PARAMOUNT

et al

BIG ISLAND

9211 - P33 - 1 - 1

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Drilling Authority No 983

NORTHERN NON-RENEWABLE RESOURCES BRANCH / DIRECTION DES RESSOURCES NON-RENOUVELABLES DU NORD

Date Issued 1981-11-06

APPLICATION FOR A DRILLING AUTHORITY / DEMANDE D'AUTORISATION DE FORAGE

DATE

This notice of intention to begin drilling operations, in triplicate, and where required a plan of survey approved by the Surveyor General showing the target area or the site of the well must be submitted and approved before commencing operations.

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to drill: —

Name and number of well Paramount et al Big Island D-54

Location: Unit E Section 54 Grid 60°40'N 123°30'W

Latitude 60°33' 18.576" N Longitude 123°40' 52.719" W

Unique Well Identifier [illegible]

Universal Well Location Reference 60.55794 N 123.68131° W

Proposed Target Location (if different) _____

Elevation: Ground 463.2 M K.B. 468 (est.) metres above sea-level.

Water Depth (for man-made islands, ice-islands and offshore wells) _____

Well is expected to produce from Middle Devonian Arnica formation at a depth of about 2500 metres Expected total final depth 3300 m K.B.

Area assigned to well _____
(for District Conservation Engineer use only)

Exploration Agreement No _____ Production Licence No _____

Permit No _____ Lease No 398-68 Containing 4779 Hectares

Permittee, licensee, or lessee Shell Canada Resources Limited

Exploratory Licence No 2806

Surface Owned by Crown or Crown

(If patented, submit name and address of owner and occupant)

We propose to use the following strings of casing either cementing or landing them as indicated below: —

	Casing Size O.D. (mm)	Mass (kg/m)	Wall thickness (mm)	Grade	New or Used	Estimated Depth K.B.	Mass of Cement
1	508	94	11.125	H-40	New	10	? t
2	339.73	71.43	8.385	H-40	New	427	72 t
3	244.48	64.74	11.5	N-80	New	1210	60 t
4	177.8						
5							

Expected water, gas, and oil horizons and type of control equipment Gas in Arnica (Middle Devonian) carbonates, control with 3000 psi blowout preventers and capability to kill well at any time with heavy mud.

Well will be drilled with Rotary Rig No 1 by Al-Pine Drilling (Northern) Ltd.
(Name, address of driller)

Responsible agent of applicant: —

Contractor's Business Licence No _____

At well Harold Gourd At registered office W. A. Harris

Address Ft. Liard, N.W.T. Address 1800, 521 - 7th Ave. S.W. Calgary

It is understood that if changes become necessary, notice of the change of plan will be submitted.

Dated at Calgary, this 11th day of July 19 81

Signed by _____ Company Paramount Resources Ltd.

Title Vice President, Operations Operator's Licence No _____

(FOR BRANCH USE ONLY)

APPROVED

This application has been examined and approved subject to the following conditions:

Well Classification: NEW FIELD WILD CAT

ATTACHMENTS #1

* Production casing specifications must be submitted for prior approval before completion operations commence.

Dated NOVEMBER 12 19 81

for District Conservation Engineer

Forms to be submitted to District Conservation Engineer, Department of Indian Affairs and Northern Development

IAND 52-85-1 (5-78)

Voir au verso

Affaires indiennes et du Nord Canada | Indian and Northern Affairs Canada

N° de l'autorisation _____

Date de délivrance _____

DIRECTION DES RESSOURCES NON-RENOUVELABLES DU NORD
DEMANDE D'AUTORISATION DE FORAGE

Avant de commencer les travaux, soumettre (en triple exemplaire) et faire approuver le présent avis (indiquant l'intention d'entreprendre des travaux de forage) et, au besoin, un plan d'arpentage reconnu par l'arpenteur général, montrant l'aire de sondage ou l'emplacement du puits.

Conformément au « Règlement sur les terres pétrolifères et gazifères du Canada », nous demandons l'autorisation d'effectuer des travaux de forage.

Nom et n° du puits _____

Emplacement: Unité _____ Section _____ Étendue quadrillée _____

Latitude _____ Longitude _____

Code d'ordinateur _____

Références universelles d'emplacement du puits _____

Emplacement proposé (s'il est différent) _____

Élévation: du sol _____ du carré d'entraînement _____ mètres au-dessus du niveau de la mer.

Profondeur d'eau (pour les îles artificielles, les îles de glace et les puits en mer _____

Production prévue quand les tiges atteindront la formation _____ à une profondeur approximative de _____ mètres Profondeur totale prévue _____

Superficie assignée au puits _____
(à l'usage de l'ingénieur en conservation du district)

N° d'Accord d'exploration _____ N° de permis de production _____

N° de permis _____ N° de concession _____ Renfermant _____ hectares

Détenteur de permis ou de licence, ou concessionnaire _____

N° de permis de prospection _____

Terres appartenant à la Couronne ou à _____
(Dans le cas de terres réservées, donner le nom et l'adresse du propriétaire et de l'occupant)

Nous prévoyons utiliser les colonnes de tubage suivantes et de les cimenter ou de les sceller, tel qu'il est indiqué ci-dessous: —

	Diamètre extérieur (en mm) de tubages	Masse (kg/m)	Épaisseur (mm)	Qualité	Tubages neufs ou usagés	Profondeur estimative	Masse de ciment
1							
2							
3							
4							
5							

Nappes d'eau, de gaz et de pétrole prévues et genre de matériel anti-éruption _____

Le puits sera foré à l'aide de la tour rotary n° _____ par _____
(Entrepreneur ou société de forage)

Agent responsable pour le requérant: — X : permis de l'entrepreneur _____

Sur le chantier _____ Au siège _____

Adresse _____ Adresse _____

Il est entendu que, dans le cas de modifications indispensables, un avis sera soumis.

Datée — _____ le _____ 19____

Signé par _____ Société _____

Titre _____ N° de licence de sondage de l'exécutant _____

(DIRECTION)

APPROBATION

Demande étudiée et approuvée sous réserve des conditions suivantes: _____

Date _____ 19____ _____
Ingénieur en conservation du district

Présenter les formules à l'ingénieur en conservation du district, Ministère des Affaires indiennes et du Nord canadien.

See Reverse

IAND 52-80-1 (9-78)

Affairs Canada et du Nord Canada

DRILLING AUTHORITY N° / N° DE L'AUTORISATION DE FORAGE: 983

APPLICATION TO ABANDON A WELL [redacted]

DEMANDE D'ABANDON D'UN PUITS OU DE SUSPENSION DU FORAGE

In compliance with the "Canada Oil & Gas Land Regulations", application is hereby made for approval to abandon, to suspend drilling: –

Conformément au Règlement sur les terres pétrolifères et gazélifères du Canada, nous demandons l'autorisation d'abandonner le puits ci-après ou de suspendre les travaux de forage.

NAME & N° OF WELL: PARAMOUNT et al BIG ISLAND E-54

LOCATION: UNIT / EMPLACEMENT: UNITÉ	SECTION	GRID – ÉTENDUE QUADRILLÉE	LATITUDE	LONGITUDE
E	54	60°40'N 123°30'W	60°33'28.58"N	123°40'52.72"

UNIVERSAL WELL LOCATION REFERENCE – RÉFÉRENCE UNIVERSELLES D'EMPLACEMENT DU PUITS: 60.55794°N 123.68131° W

UNIQUE WELL IDENTIFIER N° – CODE D'ORDINATEUR: 300E546040123300

PERMIT N° – N° DE PERMIS	LEASE N° – N° DE CONCESSION	EXPLORATION AGREEMENT N° – N° D'ACCORD D'EXPLORATION	DATE OF COMMENCEMENT OF PROPOSED PROGRAM / DATE – DÉBUT D'EXÉCUTION DU PROGRAMME PROJETÉ
	398-68		1982-12-12

HOLDER – TITULAIRE: Shell Canada Resources Limited

OIL, GAS & WATER ENCOUNTERED (DEPTH) – PÉTROLE, GAZ ET EAU (PROFONDEUR)

OIL AT – PÉTROLE À	GAS AT – GAZ À	WATER AT – EAU À
none	none	none

TOTAL DEPTH – PROFONDEUR GLOBALE	DATE OF LAST OPERATIONS – DATE DES DERNIERS TRAVAUX	PRESENT CONDITION OF WELL – ÉTAT ACTUEL DU PUITS
2771 m	1982-12-14	Plugged and abandoned

CASING RECORD – TUBAGE

	CASING SIZE OD (mm) / DIAMÈTRE EXTÉRIEUR (mm)	MASS – MASSE	AMOUNT – LONGUEUR	SET AT – FIXATION À	MASS OF CEMENT & ADDITIVES / MASSE DE CIMENT ET D'ADDITIFS	AMOUNT PULLED / LONGUEUR RÉCUPÉRÉE
1	508 mm	Conductor	9 m	9 m	not recorded	-
2	339.7	71.42	406.99	406	80 tonnes + 3% $CaCl_2$	-
3	244.5	64.74	1206.31	1205	80 tonnes + 0.75% T10 + 0.5% D19 + 0.3% R5	-
4	177.8	34.2 to 43.2	2543.46	2544 Stage 1	20.5 tonnes + 40% Silica + 0.75% T10 + 1.2% R5	
5				Stage 2	12 tonnes + 0.75% T10 + + 0.4% R5	

PROPOSED ABANDONMENT PROGRAM – PROGRAMME D'ABANDON PROJETÉ

PLUG – BOUCHON N°	PLUG – BOUCHON POSITION – PROFONDEUR	GEOLOGICAL FORMATION / FORMATION GÉOLOGIQUE	MASS OF CEMENT / MASSE DE CIMENT	REMARKS – REMARQUES
1	2700-2600	Besa River	4.1 tonnes + 0.4% R55 + 0.75% T10	Felt at 2536 8000 daN
2	2536-2482	Besa River	1.3 tonnes +0.4% R55 + 0.75% T10	Felt at 2472 10000 daN
3	23-08	Unconsolidated surface deposits	0.65 tonnes	

THE FOLLOWING LOGS HAVE BEEN RUN – LES DIAGRAMMES SUIVANTS ONT ÉTÉ TRACÉS

See attached

OTHER OPERATIONS PROPOSED – AUTRES TRAVAUX PROJETÉS

None

OPERATIONS TO BE CARRIED OUT BY – LES TRAVAUX SERONT EXÉCUTÉS PAR

Nowsco, 9th Floor, Norcen Tower, Calgary, Alberta

ADDRESS – ADRESSE

AUTHORIZED AGENT OR FIELD AGENT EXTERIOR RESPONSABLE	ADDRESS – ADRESSE	DATED AT – FAIT À	DATE
W.S. George	on wellsite	Calgary, Alberta	83-03-14

SIGNATURE	TITLE – TITRE	COMPANY – SOCIÉTÉ
	Vice President, Operations	Paramount Resources Ltd.

The District Conservation Engineer's office must be notified before work is commenced. NOTA: Aviser le bureau de l'ingénieur en conservation du district avant de commencer les travaux.

APPROVAL (FOR BRANCH USE ONLY)

Application has been examined & proposed program approved, subject to the following conditions:

APPROBATION (À L'USAGE DE LA DIRECTION)

Demande étudiée et programme approuvé, sous réserve des conditions suivantes:

SIGNATURE OF ENGINEER – SIGNATURE DE L'INGÉNIEUR DU DISTRICT

DATE: 25 Mar 83

PRESENTED BY DISTRICT CONSERVATION ENGINEER, DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

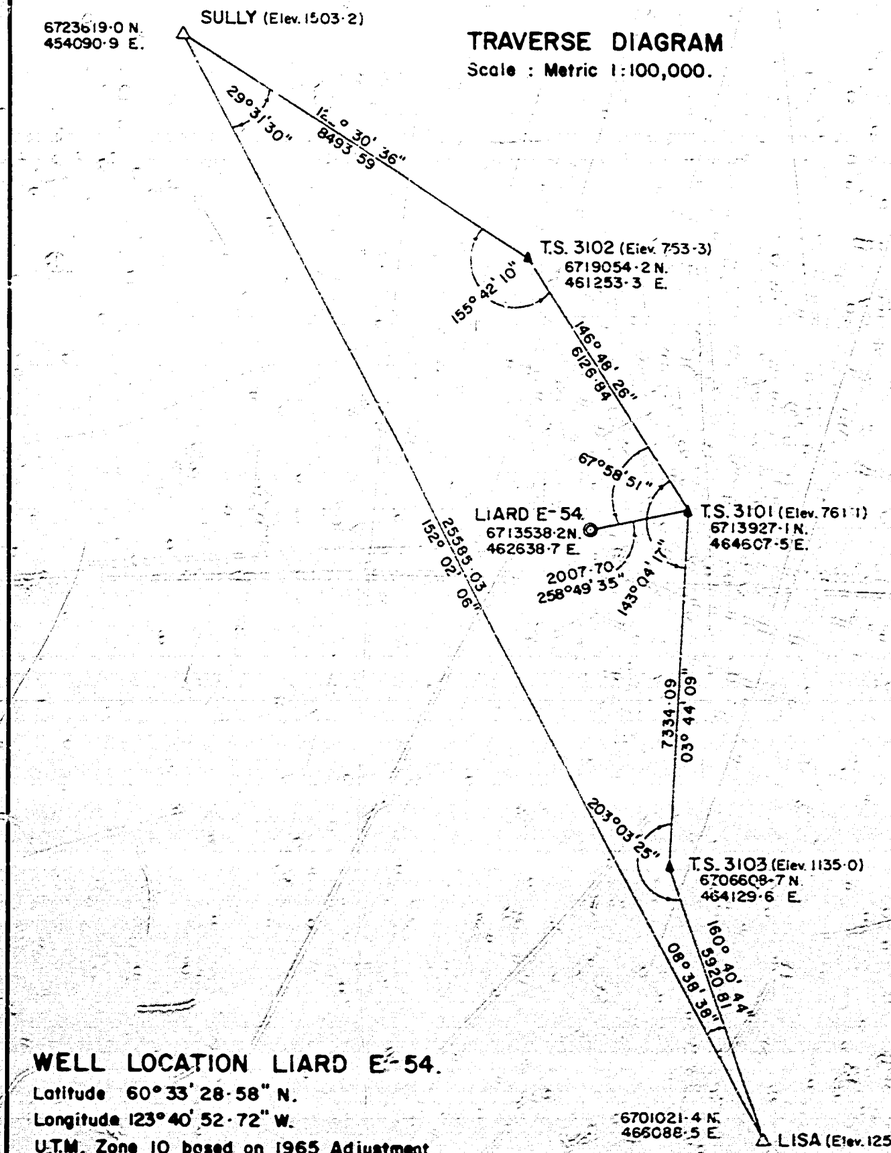
PRÉSENTÉ PAR L'INGÉNIEUR EN CONSERVATION DU DISTRICT, MINISTÈRE DES AFFAIRES INDIENNES ET DU NORD CANADIEN

LOG RECORD - E-54

Run	Type of Log	From	To
1	Cement Bond Variable Density GR	392 m	4 m
2	"	1178	341
3	"	1192	350
4	"	2538	750
1	Casing Profile Caliper	363	surface
2	"	1158	"
3	"	1150	"
4	"	2250	"
1	Borehole Compensated Sonic	2206	993
2	"	2462	1675
3	"	2692	2540
1	Gamma Ray Neutron	2686	2200
1	Dipmeter	2692	2540

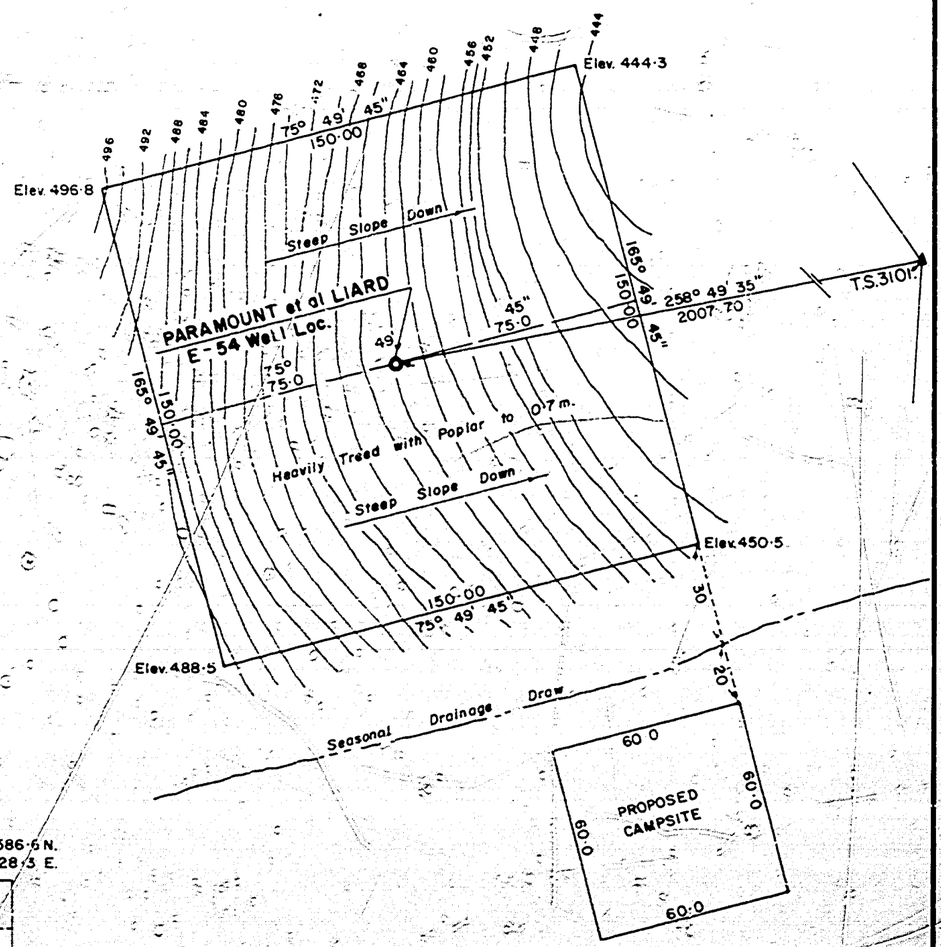
TRAVERSE DIAGRAM

Scale : Metric 1:100,000.



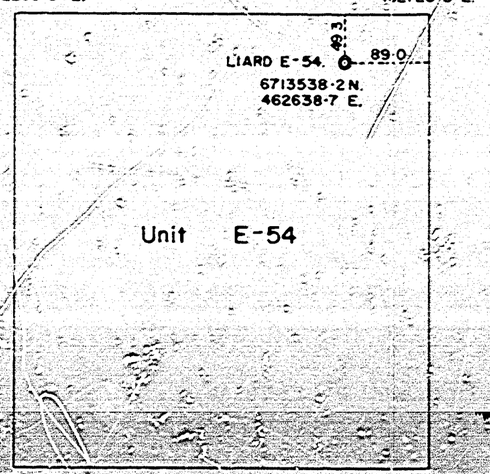
DETAIL PLAN

Scale : Metric 1:1500.



UNIT DETAIL

Scale : Metric 1:5000.



WELL LOCATION LIARD E-54.

Latitude 60° 33' 28·58" N.
Longitude 123° 40' 52·72" W.
U.T.M. Zone 10 based on 1965 Adjustment.
N. 6713538·2
E. 462638·7
Well Location Ground Elevation 463·1
DATUM : Trig. Station LISA
Elevation : 1252·4

CO-ORDINATE TABLE

STA.	AZIMUTH	DISTANCE	NORTHING	EASTING
SULLY			6723619·0	454090·9
	122° 30' 36"	8493·59		
TS.3102			6719054·2	461253·3
	146° 48' 26"	6126·84		
TS.3101			6713927·1	464607·5
	183° 44' 09"	7334·09		
TS.3103			6706608·7	464129·6
	160° 40' 44"	5920·81		
LISA			6701021·4	466088·5

NOTE : AZIMUTHS SHOWN ARE GRID AZIMUTHS REFERRED TO CENTRE MERIDIAN 123° 00' (ZONE 10)
DISTANCES ARE REDUCED TO SEA LEVEL AND CORRECTED TO GRID.

PARAMOUNT ~~OIL & GAS~~ RESOURCES LTD.

OUTLINE PLAN SHOWING

SURVEY AND TOPOGRAPHIC FEATURES OF EXPLORATORY WELL

PARAMOUNT ET AL LIARD E-54

GRID AREA 60° 40' N. Lat. 120° 30' W. Long.

by : McElhanney Associates
10014-97th. Ave., Suite 202, Fort St. John, B.C.
Telephone : 787-0356.

Job N° 191439.

DEPARTMENT OF INDIAN AFFAIRS & NORTHERN DEVELOPMENT
MINISTÈRE DES AFFAIRES INDIENNES ET DU NORD CANADIEN

OIL & MINERAL DIVISION
DIVISION DU PÉTROLE ET DES MINÉRAUX

WELL COMPLETION DATA
RENSEIGNEMENTS SUR LES FORAGES

Drilling Authority No. 983
N° de l'autorisation de forage
Date Issued 1981-11-06
Date de délivrance

To be submitted in duplicate within thirty days after the completion, rework, abandonment, recompletion or suspension of every well.
À présenter en double dans les trente jours suivant l'achèvement, le remaniement, l'abandon et le reconditionnement de chaque puits, ou après suspension.

Well Name & No. — Nom et n° du puits	Permit No. — N° de permis	Lease No. — N° de concession
PARAMOUNT et al BIG ISLAND E-54		398-68

Permittee, License, Lessee — (Détenteur de permis ou de licence, du concessionnaire)	Exploratory Licence No. — N° de licence de sondage
Shell Canada Resources Limited	2805
Operator — (Exécutant) Paramount Resources Ltd.	Exploratory Licence No. — N° de licence de sondage 393

EMPLACEMENT

Unit — Unité	Section	Grid — Étendue quadrillée	Latitude	Longitude
E	54	60°40'N 123°30'W	60°33'28.58"N	123°40'52.72"W

Well Identification — Code d'identification	Universal Well Location Reference — Références universelles d'emplacement du puits
300E546040123300	60.55794°N 123.68131°W

	Date	Depth — Profondeur
Spudded — Début des travaux	81-12-13	
Suspended — Suspension des travaux		
Resumed Operations — Reprise des travaux		
Finished Drilling — Forage terminé	82-11-11	2271
Deepened — Approfondissement		
Completed (Gas/Oil) — Achèvement (Gaz/Pétrole)		
Abandoned — Abandon	82-12-4	2271
Rig Released — Fin des travaux	82-12-14	2271

Pool(s) — Gisement(s): None

Interval(s) Open to Production — Intervalle(s) de production: None

Elevation: Gr. — Altitude du sol: 463.2 K.B. — du carré d'entraînement: 472.2

Rig No. — N° de la tour de forage: 85

Drilling Contractor — Entrepreneur en forage: S & T Drilling (Northern) Ltd.

Contractor's Business Licence No. — N° du permis de l'entrepreneur: 128

CASING RECORD — TUBAGE

	Casing Size (inches) — Diamètre (en pouces)	Grade — Qualité	Weight — Poids	Amount — Longeur	Set at — Fixation à	Sacks of Cement and Additives — Sacs de ciment et d'additifs
1.	508 mm	Conductor		9	9	not recorded
2.	339.7	H40	71.42	406.99	406	80 tonnes + 3% $CaCl_2$
3.	244.5	N80	64.74	1206.31	1205	80 tonnes + 0.75% T10+ 0.5%D19 + 0.3% R5
4.	177.8	MN80	34.2 to 43.2	2543.46	2544	Stage 1) 20.5 tonnes + 40% Silica + 0.75% T10 + 1.2% R5
5.						
6.	Stage 2) 12 tonnes + 0.75% T10 + 0.4% R5					

Geological Tops — Sommet des formations	Elevation — Profondeur: Depths — Sous le niveau du sol	Sub-Sea — Sous le niveau de la mer
none; entire hole drilled in Besa River formation.		

Core Record — Carottes

From — de	To — à	Rec. — Récup.	From — de	To — à	Rec. — Récup.
no cores					

Log Record — Diagrammes

Run — Série	Type of Log — Genre de diagramme	From — De	To — À
	See attached		

Date	From - de	To - à	Remarks - Remarques
	SEE ATTACHED LIST		

PERFORATING RECORD (Bullet, Jet)
PERFORATION (à balles, à jet)

Date	From - de	To - à	Remarks - Remarques
	NO PERFORATIONS		

Date	From - de	To - à	Remarks - Remarques
	NO SERVICING		

DRILL STEM TESTS — *ESSAIS AUX TIGES*

No.	Date	Formation	From - de	To - à	V.O. Mins. Ouverture (minutes)	I.S.I. Mins. Première obturation (minutes)	F.S.I. Mins. Obturation définitive (minutes)	I.S.I.B.H.P. Pression de fond à la 1re obturation	F.S.I.B.H.P. Pression de fond à l'obturation définitive	I.F.B.H.P. Pression de fond au jaillissement	F.F.B.H.P. Pression de fond à l'écoulement définitif	I.H.P. Pression hydrostatique de début	F.H.P. Pression hydrostatique définitif	Remarks - Remarques
			NO TESTS											

ANALYSIS — *ANALYSE*

Test No. N° de l'épreuve	Sample Échantillon	From - de	To - à	Source	Remarks - Remarques
		NO ANALYSES			

PRESENT STATUS OF WELL
ÉTAT ACTUEL DU PUITS

Oil Pétrole			(Interval) (Intervalle)
Gas Gaz			(Interval) (Intervalle)
Dry Sec		X	
Susp. Travaux sus.			

Company Société: Paramount Resources Ltd.

Signed by Signé par: [signature]

Title Titre: K. A. Harris
Vice President, Operations

Date: 83-03-10

Forms to be prepared in duplicate and forwarded to the District Conservation Engineer.

Présenter les formules remplies à l'ingénieur en conservation du district.

CEMENTING RECORD - PARAMOUNT et al BIG ISLAND E-54

Date	From	To	Remarks
Dec. 16, 1981	34 m	0	1000 sacks in 17 1/2" hole to stop loss of circulation.
Dec. 2?, 1981	73	0	200 sacks + 6% $CaCl_2$ re-cementing conductor barrel.
Feb. 10, 1982	425	371	14 1/2 tonnes + 3% $CaCl_2$ cementing fish in sidetrack.
Feb. 22, 1982	750	711	14.6 tonnes + 1 1/2% $CaCl_2$, cementing lost bit to sidetrack.
Apr. 30, 1982	2146	1205	40 tonnes + 1% T10, cementing fish for sidetrack.
May 12, 1292	1230	990	13.6 tonnes. Plug back to sidetrack through casing.
August 14, 1982	2604	2378	8.7 tonnes + 0.2% R5 + 1.0% T10. Plug back to sidetrack.
August 18, 1982	2604	2369	6.0 tonnes + 0.2% R5 + 1.0% T10. Repeat of above.
August 21, 1982	2604	2379	6.7 tonnes + 10% salt + 0.45% R5 + 0.75% T10. Repeat of above.
Sept. 28, 1982	2555	2296	11 tonnes + 10% Salt + 0.45% R5 + 0.75% T10. Plug back to sidetrack.
Dec. 11, 1982	2700	2600	4.1 tonnes + 0.4% R55 + 0.75% T10. Abandonment Plug #1. Felt at 2536 8000 daN.
Dec. 12, 1982	2536	2482	1.3 tonnes + 0.4% R55 + 0.75% T10. Abandonment Plug #2. Felt at 2472 10000 daN.
Dec. 14, 1982	23	8	0.65 tonnes. Abandonment Plug #3.

LOG RECORD - E-54

Run	Type of Log	From	To
1	Cement Bond Variable Density GR	392 m	4 m
2	"	1178	341
3	"	1192	350
4	"	2538	750
1	Casing Profile Caliper	363	surface
2	"	1158	"
3	"	1150	"
4	"	2250	"
1	Borehole Compensated Sonic	2206	993
2	"	2462	1675
3	"	2692	2540
1	Gamma Ray Neutron	2686	2200
1	Dipmeter	2692	2540

ACTION SLIP

WELL HISTORY REPORTS

Project No. 9211-P33-1-1 .....

The following action has been taken:

Receipt acknowledged ..✓..

Well card made ..✓..

Reports and maps and logs date-stamped ..✓..

Reports labelled ..✓..

Date Rec'd entered in Project Ledger ..✓..

Confidential Sections removed:

(micro) paleontological ..—..

palynological ..—..

OR Source Rock Analyses / Geochemical Analyses ..—..

Other

Land Management memo sent ..✓..

REVIEW and APPROVAL MADE BY:

Engineering Branch .....

Resource Evaluation D.R.Bates 83-11-14

Environmental Protection M.J.R. 27/2/84

PLEASE NOTE COMMENTS ON ATTACHED SHEET

PROJECT NUMBER 9211-P33-1-1

COMPANY Paramount Resources Ltd.

REPORT TITLE well history: Paramount et al Big Island E-54

COMMENTS:

ENGINEERING BRANCH

ENVIRONMENTAL PROTECTION BRANCH

RESOURCE EVALUATION BRANCH

Page 2 of well history claims that sample descriptions were forwards Dec 22 1982. I don't see these in the box. DPR 3 mths 83-11-14

→ strip log in box is sufficient LRS. 82-11-14

FINAL WELL REPORT

PARAMOUNT ET AL BIG ISLAND E-54

Section I - Summary of Well Data

(a) Well Name and Number
Paramount et al Big Island E-54
Grid - 60°40'N, 123°30'W

(b) Permittee, Licencee or Lessee
Shell Canada Resources Limited

(c) Operator
Paramount Resources Limited
1800, 717 Seventh Avenue S. W.
Calgary, Alberta T2P 0Z3

(d) Location
N.W.T. Unit E, Section 54, Grid 60°40'N, 123°30'W
Universal Well Location Reference No. 60.55794°N, 123.68131°W
Unique Well Identifier 300E546040123300

(e) Co-ordinates
49.3 m S of N Boundary of Unit E
89.0 m W of E Boundary of Unit E

(f) Permit or Lease Number
P&NG Lease 398-68

(g) Drilling Contractor
S & T Drilling (Northern) Ltd.
5825 - 98th Street, Edmonton, Alberta
Rig #85 O.I.M.E. Model SL 750

(h) Drilling Authority
#983 issued 1981-11-06

(i) Classification
New Field Wildcat

(j) Elevations
Ground 463.2 m K.B. 472.2 m

(k) Spud Date
1981-12-13

(l) Completed Drilling Date
1982-11-11

(m) Total Depth 2771 m
True Vertical Depth 2758 m

(n) Well Status
Dry and Abandoned

(o) Date Rig Released
1982-12-14

(p) Hole sizes to total depth
444.5 mm to 407 m
311.2 mm to 1205 m
215.9 mm to 2546 m
152.4 mm to 2771 m

(q) Casing
508 mm conductor pipe to 9 m
339.7 mm 71.42 kg/m H-40 to 406 m
244.5 mm 64.74 kg/m N-80 to 1205 m
177.8 mm bottom 43.2 kg/m MN80 LT&C 508.79 m
to 38.7 kg/m MN80 LT&C 753.3 m
top 34.2 kg/m MN80 LT&C 1234.2 m
43.2 kg/m MN80 LT&C 45.24 m
float at 2517 m 1.93 m
DV tool at 1064 m
Casing landed at 2544 m

Section II - Geological Summary

(a) Formation Tops
No formation tops were encountered in this well. It was spudded in the Besa River shales and terminated in the same formation.

(b) Coring
No coring was undertaken in this well.

(c) Core Descriptions
Not applicable

(d) Sample Description
Forwarded December 22, 1982

(e) Paleontological Determinations
Paramount Resources Ltd. has no paleontologists, but Shell Canada Resources Limited studied samples from 1830 to 2120 m. Their determinations are attached.

Section III - Engineering Summary

(a) Drill stem tests
No tests were run

(b) Casing record
See Section II (q)

(c) Bit record
Attached

(d) Mud Report
Attached

(e) Deviation Record

Depth	Deviation	Azimuth	Depth	Deviation	Azimuth
158	3°+		777	6.9	S58W
168	3 1/4	N84E	796	7.7	S62W
244	5	N88E	834	7.5	S72W
246	4 3/4	S86E	853	8.0	S71W
263	5.4	N88E	872	8.1	S81W
273	5.5	N87E	890	8.6	S85W
283	4.9	N74E	907	8.2	S85W
312	3.4	N82E	938	8.8	S89W
331	2.5	N76E	1050	8.0	N79W
351	2.5	N77E	1078	7.6	N72W
369	2.1	N57E	1108	7.0	N64W
392	2.1	N55E	1137	6.1	N60W
489	2.9	N67E	1228	6.2	N42W
528	2.3	S87E	1286	6.9	N38W
565	2.5	S54E	1344	7.8	N31W
604	1.7	S28E	1364	8.0	N25W
623	2.2	S24E	1379	7 3/4	N19W
633	2.5	S14E	1399	7.7	N09W
652	1.9	S26W	1428	8.2	N05W
670	2.5	S87W	1457	8.2	N15E
689	3.9	S87W	1486	8.0	N23E
708	6.2	W	1515	8.3	N30E
728	6.5	S84W	1544	9.0	N39E
747	6.9	N88W	1563	8.5	N43E
786	6.9	N77W	1582	7.4	N48E
Plugged back to 711			1614	8.1	N55E
718	4.9	S72W	1649	9.0	N54E
728	4.6	S62W	1669	9.3	N52E
756	6.2	S47W	1697	9.3	N53E

(e) Deviation Record (Continued)

Depth	Deviation	Azimuth	Depth	Deviation	Azimuth
1719	9.2	N51E	1272	5	N06E
1745	9.9	N56E	1292	4.8	N13E
1783	10.0	N58E	1311	4.9	N21E
1823	10.3	N61E	1330	5.1	N23E
1860	10.9	N62E	1349	5.5	N27E
1899	11.0	N66E	1368	6	N29E
1946	13.3	N68E	1388	5.9	N33E
1985	16.1	N69E	1407	5.1	N38E
2013	18.1	N69E	1427	5.1	N39E
2053	20.4	N78E	1446	5.5	N42E
2071	21.5	N74E	1465	5.3	N45E
2099	19.5	N78E	1484	5.1	N47E
2131	17.2	no reading	1504	5.2	N51E
Plugged back to 1205			1532	5	N48E
Got stuck, pipe parted.			1551	4.7	N49E
Milled out window in casing,			1570	4.2	N53E
plugged back to 1000 and			1600	4	N54E
sidetracked through casing			1619	4.9	N51E
window.			1628	5	N53E
1007	8.1	S80W	1638	5	N53E
1046	3.9	S50W	1657	5.6	N49E
(possible casing interference)			1667	5.6	N53E
1056	2.1	S66W	1686	5.9	N53E
1076	1.2	S62W	1696	6.1	N54E
1104	1/4	N20E	1715	6.6	N52E
1171	1.8	N34E	1725	7	N51E
1199	3.7	N01W	1738	7.1	N54E
1209	4.6	N09W	1744	7	N54E
1241	4.8	N10W	1753	6.8	N58E
1253	5.2	N02E	1764	6.6	N63E

(e) Deviation Record (Continued)

Depth	Deviation	Azimuth	Depth	Deviation	Azimuth
1774	6.5	N66E	2256	6.8	N78E
1781	6.6	N69E	2294	6.4	N78E
1791	6.7	N75E	2323	6.3	N78E
1792	6.4	N73E	2354	6.3	N74E
1816	6.7	N73E	2392	6.1	N66E
1835	6.6	N72E	2421	6.6	N63E
1855	6.8	N75E	2450	7	N62E
1874	6.6	N74E	2483	6.9	N66E
1894	6.9	N70E	2527	6.8	N66E
1903	6.9	N73E	Plugged back to 2414		
1913	7.0	N75E	2419	5.6	N54E
1923	6.9	N73E	2429	5.0	N46E
1945	7.1	N72E	2439	4.6	N34E
1955	7.6	N71E	2440	4.5	N37E
1962	7.8	N71E	2455	4.1	N31E
1971	7.6	N65E	2464	3.9	N12E
1994	7.8	N67E	2474	3.6	N40E
2013	8.1	N61E	2483	3.3	N39E
2020	8.5	N68E	2510	3	N30E
2033	8.6	N70E	Plugged back to 2354		
2041	8.8	N66E	2371	6	N87E
2067	9.5	not recorded	2389	6.4	S75E
2083	9.5	not recorded	2400	6.8	S65E
2104	8.9	not recorded	2405	6.8	S55E
2118	8.2	N68E	2400	6.8	S65E
2137	8	N69E	2422	7.1	S56E
2167	6.5	N43E	2451	6.8	S54E
2186	6.8	N41E	2484	5.8	S57E
2216	7	N76E	2532	4.3	S56E
2236	6.8	N79E	2590	4.5	not recorded
			2636	3	S77E
			2687	2.2	S54E

(f) Abandonment Plugs

Plug #1 2700-2600 m 4.1 tonnes OWG + 0.4% R-55 + 0.75% T-10
Down at 04:30 hrs. 82/12/11
Felt with 8000 daN at 2536 m

Plug #2 2536-2482 m 1.3 tonnes OWG + 0.4% R-55 + 0.75% T-10
Down at 1645 hrs. 82/12/11
Felt with 10000 daN at 2472 m

Plug #3 23-0 m 0.65 tonnes OWG

(g) Lost Circulation Zones
Lost circulation was encountered only while drilling surface hole in unconsolidated material.

(h) Blowouts
No blowouts occurred

Section IV - Logs

Jan. 16, 1982	Cement Bond Variable Density GR	392 - 4.1 m
Jan. 22, 1982	Casing Profile Caliper	363 - surface
Mar. 11, 1982	Casing Profile Caliper	1158 - surface
Mar. 11, 1982	Cement Bond Variable Density GR	1178 - 341 m
May 5, 1982	Cement Bond Variable Density GR	1192 - 350 m
May 6, 1982	Casing Profile Caliper	1150 - surface
July 9, 1982	Borehole Compensated Sonic	2206 - 993 m
Aug. 13, 1982	Borehole Compensated Sonic	2462 - 1675 m
Oct. 23, 1982	Cement Bond Variable Density GR	2538 - 750 m
Oct. 23, 1982	Casing Profile Caliper Log	2250 - surface
Nov. 16, 1982	Gamma Ray Neutron	2686 - 2200 m
Dec. 1, 1982	Borehole Compensated Sonic	2692 - 2540 m
Dec. 3, 1982	Continuous Dipmeter	2692 - 2540 m

Section V - Analysis

No cores, water, gas or oil were recovered from this well for analysis.

Severe problems were encountered in the drilling of the Paramount et al Big Island E-54 well. A brief description and analysis of these problems follows.

Air drilling had been planned for the 311 mm hole, however the hole could not be dried. Drilling was resumed with KCl mud and generally the 311 mm hole encountered little in the way of serious problems.

Air drilling was used again upon drilling out of the 244 mm casing. The collars became stuck at about 1358 m and it was necessary to mud up to wash over the collars. No clear reason was determined for getting stuck at this point. This would lead one to believe the cause was human error or undetected mechanical problems. As a result it is difficult to predict the possibility of using air successfully in another well.

The fish was recovered and drilling resumed with KCl mud. Deviation became a problem below 1900 m. Sloughing shale stuck the pipe several times at 2118 m and again at 2146 m. The pipe then parted, and it was decided to cut a window in the casing. Several causes probably contributed to getting stuck. The deviation created a high torque and drag situation. The sloughing shale problem was aggravated by increasing the pump rate. The flow properties of the mud were not altered sufficiently to provide the needed carrying capacity. In hindsight, one could also say more time should have been taken to clean up the sloughing shale prior to drilling ahead.

A window was milled in the casing and the hole sidetracked at 1000 m. This hole was essentially trouble free to 2071 m. Deviation had been

controlled well enough; however the shale sloughed and the pipe was stuck. This was a situation where the initial indication of problems was subtle, and as a result remedial actions were not taken soon enough. Analysis of the problem on site might have led to removal of the stabilization. This fish was recovered in a week. Analysis of offset logs, "d" exponent plots and total gas readings had all indicated serious over pressure. The decision was made to increase mud density to 1250 kg/m^3, and drilling resumed. Sloughing continued and the pipe stuck again at 2156 m. This fish was recovered in a week.

Density was increased to 1380 kg/m^3 and drilling resumed. Hole condition did not improve, and at 2237 m the density was increased to 1450 kg/m^3. Drilling resumed but hole conditions did not improve, so the density was increased to 1550 kg/m^3 at 2283 m. Hole conditions did gradually improve but torque and drag remained extremely high.

Drilling continued to 2604 m with extreme torque and drag. Various torque reducers were used; however, none were very effective. The pipe was stuck while making a connection at 2604 m. Many mechanical problems were encountered while fishing. A severing shot was used, circulation established and oil was spotted. Although the pipe should have been free to 2570 m, backoffs were unsuccessful up to 2468 m. The hole was then sidetracked.

The pipe was stuck again at 2555 m in the sidetrack hole. Although circulation was obtained, the pipe could not be worked free. Again oil was spotted unsuccessfully. Attempts to wash over were unsuccessful as the

wash pipe apparently went down beside the fish. This led to another sidetrack.

Both fishing jobs were hampered by mechanical problems. The total lack of success in both cases was due mainly to the high torque and drag and the out-of-gauge hole. The most probable explanation for these problems would appear to be overpressured shales. The other factor which may have caused a good deal of problem would be extreme faulting. This cannot be determined due to the lack of any conclusive logs. Sonic logs do support the theory of overpressured shales.

This section of the hole is probably the one where hole size would be most critical. The Sonic log indicates overpressured shales extend to about 2560 m. Had it been possible to run 244 mm casing past this point, subsequent problems may have been greatly reduced.

After the two unsuccessful fishing jobs the hole was sidetracked again. The mud density was increased to 1650 kg/m^3 and the hole was drilled to 2546 m. Shale uphole began to slough and the decision was made to run casing. In spite of hole problems, casing and cementing provided no major problems.

A 152 mm hole was drilled from this point. Pump pressure tended to rise probably as a result of shale packing around the casing shoe. Torque and drag were greatly reduced. However, the pipe again stuck at 2771 m. There was nothing to definitely indicate over-pressured shale as the cause. The fish was washed over right to the bit, but attempts to free it were unsuccessful. Possibly sloughing occurred after the washover, or perhaps the washover pipe went down beside the fish. In any case the lack of success led to the decision to abandon the hole.

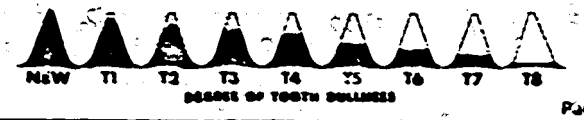
MUD & CHEMICALS USED - BIG ISLAND E-54

Product	Units Used	Amounts Used
Gel	5840	26500 kg
Barite	24396	975840 kg
Potash	11213	279742 kg
Bicarbonate of Soda	131	5942 kg
Drispac	142	3220 kg
Monpac	195	7800 kg
Staflo	40	1600 kg
CMC	9	225 kg
Peltex	106	2332 kg
Lignite	254	5760 kg
Sapp	0	
Enkapsulator	80	1600 litres
Alcomer	155	3410 kg
Caustic	574	14350 kg
XC Polymer Kel	112	2794 kg
Soda Ash	75	3000 kg
Sodium Sulphite	326	8133 kg
Kwik Seal	316	5735 kg
Sawdust	5055	91718 kg
Torqueless Beads	490	11113 kg
Walnut Hulls	147	3234 kg
Bon Ex	50	45 kg
Ironite Sponge	53	1315 kg
Aluminum Stearate	29	724 kg
Nickel Salt	3	136 kg
Inhibitor Coat 129	3	60 litres
Surflow H-35	5	95 litres
Chem Inhibitor	16	363 kg
Defoamer	86	1720 litres
No Stick	34	2040 litres
Kum Free	20	1200 litres
Lime	28	1120 kg
Chromic Chloride	2	181 kg
Vis Scale	6	1249 litres
Calcium Chloride	100	4000 kg

WESTERN ROCK BIT COMPANY LIMITED

BIT RECORD

METRIC



nce WT	Field WILD CAT	Canada	LSD E	Section 54	Twnship.	Range W	(2) Operator PARAMOUNT RESOURCES		Elev. 472.2
ion PARA ET AL BIG ISLAND E54	(1) Contractor SET					Rig No. E85	Rig Make & Type OIME SL750DW	Tool Pusher BOB SCOTT	

	No.	O.D.	I.D.
L	1. 21	171	71
LARS	2.		

	Make	Size	Type	O.D.
	1.			
TS	2.			

	Year / Month / Day	Time 00:00 to 24:00
Spudded	81 / 12 / 13	0230
Set Surface	82 / 01 / 15	
Under Surface	82 / 01 / 24	
Under Inter.	82 / 03 / 15	
Completion	82 / 11 / 11	
Release	82 / 12 / 14	0800 hrs.

PUMPS
1. Type: GARNER DENVER PZ8
2. Type: GARNER DENVER PZ8

Field Salesman

Stockpoint | Stkpt. Code

Special Additives

Mud Type
To 42 M. AIR FOAM
To M.
To M.

Circulation Depths
m
m

Key Seat Depths: 1200 TO 1400 m.

Other Remarks - Reaming, Re-Drilling, Etc.: STUCK @ 419

Lic. Formation: ARNICA
Lic. Depth: 3100

		No.	Size	Make	Type	Jets	Serial	Depth Out	Metre Drilled	Hours	Accum. Hours	Dull Cond T	B	G	No. of DC	Force Wt. on Bit daN	R.P.M.	Vert. Dev.	Pump Pres.	No. 1 Spm	No. 1 Liner	No. 2 Spm	No. 2 Liner	Mud Density	Mud Vis	Remarks Formation Cut Dates
	✓	1	200	HW	J2	OPEN	78838	43	43	10.75	.	5	1	1	3	2	50	1	—		AIR			AIR		
	✓	2	200	HW	J3	OPEN	80618												2000	80	203 X152	80	203 X152		70	
	✓	3	444.5	SMITH	DSJ	OPEN	SAC578	34	34	9.75	9.75	2	1	1	2	2	80		2000	110	203 X152	110	203 X152		90	
	✓	4	222	HW	J3	3x9.5	75491	51	51	19.50		4	7	1	5	3	100	1	8000	60	203 X152	60	203 X152		42	
	✓	5	222	HW	JD4	2x10.3 1x11.1	81690	73	22	9.75		5	1	1	3	3	100	1	8000	80		80	203 X152		53	
	✓	6	222.2	HW	J3	2x10.3 1x11.1	81446	103	30	16.25		5	2	1	3	3	100	1	8000	80		80			54	
	✓	7	222	HW	J3	2x10.3 1x11.1	83002	109	6	2.25		1	1	1	3	3	100	2	8000	80		80			54	DEC 14/81
✓	(3RR) BRR	444.5	SMITH	DSJ	3x15.9	SAC578	75	75	19.75	29.5	4	1	1	2	4	160		3000	80	203 X152	80	203 X152		49	REAM TO LARGE HO
✓		9	444.5	SMITH	DSJ	3x15.9	SAC565	110	35	11.50	41.0	5	1	1	2	6	160		3000	80		80			49	
✓		10	444.5	SMITH	DSJ	3x15.9	SAC693	128	18	4.50	45.5	1	1	1	12	10	160	2½	5000	90		80			47	
	✓	11	200	HW	J2	2x9.5 1x7.9	75288	146	18	4.75		2	1	1	14	2	160	3	9500	90		80			47	
	✓	12	222	HW	J2	3x9.5	80550	161	15	8.50		4	3	1	16	2	120	3½	9000	80		80			50	
	✓	13	222	HW	J2	3x9.5	76841	161	0	6.25	—	6	1	1	16	2	120		9000	80		80			56	REAMING
	✓	14	222	HW	JD4	3x9.5	83268	164	03	5.0		5	1	1	17	3	100	3½	6000	80	203 X152			1060	76	
	✓	15	222	HW	JD7	OPEN	77595	181	17	32.75		4	1	1	17	3	100	4.3	6000	80	203 X152	80	203 X152	1120	118	
	✓	16	221	ACC	TBYY	—	91258	327	146	58.25		G	O	D	16	10	NAVI DRILL	4.9	10000	65	203 X152	65	203 X152	1130	110	
	✓	17	222	KAN DRILL	STRATA PAC	3x20	799	397	70	10.50		G	O	D	17	2	NAVI DRILL	2.1	6000	65		65		1120	115	
	(1RR)	12R	221	ACC	TBYY	—	91258	407	10	5.50		G	O	D	17	8	NAVI DRILL		10000	-		120	203 X152	1120	93	
		13	311	SECURITY	HOLE OPENER	OPEN		1160	4	1.0		5	1	1	13	5	80		3500	85	203	85	203	1115	103	

WESTERN ROCK BIT COMPANY LIMITED

BIT RECORD — METRIC

NEW T1 T2 T3 T4 T5 T6 T7 T8

Page 2 Of 7

ce	Field	Canada	LSD	Section	Twnship.	Range W	(2) Operator		Elev.
ion	(1) Contractor			Rig No.	Rig Make & Type		Tool Pusher		

L	No.	O.D.	I.D.
	1.		
ARS	2.		

	Make	Size	Type	O.D.
	1.			
TS	2.			

Year / Month / Day Time 00:00 to 24:00

Spudded ____/____/____

Set Surface ____/____/____

Under Surface ____/____/____

Under Inter. ____/____/____

Completion ____/____/____

Release ____/____/____

PUMPS — 1. Type — 2. Type

Field Salesman

Stockpoint — Stkpt. Code

Mud Type

To ____ M.

To ____ M.

To ____ M.

Special Additives

Circulation Depths

Key Seat Depths

Other Remarks - Reaming, Re-Drilling, Etc.

Lic. Formation:

Lic. Depth:

	No.	Size	Make	Type	Jets	Serial	Depth Out	Metre Drilled	Hours	Accum. Hours	Dull Cond. T	B	G	No. of DC	Force Wt. on Bit daN	R.P.M.	Vert. Dev.	Pump Pres.	No. 1 Spm	No. 1 Liner	No. 2 Spm	No. 2 Liner	Mud Density	Mud Vis	Remarks Formation Cal Data
	3B	311	SECURITY	HOLE OPENER	OPEN		199	19	6.75		8	8	8	16	5	80		3500	85	203 X152	85	203 X152	1095	100	
	4B	311	SMITH	FDT	3X15.8	BT6066	224	25	12.50		3	1	1	19	7	80		3500	90	203 X152	—		1090	100	
	5B	311	HW	XIG	3X14.3	72924	249	25	15.75		3	1	1	19	7	80		3000	90	203 X152	—	—	1080	90	
	6B	311	HW	XYG	3X14.3	72952	344	95	30.75		4	1	1	19	8	95		2500	92	203 X152	—	—	1090	83	
	7B	311	HW	X3A	2X11.9 1X12.7	80842	407	63	37.25		5	1	1	19	8	85		3000	100	203 X152					
	1C	444	SMITH	DGJ	3X12.7	SAE 112	160	32	14.0	59.5	2	1	1	10	6	100		3000	100	203 X152			1095	100	
	2C	444	SMITH	YJ	3X12.7	SAE 197	225	65	28.25	87.75	5	4	1	19	10	150		2500	100	203 X152			1090	95	
	3C	444	SMITH	DGJ	3X12.7	SAE 081	249	24	10	97.75	4	5	1	19	10	150		2500	100	203 X152			1090	100	
	4C	444	SMITH	DSJ	3X12.7	SAC 620	285	36	15.25	113.0	2	1	1	19	7	150		3500	100	203 X152			1095	98	
	5C	444	SMITH	DSJ	3X12.7	SAC 470	393	108	20.25	133.25	5	1	1	19	7	150		10000	100	203 X152	100	203 X152	1125	130	
	6C RR	444	SMITH	DSJ	3X12.7	SAC 620	407	14	8.5	141.75	2	1	1	19	7	150		10000	100	203 X152	100	203 X152	1145	215	SET SURFACE CSG
	8B	311	HW	XIG	OPEN	78640	410	03	1.25	143.0	4	1	1	19	5	80									82/01/25
	9B	311	HW	XIG	3X12.7	SAC 52	410	&	&		LOST RIG IN E														
	—	222	HW	JH	3X14.3	73174	410				—	—	—		DRILL ALONG SIDE FISH										
	10R	311	HW	FDT	3X11.1	CD1874	425	15	1.75	144.75	—	—	—		DRILL ALONG SIDE & PAST FISH										
	11B	311	HW	XDV	3X15.9	80856	459	44	17.0	161.75	4	1	1	14	10	60	2.9	5000	90	203 X152	90	203 X152	1200	97	
	12B	311	HW	XDV	3X15.9	80965	581	112	14.75	176.5	4	8	1	16	8	NAVI DRILL	2.5	11000	96	203 X152	96	203 X152	1170	55	
	13B	311	HW	XDV	3X15.9	80846	646	65	14.0	190.5	3	2	1	17	8	NAVI DRILL	1.7	11000	96	203 X152	96	203 X152	1205	97	
	14B	311	HW	XIG	3X15.9	78628	721	75	12.75	202.75	2	1	1	16	6	NAVI DRILL	6.2	7000	142	203 X152	—	—	1155	73	

WESTERN ROCK BIT COMPANY LIMITED

BIT RECORD — METRIC

ice	Field / Canada	LSD	Section	Twnship.	Range W	(2) Operator		Elev.	Mud Type
ion	(1) Contractor			Rig No.	Rig Make & Type	Tool Pusher			To M. / To M. / To M.
L.	No. O.D. I.D. 1. / 2.	Year / Month / Day Time 00:00 to 24:00		PUMPS	Type 1. / Type 2.				Special Additives
ARS		Spudded / /							
	Make Size Type O.D. 1. / 2.	Set Surface / /							
TS		Under Surface / /			Field Salesman				
		Under Inter. / /							
		Completion / /			Stockpoint		Stkpt. Code		
		Release / /							

Circulation Depths	Key Seat Depths	Other Remarks - Reaming, Re-Drilling, Etc.	Lic. Formation: / Lic. Depth:

	No.	Size	Make	Type	Jets	Serial	Depth Out	Metre Drilled	Hours	Accum. Hours	Dull Cond T	B	G	No. of DC	Force Wt. on Bit DaN	R.P.M.	Vert. Dev.	Pump Pres.	No. 1 Spm	No. 1 Liner	No. 2 Spm	No. 2 Liner	Mud Density	Mud Vis	Remarks Formation Cut Dates.
	16B	311	SMITH	FDT	3X12.5	CD5404	UNABLE TO GET TO BOTTOM				—	—	—												LOST IN HOLE RUNNING
	15B RR	311	HW	X1G	3X15.9	73002	648	157	22.25	—	4	3	1												
	17B	311	ACC	6 HI ANGLE BUILDER		91107	742	94	27.25	—	Good			16	5	NAVI DRILL		10000	98	203 X152	98	203 X152	1195	140	SIDE TRACK
	18B	311	HW	X1G	OPEN	83287	809	67	22.50	—	7	3	1	16	5	NAVI DRILL	6-2	11000	98	203 X152	98	203 X152	1190	200	NAVI DRILL
	19B	311	SMITH	SDGH	3X12.9	BF8336	920	111	27.25	242.50	4	8	1	16	5	NAVI DRILL	7.4	11000	96	203 X152	96	203 X152	1185	150	NAVI DRILL
	20B	311	HW	X1G	2X15.9	72969	952	32	8.75	251.25	1	1	1	16	5	NAVI DRILL	8-8	11000	96		96		1200	140	NAVI DRILL
	20RR	311	HW	X1G	3X15.9	72969	983	31	8.25	259.5	2	3	1	16	12	50	9-6	9000	98		98		1190	94	
	21B	311	HW	X1G	3X15.9	72977	1161	178	59.50	319.0	3	2	1	18	13	60	7.0	9000	98		98		1190	120	
	22B	311	HW	X3A	3X15.9	80829	1205	44	9.0	328.0	1	1	1	18	13	60	7.0	9000	98		98		1200	120	CASING POINT 82/03/15
	1D	216	REED	S21GJ	0	503615	1235	30	5.0	333.0	2	2	1	12	3	55	6.2	700	(AIR)				AIR		
	2D	216	HW	JD4	0	84766	1360	125	18.75	351.75				14	3	60		700					AIR		
	3D	216	HW	X3A	3X10.3	BT660	1253	—	8.25	—	1	1	1	15	3	50		7800	100	203 X152	100	203 X152	1070	68	REAMING
	3DRR	216	HW	X3A	3X24	BT660	1532	172	37.50	389.25	3	6	1	15	8	75	8.8	3000			100	203 X152	1070	95	
	4D	216	SMITH	FDT	3X11.1	CE6152	1534	02	2.25	391.50	5	1	1	18	6	80		6600	90	203 X152			1070	40	
	5D	216	HW	JD7	3X[illegible]	81418	1538	04	5.25	396.50	6	2	1	18	8	75		8000			100	203 X152	1070	50	DRILL COLLARS
	6D	216	SMITH	FDT	3X8.7	BU8896	1685	147	41.50	438.25	3	1	1	18	5	100	9.8	7800	95	203 X152			1060	46	
	7D	216	SMITH	FDT	2X7.9	CH4515	1736	51	19.0	457.25	5	1	1	18	5	100	9.2	7000	80	203 X152			1085	46	

WESTERN ROCK BIT COMPANY LIMITED

BIT RECORD — METRIC

ce	Field / Canada	LSD	Section	Twnship.	Range W	(2) Operator		Elev.	Mud Type		
on	(1) Contractor			Rig No.	Rig Make & Type	Tool Pusher			To M.		
									To M.		
L	No. O.D. I.D.	Year / Month / Day Time 00:00 to 24:00		PUMPS	Type				To M.		
ARS	1.	Spudded			1.				Special Additives		
	2.	Set Surface			Type 2.						
	Make Size Type O.D.	Under Surface		Field Salesman							
	1.	Under Inter.									
S	2.	Completion		Stockpoint		Stkpt. Code					
		Release									
Circulation Depths		Key Seat Depths		Other Remarks - Reaming, Re-Drilling, Etc.					Lic. Formation:		
									Lic. Depth:		

	No.	Size	Make	Type	Jets	Serial	Depth Out	Metre Drilled	Hours	Accum. Hours	Dull Cond T	Dull Cond B	Dull Cond G	No. of DC	Force Wt. on Bit daN	R.P.M.	Vert. Dev.	Pump Pres.	No. 1 Spm	No. 1 Liner	No. 2 Spm	No. 2 Liner	Mud Density	Mud Vis	Remarks Formation Call Dates
	9D	216	SMITH	F-2	3x7.9	CD8444	1899	131	27.25	500.5	5	1	6 0	18	12	75	10.9	7500	80	203 x152			1065	47	
	10D	216	SMITH	F-3	3x7.9	CF0150	2092	193	75.25	575.75	1	6	1	18	3/12	100	21.5	7750	80	203 x152			1070	48	
	11D	216	HW	JD4	3x7.9	85851	2106	14	11.50	587.25	3	2	1	19	3	110	19.5	7750	80	203 x152			1085	47	
	12D	216	SMITH	F-2	3x7.9	CE7920	2114	08	11.00	598.25	1	6	0	19	3	100	—	10500	95	203 x152			1080	51	REAMING C.T.B
	13D	216	SMITH	SD6H	3x8.7	BR5945	2118	04	3.75	602.0	3	6	1	19	3	100		9500	68	203 x152			1090	90	
	14D	216	HW	J3	3x[illegible]	34391	2080	—	—	—	2	1	1	10	4	40		6600	55	203 x152			1100	100	REAMING
	15D	216	HW	X3A	3x12.5	73115	2146	28	23.25	625.25	8	8	8	9	4	83		5500	65	203 x152			1085	75	LOST IN HOLE
	11D-R	216	HW	JD4	3x15.8	85851					8	8	8	6	—	—		—	—	—					LOST IN HOLE 82/05/07
	1 RR	216	REED	S21G	3x12.7	903615	1000	76	18.00	—	4	3	1	8	3	350	—	3700	90	203 x152			1065	48	
	16D	215	ACC	ANGLE BUILDER	OPEN	91337	1018	18	24.25		1	1	1	10	2/3	350	8.1	3500	90	203 x152			1080	60	82/05/14
	17D	216	SMITH	SD6H	3x10.3	CH7384	1057	39	15.75		2	3	1	10	3	350	3.9	3000	90	203 x152			1080	50	
	18D	216	HW	X3A	1X8 2x9.5	FC877	1169	112	36.0		2	2	1	13	4/6	85	1.7	8800	75	203 x152			1080	57	
	19D	216	SECURITY	DSJ	1X7.1 2x7.9	949985	1226	57	21.25		2	6	1	13	13	65/90	4.6	7400	75	203 x152			1090	60	
	20D	216	HW	X3A	2x7.9 1x7.1	FD094	1357	131	43.25		2	2	1	13	4	65	5.5	7700	75	203 x152			1090	61	
	21D	216	HW	X3A	1x7.1 2x7.9	BP339	1452	95	38.50		2	2	1	13	5	80	5.5	8300	75	203 x152			1100	59	
	22D	216	HW	X3A	3x7.9	EC940	1586	134	50.0		2	2	1	14	5/6	80	4.2	7500	75	203 x152			1095	61	
	23D	216	HW	X3A	3x7.9	FC874	1706	120	43.0		3	2	1	14	3/4	80	6.1	6900	73	203 x152			1100	56	
	24D	216	SMITH	SD6H	3x7.9	CH7214	1731	25	17.75		3	2	1	12	3/6	80/100	7.0	7100	73	203 x152			1100	58	
	25D	216	REED	S21G	3x12.7	903788	[illegible]	13	10.25		2	4	1	12	3/4	100	7.1	7100	73	203			1100	57	

WESTERN ROCK BIT COMPANY LIMITED

BIT RECORD — METRIC

nce	Field / Canada	LSD	Section	Twnship.	Range W	(2) Operator		Elev.	Mud Type	
tion	(1) Contractor		Rig No.	Rig Make & Type	Tool Pusher				To M.	
L	No. O.D. I.D. 1.	Year / Month / Day Time 00:00 to 24:00		PUMPS	Type 1.				To M.	
LARS	2.	Spudded / /			Type 2.				To M.	
L	Make Size Type O.D. 1.	Set Surface / /		Field Salesman					Special Additives	
TS	2.	Under Surface / /		Stockpoint		Stkpt. Code				
		Under Inter. / /								
		Completion / /								
		Release / /								

Circulation Depths	Key Seat Depths	Other Remarks - Reaming, Re-Drilling, Etc.

Lic. Formation:

Lic. Depth:

		No.	Size	Make	Type	Jets	Serial	Depth Out	Metre Drilled	Hours	Accum. Hours	Dull Cond T	B	G	No. of DC	Force Wt. on Bit d a N	R.P.M.	Vert. Dev.	Pump Pres.	No. 1 Spm	No. 1 Liner	No. 2 Spm	No. 2 Liner	Mud Density	Mud Vis	Remarks Formation Coil Dates
		27D	216	HW	X3A	3X7.9	86850	1802	26	15.50		4	2	1	13	3/4	80	6.7	7000	73	203 X152			1090	58	
		28D	216	SMITH	U2HJ	2X7.9 1X8.1	399MC	1826	24	12.75		7	5	1	13	8/10	80	6.7	6600	73	203 X152			1100	60	
		29D	216	HW	JD7	3X7.9	828 32	1832	06	6.25		7	3	1	14	9/10	80	6.6	6900	73	203 X152			1100	63	
		30D	216	SMITH	F-4	3X7.9	CE 2752	1890	58	22.75		3	2	1	14	8/10	80	6.9	6800	73	203 X152			1100	60	
		31D	216	SECURITY	M44NG	3X7.9	248832	1901	11	9.50		4	2	1	14	8/10	80	6.9	6800	73	203 X152			1100	60	
		32D	216	SMITH	F-4	3X7.9	CH 1341	1916	15	8.50		1	1	1	14	6/13	80/85	7.0	6800	73	203 X152			1090	66	
		33D	216	HW	JD4	3X7.9	81172	2030	114	51.0		5	2	1	13	8	87	8.8	7800	73	203 X152			1100	68	
		34D	216	SECURITY	S44	2X7.9 1X7.1	214701	2071	41	16.25		5	2	1	13	8	85	8.8	7800	71	203 X152			1110	68	
		35D	216	REED	S21G	3X11.1	A12401	2083	12	20.25		5	2	1	13	6	80	9.5	4900	71	203 X152			1280	72	
		36D	216	SECURITY	S44	3X9.5	214691	2134	51	41.75		2	7	1	13	6/10	80	8.9	6000	71	203 X152			1260	60	
		37D	216	HW	X3A	3X8.7	86845	2163	29	21.25	637.75	6	4	1	13	10/12	70	8.2	7500	71	203 X152			1250	75	
		38D	216	HW	X3A	3X10.3	86851	2163	Ø	Ø		1	8	1	13	REAMING		8.2	5600	71	203 X152			1250	75	
		39D	216	SECURITY	S44	3X9.5	214688	2201	38	40.50	678.25	4	8	1	13	15	65	6.8	8300	88	203 X152			1350	82	
		40D	216	SECURITY	S44	3X8.7	998818	2243	42	34.50	712.75	8	8	4	15	15	70	6.8	9000	95	203 X152			1440	74	LOST CONES
		41D	216	HW	JD7	2X10.3 1X11.1	74003	2244	01	—		8	2	1	15	15	50	6.8	7800	85	203 X152			1440	100	
		42D	216	REED	S31G	3X10.3	344237	2245	01	—		4	1	1	14	14	55	—	9800	85	203 X152			1440	98	
		43D	216	SECURITY	M44G	3X9.5	214080	2270	25	16.50	729.25	3	2	1	15	15	80	6.8	11000	94	203 X152			1460	99	
		44D	216	HW	X3A	3X10.3	86849	2300	30	21.75	751.0	5	8	1	15	16	80	6.4	9200	95	203 X152			1540	100	
		45D	216	HW	JD4	3X10.3	99760	2336	36	31.0	782.0	7	3	1	13	15	80	6.4	9000	95	203 X152			1550	115	

WESTERN ROCK BIT COMPANY LIMITED

BIT RECORD

METRIC

NEW T1 T2 T3 T4 T5 T6 T7 T8

DEGREE OF TOOTH DULLNESS

ce	Field	Canada	LSD	Section	Twnship.	Range W	(2) Operator	Elev.
on	(1) Contractor			Rig No.	Rig Make & Type	Tool Pusher		

ARS	No.	O.D.	I.D.
	1.		
	2.		

S	Make	Size	Type	O.D.
	1.			
	2.			

Year / Month / Day Time 00:00 to 24:00

Spudded ___/___/___

Set Surface ___/___/___

Under Surface ___/___/___

Under Inter. ___/___/___

Completion ___/___/___

Release ___/___/___

PUMPS: 1. Type ____ 2. Type ____

Field Salesman

Stockpoint Stkpt. Code

Mud Type

Tc. M.

To. M.

To. M.

Special Additives

Lic. Formation:

Lic. Depth:

Circulation Depths

Key Seat Depths

Other Remarks - Reaming, Re-Drilling, Etc.

	No.	Size	Make	Type	Jets	Serial	Depth Out	Metre Drilled	Hours	Accum. Hours	Dull Cond T	B	G	No. of DC	Force Wt. on Bit da N	R.P.M.	Vert. Dev.	Pump Pres.	No. 1 Spm	No. 1 Liner	No. 2 Spm	No. 2 Liner	Mud Density	Mud Vis	Remarks Formation Cut Dates
	47D	2⅛	REED	FP52	1x9.5 2x10.3	926034	2384	32	44.0	857.0	1	1	1	15	16	80	6.3	9700	85	203 X152			1520	115	
	48D	216	HW	JD4	2x9.5 1x10.3	81159	2473	89	65.75	922.75	3	2	1	15	16	85	7.0	11100	85	203 X152			1560	120	
	49D	216	SMITH	FDT	2x10.3 1x9.5	CJ8831	2515	72	49.25	972.0	5	2	1	15	10	85	6.8	11000	85	203 X152			1530	100	82/07/30
	50D	216	HW	J3	2x10.3 1x9.5	58281	2604	59	37.0	1009.0	LAST IN HOLE			16	16	85	—	11000	85	203 X152			1550	110	82/08/01
	51RR																								
	52D	216	REED	S13G	OPEN	NNZ216	2411	DRILL CEMENT PLUGS						POOH		2411										
	53D	216	ACC	◊	—	91340	2450	39	40.75		6	GOOD		6	10	350	4.6	9000	90	203 X152			1550	115	82/08/28
	54D	216	HW	JD4	2x10.3 1x9.5	87340	2513	63	70.0		4	3	1	12	13	350	3.6	9000	80	203 X152			1550	100	
	55D	216	KANN DRILL	KD522D	4x15.9	889	2555	42	48.0		FLAT IN BOTT			CORE 12	8	300/70	3.0	11000	100	203 X152			1550	110	
	56D	216	HW	J3	2x10.3 1x9.5	87753	2555	0	STOCK		LOST IN HOLE.												1550	110	
	2560	216	REED	S13G	OPEN	902967	POLISH OFF CEMENT PLUG																		
	57D	216	ACC	◊	—	91397	2412	58	55.50		6	GOOD		8	10	350	6.9	9000	90	203 X152			1575	155	
	58D	216	HW	JD4	2x9.5 1x11.1	87339	2493	67	59.0		4	3	1	8	13	75	6.8	12000	80	203 X152			1650	140	82/10/06
	59D	216	SMITH	FDT	3x10.3	CK2363	2524	45	45.5		4	2	1	8	13	75	5.8	10000	80	203 X152			1670	200	
	60D	216	SMITH	SDGH	3x10.3	CK9897	2546	22	27.0		2	4	1	8	13	75	4.3	12000	80	203 X152			1670	200	82/10/14
	1E	152	HW	J4	3x10.3	SX399	2552	06	7.25		5	2	I	12	6	65		9000	46	203 X152			1650	85	82/10/24
	2E	152	HW	J3	2x7.1 1x9.5	SR402	POOH AT 2595		40.75		1	2	1	12	10	75	4.5	12000	80	203 X152			1640	80	

WESTERN ROCK BIT COMPANY LIMITED

BIT RECORD

METRIC

NEW T1 T2 T3 T4 T5 T6 T7 T8

BROKEN OR TOOTH BULLNOSE

	Field	Canada	LSD	Section	Twnship.	Range W	(2) Operator		Elev.
	(1) Contractor			Rig No.	Rig Make & Type		Tool Pusher		

Mud Type

To ____ M. ____

To ____ M. ____

To ____ M. ____

Special Additives

	No.	O.D.	I.D.
1.			
2.			

	Make	Size	Type	O.D.
1.				
2.				

Year / Month / Day Time 00:00 to 24:00

Spudded ____/____/____

Set Surface ____/____/____

Under Surface ____/____/____

Under Inter. ____/____/____

Completion ____/____/____

Release ____/____/____

PUMPS

Type 1.

Type 2.

Field Salesman

Stockpoint Stkpt. Code

Circulation Depths

Key Seat Depths

Other Remarks - Reaming, Re-Drilling, Etc.

Lic. Formation:

Lic. Depth:

	No.	Size	Make	Type	Jets	Serial	Depth Out	Metre Drilled	Hours	Accum. Hours	Dull Cond T	Dull Cond B	Dull Cond G	No. of DC	Force Wt. on Bit d c N	R.P.M.	Vert. Dev.	Pump Pres.	No. 1 Spm	No. 1 Liner	No. 2 Spm	No. 2 Liner	Mud Density	Mud Vis	Remarks Formation Call Datas
	4E	152	HW	J4	3x8.7	SX530	2655	05	6	1074.25	5	2	1	21	10	75/50	3.0	13000	70	203x114			1650	83	82/10/31
	5E	152	HW	J33	3x8.7	KB364	2659	04	10.5	1084.75	1	1	1	21	10	55/60	3.0	13000	70	203x114			1660	88	
	6E	152	HW	J3	3x8.7	XT534	2701	42	40.75	1125.50	7	2	1	21	10	75	2.2	14000	70	203x114			1660	84	82/11/04
	7E	152	HW	J3	3x8.7	XT536	2728	27	24.75	1150.25	8	8	1	21	10	75		10/15000	70	203x114			1660	108	82/11/07
	8E	152	HW	J4	3x14.3	SX490	2744	16	18.50	1168.75	7	7	1	21	10	75		14000	70	203x114			1550	109	
	9E	152	HW	J33	3x12.7	ZK866	2763	19	31.50	1200.25	1	2	1	21	10	75		15000	70	203x114			1570	90	82/11/10
	10E	152	HW	J4	3x12.7	SX488	2771	8	5.50	1205.75	2	2	IN E	21	10	75		12000	70	203x114			1570	90	82/11/11
		152	REED	HPSM		L34460	LOST	IN	CARTAGE																
		152	HW	J33		JN161	LOST	IN	CARTAGE																
		152	HW	J33		HM716	LOST	IN	CARTAGE																

INTER-OFFICE CORRESPONDENCE

To R. J. WOODS

From K. LESKIW

Subject PALEONTOLOGY PARAMOUNT et al BIG ISLAND
E-54 60°33'28.57" - 123°40'52.17"

Unwashed sample interval 1830 - 2105 m, received from Paramount Resources were processed for Micropaleontology and Paleonology.

Alternate 5 metre intervals were examined for micropaleontology.

Micropaleontological results are:

1830 - 1855 m - Barren

1870 - 1875 m - Crinoid Columnals 1 specimen, Not diagnostic.

1890 - 1935 m - Barren

1950 - 1955 m - Crinoid fragment. Not diagnostic.

1970 - 1975 m - Hyperamminoides sp. Not diagnostic.

1980 - 1985 m - Barren.

2000 - 2005 m - Hyperamminoides 32, one specimen Not diagnostic.

2020 - 2025 m - Ostracod fragment.

2040 - 2045 m - Graphiodactyllis 346 (1 specimen)
Crinoid columnals
Conodont sp.
Note: - Possible L. Mississippian but not conclusive as indicated by Graphiodactyllis 346.
Only 1 specimen of the Ostracod was recovered. Therefore a definite age cannot be established.

2060 - 2065 m - Graphiodactyllis 342 (one specimen)
Gastropod sp.
- Possible L. Mississippian but not conclusive.

2080 - 2085 m - Barren.

2100 - 2105 m - Graphiodactyllis 342 (one specimen.)
Hyperamminoides sp.
- Possible L. Mississippian but not conclusive.

2105 - [illegible] - Crinoid columnals. (2 specimens)
Not diagnostic.

[illegible], 1982

K. Leskiw