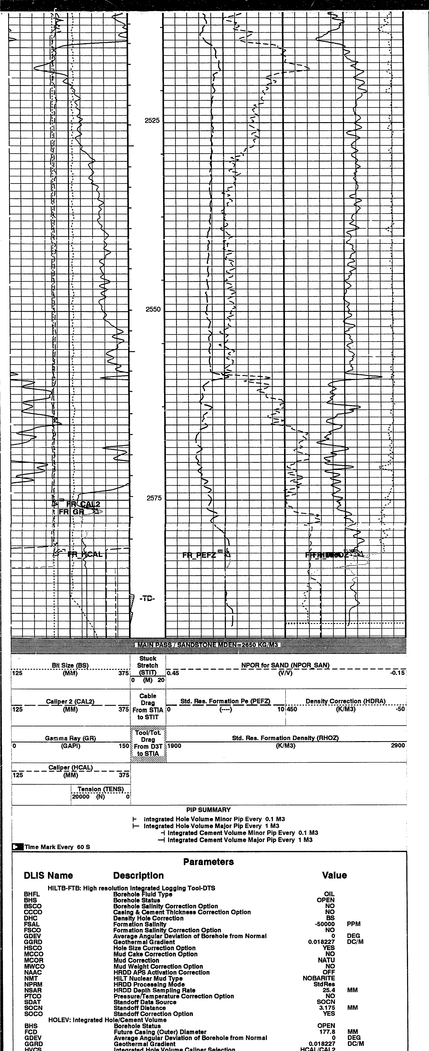
Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

Company: ANADARKO CANADA CORPORATION
Well name: ANADARKO ARROWHEAD
Location: I-75
Date of test: 06/13/03
Pressure at run depth 24394.
Fluid level N/A
Serial#: 9805
By P.D.Q. SERVICES LTD.



GRADIENT TEST



MAIN PASS 7" SANDSTONE MUD FROM KCL/S

Bit Size (BS)		Stuck Stretch		NPOR for SAND (NPOR_SAN)	
125	375	(STITT)	0.45	(V/V)	-0.15
		0	20		

Caliper 2 (CAL2)		Cable		Std. Res. Formation Pe (PEF2)		Density Correction (HDRA)	
(MM)		From STTA to STIT		(---)		(K/M3)	
125	375	0		0	10	/460	-50

Gamma Ray (GR)		Tool/Tot. Dreg	Std. Res. Formation Density (RHOZ)	
(GAPI)		From D3T to STIA	(K/M3)	
0	150	1900		2900

Caliper (HCAL)	
(MM)	
125	375

Tension (TEND)	
(LBF)	(N)
35000	0

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
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
BHFL	Borehole Fluid Type	OIL
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	NO
CDCO	Casing & Cement Thickness Correction Option	NO
DHCO	Density Hole Correction	NO
FNAC	Formation Salinity	-5000 PPM
FSCO	Formation Salinity Correction Option	NO
GDBV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
HSCO	Hole Size Correction Option	YES
MCCO	Mud Cake Correction Option	NO
MCOR	Mud Correction	NATU
MWCO	Mud Weight Correction Option	NO
MWGT	Mud Weight Source	DEP
MMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Depth Sampling Rate	StdRes
NSAR	HRDD Depth Sampling Rate	25.4 MM
PTCO	Pressure/Temperature Correction Option	NO
SDAT	Standoff Data Source	SONIC
SOCO	Standoff Data Source	3.175 MM
SOCO	Standoff Correction Option	YES
	HOLEV: Integrated Hole Volume	
BHS	Borehole Status	OPEN
FCD	Future Casing (Outer) Diameter	177.8 MM
GDEV	Average Angular Deviation of Borehole from Normal	DEG
GGRD	Geothermal Gradient	0.018227 DC/M
HVCB	Integrated Hole Volume Caliper Selection	HCAL/CAL2
	STI: Stuck Tool Indicator	
LBFS	Trigger for MAXIS First Reading Label	TDL
STKT	STT Stuck Threshold	1.524 M
TDD	Total Depth - Driller	2588.00 M
TDL	Total Depth - Logger	2588.00 M
	System and Miscellaneous	
BS	Bit Size	216.000 MM
BSAL	Borehole Salinity	-50000.00 PPM
CSIZ	Current Casing Size	114.300 MM
CWEI	Casing Weight	59.50 KG/M
DFD	Drilling Fluid Density	925.00 K/M3
DORL	Depth Offset for Repeat Analysis	0.0 M
MRT	Mud Sample Temperature	-50000.00 DEGC
MSD	Density of Mud Filtrate Sample	-50000.000 OHMM
TD	Total Depth	2589 M

Format: PORO_S Vertical Scale: 1/240 Graphics File Created: 13-Feb-2003 23:55

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_008LUP	FN:13	PRODUCER	13-Feb-2003 23:55	
REDUCED	AIT_TLD_MCFL_CNL_008LUP	FN:14	PRODUCER	13-Feb-2003 23:55	

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTB Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase							
Master: Calibration out of date 13-Nov-2002 16:55	Before: 13-Feb-2003 22:28						
Thru Cal Magnitude - 0	0	0.6372	0.6348	N/A	N/A	N/A	V
Thru Cal Magnitude - 1	0	1.286	1.301	N/A	N/A	N/A	V
Thru Cal Magnitude - 2	0	0.6378	0.6458	N/A	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.7212	0.7299	N/A	N/A	N/A	V
Thru Cal Magnitude - 4	0	1.349	1.366	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.967	1.992	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.351	1.350	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.450	1.452	N/A	N/A	N/A	V
Phase - 0	0	59.11	61.79	N/A	N/A	N/A	DEG
Phase - 1	0	57.99	60.67	N/A	N/A	N/A	DEG
Phase - 2	0	54.39	57.07	N/A	N/A	N/A	DEG
Phase - 3	0	53.82	56.29	N/A	N/A	N/A	DEG
Phase - 4	0	47.41	50.11	N/A	N/A	N/A	DEG
Phase - 5	0	42.72	45.44	N/A	N/A	N/A	DEG
Phase - 6	0	45.88	48.40	N/A	N/A	N/A	DEG
Phase - 7	0	46.04	48.44	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Auxiliary							
Master: Calibration out of date 13-Nov-2002 16:55	Before: 13-Feb-2003 22:28						
Array Induction SPA Plus	990.5	993.2	992.5	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.1125	0.09168	N/A	N/A	N/A	MV
Array Induction Temperature Pt	0.9150	0.9200	0.9180	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.0001180	0.00000347	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Test Loop Gain Correction							
Master: Calibration out of date 13-Nov-2002 16:55							
Test Loop Gain Magnitude - 0	0	1.000	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.018	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.022	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	1.002	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	0.9931	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.004	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.004	N/A	N/A	N/A	N/A	V
Phase - 0	0	0.5862	N/A	N/A	N/A	N/A	DEG
Phase - 1	0	0.6390	N/A	N/A	N/A	N/A	DEG
Phase - 2	0	0.01933	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	0.06235	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	0.03359	N/A	N/A	N/A	N/A	DEG
Phase - 5	0	-0.04473	N/A	N/A	N/A	N/A	DEG
Phase - 6	0	0.3311	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	-0.1271	N/A	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Borehole Error Correction							
Master: Calibration out of date 13-Nov-2002 16:55							
R Sonde Error Correction - 0	0	-111.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	171.8	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	102.8	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	59.85	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	25.91	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	11.49	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	0.4282	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-0.1408	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	-194.5	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	-171.5	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	48.45	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	2.917	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	-7.579	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	-2.111	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	1.768	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	-0.909	N/A	N/A	N/A	N/A	MM/M
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Gain Correction							
Master: Calibration out of date 13-Nov-2002 16:55							
Coarse - Mag. Real, Imag. - 0	0	1.087	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag. - 1	0	1.087	N/A	N/A	N/A	N/A	
Coarse - Mag. Real, Imag. - 2	0	1.087	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag. - 0	0	1.088	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag. - 1	0	1.088	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag. - 2	0	1.088	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Summary							
Before: 3-Feb-2003 10:11							
BS Window Ratio	0.7204	N/A	0.7190	N/A	N/A	N/A	
BS Window Sum	9968	N/A	9952	N/A	N/A	N/A	CPS
SS Window Ratio	0.4681	N/A	0.4677	N/A	N/A	N/A	
SS Window Sum	10070	N/A	10060	N/A	N/A	N/A	CPS
LS Window Ratio	0.2907	N/A	0.2875	N/A	N/A	N/A	
LS Window Sum	1299	N/A	1284	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations							
Before: 3-Feb-2003 10:11							
BS PM High Voltage (Comm.and)	1371	N/A	1385	N/A	N/A	N/A	V
SS PM High Voltage (Comm.and)	1475	N/A	1464	N/A	N/A	N/A	V
LS PM High Voltage (Comm.and)	1624	N/A	1612	N/A	N/A	N/A	V
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration							
Before: 3-Feb-2003 10:11							
BS Crystal Resolution	10.27	N/A	10.39	N/A	N/A	N/A	%
SS Crystal Resolution	9.733	N/A	9.527	N/A	N/A	N/A	%
LS Crystal Resolution	8.999	N/A	9.118	N/A	N/A	N/A	%
High resolution Integrated Logging Tool-DTS Wellsite Calibration - MCFL Calibration							
Before: 3-Feb-2003 10:12							
Rxo 50 Resistivity	3675	N/A	3696	N/A	N/A	N/A	OHMM
Rxo 81 Resistivity	3630	N/A	3653	N/A	N/A	N/A	OHMM
Rxo 92 Resistivity	3600	N/A	3655	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - HILT Caliper Calibration							
Before: 3-Feb-2003 10:03							
HILT Caliper Zero Measurement	203.2	N/A	217.7	N/A	N/A	N/A	MM
HILT Caliper Pad Measurement	304.8	N/A	324.7	N/A	N/A	N/A	MM
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Calibration							
Before: 3-Feb-2003 10:03							
Gamma Ray Background	30.00	N/A	47.06	N/A	N/A	N/A	GAPI
Gamma Ray (Trig. Stug)	157.5	N/A	157.1	N/A	N/A	N/A	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement							
Master: 14-Dec-2002 12:27 Before: 3-Feb-2003 10:04							
CNTC Background	27.57	27.57	27.14	N/A	N/A	4.181	CPS
CFTC Background	31.36	31.36	29.25	N/A	N/A	4.704	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration							
Before: 13-Feb-2003 22:27							
Z-Axis Acceleration	9.810	N/A	9.807	N/A	N/A	N/A	M/S2
High resolution Integrated Logging Tool-DTS Master Calibration - Inversion results							
Master: 16-Jan-2003 3:05							
Rho Aluminum	2598	2598	--	--	--	--	K/M3
Rho Magnesium	1656	1656	--	--	--	--	K/M3
Pe Aluminum	2.570	2.555	--	--	--	--	
Pe Magnesium	2.650	2.614	--	--	--	--	
High resolution Integrated Logging Tool-DTS Master Calibration - Deviation Summary							
Master: 16-Jan-2003 3:05							
BS Average Deviation	0	0.3498	--	--	--	--	°
BS Max Deviation	0	1.335	--	--	--	--	°
SS Average Deviation	0	0.4581	--	--	--	--	°
SS Max Deviation	0	1.809	--	--	--	--	°
LS Average Deviation	0	0.6352	--	--	--	--	°
LS Max Deviation	0	2.364	--	--	--	--	°
High resolution Integrated Logging Tool-DTS Master Calibration - Tank Measurement							
Master: 14-Dec-2002 12:27							
Thermal Near Corr. (Tank)	6031	5203	--	--	--	--	CPS
Thermal Far Corr. (Tank)	2793	2287	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.206	--	--	--	--	
Eccentered Dual Axis Caliper Wellsite Calibration - Caliper 1 Calibration							
Before: 3-Feb-2003 10:04							
Caliper 1 Small Ring	203.2	N/A	358.3	N/A	N/A	N/A	MM
Caliper 1 Large Ring	304.8	N/A	519.7	N/A	N/A	N/A	MM
Eccentered Dual Axis Caliper Wellsite Calibration - Caliper 2 Calibration							
Before: 3-Feb-2003 10:04							
Caliper 2 Small Ring	203.2	N/A	181.6	N/A	N/A	N/A	MM
Caliper 2 Large Ring	304.8	N/A	281.7	N/A	N/A	N/A	MM

The GLS-IU source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature	16.0	DEGC
Thermal Housing Size	85.874	MM

High resolution Integrated Logging Tool-DTB / Equipment Identification

Primary Equipment:

Array Induction Tool - H	AIT - H		
Rm/SP Bottom Nose	AHRM - A		
Array Induction Sonde	AHSI - BA	419	
HILT high-Resolution Mechanical Sonde	HRMS - B	722	
HILT Rxo Gamma-ray Device	HRGD -	994	
HILT Nuclear Back-Scatter Detector	HILT -		
HILT Nuclear Short-Spacing Detector	HILT -		
HILT Nuclear Long-Spacing Detector	HILT -		

Auxiliary Equipment:

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Thru Cal Mag. & Phase

Mx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6372		0.6050	59.11		71.00
	Before	0.6348			61.79		
1	Master	1.286		1.270	57.99		70.00
	Before	1.301			60.67		
2	Master	0.6378		0.6330	54.39		68.00
	Before	0.6458			57.07		
3	Master	0.7212		0.7040	53.82		65.00
	Before	0.7299			56.29		
4	Master	1.349		1.337	47.41		59.00
	Before	1.366			50.11		
5	Master	1.967		1.955	42.73		54.00
	Before	1.992			45.44		
6	Master	1.351		1.350	45.88		50.00
	Before	1.350			48.40		
7	Master	1.450		1.450	46.04		46.00
	Before	1.452			48.44		

4	Master	1.974				1.955		48.89		57.00
	Before	1.999						48.40		
5	Master	1.430				1.415		48.08		53.00
	Before	1.450						47.91		
		65.00 % (Minimum)	90.00 % (Nominal)	140.0 % (Maximum)		Nom -90.00 (Minimum)	(Nominal)	Nom + 90.00 (Maximum)		

Master Calibration out of date 12-Nov-2003 18:55 Before 13-Feb-2003 22:28

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Electronics Calibration Check - Auxiliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		993.2	Master		0.11125
Before		992.5	Before		0.08168
940.0 (Minimum)	990.0 (Nominal)	1040 (Maximum)	40.00 (Minimum)	0 (Nominal)	50.00 (Maximum)

Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.8500	Master		0.5001160
Before		0.8193	Before		8.047E-00
0.8700 (Minimum)	0.8150 (Nominal)	0.9600 (Maximum)	-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)

Master Calibration out of date 12-Nov-2002 18:55 Before 13-Feb-2003 22:28

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG	
0	1.020		0.5982		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.019		0.6390		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.022		0.01953		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.021		0.00628		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.002		0.03058		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9901		-0.00473		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.004		0.3301		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.014		-0.1271		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master Calibration out of date 12-Nov-2002 18:55

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	-111.8		-194.5		
	-226.0 (Minimum)	-98.00 (Nominal)	119.0 (Maximum)	-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	171.5		-171.5		
	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)	-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	102.6		48.45		
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)	-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	59.85		2.917		
	38.50 (Minimum)	64.00 (Nominal)	89.00 (Maximum)	-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	25.99		-7.576		
	15.50 (Minimum)	25.00 (Nominal)	35.00 (Maximum)	-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	11.49		2.111		
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)	-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	8.852		1.768		
	5.500 (Minimum)	10.50 (Nominal)	15.50 (Maximum)	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.1426		-5.308		
	-5.500 (Minimum)	0 (Nominal)	5.500 (Maximum)	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master Calibration out of date 12-Nov-2002 16:55

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Muo Gain Correction

Idx	Value	Coarse - Mag, Real, Imag	Value	Fine - Mag, Real, Imag	
0	1.087		1.098		
	0.9000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.087		1.098		
	0.9000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.087		1.098		
	0.9000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master Calibration out of date 12-Nov-2002 18:55

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Stab Measurement Summary

Phase	BB Window Ratio	Value	Phase	BB Window Ratio	Value	Phase	LB Window Ratio	Value
Before		0.7190	Before		0.4477	Before		0.2975
0.6844 (Minimum)	0.7204 (Nominal)	0.7564 (Maximum)	0.4447 (Minimum)	0.4481 (Nominal)	0.4915 (Maximum)	0.2938 (Minimum)	0.2981 (Nominal)	0.3139 (Maximum)
Phase	BB Window Sum CPS	Value	Phase	BB Window Sum CPS	Value	Phase	LB Window Sum CPS	Value
Before		9950	Before		10060	Before		1306
9469 (Minimum)	9966 (Nominal)	10470 (Maximum)	9582 (Minimum)	10070 (Nominal)	10870 (Maximum)	1234 (Minimum)	1299 (Nominal)	1364 (Maximum)

Before: 3-Feb-2003 12:11

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Pwin Multiplier Voltage Calibration

Phase	BB PM High Voltage (Command) V	Value	Phase	BB PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before		1388	Before		1464	Before		1812
1271 (Minimum)	1375 (Nominal)	1471 (Maximum)	1376 (Minimum)	1475 (Nominal)	1575 (Maximum)	1524 (Minimum)	1724 (Nominal)	1724 (Maximum)

Before: 3-Feb-2003 10:11

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Crystal Quality Resolutions Calibration

Phase	BB Crystal Resolution %	Value	Phase	SB Crystal Resolution %	Value	Phase	LB Crystal Resolution %	Value
Before		10.39	Before		8.527	Before		9.118
9.089 (Minimum)	10.27 (Nominal)	11.27 (Maximum)	8.733 (Minimum)	8.733 (Nominal)	10.73 (Maximum)	7.599 (Minimum)	8.999 (Nominal)	8.999 (Maximum)

Before: 3-Feb-2003 10:11

High resolution Integrated Logging Tool-DTS Wellsite Calibration
HCFL Calibration

Phase	Raw BB Resistivity OHMM	Value	Phase	Raw SB Resistivity OHMM	Value	Phase	Raw BB Resistivity OHMM	Value
Before		3936	Before		3830	Before		3856
3666 (Minimum)	3875 (Nominal)	4186 (Maximum)	3534 (Minimum)	3830 (Nominal)	4136 (Maximum)	3534 (Minimum)	3830 (Nominal)	4136 (Maximum)

Before: 3-Feb-2003 10:12

High resolution Integrated Logging Tool-DTS Wellsite Calibration
HILT Caliper Calibration

Phase	BLS Caliper Zero Measurement MM	Value	Phase	BSS Caliper Plus Measurement MM	Value	Phase	BSS Caliper Zero Measurement MM	Value
Before		217.7	Before		324.7			
152.4 (Minimum)	203.2 (Nominal)	254.0 (Maximum)	228.6 (Minimum)	304.8 (Nominal)	381.0 (Maximum)			

Before: 3-Feb-2003 12:05

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray Lig - Bkgd GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		47.06	Before		187.8	Before		185.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	152.6 (Minimum)	187.8 (Nominal)	193.1 (Maximum)	150.0 (Minimum)	185.0 (Nominal)	190.0 (Maximum)

Before: 24-Feb-2003 10:02

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		27.87	Master		31.36
Before		27.14	Before		29.25
0.000 (Minimum)	27.87 (Nominal)	40.00 (Maximum)	0.000 (Minimum)	31.36 (Nominal)	40.00 (Maximum)

Master: 14-Dec-2002 12:27 Before: 3-Feb-2003 13:04

High resolution Integrated Logging Tool-DTS Wellsite Calibration
Accelerometer Calibration

Phase	Z-Axis Acceleration 1G/02	Value
Before		3.807
9.810 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 13-Feb-2003 22:27

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	0.6272		0.6050	59.11		71.00
1	Master	1.266		1.270	57.99		70.00
2	Master	0.6376		0.6230	54.39		66.00
3	Master	0.7212		0.7040	53.60		65.00
4	Master	1.349		1.337	47.41		59.00
5	Master	1.967		1.955	45.73		57.00
6	Master	1.974		1.955	45.89		57.00
7	Master	1.430		1.415	45.08		53.00
		60.00 % (Minimum)		140.0 % (Maximum)	Nom -90.00 (Minimum)	(Nominal)	Nom + 90.00 (Maximum)	

Master Calibration out of date 12-Nov-2003 14:55

High resolution Integrated Logging Tool-DTS Master Calibration
Electronics Calibration Check - Auxiliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		993.2	Master		0.11125
940.0 (Minimum)	990.0 (Nominal)	1040 (Maximum)	-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)

Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.8500	Master		0.5001160
0.8700 (Minimum)	0.8150 (Nominal)	0.9600 (Maximum)	-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)

Master Calibration out of date 12-Nov-2002 18:55

High resolution Integrated Logging Tool-DTS Master Calibration
Test Loop Gain Correction

Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG	
0	1.020		0.5982		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.019		0.6390		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.022		0.01953		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.021		0.00628		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.002		0.03058		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9901		-0.00473		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.004		0.3301		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.014		-0.1271		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master Calibration out of date 12-Nov-2003 16:55

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	-111.8		-194.5		
	-226.0 (Minimum)	-98.00 (Nominal)	119.0 (Maximum)	-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	171.5		-171.5		
	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)	-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	102.6		48.45		
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)	-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	59.85		2.917		
	38.50 (Minimum)	64.00 (Nominal)	89.00 (Maximum)	-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	25.99		-7.576		
	15.50 (Minimum)	25.00 (Nominal)	35.00 (Maximum)	-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	11.49		2.111		
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)	-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	8.852		1.768		
	5.500 (Minimum)	10.50 (Nominal)	15.50 (Maximum)	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.1426		-5.308		
	-5.500 (Minimum)	0 (Nominal)	5.500 (Maximum)	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master Calibration out of date 12-Nov-2002 16:55

High resolution Integrated Logging Tool-DTS Master Calibration
Muo Gain Correction

Idx	Value	Coarse - Mag, Real, Imag	Value	Fine - Mag, Real, Imag	
0	1.087		1.098		
	0.9000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.087		1.098		
	0.9000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.087		1.098		
	0.9000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master Calibration out of date 12-Nov-2002 18:55

High resolution Integrated Logging Tool-DTS Master Calibration
Receiver results

Phase	Rho Aluminum K/M3	Value	Phase	Rho Magnesium K/M3	Value
Master		2556	Master		1699
2556 (Minimum)	2556 (Nominal)	2626 (Maximum)	1579 (Minimum)	1866 (Nominal)	1896 (Maximum)
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.555	Master		2.615
2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)	2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)

Master: 18-Jan-2003 3:05

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		0.3486	Master		2.4581	Master		0.6362
-6.000 (Minimum)	0 (Nominal)	6.000 (Maximum)	-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)	-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)
Phase	BB Max Deviation %	Value	Phase	SB Max Deviation %	Value	Phase	LB Max Deviation %	Value
Master		1.305	Master		1.939	Master		0.308
-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: 18-Jan-2003 3:05

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	[illegible] (Tank)	Value
Master		5203	Master		2297	Master		1266
5000 (Minimum)	6000 (Nominal)	7000 (Maximum)	2075 (Minimum)	2750 (Nominal)	3126 (Maximum)	2130 (Minimum)	2159 (Nominal)	2340 (Maximum)

Master: 14-Dec-2002 12:27

Eccentered Dual Axis Caliper / Equipment Identification

Primary Equipment:		
Eccentered Dual Axis Sonde - BA	EDAS - BA	6
Eccentered Dual Axis Electronics (cartri	EDAE - C	6
Auxiliary Equipment:		
Electronics Cartridge Housing	ECH - XC	440

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

PLATFORM EXPRESS
COMPENSATED NEUTRON
LITHODENSITY LOG

Schlumberger

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES *** TVD ***

PLATFORM EXPRESS
COMPENSATED NEUTRON
LITHODENSITY LOG

NOT A COPY

Province:	NORTHWEST TERRITORIES		
Field:	ARROWHEAD		
Location:	UNIT I, SECTION: 75		
Well:	ANADARKO ARROWHEAD RIVER I-75		
Company:	ANADARKO CANADA CORPORATION		
SURFACE LOCATION	UNIT I, SECTION: 75	Elev.: K.B. 517.8 m	
	LAT: 60 34 42.3 N LONG: 122 58 32.6 W	G.L. 510.8 m	
		D.F. 517.8 m	
	Permanent Datum: GROUND LEVEL Elev.: 510.8 m		
	Log Measured From: KELLY BUSHING 7.1 m above Perm. Datum		
	Drilling Measured From: KELLY BUSHING		

API Serial No.
N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	13-Feb-2003			
Run Number	ONE			
Depth Driller	3546 m	*** TVD *** 3540.5 m		
Schlumberger Depth	3548 m	3540.5 m		
Bottom Log Interval	3502.5 m	2537 m		
Top Log Interval	498 m			
Casing Driller Size @ Depth	244.500 mm @ 654.4 m	@ @	@ @	@ @
Casing Schlumberger	654 m	@ @	@ @	@ @
Bit Size	216.000 mm			
Type Fluid In Hole	INVERT			
Density Viscosity	925 kg/m3 45 s	@ @	@ @	@ @
Fluid Loss PH				
Source Of Sample	NO SAMPLES			
RM @ Measured Temperature	@	@	@	@
RMF @ Measured Temperature	@	@	@	@
RMC @ Measured Temperature	@	@	@	@
Source: RMF RMC	NO SAMPLES	NO SAMPLES		
RM @ MRT RMF @ MRT	@ 103 @ 103	@ @	@ @	@ @
Max Recorded Temperatures	103 degC			
Circulation Stopped Time	13-Feb-2003 10:30			
Logger On Bottom Time	13-Feb-2003 23:45			
Unit Number Location	3016 GRANDE PRAIRIE			
Recorded By	CURTIS MOFFAT			
Witnessed By	GORDON RICHMOND			

DEPTH SUMMARY LISTING

Site Created: 14-FEB-2003 1:49:56

	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				
Max Recorded Temperatures				
Circulation Stopped Time				
Logger On Bottom Time				
Unit Number Location				
Recorded By				
Witnessed By				

Depth System Equipment

Tension Device

Depth Measuring Device	
Serial Number:	2830
Calibration Date:	13-Nov-2003
Calibration Cable Type:	1 - 32KK-0303
Wheel Correction +	0 m/M
Wheel Correction -	0 m/M
Wheel Circumference:	4

Logging Cable	
Type:	4conf
Serial Number:	4997
Length:	4500.00 M
Conveyance Method:	Wireline
Rig Type:	LAND

Depth Control Parameters

Fill Up to Tie Well

Log Bottom	3548 m
Rig Up Length at Bottom	7.1 m
Rig Up Length at Bottom	3.1 m
Tool Zero Check At Bottom	0.00 M
Tool Zero Check At Surface	0.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

The DEPTH OF MEASUREMENT FROM PAD REFERENCE POINT (DMPRP) IS 0.0 m ABOVE PERMANENT DATUM (PD). ALL DEPTHS ARE REFERENCED TO DRILLER'S DEPTH. ALL LOGS RUN WITH THE TRIPLE COMBO TOOL STRING WERE RECORDED WITH THE SAME DEPTH REFERENCE AND LOGGING SPEED. THE DEPTH OF MEASUREMENT FROM PAD REFERENCE POINT (DMPRP) IS 0.0 m ABOVE PERMANENT DATUM (PD). ALL DEPTHS ARE REFERENCED TO DRILLER'S DEPTH. ALL LOGS RUN WITH THE TRIPLE COMBO TOOL STRING WERE RECORDED WITH THE SAME DEPTH REFERENCE AND LOGGING SPEED.

OTHER SERVICES
OBS: BHC-SONIC CORRECTION
OBS: BHC-SONIC SENSITIVITY
OBS: AIT-B CALIBRATION
OBS: AIT-B SPHERICALLY FOCUSED RESISTIVITY

ALL INTERVALS AND PASSES RECORDED AS PER PLAN. ALL PASSES RECORDED WITH TOOLS ECCENTRALIZED. NEUTRON MEASUREMENTS RECORDED WITH LIMESTONE MATRIX. DENSITY MEASUREMENTS RECORDED WITH SANDSTONE MATRIX. FROM PETROLEUM SERVICE CENTRE, CALGARY, ALBERTA.

DATA ACQUIRED BY: CURTIS MOFFAT, GORDON RICHMOND

CASING LOGGER: 4.75 AT 654.4 M
DRILLER'S CASING: 244.5 MM @ 654.4 M
COMPANY VISCOSITY: 45 S
COMPANY MUD TYPE: 9.25 LB/GAL INVERT MUD

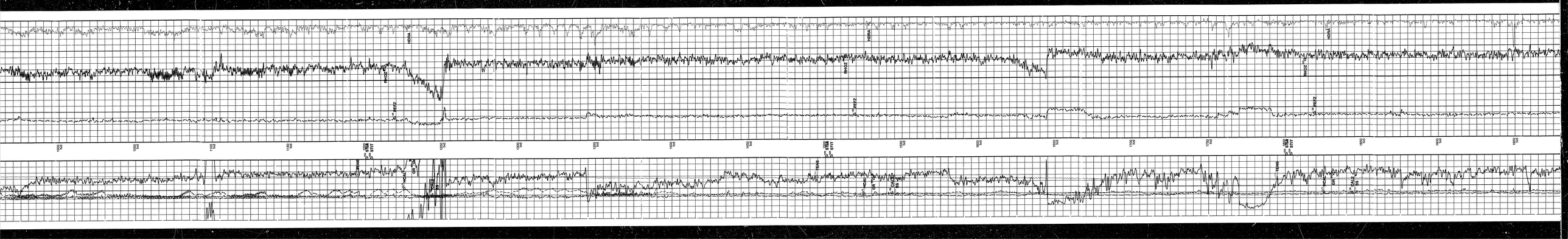
DRILLER	RUN 1	1200/204	SERVICE ORDER #		RUN 2
LOGGER		1200/204	ELEVATIONS (m)		
PRIMARY DEPTH CONTROL			LOG INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1
SURFACE EQUIPMENT
HTM CTSM-A

RUN 2

DOWNHOLE EQUIPMENT


HDNA
RHOZ
B = RFOC
1000 hrs
1050 hrs
1100 hrs
1150 hrs
1200 hrs
1250 hrs
1300 hrs
1350 hrs
1400 hrs
1450 hrs
1500 hrs
1550 hrs
1600 hrs
1650 hrs
1700 hrs
1750 hrs
1800 hrs
1850 hrs
1900 hrs
1950 hrs
TENS
HCAL
GR
CALS

MAIN PASS

Bit Size (BS)	Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ)	Density Correction (HDRA)
12.5 (MM) 37.5	0 (M) 20	0 (---) 10.400	-0.5 (K/M3) 0.5
Caliper 2 (CAL2)	Cable Drag		Std. Res. Formation Density (RHOZ)
12.5 (MM) 37.5	From STIA 2000 to STIT		(K/M3) 3000
Gamma Ray (GR)	Tool/Tot. Drag		
0 (GAPI) 150	From DXT to STIA		177.8 MM
Caliper (HCAL)			
12.5 (MM) 37.5			
Tension (TENS)			
20000 (N) 0			

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
DXC	Density Hole Correction	289
NMC	Neutron Porosity Hole Correction	289
NMT	HILT Matrix Mud Type	NONMATRX
NPRM	HRDD Processing Mode	ShtRes
NSAR	Computed Sampling Rate	20.4 MM
DIR	DIR: Directional Survey Flag	
SPVD	TVD of Starting Point	0 M
TMD	Along-hole depth of Tie-In Point	400 M
TVD	TVD of Tie-In Point	400 M
FCD	HOLEV: Integrated Hole Volume	
HVCS	Future Casing (Outer) Diameter	177.8 MM
	Integrated Hole Volume Caliper Selection	HCAL/CAL2
STI	STI: Stuck Tool Indicator	
DFS	Trigger for MAIN Pass1 Reading Label	TDL
STXT	STI Stuck Threshold	1.524 M
TDD	Total Depth - Driller	2585.00 M
TDL	Total Depth - Logger	2588.00 M
	System and Miscellaneous	
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth
BS	Bit Size	215.900 MM
DFD	Drilling Fluid Density	920.00 K/M3
DQ	Depth Offset for Playback	0.0 M
PBVSADP	Use alternate depth channel for playback	YES
PD	Pass Direction	NORMAL
TD	Total Depth	2585 M

Format: PORO_2 Vertical Scale: 1:600 Graphics File Created: 14-Feb-2003 00:48

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M 0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48	
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48	

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M 24.7 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48	2547.5 M 25.0 M
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48	2547.5 M 25.0 M

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

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

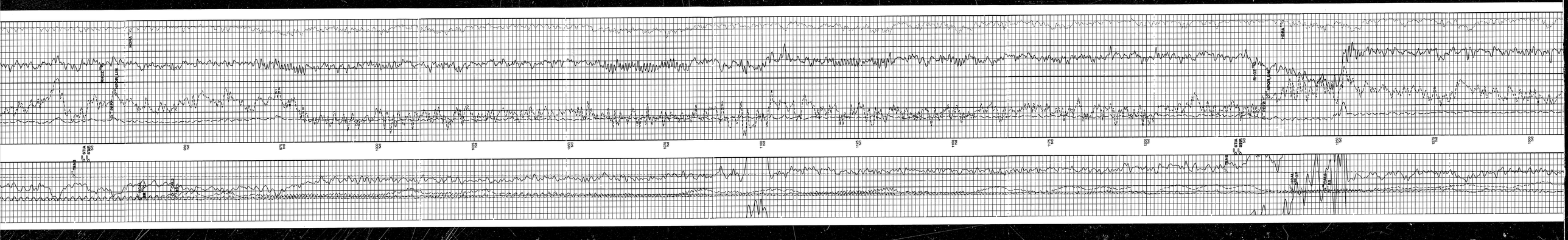
Time Mark Every 60 S

Tension (TENS)	Tool/Tot. Drag		
20000 (N) 0			
Caliper (HCAL)			
12.5 (MM) 37.5			
Gamma Ray (GR)			Std. Res. Formation Density (RHOZ)
0 (GAPI) 150	From DXT to STIA 1960		(K/M3) 2950
Caliper 2 (CAL2)	Cable Drag	Std. Res. Formation Pe (PEFZ)	Density Correction (HDRA)
12.5 (MM) 37.5	From STIA 0 to STIT	(---) 10.400	(K/M3) 0.5
Bit Size (BS)	Stuck Stretch		NPOR for LIME (NPOR_LIM)
12.5 (MM) 37.5	(STIT) -0.45 0 (M) 20		(V/V) -0.15

MAIN PASS RETURN TRACKING (REPEAT)

PELPZ
HORA
AIROE_LIM
ETA
ESO
TEMA
SATMEN
CHLZ
BS

REF
ABD_UM
CHEST
ECG
SpO2
PLETH
HOAL
CO2
RR


HORA
PACOT
HIPOFL LUM
HIPOFL DER
HORA
PACOT
HIPOFL LUM
HIPOFL DER
TEMP
ETTA
SWB
HORA
PACOT
HIPOFL DER
ETTA
SWB
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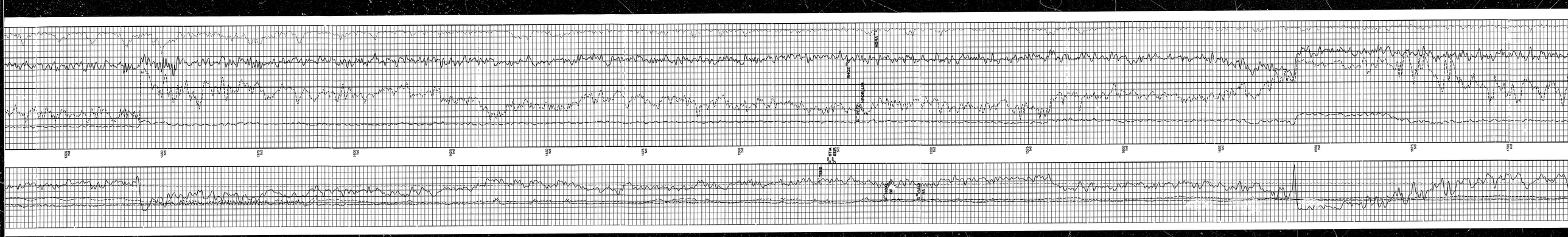
PACOT
HIPOFL DER
TEMP
HORA
CHAS
CHAS


HORA
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PRO2 LIM
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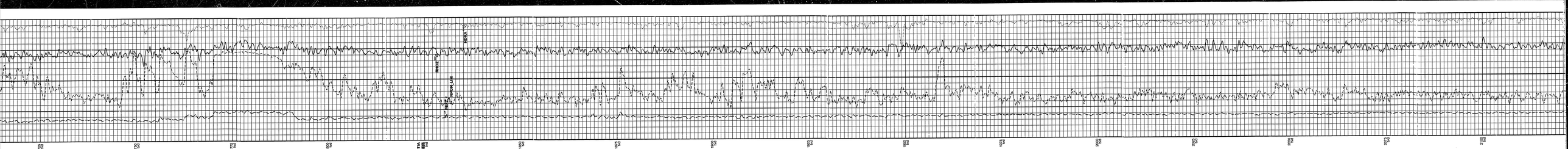
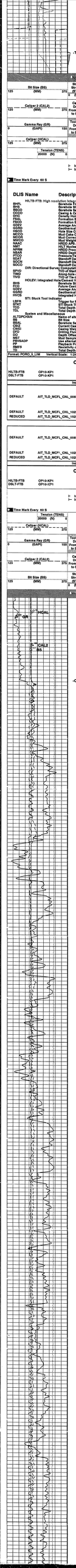

RHOZ
RXOZ
SP
1700
1730
1800
1830
1900
1930
2000
2030
2100

RHRZ
LHRA
RHCR_LM
RHRZ
RHCR
LHRA
RHCR_LM
RHRZ
LHRA
RHRB
LHRA
RHRZ



Parameters

DLIS Name	Description	Value
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
BHFL	Borehole Fluid Type	OIL
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	NO
CSCO	Casing & Cement Thickness Correction Option	NO
DOC	Density Caliper Selection	HCAL
FINL	Formation Salinity	40000 PPM
FSCO	Formation Salinity Correction Option	NO
GDIR	Geothermal Gradient Direction of Borehole from Normal	DEG
GSRC	Geothermal Gradient	0.018227 DC/M
HSCO	Hole Size Correction Option	YES
MCOO	Mud Cake Correction Option	NO
MCSO	Mud Conductivity	NATU
MWCO	Mud Weight Correction Option	NO
NMT	Neutron Matrix Type Selection	SAND
NMT	HILT Nuclear Mod Type	NORSATE
NPRM	HRDD Processing Mode	Std/fas
HRAT	HRDD Depth Sampling Rate	25.4 MM
SCAT	Reservoir Temperature Correction Option	NO
SGAT	Seawater Temperature	0 DEGC
SOCN	Standoff Distance	3.175 MM
SOCO	Standoff Correction Option	YES
	DIR: Directional Survey Parameters	
STVD	TVD of Starting Point	0 M
TIMD	Along-hole depth of Tie-in Point	655 M
TVD	TVD of Tie-in Point	655 M
	HOLEVI: Integrated Hole Volume Variables	
BHS	Borehole Status	OPEN
BSIZ	Bit Size (Diameter) Diameter	177.8 MM
GDIV	Azimuth Angle Deviation of Borehole from Normal	DEG
GGRD	Geothermal Gradient	0.018227 DC/M
HVCS	Integrated Hole Volume Caliper Selection	HCALICALI2
	STI: Stuck Tool Indicator	
LBFS	Trigger for MAXIS First Reading Label	TDL
STVT	STI Stuck Threshold	1.524 M
TDD	Total Depth - Driller	2586.00 M
TDL	Total Depth - Logger	2588.00 M
	System and Miscellaneous	
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth
BS	Bit Size	215.9 MM
BSAL	Borehole Salinity	40000.00 PPM
CBIZ	Current Casing Size	244.500 MM
CWT	Casing Weight	69.50 KG/M
DFD	Drilling Fluid Density	1.600 G/M3
DO	Depth Offset for Playback	0.0 M
MST	Mud Sample Temperature	-9999.00 DEGC
PBVSADP	Use alternate depth channel for playback	YES
SBF	Sea Bed Flag	NONMARINE
SMPA	Resistivity of Mud Filtrate Sample	0.0000 OHMM
TD	Total Depth	2588

Format: PORO_S_LIM Vertical Scale: 1:240 Graphics File Created: 14-Feb-2003 00:48

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	370-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M 0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M 0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

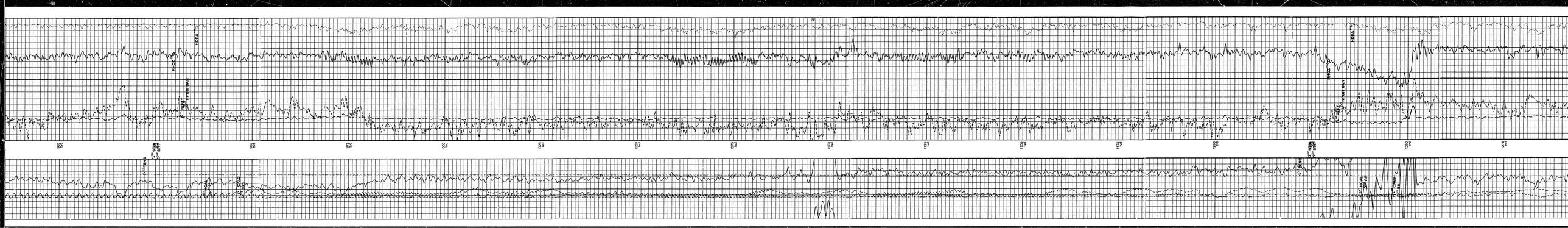
MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-2P1	DTC-H	10C0-306

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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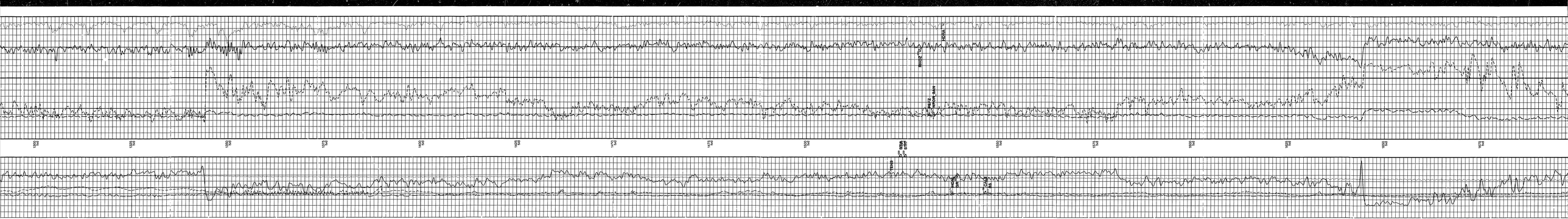
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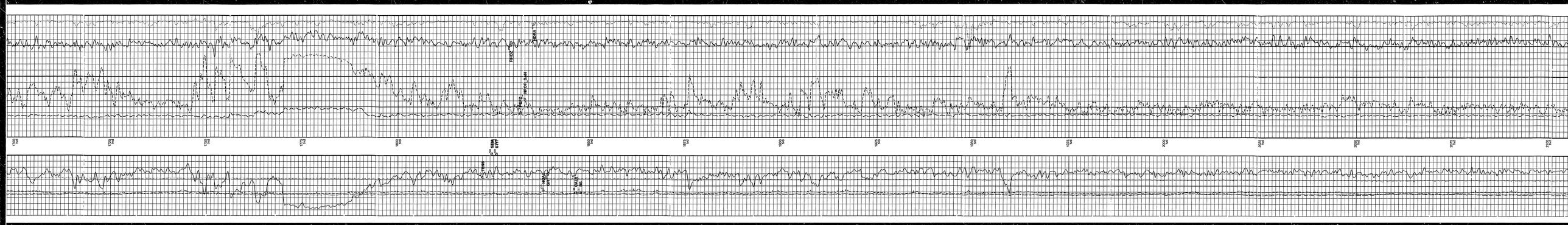
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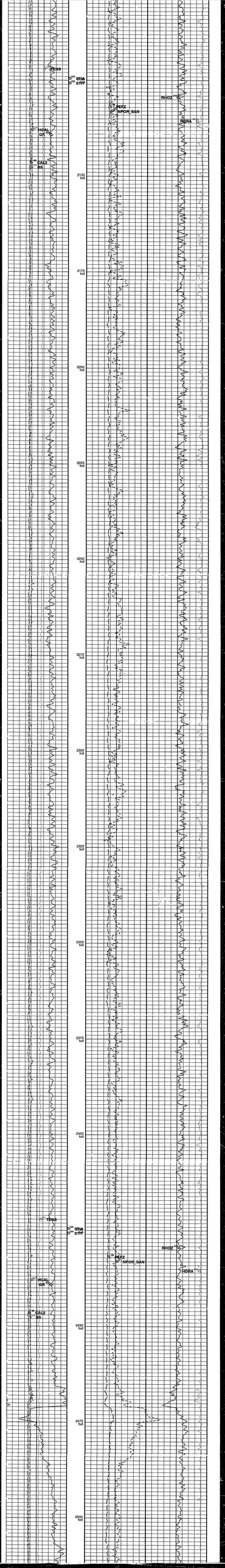
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2300 fvd
2325 fvd
2350 fvd
2375 fvd
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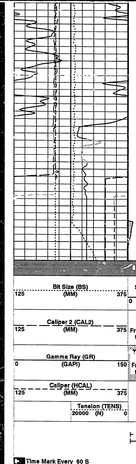

Bit Size (BS) (MM) 375 (BIT) 375 (IN) 20

Stuck Stuck Stretch 5.45

NPOR for SAND (NPOR_SAN) (V/V) -0.15

Caliper 2 (CAL2) (MM) 375

Cable Drag From STN To BTT

Std. Res. Formation Pe (PEFZ) (---) 10.459

Density Correction (HDRA) (K/M3) -.50

Gamma Ray (GR) (GAPI) 0 150

Tool/TOL From DUT To STN 1900

Std. Res. Formation Density (RHOZ) (K/M3) 2900

Caliper (HCAL) (MM) 125 375

Tonelos (TENS) (N) 20000 0

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
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	
BHFL	Borehole Fluid Type	OIL
BHS	Borehole Status	OPEN
BSCO	Borehole Salinity Correction Option	NO
BSDCO	Borehole Standoff Compensation Correction Option	NO
DSC	Density Hole Correction	BS
FSAL	Formation Salinity	60000 PPM
FSCO	Formation Salinity Correction Option	NO
HDEV	Average Angular Deviation of Borehole from Normal	0 DEG
HDIA	Hole Diameter	0.018227 DC/M
HSCO	Hole Size Correction Option	NO
MCCO	Mud Cake Correction Option	NO
MCOR	Mud Correction	NATU
MWCO	Mud Weight Correction Option	NO
NAPI	HRDD API Activation Correction	OFF
NMT	HRDD Nuclear Mud Type	NOBARITE
NPRM	HRDD Neutron Porosity Matrix	SAND
NSAR	HRDD Depth Sample Rate	25.4 MM
PTCO	Pressure/Temperature Correction Option	NO
SDAT	Standoff Data Source	SOCN
SOCS	Standoff Distance	3.175 MM
SOCO	Standoff Compensation Option	YES
	DIR: Directional Survey Computation	
SPVD	TVD of Starting Point	0 M
TMD	Along-hole depth of Tie-In Point	655 M
TVD	TVD of Tie-In Point	655 M
	HOLEV: Integrated Hole Volume	
BHS	Borehole Status	OPEN
FCD	Future Casing (Outer) Diameter	177.8 MM
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
HVCO	Integrated Hole Volume Caliper Selection	HCAL/CALI
	STI: Stuck Tool Indicator	
LBFR	Trigger for MAX05 First Reading Label	TDL
STKT	STI Stuck Threshold	1.524 M
TDD	Total Depth - Driller	2586.00 M
TDL	Total Depth - Logger	2588.00 M
	System and Miscellaneous	
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth
BS	Bit Size	216.000 MM
BSAL	Borehole Salinity	-50000.00 PPM
CSIZ	Current Casing Size	244.000 MM
CWSI	Casing Weight	59.50 KG/M
DFD	Drilling Fluid Density	1600.00 K/M3
DOD	Depth Offset for Playback	0.0 M
MST	Mud Sample Temperature	-50000.00 DEGC
PBVSADP	Use alternate depth channel for playback	YES
PD	Playback Processing	NORMAL
RMFS	Salinity of Mud Filtrate Sample	-50000.0000 OHMM
TDD	Total Depth	2588.00 M

Format: PORO_S Vertical Scale: 1:240 Graphics File Created: 14-Feb-2003 00:48

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSLT-FTB	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:13	PRODUCER	13-Feb-2003 23:55	2593.2 M 0.0 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_102PUP	FN:1	PRODUCER	14-Feb-2003 00:48	
REDUCED	AIT_TLD_MCFL_CNL_102PUP	FN:2	PRODUCER	14-Feb-2003 00:48	

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point : Measured Depth True Vertical Depth North Departure East Departure

655.00 M 655.00 M 0.00 M 0.00 M

Depth	Deviation	Azimuth	True Vertical Depth	North Departure	East Departure
0.00 M	0.00 DEG	0.00 DEG	0.00 M	0.00 M	0.00 M
655.00 M	0.00 DEG	0.00 DEG	655.00 M	0.00 M	0.00 M
668.70 M	1.80 DEG	5.10 DEG	668.70 M	0.21 M	0.01 M
678.20 M	1.90 DEG	359.90 DEG	678.19 M	0.52 M	0.03 M
706.80 M	1.30 DEG	349.00 DEG	706.78 M	1.32 M	-0.05 M
735.40 M	1.30 DEG	345.50 DEG	735.37 M	1.95 M	-0.19 M
754.40 M	1.30 DEG	322.80 DEG	754.37 M	2.33 M	-0.38 M
773.20 M	1.50 DEG	320.30 DEG	773.18 M	2.69 M	-0.66 M
792.20 M	2.00 DEG	310.60 DEG	792.15 M	3.10 M	-1.07 M
820.70 M	2.40 DEG	298.30 DEG	820.63 M	3.72 M	-1.07 M
849.20 M	2.70 DEG	299.60 DEG	849.11 M	4.33 M	-3.08 M
877.50 M	3.30 DEG	289.50 DEG	877.37 M	4.93 M	-4.41 M
906.10 M	3.10 DEG	289.70 DEG	905.92 M	5.46 M	-5.89 M
934.70 M	3.60 DEG	295.80 DEG	934.48 M	6.11 M	-7.43 M
953.70 M	3.40 DEG	307.60 DEG	953.44 M	6.72 M	-8.41 M
963.20 M	3.00 DEG	322.30 DEG	962.93 M	7.09 M	-8.79 M
982.20 M	2.60 DEG	325.50 DEG	981.90 M	7.88 M	-9.33 M
1010.80 M	2.50 DEG	349.60 DEG	1010.47 M	9.12 M	-9.79 M
1039.30 M	2.60 DEG	14.10 DEG	1038.94 M	10.37 M	-9.75 M
1068.00 M	2.80 DEG	18.70 DEG	1067.61 M	11.67 M	-9.37 M
1087.00 M	2.90 DEG	25.10 DEG	1086.59 M	12.55 M	-9.01 M
1106.00 M	2.90 DEG	39.80 DEG	1105.56 M	13.35 M	-8.50 M
1115.50 M	3.30 DEG	47.60 DEG	1115.05 M	13.72 M	-8.14 M
1144.00 M	3.80 DEG	59.20 DEG	1143.49 M	14.77 M	-6.73 M
1163.10 M	3.60 DEG	63.90 DEG	1162.55 M	15.36 M	-5.64 M
1172.50 M	3.50 DEG	66.20 DEG	1171.94 M	15.60 M	-5.12 M
1182.10 M	3.30 DEG	73.40 DEG	1181.52 M	15.80 M	-4.59 M
1191.60 M	2.90 DEG	82.40 DEG	1191.01 M	15.91 M	-4.10 M
1201.10 M	2.80 DEG	100.70 DEG	1200.49 M	15.89 M	-3.63 M
1210.60 M	3.00 DEG	114.30 DEG	1209.98 M	15.73 M	-3.12 M
1220.10 M	4.60 DEG	123.60 DEG	1219.45 M	15.40 M	-2.53 M
1229.60 M	5.70 DEG	128.60 DEG	1228.92 M	14.91 M	-1.83 M
1239.10 M	6.00 DEG	125.00 DEG	1238.37 M	14.34 M	-1.05 M
1248.60 M	6.20 DEG	122.80 DEG	1247.81 M	13.78 M	-0.21 M
1258.10 M	6.20 DEG	122.30 DEG	1257.30 M	13.22 M	0.66 M
1267.50 M	6.50 DEG	122.20 DEG	1266.80 M	12.67 M	1.53 M
1277.00 M	7.00 DEG	121.30 DEG	1276.03 M	12.08 M	2.46 M
1286.50 M	7.40 DEG	117.40 DEG	1285.46 M	11.49 M	3.51 M
1296.10 M	8.40 DEG	113.30 DEG	1294.97 M	10.83 M	4.71 M
1305.60 M	9.40 DEG	111.30 DEG	1304.35 M	10.37 M	6.07 M
1315.10 M	10.70 DEG	112.80 DEG	1313.71 M	9.78 M	7.60 M
1324.60 M	11.90 DEG	113.70 DEG	1322.93 M	9.03 M	9.30 M
1334.00 M	12.80 DEG	114.80 DEG	1332.21 M	8.19 M	11.11 M
1343.50 M	13.70 DEG	117.00 DEG	1341.45 M	7.24 M	13.11 M
1353.10 M	14.30 DEG	117.20 DEG	1350.77 M	6.18 M	15.18 M
1362.60 M	14.30 DEG	116.40 DEG	1359.97 M	5.13 M	17.26 M
1372.40 M	14.30 DEG	115.40 DEG	1369.46 M	4.05 M	19.48 M
1381.90 M	14.30 DEG	118.00 DEG	1378.67 M	3.04 M	21.59 M
1391.40 M	14.60 DEG	116.70 DEG	1387.87 M	1.98 M	23.72 M
1400.90 M	15.30 DEG	117.00 DEG	1397.04 M	0.88 M	25.90 M
1410.40 M	16.00 DEG	117.10 DEG	1406.19 M	-0.29 M	28.19 M
1419.80 M	16.30 DEG	117.00 DEG	1415.32 M	-1.51 M	30.53 M
1429.40 M	16.30 DEG	120.40 DEG	1424.64 M	-2.82 M	32.85 M
1438.90 M	16.20 DEG	120.30 DEG	1433.96 M	-4.16 M	35.14 M
1448.40 M	16.10 DEG	119.90 DEG	1443.28 M	-5.46 M	37.44 M
1458.00 M	16.20 DEG	119.00 DEG	1452.60 M	-6.80 M	39.78 M
1467.50 M	16.20 DEG	117.10 DEG	1461.92 M	-8.04 M	42.17 M
1477.00 M	16.10 DEG	116.10 DEG	1471.24 M	-9.23 M	44.48 M
1486.50 M	16.10 DEG	117.30 DEG	1480.57 M	-10.41 M	46.83 M
1496.00 M	16.10 DEG	118.4 DEG	1489.90 M	-11.63 M	49.13 M
1505.50 M	16.00 DEG	120.10 DEG	1499.23 M	-12.97 M	51.43 M
1515.00 M	15.80 DEG	122.00 DEG	1508.57 M	-14.33 M	53.64 M
1524.50 M	15.40 DEG	122.60 DEG	1517.92 M	-15.67 M	55.82 M
1534.00 M	15.30 DEG	119.40 DEG	1527.28 M	-16.93 M	57.99 M
1543.50 M	15.60 DEG	120.10 DEG	1536.63 M	-18.19 M	60.19 M
1553.00 M	16.10 DEG	121.30 DEG	1543.27 M	-19.51 M	62.42 M
1562.50 M	16.30 DEG	123.40 DEG	1552.40 M	-20.93 M	64.66 M
1572.00 M	16.20 DEG	123.10 DEG	1561.52 M	-22.39 M	66.88 M
1581.50 M	16.00 DEG	122.70 DEG	1570.64 M	-23.82 M	69.10 M
1591.00 M	16.20 DEG	122.60 DEG	1579.77 M	-25.24 M	71.32 M
1600.50 M	16.20 DEG	123.40 DEG	1588.88 M	-26.72 M	73.58 M
1610.00 M	17.20 DEG	122.80 DEG	1597.96 M	-28.33 M	75.92 M
1619.50 M	17.20 DEG	122.80 DEG	1607.04 M	-29.73 M	78.28 M
1629.00 M	16.70 DEG	120.70 DEG	1616.13 M	-31.17 M	80.63 M
1638.50 M	16.50 DEG	118.60 DEG	1625.24 M	-32.51 M	82.99 M
1648.00 M	16.60 DEG	119.40 DEG	1634.34 M	-33.82 M	85.35 M
1657.50 M	17.00 DEG	120.30 DEG	1643.44 M	-35.21 M	87.72 M
1667.00 M	17.00 DEG	122.10 DEG	1652.52 M	-36.67 M	90.09 M
1676.50 M	16.90 DEG	121.80 DEG	1661.61 M	-38.13 M	92.44 M
1686.00 M	16.70 DEG	121.10 DEG	1670.70 M	-39.57 M	94.78 M
1695.50 M	16.80 DEG	121.20 DEG	1679.81 M	-40.97 M	97.10 M
1705.00 M	16.00 DEG	119.50 DEG	1688.93 M	-42.31 M	99.40 M
1714.50 M	15.40 DEG	117.70 DEG	1698.07 M	-43.54 M	101.65 M
1724.00 M	15.40 DEG	115.70 DEG	1707.24 M	-44.68 M	103.87 M
1733.50 M	15.10 DEG	115.60 DEG	1716.42 M	-45.72 M	106.00 M
1743.00 M	15.30 DEG	118.60 DEG	1725.59 M	-46.89 M	108.20 M
1752.50 M	15.60 DEG	118.20 DEG	1734.76 M	-47.99 M	110.51 M
1762.00 M	15.00 DEG	119.50 DEG	1743.94 M	-49.13 M	112.65 M
1771.50 M	15.00 DEG	121.50 DEG	1753.12 M	-50.38 M	114.77 M
1781.00 M	15.40 DEG	121.50 DEG	1762.29 M	-51.69 M	116.89 M
1790.50 M	15.80 DEG	121.40 DEG	1771.44 M	-53.03 M	119.07 M
1800.00 M	15.90 DEG	121.20 DEG	1780.58 M	-54.37 M	121.28 M
1809.50 M	15.50 DEG	121.70 DEG	1789.72 M	-55.71 M	123.46 M
1819.00 M	15.10 DEG	120.60 DEG	1798.89 M	-57.01 M	125.61 M
1828.50 M	14.70 DEG	120.30 DEG	1808.07 M	-58.25 M	127.71 M
1838.00 M	14.50 DEG	119.80 DEG	1817.26 M	-59.45 M	129.79 M
1847.50 M	14.70 DEG	119.80 DEG	1826.45 M	-60.64 M	131.86 M
1857.00 M	15.30 DEG	119.80 DEG	1835.73 M	-61.87 M	134.01 M
1866.50 M	15.70 DEG	120.30 DEG	1844.89 M	-63.13 M	136.20 M
1876.10 M	15.70 DEG	120.80 DEG	1854.04 M	-64.43 M	138.40 M
1885.60 M	15.50 DEG	120.40 DEG	1863.20 M	-65.71 M	140.57 M
1895.10 M	15.00 DEG	119.50 DEG	1872.37 M	-66.95 M	142.71 M
1904.60 M	14.80 DEG	119.40 DEG	1881.54 M	-68.17 M	144.85 M
1914.10 M	15.60 DEG	119.20 DEG	1890.70 M	-69.41 M	147.06 M
1923.60 M	15.50 DEG	119.10 DEG	1899.76 M	-70.63 M	149.26 M
1933.00 M	15.30 DEG	119.30 DEG	1908.82 M	-71.87 M	151.47 M
1942.50 M	14.90 DEG	118.30 DEG	1918.09 M	-73.06 M	153.63 M
1952.00 M	14.60 DEG	117.80 DEG	1927.37 M	-74.19 M	155.77 M
1961.50 M	15.00 DEG	119.10 DEG	1936.66 M	-75.35 M	157.90 M
1971.00 M	15.90 DEG	120.70 DEG	1945.82 M	-76.61 M	160.10 M
1980.50 M	15.90 DEG	121.20 DEG	1954.78 M	-77.95 M	162.33 M
1990.00 M	15.60 DEG	120.70 DEG	1963.90 M	-79.27 M	164.55 M
1999.50 M	15.10 DEG	119.20 DEG	1973.06 M	-80.51 M	166.73 M
2009.00 M	14.60 DEG	117.10 DEG	1982.23 M	-81.67 M	168.89 M
2018.50 M	15.10 DEG	116.50 DEG	1991.41 M	-82.77 M	171.08 M
2028.00 M	15.80 DEG	117.60 DEG	2000.57 M	-83.93 M	173.33 M
2037.50 M	16.00 DEG	119.40 DEG	2009.69 M	-85.20 M	175.65 M
2047.00 M	16.60 DEG	120.50 DEG	2018.80 M	-86.57 M	178.00 M
2056.50 M	16.10 DEG	119.70 DEG	2027.91 M	-87.91 M	180.31 M
2066.00 M	15.80 DEG	119.00 DEG	2037.05 M	-89.19 M	182.59 M
2075.50 M	15.40 DEG	118.50 DEG	2046.20 M	-90.42 M	184.83 M
2085.00 M	15.10 DEG	119.40 DEG	2055.38 M	-91.63 M	187.02 M
2094.50 M	15.20 DEG	121.40 DEG	2064.53 M	-92.68 M	189.16 M
2104.00 M	15.40 DEG	122.60 DEG	2073.70 M	-94.21 M	191.28 M
2113.50 M	15.30 DEG	122.60 DEG	2082.88 M	-95.57 M	193.40 M
2123.00 M	14.90 DEG	122.00 DEG	2092.03 M	-96.89 M	195.49 M
2132.60 M	14.50 DEG	121.20 DEG	2101.31 M	-98.18 M	197.57 M
2142.10 M	14.20 DEG	118.70 DEG	2110.52 M	-99.54 M	199.61 M
2151.60 M	14.60 DEG	117.15 DEG	2119.72 M	-100.44 M	201.70 M
2161.10 M	14.90 DEG	118.80 DEG	2128.91 M	-101.52 M	203.86 M
2170.60 M	14.90 DEG	118.30 DEG	2138.09 M	-102.59 M	206.06 M
2180.10 M	14.80 DEG	117.30 DEG	2147.27 M	-103.66 M	208.23 M
2189.60 M	14.60 DEG	117.00 DEG	2156.46 M	-104.80 M	210.38 M
2199.10 M	14.40 DEG	118.10 DEG	2165.65 M	-105.87 M	212.51 M
2208.50 M	14.40 DEG	118.10 DEG	2174.76 M	-106.94 M	214.59 M
2218.10 M	14.60 DEG	118.50 DEG	2184.05 M	-108.10 M	216.78 M
2227.60 M	14.40 DEG	120.30 DEG	2193.25 M	-109.29 M	218.76 M
2237.10 M	14.00 DEG	120.30 DEG	2202.46 M	-110.46 M	220.77 M
2246.60 M	13.70 DEG	119.50 DEG	2211.68 M	-111.60 M	222.74 M
2256.20 M	13.90 DEG	118.30 DEG	2221.00 M	-112.70 M	224.75 M
2265.70 M	14.20 DEG	118.70 DEG	2230.21 M	-113.79 M	226.81 M
2275.20 M	15.20 DEG	117.10 DEG	2239.40 M	-114.89 M	228.96 M
2284.70 M	15.50 DEG	113.90 DEG	2248.58 M	-116.07 M	231.20 M
2294.20 M	15.20 DEG	115.90 DEG	2257.72 M	-117.29 M	233.40 M
2303.90 M	15.00 DEG	119.20 DEG	2267.08 M	-118.51 M	235.61 M
2313.40 M	14.50 DEG	118.20 DEG	2276.27 M	-119.66 M	237.73 M
2322.90 M	14.30 DEG	117.80 DEG	2285.47 M	-120.79 M	239.82 M
2332.40 M	14.60 DEG	117.00 DEG	2294.67 M	-121.88 M	241.92 M
2341.90 M	14.60 DEG	117.20 DEG	2303.87 M	-122.97 M	244.05 M
2351.40 M	14.00 DEG	119.00 DEG	2313.08 M	-124.11 M	246.16 M
2360.90 M	14.90 DEG	120.20 DEG	2322.25 M	-125.30 M	248.26 M
2370.50 M	14.90 DEG	120.70 DEG	2331.48 M	-126.53 M	250.33 M
2380.00 M	14.10 DEG	119.90 DEG	2340.73 M	-127.73 M	252.40 M
2389.50 M	13.80 DEG	118.60 DEG	2349.95 M	-128.85 M	254.40 M
2399.00 M	13.80 DEG	119.40 DEG	2359.20 M	-129.91 M	256.38 M
2408.50 M	14.40 DEG	120.10 DEG	2368.41 M	-131.01 M	258.38 M
2418.00 M	14.60 DEG	120.10 DEG	2377.61 M	-132.21 M	260.39 M
2427.50 M	14.90 DEG	120.10 DEG	2386.80 M	-133.41 M	262.47 M
2437.00 M	15.10 DEG	120.70 DEG	2395.98 M	-134.66 M	264.58 M
2446.50 M	15.10 DEG	122.80 DEG	2405.15 M	-135.96 M	266.70 M
2456.00 M	14.80 DEG	122.60 DEG	2414.33 M	-137.28 M	268.78 M
2465.50 M	14.80 DEG	122.40 DEG	2423.51 M	-138.58 M	270.85 M
2475.20 M	14.60 DEG	122.00 DEG	2432.69 M	-139.89 M	272.93 M
2484.70 M	14.60 DEG	122.20 DEG	2442.09 M	-141.19 M	274.93 M
2494.20 M	13.90 DEG	121.50 DEG	2451.31 M	-142.37 M	276.89 M
2511.20 M	13.50 DEG	120.00 DEG	2467.82 M	-144.42 M	280.35 M
2520.00 M	13.50 DEG	-999.25 DEG	2476.35 M	-999.25 M	-999.25 M

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

Schlumberger

*** TVD ***

PLATFORM EXPRESS
COMPENSATED NEUTRON
LITHODENSITY LOG

Province: NORTHWEST TERRITORIES
Field: ARROWHEAD
Location: UNIT I, SECTION 75
Well: ANADARKO ARROWHEAD RIVER I-75
Company: ANADARKO CANADA CORPORATION

ANADARKO CANADA CORPORATION
ARROWHEAD RIVER I-75
ARROWHEAD TERRITORIES
PLATFORM EXPRESS
COMPENSATED NEUTRON LITHODENSITY LOG

Schlumberger

LOCATION
Other Services: Permanent Datum: GROUND LEVEL
Log Measured From: KELLY BUSHING
Drilling Measured From: KELLY BUSHING

Elev.: K.B. 0.0 m
G.L. 0.0 m
D.F. 0.0 m
Above Perm. Datum

Date: 23-FEB-2003
Run No.: ONE
Depth Driller: 3000.0 m
Depth Logger: 3000.0 m
Bottom Logged Interval: 3000.0 m
Top Logged Interval: 1800.0 m
Casing Driller Size @ Depth: 244.5 mm @ 1800.0 m
Casing Logger Size @ Depth: 244.5 mm @ 1800.0 m
Type Fluid in Hole: WBM
Density: 1.20 kg/m3
Viscosity: 50.0 s
PH: 9.0
Fluid Loss: 5.0 cm3
Source of Sample: CIRC
Rm @ Meas. Temp: 0.0 ohmm @ 0.0 degC
Rmf @ Meas. Temp: 0.0 ohmm @ 0.0 degC
Rmc @ Meas. Temp: 0.0 ohmm @ 0.0 degC
Source of Rmf / Rmc: MEAS / MEAS
Rm @ BHT: 0.0 ohmm @ 0.0 degC
Time Circulation Stopped: 23-FEB-2003 04:00
Time Logger on Bottom: 23-FEB-2003 04:27
Maximum Recorded Temperature: 0.0 degC
Equipment Number: 1010
Location: 10CO-306
Recorded By: D. LONGMORE
Witnessed By: C. LEBLANC

MUD

Run 1 | Run 2 | Run 3 | Run 4

DEPTH SUMMARY LISTING

Date Created: 23-FEB-2003 4:14:57

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B	Type: CMTD S/A	Type: 7-46P
Serial Number: 1010	Serial Number: 2439	Serial Number: 689
Calibration Date: 15-JAN-2003	Calibration Date: 29-JAN-2003	Length: 7315.20 M
Calibration Serial Number: 1	Calibration Serial Number: 999	
Calibration Cable Type: 7-46P	Calibration Gain: 0.88	Conveyance Method: Wireline
Wheel Correction 1: -5	Calibration Offset: 346.00	Rig Type: LAND
Wheel Correction 2: -6		

Depth Control Parameters

Log Sequence: Subsequent Trip To the Well

Reference Log Name:
Reference Log Run Number:
Reference Log Date: dd-Mmm-yyyy
Subsequent Trip Down Log Correction: 5.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

DISCLAIMER
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OTHER SERVICES	OTHER SERVICES
DS1: ARRAY INDUCTION	DS1
DS2: NEUTRON / DENSITY	DS2
DS3: DB SONIC	DS3
DS4: XY CALIPER	DS4
DS5: CMR	DS5

REMARKS: RUN NUMBER 1
ALL INTERVALS AND PRESENTATIONS AS PER CLIENT REQUEST
AT RUN WITH 2 X 3.5 mm ST-NOZZLES IN COMPLETE STANDOFF MODE
NEUTRON RUN WITH 120 DEGREE OFFSET BOWSPRING
CMR RUN WITH 4.5 mm STANDOFF
HOLE VOLUME CALCULATION USING 100% WASHOUT FROM CALIPER
HOLE VOLUME = 5.48 m3
REPEAT PASS ZONE JUST BELOW CASING, DUE TO MAXIMUM TOOL TEMP
BEING REACHED ON BOTTOM DURING FIRST PASS

REMARKS: RUN NUMBER 2

CREW: C. LONGMORE, J. WALLACE
C. LEBLANC, J. LEBLANC
PRIME 3 FIELD

SERVICE ORDER #	RUN 1	10007208	SERVICE ORDER #	RUN 2
PROGRAM VERSION:		10C0-306	PROGRAM VERSION:	
FLUID SAMPLE			FLUID SAMPLE	
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 | RUN 2

SURFACE EQUIPMENT
WITM GPTB-A

GSR-UY
NCT-B
CNS-AB
NVB-VB

DOWNHOLE EQUIPMENT

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_001UP	FN:11	PRODUCER	23-Feb-2003 03:06	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2536.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27	2882.6 M	2536.4 M

Integrated Hole/Cement Volume Summary

Hole Volume = 5.47 M3
Cement Volume = 5.47 M3 (assuming 0.00 MM casing O.D.)
Computed from 2874.4 M to 2588.8 M using data channel(s) HCAL CAL2

OP System Version: 10C0-306 MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS) 20000 (N) 0

Caliper (HCAL) (MM) 125 375

Gamma Ray (GR) (GAPI) 0 150

Tool/Tot. Drag From DIT to STIT

Caliper 2 (CAL2) (MM) 125 375

Cable Drag From STIA to STIT 2000

Std. Res. Formation Density (RHOZ) (K/M3) 3000

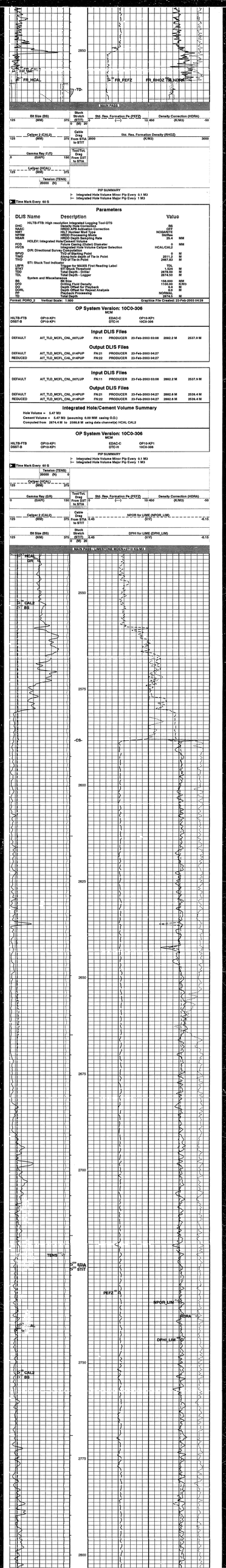
Bit Size (BS) (MM) 125 375

Stuck Sketch (STIT) 0 (N) 20

Std. Res. Formation Pe (PEFZ) (---) 0

Density Correction (HDRA) (K/M3) 10 -10

MAIN PASS



PASS

Bit Size (BS) (MM)		Stuck Stretch (STIT) (N)	Std. Res. Formation Pe (PEFZ) (---)	Density Correction (HDRA) (K/M3)
125	375	0 30	0 10.450	-50

Caliper 2 (CAL2) (MM)		Cable Drag From STSA to STIT	Stc. Res. Formation Density (RHOZ) (K/M3)	
125	375		2000	3000

Gamma Ray (GR) (GAPI)		Tool/Tot. Drag From DIT to STSA	
0	150		

Caliper (HCAL) (MM)	
125	375

Tension (TENS) (N)	
20000	0

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HLTB-FTB: High resolution Integrated Logging Tool-DTS		
CHC	HRDD Channel	BS	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mod Type	NOBARITE	
NSAM	HRDD Depth Sampling Rate	5in=1	
NSAR	HRDD Depth Sampling Rate	25.4	MM
	HOLEV: Integrated Hole/Cement Volume		
FCD	Future Casing (Outer) Diameter	0	MM
RVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
	DIR: Directional Surveying Computation		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-In Point	3511.2	M
TIVD	TVD of Tie-In Point	3497.83	M
	STI: Stuck Tool Indicator		
LBFH	Trigger for MAXIS First Reading Label	TDL	
TDC	Total Depth - Corrected	2874.00	M
TDD	Total Depth - Driller	2878.00	M
TDL	Total Depth - Logger	2874.50	M
	System and Miscellaneous		
BS	Bit Size	158.00	MM
DFD	Drilling Fluid Density	1100.00	K/M3
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
NPRS	Normalization Processing	NORMAL	
TD	Total Depth	2874.5	M

Format: PORO_2 Vertical Scale: 1:500 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M

2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_01#PUP	FN:21	PRODUCER	23-Feb-2003 04:27	
REDUCED	AIT_TLD_MCFL_CNL_01#PUP	FN:22	PRODUCER	23-Feb-2003 04:27	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M

2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_01#PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M
REDUCED	AIT_TLD_MCFL_CNL_01#PUP	FN:22	PRODUCER	23-Feb-2003 04:27	2882.6 M

2539.4 M
2539.4 M

Integrated Hole/Cement Volume Summary

Hole Volume = 5.47 M3
Cement Volume = 5.47 M3 (assuming 0.00 MM casing O.D.)
Computed from 2874.4 M to 2168.8 M using data channel(s) HCAL CAL2

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS) (N)	
20000	0

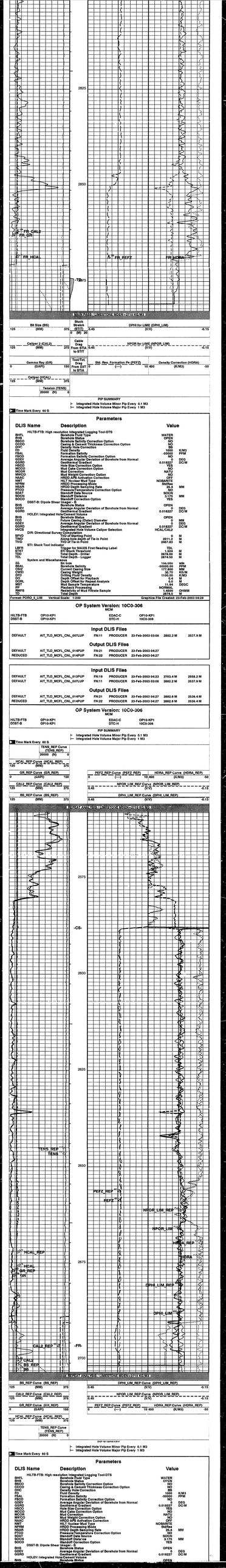
Caliper (HCAL) (MM)	
125	375

Gamma Ray (GR) (GAPI)		Tool/Tot. Drag From DIT to STSA	Std. Res. Formation Pe (PEFZ) (---)	Density Correction (HDRA) (K/M3)
0	150		0 10.450	-50

Caliper 2 (CAL2) (MM)		Cable Drag From STSA to STIT	NPOR for LIME (NPOR_LIM) (V/V)	
125	375		0.45	-0.15

Bit Size (BS) (MM)		Stuck Stretch (STIT) (N)	DPHI for LIME (DPHI_LIM) (V/V)	
125	375	0 30	0.45	-0.15

PASS REPEAT SECTION - BEGIN REPEAT 2874.4 M


Bit Size (BS)
(MM)
Caliper 2 (CAL2)
(MM)
Gamma Ray (GR)
(GAPI)
Caliper (HCAL)
(MM)
Tension (TENS)
(N)
Stuck Sketch
(STTI)
Cable Drag from STA to STT
Tool/Tub Drag from DAT to STA
Res. Res. Formation Pe (PEFZ)
(----)
Density Correction (HDRA)
(K/M3)
DPHI for LIME (DPHI_LIM)
(V/V)
NPOR for LIME (NPOR_LIM)
(V/V)
PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
BHFL
HILTB-FTB: High resolution Integrated Logging Tool-DTS
WATER
BHS
Borehole Status
OPEN
BSCO
Borehole Salinity Correction Option
NO
CGCO
Casing & Cement Thickness Correction Option
NO
DCO
Density Correction
NO
FD
Fluid Density
1000
KJM3
FBAL
Formation Salinity
-50000
PPM
FSCO
Formation Salinity Correction Option
NO
GSDV
Average Angular Deviation of Borehole from Normal
0
DEG
GGRD
Geothermal Gradient
0.018227
DC/M
HSCO
Hole Size Correction Option
YES
MCOR
Mud Correction
NATU
MWCO
Mud Weight Correction Option
NO
NAAC
HRDD APS Activation Correction
NO
NFMI
HRDD Filter Mode
NORMOPTE
NPMM
HRDD Processing Mode
Stiffmea
NSAM
HRDD Depth Sampling Rate
25.4
MM
PTCO
Pressure/Temperature Correction Option
NO
SDAT
Standoff Data Source
SCCO
SDCH
Standoff Distance
3.175
MM
SOCO
Standoff Correction Option
YES
DSST-B: Dipole Shear Imager - B
BHS
Borehole Status
OPEN
FSCO
Formation Salinity Correction Option
NO
GSDV
Average Angular Deviation of Borehole from Normal
0
DEG
GGRD
Geothermal Gradient
0.018227
DC/M
HOLEV: Integrated Hole Volume Caliper Selection
HCAL/CAL2
BHS
Borehole Status
OPEN
GSDV
Future Casing (Outer) Diameter
0
MM
GSDV
Average Angular Deviation of Borehole from Normal
0
DEG
GGRD
Geothermal Gradient
0.018227
DC/M
HVCS
Integrated Hole Volume Caliper Selection
HCAL/CAL2
DIR: Directional Survey Information
SPVO
TVD of Starting Point
0
M
TIMD
Along-hole depth of Tie-In Point
2811.2
M
TVD
TVD of Tie-In Point
2457.83
M
STI: Stuck Tool Indication
LBFI
Trigger for MAXIS First Reading Label
TDL
STKT
StT Stuck Threshold
1.524
M
TDD
Total Depth - Driller
2874.00
M
TD
Total Depth - Logger
2874.50
M
System and Miscellaneous
BS
Bit Size
156.000
MM
SSAL
Sea Water Salinity
-50000.000
PPM
CSIZ
Current Casing Size
177.800
MM
CWEI
Casing Weight
34.70
KG/M
DFD
Drilling Fluid Density
1100.00
KG/M
DO
Depth Offset for Playback
0.0
M
DOBL
Depth Offset for Repeat Analysis
0.0
M
MST
Mud Sample Temperature
25.0
DEGC
RMFI
Resistivity of Mud Filtrate Sample
NORMAL
RMFS
Resistivity of Mud Filtrate Sample
1.4000
OHMM
TD
Total Depth
2874.5
M
Format: PORO_5_LIM
Vertical Scale: 1:240
Graphics File Created: 23-Feb-2003 04:29
OP System Version: 10C0-306
HILTB-FTB
OP10-KP1
EDAC-C
OP10-KP1
DSST-B
OP10-KP1
DTC-H
10C0-306
Input DLIS Files
DEFAULT
AIT_TLD_MCFL_CNL_001LUP
FN:11
PRODUCER
23-Feb-2003 02:06
2882.2 M
2577.9 M
Output DLIS Files
DEFAULT
AIT_TLD_MCFL_CNL_01dPUP
FN:21
PRODUCER
23-Feb-2003 04:27
REDUCED
AIT_TLD_MCFL_CNL_01dPUP
FN:22
PRODUCER
23-Feb-2003 04:27
Input DLIS Files
DEFAULT
AIT_TLD_MCFL_CNL_013PUP
FN:19
PRODUCER
23-Feb-2003 04:23
2703.4 M
2558.2 M
DEFAULT
AIT_TLD_MCFL_CNL_001LUP
FN:11
PRODUCER
23-Feb-2003 03:06
2882.2 M
2537.9 M
Output DLIS Files
DEFAULT
AIT_TLD_MCFL_CNL_01dPUP
FN:21
PRODUCER
23-Feb-2003 04:27
2882.8 M
2539.4 M
REDUCED
AIT_TLD_MCFL_CNL_01dPUP
FN:22
PRODUCER
23-Feb-2003 04:27
2882.8 M
2539.4 M
OP System Version: 10C0-306
HILTB-FTB
OP10-KP1
EDAC-C
OP10-KP1
DSST-B
OP10-KP1
DTC-H
10C0-306
PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Time Mark Every 60 S
TENS_REP Curve (TENS_REP) 20000 (N) 0
HCAL_REP Curve (HCAL_REP) (MM) 125 375
GR_REP Curve (GR_REP) (GAPI) 0 150
CAL2_REP Curve (CAL2_REP) (MM) 125 375
BS_REP Curve (BS_REP) (MM) 125 375
PEFZ_REP Curve (PEFZ_REP) (----) 0 10 400
HDRA_REP Curve (HDRA_REP) (K/M3) 1900 2900
NPOR_LIM_REP Curve (NPOR_LIM_REP) (V/V) 0.45 -0.15
DPHI_LIM_REP Curve (DPHI_LIM_REP) (V/V) 0.45 -0.15
Bit Size (BS)
(MM)
Caliper 2 (CAL2)
(MM)
Gamma Ray (GR)
(GAPI)
Caliper (HCAL)
(MM)
Tension (TENS)
(N)
Stuck Sketch
(STTI)
Cable Drag from STA to STT
Tool/Tub Drag from DAT to STA
Res. Res. Formation Pe (PEFZ)
(----)
Density Correction (HDRA)
(K/M3)
DPHI for LIME (DPHI_LIM)
(V/V)
NPOR for LIME (NPOR_LIM)
(V/V)
PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Time Mark Every 60 S
Parameters
DLIS Name
Description
Value
BHFL
HILTB-FTB: High resolution Integrated Logging Tool-DTS
WATER
BHS
Borehole Status
OPEN
BSCO
Borehole Salinity Correction Option
NO
CGCO
Casing & Cement Thickness Correction Option
NO
DCO
Density Correction
NO
FD
Fluid Density
1000
KJM3
FBAL
Formation Salinity
-50000
PPM
FSCO
Formation Salinity Correction Option
NO
GSDV
Average Angular Deviation of Borehole from Normal
0
DEG
GGRD
Geothermal Gradient
0.018227
DC/M
HSCO
Hole Size Correction Option
YES
MCOR
Mud Correction Option
NO
MCOR
Mud Correction
NATU
MWCO
Mud Weight Correction Option
NO
NAAC
HRDD APS Activation Correction
NO
NFMI
HRDD Filter Mode
NORMOPTE
NPMM
HRDD Processing Mode
Stiffmea
NSAM
HRDD Depth Sampling Rate
25.4
MM
PTCO
Pressure/Temperature Correction Option
NO
SDAT
Standoff Data Source
SCCO
SDCH
Standoff Distance
3.175
MM
SOCO
Standoff Correction Option
YES
DSST-B: Dipole Shear Imager - B
BHS
Borehole Status
OPEN
GSDV
Average Angular Deviation of Borehole from Normal
0
DEG
GGRD
Geothermal Gradient
0.018227
DC/M
BHS
Borehole Status
OPEN

FCD	Picture Casing (Outer) Diameter	0	MM
GSEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
IWCS	Integrated Hole Volume Caliper Selection	HCAL;CAL2	
DIR	DIR: Directional Survey Computations		
SPVD	Vertical Starting Point	0	M
TMD	Along-hole depth of Tie-in Point	2511.2	M
TVD	TVD of Tie-in Point	2467.63	M
STI	STI: Stuck Tool Indicator		
TDL	Total Depth - Logger	2874.50	M
	System and Miscellaneous		
BS	Bit Size	156.000	MM
SALI	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	177.800	MM
CWEI	Casing Weight	35.70	KG/M
MDEN	Drilling Fluid Density	1100.00	KG/M
DO	Depth Offset for Playback	0.4	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	0.00	DEGC
MFSS	Mud Filtrate Source	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	1.4500	OHMM
TD	Total Depth	2874.5	M

Format: PORO_REP Vertical Scale: 1:250 Graphics File Created: 23-Feb-2003 04:28

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_013PUP	FN:19	PRODUCER	23-Feb-2003 04:23	2703.4 M	2558.2 M
DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27		
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_007LUP	FN:11	PRODUCER	23-Feb-2003 03:08	2882.2 M	2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M
REDUCED	AIT_TLD_MCFL_CNL_014PUP	FN:22	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Integrated Hole/Cement Volume Summary

Hole Volume = 5.47 M3
Cement Volume = 5.47 M3 (assuming 0.00 MM casing O.D.)
Computed from 2874.4 M to 2508.8 M using data channel(s) HCAL CAL2

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS) 20000 (N) 0

Caliper (HCAL) 125 (MM) 375

Tool/Tub Drag Scl. Res. Formation Pe (PEFZ) Density Correction (HDRA)
Gamma Ray (GR) 0 (GAPI) 150 From STI to STIA 0 0 (--) 10 450 (K/M3) -50

Caliper 2 (CAL2) 125 (MM) 375 Stuck Drag From STIA to STIT 0.45 NPOR for DOLO (NPOR_DOL) 0 (V/V) -0.15

Bit Size (BS) 125 (MM) 375 Stuck Drag (STIT) 0 (M) 20 0.45 DPHI for DOLO (DPHI_DOL) 0 (V/V) -0.15

MAIN PASS - DOLOMITE (HGEN=2.865 G/CM3)

HCAL DIR

CAL2 BS

-CS-

TENS HCAL

STIA STIT

PEFZ

NPOR_DOL

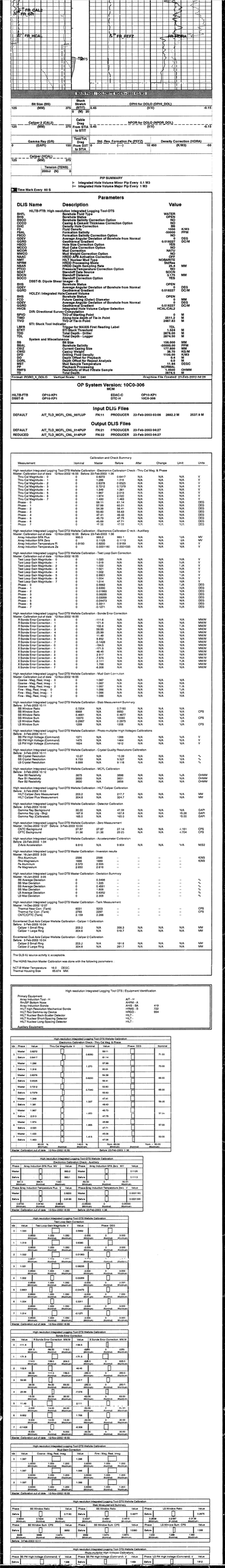
HDRA

HCAL DIR

DPHI_DOL

CAL2 BS

2550
2575
2600
2625
2650
2675
2700
2725
2750
2775
2800
2825
2850



MUDLOG Log Quality Control Plot

Bit Size (BS)
Stuck Stretch
DPHI for DOLO (DPHI_DOL)
Caliper 2 (CAL2)
Delta Caliper
NPOR for DOLO (NPOR_DOL)
Gamma Ray (GR)
Tool/Tool Drag
Std. Res. Formation Pe (PFFZ Pe)
Density Correction (HDRA)
Caliper (HCAL)
Tension (TEND)

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BHFL	HLTB-FTB: High resolution Integrated Logging Tool-DTS Borehole Fluid Type	WATER
BHSA	Borehole Salinity	0.45
BSCO	Borehole Salinity Correction Option	NO
CCCO	Casing & Cement Thickness Correction Option	NO
DTC	Fluid Compressibility	0
FHC	Fluid Density	1000 K/M3
FSAL	Formation Salinity	-99000 PPM
FSCO	Formation Salinity Correction Option	NO
GDEV	Geothermal Gradient Deviation of Borehole from Normal	0 DEG/M
GGRD	Geothermal Gradient	0.018227 DC/M
HSCO	Hole Size Correction Option	YES
MCCO	Mud Cake Correction Option	NO
MCOR	Mud Correction	NAT
MWCO	Mud Weight Correction Option	NO
NAXC	HRDD AIR Activate Correction	OFF
NBAR	HRDD Background Rate	NORMAL
NPMN	HRDD Processing Mode	Staffee
NSAR	HRDD Depth Sampling Rate	25.4 MM
SCCO	Standoff Caliper Correction Option	NO
SDCO	Standoff Distance	SCCO
SOCN	Standoff Distance	3.175 MM
SSCO	Standoff Correction Option	YES
BHB	DSST-B: Dipole Shear Imager - Base Logging Status	OPEN
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
BHS	HOLEV: Integrated Hole Volume Borehole Status	OPEN
FCD	Future Casing (Outer) Diameter	0 MM
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
HVCB	Integrated Hole Volume Caliper Selection	HCAL/CAL2
BPIO	DIR: Directional Survey Import TVD of Starting Point	0 M
TIMD	Along-hole depth of Tie-in Point	2511.2 M
TVD	TVD of Tie-in Point	2467.83 M
LBFR	MAXIS: Log Header Data Trigger for MAXIS First Reading Label	TDL
BTKT	BIT Block Threshold	1.524 M
TDD	Total Depth - Driller	2878.00 M
TDL	Total Depth - Logger	2874.00 M
BS	System and Miscellaneous Bit Size	155.600 MM
CSAL	Casing Salinity	177.800 MM
CSIZ	Current Casing Size	177.800 MM
CWEI	Casing Weight	38.70 KG/M
DFD	Drilling Fluid Density	1100.00 K/M3
DFT	Drilling Fluid Type	WBM
DGRL	Depth Offset for Repeat Analysis	0.0 M
MST	Mud Sample Temperature	11.94 DEGC
PP	Playback Processing	NORMAL
RMFS	Mud Filtrate / Filtrate Sample	0.0000 OHMM
TD	Total Depth	2874.0 M

Format: PORO_5_DOLO Vertical Scale: 1:240 Graphics File Created: 21-Feb-2003 04:04

OP System Version: 10C0-306

MCM

HLTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	10C0-306	

Input DLIs Files

DEFAULT	AIT_TLD_MCFL_CNL_GR7LUP	FN:11	PRODUCER	22-Feb-2003 03:08 2882.2 M 2537.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_01HPUP	FN:21	PRODUCER	22-Feb-2003 04:27
REDUCED	AIT_TLD_MCFL_CNL_01HPUP	FN:22	PRODUCER	22-Feb-2003 04:27

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: Calibration out of date - 10-Nov-2002 16:55 Before 25-Feb-2003 1:36							
Thru Cal Magnitude - 1	0	0.0010	0.0417	N/A	N/A	N/A	V
Thru Cal Magnitude - 1	0	1.266	1.316	N/A	N/A	N/A	V
Thru Cal Magnitude - 2	0	0.6318	0.6325	N/A	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.7212	0.7378	N/A	N/A	N/A	V
Thru Cal Magnitude - 4	0	1.266	1.316	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.897	2.019	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.974	2.020	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	0.1014	0.1014	N/A	N/A	N/A	V
Phase - 1	0	0.14	0.14	N/A	N/A	N/A	DEG
Phase - 1	0	57.99	60.01	N/A	N/A	N/A	DEG
Phase - 2	0	30.68	30.41	N/A	N/A	N/A	DEG
Phase - 3	0	53.60	55.83	N/A	N/A	N/A	DEG
Phase - 4	0	0.14	0.14	N/A	N/A	N/A	DEG
Phase - 5	0	47.79	47.79	N/A	N/A	N/A	DEG
Phase - 6	0	45.69	47.71	N/A	N/A	N/A	DEG
Phase - 7	0	0.00	0.00	N/A	N/A	N/A	DEG
BS		Bit Size		155.600	MM		
CSAL		Casing Salinity		177.800	MM		
CSIZ		Current Casing Size		177.800	MM		
CWEI		Casing Weight		38.70	KG/M		
DFD		Drilling Fluid Density		1100.00	K/M3		
GGRD		Geothermal Gradient		0.018227	DC/M		
HVCB		Integrated Hole Volume Caliper Selection		HCAL/CAL2			
BIRD	DIR: Directional Survey Import TVD of Starting Point			0	M		
TIMD		Along-hole depth of Tie-in Point		2511.2	M		
TVD		TVD of Tie-in Point		2467.83	M		
LBFR	STI: Stuck Tool Indicator Trigger for MAXIS First Reading Label			TDL			
BTKT		BIT Block Threshold		1.524	M		
TDD		Total Depth - Driller		2878.00	M		
TDL		Total Depth - Logger		2874.00	M		
BS	System and Miscellaneous Bit Size			155.600	MM		
CSAL		Casing Salinity		177.800	MM		
CSIZ		Current Casing Size		177.800	MM		
CWEI		Casing Weight		38.70	KG/M		
DFD		Drilling Fluid Density		1100.00	K/M3		
DFT		Drilling Fluid Type		WBM			
DGRL		Depth Offset for Repeat Analysis		0.0	M		
MST		Mud Sample Temperature		11.94	DEGC		
PP		Playback Processing		NORMAL			
RMFS		Mud Filtrate / Filtrate Sample		0.0000	OHMM		
TD		Total Depth		2874.0	M		

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration C-rack - Auxiliary

Master: Calibration out of date - 10-Nov-2002 16:55 Before 25-Feb-2003 1:36							
Array Induction SFA Flux	900.5	900.5	900.1	N/A	N/A	N/A	MV
Array Induction SFA Flux	0	0.0000	0.0112	N/A	N/A	N/A	MV
Array Induction Temperature PI	0	1.897	2.019	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.000180	0.000155	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Test Loop Gain Correction

Master: Calibration out of date - 10-Nov-2002 16:55							
Test Loop Gain Magnitude - 0	0	1.000	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 1	0	1.000	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 2	0	1.000	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 3	0	1.001	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 4	0	1.000	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 5	0	1.000	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 6	0	1.004	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude - 7	0	1.014	N/A	N/A	N/A	N/A	V
Phase - 0	0	0.0000	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	0.0183	N/A	N/A	N/A	N/A	DEG
Phase - 3	0	0.0220	N/A	N/A	N/A	N/A	DEG
Phase - 4	0	0.0269	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	0.0000	N/A	N/A	N/A	N/A	DEG
Phase - 7	0	-0.1271	N/A	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Sonde Error Correction

Master: Calibration out of date - 10-Nov-2002 16:55							
R Sonde Error Correction - 0	0	0.111	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	171.8	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	89.85	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	59.85	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	25.99	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	8.162	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	2.422	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-0.1426	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	-0.1943	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	-171.5	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	-89.71	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	-61.27	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	-7.570	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	-3.178	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	-0.705	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	-8.008	N/A	N/A	N/A	N/A	MM/M

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Mud Gain Correction

Master: Calibration out of date - 10-Nov-2002 16:55							
Gamma - Mag. Real, Imag. - 0	0	1.087	N/A	N/A	N/A	N/A	
Gamma - Mag. Real, Imag. - 1	0	1.087	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag. - 0	0	1.086	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag. - 1	0	1.086	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag. - 2	0	1.086	N/A	N/A	N/A	N/A	
Fine - Mag. Real, Imag. - 3	0	1.086	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Stab Measurement Survey

Before: 3-Feb-2003 10:11							
BB Window Ratio	0.7204	N/A	0.7160	N/A	N/A	N/A	
BB Window Sum	1.0000	N/A	1.0000	N/A	N/A	N/A	CPS
SR Window Ratio	0.4851	N/A	0.4877	N/A	N/A	N/A	
SR Window Sum	1.0072	N/A	1.0060	N/A	N/A	N/A	CPS
LB Window Ratio	0.2957	N/A	0.2923	N/A	N/A	N/A	
LS Window Sum	1.0299	N/A	1.0300	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Calibrations

Before: 3-Feb-2003 10:07							
SS PH High Voltage (Command)	1371	N/A	1398	N/A	N/A	N/A	V
SS PH High Voltage (Command)	1473	N/A	1502	N/A	N/A	N/A	V
LS PH High Voltage (Command)	1624	N/A	1612	N/A	N/A	N/A	V

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Crystal Quality Resolutions Calibration

Before: 3-Feb-2003 10:08							
SS Crystal Resolution	10.27	N/A	10.39	N/A	N/A	N/A	%
SS Crystal Resolution	9.733	N/A	9.527	N/A	N/A	N/A	%
LS Crystal Resolution	9.738	N/A	9.118	N/A	N/A	N/A	%

High resolution Integrated Logging Tool-DTS Wellsite Calibration - MCFL Calibration

Before: 3-Feb-2003 10:09							
Rxo R0 Resistivity	3570	N/A	3566	N/A	N/A	N/A	OHMM
Rxo R1 Resistivity	3550	N/A	3531	N/A	N/A	N/A	OHMM
Rxo R2 Resistivity	3550	N/A	3556	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool-DTS Wellsite Calibration - HILT Caliper Calibration

Before: 3-Feb-2003 10:09							
HILT Caliper Zero Measurement	203.2	N/A	217.7	N/A	N/A	N/A	MM
HILT Caliper Span Measurement	304.8	N/A	304.7	N/A	N/A	N/A	MM

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Calibration

Before: 3-Feb-2003 10:02							
Gamma Ray Background	30.00	N/A	47.06	N/A	N/A	N/A	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	16.06	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement

Master: Calibration out of date - 10-Nov-2002 16:55 Before: 3-Feb-2003 10:04							
CNTC Background	27.97	27.97	27.14	N/A	N/A	-1.151	CPS
GTTC Background	31.28	31.28	31.22	N/A	N/A	-1.704	CPS

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration

Before: 3-Feb-2003 1:34							
Z-Axis Acceleration	9.810	N/A	9.804	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Inversion results

Master: 16-Jan-2003 3:09							
Rho Aluminum	2696	2696	--	--	--	--	K/M3
Rho Magnesium	1686	1686	--	--	--	--	K/M3
Pe Aluminum	2.920	2.920	--	--	--	--	
Pe Magnesium	3.210	3.210	--	--	--	--	

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Deviation Summary

Master: 16-Jan-2003 3:09							
BB Average Deviation	0	0.3498	--	--	--	--	%
SS Average Deviation	0	0.1351	--	--	--	--	%
SR Average Deviation	0	0.4000	--	--	--	--	%
LS Average Deviation	0	0.4351	--	--	--	--	%
LB Average Deviation	0	0.6352	--	--	--	--	%
LS Max Deviation	0	2.308	--	--	--	--	%

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Tank Measurement

Master: 14-Dec-2002 12:07							
Thermal Near Conc. (Tank)	6031	6203	--	--	--	--	CPS
Thermal Far Conc. (Tank)	2783	2287	--	--	--	--	CPS
CNTC/GTTC (Tank)	2.169	2.688	--	--	--	--	

Excentered Dual Axis Caliper Wellsite Calibration - Caliper 1 Calibration

Before: 3-Feb-2003 10:04							
Caliper 1 Small Ring	203.2	N/A	356.3	N/A	N/A	N/A	MM
Caliper 1 Large Ring	304.8	N/A	518.7	N/A	N/A	N/A	MM

Excentered Dual Axis Caliper Wellsite Calibration - Caliper 2 Calibration

Before: 3-Feb-2003 10:04							
Caliper 2 Small Ring	203.2	N/A	181.6	N/A	N/A	N/A	MM
Caliper 2 Large Ring	304.8	N/A	261.7	N/A	N/A	N/A	MM

The GLS-U source activity is acceptable.

The 10N0 Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 16.0 DEGC
Thermal Housing Size 85.674 MM

High resolution Integrated Logging Tool OTS | Equipment Identification

Primary Equipment	
Array Induction Tool - H	AIT - H
Pro/SP Bottom Nose	ARBH - A
Array Induction Tool - H	AHRB - A 419
HILT Tri Axial Induction Mechanical Sonde	HRMS - B 722
HILT Tri Axial Induction Electronics	HRGD - 894
HILT Nuclear Back-Scatter Detector	HILT -
HILT Nuclear Long-Spacing Detector	HILT -
HILT Nuclear Long-Spacing Detector	HILT -
Auxiliary Equipment	

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase

Up	Phase	Value	Thru Cal Magnitude - 0	Value	Phase	Value	Phase DEG	Nominal
1	Master	0.8272		0.4060		59.11		71.00
	Before	0.8417		0.4139		61.14		
2	Master	1.398		1.370		67.99		70.00
	Before	1.314				60.01		
3	Master	0.8376		0.4830		54.38		68.00
	Before	0.8326				55.83		
4	Master	0.7218		0.7345		53.80		68.00
	Before	0.7379				55.83		
5	Master	1.349		1.337		48.42		56.00
	Before	1.385				48.42		
6	Master	1.967		1.953		49.73		57.00
	Before	2.013				47.79		
7	Master	1.974		1.955		45.68		57.00
	Before	2.020				47.71		
8	Master	1.430		1.413		45.38		53.00
	Before	1.452				47.71		
		80.00 % Above	1463 % Nominal			Nom -80.00 Minimum	Nom + 80.00 Nominal	

Master: Calibration out of date - 10-Nov-2002 16:55 Before: 3-Feb-2003 1:36

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Electronics Calibration Check - Auxiliary

Phase	Array Induction SFA Flux MV	Value	Phase	Array Induction SFA Zero MV	Value	
Master		900.5	Master		0.1125	
Before		900.1	Before		0.1113	
	80.00 Above	1041 % Nominal		-80.00 Minimum	80.00 Nominal	

Phase	Array Induction Temperature Flux	Value	Phase	Array Induction Temperature Zero	Value
Master		0.9000	Master		0.000180
Before		0.9186	Before		0.000155
	0.8700 Above	0.9000 Nominal		-0.0500 Minimum	0.05000 Nominal

Master: Calibration out of date - 10-Nov-2002 16:55 Before: 3-Feb-2003 1:36

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Test Loop Gain Correction

Up	Value	Test Loop Gain Magnitude - 0	Value	Value	Phase DEG
0	1.000		0.9992		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal
1	1.014		0.9990		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal
2	1.002		0.9983		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal
3	1.001		0.9828		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal
4	1.002		1.000		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal
5	0.992		0.9473		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal
6	1.004		0.9301		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal
7	1.014		0.1271		0.000
		0.9000 Minimum	1.000 Nominal	1.050 Maximum	0.000 Nominal

Master: Calibration out of date - 10-Nov-2002 16:55

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Sonde Error Correction

Up	Value	R Sonde Error Correction - MM.M	Value	X Sonde Error Correction - MM.M
0	-111.8		194.5	
		-600.0 Minimum	0.000 Nominal	600.0 Maximum
1	171.8		-171.5	
		-600.0 Minimum	0.000 Nominal	600.0 Maximum
2	89.85		-89.71	
		-600.0 Minimum	0.000 Nominal	600.0 Maximum
3	59.85		-61.27	
		-600.0 Minimum	0.000 Nominal	600.0 Maximum
4	25.99		-7.570	
		-15.00 Minimum	0.000 Nominal	15.00 Maximum
5	11.40		0.111	
		-4.000 Minimum	0.000 Nominal	4.000 Maximum
6	8.952		-1.708	
		-8.000 Minimum	0.000 Nominal	8.000 Maximum
7	-0.1426		-8.008	
		-8.000 Minimum	0.000 Nominal	8.000 Maximum

Master: Calibration out of date - 10-Nov-2002 16:55

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Up	Value	Coarse - Mag. Real, Imag.	Value	Value	Fine - Mag. Real, Imag.	Value
0	1.087		1.086			1.086
		0.9000 Minimum	1.000 Nominal	1.200 Maximum	0.9000 Minimum	1.000 Nominal
1	1.087		1.086			1.086
		0.9000 Minimum	1.000 Nominal	1.200 Maximum	0.9000 Minimum	1.000 Nominal
2	1.087		1.086			1.086
		0.9000 Minimum	1.000 Nominal	1.200 Maximum	0.9000 Minimum	1.000 Nominal

Master: Calibration out of date - 10-Nov-2002 16:55

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Summary

Phase	SS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Master		0.7160	Before		0.7204	Master		0.2923
Before		0.7204	Before		0.7160	Before		0.2957
	0.6864 Above	0.7204 Nominal		0.4447 Minimum	0.4851 Nominal	0.0836 Minimum	0.2957 Nominal	0.5136 Above

Phase	SS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		1.000	Before		1.000	Before		1.030
	0.9000 Above	1.000 Nominal		0.9000 Above	1.000 Nominal		0.9000 Above	1.030 Nominal

Master: 4-Feb-2003 02:01

High resolution Integrated Logging Tool-DTS Wellsite Calibration - Photo-multiplier High Voltages Summary

Phase	SS PH High Voltage (Command)	Value	Phase	SS PH High Voltage (Command)	Value	Phase	LS PH High Voltage (Command)	Value
Before		1398	Before		1502	Before		1612
	1260 Above	1398 Nominal		1352 Above	1502 Nominal		1451 Above	1612 Nominal

N.E.B. COPY

Schlumberger

ANADARKO CANADA CORPORATION

ANADARKO ARROWHEAD RIVER I-75
ARROWHEAD
NORTHWEST TERRITORIES *** TVD ***

PLATFORM EXPRESS
COMPENSATED NEUTRON
LITHODENSITY LOG

Province: NORTHWEST TERRITORIES
Field: ARROWHEAD
Location: UNIT I, SECTION 75
Company: ANADARKO CANADA CORPORATION

LOCATION

UNIT I, SECTION 75 — Elev.: K.B. 517.9 m; G.L. 510.8 m; D.F. 517.6 m

		Elev.
Permanent Datum:	GROUND LEVEL	510.8 m
Log Measured From:	KELLY BUSHING	7.1 m above Perm. Datum
Drilling Measured From:	KELLY BUSHING	

API Serial No.: N/A

	Run 1	Run 2	Run 3	Run 4
Logging Date	23-Feb-2003			
Run Number	TWO			
Depth Driller	2878 m			
Schlumberger Depth	2874.5 m			
Bottom Log Interval	2869 m			
Top Log Interval	2587.8 m			
Casing Driller Size @ Depth	177.800 mm @ 2583.6 m	@	@	@
Casing Schlumberger	2587.8 m			
Bit Size	156.000 mm			
Type Fluid In Hole	POLYMER			
MUD Density / Viscosity	1100 kg/m3 / 51 s			
MUD Fluid Loss / PH	6.5 cm3 / 10.5			
Source Of Sample	FLOW LINE			
RM @ Measured Temperature	1.330 ohm.m @ 12 degC	@	@	@
RMF @ Measured Temperature	1.450 ohm.m @ 11 degC	@	@	@
RMC @ Measured Temperature	1.680 ohm.m @ 12 degC	@	@	@
Source RMF / RMC	MEASURED / MEASURED			
RM @ MRT / RMF @ MRT	0.304 @ 125 / 0.325 @ 125	@ / @	@ / @	@ / @
Maximum Recorded Temperatures	125 degC			
Circulation Stopped / Time	22-Feb-2003 / 17:00			
Logger On Bottom / Time	23-Feb-2003 / 3:15			
Unit Number / Location	2016 / GRANDE PRAIRIE			
Recorded By	CURTIS MOFFAT			
Witnessed By	GORDON RICHMOND			

DEPTH SUMMARY LISTING

Date Created: 23-FEB-2003 4:14:57

Depth System Equipment

Tension Device

Type:	CMTD-B/A
Serial Number:	2434
Calibration Date:	28-JAN-2003
Calibrator Serial Number:	369
Calibration Gain:	148.00
Calibration Offset:	348.00

Logging Cable

Type:	7-46P
Serial Number:	7315
Length:	2838.20 M
Conveyance Method:	Wireline
Rig Type:	LAND

Depth Measuring Device

Type:	IDW-B
Serial Number:	4804
Calibration Date:	28-JAN-2003
Calibrator Serial Number:	4
Calibrator Cable Type:	7-46P
Wheel Correction Above:	-5
Wheel Correction 2:	0

Depth Control Parameters

Log Sequence: Subsequent Trip To the Well

Reference Log Name:
Reference Log Run Number:
Reference Log Date: dd-Mmm-yyyy
Subsequent Trip Down Log Correction: 5.00 M

Depth Control Remarks

1.
2.
3.
4.
5.
6.

DISCLAIMER
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OTHER SERVICES 1
OS1: IDW-B 4804
OS2: DSI SONIC
OS3: DSI RMC
OS4: FM
OS5:
REMARKS: RUN NO RESTRICTIONS AS PER CLIENT REQUEST
RUN WITH 2 1/2 INCH STANDOFFS IN COMPUTE STANDOFF MODE
DSI SONIC RUN WITH 3 STANDOFFS
HOLE VOLUME CALCULATION DONE USING 1TOAL AND CAL2
REPEAT PASS FROM JUST BELOW CASING DUE TO MAXIMUM TOOL TEMP
BEND REACHED ON BOTTOM DURING FIRST PASS

CREW: C. CONSIDINE, J. WALLACE
RIG: SHERETA WILSON 5
PRINTS: 2 FIELD

SERVICE ORDER #: 1000228
RECEIVED BY: CCC2228
FLUID LEVEL:

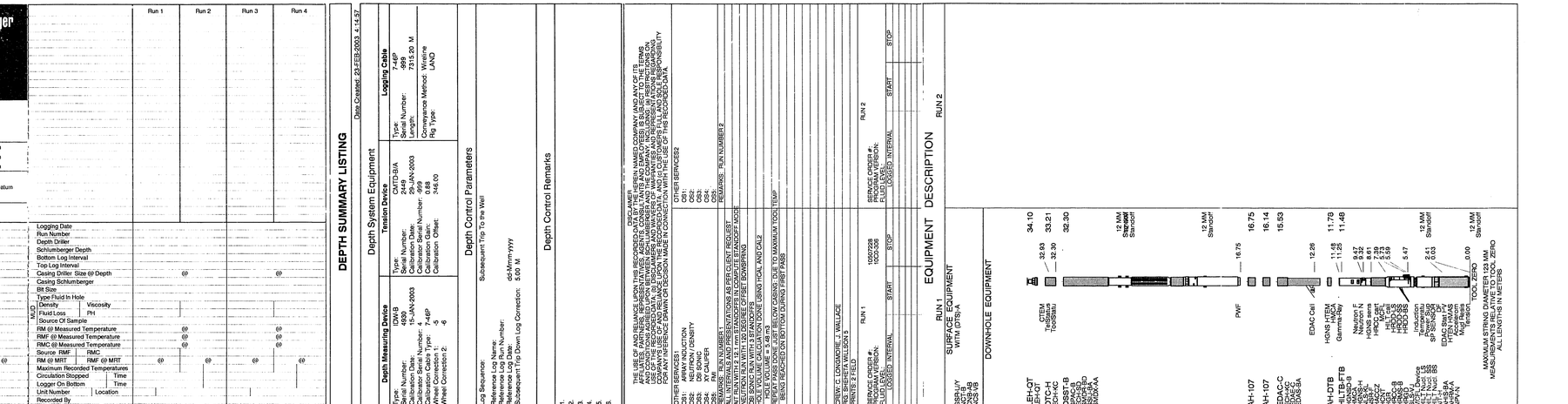
	RUN 1	RUN 2
LOGGED INTERVAL:	$TART	$TOP
SERVICE ORDER #:		
RECEIVED BY:		
FLUID LEVEL:		
LOGGED INTERVAL:	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 — RUN 2

SURFACE EQUIPMENT
WITM DTSI-A

DOWNHOLE EQUIPMENT



Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_01#1PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M / 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_01#1PUP	FN:23	PRODUCER	23-Feb-2003 04:44	2826.4 M	2499.6 M
REDUCED	AIT_TLD_MCFL_CNL_01#1PUP	FN:24	PRODUCER	23-Feb-2003 04:44	2826.4 M	2946.6 M

Indexed To True Vertical Depth in this Playback

OP System Version: 10C0-306

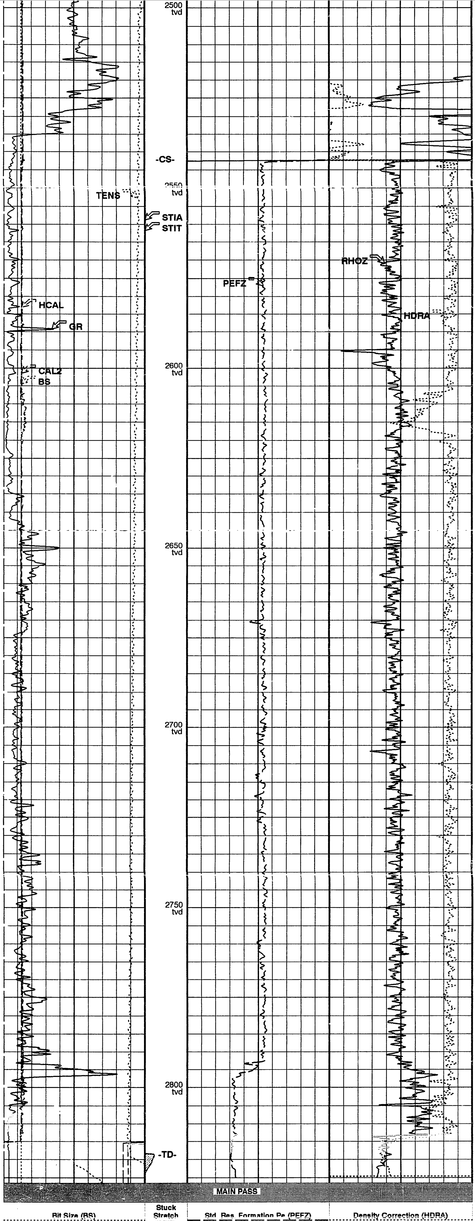
HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1		
DSST-B	OP10-KP1	DTC-H	10C0-306		

PIP SUMMARY
- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (CTEM) 3000 LBF

| | | | | | |



MAIN PASS

Bit Size (BS)	Stuck Stretch	Std. Res. Formation Pe (PEFZ)	Density Correction (HDRA)
125 (MM) 375	(STIT) 0 (M) 20	0 (----) 10	450 (K/M3) -50

Caliper 2 (CAL2)	Cable Drag	Std. Res. Formation Density (RHOZ)
125 (MM) 375	From STIA to STIT	2000 (K/M3) 3000

Gamma Ray (GR)	Tool/Tot. Drag
0 (GAPI) 150	From D3T to STIA

Caliper (HCAL)
125 (MM) 375

Tension (TENS)
20000 (N) 0

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS		
DHC	Density Hole Correction	BS	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	25.4	MM
	HOLEV: Integrated Hole/Cement Volume		
FCD	Future Casing (Outer) Diameter	0	MM
HVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-in Point	2511.2	M
TIVD	TVD of Tie-in Point	2467.83	M
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS Firat Reading Label	TDL	
STKT	STI Stuck Threshold	1.524	M
TDD	Total Depth - Driller	2876.00	M
TDL	Total Depth - Logger	2874.50	M
	System and Miscellaneous		
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth	
BS	Bit Size	158.000	MM
DFD	Drilling Fluid Density	1100.00	K/M3
DO	Depth Offset for Playback	0.0	M
PBVSADP	Use alternate depth channel for playback	YES	
PP	Playback Processing	NORMAL	
TD	Total Depth	2874.5	M

Format: PORO_2 Vertical Scale: 1:600 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44		
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44	2826.4 M	2496.6 M
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44	2826.4 M	2496.6 M

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS)
20000 (N) 0

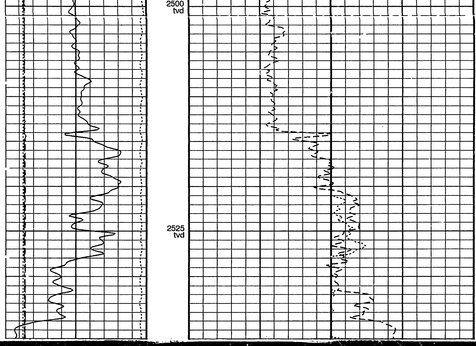
Caliper (HCAL)
125 (MM) 375

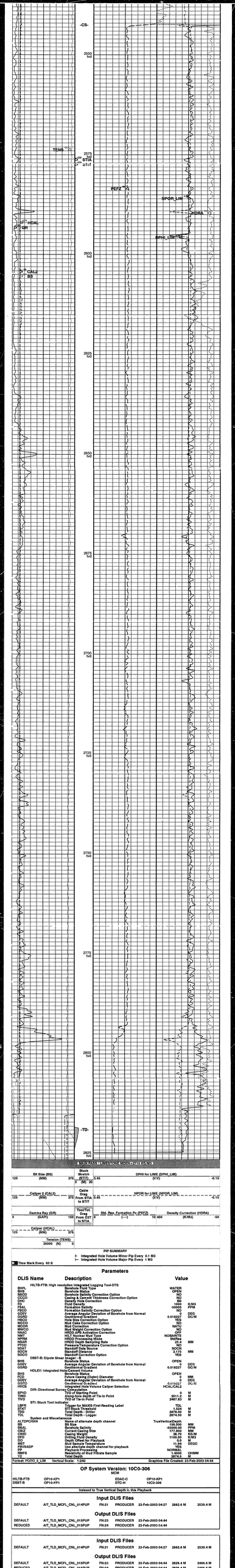
Gamma Ray (GR)	Tool/Tot. Drag	Std. Res. Formation Pe (PEFZ)	Density Correction (HDRA)
0 (GAPI) 150	From D3T to STIA	0 (----) 10	450 (K/M3) -50

Caliper 2 (CAL2)	Cable Drag	NPOR for LIME (NPOR_LIM)
125 (MM) 375	From STIA to STIT	0.45 (V/V) -0.15

Bit Size (BS)	Stuck Stretch	DPHI for LIME (DPHI_LIM)
125 (MM) 375	(STIT) 0 (M) 20	0.45 (V/V) -0.15

MAIN PASS / LIMESTONE MDEN = 2710 KG/M3





Bit Size (BS) (MM) 125 375

Stuck Stretch (STIT) 0 0.45 30

DPHI for LIME (DPHI_LIM) (V/V) 0.45 -0.15

Caliper 2 (CAL2) (MM) 125 375

Cable Drag From STIA 0 0.45 30

NPOR for LIME (NPOR_LIM) (V/V) 0.45 -0.15

Gamma Ray (GR) (GAPI) 0 150

Tool/Tot. Drag From DIT 0 to STIA

Bhd. Res. Formation Pv (PEFZ) (---) 0 10.000

Density Correction (HDRA) (G/M3) 0.250 -.150

Caliper (HCAL) (MM) 125 375

Tension (TENS) (N) 20000 0

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 0.1 M3

Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS	MCM	
BHFL	Borehole Fluid Type	WATER	
BHSA	Borehole Salinity	0.0000	PPM
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DNC	Density Hole Correction	BS	
FBAL	Formation Density	2650	KJM3
FSCO	Formation Salinity Correction Option	0.0000	PPM
GDEV	Average Angular Deviation of Borehole from Normal	NO	
GDIR	Geothermal Gradient	0	DEG
HSCO	Hole Size Correction Option	0.018227	DC/M
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NO	
MSCO	Mud Salinity Correction Option	NATU	
NAVC	NMRO Log Correction Option	OFF	
NMT	HILT Nuclear Mud Type	NONBARITE	
NPRM	HRDD Processing Mode	StdRes	
PDRA	Pressure/Temperature Rate	1.524	MM
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SDIS	Standoff Distance	5.113	MM
SOCO	Standoff Correction Option	YES	
	DSST-B: Dipole Shear Imager 1		
BHS	Borehole Status	OPEN	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GDIR	Geothermal Gradient	0.018227	DC/M
	HOLEV: Integrated Hole Cement Volume		
BHS	Borehole Status	OPEN	
BSIZ	Bit Size (Borehole) Diameter	0	MM
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GSTD	Geothermal Gradient	0.018227	DC/M
HVOL	Integrated Hole Volume Caliper Selection	HCAL,CAL2	
	DIR: Directional Survey Configuration		
SPVD	Along-hole depth of Tie-In Point	0	M
TIMD	Along-hole depth of Tie-In Point	2511.2	M
TIVD	TVD of Tie-In Point	2467.83	M
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	1.524	M
TDD	Total Depth - Driller	2878.00	M
TDL	Total Depth - Logger	2874.60	M
	System and Miscellaneous		
ALTKPCHAN	Name of alternate depth channel	TrueVerticalDepth	
BS	Bit Size	158.000	MM
CSAL	Casing Salinity	0.0000	PPM
CSIZ	Current Casing Size	177.800	MM
CWEI	Casing Weight	38.70	KG/M
DFD	Drilling Fluid Density	1100.00	K/M3
DFL	Depth Offset for Playback	0.00	M
MST	Mud Sample Temperature	11.94	DEGC
PBFSADP	Use alternate depth channel for playback	YES	
PBPS	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.0000	OHMM
TD	Total Depth	2874.6	M

Format: POITO_S_LIM Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M 2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44	
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44	

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M 2539.4 M
DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44	2826.4 M 2496.6 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:25	PRODUCER	23-Feb-2003 04:58	
REDUCED	AIT_TLD_MCFL_CNL_016PUP	FN:26	PRODUCER	23-Feb-2003 04:58	

Indexed to True Vertical Depth in this Playback

OP System Version: 10C0-306

MCM

HILTS-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Tension (TENS) 20000 (N) 0

Caliper (HCAL) 125 (MM) 375

Tool/Tot. Dwg From DIT to STIA

Gamma Ray (GR) 0 (GAPI) 150

Std. Res. Formation Pe (PEFZ) 0 (---) 10

Density Correction (HDRA) .450 (K/M3) -50

Caliper 2 (CAL2) 125 (MM) 375

Cable Dwg From STIA to STIT

Std. Res. 0.45

NPOR for DOLO (NPOR_DOL) (V/V) -0.15

Bit Size (BS) 125 (MM) 375

Stuck Stretch (STIT) 0 (M) 20

2.49

DPHI for DOLO (DPHI_DOL) (V/V) -0.15

MAIN PASS PRODCUTE MCM=2600 KB M3

2500 fvd

2525 fvd

-CS-

2550 fvd

TENS

2575 fvd

STIA

STIT

PEFZ

NPOR_DOL

HDRA

DPHI_DOL

HDAL

GR

2600 fvd

CAL2

BS

2625 fvd

2650 fvd

2675 fvd

2700 fvd

2725 fvd

2750 fvd

2775 fvd

2800 fvd

-TD-

2825 fvd

MAIN PASS PRODCUTE MCM=2600 KB M3

Bit Size (BS) 125 (MM) 375

Stuck Stretch (STIT) 0 (M) 20 0.45

DPHI for DOLO (DPHI_DOL) (V/V) -0.15

Cable Dwg From STIA to STIT

Caliper 2 (CAL2) 125 (MM) 375

Std. Res. 0.45

NPOR for DOLO (NPOR_DOL) (V/V) -0.15

Gamma Ray (GR) 0 (GAPI) 150

Tool/Tot. Dwg From DIT to STIA

Std. Res. Formation Pe (PEFZ) 0 (---) 10

Density Correction (HDRA) .450 (K/M3) -50

Caliper (HCAL) 125 (MM) 375

Tension (TENS) 20000 (N) 0

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 0.1 M3
- Integrated Hole Volume Major Pip Every 1 M3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB-FTB: High resolution Integrated Logging Tool-DTS		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1000	K/M3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HSCO	Hole Size Correction Option	YES	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	25.4	MM
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SOCN	Standoff Distance	3.175	MM
SOCO	Standoff Correction Option	YES	
	DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	0	MM
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
HVCS	Integrated Hole Volume Caliper Selection	HCAL/CAL2	
	DIR: Directional Survey Computation		
SPVD	TVD of Starting Point	0	M
TIMD	Along-hole depth of Tie-in Point	2511.2	M
TIVD	TVD of Tie-in Point	2467.83	M
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	1.524	M
TDD	Total Depth - Driller	2878.00	M
TDL	Total Depth - Logger	2874.50	M
	System and Miscellaneous		
ALTDPCHAN	Name of alternate depth channel	TrueVerticalDepth	
BS	Bit Size	156.000	MM
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	177.800	MM
CWEI	Casing Weight	38.70	KG/M
DFD	Drilling Fluid Density	1100.00	K/M3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	11.94	DEGC
PBVSADP	Use alternate depth channel for playback	YES	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	1.4500	OHMM
TD	Total Depth	2674.5	M

Format: PORO_5_DOLO Vertical Scale: 1:240 Graphics File Created: 23-Feb-2003 04:44

OP System Version: 10C0-306

MCM

HILTB-FTB	OP10-KP1	EDAC-C	OP10-KP1
DSST-B	OP10-KP1	DTC-H	10C0-306

Indexed to True Vertical Depth in this Playback

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_014PUP	FN:21	PRODUCER	23-Feb-2003 04:27	2882.6 M	2539.4 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_015PUP	FN:23	PRODUCER	23-Feb-2003 04:44
REDUCED	AIT_TLD_MCFL_CNL_015PUP	FN:24	PRODUCER	23-Feb-2003 04:44

Directional Survey Manually-Entered Inclinometry Summary

Tie In Point :	Measured Depth	True Vertical Depth	North Departure	East Departure
	2511.20 M	2467.83 M	0.00 M	0.00 M

Depth	Deviation	Azimuth	True Vertical Depth	North Departure	East Departure
2511.20 M	13.50 DEG	120.00 DEG	2467.83 M	0.00 M	0.00 M
2655.00 M	12.12 DEG	106.90 DEG	2608.05 M	-12.72 M	29.16 M
2740.00 M	15.00 DEG	101.90 DEG	2690.67 M	-17.64 M	48.46 M
2864.00 M	20.00 DEG	96.90 DEG	2808.89 M	-23.66 M	85.24 M

Company: ANADARKO CANADA CORPORATION

Schlumberger

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

*** TVD ***

PLATFORM EXPRESS
COMPENSATED NEUTRON
LITHODENSITY LOG

COMPUTED

Schlumberger

Company: ANADARKO CANADA CORPORATION
Well: ANADARKO ARROWHEAD RIVER I-75
Field: ARROWHEAD
Province: NORTHWEST TERRITORIES

SIGMA MODE N.E.B. COPY
RESERVOIR SATURATION LOG
NORTHWEST TERRITORIES/ ARROWHEAD

Company: ANADARKO CANADA CORPORATION
Well: ANADARKO ARROWHEAD RIVER I-75
Field: ARROWHEAD
Province: NORTHWEST TERRITORIES
Location: UNIT I, SECTION 75
Well: ANADARKO ARROWHEAD RIVER I-75
Company: ANADARKO CANADA CORPORATION

Logging Date	13-Mar-2003	Permanent Datum:	GROUND LEVEL
Run Number	ONE	Log Measured From:	KELLY BUSHING
Depth Driller	2787 m	Drilling Measured From:	KELLY BUSHING
Bottom Log Interval	2787 m		
Top Log Interval	2678 m		
Casing Type	CASING		
Salinity			
Density			
Fluid Level			
Fluid Type	BRINE		
Logging Unit	10C0-306		
Logging Engineer	FRANK MACEACHERN		
Witnessed By	JOE GRAVES		

Elev.:	518.9 m	K.B.	518.9 m
	71 m above Perm. Datum	G.L.	518.9 m
		D.F.	518.9 m

Logged Interval	2787 m	2678 m	
Casing Driller	244.5 mm @ 2787 m		
Casing Logged	244.5 mm @ 2787 m		
Bit Size	222.3 mm		
Type Fluid in Hole	WATER BASED MUD		
Density	1.00 g/cm3	1100 kg/m3	
Viscosity	38.69 sp/n		
pH			
Fluid Loss			
Source of Sample			
Rm @ Measured Temp			
Rmf @ Measured Temp			
Rmc @ Measured Temp			
Source of Rmf and Rmc			
Rm @ BHT			
Time Since Circulation			
Time on Bottom	13-Mar-2003 17:00		
Max Rec. Temp.	146 degC		
Equipment; Location	1100		
Recorded By			
Witnessed By			

PVT DATA

Oil Density			
Gas Gravity			
Oil Gravity			
Bo			
Rs			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Recorded Temperatures			

CEMENTING DATA

Primary/Squeeze			
Casing/Liner			
Lead Cement Type			
Amount			
Water Loss			
Density			
Additives			
Tail Cement Type			
Amount			
Water Loss			
Density			
Additives			
Displacement			
Expected Cement Top			
Logged Data			
Depth Driller			
Bottom Log Interval			
Top Log Interval			
Casing Type			
Salinity			
Density			
Fluid Level			
Fluid Type	BIT/CASING/TUBING STRING		
Logging Unit	10C0-306		
Logging Engineer	FRANK MACEACHERN		
Witnessed By	JOE GRAVES		

Logged Interval	2787 m	2678 m	
Casing Driller	244.5 mm @ 2787 m		
Casing Logged	244.5 mm @ 2787 m		
Bit Size	222.3 mm		
Type Fluid in Hole	WATER BASED MUD		
Density	1.00 g/cm3	1100 kg/m3	
Viscosity	38.69 sp/n		
pH			
Fluid Loss			
Source of Sample			
Rm @ Measured Temp			
Rmf @ Measured Temp			
Rmc @ Measured Temp			
Source of Rmf and Rmc			
Rm @ BHT			
Time Since Circulation			
Time on Bottom	13-Mar-2003 17:00		
Max Rec. Temp.	146 degC		
Equipment; Location	1100		
Recorded By			
Witnessed By			

	Run 1	Run 2	Run 3	Run 4
Oil Density				
Gas Gravity				
Oil Gravity				
Bo				
Rs				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Recorded Temperatures				
CEMENTING DATA				
Primary/Squeeze	Primary			
Casing/Liner				
Lead Cement Type				
Amount				
Water Loss				
Density				
Additives				
Tail Cement Type				
Amount				
Water Loss				
Density				
Additives				
Displacement				
Expected Cement Top				
Logged Data				
Depth Driller				
Bottom Log Interval				
Top Log Interval				
Casing Type				
Salinity				
Density				
Fluid Level				
Fluid Type				
Logging Unit				
Logging Engineer				
Witnessed By				

DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: GR/CCL DUMMY RUN	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
CORRELATED TO SOC PLATFO/SM EXPRESS COMPENSATED NEUTRON LITHODENSITY	
LOG DATED 23-FEB-2003.	
RUN 1: DEPTH DETERMINATION (DUMMY RUN)	
RUN 2: RESERVOIR SATURATION TOOL	
BOTTOM HOLE PRESSURE: 24500 KPA	
BOTTOM HOLE TEMPERATURE: 146 DEGC	
APPARENT COLUMN OF FLUID FROM 2791.0 TO 2637.5 MKB	
RST REACHED MAXIMUM TEMPERATURE RATING @ 150 DEGC	
RST CARTRIDGE TEMPERATURE VARIES FROM 146 DEGC TO 150 DEGC	
LOC ERRORS DUE TO TEMPERATURE OF WELL VERSUS TOLL TEMP RATING.	
RST MINITRON AUTOMATICALLY TURNED OFF AT CASING BOTTOM DUE TO TEMPERATURE.	
REPEAT AND MAIN PASS OVER LAP OF 60 METERS. DIDN'T WANT TO STAY	
IN HOLE LONGER THAN NEEDED TO AQUIRE DAT OVER OPEN HOLE INTERVAL.	

RUN 1			RUN 2		
SERVICE ORDER #:		10546588	SERVICE ORDER #:		
PROGRAM VERSION:		10C0-306	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

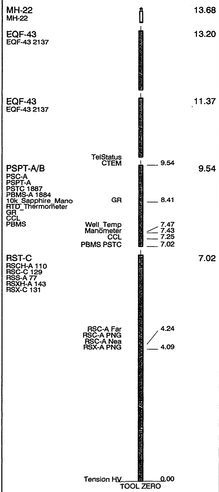
EQUIPMENT DESCRIPTION

RUN 1 / RUN 2

SURFACE EQUIPMENT

WITM-A

DOWNHOLE EQUIPMENT



MAXIMUM STRING DIAMETER 44 MM
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Input DLIS Files

DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	14-Mar-2003 22:44	2672.9 M	2554.4 M

Output DLIS Files

DEFAULT	RST_PSP_014PUP	FN:13	PRODUCER	18-Mar-2003 11:55	2672.9 M	2574.3 M

OP System Version: 10C0-306

MCM

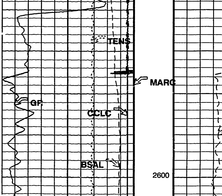
RST-C	OP10-KP1	PSPT-A/B	10C0-306

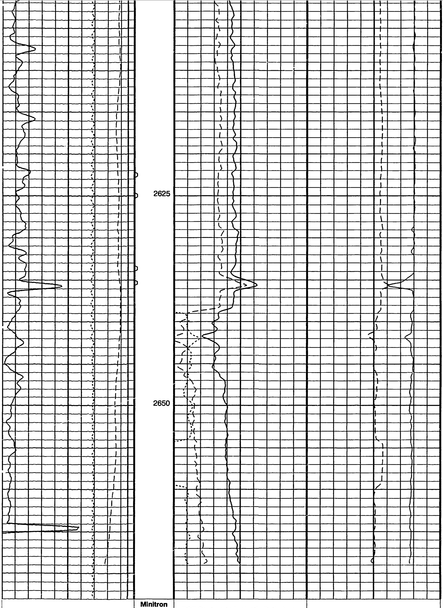
PIP SUMMARY

Time Mark Every 60 S

REPEAT PASS + TOP OF MAIN PASS

Tension (TENS) 10000 (N) 0	RST Porosity (TPHI) (V/V) 0.45 to -0.15
	RST Sigma (SIGM) 60 (CU) 0
Computed CCL (CCLC) -0.5 (V) 0.5	RST Inelastic Ratio (IRAT_FIL) 0.75 (---) 0
	RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (---) 0
Gamma Ray (GR) 0 (GAPI) 100	
RST Borehole Salinity (BSAL) 450 (PPK) -50	Minitron Arc Detection (MARC) 2.5 (---) 0
	RST Capture to Inelastic Ratio Near (CIRN_FIL) 0 (---) 5





RST Borehole Salinity (BSAL) 450 (PPK) -50
Minitron Arc Detection (MARC) 0 (---) 5
RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (---) 0
Gamma Ray (GR) 0 (GAPI) 100
RST Capture to Inelastic Ratio Far (CIRF_FIL) 2 (---) 0
Computed CCL (CCLC) -0.5 (V) 0.5
RST Inelastic Ratio (IRAT_FIL) 0.75 (---) 0
Tension (TENS) 10000 (N) 0
RST Sigma (SIGM) 60 (CU) 0
REPEAT PASS + TOP OF MAIN PASS
RST Porosity (TPHI) 0.45 (V/V) -0.15

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	RST-C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	No	
BHS	Borehole Status	OPEN	
CSID	Casing Size I.D.	165.1	MM
DFPC	Depth Filter Processing Constant	One	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
RGAI	Near/Far Gain Calibration Ratio	1	
	PSPT-A/B: PSP BASIC TOOL		
BHS	Borehole Status	OPEN	
CSID	Casing Size I.D.	165.1	MM
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
	System and Miscellaneous		
BS	Bit Size	156.000	MM
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	177.800	MM
CWEI	Casing Weight	34.23	KG/M
DFD	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	

Format: RST_PORO_SIGMA Vertical Scale: 1:240 Graphics File Created: 18-Mar-2003 11:55

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSPT-A/B	10C0-306

Input DLIS Files

DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	14-Mar-2003 22:44	2672.9 M	2554.4 M

Output DLIS Files

DEFAULT	RST_PSP_014PUP	FN:13	PRODUCER	18-Mar-2003 11:55		

Input DLIS Files

DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	14-Mar-2003 22:42	2806.1 M	2568.1 M

Output DLIS Files

DEFAULT	RST_PSP_013PUP	FN:12	PRODUCER	18-Mar-2003 11:51	2806.1 M	2571.3 M

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSPT-A/B	10C0-306

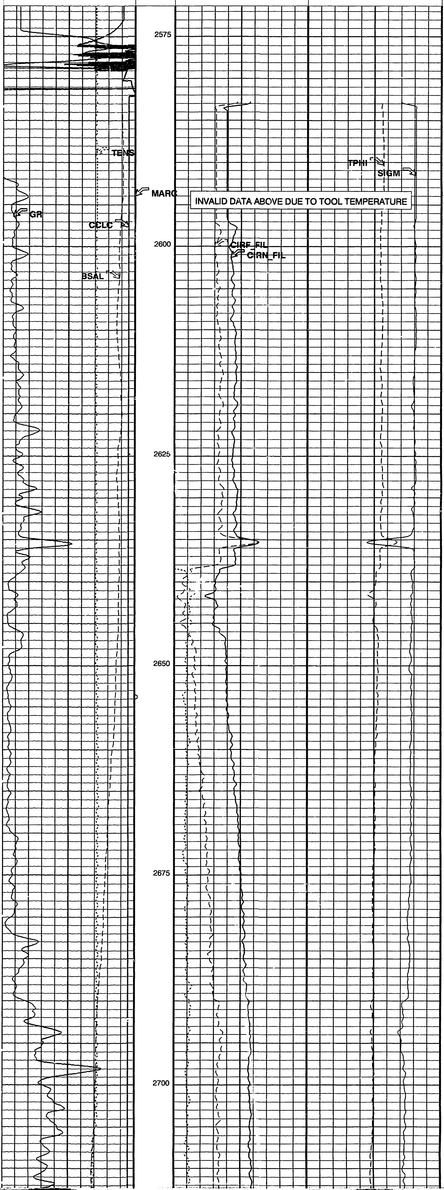
Changed Parameter Summary

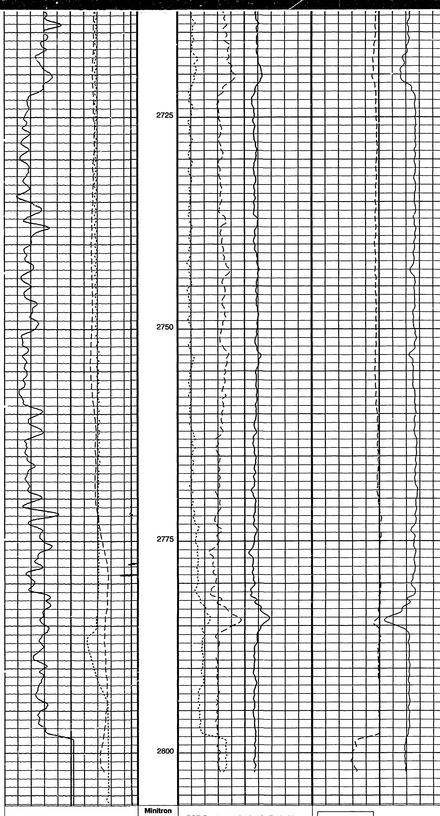
DLIS Name	New Value	Previous Value	Depth & Time
BHS	CASED OPEN	OPEN CASED	2595.5 11:52:20 2595.5 11:52:46

PIP SUMMARY

Time Mark Every 60 S

RST Porosity (TPHI) 0.45 (V/V) -0.15
Tension (TENS) 10000 (N) 0
RST Sigma (SIGM) 60 (CU) 0
Computed CCL (CCLC) -0.5 (V) 0.5
RST Inelastic Ratio (IRAT_FIL) 0.75 (---) 0
Gamma Ray (GR) 0 (GAPI) 100
RST Capture to Inelastic Ratio Far (CIRF_FIL) 2 (---) 0
RST Borehole Salinity (BSAL) 450 (PPK) -50
Minitron Arc Detection (MARC) 0 (---) 5
RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (---) 0
MAIN PASS





RST Borehole Salinity (BSAL) 450 (PPK) 50	Minitron Arc Detection (MARC) 0 (---) 5	RST Capture to Inelastic Ratio Near (CIRN_FIL) 2.5 (---) 0
		MAIN PASS
Gamma Ray (GR) 0 (GAPI) 100		RST Capture to Inelastic Ratio Far (CIRF_FIL) 5 (---) 0
Computed CCL (CCLC) -0.5 (V) 0.5		RST Inelastic Ratio (IRAT_FIL) 0.75 (---) 0
Tension (TENS) 10000 (N) 0		RST Sigma (SIGM) 50 (CU) 0
		RST Porosity (TPHI) 0.45 (V/V) -0.15

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	RST-C: Reservoir Saturation Pro Tool C		
AIRB	RST Air Borehole	Air	
BHS	Borehole Status	OPEN	
CSID	Casing Size I.D.	165.1	MM
DFPC	Depth Filter Processing Constant	One	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
RGAI	Near/Far Gain Calibration Ratio	1	
	PSPT-A/B: PSP BASIC TOOL		
BHS	Borehole Status	OPEN	
CSID	Casing Size I.D.	165.1	MM
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
	System and Miscellaneous		
BS	Bit Size	156.000	MM
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	177.800	MM
CWEI	Casing Weight	34.69	KG/M
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	

Format: RST_PORO_SIGMA Vertical Scale: 1:240 Graphics File Created: 18-Mar-2003 11:51

OP System Version: 10C0-306
MCM

RST-C	OP10-KP1	PSPT-A/B	10C0-306

Input DLIS Files

DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	14-Mar-2003 22:42	2806.1 M 2568.1 M

Output DLIS Files

DEFAULT	RST_PSP_013PUP	FN:12	PRODUCER	18-Mar-2003 11:51	

Input DLIS Files

DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	14-Mar-2003 22:44	2672.9 M 2554.4 M

Output DLIS Files

DEFAULT	RST_PSP_014PUP	FN:13	PRODUCER	18-Mar-2003 11:55	2672.9 M 2574.3 M

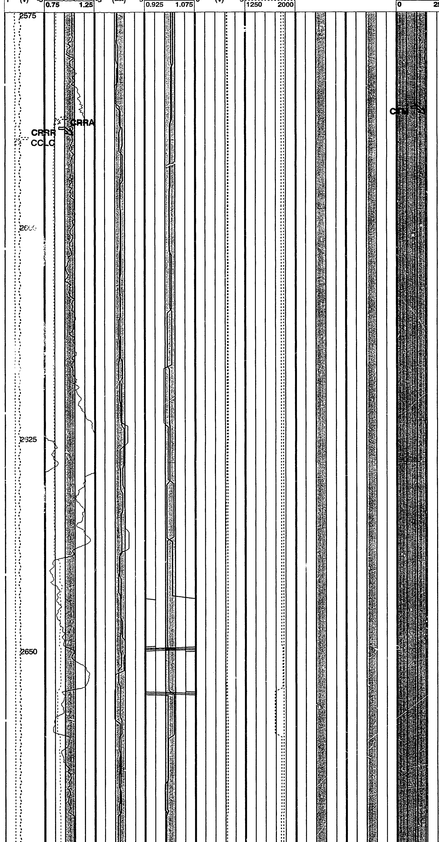
OP System Version: 10C0-306
MCM

RST-C	OP10-KP1	PSPT-A/B	10C0-306

PIP SUMMARY

Time Mark Every 60 S

(TENS) (N) 10000 0	(CRRA) (---) 5 -5	(NSCR) (---) 5	(NPGF) (---) 0.925 1.075	(NSCE) (V) 0	(NPDE) (V) 5 1250 2000		
(CCLC) (V) 1 -3	(CRRR) (---) 0.75 1.25	(FSCR) (---) 5 -5	(FPGF) (---) 0.925 1.075	(FSCE) (V) 0	(FPDE) (V) 5 1250 2000		(CTM) (DEGC) 0 250



(CCLC) (V) 1 -3	(CRRR) (---) 0.75 1.25	(FSCR) (---) 5 -5	(FPGF) (---) 0.925 1.075	(FSCE) (V) 0	(FPDE) (V) 5 1250 2000		(CTM) (DEGC) 0 250
(TENS) (N) 10000 0	(CRRA) (---) 5 -5	(NSCR) (---) 5	(NPGF) (---) 0.925 1.075	(NSCE) (V) 0	(NPDE) (V) 5 1250 2000		

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	System and Miscellaneous		
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	

Format: RST_HW_LQC Vertical Scale: 1:240 Graphics File Created: 18-Mar-2003 11:55

OP System Version: 10C0-306
MCM

RST-C	OP10-KP1	PSPT-A/B	10C0-306

Input DLIS Files

DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	14-Mar-2003 22:44	2672.9 M 2554.4 M

Output DLIS Files

DEFAULT	RST_PSP_014PUP	FN:13	PRODUCER	18-Mar-2003 11:55	

Input DLIS Files

DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	14-Mar-2003 22:42	2806.1 M	2568.1 M

Output DLIS Files

DEFAULT	RST_PSP_013PUP	FN:12	PRODUCER	18-Mar-2003 11:51	2806.1 M	2571.3 M

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSPT-A/B	10C0-306

PIP SUMMARY

Time Mark Every 60 S

(TENS) (N) 10000 0	(CRRA) (---) 0 5	(NSCR) (---) -5 5	(NPGF) (---) 0.925 1.075	(NSCE) (V) 0 5	(NPDE) (V) 1250 2000
(CCLC) (V) 1 -3	(CRRR) (---) 0.75 1.25	(FSCR) (---) -5 5	(FPGF) (---) 0.925 1.075	(FSCE) (V) 0 5	(FPDE) (V) 1250 2000

(CTM) (DEGC) 0 250

FPDE
FSCE
FP3F
FSCR
CRRA
CRRR
CCLC
CTM

2675
2600
2625
2650
2675
2700
2725
2750
2775
2800

(CCLC) (V) 1 -3	(CRRR) (---) 0.75 1.25	(FSCR) (---) -5 5	(FPGF) (---) 0.925 1.075	(FSCE) (V) 0 5	(FPDE) (V) 1250 2000
(TENS) (N) 10000 0	(CRRA) (---) 0 5	(NSCR) (---) -5 5	(NPGF) (---) 0.925 1.075	(NSCE) (V) 0 5	(NPDE) (V) 1250 2000

(CTM) (DEGC) 0 250

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	System and Miscellaneous	
DO	Depth Offset for Playback:	0.0 M
PP	Playback Processing	NORMAL

Format: RST_HW_LQC Vertical Scale: 1:240 Graphics File Created: 18-Mar-2003 11:51

OP System Version: 10C0-306

MCM

RST-C	OP10KP1	PSPT-A/B	10C0-306

Input DLIS Files

DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	14-Mar-2003 22:42	2806.1 M	2568.1 M

Output DLIS Files

DEFAULT	RST_PSP_013PUP	FN:12	PRODUCER	18-Mar-2003 11:51		

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

RESERVOIR SATURATION LOG

SIGMA MODE

Schlumberger

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

Schlumberger

ANADARKO CANADA CORPORATION

ANADARKO ARROWHEAD RIVER I-75
ARROWHEAD
NORTHWEST TERRITORIES

RESERVOIR SATURATION LOG

****SIGMA MODE****

Province	NORTHWEST TERRITORIES
Field	ARROWHEAD
Location	UNIT L SECTION 75
Company	ANADARKO CANADA CORP.

UNIT L SECTION 75	Elev.: K.B. 517.9 m
	G.L. 516.8 m
Permanent Datum: GROUND LEVEL	D.F. 517.6 m
Log Measured From: KELLY BUSHING 7.1 m	Elev.: 510.8 m above Perm. Datum
Drilling Measured From: KELLY BUSHING	

API Serial No.
N/A

Logging Date	13-Mar-2003
Run Number	SUBSEQUENT
Depth Driller	2816 m
Schlumberger Depth	2791 m
Bottom Log Interval	2806 m
Top Log Interval	2676 m
Casing Fluid Type	DRY/GAS
Salinity	
Density	
Fluid Level	
BIT/CASING/TUBING STRING	
Bit Size	196.000 mm
From	
To	
Casing/Tubing Size	177.800 mm
Weight	34.00 kg/m
Grade	L-80
From	
To	
Maximum Recorded Temperatures	
Logger On Bottom	Time 13-Mar-2003 11:00
Unit Number	Location 2130 GRANDE PRAIRIE
Recorded By	FRANK MAYDACHEVN
Witnessed By	JOE GRAMSI

	Run 1	Run 2	Run 3	Run 4
Oil Density				
Water Salinity				
Gas Gravity				
Rv				
Dw				
Rfg				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Deviation				
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				
Unit Number	Location			
Recorded By				
Witnessed By				

RIG LAMP
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OTHER SERVICES
CBIL
CBIL
CBIL
CBIL
TRIPLE COMBO, SLIMMER, SLIMMER

LOG DETAILED BELOW.

ALL DEPTHS MEASURED FROM KELLY BUSHING.

BOTH DEPTHS PRESENT, BOTTOM

RIG SUPPORTED DURING LOGGING OPERATIONS.

RIG SUPPLIED ELECTRICAL POWER DURING LOGGING.

RIG CONTRACTOR PERSONNEL WERE PRESENT DURING LOGGING.

RIG CONTRACTOR PERSONNEL HELPED WITH RIGGING UP AND DOWN OF LOGGING TOOLS.

RIG CONTRACTOR ASSISTED IN MOVING EQUIPMENT ON LOCATION.

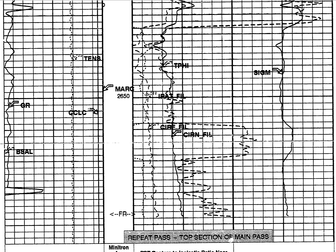
SERVICE ORDER #
ACCOUNT CODE
PROGRAM VERSION

RUN 1 — 1004068 — 1003308 — 2816m — 2676m — DRY/GAS — 13-Mar-2003 — 11:00

RUN 2 — START — STOP

EQUIPMENT DESCRIPTION

	RUN 1	RUN 2
SURFACE EQUIPMENT		
MTBA		
DOWNHOLE EQUIPMENT		
MAG2	13.68	
MHC2		
EDP-43	13.20	
EDP-43-137		
EDP-43	11.37	
EDP-43-137		
TriSonic DTCO	9.04	0.94
PBPT-A/B	8.41	
PBPT-A/B		
PBPT-A/B	7.47	
PBPT-A/B	7.28	
PBPT-A/B	7.03	
PBPT-A/B		
PBPT-A/B	7.02	
PBPT-A/B		
PBPT-A/B		
PBPT-A/B



RST Borehole Salinity (BSAL) 0 (PPK) 40

Minitron Arm Detection (MARC) 0.5 (---) 5

RST Capture to Inelastic Ratio Near (CIRN_FIL) 0 (---) 1

RST Capture to Inelastic Ratio Far (CIRF_FIL) 0 (---) 1

Gamma Ray (GR) 0 (GAPI) 150

RST Inelastic Ratio (IRAT_FIL) 0.75 (---) 1

Computed CCL (CCLC) -0.5 (V) 0.5

RST Sigma (SIGM) 60 (CU) 0

Tension (TENS) 10000 (N) 0

RST Porosity (TPHI) 0.6 (V/V) 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	RST-C: Reservoir Saturation Pre Tool C		
AIRB	RST Air Borehole	Yes	
CBFC	Casing Bite Flag	OPEN	
CBID	Casing Bite I.D.	165.1	MM
DPRC	Depth Filter Processing Constant	One	
MATR	Neut Ratio for Neutron Porosity Corrections	LIMESTONE	
RGAI	Near/Far Gain Calibration Ratio	1	
	RST-A/B: PSP BASIC TOOL		
BHS	Borehole Status	OPEN	
CBID	Casing Bite I.D.	165.1	MM
MATR	Neut Ratio for Neutron Porosity Corrections	LIMESTONE	
	System and Miscellaneous		
BS	Bit Size	165.100	MM
BSAL	Borehole Salinity	-9000.00	PPM
CBIZ	Current Casing Size	177.800	MM
CDEI	Casing Weight	34.69	KG/M
FF	Depth Mode for Playback	0.1	M
PP	Playback Processing	NORMAL	

Format: RST_PORO_SIGMA Vertical Scale: 1:240 Graphics File Created: 14-Mar-2003 02:39

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSP-A/B	10C0-306

Input DLIS Files

DEFAULT	RST_PSP_008UP	FN:1	PRODUCER	14-Mar-2003 02:04	2660.4 M

Output DLIS Files

DEFAULT	RST_PSP_012PUP	FN:11	PRODUCER	14-Mar-2003 02:38	

Input DLIS Files

DEFAULT	RST_PSP_008UP	FN:7	PRODUCER	14-Mar-2003 01:40	2794.3 M

Output DLIS Files

DEFAULT	RST_PSP_014PUP	FN:13	PRODUCER	14-Mar-2003 02:44	2606.1 M

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSP-A/B	10C0-306

PIP SUMMARY

Time Mark Every 60 S

RST Porosity (TPHI) 0.6 (V/V) 0

Tension (TENS) 10000 (N) 0

RST Sigma (SIGM) 60 (CU) 0

Computed CCL (CCLC) -0.5 (V) 0.5

RST Inelastic Ratio (IRAT_FIL) 0.75 (---) 1

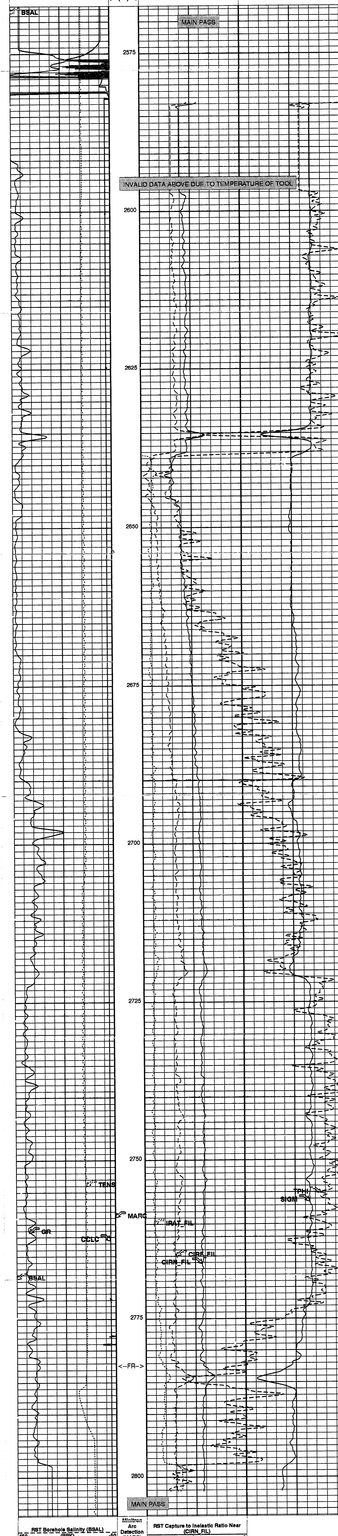
RST Capture to Inelastic Ratio Far (CIRF_FIL) 0 (---) 1

Gamma Ray (GR) 0 (GAPI) 150

RST Borehole Salinity (BSAL) 0 (PPK) 40

Minitron Arm Detection (MARC) 0.5 (---) 5

RST Capture to Inelastic Ratio Near (CIRN_FIL) 0 (---) 1



RST Borehole Salinity (BSAL) 0 (PPK) 40

Minitron Arm Detection (MARC) 0.5 (---) 5

RST Capture to Inelastic Ratio Near (CIRN_FIL) 0 (---) 1

RST Capture to Inelastic Ratio Far (CIRF_FIL) 0 (---) 1

Gamma Ray (GR) 0 (GAPI) 150

RST Inelastic Ratio (IRAT_FIL) 0.75 (---) 1

Computed CCL (CCLC) -0.5 (V) 0.5

RST Sigma (SIGM) 60 (CU) 0

Tension (TENS) 10000 (N) 0

RST Porosity (TPHI) 0.6 (V/V) 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	RST-C: Reservoir Saturation Pre Tool C		
AIRB	RST Air Borehole	Yes	
CBFC	Casing Bite Flag	OPEN	
CBID	Casing Bite I.D.	165.1	MM
DPRC	Depth Filter Processing Constant	One	
MATR	Neut Ratio for Neutron Porosity Corrections	LIMESTONE	
RGAI	Near/Far Gain Calibration Ratio	1	
	RST-A/B: PSP BASIC TOOL		
BHS	Borehole Status	OPEN	
CBID	Casing Bite I.D.	165.1	MM
MATR	Neut Ratio for Neutron Porosity Corrections	LIMESTONE	
	System and Miscellaneous		
BS	Bit Size	165.100	MM
BSAL	Borehole Salinity	-9000.00	PPM
CBIZ	Current Casing Size	177.800	MM
CDEI	Casing Weight	34.69	KG/M
FF	Depth Mode for Playback	0.1	M
PP	Playback Processing	NORMAL	

Format: RST_PORO_SIGMA Vertical Scale: 1:240 Graphics File Created: 14-Mar-2003 02:44

OP System Version: 10C0-306
MCM

RST-C OP10-KP1 PSPT-A/B 10C0-306

Input DLIS Files

DEFAULT RST_PSP_006UP File:7 PRODUCER 14-Mar-2003 01:40 2794.3 M 2590.4 M

Output DLIS Files

DEFAULT RST_PSP_014PUP File:13 PRODUCER 14-Mar-2003 02:44

Input DLIS Files

DEFAULT RST_PSP_006UP File:8 PRODUCER 14-Mar-2003 02:04 2695.4 M 2548.3 M

Output DLIS Files

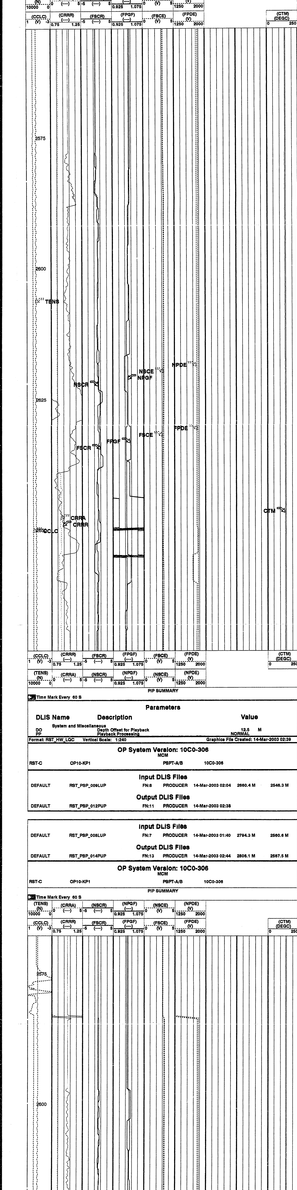
DEFAULT RST_PSP_012PUP File:11 PRODUCER 14-Mar-2003 02:38 2672.8 M 2553.8 M

OP System Version: 10C0-306
MCM

RST-C OP10-KP1 PSPT-A/B 10C0-306

PIP SUMMARY

Time Mark Every 60 S



PIP SUMMARY

Parameters

DLIS Name	Description	Value
DO System and Miscellaneous	Depth Offset for Playback Playback Processing	12.0 M NORMAL

Format: RST_HW_LOC Vertical Scale: 1:200 Graphics File Created: 14-Mar-2003 02:39

OP System Version: 10C0-306
MCM

RST-C OP10-KP1 PSPT-A/B 10C0-306

Input DLIS Files

DEFAULT RST_PSP_006UP File:8 PRODUCER 14-Mar-2003 02:04 2695.4 M 2548.3 M

Output DLIS Files

DEFAULT RST_PSP_012PUP File:11 PRODUCER 14-Mar-2003 02:38

Input DLIS Files

DEFAULT RST_PSP_006UP File:7 PRODUCER 14-Mar-2003 01:40 2794.3 M 2590.4 M

Output DLIS Files

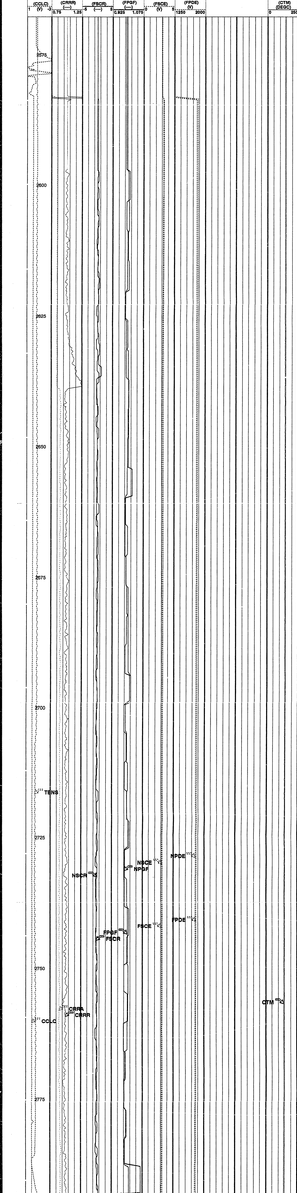
DEFAULT RST_PSP_014PUP File:13 PRODUCER 14-Mar-2003 02:44 2656.1 M 2547.0 M

OP System Version: 10C0-306
MCM

RST-C OP10-KP1 PSPT-A/B 10C0-306

PIP SUMMARY

Time Mark Every 60 S



PIP SUMMARY

Parameters

DLIS Name	Description	Value
DO System and Miscellaneous	Depth Offset for Playback Playback Processing	11.9 M NORMAL

Format: RST_HW_LOC Vertical Scale: 1:200 Graphics File Created: 14-Mar-2003 02:44

OP System Version: 10C0-306
MCM

RST-C OP10-KP1 PSPT-A/B 10C0-306

Input DLIS Files

DEFAULT RST_PSP_006UP File:7 PRODUCER 14-Mar-2003 01:40 2794.3 M 2590.4 M

Output DLIS Files

DEFAULT RST_PSP_014PUP File:13 PRODUCER 14-Mar-2003 02:44

Company: ANADARKO CANADA CORPORATION

Well: ANADARKO ARROWHEAD RIVER I-75

Field: ARROWHEAD

Province: NORTHWEST TERRITORIES

Schlumberger

MISCELLANEOUS

Input DLIS Files

DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	14-Mar-2003 22:42	2696.1 M

Output DLIS Files

DEFAULT	RST_PSP_007PUP	FN:6	PRODUCER	18-Mar-2003 11:07	2696.1 M

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSPT-A/B 10C0-306

PIP SUMMARY

Time Mark Every 60 S

MAIN PASS

Tension (TENS) (LBF) 5000 0

Wrk1 Temperature (WTEP) (DEGC) 125 -10

Wrk1 Temperature (HTEP) (DEGC) 0 150

Gamma Ray (GR) (GAPI) 0 150

Well Pressure (WPRE) (KPAA) 21500 23500

Computed CCL (CCLC) -10 10

Manometer Wrk1 Fluid Density (DFRT) (K/M3) 0 2000

2600

2625

2650

2675

2700

2725

2750

2775

2800

WTEP

GR

CCLC

PIPL

WPRE

TENS

MWFD

<--FR-->

Computed CCL (CCLC) -10 10

Gamma Ray (GR) (GAPI) 0 150

Wrk1 Temperature (WTEP) (DEGC) 125 -10

Manometer Wrk1 Fluid Density (DFRT) (K/M3) 0 2000

Well Pressure (WPRE) (KPAA) 27500 25000

Wrk1 Temperature (HTEP) (DEGC) 0 150

Tension (TENS) (LBF) 5000 0

MAIN PASS

PIP SUMMARY

Time Mark Every 60 S

Format: PSP_NO_IMAGE_SINGLE_PASS Vertical Scale: 1:200 Graphics File Created: 18-Mar-2003 11:07

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSPT-A/B 10C0-306

Parameters

DLIS Name	Description	Value
	RST-C: Reservoir Saturation Pre Tool C	
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDEV	PSPT-A/B: PSP BASIC Measurements Average Angular Deviation of Borehole from Normal	0 DEG
SO	System and Miscellaneous Depth Offset for Playback	0.0 M
PP	Playback Processing	NORMAL

Input DLIS Files

DEFAULT	RST_PSP_020PUP	FN:19	PRODUCER	14-Mar-2003 22:42	2696.1 M

Output DLIS Files

DEFAULT	RST_PSP_007PUP	FN:6	PRODUCER	18-Mar-2003 11:07	

Input DLIS Files

DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	18-Mar-2003 22:44	2672.9 M

Output DLIS Files

DEFAULT	RST_PSP_008PUP	FN:7	PRODUCER	18-Mar-2003 11:10	2672.9 M

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSPT-A/B 10C0-306

PIP SUMMARY

Time Mark Every 60 S

REPEAT PASS + TOP OF MAIN PASS

Tension (TENS) (LBF) 5000 0

Wrk1 Temperature (WTEP) (DEGC) 125 -10

Wrk1 Temperature (HTEP) (DEGC) 0 150

Gamma Ray (GR) (GAPI) 0 150

Well Pressure (WPRE) (KPAA) 27500 25000

Computed CCL (CCLC) -10 10

Manometer Wrk1 Fluid Density (DFRT) (K/M3) 0 2000

2600

2625

2650

WTEP

GR

CCLC

PIPL

WPRE

TENS

MWFD

<--FR-->

Computed CCL (CCLC) -10 10

Gamma Ray (GR) (GAPI) 0 150

Wrk1 Temperature (WTEP) (DEGC) 125 -10

Manometer Wrk1 Fluid Density (DFRT) (K/M3) 0 2000

Well Pressure (WPRE) (KPAA) 27500 25000

Wrk1 Temperature (HTEP) (DEGC) 0 150

Tension (TENS) (LBF) 5000 0

REPEAT PASS + TOP OF MAIN PASS

PIP SUMMARY

Time Mark Every 60 S

Format: PSP_NO_IMAGE_SINGLE_PASS Vertical Scale: 1:200 Graphics File Created: 18-Mar-2003 11:10

OP System Version: 10C0-306

MCM

RST-C	OP10-KP1	PSPT-A/B 10C0-306

Parameters

DLIS Name	Description	Value
	RST-C: Reservoir Saturation Pre Tool C	
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GDEV	PSPT-A/B: PSP BASIC Measurements Average Angular Deviation of Borehole from Normal	0 DEG
SO	System and Miscellaneous Depth Offset for Playback	0.0 M
PP	Playback Processing	NORMAL

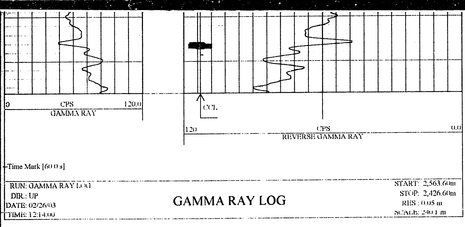
Input DLIS Files

DEFAULT	RST_PSP_021PUP	FN:20	PRODUCER	18-Mar-2003 22:44	2672.9 M

Output DLIS Files

DEFAULT	RST_PSP_008PUP	FN:7	PRODUCER	18-Mar-2003 11:10	

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

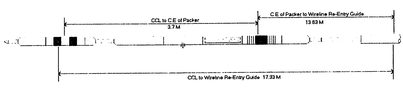


RUN: GAMMA RAY LOG
DIR.: UP
DATE: 02/26/03
TIME: 12:14:00

GAMMA RAY LOG

START: 2,583.66m
STOP: 2,426.64m
RES.: 0.05 m
SCALE: 240:1 m

Baker Setting Tool w/ Packer

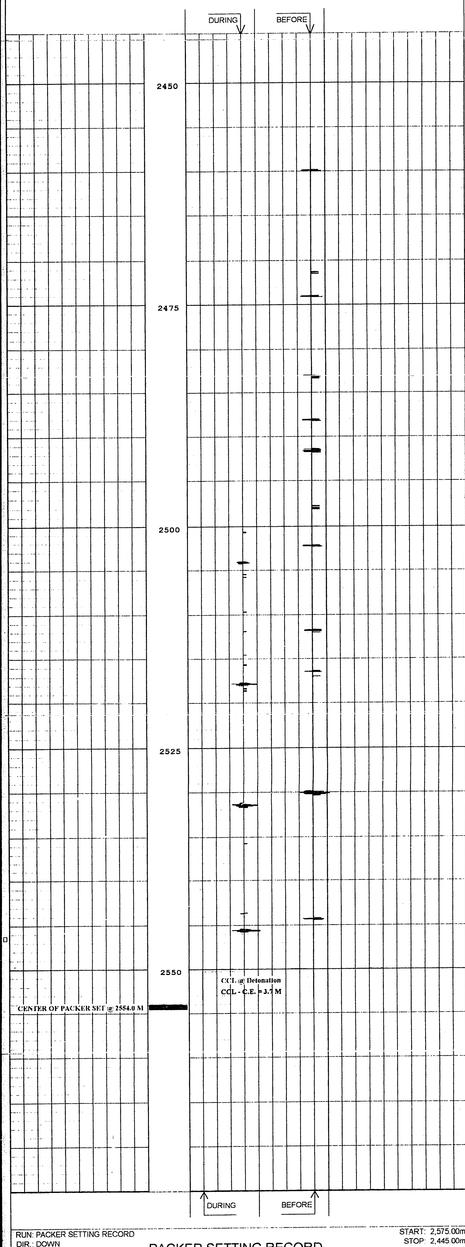


Baker Setting Tool w/ Packer

RUN: PACKER SETTING RECORD
DIR.: DOWN
DATE: 2/26/03
TIME: 4:32:17

PACKER SETTING RECORD

START: 2,575.00m
STOP: 2,445.00m
RES.: 0.05 m
SCALE: 240:1 m



RUN: PACKER SETTING RECORD
DIR.: DOWN
DATE: 2/26/03
TIME: 4:32:17

PACKER SETTING RECORD

START: 2,575.00m
STOP: 2,445.00m
RES.: 0.05 m
SCALE: 240:1 m

IPS

Company: ANADARKO CANADA CORPORATION
Well: ANADARKO ARROWHEAD I-75
Field: ARROWHEAD
Province: NORTHWEST TERRITORIES

LITHOLOGY/ MUD

PowerTSuite V5.0 developed by TriVision Geosystems Ltd. (403) 777-0454 (Canada) www.powerlogger.com

Well Information

Operator: Anadarko Canada Corporation
Well Name: Anadarko I-75
Location:
UWI: Anadarko I-75
Pool:
Field:
Province / State: Northwest Territories
Country: Canada

Elevations

Reference:
GE() / Rig():
K.B. to Ground: m
Ground: 510.8 m
Kelly Bushing: 517.9 m
Casing Flange: m

Total Depth

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	2878 m	2822.28 m
Drillers TD (Strap or SLM)	m	m
Loggers TD	2874.5 m	2818.94 m

Surface Co - Ordinates

Well Type: Devoted
Longitude: 122.58326 N / S Co - Ordinates:
Latitude: 60.34423 E / W Co - Ordinates:

Bottom Hole Co - Ordinates

Longitude: N / S Co - Ordinates:
Latitude: E / W Co - Ordinates:

Well Summary

Spud Date: Jan 25, 2003
TD Date: Feb 22, 2003 @ 05:10hrs
Rig Release Date:
Contractor: Sherritah Drilling Rig 5

Drilling Fluid Summary

Fluid Type	From	To
calcium carbonate - polymer/SM	m	m

Casing Summary

Type	Hole Size	Casing Size	Landed
Surface	311 mm	244.5 mm	654.7 m

Work Schedules

Contractor	Geologist	Log Interval	Dates Logged
		0 m - m	Jan 25, 2003 -

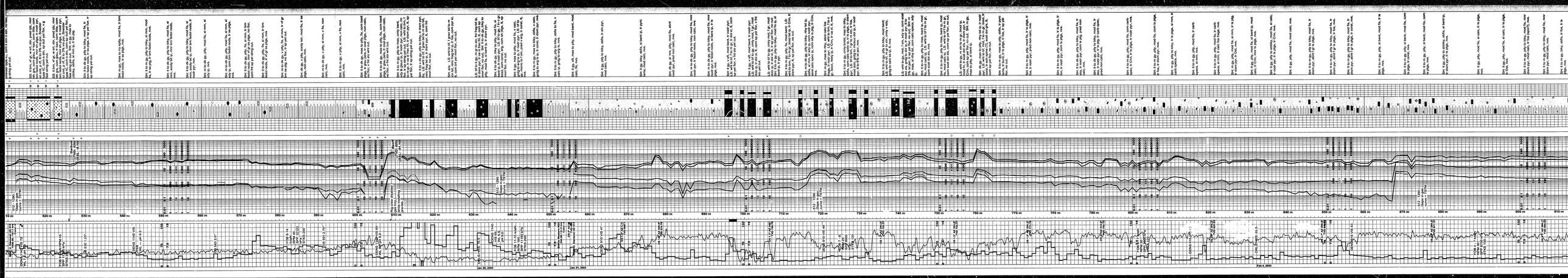
Remarks

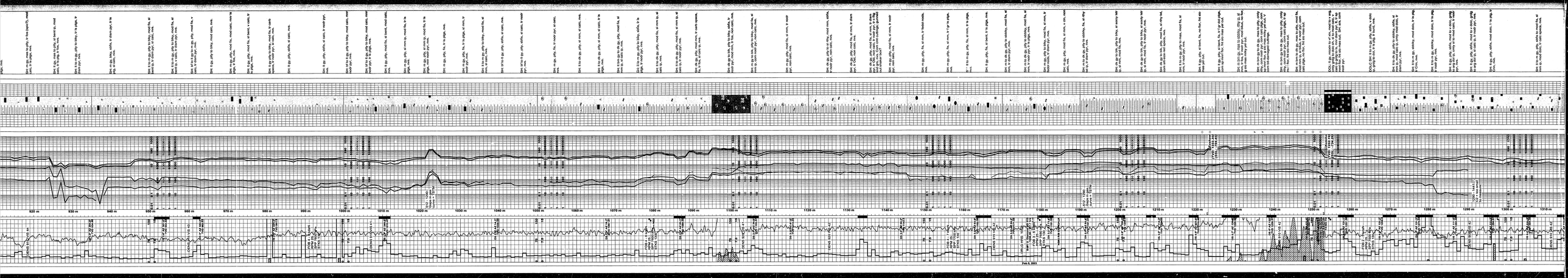
Legend

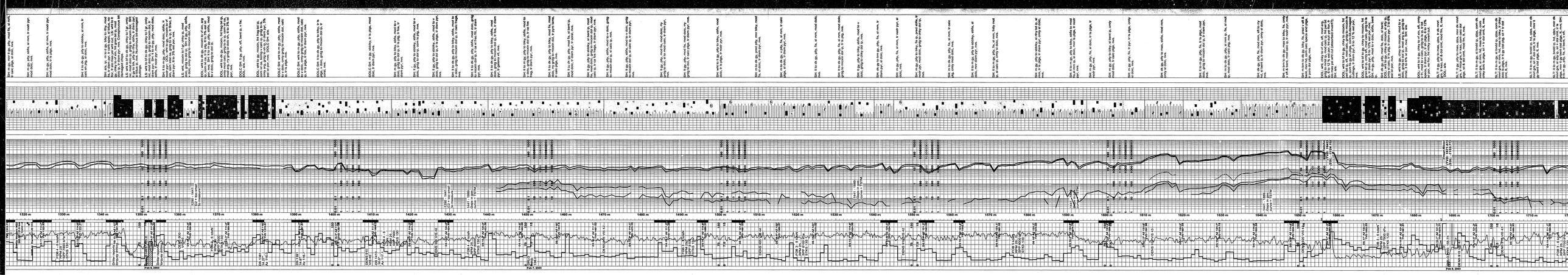
Sandstone (Rock)
Shale dark grey (Rock)
Shale medium grey (Rock)
Limestone mud supported (Rock)
Shale black (Rock)
Shale light grey (Rock)
Dolomite (Rock)
Siltstone (Rock)
Marlstone dolomitic (Rock)
Shale green (Rock)
Ferruginous (Nodules)
Siderite (Nodules)
Pyrite (Nodules)
Chert dark (Nodules)
Sandstone (Stringers)
Shale grey (Stringers)
Coal (Stringers)
Bentonite (Stringers)
Limestone mud supported (Stringers)
Dolomite (Stringers)
Siltstone (Stringers)
Marlstone calcareous (Stringers)
Marlstone dolomitic (Stringers)
Breccia (Stringers)
Shale black (Stringers)
Shale green (Stringers)
Dolomitic (Cement)
Siderous (Cement)
Sparry calcite (Matrix)
Intercrystalline (Porosity)
Fracture (Porosity)
Ferruginous (Grain)
Minerals dark (Grain)
Limestone grain supported (Grain)
Dolomite (Grain)
Chert rhyolitic (Grain)
Shale grey (Grain)
Chert dark (Grain)
Shale green (Grain)
Quartz (Grain)
Questionable oil staining (Oilshow)
Fluorescence (Oilshow)
Pyritic (Accessory)
Glauconite grains (Grain)
Fish Remains (Fossil)
Keratinic (Accessory)
Silty (Accessory)
Calcareous (Accessory)
Mica (Accessory)
Sandy (Accessory)
Carbonaceous (Accessory)
Fossil (Fossil)
Bioclastic (Fossil)
Argillaceous (Accessory)
Rugose (Fossil)
Dolomite (Accessory)
Crinoid (Fossil)
Microcrystalline (Accessory)
Solitary coral (Fossil)
Stromatolite (Accessory)
Oolitic (Accessory)
Mudstone (Grain)
Spicules (Fossil)
Microfossil (Accessory)
Chalky (Texture)
Microcrystalline (Texture)
Brachiopod (Fossil)
Mucaceous (Grain)
Sand grains (Grain)
Fractrure (Accessory)
Phosphatic pellets (Accessory)
Bitumen (Accessory)
Pellet (Fossil)
Coprocrystallinic (Texture)
Calcisiltarenite (Fossil)
Stromatoporoid (Fossil)
Fragmental (Fossil)
Algae laminations (Fossil)
Algae non descript (Fossil)
Mineral crystals (Grain)

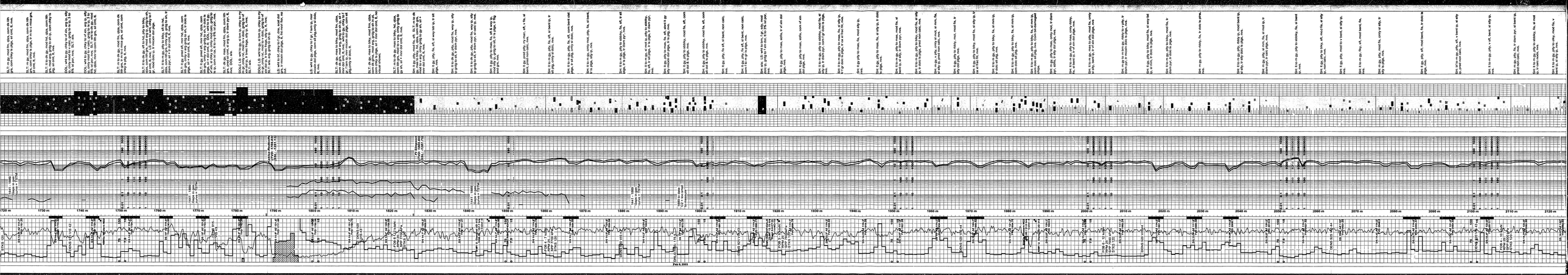
Drilling Progress

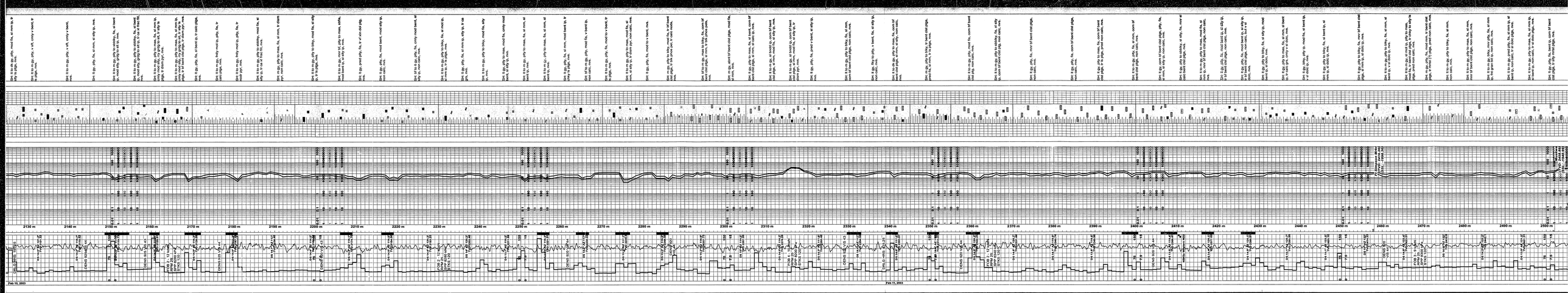
Depth (m)
Bit Run (Number)
Gamma Ray (GAPI)
DENS 1115"
VIS 52
SPM 1120
FOB 6 bcm
SPM 180 /
SPP 3700 kPa
STKS 172
DS 233 1.29°
DS 288 1.25°
FOB 6 - 9 bcm
SPM 180 - 200
SPP 3700 kPa
STKS 172
DENS 1135
VIS 52
SPM 9.0
DS 285 0.88°
DS 313 1.13°
FOB 6.7 bcm
SPM 180 /
SPP 3470 kPa
STKS 172
DS 346 0.75°
DENS 1125
VIS 52
SPM 8.0
DS 374 0.75°
FOB 9.2 bcm
SPM 180 /
SPP 3200 kPa
STKS 165
DS 398 0.50°
DS 418 1.5°
FOB 9.2 bcm
SPM 180 /
SPP 3200 kPa
STKS 165
DS 438 3.5°
DRILGEL/SWC
45.0°
DS 458 3.5°
DENS 1140 VIS
58 pH 8.0
FOB 9 bcm
SPM 180 /
SPP 3600 kPa
STKS 180
DENS 1140 VIS
57 pH 8.0
Trip check on returns
motor, 488 m
DRILGEL/SWC
45.0°
DS 478 1.25°
DENS 1140 VIS
58 pH 8.0
FOB 9 bcm
SPM 180 /
SPP 3600 kPa
STKS 180
Trip check on returns
motor, 488 m
DRILGEL/SWC
45.0°
DS 478 1.25°
DENS 1140 VIS
57 pH 8.0
FOB 9 bcm
SPM 180 /
SPP 3600 kPa
STKS 180
Trip check on returns
motor, 488 m
DRILGEL/SWC
45.0°
DS 478 1.25°
DENS 1140 VIS
58

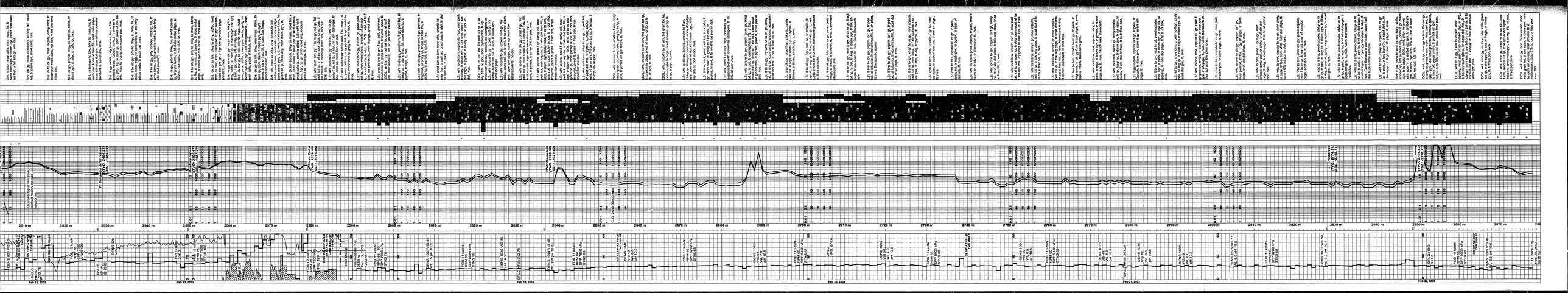









Feb 10, 2003
Feb 11, 2003


2510 m
2520 m
2530 m
2540 m
2550 m
2560 m
2570 m
2580 m
2590 m
2600 m
2610 m
2620 m
2630 m
2640 m
2650 m
2660 m
2670 m
2680 m
2690 m
2700 m
2710 m
2720 m
2730 m
2740 m
2750 m
2760 m
2770 m
2780 m
2790 m
2800 m
2810 m
2820 m
2830 m
2840 m
2850 m
2860 m
2870 m
Feb 12, 2003
Feb 13, 2003
Feb 19, 2003
Feb 20, 2003
Feb 21, 2003
Feb 22, 2003

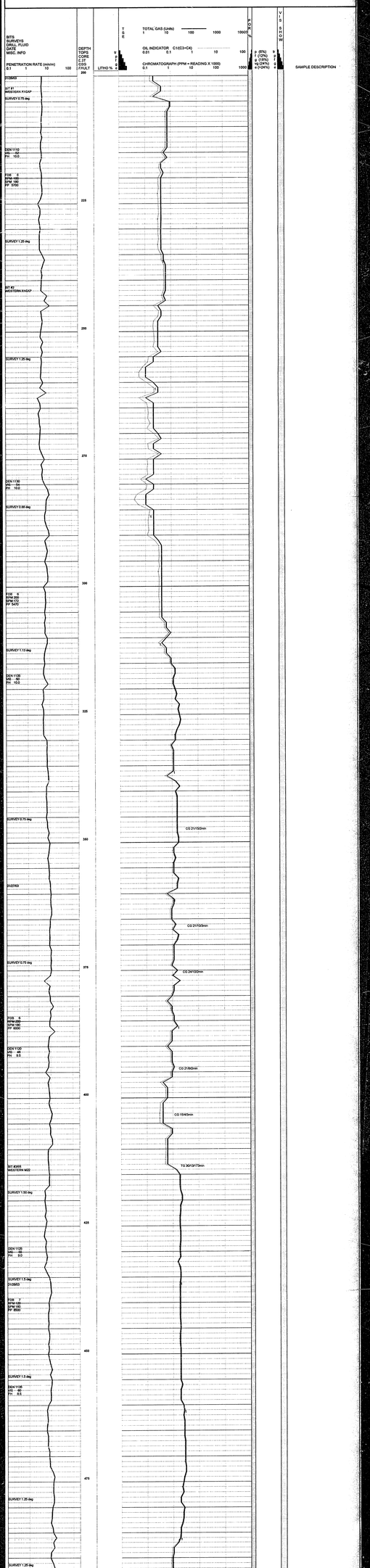
LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

Continental Laboratories Ltd.

Hydrocarbon Well Log

WELL NAME:	Anadarko Arrowhead I-75			
LOCATION:	60 - 34' - 42.3" N / 122 - 58' - 32.6" W			
COMPANY:	Anadarko Canada Corporation			
PROVINCE:	NWT	FILE:	6512	
ELEVATION K.B.:	517.0 m	HOLE SIZE:	311 mm	from 200 m to 655 m
ELEVATION G.L.:	512.0 m		216 mm	from 655 m to 2586 m
LOGGING INTERVAL:	200 m to 2878 m		156 mm	from 2586 m to 2878 m
LOGGING DATES:	26/ 1/2003 to 22/ 2/2003	MUD SYSTEM:	Gel Slurry	from: 200 m to: 655 m
PERSONNEL:	B. Campbell		Invert Emulsion	from: 655 m to: 2586 m
INSTRUMENTATION:	MP2300, MTI#17		Water/Polymer	from: 2586 m to: 2878 m

ALL LITHOLOGIC SYMBOLS ARE CANSTRAT COMPATIBLE



122-144
SHARP REDUCTION IN FLOW RATE
362-382
382-392
414-434
762-782
842-862
1132-1152
1252-1272
1512-1532
1632-1652
1752-1772
1872-1892
1992-2012
2112-2132
2232-2252
2352-2372
2472-2492
2592-2612
2712-2732
2832-2852
2952-2972
3072-3092
3192-3212
3312-3332
3432-3452
3552-3572
3672-3692
3792-3812
3912-3932
4032-4052
4152-4172
4272-4292
4392-4412
4512-4532
4632-4652
4752-4772
4872-4892
4992-5012
5112-5132
5232-5252
5352-5372
5472-5492
5592-5612
5712-5732
5832-5852
5952-5972
6072-6092
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SURVEY 28 DEC 1996
SURVEY 29 DEC 1996
SURVEY 30 DEC 1996
SURVEY 31 DEC 1996
SURVEY 1 JAN 1997
SURVEY 2 JAN 1997
SURVEY 3 JAN 1997
SURVEY 4 JAN 1997
SURVEY 5 JAN 1997

NOTE: SURVEY DATA STRUCTURES

SURVEY 0.00 Rec 0.0 km

SURVEY 77.98 Rec 0.0 km

SURVEY 77.98 Rec 0.0 km

SURVEY 77.98

1.65 - 18.0

TOUR SHEETS

NATIONAL ENERGY BOARD
Exploration and Production
MAY 12 2003

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
KERRY GENEST	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted If Required
(4.) Work Licence & Well Sign-in Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Monthly Inspect BOP's, Flare Lines & Separator Lines
(1.) Rig Site Hazard & Safety Meeting (each crew/each tour)
(2.) CAODC Rig Safety Inspection Checklist (once/month)
(3.) Weil Inspection before Running or Lowering
(4.) Derrick Board Checked
(5.) Water Tks Checked

DSH	DP
SB	SP

YEAR	MONTH	DAY
2003	3	1

RIG NO. 5

FUEL @ 08:00 HRS

LAST CASING TUBING OR LINER	O.D. (mm)	ID (mm)	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.4	68.53	ALGOMA	L-80	46	988.30		984.70
	177.7	159.4	34.70	ALGOMA	L-80	101	2888.34	7.10	3883.60

WEIGHT RANGE -14	DC / DP SIZE	MASS	GRADE	NEW I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
CURRENT DRILLING FLUID: CLEAR	86	23.87	S-135	61	139	5 5" IF	348	PT-1100	OILWELL	254
WIND DIRECTION: N. W.	86	36.66	HWDP	52	134	5 5" IF	27	PT-1100	OILWELL	254
ROAD CONDITION: ICE	121	63.00	DC	68	122	5 5" IF	31			

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	BOP	BOP SIZE & BRAND	TYPE
TIME HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	CIRC & COND	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING									
MORN	7.50						0.25														0.25						8.00			
DAY	11.50						0.25														0.25						12.00			
EVE	4.00																										4.00			
TOTAL	23.50						0.50														0.50						24.00			

SHALE SHAKERS

BOP	BOP SIZE & BRAND	TYPE
SCREENING CHAMBER		? ?
TOP	84	110
MIDDLE	84	110
BOTTOM	84	110

RENTALS

WORK	DAY	EVE

DRILLING ASSEMBLY

NO	BIT	O.D.	LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE
15	30	0.25	21	SAFETY MTG.
30	800	7.50	1	TEAR OUT RIG FOR SUNDAY MORNING MOVE
800				

NOTES :

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	325		STEAM	

DAY TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB
3878.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	21	SAFETY MTG W/ CREW ON TEAR OUT & L/O MAST.
815	830	0.25	7	RIG SERVICE. CHANGE BRASS INSERTS DRILL LINE ANCHOR.
830	1130	3.00	1	RIG OUT TO L/O MAST. VISUAL INSPECT PRIOR.
1130	2000	8.50	1	CONTINUE TO RIG OUT F/ TRUCKS.

NOTES : CHECK BRAKE ASSEMBLY PRIOR TO L/O MAST.

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	345		TEAR OUT	0

EVENING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2400	4.00	1	TEAR OUT RIG , SHOVEL SNOW OF MATTING & ROOFS.

NOTES :

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
0.00					

DRILLING CREW PAYROLL DATA

WELL NAME & NO.: Anadarko Arrowhead I-75
YEAR: 2003 MONTH: 3 DAY: 1
OPERATOR: ANADARKO CANADA ENERGY
CONTRACTOR: SHEHTAH-WILSON PARTNERSHIP
RIG MANAGER: Greg Pukas
RIG NO.: 5
PROVINCE: N.W.T.
CAMP: X YES ☐ NO
RIG SAFETY DAYS: 215

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	8.00		JB
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DARCY PUKAS	8.00	DP	
FLOOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		SHELDON MICHEL	8.00		SM
LEASE HAND		SHANE WINTERS	8.00		SW

RATE SCHEDULE: X REGULAR | REPAIR | INVERT
STEAM BURN TOP OF: CREW SAFETY DAYS: 215 | RIGHT HAND

DAY TOUR — FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		KIRK BJORNSON	12.00		KB
FLOOR HAND		ALBERT BROWN	12.00		AB
FLOOR HAND		KIT BRINK	12.00		KB
LEASE HAND		PAUL JENSEN	12.00		PJ

RATE SCHEDULE: X REGULAR | REPAIR | INVERT
CREW SAFETY DAYS: 215

EVENING TOUR — FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	4.00		JB
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		SHELDON MICHEL	4.00		SM
LEASE HAND		SHANE WINTERS	4.00		SW

RATE SCHEDULE: X REGULAR | REPAIR | INVERT
CREW SAFETY DAYS: 215

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1181	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
KERRY GENEST	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Rigging Packet If Required
(4.) Well Licensee & Stab Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Monthly Inspect BOPs, Flare Lines & Degasser Lines
(1.) Rig Site Health & Safety Meeting (weekly/bi-weekly)
(2.) CAODC Rig Safety Inspection Checklist (every/six mth)
(3.) Hoist Inspection before Raising or Lowering
(4.) Derrick Board Checked
(5.) Stabbing Board Checked

YEAR	MONTH	DAY
2003	2	28

RIG NO. 5

FUEL ON 08 00 HRS

FROM	TO
-22	

SNOW DEPTH: CLOUDY
WIND DIRECTION: N.W.
WIND VELOCITY: ICE

LAST CASING TUBING OR LINER

O.D. (mm)	WALL T.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
244.5	234.4	59.53	ALGOMA	L-80	46	968.36		964.70
177.7	159.4	34.76	ALGOMA	L-80	191	2988.34	7.10	3983.90

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THD	NO JNTS
89	23.07	X-95	61	136	3 5" IF	349
89	36.96	HWDP	53	134	3 5" IF	27
121	65.00	DC	56	122	3 6" IF	21

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TIME-HRS		RIG UP & TEAR DOWN	DRILL ACTUAL	RIG REPAIR	BOPRIG	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	cut drlg line				
	MORN					6.50		0.25							1.75							5.50					8.00
	DAY	2.25						0.25														1.50					12.00
	EVE	3.75						0.25							7.75												4.00
	TOTAL	6.00				6.50		0.75							7.75	1.75						7.00					24.00

SHALE SHAKERS

NO	TYPE / BRAND	TYPE
1	BRANDT	DUO

SCREENING CHANGES

TIME		TIME	
1ST	84	2ND	110
3RD	84	4TH	110
5TH	84	6TH	110

RENTALS

WORK	DAY	SYS

DRILLING ASSEMBLY

NO.	BIT	O.D.	LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE
15	500	4.75	22	CONT. TRYING TO LATCH ON TO PACKER
500	530	0.50	5	WASH TOP OF PACKER
530	615	0.75	22	RELAND DOG NUT W/ 9500daN
615	800	1.75	15	PRESS. TEST DOG NUT 15,000 kpa

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR

HRS RUN	BOILER m3	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	47	PT	

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	26
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	214	

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	8.00		JB
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		SHELDON MICHEL	8.00		SM
LEASE HAND		SHANE WINTERS	8.00		SW

RATE SCHEDULE: X REGULAR | REPAIR | INVERT
CREW SAFETY DAYS: 214

DAY TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2878.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	7	RIG SERVICE
815	945	1.50	22	INSTALL BACK PRESS. VALVE.
945	1730	7.75	14	NIPPLE DOWN B.O.P.s TO INSTALL WELL HEAD. SAFTEY MEETING W/ CREW PRIOR.
1730	1745	0.25	21	SAFETY MTG. W/ CREW KERRY WILSON AND RM
1745	2000	2.25	1	RIG OUT RIG.
2000				

NOTES : D W A R G

HRS RUN	BOILER m3	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	345		WILSONS POLICYS ETC.	0

DAY TOUR — FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		KIRK BJORNSON	12.00		KB
FLOOR HAND		ALBERT BROWN	12.00		AB
FLOOR HAND		KIT BRINK	12.00		KB
LEASE HAND		PAUL JENSEN	12.00		PJ

RATE SCHEDULE: X REGULAR | REPAIR | INVERT
CREW SAFETY DAYS: 214

EVENING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE
2015	2400	3.75	1	TEAR OUT RIG
				RIG RELEASED @ 23:59 hrs; 2003-02-28 KLG

NOTES :

HRS RUN	BOILER m3	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	325		TEAR OUT RIG	0

EVENING TOUR — FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	4.00		JB
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		SHELDON MICHEL	4.00		SM
LEASE HAND		SHANE WINTERS	4.00		SW

RATE SCHEDULE: X REGULAR | REPAIR | INVERT
CREW SAFETY DAYS: 214

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
KERRY GENEST	Greg Pukas

DAILY CHECKS

(1) Daily Work Around Inspection
(2) Guyline Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Licence & Shut Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Weekly Inspect BOP - Flare Lines & Degasser Lines

(1) Rig Site Hazard & Safety Meeting (environmental)
(2) CAODC Rig Safety Inspection Checklist (environmental)
(3) Visit the position before Raising or Lowering
(4) Crown Saver Checked
(5) Water in Rig Checked

DATE	POINTS	DAY
2003	2	27

RIG NO. 5

FUEL AND JOB POINTS

RIG	BOILER
103	

WIND DIRECTION	-10
SAFETY SCORE (24 HR)	CLEAR
TOUR DIRECTION	CALM
WEATHER	ICE

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.4	69.53	ALGOMA	L-80	48	939.39		884.70
	177.7	159.4	34.78	ALGOMA	L-80	191	2986.34	7.10	2883.66

DC / DP SIZES	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS
89	23.07	X-95	61	129	3.5" IF	348
89	38.66	HWDP	52	134	3.5" IF	27
121	63.69	DC	58	122	3.5" IF	21

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

SHALE SHAKERS

NO	TYPE / BRAND	TYPE
3	BRANDT	

SCREENS CHANGED

TOP	84	TOP	110
SHALE	84	SHALE	110
BOTTOM	84	BOTTOM	110

RENTALS

WORK	DAY	SVC

CODE NO.

TIME (HRS)	1 RIG UP / TEAR DOWN	2 DRILL ACTUAL	3 REAMING	4 CORING	5 COND MUD & CIRC	6 TRIPS	7 RIG SERVICE	8 REPAIR RIG	9 CUT DRILLING LINE	10 DIRV. SURVEY	11 WIRELINE LOGS	12 RUN CSG & CEMENT	13 WAIT ON CEMENT	14 NIPPLE UP B.O.P.	15 TEST B.O.P.	16 DRILL STEM	17 PLUG BACK	18 SQUEEZE CEMENT	19 FISHING	20 DIR. WORK	21 SAFETY MEETING	22	23 DOG HT	24	25	26	TOTAL
MORN							0.25					7.75															8.00
DAY					6.25		0.25					8.25									0.25		3.25				12.00
EVE					0.50		0.25																				4.00
TOTAL					6.75		0.75					13.00									0.25		3.25				24.00

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	27
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER		**RIG NO.**	
Greg Pukas		5	
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES ☐ NO	213	

MORNING TOUR

DRILLING ASSEMBLY

NO	BIT	O.D.	LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD

BIT NO.
SIZE
IADC CODE
MANUFACTURER
TYPE
SERIAL NO.
JETS
DEPTH OUT
DEPTH IN
TOTAL M DRILLED
TOTAL HRS RUN

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION
HOLE DRAG
TORQUE AT BTTM
PULL ON BTTM (m)

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE
JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE
15	800	7.75	12	STRAP + RUN PRODUCTION STRING

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR
CHECK MANI VALVES + GAUGES

HRS RUN	BOILER PH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	325	25	TUBING	631

MORNING TOUR — INJURIES

FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		JOHN BURNS	8.00		JB
DERRICK HAND		BRUCE DEJONG	8.00	BD	
MOTOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		SHELDON MICHEL	8.00		SM
LEASE HAND		SHANE WINTERS	8.00		SW

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

FIRST AID TO R WRIST — CREW SAFETY DAYS — FROM STEAM BURN
213

DAY TOUR

DRILLING ASSEMBLY

NO	BIT	O.D.	LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD

BIT NO.
SIZE
IADC CODE
MANUFACTURER
TYPE
SERIAL NO.
JETS
DEPTH OUT
DEPTH IN
TOTAL M DRILLED
TOTAL HRS RUN

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION
HOLE DRAG
TORQUE AT BTTM
PULL ON BTTM (m)

DAY TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2878.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
1200	140.0	45	140.0	

REDUCED PUMP SPEED

	0	

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE
ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	21	SAFETY MTG.
815	1330	5.25	12	P/U RIH PRODUCTION TUBULAR TO PACKER 2554M.
1330	1345	0.25	7	RIG SERVICE FT. HYDRILL 10 SEC. CLOSE.
1345	1515	1.50	5	DISPLACE PIPE TO WATER AND INHIBETOR. AT 2543M.
1515	2000	4.75	5	P/U RETIGHTEN KELLY BAR WASH F/ 2543M-2554M. TOP PACKER CIRC. BOTTOMS UP.
2000				STRING WT. 35,000 DAN.

NOTES : D W A R G CHECK BRAKE ASSEMBLY.

HRS RUN	BOILER PH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	345	42	TUBULAR	

DAY TOUR — INJURIES

FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		KIRK BJORNSON	12.00		KB
FLOOR HAND		ALBERT BROWN	12.00		AB
FLOOR HAND		KIT BRINK	12.00		KB
LEASE HAND		PAUL JENSEN	12.00		PJ

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS
213

EVENING TOUR

DRILLING ASSEMBLY

NO	BIT	O.D.	LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD

BIT NO.
SIZE
IADC CODE
MANUFACTURER
TYPE
SERIAL NO.
JETS
DEPTH OUT
DEPTH IN
TOTAL M DRILLED
TOTAL HRS RUN

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION
HOLE DRAG
TORQUE AT BTTM
PULL ON BTTM (m)

EVENING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS Run	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
1200	140.0	45	140.0	

REDUCED PUMP SPEED

	0	

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE
JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE
2015	2045	0.50	5	COND MUD & CIRC. BTTM UP
2045	2300	2.25	23	MEAS. IN TO LAND DOG N T
2300	2400	1.00	23	BREAK DOWN KELLY BAR + SUBS
2400				STRING WT 35,000 dan

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR

HRS RUN	BOILER PH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	11.0	325	42	POWER TONGS	

EVENING TOUR — INJURIES

FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		JOHN BURNS	4.00		JB
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		SHELDON MICHEL	4.00		SM
LEASE HAND		SHANE WINTERS	4.00		SW

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS
213

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
KERRY GENEST	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted If Required
(4.) Well License & Well Program Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Monthly Inspect BOPs, Flare Lines & Diagonal Lines
(1.) Rig Site Health & Safety Meeting (conference room)
(2.) CAODC Rig Safe Inspection Checklist (every month)
(3.) Hose Inspection before Raising or Lowering
(4.) Crown Saver Checked
(5.) Choke & Kill Checked

YEAR	MONTH	DAY
2003	2	26

RIG NO. 5

FUEL @ 08:00 HRS 139

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)
	244.5	224.4	59.53	ALGOMA	L-80	68	868.30		864.73
	177.7	159.4	34.76	ALGOMA	L-80	191	2868.34	7.16	2863.96

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
89	23.07	X-95	61	120	3.5" IF	349	PT-1100	DILWELL	254
89	38.96	HWDP	52	134	3.5" IF	27	PT-1100	DILWELL	254
121	83.00	DC	68	132	3.5" IF	21			

WIND SPEED	WIND DIRECTION	RIG HEADING
-18	EAST	ICE

SURFACE CONDITIONS
CLEAR

TIME BREAKDOWN

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TIME HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	DIRECTIONAL DRILLING	FISHING	SR. WORK	SAFETY MEETING	WEAR BUSH'G	O.P.ACKER				
MORN						3.75	0.25					2.50									0.25	0.50	0.75				8.00
DAY							0.25				10.00										0.50		1.25				12.00
EVE							0.25				0.50	3.00									0.25						4.00
TOTAL						3.75	0.75				10.50	5.50									1.00	0.50	2.00				24.00

SHALE SHAKERS

NO.	TYPE	SCREENING CHAMBERS	TOP	BOTTOM
2	BRANDT	2 | 2	84	110
			84	110
			84	110

RENTALS

WORK	DAY	DWY

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	26
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	212	

DRILLING ASSEMBLY

NO.		OD	LENGTH
1	BIT	0.12	
1	SCRAPER SUB	160	0.65
1	BIT SUB	125	0.92
3	D.C.	122	29.24
1	JAR	121	8.02
14	D.C.	122	133.21
9	H.W.D.P.	124	81.75
	BHA 249.11		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		249.11
	WT. OF D.C.	13	
	WT. OF STRING	79	

BIT RECORD

BIT NO.	4
SIZE	156.0
IADC CODE	
MANUFACTURER	
TYPE	L2 1819
SERIAL NO.	722013
JETS	OPEN CENTER
DEPTH OUT	2558.00
DEPTH IN	
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR

MUD TYPE | WATER BASED | OIL BASED
TIME
DENSITY (KG/M3)
FUNNEL VIS
W.L. (cm3)
pH

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

PUMP PRESS kPa

	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE / FT. HYDRIL 22 sec C
15	400	3.75	6	TRIPS - RUN STNDS in FLOW CHECK
400				CONT. LAY DOWN STRING FLOW CHECK @ DC
				O.O.H FLOW CHECK STATIC WELL FT BLIND RAMS 4 sec C
400	430	0.50	22	PULL WEAR BUSHING
430	700	2.50	12	STRAP TOP TEAR PRODUCTION STRING / RIG IN TONG HAND
700	715	0.25	21	SAFETY MTG. W/CREW - EZ LAY PIPE HANDLERS - HILLS POWER TONGS
715	800	0.75	23	W.O. PACKER

TRIP RECORD CALCU. 7.84m3
MEAS. 6.92m3
DIFF. 1.06m3

NOTES : CHECK BRAKE LINKAGE - DEADLINE ANCHOR
FT MANN, REMOTE CHOKE

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	25	POWER TONGS	531

RATE SCHEDULE		REGULAR		REPAIR		RIVERT
	X					

CREW SAFETY DAYS
212

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	8.00			JB
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DARCY PUKAS	8.00			DP
FLOOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		SHELDON MICHEL	8.00			SM
LEASE HAND		SHANE WINTERS	8.00			SW

DRILLING ASSEMBLY

NO.		OD	LENGTH
	BIT	OD	
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

DAY TOUR

MUD TYPE | X | WATER BASED | OIL BASED
TIME
DENSITY (KG/M3)
FUNNEL VIS
W.L. (cm3)
pH

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa

	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2879.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	7	RIG SERVICE, FT. BLIND RAMS 6 SEC. CLOSE.
815	830	0.25	21	SAFETY MTG. W/ WIRELINE HANDS TONGHAND L/D HANDS.
830	1130	3.00	11	RIG OUT L/D MACHINE. RIG IN WIRELINE TRUCK. TEAR OUT FLOW-T CACTH PAN.
1130	1400	2.50	11	WIRE LINE GR/CCL
1400	1515	1.25	23	W.O PACKER
1515	1530	0.25	21	SAFETY MTG. W/ CREW WIRELINE HANDS PRODUCTION ENG. R.M
1530	1915	3.75	11	WIRE LINE PACKER. SET @ 2554M.
1915	1930	0.25	11	PRESS. TEST PACKER PLUG 13,000 K.P.A 15 MIN.
1930	2000	0.50	11	RIG OUT WIRE LINE & LUBRICATOR HEAD

NOTES : D.W.A.R.G CHECK BRAKE ASSEMBLY.

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	345		PRODUCTION	531

RATE SCHEDULE		REGULAR		REPAIR		RIVERT
	X					

CREW SAFETY DAYS
212

DAY TOUR — FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		KIRK BJORNSON	12.00			KB
FLOOR HAND		ALBERT BROWN	12.00			AB
FLOOR HAND		KIT BRINK	12.00			KB
LEASE HAND		PAUL JENSEN	12.00			PJ

DRILLING ASSEMBLY

NO.		OD	LENGTH
	BIT	OD	
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

EVENING TOUR

MUD TYPE | WATER BASED | OIL BASED
TIME
DENSITY (KG/M3)
FUNNEL VIS
W.L. (cm3)
pH

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	DISCHARGE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa

	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2030	0.50	11	RIG OUT FLANGE TOP HYDRIL - RIG UP FLOW-T + FLOW LINE
2030	2045	0.25	7	RIG SERVICE
2045	2115	0.50	12	RIG IN LAY DOWN MACHINE
2115	2130	0.25	21	SAFETY MTG. W/CREW - TONG HAND - LAY DOWN OPPERATOR
2130				PRODUCTION ENG. - HYDRIL HANDS
2130	2400	2.50	12	RUN PRODUCTION STRING

NOTES : CHECK BRAKE LINKAGE - DEADLINE ANCHOR

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	11.0	325	14	POWER TONGS	531

RATE SCHEDULE		REGULAR		REPAIR		RIVERT
	X					

CREW SAFETY DAYS
212

EVENING TOUR — FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	4.00			JB
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DARCY PUKAS	4.00			DP
FLOOR HAND		DAVE GREEN	4.00			DG
FLOOR HAND		SHELDON MICHEL	4.00			SM
LEASE HAND		SHANE WINTERS	4.00			SW

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Work Account Inspections
(2) Detailed Inspection - Weekly (during Shaft Unit)
(3) H2S Signs Posted if Required
(4) Well Licenses & Shaft Diagram Posted
(5) Pipe Lines Tested
(6) BOP Drills Performed
(7) Visually Inspect BOPs, Pipe Lines & Separator Lines
(1) Rig Site Health & Safety Meeting (minimum monthly)
(2) CADOC Rig Safety Inspection Checklist (quarterly basis)
(3) Hard Inspection before Raising or Lowering
(4) Derrick Board Checked
(5) Motor Rolls Checked

YEAR	MONTH	DAY
2003	2	25

RIG NO. 5

FUEL @ 08:00 HRS

DIESEL	204
PROPANE	
CLEAR	
CALC	
ICE	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.4	69.83	ALGOMA	L-80	46	685.30		684.70
	177.7	159.4	34.70	ALGOMA	L-80	101	2986.34	7.10	2883.89

	DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
	89	23.07	X-95	81	108	2.5" IF	548	PT-1100	OILWELL	254
	89	38.89	HWDP	62	134	3.5" IF	27	PT-1100	OILWELL	254
	121	65.09	DC	80	133	3.5" IF	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TIME HRS	PICK UP & TRIP OUT	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICES	REPAIR RIG	EVT DRILLING LINE	SRV SURVEY	STERLING LOSS	RUN CSG & CEMENT	WAIT ON CEMENT	RIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	B/O KELLY					
MORN					1.00	6.25	0.25														0.50						8.00
DAY					7.00	4.50	0.25														0.25						12.00
EVE						2.75	0.25														0.25	0.75					4.00
TOTAL					8.00	13.50	0.75														1.00	0.75					24.00

SHALE SHAKERS

NO.	TYPE	SCREENING
2	BRANDT	84 / 110

RENTALS

WORK	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	25
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER		**RIG NO.**	
Greg Pukas		5	
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES ☐ NO	211	

NO.	DRILLING ASSEMBLY		LENGTH
1	BIT	O.D.	0.12
1	SCRAPER SUB	160	0.85
1	BIT SUB	125	0.92
3	D.C.	122	28.24
1	JAR	121	6.02
14	D.C.	122	132.21
9	H.W.D.P.	124	81.75
	BHA 249.11		
80	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	2277.89
KELLY DOWN			13.03
TOTAL			2539.83
WT. OF D.C.	13		
WT. OF STRING	76		

BIT RECORD

BIT NO.	4
SIZE	156.0
IADC CODE	
MANUFACTURER	
TYPE	L2 1619
SERIAL NO.	722013
JETS	OPENCENTER
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR — FROM 0 TO 800

MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME	500	715
DENSITY (KG/M3)	1100	1100
FUNNEL VIS	62	65
W.L. (cm3)	6.0	6.0
pH	10.5	10.5

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY

CENTRIFUGE

HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY

	HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
5730	140.0	46	140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE / FT BLIND RAMS 4 sec C
15	30	0.25	21	SAFETY MTG WITH NEW DDH NORTHERN SAFETY BERLMAN
30	845	8.25	5	TRIPS - MAKE UP SCRAPER + BIT < RUN PORTED FLOAT + TOTCO RING >
				PICK UP JARS - FILL EVERY 800 M / FLOW CHECK ON FILL
845	700	0.25	21	SOUR GAS B.O.P DRILL W/CREW + DDH NORTHERN SAFETY
700				DDH PACK - SHUT WELL IN
700	800	1.00	5	COND MUD & CIRC

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR
CHECK MANN VALVES + GAUGES
FT REMOTE CHOKE

HRS RUN	BOILER HT.	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	80	FLOW CHECKS	

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS: 211

MORNING TOUR — FROM 0 TO 800 — INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		JOHN BURNS	8.00			JB
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DARCY PUKAS	8.00			DP
FLOOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		SHELDON MICHEL	8.00			SM
LEASE HAND		SHANE WINTERS	8.00			SW

NO	DRILLING ASSEMBLY		LENGTH
1	BIT	O.D.	0.12
1	SCRAPER SUB	160	0.85
1	BIT SUB	125	0.92
3	D.C.	122	28.24
1	JAR	121	6.02
14	D.C.	122	132.21
9	H.W.D.P.	124	81.75
	BHA 249.11		
80	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	2296.88
KELLY DOWN			13.03
TOTAL			2558.62
WT. OF D.C.	13		
WT. OF STRING	76		

BIT RECORD

BIT NO.	4
SIZE	156.0
IADC CODE	
MANUFACTURER	
TYPE	L2 1619
SERIAL NO.	722013
JETS	OPENCENTER
DEPTH OUT	2758.00
DEPTH IN	
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

DAY TOUR — FROM 800 TO 2000

MUD RECORD

MUD TYPE	X	WATER BASED	OIL BASED
TIME		800	1300
DENSITY (KG/M3)		1100	1100
FUNNEL VIS		63	54
W.L. (cm3)		6.5	6.0
pH		10.5	10.5
PVT		30.20	31.90

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BAROCARB 5	15	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY

CENTRIFUGE

HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY
0.00			

	HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY
	0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2678.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
5800	140.0	50	140.0	

REDUCED PUMP SPEED: 2680 — 28 — 2558

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	7	RIG SERVICE, FT. UPPER RAMS 4 SEC. CLOSE.
815	1515	7.00	5	CIRC. W/ SCRAPER ASSEMBLY, RIG IN L/D MACHINE.
1515	1530	0.25	21	SAFETY MTG. W/ CREW L/D HANDS.
1530	2000	4.50	6	FLOW CHECK 2538M, PUMP PILL L/D D/P FLOW CHECK 2510M, 1370M.
2000				

NOTES : D.W.A.R.O CHECK BRAKE ASSEMBLY SLIP TONG DIES BACK UP LINES ANCHOR POINTS ETC.
4 FUNTION START 19,000kpa FINISH 18,250kpa RECHARGED 3.04min/s
PRECHARGE 7,000kpa

HRS RUN	BOILER HT.	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	345	75	L/D MACHINE	531

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS: 211

DAY TOUR — FROM 800 TO 2000 — INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		KIRK BJORNSON	12.00			KB
FLOOR HAND		ALBERT BROWN	12.00			AB
FLOOR HAND		KIT BRINK	12.00			KB
LEASE HAND		PAUL JENSEN	12.00			PJ

NO	DRILLING ASSEMBLY		LENGTH
1	BIT	O.D.	0.12
1	SCRAPER SUB	160	0.85
1	BIT SUB	125	0.92
3	D.C.	122	28.24
1	JAR	121	6.02
14	D.C.	122	132.21
9	H.W.D.P.	124	81.75
	BHA 249.11		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
KELLY DOWN			
TOTAL			249.11
WT. OF D.C.	13		
WT. OF STRING	76		

BIT RECORD

BIT NO.	4
SIZE	156.0
IADC CODE	
MANUFACTURER	
TYPE	L2 1619
SERIAL NO.	722013
JETS	OPENCENTER
DEPTH OUT	2558.00
DEPTH IN	
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

EVENING TOUR — FROM 2000 TO 2400

MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY

CENTRIFUGE

HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY

	HOURS RUN	SIZE OF HDSTY (INCHES)	GPM FLOW DENSITY	PRESS FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED: ● — 0 — ●

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	21	SAFETY MTG. W/CREW + E-Z LAY PIPEHANDLERS
2015	2030	0.25	7	RIG SERVICE / FT LOWER P.RAMS 4sec.C
2030	2315	2.75	6	TRIPS - CONT. LAY DOWN STRING - FLOW CHECK @ H.W.D.P
2315	2400	0.75	22	BREAK DOWN KELLY

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR
CHECK MANN VALVES

HRS RUN	BOILER HT.	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	325	55	LAYDOWN MACHINE	531

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS: 211

EVENING TOUR — FROM 2000 TO 2400 — INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		JOHN BURNS	4.00			JB
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DARCY PUKAS	4.00			DP
FLOOR HAND		DAVE GREEN	4.00			DG
FLOOR HAND		SHELDON MICHEL	4.00			SM
LEASE HAND		SHANE WINTERS	4.00			SW

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME / UWI NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Walk Around Inspection
(2) Derrick Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Weh Lanyard & Shock Absorber Posted
(5) Fire Lines Posted
(6) BOP Drills Performed
(7) Weekly Inspect BOPs Fire Lines & Ringwall Lines
(1) Rig Site Health & Safety Meeting (weekly/monthly)
(2) ELKOPIC Rig Assist Inspection Checklist (weekly/monthly)
(3) Hoist Inspection before Raising or Lowering
(4) Crown Saver Checked
(5) Hoist Kills Checked

YEAR	MONTH	DAY
2003	2	24

RIG NO. 5

FUEL @ 08:00 HRS

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)
	244.5	224.4	69.85	ALGOMA	L-80	48	958.36		954.70
	177.7	159.4	34.76	ALGOMA	L-80	101	3998.34	7.10	3993.50

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
89	23.07	S-135	61	139	3.5" IF	349	PT-1100	OILWELL	254
89	26.90	HWDP	62	134	3.5" IF	27	PT-1100	OILWELL	254
191	63.00	DC	88	182	3.5" IF	21			

CODE NO. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 — **TIME BREAKDOWN**

	TRIP & TOUR SUB	DRILL ACTUAL	REAMING	CORING	CORE MUD & CORE	TYPE	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DIRECT. SURVEY	DRILLING LOSS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	BRIDGE PLUG				TOTAL
MORN						7.50	0.25														0.25					
DAY						8.75	0.25															2.00				8.00
EVE						8.50	0.25		1.00												0.25		1.00			8.00
TOTAL						16.75	0.75		1.00												0.50	2.00	1.00			24.00

SHALE SHAKERS

NO.	TYPE	GRADE
2	BRANDT	

SCREENING	TOP	BTM
TOP	84	110
THIRD	84	110
BOTTOM	84	110

RENTALS — MORN / DAY / EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	24
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER		**RIG NO**	
Greg Pukas		5	
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES ☐ NO	210	

DRILLING ASSEMBLY

NO	DRILLING ASSEMBLY	O.D.	LENGTH
1	BIT		0.17
1	BIT SUB	122	0.92
3	D.C.	122	29.24
1	JAR	121	9.02
14	D.C.	122	132.21
9	H.W.D.P.	121	81.79
	BHA 248.31		
92	DRILL PIPE — STANDS		2810.29
	DRILL PIPE — SINGLES		
KELLY DOWN			16.41
TOTAL			2878.80
WT. OF D.C.	13		
WT. OF STRING	78		

BIT RECORD

BIT NO.	RR3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C1SLRGSP
SERIAL NO.	CF687
JETS	17.5 | 17.5 | 17.5 | OPEN
DEPTH OUT	
DEPTH IN	2878.00
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG

TORQUE AT BTTM

FILL ON BTTM (m)

MORNING TOUR — MUD RECORD

WATER BASED ☐ OIL BASED ☐

MUD TYPE | TIME | DENSITY (KG/M3) | FUNNEL VIS | W.L. (cm3) | pH

MUD MATERIALS ADDED: PRODUCT | USED | UNIT

SOLIDS CONTROL — DESILTER: HOURS RUN | SCREEN SIZE (MESH) | OVER FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | SCREEN SIZE (MESH) | OVER FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
14000			0	0

REDUCED PUMP SPEED

DEVIATION SURVEY: DEPTH (M) | DEVIATION | DIRECTION

DRILLER SIGNATURE: DAVID RUSCHEINSKI

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE FT. HYDRILL C/ 17 SECS
15	30	0.25	21	BOP DRILL WELL SECURE IN 1 MIN 35 SECS, SAFETY MTG.
30	345	3.25	6	CONTINUE TRIP OUT, FLOW CHECK @ 1583m, 169m & SURFACE
345	800	4.25	6	PICK UP BRIDGE PLUG, R.I.H., DOUBLE STRAP IN,
800				FLOW CHECK & FILL PIPE @ 440m & 813m

TRIP RECORD CALC. 6.66m3
ACT. 10.77m3
DIFF. 2.11m3

NOTES : CHECK CROWN SAVER, TONGS & LINES, BRAKE LINKAGE
INSPECT DERRICKMAN HARNESS
CLOSE BLIND RAM OUT OF HOLE @ 4 SECS

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	75	BOP DRILL	531

MORNING TOUR — CREW

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		DAVID RUSCHEINSKI	8.00			DR
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		Mark Suchy	8.00			MS
FLOOR HAND		RICK SONFRERE	8.00			RS

RATE SCHEDULE | X | REGULAR | | REPAIR | | RIVET

CREW SAFETY DAYS: 210

DAY TOUR

NO	DRILLING ASSEMBLY	O.D.	LENGTH
	BIT		
1	BRIDGE PLUG		3.38
2	D.C.	121	18.86
1	JAR		9.02
15	D.C.	121	141.98
9	H.W.D.P.	89	81.79
	B.H.A. 250.8		
81	DRILL PIPE — STANDS		
1	DRILL PIPE — SINGLES		2600.26
KELLY DOWN			16.14
TOTAL			2961.00
WT. OF D.C.	13		
WT. OF STRING	78		

BIT RECORD: BIT NO. | SIZE | IADC CODE | MANUFACTURER | TYPE | SERIAL NO. | JETS | DEPTH OUT | DEPTH IN | TOTAL M DRILLED | TOTAL HRS RUN

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN MHR

HOLE CONDITION: HOLE DRAG | TORQUE AT BTTM | FILL ON BTTM (m)

DAY TOUR — MUD RECORD

WATER BASED ☐ OIL BASED ☐

MUD TYPE | TIME | DENSITY (KG/M3) | FUNNEL VIS | W.L. (cm3) | pH

MUD MATERIALS ADDED: PRODUCT | USED | UNIT

SOLIDS CONTROL — DESILTER: HOURS RUN | SCREEN SIZE (MESH) | OVER FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | SCREEN SIZE (MESH) | OVER FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
14000			0	0

REDUCED PUMP SPEED

DEVIATION SURVEY: DEPTH (M) | DEVIATION | DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 4 secs C
815	1400	5.75	6	TRIPS - CONT. RI BRIDGE PLUG - DOUBLE STRAP - FILL PIPE ON STRAPS
1400	1600	2.00	22	METRE IN - SET BRIDGE PLUG 2961m
1600				

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR
CHECK MANN VALVES + GAUGES

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	95	BRIDGE PLUG	531

DAY TOUR — CREW

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		JOHN BURNS	8.00			JB
DERRICK HAND		ALBERT BROWN	8.00			AB
MOTOR HAND		DARCY PUKAS	8.00			DP
FLOOR HAND		SHELDON MICHEL	8.00			SM
FLOOR HAND		KEVIN FINNING	8.00			KF
LEASE HAND		DAVID NORN	8.00			DN
LEASE HAND		PAUL JENSEN	8.00			PJ

RATE SCHEDULE | X | REGULAR | | REPAIR | | RIVET

CREW SAFETY DAYS: 210

EVENING TOUR

NO.	DRILLING ASSEMBLY	O.D.	LENGTH
	BIT		
17	D.C.	121	156.46
9	H.W.D.P.	89	81.79
81	DRILL PIPE — STANDS		
1	DRILL PIPE — SINGLES		2600.26
KELLY DOWN			
TOTAL			2842.46
WT. OF D.C.	13		
WT. OF STRING	78		

BIT RECORD: BIT NO. | SIZE | IADC CODE | MANUFACTURER | TYPE | SERIAL NO. | JETS | DEPTH OUT | DEPTH IN | TOTAL M DRILLED | TOTAL HRS RUN

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN MHR

HOLE CONDITION: HOLE DRAG | TORQUE AT BTTM | FILL ON BTTM (m)

EVENING TOUR — MUD RECORD

WATER BASED ☐ OIL BASED ☐

MUD TYPE	FROM
X	2878.00

TIME | DENSITY (KG/M3) | FUNNEL VIS | W.L. (cm3) | pH

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BAROCARB 5	20	50

SOLIDS CONTROL — DESILTER: HOURS RUN | SCREEN SIZE (MESH) | OVER FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | SCREEN SIZE (MESH) | OVER FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
14000			140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY: DEPTH (M) | DEVIATION | DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2878.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1800	1815	0.25	21	SAFETY MTG. B.O.P DRILL W/ CREW.
1815	1830	0.25	6	FLOW CHECK BLOW KELLY 2979M.
1830	1845	0.25	7	RIG SERVICE FT.LOWER PIPE RAM 3sec. PUMP PILL, FLOW CHECK 2780M.
1845	2200	3.25	6	CONTINUE P.O.O.H FLOW CHECK @ 1545M. D/C ON BANK L/O BRIDGE PLUG ASSEMBLY.
2200	2300	1.00	9	CUT OFF DRILL LINE GREASE CROWN AND BLOCKS
2300	2400	1.00	23	W.O SCRAPER.
2400				

TRIP RECORD CAL. 6.11 M/3 ACTUAL 8.11 M/3 DIFF. 1.0 M/3

NOTES : D W A R C CHECK SLIP TONG DIES

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5		90	RI IP OUT	531

EVENING TOUR — CREW

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	8.00			RG
DERRICK HAND		KEVIN FINNING	4.00			KF
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		ALBERT BROWN	4.00			AB
FLOOR HAND		KIT BRINK	8.00			KB
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DAVE GREEN	4.00			DG
LEASE HAND		SHANE WINTERS	4.00			SW

RATE SCHEDULE | X | REGULAR | | REPAIR | | RIVET

CREW SAFETY DAYS: 210

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
B.Goodrich / J.Kerekan	Greg Pukas

DAILY CHECKS

(1) Daily Visit Around Inspection
(2) Derrick Inspection - Weekly (Using Check List)
(3) H2S Signs Posted If Required
(4) Well Licence & Sour Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually Inspect BOPs, Flare Lines & Degasser Lines
(8) Fog Site Health & Safety Meeting (employees/crew etc)
(9) CADDC Rig Safety Inspection Checklist (once/tig/month)
(10) Mud Inspection before Rotating or Lowering
(11) Crown Saver Checked
(12) Marker If Rig Checked

YEAR	MONTH	DAY
2003	2	23

RIG NO. 5

FUEL @ 08:00 HRS

AIR TEMP	171
BOP TEST PRESSURE	25
BOP TEST DATE	CL2.AR
BOP INSPECTION	CAL.M
COMMENTS	ICE

LAST CASING / TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)
	244.5	234.4	59.53	ALGOMA	L-80	48	686.30		684.70
	177.7	159.4	34.76	ALGOMA	L-80	191	2589.34	7.10	2583.90

OD / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS
89	23.67	X-95	81	108	3.5" IF	348
89	34.59	HWDP	52	124	3.5" IF	27
121	83.09	DC	58	152	3.5" IF	21

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

SHALE SHAKERS

NO.	TYPE	BRAND	TYPE
2	SCREEN CHANGER		
	Top	84	Top 110
	Middle	84	Middle 110
	Bottom	84	Bottom 110

RENTALS

	WORN	BAY	DVE

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TYPE HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	CONDITION & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING						
B ORN							0.25				7.50										0.25						8.00
DAY			0.50			5.50	0.25				5.75																12.00
EVE					2.00	1.75	0.25																				4.00
TOTAL			0.50		2.00	7.25	0.75				13.25										0.25						24.00

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	23
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES ☐ NO	209	

DRILLING ASSEMBLY

NO.		LENGTH
1	BIT	0.17
1	N.B STAB.	1.25
2	D.C.	16.55
1	JAR	5.02
10	D.C.	141.80
9	H.W.D.P.	81.75
	BHA 248.84m	
91	DRILL PIPE STANDS	2609.78
2	DRILL PIPE SINGLES	
KELLY DOWN		13.03
TOTAL		2871.45
WT. OF D.C.	13	
WT. OF STRING	78	

BIT RECORD

BIT NO.	RR3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2878.00
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR — MUD RECORD — METRES DRILLED

MUD TYPE	X	WATER BASED		OIL BASED	
TIME					
DENSITY (KG/M3)					
FUNNEL VIS					
W.L. (cm3)					
pH					

FROM	TO	DRC	RPM	WOB

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

@		@	

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE	HRS RUN	BOILER PH	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
DAVID RUSCHEINSKI	8.00	10.0	350	13	LOGGING	531

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE CLOSE BLIND RAM OUT OF HOLE C/ 4 SECS
15	30	0.25	21	SAFETY MTG. W SCHLUMBERGER
30	715	6.75	11	RIG UP TO & RUN LOG #1 DSI/ XY/ HGNS/ TLD/ AIT
715				TD STM @ 318 hr, DEPTH 2974.5m
715	800	0.75	11	RUN LOG # 2 FWI
800				

NOTES : CHECK BRAKE LINKAGE, VISUALLY INSPECT DRIVE CHAINS IN DRAWWORKS
CONTINUOUS MONITOR HOLE VOLUME
SERVICE MUD PUMPS # 1 & # 2

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS
209

MORNING TOUR — CREW

FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	8.00			DR
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		Mark Suchy	8.00			MS
FLOOR HAND		RICK SONFNERE	8.00			RS

DRILLING ASSEMBLY

NO.		LENGTH
1	BIT	0.17
1	BIT SUB	0.92
3	D.C.	29.24
1	JAR	5.02
10	D.C.	132.21
9	H.W.D.P.	81.75
	BHA 248.31	
82	DRILL PIPE STANDS	2619.28
	DRILL PIPE SINGLES	
KELLY DOWN		10.41
TOTAL		2878.00
WT. OF D.C.	13	
WT. OF STRING	78	

BIT RECORD

BIT NO.	RR3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2878.00
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

DAY TOUR — MUD RECORD — METRES DRILLED

MUD TYPE		WATER BASED		OIL BASED	
TIME					
DENSITY (KG/M3)					
FUNNEL VIS					
W.L. (cm3)					
pH					

FROM	TO	DRC	RPM	WOB

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
3200	140.0	30	0.0	

REDUCED PUMP SPEED

@		@	

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE	HRS RUN	BOILER PH	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
JOHN BURNS	12.00	10.5	325	80	H2S	531

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	7	RIG SERVICE / FT. BLIND RAMS 4 SEC C / FLOW CHECK < STATIC >
815	1400	5.75	11	WIRE LINE LOGS < SCHLUMBERGER > R.I.H .82 LOG DOWN 2969.M @ 9.85 hr
				FMI , FMICART , GAMMA RAY ,DTC , HEAD
				RIG OUT LOGGERS
1400	1930	5.50	6	TRIPS - MAKE UP BIT + BIT SUB < RUN PORTED FLOAT + TOTCO RING >
1930				PICK UP JARS / R.I.H FILL 800 M - 1900 M - 2900 M
				FLOW CHECK ON FILLS
1930	2000	0.50	3	WASH/ REAM F/ 2848m - 2878m
2000				

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR
CHECK MANN. VALVES + GAUGES
FT. REMOTE CHOKE

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS
209

DAY TOUR — CREW

FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	12.00			JB
DERRICK HAND		ALBERT BROWN	12.00			AB
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		SHELDON MICHEL	12.00			SM
FLOOR HAND		KEVIN FINNING	12.00			KF
LEASE HAND		DAVID NORN	12.00			DN

DRILLING ASSEMBLY

NO.		LENGTH
1	BIT	0.17
1	BIT SUB	0.92
3	D.C.	29.24
1	JAR	5.02
10	D.C.	132.21
9	H.W.D.P.	81.75
	BHA 248.31	
82	DRILL PIPE STANDS	2619.28
	DRILL PIPE SINGLES	
KELLY DOWN		10.41
TOTAL		2878.00
WT. OF D.C.	13	
WT. OF STRING	78	

BIT RECORD

BIT NO.	RR3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2878.00
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

EVENING TOUR — MUD RECORD — METRES DRILLED

MUD TYPE	X	WATER BASED		OIL BASED	
TIME		2200			
DENSITY (KG/M3)		1100			
FUNNEL VIS		51			
W.L. (cm3)		6.0			
pH		10.0			
PVT		60.80			

FROM	TO	DRC	RPM	WOB

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8120	140.0	67	0.0	

REDUCED PUMP SPEED

4530	@	38	@	2975

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE	HRS RUN	BOILER PH	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
DAVID RUSCHEINSKI	4.00	10.0	350	85	TRIPPING	531

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE FT. LOWER PIPE RAM C/ 4 SECS
2015	2215	2.00	5	COND MUD & CIRC
2215	2400	1.75	5	TRIP OUT OF HOLE, PUMP PILL, BLOW KELLY,FLOW CHECK @ 2568m, 2722m

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS
209

EVENING TOUR — CREW

FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	4.00			DR
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DAVE GREEN	4.00			DG
FLOOR HAND		Mark Suchy	4.00			MS
FLOOR HAND		RICK SONFRERE	4.00			RS

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
B.Goodrich / J.Kerekan	Greg Pukas

DAILY CHECKS

(1) Daily Visib Accurate Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Libraries & Drlg Program Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Weekly Inspect BOPs Flare Lines & Separator Lines

(1) Rig Site Hazards & Safety Meeting (crew/contractor)
(2) CADRE Rig Safety Inspection Checklist (yearly/month)
(3) Visit Inspection before Raising or Lowering
(4) Derrick Crown Checked
(5) Water Rig Checked

YEAR	MONTH	DAY
2003	2	22

RIG NO 5

FUEL @ 08.00 HRS

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.4	59.53	ALGOMA	L-80	46	686.36		684.70
	177.7	169.4	34.70	ALGOMA	L-80	191	2988.24	7.16	3983.96

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS
88	25.67	X-56	61	139	3.5" IF	348
88	36.99	HWDP	52	134	3.5" IF	27
121	63.00	DC	56	182	5.5" IF	51

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

RIG MOVE DESCRIBED: ICE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	22
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
RIG MANAGER	**RIG NO.**
Greg Pukas	5
PROVINCE	**CAMP**	**RIG SAFETY DAYS**
N.W.T.	X YES NO	206

TIME / HRS

	CODE NO 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
		RIGUP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	PERFING	DIR. WORK	SAFETY MEETING					
MORN		7.00				0.25	0.50	0.25																			8.00
DAY		9.25				5.25	3.25	0.25			1.00																12.00
EVE							3.75	0.25																			4.00
TOTAL		7.25				5.50	6.50	0.75			1.00																24.00

SHALE SHAKERS

NO	TYPE SHALE	TYPE
2	SCREENS SCANNERS	P T
TOP	84	TOP 110
MIDDLE	84	MIDDLE 110
BOTTOM	84	BOTTOM 110

RENTALS

ITEM	HOURS	DAYS	$/DAY

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.17	
1	N.B STAB	1.25	155
1	MONEL	9.48	122
2	D.C.	10.95	123
1	JAR	8.02	121
15	D.C.	141.80	122
9	H.W.D.P.	81.75	121
	BHA 259.12		
91	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	2508.79
KELLY DOWN			9.10
TOTAL			2976.00
WT. OF D.C.		13	
WT. OF STRING		70	

BIT RECORD

BIT NO.	3
SIZE	196.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO.	CF667
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	290.00
TOTAL HRS RUN	83.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN (HR)

HOLE CONDITION

HOLE DRAG 15UP<>100DOWN
TORQUE AT BTTM 1850
PILL ON BTTM (m)

MORNING TOUR

MUD TYPE X

TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	
PVT	63.40

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BAROCARB 150	10	SX
BAROCARB 50	50	SX
BAROCARB 5	30	SX

MUD RECORD

	WATER BASED	OIL BASED
	120	330
	1085	1085
	49	49
	6.5	6.5
	10.5	10.5
	62.50	61.50

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2830.00	2976.00	D	60	10

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
9500	140.0	86	140.0	

REDUCED PUMP SPEED

4300 ● 37 ● 2850

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: DAVID RUSCHEINSKI

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	5	CIRC HOLE CLEAN
15	30	0.25	7	RIG SERVICE FT, HYDRILL C/ 17 DEGS, BLOW KELLY
30	100	0.50	6	WIPER TRIP TO 2790m, FLOW CHECK @ 2580m,2790m FLH.
100	800	7.00	2	DRILL FI 2950m - 2976m
800				

NOTES : CHECK CROWN SAVER, BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER PH	STACK TEMP	MAX WHP EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	88	ICE BUILD UP	1030

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		DAVID RUSCHEINSKI	8.00		DR
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		Mark Suchy	8.00		MS
FLOOR HAND		RICK SONFNERE	8.00		RS

RATE SCHEDULE: X REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 208

DAY TOUR

DAY TOUR FROM 800 TO 2000

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.17	
1	N.B STAB	1.25	155
1	MONEL	9.48	123
2	D.C.	10.95	122
1	JAR	8.02	121
15	D.C.	141.80	122
9	H.W.D.P.	81.75	121
	BHA 258.12		
91	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	2608.78
KELLY DOWN			10.10
TOTAL			2975.00
WT. OF D.C.		13	
WT. OF STRING		70	

BIT RECORD

BIT NO.	3
SIZE	196.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO.	CF667
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	292.00
TOTAL HRS RUN	84.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN (HR)

HOLE CONDITION

HOLE DRAG 10 - 20 UP & DOWN
TORQUE AT BTTM 2000
PILL ON BTTM (m)

DAY TOUR

MUD TYPE X

TIME	
DENSITY (KG/M3)	1080
FUNNEL VIS	50
W.L. (cm3)	6.5
pH	10.5

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BAROCARB 50	88	SX
BAROCARB 5	22	SX
BARASUP	5	SX

MUD RECORD

	WATER BASED		OIL BASED	
	800	1300	1700	
	1080	1100	1100	
	50	80	51	
	6.5	6.5	6.5	
	10.5	10.5	10.5	

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2976.00	2978.00	D	60	10

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
9400	140.0	87	140.0	

REDUCED PUMP SPEED

3700 ● 37 ● 2987

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2964.00	30.00	96.9

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	2	DRILL FR. 2976.M - 2978.M
815	830	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 4 sec. C
830	915	0.75	5	COND MUD & CIRC. UP STTM. HOLE SAMPLE
915	1015	1.00	10	DEV. SURVEY 2964.M INC. 30 AZM. 96.9
1015	1300	2.75	5	COND MUD & CIRC / WORK STRING
1300	1515	2.25	6	TRIPS - 11 stnd WIPER TRIP CALCU. .81m3 MEAS .87m3
1515				FLOW CHECK 2986.M - 2724. 2561 / FLH
1515	1700	1.75	5	COND MUD & CIRC. HOLE CLEAN / WORK STRING
1700	2000	3.00	6	TRIPS - P.O.O.H. TO RUN LOGS STRAP OUT - CHAIN OUT - PUMP PILL
2000				FLOW CHECK 2964.M - 2724. M

NOTES : CHECK BRAKE LINKAGE & DEADLINE ANCHOR
HOLE SEEPAGE 90+3 LOSSES ON WIPER TRIP
BLOW MUDLINE BACK TO MUDTANKS WIAR

HRS RUN	BOILER PH	STACK TEMP	MAX WHP EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325	95	TRIPPING	831

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		JOHN BURNS	12.00		JB
DERRICK HAND		ALBERT BROWN	12.00		AB
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		SHELDON MICHEL	12.00		SM
FLOOR HAND		KEVIN FINNING	12.00		KF
LEASE HAND		DAVID NORN	12.00		DN

RATE SCHEDULE: X REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 208

EVENING TOUR

EVENING TOUR FROM 2000 TO 2400

DRILLING ASSEMBLY

NO		O.D.	LENGTH
2	D.C.	10.95	122
1	JAR	8.02	121
15	D.C.	141.80	122
9	H.W.D.P.	81.75	121
91	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	2608.78
KELLY DOWN			10.10
TOTAL			2987.10
WT. OF D.C.		13	
WT. OF STRING		70	

BIT RECORD

BIT NO.	3
SIZE	196.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO.	CF667
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	2978.00
DEPTH IN	2586.00
TOTAL M DRILLED	292.00
TOTAL HRS RUN	84.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG
0	4	WT	A	E

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN (HR)
0.00	FC	TD	

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

EVENING TOUR

MUD TYPE X

TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

MUD RECORD

	WATER BASED	OIL BASED

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

	DISCHARGE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM

REDUCED PUMP SPEED

● ●

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: DAVID RUSCHEINSKI

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE FT. LOWER PIPE RAM C/ 4 SECS
2015	2400	3.75	6	CONTINUE TRIP OUT, FLOW CHECK @ 1984m, 185m & SURFACE
2400				LAY DOWN, JARS, MONEL & NEAR BIT REAMER
				TRIP RECORD CALC. 8.7 STRAP CALC. 2978.00m
				ACT. 11.48m3 MEAS. 2977.82m
				DIFF. 2.75m3 DIFF. .06m

NOTES : CHECK CROWN SAVER, TONGS & LINES, BRAKE LINKAGE

HRS RUN	BOILER PH	STACK TEMP	MAX WHP EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	300	88	FLOW CHECKS	831

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		DAVID RUSCHEINSKI	4.00		DR
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		Mark Suchy	4.00		MS
FLOOR HAND		RICK SONFNERE	4.00		RS

RATE SCHEDULE: X REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 208

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
B.Goodrich / J.Kerekan	Greg Pukas

DAILY CHECKS

(1.) Daily Work Consent Negotiation
(2.) Scheduled Inspections - Weekly (Using Check List)
(3.) H2S Signs Posted & Reported
(4.) Work Licences & Work Program Posted
(5.) Flare Lines Checked
(6.) BOP Drills Performed
(7.) Weekly Inspect BOPs, Flare Lines & Degasser Lines
(8.) Rig Site Health & Safety Meeting (Attendance/Month)
(9.) CADDC Rig Safety Inspection Checklist (Monthly/Annual)
(10.) Shut Preparations Before Tripping or Lowering
(11.) Crown Saver Checked
(12.) Motion X Ray Checked

YEAR	MONTH	DAY
2003	2	21

RIG NO. 5

FUEL @ 08:00 HRS

	DAYS	DRLG HRS
	78	

	SPR	T/D
	5/6	5/7
	5/6	5/7
	5/6	5/7
	5/6	5/7
	5/6	5/7
	5/6	5/7
	5/6	5/7

	SPR	T/D

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	234.4	69.83	ALGOMA	L-80	40	555.30		554.70
	177.7	159.4	36.70	ALGOMA	L-80	191	2368.84	7.10	2883.90

	DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THREAD	NO. JNTS
	89	23.07	S-135	61	139	3.5" IF	349
	89	38.86	HWDP	62	134	3.5" IF	27
	121	83.00	DC	69	182	3.5" IF	21

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

Weight in Mud: 35
Surface Conditions: CLEAR
Wind Direction: N.W.
Air Temperature: ICE

CODE NO. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

TOUR HRS	CODE 1 ROUTINE & TOUR SERVICE	2 DRILL ACTUAL	3 REAMING	4 CORING	5 COND MUD & CIRC	6 TRIPS	7 RIG SERVICE	8 REPAIR RIG	9 CUT DRILLING LINE	10 SRV. SURVEY	11 WIRELINE LOGS	12 RUN CSG & CEMENT	13 WAIT ON CEMENT	14 NIPPLE UP B.O.P.	15 TEST B.O.P.	16 DRILL STEM	17 PLUG BACK	18 SQUEEZE CEMENT	19 FISHING	20 DIR. WORK	21 SAFETY MEETING	22	23	24	25	26	TOTAL
MORN		7.75					0.25																			8.00
DAY		11.75					0.25																			12.00
EVE		3.25			1.50		0.25																			4.00
TOTAL		21.75			1.50		0.75																			24.00

SHALE SHAKERS

No.	TYPE BRAND	TYPE
2		

SCREENS CHAMBER: 2 | 3 | 4

TOP	84	TOP	110
BOTTOM	84	BOTTOM	110

RENTALS

	HORN	GAY	SYE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	21

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	207

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.D.	0.17
1	N.B STAB.	155	1.25
1	MONEL	122	9.48
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.50
9	H.W.D.P.	121	81.75
	BHA 258.12		
89	DRILL PIPE	STANDS	2533.80
	DRILL PIPE	SINGLES	
KELLY DOWN			13.03
TOTAL			2804.95
WT. OF D.C.		13	
WT. OF STRING		77	

BIT RECORD

BIT NO.	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	218.00
TOTAL HRS RUN	62.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 17UP<>10DOWN
TORQUE AT BTTM 1730
FILL ON BTTM (m)

MORNING TOUR

MUD TYPE X

	WATER BASED		OIL BASED	
TIME	100	400	530	
DENSITY (KG/M3)	1075	1080	1080	
FUNNEL VIS	49	49	49	
W.L. (cm3)	6.0	6.0	6.0	
pH	10.5	10.5	10.5	
PVT	65.00	64.70	63.80	

MUD RECORD

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2778.00	2804.00	D	65	11

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BARACARB 600	14	SX
BAROCARB 150	16	SX
BAROCARB 50	50	SX
BAROCARB 5	20	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
9200	140.0	88	140.0	

REDUCED PUMP SPEED: 4000 @ 35 @ 2785

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: DAVID RUSCHEINSKI

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE FT. HYDRILL C/ 17 SECS
15	800	7.75	2	DRILL IV 2778m - 2804m
800				

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES
1.2m 3 TOTAL LOSSES TO HOLE

HRS RUN	BOILER HP	STACK TEMP	MAX RNUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	96	STEAM	1030

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	8.00		DR
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		Mark Suchy	8.00		MS
FLOOR HAND		RICK SONFNERE	8.00		RS

RATE SCHEDULE		X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS: 207

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	O.D.	0.17
1	N.B STAB.	155	1.25
1	MONEL	122	9.48
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.50
9	H.W.D.P.	121	81.75
	BHA 258.12		
90	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	2571.74
KELLY DOWN			12.14
TOTAL			2842.00
WT OF D.C.		13	
WT OF STRING		77	

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	236.00
TOTAL HRS RUN	74.50

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 15 - 20 UP + DOWN
TORQUE AT BTTM 1750
FILL ON BTTM (m)

DAY TOUR

MUD TYPE X

	WATER BASED		OIL BASED	
TIME	900	1530	1830	
DENSITY (KG/M3)	1075	1070	1075	
FUNNEL VIS	51	50	50	
W.L. (cm3)	6.0	6.0	6.0	
pH	10.5	10.5	10.5	
PVT.	62.90	64.80	64.30	

MUD RECORD

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2804.00	2842.00	D	65	11

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BARACARB 600	14	SX
BAROCARB 150	10	SX
B1007 BIOCIDE	2	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
9200	140.0	88	140.0	

REDUCED PUMP SPEED: 4400 @ 40 @ 2820

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: John Burns

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 4 sec C
815	2000	11.75	2	DRILL FR 2804 M - 2842 M

NOTES : CHECK BRAKE LINKAGE + DEADLINE ANCHOR
CHECK MAIN VALVES + GAUGES

HRS RUN	BOILER HP	STACK TEMP	MAX RNUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10 5	325	96	FLOW CHECKS	1030

DAY TOUR FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	12.00		JB
DERRICK HAND		ALBERT BROWN	12.00		AB
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		SHELDON MICHEL	12.00		SM
FLOOR HAND		KEVIN FINNING	12.00		KF
LEASE HAND		DAVID NORN	12.00		DN

RATE SCHEDULE		X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS: 207

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	O.D.	0.17
1	N.B STAB.	155	1.25
1	MONEL	122	9.48
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.50
9	H.W.D.P.	121	81.75
	BHA 258.12		
90	DRILL PIPE	STANDS	
3	DRILL PIPE	SINGLES	2581.29
KELLY DOWN			10.83
TOTAL			2850.00
WT OF D.C.		13	
WT OF STRING		77	

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	264.00
TOTAL HRS RUN	76.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 15-20UP<>12DOWN
TORQUE AT BTTM 1790
FILL ON BTTM (m)

EVENING TOUR

MUD TYPE X

	WATER BASED		OIL BASED	
TIME	2000	2200	2400	
DENSITY (KG/M3)	1080	1080	1080	
FUNNEL VIS	50	49	49	
W.L. (cm3)	6.0	6.0	6.0	
pH	10.5	10.5	10.5	
PVT	64.20	64.20	64.10	

MUD RECORD

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2842.00	2850.00	D	65	11

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS RUN	BYPASS DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
9350	140.0	88	140.0	

REDUCED PUMP SPEED: 4400 @ 37 @ 2842

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: DAVID RUSCHEINSKI

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE FT. LOWER PIPE RAM C/ 4 SECS
2015	2230	2.25	2	DRILL F/ 2842m - 2850m
2230	2400	1.50	5	CIRCULATE HOLE CLEAN
2400				

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER HP	STACK TEMP	MAX RNUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	100	HPS	0

EVENING TOUR FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	4.00		DR
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		Mark Suchy	4.00		MS
FLOOR HAND		RICK SONFNERE	4.00		RS

RATE SCHEDULE		X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS: 207

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
B.Goodrich / J.Kerekan	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted If Required
(4.) Well Licenses & Rotex Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Weekly Inspect BOPs, Flare Lines & Diagram / Lines

(1.) Rig Site Health & Safety Meeting (each crew/each tour)
(5.) CADDC Rig Safe Inspection Checklist (monthly/each)
(3.) Mast Inspection before Raising or Lowering
(4.) Derrick Saver Checked
(5.) Water Line Checked

DATE	MONTH	DAY
2003	2	20

RIG NO 5

FUEL @ 08.00 HRS

| | | |

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

SURFACE LOCATION	UNIQUE ID
60:34:42.30 N 122:58:32.60 W	3001756040122450

SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
B.Goodrich / J.Keskan	Greg Pukas

DAILY CHECKS

(1) Daily Walk Around Inspection
(2) Derrick Inspection - Weekly (Using Crown Unit)
(3) H2S Signs Posted & Reported
(4) Well Licence & Blow Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Monthly Inspect BOPs Flare Lines & Bypass Lines

(1) Rig Site Health & Safety Meeting (weekly minimum)
(2) CAODC Rig Safety Inspection Checklist (each alternate)
(3) Mix of Inspections before Rigging In or Leaving
(4) Crown Saver Checked
(5) Water & Mix Checked

YEAR	MONTH	DAY
2003	2	19

RIG NO. 5

FUEL @ 08:00 HRS

FUEL	GAIN OR LOSS
221	

LAST STRING RUN ON OUT	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)
	244.5	234.4	69.83	ALGOMA	L-80	48	898.30		894.70
	177.7	159.4	35.70	ALGOMA	L-80	191	2388.26	7.10	2883.96

OC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
89	23.07	S-95	61	120	3 1/2" IF	340	PT-1100	OILWELL	254
89	26.66	HWDP	62	124	3 1/2" IF	27	PT-1100	OILWELL	254
121	65.66	DC	80	152	3 1/2" IF	21			

CODE NO. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 — **SHALE SHAKERS** — **RENTALS**

HRS	GROUP 3 YEAR SERVS	DRILL ACTUAL	REAMING	CORING	CEMENT PLUG & SQZ	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	SAMPLING LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	FLUID ANAL.	DRILLING CONTROL	FISHING	DIR. WORK	SAFETY MEETING							TOTAL
MORN		7.75					0.25																					8.00
DAY		10.75					0.25			1.00																		12.00
EVE		3.75					0.25																					1.00
TOTAL		22.25					0.75			1.00																		24.00

SHALE SHAKERS: 1 — TYPE: DERRICK SHAKER — SCREENS: TOP 84, 110; BOTTOM 84, 110

RENTALS: WORK | SAT | EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	19

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	205

MORNING TOUR FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	8.00			DR
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		Mark Suchey	8.00			MS
FLOOR HAND		RICK SONFNERE	8.00			RS

RATE SCHEDULE: X REGULAR | REPAIR | RIVERT

CREW SAFETY DAYS: 205

DAY TOUR FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	12.00			JB
DERRICK HAND		ALBERT BROWN	12.00			AB
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		SHELDON MICHEL	12.00			SM
FLOOR HAND		KEVIN FINNING	12.00			KF
LEASE HAND		DAVID NORN	12.00			DN

RATE SCHEDULE: X REGULAR | REPAIR | RIVERT

CREW SAFETY DAYS: 205

EVENING TOUR FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	4.00			DR
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DAVE GREEN	4.00			DG
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		RICK SONFNERE	4.00			RS

RATE SCHEDULE: X REGULAR | REPAIR | RIVERT

CREW SAFETY DAYS: 205

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	0.D.	0.17
1	N.B STAB.	155	1.25
1	MONEL	122	9.46
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.90
9	H.W.D.P.	121	81.75
	BHA 259.12		

84	DRILL PIPE	STANDS	2381.54
	DRILL PIPE	S-NGLES	
KELLY DOWN			10.34
TOTAL			2960.00
WT. OF D.C.		13	
WT. OF STRING		74	

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C1SLRGSP
SERIAL NO	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	74.00
TOTAL HRS RUN	18.25

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG 15UP<>100DWN

TORQUE AT BTTM 1580

FILL ON BTTM (m)

MORNING TOUR — MUD RECORD — METRES DRILLED — TIME LOG

MUD TYPE: X

	WATER BASED		OIL BASED	
TIME	300	400	630	
DENSITY (KG/M3)	1040	1040	1040	
FUNNEL VIS	48	47	46	
W.L. (cm3)	8.0	8.0	8.5	
pH	10.5	10.5	10.5	
PVT	78.40	77.70	77.60	

METRES DRILLED FROM	TO	DRC	RPM	WOB
2630.00	2960.00	D	60	11

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE FT. HYDRILL C/ 17 SECS
15	800	7.75	2	DRILL R/ 2630m - 2883m
800				

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
SODIUM SULPHITE	10	SX
TRIETHANOLAMINE	1	BBL

SOLIDS CONTROL — DESILTER: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY — 0.00

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
7850	140.0	68	140.0	

REDUCED PUMP SPEED: 3470 @ 35 @ 2643

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

DRILLER SIGNATURE: DAVID RUSCHEINSKI

HRS RUN	BOILER pH	STACK TEMP	MAX WEIGHT EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	90	SLIPPERY SURFACES	2027

DAY TOUR — MUD RECORD — METRES DRILLED — TIME LOG

MUD TYPE: X

	WATER BASED		OIL BASED	
TIME	900	1530	1830	
DENSITY (KG/M3)	1040	1040	1040	
FUNNEL VIS	48	49	51	
W.L. (cm3)	7.0	7.5	7.0	
pH	10.5	10.5	10.5	
PVT	77.10	74.10	73.50	

METRES DRILLED FROM	TO	DRC	RPM	WOB
2660.00	2883.00	D	55	11

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	900	1.00	2	DRILL F/R 2660 M - 2682 M
900	915	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 4 sec. C
915	1145	2.50	2	DRILL F/R 2682 M - 2872 M
1145	1245	1.00	10	DEV. SURVEY 2655 M @ INC. 12.1/6 AZM. 106.9
1245	2000	7.25	2	DRILL F/R 2872 M - 2883 M
2000				

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BAROCARB 6	30	SX
FILTERCHECK	6	SX

SOLIDS CONTROL — DESILTER: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
8200	140.0	66	140.0	

REDUCED PUMP SPEED: 4300 @ 44 @ 2662

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2655.00	12.12	106.9

NOTES : CHECK BRAKE LINKAGE / CHECK MANIFOLD VALVES & GAUGES / FT. REMOTE CHOKE

LOSS 1.5 m3 MUD TO HOLE SEEPAGE ON SURVEY

DRILLER SIGNATURE: JOHN BURNS

HRS RUN	BOILER pH	STACK TEMP	MAX WEIGHT EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	325	95	KICKs	2027

EVENING TOUR — MUD RECORD — METRES DRILLED — TIME LOG

MUD TYPE: X

	WATER BASED		OIL BASED	
TIME	2000	2200	2330	
DENSITY (KG/M3)	1040	1045	1045	
FUNNEL VIS	51	49	49	
W.L. (cm3)	7.0	7.0	7.0	
pH	10.5	10.5	10.5	
PVT	73.00	72.50	72.40	

METRES DRILLED FROM	TO	DRC	RPM	WOB
2693.00	2705.00	D	60	11

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE FT. LOWER PIPE RAM C/ 4 SECS
2015	2400	3.75	2	DRILL F/ 2683m - 2705m

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL — DESILTER: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
8420	140.0	66	140.0	

REDUCED PUMP SPEED: 3750 @ 35 @ 2700

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

6m3 LOSSES TO HOLE

DRILLER SIGNATURE: DAVID RUSCHEINSKI

HRS RUN	BOILER pH	STACK TEMP	MAX WEIGHT EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	90	SPILLS	2027

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	O.D.	0.17
1	N.B STAB.	155	1.25
1	MONEL	122	9.46
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.90
9	H.W.D.P.	121	81.75
	BHA 259.12		

85	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	2429.52
KELLY DOWN			9.36
TOTAL			2883.00
WT OF D.C.		13	
WT OF STRING		74	

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C1SLRGSP
SERIAL NO	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	107.00
TOTAL HRS RUN	29.00

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG 15 - 20 UP & DOWN

TORQUE AT BTTM 1600

FILL ON BTTM (m)

EVENING TOUR — MUD RECORD — METRES DRILLED

MUD TYPE: X

	WATER BASED		OIL BASED	
TIME	2000	2200	2330	
DENSITY (KG/M3)	1040	1045	1045	
FUNNEL VIS	51	49	49	
W.L. (cm3)	7.0	7.0	7.0	
pH	10.5	10.5	10.5	
PVT	73.00	72.50	72.40	

METRES DRILLED FROM	TO	DRC	RPM	WOB
2693.00	2705.00	D	60	11

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL — DESILTER: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | DISTALE DENSITY (KG/M3) | OVFD FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
8420	140.0	66	140.0	

REDUCED PUMP SPEED: 3750 @ 35 @ 2700

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: DAVID RUSCHEINSKI

HRS RUN	BOILER pH	STACK TEMP	MAX WEIGHT EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	90	SPILLS	2027

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

SURFACE LOCATION	UNIQUE ID
60:34:42.30 N 122:58:32.60 W	3001756040122450

SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
B.Goodrich / J.Kerekan	Greg Pukas

DAILY CHECKS

(1) Daily Visit Around Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) Hild Signs Posted if Required
(4) Well Licence & Sign Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually Inspect BOP's Flare Lines & Degasser Lines
(1) Rig Site Health & Safety Meeting (once/crew/month)
(2) EACDC Rig Site Inspection Checklist (once/month)
(3) Visit Inspection before Raising or Lowering
(4) Brake Linkage Checked
(5) Boiler Kills Checked

YEAR	MONTH	DAY
2003	2	18

RIG NO. 5

FUEL @ 08:00 HRS

	DC / DP SIZE	MAKE	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JOINTS
	89	23.67	X-95	81	120	3.5" IF	349
	89	38.95	HWDP	53	134	3.5" IF	37
	121	83.80	DC	80	122	3.5" IF	21

LAST CASING TUBING OR LINER	O.D (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	234.4	59.53	ALGOMA	L-80	48	695.36		694.76
	177.7	169.4	34.76	ALGOMA	L-80	191	2588.34	7.16	2583.98

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1600	DILWELL	254
PT-1600	DILWELL	254

CREW

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIGUP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SRV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	DIRECTIONAL CONTROL	FISHING	SAFETY MEETING	SHOE / CMT						
MORN					7.50		0.25													0.25							8.00
DAY		6.75			3.25		0.25								0.50					0.25	1.00						12.00
EVE		3.75					0.50																				4.00
TOTAL		10.50			10.75		1.00								0.50					0.50	1.00						24.00

SHALE SHAKERS

NO	TYPE	BRAND	TYPE
1	DERRICK	DUAL	
2			
3			

TOP	84	TOP	110
MIDDLE	84	MIDDLE	110
BOTTOM	84	BOTTOM	110

RENTALS

ITEM	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	18

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	204

DRILLING ASSEMBLY

NO		OD	LENGTH
1	BIT	0.0	0.17
1	N.B STAB	159	1.36
1	MONEL	122	9.46
2	D.C.	122	18.95
1	JAR	121	5.02
18	D.C.	122	141.80
9	H.W.D.P.	121	81.75
	BHA 258.12		
81	DRILL PIPE	STANDS	2308.16
	DRILL PIPE	SINGLES	
KELLY DOWN			11.72
TOTAL			2575.00
WT. OF D.C		13	
WT. OF STRING		74	

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG SLIP<>SDOWN
TORQUE AT BTTM 1800
FILL ON BTTM (m)

MORNING TOUR X

MUD RECORD

MUD TYPE	WATER BASED		OIL BASED	
TIME	230	430	630	
DENSITY (KG/M3)	1010	1015	1015	
FUNNEL VIS	37	43	42	
W.L. (cm3)			10.0	
pH	10.0	10.0	10.0	
PVT	68.20	70.60	71.00	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
N-VIS PLUS	80	SX
BARABUF	10	SX
PITSARCHECK	30	SX
BAROCARB 5	75	SX
BAROCARB 50	210	SX
BAROCARB 150	25	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	DISTANCE DESANDER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

	HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY
	0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
6900	140.0	79	140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE
DAVID RUSCHEINSKI

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE FT. HYDRILL C/ 17 SECS
15	30	0.25	21	SAFETY MTG. BOP DRILL 50UR WELL SECURE IN 2 MIN 30 SECS
30	800	7.50	5	COND MUD & CIRC
800				

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES
CHANGED SCREEN ON SHALE DRYER

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	84	BOPDRILL	

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	8.00			DR
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		Mark Suchey	8.00			MS
FLOOR HAND		KEVIN FINNING	8.00			KF

RATE SCHEDULE		X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS
204

DRILLING ASSEMBLY

NO		OD	LENGTH
1	BIT	0.0	0.17
1	N.B STAB	159	1.35
1	MONEL	122	9.46
2	D.C.	122	18.95
1	JAR	121	5.02
18	D.C.	122	141.80
9	H.W.D.P.	121	81.75
	BHA 258.12		
82	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	2344.09
KELLY DOWN			12.79
TOTAL			2615.00
WT. OF D.C		13	
WT. OF STRING		74	

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	20.00
TOTAL HRS RUN	6.75

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 15 - 20
TORQUE AT BTTM 1500
FILL ON BTTM (m)

DAY TOUR X

MUD RECORD

MUD TYPE	WATER BASED		OIL BASED	
TIME	1000	1400	1800	
DENSITY (KG/M3)	1015	1025	1025	
FUNNEL VIS	46	43	46	
W.L. (cm3)	8.0	8.0	7.5	
pH	10.5	10.5	10.5	
PVT	72.80	72.60	72.90	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
FILTERCHECK	10	SX
N-VIS PLUS	10	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY

	HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY
	0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00	2615.00	D	55	11
			60	

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
7000	140.0	70	140.0	

REDUCED PUMP SPEED

3560	●	36	●	2586

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE
John Burns

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	7	RIG SERVICE / FT. UPPER pipe RAMS 4 sec. C
815	1030	2.25	5	COND MUD
1030	1045	0.25	21	SAFETY MTG. - H2S SAFETY MEET W/CREW PRIOR TO DRILL OUT
1045	1145	1.00	22	DRILL OUT CEMENT FR. 2579.M - 2586 M TAG SHOE @ 2583.8
1145	1315	1.50	2	DRILL AHEAD FR. 2586. M - 2591.M
1315	1415	1.00	5	COND MUD & CIRC. BTTMS UP
1415	1445	0.50	16	FORMATION LEAK OFF TEST
1445	2000	5.25	2	DRILL 2591.M - 2615.M
2000				
				F.L.O.T.
				H.P. @ CASING SHOE: 25837 KPA/ APPLIED SURFACE PRESSURE:2400 KPA
				TOTAL PRESSURE: 27837 KPA / PRESSURE GRADIENT: 11 KPA/M.
				EQUIVALENT MUD DENSITY: 1121 KG/M3

NOTES : CHECK BRAKE LINKAGE / CHECK DEADLINE ANCHOR
CHANGE SHAKER SCREENS # 2 SHAKER #4 SCREENS

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325	80	TONGS + SLIPPS	2276

DAY TOUR FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	12.00			JB
DERRICK HAND		ALBERT BROWN	12.00			AB
MOTOR HAND		DARCY PUKAS	12.00			DP
LEASE HAND		SHELDON MICHEL	12.00			SM
FLOOR HAND		RICK SONFNERE	8.00			RS
FLOOR HAND		KEVIN FINNING	4.00			KF
LEASE HAND		DAVID NORN	12.00			DN

RATE SCHEDULE		X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS
204

DRILLING ASSEMBLY

NO		OD	LENGTH
1	BIT	0.0	0.17
1	N.B STAB.	159	1.25
1	MONEL	122	9.46
2	D.C.	122	18.95
1	JAR	121	5.02
18	D.C.	122	141.80
9	H.W.D.P.	121	81.75
	BHA 258.12		
83	DRILL PIPE	STANDS	2353.07
	DRILL PIPE	SINGLES	
KELLY DOWN			8.91
TOTAL			2630.00
WT. OF D.C		13	
WT. OF STRING		74	

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	44.00
TOTAL HRS RUN	10.50

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 13UP<>11DOWN
TORQUE AT BTTM 1600
FILL ON BTTM (m)

EVENING TOUR X

MUD RECORD

MUD TYPE	WATER BASED		OIL BASED	
TIME	2000	2230	2230	
DENSITY (KG/M3)	1030	1030	1030	
FUNNEL VIS	47	47	48	
W.L. (cm3)	8.0	8.0		
pH	10.5	10.5	10.5	
PVT	72.50	78.50	78.50	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BAROCARB 150	10	SX
BAROCARB 5	30	SX
BAROCARB 50	60	SX
BARABUF	1	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

	HOURS RUN	DISTANCE DESILTER (METRES)	OVER FLOW DENSITY	UNDER FLOW DENSITY
	0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2615.00	2630.00	D	60	11

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
6060	140.0	69	140.0	

REDUCED PUMP SPEED

3560	●	36	●	2615

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE
DAVID RUSCHEINSKI

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE FT. LOWER PIPE RAM C/ 4 SECS
2015	2400	3.75	2	DRILL F/ 2615m - 2630m
2400				

NOTES CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	AR	POLYMER SYSTEM	2276

EVENING TOUR FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		DAVID RUSCHEINSKI	4.00			DR
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DAVE GREEN	4.00			DG
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		KEVIN FINNING	4.00			KF

RATE SCHEDULE		X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS
204

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

SURFACE LOCATION	UNIQUE ID
60:34:42.30 N 122:58:32.60 W	3001756040122450

SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
B.Goodrich / J.Kergkan	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Derrick Inspection - Weekly (Using Check List)
(3.) Hill Signs Posted if Required
(4.) Well Licence & Work Program Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Weekly Inspect BOP's, Flare Lines & Diagnose Lines

(1.) Rig Site Health & Safety Meeting (every month)
(2.) CAODC Rig Safe Inspection Checklist (every month)
(3.) Visit Inspection before Raising or Lowering
(4.) Crown Saver Checked
(5.) Motor Kills Checked

DAY	TOUR
SUN	00
MON	08
TUE	16
WED	
THU	
FRI	
SAT	

DAY	TOUR
SUN	00
MON	08
TUE	16
WED	
THU	
FRI	
SAT	

YEAR	MONTH	DAY
2003	2	17

RIG NO. 5

FUEL @ 08.00 HRS

RIG 249 | BARS 69

WEIGHT BELOW -21
BRAKE CONDITION SHOW
HOOK CONDITION H.W
BLOCK CONDITION ICY

LAST CASING TUBING OR LINER	O.D (mm)	MIN I.D	KG / M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.4	59.53	ALGOMA	L-80	46	938.39		954.79
	177.7	159.4	36.70	ALGOMA	L-80	191	7998.24	7.10	8953.90

DC / DP SIZE	MASS	GRADE	MIN I.D	T.J OD	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
89	23.67	X-95	61	139	3 5" IF	349	PT-1100	OILWELL	394
89	38.98	HWDP	52	134	3 5" IF	37	PT-1100	OILWELL	394
121	83.00	DC	58	122	3 5" IF	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	0	TOTAL
	RIGUP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	DEVIATED DRILLING	FISHING	SKR WORK	SAFETY MEETING	FLOAT COLLAR						
1 TVE HRS																												
MOAN						7.50	0.25														0.25							8.00
DAY						9.75	0.25		1.00						0.50						0.50							12.00
EVE					1.00		0.25								0.25							2.50						4.00
TOTAL					1.00	17.25	0.75		1.00						0.75						0.75	2.50						24.00

SHALE SHAKERS

NO	TYPE	MAKE	TYPE
3	BRANDT		

SCREENS: 1st 110 | 2nd 110 | 3rd 110 | 4th 110 | 5th 110 | 6th 110

RENTALS

WORK	DAY	SVC

DRILLING CREW PAYROLL DATA

WELL NAME & NO	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	17

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	203

MORNING TOUR — FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		KEVIN FINNING	8.00		KF
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		BRUCE DEJONG	8.00		BD
FLOOR HAND		Mark Suchey	8.00		MS
LEASE HAND		AARON TAMBOUR	8.00		AT

RATE SCHEDULE: X REGULAR | REPAIR | IVERT

CREW SAFETY DAYS: 203

DAY TOUR — FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	8.00		JB
DERRICK HAND		ALBERT BROWN	12.00		AB
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		RICK SONFNERE	12.00		RS
LEASE HAND		DAVID NORN	12.00		DN

RATE SCHEDULE: X REGULAR | REPAIR | IVERT

CREW SAFETY DAYS: 203

EVENING TOUR — FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	8.00		JB
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		KEVIN FINNING	4.00		KF
FLOOR HAND		SHELDON MICHEL	8.00		SM

RATE SCHEDULE: X REGULAR | REPAIR | IVERT

CREW SAFETY DAYS: 203

DRILLING ASSEMBLY

NO.	DRILLING ASSEMBLY	O.D	LENGTH
1	BIT	0.D	0.17
1	N.B STAB.	155	1.25
1	MONEL	122	8.46
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.50
9	H.W.D.P.	121	81.75
	BHA 258.12		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		258.12
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO.	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR

MUD TYPE X | WATER BASED | OIL BASED

TIME
DENSITY (KG/M3)
FUNNEL VIS
W.L. (cm3)
pH

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			
—			
0.00			

PUMP PRESS kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM
140.0 | 140.0

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE. FT. HYDRILL 14 SEC. CLOSE.
15	300	2.75	5	P/U M/U B.H.A RIH
300	845	2.75	6	P/U M/U D/P RIH TALLY PIPE.
845	845	1.00	6	P/U KELLY TORQE. INSTALL LOWER KELLY COCK SAVER SUB. TABLE BUSH.
845	745	1.00	5	TALLY PIPE P/U PIPE RIH
745	800	0.25	21	SAFETY MTG. B.O.P DRILL W/ CREW

NOTES : DWARG

HRS RUN	BOILER PSI	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	37	B.O.P DRILL	

DRILLING ASSEMBLY

NO.	DRILLING ASSEMBLY	O.D	LENGTH
1	BIT	0.D	0.17
1	N.B STAB	155	1.25
1	MONEL	122	8.46
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.50
9	H.W.D.P.	121	81.75
	BHA 258.12		
79	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	2256.70
	KELLY DOWN		9.15
	TOTAL		2326.00
	WT. OF D.C.		
	WT. OF STRING		79

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

DAY TOUR

MUD TYPE | WATER BASED | OIL BASED

TIME
DENSITY (KG/M3)
FUNNEL VIS
W.L. (cm3)
pH

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM
140.0 | 70 | 140.0

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

MUD RECORD

WATER BASED | OIL BASED

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1530	7.50	6	TALLY PIPE P/U PIPE RIH TO 2246 M 3.5 STRING
1530	1545	0.25	7	RIG SERVICE / FT. UPPER PIPE 4 SEC
1545	1845	1.00	6	SLIP + CUT 18 M
1845	1900	0.25	6	TALLY 3.5 DP P/U RIH TO 2528 M
1900	1930	0.50	21	PRE DRILL OUT SAFETY MTG. W/CREW & DOA SAFETY
1930	2000	0.50	15	PT. LOWER + UPPER KELLY COCK 1400 LOW 35,000 HI
2000				

NOTES : CHECK BRAKE LINKAGE
CHECK DEADLINE ANCHOR

HRS RUN	BOILER PSI	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325		H2S	0

DRILLING ASSEMBLY

NO	DRILLING ASSEMBLY	O.D	LENGTH
1	BIT	0.D	0.17
1	N.B STAB	155	1.25
1	MONEL	122	8.46
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.50
9	H.W.D.P	121	81.75
	BHA 258.12		
81	DRILL PIPE	STANDS	2508.15
	DRILL PIPE	SINGLES	
	KELLY DOWN		11.72
	TOTAL		2576.00
	WT. OF D.C.		9800
	WT. OF STRING		74

BIT RECORD

BIT NO	3
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.I.
TYPE	C15LRGSP
SERIAL NO	CF687
JETS	17.5 17.5 17.5 OPEN
DEPTH OUT	
DEPTH IN	2586.00
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

EVENING TOUR

MUD TYPE | WATER BASED | OIL BASED

TIME
DENSITY (KG/M3)
FUNNEL VIS
W.L. (cm3)
pH

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM
6450 | 140.0 | 86 | 140.0
3800 | 51 | 2544

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

MUD RECORD

WATER BASED | OIL BASED

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	15	FINISH PRESS TEST
2015	2030	0.25	7	RIG SERVICE FT. LOWER PIPE RAMS 4 SEC
2030	2300	2.50	22	DRILL OUT PLUGS & FLOAT COLLAR & CEMENT TO 2578m TAG FLOAT @ 2538m
2300	2400	1.00	9	COND MUD & CIRC
2400				

NOTES :

HRS RUN	BOILER PSI	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	11.0	325		PRESS TEST	0

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER

DAILY CHECKS

(1) Daily Work Account Inspection
(2) Derrick/ Inspection - Monthly (Wrong Chain Link)
(3) H2S Signs Posted if Required
(4) Well Licence & Mast Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Monthly Inspection BOPs- Flare Lines & Diverter Lines

(1) Rig Site Hazards & Safety Meeting (when crew moves in)
(2) CADDC Rig Safety Inspection Checklist (every 6 months)
(3) Mast Inspection before Raising or Lowering
(4) Crown Saver Checked
(5) Motion Alarm Checked

YEAR	MONTH	DAY
2003	2	16

RIG NO. 5

FUEL @ 08.00 HRS

RIG RELEASE	
-21	
CLOUDY	
R.W.	
ICE	

	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
LAST CASING STRING OR LINER	244.5	234.4	69.63	ALGOMA	L-80	46	985.36		984.70
	177.7	159.4	34.70	ALGOMA	L-80	191	2188.24	7.16	2885.00

	DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
DRILL STRING	114	34.70	S5-95	73	159	4.5" IU	291	PT-1100	OILWELL	254
	114	39.60	S5-95	73	159	4.5" IU	135	PT-1100	OILWELL	254
	114	62.40	HWDP	73	159	4.5" IU	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIGUP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	EVT DRILLING LOG	DIR. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	Install Pack					
TIME MORN							0.25					2.50		1.00								4.25					8.00
TIME DAY							0.25							0.50	11.25												12.00
TIME EVE							0.25								8.50						0.25		0.75	1.00	1.25		4.00
TOTAL							0.75					2.50		1.50	11.75						0.25	4.25	0.75	1.00	1.25		24.00

SHALE SHAKERS

2	Type GRAND	
SCREENS CHANGED		
TOP	175	120
MIDDLE	175	120
BOTTOM	140	120

RENTALS

	HORN	BAY	DVR

DRILLING CREW PAYROLL DATA

WELL NAME & NO	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	16
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	202	

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

T1	T2	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR

MUD TYPE	
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

WATER BASED | OIL BASED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	SPIGOT DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	SPIGOT DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

PUMP PRESS kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM

140.0 | 140.0

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	230	2.50	12	CONTINUE CEMENTING CASING. TEAR OUT CEMENTERS.
230	245	0.25	7	RIG SERVICE.
245	700	4.25	22	INSTALL SEAL MANDROW. W/CAMERON PRESS. TEST 5,000 P.S.I FLUSH STACK PRIOR.
700	800	1.00	14	REMOVE 4.5 PIPE RAMS INSTALL 3.5 RAMS.
800				

DISPLACE WITH 61.0 M3 WATER, PLUG DOWN @ 00:40 HRS. BUMP PLUG
WITH 3500 KPA OVER FINAL DISPLACEMENT PRESSURE TO 19000 KPA.
CHECK FLOATS OK. 6.0 M3 HT40-NT + 2 M3 HOWFLUSH BACK TO
SURFACE. CEMENT TOP ESTIMATED @ 470 MD.

NOTES

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	350		TEAR OUT CLEAN UP	

RATE SCHEDULE		REGULAR		REPAIR	X	DIVERT

CREW SAFETY DAYS: 202

MORNING TOUR — FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00			RG
DERRICK HAND		KEVIN FINNING	8.00			KF
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		BRUCE DEJONG	8.00			BD
FLOOR HAND		Mark Suchey	8.00			MS
LEASE HAND		AARON TAMBOUR	8.00			AT

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT		0.17
1	N.B STAB.	155	1.25
1	MONEL	122	9.46
2	D.C.	122	18.95
1	JAR	121	9.02
15	D.C.	122	141.50
9	H.W.D.P.	121	81.75
	BHA 258.12		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		258.12
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	1
SIZE	156.0
IADC CODE	4 3 7
MANUFACTURER	R.B.J.
TYPE	C15LRGSP
SERIAL NO	CF687
JETS	OPEN
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

T1	T2	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

DAY TOUR

MUD TYPE	
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

WATER BASED | OIL BASED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	SPIGOT DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	SPIGOT DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM

140.0 | 140.0

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	14	CHANGE PIPE RAMS 4 1/2 - 3 1/2
830	845	0.25	7	RIG SERVICE
845	2000	11.25	15	PRESS. TEST MANN. VALES + CHOKES 1400 LOW 35,000 HI 10 min EACH
2000				CASG. 1400 LOW 21,000 HI
				ANNULAR 1400 LOW 17,500 HI
				B.O.P RAMS & ACESORRIES 1400 LOW 35,000 HI 10 min EACH

NOTES: CHECK BRAKE LINKAGE / DEAD LINE ANCHOR

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325		PRESS. TESTING	

RATE SCHEDULE		REGULAR		REPAIR	X	DIVERT

CREW SAFETY DAYS: 202

DAY TOUR — FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	12.00			JB
DERRICK HAND		ALBERT BROWN	12.00			AB
MOTOR HAND		DAVE GREEN	12.00			DG
FLOOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		RICK SONFNERE	12.00			RS
LEASE HAND		DAVID NORN	12.00			DN

EVENING TOUR

MUD TYPE	X
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

WATER BASED | OIL BASED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	SPIGOT DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

CENTRIFUGE

HOURS run	SPIGOT DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

PUMP PRESS kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM

140.0 | 140.0

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2030	0.50	15	ACUM. 3 FT. TEST PULL TEST PLUG
2030	2115	0.75	23	INSTALL WEAR BUSHING
2115	2130	0.25	7	RIG SERVICE FT. BLIND RAMS
2130	2230	1.00	24	CHANGE KELLY BAR. AND SOCK OUT. PU SAME
2230	2345	1.25	25	RIG RI L/D MACHINE READY FLOOR F/ PU B.H.A DRIPP PIPE.
2345	2400	0.25	21	SAFETY MTG. W/ CREW L/D HANDS

NOTES: D.W.A.R.B CHECK BRAKE ASSEMBLY SUP TONG DIES BACK UP LINES ANCHORS ETC

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	345		PU PIPE	0

RATE SCHEDULE		REGULAR		REPAIR	X	DIVERT

CREW SAFETY DAYS: 202

EVENING TOUR — FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	4.00			RG
DERRICK HAND		KEVIN FINNING	4.00			KF
MOTOR HAND		KIRK BJORNSON	4.00			KB
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		BRUCE DEJONG	4.00			BD
LEASE HAND		AARON TAMBOUR	4.00			AT

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Drills Posted & Reported
(4.) Well Licensee & E.U.D. Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Monthly Inspect BOP's- Flare Lines & Degasser Lines

(1.) Rig Site Health & Safety Meeting (Anniversaries)
(2.) CAODC Rig Safe Inspection Checklist (anniversaries)
(3.) Visual Inspection before Raising or Lowering
(4.) Crown Saver Checked
(5.) Choke in Use Checked

YEAR	MONTH	DAY
2003	2	15

RIG NO. 5

FUEL @ 08:00 HRS

RIG UP HOURS	156
RIG UP ACTIVITY	TO
CURRENT ACTIVITY	LITE SNOW
NEXT ACTIVITY	R W
ENGINE ACTIVITY	ICE

LAST CASING STRING OR LINER

O.D. (mm)	WGHT LB	KG/M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
244.5	234.4	88.53	ALGOMA	L-80	44	866.30		864.70
177.8	139.4	36.76	ALGOMA	L-80	191	2866.24	7.10	2863.90

DRILL STRING

DC / DP SIZE	MASS	GRADE	WGHT I.D.	T.J. OD	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	94.79	S5-95	73	159	4.5" IU	251	PT-1100	OILWELL	254
114	88.65	S5-95	73	159	4.5" IU	128	PT-1100	OILWELL	254
114	82.46	HWDP	73	159	4.5" IU	21			

TIME / HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIGUP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SRV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	SKL WORK	SAFETY MEETING	pipe recvd					
MORN							0.25					5.00			0.50						0.25	2.00					8.00
DAY					1.00							10.75									0.25						12.00
EVE					1.00		0.25					2.50									0.25						4.00
TOTAL					2.00		0.50					18.25			0.50						0.75	2.00					24.00

SHALE SHAKERS

NO	TYPE	BRAND	TYPE
2	SCREENS CHANGED		
TOP	175	TOP	120
SHALE	175	SHALE	120
BOTTOM	140	BOTTOM	120

RENTALS

ITEM	HORN	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	15
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES / NO	201	

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR

MUD TYPE	WATER BASED	X	OIL BASED
TIME			
DENSITY (KG/M3)			
FUNNEL VIS			
W.L. (cm3)			
pH			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	200	2.00	22	PULL WEAR BUSHING. CHANGE PIPE RAMS TO 7"
200	245	0.75	12	RIG IN TONG HAND RIG FLOOR F/ CASING.
245	300	0.25	21	SAFETY MTG. W/ CREW TONG HAND L/D OPERATORS.
300	330	0.50	15	PRESS. TEST 7" PIPE RAMS, 5,000 K.P.A O.K
330	745	4.25	12	RUN CASE BREAK CIRC. FLOW CHECK 1000M.
745	800	0.25	7	RIG SERVICE FT. HYDRIL
800				

NOTES : D W A R G CHECK BRAKE ASSEMBLY

HRS RUN	BOILER pH	STACK TEMP	MAX HKLD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	345		R/ CASING.	5880

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	NO
DRILLER		ROSS GUYNUP	8.00			RG
DERRICK HAND		KEVIN FINNING	8.00			KF
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		BRUCE DEJONG	8.00			BD
FLOOR HAND		Mark Suchey	8.00			MS
LEASE HAND		AARON TAMBOUR	8.00			AT

RATE SCHEDULE	REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 201

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

DAY TOUR

MUD TYPE	WATER BASED		OIL BASED
TIME			
DENSITY (KG/M3)			
FUNNEL VIS			
W.L. (cm3)			
pH			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	21	SAFETY MTG. / W/CREW / TONG HAND / LAY DOWN HAND
815	1715	9.00	12	RUN CASE W/HILLS CASING SERVICES
1715				BREAK CIRCU. @ 1800 M / CONT. RUN CASG. TO BTTM.
1715	1815	1.30	5	COND MUD & CIRC. CASG. TO BTTM. / WORK STRING
1815	2000	1.75	12	RIG IN HANGER
2000				
				RAN, 151 JOINTS: 177.8 MM, 36.7 KG/M, L-80, LT&C NEW ALGOMA
				CASING. LANDED @ 2563.6 M. FLOAT COLLAR @ 2514.8 MD.
				INTERMEDIATE CASING LANDED W/ 75000 DAN TENSION IN SLIPS.

NOTES : CHECK BRAKE LINKAGE / DEADLINE ANCHOR

HRS RUN	BOILER pH	STACK TEMP	MAX HKLD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325	130	SAFETY GLASSES	5880

DAY TOUR FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	NO
DRILLER		JOHN BURNS	12.00			JB
DERRICK HAND		ALBERT BROWN	12.00			AB
MOTOR HAND		DAVE GREEN	12.00			DG
FLOOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		RICK SONFNERE	12.00			RS
LEASE HAND		DAVID NORN	12.00			DN

RATE SCHEDULE	REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 201

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HHR

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

EVENING TOUR

MUD TYPE	WATER BASED	X	OIL BASED
TIME			
DENSITY (KG/M3)			
FUNNEL VIS			
W.L. (cm3)			
pH			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS run	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
5800	140.0	85	140.0	

REDUCED PUMP SPEED: 0

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2100	1.00	12	RIG OUT TONG HAND L/D MACHINE RIG FLOOR F/ CIRC. CASING.
2100	2200	1.00	5	COND MUD & CIRC. CASING PRIOR TO CEMENT JOB.
2200	2215	0.25	21	SAFETY MTG. W/ CREW CEMENTERS PRIOR TO HEADING UP.
2215	2230	0.25	7	RIG SERVICE, FT. HYDRILL 10 SEC. CLOSE.
2230	2400	1.50	12	HEAD UP PRESS. TEST CEMENT LINES CEMENT CASING.
				CEMENT WITH: SPACER/PREFLUSH: 6.0 M3 HT40-NT, 6.0 M3 NOWFLUSH, +
				3.0 M3 SCAVENGER. LEAD. 29.0 TONNE 1:1:2 "G" + .8% CD-32 +
				.05% R-3 @ 1882 KG/M3 / TAIL: 7.3 TONNE: THERMAL 40F + .5%
				CD-32 + .4% FL-77 + .15% R-3 @ 1578 KG/M3

NOTES : D W A R G

HRS RUN	BOILER pH	STACK TEMP	MAX HKLD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	345		CEMENTING	0

EVENING TOUR FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	NO
DRILLER		ROSS GUYNUP	4.00			RG
DERRICK HAND		KEVIN FINNING	4.00			KF
MOTOR HAND		KIRK BJORNSON	4.00			KB
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		BRUCE DEJONG	4.00			BD
LEASE HAND		AARON TAMBOUR	4.00			AT

RATE SCHEDULE	REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 201

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Walk Around Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Drills Practiced If Required
(4) Well Libraries & Drill Diagram Posted
(5) Pipe Lines Slicked
(6) BOP Drills Performed
(7) Monthly Inspect BOPs, Flow Lines & Separator Lines

(1) Rig Site Hazard & Safety Meeting (Crew Changes)
(2) CAODC Rig Safety Inspection Checklist (Quarterly)
(3) Hold Pre-Job Safety Meeting
(4) Stones, Bones, Stones Hit
(5) Noise Pollution Controlled

YEAR 2003 MONTH 2 DAY 14
RIG NO 5
FUEL @ 08:00 HRS

LAST CASING TUBING OR LINER	O.D. (mm)	WALL I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	244.4	69.85	ALGOMA	L-80	44	616.36		604.70

DC / DP SIZE	MASS	GRADE	SERV I.D.	T.J. O.D.	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S-135	73	159	4 1/2" IU	251	PT-1100	OILWELL	254
114	39.05	S-135	73	159	4 1/2" IU	125	PT-1100	OILWELL	254
114	32.40	HWDP	73	159	4 1/2" IU	21			

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TYPE / HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DIR. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	WASH					
MORN						4.50	0.25				3.25										0.25						8.00
DAY					4.50	8.75	0.25														0.25	0.25					12.00
EVE						3.50	0.25														0.25						4.00
TOTAL					4.50	14.75	0.75				3.25										0.50	0.25					24.00

SHALE SHAKERS

NO	TYPE	SCREENING CHAMBER
1	BRANDT	175
2		175
3		140

RENTALS

ITEM	SIZE	TYPE	DAILY	SURCHARGE

BOP'S	BAP	DVD

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	14
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	200	

DRILLING ASSEMBLY

NO	DRILLING ASSEMBLY	O.D.	LENGTH
1	BIT	0.25	
1	BIT SUB	0.83	1.73
3	D.C.	28.11	166
1	JAR	4.90	167
6	D.C.	74.82	168
1	X.O.	0.73	185
9	H.W.D.P.	82.89	186
	B.H.A 182.73M.		
83	DRILL PIPE STANDS		
1	DRILL PIPE SINGLES		2379.30
KELLY DOWN			0.00
TOTAL			2566.03
WT. OF D.C.		15	
WT. OF STRING		68	

BIT RECORD

BIT NO	2RR
SIZE	216.0
IADC CODE	
MANUFACTURER	REED
TYPE	EHP43ALK
SERIAL NO	TC1043
JETS	3 X 11.1
DEPTH OUT	2586.00
DEPTH IN	2586.00
TOTAL M DRILLED	0.00
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR

MUD TYPE	WATER BASED X	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER: SCREEN SIZE | DISCH. DENSITY (kg/m3) | DISCH. FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: SCREEN SIZE | DISCH. DENSITY (kg/m3) | DISCH. FLOW DENSITY | UNDER FLOW DENSITY
0.00

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	18	0.25	7	RIG SERVICE FT. BLIND RAMS 7 SEC. CLOSE REMOTE CHOKE.
18	330	3.25	11	WIRE LINE LOGS TEAR OUT LOGGERS.
330	800	4.50	6	M/U BIT B.H.A R.I.H FILL PIPE @ SHOE. FLOW CHECK847M.
800				FILL PIPE FLOW CHECK 1584M. FLOW CHECK PRIOR TO BREAK CIRC.

NOTES : D.W.A.R.G CHECK BRAKE ASSEMBLY SLIP TONG DIES BACK UP LINES ANCHORS ETC.
150 LITERS FUEL LOGGERS

HRS RUN	BOILER pH	STACK TEMP	MAX HKLD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
6.00	10.5	345		TRIPPING	3680

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	6.00		RG
DERRICK HAND		KEVIN FINNING	6.00		KF
MOTOR HAND		KIRK BJORNSON	6.00		KB
FLOOR HAND		BRUCE DEJONG	6.00		BD
FLOOR HAND		Mark Suchey	6.00		MS
LEASE HAND		AARON TAMBOUR	6.00		AT

RATE SCHEDULE | REGULAR | REPAIR | X | RIVERT
CREW SAFETY DAYS: 200

DAY TOUR

MUD TYPE	WATER BASED X	OIL BASED
TIME	800	1200
DENSITY (KG/M3)	925	925
FUNNEL VIS	45	45
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BARITE	15	SX
SUSPENDTONE	4	SX
GEL TONE V	2	SX
LIME	1	SX

SOLIDS CONTROL

DESILTER: SCREEN SIZE | DISCH. DENSITY (kg/m3) | DISCH. FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: SCREEN SIZE | DISCH. DENSITY (kg/m3) | DISCH. FLOW DENSITY | UNDER FLOW DENSITY
12.00 | 925 | 905 | 1630

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7350	140.0	120	140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB
800	1818			
1818	2000			

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	818	0.25	22	WASH 2 SINGLES TO BTTM. .50 M FILL
818	1245	4.50	6	COND MUD & CIRC. HOLE CLEAN / WORK STRING
				PUMP GYRO TOOL DOWN @ 18 stk p/min PDT 820 m/s
1245	1300	0.25	21	SAFETY MTG. W/CREW + E-Z LAY PIPEHANDLERS
1300	1800	5.00	6	TRIPS - PUMP PILL FLOW CHECK - CONE OUT SIDEWAYS
				SURVEY EVERY 3 SINGLES / FLOW CHECKS 2579, 2481, 1700
1800	1818	0.25	7	RIG SERVICE / FT UPPER PIPE RAMS 7 sec C
1818	2000	1.75	6	TRIPS - CONT. O.O.H. W/LAY DOWN MACHINE

NOTES : CHECK BRAKE LINKAGE / CHECK MANN VALVES

HRS RUN	BOILER pH	STACK TEMP	MAX HKLD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325	110	OUT SIDEWAYS	5880

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		JOHN BURNS	12.00		JB
DERRICK HAND		ALBERT BROWN	12.00		AB
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		RICK SONFNERE	12.00		RS
LEASE HAND		DAVID NORN	12.00		DN

RATE SCHEDULE | REGULAR | REPAIR | X | RIVERT
CREW SAFETY DAYS: 200

EVENING TOUR

MUD TYPE	WATER BASED X	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER: SCREEN SIZE | DISCH. DENSITY (kg/m3) | DISCH. FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: SCREEN SIZE | DISCH. DENSITY (kg/m3) | DISCH. FLOW DENSITY | UNDER FLOW DENSITY
0.00

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	21	[illegible] W L/O OPERATORS CREW GYRO DATA
2015	2145	1.50	6	FLOW CHECK 1585 M. CONTINUE TO L/O PIPE. FLOW CHECK D/C 124M
2145	2345	2.00	6	L/O H W D C & RETRIVE GYRO TOOL FT. BLIND RAMS
2345	2400	0.25	7	RIG SERVICE FT. BLIND RAMS 7 SEC. CLOSE.
				TRIP RECORED
				CAL.18.83 M3
				ACTUAL 11.26 M3

NOTES : D W A R G CHECK BRAKE ASSEMBLY SLIP TONG DIES

HRS RUN	BOILER pH	STACK TEMP	MAX HKLD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	345		T/O B H A	5880

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		KEVIN FINNING	4.00		KF
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		BRUCE DEJONG	4.00		BD
LEASE HAND		AARON TAMBOUR	4.00		AT

RATE SCHEDULE | REGULAR | REPAIR | X | RIVERT
CREW SAFETY DAYS: 200

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	300175604012245O
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Walk Around Inspection
(2) Detailed Inspection (Housing (Using Check List)
(3) H2S Signs Posted If Required
(4) Well Licenses & Work Program Posted
(5) Pipe Lines Tested
(6) BOP Drills Performed
(7) Monthly Inspect BOPs Pipe Lines & Diagnose Lines

(1) Rig Site Health & Safety Meeting (environments)
(2) CADOC Rig Safety Inspection (Using Checklist)
(3) Hard Hat position before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills Checked

YEAR	MONTH	DAY
2003	2	13

RIG NO. 5

FUEL @ 08.00 HRS

RIG ACTIVITY	17
CONDITION OF ROAD AND LEASE	LITE SNOW
WORK SUBMITTED	B.E.
ROAD CONDITION	ICE

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)
	244.5	224.4	69.83	ALGOMA	L-80	40	888.36		884.70

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S5-95	73	139	4.5" IU	251	PT-1100	OILWELL	254
114	39.10	S5-95	73	139	4.5" IU	125	PT-1100	OILWELL	254
114	82.40	HWDP	73	139	4.5" IU	31			

CODE NO:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	AIR SERVICE	REPAIR RIG	CUT DRILLING LINE	SVY SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	REVERSE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	Water Back Hrs					
MORN		4.00			3.75		0.25																				8.00
DAY		3.75			2.50	5.50															0.25						12.00
EVE						1.00	0.25				2.25											0.50					4.00
TOTAL		7.75			6.25	6.50	0.50				2.25										0.25	0.50					24.00

SHALE SHAKERS

NO	TYPE	BRAND	TYPE
2	SCREENS CHANGED		
TOP	175	TOP	120
THIRD	175	THIRD	120
BOTTOM	140	BOTTOM	120

RENTALS

	MONTH	DAY	DYE

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	3/7		0.25
1	BIT SUB	173	0.93
1	ROLLER REAMER	167	1.35
1	D.C.	166	9.37
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	4.90
10	D.C.	166	84.29
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 196.29M.		
83	DRILL PIPE	STANDS	2346.80
	DRILL PIPE	SINGLES	
KELLY DOWN			7.92
TOTAL			2972.00
WT. OF D.C.		19	
WT. OF STRING		86	

BIT RECORD

BIT NO	2
SIZE	216.0
IADC CODE	
MANUFACTURER	REED
TYPE	EHP43ALK(
SERIAL NO.	TC1043
JETS	11.1 | 11.1
DEPTH OUT	
DEPTH IN	2511.00
TOTAL M DRILLED	61.00
TOTAL HRS RUN	9.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 5-15 DAN.
TORQUE AT STTM
FILL ON STTM (m)

MORNING TOUR

MUD RECORD

MUD TYPE	WATER BASED	X	OIL BASED
TIME	230	800	630
DENSITY (KG/M3)	925	925	925
FUNNEL VIS	45	45	45
W.L. (cm3)			
pH			
PVT	66.00	64.60	64.60

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	DENSITY (kg/m3)	FLOW RATE (l/min)	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	DENSITY (kg/m3)	FLOW RATE (l/min)	UNDER FLOW DENSITY
8.00	925	900	1630

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2546.00	2572.00	D	75	12

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7300	140.0	120	140.0	

REDUCED PUMP SPEED

1810	●	48	●	2553

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	145	1.75	2	DRILL/DRILL FI 2546M.- 2562M.
145	300	1.25	5	CIRC. 2562M. SAMPLE.
300	400	1.00	2	DRILL FI 2562M.-2567M.
400	515	1.25	5	CIRC. 2567M. SAMPLE
515	530	0.25	7	RIG SERVICE. FT. HYDRILL 13 SEC. CLOSE.
530	645	1.25	2	DRILL FI 2567M.-2572M.
645	800	1.25	5	CIRC. 2572M. SAMPLE

NOTES: D.W.A.R.G.CHECK BRAKE ASSEMBLY SLIP TONG DIES
FUEL LOGGERS 100 LITERS

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	345	115	H2 S	5944

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	13

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	199

MORNING TOUR — FROM 0 TO 800 — INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		KEVIN FINNING	8.00		KF
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		BRUCE DEJONG	8.00		BD
FLOOR HAND		Mark Suchey	8.00		MS
LEASE HAND		AARON TAMBOUR	8.00		AT

RATE SCHEDULE	REGULAR	REPAIR	X	INVERT

CREW SAFETY DAYS: 199

DAY TOUR

MUD RECORD

MUD TYPE	WATER BASED	X	OIL BASED
TIME	1100	1500	
DENSITY (KG/M3)	925	925	
FUNNEL VIS	45	45	
W.L. (cm3)			
pH			
PVT	64.00	60.20	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BARITE	20	SX

SOLIDS CONTROL

DESILTER

HOURS run	DENSITY (kg/m3)	FLOW RATE (l/min)	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	DENSITY (kg/m3)	FLOW RATE (l/min)	UNDER FLOW DENSITY
5.00	925	905	1630

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2572.00	2586.00	D	75	12

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7200	140.0	120	140.0	

REDUCED PUMP SPEED

1850	●	48	●	2573

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	21	SAFETY MTG. W/CREW + DDA NORTHERN SAFETY SERVICES « H2S , Co2 »
815	1200	3.75	2	DRILL AHEAD FR. 2572.M - 2586.M
1200	1300	1.00	5	COND MUD & CIRC. STTM. UP / WORK STRING
1300	1400	1.00	6	TRIPS - 5 STND WIPER / PUMP PILL / FLOW CHECK @ 2573.M , 2429.M
1400				RUN TO STTM. CAL. .48m3 MEAS. .55m3 DIFF. .07m3
1400	1530	1.50	5	COND MUD & CIRC. HOLE CLEAN / WORK STRING
1530	2000	4.50	6	TRIPS - P.O.O.H TO LOG / CHAIN OUT / PUMP PILL
2000				FLOW CHECK 2573.- 2429.- 1403.M

NOTES: CHECK BRAKE LINKAGE + DEAD LINE ANCHOR
FUNCT. REMOTE CHOKE + CHECK MANN VALVES
CHECK BOP BOLTS + FLANGES

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325	120	TRIPPING	5880

DAY TOUR — FROM 800 TO 2000 — INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		JOHN BURNS	12.00		JB
DERRICK HAND		ALBERT BROWN	12.00		AB
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		RICK SONFNERC	12.00		RS
LEASE HAND		DAVID NORN	12.00		DN

RATE SCHEDULE	REGULAR	REPAIR	X	INVERT

CREW SAFETY DAYS: 199

EVENING TOUR

MUD RECORD

MUD TYPE	WATER BASED	X	OIL BASED
TIME			
DENSITY (KG/M3)			
FUNNEL VIS			
W.L. (cm3)			
pH			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS run	DENSITY (kg/m3)	FLOW RATE (l/min)	UNDER FLOW DENSITY

CENTRIFUGE

HOURS run	DENSITY (kg/m3)	FLOW RATE (l/min)	UNDER FLOW DENSITY
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2586.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		140.0	

REDUCED PUMP SPEED

●		●

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2100	1.00	5	CONTINUE TO P.O.O.H FLOW CHECK @ D/C ON BANK.
2100	2115	0.25	7	RIG SERVICE. FT. BLIND RAMS 9 SEC. CLOSE.
2115	2145	0.50	22	PULL WEAR BUSHING VISUAL INSPECT. PUT BACK IN.
2145	2400	2.25	11	RIG IN WIRE LINE LOGGERS LOGGING.
				BHC-SONIC/ X.Y CALIPER/ GR/ CNL/ TLD/ AIT LOGS.
				TALLY DEPTH 2586M
				LOGGERS DEPTH 2586M.
				TIME ON BOTTOM 11.45

NOTES: D.W.A.R.G.CHECK CHECK BRAKE ASSEMBLY SLIP TONG DIES

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	345		LOCKOUT PROCEDURE	5880

EVENING TOUR — FROM 2000 TO 2400 — INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		KEVIN FINNING	4.00		KF
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		BRUCE DEJONG	4.00		BD
LEASE HAND		AARON TAMBOUR	4.00		AT

RATE SCHEDULE	REGULAR	REPAIR	X	INVERT

CREW SAFETY DAYS: 199

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Visit Around Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted If Required
(4) Hoist Licenses & Blast Diagram Posted
(5) Flare Lines Staked
(6) BOP & Kelly Performed
(7) Monthly Inspect BOP's Flare Lines & Diagram Lines
(8) Rig Site Health & Safety Meeting (environmental)
(9) CADDC Rig Safety Inspection Checklist (every/month)
(10) Hoist Inspection before Raising or Lowering
(11) Crown Saver Checked
(12) Water Line Checked

YEAR	MONTH	DAY
2003	2	12

RIG NO. 5

FUEL @ 08:00 HRS

RIG	DRILL PIPE
150	

TEMPERATURE: -12
Dominant Downhole Events: CLOUDY
Road Restrictions: N.E.
Road Conditions: ICE

LAST CASING TUBING OR LINER	OD (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.4	59.53	ALGOMA	L-80	48	696.30		694.70

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO JNTS
114	34.70	S5-95	73	158	4.5" XH	291
114	38.00	S5-95	73	158	4.5" XH	125
114	62.40	HWDP	73	158	4.5" XH	21

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

SHALE SHAKERS / RENTALS

NO.	TYPE	BRAND	SIZE
2	DERRICK	CHAMP II	

TOP 175 | TOP 120
SHALE 175 | SHALE 120
SCREEN 140 | SCREEN 120

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	MORN	DAY	EVE
TOUR / HRS		GROUP & TOUR DOWN	DRILL ACTUAL	REAMING	BORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SVY SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	RIPPLE UP S.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING								
	MORN						0.25	0.25														0.25					0.50			
	DAY		3.25			1.00	4.75	0.25		1.25											1.25	0.25	1.25					12.00			
	EVE		1.75			1.75		0.25														0.25					4.00			
	TOTAL		5.00			2.75	11.00	0.75		1.25											1.25	0.75	1.25					24.00			

NO	DRILLING ASSEMBLY		LENGTH
		O.D.	0.25
1	BIT	173	0.93
1	BIT SUB	187	1.36
1	ROLLER REAMER	186	9.37
1	D.C.	186	4.14
1	SQUARE D.C SHORT	186	9.37
1	D.C.	187	4.80
10	D.C.	186	84.29
1	X.O.	185	0.79
9	H.W.D.P.	156	82.89
	B.H.A 196.25M.		
79	DRILL PIPE	STANDS	2270.83
2	DRILL PIPE	SINGLES	
KELLY DOWN			13.21
TOTAL			2482.12
WT. OF D.C.		18	
WT. OF STRING		88	

BIT RECORD		
BIT NO	1	2
SIZE	216.0	216.0
IADC CODE		
MANUFACTURER	UDIHAND	REED
TYPE	216UD513	EHP49ALK
SERIAL NO	00559	TC1043
JETS	5 X 15.9	11.1 11.1 11.1
DEPTH OUT	2511.00	
DEPTH IN	655.00	2511.00
TOTAL M DRILLED	1856.00	0.00
TOTAL HRS RUN	157.75	0.00

CUTTING STRUCTURE

T1	T0	MAJOR DULL	LOCATION	BRG
1	2	CT	H	X

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR
1.00		BH	11.70

HOLE CONDITION

HOLE DRAG	
TORQUE AT 6TTM	
FILL ON 6TTM (m)	

MORNING TOUR

MUD TYPE	
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD — WATER BASED [ ] OIL BASED [X]

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2511.00				

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

	DESILTER	CENTRIFUGE
ROWS/ CONS		
DESAND DENSITY (KG/M3)		
OVER FLOW DENSITY		
UNDER FLOW DENSITY		

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8345	140.0	120	140.0	

REDUCED PUMP SPEED

2590	●	57	●	2510

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	345	78	TIGHT HOLE	8944

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	445	4.75	6	FLOW CHECK 2511M. P.O.O.H STRAP FLOW CHECK, 2411M D/C ON BANK.
445	500	0.25	7	RIG SERVICE FT. BLIND RAMS.
500	515	0.25	21	PRE. JOB SAFTEY MEETING
515	530	1.25	20	L/D DIR. TOOLS M.W.D TOOLS.
530	600	1.50	6	M/U BIT B.H.A R.I.H BIT # 2
600				
				TALLY 2511.17M. CAL. TRIP RECORD 10.91 M/3
				STRAP 2510.99M. ACTUAL 10.89 M/3
				DIFF. .29 DIFF.22
				NOTE.... 5 CHIPPED CUTTERS P.D.C
				NOTES : D.W.A.R.G CHECK BRAKE ASSEMBLY SLIP TONG DIES BACK UP LINES ETC
				CHANGE TRANSMISSION PIPE.

NO	DRILLING ASSEMBLY		LENGTH
		O.D.	0.25
1	BIT	173	0.93
1	BIT SUB	187	1.35
1	ROLLER REAMER	186	9.37
1	D.C.	186	4.14
1	SQUARE D.C SHORT	186	9.37
1	D.C.	186	9.37
1	JAR	187	4.80
10	D.C.	186	84.29
1	X.O.	185	0.79
9	H.W.D.P.	156	82.89
	B.H.A 196.25M.		
81	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	2319.24
KELLY DOWN			12.48
TOTAL			2529.00
WT. OF D.C.		18	
WT. OF STRING		88	

BIT RECORD	
BIT NO	2
SIZE	216.0
IADC CODE	
MANUFACTURER	REED
TYPE	EHP43ALK
SERIAL NO	TC1043
JETS	11.1 11.1 11.1
DEPTH OUT	
DEPTH IN	2511.00
TOTAL M DRILLED	18.00
TOTAL HRS RUN	3.25

CUTTING STRUCTURE

T1	T0	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG	10 - 15 UP & DOWN
TORQUE AT 6TTM	1700
FILL ON 6TTM (m)	0.50

DAY TOUR

MUD TYPE	
TIME	1500 1800
DENSITY (KG/M3)	920 920
FUNNEL VIS	46 44
W.L. (cm3)	
pH	

MUD RECORD — WATER BASED [X] OIL BASED [ ]

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2511.00	2529.00	D	75	12

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	920	900	1630

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
5.00	920	900	1630

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7280	140.0	120	140.0	

REDUCED PUMP SPEED

	●	0	●	

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: JOHN BURNS

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.0	350	110	TIGHT HOLE	8944

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
600	630	0.50	6	R.I.H. DC + HWDP / CHANGE OUT WORKING SINGLES
630	645	0.25	21	SAFETY MTG. POOR PUNTION / ACUM. CHECK
645	1000	1.25	6	CUT OFF DRILL LINE 27.5 M
1000	1415	4.25	6	TRIP IN - FILL PIPE - 720.M FLOW CHECK / 1580.M FLOW CHECK
1415	1530	1.25	22	WASH TO 511m FR. 2472.M - 2511.M - .50 M FILL
1530	1545	0.25	7	RIG SERVICE / FT, LOWER PIPE RAMS 7 sec C / FLOW CHECK
1545	1645	1.00	6	COND MUD & CIRC. 6TTM. UP / WORK STRING
1645	2000	3.25	2	DRILL FR. 2511.M - 2529.M
2000				
				NOTES : START PRESS 16,800kpa PUMP 10 250kpa RECHARGED 3.04mins
				PRECHARGE 7000 kpa

NO	DRILLING ASSEMBLY		LENGTH
		O.D.	0.25
1	BIT	173	0.93
1	BIT SUB	187	1.33
1	ROLLER REAMER	186	9.37
1	D.C.	186	4.14
1	SQUARE D.C SHORT	186	9.37
1	D.C.	186	4.80
10	D.C.	186	84.29
1	X.O.	185	0.79
9	H.W.D.P.	156	82.89
	B.H.A 196.25M.		
82	DRILL PIPE	STANDS	2337.27
	DRILL PIPE	SINGLES	
KELLY DOWN			13.21
TOTAL			2548.76
WT. OF D.C.		18	
WT. OF STRING		88	

BIT RECORD	
BIT NO.	2
SIZE	216.0
IADC CODE	
MANUFACTURER	REED
TYPE	EHP43ALK
SERIAL NO	TC1043
JETS	11.1 11.1 11.1
DEPTH OUT	
DEPTH IN	2511.00
TOTAL M DRILLED	37.00
TOTAL HRS RUN	5.00

CUTTING STRUCTURE

T1	T0	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG	6-15 DAN. UP & DOWN.
TORQUE AT 6TTM	
FILL ON 6TTM (m)	

EVENING TOUR

MUD TYPE	
TIME	2100 2230 2400
DENSITY (KG/M3)	920 920 920
FUNNEL VIS	44 44 44
W.L. (cm3)	
pH	
PVT	64.60 66.00

MUD RECORD — WATER BASED [X] OIL BASED [ ]

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2529.00	2548.00	D	75	12

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
SUSPENDTONE	10	SX
LIME	8	SX

SOLIDS CONTROL

DESILTER

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	920	900	1620

ROWS/ CONS	DESAND DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	920	900	1625

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7500	140.0	120	140.0	

REDUCED PUMP SPEED

1950	●	95	●	2548

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	345	115	AIR PACKS H2S	8944

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2045	0.75	6	CIRC. SAMPLE 2529M. GEO. REQUST.
2045	2100	0.25	21	SAFETY MTG. W/ SAFTEY HAND AND CREW . POSSIBLE H/2 s SLAVE POINT ZONE.
2100	2200	1.00	2	DRILL F/ 2529M. - 2540M.
2200	2300	1.00	6	CIRC. SAMPLE 2540M. GEO. REQUEST.
2300	2315	0.25	7	RIG SERVICE FLOW CHECK FT. HYDRILL 13 SEC. CLOSE
2315	2400	0.75	2	DRILL F/ 2540M - 2548M.
				NOTES : D.W.A.R.G CHECK BRAKE ASSEMBLY SLIP TONG DIES
				CONTINUES MONITORING BY D.D.A NOTHERN SAFTEY SERVICES
				ALSO DISCUSSED C.A.D.D.C PROCEDURE FI TIGHTEN DEAD LINE ANCHOR W CREW.

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	12

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	[X] YES [ ] NO	196

MORNING TOUR FROM 0 TO 600

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	8.00			RG
DERRICK HAND		KEVIN FINNING	8.00			KF
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		BRUCE DEJONG	8.00			BD
FLOOR HAND		Mark Suchey	8.00			MS
LEASE HAND		AARON TAMBOUR	8.00			AT

INJURIES

RATE SCHEDULE	REGULAR	REPAIR	X	INVERT

CREW SAFETY DAYS: 198

DAY TOUR FROM 600 TO 2000

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		JOHN BURNS	12.00			JB
DERRICK HAND		ALBERT BROWN	12.00			AB
MOTOR HAND		DAVE GREEN	12.00			DG
FLOOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		RICK SONFNERE	12.00			RS
LEASE HAND		DAVID NORN	12.00			DN

INJURIES

RATE SCHEDULE	REGULAR	REPAIR	X	INVERT

CREW SAFETY DAYS: 198

EVENING TOUR FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	4.00			RG
DERRICK HAND		KEVIN FINNING	4.00			KF
MOTOR HAND		KIRK BJORNSON	4.00			KB
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		BRUCE DEJONG	4.00			BD
LEASE HAND		AARON TAMBOUR	4.00			AT

INJURIES

RATE SCHEDULE	REGULAR	REPAIR	X	INVERT

CREW SAFETY DAYS: 198

ALL IN ONE

PASON Rig PRINTOUT

LICENCE NO	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Walk Around Inspection
(2) Derrick/ Sub Base / Weekly (Using Chart List)
(3) H2S Signs Posted if Required
(4) Weil Libraries & Shed Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Weekly Report BOPs Flare Lines & Degasser Lines

(1) Rig Site Health & Safety Meeting (minute minutes)
(2) CROOC Rig Safety Inspection Checklist (monthly meets)
(3) Weil Inspection before Raising or Lowering
(4) Derrick Board Checked
(5) Water Kills Checked

DAY 2003 MONTH 2 DAY 11

RIG NO 5

FUEL @ 08:00 HRS

TOTAL 184	USED
DIESEL ON HAND 412	
CONDITION OF WEATHER	CLOUDY
WIND DIRECTION	S.E.
ROAD CONDITION	ICE

LAST CASING TUBING OR LINER

O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
244.5	234.4	59.53	ALGOMA	L-80	48	695.30		694.70

	CC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
1	114	34.76	S5-95	73	159	4.5" XH	251	PT-1100	OILWELL	254
2	114	39.00	S5-95	73	159	4.5" XH	135	PT-1100	OILWELL	254
3	114	53.40	HWDP	73	159	4.5" XH	21			

CODE NO.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	TRIPS & TRIM DRILL	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SER. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	PERFORG	DIR. WORK	SAFETY MEETING					
MORN		6.75					0.25			1.00																
DAY		6.75			1.75		0.25			1.25																
EVE					2.00	1.75	0.25																			
TOTAL		13.50			3.75	1.75	0.75			2.25																

SHALE SHAKERS

	BRAND	TYPE
1		
2		

	TOTAL	SCREENING CHANGES	TOP	BTM
MORN	8.00		175	120
DAY	12.00	SHIFT	175	120
EVE	4.00	SHIFT	140	120
TOTAL	24.00			

RENTALS

	WORK	SAT	SVD

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	216	0.18
1	MOTOR	212	8.05
1	FLOAT SUB	187	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB.	168	0.67
1	MONEL	161	8.60
1	MONEL	165	9.06
1	ROLLER REAMER	187	1.35
1	SQUARE D.C SHORT	168	4.14
1	D.C.	166	9.37
1	JAR	167	4.90
10	D.C.	166	93.68
1	X.O	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 227.33M.		
78	DRILL PIPE STANDS		2175.46
1	DRILL PIPE SINGLES		
KELLY DOWN			13.21
TOTAL			2416.00
WT. OF D.C.		15	
WT. OF STRING		83	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1761.00
TOTAL HRS RUN	146.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 4-16 DAN.
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR

MUD TYPE	WATER BASED	X	OIL BASED
TIME	100	400	700
DENSITY (KG/M3)	920	920	920
FUNNEL VIS	44	44	44
W.L. (cm3)			
pH			
PVT	55.00	63.00	61.20

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
LIME	6	SX
INVERT	11	SX

SOLIDS CONTROL

DESILTER

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	920	900	1620

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2336.00	2416.00	D	25	2
				12

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8340	140.0	120	140.0	

REDUCED PUMP SPEED

2740 @ 54 @ 2367

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2322.00	14.27	117.8
2341.00	14.58	117.5
2360.00	14.85	120.7
2380.00	14.11	119.8
2339.00	13.75	118.2

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	430	4.50	2	DRILL F/ 2323M.-2387M.
430	445	0.25	7	RIG SERVICE FT. HYDRILL 12 SEC. CLOSE
445	700	2.25	2	DRILL F/ 2387M.-2416M.
700	800	1.00	10	TOTAL TIME ACUM. F/ SURVEYS ORIENT TOOL FACE.

NOTES: D W A R G CHECK BRAKE ASSEMBLY SLIP TONG DIES

HRS RUN	BOILER PH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	345	106	INVERT	3044

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	216	0.18
1	MOTOR	212	8.05
1	FLOAT SUB	187	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB.	168	0.67
1	MONEL	161	8.60
1	MONEL	165	9.06
1	ROLLER REAMER	187	1.35
1	SQUARE D.C SHORT	168	4.14
1	D.C.	166	9.37
1	JAR	167	4.90
10	D.C.	166	93.68
1	X.O	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 227.33M.		
79	DRILL PIPE STANDS		2270.83
2	DRILL PIPE SINGLES		
KELLY DOWN			13.04
TOTAL			2511.00
WT. OF D.C.		15	
WT. OF STRING		85	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO.	00558
JETS	5 X 15.9
DEPTH OUT	2511.00
DEPTH IN	655.00
TOTAL M DRILLED	1856.00
TOTAL HRS RUN	136.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 10-17 UP & DOWN
TORQUE AT BTTM 2200
FILL ON BTTM (m)

DAY TOUR

MUD TYPE	WATER BASED	X	OIL BASED
TIME	1100	1200	1900
DENSITY (KG/M3)	920	920	920
FUNNEL VIS	44	44	43
W.L. (cm3)			
pH			
PVT	59.70	60.30	72.10

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
INVERMUL	1	BBL
DELTONE V	19	SX
SAWDUST	82	SX
SUSPENDTONE	8	SX
LIME	16	SX
RM63	1	BBL

SOLIDS CONTROL

DESILTER

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	920	900	1650

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	920	900	1630

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2416.00	2511.00	D	25	3
				9

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8300	140.0	120	140.0	

REDUCED PUMP SPEED

2740 @ 55 @ 2453

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2408.50	13.90	119.4
2427.50	14.90	120.1
2446.50	15.10	122
2475.20	14.60	122
2484.20	13.90	121.5

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1200	4.00	2	DRILL 2416.M - 2454.M
1200	1215	0.25	7	RIG SERVICE / FT. LOWER PIPE RAMS 7 sec. C
1215	1700	4.75	2	DRILL 2454.M - 2511.M
1700	1915	1.25	10	ACUM. SURVEY TIME
1915	2000	1.75	5	COND MUD & CIRC. UP SAMPLE / WORK STRING
2000				

NOTES: CHECK BRAKE LINKAGE / MANN VALVES + GAUGES / PUNCT. REMOTE CHOKE

HRS RUN	BOILER PH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	325	105	BACK TORQUE	3044

EVENING TOUR

MUD TYPE	WATER BASED	X	OIL BASED
TIME	2300		
DENSITY (KG/M3)	925		
FUNNEL VIS	43		
W.L. (cm3)			
pH			
PVT	69.00		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BARITE	36	SX

SOLIDS CONTROL

DESILTER

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

CENTRIFUGE

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2511.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8400	140.0	120	140.0	

REDUCED PUMP SPEED

2560 @ 57 @ 2510

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2145	1.75	6	FLOW CHECK PUMP PILL WIPER TRIP F/ 2511M.-2064M.
2145	2200	0.25	7	RIG SERVICE. FT. HYDRILL 14 SEC. CLOSE.
2200	2400	2.00	5	COND MUD & CIRC PRIOR TO P.O.O.H MIX. PUMP PILL.

NOTES: D W A R G CHECK BRAKE ASSEMBLY SLIP TONG DIES PRIOR TO TRIPPING

HRS RUN	BOILER PH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	11.0	345	190	TRIPPING	3044

DRILLING CREW PAYROLL DATA

WELL NAME & NO	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	11
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	197	

MORNING TOUR FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		KEVIN FINNING	8.00		KF
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		BRUCE DEJONG	8.00		BD
FLOOR HAND		Mark Suchey	8.00		MS
LEASE HAND		AARON TAMBOUR	8.00		AT

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT

CREW SAFETY DAYS: 197

DAY TOUR FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	12.00		JB
DERRICK HAND		ALBERT BROWN	12.00		AB
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		RICK SONFNERE	12.00		RS
LEASE HAND		DAVID NORN	12.00		DN

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT

CREW SAFETY DAYS: 197

EVENING TOUR FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		KEVIN FINNING	4.00		KF
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		BRUCE DEJONG	4.00		BD
LEASE HAND		AARON TAMBOUR	4.00		AT

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT

CREW SAFETY DAYS: 197

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Derrick Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted If Required
(4.) Well Licenses & Shut Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Weekly Inspect BOP's- Flare Lines & Diagram Lines
(1.) Rig Site Health & Safety Meeting (once per month)
(2.) CADDC Rig Safety Inspection Checklist (once per month)
(3.) Shut Inspection before Raising or Lowering
(4.) Crown Saver Checked
(5.) Water Tank Checked

YEAR	MONTH	DAY
2003	2	10

RIG NO. 5

FUEL @ 08:00 HRS

RIG	DAILY USE
143	

TEMPERATURE -7
SURFACE CONDITIONS CLOUDY
ROAD CONDITIONS S.W.
TOUR CONDITIONS ICE

LAST CASING / TUBING / DRILL PIPE	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.0	69.53	ALGOMA	L-80	46	838.38		884.78

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.79	S5-95	73	159	4 1/2 IU	251	PT-1160	OILWELL	254
114	38.60	S5-95	73	159	4 1/2 IU	125	PT-1160	OILWELL	254
114	52.65	HWDP	73	159	4 1/2 IU	21			

CODE NO.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TIME CODE	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	DIRECTED SURVEY	Fishing	DIR. WORK	SAFETY MEETING						
HORN		6.25					0.25			1.25											0.25						8.00
DAY		6.50					0.25			1.00											0.25						8.00
EVE		6.75					0.25			1.00																	8.00
TOTAL		19.50					0.75			3.25											0.50						24.00

SHALE SHAKERS

MFG	MODEL	TYPE
BRANDT		

SCREENING (CHARTER)

TOP	175	120
SHALE	175	120
BOTTOM	140	120

RENTALS

	WORK	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	10

OPERATION	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES / NO	196

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	216	0.15
1	MOTOR	212	8.06
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB.	166	0.87
1	MONEL	161	8.60
1	MONEL	165	9.06
1	ROLLER REAMER	167	1.35
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	14.80
10	D.C.	166	93.88
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 227.33M.		
86	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	1947.23
KELLY DOWN			12.44
TOTAL			2187.00
WT OF D.C.		15	
WT OF STRING		82	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIAMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1532.00
TOTAL HRS RUN	128.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 6 - 12 UP + DOWN
TORQUE AT BTTM 1800
FILL ON BTTM (m)

MORNING TOUR

MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	200	400	630
DENSITY (KG/M3)	925	925	925
FUNNEL VIS	44	43	44
W.L. (cm3)			
pH			
PVT	39.20	57.60	54.30

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	925	895	1665
8.00	925	895	1690

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2125.00	2187.00	D	25	3
				9

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
8000	140.0	120	140.0	

REDUCED PUMP SPEED

2730		52		2129

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2113.50	15.30	122.6
2132.60	14.50	121.2
2142.10	14.20	118.7
2151.60	14.60	117.1
2161.10	14.80	115.8

DRILLER SIGNATURE
JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	21	B.O.P DRILL W/CREW - WELL SHUT IN 55 sec
15	630	6.25	2	DRILL FR. 2125.M - 2187.M
630	645	0.25	7	RIG SERVICE / FT. HYDRIL 15 sec. C
645	800	1.25	10	ACUM. SURVEY TIME

NOTES : CHECK BRAKE LINKAGE / CHECK MANN VALVES & GAUGES
REPLACE ALTERNATER BELT ON #1 GEN

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	93	INVERT	

MORNING TOUR FROM 0 TO 800

CREW	SOC INS NO.	NAME	HRS	YES	NO
DRILLER		JOHN BURNS	8.00		JB
DERRICK HAND		ALBERT BROWN	8.00		AB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		BRUCE DEJONG	8.00		BD
FLOOR HAND		Mark Suchey	8.00		MS
LEASE HAND		AARON TAMBOUR	8.00		AT

INJURIES

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS
196

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	216	0.15
1	MOTOR	212	8.35
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB	166	0.87
1	MONEL	161	8.60
1	MONEL	165	9.06
1	ROLLER REAMER	167	1.35
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	14.80
10	D.C.	166	93.88
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 227.33M.		
71	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	2032.83
KELLY DOWN			13.00
TOTAL			2273.16
WT OF D.C.		19	
WT OF STRING		82	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIAMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1618.00
TOTAL HRS RUN	134.50

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 6-14 DAN.
TORQUE AT BTTM 2000
FILL ON BTTM (m)

DAY TOUR

MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	830	1200	1500
DENSITY (KG/M3)	920	920	920
FUNNEL VIS	43	44	44
W.L. (cm3)			
pH			
PVT	53.30	62.50	60.50

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
CAL CARB 'D'	10	SX
CAL CARB 325	10	SX
LIME	10	SX
GELTONEV	13	SX
INVERT	11	M3

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	920	895	1620
8.00	920	895	1625

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2187.00	2273.00	D	25	2
				12

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
8250	140.0	120	140.0	

REDUCED PUMP SPEED

2780		86		2254

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2190.00	14.80	117.3
2198.00	14.40	116.4
2227.00	14.40	120.3
2237.00	14.02	120.2
2246.00	13.70	119.4

DRILLER SIGNATURE
ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	900	1.00	2	DRILL F/ 2187M. - 2209M
900	915	0.25	21	HOLD B.O.P DRILL W/ CREW FT. HYDRILL REMOTE CHOKE
915	1345	4.50	2	DRILL F/ 2209M.-2254M.
1345	1400	0.25	7	RIG SERVICE. FT. LOWER RAMS 7 SEC. CLOSE.
1400	1500	1.00	2	DRILL F/ 2254M. - 2273 M
1500	1800	1.00	10	TOTAL TIME ACUM. F/ SURVEYS ORIENT TOOL FACE.
1800				

NOTES : D.W.A.R.G CHECK BRAKE ASSEMBLY SLIP TONG DIES

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	345	105	B.O.P DRILL	5944

DAY TOUR FROM 800 TO 2000

CREW	SOC INS NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		KEVIN FINNING	8.00		KF
MOTOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		SHELDON MICHEL	12.00		SM
FLOOR HAND		RICK SONFNERE	12.00		RS
LEASE HAND		DAVID NORN	12.00		DN
FLOOR HAND		DARCY PUKAS	4.00		DP
MOTOR HAND		DAVE GREEN	4.00		DG

INJURIES

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS
196

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	216	0.15
1	MOTOR	212	8.06
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB	166	0.87
1	MONEL	161	8.60
1	MONEL	165	9.06
1	ROLLER REAMER	167	1.35
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	14.80
10	D.C.	166	93.88
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	A 227.33M.		
73	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	2096.40
KELLY DOWN			12.27
TOTAL			2339.00
WT OF D.C.		19	
WT OF STRING		82	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIAMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1684.00
TOTAL HRS RUN	141.25

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 8 - 15 UP + DOWN
TORQUE AT BTTM 2000
FILL ON BTTM (m)

EVENING TOUR

MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	1800	2200	2300
DENSITY (KG/M3)	920	920	920
FUNNEL VIS	44	44	43
W.L. (cm3)			
pH			
PVT	59.60		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	920	895	1620
8.00	920	895	1635

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2273.00	2339.00	D	25	4
				10

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
8250	140.0	120	140.0	

REDUCED PUMP SPEED

		0		

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2256.20	13.90	118.3
2275.20	15.20	117.1
2294.20	15.20	118.9

DRILLER SIGNATURE
JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1800	1945	3.75	2	DRILL 2273 M - 2301 M
1945	2000	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 7 sec. C / CHANGE OUT M.S.V
2000	2300	3.00	2	DRILL FR. 2301.M - 2339 M
2300	2400	1.00	10	ACUM. SURVEY TIME
2400				

NOTES : LEL CHECK @ SHAKER, MIXING SHACK, CELLAR, DONE BY RIG MANAGER
CHECK BRAKE LINKAGE / FUNCT. REMOTE CHOKE

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	102	TIGHT HOLE	5944

EVENING TOUR FROM 2000 TO 2400

CREW	SOC INS NO.	NAME	HRS	YES	NO
DRILLER		John Burns	8.00		JB
DERRICK HAND		ALBERT BROWN	8.00		AB
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		BRUCE DEJONG	4.00		BD
LEASE HAND		AARON TAMBOUR	4.00		AT

INJURIES

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS
196

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(S.) Daily Walk Around Inspection
(S.) Detailed Inspection - Weekly (Living Check List)
(S.) H2S Signs Posted If Required
(S.) Well Lockouts & Bleed Diagram Posted
(S.) Flare Lines Staked
(S.) BOP Drills Performed
(F.) Monthly Inspect BOPs, Flare Lines & Bypasser Lines
(S.) Rig Site Health & Safety Meeting (environmental)
(S.) CAODC Rig Safety Inspection Checklist (emergencies)
(S.) Mast Inspection before Raising or Lowering
(S.) Derrick Saver Checked
(S.) Motion & Sky Checked

YEAR	MONTH	DAY
2003	2	9

RIG NO. 5

FUEL @ 08:00 HRS

FUEL (m3) 21	GAS (l)
PRESENT LOCATION -6	
CLOSEST SETTLEMENT SHOW	
MAST DIRECTION N.W.	
ROAD CONDITIONS ICE	

LAST CASING TURNING ON LINER

O.D. (mm)	MIN I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
244.5	234.4	69.53	ALGOMA	L-80	46	698.30		694.70

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.76	S3-65	73	159	4.5" XJ	551	PT-1100	OILWELL	254
114	38.00	S3-65	73	159	4.5" XJ	135	PT-1100	OILWELL	254
114	62.40	HWDP	73	159	4.5" XJ	21			

CODE NO.

	1 RIG UP & TEAR DOWN	2 DRILL ACTUAL	3 REAMING	4 CORING	5 COND MUD & CIRC	6 TRIPS	7 RIG SERVICE	8 REPAIR RIG	9 CUT DRILLING LINE	10 DEV. SURVEY	11 WIRELINE LOGS	12 RUN CSG & CEMENT	13 WAIT ON CEMENT	14 NIPPLE UP B.O.P.	15 TEST B.O.P.	16 DRILL STEM	17 PLUG BACK	18 SQUEEZE CEMENT	19 PERFORG	20 SR. WORK	21 SAFETY MEETING	22	23	24	25	26	TOTAL
TOUR MORN		6.50					0.25			1.25																	8.00
DAY		10.50					0.25			1.25																	12.00
EVE		2.75					0.25			1.00																	4.00
TOTAL		19.75					0.75			3.50																	24.00

SHALE SHAKERS

NO.	TYPE / BRAND	TYPE
2	SCREENS (PHASED)	80 / 120
	TOP	175 / 196
	BASKET	175 / 120
	BOTTOM	140 / 120

RENTALS

	WORK	DAY	DHS

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		0.15
1	MOTOR	212	9.05
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB.	158	0.87
1	MONEL	161	8.60
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.35
1	SQUARE D.C SHORT	168	4.14
1	D.C.	168	9.37
1	JAR	167	4.90
10	D.C.	168	93.84
1	X.O.	165	0.79
9	H.W.D.P.	158	82.89
	B.H.A 227.33M.		
60	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	1719.13
KELLY DOWN			8.54
TOTAL			1865.00
WT. OF D.C.		19	
WT. OF STRING		76	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1300.00
TOTAL HRS RUN	106.50

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 3-7 UP + DOWN

TORQUE AT STTM 1800

FILL ON STTM (m)

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	200	400 — 630
DENSITY (KG/M3)	925	925 — 925
FUNNEL VIS	43	44 — 44
W.L. (cm3)		
pH		
PVT	59.20	58.60 — 57.20

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
SUSPENSTONE	8	SX
GELTONE V	16	SX
LIME	9	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	925	895	1630

CENTRIFUGE

HOURS RUN	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	925	900	1660

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1883.00	1955.00	D	25	3
				6

PUMP PRESS kPa 7500 — **PUMP NO. 1** LINER SIZE 140.0, SPM 120 — **PUMP NO. 2** LINER SIZE 140.0, SPM

REDUCED PUMP SPEED 2240 @ 50 @ 1911

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1885.80	15.20	120.4
1904.60	15.20	118.6
1933.00	15.30	119.5

DRILLER SIGNATURE JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	215	2.25	2	DRILL - SLIDE - ROTATE - FR. 1883.M - 1912.M
215	230	0.25	7	RIG SERVICE / FT. HYDRIL 15 sec. C
230	845	4.25	2	DRILL - SLIDE - ROTATE FR. 1912.M - 1955 M
845	800	1.25	10	ACUM. SURVEY TIME 1.25 hr
800				

NOTES : CHECK BRAKE LINKAGE / CHECK MANN VALVES + GAUGES

HELD SAFETY MEET W/RIG CREW + ENGINEER / DISCUSS PROPPER HANDLING OF AIR PRESS

TRANSFERED 12 m3 INVERT TO MAIN SYSTEM

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	85	TORQUE	5880

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	9
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES / NO	195	

MORNING TOUR FROM 0 TO 800 — INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		JOHN BURNS	8.00			JB
DERRICK HAND		ALBERT BROWN	8.00			AB
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		BRUCE DEJONG	8.00			BD
FLOOR HAND		Mark Suchey	8.00			MS
LEASE HAND		AARON TAMBOUR	8.00			AT

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS 195

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		0.15
1	MOTOR	212	9.05
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB.	158	0.87
1	MONEL	161	8.60
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.35
1	SQUARE D.C SHORT	168	4.14
1	D.C.	168	9.37
1	JAR	167	4.90
10	D.C.	168	93.84
1	X.O.	165	0.79
9	H.W.D.P.	158	82.89
	B.H.A 227.33M.		
84	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	1842.57
KELLY DOWN			13.00
TOTAL			2083.00
WT. OF D.C.		19	
WT. OF STRING		76	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1428.00
TOTAL HRS RUN	118.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 4-10 DAN.

TORQUE AT STTM 2200

FILL ON STTM (m)

DAY TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	900 — 1200	1800
DENSITY (KG/M3)	920 — 920	920
FUNNEL VIS	44 — 44	44
W.L. (cm3)		
pH		
PVT		60.10

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
CAL CARB 'D'	10	SX
CAL CARB 325	10	SX
LIME	9	SX
DURATONE	4	SX
INVERT	10	MG

SOLIDS CONTROL

DESILTER

HOURS RUN	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	920	895	1625

CENTRIFUGE

HOURS RUN	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	920	895	1700

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1935.00	2083.00	D	25	6
				12

PUMP PRESS kPa 7990 — **PUMP NO. 1** LINER SIZE 140.0, SPM 120 — **PUMP NO. 2** LINER SIZE 140.0, SPM

REDUCED PUMP SPEED @ D @

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1908.00	15.08	118.1
2018.00	15.13	118.4
2028.00	15.83	117.7
2037.00	16.58	119.8
2047.00	16.60	120.4

DRILLER SIGNATURE ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1800	10.00	2	DIR. DRILL F/ 1955M -2054M.
1800	1815	0.25	7	RIG SERVICE. FT. LOWER RAMS 6 SEC. CLOSE
1815	1845	0.50	2	DIR. DRILL F/ 2054M -2083M.
1845	2000	1.25	10	TOTAL TIME ACUM. F/ SURVEYS ORIENT TOOL FACE.
2000				

NOTES : D W A R G CHECK BRAKE ASSEMBLY SLIP TONG DIES BACK UP LINES, ETC

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	345	93	UNLOADING CASING	5880

DAY TOUR FROM 800 TO 2000 — INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		SHELDON MICHEL	12.00			SM
FLOOR HAND		RICK SONFNERE	12.00			RS
LEASE HAND		DAVID NORN	12.00			DN

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS 195

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		0.15
1	MOTOR	212	9.05
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB.	158	0.87
1	MONEL	161	8.60
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.35
1	SQUARE D.C SHORT	168	4.14
1	D.C.	168	9.37
1	JAR	167	4.90
10	D.C.	168	93.84
1	X.O.	165	0.79
9	H.W.D.P.	158	82.89
	B.H.A 227.33M.		
86	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	1890.18
KELLY DOWN			7.48
TOTAL			2125.00
WT. OF D.C.		19	
WT. OF STRING		76	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1470.00
TOTAL HRS RUN	121.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 5 - 10 UP + DOWN

TORQUE AT STTM 1800

FILL ON STTM (m)

EVENING TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	1800 — 2200	2400
DENSITY (KG/M3)	925 — 920	920
FUNNEL VIS	44 — 43	43
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
DURATONE	10	SX
RAMS	1	BBL

SOLIDS CONTROL

DESILTER

HOURS RUN	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	920	895	1680

CENTRIFUGE

HOURS RUN	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	920	895	1690

METRES DRILLED

FROM	TO	DRC	RPM	WOB
2083.00	2125.00	0	25	4
				10

PUMP PRESS kPa 8000 — **PUMP NO. 1** LINER SIZE 140.0, SPM 120 — **PUMP NO. 2** LINER SIZE 140.0, SPM

REDUCED PUMP SPEED 2730 @ 52 @ 2125

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
2085.00	15.10	119.4
2084.50	15.20	121.4
2104.00	15.40	122.6

DRILLER SIGNATURE JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2245	2.75	2	DRILL. FR. 2083.M - 2125.M
2245	2300	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 7 sec. C
2300	2400	1.00	10	ACUM. SURVEY TIME 1hr
2400				

NOTES : LEL CHECK @ CELLAR, SHAKER, MUDS SHACK, DO BY RIG MANAGER

CHECK BRAKE LINKAGE / FUNCT. MANN. REMOTE CHOKE

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	11.0	325	85	FLOW CHECKS	5844

EVENING TOUR FROM 2000 TO 2400 — INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		John Burns	4.00			JB
DERRICK HAND		ALBERT BROWN	4.00			AB
MOTOR HAND		KIRK BJORNSON	4.00			KB
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		BRUCE DEJONG	4.00			BD
LEASE HAND		AARON TAMBOUR	4.00			AT

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS 195

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Visit Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Drills Posted If Required
(4.) Well Lineups & Well Diagrams Posted
(5.) Flare Lines Tested
(6.) BOP Drills Performed
(7.) Weekly Inspect BOPs, Flare Lines & Degasser Lines

(1.) Rig Site Health & Safety Meeting (weekly/monthly)
(2.) CAODC Rig Safety Inspection Checklist (weekly/monthly)
(3.) Visual Inspection before Raising or Lowering
(4.) Derrick Raiser Checked
(5.) Motor in Big Chocked

SPR	DR
AM	AM
PM	PM
AM	AM
PM	PM
AM	AM
PM	PM

YEAR	MONTH	DAY
2003	2	8

RIG NO. 5

FUEL @ 08:00 HRS

RIG IN STATUS: 3
CURRENT WEATHER: CLOUDY
WIND DIRECTION: S.E.
TEXAS GUSHER: ICE

LAST CASING TUBING OR LINER

OD (mm)	MIN I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
244.5	224.4	69.93	ALGOMA	L-80	46	686.30		684.70

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S5-95	73	159	4 1/2" XH	201	PT-1100	OILWELL	254
114	38.00	S5-95	73	159	4 1/2" XH	125	PT-1100	OILWELL	254
114	62.40	HWDP	73	159	4 1/2" XH	21			

CODE NO.

HRS / TIME	1 RIG UP & TEAR DOWN	2 DRILL ACTUAL	3 REAMING	4 CORING	5 COND MUD & CIRC	6 TRIPS	7 RIG SERVICE	8 REPAIR RIG	9 CUT DRILLING LINE	10 SRV. SURVEY	11 WIRELINE LOGS	12 RUN CSG & CEMENT	13 WAIT ON CEMENT	14 NIPPLE UP B.O.P.	15 TEST B.O.P.	16 DRILL STEM	17 PLUG BACK	18 SQUEEZE CEMENT	19 PERFORATE	20 DIRECTIONAL WORK	21 SAFETY MEETING	22	23	24	25	26	TOTAL
MORN		8.50					0.25			1.25																	6.00
DAY		10.50					0.25			1.25																	12.00
EVE		2.75					0.25			1.00																	4.00
TOTAL		19.75					0.75			3.50																	24.00

SHALE SHAKERS

NO.	TYPE BRAND	TYPE
2	SCREENING CHAMBER	2
	TOP 175	TOP 120
	BOTTOM 175	BOTTOM 120
	BOTTOM 140	BOTTOM 120

RENTALS

	WORN	DAY	DYD

DRILLING ASSEMBLY

NO.	BIT	O.D.	LENGTH
1	MOTOR	212	8.05
1	FLOAT SUB	187	0.77
1	PONY MONEL	181	2.80
1	U.B.H.O SUB	186	0.67
1	MONEL	181	8.60
1	MONEL	188	9.08
1	ROLLER REAMER	187	1.35
1	SQUARE D.C SHORT	188	4.14
1	D.C.	188	9.37
1	JAR	187	4.90
10	D.C.	188	93.86
1	X.O.	185	0.79
9	H.W.D.P.	158	82.89
	B.H.A 227.33M.		
54	DRILL PIPE STANDS		1529.18
	DRILL PIPE SINGLES		
KELLY DOWN			12.49
TOTAL			1769.00
WT. OF D.C.			15
WT. OF STRING			99

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1114.00
TOTAL HRS RUN	88.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	3-7 UP + DOWN
TORQUE AT BTTM	1800
FILL ON BTTM (m)	

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	200 430	630
DENSITY (KG/M3)	910 915	915
FUNNEL VIS	43 42	43
W.L. (cm3)		
pH		
PVT.	60.10 58.90	57.90

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
SUSPENSTONE	10	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	915	905	1660

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1646.00	1769.00	D	25	3
				6

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7700	140.0	120	140.0	

REDUCED PUMP SPEED: 2080 @ 47 @ 1721

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1676.50	16.90	121.8
1686.00	16.70	121.1
1695.50	16.50	121.2
1714.50	15.40	117.7
1733.50	15.10	115.6

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	230	2.50	2	DRILL - SLIDE - ROTATE - FR. 1656.3M - 1712.3M
230	245	0.25	7	RIG SERVICE / FT. HYDRIL 15 sec. C
245	645	4.00	2	DRILL - SLIDE - ROTATE - FR. 1712.3M - 1769.3M
645	800	1.25	10	ACUM. SURVEY TIME 1.25 hr

NOTES: CHECK BRAKE LINKAGE / FUNCT. MANN REMOTE CHOKE

SHALE DRYER - CHANGE TOP SCREEN + NEW 84 +

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	325	82	SPILLS	3944

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	8
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	194	

MORNING TOUR FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		JOHN BURNS	8.00			JB
DERRICK HAND		ALBERT BROWN	8.00			AB
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		BRUCE DEJONG	8.00			BD
FLOOR HAND		Mark Suchey	8.00			MS
LEASE HAND		AARON TAMBOUR	8.00			AT

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 194

DAY TOUR

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1190.00
TOTAL HRS RUN	99.25

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	3-9 DAN.
TORQUE AT BTTM	1555
FILL ON BTTM (m)	

DRILLING ASSEMBLY

NO.	BIT	O.D.	LENGTH
1	MOTOR	212	8.05
1	FLOAT SUB	187	0.77
1	PONY MONEL	181	2.80
1	U.B.H.O SUB.	186	0.67
1	MONEL	181	8.60
1	MONEL	185	9.08
1	ROLLER REAMER	187	1.35
1	SQUARE D.C SHORT	188	4.14
1	D.C.	188	9.37
1	JAR	187	4.90
10	D.C.	188	93.86
1	X.O.	185	0.79
9	H.W.D.P.	158	82.89
	B.H.A 227.33M.		
56	DRILL PIPE STANDS		1808.18
1	DRILL PIPE SINGLES		
KELLY DOWN			13.00
TOTAL			1845.51
WT. OF D.C.			15
WT. OF STRING			75

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED X
TIME	900 1200	1530
DENSITY (KG/M3)	915 920	920
FUNNEL VIS	43 43	43
W.L. (cm3)		
pH		
PVT.	58.50	61.00

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
CAL CARB 'D'	10	SX
CAL CARB 325	10	SX
LIME	5	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	915	900	1640
0.00			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1769.00	1845.00	D	20	6
				12

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7700	140.0	120	140.0	

REDUCED PUMP SPEED: 2460 @ 83 @ 1923

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1752.00	14.90	118.1
1771.00	14.05	121.4
1781.00	19.40	121.8
1800.00	15.77	121.1
1809.00	15.50	121.6

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1800	10.00	2	DRL DRILL. F/ 1769M.-1826M.
1800	1815	0.25	7	RIG SERVICE FT. UPPER RAMS 7 SEC. CLOSE.
1815	1845	0.50	2	DRILL IN 1826M.-1845M.
1845	2000	1.25	10	DEV. SURVEY TOTAL TIME ACUM. F/ SURVEYS ORIENT TOOL FACE.
2000				

NOTES: D.W.A.R.D CHECK BRAKE ASSEMBLY SLIP TONGUES

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	345	90	CONECTIONS	3944

DAY TOUR FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		SHELDON MICHEL	12.00			SM
FLOOR HAND		RICK SONFNERE	12.00			RS
LEASE HAND		DAVID NORN	12.00			DN

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 194

EVENING TOUR

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	695.00
TOTAL M DRILLED	1238.00
TOTAL HRS RUN	102.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	8-8 UP + DOWN
TORQUE AT BTTM	1700
FILL ON BTTM (m)	

DRILLING ASSEMBLY

NO.	BIT	O.D.	LENGTH
1	MOTOR	212	8.05
1	FLOAT SUB	187	0.77
1	PONY MONEL	181	2.90
1	U.B.H.O SUB.	186	0.67
1	MONEL	181	8.60
1	MONEL	185	9.08
1	ROLLER REAMER	187	1.35
1	SQUARE D.C SHORT	188	4.14
1	D.C.	188	9.37
1	JAR	187	4.90
10	D.C.	188	93.86
1	X.O.	185	0.79
9	H.W.D.P	158	82.89
	B.H.A 227.33M.		
58	DRILL PIPE STANDS		1852.73
	DRILL PIPE SINGLES		
KELLY DOWN			12.94
TOTAL			1983.00
WT. OF D.C.			15
WT. OF STRING			75

EVENING TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	1800 2230	2400
DENSITY (KG/M3)	920 920	920
FUNNEL VIS	43 43	43
W.L. (cm3)		
pH		
PVT.		59.90

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
2.00	920	905	1630
4.00	920	905	1660

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1845.00	1893.00	D	25	4
				7

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7700	140.0	120	140.0	

REDUCED PUMP SPEED: 2790 @ 88 @ 1879

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1838.00	14.50	119.8
1847.50	14.70	119.6
1857.00	15.20	119.8
1876.10	15.50	120.8

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2245	2.75	2	DRILL - SLIDE - ROTATE - FR. 1845.M - 1883.M
2245	2300	0.25	7	RIG SERVICE / FT. LOWER PIPE RAMS 8 sec C
2300	2400	1.00	10	ACUM. SURVEY TIME 1 hr
2400				

NOTES: LEL CHECK @ SHAKER, CELLAR, MIXING SHACK BY GREG PUKAS
CHECK BRAKE LINKAGE / CHECK MANN REMOTE CHOKE

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	325	85	MUD MOTOR	3944

EVENING TOUR FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		John Burns	4.00			JB
DERRICK HAND		ALBERT BROWN	4.00			AB
MOTOR HAND		Kirk BJORNSON	4.00			KB
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		BRUCE DEJONG	4.00			BD
LEASE HAND		AARON TAMBOUR	4.00			AT

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 194

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3301756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted & Reported
(4.) Well Licence & Well Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Weekly Inspect BOP + Flare Lines & Degasser Lines
(1.) Rig Site Hazard & Safety Meeting (environmental)
(2.) CAODC Rig Safe Inspection Checklist (environmental)
(3.) Mast Inspection before Raising or Lowering
(4.) Crown Saver Checked
(5.) Motion & Rig Checked

YEAR	MONTH	DAY
2003	2	7

RIG NO. 5

FUEL @ 08.00 HRS

343	
TEMPERATURE	-4
SURFACE CONDITIONS	CLOUDY
WIND DIRECTION	CALM
SURFACE CONDITION	ICE

LAST CASING TUBING OR LINER

	O.D. (mm)	MIN I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	234.4	68.53	ALGOMA	L-80	48	856.58		864.70

	DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO. JNTS
	114	34.78	S5-95	73	168	4.5" IU	201
	114	33.00	S5-95	73	168	4.5" IU	139
	114	62.40	HWDP	73	168	4.5" IU	21

	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
	PT-1100	OILWELL	254
	PT-1100	OILWELL	254

CODE NO. 1 ROP & TRIP SCRW | 2 DRILL ACTUAL | 3 REAMING | 4 CORING | 5 COND MUD & CIRC | 6 TRIPS | 7 P/U & HANDLE | 8 REPAIR RIG | 9 CUT DRILLING LINE | 10 DEV. SURVEY | 11 WIRELINE LOGS | 12 RUN CSG & CEMENT | 13 WAIT ON CEMENT | 14 NIPPLE UP B.O.P. | 15 TEST B.O.P. | 16 DRILL STEM | 17 PLUG BACK | 18 SQUEEZE CEMENT | 19 PERFING | 20 SQ. WORK | 21 SAFETY MEETING | 22 | 23 | 24 | 25 | 26 | TOTAL

TIME / HRS																											
MORN		6.50					0.25			1.25																	8.00
DAY		10.90					0.25			1.25																	12.00
EVE		2.75					0.25			1.00																	4.00
TOTAL		19.75					0.75			3.50																	24.00

SHALE SHAKERS

NO	TYPE	BRAND	TYPE
	SCREENING SCREENS	X	
	TOP	85	TOP 120
	MID 1	85	MID 1 120
	BTM	84	BTM 120

RENTALS — HOURS | DAY | RVD

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	7
OPERATOR: ANADARKO CANADA ENERGY	CONTRACTOR: SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER: Greg Pukas		RIG NO. 5	
PROVINCE: N.W.T.	CAMP: X YES NO	RIG SAFETY DAYS 193	

DRILLING ASSEMBLY

NO		O.D.	LENGTH
	BIT	0.18	
1	MOTOR	212	8.05
1	FLOAT SUB	167	0.77
1	PONY MONEL	181	2.90
1	U.B.H.O SUB.	168	0.87
1	MONEL	181	8.80
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.36
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	4.90
10	D.C.	166	93.66
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 227.33M.		
45	DRILL PIPE STANDS		1291.82
1	DRILL PIPE SINGLES		
	KELLY DOWN		12.05
	TOTAL		1531.00
	WT. OF D.C.	19	
	WT. OF STRING	99	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U.D/SMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	876.00
TOTAL HRS RUN	59.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 2-4 UP + DOWN
TORQUE AT BTTM 1800
FILL ON BTTM (m)

MORNING TOUR

MUD TYPE	WATER BASED	X	OIL BASED
TIME	900	400	630
DENSITY (KG/M3)	905	905	905
FUNNEL VIS	42	43	44
W.L. (cm3)			
pH			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
SUSPENDTONE	13	SX
GELTONE V	10	SX
LIME	9	SX

SOLIDS CONTROL — DESILTER

HOURS Run	BASE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	BASE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	905	885	1680

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1490.00	1531.00	D	25	3
				6

PUMP PRESS kPa | PUMP NO 1 LINER SIZE | SPM | PUMP NO 2 LINER SIZE | SPM

8100 | 140.0 | 86 | 140.0 | 86

REDUCED PUMP SPEED: 1780 @ 45 @ 1474

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1438.90	16.20	120.3
1449.40	16.20	119.7
1458.00	16.20	119
1477.00	16.10	118.1
1495.90	16.10	118.6

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	215	2.25	2	DRILL FR. 1480.M - 1474.M
215	230	0.25	7	RIG SERVICE / FT. HYDRIL 15 sec. C
230	845	4.25	2	DRILL FR. 1474.M - 1531.M
845	900	1.25	10	ACUM. SURVEY TIME 1.25 hr
900				

NOTES : CHECK BRAKE LINKAGE + MAIN VALVES / GAUGES
CLEAN SUCTION SCREEN ON CONN
TRANSFERED 10 m3 INVERT TO MAIN SYSTEM

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	76	BACK TORQUE	6008

RATE SCHEDULE | REGULAR | REPAIR X | RIVERT

CREW SAFETY DAYS: 193

MORNING TOUR — INJURIES

FROM 0 TO 800				
CREW	SOC INS. NO.	NAME	HRS	YES / NO
DRILLER		JOHN BURNS	8.00	JB
DERRICK HAND		ALBERT BROWN	8.00	AB
MOTOR HAND		KIRK BJORNSON	8.00	KB
FLOOR HAND		BRUCE DEJONG	8.00	BD
FLOOR HAND		Mark Suchey	8.00	MS
LEASE HAND		AARON TAMBOUR	8.00	AT

DRILLING ASSEMBLY

NO		O.D.	LENGTH
	BIT	0.18	
1	MOTOR	212	8.05
1	FLOAT SUB	167	0.77
1	PONY MONEL	181	2.90
1	U.B.H.O SUB.	168	0.87
1	MONEL	181	8.80
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.36
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	4.90
10	D.C.	166	93.66
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 227.33M.		
90	DRILL PIPE STANDS		1424.88
	DRILL PIPE SINGLES		
	KELLY DOWN		13.00
	TOTAL		1865.01
	WT. OF D.C.	19	
	WT. OF STRING	94	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U.D/SMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1010.00
TOTAL HRS RUN	79.50

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 4-8 DAN.
TORQUE AT BTTM
FILL ON BTTM (m)

DAY TOUR

MUD TYPE	WATER BASED	OIL BASED
TIME	900	1200 1500
DENSITY (KG/M3)	910	910 910
FUNNEL VIS	42	43 43
W.L. (cm3)		
pH		
PVT	57.20	54.00

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
SUSPENDTONE	7	SX
CAL CARB 'D'	20	SX
CAL CARB 325	20	SX
LIME	14	SX

SOLIDS CONTROL — DESILTER

HOURS Run	BASE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	BASE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	920	900	1630

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1531.00	1665.00	D	25	5

PUMP PRESS kPa | PUMP NO 1 LINER SIZE | SPM | PUMP NO 2 LINER SIZE | SPM

8000 | 140.0 | 85 | 140.0 | 85

REDUCED PUMP SPEED: 2720 @ 54 @ 1845

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1524.00	15.40	120.0
1543.00	15.55	120.0
1562.00	16.30	123.3
1610.00	17.10	122.1
1619.00	16.98	122.1

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
900	1830	10.50	2	DRILL F/ 1531M.-1665.M
1830	1845	0.25	7	RIG SERVICE FT. LOWER PIPE RAMS 7 SEC. CLOSE.
1845	2000	1.25	10	TOTAL TRUE ACUM F/ SURVEYS ORIENT TOOL FACE
2000				

NOTES : D W A R G CHECK BRAKE ASSEMBLY SLIP TONG DIES
R-DALE VAC & WATER TRUCK OIL USED 60 LITERS 15W40

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	345	78	WILSONS POLICYS	6008

RATE SCHEDULE | REGULAR | REPAIR X | RIVERT

CREW SAFETY DAYS: 193

DAY TOUR — INJURIES

FROM 800 TO 2000				
CREW	SOC INS. NO.	NAME	HRS	YES / NO
DRILLER		ROSS GUYNUP	12.00	RG
DERRICK HAND		KEVIN FINNING	12.00	KF
MOTOR HAND		DARCY PUKAS	12.00	DP
FLOOR HAND		SHELDON MICHEL	12.00	SM
FLOOR HAND		RICK SONFNERE	12.00	RS
LEASE HAND		DAVID NORN	12.00	DN

DRILLING ASSEMBLY

NO		O.D.	LENGTH
	BIT	0.18	
1	MOTOR	212	8.05
1	FLOAT SUB	167	0.77
1	PONY MONEL	181	2.90
1	U.B.H.O SUB.	168	0.87
1	MONEL	181	8.80
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.35
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	4.90
10	D.C.	166	93.66
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	B.H.A 227.33M.		
81	DRILL PIPE STANDS		1453.16
	DRILL PIPE SINGLES		
	KELLY DOWN		7.81
	TOTAL		1868.00
	WT. OF D.C.	19	
	WT. OF STRING	84	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U.D/SMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	1033.00
TOTAL HRS RUN	82.25

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 3-5 UP + DOWN
TORQUE AT BTTM 1800
FILL ON BTTM (m)

EVENING TOUR

MUD TYPE	WATER BASED	X	OIL BASED
TIME	1800	2200	2400
DENSITY (KG/M3)	920	910	915
FUNNEL VIS	43	42	42
W.L. (cm3)			
pH			
PVT	58.00	61.70	60.60

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
SUSPENDTONE	5	SX

SOLIDS CONTROL — DESILTER

HOURS Run	BASE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	BASE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	910	895	1675

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1665.00	1688.00	D	25	3
				6

PUMP PRESS kPa | PUMP NO 1 LINER SIZE | SPM | PUMP NO 2 LINER SIZE | SPM

7900 | 140.0 | 120 | 140.0

REDUCED PUMP SPEED: 2400 @ 49 @ 1680

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1648.00	16.80	119.4
1657.90	17.00	121.3
1667.00	17.00	122.1

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 7 sec. C
2015	2300	2.75	2	DRILL - SLIDE - ROTATE - FR. 1665.M - 1688.M
2300	2400	1.00	10	ACUM. SURVEY TIME 1 hr

NOTES : CHECK BRAKE LINKAGE / CHECK MAIN VALVES + GAUGES
TRANSFERED 10 m3 INVERT TO MAIN SYSTEM
LBL CHECK @ MUD SHACK, CELLAR SHAKER, BY RIG MANAGER

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	325	77	ELECTRICAL	6044

RATE SCHEDULE | REGULAR | REPAIR X | RIVERT

CREW SAFETY DAYS: 193

EVENING TOUR — INJURIES

FROM 2000 TO 2400				
CREW	SOC INS. NO.	NAME	HRS	YES / NO
DRILLER		John Burns	4.00	JB
DERRICK HAND		ALBERT BROWN	4.00	AB
MOTOR HAND		KIRK BJORNSON	4.00	KB
FLOOR HAND		Mark Suchey	4.00	MS
FLOOR HAND		BRUCE DEJONG	4.00	BD
LEASE HAND		AARON TAMBOUR	4.00	AT

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

SURFACE LOCATION	UNIQUE ID
60:34:42.30 N 122:58:32.60 W	300175604012245O

SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

	DR	CR
(1) Daily Visit Attended (Inspection)		
(2) Weekly Inspection - Monthly (Using Check List)		
(3) H2S Signs Posted if Required		
(4) Well Location & Shop Diagram Posted		
(5) Flare Lines Tested		
(6) BOP Drills Performed		
(7) Weekly Inspect BOPs- Flare Lines & Degasser Lines		
(1) Rig Site Health & Safety Meeting (each crew/week)		
(2) Emergency Rig Solid Inspection (Checklist / emergency muster)		
(3) Mock Inspection before Rotating or Lubricating		
(4) Crown Saver Checked		
(5) Water Kits Checked		

YEAR	MONTH	DAY
2003	2	6

RIG NO. 5

FUEL @ 08:00 HRS

WEATHER	CLOUDY
WIND DIRECTION	N W
ROAD CONDITION	ICE

LAST CASING / TUBING OR LINER	O.D. (inch)	MIN I.D.	K.B. / G.L.	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	230.4	10.00	ALGOMA	L-80	45	695.30		694.70

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S5-95	75	165	6 5/8" IU	261	PT-1100	OILWELL	254
114	39.66	S5-95	75	165	6 5/8" IU	135	PT-1100	OILWELL	254
114	62.48	HWDP	75	169	6.5" IU	21			

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIG UP & TEAR DOWN	DRILL ACTUAL	RIG SERVICE	TUBING	CORE BBL & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV SURVEY	DRILLING LOSS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	DIRECTIONAL DRILLING	Fishing	DR WORK	SAFETY MEETING						
MORN		4.50			0.50	1.00	0.25			0.75										1.00							8.00
DAY		3.75				0.25	0.25			0.50										1.25							12.00
EVE		2.75					0.25			1.00																	4.00
TOTAL		11.00			0.50	1.25	0.75			2.25										2.25							24.00

SHALE SHAKERS

MFG	TYPE	SCREEN NO
DERRICK CHAMPION	2	84
DERRICK CHAMPION	2	84
DERRICK CHAMPION	2	84

RENTALS

ITEM	RATE	SYS

DRILLING ASSEMBLY

NO.	BIT	O.D.	LENGTH
	BIT		0.18
1	MOTOR	212	7.83
1	FLOAT SUB	167	0.77
1	U.B.H.O SUB	166	0.87
1	MONEL	161	2.90
1	PONY MONEL	165	6.99
1	MONEL	165	9.08
1	REAMER	167	1.36
1	SQUARE D.C SHORT	166	4.14
1	D.C.	166	9.37
1	JAR	167	4.80
11	D.C.	166	103.03
1	X.O.	166	0.79
9	H.W.D.P	156	82.89
	BHA 236.46		
46	DRILL PIPE	STANDS	1139.55
	DRILL PIPE	SINGLES	
KELLY DOWN			12.87
TOTAL			1369.09
WT. OF D.C		15	
WT. OF STRING		84	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U-DIMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	693.00
TOTAL M DRILLED	734.00
TOTAL HRS RUN	86.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 2-4 UP + DOWN

TORQUE AT BTTM 1800

FILL ON BTTM (m)

MORNING TOUR

MUD TYPE	
TIME	
DEN SITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

	WATER BASED	X	OIL BASED
	700		800
	900		905
	40		41

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1351.00	1389.00	D	25	7
				6

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	230	2.50	2	DRILL - SLIDE - ROTATE FR. 1351 M - 1379.1 M
230	245	0.25	7	RIG SERVICE / FT. HYDRIL 17 sec C/O
245	445	2.00	2	DRILL - SLIDE - ROTATE - FR. 1379.M - 1389.M
445	530	0.75	10	ACUM. SURVEY TIME 45 min
530	630	1.00	20	DR. WORK - MWD TOOL FAILURE / NO SURVEYS
630	700	0.50	5	COND MUD & CIRC. HOLE CLEAN / WORK STRING
700	800	1.00	6	TRIPS - FLOW CHECK - PUMP PILL
800				P.O.O.H

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
CALCIUM CHLORIDE	16	BX
BARITE	12	BX

SOLIDS CONTROL

DESILTER

SCREEN SIZE	DISCHARGE DENSITY (KG/M3)	SAND FLOW DENSITY	SHALE FLOW DENSITY

CENTRIFUGE

SCREEN SIZE	DISCHARGE DENSITY (KG/M3)	SAND FLOW DENSITY	SHALE FLOW DENSITY
8.00	905	890	1685

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7900	140.0	88	140.0	88

REDUCED PUMP SPEED

1800 @ 48 @ 1378

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1343.50	13.67	117.
1353.10	14.30	117.2
1362.90	14.50	116.4

DRILLER SIGNATURE: JOHN BURNS

HRS RUN	BOILER HRS	STACK TEMP	MAX MUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	80	TRIPPING	6008

NOTES : CHECK BRAKE LINKAGE

PT REMOTE CHOKE + CHECK MANIFOLD VALVES

TRANSFERED 10 m3 RVERT TO MAIN SYSTEM

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	6

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES NO	192

MORNING TOUR FROM 0 TO 800 — INJURIES

CREW	BOC INS NO.	NAME	HRS	YES	NO
DRILLER		JOHN BURNS	8.00		JB
DERRICK HAND		ALBERT BROWN	8.00		AB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		BRUCE DEJONG	8.00		BD
FLOOR HAND		Mark Suchey	8.00		MS
LEASE HAND		AARON TAMBOUR	8.00		AT

RATE SCHEDULE | REGULAR | REPAIR X | RIVERT

CREW SAFETY DAYS 192

DAY TOUR

MUD TYPE	
TIME	1630
DEN SITY (KG/M3)	810
FUNNEL VIS	39
W.L. (cm3)	
pH	
PVT	58.30

MUD RECORD

	WATER BASED	X	OIL BASED
	1630		1900
	810		810
	39		40
	58.30		60.80

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1389.00	1417.00	D	25	4
				6

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1100	3.00	6	CONTINUE TO P.O.O.H FLOW CHECK @ 1389M 1290M, 863M, D/C.
1100	1215	1.25	20	DR. WORK CHANGE M.W.D TOOLS. REMOVE BEND L/D MOTOR P/U MOTOR 1.5 BEND.
1215	1530	3.25	6	FLOW CHECK RIH TO 586M. FLOW CHECK SHALLOW TEST. M.W.D TOOLS. FLOW CH 37M.
1530	1545	0.25	7	RIG SERVICE. FT. LOWER PIPE RAMS. 7 SEC. CLOSE.
1545	1930	3.75	2	DRILL F/ 1389M.-1417M.
1930	2000	0.50	10	TOTAL TIME ACUM. F/ SURVEYS ORIENT TOOL FACE.
2000				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7900	140.0	88	140.0	88

REDUCED PUMP SPEED

2340 @ 83 @ 1406

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1372.00	14.30	115.4
1381.00	14.27	116.0
1391.00	14.60	116.7

NOTES D.W.A.R CHECK SLIP TONG DIES BRAKE ASSEMBLY PRIOR TO TRIPPING

NOTE : 2 CHIPPED CUTTERS P.D.C

DRILLER SIGNATURE: ROSS GUYNUP

HRS RUN	BOILER HRS	STACK TEMP	MAX MUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	350	88	TRIPPING	6008

DAY TOUR FROM 800 TO 2000 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		SHELDON MICHEL	12.00		SM
FLOOR HAND		RICK SONFNERE	12.00		RS
LEASE HAND		DAVID NORN	12.00		DN

RATE SCHEDULE | REGULAR | REPAIR X | RIVERT

CREW SAFETY DAYS 192

EVENING TOUR

MUD TYPE	
TIME	2000
DEN SITY (KG/M3)	900
FUNNEL VIS	40
W.L. (cm3)	
pH	

MUD RECORD

	WATER BASED	X	OIL BASED
	2000	2200	2400
	900	905	910
	40	40	40

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1417.00	1450.00	D	25	4
				6

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE / FT. UPPER PIPE RAMS 7 SEC. C
2015	2300	2.75	2	DRILL - SLIDE - ROTATE FR. 1417 M - 1451 M
2300	2400	1.00	10	ACUM. SURVEY TIME 1 hr

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8000	140.0	88	140.0	88

REDUCED PUMP SPEED

2050 @ 48 @ 1425

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1400.90	15.30	117
1410.40	16.00	117.1
1419.90	16.30	118.2
1429.60	16.30	120.4

NOTES CHECK BRAKE LINKAGE

LEL CHECK @ CELLAR, SHAKER, MIXING SHACK, DONE BY GREG PUKAS

PUNCT MANN REMOTE CHOKE

CHANGE SCREENS ON SHAKER @ 120 screens

DRILLER SIGNATURE: JOHN BURNS

HRS RUN	BOILER HRS	STACK TEMP	MAX MUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
6.00	11.0	325	75	INVERT	6008

EVENING TOUR FROM 2000 TO 2400 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		John Burns	4.00		JB
DERRICK HAND		ALBERT BROWN	4.00		AB
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		BRUCE DEJONG	4.00		BD
LEASE HAND		AARON TAMBOUR	4.00		AT

RATE SCHEDULE | REGULAR | REPAIR X | RIVERT

CREW SAFETY DAYS 192

DRILLING ASSEMBLY

NO	BIT	O.D.	LENGTH
1	MOTOR	212	8.06
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB	166	0.87
1	MONEL	161	8.99
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.36
1	SQUARE D.C SHORT	163	4.14
1	D.C.	166	9.37
1	JAR	167	4.80
10	D.C.	166	93.64
1	X.O.	166	0.79
9	H.W.D.P	156	82.89
	BHA 277.33m		
41	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	1177.56
KELLY DOWN			13.00
TOTAL			1417.91
WT. OF D.C		15	
WT. OF STRING		84	

BIT RECORD

BIT NO	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U-DIMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 19.0
DEPTH OUT	
DEPTH IN	695.00
TOTAL M DRILLED	782.00
TOTAL HRS RUN	99.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 2-4 UP

TORQUE AT BTTM

FILL ON BTTM (m) 3.00

DRILLING ASSEMBLY

NO	BIT	O.D.	LENGTH
1	MOTOR	212	8.16
1	FLOAT SUB	167	0.77
1	PONY MONEL	161	2.90
1	U.B.H.O SUB	166	0.87
1	MONEL	161	8.99
1	MONEL	165	9.08
1	ROLLER REAMER	167	1.36
1	SQUARE D.C SHORT	163	4.14
1	D.C.	166	9.37
1	JAR	167	4.80
10	D.C.	166	93.64
1	X.O.	166	0.79
9	H.W.D.P	156	82.89
	BHA 277.33m		
42	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	1218.58
KELLY DOWN			7.00
TOTAL			1468.80
WT OF D.C		15	
WT. OF STRING		82	

BIT RECORD

BIT NO	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U-DIMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	695.00
TOTAL M DRILLED	795.00
TOTAL HRS RUN	102.50

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 2-4 UP DOWN

TORQUE AT BTTM 1400

FILL ON BTTM (m)

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Work Around Inspection
(2) Scheduled Inspection - Monthly (Using Check List)
(3) H2S Signs Posted / Reported
(4) Wind Indicator & Work Diagram Posted
(5) Fire Lines Tested
(6) BOP Drills Performed
(7) Visually Inspect BOPs, Flare Lines & Degasser Lines

(1) Rig Site Hazard & Safety Meeting (Accepted/Held)
(2) CADDC Rig Safety Inspection (Satisfied / Overnighted)
(3) Wind Indicator before Placing or Lowering
(4) Derrick Board Checked
(5) Water Kills Checked

YEAR	MONTH	DAY
2003	2	5

RIG NO: 5

FUEL @ 08:00 HRS.

RIG	TIME
109	

WEATHER	WIND DIR
-3	
PRECIP / ROAD COND	
CLOUDY	
VISIBILITY	
B.W.	
ROAD CONDITION	
ICE	

LAST CASING TUBING OR LINER	O.D. (mm)	WGHT LB/FT	K55 / M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	234.4	55.53	ALGOMA	L-80	46	886.36		884.76

DC / DP SIZE	MASS	GRADE	WGHT I.D.	T.J. O.D.	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.76	S5-95	73	139	4.5" IF	251	PT-1100	OILWELL	254
114	35.66	S5-95	73	139	4.5" IF	139	PT-1100	OILWELL	254
114	32.49	HWDP	77	139	4.5" IF	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	DIRECTIONAL STRAIGHT	PERMOS	GEN. WORK	SAFETY MEETING						
MORN		6.75					0.25			1.00																	8.00
DAY		16.20					0.25			1.25																	12.00
EVE		5.75					0.25			1.00																	4.00
TOTAL		28.00					0.75			3.25																	24.00

SHALE SHAKERS

NO	TYPE	BRAND	TYPE
1	DERRICK		
SCREENS	TOP	86	BTM 85
WIRE	83	WIRE	83
DEPTH	84	DEPTH	84

RENTALS

	WORN	GAY	DYE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.			YEAR	MONTH	DAY
Anadarko Arrowhead I-75			2003	2	5
OPERATOR		CONTRACTOR			
ANADARKO CANADA ENERGY		SHEHTAH-WILSON PARTNERSHIP			
RIG MANAGER			RIG NO.		
Greg Pukas			5		
PROVINCE	CAMP		RIG SAFETY DAYS		
N.W.T.	X YES	NO	191		

DRILLING ASSEMBLY

NO			O.D.	LENGTH
	BIT			0.15
1	MOTOR		212	7.83
1	FLOAT SUB		197	0.77
1	U.B.H.O SUB		166	0.67
1	MONEL		161	2.90
1	PONY MONEL		165	6.80
1	MONEL		165	9.08
1	REAMER		197	1.36
1	SQUARE D.C SHORT		166	4.14
1	D.C.		166	9.37
1	JAR		167	4.90
11	D.C.		166	103.03
1	X.O.		165	0.79
9	H.W.D.P		156	82.89
	BHA 236.46			
36	DRILL PIPE	STANDS		
1	DRILL PIPE	SINGLES		1008.85
KELLY DOWN				7.97
TOTAL				1251.00
WT. OF D.C.		15		
WT. OF STRING		90		

BIT RECORD

BIT NO	1
SIZE	216.0
IADC CODE	
MANUFACTURER	UDIHOMO
TYPE	216UDS13
SERIAL NO	005598
JETS	6 X 15.9
DEPTH OUT	
DEPTH IN	635.00
TOTAL M DRILLED	846.00
TOTAL HRS RUN	38.25

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	2-3 UP + DOWN
TORQUE AT BTTM	1400
FILL ON BTTM (m)	

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	200 430	600
DENSITY (KG/M3)	910 910	915
FUNNEL VIS	42 43	42
W.L. (cm3)		
pH		
PVT		60.00

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
CALCIUM CHLORIDE	18	SX

SOLIDS CONTROL

DESILTER

POWER (kw)	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

POWER (kw)	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	910	905	1770

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1174.00	1251.00	D	25	3
				6

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
7900	140.0	85	140.0	85

REDUCED PUMP SPEED

1420 @ 40 @ 1198

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1172.90	3.48	86.18
1191.60	2.88	82.37
1210.60	3.60	114.3
1220.10	4.95	123.6

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE / FT HYDRIL 15 SEC. C/O
15	700	6.75	2	DRILL - SLIDE - ROTATE FR. 1174 M - 1251 M
				KICK OFF POINT 1206 M / SLIDE W/ 12-1500kpa DIFF
700	800	1.00	10	ACUM. SURVEY TIME 1 hr
800				

NOTES : CHECK BRAKE LINKAGE
CHECK MAIN VALVES - GAUGES
TRANSFERED 16 m3 INVERT TO MAIN SYSTEM

HRS RUN	BOILER HRS	STACK TEMP	MAX WOM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	63	MUD MOTOR	

MORNING TOUR FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	NO
DRILLER		JOHN BURNS	8.00			JB
DERRICK HAND		ALBERT BROWN	8.00			AB
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		BRUCE DEJONG	8.00			BD
FLOOR HAND		Mark Suchey	8.00			MS
LEASE HAND		AARON TAMBOUR	8.00			AT

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 191

DAY TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	900 1200	1900
DENSITY (KG/M3)	900 900	905
FUNNEL VIS	40 41	42
W.L. (cm3)		
pH		
PVT	56.20	60.00

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
EZVIS	1	SKL
HYDRAVIS	1	SKL
SUSPENDTONE	10	SX

SOLIDS CONTROL

DESILTER

POWER (kw)	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

POWER (kw)	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	010	890	1620

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1251.00	1322.00	D	25	2
				5

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
7900	140.0	85	140.0	85

REDUCED PUMP SPEED

2040 @ 84 @ 1303

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1239.00	6.02	124.9
1248.00	6.10	122.6
1258.00	6.90	122.9
1277.00	6.85	121.9
1296.00	7.36	117.5

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1648	8.75	2	DRILL FI 1251M - 1303M.
1648	1700	0.25	7	RIG SERVICE. FT. UPPER PIPE RAMS 8 SEC. CLOSE FT. REMOTE CHOKE.
1700	1945	1.75	2	DRILL FI 1303M.-1322M.
1945	2000	1.25	10	TOTAL TIME ACUM. FI SURVEYS ORIENT TOOL FACE.
2000				

NOTES : D.W.A.R.O CHECK BRAKE ASSEMBLY SLIP TONG DIES
LEL CHECK @ SUB,SHAKERS & MIXING SHACK DONE BY GREG P
H.E.S RIG INSPECTION DONE BY RICK FISHER

HRS RUN	BOILER HRS	STACK TEMP	MAX WOM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	350	80	SPILLS	6008

DAY TOUR FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		SHELDON MICHEL	12.00			SM
FLOOR HAND		RICK SONFNERE	12.00			RS
LEASE HAND		DAVID NORN	12.00			DN

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 191

EVENING TOUR — MUD RECORD

MUD TYPE	WATER BASED X	OIL BASED
TIME	1900 2100	2400
DENSITY (KG/M3)	910 900	900
FUNNEL VIS	42 40	41
W.L. (cm3)		
pH		
PVT	58.60	57.50

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
CALCIUM CHLORIDE	6	SX
LIME	20	SX

SOLIDS CONTROL

DESILTER

POWER (kw)	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

POWER (kw)	D50 (MICRONS)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	890	880	1720

METRES DRILLED

FROM	TO	DRC	RPM	WOB
1322.00	1351.00	D	25	4
				6

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
7900	140.0	86	140.0	85

REDUCED PUMP SPEED

1850 @ 50 @ 1340

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1296.10	8.41	113.3
1315.10	10.71	112.5
1324.90	11.85	113.7
1334.00	12.82	114.9

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE / FT. LOWER PIPE RAMS 8 sec. C
2015	2300	2.75	2	DRILL - SLIDE - ROTATE FR. 1322.M - 1351 M
2300	2400	1.00	10	ACUM. SURVEY TIME 1 hr
2400				

NOTES : CHECK BRAKE LINKAGE / MAIN VALVES

HRS RUN	BOILER HRS	STACK TEMP	MAX WOM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	11.0	324	80	RIGGING	6073

EVENING TOUR FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS		INJURIES YES	NO
DRILLER		John Burns	4.00			JB
DERRICK HAND		ALBERT BROWN	4.00			AB
MOTOR HAND		KIRK BJORNSON	4.00			KB
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		BRUCE DEJONG	4.00			BD
LEASE HAND		AARON TAMBOUR	4.00			AT

RATE SCHEDULE		REGULAR		REPAIR	X	INVERT

CREW SAFETY DAYS: 191

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Visit Around Inspection
(2.) Derrick Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted If Required
(4.) Well Licence & Blow Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Weekly Inspect BOPs, Flare Lines & Degasser Lines
(1.) Rig Site Health & Safety Meeting (Documentation)
(2.) ERCB/ Rig Safety Inspection Checklist (Documentation)
(3.) Pre-Spud/Move before Raising or Lowering
(4.) Derrick Board Checked
(5.) Water Tanks Checked

YEAR 2003 | MONTH 2 | DAY 4
RIG NO. 5
FUEL @ 08:00 HRS 174

Weight on Hook -10	
Condition of Weather	CLOUDY
Wind Direction	S.E.
Road Restrictions	C/S

LAST CASING TUBING OR LINER

	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
	244.5	224.0	69.85	ALGOMA	L-80	48	662.30		664.70

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP SM NUFACTURER	STROKE LENGTH
114	34.76	S5-65	73	159	4 1/2" IU	201	PT-1100	OILWELL	254
114	38.00	S5-65	73	159	4 1/2" IU	135	PT-1100	OILWELL	254
114	52.46	HWDP	71	159	4 1/2" IU	21			

CODE NO. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

SHALE SHAKERS | **RENTALS** | WORK | DAY | SVC

TIME / HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SURV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	TOTAL
MORN		6.75					0.25			1.00												8.00
DAY		10.00					0.25			1.75												12.00
EVE		2.75					0.25			0.75												4.00
TOTAL		19.50					0.75			3.50											0.25	24.00

SCR	TYPE SHALE	PITS
1	DERRICK SHAKERS	X 2 3
2		

PUMP	MAKE	SIZE
1	OILWELL	6 1/2
2	OILWELL	6 1/2

	PUMP	SWACO
TOP	85	85
BTM	84	84

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	216.0	0.18
1	MOTOR	212	7.83
1	FLOAT SUB	167	0.77
1	U.B.H.O SUB	166	0.87
1	PONY MONEL	161	2.90
2	MONEL	165	17.66
1	REAMER	167	1.36
1	SQUARE D.C SHORT	168	4.14
1	D.C.	169	9.37
1	JAR	167	4.90
11	D.C.	169	103.03
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
		0	
	BHA 236.46 m		
25	DRILL PIPE STANDS		711.90
	DRILL PIPE SINGLES		
KELLY DOWN			12.62
TOTAL			961.20
WT. OF D.C.		15	
WT. OF STRING		96	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/D/SMITH
TYPE	216UDS13
SERIAL NO.	00559
JETS	5 X / 15.9
DEPTH OUT	
DEPTH IN	633.00
TOTAL M DRILLED	308.00
TOTAL HRS RUN	18.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM 1200
FILL ON BTTM (m)

MORNING TOUR | **MUD RECORD** | **METRES DRILLED** | **TIME LOG**

MUD TYPE	WATER BASED X	OIL BASED
TIME	200	400	600
DENSITY (KG/M3)	915	915	915
FUNNEL VIS	43	42	44
W.L. (cm3)			
pH			

MUD MATERIALS ADDED	USED	UNIT
CALCIUM CHLORIDE	10	SX
RIVERMUL NT.	2	BBL
EZ MUL	1	BBL
RM-93	1	BBL

SOLIDS CONTROL

DESILTER

ROWS/ CONES	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

BOWL/ CONES	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
8700	140.0	88	140.0	85

REDUCED PUMP SPEED: 2090 @ 57 @ 585

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
820.70	2.40	298.3
849.20	2.70	299.6
877.50	3.20	299.5
906.10	3.10	299.7

DRILLER SIGNATURE: DRJS

METRES DRILLED FROM	TO	DRC	RPM	WOB
834.00	961.00	D	30	4
				7

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE / FT HYDRILL 13 SEC. C
15	700	6.75	2	DRILL FR. 834.M - 961.M
700	800	1.00	10	DEV. SURVEY / ACUM SURVEY TIME 1 hr
800				

NOTES: FT REMOTE CHOKE - CHECK MANN. VALVES
TRANSFER 10 m3 TO MAIN SYSTEM - INVERT -

HRS RUN	BOILER HT.	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	325	58	MUD MOTOR	5944

DRILLING CREW PAYROLL DATA

WELL NAME & NO: Anadarko Arrowhead I-75 | YEAR 2003 | MONTH 2 | DAY 4
OPERATOR: ANADARKO CANADA ENERGY | CONTRACTOR: SHEHTAH-WILSON PARTNERSHIP
RIG SUPERVISOR: Greg Pukas | RIG NO. 5
PROVINCE: N.W.T. | CAMP X YES NO | RIG SAFETY DAYS 190

MORNING TOUR | FROM 0 TO 800 | INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		JOHN BURNS	8.00			JB
DERRICK HAND		ALBERT BROWN	8.00			AB
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		BRUCE DEJONG	8.00			BD
FLOOR HAND		Mark Suchey	8.00			MS
LEASE HAND		AARON TAMBOUR	8.00			AT

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT
CREW SAFETY DAYS 190

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	216.0	0.18
1	MOTOR	212	7.83
1	FLOAT SUB	167	0.77
1	U.B.H.O SUB	166	0.87
1	PONY MONEL	161	2.90
2	MONEL	165	17.66
1	REAMER	167	1.36
1	SQUARE D.C SHORT	168	4.14
1	D.C.	169	9.37
1	JAR	167	4.90
11	D.C.	169	103.03
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
		0	
	BHA 236.46 m		
30	DRILL PIPE STANDS		
2	DRILL PIPE SINGLES		673.82
KELLY DOWN			13.00
TOTAL			1123.00
WT. OF D.C.		15	
WT. OF STRING		97	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/D/SMITH
TYPE	216UDS13
SERIAL NO.	00559
JETS	5 X / 15.9
DEPTH OUT	
DEPTH IN	633.00
TOTAL M DRILLED	466.00
TOTAL HRS RUN	28.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG 2-S DAN, UP 2-S DA
TORQUE AT BTTM 2400
FILL ON BTTM (m)

DAY TOUR | **MUD RECORD** | **METRES DRILLED** | **TIME LOG**

MUD TYPE	WATER BASED	OIL BASED X
TIME	900	1200	1500
DENSITY (KG/M3)	915	915	920
FUNNEL VIS	40	41	40
W.L. (cm3)			
pH			

MUD MATERIALS ADDED	USED	UNIT
EZMUL	1	BBL
RIVERMUL	1	BBL
RM93	1	BBL

SOLIDS CONTROL

DESILTER

ROWS/ CONES	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

BOWL/ CONES	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	920	890	1630

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
7800	140.0	85	140.0	85

REDUCED PUMP SPEED: 2090 @ 84 @ 1085

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
934.00	3.60	295.8
953.00	3.39	307.9
963.00	3.01	322.1
982.00	2.77	329.4
1087.00	2.67	25.14

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED FROM	TO	DRC	RPM	WOB
961.00	1123.00	D	25	4
				6

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1630	8.50	2	DRILL FI 961M - 1084M.
1630	1845	0.25	7	RIG SERVICE FT. LOWER PIPE RAMS 10 SEC. CLOSE
1845	1915	1.50	2	DRILL FI 1084M - 1123M.
1915	2000	1.75	10	TOTAL TIME ACUM. FI SURVEYS ORIENT TOOL FACE.
2000				

NOTES: O.W.A.R.G CHECK SLIP TONG DIES BRAKE ASSEMBLY ORIENTATION W/ RICK AND DAVID
LEL CHECK @ SUB CELLAR SHAKER BY RIG MANAGER
TRANSFERED 25 m3 INVERT TO MAIN SYSTEM

HRS RUN	BOILER HT.	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	345	68	ORIENTATION	5944

DAY TOUR | FROM 100 TO 2000 | INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		SHELDON MICHEL	12.00			SM
FLOOR HAND		RICK SONFNERE	12.00			RS
LEASE HAND		DAVID NORN	12.00			DN

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT
CREW SAFETY DAYS 190

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	216.0	0.18
1	MOTOR	212	7.83
1	FLOAT SUB	167	0.77
1	U.B.H.O SUB	166	0.87
1	PONY MONEL	161	2.90
2	MONEL	165	17.66
1	REAMER	167	1.36
1	SQUARE D.C SHORT	168	4.14
1	D.C.	169	9.37
1	JAR	167	4.90
11	D.C.	169	103.03
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
		0	
	BHA 236.46 m		
33	DRILL PIPE STANDS		
2	DRILL PIPE SINGLES		930.58
KELLY DOWN			12.94
TOTAL			1174.00
WT. OF D.C.		15	
WT. OF STRING		98	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/D/SMITH
TYPE	216UDS13
SERIAL NO.	00559
JETS	5 X / 15.9
DEPTH OUT	
DEPTH IN	633.00
TOTAL M DRILLED	619.00
TOTAL HRS RUN	31.50

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM 1800
FILL ON BTTM (m)

EVENING TOUR | **MUD RECORD** | **METRES DRILLED** | **TIME LOG**

MUD TYPE	WATER BASED X	OIL BASED
TIME	1630	2000	2400
DENSITY (KG/M3)	920	920	915
FUNNEL VIS	41	42	42
W.L. (cm3)			
pH			
PVT		55.30	52.60

MUD MATERIALS ADDED	USED	UNIT
LIME	10	SX

SOLIDS CONTROL

DESILTER

ROWS/ CONES	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

BOWL/ CONES	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	915	905	1790

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
7700	140.0	85	140.0	85

REDUCED PUMP SPEED: 1800 @ 48 @ 1180

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
1106.00	2.90	39.8
1115.90	3.20	47.5
1144.00	3.80	59.2

DRILLER SIGNATURE: JOHN BURNS

METRES DRILLED FROM	TO	DRC	RPM	WOB
1123.00	1174.00	D	25	4
				7

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE / FT UPPER PIPE RAMS 8 SEC C
2015	2300	2.75	2	DRILL FR. 1123.M - 1174 M
2300	2315	0.25	21	SAFETY MTG. B.O.P DRILL W/CREW - WELL SHUT IN 90 sec.
2315	2400	0.75	10	ACUM. SURVEY TIME 45 min.
2400				

NOTES: CHECK BRAKE LINKAGE / FT REMOTE CHOKE - CHECK MANN. VALVES, GAUGES
ORIENTATE NEW HAND - AARON TAMBOUR

HRS RUN	BOILER HT.	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	11.0	325	61	BOP DRILL	5944

EVENING TOUR | FROM 2000 TO 2400 | INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		John Burns	4.00			JB
DERRICK HAND		ALBERT BROWN	4.00			AB
MOTOR HAND		KIRK BJORNSON	4.00			KB
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		BRUCE DEJONG	4.00			BD
LEASE HAND		AARON TAMBOUR	4.00			AT

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT
CREW SAFETY DAYS 190

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
00:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(L) Daily Walk Around Inspection
(S) Derrick Inspection - Crown (Using Chase Unit)
(S) H2S Signs Posted If Required
(4) Well Licence & Well Sign on Posted
(5) Flare Lines Tested
(6) BOP Drills Performed
(7) Weekly Inspect BOP's, Flare Lines & Degasser Lines
(1) Rig Site Hazard & Safety Meeting (environment)
(2) CADDC Rig Safe Inspection & Booklet (overlap/week)
(3) Visual Inspection before Raising or Lowering
(4) Crown Saver Checked
(5) Motion Comp Checked

YEAR	MONTH	DAY
2003	2	3

RIG NO. 5

FUEL @ 08:00 HRS

RIG ACTIVITY	CALM
NEXT RIG ACTIVITY	ICE

	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
LAST CASING RUN	244.5	234.4	59.53	ALGOMA	L-80	48	886.30		884.70
NEXT CASING OR LINER									

	DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS
DRILL STRING	114	34.70	S5-95	73	159	4.5" IU	251
	114	39.00	S5-95	73	159	4.5" IU	125
	114	92.40	HWDP	73	159	4.5" IU	21

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	HOURS	DAYS	DYS
TIME BREAKDOWN	RIGUP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SURVEY	DRILLING LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	S. SERVICE	SPT. L							
MORN		0.75			2.00	1.25	0.25		0.75			1.25			1.00						0.25						6.00			
DAY		9.00					8.25		0.50	1.25											0.25	0.75					12.00			
EVE		2.25				0.25	0.25			0.75											0.25		0.25				4.00			
TOTAL		12.00			2.00	1.50	0.75		1.25	2.00		1.25			1.00						0.75	0.75	0.25				24.00			

SHALE SHAKERS

NO.	BRAND	TYPE
2	DERRICK CHAMPION	X-2

TOP 110 | BTM 110 | MIDDLE 110 | MIDDLE 110 | BOTTOM 84 | BOTTOM 84

RENTALS

	HOURS	DAYS	DYS

DRILLING ASSEMBLY

NO.		LENGTH
1	BIT	0.18
1	MOTOR	7.83
1	FLOAT SUB	0.77
1	U.B.H.O SUB	0.67
1	PONY MONEL	2.90
2	MONEL	17.88
1	REAMER	1.36
1	SQUARE D.C SHORT	4.14
1	D.C.	9.37
1	JAR	4.90
11	D.C.	103.03
1	X.O.	0.79
9	H.W.D.P.	82.89
	BHA 236.48m	
14	DRILL PIPE STANDS	
2	DRILL PIPE SINGLES	417.38
KELLY DOWN		7.33
TOTAL		681.20
WT. OF D.C.	15	
WT. OF STRING	41	

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/D/SMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	6 X / 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	6.00
TOTAL HRS RUN	0.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG

TORQUE AT BTTM 600

FILL ON BTTM (m)

MORNING TOUR

MUD TYPE

TIME

DENSITY (KG/M3)

FUNNEL VIS

W.L. (cm3)

pH

MUD RECORD

WATER BASED | X | OIL BASED

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00	661.00	D	35	1

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
BARITE	5	SX
GELTONE V	5	SX

SOLIDS CONTROL

DESILTER

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY

CENTRIFUGE

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
6300	140.0	108	140.0	

REDUCED PUMP SPEED

1720 | 51 | 647

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschelnski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	45	0.75	5	DISPLACE TO INVERT
45	300	1.25	5	CIRCULATE, CONDUCT RIG INSPECTION
300	345	0.75	12	DRILL CEMENT F/ 636m - 640m,FLOAT COLLAR, CEMENT F/ 640m - 647m
345	300	0.25	7	RIG SERVICE FT, HYDRILL C/ 17 SECS
300	315	0.25	21	SAFETY MTG. BOP DRILL WELL SECURE IN 1 MIN 35 SECS
315	345	0.50	12	DRILL CEMENT F/ 647m - 655m, FLOAT COLLAR
345	430	0.75	2	DRILL F/ 655m - 661m
430	500	0.50	5	CIRC HOLE CLEAN
500	500	1.00	15	FORMATION INTEGRITY TEST
500				H.P. @ SHOE 8100kpa, APPLIED SURFACE PRESS. 9400kpa
				TOTAL PRESS. 18308kpa, LEAK OFF GRADIENT 23.3kpa/m
500	715	1.25	5	LAY DOWN 24 SHOULES, RUN IN 8 STANDS
715	800	0.75	9	CUT OFF DRILL LINE
800				

NOTES : CHECK CROWN SAVER, TONGS & LINES, BRAKE LINKAGE

VISUALLY INSPECT DEGASSER & FLARE LINES

OFF BTM PRESSURE 6700kpa

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	42	BOP DRILL	

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	0.18	
1	MOTOR	212	7.83
1	FLOAT SUB	167	0.77
1	U.B.H.O SUB.	168	0.67
1	PONY MONEL	161	2.90
2	MONEL	165	17.88
1	REAMER	167	1.36
1	SQUARE D.C SHORT	168	4.14
1	D.C.	169	9.37
1	JAR	167	4.90
11	D.C.	169	103.03
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
	BHA 236.48m		
18	DRILL PIPE STANDS		
2	DRILL PIPE SINGLES		531.87
KELLY DOWN			12.80
TOTAL			780.95
WT. OF D.C.	15		
WT. OF STRING	53		

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/D/SMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	5 X / 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	125.00
TOTAL HRS RUN	0.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG

TORQUE AT BTTM

FILL ON BTTM (m)

DAY TOUR

MUD TYPE | WATER BASED | X | OIL BASED

TIME	900	1200	1500
DENSITY (KG/M3)	910	910	910
FUNNEL VIS	47	47	48
W.L. (cm3)			
pH			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
661.00	780.00	D	25	7
				8

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY

CENTRIFUGE

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY
0.00			

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY
0.00			

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8900	140.0	80	140.0	80

REDUCED PUMP SPEED

1570 | 80 | 724

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
668.00	1.80	5.1
678.00	1.90	359.9
708.00	1.30	349.0
735.00	1.30	345.5

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	9	CUT OFF DRILL LINE CHECK BRAKE ASSEMBLY.
830	845	0.25	7	RIG SERVICE, UPPER PIPE RAMS 8 SEC.
845	945	1.00	2	DRILL F/ 661M.-686M.
945	1000	0.25	21	B.O.P DRILL W/ CREW FT. HYDRILL 12 SEC. CLOSE FT. REMOTE CHOKE.
1000	1045	0.75	22	CHANGE SHAKER SCREENS.
1045	1945	8.00	2	DRILL F/ 686M.-780M.
1945	2000	1.25	10	TOTAL TIME ACUM. F/ SURVEYS
2000				

NOTES : D.W.A.R.G CHECK SLIP TONG DIES BACK UP LINES ANCHOR POINTS ETC

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.0	345	80	B.O.P DRILL	0

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	0.18	
1	MOTOR	212	7.83
1	FLOAT SUB	167	0.77
1	U.B.H.O SUB.	168	0.67
1	PONY MONEL	161	2.90
2	MONEL	165	17.88
1	REAMER	167	1.36
1	SQUARE D.C SHORT	168	4.14
1	D.C.	169	9.37
1	JAR	167	4.90
11	D.C.	169	103.03
1	X.O.	165	0.79
9	H.W.D.P.	156	82.89
		0	
	BHA 236.48m		
20	DRILL PIPE STANDS		
2	DRILL PIPE SINGLES		598.41
KELLY DOWN			8.11
TOTAL			834.00
WT. OF D.C.	15		
WT. OF STRING	53		

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/D/SMAND
TYPE	216UD513
SERIAL NO.	00559
JETS	6 X / 15.9
DEPTH OUT	
DEPTH IN	685.00
TOTAL M DRILLED	171.00
TOTAL HRS RUN	12.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG

TORQUE AT BTTM 1500

FILL ON BTTM (m)

EVENING TOUR

MUD TYPE | WATER BASED | X | OIL BASED

TIME	2300	2400	
DENSITY (KG/M3)	915	915	
FUNNEL VIS	43	44	
W.L. (cm3)			
pH			

METRES DRILLED

FROM	TO	DRC	RPM	WOB
780.00	834.00	D	30	6
				7

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY

CENTRIFUGE

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY

SCREEN SIZE	SPEED (M/MIN)	FLOW (M3/HR)	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
7900	140.0	122	140.0	

REDUCED PUMP SPEED

1480 | 46

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
773.20	1.50	320.3
792.20	2.00	310.6

DRILLER SIGNATURE: JOHN BURNS

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE / FT LOWER PIPE RAMS 8 SEC C/O
2015	2130	1.25	2	DRILL F/ 780 M - 799 M
2130	2145	0.25	21	B.O.P DRILL
2145	2200	0.25	5	PULL THREE SINGLES TO RETRIVE PIPE SCREEN
2200	2215	0.25	22	DRILL (CONTAIN & CLEAN UP)
2215	2315	1.00	2	DRILL F/ 799 M - 834 M
2315	2400	0.75	10	ACUM. SURVEY TIME 45min
2400			0	

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	320	55	RIG LIFE	0

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	3

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE N.W.T. | CAMP X YES NO | RIG SAFETY DAYS 189

MORNING TOUR — FROM 0 TO 800 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		David Ruschelnski	6.00		DR
DERRICK HAND		BRUCE DEJONG	6.00		BD
MOTOR HAND		DAVE GREEN	6.00		DG
FLOOR HAND		Mark Suchey	6.00		MS
FLOOR HAND		KIRK BJORNSON	6.00		KB
LEASE HAND		CHAD SPIES	6.00		CS

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT

CREW SAFETY DAYS: 189

DAY TOUR — FROM 800 TO 2000 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		ALBERT BROWN	6.00		AB
FLOOR HAND		SHELDON MICHEL	12.00		SM
LEASE HAND		John Burns	6.00		JB
LEASE HAND		DAVID NORN	4.00		DN
FLOOR HAND		RICK SONFNERE	4.00		RS

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT

CREW SAFETY DAYS: 189

EVENING TOUR — FROM 2000 TO 2400 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		John Burns	4.00		JB
DERRICK HAND		KEVIN FINNING	4.00		KF
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		BRUCE DEJONG	4.00		BD
LEASE HAND		AARON TAMBOUR	4.00		AT

RATE SCHEDULE | REGULAR | REPAIR | X | INVERT

CREW SAFETY DAYS: 189

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted if Required
(4.) Well Licensee & Sour Diagram Posted
(5.) Flare Lines Tested
(6.) BOP Drills Performed
(7.) Monthly Inspect BOP's Flare Lines & Degasser Lines
(1.) Rig Site Hazard & Safety Meeting (every week)
(2.) CADDE Rig Safety Inspection Checklist (every month)
(3.) Hand line position before Raising or Lowering
(4.) Crown Saver Checked
(5.) Brake & Rig Checked

YEAR	MONTH	DAY
2003	2	2

RIG NO. 5

FUEL @ 08:00 HRS

	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
LAST CASING	244.5	224.4	59.53	ALGOMA	L-80	48	886.30		884.75
TUBING OR LINER									

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO. JNTS
114	34.76	S5-95	73	159	4.5" XH	251
114	28.00	S5-95	73	159	4.5" XH	139
114	82.49	HWDP	73	159	4.5" XH	21

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

CODE NO.

	1 RMUP & TEAR DOWN	2 DRILL ACTUAL	3 ROAMING	4 CORING	5 COND MUD & CIRC	6 TRIPS	7 RIG SERVICE	8 REPAIR RIG	9 CUT DRILLING LINE	10 SURVEY	11 WELL LOGS	12 RUN CSG & CEMENT	13 WAIT ON CEMENT	14 NIPPLE UP B.O.P.	15 TEST B.O.P.	16 DRILL STEM	17 PLUG BACK	18 SQUEEZE CEMENT	19 FISHING	20 DIR. WORK	21 SAFETY MEETING	22	23 THAW	24 SUCTION	25	26	TOTAL
MORN							0.25							2.50	5.00						0.25						8.00
DAY						3.75	0.25								7.50							0.50					12.00
EVE						0.50	0.25																3.25				4.00
TOTAL						4.25	0.75							2.50	12.50						0.25	0.50	3.25				24.00

SHALE SHAKERS

NO.	TYPE
2	GRAND

	TYPE
UPPER DECK	
LOWER DECK	

RENTALS

	HORN	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	2

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	188

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN	MHR

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR

MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

DRILLER SIGNATURE

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

PUMP PRESS kPa

PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	230	2.50	14	NIPPLE UP B.O.P., FLOW NIPPLE
230	245	0.25	7	RIG SERVICE
245	300	0.25	21	SAFETY MTG. W/ PRESSURE TESTER
300	530	2.50	15	PRESSURE TEST ALL MANIFOLD VALVE, CHOKES, & SWEEP LINES
				ALL TESTS 1400kpa LOW, 21000kpa HIGH
530	800	2.50	15	TEST B.O.P., STABBING VALVE, ANNULAR, INSIDE KILL LINE VALVES
800				HCR

NOTES : CHANGE LINERS IN # 1 TO 5 1/2

DRILLER SIGNATURE	HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
David Ruschelnaski	8.00	10.0	390		PRESSURE TEST	

MORNING TOUR FROM 0 TO 800

INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		David Ruschelnaski	8.00			DR
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		Mark Suchey	8.00			MS
FLOOR HAND		KIRK BJORNSON	8.00			KB
LEASE HAND		CHAD SPIES	8.00			CS

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS

188

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	216	0.18
1	MOTOR	212	7.63
1	FLOAT SUB	197	0.77
1	U.B.H.O SUB.	198	0.87
1	PONY MONEL	181	2.90
2	MONEL	165	17.58
1	REAMER	197	1.35
1	SQUARE D.C SHORT	198	4.14
1	D.C.	197	9.37
1	JAR	197	4.90
11	D.C.	197	103.03
1	X.O.	159	0.79
9	H.W.D.P.	156	82.89
14	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	417.56
	KELLY DOWN		13.00
	TOTAL		847.06
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN	MHR

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

DAY TOUR

MUD RECORD

MUD TYPE	WATER BASED	X	OIL BASED
TIME			
DENSITY (KG/M3)			
FUNNEL VIS			
W.L. (cm3)			
pH			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GELTONE V	11	SX
INVERT	80	M3

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

CENTRIFUGE

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

DRILLER SIGNATURE

ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

PUMP PRESS kPa

PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
140.0	0	140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0			15	CONTINUE PRESS. TESTING HYDRIL, KILL LINE + VALVES H.C.R KILL LINE VALVES
			15	UPPER LOWER KELLY COCK, UPPER LOWER PIPE RAMS INSIDE B.O.P
			15	BLIND RAMS, CHECK VALVE, MUD LINES KELLY BAR SWIVEL ETC. ALL OTHER
800	1830	7.50	15	RELATED B.O.P EQUIPMENT. ACUM. 3 FT. TEST, 1400 K.P.A LOW 21 000 HIGH
1830	1900	0.50	22	INSTALL WEAR BUSHING.
1900	1915	0.25	7	RIG SERVICE. CHECK BRAKE ASSEMBLY.
1915	2000	3.75	6	P/U M/U B.H.A R/H SET 1.5 BEND IN MOTOR SCRIBE TOOLS.

NOTES : D W A R G

DRILLER SIGNATURE	HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
ROSS GUYNUP	12.00	11.0	345		PRESS. TESTING.	

DAY TOUR FROM 800 TO 2000

INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		ALBERT BROWN	12.00			AB
FLOOR HAND		SHELDON MICHEL	12.00			SM
LEASE HAND		John Burns	12.00			JB

RATE SCHEDULE		REGULAR		REPAIR		INVERT
					X	

CREW SAFETY DAYS

188

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	216	0.18
1	MOTOR	212	7.63
1	FLOAT SUB	197	0.77
1	U.B.H.O SUB.	198	0.87
1	PONY MONEL	181	2.90
2	MONEL	165	17.58
1	REAMER	197	1.35
1	SQUARE D.C SHORT	198	4.14
1	D.C.	197	9.37
1	JAR	197	4.90
11	D.C.	197	103.03
1	X.O.	159	0.79
9	H.W.D.P.	156	82.89
14	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	417.56
	KELLY DOWN		13.00
	TOTAL		847.06
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	1
SIZE	216.0
IADC CODE	
MANUFACTURER	U/DIMAND
TYPE	216UD513
SERIAL NO	00559
JETS	5 X 15.9
DEPTH OUT	
DEPTH IN	655.00
TOTAL M DRILLED	0.00
TOTAL HRS RUN	0.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN	MHR

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

EVENING TOUR

MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

DRILLER SIGNATURE

David Ruschelnaski

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa

PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
140.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2030	0.50	6	RUN IN TO 835m, WELD DEGASSER LINES TO FLARE TANK
2030	2045	0.25	7	RIG SERVICE
2045	2400	3.25	23	CONTINUE TO RIG UP FLARE TANK

NOTES : CHECK BRAKE LINKAGE, TONGS & LINER

DRILLER SIGNATURE	HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
David Ruschelnaski	4.00	10.0	350	40	TRIPPING	

EVENING TOUR FROM 2000 TO 2400

INJURIES

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		David Ruschelnaski	4.00			DR
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DAVE GREEN	4.00			DG
FLOOR HAND		Mark Suchey	4.00			MS
FLOOR HAND		KIRK BJORNSON	4.00			KB
LEASE HAND		CHAD SPIES	4.00			CS

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS

188

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Walk Around Inspection
(2) Derrick Inspection - Weekly (Using Check List)
(3) H2S Signs Posted & Displayed
(4) Well Libraries & Shut Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Weekly Inspect BOPs Flare Lines & Separator Lines
(1) Rig Site Hazard & Safety Meeting (weekly/month)
(2) CADRC Rig Safet Inspection Checklist (every/month)
(3) Mud Inspection before Rigging up/Leaving
(4) Brown Bonnet Checked
(5) Water & Air Checked

YEAR	MONTH	DAY
2003	2	1

RIG NO. 5

FUEL @ 08:00 HRS

LAST CASING	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)		
TUBING	244.5	224.4	69.53	ALGOMA	L-80	48	699.30		694.70		
OPEN HOLE											

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	94.70	S5-95	73	159	4 1/2" XH	251	PT-1100	OILWELL	254
114	99.00	S5-95	73	159	4 1/2" XH	125	PT-1100	OILWELL	254
114	92.40	HWDP	73	159	4 1/2" XH	21			

CLOUDY

CALM

ICE

SHALE SHAKERS — **RENTALS**

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIG UP & TEAR DOWN	DRILL ACTUAL	RIG SERV	CSG/RUN	CORE SAMP & TEST	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SVY SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING						
MORN							0.25						7.75	4.00							0.25	7.50					6.00
DAY							0.25							3.75													12.00
EVE							0.25							3.75													4.00
TOTAL							0.75						7.75	7.75							0.25	7.50					24.00

BRAND	TYPE

SCREENING CHANGES

TOP		TOP	
120		120	
SIDES		SIDES	
120		120	
BOTTOM		BOTTOM	
120		120	

DRILLING ASSEMBLY

NO	DRILLING ASSEMBLY	O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
PULL ON BTTM (m)	

MORNING TOUR

MUD TYPE	
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

WATER BASED | OIL BASED

MUD MATERIALS ADDED		
PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

POWER GEN	DISCH DENSITY (KG/M3)	OVFL FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

POWER GEN	DISCH DENSITY (KG/M3)	OVFL FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

David Ruscheinski

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE
15	215	2.00	13	W.O.C., TRIP OUT PIPE FROM W CASING
215	600	3.75	13	W.O.C., TEAR OUT DIVERTER BOUNE LINE, HCR, GET READY TO CUT CASING,
600	800	2.00	13	W.O.C., FLUSH PUMPS CLEAN TANKS

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER PH	STACK TEMP	MAX WGHT EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	25	TEAR OUT DIVERTER	

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	2	1
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukes	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES / NO	187	

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruscheinski	8.00		DR
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		Mark Suchey	8.00		MS
FLOOR HAND		KIRK BJORNSON	8.00		KB
LEASE HAND		CHAD SPIES	8.00		CS

RATE SCHEDULE		REGULAR		REPAIR		DIVERT
	X					

CREW SAFETY DAYS: 187

DAY TOUR

MUD TYPE	
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

WATER BASED | OIL BASED

MUD MATERIALS ADDED		
PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

POWER GEN	DISCH DENSITY (KG/M3)	OVFL FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

POWER GEN	DISCH DENSITY (KG/M3)	OVFL FLOW DENSITY	UNDER FLOW DENSITY
0.00			
0.00			

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	152.0		140.0	

REDUCED PUMP SPEED: 0

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
600	615	0.25	7	RIG SERVICE
615	630	0.25	21	SAFETY MTG. W/ CREW NIPPLE UP.
630	1600	7.50	22	TEAR OUT DIVERTER,CUT CONDUCTOR SEL & CASING, DRESS CASING WELD ON BOWL.
1600			22	PRESS. TEST BOWL - 7,000 K.P.A O.K.
1600	2000	4.00	14	NIPPLE UP B.O.P. FLANGES D.S.A SPOOL SWEEP LINES ALL OTHER RELATED EQUIPMENT.
				CLEAN MUD TANKS

NOTES : D.W.A.R.D.

HRS RUN	BOILER PH	STACK TEMP	MAX WGHT EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	345		NIPPLE UP	

DAY TOUR — FROM 800 TO 2000

CREW	SOC INS NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		ALBERT BROWN	12.00		AB
FLOOR HAND		SHELDON MICHEL	12.00		SM
LEASE HAND		John Burns	12.00		JB

RATE SCHEDULE		REGULAR		REPAIR		DIVERT
	X					

CREW SAFETY DAYS: 187

EVENING TOUR

MUD TYPE	
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

WATER BASED | OIL BASED

MUD MATERIALS ADDED		
PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

POWER GEN	DISCH DENSITY (KG/M3)	OVFL FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

POWER GEN	DISCH DENSITY (KG/M3)	OVFL FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	152.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

David Ruscheinski

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE
2015	2400	3.75	14	NIPPLE UP B.O.P., ANNULAR, HCR & SWEEP LINES, KILL LINES
2400				

NOTES :

HRS RUN	BOILER PH	STACK TEMP	MAX WGHT EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350		NIPPLE UP B.O.P.	

EVENING TOUR — FROM 2000 TO 2400

CREW	SOC INS NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruscheinski	4.00		DR
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		KIRK BJORNSON	4.00		KB
LEASE HAND		CHAD SPIES	4.00		CS

RATE SCHEDULE		REGULAR		REPAIR		DIVERT
	X					

CREW SAFETY DAYS: 187

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER

DAILY CHECKS

( ) Daily Work Area and Inspection
( ) Derrick/Mast Inspection - Weekly (Using Check List)
( ) ROE Signs Posted & Required
( ) Well Licence & Blow Diagram Posted
( ) Pipe Lines Tested
( ) BOP Drills Performed
( ) Monthly Pre-spud BOPs Pit-n Lines & Bypasser Lines
( ) Rig Site Hazard & Safety Meeting (weekly/bi-weekly)
( ) ACADC Rig Safety Inspection Checklist (monthly/bi-ann)
( ) Rig or Derrick/Mast Raising or Lowering
( ) Crown Saver Checked
( ) Water Lines Checked

SPR	TD
3.5	
4.5	
5.5	
6.5	

YEAR 2003 | MONTH 1 | DAY 31

RIG NO. 5

FUEL @ 08:00 HRS

		O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RIG TO CSG HD	SET AT (m)
LAST CASING		244.5	224.4	69.53	ALGOMA	L-80	46	838.39		834.70
TUBING ON HAND										

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S3-05	73	159	4.5" IF	291	PT-1100	OILWELL	254
114	38.00	S3-05	73	159	4.5" IF	128	PT-1100	OILWELL	254
114	62.40	HWDP	73	159	4.5" IF	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TIME / HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	SVY. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	DIRECTIONAL WORK	PERFORATE	SQZ. WORK	SAFETY MEETING	BLOW OUT KELLY					
MORN							0.25					7.50									0.25						8.00
DAY					6.00	2.25	0.25					1.25									0.25						12.00
EVE							0.25					3.00									0.25	0.50					4.00
TOTAL					6.00	2.25	0.75					11.75									0.75	0.50					24.00

SHALE SHAKERS			RENTALS	WORK	DAY	DYE
NO.	TYPE BRAND	SCREENS				
1		TOP 120				
2		TOP 120				
3		TOP 120				
4		BTM 120				
5		BTM 120				
6		BTM 120				

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	31
OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
RIG MANAGER	RIG NO.
Greg Pukas	5
PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	186

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT		
3	D.C.	171	29.22
1	JAR	170	4.87
9	D.C.	170	84.18
1	X.O.	159	0.56
9	H.W.D.P.	156	82.89
14	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	417.56
KELLY DOWN			7.27
TOTAL			825.37
WT OF D.C.			36
WT OF STRING			43

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR

MUD TYPE	X
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

	WATER BASED	OIL BASED
FROM	655.00	

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

ROUND RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

ROUND RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
	152.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

David Ruscheinski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	130	1.50	12	RIG UP POWER TONGS & LAY DOWN MACHINE
130	145	0.25	7	RIG SERVICE
145	200	0.25	21	SAFETY MTG. W/ POWER TONGS & PIPE HANDLERS
200	800	6.00	12	MAKE UP SHOE & FLOAT, RUN CASING

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	36	RUN CASING	

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruscheinski	8.00		DR
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		Mark Suchey	8.00		MS
FLOOR HAND		KIRK BJORNSON	8.00		KB

RATE SCHEDULE	X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS: 186

DRILLING ASSEMBLY

NO		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
KELLY DOWN			
TOTAL			
WT OF D.C.			
WT OF STRING			

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

DAY TOUR

MUD TYPE	X
TIME	
DENSITY (KG/M3)	1000
FUNNEL VIS	1150
W.L. (cm3)	65
pH	6.0
	8.5

MUD RECORD

	WATER BASED		OIL BASED	
	1000	1500	1700	
	1150	1145	1140	
	65	55	50	
	6.0	6.0	6.0	
	8.5	9.0	9.0	

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
DESCO	1	SX

SOLIDS CONTROL

DESILTER

ROUND RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	1140	1130	1810

CENTRIFUGE

ROUND RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	1140	1130	1810

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
1800	152.0		140.0	120

REDUCED PUMP SPEED: 0

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	12	CONTINUE TO RUN CASING SWEDGE UP.
830	1130	3.00	5	FLOW CHECK CIRC. CASING RIG OUT TONG I/O MACHINE.
1130	1145	0.25	21	PRE. JOB SAFTEY MEETING. W/ CREW R.U. C.M IMPORT TOOL HAND.
1145	1400	2.25	5	RIG FLOOR TO RUN D/P INSIDE CASING R.I.H PIPE TO 655M.
1400	1445	0.75	12	HEAD UP IV CEMENT JOB.
1445	1500	0.25	7	RIG SERVICE
1500	2000	5.00	5	COND MUD & CIRC CASING PRIOR TO CEMENT JOB.
				NOTE CASING DRILL PIPE 51, 000 DAN.
				RAN : 46 Joints of 244.5 mm, 69.53 kg/m, L-80 LTSC New Algoma
				Casing, Total Length: 838.3 m. Landed @ 834.7 m. Top Float Collar
				at 836.86 m. Casing Ran in Hole Good, No Problems Circulating, Casing

NOTES : D W A R S CHECK BRAKE ASSEMBLY

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	350	84	RI PIPE IN CASING	0

DAY TOUR — FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		ALBERT BROWN	12.00		AB
FLOOR HAND		SHELDON MICHEL	12.00		SM
LEASE HAND		John Burns	12.00		JB

RATE SCHEDULE	Y	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS: 186

DRILLING ASSEMBLY

NO		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
KELLY DOWN			
TOTAL			
WT OF D.C.			
WT OF STRING			

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

EVENING TOUR

MUD TYPE	
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD RECORD

	WATER BASED	OIL BASED
FROM	655.00	

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

ROUND RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

ROUND RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
	152.0		140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

David Ruscheinski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	21	SAFETY MTG W/ BJ HUGHES CEMENTERS
2015	2215	2.00	12	CEMENT 5 1/2" ACA CASING
2215	2330	1.25	7	RIG SERVICE
2330	2330	1.00	12	RIG OUT PACK OFF HEAD, & SERVICE
2330	2400	0.50	22	BLOW OUT KELLY, AND MUD LINE
2400				Cement Surface Casing with BJ Services
				3.0 m3 water Ahead, Mix 20.5 m3 @ 1.8 G" Neat Cement until water
				Flush to Surface, Stop, Drop Plug, Displace 4.7 m3 water thru Drill Pipe
				Plug Down @ 23:52 hr Jan. 31/03 Bump Plug w 3500 kpa over final
				Displacement Pressure to 9400 kpa, Bleed Pressure, Check Floats, Held ok
				2.5 m3 Cement Returns to Surface

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	300	80	CEMENTING	

EVENING TOUR — FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruscheinski	4.00		DR
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		KIRK BJORNSON	4.00		KB
LEASE HAND		CHAD SPIES	4.00		CS

RATE SCHEDULE	X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS: 186

ALL IN ONE

PASON RIG PRINT OUT

LICENCE NO.	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Visit Around Inspection
(2) Derrick Inspection - Weekly (Using Check List)
(3) H2S Signs Posted & Required
(4) Flow Lines & Rotary Diagram Posted
(5) Flow Lines Chained
(6) BOP Drills Performed
(7) Monthly Inspect BOP's, Flow Lines & Degasser Lines
(1) Rig Site Health & Safety Meeting (Crew/Non-Rlwrkrs)
(2) CNOOC Rig Safety Inspection Checklist (Crew/Rlwrkrs)
(3) Visit Inspection Before Raising or Lowering
(4) Derrick Screw Chained
(5) Water Tanks Chained

YEAR	MONTH	DAY
2003	1	30

RIG NO: 5

FUEL on OB CO HRS

TIME	FUEL	OB	CO	HRS
0600				
SHOW				
CALM				
SHOW				

	O.D. (mm)	WALL I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)
LAST CASING									
TUBING OR LINER									

DC / DP SIZE	MASS	GRADE	SIN I.D.	T.J. O.D.	TYPE THRD	NO JNTS
114	84.70	S5-95	73	139	4 1/2" IF	291
114	39.69	S5-95	73	139	4 1/2" IF	139
114	82.49	HWDP	73	139	4 1/2" IF	31

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
PT-1100	OILWELL	254
PT-1100	OILWELL	254

TIME BREAKDOWN

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DIR. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING						
MORN						7.75	0.25																				8.00
DAY		3.00	0.75		1.00	6.25	0.25			0.25																	12.00
EVE					0.25	3.25	0.25														0.25						4.00
TOTAL		3.00	0.75		1.75	17.25	0.75			0.25											0.25						24.00

SHALE SHAKERS

	BRAND	SIZE
1	DERRICK	
2	DERRICK	
3	DERRICK	

SCREENS	1	2	3
TOP	120		120
MIDDLE	120		120
BOTTOM	120		120

RENTALS

	WORK	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	30
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES / NO	185	

DRILLING ASSEMBLY

NO.	DRILLING ASSEMBLY	O.D.	LENGTH
1	BIT	0.30	
1	MOTOR	300	8.96
3	D.C.	225	27.11
1	BELL JAR	217	6.87
3	D.C.	171	28.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P	156	82.89
	B.H.A 237.56		
13	DRILL PIPE STANDS		
1	DRILL PIPE SINGLES		376.93
KELLY DOWN			13.00
TOTAL			630.00
WT. OF D.C		28	
WT. OF STRING		45	

BIT RECORD

BIT NO	3A RR
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO	TC3033
JETS	15.9 15.9 15.9
DEPTH OUT	413.00
DEPTH IN	217.00
TOTAL M DRILLED	196.00
TOTAL HRS RUN	26.50

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MORNING TOUR

MUD TYPE	X	WATER BASED	OIL BASED
TIME		100	400
DENSITY (KG/M3)		1150	1150
FUNNEL VIS		61	60
W.L. (cm3)		6.8	6.8
pH		8.5	8.5

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

SPEED	DIFFUSE DISCHARGE (L/S-KPA)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

SPEED	DIFFUSE DISCHARGE (L/S-KPA)	OVER FLOW DENSITY	UNDER FLOW DENSITY
7.00	1150	1140	1830
7.00	1150	1140	1820

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
11000	152.0	100	140.0	100

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschelnisk

METRES DRILLED

FROM	TO	DRC	RPM	WOB
630.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	348	3.75	6	CONTINUE PUMP OUT SINGLES PH 27m - 336m
348	448	0.25	7	RIG SERVICE
448	448	0.75	6	PUMP OUT SINGLES PI 336m - 186m
448	806	3.25	6	TRIP OUT BHA, LAY DOWN SQUARE MOTOR, MAKE UP NEW BHA

NOTES: CHECK CROWN SAVER, TONGS & LINES, BRAKE LINKAGE

HRS RUN	BOILER HRS	STACK TEMP	MAX GAIN EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
6.00	10.0	390	80	PUMP OUT SINGLES	

MORNING TOUR — CREW

FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruschelnisk	8.00		DR
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		Mark Suchey	8.00		MS
FLOOR HAND		KIRK BJORNSON	8.00		KB

RATE SCHEDULE: X REGULAR | REPAIR | RIVERT

CREW SAFETY DAYS: 185

DAY TOUR

NO.	DRILLING ASSEMBLY	O.D.	LENGTH
1	BIT	0.30	
1	BIT SUB	229	0.84
2	D.C.	229	18.09
1	REAMER	289	0.71
1	D.C.	229	9.02
1	BELL JAR	217	6.87
3	D.C.	171	28.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P	156	82.89
	B.H.A 230.15M		
14	DRILL PIPE STANDS		
2	DRILL PIPE SINGLES		417.98
KELLY DOWN			7.27
TOTAL			658.00
WT. OF D.C		28	
WT. OF STRING		49	

BIT RECORD

BIT NO	3A RR
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO	TC3033
JETS	15.9 15.9 13.9
DEPTH OUT	655.00
DEPTH IN	413.00
TOTAL M DRILLED	242.00
TOTAL HRS RUN	31.50

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR
		TD	7.60

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM 1667
FILL ON BTTM (m) 6.00

MUD RECORD

MUD TYPE	X	WATER BASED	OIL BASED
TIME		1230	1430	1900
DENSITY (KG/M3)		1140	1150	1180
FUNNEL VIS		59	63	63
W.L. (cm3)		6.5	6.0	6.5
pH		9.0	9.0	9.0
PVT		53.30	47.00	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	6	
CAUSTIC	1	

SOLIDS CONTROL

DESILTER

SPEED	DIFFUSE DISCHARGE (L/S-KPA)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

CENTRIFUGE

SPEED	DIFFUSE DISCHARGE (L/S-KPA)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	1150	1140	1840

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
11180	152.0	100	140.0	100

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
655.00	2.00	

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
630.00	655.00	D	180	11
				15

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
630	1130	3.50	5	M/U BIT REAMER R.I.H P/U PIPE F/ RACKS.
1130	1215	0.75	3	REAM WASH F/ 613M - 630M, 6M, /TLL
1215	1515	3.00	2	DRILL 311MM, HOLE F/ 630M - 655M, T.D
1515	1530	0.25	7	RIG SERVICE CHECK BRAKE ASSEMBLY.11
1530	1600	0.50	5	COND MUD & CIRC HOLE CLEAN WORK PIPE.
1600	1615	0.25	10	TRIP SURVEY
1615	1730	1.25	5	FLOW CHECK @ 655M , P.O.O.H TO H.W. D/P FLOW CHECK.
1730	1900	1.50	5	P/U 24 JOINTS DRILL PIPE R.I.H TO 655M.
1900	2000	1.00	5	COND MUD & CIRC @ 655M. PRIOR TO CASING
2000				
				NOTE STRAP PIPE R.I.H TALLY 379.94M.
				STRAP 379.94M.
				DIFF.0.11 IN/C

NOTES: D.W.A.R.O CHECK SLIP TONG DIES BRAKE ASSEMBLY PRIOR TO TRIP

HRS RUN	BOILER HRS	STACK TEMP	MAX GAIN EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	350	67	SAFTEY GLASSES	

DAY TOUR — CREW

FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		ALBERT BROWN	12.00		AB
FLOOR HAND		SHELDON MICHEL	12.00		SM
LEASE HAND		John Burns	12.00		JB

RATE SCHEDULE: X REGULAR | REPAIR | RIVERT

CREW SAFETY DAYS: 185

EVENING TOUR

NO.	DRILLING ASSEMBLY	O.D.	LENGTH
1	BIT	0.30	
1	BIT SUB	229	0.84
2	D.C.	229	18.09
1	REAMER	289	0.71
1	D.C.	229	9.02
1	BELL JAR	217	6.87
3	D.C.	171	28.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P	156	82.89
	B.H.A 230.15M		
14	DRILL PIPE STANDS		
2	DRILL PIPE SINGLES		417.98
KELLY DOWN			7.27
TOTAL			658.00
WT. OF D.C		28	
WT. OF STRING		49	

BIT RECORD

BIT NO.	3A RR
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO	TC3033
JETS	15.9 15.9 15.9
DEPTH OUT	655.00
DEPTH IN	413.00
TOTAL M DRILLED	242.00
TOTAL HRS RUN	31.50

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG
2	2	WT	A	E

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR
	BT	TD	

HOLE CONDITION

HOLE DRAG
TORQUE AT BTTM
FILL ON BTTM (m)

MUD RECORD

MUD TYPE	X	WATER BASED	OIL BASED
TIME		800	
DENSITY (KG/M3)		1155	
FUNNEL VIS		67	
W.L. (cm3)		6.0	
pH		9.0	
PVT		46.80	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

SPEED	DIFFUSE DISCHARGE (L/S-KPA)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

SPEED	DIFFUSE DISCHARGE (L/S-KPA)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM
10000	152.0	95	140.0	95

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschelnisk

METRES DRILLED

FROM	TO	DRC	RPM	WOB
655.00				

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	5	CONTINUE CIRC HOLE CLEAN
2015	2245	2.50	6	TRIP OUT TO RUN CASING
2245	2300	0.25	7	RIG SERVICE
2300	2315	0.25	21	SAFETY MTG. PRE RIG UP W/ POWER TONGS & LAY DOWN MACHINE
2315	2400	0.75	6	LAY DOWN 9" COLLARS
2400				

NOTES: LEL CHECK DONE IN SUB,SHACKER,MIXING SHACK BY GREG PUKAS
CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER HRS	STACK TEMP	MAX GAIN EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	67	LAY DOWN MACHINE	0

EVENING TOUR — CREW

FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruschelnisk	4.00		DR
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		Mark Suchey	4.00		MS
MOTOR HAND		KIRK BJORNSON	4.00		KB

RATE SCHEDULE: X REGULAR | REPAIR | RIVERT

CREW SAFETY DAYS: 185

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1) Daily Visit And Job Inspection
(2) Blowout Preventer - Weekly (Using Check List)
(3) H2S Signs Posted If Required
(4) Well Location & Well Diagram Posted
(5) Flare Lines Tested
(6) BOP Drills Performed
(7) Weekly Report BOPs, Flare Lines & Separator Lines
(8) Rig Site Health & Safety Meeting (weekly/crew/each)
(9) CADOC Rig Site Inspection Checklist (monthly/each)
(10) Visual Inspection before Hoisting or Lowering
(11) Crown Saver Checked
(12) Driller & Its Checked

YEAR	MONTH	DAY
2003	1	29

RIG NO. 5

FUEL @ 08:00 HRS

	DSL	GAS
RECEIVED	152	
USED		
ON HAND		

WEATHER: -16
SURFACE CONDITIONS: CLEAR
ROAD CONDITIONS: ICE

LAST CASING TUBING OR LINER

	O.D. (mm)	MIN I.D.	KG / M	GRADE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.76	S5-05	73	168	4 1/2" XV	201	PT-1100	OILWELL	254
114	38.80	S5-05	73	168	4 1/2" XV	135	PT-1100	OILWELL	254
114	52.40	HWDP	73	168	4 1/2" XV	31			

CODE NO. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

TIME HRS	1 RIGUP & TEAR DOWN	2 DRILL ACTUAL	3 REAMING	4 CORING	5 CONDITION & CIRC	6 TRIPS	7 RIG SERVICE	8 REPAIR RIG	9 CUT DRILLING LINE	10 DEV. SURVEY	11 WIRELINE LOGS	12 RUN CSG & CEMENT	13 WAIT ON CEMENT	14 NIPPLE UP B.O.P.	15 TEST B.O.P.	16 DRILL STEM	17 PLUG BACK	18 DIRECTIONAL DRILLING	19 FISHING	20 SQZ. WORK	21 SAFETY MEETING	22	23	24	25	26	TOTAL
MORN		6.75					0.25			1.00																	8.00
DAY		10.50			0.50	0.50	0.25			0.75																	12.00
EVE						3.75	0.25																				4.00
TOTAL		16.75			0.50	4.25	0.75			1.75																	24.00

SHALE SHAKERS

NO.	TYPE / BRAND	SCREENING SCHEMES
1		
2		

RENTALS

	WORK	SAT	SVC

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.30	0.30
1	MOTOR	300	6.96
3	D.C.	229	27.11
1	SHELL JAR	217	9.67
3	D.C.	171	29.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P.	158	82.89
	B.H.A 237.56		
9	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	293.96
KELLY DOWN			13.00
TOTAL			544.32
WT. OF D.C.		36	
WT. OF STRING		42	

BIT RECORD

BIT NO	3A RR
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO.	TC3033
JETS	15.9 15.9 15.9
DEPTH OUT	
DEPTH IN	413.00
TOTAL M DRILLED	131.00
TOTAL HRS RUN	18.50

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN M-HR

HOLE CONDITION

HOLE DRAG
TORQUE AT STTH 1100
FILL ON STTH (m)

MORNING TOUR

MUD TYPE: X

MUD RECORD

	WATER BASED		OIL BASED
TIME	100	330	630
DENSITY (KG/M3)	1140	1140	1140
FUNNEL VIS	74	72	69
W.L. (cm3)	7.5	7.5	7.5
pH	9.5	9.5	9.5
PVT	60.90	59.50	57.00

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
LIGNITE	1	BX
DRISPAC	2	BX

SOLIDS CONTROL

DESILTER

HOURS Run	SHALE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	SHALE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	1140	1130	1920

METRES DRILLED

FROM	TO	DRC	RPM	WOB
492.00	507.00	D	45	9
507.00	545.00	D	45	10

PUMP

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
11700	140.0	100	152.0	100

REDUCED PUMP SPEED: 3530 @ 83 @ 506

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
492.00	1.25	
530.00	1.25	

DRILLER SIGNATURE: David Ruschetnski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	445	4.75	2	DRILL F/ 482m - 527m
445	500	0.25	7	RIG SERVICE
500	700	2.00	2	DRILL F/ 527m - 545m
700	800	1.00	10	ACCUMULATIVE SURVEY TIME
800				

NOTES : CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	47	SURVEYS	

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	29
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**SAMP** X **WS**	**RIG SAFETY DAYS**	
N.W.T.		184	

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		David Ruschetnski	8.00			DR
DERRICK HAND		BRUCE DEJONG	8.00			BD
MOTOR HAND		DAVE GREEN	8.00			DG
FLOOR HAND		Mark Suchey	8.00			MS
FLOOR HAND		KIRK BJORNSON	8.00			KB

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS: 184

DAY TOUR — FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		ROSS GUYNUP	12.00			RG
DERRICK HAND		KEVIN FINNING	12.00			KF
MOTOR HAND		DARCY PUKAS	12.00			DP
FLOOR HAND		ALBERT BROWN	12.00			AB
FLOOR HAND		SHELDON MICHEL	12.00			SM
LEASE HAND		John Burns	12.00			JB

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS: 184

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.30	0.30
1	MOTOR	300	6.96
3	D.C.	229	27.11
1	SHELL JAR	217	9.67
3	D.C.	171	29.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P.	156	82.89
	B.H.A 237.56		
13	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	378.83
KELLY DOWN			13.00
TOTAL			630.09
WT. OF D.C.		36	
WT. OF STRING		43	

BIT RECORD

BIT NO	3A RR
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO	TC3033
JETS	15.9 15.9 15.8
DEPTH OUT	
DEPTH IN	413.00
TOTAL M DRILLED	217.00
TOTAL HRS RUN	26.50

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG: NIL
TORQUE AT STTH 1234
FILL ON STTH (m)

DAY TOUR

MUD TYPE: X

MUD RECORD

	WATER BASED		OIL BASED
TIME	900	1200	1530
DENSITY (KG/M3)	1140	1140	1140
FUNNEL VIS	64	64	65
W.L. (cm3)	7.5	8.0	8.0
pH	9.0	9.0	9.0
PVT	55.40	58.50	56.50

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
LIGNITE	1	BX
DETERGENT	1	PAILS
POLYPAC R	1	BX

SOLIDS CONTROL

DESILTER

HOURS Run	SHALE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS Run	SHALE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	1145	1130	1830
12.00	1145	1135	1820

METRES DRILLED

FROM	TO	DRC	RPM	WOB
545.00	630.00	D	45	6
				14

PUMP

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
12123	140.0	100	152.0	100

REDUCED PUMP SPEED: @ 0 @

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
563.00	2.00	
591.00	2.75	
611.00	2.75	

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
545	1800	10.00	2	DRILL F/ 545M -630M.
1800	1845	0.75	10	DEV. SURVEY TOTAL TIME F/ SURVEYS
1845	1900	0.25	7	RIG SERVICE FT. DIVERTER
1900	1930	0.50	5	COND MUD & CIRC PRIOR TO P.O.O.H
1930	2000	0.50	6	FLOW CHECK 630M. P.O.O.H
2000				

NOTES : D.W.A.R.G CHECK BRAKE ASSEMBLY SLIP TONG DIES BACK UP LINES ETC

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.0	350	45	ANADARKO POLICYS	

EVENING TOUR — FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS		YES	NO
DRILLER		David Ruschetnski	4.00			DR
DERRICK HAND		BRUCE DEJONG	4.00			BD
MOTOR HAND		DAVE GREEN	4.00			DG
FLOOR HAND		Mark Suchey	4.00			MS
MOTOR HAND		KIRK BJORNSON	4.00			KB

RATE SCHEDULE		REGULAR		REPAIR		INVERT
	X					

CREW SAFETY DAYS: 184

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.30	0.30
1	MOTOR	300	6.96
3	D.C.	229	27.11
1	SHELL JAR	217	9.67
3	D.C.	171	29.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P.	156	82.89
	B.H.A 237.56		
13	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	379.63
KELLY DOWN			13.00
TOTAL			630.09
WT. OF D.C.		36	
WT. OF STRING		43	

BIT RECORD

BIT NO	3A RR
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO	TC3033
JETS	15.9 15.9 15.9
DEPTH OUT	630.00
DEPTH IN	413.00
TOTAL M DRILLED	217.00
TOTAL HRS RUN	26.50

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG
TORQUE AT RTTH
FILL ON STTH (m)

EVENING TOUR

MUD TYPE: X

MUD RECORD

	WATER BASED		OIL BASED
TIME	1830	2130	2330
DENSITY (KG/M3)	1145	1145	1150
FUNNEL VIS	62	62	64
W.L. (cm3)	6.6	6.8	
pH	9.0	9.0	
PVT	60.00		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS Run	SHALE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

CENTRIFUGE

HOURS Run	SHALE DENSITY (kg/m3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	1150	1140	1880
4.00	1150	1140	1870

METRES DRILLED

FROM	TO	DRC	RPM	WOB
630.00				

PUMP

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
10000	140.0	100	152.0	100

REDUCED PUMP SPEED: @ 0 @

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschetnski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE
2015	2400	3.75	6	TRIP OUT, PUMP OUT SINGLES F/ 563m - 427m

NOTES : LEL CHECK IN SUB, MIXING SHACK, SHAKER BY RIG MANAGER G PUKAS
CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER HRS	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	80	BOWARF MOTOR	

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Visit Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted & Reported
(4.) Weir Lubricator & Brass Strainers Packed
(5.) Fibre Lines Braced
(6.) BOP Drills Performed
(7.) Weekly Inspect BOPs, Fibre Lines & Regulator Lines
(1.) Rig Site Hazard & Safety Meeting (Monthly/Weekly)
(2.) CAODC Rig Safety Inspection Checklist (Monthly/Weekly)
(3.) Visual Inspection before Raising or Lowering
(4.) Crown Saver Checked
(5.) Choke & Kill Manifold Checked

YEAR	MONTH	DAY
2003	1	28

RIG NO: 5

FUEL @ 08:00 HRS

DIESEL	63
PROPANE	
GASOLINE	

TOOLPUSHER	
DRILLER	STRONG WIND
MUD ENGINEER	N.W.
MUD ENGINEER	ICE

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)

	OC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
	114	84.76	S5-95	73	159	4.5" XH	261	FT-1160	DILWELL	254
	114	99.99	S5-95	73	159	4.5" XH	135	FT-1160	DILWELL	254
	114	88.48	HWDP	73	159	4.5" XH	21			

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	SHALE SHAKERS	RENTALS	WORK	DAY	SVC
TIME / HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	BORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	OUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	Perforate	SAFETY MEETING												
WORK		7.25					0.25			0.50																	8.00					
DAY		9.75			0.50	10.25	0.25			0.25																	12.00					
EVE		9.75	3.00				0.25																				4.00					
TOTAL		9.75	3.00		0.50	10.25	0.75			0.75																	24.00					

SHALE SHAKERS			
NO. 2	TYPE / BRAND		TYPE
SCREENING CONDITIONS	TOP	120	TOP 120
	MIDDLE	120	MIDDLE 120
	BOTTOM	120	BOTTOM 120

DRILLING CREW PAYROLL DATA

WELL NAME & NO	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	28
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	183	

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	0.0	0.30
1	BIT SUB	229	0.94
3	D.C.	226	27.11
1	SHELL JAR	217	0.67
3	D.C.	171	29.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P.	156	82.99
	BHA 229.44		
6	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	248.91
KELLY DOWN			9.05
TOTAL			486.80
WT. OF D.C.		38	
WT. OF STRING		49	

BIT RECORD

BIT NO.	3A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO.	TC3033
JETS	15.9 15.9 15.9
DEPTH OUT	
DEPTH IN	413.00
TOTAL M DRILLED	72.00
TOTAL HRS RUN	10.25

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN SMHR

HOLE CONDITION

HOLE DRAG
TORQUE AT STTM 1300
FILL ON STTM (m)

MORNING TOUR — MUD RECORD

MUD TYPE	X	WATER BASED		OIL BASED	
TIME		100	330	500	
DENSITY (KG/M3)		1135	1135	1140	
FUNNEL VIS		59	60	59	
W.L. (cm3)					
pH		9.0	8.5	9.0	
PVT		62.70			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	8	SX

SOLIDS CONTROL

DESILTER

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY
7.50	1140	1130	1910

CENTRIFUGE

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB
441.00	450.00	D	130	6
450.00	465.00	D	140	8

PUMP PRESS kPa

	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
5338	140.0	80	152.0	90

REDUCED PUMP SPEED: 3940 | 90 | 490

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
436.00	1.50	
455.00	1.50	

DRILLER SIGNATURE: David Ruschelnski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	145	1.75	2	DRILL F/ 441m - 450m
145	200	0.25	7	RIG SERVICE
200	730	5.50	2	DRILL F/ 450m - 465m
730	800	0.50	10	ACCUMULATIVE SURVEY TIME

NOTES: CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER eH	STACK TEMP	MAX MUD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	390	41	ENVIRONMENTAL LAND UE	

MORNING TOUR FROM 0 TO 800

INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		David Ruschelnski	8.00		DR
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		Mark Suchey	8.00		MS
FLOOR HAND		KIRK BJORNSON	8.00		KB
LEASE HAND		John Burns	8.00		JB

RATE SCHEDULE: X | REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 183

DAY TOUR — MUD RECORD

MUD TYPE	X	WATER BASED		OIL BASED	
TIME		800	1730	1800	
DENSITY (KG/M3)		1140	1135	1135	
FUNNEL VIS		54	51	54	
W.L. (cm3)					
pH		9.0	8.0	9.0	
PVT		63.30	61.00	61.50	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY
12.00	1135	1125	1920

CENTRIFUGE

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB
465.00	488.00	D	140	5
251.00	370.00	R	80	6

PUMP PRESS kPa

	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
5800	140.0	90	152.0	99

REDUCED PUMP SPEED: ● | ●

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
479.00	1.25	

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	845	0.75	2	DRILL F/ 488M.-498M.
845	900	0.25	7	RIG SERVICE FT. DIVERTER FLOW CHECK
900	915	0.25	10	DEV. SURVEY
915	945	0.50	5	COND MUD & CIRC PRIOR TO P.O.O.H F/ B.H.A
945	1415	4.50	6	FLOW CHECK 488m. P.O.O.H ON BANK FLOW CHECK.
1415	2000	5.75	6	P/U M/U BIT, MUD MOTOR, R.I.H REAM WASH F/ 251M.-370M.
2000				

NOTES: D.W.A.R.S CHECK BRAKE ASSEMBLY SLIP TONG DIES.

HRS RUN	BOILER eH	STACK TEMP	MAX MUD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	11.5	350	63	TRIPPING	0

DAY TOUR FROM 800 TO 1600

INJURIES

CREW	BOC INS NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	12.00		RG
DERRICK HAND		KEVIN FINNING	12.00		KF
MOTOR HAND		DARCY PUKAS	12.00		DP
FLOOR HAND		ALBERT BROWN	12.00		AB
FLOOR HAND		SHELDON MICHEL	12.00		SM

RATE SCHEDULE: X | REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 183

EVENING TOUR — MUD RECORD

MUD TYPE	X	WATER BASED		OIL BASED	
TIME		1800	2130	2330	
DENSITY (KG/M3)		1135	1140	1140	
FUNNEL VIS		54	68	67	
W.L. (cm3)					
pH		8.5	8.5	9.0	
		61.50	61.00	60.50	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	8	SX
LIGNITE	1	SX
DRISPAC	1	SX
BARAZAN	0	SX
CAUSTIC	1	SX

SOLIDS CONTROL

DESILTER

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	1135	1125	1860

CENTRIFUGE

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB
370.00	488.00	R	90	2
488.00	492.00	O	40	8

PUMP PRESS kPa

	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
10900	140.0	95	152.0	105

REDUCED PUMP SPEED: ● | 0 | ●

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschelnski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE
2015	2315	3.00	3	WASH/ REAM F/ 370m - BTM
2315	2400	0.75	2	DRILL F/ 488m - 492m
2400				

NOTES: CHECK BRAKE LINKAGE, TONGS & LINES
OFF BTM PRESS. 10450kpa
LEL CHECK @ SHAKER, SUB, MIXING SHACK BY RIG MANGER D.P

HRS RUN	BOILER eH	STACK TEMP	MAX MUD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	45	REAMING	

EVENING TOUR FROM 1600 TO 2400

INJURIES

CREW	BOC INS NO.	NAME	HRS	YES	NO
DRILLER		David Ruschelnski	4.00		DR
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		KIRK BJORNSON	4.00		KB
LEASE HAND		John Burns	4.00		JB

RATE SCHEDULE: X | REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 183

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	0.0	0.30
1	MOTOR	308	8.96
3	D.C.	229	27.11
1	SHELL JAR	217	0.67
3	D.C.	171	29.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.86
9	H.W.D.P.	156	82.99
	B.H.A 277.56		
6	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	248.81
KELLY DOWN			3.93
TOTAL			486.90
WT. OF D.C.		38	
WT. OF STRING		49	

BIT RECORD

BIT NO.	3A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO.	TC3033
JETS	15.9 15.9 15.9
DEPTH OUT	
DEPTH IN	413.00
TOTAL M DRILLED	75.00
TOTAL HRS RUN	11.00

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN SMHR

HOLE CONDITION

HOLE DRAG
TORQUE AT STTM
FILL ON STTM (m)

EVENING TOUR — MUD RECORD

MUD TYPE	X	WATER BASED		OIL BASED	
TIME		1800	2130	2330	
DENSITY (KG/M3)		1135	1140	1140	
FUNNEL VIS		54	68	67	
W.L. (cm3)					
pH		8.5	8.5	9.0	
PVT		61.50	61.00	60.50	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	8	SX
LIGNITE	1	SX
DRISPAC	1	SX
BARAZAN	0	SX
CAUSTIC	1	SX

SOLIDS CONTROL

DESILTER

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY
4.00	1135	1125	1860

CENTRIFUGE

ROUND SIZE	TOTAL DESILTER (USED)	OVER FLOW DENSITY	UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	DRC	RPM	WOB
370.00	488.00	R	90	2
488.00	492.00	O	40	8

PUMP PRESS kPa

	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
10900	140.0	95	152.0	105

REDUCED PUMP SPEED: ● | 0 | ●

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschelnski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE
2015	2315	3.00	3	WASH/ REAM F/ 370m - BTM
2315	2400	0.75	2	DRILL F/ 488m - 492m
2400				

NOTES: CHECK BRAKE LINKAGE, TONGS & LINES
OFF BTM PRESS. 10450kpa
LEL CHECK @ SHAKER, SUB, MIXING SHACK BY RIG MANGER D.P

HRS RUN	BOILER eH	STACK TEMP	MAX MUD EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.0	350	45	REAMING	

EVENING TOUR FROM 1600 TO 2400

INJURIES

CREW	BOC INS NO.	NAME	HRS	YES	NO
DRILLER		David Ruschelnski	4.00		DR
DERRICK HAND		BRUCE DEJONG	4.00		BD
MOTOR HAND		DAVE GREEN	4.00		DG
FLOOR HAND		Mark Suchey	4.00		MS
FLOOR HAND		KIRK BJORNSON	4.00		KB
LEASE HAND		John Burns	4.00		JB

RATE SCHEDULE: X | REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 183

ALL IN ONE

PASON Rig PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
K.Genest / B.Goodrich	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Safety Meeting (Weekly (Using Check List)
(3.) H2S Sign Posted If Required
(4.) Well Licences & Well Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Weekly Inspect BOPs, Flare Lines & Diverter Lines

(1.) Rig Site Hazards & Safety Meeting (environment/health)
(2.) CADEC Rig Safety Inspection Checklist (monthly/rotate)
(3.) Weld Inspection before Rotating or Loosening
(4.) Chains Below Checked
(5.) Water Hose Checked

RUN 2003 | MONTH 1 | DAY 27

RIG NO. 5

FUEL @ 08:00 HRS

176 | DRILLING HRS

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	J.O. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)

MUD SYSTEM	DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE / MAKE	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
#3	114	34.76	S5-95	73	159	4.5" IU	291	PT-1100	OILWELL	254
MUD DESCRIPTION: LITE CLOUD	114	38.06	S5-95	73	159	4.5" IU	135	PT-1100	OILWELL	254
MUD ADDITIVE: CALM	114	52.45	HWDP	73	159	4.5" IU	21			
MUD WEIGHTED: ICE										

TIME / HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	REPAIR & TEAR DOWN	DRILL ACTUAL	REAMING	BOXING	CORE BBL & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV SURVEY	DRILLING LOSS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING						
MORN		7.50					0.25			0.25																	8.00
DAY		1.25			0.75	9.75				0.25																	8.00
EVE		3.00				4.50	0.25			0.25																	8.00
TOTAL		11.75			0.75	14.25	0.50			0.75																	24.00

SHALE SHAKERS

NO.	MAKE & BRAND	TYPE
1	DERRICK	
2	DERRICK	

CC RSHG CF ARMEN			
TOP	120	BTM	120
TANK	120	TANK	120
DEPTH	120	DEPTH	120

RENTALS

WORK	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	27
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAN?**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	182	

MORNING TOUR

DRILLING ASSEMBLY

NO.		OD	LENGTH
1	BIT	0.30	
1	BIT SUB	229	0.94
3	D.C.	229	27.11
1	BELL JAR	217	6.67
3	D.C.	171	28.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.98
9	H.W.D.P.	156	82.89
	BHA 229.44		
5	DRILL PIPE	STANDS	
2	DRILL PIPE	SINGLES	168.98
KELLY DOWN			13.00
TOTAL			403.38
WT. OF D.C.		36	
WT. OF STRING		40	

BIT RECORD

BIT NO.	2A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1GXP
SERIAL NO.	J17733
JETS	3 X 18.8
DEPTH OUT	
DEPTH IN	242.00
TOTAL M DRILLED	161.00
TOTAL HRS RUN	20.75

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG: 2-4 DAN.

TORQUE AT BTTM: 1435

FILL ON BTTM (m):

MUD RECORD

MUD TYPE	X	WATER BASED		OIL BASED	
TIME		200	400	600	
DENSITY (KG/M3)		1125	1125	1120	
FUNNEL VIS		53	50	48	
W.L. (cm3)					
pH		9.5	9.5	9.5	
PVT		58.20	58.60	59.10	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	7	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	1120	1115	1930
0.00			

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
6300	140.0	90	152.0	90

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
374.00	0.75	

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
358.00	403.00	D	200	6
				7

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	7	RIG SERVICE, CHECK BRAKE ASSEMBLY
15	430	4.25	2	DRILL 311MM. HOLE Fr 358M.-384M.
430	445	0.25	10	DEV. SURVEY
445	800	3.25	2	DRILL Fr 384M.-403M.

NOTES: D.W.A.R.G CHECK BRAKE ASSEMBLY SLIP TONG DIES

CHECKED ALL FIRE EXTINGUISHERS GREASE CROWN

CHANGE TWO 110 SHAKER SCREENS ON # 2 SHAKER

HRS RUN	BOILER (#)	STACK TEMP	MAX RUN EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	350	46	COMPANY POLICYS	

RATE SCHEDULE: X REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 182

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		John Burns	8.00		JB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		ALBERT BROWN	8.00		AB
LEASE HAND		SHELDON MICHEL	8.00		SM

DAY TOUR

DRILLING ASSEMBLY

NO.		OD	LENGTH
1	BIT	0.30	
1	BIT SUB	229	0.94
3	D.C.	229	27.11
1	BELL JAR	217	6.67
3	D.C.	171	28.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.98
9	H.W.D.P.	156	82.89
	BHA 229.44		
5	DRILL PIPE	STANDS	
1	DRILL PIPE	SINGLES	179.96
KELLY DOWN			3.70
TOTAL			413.10
WT. OF D.C.		36	
WT. OF STRING		40	

BIT RECORD

BIT NO.	2A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1GXP
SERIAL NO.	J17733
JETS	3 X 18.8
DEPTH OUT	413.00
DEPTH IN	242.00
TOTAL M DRILLED	171.00
TOTAL HRS RUN	22.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG
3	3	WT	A	E

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS
2.00	BS	HP	7.77

HOLE CONDITION

HOLE DRAG:

TORQUE AT BTTM: 1350

FILL ON BTTM (m):

MUD RECORD

MUD TYPE	X	WATER BASED		OIL BASED	
TIME		900	1300	1400	
DENSITY (KG/M3)		1130	1130	1130	
FUNNEL VIS		58	56	52	
W.L. (cm3)					
pH		9.0	9.0	9.0	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	6	SX
SAWDUST	3	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
	1130	1120	1750

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
6400	140.0	90	152.0	90

REDUCED PUMP SPEED: 0

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
398.00	1.50	

DRILLER SIGNATURE: David Ruscheinski

METRES DRILLED

FROM	TO	DRC	RPM	WOB
403.00	409.00	D	200	6
409.00	413.00	D	200	7

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	915	1.25	2	DRILL Fr 403m - 413m
915	930	0.25	10	DEV. SURVEY
930	1000	0.50	5	CIRC HOLE CLEAN
1000	1230	2.50	6	TRIP OUT BIT # 2, PUMP OUT SINGLES Fr 360± - 356m
1230	1245	0.25	5	CIRC HOLE CLEAN
1245	1900	3.25	6	TRIP OUT, PUMP OUT SINGLES Fr 338m - 298 ft, TRIP OUT BHA
1900				

NOTES: CHECK BRAKE LINKAGE, TONGS & LINES

HRS RUN	BOILER (#)	STACK TEMP	MAX RUN EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	350	60	TRIPPING	

RATE SCHEDULE: X REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 182

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		David Ruscheinski	8.00		DR
DERRICK HAND		BRUCE DEJONG	8.00		BD
MOTOR HAND		DAVE GREEN	8.00		DG
FLOOR HAND		Mark Suchey	8.00		MS
FLOOR HAND		KEVIN FINNING	8.00		KF
LEASE HAND		JEFF MALINOWSKI	8.00		JM

EVENING TOUR

DRILLING ASSEMBLY

NO.		OD	LENGTH
1	BIT	0.30	
1	BIT SUB	229	0.94
1	D.C.	229	27.11
1	BELL JAR	217	6.67
3	D.C.	171	28.22
1	JAR	170	4.67
9	D.C.	170	84.18
1	X.O.	159	0.98
9	H.W.D.P.	156	82.89
	BHA 229.44		
7	DRILL PIPE	STANDS	199.97
	DRILL PIPE	SINGLES	
KELLY DOWN			13.00
TOTAL			441.41
WT. OF D.C.		36	
WT. OF STRING		40	

BIT RECORD

BIT NO.	3A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	M22
SERIAL NO.	TC3033
JETS	15.9 15.9 15.9
DEPTH OUT	
DEPTH IN	00
TOTAL M DRILLED	28.00
TOTAL HRS RUN	3.00

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG:

TORQUE AT BTTM:

FILL ON BTTM (m):

MUD RECORD

MUD TYPE		WATER BASED		OIL BASED	
TIME		2100	2300		
DENSITY (KG/M3)		1130	1175		
FUNNEL VIS		54	55		
W.L. (cm3)					
pH		8.5	9.0		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DISCH DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
6300	140.0	90	152.0	90

REDUCED PUMP SPEED: 0

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
419.00	1.50	

DRILLER SIGNATURE: Jeff Malinowski

METRES DRILLED

FROM	TO	DRC	RPM	WOB
413.00	441.00	D	120	7

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1800	1815	0.25	7	RIG SERVICE FUNC DEVERTER 12 SECS T/C
1815	2045	4.50	6	MAKE UP BIT & RIH REAM & WASH TO ITM 188 - 413
2045	2300	2.25	2	DRILL 413- 431
2300	2315	0.25	10	DEV. SURVEY @ 419
2315	2400	0.75	2	DRILL 431-441
2400				

NOTES: LEL CHECK DONE IN CELLAR, SHACKER, MIXING SHACK BY RIG MANAGER

TEST IGNITER ON FLARE TANK

HRS RUN	BOILER (#)	STACK TEMP	MAX RUN EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	350	NR	POP VALVE	

RATE SCHEDULE: X REGULAR | REPAIR | INVERT

CREW SAFETY DAYS: 182

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		JEFF Malinowski	8.00		JM
DERRICK HAND		KEVIN FINNING	8.00		KF
MOTOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		ALBERT BROWN	8.00		AB
FLOOR HAND		SHELDON MICHEL	4.00		SM
LEASE HAND		John Burns	4.00		JB
LEASE HAND		ROSS GUYNUP	4.00		RG

ALL IN ONE

PASON Rig PRINTOUT

LICENCE NO	WELL NAME AND NO	DAILY CHECKS	YEAR	MONTH	DAY
1981	Anadarko Arrowhead I-75		2003	1	26
OPERATOR	**CONTRACTOR**		RIG NO.	5	
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		FUEL @ 08:00 HRS		
SURFACE LOCATION	**UNIQUE ID**				
60:34:42.30 N 122:58:32.60 W	30011756040122450				
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**				
K.Genest / B.Goodrich	Greg Pukas				

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	K.B. / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	BHS TO CSG HD.	SET AT (m)

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.79	S5-95	73	168	4.5" IU	251	PT-1100	DILWELL	254
114	38.09	S5-95	73	168	4.5" IU	135	PT-1100	DILWELL	254
114	32.48	HWDP	73	168	4.5" IU	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
TIME HRS	MORN	4.25				0.50	2.75			0.50																	8.00
	DAY	9.71	0.29				1.00	0.25		0.75																	12.00
	EVE	7.50						0.25		0.25																	4.00
	TOTAL	17.50	0.29			0.50	3.75	0.50		1.50																	24.00

SHALE SHAKERS	RENTALS	WORK	SAT	SVC
JET 2 TYPE GRAND DERRICK CHAMBER	TYPE 1 X 1			
TOP 120 WEST 120 BOTTOM 120	TOP 120 WEST 120 BOTTOM 120			

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	26
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	181	

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT		0.30
1	BIT SUB	229	0.84
3	D.C.	229	27.11
1	BELL JAR	217	6.67
3	D.C.	171	29.22
1	JAR	170	4.67
6	D.C.	170	84.18
1	X.O.	159	0.96
8	H.W.D.P.	156	82.59
	DRILL PIPE — STANDS		
	DRILL PIPE — SINGLES		
	KELLY DOWN		13.00
	TOTAL		242.38
	WT. OF D.C.	25	
	WT. OF STRING	55	

BIT RECORD

BIT NO.	1 A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1GXP
SERIAL NO	J25787
JETS	3 X 3 X 15.9 28 15.9
DEPTH OUT	242.00
DEPTH IN	0.00
TOTAL M DRILLED	242.00
TOTAL HRS RUN	20.00

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG
4	3	WT	A	E

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR
2.00	RG	PR	

HOLE CONDITION

HOLE DRAG 2-6

TORQUE AT BTTM

FILL ON BTTM (m)

MORNING TOUR — MUD RECORD

MUD TYPE X	WATER BASED	OIL BASED
TIME	200	400
DENSITY (KG/M3)	1110	1115
FUNNEL VIS	52	50
W.L. (cm3)		
pH	10.0	10.0
PVT	29.40	29.90

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	10	SX
DETERGENT	2	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS

CENTRIFUGE

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS
9.00	1120	1110	1860

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS
0.00			

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
196.00	242.00	D	180	6

PUMP

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8700	140.0	90	152.0	90

REDUCED PUMP SPEED: @ @

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
205.00	0.75	
233.00	1.25	

NOTES: D.W.A.R.G. CHECK BRAKE ASSEMBLY SLIP TONG DIES

MHR RUN	BOILER pH	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	11.0	325	39	DRIVING CREW TRUCK	

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	145	1.75	2	DRILL F/ 196M -214M.
145	200	0.25	10	DEV. SURVEY
200	430	2.50	2	DRILL F/ 214M -242M.
430	445	0.25	10	DEV. SURVEY
445	515	0.50	5	COND MUD & CIRC PRIOR TO BIT TRIP. F/ DEV.
515	600	2.75	6	FLOW CHECK P.O.O.H STRAP C/BIT. FLOW CHECK.
				TALLY 242.44M.
				STRAP 241.41
				DIFF. 1.03 M.

MORNING TOUR — CREW

FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00			RG
DERRICK HAND		John Burns	8.00			JB
MOTOR HAND		KIRK BJORNSON	8.00			KB
FLOOR HAND		DARCY PUKAS	8.00			DP
FLOOR HAND		ALBERT BROWN	8.00			AB
LEASE HAND		SHELDON MICHEL	8.00			SM

RATE SCHEDULE X REGULAR REPAIR RIVERT

CREW SAFETY DAYS 181

DAY TOUR — DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT		0.30
1	BIT SUB	229	0.84
3	D.C.	229	27.11
1	BELL JAR	217	6.67
3	D.C.	171	29.22
1	JAR	170	4.67
6	D.C.	170	84.18
1	X.O.	159	0.96
8	H.W.D.P.	156	82.59
	BHA 229.44		
3	DRILL PIPE — STANDS		
1	DRILL PIPE — SINGLES		84.71
	KELLY DOWN		13.95
	TOTAL		336.00
	WT. OF D.C.	25	
	WT. OF STRING	67	

BIT RECORD

BIT NO.	2
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1GXP
SERIAL NO	J17733
JETS	3 X 15.9
DEPTH OUT	
DEPTH IN	242.00
TOTAL M DRILLED	93.00
TOTAL HRS RUN	9.75

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG

TORQUE AT BTTM 1250

FILL ON BTTM (m) 1.00

DAY TOUR — MUD RECORD

MUD TYPE X	WATER BASED		OIL BASED	
TIME	1000	1300	1600	
DENSITY (KG/M3)	1120	1130	1135	
FUNNEL VIS	47	54	55	
W.L. (cm3)				
pH	10.0	10.0	9.5	
PVT	31.20	47.40	47.60	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	23	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS

CENTRIFUGE

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS
12.00	1135	1125	1910

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS

DRILLER SIGNATURE: David Ruschelnski

METRES DRILLED

FROM	TO	DRC	RPM	WOB
242.00	273.00	D	180	5
273.00	300.00	D	200	4
300.00	311.00	D	200	6
311.00	327.00	D	200	7
327.00	335.00	D	200	6

PUMP

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
8470	140.0	86	152.0	86

REDUCED PUMP SPEED: 1380 @ 71 @ 299

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
296.00	1.25	
285.00	0.88	
313.00	1.13	

NOTES: CHECK CROWN SAVER,TONGS & LINES, BRAKE LINKAGE

MHR RUN	BOILER pH	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.5	350	48	ICY CONDITIONS	

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	6	CONTINUE TRIP IN TO 130m
830	845	0.25	3	WASH F/ 130m - 150m
845	915	0.50	6	TRIP IN TO BTM
915	1530	6.25	2	DRILL F/ 242m - 299m
1530	1545	0.25	7	RIG SERVICE
1545	1915	3.50	2	DRILL F/ 299m - 335m
1915	2000	0.75	10	ACCUMULATIVE SURVEY TIME
2000				

DAY TOUR — CREW

FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		David Ruschelnski	12.00			DR
DERRICK HAND		BRUCE DEJONG	12.00			BD
MOTOR HAND		DAVE GREEN	12.00			DG
FLOOR HAND		Mark Buchey	12.00			MS
FLOOR HAND		KEVIN FINNING	12.00			KF
LEASE HAND		JEFF MALINOWSKI	12.00			JM

RATE SCHEDULE X REGULAR REPAIR RIVERT

CREW SAFETY DAYS 181

EVENING TOUR — DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT		0.30
1	BIT SUB	229	0.84
3	D.C.	229	27.11
1	BELL JAR	217	6.67
3	D.C.	171	29.22
1	JAR	170	4.67
6	D.C.	170	84.18
1	X.O.	159	0.96
8	H.W.D.P.	156	82.59
	BHA 229.44		
4	DRILL PIPE — STANDS		113.72
1	DRILL PIPE — SINGLES		9.25
	KELLY DOWN		5.81
	TOTAL		389.00
	WT. OF D.C.	25	
	WT. OF STRING	67	

BIT RECORD

BIT NO.	2
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1GXP
SERIAL NO	J17733
JETS	3 X 15.9
DEPTH OUT	
DEPTH IN	242.00
TOTAL M DRILLED	116.00
TOTAL HRS RUN	13.25

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG 2-4 DAN.

TORQUE AT BTTM 1347

FILL ON BTTM (m)

EVENING TOUR — MUD RECORD

MUD TYPE X	WATER BASED		OIL BASED	
TIME	1800	2100	2400	
DENSITY (KG/M3)	1135	1130	1130	
FUNNEL VIS	50	50	47	
W.L. (cm3)				
pH	10.0	10.0	9.5	
PVT		48.80	57.80	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	21	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS

CENTRIFUGE

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS
8.00	1130	1125	1910

HOURS RUN	SPIGOT DENSITY (KG/M3)	SPIGOT FLOW (M3/HR)	SPIGOT SOLIDS
0.00			

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
335.00	358.00	D	200	6

PUMP

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
9200	140.0	90	152.0	90

REDUCED PUMP SPEED: @ 0 @

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
346.00	0.75	

NOTES: D.W.A.R.G CHECK BRAKE ASSEMBLY SLIP TONG DIES

CONDUCT L.E.L. CHECK @ CELLAR,SHACKER,MIXING SHACK, BY R.M

MHR RUN	BOILER pH	STACK TEMP	MAX IMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	300	42	LAND TITLE ACT	

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2300	3.00	2	DRILL 311MM. HOLE F/ 335M.-358M.
2300	2315	0.25	7	RIG SERVICE. FT. DIVERTER
2315	2330	0.25	10	DEV. SURVEY
2330	2400	0.50	2	DRILL F/ 358M.-358M.

EVENING TOUR — CREW

FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS		INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	4.00			RG
DERRICK HAND		John Burns	4.00			JB
MOTOR HAND		KIRK BJORNSON	4.00			KB
FLOOR HAND		DARCY PUKAS	4.00			DP
FLOOR HAND		ALBERT BROWN	4.00			AB
LEASE HAND		SHELDON MICHEL	4.00			SM

RATE SCHEDULE X REGULAR REPAIR RIVERT

CREW SAFETY DAYS 181

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
Kerry Genest	Greg Pukas

DAILY CHECKS

(1.) Daily Visit Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted if Required
(4.) Wind Indicator & Sock Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Monthly Inspect BOP's, Flare Lines & Diagnostic Lines
(1.) Rig Site Health & Safety Meeting (employees/visitors)
(2.) CADDC Rig Safety Inspection Completed (every/months)
(3.) Visit Inspection before Raising or Lowering
(4.) Derrick Screw Shackled
(5.) Winter Kits Checked

YEAR 2003 | MONTH 1 | DAY 25 | RIG NO. 5 | FUEL @ 06:00 HRS

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.76	S-135	73	158	4.5" IU	291	PT-1160	OILWELL	254
114	39.00	S-135	73	168	4.5" IU	135	PT-1160	OILWELL	254
114	52.40	S-135	73	168	4.5" IU	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	TRIP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	CONC SUB & CORE	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	CLEAN PLEASURE DRIN					
MORN		4.50					0.50			0.50												2.75					8.00
DAY		7.75			2.00		0.25			0.75												0.75	0.50				12.00
EVE		3.50					0.25			0.25																	4.00
TOTAL		15.75			2.00		0.75			1.50												3.50	0.50				24.00

SHALE SHAKERS

NO.	TYPE	MAKE
1	DERRICK	2 X 1
	TOP	120
	WIRE	120
	BOTTOM	120

RENTALS

	WORK	DAY	DYD

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT	0.0	0.30
1	BIT SUB	228	0.94
3	D.C.	228	27.11
1	BELL SUB	217	0.67
1	X.O.	159	0.86
3	D.C.	171	28.22
1	JAR	178	4.67
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
KELLY DOWN			13.00
TOTAL			78.37
WT. OF D.C.		29	
WT. OF STRING			

BIT RECORD

BIT NO	1A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1CXP
SERIAL NO	J25767
JETS	15.9 15.9 15.9 28
DEPTH OUT	
DEPTH IN	0.00
TOTAL M DRILLED	70.00
TOTAL HRS RUN	4.50

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG: NIL
TORQUE AT BTTM:
FILL ON BTTM (m):

MORNING TOUR — **MUD RECORD** — **METRES DRILLED**

MUD TYPE: X WATER BASED | OIL BASED

	WATER BASED	OIL BASED
TIME	200	400
DENSITY (KG/M3)	1040	1045
FUNNEL VIS	55	52
W.L. (cm3)		
pH	10.0	10.0
PVT	27.90	29.00

FROM	TO	DRC	RPM	WOB
0.00	70.00	D	120	6

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	10	51
DETERGENT	1	PAILS
BAPP	2	51

SOLIDS CONTROL

DESILTER: HOURS RUN | DISCH DENSITY (SG/KG) | OVER FLOW DENSITY | UNDER FLOW DENSITY — 0.00

CENTRIFUGE: HOURS RUN | DISCH DENSITY (SG/KG) | OVER FLOW DENSITY | UNDER FLOW DENSITY — 0.00

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
1300	152.0	110	140.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
33.00	0.50	
61.00	0.75	

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	200	2.00	2	LEVEL KELLY BAR SPUD 311MM. HOLE DRILL F/ 0-42M.
200	215	0.25	7	RIG SERVICE FT. CONVERTER
215	230	0.25	10	DEV. SURVEY
230	415	1.75	2	DRILL F/ 42M.-70M.
415	430	0.25	10	DEV. SURVEY
430	515	0.75	2	DRILL F/ 70M.-70M.
515	800	2.75	22	UNPLUG F LOW LINE MUD RING.

NOTES : SPUD @ 24 00 HRS

HRS RUN	BOILER HRS	STACK TEMP	MAX MUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	345		P/U D.C s	

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.0	0.30
1	BIT SUB	228	0.94
3	D.C.	228	27.11
1	BELL SUB	217	0.67
1	X.O.	159	0.86
3	D.C.	171	28.22
1	JAR	178	4.67
9	D.C.	171	84.18
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
KELLY DOWN			13.00
TOTAL			159.35
WT. OF D.C.		34	
WT. OF STRING			

BIT RECORD

BIT NO	1A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1CXP
SERIAL NO	J25767
JETS	15.9 15.9 15.9 28
DEPTH OUT	
DEPTH IN	0.00
TOTAL M DRILLED	159.00
TOTAL HRS RUN	12.25

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG: NIL
TORQUE AT BTTM: 1100
FILL ON BTTM (m):

DAY TOUR — **MUD RECORD** — **METRES DRILLED**

MUD TYPE: X WATER BASED | OIL BASED

	WATER BASED		OIL BASED	
TIME	800	1330	1600	
DENSITY (KG/M3)	1070	1100	1090	
FUNNEL VIS	38	58	57	
W.L. (cm3)				
pH	10.5	10.5	10.5	

FROM	TO	DRC	RPM	WOB
70.00	113.00	D	80	5
113.00	159.00	D	100	5

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	53	51

SOLIDS CONTROL

DESILTER: HOURS RUN | DISCH DENSITY (SG/KG) | OVER FLOW DENSITY | UNDER FLOW DENSITY — 2.00 | 1100 | 1080 | 1730

CENTRIFUGE: HOURS RUN | DISCH DENSITY (SG/KG) | OVER FLOW DENSITY | UNDER FLOW DENSITY — 0.00

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
1900	152.0	110	140.0	

REDUCED PUMP SPEED: 479 | 46 | 103

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
89.00	0.50	
117.00	0.25	
145.00	0.75	

DRILLER SIGNATURE: David Ruscheinski

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	845	0.75	22	TAKE FLOW LINE OFF & CLEAN OUT
845	915	0.50	6	CIRC HOLE CLEAN
915	1115	2.00	2	DRILL F/ 75m - 84m
1115	1145	0.50	23	WORK CONN.
1145	1315	1.50	6	COND MUD & CIRC
1315	1400	0.75	2	DRILL F/ 84m - 103m
1400	1415	0.25	7	RIG SERVICE
1415	1430	0.25	10	DEV. SURVEY
1430	1645	2.25	2	DRILL F/ 103m - 131m
1645	1700	0.25	10	DEV. SURVEY
1700	1845	2.75	2	DRILL F/ 131m - 159m
1845	2000	0.25	10	DEV. SURVEY

NOTES : CHECK BRAKE LOWKAGE, TONGS & LINES

HRS RUN	BOILER HRS	STACK TEMP	MAX MUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00	10.0	350	36	COLLARS	0

DRILLING ASSEMBLY

NO		O.D.	LENGTH
1	BIT	0.0	0.30
1	BIT SUB	228	0.94
3	D.C.	228	27.11
1	BELL SUB	217	0.67
3	D.C.	171	28.22
1	JAR	178	4.67
9	D.C.	171	84.18
1	X.O.	159	0.86
4	H.W.D.P.	114	36.86
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
KELLY DOWN			13.00
TOTAL			196.41
WT. OF D.C.		36	
WT. OF STRING		34	

BIT RECORD

BIT NO	1A
SIZE	311.0
IADC CODE	
MANUFACTURER	WESTERN
TYPE	X1CXP
SERIAL NO	J25767
JETS	15.9 15.9 15.9 28
DEPTH OUT	
DEPTH IN	0.00
TOTAL M DRILLED	196.00
TOTAL HRS RUN	16.75

CUTTING STRUCTURE: TI | To | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG: NIL
TORQUE AT BTTM: 1400
FILL ON BTTM (m):

EVENING TOUR — **MUD RECORD** — **METRES DRILLED**

MUD TYPE: X WATER BASED | OIL BASED

	WATER BASED		OIL BASED	
TIME	1900	2200	2400	
DENSITY (KG/M3)	1090	1090	1100	
FUNNEL VIS	60	58	55	
W.L. (cm3)				
pH	10.0	10.0	10.0	
PVT	31.80	35.90	30.50	

FROM	TO	DRC	RPM	WOB
159.00	196.00	D	100	5
				8

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER: HOURS RUN | DISCH DENSITY (SG/KG) | OVER FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | DISCH DENSITY (SG/KG) | OVER FLOW DENSITY | UNDER FLOW DENSITY — 4.00 | 1100 | 1080 | 1850

20 L/PM: HOURS RUN | DISCH DENSITY (SG/KG) | OVER FLOW DENSITY | UNDER FLOW DENSITY — 0.00

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
3070	152.0	120	140.0	

REDUCED PUMP SPEED: 0

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION
178.00	0.50	

DRILLER SIGNATURE: ROSS GUYNUP

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1900	2230	2.50	2	DRILL 311 MM. HOLE F/ 159M.-187M.
2230	2245	0.25	7	RIG SERVICE FT. CONVERTER
2245	2300	0.25	10	DEV. SURVEY
2300	2400	1.00	2	DRILL F/ 187M.-196M.

NOTES : D W A R G CHECK BRAKE ASSEMBLY SLIP TONG DIES

HRS RUN	BOILER HRS	STACK TEMP	MAX MUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	345	37	CDN D WEATHER	

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	25
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X RIG ☐ MD	180	

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		John Burns	8.00		JB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		ALBERT BROWN	8.00		AB

RATE SCHEDULE | X | REGULAR | | REPAIR | | INVERT

CREW SAFETY DAYS: 180

DAY TOUR FROM 800 TO 2000

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruscheinski	12.00		DR
DERRICK HAND		BRUCE DEJONG	12.00		BD
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		Mark Suchey	12.00		MS
FLOOR HAND		KEVIN FINNING	12.00		KF
LEASE HAND		JEFF MALINOWSKI	12.00		JM

RATE SCHEDULE | X | REGULAR | | REPAIR | | INVERT

CREW SAFETY DAYS: 180

EVENING TOUR FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		John Burns	4.00		JB
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		ALBERT BROWN	4.00		AB
LEASE HAND		SHELDON MICHEL	4.00		SM

RATE SCHEDULE | X | REGULAR | | REPAIR | | INVERT

CREW SAFETY DAYS: 180

ALL IN ONE

PASON Rig PRINTOUT

LICENCE NO.	WELL NAME AND NO
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
Kerry Genest	Greg Pukas

DAILY CHECKS

(1.) Daily Work Around Inspection
(2.) Bolts & Pegs/Bars - Weekly (Using Chain List)
(3.) H2S Pipes Painted If Required
(4.) Work Ladders & Stairs Slippery Painted
(5.) Pipe Lines Stated
(6.) BOP Drills Performed
(7.) Weekly Report BOPs Pipe Lines & Separator Lines
(1.) Rig Site Hazard & Safety Meeting (month/week/month)
(2.) CADRE Rig Safety Inspection Checklist (monthly/month)
(3.) Weld Inspection before Raising or Lowering
(4.) Derrick Bumper Checked
(5.) Motor & Rig Checked

DATE			
2003	1	24

RIG NO. 5

FUEL @ 08:00 HRS

M/S	
WEATHER	CLEAR
WIND DIRECTION	S E
WIND VELOCITY	ICE

LAST CASING	OD (mm)	MIN I.D.	KG / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)
TUBING									
OPEN HOLE									

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S3-05	73	159	4.5" IU	291	PT-1100	OILWELL	254
114	38.00	S3-05	73	159	4.5" IU	139	PT-1100	OILWELL	254
114	53.40	HWDP	73	159	4.5" IU	21			

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	RIG UP & TEAR DOWN	DRILL ACTUAL	RAMMING	GRADING	BOND SUB & ERC	TRIPS	RIG SERVICE	REPAIR RIG	SVY DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	FLUID GAGE	SOURCES/ COUNT	FISHING	DIR. WORK	SAFETY MEETING						
MORN	7.50						0.50														0.25						8.00
DAY	11.50						0.50														0.25						12.00
EVE	3.75				0.25		0.50								0.50						0.25						4.00
TOTAL	21.75				0.25		0.75								0.50						0.75						24.00

SHALE SHAKERS — SIZE: 120 / 120 / 120 / 120 — TYPE: BRANDT DUAL FLO — SCREENING STARTED: X — FINISHED: X — MFR: BRANDT

RENTALS?

	WORK	BAT	DYE

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG

TORQUE AT BTTM

FILL ON BTTM (m)

MORNING TOUR

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

	HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

DRILLER SIGNATURE

METRES DRILLED

FROM	TO	DRC	RPM	WOB

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

NOTES

HRS RUN	BOILER HRS	STACK TEMP	MAX HKLD EXPERIENCED	SAFETY TOPIC	MACP

DAY TOUR

MUD TYPE	X	WATER BASED		OIL BASED	
TIME					
DENSITY (KG/M3)		1030			
FUNNEL VIS		45			
W.L. (cm3)					
pH		10.5			

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	40	SX
CAUSTIC	1	SX
SODA ASH	1	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

	HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

DRILLER SIGNATURE: David Ruschelnaki

METRES DRILLED

FROM	TO	DRC	RPM	WOB
0.00				

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	5.0		6.0	

REDUCED PUMP SPEED: 5

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	21	SAFETY MTG.
815	930	1.25	1	PICK UP DIVERTER FLOW NIPPLE
930	945	0.25	7	RIG SERVICE
945	1800	8.25	1	CONTINUE RIG UP TO SPUD, PICK UP SWIVEL, KELLY BOCK, KELLY BAR
1800	2000	4.00	1	PICK UP 9" DC, MAKE UP BHA, FUNCTION TEST DIVERTER & HCR
2000				

NOTES: CHECK BRAKE LINKAGE, TONGS & LINES.
VISUALLY INSPECT DIVERTER BOWL LINES

HRS RUN	BOILER HRS	STACK TEMP	MAX HKLD EXPERIENCED	SAFETY TOPIC	MACP
12.00	11.0	350	20	DIVERTER	

EVENING TOUR

MUD TYPE	X	WATER BASED		OIL BASED	
TIME				2400	
DENSITY (KG/M3)				1040	
FUNNEL VIS				60	
W.L. (cm3)					
pH				10.0	
PVT		24.90		23.40	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT
GEL	20	SX

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
0.00			

	HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
	0.00			

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB
0.00		0	55	2
			80	6

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM
	140.0		152.0	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2015	0.25	7	RIG SERVICE
2015	2300	2.75	1	RIG UP TO SPUD SURFACE HOLE.
2300	2315	0.25	15	FT. CONVERTER H.C.R
2315	2330	0.25	15	PRESS. TEST CONVERTER, H.C.R CONDUCTOR MUD LINES ETC. 10 MIN. 1500 K.P.A
2330	2345	0.25	21	SAFETY MTG. PRE. SPUD . W/ CREW C.M R.M
2345	2400	0.25	5	COND MUD RAISE VIS. TO 55 PRIOR TO SPUD.
2400				

NOTES

HRS RUN	BOILER HRS	STACK TEMP	MAX HKLD EXPERIENCED	SAFETY TOPIC	MACP
4.00	11.0	345		PRE SPUD	

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	24

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES / NO	179

MORNING TOUR FROM 0 TO 800 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		John Burns	8.00		JB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		ALBERT BROWN	8.00		AB
LEASE HAND		LOUIE McKENZIE	8.00		LM

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS: 179

DAY TOUR FROM 800 TO 2000 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		David Ruschelnaki	12.00		DR
DERRICK HAND		BRUCE DEJONG	12.00		BD
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		Mark Suchey	12.00		MS
FLOOR HAND		KEVIN FINNING	12.00		KF
LEASE HAND		JEFF MALINOWSKI	12.00		JM

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS: 179

EVENING TOUR FROM 2000 TO 2400 — INJURIES

CREW	BOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		John Burns	4.00		JB
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		ALBERT BROWN	4.00		AB

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS: 179

ALL IN ONE

PASON Rig Print Out

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
Kerry Genest	Greg Pukas

DAILY CHECKS

(1) Daily Visit Around Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Licenses & Shale Shakers Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Monthly Inspect BOPs, Flare Lines & Diagnostic Lines
(8) Rig Site Health & Safety Meeting (Minimum Monthly)
(9) CAODC Rig Safety Inspection Checklist (Annually/Monthly)
(10) Visit Inspection before Raising or Lowering
(11) Crown Saver Checked
(12) Motion Alloy Checked

YEAR	MONTH	DAY
2003	1	23

RIG NO. 5

FUEL @ 08:00 HRS

LAST CASING TUBING OR LINER

O.D. (mm)	MIN I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S5-95	73	159	4 1/2 XH	291	PT-1160	OILWELL	254
114	38.00	S5-95	73	159	4 1/2 IU	129	PT-1160	OILWELL	254
114	62.40	NVDP	73	161	4 1/2 IU	31			

CODE NO. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

TIME (HRS)	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DIR. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	TOTAL
MORN																						
DAY	5.00																				3.00	12.00
EVE	4.00																					4.00
TOTAL	13.00																				3.00	16.00

SHALE SHAKERS — No. 1 — Type: Brandt — Screening Changes: 8 X 8

RENTALS

WORK	DAY	EVE

DRILLING ASSEMBLY

NO.		O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

T1	T2	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

NOTES :

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	345			

DAY TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruscheinski

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1400	6.00	1	RIG UP PRE-FABS, RIG IN DIVERTER, RIG UP FLOOR
1400	1700	3.00	21	PRE-SUB SAFETY MTG. WITH ANADARKO MANAGMENT
1700	2000	3.00	1	RIG TO SPUD
				WORKED BOTH CREWS TILL SAFETY MEETING, THEN BROKE TOUR

NOTES :

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
12.00				PRE-SPUD	

EVENING TOUR — MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	DRAW OFF (L/min)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000	2400	4.00	1	RIG IN DIVERTER, RIG TO SPUD

NOTES :

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	340			

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	23
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES / NO	179	

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		John Burns	8.00		JB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		ALBERT BROWN	8.00		AB
LEASE HAND		LOUIE McKENZIE	8.00		LM

RATE SCHEDULE		REGULAR		REPAIR		RIVERT
	X					

CREW SAFETY DAYS: 179

DAY TOUR — FROM 800 TO 2000

CREW	SOC INS NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruscheinski	16.00		DR
DERRICK HAND		BRUCE DEJONG	16.00		BD
MOTOR HAND		DAVE GREEN	16.00		DG
FLOOR HAND		Mark Suchey	16.00		MS
FLOOR HAND		KEVIN FINNING	16.00		KF
LEASE HAND		JEFF MALINOWSKI	16.00		JM

RATE SCHEDULE		REGULAR		REPAIR		RIVERT
	X					

CREW SAFETY DAYS: 179

EVENING TOUR — FROM 2000 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	2.00		RG
DERRICK HAND		John Burns	2.00		JB
MOTOR HAND		KIRK BJORNSON	2.00		KB
FLOOR HAND		DARCY PUKAS	2.00		DP
FLOOR HAND		ALBERT BROWN	2.00		AB
LEASE HAND		LOUIE McKENZIE	2.00		LM

RATE SCHEDULE		REGULAR		REPAIR		RIVERT
	X					

CREW SAFETY DAYS: 179

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
Kerry Genest	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Weekend Inspection - Weekly (using Check List)
(3.) H2S Signs Posted & Required
(4.) Well Licence & Shale Diagram Posted
(5.) Flare Lines Shielded
(6.) BOP Drills Performed
(7.) Monthly Inspect BOP's Flare Lines & Diagonal Lines
(1.) Rig Site Health & Safety Meeting (employee/month)
(2.) CADOC Rig Safety Inspection Checklist (monthly/month)
(3.) Weil Inspection before Rotating or Unlocking
(4.) Ground Fault Checked
(5.) Water Kills Checked

YEAR 2003 | MONTH 1 | DAY 22
RIG NO. 5
FUEL @ 08:00 HRS

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG / M	GRADE	THREAD	NO JOINTS	TOTAL LENGTH	RKB TO CSG HD.	SET AT (m)

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. O.D.	TYPE THRD	NO JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
114	34.70	S-135	73	159	4.5 E.H	251	PT-1100	OILWELL	254
114	30.80	S-135	73	159	4.5 E.H	135	PT-1100	OILWELL	254
114	32.40	HWDP	73	159	4.5 E.H	21			

CODE NO.

TIME / HRS	1 RIG UP & TEAR DOWN	2 DRILL ACTUAL	3 REAMING	4 CORING	5 COND MUD & CIRC	6 TRIPS	7 RIG SERVICE	8 REPAIR RIG	9 CUT DRILLING LINE	10 DEV. SURVEY	11 WIRELINE LOGS	12 RUN CSG & CEMENT	13 WAIT ON CEMENT	14 NIPPLE UP B.O.P.	15 TEST B.O.P.	16 DRILL STEM	17 PLUG BACK	18 SQUEEZE CEMENT	19 PERFS	20 SIDE WORK	21 SAFETY MEETING	22	23	24	25	26	TOTAL
MIDNT																										
DAY	12.00																									12.00
EVE																										
TOTAL	12.00																									12.00

SHALE SHAKERS

NO.	TYPE	MAKE
2	BRAM	

SCREEN CHANGES: 1 X 3 4

TOP	TOP
SIZE	SIZE
BOTTOM	BOTTOM

RENTALS

WORK	DAY	EVE

DRILLING ASSEMBLY

NO.	DRILLING ASSEMBLY	LENGTH
	BIT	O.D.
	DRILL PIPE	STANDS
	DRILL PIPE	SINGLES
	KELLY DOWN	
	TOTAL	
	WT. OF D.C.	
	WT. OF STRING	

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	TO	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN MHR

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR

MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	SHAKER SCREEN(S)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	SHAKER SCREEN(S)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschelnaki

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

NOTES:

HRS RUN	BOILER pH	STACK TEMP	MAX RUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
6.00	10.5	325		OVER HEAD	

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	22
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	177	

MORNING TOUR FROM 0 TO 800

CREW	BOC INS. NO	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		John Burns	8.00		JB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		ALBERT BROWN	8.00		AB
LEASE HAND		LOUIE McKENZIE	8.00		LM

RATE SCHEDULE	X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS: 177

DAY TOUR

MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	SHAKER SCREEN(S)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	SHAKER SCREEN(S)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	2000	12.00	1	FINISH RIGGING UP POWER CORDS, FIRED UP GEN @ 9.00am
				RIG UP WATER & STEAM LINES, BOILER FIRED UP @ 14:00pm
				WATER CIRC. @ 16.00pm
				RIG TO RAISE DERRICK. UP @ 19:00pm
				WORKED BOTH CREWS ON DAYLIGHTS

NOTES:

HRS RUN	BOILER pH	STACK TEMP	MAX RUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	325			

DAY TOUR FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruschelnaki	12.00		DR
DERRICK HAND		BRUCE DEJONG	12.00		BD
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		Mark Suchey	12.00		MS
FLOOR HAND		KEVIN FINNING	12.00		KF
LEASE HAND		JEFF MALINOWSKI	12.00		JM

RATE SCHEDULE	X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS: 177

EVENING TOUR

MUD RECORD

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	SHAKER SCREEN(S)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	SHAKER SCREEN(S)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO 1 LINER SIZE	PUMP NO 1 SPM	PUMP NO 2 LINER SIZE	PUMP NO 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

NOTES:

HRS RUN	BOILER pH	STACK TEMP	MAX RUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
4.00	10.5	325			

EVENING TOUR FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		John Burns	4.00		JB
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		ALBERT BROWN	4.00		AB
LEASE HAND		LOUIE McKENZIE	4.00		LM

RATE SCHEDULE	X	REGULAR		REPAIR		RIVERT

CREW SAFETY DAYS: 177

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO.	WELL NAME AND NO.
1981	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
Kerry Genest	Greg Pukas

DAILY CHECKS

	am	pm
(1) Daily Walk Around Inspection		
(2) Detailed Inspection - Weekly (Using Check List)		
(3) H2S Signs Posted if Required		
(4) Work Licenses & Permits Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually Inspect BOPs, Flare Lines & Degasser Lines		
(1) Rig Site Health & Safety Meeting (4 hrs/crew/month)		
(2) CAODC Rig Safety Inspection Checklist (once/month)		
(3) Weekly Inspection before Raising or Lowering		
(4) Derrick Escape Device		
(5) Motion & Pin Checked		

YEAR 2003 | MONTH 1 | DAY 21 | RIG NO. 5

FUEL @ 08:00 HRS

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	KG/M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LEN. (MM)
114	34.70	S5-95	73	159	4 1/2 IF	251	PT-1100	OILWELL	254
114	28.00	S5-95	73	159	4 1/2 IF	125	PT-1100	OILWELL	254
114	82.40	HWDP	73	159	4 1/2 IF	21			

Hi pot to hold: 34
Equipment Sounded Good: CLEAR
Hole Condition: CALM
Kick Detection: ICE

CODE NO. 1 DRILLING | 2 RIG SERVICE | 3 REPAIR RIG | 4 CUT DRILLING LINE | 5 DEV. SURVEY | 6 WIRELINE LOGS | 7 RUN CSG & CEMENT | 8 WAIT ON CEMENT | 9 NIPPLE UP B.O.P. | 10 TEST B.O.P. | 11 DRILL STEM | 12 PLUG BACK | 13 SQUEEZE CEMENT | 14 PERFING | 15 DIR. WORK | 16 SAFETY MEETING | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26

TYPE HRS	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	PERFING	DIR. WORK	SAFETY MEETING					TOTAL
MORN																										
DAY	1.50																					10.50				12.00
EVE																										
TOTAL	1.50																					10.50				12.00

SHALE SHAKERS

NO.	TYPE	SCREENS
2	BRANDT	210 | 210 | 210

RENTALS

	TYPE	SIZE	SERIAL NO.
DESILTER			
DESANDER			
CENTRIFUGE			

	WORK	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO.	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	21
OPERATOR	**CONTRACTOR**		
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP		
RIG MANAGER	**RIG NO.**		
Greg Pukas	5		
PROVINCE	**CAMP**	**RIG SAFETY DAYS**	
N.W.T.	X YES NO	175	

NO 1 DRILLING ASSEMBLY — BIT | O.D. | LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT OF D.C.
WT OF STRING

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE: T1 | T8 | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR

MUD TYPE	WATER BASED / OIL BASED
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER: HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	
PUMP NO. 1 LINER SIZE	
PUMP NO. 1 SPM	
PUMP NO. 2 LINER SIZE	
PUMP NO. 2 SPM	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

NOTES

HRS RUN	BOILER m³	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
0.00					

MORNING TOUR FROM 0 TO 800

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		John Burns	8.00		JB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		ALBERT BROWN	8.00		AB

RATE SCHEDULE | X | REGULAR | | REPAIR | | RIVERT

CREW SAFETY DAYS: 176

NO 2 DRILLING ASSEMBLY — BIT | O.D. | LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT OF D.C.
WT OF STRING

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE: T1 | T8 | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

DAY TOUR

MUD TYPE	WATER BASED / OIL BASED
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER: HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	
PUMP NO. 1 LINER SIZE	
PUMP NO. 1 SPM	
PUMP NO. 2 LINER SIZE	
PUMP NO. 2 SPM	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: David Ruschelnski

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
900	1700	9.00	22	RH TABLE BEAMS, LEVEL RIG, SPOT ALL LOADS
1700	1830	1.50	22	UNLOAD TUBULARS
1830	2000	1.50	1	STRING POWER CORDS
				WORKED BOTH CREWS ON DAYLIGHTS

NOTES

HRS RUN	BOILER m³	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
0.00				RIG MOVE	

DAY TOUR FROM 800 TO 2000

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		David Ruschelnski	12.00		DR
DERRICK HAND		BRUCE DEJONG	12.00		BD
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		Mark Suchey	12.00		MS
FLOOR HAND		KEVIN FINNING	12.00		KF
LEASE HAND		JEFF MALINOWSKI	12.00		JM

RATE SCHEDULE | X | REGULAR | | REPAIR | | RIVERT

CREW SAFETY DAYS: 176

NO 3 DRILLING ASSEMBLY — BIT | O.D. | LENGTH

DRILL PIPE — STANDS
DRILL PIPE — SINGLES
KELLY DOWN
TOTAL
WT OF D.C.
WT OF STRING

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE: T1 | T8 | MAJOR DULL | LOCATION | BRG

GAGE | OTHER DULL | REASON PULLED | TOTAL RUN HRS

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

EVENING TOUR

MUD TYPE	WATER BASED / OIL BASED
TIME	
DENSITY (KG/M3)	
FUNNEL VIS	
W.L. (cm3)	
pH	

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER: HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

PUMP PRESS kPa	
PUMP NO. 1 LINER SIZE	
PUMP NO. 1 SPM	
PUMP NO. 2 LINER SIZE	
PUMP NO. 2 SPM	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE: ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
2000				

NOTES :

HRS RUN	BOILER m³	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
0.00					

EVENING TOUR FROM 2000 TO 2400

INJURIES

CREW	SOC INS. NO.	NAME	HRS	YES	NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		John Burns	4.00		JB
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		ALBERT BROWN	4.00		AB

RATE SCHEDULE | X | REGULAR | | REPAIR | | RIVERT

CREW SAFETY DAYS: 176

ALL IN ONE

PASON RIG PRINTOUT

LICENCE NO	WELL NAME AND NO
1991	Anadarko Arrowhead I-75
OPERATOR	**CONTRACTOR**
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP
SURFACE LOCATION	**UNIQUE ID**
60:34:42.30 N 122:58:32.60 W	3001756040122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	**SIGNATURE OF CONTRACTOR'S RIG MANAGER**
Kerry Genest	Greg Pukas

DAILY CHECKS

(1.) Daily Walk Around Inspection
(2.) Electrical Inspection - Monthly (Listing Check List)
(3.) H2S Signs Posted & Required
(4.) Well Licence & Plans Displayed Posted
(5.) Fire Lines Stated
(6.) BOP Drills Performed
(7.) Weekly Inspect BOPs, Flare Lines & Degasser Lines
(1.) Rig Site Health & Safety Meeting (environment/crew)
(2.) CAODC Rig Safet Inspection Checklist (environment)
(3.) Mast Inspection before Raising or Lowering
(4.) Crown Saver Checked
(5.) Motor Kills Checked

YEAR	MONTH	DAY
2003	1	20

RIG NO. 5

FUEL @ 08 00 HRS

WEATHER	CLEAR
ROAD CONDITIONS	CALM
	ICE

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D.	K.B. / M	MAKE	GRADE	NO. JOINTS	TOTAL LENGTH	RKB TO CSG HD	SET AT (m)

DC / DP SIZE	MASS	GRADE	MIN I.D.	T.J. OD	TYPE THRD	NO. JNTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH

TIME BREAKDOWN

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	HRS	DAY	SYS
	MORN & TRIP IN/OUT	DRILL ACTUAL	RIG REPAIR	CIRC	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT DRILLING LINE	DIR. SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	RIG MOVE								
MORN																														
DAY																					0.50	11.50					12.00			
SYS																														
TOTAL																					0.50	11.50					12.00			

SHALE SHAKERS

MAKE	TYPE	TYPE
SCREENS CHANNEL	Top	2 / 3
	Bottom	Deck

RENTALS

WORK	DAY	SYS

DRILLING ASSEMBLY

NO	DRILLING ASSEMBLY	O.D.	LENGTH
	BIT		
	DRILL PIPE	STANDS	
	DRILL PIPE	SINGLES	
	KELLY DOWN		
	TOTAL		
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	
SIZE	
IADC CODE	
MANUFACTURER	
TYPE	
SERIAL NO.	
JETS	
DEPTH OUT	
DEPTH IN	
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE

TI	To	MAJOR DULL	LOCATION	BRG

GAGE	OTHER DULL	REASON PULLED	TOTAL RUN time

HOLE CONDITION

HOLE DRAG	
TORQUE AT BTTM	
FILL ON BTTM (m)	

MORNING TOUR

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

NOTES :

HRS RUN	BOILER #1	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
0.00				NORTHERN RULES	

DRILLING CREW PAYROLL DATA

WELL NAME & NO	YEAR	MONTH	DAY
Anadarko Arrowhead I-75	2003	1	20

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	SHEHTAH-WILSON PARTNERSHIP

RIG MANAGER	RIG NO.
Greg Pukas	5

PROVINCE	CAMP	RIG SAFETY DAYS
N.W.T.	X YES ☐ NO	175

MORNING TOUR FROM 0 TO 800

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	8.00		RG
DERRICK HAND		John Burns	8.00		JB
MOTOR HAND		KIRK BJORNSON	8.00		KB
FLOOR HAND		DARCY PUKAS	8.00		DP
FLOOR HAND		ALBERT BROWN	8.00		AB

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS

175

DAY TOUR

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

David Ruschelnski

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	21	SAFETY MEETING WITH M.P.O & ANADARKO
830	2000	11.50	22	LOAD RIG OUT @ RACK SITE, TRAVEL TO LOCATION, & SPOT MATTING
				PIN SUB BASE TO TOP SECTION, PIN DERRICK TOGETHER.
				RECEIVED ALL BUILDINGS
				WORKED BOTH CREWS

NOTES :

HRS RUN	BOILER #1	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
0.00				RIG MOVE	

DAY TOUR FROM 800 TO 2000

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		David Ruschelnski	12.00		DR
DERRICK HAND		BRUCE DEJONG	12.00		BD
MOTOR HAND		DAVE GREEN	12.00		DG
FLOOR HAND		Mark Suchey	12.00		MS
FLOOR HAND		KEVIN FINNING	12.00		KF
LEASE HAND		JEFF MALINOWSKI	12.00		JM

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS

175

EVENING TOUR

MUD TYPE	WATER BASED	OIL BASED
TIME		
DENSITY (KG/M3)		
FUNNEL VIS		
W.L. (cm3)		
pH		

MUD MATERIALS ADDED

PRODUCT	USED	UNIT

SOLIDS CONTROL

DESILTER

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY

PUMP PRESS kPa	PUMP NO. 1 LINER SIZE	PUMP NO. 1 SPM	PUMP NO. 2 LINER SIZE	PUMP NO. 2 SPM

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (M)	DEVIATION	DIRECTION

DRILLER SIGNATURE

ROSS GUYNUP

METRES DRILLED

FROM	TO	DRC	RPM	WOB

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

NOTES :

HRS RUN	BOILER #1	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
0.00				RIG MOVE	

EVENING TOUR FROM 2000 TO 2400

CREW	BOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		ROSS GUYNUP	4.00		RG
DERRICK HAND		John Burns	4.00		JB
MOTOR HAND		KIRK BJORNSON	4.00		KB
FLOOR HAND		DARCY PUKAS	4.00		DP
FLOOR HAND		ALBERT BROWN	4.00		AB

RATE SCHEDULE	X	REGULAR		REPAIR		INVERT

CREW SAFETY DAYS

175