

1834

FINAL WELL REPORT
PARAMOUNT ARROWHEAD (BERKLEY)

O-15

60° 30' 123° 00'

1998/1999

N.E.B. COPY



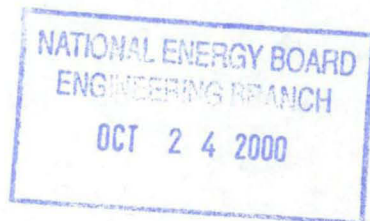
Paramount Resources Ltd.

MICROFILMED
SUR MICROFILM:

FINAL WELL REPORT
PARAMOUNT BERKLEY ARROWHEAD
O-15

60° 30' 123° 00'

Latitude 60° 24' 53.694" Longitude 123° 02' 31.174"



Prepared By:
Date:

Wayne Tomm
September 26, 2000

TABLE OF CONTENTS

1. INTRODUCTION

Summary
Locality Map

2. GENERAL DATA

Well Name
Exploration Agreement
Drilling Authority
Grid Area
Coordinates
Well Location
Unique Identifier
Lessor
Operator
Drilling Contractor
Drilling Rig
Position Keeping
Support Craft
Drilling Unit Performance
Difficulties and Delays

3. SUMMARY OF DRILLING OPERATIONS

Elevations
Total Depth
Spud Date
Drilling Date
Rig Release
Well Status
Hole Sizes
Casing & Cementing
Sidetracked Hole
Drilling Fluid
Fishing Operations
Well Kicks
Leak-Off Tests
Time Distribution
Deviation Surveys
Abandonment Plugs
Composite Well Record

4. GEOLOGY

Drill Cuttings
Cores
Lithology
Stratigraphic Column
Biostratigraphic Column

5. WELL EVALUATION

Downhole Logs
Other Logs
Synthetic Seismograms
Formation Stimulation
Formation and Production Tests

6. ENVIRONMENTAL WELL REPORT

7. APPENDICES TO WELL HISTORY REPORT

Oil, Gas, and Water Analyses
Completion Data

1. INTRODUCTION

Summary

Surface Hole:

The well was spud February 14, 1998 with 445.0mm surface hole drilled to a total depth of 500m. 339mm K-55 casing was run and cemented with 31 tonnes of 0:1:0 "G" and 27 Tonnes of Expandomix

1st Intermediate Hole:

311mm hole was drilled to 1560m. Deviation walked out to 15° and well was plugged back to 1195m and 244.5mm x 64.74kg/m L-80 casing run to a depth of 1186m. Casing was cemented with 21 tonnes LW14 and 29 Tonnes 0:1:0 "G".

2nd Intermediate Hole:

216mm hole was drilled to 1455m using a mud motor to combat deviation. Due to time constraints associated with spring break-up, the well was plugged back as follows: (to be finish drilled next winter)

Plug #1: 1255-1455m , 4 tonnes Thermal 40

Plug #2: 996-1196m , 3.5 tonnes Thermal 40

Drillable Bridge Plug set at 903m

Rig released March 24, 1998.

Precision Rig #507 was moved in and Spud January 19, 1999 to finish drilling well.

216 hole was drilled to 2805m and 177.8mm x 38.69kg/m, L-80 casing run and cemented with 24.6 tonnes 1:1:2 fill cement and 17 tonnes Thermal 40.

Main Hole:

156mm hloe was drilled to a depth of 3301m. The well eas logged and three DST's were run.

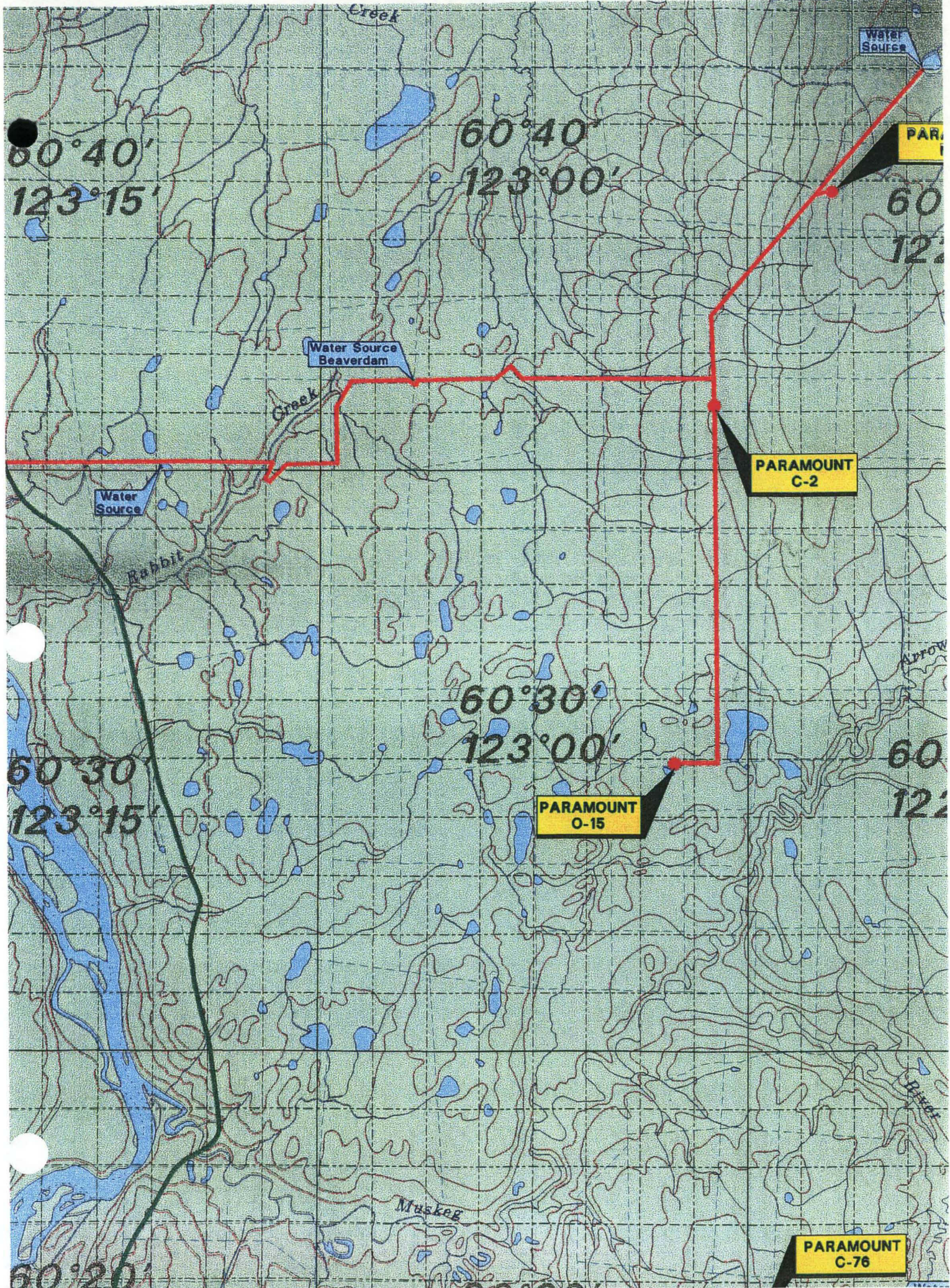
The well was suspended with the following plugs:

Plug #1: 3301-3191m , 3.9m³ Thermal 40

Plug #2: 3005-2820m , 3.49m³ Thermal 40

Drillable Bridge Plug set at 2306m topped with 8m cement.

Location Map (Following Page)



2. GENERAL DATA

WELL NAME: Paramount Berkley Arrowhead O-15

EXPLORATION AGREEMENT: EL 383

DRILLING AUTHORITY: 1834 Issued December 22, 1997

GRID AREA: 60° 30' 123° 00'

CO-ORDINATES: Latitude 60° 24' 53.694"
Longitude 123° 02' 31.174"

UNIQUE WELL IDENTIFIER: 300O156030123000

LESSOR: Paramount Resources Ltd.

OPERATOR: Paramount Resources Ltd.
4000, 350 – 7 Ave. S.W.
Calgary, Alberta
T2P 3W5

DRILLING CONTRACTOR: Precision Drilling Limited
1000, 112 - 4 Ave. S.W.
Calgary, Alberta

DRILLING RIG: Precision 622 Feb 15 - March 24, 1998
Precision 507 Jan. 18 - Mar 6, 1999

POSITION KEEPING: N/A

SUPPORT CRAFT: N/A

DRILLING UNIT PERFORMANCE N/A

DIFFICULTIES & DELAYS: N/A

3. SUMMARY OF DRILLING OPERATIONS

ELEVATIONS: G.L.: 387 m
K.B.: 380 m

TOTAL DEPTH: Drilled: 3301 m
Logged: 3299 m
Plug Back: 2298 m

NOTE: This well was spudded and drilled to 1455 m, then plugged back and suspended due to break-up. A different rig moved in the following season and finished drilling the well to total depth.

SPUD DATE: February 15, 1998 - 2215 hrs

SUSPEND DRILLING DATE: March 24, 1998 (first rig released)

RESUME DRILLING DATE: January 18, 1998 (second spud date)

COMPLETED DRILLING DATE: February 25, 1999

RIG RELEASE: March 6, 1999 - 2359 hrs

WELL STATUS: Suspended

HOLE SIZES: Also See Attached Bit Record

	HOLE SIZE mm	CSG SIZE mm	WT Kg/m	GRADE	LANDED M
Surface	444	339.7	81.1	K 55, ST&C	499.9
Intermediate	311	244.5	64.74	L80, LT&C	1196
2 nd Intermediate	216	177	38.69	L80, LT&C	2805
		177	34.2	L80, LT&C	1426.85
		177	38.69	L80, LT&C	1399.77
Main Hole	156	Open Hole			3301

CASING & CEMENTING: See Casing & Cementing Reports, and Wellhead diagram on following pages

SIDETRACKED HOLE:	While drilling first intermediate hole, the well kicked out to 15 ° at a depth of 1560 m MD. The well was cemented back to 1195 m MD and casing run in the vertical well to 1186 m MD. Drilling continued on the vertical wellbore.
DRILLING FLUID:	See Attached Drilling Fluid Summary
	Surface Hole: Air to 442 m, Gel Chemical to 500 m
	1 st Intermediate: Foam and air hammer to 867 m KB, Cutter D to 1455 m
	2 nd Intermediate: Calcium Chloride Invert
	Main Hole: Nitrified Calcium Chloride Invert to 2936 m KB, then stopped nitrogen
FISHING:	When running suspension plugs in main hole, drill pipe had to be backed off because it was stuck in the cement
WELL KICKS:	N/A (Note: A short section at the start of the main hole was drilled underbalanced.)
LEAK-OFF TESTS:	Gradient at 509 m 17.04 kPa/m, no breakdown
TIME DISTRIBUTION:	See Daily Well Reports
DEVIATION SURVEY:	See Attached within this Section
SUSPENSION PLUGS PLUGS:	A.Suspension Plugs: (Suspended well Mar.24, 1998 to be finished drilling in 1999) -Plug #1: 1455-1255 m KB Cemented with 4 tonnes Thermo/40F + 0.4% R6 + 3% D24 + 0.5% T10 -Plug #2: 1196-996 m KB Cemented with 3.5 tonnes Thermo/40F + 0.4% R6 + 3% D24 + 0.5% T10 -Bridge Plug set at 903m and pressure tested to 20,000 kPa.

B. Suspension Plugs: (Suspended well Mar.16,
1999 finished drilling in 1999)

-Plug #1: 3301-3135m, 3.9m³ Thermal 40

Felt at 3191mKB

-Plug #2: 3005-2820m, 3.49m³ Thermal 40

Felt at 2780mKB

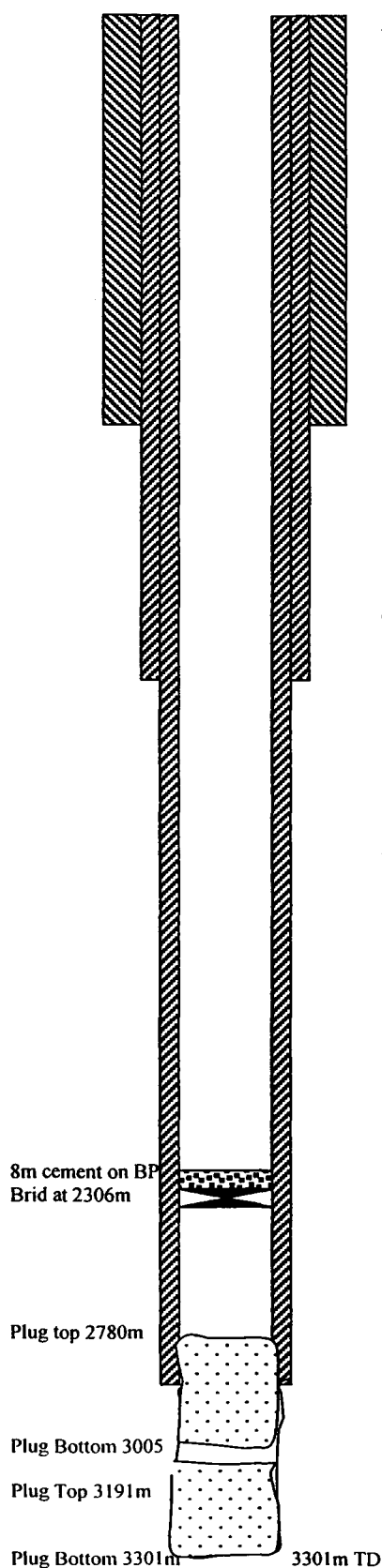
-Bridge Plug set at 2306m, 8m cement on top of BP

COMPOSITE WELL RECORD: See attached in the pouch at the end of this section

Well Schematic

Paramount Berkley Arrowhead O15

As Drilled March 06, 1999



Surface Hole: (surface – 500)

Hole Size: 444 mm

Surveys: ¼ @ 463

Mud Type: Air to 442, gel/chem to 500

Casing: 339.7 mm, 81.1 kg/m, K55

Landed at 499.9 m KB

Cement: Lead: 31 T 0:1:0 Class "G" + 1% CaCl₂

Tail: 27 T Expandomix + 2% CaCl₂

8 m3 returns

Intermediate Hole: (500 – 1455 m)

Hole Size: 311 mm

Surveys: This section originally kicked out to 15° so was plugged back and re-drilled
To keep vertical

First Leg: 500 – 1560 m KB

(partial plug back) Drilled with foam and air hammer to 867 m, well watered out. Drill with
Cutter D to 1560 m MD.

Problems: Totco surveys indicated 7°, directional survey read 15°,

Decision was made to plug back and redrill

Plug #1: 1195 – 1350 m w/ 16 T 0:1:0 High Density G + 1% CFR + 1% LTR

Casing: 244.5 mm, 64.74 kg/m, L80 landed at 1196 m

Cement: Lead: 21 T LW14 + 2% CaCl₂ + 2% LWA + 2% SMS

Tail: 29 T 0:1:0 G + 0.4% CFL3 + 1% CFLH + 2% SPC 2

5 m3 returns

1196m

2nd Intermediate Re-Entry (spud January 19, 1999)

2nd Intermediate hole :drill 216 mm 1196 m to 2805 m KB

Casing: 177.8 mm, 38.69 kg/m IL-80 - 0 - 2805 m KB

Cement: 24.6 Tonnes 1:1:2 G fill plus 17 Tonnes Thermal 40 tail

Hole Size: 216 mm

Mud Type: Invert

Main hole: drill 156 mm hole 2805 - 3301 m KB

Mud: Invert

Open Hole

PARAMOUNT RESOURCES LTD.

WELL SUMMARY

DATE March-8-1999

WELL NAME Paramount Berkley Arrowhead LOCATION 0-15-60-30-123-02
 ELEVATIONS: KB 61.84 m GL 380.5 m CF 6.60 m
 HISTORY: Spud Date 99-01-12 RR Date 99-03-06 TD 3301 m PBD 2306 m
 STATUS: Abandoned Producing zone(s) ✓ Bridge Plug + 8m Cmt

A. DRILLING DETAILS

Hole Size 444.5 mm Depth 500 m Logs STI-SPED-CNL-BHC-SONTC
 Hole Size 311.2 mm Depth 1557 m Logs Platform Express-DIL-CD-CN-ML-SONTC
 Hole Size 216.0 mm Depth 2805 m Logs _____
 Hole Size 156 mm Depth 3301 m Logs HDP-GR, 2DL-CN-GR-XV & HDP-GR, MAC-GR-XV
 Csg Size 339.7 mm Grade K-55 Depth 500 m Cmt Vol. _____
 Csg Size 244.5 mm Grade L-80 Depth 1186 m Cmt Vol. 295-0.1106-21.95m³
 Csg Size 177.8 mm Grade L-80 Depth 2805 m Cmt Vol. _____
 Csg Size _____ mm Grade _____ Depth _____ m Cmt Vol. _____

DST No. <u>1</u>	Interval <u>3245-3270</u> m	Zone <u>Landy</u>	
DST No. <u>2</u>	Interval <u>3257-3270</u> m	Zone <u>Landy</u>	
DST No. <u>3</u>	Interval <u>3033-3044</u> m	Zone <u>Horn River</u>	
DST No. _____	Interval _____ m	Zone _____	
DST No. _____	Interval _____ m	Zone _____	
Core No. _____	Interval _____ m	Zone _____	Rec. _____
Core No. _____	Interval _____ m	Zone _____	Rec. _____
Core No. _____	Interval _____ m	Zone _____	Rec. _____

Plug No. <u>1</u>	Interval <u>3301-3135</u> m	Cmt Vol <u>3.9m³</u>	Felt <u>3191</u>
Plug No. <u>2</u>	Interval <u>3005-2820</u> m	Cmt Vol <u>3.49m³</u>	Felt <u>2780</u>
Plug No. <u>3</u>	Interval <u>2306</u> m	Cmt Vol <u>Bridge Plug</u>	Felt <u>8m Cement</u>
Plug No. _____	Interval _____ m	Cmt Vol _____	Felt <u>Bridge Plug</u>

B. COMPLETION DETAILS

COMPLETION DATE

Perforations: Interval _____ m	Zone _____	Type _____
Interval _____ m	Zone _____	Type _____
Interval _____ m	Zone _____	Type _____

Stimulations: Formation _____

Tubing Details _____

Anchor/Packer Details _____

Pumping Equipment _____

Remarks _____

NOTE: See specific forms for more details!

Supervisor Wilbert Callitroo

PIPE TALLY

Date **15-Feb-98**

Page no. **one**

Well name and location **Paramount Berkley Arrowhead O15**

Contractor **Precision 622E**

1 Description

Size: **339.7** Wt: **81.1** Grade: **K55** Range: **3** Cplg: **STC**

Thread: **8 rd** Mfr: **TAMSA, Mexico**

Type of String: **Surface**

Tallied By: **Stew Ward**

No	Length	No		No		No		No	
1	11.71	21	14.16	41		61		81	
2	13.94	22	14.4	42		62		82	
3	12.75	23	14.32	43		63		83	
4	14.22	24	14.02	44		64		84	
5	14.27	25	14.44	45		65		85	
6	13.91	26	14.04	46		66		86	
7	14.2	27	14.19	47		67		87	
8	14.31	28	12.95	48		68		88	
9	14.36	29	13.88	49		69		89	
10	13.9	30	14.11	50		70		90	
Total	137.57		140.51		0		0		0
11	14.05	31	14.34	51		71		91	
12	13.61	32	13.79	52		72		92	
13	13.73	33	14.36	53		73		93	
14	14.08	34	12.83	54		74		94	
15	14.3	35	14.26	55		75		95	
16	14.29	36	13.61	56		76		96	
17	13.35	37	13.16out	57		77		97	
18	14.5	38		58		78		98	
19	14.14	39		59		79		99	
20	13.78	40		60		80		100	
Total	139.83		83.19		0		0		0
Total 1-20	277.4	Total 21-40	223.7	Total 41-60	0	Total 61-80	0	Total 81-100	0

TOTALS		TOTALS		TOTALS	
1-20	277.4	101-120			
21-40	223.7	121-140			
41-60	0	141-160			
61-80	0	161-180			
81-100	0	181-200			
TOTAL	501.1	TOTAL	0	TOTAL	501.1

Total joints on location **37**

Length of cutoff

Remarks:

Float shoe and float collar included in first joint tally.

Centralizers on jts. 1,3,5,7,34,36

CEMENTING

Well Name: Paramount Berkley Arrowhead 015

Date: 2-Feb-98

Type of Casing: Surface

Cementing Company: Sanjel Cementers

Station: Ft. Nelson

Rep.:

Hole Size: 444.5

Casing Size: 339.7

Depth: 500

Cement Volume Required, m3: 48

Excess: 50%

Type of Cement and Additives: Lead - 31T 0:1:0 + 1% CaCl₂, Tail-in - 27T Expandomix + 2% CaCl₂

Start Flush: 855 Start Cement: 908 Start Disp: 954

End Flush: -905 End Cement: 951 End Disp: 1057

Flush ahead: 10 m3 water Displace with: 39.2 m3 water

Total water: 79 m3 Total cement pumped: 58T

Max pump press: 6000 kPa Bumped plug: no/yes yes

Cement returns: 8 m3 Floats held: yes

Work casing: 4-5 m, while circulating

4-5 m, while cementing

Remarks

Good returns throughout the job. No apparent losses.

Seepage around conductor pipe diminished to nil by the end of the job

.SING SUMMARY

WELL NAME: **Paramount Berkley Arrowhead 015**

DATE: **98-02-20**

Size	Wgt	Gr	Rge	Thd	Cplg	Make	Tot. Jts	Jts Run	Depth	Total M
339.7	81.1	K55	3	8rd	STC	TAMSA	37	36	500	500.28

Shoe:	Make	Weatherford	Type	Float	Length, m	0.48
Collar:	Make	Weatherford	Type	Float	Length, m	0.34
Liner Hanger:	Make:				Length, m	
				Landing jt. (if used)	Length, m	
				Overall length of csg string	Length, m	501.10
				Meters up from K.B. (subtract)		1.2
				Setting depth (if diff. from TD)	Tally, m	499.90
				Shoe joint (subtract), m		11.71
				Top of float collar, m		488.19

KB to CF, m
 Centralizers- Make: **Weatherford** Number **6** Position **1,3,5,7,34,36**

atchers Make: Number Position

Time/date pipe started **2130 hrs, 98/02/19** Time/date pipe on bottom **0615 hrs, 98/02/20**
 Time circulated **90 min.** Reciprocated **180 min.** with **4-5** m strokes

Make/size of casing bowl **ABB Vetco Gray 13 5/8 x 5000# x 13 3/8**
 H2S rating (PSL0-3) **PSL 0 on bowl**
PSL1 on valves

Additional Information

PARA AMOUNT RESOURCES LTD.

PRODUCTION CASING REPORT

O.D.: 177.8 MM

WELL NAME: PARA ETAL ARROWHEAD

LOC: 0-15

DATE: 99-02-10

JTS ON LOC	M ON LOC	CASING WT.	GRADE	RANGE	THREAD	T & C	MAKE	JTS. RUN	DEPTH LANDED	M RUN IN WELL
101	1377.44	38.69	L80	1	8RD	LTPC	IPSCO	101	2805	1377.44
2	67.23	34.20	L80	1	8RD	LTPC	IPSCO	2	1426.85	27.08
104	1427.41	38.69	L80	1	8RD	LTPC	IPSCO	104	1399.77	1401.80

SHOE: MAKE: WEATHER FORD

TYPE: Float

LENGTH, M

COLLAR: MAKE: WEATHER FORD

TYPE: Float

LENGTH, M

LANDING JOINT (WHEN USED) LENGTH, M

LENGTH, M

OVERALL LENGTH OF CASING STRING, M

TOTAL, M

METERS UP FROM K.B. (SUBTRACT)

2.03 M

SETTING DEPTH: LOG: 2804.7

DRILLER: 2805.00

SHOE JOINT: OVERALL: 14.45 M (SUBTRACT)

SHOE JOINT

FLOAT COLLAR: LOG: M

DRILLER: 2796.35 M

K.B. TO CASING FLG: 6.57 M

CUT OFF: 8.60 M

CENTRALIZERS & TURBOLIZERS:

SCRATCHERS:

MAKE: WEATHER FORD NUMBER 10

MAKE: NUMBER 0

POSITIONS:

POSITIONS:

2797m 2777m 2750m 2700m
1610m 1592m 1565m 1537m 1510m
1483m

OF JOINTS WELDED: NIL

REMARKS:

RAN 101 STS 38.69 kg/m L80 RBE1 8RD LTC IPSCO 1377.44m.
RAN 2 STS 34.20 kg/m L80 RBE1 8RD LTC IPSCO 27.08m
RAN 104 STS 38.69 kg/m L80 RBE1 8RD LTC IPSCO 1401.80m
LEFT OUT 3 STS 34.2 kg/m & 2 STS 38.69 kg/m L80 8RD LTC IPSCO 66.11m
OVERALL LENGTH

OPERATORS REP:

G. SANDERS

PROD.CSG.RPT

PARAMOUNT RESOURCES LTD.

RUNNING AND CEMENTING PRODUCTION CASING

O.D.: 177.8 MM

WELL NAME: PARA ETAL ARROW HEAD LOC: 8-15 DATE: 99.02.10

K.B. ELEVATION _____ CSG. FLG: _____ TOTAL DEPTH (DRILLER) 2805 m

HOLE SIZE	<u>216</u>	#REF!	
DEPTH M	<u>2805</u>	#REF!	

CSG IN HOLE	<u>2807.67</u>	#REF!	
DEPTH SET	<u>2805.6</u>	#REF!	

MUD TYPE: INVERT WT: 1015 KG/M3 VISC: 48 WL: _____

BOP'S 35000 kpa

RUNNING

POWER TONGS 7040 TORQUE: MAX: 8890 NM NOM 7040 NM MIN 5270
TIME PIPE START: 2200 TIME ON BOTTOM 1200 TIME CIRCULATED 5:25 hrs
FILL UP POINTS: EVERY 10 ITS BOTTOM BY CSG 2805m UP FROM KB: 2 m

REMARKS: CSG STUCK ON BTM. Pulled 50000 down OVER SPRING w/ 6' 80 000 down WORKER PIPES 24hrs No Luck
CEMENTED CSG ON BOP CIRC PRESS 50000 w/ 24hrs CIRC TIME
BY ADDING 15% SANDWASH & OVER TIME WITHIN 4 min 6'1" THROUGHT

CEMENTING

CEMENT CO: NOVSCO OPERATOR: KEN DICKSON AR. TIME: 06:00
TYPES & QUANTITY OF CEMENT: 24.6 T 1-1-26 + 19.26 5% TIO 17 T + 14% MOL 40F
+ 19.26 + 3% D24 + 5% TIO + 1% SANDWASH HEIGHT TO BE CEMENTED 1186 m
FLUSH: 3m³ DIESEL 3m³ NOWFLUSH MIX TIME: START: 19:31 FIN: 20:14 WT: 16.83 kg/m³
CALCULATED DISP 57.32 MEASURED DISP. 57.3 m³ START: 20:21 FIN: 21:21
DISPLACING FLUID INVERT MAX. PRESS 19000 kpa BUMP WI 3000 kpa
CEMENT RETURNS NIL FLOAT OK WORKED CSG WHILE CMT NO

REMARKS: _____

LANDING

TIME LANDED: 0430 DATE: 99-02-11 WT. STRING (LESS BLOCKS) daN 85000
WT. LANDED IN SLIPS: 95000 daN BOWL: 135/8 PRTG SIZE: 135/8
SERIES EG 1 SLIP & SEAL ASS: V-G 100 AUTOMATIC V60 F.

REMARK: _____

AGENT OF OPERATOR:

G. SANDER

RUN & CMT PROD

PARAMOUNT RESOURCES LTD.

PIPE TALLY

DATE: 99-02-09 PAGE 1 OF 2
 WELL NAME PARA EIAL ARROWHEAD LOCATION 0-15
 CONTRACTOR PRECISION 507
 PIPE DESCRIPTION 177.8 mm. 38.69 KG/M GRADE L80 RANGE 1
 CPLG LTC THREAD 24.2 MFG. IPSCO NEW OR USED NEW
 TYPE OF STRING 2ND INTERMEDIATE TALLIED THREADS OFF

LENGTH	LENGTH	LENGTH	LENGTH	LENGTH	LENGTH
1 1370	21 1364	41 1370	61 1406	81 1370	101 1404
2 1368	22 1370	42 1419	62 1388	82 1392	102 1354
3 1370	23 1370	43 1286	63 1315	83 1374	103 1354
4 1370	24 1366	44 1369	64 1394	84 1394	104 1357
5 1383	25 1371	45 1364	65 1371	85 1371	105 1359
6 1375	26 1290	46 1371	66 1390	86 1340	106 1299
7 1372	27 1372	47 1372	67 1388	87 1369	107 1364
8 1333	28 1346	48 1329	68 1369	88 1320	108 1357
9 1356	29 1363	49 1300	69 1292	89 1370	109 1357
10 1388	30 1386	50 1382	70 1390	90 1370	110 1360

TTL 1-10 136.82	TTL 21-30 135.98	TTL 41-50 135.62	TTL 61-70 137.06	TTL 81-90 136.70	TTL 101-110 135.65
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11 1401	31 1368	51 1386	71 1360	91 1398	111 1310
12 1394	32 1330	52 1390	72 1380	92 1403	112 1316
13 1368	33 1354	53 1371	73 1364	93 1218	113 1257
14 1368	34 1384	54 1380	74 1379	94 1148	114 1360
15 1387	35 1369	55 1369	75 1360	95 1387	115 1361
16 1371	36 1370	56 1384	76 1349	96 1400	116 1361
17 1365	37 1327	57 1370	77 1361	97 1373	117 1360
18 1367	38 1366	58 1376	78 1360	98 1370	118 1337
19 1369	39 1372	59 1370	79 1381	99 1369	119 1360
20 1310	40 1384	60 1362	80 1307	100 1403	120 1361

TTL 11-20 137.06	TTL 31-40 136.24	TTL 51-60 137.28	TTL 71-80 136.61	TTL 91-100 134.69	TTL 111-120 133.82
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TTL 01-20	TTL 21-40	TTL 41-60	TTL 61-80	TTL 81-100	TTL 101-120
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TOTAL 1-20	136.82	PAGE 1 TOTAL	1632.57	Shoe=
	137.06			Float=
TOTAL 21-40	135.98	PAGE 2 TOTAL		Shoe jt.=
	136.24			
TOTAL 41-60	135.62	FLOAT & SHOE		TOTAL JOINTS ON LOCATION
	137.28			
TOTAL 61-80	137.06	GRAND TOTAL:		REMARKS:
	136.61			
TOTAL 81-100	136.70			
	134.69			
TOTAL 100-120	135.65			
	133.82			
TOTAL 1-120	1632.87			AGENT OF OPERATOR: C. Sawoou

PARAMOUNT RESOURCES LTD.

PIPE TALLY

DATE: 99-02-09

WELL NAME PARA ETAL ARROWHEAD

CONTRACTOR PRECISION 507

PIPE DESCRIPTION 177.8 mm. 38.69 KG/M GRADE L80 RANGE 1

CPLG LTC THREAD 34.27 MFG. IPSCO NEW OR USED NEW

TYPE OF STRING 2ND INTERMEDIATE TALLIED THREADS OFF

PAGE 2 OF 2

LOCATION 0-15

LENGTH	LENGTH	LENGTH	LENGTH	LENGTH	LENGTH
1 1360	21 1360	41 1360	61 1113	81 1326	101
2 1312	22 1361	42 1360	62 1379	82 1347	102
3 1360	23 1357	43 1249	63 1380	83 1313	103
4 1361	24 1340	44 1363	64 1349	84 1369	104
5 1362	25 1357	45 1360	65 1360	85 1331	105
6 1361	26 1360	46 1361	66 1374	86 1382	106
7 1362	27 1335	47 1362	67 1399	87 1371	107
8 1358	28 1362	48 1245	68 1370	88 1375	108
9 1358	29 1355	49 1361	69 1368	89 1370	109
10 1361	30 1359	50 1358	70 1312	90 1368	110

TTL 1-10 13555	TTL 21-30 13546	TTL 41-50 13379	TTL 61-70 13404	TTL 81-90 13552	TTL 101-110
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11 1359	31 1364	51 1180	71 1343	91 1385	111
12 1356	32 1360	52 1361	72 1307	92 1365	112
13 1361	33 1361	53 1361	73 1390	93	113
14 1359	34 1361	54 1361	74 1073	94	114
15 1366	35 1357	55 1362	75 1386	95	115
16 1360	36 1358	56 1362	76 1369	96	116
17 1361	37 1361	57 1360	77 1371	97	117
18 1361	38 1360	58 1360	78 1394	98	118
19 1360	39 1359	59 1362	79 1367	99	119
20 1360	40 1359	60 1028	80 1381	100	120

TTL 11-20 13591	TTL 31-40 13600	TTL 51-60 13091	TTL 71-80 13381	TTL 91-100 27.50	TTL 111-120
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TTL 01-20	TTL 21-40	TTL 41-60	TTL 61-80	TTL 81-100	TTL 101-120
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TOTAL 1-20	13555	PAGE 1 TOTAL	163287	Shoe=	.40
	13597			Float=	.35
TOTAL 21-40	135.46	PAGE 2 TOTAL	1238.61	Shoe jt.=	13.54
	136.00				
TOTAL 41-60	13379	FLOAT & SHOE	.75		
	130.97				
TOTAL 61-80	134.04	GRAND TOTAL:	2872.23		
	133.81				
TOTAL 81-100	13552				
	27.50				
TOTAL 100-120					
TOTAL 1-120					

REMARKS:
 JOINTS # 1 THROUGH 101 ARE 38.69 Kg/m L80 LTC 8RD
 JOINTS # 102, 103, 104, 105, 106, ARE 34.2 Kg/m L80 LTC 8RD.
 JOINTS # 107 THROUGH 212 ARE 38.6 Kg/m L80 LTC 8RD
 LEFT OUT JOINTS # 104, 105, 106, 113, 168. USUAL LENGTH 66.11m

AGENT OF OPERATOR: G. SANDERS

DAILY DRILLING REPORT

WELL NAME Paramountetal Arrowhead LOCATION 0-15-60-30-123-02
Day 50 Depth ✓ Metres last 24 hr ✓ Rotating hrs ✓
Activity at report time Tear-out and move camp @ 08:00 Hrs.

Wt	Vis	WL	Gels	Solids	%	PV	YP	pH
Oil	%	%	Cake	PPMCL			PPMCs	
	Sand							

[illegible][illegible]

_____	•	at _____	in _____	•	at _____	in _____
_____	•	at _____	in _____	•	at _____	in _____
_____	•	at _____	in _____	•	at _____	in _____
_____	•	at _____	in _____	•	at _____	in _____

[illegible][illegible]

OPERATION	TODAY	CUM.
1. Drilling		
2. Trips		
3. Rig Service		
4. Deviation Surveys		
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation		
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		

DAILY	24000
CUMMULATIVE	2648000

16. Drilling Out

17. Last Circ.

18. Laying Down DP & BQP's

19. Plot & Abandon

20. Pick up - Tear out

21.

SUPERVISOR

Wilbert Calhoun

TOTAL	24
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PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

 FOR 24 HR PERIOD ENDING 99-03-07-24:00
 Yr-Mon-Day-Time

 WELL NAME Paramount at Arrowhead LOCATION 0-15-100-30-123-02

OPERATIONS DETAIL:

Tear out Rig and Equipment - Clean all Tanks - Lay down
 Derrick - Unspool Drilling Line thru Blocks - Drilled
 Wash Boiler - Clean out Shale Slump and send out to land
 Farm at Beaton River - Clean out 400 Bbl Slap Tank and send
 to Ft. St. John - Get Wellsite Units ready for Rig Move
 Order out Rig Move Trucks - Will Move Camp to Morning.

1- Green Box For MWD Tools
 6- 1" x 8" Bars For MWD Drilling
 1- White Box MWD Tools

WANT LIST:

2- Down Hole Drilling Motors - 4 3/4"
 2- 4 3/4" Non Magnetic Drill Collars
 1- 4 3/4" Short Non Magnetic Drill Collar

WEATHER: Cloudy - Wind - N 15 km/h - Cold - 22°C ROAD: Snow covered - Highway to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Return to Paramount Base Camp -

11 x 4 1/2" Casings 2- 8' x 48" Mats For Invert Tanks
 9 x 3 1/2" Drill Pipe 1- 138" - 500 x 11" - 5000 DSA Flange
 2 x 3 1/2" Heat Waste Pipe 2- 400 Bbl Tanks

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-03-06-24:00
Yr-Mon-Day-TimeWELL NAME Paramount Attouthead LOCATION 8-15-100-30-123-02**OPERATIONS DETAIL:**

(4)

Lay down Drill Pipe - Run in 8 Stands Hevi Wate From Dens
Lay down Hevi Wate Pipe - Rig out Lay down Machine - Rig
in Computalog Wire Line - Run in Gauge Rig on Wire Line
Get down to 2334 m with Gauge Rig and Hang up in Casing - Not
able to Work Gauge Rig any deeper - Pull out Gauge Rig
and Rig was Jammed with Pieces of Rubber From Packers
Make up Bridge Plug and Run in on Wire Line - Bridge Plug
Hang up at 2306 m - Not able to Work Plug any deeper - Set
Bridge Plug @ 2306 m - Pull out Wire Line - Make up Dump Bailer
and Fill with Cement - Run in and Drop 3 m Cement Plug on
Top of Bridge Plug - Rig out Wire Line - Nipple down and
Tear out BOP Stack - Install Wellhead - Test out Rig.

Rig Released at - 1999-03-06-23:59 Hrs.

WANT LIST:WEATHER: Cloud-Sunny-Breeze-20°C ROAD: Heavy Sand on Highway & Lease Road**IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)**

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-03-05-24:00
Yr-Mon-Day-TimeWELL NAME Paramount at Arrowhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

(4)

Work on Weatherford Operator with Free Point and Backoff
Tools to Arrive - Make up Free Point into Computer Wireline
Run on Free Point Tools - Found Pipe Free @ 2733 - Shut @ 2733
Pull out Free Point - Make up Run in w/ 980 Gram String Shot -
net Back off Pipe - Pull out - Run in with 1400 Gram String Shot -
Get back off - Pull out and lay down Wireline & Tool - Pull out
and lay down 1 IT Heli Water Drill Pipe - Rig in lay down
Machine - Laying down Drill Pipe at Mid site

Since Mid site - All Pipe layed down - Rig in and Run in
Gauge Ring on Wireline @ 07:00 Hrs.
Running Gauge Ring Peter to Running Wireline Bridge Plug
Left 30 I/S 8mm - Grade E Pipe in Hole

WANT LIST:

WEATHER: Clear-Cold-Wind-North -20°C ROAD: Snowy on Highway to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-03-04
Yr - Mon - Day - Time

WELL NAME Paramount total Airwhood LOCATION 0-15-100-30-123-02
 Day 47 Depth ✓ Metres last 24 hr ✓ Rotating hrs ✓
 Activity at report time Wait on Weather Ford Fisherman

DRILLING MUD PROPERTIES AT SHAKERS/SUCTION/PIT

Wt _____ Vls _____ WL _____ Gels _____ Solids _____ % PV _____ YP _____ pH _____
 Oil _____ % Sand _____ % Cake _____ PPMCL _____ PPMCa _____

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL		JET VEL	HHP	SURF. PRESS kPa
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			

DEVIATION SURVEYS

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

CRW/32F Inhibitor - 410 litres
1500 litres diesel fuel

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling		
2. Trips		
3. Rig Service		
4. Deviation Surveys		
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation	2.0	
8. Rig Repair		
9. Wait on Backoff Tools	6 1/4	
10. Fishing		
11. Logging Free Point Backoff	10	
12. Coring		
13. Formation Testing		
14. Waiting on		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Backoff Pipe	1 1/2	
18. Laying Down DP & BOP's		
19. Plug & Abandon	1/2	
20. Work Stuck Pipe	1 1/4	
21. Safety Meetings	3/4	
TOTAL	24	

COSTS

DAILY 49000
 CUMMULATIVE 2508500

SUPERVISOR

Willbert Calhoun

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-03-04-24:00
Yr - Mon - Day - Time

WELL NAME Paramount total Attached LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

Wait on Weatherford Operator to arrive w/ Free Port Tools and String Shot Equipment - Rigin Free Port on Computalog Wireline - Run in to Find Free Port - Found Free Port at 3006 M - Pipe was stuck @ 3014 M - Calculated Cement Top was to have been @ 3115 M - Made up String Shot - Run in and Backed off Pipe @ 3004 M - Pull out of Stuck Pipe - Lay down String Shot Tools and Wireline - Pick up Kelly - Break CTR - Displaced Hole and Casing to Inhibited Water - Pull out 3 Stds & B Single Pipe - Rigin Cementers - Run 3 Stands Pipe back in Hole - Rigin New 8 Cementers - Run Cement Above desired Plug #2 - 4.6 tonnes Thermal 40 Cement - 3.49 m³ Cement Slurry which would be 180 M Plug length in 150 mm Hole - Displaced with 9.6 m³ Water - Broke off Cementing lines - Pull out 8 Stands Pipe or 2250 M Pipe - Pipe Dry - Rigin Wireline and Run in to Lag Plug Top - Found Cement Top @ 2780 M - Rigin Cementers - Not able to CTR - Not able to Move Pipe - With Pipe and not Moving - Phone Weatherford Man to come back in From Ft Nelson -

Wait on Weatherford operator @ 0710 Hrs.

WANT LIST:

WEATHER: Cloudy-Cold-Wind-Nat 20 kph -18°C ROAD: Snow Covered on Highway to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

WELL NAME Paramount at Redwood LOCATION A-15-60-30-125-02

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

BIT RECORD

CIRCULATION RECORD

DEVIATION SURVEYS

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TIME ANALYSIS

COSTS

15. Nipple Up & Test BOP's		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Work Stuck Pipe	1 1/4	
20. Wait on Fishing Tools	11	
21. Safety Meeting	1/4	
TOTAL	34	

PARA-DRL RPT.xls

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-03-03-14:00
Yr-Mon-Day-Time

WELL NAME Paramountetal Arkhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

18

Lay down and Move Drill Collars - Measure Heavy Water Drill
Pipe - Pickup and Back in Derrick - Run in Hole Open End -
Pickup Kelly - Break Circ @ 3292m - Circ - Clean to Bottom - Held
Safety Meeting w/ Newco Cementers - Rig up & Run Plug #1 - 3301-3135m
⇒ Displace Plug w/ Invert - Break off Cementing Swadge - Pull Pipe
out of Hole - Pulled 2 Stands out of Hole - Pulling Very Tight -
Watch Pipe - Pulled out 1 Single & Broke off - Pickup Kelly -
Notable to Circ - Unable to Pull or Move Pipe - Phone Weather Ford
in Ft St John to get out Charge to Sever Pipe - Notable to Fly
out Explosives - Will have to get Charge out from Grande
Prairie through Ft St John by Pickup - Wait on Weather Ford
Fisherman to Arrive

Since Midnite - Weather Ford Fisherman Arrived @ 2:30 AM
Rig Weather Ford Electrician Panel in to Camp at a 1/2 mile
Live Truck - Rig in Free Point Tools & Wireline. Sheaves -
Ran in with Free Point Locator - Tool quit working - Pull
out & Lay Down - Run in with another Free Point Tool -
Running Free Point Locator @ 07:00 Hrs.

WANT LIST:

WEATHER: Clear - Cold - Wind - 30kph - N - 18°C ROAD: Snow on Highway to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-03-02-24:00
Yr-Mon-Day-Time

WELL NAME Paramount Atterhead LOCATION 0-15-60-30-123-02
Day 45 Depth 3301 Metres last 24 hr ✓ Rotating hrs ✓
Activity at report time Run Cement Abandonment Plug @ 02:00

DRILLING MUD PROPERTIES AT SHAKERSUCTION/PIT

Wt 1075 Vls 68 WL 13.5 Gels 30/45 Solids 14.2 % PV 39 YP 1.44 pH
OU 88.6 % Sand 1003 % Cake 1 PPMCL 21111 PPMCs 82888

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.			
				WT	RPM							T	B	G	
RR7	156	Reed-EHP514	009771	✓	✓		Clean out Trip								

CIRCULATION RECORD

BIT NO.	JETS - mm			STROKE	PUMP			ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3		SPM	LINER	m³/MIN	DP	DC			
RR7	15.9	15.9	15.9	203	105	114	164	50	84	30		9000

DEVIATION SURVEYS

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

Balite-1530x

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN
1-Bit		156	20	
1-Bit Sub		120	.78	
21-Drill Collars		89	104.10	
12-Heavy Weight P		89	110.32	
312-Drill Pipe		89	2988.44	
1-Kelly		89	7.30	

TIME ANALYSIS

					OPERATION	TODAY	CUM.
					1. Drilling		
					2. Trips	1/4	
					3. Rig Service	1/2	
					4. Deviation Surveys		
					5. Ream & Cond. Hole		
					6. Mix & Cond. Mud		
					7. Circulation	3 3/4	
					8. Rig Repair		
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing	5	
					14. Waiting on		
					15. Nipple Up & Test BOPS		
					16. Drilling Out		
					17. BOP Drill	1/4	
					18. Laying Down DP & BOP's		
					19. Plug & Abandon		
					20. Rig up - Tear out		
					21. Strip and Cut Line	1/2	
					TOTAL	24	

COSTS

DAILY 40000
CUMMULATIVE 2424500

SUPERVISOR

Wilbert Callitoo

PAR/MOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-09-02-21:00
Yr - Mos - Day - Time

WELL NAME Paramountetal Arrowhead LOCATION 0-15-16-30-123-02

OPERATIONS DETAIL:

1*

Finish Reverse Circ out Test Fluid and Invert Circulation From Drill Pipe - Recovered 3m³ Very Gassy Fresh Salt Water testing @ 142,000 PPM Salinity - Rig out Reverse Circ Lines - Pump Weight Material Pill - Pull out of Hole - Recover Recorders and Read Pressures - Break Down and Lay Down Test Tools - Had Plugged Drill Collar between Reverse Circ Pump out Sub plus Top Recorder Carrier - Pump out Sub and Cross Over Sub - Total of 11-12 m Tool Plugged with Formation Material - Make up Bit and BHA - Run in For Clean out Trip - Load out Test Tools and Release Tester - Run in - Break Circ - Clean out to Bottom - Circ to Card and Mud and Clean Hole - Pushed Packer Rubbers to Bottom - Pump Weight Material Pill - Pull out of Hole - Lay Down Drill Collars -

Ordered out Newco Cementers and Cement along with Computalog Plug Loggers - Will be Running Cement Abandonment Plugs

WANT LIST:

WEATHER: Clear - Cool - Wind - 20 km/h - 14°C ROAD: Good on Highway - Fair to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-03-01-24:00
Yr - Mon - Day - TimeWELL NAME Paramount at Alameda LOCATION 0-15-100-30-122-02

OPERATIONS DETAIL:

15

Break Down DST #2 - Recover Recorders - Read Charts and get Pressures - Change Packer Rubbers - Both Rubbers were left down Hole - Make up DST Tools changing Interval from 19M to 11M - Run in with Tools for DST #3 - Measure in Hole Position Packers - Head up Test String - Pump up and set Packers - Open Tool - Good Air Blow building to String at Bottom of Pail after 4 mins holding at String for Beat of 10 min Pre Flow Shut in for packing - Went to Open Tool and did not get any Blow thru Hose - Close and Re-open Tool 3 Times and not able to get Tool to Open - Shut in Tools - Pull hose and Pull out of Hole - Hit Fluid at 1700M Pipe left in Hole - Had put 870M Invert Cushion in for Test - Had increase of 830M Fluid in Pipe - Drop Back & Re-Set & Cite Out - Recovered 3.18m³ Fluid above Cushion amount - Mostly Very Gassy Salt Water - Salinity of Water Tests @ 142,000 PPM - Make up Bit & BHA to Run in for Clean out Trip.

WANT LIST:

WEATHER: Clear - Wind - 20km/h - Cool - 19°C ROAD: Good on Highway - Fair to location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARA-DRL RPT.xls

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-28-24:00
Yr - Mo - Day - Time

WELL NAME Paramount at Arrowhead LOCATION 0-15-60-30-128-02

OPERATIONS DETAIL:

Finish Pulling out of Hole with Clean out String - Pickup -
make up and Run in Test Tools For DST #3 - Different Interval
3251-3270M - Installed different Electronic Recorders
supposed to work under High Temperature - Ran Tools in Hole
less Problem getting Packers down to Seating area - Did
not have to wait string to get down - Position Packers -
Pump up and set Packers - Open Tool - Better Air Blow
than DST #1 - Hose went into water in Pail 1 1/4" - Shut in
after 10 mins. For 60 min Shut in - Opened Tool and lost Packer
Seat after 40 Secs Tool Opened - Pull up to close Tool -
Pulled out of Hole - Hit Fluid at 77 Stds out of Hole - Fluid
Level was 200M Higher than Invert Cushman Packer on way
in Hole - Drop Bar - Reverse Circ out Fluid - Indications of
Salt Water in Recovery - Pulling out of Hole @ Midnite

Since Midnite - Have pulled out of Hole - Recover Recorders
and Read Pressures - Electronic Recorders did not give
Readings again - Had 2 Bottom Hole Samplers down Hole
and will be able to get Fluid Recovery checked on contents
of Samplers - Better Packer Rubbers Stopped off again.

WANT LIST:

WEATHER: Clear - Calm - Cool - 12° C

ROAD: Good on Highway - Fair to location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-27-24:00
Yr-Mos-Day-Time

WELL NAME Paramount Arrowhead LOCATION 0-15-60-30-123-02
Day 42 Depth 3301 Metres last 24 hr ✓ Rotating hrs ✓
Activity at report time Make up Run in with DST #2

DRILLING MUD PROPERTIES AT SHAKERS/SUCTION/PIT

Wt 1070 Vls 54 WL 13.5 Gels 2.4/4.2 Solids 16.6 % PV 29 YP 1.44 pH
Oil 88.7 % Sand 1.003 % Cake 1 PPMCL 133333 PPMCa 66666

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
R97	156	Reed-EXP514	MM9771	2-3	60-70	Clear out	Packer	2				3	3	74

CIRCULATION RECORD

BIT NO.	JETS - mm			STROKE	PUMP			ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3		SPM	LINER	m/min	DP	DC			
R97	15.9	15.9	15.9	203	100	114	167	51	86	3.1		8500

DEVIATION SURVEYS

• at	m	• at	m
• at	m	• at	m
• at	m	• at	m
• at	m	• at	m

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN
1-Bit		156	2.0	
1-Bit Sub		120	.78	
21-Drill Collars		120	194.16	
12-Heavy Wdr DP		89	110.32	
104-Drill Pipe		89	298.44	
1-Kelly		89	7.30	

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling		
2. Trips	11 1/4	
3. Rig Service	1/2	
4. Deviation Surveys		
5. Beam & Cond. Hole Clean Rubber	2	
6. Mix & Cond. Mud		
7. Circulation	3 3/4	
8. Rig Repair Master Clutch	1/2	
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing	5 1/2	
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21. Slip out drill line	1/2	
TOTAL	24	

COSTS

DAILY 301.00
CUMMULATIVE 2290.00

SUPERVISOR Wilbert Callibee

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-01-27-24:00
Yr - Mos - Day - Time

WELL NAME Paramount total Arrowhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

Pullout Test Tools - Had to Pull out slow to Allow Hole Fill Fluid to get by Packers and Drag Down to Fill Hole - Hit Fluid at 76 stands out and had Filled Pipe with Invert Cushion at 81 Stands out - Got 5 Stands - 142m - .46m³ Fluid on Test No visible Signs of Water in Recovery in Invert Fluid - Invert had thickened up in Cushion which is an indication of Water Contamination - Pulled out of Hole after Reverse Circ Fluid out of Pipe - Recover Recorders - 2 Electronic Recorders did not Work due to High Bottom Hole Temperature (150°C) Both Mechanical Recorders worked and were able to get Pressures of F Charts - Tools also stopped Stages of Plugging - Both Packer Rubbers came off and were left down hole - Broke down and hauled down Test Tools - Faxed Test Results and Pressures to Calgary Made up Re-Run Bit and Bore in Hole - Hit Packer Rubber @ 3245m Pickup Kelly - Break Circ - Clean out to Bottom @ 3301m - Had only Packer Rubbers and Not Wire-Braid Case left down hole so were able to Clean out with no Problems - Circ - Work Pipe - Cond mud and Hole For test #2 over same Zone - Ordered out 2 Hi-Temp Electronic Recorders from Grande Prairie and also more Ammonia and Inhibitor for Safety Boss on some Trip Circ till 21:00 hrs - Pump wt Material Fill - Pull out of Hole

Since Midnite - Got out of Hole - Made up Test Tools with 19m vs 25m Interval - Install Higher Temp Electronic Recorders Run in Hole - Fill Pipe with Invert Cushion

WANT LIST:

WEATHER: Clear - Calm - Cold - -22°C

ROAD: Good on Highway - Fair to location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-26-24:00
Yr. Mo. Day - Time

WELL NAME Paramount at Arrowhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

Run to Hole w/ Inflate Straddle Test Tools - Measure in Hole - Work Packers down last 50m to Setting Depth - Had to Pick up and Work down Test Tools - Position Packers over Test Interval - Pump up and Set Packers - Open Tool - Had very weak Air Blow - Shut in Tool after 10 mins Pte Flow - Leave Shut in For 10 mins - Re-Open Tool - Still have very weak Air Blow - Hase has Bubbles on Sur Face of Water in Pail and increased to Bubbles at 2" Below Sur Face of Water by End of 90 mins. Valve Open - Shut in Tool For 270 mins (3 Times Valve open) Deflate Packers & Pull Loose - Break down Test Head and lay down - Pull out of Hole - First 5 Stands Swabbed Fluid out of Hole - Took Flow Check - Well Stable - Pulled 5 more stands and Fluid staying Stable in Hole - Fluid not Swabbing but also not dropping in Hole - Pulled 18 Stands to get up into Casing - Close Pipe Rams and Pump through Kill Line to push Fluid Past Packer Rubbers and down Hole - Hse Took Correct Amount of Fluid For Pipe Pulled out of Hole - Continuing Pulling out and Stopped every 12-15 Stands to Pump Fluid past Packer Rubbers - Had to Pull Pipe very slow to keep from Swabbing Fluid out of Hole - After Pulling 56 Stands Mud in Hole started to go Past Rubbers and Hse Took Taking Correct Amount of Fluid - Pull Pipe Slow till Midnite

Since Midnite - Got out of Hole - Reversed C/L to Pump out Invert Cushion @ 76 Stands out - No Gas Bubble Followed Packers out of Hole - Break down Test Tools - Recovered and Read Records For Results to Calgary - Electronic Recorders Failed due to High

WANT LIST: Temperature - Tool Partially Plugged - Lost Both Packer Rubbers down Hole -

WEATHER: Clear-Snow-Wind N-W 10-15 -12°C ROAD: Good on Highway - Rough to location
 IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

WELL NAME Perseus at Al Attouhad LOCATION D-15-60-30-123-02
Day 41 Depth 3301 Metres last 24 hr ✓ Rotating hrs ✓
Activity at report time Break down Test Tools @ 07:00Hrs

Wt	Vis	WL	Gels	Solids	%	PV	YP	pH
Oil	%	%	Cake	PPMCL			PPMCa	
	Sand							

[illegible][illegible]

_____	•	at	_____	_____	•	at	_____	_____
_____	•	at	_____	_____	•	at	_____	_____
_____	•	at	_____	_____	•	at	_____	_____
_____	•	at	_____	_____	•	at	_____	_____

[illegible]

OPERATION	TODAY	CUM.
1. Drilling		
2. Trips	11 1/2	
3. Rig Service	1/2	
4. Deviation Surveys		
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation		
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing	12	
14. Waiting on:		

DAILY	34300
CUMMULATIVE	2159900

DAILY

34300

CUMMULATIVE

22599.00

SUPERVISOR

Wilbert Calliano

TOTAL

24

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-09-26-24:00
Yr - Mo - Day - Time

WELL NAME Paramount At Arrowhead LOCATION 0-15-60-30-128-02

OPERATIONS DETAIL:

Run in Hole w/ InFlate Straddle Test Tools - Measure in Hole - Work Packers down last 5m to Setting Depth - Had to Pick up and Work down Test Tools - Position Packers over Test Interval - Pump up and Set Packers - Open Tool - Had very weak Air Blow - Shut in Tool after 10 mins Pte Flaw - Leave Shut in For 10 mins - Re-open Tool - Still have very weak Air Blow - Have Gas Bubbles on Sur Face of Water in Pit and increased to Bubbles at 2" Below Sur Face of Water by End of 90 mins. Valve open - Shut in Tool For 270 mins (3 Times Valve open) Deflate Packers & Pull loose - Break down Test Head and lay down - Pull out of Hole - First 5 Stands swabbed Fluid out of Hole - Took Flow check - Well Stable - Pulled 5 more stands and Fluid staying stable in Hole - Fluid not swabbing but also not dropping in Hole - Pulled 18 Stands to get up into Casing - Close Pipe Rams and Pump through Kill line to push Fluid past Packets Rubbers and down Hole - Hole took correct Amount of Fluid For Pipe Pulled out of Hole - Continuing Pulling out and Stopped every 12-15 Stands to Pump Fluid past Packets Rubbers - Had to Pull Pipe very slow to keep from swabbing Fluid out of Hole - After Pulling 54 Stands Mud in Hole started to go past Rubbers and Hole was Taking correct Amount of Fluid - Pull Pipe slow till Midnite

Since Midnite - Got out of Hole - Reversed Cx to Pump out Invert Cushion @ 76 Stands out - No Gas Bubble Followed Packets out of Hole - Break down Test Tools - Recased and Read Recorder Fax Results to Calgary - Electronic Recorders Failed due to High

WANT LIST: Temperature Tool Partially Plugged - Lost Both Packet Rubbers down Hole -

WEATHER: Overcast-Snow-Wind-N-W 12-14 -12°C

ROAD: Good on Highway - Rough to location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-25-24:00
Yr - Mon - Day - Time

WELL NAME Paramount at Arrihead LOCATION D-15-60-30-123-02
Day 40 Depth 3201 Metres last 24 hr ✓ Rotating hrs ✓
Activity at report time _____

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt _____ Vis _____ WL _____ Gels _____ Solids _____ % PV _____ YP _____ pH _____
Oil _____ % Sand _____ % Cake _____ PPMCL _____ PPMCa _____

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP			m³/MIN	ANN. VEL.		JET VEL.	BHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER		DP	DC			

DEVIATION SURVEYS

MUD & CHEMICALS ADDED

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

BOTTOM HOLE ASSEMBLY

TIME ANALYSIS

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN	OPERATION	TODAY	CUM.
					1. Drilling		
					2. Trips		
					3. Rig Service		
					4. Deviation Surveys		
					5. Ream & Cond. Hole		
					6. Mix & Cond. Mud		
					7. Circulation		
					8. Rig Repair		
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing		
					14. Waiting on:		

COSTS

DAILY 33600
CUMMULATIVE 2225600

SUPERVISOR Wilbert Callitron

15. Nipple Up & Test BOPs		
16. <u>Wait on Orders</u>	<u>3 3/4</u>	
17. <u>Wait on Tester</u>	<u>10 3/4</u>	
18. Laying Down DP & BOPs		
19. Plug & Abandon		
20. Rig up - Tear out		
21. <u>Slip & Cut Del Line</u>	<u>1/2</u>	
TOTAL		

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 98-02-25-24:00
Yr - Mon - Day - Time

WELL NAME Paramount at Arrowhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

18

Finish Running logs with Baker Atlas - Tear out and lay down Logging Tools - Send Logs to Calgary with Constellation
Wait on Orders - Call Tester & wait on Tester to Arrive
From Ft St. John - Pick up - Make up and Run in Test Tools
Filling 900M Pipe with Inert For Test Cushion

Since didn't have Run in with Test Tools - Work Tools down to Test Zone For Inst. 45M - Head up Test Tools - Pump up Packers - Set Packers - Open Tool @ 06:24 Hrs. Had initial Open Formation till 06:34 - Close it Tool - Had Very Weak Air Blow on initial Open - Hose Moving Water just below Surface Have 900M Inert Cushion in Pipe to balance hydrostatic difference between Formation and Pipe - Will open Tool again @ 07:34 Hrs.

WANT LIST:

WEATHER: Overcast - Wind 15 KM/H S-E - Cool - 10°C ROAD: Good on Hiway - Fair to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-24-24100
Yr - Mon - Day - Time

WELL NAME Paramount at Arrowhead LOCATION 0-15-60-30-123-02
Day 30 Depth 3301 Metres last 24 hr ✓ Rotating hrs ✓
Activity at report time Finished logging - waiting on permits

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

WI 1066 Vis 57 WL 13.2 Gels 1.5/1.5 Solids 8.1 % PV 19 YP 3.35 PH
Oil 93 % Sand .004 % Cake 1 PPMCL 191666 PPMCa 123333

BIT RECORD

[illegible]

CIRCULATION RECORD

[illegible]

DEVIATION SURVEYS

_____	•	at _____	_____	•	at _____	_____
_____	•	at _____	_____	•	at _____	_____
_____	•	at _____	_____	•	at _____	_____
_____	•	at _____	_____	•	at _____	_____

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

[illegible]

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling		
2. Trips	4 3/4	
3. Rig Service	1/4	
4. Deviation Surveys		
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation		
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging	19	
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21.		
TOTAL	24	

COSTS

DAILY	110,000
CUMMULATIVE	2,222,000

SUPERVISOR

Wilbert Callitree

TOTAL	24
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PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

 FOR 24 HR PERIOD ENDING 99-02-24-24:00
 Yr - Mon - Day - Time

 WELL NAME Bismontal Airhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

14

Finish Pulling out of Hole to Run Logs in Hole - Regin Baker
 Atlas Logging Tools - Run Logging Tools in Hole - Tools went in
 to Bottom with no Problems - Had Problems with Density
 Tool not working - Not able to Repair Tool on Location - Ran
 Beat of Logs - Brought to Replacement Density Tool and Running
 Log - Logging all Day - No Hole Problems

Since Midnite - Finished Running Logs and Logging Truck
 Left Location @ 04:00 Hrs - Truck going to P-57 Location
 Precision Rig #329

WANT LIST:

 WEATHER: Overcast - Calm - Cool - 10°C

 ROAD: Good on Hiway - Fair to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

 FOR 24 HR PERIOD ENDING 99-02-23-24:00
 Yr - Mon - Day - Time

 WELL NAME Paramount et al Arrowhead LOCATION 0-15-60-30-128-02
 Day 28 Depth 3901 Metres last 24 hr 56 Rotating hrs 17 1/2
 Activity at report time Run Logs in Hole with Baker Atlas

DRILLING MUD PROPERTIES AT SHAKERSUCTION/PIT

 Wt 1065 Vis 50 WL 13 Gels 2.5/1.5 Solids 8.1 % PV 19 YP 3.35 pH
 Oil 93 % Sand 0.04 % Cake 1 PPMCL 191666 PPMCa 123333

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hr	m/hr	Dall Cond.		
				WT	RPM							T	B	G
9	152	HC-STR 20	X74YE	8-10	80	3101	56	199	17 1/2	56 3/4		3	6	In

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m/MIN	DP	DC			
9	11.1	11.1	11.1	203	140	11.4	167	51	86	31		9100

DEVIATION SURVEYS

3 3/4"	at	3300 m		at		m
	at			at		m
	at			at		m
	at			at		m

MUD & CHEMICALS ADDED

Invert 5m³
Belite - 27.5 ax

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN
1 - Bit		152	.20	
1 - Bit Sub		120	.78	
21 - Drill Collars		120	194.16	
12 - Heavy Wtd DP			110.30	
313 - Drill Pipe			1088.44	
1 - Kelly		1	7.30	

TIME ANALYSIS

					OPERATION	TODAY	CUM.
					1. Drilling	17 1/2	
					2. Trips	2 1/2	
					3. Rig Service	1/2	
					4. Deviation Surveys		
					5. Ream & Cond. Hole		
					6. Mix & Cond. Mud		
					7. Circulation	2 1/2	
					8. Rig Repair		
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing		
					14. Waiting on:		
					15. Nipple Up & Test BOPS		
					16. Drilling Out		
					17. Lost Circ.		
					18. Laying Down DP & BOP's		
					19. Plug & Abandon		
					20. Rig up - Tear out		
					21.		
					TOTAL	24	

COSTS

 DAILY 27650
 CUMMULATIVE 3112000

 SUPERVISOR Wilbert Callibao

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-23-24:00
Yr - Mon - Day - Time

WELL NAME Paramount total Ahead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

Drill Ahead carrying 7-8" dan Bit Weight - Increased Bit Weight to 10 med dan From 3288 to T.D. @ 3301M - Drilled past 3300M before getting to logging depth - Circ For 1 Yr - Make 18 Stand Wiper Trip - Hole O.K. - Circ & Wash Pipe For 2 Hrs - Drop Survey - Pump wt Material Pill - Pull out to Burr logs

Since slide into - Have Pulled out of Hole - Measured out - Board Tally Deeper - Deviation out to 3 3/4° - Ripped in Baker logging Tools - Running logging Tools in hole

Meas Tally - 3292.33
Board Tally - 3293.70

WANT LIST:

WEATHER: Clear - Calm - Cool - 12°C

ROAD: Good on Highway - Fair to location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-23-24:00
Yr-Mon-Day-Hr:Min

WELL NAME Paramount at Aloubahead LOCATION 0-15-60°30'N-129°02'W
 Day 37 Depth 3245 * Metres last 24 hr 72 Rotating hrs 20 3/4
 Activity at report time Drill 15mm Hole @ 3270 @ 07:00 Hrs.

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1075 Vls 47 WL 12.8 Gels 2/1 Solids 8.4 % PV 18 YP 2.87 pH
 Oil 93.2 % Sand 100.35 % Cake 1 PPMCL 189625 PPMCa 122586

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
9	156	HC-ST 20	V744F	8-10"	80		72	143	20 3/4	39 1/4	3.64	Run		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP			ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER m/MIN	DP	DC			
9	11.1	11.1	11.1	203	110	114	51	86	31		9000

DEVIATION SURVEYS

1	at	3168 m		at		m
2	at	3225 m		at		m
	at			at		m
	at			at		m

MUD & CHEMICALS ADDED

Lime - 11 Sack

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN
1- Bit		156	1.20	
1- Bit Sub		119	.78	
21- Drill Collars		119	194.16	
12- Heavy Weight		89	110.20	
307- Drill Pipe		89	2930.02	
1- Kelly		89	9.54	

TIME ANALYSIS

OPERATION					TODAY	CUM.
1. Drilling					20 3/4	
2. Trips						
3. Rig Service					1/2	
4. Deviation Surveys					2	
5. Ream & Cond. Hole						
6. Mix & Cond. Mud						
7. Circulation					1/2	
8. Rig Repair						
9. Run Casing & Cement						
10. Fishing						
11. Logging						
12. Coring						
13. Formation Testing						
14. Waiting on:						
15. Nipple Up & Test BOPS						
16. Drilling Out						
17. Lost Crt.						
18. Laying Down DP & BOP's						
19. Plug & Abandon						
20. Rig up - Tear out						
21. BOP Drill					1/4	
TOTAL					24	

COSTS

DAILY 29921
 CUMMULATIVE 2084350

SUPERVISOR

Willbert Callifano

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-02-22-24:00
Yr - Mon - Day - TimeWELL NAME Paramountata Arrowhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

Drill Ahead 15m Hole - Run Deviation Survey @ 3165m and
Hole Angle was 1° - Run next Survey @ 3225m and Deviation is out
to 2° - Held Back on Bit Weight From 14,000 lbs to 8,000 lbs
Hole in Good Shape - Held BOP Drill with Weight Crew after
Arriving - Computer did not have logging truck available to
Leave Grande Prairie until this A.M. - Will Drill ahead until we
receive phone call informing us that logging Truck and
Crew is on the way - Then will Condition Hole to Log

WANT LIST:

WEATHER: Clear - Calm - Cool -10°CROAD: Grande Prairie - Fair to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-62 22 86cw
Yr - Mon - Day - Time

WELL NAME PARA ETAL ARROWHEAD LOCATION O-15 60° 30' N 123° 02' W
 Day 36 Depth 3173 Metres last 24 hr 68 Rotating hrs 22.50
 Activity at report time DRILLING 156 min idle

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1670 Vis 47 WL 4 Gels 20/1.0 Solids 71.6 % PV 17.60 YP 3.35 pH
Oil % Sand 1004 % Cake 10 PPMCL 183333.3 PPMCa 123333.3

BIT RECORD

[illegible]

CIRCULATION RECORD

[illegible]

DEVIATION SURVEYS

12	at	3121	in		at		in
	at		in		at		in
	at		in		at		in
	at		in		at		in

MUD & CHEMICALS ADDED

MSO 600E 19L.

BOTTOM HOLE ASSEMBLY

[illegible]

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling	22.56	
2. Trips		
3. Rig Service	.56	
4. Deviation Surveys	1.60	
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation		
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21.		
TOTAL	24	

COSTS

DAILY	23 876
CUMMULATIVE	2056 429

SUPERVISOR

Q. SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-22 0600
Yr. Mon. Day TimeWELL NAME PARA ETAL ARROWHEAD LOCATION 0-15-66° 30' N 123° 02' W

OPERATIONS DETAIL:

1*

DRILL & SURVEY AHEAD Hole Good

FUNCTION MOTOR KILLS OK

FUNCTION TOP PIPE 2min 6sec

WANT LIST:

WEATHER: 0/CAS

- 10

ROAD: Good

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

MOVED ALPINE EQUIPMENT TO A.O.I

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99 02 20 0600
Yr - Mon - Day - Time

WELL NAME PARA ETAL Arrowhead LOCATION 6-15-60-30'N 127°02'W
 Day 34 Depth 3085 Metres last 24 hr 66 Rotating hrs 21.75
 Activity at report time SURVEYING

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1065 Vis 47 WL Gels 2.0 Solids 7.6 % PV 16.06 YP 3.83 pH
 Oil 92.5 % Sand 1004 % Cake 1.0 PPMCL 149253.7 PPMCa 110442.8

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
8	156	10005716	12647	12	80		66	149	21.75	54.25	2.74			

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			kPa	
8	11.9	11.9	11.9	203	116	114	1671	51	56	31		82014	

DEVIATION SURVEYS

1/2 at 3026 m at _____ m
 at _____ m at _____ m
 at _____ m at _____ m
 at _____ m at _____ m

MUD & CHEMICALS ADDED

BARITE 42 SY
LIME 24 SY

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN
<u>BIT</u>		<u>156</u>	<u>20</u>	
<u>BIT SUB</u>		<u>119</u>	<u>7F</u>	
<u>21-DC</u>		<u>119</u>	<u>194.3</u>	
<u>12 HROP</u>		<u>89</u>	<u>140.31</u>	

TIME ANALYSIS

OPERATION					TODAY	CUM.
1. Drilling					<u>21.75</u>	
2. Trips						
3. Rig Service					<u>1.23</u>	
4. Deviation Surveys					<u>2.60</u>	
5. Ream & Cond. Hole						
6. Mix & Cond. Mud						
7. Circulation						
8. Rig Repair						
9. Run Casing & Cement						
10. Fishing						
11. Logging						
12. Coring						
13. Formation Testing						
14. Waiting on:						
15. Nipple Up & Test BOPS						
16. Drilling Out						
17. Lost Circ.						
18. Laying Down DR & BOP's						
19. Plug & Abandon						
20. Rig up - Tear out						
21.						
TOTAL					<u>24.58</u>	

COSTS

DAILY 62700
 CUMULATIVE 1993377

SUPERVISOR G. SANDERS

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-02-20 1600
Yr - Mon - Day - TimeWELL NAME PARA 67A ARROWHEADLOCATION 0-15 60°30'N 123° 02'W

OPERATIONS DETAIL:

15

DRILL AND SURVEY ARROW
FUNCTION TEST 37M PIPE RAMS 6 SEC.
LONGEST DRILLING BREAK TUE SEEN

WANT LIST:

WEATHER: 0/CAS1

-16

ROAD: G080

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

MOVED ENTIRE EQUIPMENT TO ASI PRECISION 373.

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 75 02 21

11 - Mon - Day - Time

WELL NAME PARA ETAL ARROWHEADLOCATION D-15 60° 30' N 123° 28' WDay 35Depth 3105Metres last 24 hr 20Rotating hrs 7.50Activity at report time DRILLING 156 mm Hole

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1070 Vis 47

WL

Gels 2.0/1.0 Solids 7.8 % PV 17.00YP 752 pHOil 92.6 %Sand 1004 %Cake 1.0PPMCL 153846.2PPMCa 113846.2

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
8	156	VARLE PROSIT 116	DL447	12	80	3102	17	165	534	534	2.76	4	6	1
9	156	HC STR 20	K744F	8	80		3	3	1.75	1.75	2.9		0.8	

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m³/MIN	DF	DC			
8	11.9	11.9	11.9	203	110	114	.671	51	86	31		8200
9	11.1	11.1	11.1	203	110	114	.671	51	86	31		9100

DEVIATION SURVEYS

134	at	3071	m		at		m
2	at	3090	m		at		m
	at		m		at		m
	at		m		at		m

MUD & CHEMICALS ADDED

BARITE 155X

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT		156	.20	
Bit Sub		119	.79	
21 - Drill Collars		115	194.15	
12 - HWOP		89	110.31	

TIME ANALYSIS

OPERATION					TODAY	CUM.
1. Drilling					7.50	
2. Trips					9.0	
3. Rig Service					1.75	
4. Deviation Surveys						
5. Ream & Cond. Hole						
6. Mix & Cond. Mud						
7. Circulation	3m up Sample				1.25	
8. Rig Repair	Slip & Cut				1.50	
9. Run Casing & Cement						
10. Fishing						
11. Logging						
12. Corlog						
13. Formation Testing						
14. Waiting on:						
15. Nipple Up & Test BOPS						
16. Drilling Out						
17. Lost Circ.						
18. Laying Down DP & BOP's R. H. 1990					8.6	
19. Plug & Abandon						
20. Rig up - Tear out						
21.						
TOTAL					24	

COSTS

DAILY 37126CUMMULATIVE 2 032553

SUPERVISOR

G SANDERS

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99 02 21 0600
Yr - Mon - Day - TimeWELL NAME PARA ETAL ARROWHEADLOCATION 0-15 - 60°24'N/123° 52'W

OPERATIONS DETAIL:

1+

DRILLED TO 3102m. TRATIC PENETRATION RATE. DROP SURVEY FLOW
P.O.G.H. FLOW V 2838m 1640m 305m & BANK.

RIG SERVICE FUNCTION TEST BLOW RAM 6 SEC.

TORE OUT ROTATING HEAD - INSTAL FLOW NIAPLE, FLOW LINE.

RAN IN W BIT #9, SLIP & CUT DRILLING LINE.

RAN INTO 3080m WASHED 22m TO BIT

DRILLING 156mm HOLE @ 0600 Hrs

WANT LIST:

WEATHER: CLEAR

-13

ROAD: C660

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAM UNIT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-19 0600
Yr - Mo - Day - Time

WELL NAME PARA ETAL ARROWHEAD LOCATION 5-15-60 30'N 123°02'W
Day 33 Depth 3619 Metres last 24 hr 64 Rotating hrs 22
Activity at report time DRILLING 156 mm H₂O

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1065 Vis 48 WL Gels 26/10 Solids 7.5 % PV 16.00 YP 3.53 pH
Oil 92.6 % Sand 1003 % Cake 10 PPMCL 176470.6 PPMCa 105852.5

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
8	156	PARAL 537 YG	126447	12	80		64	83	22	32.5	1.96	63		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP			ANN. VEL.		JET VEL	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m ³ /MIN	DP			
8	11.9	11.9	11.9	203	110	114	671	51	86	31	8000

DEVIATION SURVEYS

3/8	at	2968	m	at		m
	at		m	at		m
	at		m	at		m
	at		m	at		m

MUD & CHEMICALS ADDED

BARITE 42.54
INUGEL 10 m³

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT		156	1.20	
Bit Sub		119	1.79	
21- DRILL Collars		119	194.13	
12- HWOP		89	110.31	

TIME ANALYSIS

					OPERATION	TODAY	CUM.
					1. Drilling	22	
					2. Trips		
					3. Rig Service	50	
					4. Deviation Surveys	1.00	
					5. Ream & Cond. Hole		
					6. Mix & Cond. Mud		
					7. Circulation		
					8. Rig Repairs Collars - R 30A	1.25	
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing		
					14. Waiting on:		
					15. Nipple Up & Test BOPS		
					16. Drilling Out		
					17. Lost Circ.		
					18. Laying Down DP & BOP's		
					19. Plug & Abandon		
					20. Rig up - Tear out		
					21. H ₂ S & BOP Drill	1.25	
					TOTAL	24	

COSTS

DAILY 60201
CUMMULATIVE 19326777

SUPERVISOR G. SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-19 0600
Yr Mon Day Time

WELL NAME PARA ESTN Arrowhead

LOCATION 8-15- 66° 30' N 123° 02' W

OPERATIONS DETAIL:

15

DRILL & SURVEY AHEAD.

INSTALLED BLANK IN ROTATING HEAD.

HELD B.O.P & 142" DRILL W/ CREW IN POSITION WELL STARTING 2 MIN

FUNCTION TESTED ANNULAR CLOSED 13 SEC PIPE RAM 6 SEC

ENTEST EQUIPMENT READY TO MOVE TO A.O.I.

AIR EQUIPMENT & PROPANE SKID & VAPORIZER TO P57.

WANT LIST:

WEATHER: CLCSE

- 15

ROAD: 6000

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

AIR EQUIPMENT TO P57. PROPANE SKID & VAPORIZER (166) SENT TO P57.

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-82-17-8600
Yr - Mon - Day - Time

WELL NAME PARA ERM AEROLHEAS

LOCATION 6-15- 60° 30' N 123° 02' W

OPERATIONS DETAIL:

1+

PULL OUT OF HOLE. CHECKED ALL CONNECTIONS FLOW CHECK @ 2753m

221.7m 1500m 252m. BANK Fill up man. 10.74m³ calc 10.34m³

RAN IN HOLE LAYED DOWN 2 BENT HWOP #6 E PIPE. PICKED UP 8 HWOP

FULL PIPE # FLOW V 9.08m, 1870m 2710m INSTALLED R.B.O.P.

SLIP & CUT DRILLING LINE

FUNCTION TEST TOP PIN Rms 6 s ANNULAR 12 SEC

WASHED 18m TO 87m.

DRILL AHEAD

SENT 50m³ CONTAMINATED INJECT & SALI WATER TO FT ST JOHN
NEW ALTA FOR DISPOSAL

3 LOADS AIR EQUIPMENT MOVED TO P57

WANT LIST:

WEATHER: 0/CAS

-12

ROAD: GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-11-0600
Yr. Mon. Day Time

WELL NAME PARA EIAL ARROWHEAD LOCATION D-15
Day 31 Depth 2936 Metres last 24 hr 0 Rotating hrs 0
Activity at report time P.O.H TO CHECK DRILL STRING

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1065 Vis 55 WL Gels 3/20 Solids 6.0 % PV 18 YP 6.27 pH
Oil 93 % Sand 10625 % Cake 1.0 PPMCL 216666 PPMCa 113333

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	D	G
7	156	RICHPSIN	mm 9771				0	131	0	23.75	55	TRIP		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			
7	15.9	15.9	15.9	203	116	114	1.696	55	92	19		9800

DEVIATION SURVEYS

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

INVERT 30M³
BASE OIL 10M³
BARITE 225M³

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN
BIT		156	128	
BIT SUB		120	79	
FLOAT SUB		124	94	
21- DRILL COLLARS		119	194 15	
6- HW DP		89	55 18	

TIME ANALYSIS

OPERATION					TODAY	CUM.
1. Drilling						
2. Trips					8.00	
3. Rig Service					50	
4. Deviation Surveys						
5. Ream & Cond. Hole						
6. Mix & Cond. Mud					5.25	
7. Circulation					3.75	
8. Rig Repair						
9. Run Casing & Cement						
10. Fishing					1.00	
11. Logging						
12. Coring						
13. Formation Testing						
14. Waiting on: WIRE LINE					2.50	
15. Nipple Up & Test BOPS						
16. Drilling Out						
17. Lost Circ Displace mud					1.75	
18. Laying Down DP & BOP's						
19. Plug & Abandon						
20. Rig Up - Tear out						
21. MONITOR WELL. 15MCM					1.25	
TOTAL					24	

COSTS

DAILY 73370
CUMMULATIVE 1810535

SUPERVISOR

G SANBERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99 02 17 0600
Yr - Mon - Day - Time

WELL NAME PARA ET AL ARROWHEAD

LOCATION 8-15

OPERATIONS DETAIL:

12

WAITED ON WIRE LINE & FISHERMAN
BACKED OFF DRILL PIPE MANUALLY WHILE WAITING.
BLED OFF PRESSURE BETWEEN STRING FLOAT & BIT.
PULLED OUT OF HOLE RECOVERED 31 STD'S + 1 SINGLE DP.
LAYED DOWN 1 SINGLE & STRING FLOAT.
RAN IN OPEN ENDED & CIRC ABOVE FISH. FILLED HOLE WATER LEVEL @ 2044m.
SCREWED INTO FISH - WORKED PIPE & PRESSURED UP ON DALL STRING.
FISH CAME FREE.
CIRC BTMS UP (SALT WATER AND INJECT) CONTAIN CONTAMINATED MUD IN
& COMPAN MUDS IN MUD TANKS
PULLED 5 STD'S AND RACKED BACK.
CLEANED CONTAMINATED MUD OUT OF MUD TANKS & STORED IN H2S TRIN
400 BBL TANKS WITH VAC TUBE. HAVE 74m³ IN TANKS.
TRANSFERRED 10m³ BASE OIL & 30m³ INJECT FROM TANK FARM TO R2.
TO BRING MUD TANK VOLUME TO 100m³.
MIXED DARTS TO BRING WT TO 1065 kg/m³.
RAN IN 5 STANDS AND DISPLACED HOLE THROUGH ENTERTY TO 400 BBL
TANK.
CIRC BTMS UP & CHECKED FOR FLOW
P.O.O.H TO CHECK DRILLING STRING @ 0600 H

WANT LIST:

WEATHER: L SNOW

- 12

ROAD: Good

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-16-0600
Yr - Mon - Day - Time

WELL NAME Para EFL Arrowhead LOCATION 0-15 60° 50' N 123° 02' W
 Day 30 Depth 2936 Metres last 24 hr 66 Rotating hrs 12.5
 Activity at report time WORK STOP PIPE WAIT ON WIRE LINE & TOOLS

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT OIL - BRINE 960 - 970
 Wt 10.15 Vls WL Gels 1.0 Solids 18.0 % PV 14.0 YP 1.82 pH
 Oil 90.3 % Sand .007 % Cake 1.0 PPMCL 186666 PPMCa 90666

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	D	G
7	156	RYCHPSH	MA9711	4/600	85		66	131	12.50	23.75	5.5			60

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			
7	15.9	15.9	15.9	203	40	114	.3					4800 kPa

DEVIATION SURVEYS

14	at	2911	m		at		m
	at		m		at		m
	at		m		at		m
	at		m		at		m

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT				
BIT SUB				
Flow SUB				
21 DRILL COLLAR				
6 HWDP				

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling	12.50	
2. Trips		
3. Rig Service	1.50	
4. Deviation Surveys	1.25	
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation	.75	
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing WORK STOP PIPE	9.00	
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21.		
TOTAL	24	

COSTS

DAILY 43993
 CUMMULATIVE 1737165

SUPERVISOR G SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99.02.1

Yr - Mon - Day - Time

WELL NAME PARA EAL AAROS HEADLOCATION 0-15

OPERATIONS DETAIL:

15

DRILLED AHEAD TO 2925M W/ NITRIFIED INVERT. HOLE CLEANING GOOD
CIRC HOLE CLEAN. DISPLACED DRILL PIPE W/ 6" INVERT. RETRIEVED STRING FLOAT
SURVEYED @ 2911m 14°
INSTALLED STRING FLOAT AND DRILLED AHEAD TO 2936m.
MADE A QUICK 4m OF HOLE 2935-2936m TABLE TORQUED UP -
STOPPED ROTATING - TRIED TO WORK STRING - ONLY ABLE TO PICK UP
.3m. PIPE STUCK. WORKED PIPE W/ NITRIFIED FLUID HOLE PACKED
OFF COULDN'T CIRCULATE. BLEED OFF PRESS ON D.P. SIDE. COULD ONLY
BLEED OFF KELLY & SINGLE. ANNULUS BLEED DOWN - HAVE NITROGEN & FLUID
TRAPPED BETWEEN STRING FLOAT & PACKED OFF ANNULUS.
WORKED STUCK PIPE TO ONE HUNDRED AND FIVE CM.
STILL STUCK @ 0600 HRS
MUD REPORT WOULD INDICATE POSSIBLE WATER INFLUX. WILL HAVE
TO CHECK FURTHER WHEN UNSTUCK.

WANT LIST:

WEATHER: -18 C CASHROAD: G660

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-15 06:00
Yr-Mon-Day-Time

WELL NAME PARA ETL ARROWHEAD LOCATION 0-15-60°30'N 123°02'W
 Day 29 Depth 2870 Metres last 24 hr 65 Rotating hrs 11.25
 Activity at report time DRILLING AHEAD

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 10/10 Vls WL Gels 1.4/1.5 Solids 13.6 % PV 12.0 YP 1.44 pH
 Oil % Sand 1006 % Cake 10 PPMCL 450000 PPMCa 360000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
7	156	REED EPHS1H	mm 9771	4170	15/80		65	65	11.25	11.25	5.7		0	8

CIRCULATION RECORD

BIT NO.	JETS - mm			STROKE	PUMP			ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3		SPM	LINE	m³/MIN	DP	DC			
7	15.9	15.9	15.9	202	40	100	1363					4500

DEVIATION SURVEYS

12	at	2854	m	at		m
	at		m	at		m
	at		m	at		m
	at		m	at		m

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT		156	.20	
BIT SUB		120	.79	
FLOAT SUB		124	.94	
21 - DRILL COLL		119	194.15	
6 - HWDP		89	55.18	
1 - STRING FLOW SUB		123	.94	

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling	11.25	
2. Trips	.50	
3. Rig Service	.50	
4. Deviation Surveys	2.75	
5. Ream & Cond. Hole		
6. Mix & Cond. Mud Discharge	2.50	
7. Circulation	3.0	
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out	3.25	
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21. B.O.P. ON	25	
TOTAL	24	

COSTS

DAILY 35307
 CUMMULATIVE 1693172

SUPERVISOR

C. SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-15 0600
Yr - Mon - Day - TimeWELL NAME PARA ETK ARROWHEADLOCATION 0-15

OPERATIONS DETAIL:

15

FINNISH PICKING UP DRILL PIPE.

DRUM OUT FROM COLLAR CEMENT & FLOW SHOE.

DRILL AHEAD TO 2809m.

CIRC HOLE CLEAN (HOLD SAFETY MACHINE)

DISPLACED HOLE TO NITROGEN & CHECK ALL EQUIPMENT & FLOW RATES

DRILLED AHEAD W/ NITROGEN INVERT SYSTEM TO 2844m

CIRC HOLE CLEAN & SURVEY THIS RUN.

DRILLED AHEAD W/ NITROGEN INVERT TO 2467m CIRC HOLE & DISPLACE D.P.

SURVEY.

DRILLING AHEAD @ 0600 hrs

WANT LIST:

WEATHER:

CLEAR-20

ROAD:

GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

SENT 3 JTS 177.8m 38.2 kg L80 840 LTC PLUS 2 JTS 127.8m 38.6 kg
BACK TO STOCK SITE BASE CAMP W/ PICKUP TRUCK. (TRANSFERRED)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99 02 14 0600
Yr Mon Day TimeWELL NAME PARA ETAL ARROWHEAD LOCATION 8-15- 60° 30' N 123° 02' W

OPERATIONS DETAIL:

15

PRESSURE TESTED 2000 PSI HEAVY CHECK VALVES, KILL LINE, 1400 PSI LOW
1400 PSI HIGH 10 MIN OK. PICKED UP 3 1/2 KELLY.

PRESSURE TESTED UPPER & LOWER KELLY COLS 1500 PSI LOW 3500 PSI HIGH
10 MIN OK. PRESSURE TESTED MANIFOLD VALVES & LINES 1500 PSI LOW 3500 PSI
HIGH 10 MIN OK. ACCUMULATOR CHECK 10500 PSI LEFT ON SYSTEM
AFTER CLOSING TOP & BOTTOM PIPES 2nd, ANNULAR & HER.

RECHARGE 2 MIN 38 SECS.

CHECK MOTOR KILLS OK.

RIG TO & PICK UP DRILL STRING

WANT LIST:

WEATHER: CLOUDY

- 17

ROAD: 6600

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 990213 0600
Yr - Mon - Day - Time

WELL NAME PARA ETAL ARROWHEAD LOCATION 0-15 60° 30' N 123° 02' W
 Day 27 Depth 2790 PBD Metres last 24 hr 0 Rotating hrs 0
 Activity at report time PRESSURE TEST ENTREST LINE & ROTARY HEAD

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt	Vis	WL	Gels	Solids	%	PV	YP	pH
Oil	%	%	Cake	PPMCL			PPMCa	

BIT RECORD

[illegible]

CIRCULATION RECORD

[illegible]

DEVIATION SURVEYS

at	m	at	m
at	m	at	m
at	m	at	m
at	m	at	m

MUD & CHEMICALS ADDED

	1	
	2	
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	100	

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN	OPERATION	TODAY	CUM.
					1. Drilling		
					2. Trips		
					3. Rig Service		
					4. Deviation Surveys		
					5. Ream & Cond. Hole		
					6. Mix & Cond. Mud		
					7. Circulation		
					8. Rig Repair		
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing		
					14. Welding on:		

COSTS

DAILY	40412
CUMMULATIVE	1597222

SUPERVISOR

G. SANDERS

15. Nipple Up & Test BOPS

24

16. Drilling Out

17. Loss Ctr.

18. Laying De

19. Plug & Abandon

20. Rig up - Tear out

21

+

TOTAL	24
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PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-13 0600
Yr - Mon - Day - Time

WELL NAME PARA ETAL Area 1444 LOCATION 0-15

OPERATIONS DETAIL:

15

FINNISHED NIPPLEING UP B.O.P STACK & ENTEST LINES.
PRESSURE TESTED BLIND RAMS W/ TEST PLUG. PRESSURED UP TO 1500 KPA LOW
AND 3500 KPA HIGH 15 MIN OK.
PULLED OUT TEST PLUG AND MADE UP TEST CUP ON SINGLE AND RAN IN
TO TEST TUBING HANGER TO CSY HANGER CONNECTION & BOTTOM PIPE RAM,
BOTTOM KILL LINE & BLEED OFF LINE VALVES TO 1500 KPA & 3500 KPA. 15 MIN OK.
TRIED TO PRESSURE TEST TOP PIPE RAM. CUP TESTER FAILED. PULLED
TEST CUP. - MADE UP TEST PLUG AND REMOVED CUP POOR PLUG. RAN IN
TO TUBING HANGER. PRESSURED UP TO 1500 KPA LOW & PRESSURED UP TO 3500 KPA
TEST PLUG PULLED. PULLED TEST PLUG & ROTATING HEAD. CHECKED SEAL OK
RERAN TEST PLUG. SAME RESULTS. DRAINED DOWN B.O.P STACK
AND PULLED TEST PLUG. TURNED TEST PLUG OVER & RAN IN.
PRESSURE TESTED TOP PIPE RAM & VALVES TO 1500 KPA LOW 3500 KPA HIGH
OK. PRESSURE TESTED ANNULAR 1500 LOW 1400 KPA HIGH OK.
PRESSURE TESTED CHECK VALVES - ROTATING HEAD, ENTEST LINES. PRESSURE
NOT HOLDING TO ACCEPTABLE RATE. PRESSURE TEST ENTEST LINES SEPARATELY
1200 LOW 1400 HIGH OK. PRESSURE TEST CHECK VALVES 1500 KPA LOW 1400 KPA
HIGH OK.

WANT LIST:

WEATHER: PTLY CLOUDY -20

ROAD: GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

9" DRILLING PIPES & SUBS WERE RETURNED FROM BARCEN 379.
SENT 7 STABILIZERS (6-8" & 1-11") BACK TO BASE CAMP & PICKUP TRUCK.

DAILY DRILLING REPORT

VESSEL NAME PARA EIAL ARROWHEAD LOCATION 0-15 60' 30" N 123' 0' W
 Day 26 Depth 2790 PBD Metres last 24 hr 0 Rotating hrs 0
 Activity at report time NIPAL UP 3.0 P

Wt	Vis	WL	Gels	Solids	%	PV	YP	pH
Oil	% Sand	%	Cake	PPMCL			PPMC_a	

[illegible][illegible]

at	m	at	m
at	m	at	m
at	m	at	m
at	m	at	m

[illegible][illegible]

OPERATION	TODAY	CUM.
1. Drilling		
2. Trips		
3. Rig Service		
4. Deviation Surveys		
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation		
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		

DAILY	38069
CUMMULATIVE	1556809

G. SANDERS

PARA-DRL RPT.x18

15. Nipple Up & Test BOPS	24	
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21.		
TOTAL	24	

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99 02 12 0600
Yr - Mon - Day - Time

WELL NAME PARA ETAL ARROWHEAD

LOCATION 0-15

OPERATIONS DETAIL:

15

NIPPLED DOWN B.O.P. STACK - INSTALLED TUBING HANGER & RIG SPOOL
SET STACK DOWN ON SPOOL - ROTATING IDEAS OUT LET LINED UP
IN MIDDLE OF BEAM ON SUB. 1 INCH TOO LOW - PICK UP STACK
CHANGE OUT SPOOLS - SET STACK BACK DOWN - PICK UP ROTATING
HEAD - VERY CLOSE TO ROTARY TABLE. CLEARS BY 3 INCHES
NIPPLE UP VALVES KILL LINES - BLEED OFF LINES - FLOW LINE
HAD TO MODIFY SOME LINES - FLOW LINE - KILL LINE ETC

WOULD MAKE IT A LOT EASIER IF SUB BASE WAS MODIFIED
ON TOP SECTION. THERE IS A STUPID CROSS MEMBER THAT
IS ALWAYS THE PROBLEM WHEN TRYING TO GET THE FLOW LINE OUT
TO MUD TANKS. COULD BE MODIFIED QUITE EASILY - 1

WANT LIST: NEW SUB BASE FOR RIG - ONE MILL FLOOR MOTOR OR PUMPS
LET MOTORS ON THEM

WEATHER: CLOUDY

-24

ROAD: GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

GET DOUBLE ENDER WRENCH FROM REC. FOR EXTRA BIEDE (MAXIMUMISH SHORTEN

WREN-)

PARAMOUNT RESOURCES L.D.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 89-02-11 0600
Yr - Mon - Day - Time

WELL NAME PARA ET AL ARROWHEAD LOCATION 0-15
Day 28 Depth 2805 PBM 2790 Metres last 24 hr 0 Rotating hrs 0
Activity at report time

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1015 Vls 48 WL _____ Gels _____ Solids _____ % PV _____ YP _____ pH _____
Oil _____ % Sand _____ % Cake _____ PPMCL _____ PPMCa _____

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH m	DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G

CIRCULATION RECORD

BIT NO.	JETS - mm			STROKE	PUMP		LINER	m ³ /MIN	ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3		SPM				DP	DC			

DEVIATION SURVEYS

	at	m		at	m
	at	m		at	m
	at	m		at	m
	at	m		at	m

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

						OPERATION		TODAY	CUM.
						1. Drilling			
						2. Trips			
						3. Rig Service			
						4. Deviation Surveys			
						5. Ream & Cond. Hole			
						6. Mix & Cond. Mud			
						7. Circulation		5.25	
						8. Rig Repair			
						9. Run Casing & Cement		10.50	
						10. Fishing			
						11. Logging			
						12. Coring			
						13. Formation Testing			
						14. Waiting on:			
						15. Nipple Up & Test BOPS			
						16. Drilling Out			
						17. Lower SAFETY NUTS		35	
						18. Laying Down DP & BOP's		7.50	
						19. Plug & Abandon			
						20. Rig up - Tear out			
						21. Set Slip		50	
						TOTAL		24.00	

COSTS

DAILY 243471
CUMMULATIVE 1518740

SUPERVISOR

G SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-11 0600
Yr - Mon - Day - TimeWELL NAME PARA EITH ARAUHEANLOCATION 8-15

OPERATIONS DETAIL:

1-

RAN 207 JTS OF 177.8mm 280 SPA LTC IPSCO C51 TO
2805m KB FILLED C59 EVERY 10 JTS.

C59 WENT DOWN OK BUT WHEN NEAR BTA COULDN'T GET C59
TO MOVE UPWARD TAGGED BTA @ 2805m. COULDN'T MOVE PIPE
UP OR DOWN.

BROKE CIRC & CIRC W/ 1500 KPA PRESSURE SEEMED UNUSUALLY
LOW. MIX 1.5% SAW DUST IN PILL TANK AND PUMPED AROUND.

CIRC TIME 4 min LESS THAN THEORETICAL TIME.

MAKED CEMENT AS PER PROGRAM.

CEMENT JOB WENT WELL. A TRACE OF DIESEL FLUSH TO SURFACE
WHEN PLUG DOWN.

PLUG DOWN W/ 3000 KPA OVER PLANNING PRESSURE

PLUG DOWN @ 2120 KPA 99-02-10

WANT LIST:

WEATHER:

CLEAR- 2xROAD: Good

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-16 0600
Yr - Mon - Day - Time

WELL NAME PARA ETAL AREA HEAD

LOCATION 0-15

OPERATIONS DETAIL:

15

FINNISHED IN W/ RIT

CIRCULATE HOLE CLEAN

RIG TO & LAY DOWN DRILL PIPE & D.C. BREAK KEY.

RIS TO & RUN 177.8mm CSG

RIGGING IN ENTERT & CONTINUED AIR

HAD DC ENERGY SOUR SERVICE 2 OF THE TANKS IN TANK FARM.

COMPASS TRANSFERRED DIESEL FROM SOUR SERVICE TANK TO NON SOUR SERVICE TANK.

HAVE TANKS SET UP TO PRODUCE INTO SOUR SERVICE AND TO CIRCULATE FROM ENTERT TO SOUR SERVICE INVERT TANKS TO SUCTION OF TWO PUMPS

WANT LIST:

WEATHER: CLEAR

- 29

ROAD: GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

 FOR 24 HR PERIOD ENDING 99.02.09 0600
 Yr - Mon - Day - Time

 WELL NAME PARA ETAL ARROWHEAD LOCATION 0-15.66'-30'N 123°0'W
 Day 23 Depth 2805 Metres last 24 hr 0 Rotating hrs 0
 Activity at report time RUN IN HOLE w/ BIT TO LAY DRILL D.P. & DC.

DRILLING MUD PROPERTIES AT SHAKERS/SUCTION/PTT

 Wt 1015 Vis 48 WL 170 Gels 1.4/2.3 Solids 7.0 % PV 13.0 YP 4.3 pH
 Oil 96.4 % Sand .05 % Cake 2.0 PPMCL 26666.7 PPMCa 22666.7

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
6RA	216	REED H&W	L94037	3	76									

CIRCULATION RECORD

BIT NO.	JETS - mm			STROKE	PUMP			ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3		SPM	LINER	m³/MIN	DP	DC			
6RA	11.9	11.9	11.9	203	165	152	1.1	44	84	57		

DEVIATION SURVEYS

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

0.6 GAL 454

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT		216	.25	
BIT SUB		170	1.06	
3-DC		177	28.75	
1- DRILLING SAR		178	3.86	
3-DC		171	28.33	
1.80 SUB		163	.58	
6 H&WDP		114	54.98	

TIME ANALYSIS

OPERATION		TODAY	CUM.
1. Drilling			
2. Trips		8.25	
3. Rig Service		.25	
4. Deviation Surveys			
5. Ream & Cond. Hole			
6. Mix & Cond. Mud			
7. Circulation		6:50	
8. Rig Repair			
9. Run Casing & Cement			
10. Fishing			
11. Logging		8:50	
12. Coring			
13. Formation Testing			
14. Waiting on:			
15. Nipple Up & Test BOPS			
16. Drilling Out			
17. Lost Circ.			
18. Laying Down DP & ROP's			
19. Plug & Abandon			
20. Rig up - Tear out			
21. Slip & Cure		.50	
TOTAL		24.00	

COSTS

 DAILY 32763
 CUMMULATIVE 1145613

SUPERVISOR

G SANDERS

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-02-09 0600
Yr - Mon - Day - TimeWELL NAME PARA ETAL ARROWHEAD LOCATION 0-15

OPERATIONS DETAIL:

15

Circ & Conn men.P.O.O.H TO LOG HOLE GOOD ON TRIP OUTRIG TO & LOG W/ WESTERN ARMS.RAN DAL - GR - XY - 2DL - CN - GR - XY CUL TVD. 2805m TO 1185m.Rig out loggers -R.I.H. w/ BIT TO LAY DOWN D.P. & D.C.ENTERED & CANADIAN AIR RIGGING IN EQUIPMENT

WANT LIST:

WEATHER:

Clear- 27

ROAD:

Fair

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

MOVED IN 3 AIR DRILLING UNITS.

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-08 0600
Yr - Mon - Day - Time

WELL NAME PARA ETAL ARROWHEAD LOCATION 0-15 60° 24' 123° 02'
Day 22 Depth 2805 Metres last 24 hr 7 Rotating hrs 1.25
Activity at report time Circ & Conn mud to Log.

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1010 Vls 51 WL 15 Gels 0/20 Solids 6.6 % PV 13.0 YP 96 pH
Oil 97.5 % Sand 0.5 % Cake 2.0 PPMCL 4/000 PPMCa 26.000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
6	216	REED 1451A	294037	1416	30/15	2805	7	269	1.21	45.25	5.9	1	3	1

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	BPM	LINER	m'/MIN	DP	DC			
6	11.9	11.9	11.9	203	105	152	1.1	44	84	57		7000

DEVIATION SURVEYS

at	m	at	m
at	m	at	m
at	m	at	m
at	m	at	m

MUD & CHEMICALS ADDED

OIL GEL 55x
CARBONUL 1.8BL
BARITE 155x

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT		216	2.5	
BIT SUB		177	1.06	
3-DC		177	28.75	
1-DRILLING JAW		170	3.86	
3-DC		177	28.53	
6-HWOP		114	31.98	
14.0		160	1.55	

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling	1.25	
2. Trips	14.75	
3. Rig Service	1.50	
4. Deviation Surveys	.25	
5. Ream & Cond. Hole 1160T Cement	.25	
6. Mix & Cond. Mud	1.75	
7. Circulation	3.50	
8. Rig Repair Slip & Cst	.50	
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21. HLL DR TOOLS	1.25	
TOTAL	24.00	

COSTS

DAILY 43707
CUMMULATIVE 1112850

SUPERVISOR G. SANDRA

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING: 99 02 08 1600.
At Noon Day Time

WELL NAME: PARA EIAL ARBORETA

LOCATION: 0-15-60°-24' 122°-2'

OPERATIONS DETAIL:

CIRC 81m Hole Sample - DRAWED TO 2805 m.

CIRC HOLE CLEAN.

P.O.O. IT Pumped out 14 singles - REST OF TRIP FAIR. HOLE

DRAW 10-20000 SOL.

LAYED DOWN DIRECTIONAL POLS.

LEFT OUT 3 STDs DRILL COLLARS

RTH W/ R. Picked up 26 singles. No fill in 2m

HOLE DRAW THE SAME AS BEFORE

CIRC & CONDITION MUD PRIOR TO LOGGING

DIRECTIONAL PERSONNEL LEFT FOR EDMONTON LAST NIGHT

WANT LIST:

WEATHER: LIGHT SNOW

-22

ROAD: GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

HAULED IN AIR EQUIPMENT: SPOTTED ENTERT EQUIPMENT: STOOD UP.
HARE STACK: BROUGHT IN 2 SSSR SEALS 100 BBL TANKS.

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-07 0600
Yr - Mo - Day - TimeWELL NAME Para Est. Arrow Head LOCATION 0-15-60-14-123-02
Day 21 Depth 2798 Metres last 24 hr 126m Rotating hrs 19
Activity at report time Circ. Btm Hole Sample - 2798m

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 10/10 Vls 50 WL 15 Gels 10/2.0 Solids 6.6 % PV 13.0 YP .96 pH
Oil 97.2 % Sand .005 % Cake 2.0 PPMCL 4/1000 PPMCa 26.000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
6	216	ARCO H4919	104037	17/19	30/15		126	262	1900	4400	58		013	

CIRCULATION RECORD

BIT NO.	JETS - mm			STROKE	PUMP			ANN. VEL.		JET VEL.	IHP	SURF. PRESS. kPa
	1	2	3		SFM	LINER	m'/MIN	DP	DC			
6	11.9	11.9	11.9	203	105	152	1.1	44	84	57		9200

DEVIATION SURVEYS

at	m	at	m
at	m	at	m
at	m	at	m
at	m	at	m

MUD & CHEMICALS ADDED

BASE OIL 10m³ 1120.0 m³
Soluflocc F 850
Carb Cel 850
Torque Red 240

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1 BIT		216	.23	
1- DRILLING MOTOR		161	6.66	
1- FLOAT SUB		164	.67	
1- MWD NMDC		167	9.44	
1- PULSE SUB		161	1.14	
1- NM DC		158	9.39	
1- XO SUB		176	4.44	
3- DC		176	28.75	
1- DRILLING JAR		176	3.82	
12- DC		176	113.56	
1- XO SUB		163	.58	
1- HWDOP		114	54.98	
TOTAL			224.52	

TIME ANALYSIS

OPERATION				TODAY	CUM.
1. Drilling				19.00	
2. Trips					
3. Rig Service				.50	
4. Deviation Surveys				2.00	
5. Ream & Cond. Hole					
6. Mix & Cond. Mud					
7. Circulation				.75	
8. Rig Repair					
9. Run Caslag & Cement					
10. Fishing					
11. Logging					
12. Coring					
13. Formation Testing					
14. Waiting on:					
15. Nipple Up & Test BOPS					
16. Drilling Out					
17. Lost Circ.					
18. Laying Down DP & BOP's					
19. Plug & Abandon					
20. Rig up - Tear out					
21. WORK TIGHT Cased				1.75	
TOTAL				24.00	

COSTS

DAILY 48100
CUMMULATIVE 1069143

SUPERVISOR

G SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-07 0600
Yr - Mon - Day - TimeWELL NAME PARA ERL ARROWHEAD LOCATION Q-13

OPERATIONS DETAIL:

12

DIRECTIONAL DRILL & SURVEY AHEAD.
 CONNECTIONS STILL TIGHT. 9-27-00 DRAG. HAVE TO BACK REAM
 ON EVERY CONNECTION.
 HOLE ANGLE HOLDING REASONABLY GOOD $\pm 5^\circ$ 65° THE LAST 200m
 FUNCTION TEST ANNULAR P.O.P. 14 SEC TOP PIPE RAN 6 SEC
 HOLE SEEMS TO BE CLEANING OK.

HAD PICKER COME IN AND STAND FRONT END LOADED BACK ON ITS
 WHEELS - NO SIGNS OF DAMAGE.

WANT LIST:

WEATHER:

ROAD:

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

HAULED IN 21-120mm DC & PICK UP SUBS FROM F36 LOCATION.

SENT 1 400 GAL TANK FROM 6-15 TO A 01.

SENT 2 BASKETS FISHING TAIL BACK TO BASE CAMP

SENT COYOTE VACUUM CLEANER BACK TO BASE CAMP TO BE SENT TO NIKO ON 11/12

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 79 02 06 0600
Yr - Mon - Day - TimeWELL NAME PARA EIAL AEROW HGMLOCATION 0-15 6034' 128° 02'Day 20Depth 2672Metres last 24 hr 103Rotating hrs 19

Activity at report time

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1000 Vis 48 WL 16 Gels 10/20 Solids 7.5 % PV 13 YP 448 pH
 Oil 98.1 % Sand 1.008 % Cake 2.0 PPMCL 4/3333.3 PPMCa 480000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	D	G
6	216	REGA HOSIA	L94037	14/15	3045		163	154	19.0	25	5.26			

CIRCULATION RECORD

BIT NO.	JETS - mm			STROKE	SPM	PUMP		ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3			IJNER	m³/MIN	DP	DC			kPa	
6	11.9	11.9	11.9	203	105	152	1.1	44	84	57		9200	

DEVIATION SURVEYS

at	m	at	m
at	m	at	m
at	m	at	m
at	m	at	m

MUD & CHEMICALS ADDED

BASH OIL 10M TORQUE MCL 380L
 CARBO MCL 186L
 SOLU PAPER 65X
 CH CAS 65X

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1-Bit		216	1.25	
1-Drilling motor		161	6.66	
1-Flow Sub		164	.67	
1-MWD NMO		163	9.44	
1-Pulse Sub		161	1.14	
1-NMOC		158	9.39	
1-X6 Sub		171	.44	
3-DC		176	28.75	
1-Drilling SWL		120	3.86	
12-DC		176	113.36	
1-EC Sub		163	.58	
6-HWRP		20/114	54.88	
TOTAL			229.52	

TIME ANALYSIS

	OPERATION	TODAY	CUM.
DAILY	1. Drilling	19	
CUMULATIVE	2. Trips		
	3. Rig Service	.50	
PERVISOR	4. Deviation Surveys	3.0	
	5. Ream & Cond. Hole		
	6. Mix & Cond. Mud		
	7. Circulation		
	8. Rig Repair		
	9. Run Casing & Cement		
	10. Fishing		
	11. Logging		
	12. Corlog		
	13. Formation Testing		
	14. Waiting on:		
	15. Nipple Up & Test BOPS		
	16. Drilling Out		
	17. Lost Circ.		
	18. Laying Down DP & BOP's		
	19. Plug & Abandon		
	20. Rig up - Tear out		
	21. ASSESS RIG NR	1.50	
TOTAL		24.00	

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 94 02 06 0600
Yr - Mon - Day - TimeWELL NAME PARA ETR ARROWHEAD LOCATION 0-15- 66° 24' 123° 02'

OPERATIONS DETAIL:

17

DIRECTIONAL DRILL & SURVEY AT HEAD. CONNECTIONS ARE GETTING VERY TIGHT. STUCK FOR HALF HOUR IN LAST 24 HR - BACK REAMING ON CONNECTIONS TO PICK UP.

ADDED 3 BBL TORQUE TOOL HELPS PENETRATION BUT NOT MUCH HELP ON CONNECTIONS

FUNCTION TEST TOP PIPE RAMS 6 SEC TO CLOSE

DEFLECTION HAS DROPPED BACK TO .5 DEGREES.

HOPE TO BE AT TO TODAY.

LAYERED FRONT END LOADER ON THE SHALE BIN.

MOVING SHALE FROM SHAKER TO SHALE BIN w/ PAULS.

WANT LIST:

WEATHER: 0/CAS WINDS N.W. @ 5 TEMP -20ROAD: GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-02-05 0600
Yr - Mon - Day - Time

WELL NAME PARA FIDEL ARROWHEAD LOCATION 0-15-60°24' 123°02'
Day 19 Depth 2569 Metres last 24 hr 40 Rotating hrs 7.25
Activity at report time

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1016 Vis 56 WL 16 Gels 1.0/20 Solids 7.5 % PV 13 YP 144PH
Oil 98.1 % Sand .005 % Cake 2.0 PPMCL 41333.3 PPMCa 48000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	D	G
5	216	STL MP2P	LT1582	14/18	37/75	2538	9	337	1.25	72.5	7.6	1	4	01
6	216	RAED HP81A	LD4037	14/18	50/75		31	31	6.0	6.	5.1		0	8

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.		
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			kPa		
5	11.9	11.9	11.9	203	105	152	1.1	44	84	57		9200		
6	11.9	11.9	11.9	203	105	152	1.1	44	84	57		9200		

DEVIATION SURVEYS

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

Soliflume 25x
CM CM6 25x
BAREN 15 SK
MILCHEL 1 33L

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1-BIT		216	.25	
1-DRILLING MOTOR		161	6.66	
1-FLOAT SUB		164	.67	
1-MWD NMDC		167	9.44	
1-POISER SUB		161	1.14	
1-NMDC		158	9.39	
1-XO		171	.44	
3-UC		176	28.75	
1-DRILLING JAC		170	3.86	
12-DC		176	113.36	
1-XO SUB		163	.58	
6-HWD		158/114	54.88	

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling	7.25	
2. Trips	10.00	
3. Rig Service	.56	
4. Deviation Surveys	.75	
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation	2.60	
8. Rig Repair Slip & Cut	.50	
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21. H/d Dip tools	2.50	
TOTAL	24	

COSTS

DAILY 42135
CUMMULATIVE 1008893

ERVISOR

G. SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 97 02 05 0600
Yr - Mon - Day - TimeWELL NAME Para Est Arrow Head LOCATION 0-15 60°-24' 123° 00'

OPERATIONS DETAIL:

15

DRIVEN TO 2538m. P.O.O.H TO CHANGE MOTOR & TRIP THIN-
HOLE - HOLE DL+6 6-25 TO CSG POINT.

CHANGED OUT MOTOR - R.I.H TO 255m TEST MW9.

Slipped & Cut Drilling Line.

R.I.H. Fill Pipe @ 1345m 1915m 2517m. NO NOTICEABLE
CHANGE IN HOLE DRAG ON TRIP IN. NO Fill on bit.

Hole Angle Dropping Back. Hole Drag Holding Strong.

Added 1 BBL mild steel - seams & have helped on drag.

Will add some torque tool to help w/ drag.

WANT LIST:

WEATHER: Clear Calm - 25° CROAD: Good.

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 89 04 00
Yr - Mon - Day - Time

WELL NAME PARA ETL Arrowhead LOCATION 0-15-60°-24' 123° 02'
 Day 18 Depth 2529 Metres last 24 hr 98 Rotating hrs 19
 Activity at report time DIRECTIONAL DRILL 216 mm Hole

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 1005 Vls 52 WL _____ Gels 1.0/20 Solids _____ % PV 11 YP / 92 pH
 Oil 980 % Sand 005 % Cake 2.0 PPMCL 433333.3 PPMCa 375333.3

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	H	C
5	216	SR MFP	151582	14/18	20/15		98	328	19	7125	4.6	0	3	

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			kPa	
5	11.9	11.9	11.9	203	105	152	1.1	44	84	57		9200	

DEVIATION SURVEYS

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

Solids Flake 454
 CH CN2B 454
 255 oil 10mm
 H2O 100

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT		216	24	
1-MOTOR		166	6.18	
1-FLAT SUB		160	.48	
1-MWD NEN M+6		168	9.44	
1-PULSE SUB		166	1.14	
1-NON MAG DC		128	9.46	
1-XO SUB		170	.44	
3-DC		170	28.76	
1-DRILLING JAG		170	3.86	
12-DC		170	113.76	
1-XO SUB		164	.58	
6-HWOP		114	54.88	

TIME ANALYSIS

OPERATION		TODAY	CUM.
1. Drilling	DIRECTIONAL	19.00	
2. Trips			
3. Rig Service		.50	
4. Deviation Surveys		2.50	
5. Ream & Cond. Hole			
6. Mix & Cond. Mud			
7. Circulation			
8. Rig Repair			
9. Run Casing & Cement			
10. Fishing			
11. Logging			
12. Coring			
13. Formation Testing			
14. Waiting on:			
15. Nipple Up & Test BOPS			
16. Drilling Out			
17. Lost Circ.			
18. Laying Down DP & BOP's			
19. Plug & Abandon			
20. Rig up - Tear out			
21. JACK RIG		2.0	
TOTAL			

COSTS

DAILY 40 436
 CUMMULATIVE 966 758

SUPERVISOR

G. SANDERS

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 79 02 64 06
Vr Mon Day TimeWELL NAME PARA RTH ARROWHEAD LOCATION 0-15-60'-20' 123'-02'

OPERATIONS DETAIL:

15

DIRECTIONAL DRILL & SURVEY 216 mm HOLE.
DEVIATION HELD GOOD FOR 50 m THEN STARTED DRIFTING
AGAIN. HOLE DRAG STILL INCREASING. GETTING CLOSE TO D.P. LIMIT.
HAB N.E.B. INSPECTION - NO BAD COMMENTS.
RIG JACKERS IN & LEVELED RIG.

WANT LIST:

WEATHER: 0/CASE WIND CALM TEMP -24ROAD: Good

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

HAULED IN 75 STS 177 mm CSF

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

77-02-03 0600
Yr - Mon - Day - TimeWELL NAME PARA REAL ARROWHEAD LOCATION 0-15-60'30'125'02'Day 17Depth 2431Metres last 24 hr 95Rotating hrs 21Activity at report time DIRECTIONAL DRILLING 216mm Hole @ 2431m @ 3L-1K

DRILLING MUD PROPERTIES AT SHAKERS/SUCTION/PIT

Wt 1000 Vis 53 WL _____ Gels 1.0/2.0 Solids 85 % PV 9.0 YP 1.44 pH
 Oil 96.5 % Sand 1.005 % Cake 2 PPMCL 466666.7 PPMCa 266666.7

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
<u>5</u>	<u>216</u>	<u>S.C.M.F.P.</u>	<u>LT1582</u>	<u>4178</u>	<u>50/45</u>		<u>95</u>	<u>230</u>	<u>21</u>	<u>524</u>	<u>4.4</u>	<u>0</u>	<u>8</u>	

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	1.1NER	m³/MIN	DP	DC			kPa	
<u>5</u>	<u>11.9</u>	<u>11.9</u>	<u>11.9</u>	<u>203</u>	<u>105</u>	<u>152</u>	<u>1.1</u>	<u>44</u>	<u>84</u>	<u>57</u>		<u>9260</u>	

DEVIATION SURVEYS

° at _____ m	° at _____ m
° at _____ m	° at _____ m
° at _____ m	° at _____ m
° at _____ m	° at _____ m

MUD & CHEMICALS ADDED

SOLU FLAKE F 95x
Gar PMS 85x
Calco Tech 180L

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
<u>BIT</u>		<u>216</u>	<u>24</u>	
<u>1- MOTOR</u>		<u>166</u>	<u>6.18</u>	
<u>1 FLOAT SUB</u>		<u>160</u>	<u>1.48</u>	
<u>1 MWD NON MAC</u>		<u>168</u>	<u>9.44</u>	
<u>1 PULSER SUB</u>		<u>160</u>	<u>1.14</u>	
<u>1 1.5" MAC DR</u>		<u>158</u>	<u>9.40</u>	
<u>1 X0 SUB</u>		<u>170</u>	<u>1.44</u>	
<u>3 DRILL COLLARS</u>		<u>170</u>	<u>28.76</u>	
<u>1 DRILLING SHR</u>		<u>170</u>	<u>3.86</u>	
<u>12- DRILL COLLARS</u>		<u>170</u>	<u>113.36</u>	
<u>1 X0 SUB</u>		<u>164</u>	<u>1.58</u>	
<u>6 HWDR</u>		<u>114</u>	<u>54.98</u>	

TIME ANALYSIS

OPERATION		TODAY	CUM.
1. Drilling	<u>DIRECTIONAL</u>	<u>21</u>	
2. Trips			
3. Rig Service		<u>1.50</u>	
4. Deviation Surveys		<u>2.50</u>	
5. Ream & Cond. Hole			
6. Mix & Cond. Mud			
7. Circulation			
8. Rig Repair			
9. Run Casing & Cement			
10. Fishing			
11. Logging			
12. Corlog			
13. Formation Testing			
14. Waiting on:			
15. Nipple Up & Test BOPS			
16. Drilling Out			
17. Lost Circ.			
18. Laylog Down DP & BOP's			
19. Plug & Abandon			
20. Rig up - Tear out			
21.			
TOTAL		<u>24</u>	

COSTS

DAILY 43211
 CUMMULATIVE 926322

SUPERVISOR

G. SANDERS

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99 02 05 06:00
Yr - Mon - Day - TimeWELL NAME PARA ETAL ARROWSHEAD LOCATION 0-15-60°-50' 03°-03'

OPERATIONS DETAIL:

1-

DIRECTIONAL DRILL & SURVEY AHEAD-

HOLE STILL SEARCHING FOR HYDROCARBONS. IT THINKS IT IS TO THE N.E..

RIG SERVICES & FUNCTION TEST PIPE RANG 6 SEC HOURS 18 SEC. MOTOR KILLS FUNCTION OK.

HOLE DRAG IS STILL INCREASING - HAS NO CONSIDERABLE DRAG. MORE LIKE WHAT YOU'D FIND ON FIRST TRIP OUT OF HOLE W/ BIC.

WANT LIST:

WEATHER: 0/CAST WINDS SW @ 6 kmROAD: GOOD

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99 02 01 2400
Yr Mon Day Time

WELL NAME PARAFINAL Arrowhead LOCATION 0-15 60-30-127-02
 Day 16 Depth 2336 m Metres last 24 hr 117 Rotating hrs 21
 Activity at report time DRILLING

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

WI 1000 Vis 50 WL Gels 14/30 Solids 65 % PV 10 YP 444 pH
 Oil 91 % Sand 1005 % Cake 2 PPMCL PPMCa 224000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
5	216	STC MP2P	LT1582	14/17	30/15		117	135	21	39	3.3	0	2	

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m ³ /MIN	DP	DC			
5	11.9	11.9	11.9	263	185	152		46	78			9200

DEVIATION SURVEYS

at	m	at	m
at	m	at	m
at	m	at	m
at	m	at	m

MUD & CHEMICALS ADDED

SOLUFLAKE 55x	Water 5m ³
CAL CREA 55x	
CALIZ 30 5x	
INVENT 10 m ³	

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
BIT		216	.24	
1 - MOTOR		166	6.18	
1 - FLOAT SUB		160	.48	
1 - MWD NON MAG		168	9.44	
1 - PULSER SUB		160	1.14	
1 - NON MAG DC		158	9.40	
1 - X.O SUB		170	.44	
3 - DRILL COLLARS		170	28.76	
1 - DRILLING SANS		170	3.86	
12 - DRILL COLLARS		170	113.36	
1 - Y.G. SUB		164	.58	
6 - HEAVY WASH DP		114	54.90	

TIME ANALYSIS

OPERATION					TODAY	CUM.
1. Drilling					21.00	
2. Trips						
3. Rig Service					.50	
4. Deviation Surveys					2.50	
5. Ream & Cond. Hole						
6. Mix & Cond. Mud						
7. Circulation						
8. Rig Repair						
9. Run Casing & Cement						
10. Fishing						
11. Logging						
12. Coring						
13. Formation Testing						
14. Waiting on:						
15. Nipple Up & Test BOPS						
16. Drilling Out						
17. Lost Circ.						
18. Laylog Down DP & BOP's						
19. Plug & Abandon						
20. Rig up - Tear out						
21.						
TOTAL					24	

COSTS

DAILY 40 611
 CUMMULATIVE 883 111

SUPERVISOR

G. SANDERS

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-02-01 FRI
Year-Mo-Day-YearWELL NAME PARA ETAL ARROWHEAD LOCATION 0-15-60°38'123°02'

OPERATIONS DETAIL:

1-

DIRECTIONAL DRILL AHEAD TO 2264m. Hole maintaining dip
and angle steady. Took nose divs @ 2274 dropped and and pick.
Direction put in pretty good Doplec @ 2274m

WANT LIST:

WEATHER:

C/CASE - Calm - -29

ROAD:

Fair

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-31-24:00
Yr - Mon - Day - Time

WELL NAME Paramount at Arrowhead LOCATION 0-15-60-30-122-02
 Day 15 Depth 2219 Metres last 24 hr 47 Rotating hrs 10
 Activity at report time Directional Drill 2 1/4" Hole @ 2244 @ 07:00 Hrs.

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 985 Vis 57 WL 14 Gels 60/2.5 Solids 7.3 % PV 10 YP 1.44 pH
 Oil 0.0 % Sand 0.05 % Cake 2 PPMCL 180000 PPMc2 225000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	F	G
4	216	HC-GT8M	41/CV	1475	30-75	2201	29	514	5 1/2	84	6.12	2-3	4	IN
5	216	SR-MEAP	LT1582	1417	30-75		18	18	4 1/2	4 1/2	4	R	IN	

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP			ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	LINER	m ³ /MIN	DP			kPa	
4	11.9	11.9	11.9	203	105	152	1.15	46	78		9200	
5	11.9	11.9	11.9	203	105	152	1.15	46	78		9200	

DEVIATION SURVEYS

• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m
• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

SoluFlake - 250X Water - 1.59m³
 Calcarb - 250X
 CaCl₂ - 550X
 Bantex - 1550X

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1 - Bit		216	0.4	
1 - Drilling Jars		116	6.18	
1 - Float Sub		160	0.48	
1 - MWD - Non Mag		168	9.44	
1 - Pulser Sub		160	1.14	
1 - Non Mag DC		158	9.40	
1 - XO Sub		170	0.44	
3 - Drill Collars		170	28.26	
1 - Drilling Jars		170	3.86	
12 - Drill Collars		170	113.26	
1 - XO Sub		164	0.58	
6 - Heavy Water Pipe		114	54.98	
205 - Drill Pipe		114	1978.68	

TIME ANALYSIS

					OPERATION	TODAY	CUM.
					1. Drilling	10	
					2. Trips	8 1/4	
					3. Rig Service	1/2	
					4. Deviation Surveys <u>Directional</u>	2 3/4	
					5. Ream & Cond. Hole <u>Clean to Bot</u>	1/4	
					6. Mix & Cond. Mud		
					7. Circulation	1 1/4	
					8. Rig Repair		
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing		
					14. Waiting on:		
					15. Nipple Up & Test BOPS		
					16. Drilling Out		
					17. Lost Circ.		
					18. Laying Down DP & BOP's		
					19. Plug & Abandon		
					20. Rig up <u>Tool out BOP Drills</u>	1/2	
					21. <u>Slur Cut Line</u>	1/2	
					TOTAL	24	

COSTS

DAILY 41000
 CUMMULATIVE 842500

SUPERVISOR

Wilbert Callihan

PARAMJUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-01-31-24:00
Yr - Mon - Day - Time

WELL NAME Paramount total Arrowhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

Drill 214mm Hole directionally to 2201M at 05:45 Hrs - Circ up Bottom Hole Sample - Pull out of Hole to change out down hole Motor and Bit - Had 84 Hrs use on each - Both came out in Good Shape - Lay down Mud Motor - Pick up and Run in with New Mud Motor and Smith ME2 Bit - Went in Hole with No Problems - Mud Motor set @ 183° - Same as last Motor Moved Drilling Jars down 1 Stand in BHA - Break Circ - Clean and Wash 13m to Bottom - Directional Drill Ahead - Dropping Angle down Hole and direction Dropping Back From Programmed Angles - Slide 3-4m per Single to build up Angle

Lots of Snow Yesterday Afternoon and Evening

WANT LIST:

WEATHER: 0'cast - Calm - Cold - 22°C

ROAD: Good on Highway - Fair to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-30-24:00
Yr - Mon - Day - TimeWELL NAME Paramount total Arrowhead LOCATION 0-15-60-30-123-02
Day 14 Depth 2172 Metres last 24 hr 107 Rotating hrs 20 3/4
Activity at report time Like Bottoms up Pick to Trip out @ 220M @ 07:00

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PTT

Wt 975 Vis 49 WL 19 Gels 1512.5 Solids 7.8 % PV 10 YP .96 pH
Oil 90 % Sand 100.5 % Cake 2 PPMCL 250000 PPMCa 200000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	E	G
4	216	HC-GT8m	X612V	12-12	30-75	✓	107	485	20 3/4	78 1/2	5.16	Rnog		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			
4	11.9	11.9	11.9	203	105	152	1.15	46	78			9100

DEVIATION SURVEYS

° at _____ m	° at _____ m
° at _____ m	° at _____ m
° at _____ m	° at _____ m
° at _____ m	° at _____ m

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1 - Bit		216	.24	
1 - Drilling Motor		1105	6.18	
1 - Float Sub		160	.48	
1 - MWB-NonMag PC		168	9.44	
1 - Pulser Sub		160	1.14	
1 - NonMag PC		158	9.40	
1 - XO Sub		170	.44	
6 - Drill Collars		120	57.08	
1 - Drilling Jar		120	3.86	
9 - Drill Collars		120	85.04	
1 - XO Sub		164	.58	
6 - Heavy Wall Pipe		114	54.98	
200 - Drill Pipe		114		

TIME ANALYSIS

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN	OPERATION	TODAY	CUM.
1-Bit		216	1.24		1. Drilling	20 3/4	
1-Drilling Motor		1105	6.18		2. Trips		
1-Float Sub		160	.48		3. Rig Service	1/2	
1-MWB-Nea Mag Dr		168	9.44		4. Deviation Surveys		
1-Pulse Sub		160	1.14		5. Ream & Cond. Hole		
1-Nea Mag Dr		158	9.40		6. Mix & Cond. Mud		
1-XO Sub		170	.44		7. Circulation		
6-Drill Collars		120	57.08		8. Rig Repair		
1-Drilling Jar		120	3.86		9. Run Casing & Cement		
9-Drill Collars		120	85.14		10. Fishing		
1-XO Sub		164	.58		11. Logging		
6-Heavy Wate Pipe		114	54.98		12. Coring		
200-Drill Pipe		114	.		13. Formation Testing		
COSTS					14. Waiting on:		
					15. Nipple Up & Test BOPS		
DAILY 34500					16. Drilling Out		
CUMMULATIVE 801500					17. Lost Circ.		
SUPERVISOR Wilbert Callitao					18. Laying Down DP & BOP's		
					19. Plug & Abandon		
					20. Rig up - Tear out		
					21. Directional Surveys	23 1/4	
					TOTAL	24	

COSTS

DAILY 34500
CUMMULATIVE 801500

SUPERVISOR

Wilbert Callitao

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-01-30-24:00
Yr-Mon-Day-TimeWELL NAME Paramount at Arrowhead LOCATION 0-15-60-30-123-02

OPERATIONS DETAIL:

Directional Drill Ahead in 216mm Hole - Using Both Mud Motor and Some Rotating when Drilling - Have Hole Angle built up in the 4-5° Range and Direction in the 240-245° Area Starting to go as per Program
Since Mud motor have Drilled to 2201M - Circ Bottoms up Sample prior to Tripout - Tripping due to Hooks on Mud Motor and Bit - Will bring in another Mud Motor to Keep on Location as standby

WANT LIST:

WEATHER: Overcast-Calm-Cold-26° C.ROAD: Good on Hiway - Rough to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-29-24:00
Yr - Mon - Day - Time

WELL NAME Paramounttal Henshead LOCATION 0-15-60-30-123-00
 Day 13 Depth 2065 Metres last 24 hr 74 Rotating hrs 12 1/2
 Activity at report time Directional Drilling Hole @ 2092m @ 02:00 Hrs

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 980 Vis 52 WL 20 Gels 1.5/2.5 Solids 9.8 % PV 10 YP 1.5 pH
 Oil 88 % Sand 0.005 % Cake 2 PPMCL 240000 PPMCa 240000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot nrs TODAY	CUM Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
4	216	HC-GT1801	X61C11	12-16	30/95		74	398	12 1/2	57 1/4	5.92	Run		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m'/MIN	DP	DC			
4	11.9	11.9	11.9	203	105	152	1.15	46	98			9100

DEVIATION SURVEYS

° at	m	° at	m
° at	m	° at	m
° at	m	° at	m
° at	m	° at	m

MUD & CHEMICALS ADDED

Bayer-15 Sak
 Cutter "D" - 13m³

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1- Bit		216	.24	
1- Drilling Motor		165	6.18	
1- Float Sub		160	.48	
1- MWD - Navigation		168	9.44	
1- Pulser Sub		160	1.14	
1- Navigation Sub		158	9.40	
1- Xp Sub		170	.44	
6- Drill Collars		170	57.08	
1- Drilling Jar		170	3.86	
9- Drill Collars		170	85.04	
1- Xp Sub		164	.58	
1- Heavy Weight Pipe		114	54.98	
189 - Drill Pipe		114	102.96	

TIME ANALYSIS

OPERATION		TODAY	CUM.
1. Drilling		12 1/2	
2. Trips		7	
3. Rig Service		1/2	
4. Deviation Surveys - Directional		2 1/4	
5. Ream & Cond. Hole - Clean to Bottom		1/4	
6. Mix & Cond. Mud			
7. Circulation		1	
8. Rig Repair			
9. Run Casing & Cement			
10. Fishing			
11. Logging			
12. Coring			
13. Formation Testing			
14. Waiting on:			
15. Nipple Up & Test BOPS			
16. Drilling Out			
17. Lost Circ.			
18. Laying Down DP & BOP's			
19. Plug & Abandon			
20. Rig up - Tear out			
21. Slip and Cut Line		1/2	
TOTAL		24	

COSTS

DAILY 43500
 CUMMULATIVE 767000

SUPERVISOR

Wilbert Callieco

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-01-22-24:00
Yr - Mon - Day - TimeWELL NAME Paramountal Ahead LOCATION 0-15-60-90-123-00

OPERATIONS DETAIL:

directional drill Ahead - Hole Angle came back in to 1° From Vertical and direction turning the wrong way - At 195' and need 240° - Give Bottoms up - Pull out of Hole - Change Angle on Mud Motor From 1.15° to 1.83° - Run Back in Hole - Test Mud Motor again - Clean out 20m to Bottom - Drill Ahead - Mud Motor has built up more Hole Angle and direction has turned to 247° - Getting back to Program Requirements - Since Midway to have drilled Ahead with no Problems - Brought in 90m³ Invert Mud From Storage at Base Camp - Sent out load of Solids to Ft St-John

Weather getting Colder - No Wind but Lower Temp

Bit and Mud Motor that were Pulled out of Hole + inspected in Good Shape - Ran both back in Hole

WANT LIST:

WEATHER: Good on Hwy - Rough to Location ROAD: Clear - Cold - 28°C

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-28-24:00
Yr - Mon - Day - Time

WELL NAME Paramount North Arrowhead LOCATION 0-15-60-30-123-02
 Day 12 Depth 1991 Metres last 24 hr 143 Rotating hrs 19 3/4
 Activity at report time Trip back in Hole after drilling motor Angle Change

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 980 Vis 52 WL 20 Gels 15/2.5 Solids 9.8 % PV 10.0 YP 1.44 pH
 Oil 88 % Sand 1005 % Cake 2 PPMCL 240000 PPMCa 240000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
4	214	HC-BT18M	X61CV	12-15	30/25		143	304	19 3/4	45 1/4	2.24			Running

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.		
	1	2	3	STROKE	SPM	LINER	m ³ /MIN	DP	DC			kPa		
4	11.9	11.9	11.9	203	105	140	.98	46	78			9100		

DEVIATION SURVEYS

° at _____ m	° at _____ m
° at _____ m	° at _____ m
° at _____ m	° at _____ m
° at _____ m	° at _____ m

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1- Bit		214	1.24	
1- Drilling Motor		165	1.18	
1- Float Sub		160	.48	
1- Mud-Non Magnetic		168	9.44	
1- Pulser Sub		160	1.14	
1- Non Magnetic		158	9.40	
1- XO Sub		170	.44	
6- Drill Collars		170	57.08	
1- Drilling Jar		170	3.86	
9- Drill Collars		170	172.28	
1- XO Sub		164	.58	
6- Heavy Water Pipe		114	59.98	
182- Drill Pipe		114	175.62	

TIME ANALYSIS

OPERATION					TODAY	CUM.
1. Drilling					19 3/4	
2. Trips						
3. Rig Service					1/2	
4. Deviation Surveys						
5. Ream & Cond. Hole						
6. Mix & Cond. Mud						
7. Circulation						
8. Rig Repair						
9. Run Casing & Cement						
10. Fishing						
11. Logging						
12. Coring						
13. Formation Testing						
14. Waiting on:						
15. Nipple Up & Test BOPS						
16. Drilling Out						
17. Lost Circ.						
18. Laying Down DP & BOP's						
19. Plug & Abandon						
20. Rig up - Tear out						
21. Directional Surveys					3 3/4	
TOTAL					24	

COSTS

DAILY 43500
 CUMMULATIVE 722500

SUPERVISOR

Wilbert Callisto

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 98-01-28-24:00
Yr-Mon-Day-TimeWELL NAME Paramount Atlashead LOCATION D-15-60-30-122-02

OPERATIONS DETAIL:

12

Directional Drill 216mm Hole - Drapping Hole Angle and turning Hole direction toward 240° as per Program - Going Good until 1920m - Start to drop Hole Angle and losing direction - At 1950m - Able to get Hole direction to change and bring Hole Angle back up - Since Midnite have drilled to 1998m - Ckce to Clean Hole - Trip out - Change Mud Motor Angle From 1.15° to 1.83° - Ran back in with same mud motor and Bit - Both were in Good Shape - Slip and Cut Line at Report Time.

WANT LIST:

WEATHER: Overcast - Wind 25kmH - Cold - 24°C ROAD: Good on Hi Way - Rough to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-27-24:00
Yr - Mon - Day - Time

WELL NAME Paramount at Arrowhead LOCATION 0-15-60-50-123-02
Day 11 Depth 1848 Metres last 24 hr 132 Rotating hrs 20
Activity at report time Directional Drill 216mm Hole @ 1890m

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 980 Vis 52 WL 20 Gels 1.5/2.5 Solids 10 % PV 10 YP 1.44 pH
Oil 88 % Sand 1005 % Cake 2 PPMCL 240000 PPMCa 240000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
4	216	HC-GT78m	X61CV	1213	30-75		132	161	20	2542	126	Rang		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS. kPa
	1	2	3	STROKE	SPM	LINER	m'/MIN	DP	DC			
4	11.9	11.9	11.9	203	102	152	1.15	46	78			9000

DEVIATION SURVEYS

at m at m
at m at m
at m at m
at m at m

MUD & CHEMICALS ADDED

Cutter 25"-18m³

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1- B.T.		216		24
1- Drilling Motor		165		1618
1- Floor Sub		160		48
1- Mud-Head Assy		168		944
1- Pulser Sub		160		114
1- Mud Lag D.C.		158		940
1- X0 Sub		170		44
1- Drill Collars		170		57.08
1- Drilling Jar		170		3.86
9- Drilling Collars		170		173.38
1- X0 Sub		164		158
6- Heavy Water Pipe		114		54.98
167- Drill Pipe		114		162.24

TIME ANALYSIS

					OPERATION	TODAY	CUM.
					1. Drilling	20	
					2. Trips		
					3. Rig Service	1/2	
					4. Deviation Surveys		
					5. Ream & Cond. Hole		
					6. Mix & Cond. Mud		
					7. Circulation		
					8. Rig Repair		
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing		
					14. Waiting on:		
					15. Nipple Up & Test BOPS		
					16. Drilling Out		
					17. Lost Circ.		
					18. Laying Down DP & BOP's		
					19. Plug & Abandon		
					20. Rig up - Tear out		
					21. Directional Surveys	3 1/2	
					TOTAL	24	

COSTS

DAILY 35800
CUMMULATIVE 630,000

UPERVISOR

Wilbert Callibee

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT (page 2)

FOR 24 HR PERIOD ENDING 99-01-27-21:00
Yr - Mon - Day - Time

WELL NAME Paramountetailhead LOCATION D-15-60-50-123-02

OPERATIONS DETAIL:

1*

Directional Drill 21mm Hole - Hole Angle Holding at $+4^{\circ}$ - Will have to Bring Angle back to 3° or less before getting Hole fractured. Have to Turn Hole to 240° and have come from 84° to 170° - Still have more turning in Hole to get done before getting bottom of Hole back into Location Area - Since Mudrate has been restricted to 18gpm - Using Mud Motor and Sliding Drill String. Sent out Load of Solids to Ft St John - Brought in Load of Sandust with Incoming Truck.

WANT LIST:

WEATHER: Clear - Cold - 20km/h Wind - -20°C ROAD: Good on Hiway - Rough to location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

 FOR 24 HR PERIOD ENDING 01-27-1999
 Yr - Mon - Day - Time

 WELL NAME Paramount total Air-rodhead LOCATION 0-15-60-50-123-00
 Day 10 Depth 1716 Metres last 24 hr 48 Rotating hrs 9 1/4
 Activity at report time Directional Drilling 216mm Hole @ 1754 M @ 07:00 Hrs

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

 Wt 955 Vis 50 WL 20 Gels 1512.5 Solids 5.8 % PV 10 YP .96 pH 16
 Oil 99.5 % Sand 100.5 % Cake 2 PPMCL 250000 PPMCa 240000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
2	216	Vale-L216X8	90282	212	110	1687	19	86	3 3/4	203/4	4.25	3	3	IR
4	216	HC-GT1807	X61CV	1276	90-75		29	29	5 1/2	5 1/2	5.27			Rnag

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	LINER	m ³ /MIN	DP	DC			kPa	
4	11.9	11.9	11.9	203	100	152	1.1	46	78			9300	

DEVIATION SURVEYS

3	°	at	11668 m	°	at		m
3.5	°	at	11674 m	67°	°	at	m
3.9	°	at	11685 m	72.6°	°	at	m
4.2	°	at	11694 m	71.2°	°	at	m

MUD & CHEMICALS ADDED

Banite - 153ax

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1-Bit		216	.24	
1-Drill Motor		165	6.18	
1-Float Sub		160	.48	
1-MWD Near Magn		168	9.44	
1-Pulser Sub		160	1.14	
1-Near Magn 2.C.		158	9.40	
1-XO Sub		170	.44	
1-Drill Collars		170	57.08	
1-Drilling Jar		170	3.86	
9-Drill Collars		170	178.28	
1-XO Sub		164	.58	
1-Heli-Water Pipe		114	54.98	
152 Drill Pipe		114	142.16	

TIME ANALYSIS

OPERATION					TODAY	CUM.
1. Drilling					9 1/4	
2. Trips					7 1/4	
3. Rig Service					1/2	
4. Deviation Surveys					1/2	
5. Ream & Cond. Hole						
6. Mix & Cond. Mud						
7. Circulation					1/2	
8. Rig Repair						
9. Run Casing & Cement						
10.						
11. Logging						
12. Coring						
13. Formation Testing						
14. Waiting on: Directional Drilling					3 1/2	
15. Nipple Up & Test BOPS						
16. Drilling Out						
17. Lost Circ.						
18. Laying Down DP & BOP's						
19. Plug & Abandon						
20. Rig up - Tear out						
21. Directional Surveys					3/4	
TOTAL						

COSTS

 DAILY 50000
 CUMMULATIVE 44200

SUPERVISOR

Wilbert Callison

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-01-26-24:00
Yr-Mon-Day-TimeWELL NAME Paramountetal Arrowhead LOCATION 0-15-60-50-123-02**OPERATIONS DETAIL:**

12

Drill 216mm Hole w/ 5-6000 daN Bit Weight - Run Survey at 1669m -
Deviation out to 3° - Drill Ahead to 1687m - Pull out of Hole to Pickup
Directional Drilling Tools which had Arrived Last P.M. - Wait on
Directional Drilling Operator to Arrive - Were out of Hole @ 08:00hrs
Operator Arrived @ 11:30hrs - Pickup - Make up and Run in with
Directional Drilling Tools - Survey at Casing Shoe @ 1190m and every
5 Stands on way to Bottom - Drill Ahead with Mud Motor and Rotate
3-3.5m on every Single Drilled -

Deviation at Bottom of Hole @ 1687m was 24.20m North and 22.54m
East - Start to Bring Hole Angle and Direction back since midnite

WANT LIST:WEATHER: Clear Cold Wind 30kph -16°CROAD: Good on the way - Rough to location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-25-24:00
Yr - Mo - Day - Time

WELL NAME Paramount total Arrowhead LOCATION 0-15-60-50-123-02
 Day 9 Depth 1668 Metres last 24 hr 52 Rotating hrs 17
 Activity at report time Pull out of Hole @ 1687m - to Pick up directional Tools

DRILLING MUD PROPERTIES AT SHAKERS/SUCTION/PIT

Wt 955 Vis 50 WL 20 Gels 1.512.5 Solids 5.5 % PV 10 YP 96 pH
 Oil 92 % Sand 0.05 % Cake 2 PPMCL 240000 PPMCa 240000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
<u>3</u>	<u>216</u>	<u>Sec. G-582F</u>	<u>730987</u>	<u>6-7</u>	<u>80-90</u>	<u>1666</u>	<u>✓</u>	<u>161</u>	<u>✓</u>	<u>2644</u>	<u>2480</u>	<u>2-2</u>	<u>3</u>	<u>IN</u>
<u>RK2</u>	<u>216</u>	<u>Sec. L-216XG</u>	<u>90282</u>	<u>6-10</u>	<u>100-110</u>		<u>52</u>	<u>52</u>	<u>17</u>	<u>17</u>	<u>3.05</u>	<u>Rolling</u>		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	LINER	m ³ /MIN	DP	DC			kPa	
<u>3</u>	<u>9.5</u>	<u>9.5</u>	<u>9.5</u>	<u>203</u>	<u>100</u>	<u>152</u>	<u>1.1</u>	<u>46</u>	<u>78</u>			<u>72.00</u>	
<u>RK2</u>	<u>11.1</u>	<u>11.1</u>	<u>11.1</u>	<u>203</u>	<u>100</u>	<u>152</u>	<u>1.1</u>	<u>46</u>	<u>78</u>			<u>58.00</u>	

DEVIATION SURVEYS

<u>3</u>	• at <u>1640</u> m	• at _____ m
	• at _____ m	• at _____ m
	• at _____ m	• at _____ m
	• at _____ m	• at _____ m

MUD & CHEMICALS ADDED

Barite - 15 Sax

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
<u>1- Bit</u>		<u>216</u>	<u>.24</u>	
<u>1- Shock Sub</u>		<u>170</u>	<u>1.08</u>	
<u>6- Drill Collars</u>		<u>170</u>	<u>57.08</u>	
<u>1- Drilling Jg</u>		<u>170</u>	<u>3.86</u>	
<u>9- Drill Collars</u>		<u>170</u>	<u>85.04</u>	
<u>1- XO Sub</u>		<u>163</u>	<u>.58</u>	
<u>6- Heavy Water Pipe</u>		<u>114</u>	<u>54.58</u>	
<u>- Drill Pipe</u>		<u>114</u>		
<u>1- Kelly</u>		<u>114</u>		

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling	<u>17</u>	
2. Trips	<u>43/4</u>	
3. Rig Service	<u>1</u>	
4. Deviation Surveys	<u>1/2</u>	
5. Ream & Cond. Hole <u>Clean to Bottom</u>	<u>1/2</u>	
6. Mix & Cond. Mud		
7. Circulation	<u>1/4</u>	
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Last Circ.		
18. Laying Down DP & BOP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21.		
TOTAL	<u>24</u>	

COSTS

DAILY 23,300
 CUMMULATIVE 594,200

SUPERVISOR

Wilbert Callif, Jr.

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-01-25-24:00
Yr - Mon - Day - TimeWELL NAME Paramount at Arrowhead LOCATION 0-15-60-50-123-02

OPERATIONS DETAIL:

(±)

Finish Pulling out of Hole - lay down wear Bit Stabilizer and
String Stabilizer - Run in with Re Run Tooth Bit & Slick String
Break Circ - Wash and Clean to Bottom - Drill Ahead with 5-6"
den Bit Weight and 110 RPM Rotary Speed - Drill Ahead for
30m and Run Survey @ 1640m - Deviation still at 3°
Drill Ahead carrying 1000 den Bit Weight
Since Midnite Run Survey @ 1670m - deviation still at 3°
with more Bit Weight - Pull out of Hole to pick up Directional Tools

WANT LIST:

WEATHER: Clear - Calm - Cool -18°CROAD: Good on Highway - Rough to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-24-24:00
Yr - Mo - Day - Time

WELL NAME Paramount et al Alseahead LOCATION A-15-60-50-128-02
 Day 8 Depth 1616 Metres last 24 hr 88 Rotating hrs 18 1/2
 Activity at report time Drill 215mm Hole with Tooth Bit @ 1620

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 950 Vis 60 WL 20 Gels 15/215 Solids 5.8 % PV 10 YP 1.44 pH
 Oil 91 % Sand .005 % Cake 2 PPMCL 100000 PPMCs 200000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLd	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	P	C
3	216	See GS8AF	280987	6-T	80-90		88	161	18 1/2	26 1/4	244 1/2	244 1/2	ROP	

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	LINER	m³/MIN	DP	DC			kPa	
3	9.5	9.5	9.5	203	100	152	1.1	46	78			7200	

DEVIATION SURVEYS

2 3/4" at 1534 m
 1 1/2" at 1544 m
 3" at 1611 m
 at m

MUD & CHEMICALS ADDED

Invert - 13m³

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		216	.24	
1 - New Bit Sub		214	1.08	
2 - Drill Collars		170	19.14	
1 - String Sub		214	1.44	
3 - Drill Collars		170	28.56	
1 - Drilling Pipe		170	3.86	
10 - Drill Collars		170	94.42	
1 - X-Sub		163	.58	
6 - Heavy Duty Pipe		114	54.58	
146 - Drill Pipe		114	408.08	
1 - Kelly		114	4.22	

TIME ANALYSIS

OPERATION	TODAY	CUM.
1. Drilling	18 1/2	
2. Trips	1 1/4	
3. Rig Service	1/2	
4. Deviation Surveys	1/2	
5. Ream & Cond. Hole		
6. Mix & Cond. Mud		
7. Circulation	2 1/4	
8. Rig Repair		
9. Run Casing & Cement		
10. Fishing		
11. Logging		
12. Coring		
13. Formation Testing		
14. Waiting on:		
15. Nipple Up & Test BOPS		
16. Drilling Out		
17. Lost Circ.		
18. Laying Down DP & ROP's		
19. Plug & Abandon		
20. Rig up - Tear out		
21.		
TOTAL	24	

COSTS

DAILY 23000
 CUMMULATIVE 560900

SUPERVISOR

Wilbert Callison

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-01-24-24:00
Yr - Mo - Day - TimeWELL NAME Paramount total Arrowhead LOCATION 0-15-60-50-123-02

OPERATIONS DETAIL:

(2)

Drill Ahead with 216 mm Button Bit - Carrying 6-7 m dan Bit Weight
Drill at 4-8 m/hr - Circ to Clean Hole and Run Surveys over, 30 m
Deviation came in from 2 3/4" (which was Deviation at this depth in
Old Hole) to 2 1/2" - Drilled ahead 50 m and Run Survey - Deviation
out to 3° at 160 m - Circ to Clean Hole - Pump Weight Material Pill
Pull out of Hole For Bit Change and Leave out Stabilizers
Since No Circ - Made Trip - Run in with Re Run Teeth Bit
Drill Ahead at 3 m/hr with 6-6.5 dan Bit Weight - Rotate 110 RPM.

WANT LIST:

WEATHER: Clear-Calm-Cool -18°CROAD: Good on Highway - Rough to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING 99-01-23-20:00
Yr - Mon - Day - Time

WELL NAME Paramount at Arrowhead LOCATION 015-60-50-123-00
 Day 7 Depth 1528 Metres lost 24 hr 141 Rotating hrs 18 3/4
 Activity at report time Drill Ahead 216mm Hole @ 1566m @ 02:30 Hrs

DRILLING MUD PROPERTIES AT SHAKER/SUCTION/PIT

Wt 945 Vis 50 WL 20 Gels 1.5/2.5 Solids 5 % PV 10 YP 1.44 pH
 Oil 92 % Sand .005 % Cake 2 PPMCL 216666 PPMCa 200000

BIT RECORD

BIT NO.	SIZE mm	MAKE & TYPE	SER. NO.	BIT		DEPTH OUT m	m DRLD TODAY	CUM m. DRLD	Rot hrs TODAY	CUM. Rot hr	m/hr	Dull Cond.		
				WT	RPM							T	B	G
3	216	Sec-GS82F	730987	370 ⁰⁰⁰	85-100		141	235	18 3/4	24		Katz		

CIRCULATION RECORD

BIT NO.	JETS - mm			PUMP				ANN. VEL.		JET VEL.	HHP	SURF. PRESS.	
	1	2	3	STROKE	SPM	LINER	m ³ /MIN	DP	DC			kPa	
3	9.5	9.5	9.5	203	100	152	1.1	46	78			7000	

DEVIATION SURVEYS

1 1/2° at 1390 m ° at m
 2° at 1419 m ° at m
 2° at 1448 m ° at m
 2 3/4° at 1506 m ° at m

MUD & CHEMICALS ADDED

BOTTOM HOLE ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
1- Bit		216	.24	
1- Near Bit Sub		214	1.08	
2- Drill Collars		170	19.14	
1- String Stab		214	1.44	
3- Drill Collars		170	28.56	
1- Drilling Jar		170	3.86	
10- Drill Collars		170	94.42	
6- Hole Wash Pipe		114	54.98	
156- Drill Pipe		114	1312.36	
1- Kelly		114	11.94	

TIME ANALYSIS

					OPERATION	TODAY	CUM.
					1. Drilling	7 3/4	
					2. Trips		
					3. Rig Service	1/2	
					4. Deviation Surveys	2	
					5. Ream & Cond. Hole - <u>Drill Cement</u>	11	
					6. Mix & Cond. Mud		
					7. Circulation	2 1/2	
					8. Rig Repair		
					9. Run Casing & Cement		
					10. Fishing		
					11. Logging		
					12. Coring		
					13. Formation Testing		
					14. Waiting on:		
					15. Nipple Up & Test BOPS		
					16. Drilling Out		
					17. Lost Circ.		
					18. Laying Down Dr & BOP's		
					19. Plug & Abandon		
					20. Rig up - Tear out		
					21. BOP Drill	1/4	
					TOTAL	24	

COSTS

DAILY 36520
 CUMMULATIVE 537,900

SUPERVISOR

Wilbert Colliton

PARAMOUNT RESOURCES LTD.**DAILY DRILLING REPORT (page 2)**FOR 24 HR PERIOD ENDING 99-01-23-24:00
Yr - Mon - Day - TimeWELL NAME Paramount et al Ahead LOCATION 0-15-40-00-123-000

OPERATIONS DETAIL:

(2)

Drill out Cement Plug in Hole - Carrying 3-5⁰⁰ dam on Bit to try and keep Bit From Sliding off Cement Plug - Cite to Clean Hole and Run Survey every 30m - Hole Angle staying the same as Surveys on Original Hole - Drill out 16m Cement @ 1433m - Drill Ahead in New Hole carrying 9-10⁰⁰ dam on Bit - Hole Angle staying the same @ 2³/₄° After Drilling 50m New Hole - Drill Ahead with 6-8⁰⁰ dam on Bit - Since Midnite have taken Survey at 1536m and Deviation still at 2³/₄° - Survey at 1540m - 2¹/₂°

WANT LIST:

WEATHER: Clear - Calm - Cool - 8° CROAD: Good Highway - Rough to Location

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PAR. MOUNT RESOURCES LTD.

DAILY DRILLING REPORT

UNIQUE I.D. 3000156030123000LOCATION: PARA ETAL ARROWHEAD-15
WELL LICENCE WID 1834SUPERVISOR: G. SANDERS
CELLULAR #: 1-6067005443
SPUD DATE: 99-01-17
R.R. DATE: _____
CONTRACTOR: PRECISION 507
A.F.E. #: 17178 EST. T.D. 3085DAILY COST: 43516
CUM. COST: 465830
DAILY MUD: _____
CUM MUD: _____
Temp -32DAY: 5 REP DATE: 99-01-22 STATUS 08:00 REAMING TO BTM
DEPTH: 1273 PROG. 138m KB: 6-20 GL: 386.5 MACP: 14493
SURVEYS: 1212 4° 1222m 33° 1251m 2° 1264m 1°MUD TYPE: INVERT WT: 965 VISC: 65 WL: _____ FC: _____ PH: _____
ADDITIVES: _____

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
2AR	90282	216	VAREL	L216XG	3-11.1	1273	153	12.25	221	2.4	50/80
3	730987	216	SEC	GS82F	3-9.5						

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
AIRWELL	PT600	152							
OILWELL	PT600	170	208	110	1.05	7200	78	46	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			1.25
BIS NBR			1.07
228MM DC 2-DC			19.14
XIO STR STR			1.43
XIO 3DC			28.58
6DC JARS			3.86
10 DC			97.42
KELLY 6 HWD			54.98
TOTAL			203.70

CASING SUMMARY

RAN _____ JTS OF _____ MM,
LANDED AT _____ MKB. TOTAL LENGTH _____
CEMENTED WITH _____
PLUG DOWN AT _____

TIME DISTRIBUTION

MOVE/RIG-UP _____ RIG REP: _____
DRILL MH & RH: _____ LOGGING: _____
RIG SERVICE: .50 CEMENT: _____
SURVEY: 2.25 WOC: _____
PRESSURE TEST: _____ RUN CSG: _____
DRILL: _____ DST: _____
DRILL OUT: 10.75 TRIP: 7.00
CIRCULATE: 2.75 L.D.D.S.: _____
NIPPLE UP BOP: _____ REAM: _____
B.O.P. DRILL .25 S/COR .50TOTAL HOURS: 24
KG/M, _____ CASING.
METERS. _____

HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

DRILLED OUT CEMENT & SURVEY TO 1273m. HAD TO DRILL ALL THE WAY
NO. SIGN. OF OPEN HOLE FROM 1060m. HOLE COULD BE SWELLED IN A BIT. ON
PLUGS IN ET. DRILLS THE SAME, LOTS OF CUTTING COMING OUT OF 1060
P.O. H @ 1273m AND PICKED UP BHA. RAN IN TO 1186m AND HAD A
REAM WAY IN. DOESN'T TAKE MUCH TO REAM IT.
REAMING @ 1216m @ 0600 HRS

DAILY DRILLING REPORT

LOCATION: PARA ETAL ARROWHEAD 6-15
WELL LICENCE WID 1834

SUPERVISOR: G. SANDERS
CELLULAR #: 1-600-706-5448
SPUD DATE: 99-01-17
R.R. DATE: _____
CONTRACTOR: PRECISION 567
A.F.E. #: 17178 EST. T.D. 3085

DAILY COST:	<u>32179</u>
CUM. COST:	<u>422314</u>
DAILY MUD:	<u>760</u>
CUM MUD:	<u>1860</u>

TEMP -30

DAY: 4 REP DATE: 99-01-21 STATUS 0800 DRILL dur CEMENT
DEPTH: 1135 PROG. 22 KB: 6.20 GL: 380.5 MACP: 11493
SURVEYS:

MUD TYPE: INVERT WT: 9.65 VISC: 65 WL: FC: PH:

ADDITIVES:

[illegible]

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
OIL WELL	PT 600	152	203	100	1.05 m ³ /h	4600	78	46	
OIL WELL	PT 600	140	203						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	256		.25
B/S	173		1.06
15 10C	171		132.50
6 HW DP	163		54.98
X4 SUB	163		.58
KELLY			
TOTAL			189.37

CASING SUMMARY

RAN _____ JTS OF _____ MM, _____ KG/M, _____ CASING.
 LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.
 CEMENTED WITH _____
 PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

TIME DISTRIBUTION

MOVE/RIG-UP		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	.50	CEMENT:	
SURVEY:		WOC:	
PRESSURE TEST:	2.75	RUN CSG:	
DRILL:	1.50	DST:	
DRILL OUT:		TRIP:	9.25
CIRCULATE:	.50	L.D.D.S.:	
NIPPLE UP BOP:	8.75	REAM:	
	.75		

Flint

TOTAL HOURS: 24
KG/M, _____ CASING.
METERS. _____

FINNISHED TRIP OUT W/ MAGNET. Full 6th JUNE -

PICKED UP B.O.P. STAGE AND CHANGED OUT TUBING HANGER TO CS9 HANGER
NIPPLED UP. B.O.P. & FLOW LINE. - PRESSURE TESTED BTM PIPE RAM. CS9 HANGER
KILL LINE. MANIFOLD LINES & VALVES 1400 KPA LOW & 21000 KPA HIGH 16 MIN OR
RAN IN W/ MAGNET. WORKED MAGNET. P.O.H. RECOVERED MAGNET FULL OF
FILLINGS. NO LARGE PIECES.

FILLINGS. NO LARGE PIECES.
DAN IN w/ BIT. DRILLING OUT CEMENT w/ 2-3 den. VERY POOR CEMENT
B. ANY WHERE FROM 10-25m/HR VERY PATCHY CEMENT.

PAI MOUNT RESOURCES L.J.

DAILY DRILLING REPORT

UNIQUE I.D. 3000156030123000

LOCATION: PARA ERAL ARRUWITEAO 0-15
WELL LICENCE WID 1834

SUPERVISOR: G. SANDERS
CELLULAR #: 1-600-700-5443
SPUD DATE: 99-01-17
R.R. DATE: _____
CONTRACTOR: PRIESSION 567
A.F.E. #: 17178 EST. T.D

DAILY COST:	<u>28791</u>
CUM. COST:	<u>396135</u>
DAILY MUD:	<u>1100</u>
CUM MUD:	<u>1100</u>

TEMP: -20

DAY: 3 REP DATE: 99-01-20 STATUS: 08:00 MAGNET RUN #4
DEPTH: _____ PROG. _____ KB: _____ GL: _____ MACP: _____
SURVEYS: _____

MUD TYPE:	INVERT	WT: 965	VISC: 65	WL:	FC:	PH:
ADDITIVES:						

[illegible]

PUMP	DESCR	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
OIL WELL	PT600	157	203	100	1.05 m ³	4500	7.8	Y6	
OIL WELL	PT600	140	203						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
MAGNET	203		.68
BIT SUB			1.06
15 OC	171		1.4211
1 X6 SUB	163		.58
6 HW DP	114		54.98
KELLY			
		TOTAL	

CASING SUMMARY

RAN _____ **JTS OF** _____ **MM,**
LANDED AT _____ **MKB.** **TOTAL LENGTH** _____
CEMENTED WITH _____
PLUG DOWN AT _____ **HRS. ON** _____

TIME DISTRIBUTION

MOVE/RIG-UP	_____	RIG REP:	_____
DRILL MH & RH:	_____	LOGGING:	_____
RIG SERVICE:	<u>.50</u>	CEMENT:	_____
SURVEY:	_____	WOC:	_____
PRESSURE TEST:	_____	RUN CSG:	_____
DRILL:	<u>.75</u>	DST:	_____
DRILL OUT:	_____	TRIP:	<u>26.75</u>
CIRCULATE:	_____	L.D.D.S.:	_____
NIPPLE UP BOP:	_____	REAM:	_____
FISH W/ MAGNET 2.0			

TOTAL HOURS: 27

KG/M, _____ CASING.

METERS. _____

HRS. ON WITH M3 CEMENT RETURNS.

RAN IN W/ 8 INCH MAGNET- WORKED MAGNET- HOISTED MAGNET. RECOVERED
JUNK. (LOOKED LIKE CUP.) APPEARS TO BE BIT CASE. MADE SECOND MAGNET. RUN
RECOVERED MORE PIECES OF STEEL.
RAN IN W/ BIT TRIED TO DRILL. STILL MORE IRON- HOISTED BIT.
RAN MAGNET- MORE PIECES OF STEEL.
RAN MAGNET AGAIN.
HAVE ICE CREAM PAIL FULL OF PIECES RANGING FROM 1/2 OF CONC SIZE TO PEA
SIZE.
HAVE INTERMEDIATE SPOOL & DOUBLE STUCCO ADAPTER HERE & NIPPLE UP CROW.

DRILLING REPORT DAY 1

PAF MOUNT RESOURCES L.

DAILY DRILLING REPORT

UNIQUE I.D. 3000156030123000LOCATION: PARA ETL ARROWHEAD 0-15WELL LICENCE WID 1854SUPERVISOR: G. SANDERSCELLULAR #: 1-600 700 5443SPUD DATE: 99-01-17R.R. DATE: CONTRACTOR: PRECISION 507A.F.E. #: 17178EST. T.D. 3086DAILY COST: 45622CUM. COST: 361544DAILY MUD: CUM MUD: TEMP -13.DAY: 2 REP DATE: 99-01-19 STATUS 08:00 R.I.H. W/ MAGNET.DEPTH: 1113 PROG. 113m KB: 6-20 GL: 380-5 MACP: SURVEYS: MUD TYPE: INVERT WT: 940 VISC: 60 WL: FC: PH: ADDITIVES:

RIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1:	A44DX	215.9	WC	GTX.G3	3-14	1114	713	13.76	811	3-6	40/60

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
D.L.WEH	600PT	152	203	100	105%	6000	78	46	
D.L.WEH	600PT	140	203						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
MAGNET			.68
BIT SUB.			1.06
15 DC	171		142.11
1X0	163		.58
6 HWDP			54.98
KELLY			
TOTAL			

TIME DISTRIBUTION

MOVE/RIG-UP	RIG REP: .50
DRILL MH & RH:	LOGGING:
RIG SERVICE:	.50 CEMENT:
SURVEY:	WOC:
PRESSURE TEST:	RUN CSG:
DRILL:	DST:
DRILL OUT:	13.75 TRIP: 8.00
CIRCULATE:	.50 L.D.S.:
NIPPLE UP BOP:	REAM:
	W.O.O. .75

CASING SUMMARY

RAN	JTS OF	MM,	KG/M,	CASING.
LANDED AT	MKB.	TOTAL LENGTH	METERS.	
CEMENTED WITH				
PLUG DOWN AT	HRS. ON	WITH	M3 CEMENT RETURNS.	

DRILLED OUT BRIDGE PLUG @ 906m.

RAN IN TO TOP OF CEMENT PLUG @ 1064m

DRILL OUT CEMENT TO 1099m POOR CEMENT. DRILLED OUT CEMENT TO 1111m FAIR CEMENT - BIT STARTED TORQUING & QUIT DRILLING.

PULLED OUT OF HOLE. BIT LOCKED UP. CENTER TEETH BROKEN OFF. FOUND

HUNK OF IRON IN BIT. R.I.H. HOLE W/ NEW BIT. IRON ON BTM. P.O.S.H.

PHONE DAVE WILSON. AND MET HIM AT HIGHWAY TO GET MAGNET 206mm.

R.I.H. W/ MAGNET. @ 6600 HRS

PAI MOUNT RESOURCES LTD.

DAILY DRILLING REPORT

UNIQUE I.D. 3000156030123060LOCATION: Arradnag D-15
WELL LICENCESUPERVISOR: G. SANDERSCELLULAR #: 1-600 700 5493SPUD DATE: 99-01-17

R.R. DATE:

CONTRACTOR: PRECISION 507A.F.E. #: 17128EST. T.D. 3085DAILY COST: 30886CUM. COST: 315722

DAILY MUD:

CUM MUD:

TEMP

DAY: 1REP DATE: 99-01-18 STATUS 08:00 REPAIR DWS

DEPTH:

PROG.

KB:

GL:

MACP:

SURVEYS:

MUD TYPE: INVERT

WT:

VISC:

WL:

FC:

PH:

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1	A44DX	215.9	HC	GT-63	3-14						

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
OILWELL	PT600	152	203						
OILWELL	PT600	140	203						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	215.9		.25
B/S	173		1.46
18 DC	171		132.50
6 HWOP	163		54.98
XO SUB	163		.58
KELLY			
TOTAL			191.67

CASING SUMMARY

RAN

JTS OF

MM,

LANDED AT

MKB.

TOTAL LENGTH

CEMENTED WITH

PLUG DOWN AT

HRS. ON

WITH

M3 CEMENT RETURNS.

TIME DISTRIBUTION

MOVE/RIG-UP

RIG REP: 2.25

DRILL MH & RH:

LOGGING:

RIG SERVICE:

CEMENT:

SURVEY:

WOC:

PRESSURE TEST: 10

RUN CSG:

DRILL:

DST:

DRILL OUT:

TRIP:

CIRCULATE:

L.D.D.S.:

NIPPLE UP BOP:

REAM:

Pick up DC top

7

Disolve

2.50

Rig n Pick up

1.50

SAFETY

.25TOTAL HOURS: 24

KG/M,

CASING.

METERS.

PRESSURE TESTED LOWER PIPE RAMS & KILL LINES. WORKONT hold
 PRESSURE. FOUND CEMENT IN CHECK VALVE. RENIPPLE KILL LINES. PRESSURE
 TESTED TOP & BTM PIPE RAM 1200 low 21000 kpa HIGH 10 min ok. PRESSURE
 TESTED ALL LINES & MANIFOLD VALVES TO 1400 low 21000 kpa HIGH 10 min ok.
 PRESSURE TESTED ANNULAR TO 1200 low 21000 kpa HIGH 10 min ok.
 CHECKED MOTOR KILLS OK. CHECKED ACCUMULATOR 22000 kpa STOP
 PRESSURE LEFT AFTER FUNCTIONS 12500 kpa RECHARGED IN 2 min HSSO -
 PICKED UP 15 DC 6 HWOP & DREW PIPE TO 906 m. DISPLACED CUTTER 'D'
 TO INVERT.
 REPAIRING WATER LEAK TO BRAKE DRUMS.

DRILLING REPORT DAY 1

PAI MOUNT RESOURCES LTD.

DAILY DRILLING REPORT

UNIQUE I.D. 306015603012300

LOCATION: PARA ETK ARROWHEAD 0-15
WELL LICENCE W101834

SUPERVISOR: G. SANDERS
CELLULAR #: 16007005443
SPUD DATE: _____
R.R. DATE: _____
CONTRACTOR: PRECISION 567
A.F.E. #: 17178 EST. T.D. 3088

DAILY COST: 23390
CUM. COST: 284836
DAILY MUD: _____
CUM MUD: _____

DAY: 1 REP DATE: 99-01-17 STATUS 08:00 PRESSURE TESTING
DEPTH: _____ PROG. _____ KB: _____ GL: _____ MACP: _____
SURVEYS: _____

MUD TYPE: _____ WT: _____ VISC: _____ WL: _____ FC: _____ PH: _____
ADDITIVES: _____

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1A											

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
B/S			
228MM DC			
X/O			
X/O			
6DC			
KELLY			
TOTAL			

TIME DISTRIBUTION

MOVE/RIG-UP	RIG REP:
DRILL MH & RH:	LOGGING:
RIG SERVICE:	CEMENT:
SURVEY:	WOC:
PRESSURE TEST:	RUN CSG:
DRILL:	DST:
DRILL OUT:	TRIP:
CIRCULATE:	L.D.D.S.:
NIPPLE UP BOP:	REAM:

CASING SUMMARY

RAN _____ JTS OF _____ MM, _____ KG/M, _____ CASING.
LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.
CEMENTED WITH _____
PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

RE BUILD BLEED OFF LINES & FLOW NIPPLE. NIPPLE UP 200'. SAME PROBLEM AS LAST WELL. PRESSURE TESTED MANIFOLD & ECLARE LINES 1400 - 2100 kpa. PRESSURE TEST BOTTOM PIPE RAN 1400 kpa low & 2100 kpa high 10 min ok. HAD SOME CEMENT IN 2TH KILL LINE. CEMENT JUNK HAD TO PULL LINES OFF ON KILL LINE STOPS.

PAF MOUNT RESOURCES LTD.

DAILY DRILLING REPORT

UNIQUE I.D. 20001560361236L

LOCATION: PARA ETAL ARROWHEADS-N
WELL LICENCE WID 1834

SUPERVISOR: G. SANDERS
CELLULAR #: 1-600-760 5448
SPUD DATE: _____
R.R. DATE: _____
CONTRACTOR: PRECISION 507
A.F.E. #: 12178 EST. T.D. 3685

DAILY COST: 32450
CUM. COST: 261446
DAILY MUD: _____
CUM MUD: _____
Temp - 8

DAY: 1 REP DATE: _____ STATUS 08:00 NIPPLE UP B.O.P.
DEPTH: _____ PROG. _____ KB: _____ GL: _____ MACP: _____
SURVEYS: _____

MUD TYPE: _____ WT: _____ VISC: _____ WL: _____ FC: _____ PH: _____
ADDITIVES: _____

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1A											

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
B/S			
228MM DC			
X/O			
X/O			
6DC			
KELLY			
TOTAL			

TIME DISTRIBUTION

MOVE/RIG-UP	RIG REP:
DRILL MH & RH:	LOGGING:
RIG SERVICE:	CEMENT:
SURVEY:	WOC:
PRESSURE TEST:	RUN CSG:
DRILL:	DST:
DRILL OUT:	TRIP:
CIRCULATE:	L.D.S.:
NIPPLE UP BOP:	REAM:

CASING SUMMARY

RAN _____ JTS OF _____ MM, _____ KG/M, _____ CASING.
LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.
CEMENTED WITH _____
PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

Rigged up Floor - Put up PREFABS - Rigged in CENTREFUGES -
DUG FLARE PIT - Sumps for WELL SITES - PITS for Blow Down & SHAKER -
Losses. STARTED Nipple up B.O.P @ 2000 HRS. HAD DC ENERGY IN TO
MANIFOLD TANK FARM & CHECK PUMP.
CONTACTED Rod & Geo Comm THEY HAVE MOTORS & MWD TOOLS &
PERSONNEL. THEY DOIT STOCK PIKE TOOLS & PERSONNEL @ FT NELSON -
HAVE TO CHANGE 2 LINES ON MANIFOLD LINES -

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

UNIQUE I.D. 30001568301236L

LOCATION: PARA ETAL ARROWHEAD 8-15
WELL LICENCE W10 1834

SUPERVISOR: G. SANDERS

CELLULAR #: 1-608 700 5443

SPUD DATE: _____

R.R. DATE: _____

CONTRACTOR: PRECISION 507

A.F.E. #: 17178 EST. T.D. 3085

DAILY COST: 164045

CUM. COST: 228996

DAILY MUD: _____

CUM MUD: _____

DAY: 1 REP DATE: _____ STATUS 08:00 RIGGING UP

DEPTH: _____ PROG. _____ KB: _____ GL: _____ MACP: _____

SURVEYS: _____

MUD TYPE: _____ WT: _____ VISC: _____ WL: _____ FC: _____ PH: _____

ADDITIVES: _____

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1A											

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
B/S			
228MM DC			
X/O			
X/O			
8DC			
KELLY			
TOTAL			

TIME DISTRIBUTION

MOVE/RIG-UP	RIG REP:
DRILL MH & RH:	LOGGING:
RIG SERVICE:	CEMENT:
SURVEY:	WOC:
PRESSURE TEST:	RUN CSG:
DRILL:	DST:
DRILL OUT:	TRIP:
CIRCULATE:	L.D.D.S.:
NIPPLE UP BOP:	REAM:

CASING SUMMARY

RAN	JTS OF	MM,	KG/M,	CASING.
LANDED AT	MKB.	TOTAL LENGTH	METERS.	
CEMENTED WITH				
PLUG DOWN AT	HRS. ON	WITH	M3 CEMENT RETURNS.	

FINNISHED rig up w/ trucks. DERRICK RAISED BY 1608 HRS.
Rigging up misc tools, floor, etc.
COYOTE SERVICE MAN BRUISED LEFT HAND WHILE RIGGING IN CENTRIFUGES AND
WENT INTO MEDIC CLINIC. REPORT TO FOLLOW. CONTINUES COYOTE REP IN HICKS
AND WAS INFORMED HE WLD BE BACK 99-01-18 AM. TO CONTINUE RIGGING IN
CENTRIFUGES.
WELL HEAD DIAGRAM TO FOLLOW

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

UNIQUE I.D. 300015603012301

LOCATION: PARA ETAL AREA HEAD 0-15
WELL LICENCE WID 1834

SUPERVISOR: G. SANDERS
CELLULAR #: 1-600 700 5443
SPUD DATE: _____
R.R. DATE: _____
CONTRACTOR: PRECISION 507
A.F.E. #: 17178 EST. T.D. 3685

DAILY COST: 47730
CUM. COST: 47730
DAILY MUD: _____
CUM MUD: _____

Temp -11

DAY: 1 REP DATE: _____ STATUS 08:00 RIGGING UP Rig.
DEPTH: _____ PROG. _____ KB: _____ GL: _____ MACP: _____
SURVEYS: _____

MUD TYPE: _____ WT: _____ VISC: _____ WL: _____ FC: _____ PH: _____
ADDITIVES: _____

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1A											

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
B/S			
228MM DC			
X/O			
X/O			
GDC			
KELLY			
TOTAL			

TIME DISTRIBUTION

MOVE/RIG-UP 24 RIG REP: _____
DRILL MH & RH: _____ LOGGING: _____
RIG SERVICE: _____ CEMENT: _____
SURVEY: _____ WOC: _____
PRESSURE TEST: _____ RUN CSG: _____
DRILL: _____ DST: _____
DRILL OUT: _____ TRIP: _____
CIRCULATE: _____ L.D.D.S.: _____
NIPPLE UP BOP: _____ REAM: _____

CASING SUMMARY

RAN _____ JTS OF _____ MM, _____ KG/M, _____ CASING.
LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.
CEMENTED WITH _____
PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

TOTAL HOURS: 24

HAULED IN BALANCE OF Rig EQUIPMENT. ALL Rig COMPONENTS ON LEASE
LAID MATTING - PUT SUB TOGETHER & LEVELED. SPOTTED MUD TANKS
PUT DERRICK TOGETHER. READY TO PICK UP DUMPS AND DERRICK IN MORNING
HAVE ALL WEIGHT MATERIAL & MUD PRODUCTS ON LEASE
BEAVER CHANGED OUT COCK.
ENTEST EQUIPMENT & ALPINE ON LOCATION
89m Drill string ON LEASE

PAR MOUNT RESOURCES LT

DAILY DRILLING REPORT

UNIQUE I.D. _____

LOCATION: PARA REAL ARROWHEAD 0-15
WELL LICENCE: WID

SUPERVISOR: G SANDERS

CELLULAR #: 1-600 706 5443

SPUD DATE: _____

R.R. DATE: _____

CONTRACTOR: PRECISION DRILLING INC

A.F.E. #: 17178 EST. T.D. _____

DAILY COST: _____

CUM. COST: _____

DAILY MUD: _____

CUM MUD: _____

DAY: 1

REP DATE: _____

STATUS 08:00

DEPTH: _____

PROG. _____

KB: _____

GL: _____

MACP: _____

SURVEYS: _____

MUD TYPE: _____

WT: _____

VISC: _____

WL: _____

FC: _____

PH: _____

ADDITIVES: _____

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1A											

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
B/S			
228MM DC			
X/O			
X/O			
6DC			
KELLY			
TOTAL			

TIME DISTRIBUTION

MOVE/RIG-UP	<u>24</u>	RIG REP: _____
DRILL MH & RH:	_____	LOGGING: _____
RIG SERVICE:	_____	CEMENT: _____
SURVEY:	_____	WOC: _____
PRESSURE TEST:	_____	RUN CSG: _____
DRILL:	_____	DST: _____
DRILL OUT:	_____	TRIP: _____
CIRCULATE:	_____	L.D.D.S.: _____
NIPPLE UP BOP:	_____	REAM: _____

CASING SUMMARY

RAN	JTS OF	MM,	KG/M,	CASING.
LANDED AT	MKB.	TOTAL LENGTH	METERS.	
CEMENTED WITH				
PLUG DOWN AT.	HRS. ON	WITH	M3 CEMENT RETURNS.	

TOTAL HOURS: 24

TORE OUT & MOVED CAMP TO 0-15 CAMPSIDE & RIG UP SAME
TOLD BOY RIG & MOVING TO 0-15.
HAVE 14 TRACTOR TRAILER - 2 BEDS 1 POLK TRUCK ON MOUSE
MOUSE IS GOING WELL.
BEAVER CHANGED OUT KITCHEN STAFF. NEW COOK HAS NEVER COOKED
IN RIG CAMP - WANTS RELIEF ALREADY.

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :		38							
						DATE :		03/24/98							
						DEPTH 24:00		903							
OPERATION AT 24:00 HRS :				RIG OUT TOP DRIVE				PROGRESS :		0					
OPERATION AT 08:00 HRS :				RIG OUT WAITING ON MORE TRUCKS				DFS :		38					
DRILLING FLUID IN USE :				MUD COMPANY :				AFE NO :		13577					
DENSITY :		GRAD :		WATER		WELL LICENCE NO :		EL369							
VIS :		600 / 300		CA+		LAST BOP DRILL :		03/13/98							
W.L		PV / YP		PH		RIG SAFETY DAYS :									
F.C.		GELS 1/10		SOLIDS		MUD ADDITIVES USED :									
DAILY MUD COSTS :				CUMM :											
DAILY WATER COSTS :				CUMM :											
BIT DATA :				DRILLING PARAMETERS :				FLUIDS CONTROL :							
BIT NO :				WOB :				HOLE VOLUME :							
SIZE MM :				RPM :				TANK VOLUME :							
TYPE :				STR. WT. :				BOTTOMS UP :							
SERIAL NO :				SPM 1 :				CIRC. TIME :							
JETS :				SPM 2 :				SHOE SET AT :							
DEPTH IN :				L / STRK :				FLUID LOSSES :							
DEPTH OUT :				M3 / MIN :				FORMATION :							
METERS :		0		PRESSURE :				SUMP VOLUME :							
HRS :				DC VEL :				SUMP FREE BOARD :							
ROP :				DP VEL :				LOADS TO LOC :							
CUM. HRS :				JET VEL :				VOL. HAULED OUT :							
CONDITION :				MACP :				MP 1 RRSP RATE :							
SOLIDS CONTROL :						SURVEYS :									
ITEM :		UNDER FLOW :		OVERFLOW :		L / MIN :		HRS :							
DESANDER :															
DESILTER :															
CENTRI : 1															
CENTRI : 2															
						GROUND :		387		KB ELEV :		393.22			
B.H.A.															
DAILY TIME BREAK DOWN :						BOILER :		WEATHER :		CLEAR -5					
MIRU		SLIP/CUT				CORING		CONTRACTOR :		PREC. 622E					
DRILLING		LEAK OFF.				WO WIRE L		8.00		RIG MANAGER :		DENNIS ROSS			
CIRC/DISP		LOST CIRC.				LOG				PHONE :					
TRIP		WELL CNTRL				CEMETING				FOREMAN :		HARVEY PARCELS			
SURVEY		LAY D DP				RUN PLUG		3.00		PHONE :		403-210-1894			
NIPPLE DN		8.00		RIG SVC		WELDING				DRILLING SUPT :		SHIRLEY MAASKANT			
TEAR OUT		5.00		HAND TOOLS		WOC				PREVIOUS COST :		\$3,160,692.00			
TOTAL P :		13.00		TOTAL R :		0.00		TOTAL E :		11.00		DAILY COST :		\$52,892.00	
TOTAL HRS		24.00		REPORT TIME FROM 00:00 HRS TO 24:00 HRS :						CUMM. COST :		\$3,213,584.00			
24 HRS SUMMARY :		RUN DRILLABLE BRIDGE PLUG SET AT 903 M SET WITH PLAINS PERFORATING BRIDGE PLUG PRESSURE TESTED TO 20000 KPA FOR 15 MIN HELD OK													
REMARKS		CLEAN MUD TANKS WITH STEAM CLEANER , TEAR OUT BOP RIG OUT TOP DRIVE LOAD 15 MULLEN TRUCKS. WAIT ON DAYLIGHT TO LOWER DERRICK. NEXT 24 HRS RIG WILL BE ALL MOVED TO ROAD AND IN TRANSIT													
DIRECTIONS :															
PLANNED :															

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :		37			
						DATE :		03/23/98			
						DEPTH 24:00		996			
OPERATION AT 24:00 HRS :				WAIT ON WIRE LINE TRUCK				PROGRESS :		0	
OPERATION AT 08:00 HRS :				WAIT ON WIRELINE TRUCK				DFS :		37	
DRILLING FLUID IN USE :		CUTTER D		MUD COMPANY :		CONCORD		AFE NO :		13577	
DENSITY :	1075	GRAD :	10.60	WATER	0.03	WELL LICENCE NO :		EL369			
VIS :	70	600 / 300	95/60	CA+		LAST BOP DRILL :		03/13/98			
W.L.		PV / YP	35/12	PH		RIG SAFETY DAYS :					
F.C.		GELS 1/10	4/6	SOLIDS	0.1	MUD ADDITIVES USED :					
DAILY MUD COSTS :				CUMM :	121245						
DAILY WATER COSTS :		1000		CUMM :	11271'3						
BIT DATA :				DRILLING PARAMETERS :				FLUIDS CONTROL :			
BIT NO :				WOB :				HOLE VOLUME :		21	
SIZE MM :				RPM :				TANK VOLUME :			
TYPE :				STR. WT. :				BOTTOMS UP :		45	
SERIAL NO :				SPM 1 :				CIRC. TIME :		96	
JETS :				SPM 2 :				SHOE SET AT :		1186	
DEPTH IN :				L / STRK :				FLUID LOSSES :			
DEPTH OUT :				M3 / MIN :				FORMATION :		0	
METERS :		0		PRESSURE :				SUMP VOLUME :		0	
HRS :				DC VEL :				SUMP FREE BOARD :		4M	
ROP :				DP VEL :				LOADS TO LOC :			
CUM. HRS :				JET VEL :				VOL. HAULED OUT :			
CONDITION :				MACP :		22825		MP 1 RRSP RATE :			
SOLIDS CONTROL :						SURVEYS :					
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :							
DESANDER :											
DESILTER :											
CENTRI : 1					ELEVATIONS :						
CENTRI : 2					GROUND :	387	KB ELEV :	393.22			
B.H.A.											
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :		CLEAR -5			
MIRU		SLIP/CUT		CORING		CONTRACTOR :		PREC. 622E			
DRILLING		LEAK OFF.		WO WIRE L	5.00	RIG MANAGER :		DENNIS ROSS			
CIRC/DISP		LOST CIRC.		LOG		PHONE :					
TRIP	6.00	WELL CNTRL		CEMETING		FOREMAN :		HARVEY PARCELS			
SURVEY		LAY D DP	4.00	DIR TOOLS		PHONE :		403-210-1894			
NIPPLE UP		RIG SVC		WELDING		DRILLING SUPT :		SHIRLEY MAASKANT			
TEAR OUT		HAND TOOLS		WOC	9.00	PREVIOUS COST :		\$3,120,508.00			
TOTAL P :	6.00	TOTAL R :	4.00	TOTAL E :	14.00	DAILY COST :		\$40,183.00			
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :		\$3,160,692.00			
24 HRS SUMMARY :		PLUG NO 2 NOT SET UP YET. RECEIVED APPROVAL TO RUN DRILLABLE BRIDGE PLUG WAIT ON WIRELINE TRUCK DUE TO ROAD BANS									
REMARKS		HAUL CUTTER D TO FT. LIARD LAY DOWN DRILL PIPE HAUL 12 LOADS RENTAL EQPT. TO EDM. VIA ENTERPRIZE . NEXT 24 HRS. RUN BRIDGE PLUG , LAY DOWN BOP REDO WELL HEAD LAY DOWN TOP DRIVE UNIT.									
DIRECTIONS :											
PLANNED :											

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :	36
						DATE :	03/22/98
						DEPTH 24:00	1455
OPERATION AT 24:00 HRS :		W.O.C. PLUG NO TWO				PROGRESS :	0
OPERATION AT 08:00 HRS :		W.O.C. PLUG NOT SET UP YET				DFS :	36
DRILLING FLUID IN USE :		CUTTER D	MUD COMPANY :		CONCORD	AFE NO :	13577
DENSITY :	1075	GRAD :	10.60	WATER	0.03	WELL LICENCE NO :	EL369
VIS :	70	600 / 300	95/60	CA+		LAST BOP DRILL :	03/13/98
W.L.		PV / YP	35/12	PH		RIG SAFETY DAYS :	
F.C.		GELS 1/10	4/6	SOLIDS	0.1	MUD ADDITIVES USED :	
DAILY MUD COSTS :			CUMM :	121245			
DAILY WATER COSTS :		1000	CUMM :	11271'3			
BIT DATA :			DRILLING PARAMETERS :			FLUIDS CONTROL :	
BIT NO :			WOB :			HOLE VOLUME :	21
SIZE MM :			RPM :			TANK VOLUME :	
TYPE :			STR. WT. :	38		BOTTOMS UP :	45
SERIAL NO :			SPM 1 :			CIRC. TIME :	96
JETS :			SPM 2 :			SHOE SET AT :	1186
DEPTH IN :			L / STRK :	0.0128		FLUID LOSSES :	
DEPTH OUT :			M3 / MIN :	1.36		FORMATION :	0
METERS :	0		PRESSURE :	1800		SUMP VOLUME :	0
HRS :			DC VEL :			SUMP FREE BOARD :	4M
ROP :			DP VEL :			LOADS TO LOC :	
CUM. HRS :			JET VEL :			VOL. HAULED OUT :	
CONDITION :			MACP :	22925		MP 1 RRSP RATE :	
SOLIDS CONTROL :				SURVEYS :			
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :			
DESANDER :							
DESILTER :							
CENTRI : 1					ELEVATIONS :		
CENTRI : 2					GROUND :	387	KB ELEV : 393.22
B.H.A.	OPEN END DP						
DAILY TIME BREAK DOWN :			BOILER :		WEATHER :	CLEAR -5	
MIRU		SLIP/CUT		CORING		CONTRACTOR :	PREC. 622E
DRILLING		LEAK OFF.		P. TEST		RIG MANAGER :	DENNIS ROSS
CIRC/DISP		LOST CIRC.		LOG		PHONE :	
TRIP	10.25	WELL CNTRL		CEMETING	3.75	FOREMAN :	HARVEY PARCELS
SURVEY		TIGHT HOLE		DIR TOOLS		PHONE :	403-210-1894
NIPPLE UP		RIG SVC		WELDING		DRILLING SUPT :	SHIRLEY MAASKANT
TEAR OUT		HAND TOOLS		WOC	10.00	PREVIOUS COST :	\$3,047,167.00
TOTAL P :	10.25	TOTAL R :	0.00	TOTAL E :	13.75	DAILY COST :	\$73,342.00
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :	\$3,120,509.00
24 HRS SUMMARY :		MIX AND DISPLACE PLUG NO 2 LAY DOWN 40 STANDS DP LAY DOWN DCS WOC TRY TO FEEL PLUG AFTER 12 HRS NO SUCCESS FEEL PLUG AFTER 20 HRS. STILL TO SOFT WOC.					
REMARKS		AFTER DISPLACE PLUG NO 2 1.5 M3 DIESEL SPACER RETURNED PLUS .5 M3 CEMENT PLUG TOP AT 996 M NOT SET UP ENOUGH TO FEEL					
DIRECTIONS :							
PLANNED :							

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :	35	
						DATE :	03/21/98	
						DEPTH 24:00	1455	
OPERATION AT 24:00 HRS :						WAIT ON CEMENTERS TO RUN PLUGS	PROGRESS :	0
OPERATION AT 08:00 HRS :						MIX PLUG NO TWO	DFS :	35
DRILLING FLUID IN USE :		CUTTER D	MUD COMPANY :		CONCORD	AFE NO :	13577	
DENSITY :	1075	GRAD :	10.60	WATER	0.03	WELL LICENCE NO :	EL369	
VIS :	70	600 / 300	95/60	CA+		LAST BOP DRILL :	03/13/98	
W.L.		PV / YP	35\12	PH		RIG SAFETY DAYS :		
F.C.		GELS 1/10	4\6	SOLIDS	0.1	MUD ADDITIVES USED :		
DAILY MUD COSTS :		1587	CUMM :	121245				
DAILY WATER COSTS :		1000	CUMM :	111713				
BIT DATA :			DRILLING PARAMETERS :			FLUIDS CONTROL :		
BIT NO :			WOB :			HOLE VOLUME :	43	
SIZE MM :			RPM :			TANK VOLUME :	43	
TYPE :			STR. WT. :	55		BOTTOMS UP :	45	
SERIAL NO :			SPM 1 :			CIRC. TIME :	96	
JETS :			SPM 2 :			SHOE SET AT :	1186	
DEPTH IN :			L / STRK :	0.0128		FLUID LOSSES :		
DEPTH OUT :			M3 / MIN :	1.36		FORMATION :	0	
METERS :	0		PRESSURE :	1800		SUMP VOLUME :	0	
HRS :			DC VEL :			SUMP FREE BOARD :	4M	
ROP :			DP VEL :			LOADS TO LOC :		
CUM. HRS :			JET VEL :			VOL. HAULED OUT :		
CONDITION :			MACP :	22925		MP 1 RRSP RATE :		
SOLIDS CONTROL :					SURVEYS :			
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :				
DESANDER :								
DESILTER :								
CENTRI : 1					ELEVATIONS :			
CENTRI : 2					GROUND :	387	KB ELEV :	
							393.22	
B.H.A.	OPEN END DP							
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :	CLEAR -5	
MIRU		SLIP/CUT		CORING		CONTRACTOR :	PREC. 622E	
DRILLING		LEAK OFF.		P. TEST		RIG MANAGER :	DENNIS ROSS	
CIRC/DISP	18.00	LOST CIRC.		LOG		PHONE :		
TRIP	5.00	WELL CNTRL		CEMETING		FOREMAN :	HARVEY PARCELS	
SURVEY		TIGHT HOLE		DIR TOOLS		PHONE :	403-210-1894	
NIPPLE UP		RIG SVC		WELDING		DRILLING SUPT :	SHIRLEY MAASKANT	
TEAR OUT		HAND TOOLS	1.00	WOC		PREVIOUS COST :	\$2,986,071.00	
TOTAL P :	23.00	TOTAL R :	1.00	TOTAL E :	0.00	DAILY COST :	\$81,096.00	
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :	\$3,047,167.00	
24 HRS SUMMARY :		WAIT ON CEMENTERS, CIRC OPEN END . RIG UP CEMENTERSTO RUN PLUGS						
REMARKS		0800 PLUG NO 1 IN PLACE MIXING PLUG NO 2 PLUG NO 1 1455M TO 1255 4 TONNS THERMAL 40 PLUG NO2 1196 TO 996 3.5 TONNS THERMAL 40 PLUGS DOWN AT 0930 HRS. MAR. 22/98 PULL UP REVERSE CIRC WAIT ON CEMENT						
DIRECTIONS :								
PLANNED :								

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :	34
						DATE :	03/20/98
						DEPTH 24:00	1455
OPERATION AT 24:00 HRS :						WAIT ON N2 UNIT TO BLOW HOLE DRY	
OPERATION AT 08:00 HRS :						WAIT ON CEMENTERS TO RUN PLUGS	
DRILLING FLUID IN USE :		CUTTER D	MUD COMPANY :		CONCORD	AFE NO :	13577
DENSITY :	1075	GRAD :	10.60	WATER	0.03	WELL LICENCE NO :	EL369
VIS :	70	600 / 300	95/60	CA+		LAST BOP DRILL :	03/13/98
W.L.		PV / YP	35/12	PH		RIG SAFETY DAYS :	
F.C.		GELS 1/10	4/6	SOLIDS	0.1	MUD ADDITIVES USED :	
DAILY MUD COSTS :		1587	CUMM :	121245	LIME 25 FLOORDRY 4 BARITE 30 SAWDUST 10		
DAILY WATER COSTS :		1000	CUMM :	111713			
BIT DATA :			DRILLING PARAMETERS :			FLUIDS CONTROL :	
BIT NO :	7		WOB :			HOLE VOLUME :	43
SIZE MM :	216		RPM :			TANK VOLUME :	43
TYPE :	F15G		STR. WT. :	65		BOTTOMS UP :	45
SERIAL NO :	LN6278		SPM 1 :			CIRC. TIME :	96
JETS :	3/12.7		SPM 2 :			SHOE SET AT :	1186
DEPTH IN :	1455		L / STRK :	0.0128		FLUID LOSSES :	
DEPTH OUT :			M3 / MIN :	1.36		FORMATION :	0
METERS :	0		PRESSURE :	4500		SUMP VOLUME :	0
HRS :			DC VEL :			SUMP FREE BOARD :	4M
ROP :			DP VEL :			LOADS TO LOC :	1
CUM. HRS :	47.75		JET VEL :			VOL. HAULED OUT :	10M
CONDITION :	IN		MACP :	22925		MP 1 RRSP RATE :	
SOLIDS CONTROL :					SURVEYS :		
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :			
DESANDER :							
DESILTER :							
CENTRI : 1					ELEVATIONS :		
CENTRI : 2					GROUND :	387	KB ELEV : 393.22
B.H.A.	BIT, BIT SUB, 9 DC, 1 JARS, 4DC, 1 XO SUB, 6 HW DP,						
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :	CLEAR -6
MIRU		SLIP/CUT		CORING		CONTRACTOR :	PREC. 622E
DRILLING		LEAK OFF.		P. TEST		RIG MANAGER :	DENNIS ROSS
CIRC/DISP	17.00	LOST CIRC.		LOG		PHONE :	
TRIP	0.75	WELL CNTRL		CEMETING		FOREMAN :	HARVEY PARCELS
SURVEY		TIGHT HOLE		DIR TOOLS		PHONE :	403-210-1894
NIPPLE UP		RIG SVC	0.25	WELDING		DRILLING SUPT :	SHIRLEY MAASKANT
TEAR OUT		WAIT ON N2	6.00	WOC		PREVIOUS COST :	\$2,773,459.00
TOTAL P :	17.75	TOTAL R :	6.25	TOTAL E :	0.00	DAILY COST :	\$192,612.00
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :	\$2,986,071.00
24 HRS SUMMARY :		WAIT ON N2 UNIT , BLOW HOLE EMPTY CONTINUE DRYING HOLE STOP DRYING HOLE AND DISPLACE TO MUD TO RUN PLUGS.					
REMARKS		WAITING AND CONDITIONING MUD TO RETURN TO STORAGE CEMENTERS SENT TO NEIBORS 16 TO STOP WATER FLOOD THEY WILL COME HERE NEXT 7" CSG. SENT TO FT. LIARD TO STORE IN YARD 16 TRUCKS COMING TODAY TO HAUL OUT RENTALS.					
DIRECTIONS :							
PLANNED :							

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :	33
						DATE :	03/19/98
						DEPTH 24:00	1455
OPERATION AT 24:00 HRS :						RIH TO BLOW DRY WITH N2 DEPTH 1455	
OPERATION AT 08:00 HRS :						DISPLACE HOLE TO N2	
DRILLING FLUID IN USE :						CUTTER D	
DENSITY :						1085	
VIS :						72	
W.L.							
F.C.							
DAILY MUD COSTS :						1476	
DAILY WATER COSTS :						1250	
MUD COMPANY :						CONCORD	
WATER						0.025	
WELL LICENCE NO :						EL369	
LAST BOP DRILL :						03/13/98	
RIG SAFETY DAYS :							
MUD ADDITIVES USED :							
lime 10 sawdust 20 barite 30 floor dry 12							
CUMM :						119658	
CUMM :						110713	
BIT DATA :						DRILLING PARAMETERS :	
HOLE VOLUME :						43	
TANK VOLUME :						43	
BOTTOMS UP :						45	
CIRC. TIME :						96	
SHOE SET AT :						1188	
FLUID LOSSES :							
FORMATION :						0	
SUMP VOLUME :						0	
SUMP FREE BOARD :						4M	
LOADS TO LOC :						1	
VOL. HAULED OUT :						10M	
MP 1 RRSP RATE :							
SOLIDS CONTROL :						SURVEYS :	
ITEM :						UNDER FLOW :	
OVERFLOW :						L / MIN :	
HRS :							
DESANDER :							
DESILTER :							
CENTRI : 1							
CENTRI : 2							
GROUND :						387	
KB ELEV :						393.22	
B.H.A.						BIT M MOTOR FLT SUB XO SUB NM DC PUL SUB NM DC NM SUB XO SUB JARS	
DAILY TIME BREAK DOWN :						BOILER :	
WEATHER :						CLEAR -15	
CONTRACTOR :						PREC. 622E	
RIG MANAGER :						RANDY BITZ	
PHONE :							
FOREMAN :						HARVEY PARCELS	
PHONE :						403-210-1894	
DRILLING SUPT :						SHIRLEY MAASKANT	
PREVIOUS COST :						\$2,724,340.00	
DAILY COST :						\$49,744.00	
CUMM. COST :						\$2,773,459.00	
REPORT TIME FROM 00:00 HRS TO 24:00 HRS :							
24 HRS SUMMARY :						DRILL AHEAD TO 1455 CIRC HOLE CLEAN POOH LAY DOWN DIR TOOLS RIH TO BLOW HOLE DRY WAIT ON N2 UNIT RIG UP UNIT START DISPLACEING HOLE	
REMARKS						ON TRIP HOLE SLOUGHING NINE METERS FILL ON BOTTOM AFTER TRIP	
DIRECTIONS :							
PLANNED :							

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15		REPORT NO :				32		
		DATE :				03/18/98		
		DEPTH 24:00				1400		
OPERATION AT 24:00 HRS :		DRILLING AHEAD SLIDING WITH DIR. MOTOR AT 1.5				PROGRESS :		104
OPERATION AT 08:00 HRS :		drilling at 1438				DFS :		32
DRILLING FLUID IN USE :		CUTTER D	MUD COMPANY :		CONCORD	AFE NO :		13577
DENSITY :	1085	GRAD :	10.60	WATER	0.025	WELL LICENCE NO :		EL369
VIS :	72	600 / 300	55/8	CA+		LAST BOP DRILL :		03/13/98
W.L.		PV / YP	25/15	PH		RIG SAFETY DAYS :		
F.C.		GELS 1/10	4/6	SOLIDS	0.115	MUD ADDITIVES USED :		
DAILY MUD COSTS :		1233	CUMM :	2225	lime 22 sawdust 16 floordry 2 disperse 2			
DAILY WATER COSTS :		1250	CUMM :	110713				
BIT DATA :			DRILLING PARAMETERS :			FLUIDS CONTROL :		
BIT NO :	7		WOB :	10/12		HOLE VOLUME :	43	
SIZE MM :	216		RPM :	35		TANK VOLUME :	43	
TYPE :	F15G		STR. WT. :	61		BOTTOMS UP :	45	
SERIAL NO :	LN6278		SPM 1 :	107		CIRC. TIME :	96	
JETS :	3/12.7		SPM 2 :			SHOE SET AT :	1186	
DEPTH IN :	1215		L / STRK :	0.0128		FLUID LOSSES :		
DEPTH OUT :			M3 / MIN :	1.36		FORMATION :	0	
METERS :	223		PRESSURE :	9700		SUMP VOLUME :	0	
HRS :	37.50		DC VEL :			SUMP FREE BOARD :	4M	
ROP :	5.94		DP VEL :			LOADS TO LOC :	1	
CUM. HRS :	37.50		JET VEL :			VOL. HAULED OUT :	10M	
CONDITION :	IN		MACP :	22925		MP 1 RRSP RATE :		
SOLIDS CONTROL :					SURVEYS :			
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :	FAXED TO OFFICE			
DESANDER :								
DESILTER :								
CENTRI : 1								
CENTRI : 2					ELEVATIONS :			
					GROUND :	387	KB ELEV :	393.22
B.H.A.	BIT M MOTOR FLT SUB XO SUB NM DC PUL SUB NM DC NM SUB XO SUB JARS							
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :	CLEAR -15	
MIRU		RIG REPAIR		CORING		CONTRACTOR :	PREC. 622E	
DRILLING	21.25	LEAK OFF.		P. TEST		RIG MANAGER :	RANDY BITZ	
CIRC/DISP		LOST CIRC.		LOG		PHONE :		
TRIP		WELL CNTRL		CEMETING		FOREMAN :	HARVEY PARCELS	
SURVEY	2.25	TIGHT HOLE		DIR TOOLS		PHONE :	403-210-1894	
NIPPLE UP		RIG SVC	0.50	WELDING		DRILLING SUPT :	SHIRLEY MAASKANT	
TEAR OUT		OTHERS		WOC		PREVIOUS COST :	\$2,662,337.00	
TOTAL P :	23.50	TOTAL R :	0.50	TOTAL E :	0.00	DAILY COST :	\$62,003.00	
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :	\$2,724,340.00	
24 HRS SUMMARY :		DRILLING AHEAD SLIDING TO TRY TO MAINTAIN DEVIATION UNDER HOLE GOES OFF IMMEDIATELY WHEN WE ROTATE AND WE HAVE TO MAINTAIN SLIDE TO KEEP IT STRAIGHT						
REMARKS		WATER CONCENTRATION IN MUD UP 5% ADDED 22 CUBES OF MUD TO CONTROL IT DEVIATION A SEVERE PROBLEM WHEN ROTATING GEOLG. ADVISES THAT THERE IS A FAULT AT 1480 WE WILL CONTINUE WITH MUD MOTOR TO 1500 M THEN BLOWW HOLE DRY AND ATTEMP TO DRILL WITH AIR						
DIRECTIONS :								
PLANNED :								

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :		31			
						DATE :		03/17/98			
						DEPTH 24:00 :		1296			
OPERATION AT 24:00 HRS :				DRILLING AHEAD SLIDING WITH DIR. MOTOR AT 1.5				PROGRESS :		117	
OPERATION AT 08:00 HRS :				DRILL AHEAD AT 1332 M				DFS :		31	
DRILLING FLUID IN USE :		CUTTER D		MUD COMPANY :		CONCORD		AFE NO :		13577	
DENSITY :	1085	GRAD :	10.64	WATER	0.025	WELL LICENCE NO :		EL369			
VIS :	90	600 / 300	11075	CA+		LAST BOP DRILL :		03/13/98			
W.L.		PV / YP	3520	PH		RIG SAFETY DAYS :					
F.C.		GELS 1/10	46	SOLIDS	0.12	MUD ADDITIVES USED :					
DAILY MUD COSTS :		1233		CUMM :		BICARB 10 GEL 2 BARITE 30					
DAILY WATER COSTS :		1250		CUMM :							
BIT DATA :				DRILLING PARAMETERS :				FLUIDS CONTROL :			
BIT NO :	7			WOB :	1012			HOLE VOLUME :	43		
SIZE MM :	216			RPM :	35			TANK VOLUME :	43		
TYPE :	F15G			STR. WT. :	61			BOTTOMS UP :	45		
SERIAL NO :	LN6278			SPM 1 :	107			CIRC. TIME :	96		
JETS :	312.7			SPM 2 :				SHOE SET AT :	1186		
DEPTH IN :	1215			L / STRK :	0.0128			FLUID LOSSES :			
DEPTH OUT :				M3 / MIN :	1.36			FORMATION :	0		
METERS :	81			PRESSURE :	9700			SUMP VOLUME :	0		
HRS :	16.25			DC VEL :				SUMP FREE BOARD :	4M		
ROP :	4.98			DP VEL :				LOADS TO LOC :	1		
CUM. HRS :	16.25			JET VEL :				VOL. HAULED OUT :	10M		
CONDITION :	IN			MACP :	22925			MP 1 RRSP RATE :			
SOLIDS CONTROL :						SURVEYS :					
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :	FAXED TO OFFICE						
DESANDER :											
DESILTER :											
CENTRI : 1											
CENTRI : 2					GROUND :		387	KB ELEV :		393.22	
B.H.A.	BIT M MOTOR FLT SUB XO SUB NM DC PUL SUB NM DC NM SUB XO SUB JARS										
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :		CLEAR -15			
MIRU		RIG REPAIR		CORING		CONTRACTOR :		PREC. 622E			
DRILLING	16.25	LEAK OFF.		P. TEST		RIG MANAGER :		RANDY BITZ			
CIRC/DISP		LOST CIRC.		LOG		PHONE :					
TRIP	2.50	WELL CNTRL		CEMETING		FOREMAN :		HARVEY PARCELS			
SURVEY	1.00	TIGHT HOLE		DIR TOOLS	3.50	PHONE :		403-210-1894			
NIPPLE UP		RIG SVC	0.75	WELDING		DRILLING SUPT :		SHIRLEY MAASKANT			
TEAR OUT		OTHERS		WOC		PREVIOUS COST :		\$2,800,024.00			
TOTAL P :	19.75	TOTAL R :	0.75	TOTAL E :	3.50	DAILY COST :		\$62,313.00			
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :		\$2,662,337.00			
24 HRS SUMMARY :		DRILL AHEAD SLIDING AND ROTATEING DEVIATION BROUGHT BACK TO 1 DEG.									
REMARKS		POSITION OF NEW HOLE 9.6 METERS FROM OLD WELL BORE									
DIRECTIONS :											
PLANNED :											

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :		30			
						DATE :		03/16/98			
						DEPTH 24:00		1215			
OPERATION AT 24:00 HRS :				WAIT ON DIRECTIONAL TOOLS				PROGRESS :		0	
OPERATION AT 08:00 HRS :				DRILLING AHEAD SLIDING WITH DIR. MOTOR AT 1.5				DFS :		29	
DRILLING FLUID IN USE :		CUTTER D		MUD COMPANY :		CONCORD		AFE NO :		13577	
DENSITY :	1085	GRAD :	10.64	WATER	0.025	WELL LICENCE NO :		EL369			
VIS :	90	600 / 300	110V75	CA+		LAST BOP DRILL :		03/13/98			
W.L.		PV / YP	35/20	PH		RIG SAFETY DAYS :					
F.C.		GELS 1/10	4/6	SOLIDS	0.12	MUD ADDITIVES USED :					
DAILY MUD COSTS :		1233		CUMM :		BICARB 10 GEL 2 BARITE 30					
DAILY WATER COSTS :		1250		CUMM :							
BIT DATA :				DRILLING PARAMETERS :				FLUIDS CONTROL :			
BIT NO :	7			WOB :	07-Jan		HOLE VOLUME :	43			
SIZE MM :	216			RPM :			TANK VOLUME :	43			
TYPE :	F15G			STR. WT. :	61		BOTTOMS UP :	45			
SERIAL NO :	LN6278			SPM 1 :	107		CIRC. TIME :	96			
JETS :	3/12.7			SPM 2 :			SHOE SET AT :	1186			
DEPTH IN :	1215			L / STRK :	0.0128		FLUID LOSSES :				
DEPTH OUT :				M3 / MIN :	1.36		FORMATION :	0			
METERS :	0			PRESSURE :	9700		SUMP VOLUME :	0			
HRS :				DC VEL :			SUMP FREE BOARD :	4M			
ROP :	4.50			DP VEL :			LOADS TO LOC :				
CUM. HRS :				JET VEL :			VOL. HAULED OUT :	10M			
CONDITION :	IN			MACP :	22925		MP 1 RRSP RATE :				
SOLIDS CONTROL :					SURVEYS :						
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :							
DESANDER :											
DESILTER :											
CENTRI : 1											
CENTRI : 2					GROUND :		387	KB ELEV :		393.22	
B.H.A.	BIT M MOTOR FLT SUB XO SUB NM DC PUL SUB NM DC NM SUB XO SUB JARS										
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :		CLEAR -10			
MIRU		RIG REPAIR		CORING		CONTRACTOR :		PREC. 622E			
DRILLING	1.50	LEAK OFF.		P. TEST		RIG MANAGER :		RANDY BITZ			
CIRC/DISP	9.25	LOST CIRC.		LOG		PHONE :					
TRIP	5.50	WELL CNTRL		CEMETING		FOREMAN :		HARVEY PARCELS			
SURVEY		TIGHT HOLE		DRILL OUT		PHONE :		403-210-1894			
NIPPLE UP		RIG SVC	0.50	WELDING		DRILLING SUPT :		SHIRLEY MAASKANT			
TEAR OUT		OTHERS		WOC	7.25	PREVIOUS COST :		\$2,569,941.00			
TOTAL P :	16.25	TOTAL R :	0.50	TOTAL E :	7.25	DAILY COST :		\$47,301.00			
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :		\$2,617,242.00			
24 HRS SUMMARY :		POLISH PLUG TO 1218 RIG UP AIR COMPS. BLOW HOLE DRY CLEAN TANKS AND LINES DISPLACE HOLE TO CUTTER D CIRC BOTTOMS UP POOH WAIT ON DIRECTIONAL TOOLS.									
REMARKS		MAKE UP BOTTOM HOLE ASSEMBLY FOR DIR DRILLING RIH ORIENT TOOL SLIDE AHEAD									
DIRECTIONS :											
PLANNED :											

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :	29	
						DATE :	03/15/98	
						DEPTH 24:00	1215	
OPERATION AT 24:00 HRS :						WOC	PROGRESS :	0
OPERATION AT 08:00 HRS :						WOC	DFS :	29
DRILLING FLUID IN USE :		WATER	MUD COMPANY :		CONCORD	AFE NO :	13577	
DENSITY :	1000	GRAD :		CL		WELL LICENCE NO :	EL369	
VIS :		600 / 300		CA+		LAST BOP DRILL :	03/13/98	
W.L.		PV / YP		PH		RIG SAFETY DAYS :		
F.C.		GELS 1/10		SAND %		MUD ADDITIVES USED :		
DAILY MUD COSTS :			CUMM :					
DAILY WATER COSTS :		1200	CUMM :					
BIT DATA :			DRILLING PARAMETERS :			FLUIDS CONTROL :		
BIT NO :	6		WOB :			HOLE VOLUME :	48.5	
SIZE MM :	216		RPM :			TANK VOLUME :	20	
TYPE :	FDT		STR. WT. :	53		BOTTOMS UP :	45	
SERIAL NO :	CH9961		SPM 1 :	45		CIRC. TIME :	96	
JETS :	312.7		SPM 2 :			SHOE SET AT :	1186	
DEPTH IN :	1215		L / STRK :	0.0128		FLUID LOSSES :		
DEPTH OUT :	1215		M3 / MIN :	1.15		FORMATION :	0	
METERS :	0		PRESSURE :	2850		SUMP VOLUME :	0	
HRS :	6.00		DC VEL :			SUMP FREE BOARD :		
ROP :	10.50		DP VEL :			LOADS TO LOC :		
CUM. HRS :	6.00		JET VEL :			VOL. SPREAD / PITS :		
CONDITION :	IN		MACP :	22825		MP 1 RRSP RATE :		
SOLIDS CONTROL :					SURVEYS :			
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :				
DESANDER :								
DESILTER :								
CENTRI : 1					ELEVATIONS :			
CENTRI : 2					GROUND :	387	KB ELEV :	
							393.22	
B.H.A.	7 171 MM DC 1 XO SUB BIT SUB 6 HW DP BHA LGTH 122.18							
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :	CLEAR -10	
MIRU		RIG REPAIR		CORING		CONTRACTOR :	PREC. 622E	
DRILLING		LEAK OFF.		P. TEST		RIG MANAGER :	RANDY BITZ	
CIRCULATE		LOST CIRC.		LOG		PHONE :		
TRIP	2.00	WELL CNTRL		CEMETING	2.50	FOREMAN :	HARVEY PARCELS	
SURVEY		TIGHT HOLE		DRILL OUT		PHONE :	403-210-1894	
NIPPLE UP		RIG SVC		WELDING		DRILLING SUPT :	SHIRLEY MAASKANT	
TEAR OUT		OTHERS		WOC	19.50	PREVIOUS COST :	\$2,508,013.00	
TOTAL P :	2.00	TOTAL R :	0.00	TOTAL E :	22.00	DAILY COST :	\$46,699.00	
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :	\$2,554,612.00	
24 HRS SUMMARY :		RAN PLUG FROM 1250M TO 1100M 7 TONNES 0-1-0 PLUS 1%CFR + .6%LTR DESITY 2100 PLUG DOWN 1045 HRS. PIPE PULLED TIGHT OUT OF PLUG PULLED 130000 TO GET FREE 1.75 HRS.						
REMARKS								
WOC. RUN IN HOLE TO FEEL PLUG PLUG AT 1215 POOH PICK UP BIT AND COLLARS RIH WOC WILL POLISH TOP OF PLUG TO 1218 READY FOR DIRECTIONAL TOOLS								
DIRECTIONS :								
PLANNED :								

PARAMOUNT RESOURCES

DAILY DRILLING REPORT :

WELL NAME :Paramount Berkley Arrowhead 0-15						REPORT NO :	28	
						DATE :	03/14/98	
						DEPTH 24:00	1250	
OPERATION AT 24:00 HRS :		CIRC HOLE CLEAN CONT. CEMENT				PROGRESS :	64	
OPERATION AT 08:00 HRS :		RIG UP TO RUN PLUG				DFS :	28	
DRILLING FLUID IN USE :		WATER	MUD COMPANY :		CONCORD	AFE NO :	13577	
DENSITY :	1000	GRAD :		CL		WELL LICENCE NO :	EL369	
VIS :		600 / 300		CA+		LAST BOP DRILL :	03/13/98	
W.L.		PV / YP		PH		RIG SAFETY DAYS :		
F.C.		GELS 1/10		SAND %		MUD ADDITIVES USED :		
DAILY MUD COSTS :			CUMM :					
DAILY WATER COSTS :		1710	CUMM :					
BIT DATA :			DRILLING PARAMETERS :			FLUIDS CONTROL :		
BIT NO :	6		WOB :	213		HOLE VOLUME :	48.5	
SIZE MM :	216		RPM :	30		TANK VOLUME :	20	
TYPE :	FDT		STR. WT. :	56		BOTTOMS UP :	45	
SERIAL NO :	CH9961		SPM 1 :	90		CIRC. TIME :	96	
JETS :	312.7		SPM 2 :			SHOE SET AT :	1186	
DEPTH IN :	1187		L / STRK :	0.0128		FLUID LOSSES :		
DEPTH OUT :	1250		M3 / MIN :	1.15		FORMATION :	0	
METERS :	63		PRESSURE :	4500		SUMP VOLUME :	0	
HRS :	6.00		DC VEL :			SUMP FREE BOARD :		
ROP :	10.50		DP VEL :			LOADS TO LOC :		
CUM. HRS :	6.00		JET VEL :			VOL. SPREAD / PITS :		
CONDITION :	2-24		MACP :	22925		MP 1 RRSP RATE :		
SOLIDS CONTROL :					SURVEYS :			
ITEM :	UNDER FLOW :	OVERFLOW :	L / MIN :	HRS :				
DESANDER :								
DESILTER :								
CENTRI : 1								
CENTRI : 2					ELEVATIONS :			
					GROUND :	387	KB ELEV :	393.22
B.H.A.	7 171 MM DC 1 XO SUB BIT SUB 6 HW DP BHA LGTH 122.18							
DAILY TIME BREAK DOWN :				BOILER :		WEATHER :	CLEAR -15 C	
MIRU		RIG REPAIR		CORING		CONTRACTOR :	PREC. 622E	
DRILLING	6.00	LEAK OFF.	1.00	P. TEST	7.00	RIG MANAGER :	RANDY BITZ	
CIRCULATE		LOST CIRC.		LOG		PHONE :		
TRIP	4.00	WELL CNTRL		CSG /CUT	2.00	FOREMAN :	HARVEY PARCELS	
SURVEY		TIGHT HOLE		DRILL OUT		PHONE :	403-210-1894	
NIPPLE UP	3.50	RIG SVC		WELDING		DRILLING SUPT :	SHIRLEY MAASKANT	
TEAR OUT		OTHERS	0.50	WOC		PREVIOUS COST :	\$2,437,333.00	
TOTAL P :	13.50	TOTAL R :	1.50	TOTAL E :	9.00	DAILY COST :	\$70,680.00	
TOTAL HRS	24.00	REPORT TIME FROM 00:00 HRS TO 24:00 HRS :				CUMM. COST :	\$2,508,013.00	
24 HRS SUMMARY :		FINISH PRESSURE TESTSWEEP LINE AND MANIFOLD, RIH DRILL OUT CEMENT AND SHOE DRILL AHEAD TEN METERS , NO CEMENT WITH ANY STRENGHT DUE TO CONTAMINATION.						
REMARKS NEXT 24 HRS.		CIRC HOLE CLEAN RUN LEAK OFF TEST 10 METERS BELOW SHOE GRADIANT ESTABLISHED AT 19.5 POH BROP COLLARS AND BIT RUN IN OPEN END TO PLUG BACK WAIT ON CEMENTERS						
DIRECTIONS :								
PLANNED :								

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/12	Day	26
Depth	1195	Progress	0	AFE	13577	Operation Running CSG			
Elevations	Grd -	380.5	KB	6.22	Formation BANFF				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1100	Visc	112	W.L.		PH		FC	
Temp	36* C	PV 50	YP 25	600/180	150/100	Oil	85.5		
Tank Vol	97	Hole Vol	98	Total Vol	195	Gradient	10.8	Circ. Time	

MUD ADDITIVES

Gel		Lime		SAPP		Soap		Shrinks	
Caustic		Vis-Plus		Lignite		Detergent		Cutter D	
Benex		Sawdust		Gypsum		Disperse			
Soda ash		Kwikseal		Barite	30	Floordry			
Mud cost - Daily		726	Cum	102690	Water cost - Daily		600	Cum	28820

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly
Desander					Water	
Desilter					Oil	
Centrifuge	Sharpell	1770	1065		Losses	
Shaker	Swaco	Mesh	84/140	84/84	Dumped	

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m		
4	311	HP51H	DJ4132	3/15.9	1205	1425	220		
5	311	GS84F	634949	3/17.5	1425	1459	34		
5RR	311	GS84F	634949	2/15.9,17.5	1459	1560	135		
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		
42	21.5	1.95	72.5	6/7/o2mm					
12	6.75	1.70	22.5	3/3/1					
68	8.5	3.9	47	4/5/06				TOTAL	

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152							5700	105
2	140								

SURVEYS

1384	5°	1421	7°	1450	7+ °	GeoCom	Sheet		
1075	2°	1137m	2 1/2°	1194m	3 1/2°	1252	4°	1308	4°

Drilling		NU BOP's		Rig up		Log		woc	10
Tripping	3.5	P. test		Run Csg	5.75	Core		W.O. SUB	
Reaming		Slip & cut		Circulate		DST		BOPdrill	
Survey		CTB		Cement		Lost. Circ		Hdl Tools	2.5
Rig Serv.		Repair	2	safety/M	0.25	D.O.F&S		TOTAL	24

REMARKS

**WOC, Trip in to Feel Cement Plug, POOH to Run CSG, Rig in Power Tongs & Lay Down Machine
Held Safety Meeting with Tong & Lay Down Machine Hands, Adj. Annular Preventer to Open & Close
Properly, Run CSG**

Next 24hrs.- Run CSG, Cement CSG, Lift BOP Stack, Set CSG Slips & Seal, WOC, Nipple up BOP

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/11	Day	25
Depth	1195	Progress	0	AFE	13577	Operation WOC			
Elevations	Grd -	380.5	KB	6.22	Formation BANFF				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1100	Visc	112	W.L.		PH		FC	
Temp	36* C	PV 50	YP 25	600/180	150/100	Oil	85.5		
Tank Vol	97	Hole Vol	98	Total Vol	195	Gradient	10.8	Circ. Time	

MUD ADDITIVES

Gel		Lime		SAPP		Soap		Shrinks	
Caustic		Vis-Plus		Lignite		Detergent		Cutter D	22m3
Benex		Sawdust		Gypsum		Disperse			
Soda ash		Kwikseal		Barite	30	Floordry			
Mud cost - Daily		9526	Cum	101964	Water cost - Daily		1390	Cum	28220

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly
Desander					Water	Open End
Desilter					Oil	
Centrifuge	Sharpell	1770	1065		Losses	22
Shaker	Swaco	Mesh	84/140	84/84	Dumped	

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m		
4	311	HP51H	DJ4132	3/15.9	1205	1425	220		
5	311	GS84F	634949	3/17.5	1425	1459	34		
5RR	311	GS84F	634949	2/15.9,17.5	1459	1580	135		
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		
42	21.5	1.95	72.5	6/7/o2mm					
12	6.75	1.70	22.5	3/3/1					
68	8.5	3.9	47	4/5/06				TOTAL	

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152							5700	105
2	140								

SURVEYS

1364	5*	1421	7*	1450	7+ *	GeoCom	Sheet		
1075	2*	1137m	2 1/2*	1194m	3 1/2*	1252	4*	1308	4*

Drilling		NU BOP's		Rig up		Log		woc	3
Tripping	13	P. test		Run Csg		Core		W.O. SUB	
Reaming		Slip & cut		Circulate	6	DST		BOPdrill	
Survey		CTB		Cement	0.5	Lost. Circ		Hdl Tools	0.5
Rig Serv.	0.25	Repair	0.5	safety/M	0.25	D.O.F&S		TOTAL	24

REMARKS

RIH,Circ.,POOH,Lay Down 228mm DC& Directional Tools,RIH to 1335m,Circ.,Held Safety Meeting
with Sanjel Cementers,Pump Cement Plug,Pull 5stds. to 1195m,Reverse Circ.,Pull 5stds. to 1055m
Rlg Service,Trip,Service Top Drive,Pick up 80sgls.DP, WOC

Next 24hrs.-WOC,RIH & Feel Plug,POOH,Run CSG,Cement CSG

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/10	Day	24
Depth 1560		Progress	33	AFE	13577	Operation RIH OPEN END			
Elevations	Grd -	380.5	KB	6.22	Formation Kotcho				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1085	Visc	86	W.L.		PH		FC	
Temp	42* C	PV 40	YP 22.5	600/180	125/85	Oil	87		
Tank Vol 80		Hole Vol	119	Total Vol	199	Gradient	10.6	Circ. Time	

MUD ADDITIVES

Gel		Lime	27	SAPP		Soap		Shrinks	
Caustic		Vis-Plus		Lignite		Detergent		Cutter D	4m3
Benex		Sawdust	120	Gypsum		Disperse	11		
Soda ash		Kwikseal		Barite		Floordry	22		
Mud cost - Daily		7774 Cum		92168	Water cost - Daily		600 Cum		26830

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		Open End	
Desilter					Oil			
Centrifuge	Sharpell	1770	1065		Losses	4		
Shaker	Swaco	Mesh	84/140	84/84	Dumped			

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m		
4	311	HP51H	DJ4132	3/15.9	1205	1425	220		
5	311	GS84F	634949	3/17.5	1425	1459	34		
5RR	311	GS84F	634949	2/15.9,17.5	1459	1560	135		
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		
42	21.5	1.95	72.5	6/7/o2mm					
12	6.75	1.70	22.5	3/3/ l					
68	8.5	3.9	47	4/5/06				TOTAL	

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152							5700	105
2	140								

SURVEYS

1364	5*	1421	7*	1450	7+ *	GeoCom	Sheet		
1075	2*	1137m	2 1/2*	1194m	3 1/2*	1252	4*	1308	4*

Drilling	8.5	NU BOP's		Rig up		Log	5.5	woc	
Tripping	6	P. test		Run Csg		Core		W.O. SUB	
Reaming		Slip & cut		Circulate	2.25	DST		BOPdrill	
Survey	0.5	CTB		Cement		Lost. Circ		Hdl Tools	0.75
Rig Serv.	0.25	Repair		safety/M	0.25	D.O.F&S		TOTAL	24

REMARKS

Drill 311mm hole, Survey, Rig Service, Circ. hole clean, Pump Pill, POOH, Lay Down MWD Tools, Loggers TD - 1560m
Next 24hrs.-RIH OPEN END, Run High Density cement Plug 1350-1200m, WOC

Weather	Cloudy	Temp.-22c	Spud	92/02/14	Daily Cost	\$43,691	CUM	\$2,013,278
Rig Mgr.	Dennis Ross		Phone	774-0472	Orig Spvr. Dave Garstad		Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

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DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/08	Day	22
Depth	1459	Progress	12	AFE	13577	Operation RIH with Dir. Tools & Bit #5RR			
Elevations	Grd -	380.5	KB	6.22	Formation Banff				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1100	Visc	85	W.L.		PH		FC	
Temp	30* C	PV 45	YP 22.5	600/180	135/90	Oil 82.5	84	12	
Tank Vol	76	Hole Vol	120	Total Vol	246	Gradient	10.79	Circ. Time	

MUD ADDITIVES

Gel		Lime	63	SAPP		Soap		Shrinks	
Caustic		Vis-Plus		Lignite		Detergent		Cutter D	7m3
Benex		Sawdust	30	Gypsum		Disperse	8		
Soda ash		Kwikseal		Barite	30	Floordry	4		
Mud cost - Daily		8301	Cum	81142	Water cost - Daily		600	Cum	24840

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		As Per	United
Desilter					Oil		GeoCom	Sheet
Centrifuge	Sharpell	1770	1065		Losses	7		
Shaker	Swaco	Mesh	84/140	84/84	Dumped	10.5		

BIT DATA

No.	Size	Type	Serial #	Jets	In	Out	Total m
4	311	HP51H	DJ4132	3/15.9	1205	1425	220
5	311	GS84F	634949	3/17.5	1425	1459	34
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque
42	21.5	1.95	72.5	6/7/o2mm			
12	6.75	1.70	22.5	3/3/ I			
							TOTAL

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152	105	12800	2.4	38	45	55	5700	105
2	140	105							

SURVEYS

1364	5*	1421	7*	1450	7+ *				
1075	2*	1137m	2 1/2*	1194m	3 1/2*	1252	4*	1308	4*

Drilling	6.75	NU BOP's		Rig up		Log		woc	
Tripping	5	P. test		Run Csg		Core		W.O. SUB	7.5
Reaming		Slip & cut		Circulate	0.25	DST		BOPdrill	
Survey	0.75	CTB		Cement		Lost. Circ		Hdl Tools	3.75
Rig Serv.		Repair		safety/M		D.O.F&S		TOTAL	24

REMARKS

Drill 311mm hole, Circ. & Survey @ 1450m, check Crown Saver & Pump Pill, POOH
Lay Down Shock Sub, Pick up Mud Motor, make up new BHA, wait on Rental Sub
Make up Bit # 5RR & RIH

Next 24hrs.-RIH with Directional Tools, Orient to straghten hole

Weather	Cloudy	Temp.-29c	Spud	92/02/14	Daily Cost	\$40,081	Cum Cost	\$1,911,247
Rig Mgr.	Dennis Ross		Phone	774-0472	Dirg Spvr. Dave Garstad		Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

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DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/06	Day	20
Depth 1425		Progress	42	AFE	13577	Operation POOH with Bit #4			
Elevations	Grd -	380.5	KB	6.22	Formation Banff				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1135	Visc	75	W.L.		PH		FC	
Temp	56* C	PV 40	YP 17.5	600/180	115/75	Oil 79	Solids - % 14		
Tank Vol 70		Hole Vol	101	Total Vol	171	Gradient	11.18	Circ. Time	

MUD ADDITIVES

Gel		Lime		SAPP		Soap		Shrinks	
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust	35	Gypsum		Disperse	12		
Soda ash		Kwikseal		Barite		Floordry	4		
Mud cost - Daily		4989	Cum	58671	Water cost - Daily		600	Cum	22850

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		Bit	0.35
Desilter					Oil	6.5	Sab/Reamer	1.82
Centrifuge	Sharpell	1720	1115		Losses	1.5	Shock/Sub	3.83
Shaker	Swaco	Mesh	84/140	84/84	Dumped	3	2(228) DC	18.92

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	10(171)DC	93.32
4	311	HP51H	DJ4132	3/15.9	1205	1425	220	Jars+x/o,s	5.8
								6(171) DC	55.88
3RR	311	HP43A	LB8263	2/14.3/12.7	867	1205	338	X/O	0.9
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	6HWDP	55.17
42	21.5	1.95	72.5						
74	13.25	5.4	62.75	5/6/ o2				TOTAL	236.52

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSP	SPM
1	152							5700	105
2	140								

SURVEYS

1364	5*	1421	7*						
1075	2*	1137m	2 1/2*	1194m	3 1/2*	1252	4*	1308	4*

Drilling	21.5	NU BOP's	Rig up	Log	woc	
Tripping	1	P. test	Run Csg	Core	WOWelder	
Reaming		Slip & cut	Circulate	DST	BOPdrill	0.25
Survey	1	CTB	Cement	Lost. Circ	Hdl Tools	
Rig Serv.	0.5	Repair	safety/M	D.O.F&S	TOTAL	24

REMARKS

Drill 311mm hole, Rig Service, Survey	Circ. BTMs Up, POOH
Total Cutter D Losses to hole 24m3	
Next 24 hrs.- Spot Premix Tank,Rig In 2nd Centrifuge, Trip for Bit #4, Drill 311mm hole, Survey	

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/03/04	Day	18
Depth	1305	Progress	78	AFE	13577	Operation Dr'l'g. 311mm hole		
Elevations	Grd -	380.5	KB	6.22	Formation Banff			
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap	
Wgt	1120	Visc	62	W.L.		PH		FC
Temp	55* C	PV 34	YP 21	600/180	110/76	Oil 77	Solids - %	12
Tank Vol	67	Hole Vol	94	Total Vol	161	Gradient	10.99	Circ. Time
								67

MUD ADDITIVES

Gel		Lime	184	SAPP		Soap		Shrinks	
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust	38	Gypsum		Disperse	7		
Soda ash		Kwikseal		Barite		Floordry	5		
Mud cost - Daily		7311	Cum	46091	Water cost - Daily		600	Cum	20860

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly
Desander					Water	BR 0.35
Desilter					Oil 20	Sub/Reamer 1.82
Centrifuge	Sharpell	1720	1110		Losses	Shock/Sub 3.83
Shaker	Swaco	Mesh	84/140	84/84	Dumped 9	2(228) DC 18.92

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	10(171)DC	93.32
4	311	HP51H	DJ4132	3/15.9	1205		100	Jets+X/O,S	5.8
								6(171) DC	55.88
3RR	311	HP43A	LB8263	2/14.3/12.7	867	1205	338	X/O	0.9
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	6HWDP	55.17
78	22.75	3.40	30		18	80			
74	13.25	5.4	62.75	5/8/ o2				TOTAL	236.52

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152	105	13700	2.4	38	45	67	5700	105
2	140	105							

SURVEYS

576m	1*	690m	1/8*	804m	1/4*	908m	1*	973m	3/4*
1075	2*	1137m	2 1/2*	1194m	3 1/2*	1252	4*		

Drilling	22.75	NU BOP's	Rig up	Log	woc
Tripping		P. test	Run Csg	Core	WOWelder
Reaming		Slip & cut	Circulate	DST	BOPdrill
Survey	0.75	CTB	Cement	Lost. Circ	Hdl Tools
Rig Serv.	0.5	Repair	safety/M	D.O.F&S	TOTAL
					24

REMARKS

Drill 311mm hole, Rig Service, Survey
Next 24hrs.- Drill 311mm hole, Rig Service, Survey, Work on straightening hol Fence Sumps

Weather	Snowing	Temp.-8°C	Spud	92/02/14	Daily Cost	\$62,279	Cum Cost	\$1,712,409
Rig Mgr.	Dennis Ross		Phone	774-0472	Orig Spvr. Dave Garstad		Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

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DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/03	Day	17
Depth 1227		Progress	22	AFE	13577	Operation Drl'g. 311mm hole			
Elevations	Grd -	380.5	KB	6.22	Formation Banff				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1105	Visc	69	W.L.		PH		FC	
Temp	47°C	PV 45	YP 25	600/180	140/95	Oil 76	Solids - %		11
Tank Vol 58		Hole Vol	89	Total Vol	147	Gradient	10.8	Circ. Time	61

MUD ADDITIVES

Gel		Lime	64	SAPP		Soap		Shrinks	8
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust	10	Gypsum		Disperse			
Soda ash		Kwikseal		Barite	20	Floordry	3		
Mud cost - Daily		2379	Cum	38780	Water cost - Daily		3660	Cum	20260

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		Bit	0.35
Desilter					Oil	20	Sab/Reamer	1.82
Centrifuge	Sharpell				Losses		Shock/Sub	3.83
Shaker	Swaco	Mesh	84/140	84/84	Dumped	6	2(228) DC	18.92
BIT DATA							Bell Sub	0.53

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	10(171)DC	93.32
4	311	HP51H	DJ4132	3/15.9	1205		22	Jars+x/o,s	5.8
								6(171) DC	55.88
3RR	311	HP43A	LB8263	2/14.3/12.7	867	1205	338	X/O	0.9
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	6HWDP	55.17
22	7.25	3.00	7.25		10	150			
74	13.25	5.4	62.75	5/6/ o2				TOTAL	236.52

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSP	SPM
1	152	105	13700	2.4	38	45	67	5700	105
2	140	105							

SURVEYS

576m	1*	690m	1/8*	804m	1/4*	908m	1*	973m	3/4*
1075	2*	1137m	2 1/2*	1194m	3 1/2*				

Drilling	7.25	NU BOP's	Rig up	Log	woc
Tripping	1	P. test	Run Csg	Core	WOwelder
Reaming	15.5	Slip & cut	Circulate	DST	BOPdrill
Survey		CTB	Cement	Lost. Circ	Hdl Tools
Rig Serv.	0.25	Repair	safety/M	D.O.F&S	TOTAL
					24

REMARKS

[illegible]

Weather	cloudy	Temp.-8°C	Spud	92/02/14	Daily Cost	\$44,019	Cum Cost	\$1,650,130
Rig Mgr.	Dennis Ross		Phone	774-0472	Drig Spvr.	Dave Garstad	Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

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DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/02	Day	16
Depth 1205		Progress	74	AFE	13577	Operation Picking up 127mm D. P.			
Elevations	Grd -	380.5	KB	6.22	Formation Banff				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1095	Visc	66	W.L.		PH		FC	
Temp	55°C	PV 30	YP 25	600/180	110/80	Oil 76.5	Solids - %		9.5
Tank Vol 56		Hole Vol	87	Total Vol	143	Gradient	10.74	Circ. Time	

MUD ADDITIVES

Gel		Lime	260	SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust	38	Gypsum		Disperse	7		
Soda ash		Kwikseal		Barite		Floordry	5		
Mud cost - Daily		9237	Cum	36401	Water cost - Daily		600	Cum	16600

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		Bit	0.35
Desilter					Oil	18	Sab/Reamer	1.82
Centrifuge	Sharpell				Losses		Shock/Sub	3.83
Shaker	Swaco	Mesh	84/140	84/84	Dumped	9	2(228) DC	18.92
BIT DATA							Bell Sub	0.53

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	10(171)DC	93.32
4	311	HP51H	DJ4132	3/15.9	1205			Jars+x/o,s	5.8
								6(171) DC	55.88
3RR	311	HP43A	LB8263	2/14.3/12.7	867	1205	338	X/O	0.9
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	6HWDP	55.17
74	13.25	5.4	62.75	5/6 1/2 mm				TOTAL	236.52

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152	104						7000	100
2	140	105							

SURVEYS

576m	1*	690m	1/8*	804m	1/4*	908m	1*	973m	3/4*
1075	2*	1137m	2 1/2*	1194m	3 1/2*				

Drilling	13.5	NU BOP's		Rig up		Log		woc	
Tripping	3.5	P. test		Run Csg		Core		WOwelder	
Reaming		Slip & cut		Circulate	1	DST		BOPdrill	
Survey	1	CTB		Cement		Lost. Circ		Hdl Tools	4.25
Rig Serv.	0.75	Repair		safety/M		D.O.F&S		TOTAL	24

REMARKS

[illegible]

Weather	cloudy	Temp.	-8°C	Spud	9202/14	Daily Cost	\$44,019	Cum Cost	\$1,610,986
Rig Mgr.	Dennis Ross	Phone	774-0472	Drig Spvr.	Dave Garstad	Phone	210-1894		

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

[illegible]

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/03/01	Day	15
Depth	1131	Progress	151	AFE	13577	Operation Dr'g. Ahead 311mm Hole			
Elevations	Grd -	380.5	KB	6.22	Formation Banff				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1060	Visc	76	W.L.		PH		FC	
Temp	45° C	PV52	YP24	600/180	152/100	Oil	Solids - %		74.5
Tank Vol	61	Hole Vol	82	Total Vol	143	Gradient	10.4	Circ. Time	60

MUD ADDITIVES

Gel		Lime	263	SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust	25	Gypsum		Disperse	8		
Soda ash		Kwikseal		Barite		Floordry	5		
Mud cost - Daily		9465	Cum	27164	Water cost - Daily	1000	Cum		16000

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly
Desander					Water	BIT 0.35
Desilter					Oil 10	BIT SUB 1.06
Centrifuge	Sharpell				Losses	2(228)DC 18.92
Shaker	Swaco	Mesh	84/140	84/84	Dumped 8	Ball Sub 0.51

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	x/o	0.45
1	311	FDS	LC8522	4x14.3	500	510	10	10(171)DC	93.32
2RR	311	H4252R3	KJ7805	5/8choke	510	867	357	X/O	0.36
3RR	311	HP43A	LB8263	2/14.3/12.7	867		284	Jars	5.03
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	x/o	0.41
	8.75	1.10	8.75	3/3/I				6(171)DC	55.88
32	20.5	17.00	21					X/O	0.9
151	22.75	6.6	49.5		10000+	120		TOTAL	238.00

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152	104	14500	2.4	39	45	89	7000	100
2	140	105							

SURVEYS

576m	1*	690m	1/8*	804m	1/4*	908m	1*	973m	3/4*
1075	2*								

Drilling	22.75	NU BOP's	Rig up	Log	woc
Tripping		P. test	Run Csg	Core	WOwelder
Reaming		Slip & cut	Circulate	DST	BOPdrill
Survey	0.5	CTB	Cement	Lost. Circ	Hdl Tools
Rig Serv.	0.75	Repair	safety/M	D.O.F&S	TOTAL
					24

REMARKS

Drill 311mm hole,Rig Service,Survey

Next 24hrs.- Drill 311mm hole,Cond. Cutter D while Dr'g, Survey, Rig Service ,Adj. Pitt for Cuttings

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/02/27	Day	13
Depth	875	Progress	8	AFE	13577	Operation Dr'g. Ahead 311mm Hole			
Elevations	Grd -	380.5	KB	6.22	Formation Flett - limestone				
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap		
Wgt	1100	Visc	140	W.L.		PH		FC	
Temp	18°C	PV 60	YP 30	600/180	300/120	Oil	Solids - % 66.5		
Tank Vol 51		Hole Vol	63	Total Vol	114	Gradient	10.79	Circ. Time	97min.

MUD ADDITIVES

Gel		Lime	80	SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust		Gypsum		Disperse	3		
Soda ash		Kwikseal		Barite					
Mud cost - Daily		3138	Cum	11106	Water cost - Daily		1000	Cum	14400

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		BIT	0.35
Desilter					Oil	44m3	BIT SUB	1.06
Centrifuge	Sharpell				Losses		2(228)DC	18.92
Shaker	Swaco	Mesh	84/140	84/84	Dumped		Bell Sub	0.51
BIT DATA							Shock Sub	3.64

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	x/o	0.45
1	311	FDS	LC8522	4x14.3	500	510	10	10(171)DC	93.32
2RR	311	H4252R3	KJ7805	5/8choke	510	867	357	X/O	0.36
3RR	311	HP43A	LB8263	2/14.3/12.7	867		8	Jars	5.03
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	x/o	0.41
	8.75	1.10	8.75	3/3/I				6(171)DC	55.88
32	20.5	17.00	21					X/O	0.9
8	4.75	1.68	4.75		11000	80		TOTAL	236.00

PUMP DATA

[illegible]

SURVEYS

[illegible]

TIME BREAKDOWN

Drilling	4.75	NU BOP's	Rig up	Log	woc
Tripping	0.75	P. test	Run Csg	Core	WOwelder
Reaming		Slip & cut	Circulate	18.25	DST
Survey		CTB	Cement	Lost. Circ	Hdl Tools
Rig Serv.	0.25	Repair	safety/M	D.O.F&S	TOTAL
					24

REMARKS

Circ. & Cond. Mud, Rig Service, RIH to 856m, Circ. & clean to BTM, Drill 311mm hole.

Next 24hrs.- Drill 311mm hole, Cond. Cutter D, Survey, Clean Flare Pitt.

Weather	cloudy	Temp.-20	Spud	92/02/14	Daily Cost	\$71,501	Cum Cost	\$1,488,921
Riq Mgr.	Dennis Ross		Phone	774-0472	Orlg Spvr. Dave Garstad			Phone 210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

[illegible]

TIME BREAKDOWN

[illegible]

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/26	Day	12
Depth	867	Progress	32	AFE	13577	Operation <i>CIRC CUTTER D.</i>		
Elevations	Grd -	380.5	KB	6.22	Formation Flett - limestone			
Drilling Fluid Type		Cutter D	Volume		Fluid Vol.		Soap	
Wgt		Visc		W.L.		PH		FC
Temp		PV	YP	600	300	Oil	Solids - %	
Tank Vol	10	Hole Vol	60	Total Vol	70	Gradient		Circ. Time

MUD ADDITIVES

Gel		Lime		SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily		1033	Cum	7968	Water cost - Daily		1000	Cum	13400

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		BIT	0.35
Desilter					Oil		BIT SUB	1.06
Centrifuge					Losses		2(228)DC	18.92
Shaker	Swaco	Mesh	84/140	84/84	Dumped		Bell Sub	0.51
BIT DATA							Shock Sub	3.64

BIT DATA

[illegible]

PUMP DATA

[illegible]

SURVEYS

[illegible]

TIME BREAKDOWN

Drilling	3	NU BOP's		Rig up		Log		woc	
Tripping	4	P. test		Run Csg		Core		WOwelder	
Reaming		Slip & cut	0.75	Circulate	4	DST		BOPdrill	
Survey		CTB		Cement		Lost. Circ		Hdl Tools	12.25
Rig Serv.		Repair		safety/M		D.O.F&S		TOTAL	24

REMARKS

Drill 311mm hole with Air, Blow hole dry, POOH & Displace hole to Cutter D , Handle tools, Slip & Cut line, circ.
Next 24hrs.- Install Ketex Vacuum System, Centrifuge ,adj. lease for equipment.

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/25	Day	11
Depth 835		Progress	315	AFE	13577	Operation Dr'g.311mm Hole with Foam		
Elevations	Grd -	380.5	KB	6.22	Formation			
Drilling Fluid Type			Volume		Fluid Vol.		Soap	
Wgt		Visc		W.L.		PH		FC
Temp		PV	YP	600	300	Oil	Solids - %	
Tank Vol		Hole Vol	40	Total Vol		Gradient		Circ. Time

MUD ADDITIVES

Gel		Lime		SAPP		Soap		
Caustic		Vis-Plus		Lignite		Detergent		
Benex		Sawdust		Gypsum				
Soda ash		Kwikseal		Barite				
Mud cost - Daily		1033	Cum	7968	Water cost - Daily		600	Cum 12400

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		Bit	0.33
Desilter					Oil		Hammer	2.22
Centrifuge					Losses		Bit sub	1.06
Shaker	Swaco	Mesh	84/140	84/84	Dumped		2(228)DC	18.92

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	Drilling Assembly	
1	311	FDS	LC8522	4x14.3	500	510	10	Reamer	2.13
4RR	311	H4252R3	KJ7805	5/8choke	510		325	Bell sub	0.51
								Jars	5.03
								x/o	0.45
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	4(171)DC	37.21
	8.75	1.10	8.75	3/3/I				x/o	0.9
325	20.5	15.80	20.5		1-Jan	27		6(HWDP)	55.17
								TOTAL	124.44

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM

SURVEYS

576m	1*	690m	1/8*	804m	1/4*				

TIME BREAKDOWN

Drilling	18	NU BOP's		Rig up		Log		WOC	
Tripping		P. test		Run Csg		Core		WOWelder	
Reaming		Slip & cut		Circulate	3.5	DST		BOPdrill	
Survey	2	CTB		Cement		Lost. Circ		Hdl Tools	
Rig Serv.	0.5	Repair		safety/M		D.O.F&S		TOTAL	24

REMARKS

Drill 311mm hole with air water entering wellbore @ 543m ,dry hole with air ,mist drill 311mm hole, survey, Rig service,

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DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/02/24	Day	10
Depth	520	Progress	10	AFE	13577	Operation Dr'g.311mmHole with Air			
Elevations	Grd -	380.5	KB	6.22	Formation Flett - limestone				
Drilling Fluid Type			Volume		Fluid Vol.		Soap		
Wgt		Visc		W.L.		PH		FC	
Temp		PV	YP	600	300	Oil	Solids - %		
Tank Vol		Hole Vol	40	Total Vol		Gradient		Circ. Time	

MUD ADDITIVES

Gel		Lime		SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily		1033	Cum	7968	Water cost - Daily		1000	Cum	11800

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		Bit	0.33
Desilter					Oil		Hammer	2.22
Centrifuge					Losses		Bit sub	1.06
Shaker	Swaco	Mesh	84/140	84/84	Dumped		2(228)DC	18.92
BIT DATA							Fire Stop	0.51

No	Size	Type	Serial #	Jets	In	Out	Total m		
1	311	FDS	LC8522	4x14.3	500	510	10	Reamer	2.13
								Bell sub	0.51
								Jars	5.03
								x/o	0.45
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	4(171)DC	37.21
	8.75	1.10	8.75	3/3/I				x/o	0.9
								6(HWDP)	55.17
								TOTAL	124.44

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSP	SPM

SURVEYS

TIME BREAKDOWN

Drilling	1	NU BOP's		Rig up		Log		woc	
Tripping	7	P. test		Run Csg		Core		WOwelder	4.25
Reaming		Slip & cut		Circulate	2.75	DST		BOPdrill	0.25
Survey		CTB		Cement		Lost. Circ		Hdl Tools	8.25
Rig Serv.	0.25	Repair		safety/M	0.25	D.O.F&S		TOTAL	24

REMARKS

Trip,Handle Tools, Rig Service, Make up BTM HOLE ASS. & RIH, Held Safety Meeting with AIR Drillers									
Wait on Welder, Blow Hole Dry with Air, Held BOP Drill,Drill 311mm Hole									
Next 24 hrs.- Air Drill 311mm Hole, Survey, Rig Service									

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DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/23	Day	9
Depth	510	Progress	10	AFE	13577	Operation P.O.O.H. for Bit#1		
Elevations	Grd -	380.5	KB	6.22	Formation Flett - limestone			
Drilling Fluid Type			Volume		Fluid Vol.		Soap	
Wgt		Visc		W.L.		PH		FC
Temp		PV	YP	600	300	Oil	Solids - %	
Tank Vol		Hole Vol	40	Total Vol		Gradient		Circ. Time

MUD ADDITIVES

Gel		Lime		SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily		1033	Cum	7968	Water cost - Daily		600	Cum	10800

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		Bit	0.35
Desilter					Oil		Bit sub	1.06
Centrifuge					Losses		2(228)DC	18.92
Shaker	Swaco	Mesh	84/140	84/84	Dumped		Bell sub	0.55
							4(171)DC	37.21

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m	X/O	0.9
1	311	FDS	LC8522	4x14.3	500			6(127)HWDP	55.17
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		
								TOTAL	114.16

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/02/22	Day	8
Depth 500		Progress		AFE	13577	Operation Pressure test			
Elevations	Grd -	380.5	KB		Formation	Flett - limestone			
Drilling Fluid Type			Volume		Fluid Vol.		Soap		
Wgt		Visc		W.L.		PH		FC	
Temp		PV	YP	600	300	Oil	Solids - %		
Tank Vol		Hole Vol	40	Total Vol		Gradient		Circ. Time	

MUD ADDITIVES

Gel		Lime		SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily		1033	Cum	7968	Water cost - Daily		600	Cum	10200

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water			
Desilter					Oil			
Centrifuge					Losses			
Shaker	Swaco	Mesh	84/140	84/84	Dumped			

BIT DATA

[illegible]

PUMP DATA

[illegible]

SURVEYS

[illegible]

TIME BREAKDOWN

Drilling		NU BOP's	12.5	Rig up		Log		WOC	
Tripping	2	P. test	9	Run Csg		Core		Cut csg	
Reaming		Slip & cut		Circulate	0.5	DST		Weld bowl	
Survey		CTB		Cement		Lost. Circ		Hdl Tools	
Rig Serv.		Repair		WOC		Fish		TOTAL	24

REMARKS

NU BOP's and flare lines. Pressure tested manifold and blind rams to 14000 kPa and 1400 kPa holding 10 min on each pressure. All OK.

Picked up bit and RIH.

Pressure testing the rest of the stack as of this AM.

Next 24 hrs - Pressure test, drill out shoe, leak-off test, drill

Weather	cloudy	Temp.	-18	Spud	92/02/14	Daily Cost	\$22,666	Cum Cost	\$1,220,957
Rig Mgr.	Paul Wagner	Phone	774-0472	Drig Spvr.	Stew Ward	Phone	210-1894		

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

WELL NAME & LOCATION Paramount Berkley Arrowhead O15 Day 8

TIME BREAKDOWN

[illegible]

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name	Paramount Berkley Arrowhead O-15					Date	98/02/21	Day	7
Depth	500	Progress		AFE	13577	Operation	NU BOP's		
Elevations	Grd -	380.5	KB			Formation	Flett - limestone		
Drilling Fluid Type	Gel chem	Volume		Fluid Vol.		Soap			
Wgt	1145	Visc	93	W.L.		PH	9.5	FC	
Temp		PV	YP	600	300	Oil	Solids - %		
Tank Vol	37	Hole Vol	61	Total Vol	98	Gradient		Circ. Time	

MUD ADDITIVES

Gel		Lime		SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily		1033	Cum	7968	Water cost - Daily		600	Cum	9600

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly
Desander					Water	
Desilter					Oil	
Centrifuge					Losses	
Shaker	Swaco	Mesh	84/140	84/84	Dumped	

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	Total m		
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		
TOTAL								0.00	

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM

SURVEYS

TIME BREAKDOWN

Drilling		NU BOP's	4	Rig up		Log		WOC	6
Tripping		P. test		Run Csg		Core		Cut csg	6
Reaming		Slip & cut		Circulate		DST		Weld bowl	4
Survey		CTB		Cement	3	Lost. Circ		Hdl Tools	1
Rig Serv.		Repair		WOC		Fish		TOTAL	24

REMARKS

Ran 36 jts 339.7mm, 81.1 kg/m, K55, STC to 500m. Cemented w/ 31T 0:1:0G + 1% CaCl2 and 27T Expandomix + 2% CaCl2. Displaced w/ 39.2 m3 of water to 488.3 m. Plug down at 1100 hrs, 98/02/20									
Approx. 8 m3 good cement returns. Floats held OK. Had some circulation around conductor barrel at start of cement job. Reduced to nil prior to bumping the plug.									
Rigged out cementers and WOC.									
Cut casing and lay down diverter system. Weld on casing bowl and NU BOP's.									
Next 24 hrs - NU BOP's, pressure test									
Weather	snowing	Temp.	-15	Spud	92/02/14	Daily Cost	\$217,273	Cum Cost	\$1,198,291
Rig Mgr.	Dennis Ross		Phone	774-0472	Drig Spr.	Stew Ward		Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

WELL NAME & LOCATION

Paramount Berkley Arrowhead O15

Day

7

TIME BREAKDOWN

[illegible]

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date	98/02/20	Day	6
Depth 500		Progress		AFE	13577	Operation Rig up to cement sfc. csg.			
Elevations	Grd -	380.5	KB		Formation	Flett - limestone			
Drilling Fluid Type		Gel chem	Volume		Fluid Vol.		Soap		
Wgt	1145	Visc	93	W.L.		PH	9.5	FC	
Temp		PV	YP	600	300	Oil	Solids - %		
Tank Vol 37		Hole Vol	61	Total Vol	98	Gradient		Circ. Time	

MUD ADDITIVES

Gel		Lime		SAPP		Soap			
Caustic		Vis-Plus		Lignite		Detergent			
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily		1033	Cum	7968	Water cost - Daily		600	Cum	9000

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		bit	0.4
Desilter					Oil		bit sub	0.9
Centrifuge					Losses		2-9" DC	18.92
Shaker	Swaco	Mesh	84/140	84/84	Dumped		bell sub	0.53

BIT DATA

[illegible]

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152	115	6100	1.4					
2	140	115	6100	1.2					

SURVEYS

[illegible]

TIME BREAKDOWN

Drilling		NU BOP's		Rig up		Log	3.5	Well control	
Tripping	6.5	P. test		Run Csg	9.25	Core		Tear Out	
Reaming		Slip & cut		Circulate	1.75	DST		Dig pit	
Survey		CTB		Cement	0.5	Lost. Circ		Hdl Tools	2
Rig Serv.	0.5	Repair		WOC		Fish		TOTAL	24

REMARKS

Finished logging with Computalog. Tear out loggers, RIH and clean to bottom. Circulate and trip out to run casing. Rigged up to/and ran 36 jts 339.7 mm casing to 500m. Had to circulate last 4m to bottom due to very loose fill. Circulated and rigged in Sanjel cementers to cement surface casing.

Next 24 hrs - cement casing, WOC, cut off casing, NU BOP's

Weather	clear	Temp.	-12	Spud	92/02/14	Daily Cost	\$43,366	Cum Cost	\$981,018
Rig Mgr.	Dennis Ross	Phone	774-0472	Drlg Spvr.	Stew Ward	Phone	210-1894		

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DAILY DRILLING REPORT

PAGE TWO

WELL NAME & LOCATION

Paramount Berkley Arrowhead 015

Day

6

TIME BREAKDOWN

[illegible]

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/19	Day	5
Depth	500	Progress	22	AFE	13577	Operation Logging surface hole		
Elevations	Grd -	380.5	KB		Formation	Flett - limestone		
Drilling Fluid Type	Gel chem	Volume		Fluid Vol.		Soap		
Wgt	1145	Visc	93	W.L.		PH	9.5	FC
Temp		PV	YP	600	300	Oil	Solids - %	
Tank Vol	37	Hole Vol	61	Total Vol	98	Gradient		Circ. Time

MUD ADDITIVES

Gel	20	Lime		SAPP		Soap		
Caustic		Vis-Plus	1	Lignite		Detergent	2	
Benex		Sawdust		Gypsum				
Soda ash		Kwikseal		Barite				
Mud cost - Daily	1033	Cum	7968	Water cost - Daily	600	Cum	8400	

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly	
Desander					Water	bit	0.4
Desilter					Oil	bit sub	0.9
Centrifuge					Losses	2-9" DC	18.92
Shaker	Swaco	Mesh	84/140	84/84	Dumped	bell sub	0.53
BIT DATA						4-6 3/4 DC	37.21

No	Size	Type	Serial #	Jets	In	Out	Total m	xo	0.9
1A	444.5	hammer	KJ7906	3/8 choke	0	442	112	6-HWDP	55.17
2A	444.5	SS81J4	687007	3x20,1x28	442	500	58		
Today m	Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		
	11.25	9.96	35.75	drig	1-2	20	18		
22	12.75	4.55	66.75		6-8000	135	450-500		
								TOTAL	114.03

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPD	SPM
1	152	115	6100	1.4					
2	140	115	6100	1.2					

SURVEYS

482	1/4								

TIME BREAKDOWN

Drilling	12.75	NU BOP's		Rig up		Log	1.5	Well control	
Tripping	6.5	P. test		Run Csg		Core		Tear Out	1
Reaming		Slip & cut		Circulate	2.5	DST		Dig pit	
Survey	0.5	CTB		Cement		Lost. Circ		Hdl Tools	
Rig Serv.	0.25	Repair		WOC		Fish		TOTAL	24

REMARKS

Drilled ahead to surface TD at 500m. Hole conditions good. Slight flow around around conductor pipe.									
Pulled wiper trip. Had to circulate and back ream 1 stand off bottom for approximately 6 stands. Tripped to bit, cleaned off mud ring, and ran to bottom. Circulated and raised visc. to 90+. Circulated hole clean.									
Tripped out to log. Hole good on trip out. Rigged up to log and start to log surface hole as of this AM.									
Next 24 hrs - log, trip, run casing and cement									
Weather	cloudy	Temp.	-16	Spud	92/02/14	Daily Cost	\$26,615	Cum Cost	\$937,652
Rig Mgr.	Dennis Ross	Phone		Drlg Spvr.	Stew Ward	Phone	210-1894		

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

WELL NAME & LOCATION

Paramount Berkley Arrowhead O15

Day

5

TIME BREAKDOWN

[illegible]

DAILY DRILLING REPORT

MUD ADDITIVES

SOLIDS CONTROL

BIT DATA

PUMP DATA

SURVEYS

TIME BREAKDOWN

REMARKS

Finished connecting flow nipple. Made up BHA and ran in hole to 397m. Reamed and cleaned to bottom.

No flow around conductor pipe. Continued to drill to proposed TD at 503m.

Drilled ahead to present depth. Hole conditions good

Next 24 hrs - drill, wiper trip, drill, trip to run casing

Weather	cloudy	Temp -18	Spud	92/02/14	Daily Cost	\$79,653	Cum Cost	\$911,037
Rig Mgr.	Dennis Ross		Phone		Drig Spvr.	Stew Ward	Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

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PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Name Paramount Berkley Arrowhead O-15						Date	98/02/17	Day	3
Depth	442	Progress	112	AFE	13577	Operation Tear out Grant Head			
Elevations	Grd -	380.5	KB		Formation				
Drilling Fluid Type		Air	Volume	6000 cfm	Fluid Vol.	25-35 lpm Soap		0.8-1 %	
Wgt	1030	Visc	47	W.L.		PH	10	FC	
Temp		PV	YP	600	300	Oil	Solids - %		
Tank Vol	47	Hole Vol	56.5	Total Vol	103.5	Gradient		Circ. Time	

MUD ADDITIVES

Gel	134	Lime		SAPP		Soap	1		
Caustic	1	Polymer		Lignite					
Benex		Sawdust		Gypsum					
Soda ash	1	Kwikseal		Barite					
Mud cost - Daily	3504	Cum	5372	Water cost - Daily	600	Cum	7200		

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly	
Desander					Water	bit	0.39
Desilter					Oil	Hammer	2.22
Centrifuge					Losses	bit sub	0.53
Shaker		Mesh			Dumped	2-9" DC	18.92

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m		
1A	444.5	hammer	KJ7906	3/8 choke	0	442	112	4-6 3/4 DC	37.21
								xo	0.9
								6-HWDP	55.17
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque			
1.25	10.0	35.75	drlg	1-2	20	18			
								TOTAL	116.38

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM
1	152								
2	140								

SURVEYS

343	1	399	1/2						
374	1	427	1						

TIME BREAKDOWN

Drilling	11.25	NU BOP's		Rig up		Log		Well control	1.75
Tripping	2.5	P. test		Run Csg		Core		Tear Out	2.5
Reaming		Slip & cut		Circulate	2.5	DST		Dig pit	
Survey	1.5	CTB		Cement		Lost. Circ		Hdl Tools	0.5
Rig Serv.	0.25	Repair	1.25	WOC		Fish		TOTAL	24

REMARKS

Drilled ahead and surveyed. Hole good on connections									
Drilled to 430m and mist pump went down. Repaired and brought back on line.									
Drilled ahead to 442m. Clamp on Grant head vibrated open and rubber popped free. Also noticed fluid and gas flowing up around conductor pipe. Opened HCR and closed Hydril. HCR apparently plugged.									
Pulled 5 stands and pumped 15 m3 mud. Re-installed rubber and opened well to blooie pit. Pressure bled off and bubbling around conductor pipe reduced substantially. Pulled to last stand of HWDP and displaced well to mud. Hole took approx. 56.5 m3 to fill. Well dead. Tripped out, layed down hammer and bit. Tore Grant head and replaced with flow nipple.									
Hole is in competent shale and should be cased here to as drilling ahead may washout conductor barrel more. Released Percussion drilling and air drilling equipment.									
Next 24 hrs. - RIH, CTB, Trip, Run casing and cement.									
Weather	cloudy	Temp -14	Spud	92/02/14	Daily Cost	\$47,676	Cum Cost	\$831,384	
Rig Mgr.	Dennis Ross	Phone		Drlg Spvr.	Stew Ward	Phone	210-1894		

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

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PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/16	Day	2
Depth	330	Progress	238	AFE	13577	Operation Drilling 444.5mm surface hole		
Elevations	Grd -	380.5	KB		Formation			
Drilling Fluid Type	Air	Volume	6000 cfm	Fluid Vol.	25-35 lpm Soap	0.8-1 %		
Wgt	Visc		W.L.		PH	FC		
Temp	PV	YP	600	300	Oil	Solids - %		
Tank Vol	78	Hole Vol		Total Vol		Gradient	Circ. Time	

MUD ADDITIVES

Gel	60	Lime		SAPP		Soap			
Caustic		Polymer		Lignite					
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily	1368	Cum	1868	Water cost - Daily	600	Cum	6600		

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly	
Desander					Water	bit	0.39
Desilter					Oil	Hammer	2.22
Centrifuge					Losses	bit sub	0.53
Shaker		Mesh			Dumped	2-9" DC	18.92

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m		
1A	444.5	hammer	KJ7906	3/8 choke	0		330	4-6 3/4 DC	37.21
								xo	0.9
								6-HWDP	55.17
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque			
19	17.4	24.5	drlg	1-2	20	18			
								TOTAL	116.38

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM

SURVEYS

115	7/8	172	1 1/4	230	1 1/2	286	1		
143	7/8	201	1 1/4	258	1 1/8	315	1 7/8		

TIME BREAKDOWN

Drilling	19	NU BOP's		Rig up		Log		Abandon	
Tripping		P. test		Run Csg		Core		Tear Out	
Reaming		Slip & cut		Circulate	0.75	DST		Dig pit	
Survey	2.5	CTB		Cement		Lost. Circ		Hdl Tools	
Rig Serv.	1	Repair	0.75	WOC		Fish		TOTAL	24

REMARKS

Drilled ahead and surveyed. Hole good on connections									
Hole not making any appreciable amounts of water. Encountered gas after taking survey at 144m. Did not notice any while drilling. Volume not measurable.									
Mixed mud in tanks for displacing hole prior to running casing.									
Injecting air at 6000 CFM and fluid at 25-35 lpm. Hole does not slug with lower volume of fluid injection.									
Next 24 hrs - drill, survey									
Weather	cloudy	Temp -15	Spud	92/02/14	Daily Cost	\$76,070	Cum Cost	\$783,708	
Rig Mgr.	Dennis Ross		Phone		Drig Spvr.	Stew Ward	Phone	210-1894	

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

[illegible]

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/15	Day	1
Depth 92		Progress 92		AFE	13577	Operation Drilling 444.5mm surface hole		
Elevations	Grd -	380.5	KB		Formation			
Drilling Fluid Type		Air						
Wgt		Visc		W.L.		PH		FC
Temp		PV	YP	600	300	Oil	Solids - %	
Tank Vol		Hole Vol		Total Vol		Gradient		Circ. Time

MUD ADDITIVES

Gel		Lime		SAPP		Soap	1		
Caustic	1	Polymer		Lignite					
Benex		Sawdust		Gypsum					
Soda ash	1	Kwikseal		Barite					
Mud cost - Daily		500	Cum	500	Water cost - Daily		600	Cum	6000

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water		bit	0.39
Desilter					Oil		Hammer	2.22
Centrifuge					Losses		bit sub	1.05
Shaker		Mesh			Dumped		2-9" DC	18.92

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m		
1A	444.5	hammer	KJ7906	3/8 choke	0		92	fire sub	0.51
								bell sub	0.53
								4-6 3/4 DC	37.21
								xo	0.9
								HWDP	27.7
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque			
5.5	16.7	5.5		1-2	20				
								TOTAL	89.43

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM

SURVEYS

41	1/4	88	3/4						
69	3/4								

TIME BREAKDOWN

Drilling	5.5	NU BOP's		Rig up		Log		Abandon	
Tripping	2.25	P. test		Run Csg		Core		Tear Out	
Reaming		Slip & cut		Circulate	1	DST		Dig pit	13
Survey	1	CTB		Cement		Lost. Circ		Hdl Tools	1.25
Rig Serv.		Repair		WOC		Fish		TOTAL	24

REMARKS

Dug blooie pit, rigged in blooie line.									
Picked air hammer and bit on 9" drill collar									
SPUD 2215 HRS, 98/02/14									
Drilled ahead with hammer and air to 61m. Tripped out and changed to above BHA. RIH and drilled ahead									
Injecting air at 5400 CFM and fluid at 30-35 lpm.									
Hole good on connections									
Next 24 hrs - drill, survey									
Weather	cloudy	Temp -15	Spud	Daily Cost \$88,533		Cum Cost \$707,638			
Rig Mgr.	Dennis Ross		Phone	Drig Sprv. Stew Ward			Phone 210-1894		

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

PAGE TWO

WELL NAME & LOCATION

Paramount Berkley Arrowhead O15

TIME BREAKDOWN

[illegible]

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/14	Day	PS7
Depth	Progress	AFE	13577		Operation Rigging up			
Elevations	Grd -	KB	Formation					
Drilling Fluid Type								
Wgt	Visc	W.L.	PH		FC			
Temp	PV	YP	600	300	Oil	Solids - %		
Tank Vol	Hole Vol	Total Vol	Gradient		Circ. Time			

MUD ADDITIVES

Gel	Lime	SAPP				
Caustic	Polymer	Lignite				
Benex	Sawdust	Gypsum				
Soda ash	Kwikseal	Barite				
Mud cost - Daily	Cum	Water cost - Daily		Cum		

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes	Drilling Assembly
Desander					Water	
Desilter					Oil	
Centrifuge					Losses	
Shaker		Mesh			Dumped	

BIT DATA

No	Size	Type	Serial #	Jets	in	Out	m
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPD	SPM

SURVEYS

TIME BREAKDOWN

Drilling	NU BOP's	Rig up	Log	Abandon
Tripping	P. test	Run Csg	Core	Tear Out
Reaming	Slip & cut	Circulate	DST	
Survey	CTB	Cement	Lost. Circ	
Rig Serv.	Repair	WOC	Fish	TOTAL

REMARKS

Diverter system and Grant head installed							
All air drilling and related equipment rigged in.							
Track hoe to dig blooie pit did not arrive on location until 930 PM and operator would not work until morning. Waiting on pit before spudding.							
Weather	cloudy	Temp -15	Spud	Daily Cost	\$49,469	Cum Cost	\$619,105
Rig Mgr.	Dennis Ross	Phone		Drig Spvr.	Stew Ward	Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/13	Day	PS6
Depth		Progress	AFE		13577 Operation Rigging up			
Elevations	Grd -	KB	Formation					
Drilling Fluid Type								
Wgt		Visc	W.L.		PH		FC	
Temp		PV	YP	600	300	Oil	Solids - %	
Tank Vol		Hole Vol		Total Vol		Gradient		Circ. Time

MUD ADDITIVES

Gel		Lime		SAPP				
Caustic		Polymer		Lignite				
Benex		Sawdust		Gypsum				
Soda ash		Kwikseal		Barite				
Mud cost - Daily			Cum	Water cost - Daily			Cum	

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water			
Desilter					Oil			
Centrifuge					Losses			
Shaker		Mesh			Dumped			

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPD	SPM

SURVEYS

TIME BREAKDOWN

Drilling		NU BOP's		Rig up		Log		Abandon	
Tripping		P. test		Run Csg		Core		Tear Out	
Reaming		Slip & cut		Circulate		DST			
Survey		CTB		Cement		Lost. Circ			
Rig Serv.		Repair		WOC		Fish		TOTAL	

REMARKS

Top drive installed and operational							
Spotted all air equipment and rigged in							
Still inspecting drill pipe.							
Installing diverter system as of this AM.							
Weather	cloudy	Temp -15	Spud	Daily Cost	\$74,672	Cum Cost	\$569,636
Rig Mgr.	Dennis Ross	Phone		Drlg Spvr.	Stew Ward	Phone	210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/12	Day	PS5
Depth		Progress	AFE		13577 Operation Rigging up			
Elevations	Grd -	KB	Formation					
Drilling Fluid Type								
Wgt		Visc		W.L.		PH		FC
Temp		PV	YP	600	300	Oil		Solids - %
Tank Vol		Hole Vol		Total Vol		Gradient		Circ. Time

MUD ADDITIVES

Gel		Lime		SAPP				
Caustic		Polymer		Lignite				
Benex		Sawdust		Gypsum				
Soda ash		Kwikseal		Barite				
Mud cost - Daily			Cum	Water cost - Daily			Cum	

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water			
Desilter					Oil			
Centrifuge					Losses			
Shaker		Mesh			Dumped			

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m	
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSP	SPM

SURVEYS

TIME BREAKDOWN

Drilling		NU BOP's		Rig up		Log		Abandon	
Tripping		P. test		Run Csg		Core		Tear Out	
Reaming		Slip & cut		Circulate		DST			
Survey		CTB		Cement		Lost. Circ			
Rig Serv.		Repair		WOC		Fish		TOTAL	

REMARKS

Continued to move equipment from Nabors 16.			
Raised derrick and continued to rig up			
Still inspecting drill pipe.			
Started to install top drive.			
If all goes well today should spud sometime on Friday.			
Weather	Clear	Temp -20	Spud
Daily Cost		Cum Cost \$494,964	
Rig Mgr.	Dennis Ross	Phone	
Drig Spvr. Stew Ward		Phone 210-1894	

DAILY DRILLING REPORT

Well Name					Paramount Berkley Arrowhead O-15		Date		98/02/11		Day		PS4	
Depth		Progress				AFE		13577		Operation Rigging up				
Elevations		Grd -				KB				Formation				
Drilling Fluid Type														
Wgt		Visc				W.L.		PH		FC				
Temp		PV		YP		600		300		Oil		Solids - %		
Tank Vol		Hole Vol				Total Vol				Gradient		Circ. Time		

MUD ADDITIVES

Gel		Lime		SAPP				
Caustic		Polymer		Lignite				
Benex		Sawdust		Gypsum				
Soda ash		Kwikseal		Barite				
Mud cost - Daily		Cum		Water cost - Daily			Cum	

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water			
Desilter					Oil			
Centrifuge					Losses			
Shaker		Mesh			Dumped			

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	

PUMP DATA

[illegible]

SURVEYS

[illegible]

TIME BREAKDOWN

Drilling		NU BOP's		Rig up		Log		Abandon	
Tripping		P. test		Run Csg		Core		Tear Out	
Reaming		Slip & cut		Circulate		DST			
Survey		CTB		Cement		Lost. Circ			
Rig Serv.		Repair		WOC		Fish		TOTAL	

REMARKS

Rigged up Precision 622E. Continued to move equipment from Nabors 16.					
Started to inspect drill pipe. Strung line on blocks.					
Weather		Temp	Spud	Daily Cost	Cum Cost
Rig Mgr.	Dennis Ross	Phone	Drlg Spvr.	Stew Ward	Phone 210-1894

PARAMOUNT RESOURCES LTD.

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15					Date	98/02/10	Day	PS3
Depth		Progress	AFE		13577 Operation Rigging up			
Elevations	Grd -		KB		Formation			
Drilling Fluid Type								
Wgt		Visc		W.L.		PH		FC
Temp		PV	YP	600	300	Oil	Solids - %	
Tank Vol		Hole Vol		Total Vol		Gradient		Circ. Time

MUD ADDITIVES

Gel		Lime		SAPP				
Caustic		Polymer		Lignite				
Benex		Sawdust		Gypsum				
Soda ash		Kwikseal		Barite				
Mud cost - Daily			Cum	Water cost - Daily			Cum	

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water			
Desilter					Oil			
Centrifuge					Losses			
Shaker		Mesh			Dumped			

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m	
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque		

PUMP DATA

Pump No.	Liners	SPM	Pressure	m3/min	DP Vel.	DC Vel.	Noz. Vel.	RSPP	SPM

SURVEYS

TIME BREAKDOWN

Drilling		NU BOP's		Rig up		Log		Abandon	
Tripping		P. test		Run Csg		Core		Tear Out	
Reaming		Slip & cut		Circulate		DST			
Survey		CTB		Cement		Lost. Circ			
Rig Serv.		Repair		WOC		Fish		TOTAL	

REMARKS

Rigged up Precision 622E. Transferred air drilling equipment and diverter from Nabors 16.	
Started boiler and generators. Put up prefabs.	

Weather	Temp	Spud	Daily Cost	Cum Cost
Rig Mgr. Dennis Ross	Phone	Drig Spvr. Stew Ward	Phone	210-1894

DAILY DRILLING REPORT

Well Name Paramount Berkley Arrowhead O-15						Date 98/02/08		Day		PS1	
Depth		Progress		AFE		13577		Operation Move Rig			
Elevations	Grd -			KB			Formation				
Drilling Fluid Type											
Wgt		Visc			W.L.		PH		FC		
Temp		PV	YP	600		300		Oil	Solids - %		
Tank Vol		Hole Vol			Total Vol		Gradient		Circ. Time		

MUD ADDITIVES

Gel		Lime		SAPP					
Caustic		Polymer		Lignite					
Benex		Sawdust		Gypsum					
Soda ash		Kwikseal		Barite					
Mud cost - Daily		Cum		Water cost - Daily				Cum	

SOLIDS CONTROL

Item	Make	UF	OF	L/min	Fluid Volumes		Drilling Assembly	
Desander					Water			
Desilter					Oil			
Centrifuge					Losses			
Shaker		Mesh			Dumped			

BIT DATA

No	Size	Type	Serial #	Jets	In	Out	m
Hours	m/Hr	Cum Hrs	Condition	Weight	RPM	Torque	

PUMP DATA

[illegible]

SURVEYS

[illegible]

TIME BREAKDOWN

Drilling	NU BOP's	Rig up	Log	Abandon
Tripping	P. test	Run Csg	Core	Tear Out
Reaming	Slip & cut	Circulate	DST	
Survey	CTB	Cement	Lost. Circ	
Rig Serv.	Repair	WOC	Fish	TOTAL

REMARKS

[illegible]

COMPLETION

FOR

PARAMOUNT RESOURCES LIMITED

PARAMOUNT BERKLEY ARROWHEAD 0-15

FROM SURFACE LOCATION:

LAT 60°24' LONG 123°02'

WELL FILE: 9177 C

99-03-25

UNITED GEOCOM DRILLING SERVICES
9204 - 37th AVENUE
EDMONTON, AB, CANADA T6E 5L4
PHONE: (780) 462-6300
FAX: (780) 466-6002

UNITED GEOCOM DRILLING SERVICES
2140 530 - 8 TH AVENUE, S.W.
CALGARY, AB, CANADA T2P 3S8
PHONE: (403) 218-2400
FAX: (403) 218-2401

UN. ED GEOCOM DRILLING SERVICE

Client : PARAMOUNT RESOURCES LTD.
Well Name : PARAMOUNT BERKLEY ARROWHEAD 0-15
Location : LAT 60 24' LONG 123 02'

Page : 3 of 4
Date : 99/03/25
File : 9177C

Vertical Section Calculated Along AZ 100.67°

MD m	INC deg	DIR deg	TVD m	LAT m	DEP m	VS m	D'LEG °/30	BUILD °/30	TURN °/30
2235.45	2.60	219.40	2233.31	4.76	14.45	13.32	0.39	0.31	-5.5
2245.14	2.60	220.60	2242.99	4.42	14.16	13.10	0.17	0.00	3.7
2254.84	2.30	238.30	2252.68	4.15	13.86	12.85	2.50	-0.93	54.7
2264.67	2.80	254.80	2262.50	3.98	13.46	12.49	2.70	1.53	50.4
2274.30	4.30	262.90	2272.11	3.88	12.87	11.93	4.92	4.67	25.2
2284.01	5.30	260.80	2281.79	3.76	12.07	11.16	3.14	3.09	-6.5
2293.83	5.70	257.60	2291.56	3.58	11.14	10.29	1.54	1.22	-9.8
2303.52	6.20	255.40	2301.20	3.35	10.17	9.37	1.70	1.55	-6.8
2312.93	6.40	258.20	2310.55	3.11	9.16	8.43	1.17	0.64	8.9
2324.75	5.50	254.20	2322.31	2.82	7.97	7.31	2.51	-2.28	-10.2
2332.57	5.00	251.00	2330.10	2.61	7.29	6.68	2.22	-1.92	-12.3
2341.88	5.30	250.00	2339.37	2.33	6.50	5.96	1.01	0.97	-3.2
2351.56	5.60	249.90	2349.00	2.02	5.64	5.17	0.93	0.93	-0.3
2361.23	5.40	258.40	2358.63	1.76	4.75	4.34	2.60	-0.62	26.4
2370.91	4.50	262.40	2368.27	1.62	3.93	3.56	2.99	-2.79	12.4
2380.60	3.50	260.20	2377.94	1.52	3.26	2.92	3.13	-3.10	-6.8
2390.19	3.00	256.00	2387.51	1.41	2.73	2.42	1.73	-1.56	-13.1
2399.90	2.20	257.00	2397.22	1.31	2.30	2.02	2.48	-2.47	3.1
2409.26	1.10	260.10	2406.57	1.25	2.03	1.77	3.54	-3.53	9.9
2418.99	0.50	289.70	2416.30	1.25	1.90	1.64	2.19	-1.85	91.3
2428.81	1.00	306.70	2426.12	1.31	1.79	1.52	1.66	1.53	51.9
2438.08	1.30	319.10	2435.39	1.44	1.66	1.36	1.26	0.97	40.1
2447.41	1.30	346.00	2444.72	1.63	1.56	1.24	1.94	0.00	86.5
2457.05	1.30	54.30	2454.35	1.80	1.63	1.27	4.54	0.00	99.0
2466.41	1.80	74.30	2463.71	1.90	1.85	1.47	2.34	1.60	64.1
2476.23	1.70	83.70	2473.52	1.95	2.15	1.75	0.93	-0.31	28.7
2485.95	1.90	95.70	2483.24	1.95	2.45	2.05	1.31	0.62	37.0
2495.23	2.70	110.90	2492.51	1.86	2.81	2.42	3.23	2.59	49.1
2504.95	3.70	127.10	2502.22	1.59	3.27	2.92	4.13	3.09	50.0
2514.77	4.20	128.50	2512.01	1.18	3.81	3.52	1.55	1.53	4.3
2524.45	4.10	117.00	2521.67	0.80	4.39	4.17	2.59	-0.31	-35.6
2533.57	3.80	103.10	2530.77	0.58	4.98	4.78	3.29	-0.99	-45.7
2543.27	3.70	85.70	2540.45	0.53	5.60	5.41	3.52	-0.31	-53.8
2552.98	3.50	70.80	2550.14	0.65	6.20	5.97	2.95	-0.62	-46.0
2562.24	3.00	62.30	2559.38	0.86	6.68	6.40	2.25	-1.62	-27.5

UN. ED GEOCOM DRILLING SERVICE

Client : PARAMOUNT RESOURCES LTD.
 Well Name : PARAMOUNT BERKLEY ARROWHEAD 0-15
 Location : LAT 60 24' LONG 123 02'

Page : 1 of 4
 Date : 99/03/25
 File : 9177C

Vertical Section Calculated Along AZ 100.67°

MD	INC	DIR	TVD	LAT	DEP	VS	D'LEG	BUILD	TURN
m	deg	deg	m	m	m	m	°/30	°/30	°/30
TIE-ON									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.0
550.00	0.32	78.80	550.00	0.03	0.14	0.13	0.19	0.19	47.3
660.32	0.35	91.07	660.32	0.08	0.78	0.75	0.02	0.01	3.3
774.00	0.46	104.70	774.00	-0.04	1.56	1.55	0.04	0.03	3.6
886.00	0.81	55.62	885.99	0.29	2.65	2.55	0.17	0.09	-13.1
1001.00	2.77	68.29	1000.93	1.78	5.91	5.47	0.52	0.51	3.3
1113.00	4.10	61.14	1112.72	4.71	11.93	10.85	0.37	0.36	-1.9
INTERMEDIATE CASING @ 1186.60m MD									
1186.60	4.18	59.54	1186.13	7.34	16.54	14.90	0.06	0.03	-0.7
1202.36	4.20	59.20	1201.85	7.93	17.53	15.76	0.07	0.04	-0.6
1337.65	2.60	316.80	1336.99	12.71	19.69	17.00	1.20	-0.35	-22.7
1472.58	1.90	317.10	1471.81	16.58	16.07	12.73	0.16	-0.16	0.1
1616.57	2.90	23.70	1615.70	21.66	15.91	11.63	0.58	0.21	13.9
1749.90	3.50	67.00	1673.95	23.71	18.14	13.44	1.25	0.31	22.3
1684.59	3.90	72.60	1683.62	23.92	18.73	13.98	1.67	1.24	17.3
1694.12	4.30	77.20	1693.12	24.10	19.39	14.59	1.63	1.26	14.5
1703.85	4.60	83.70	1702.82	24.22	20.13	15.30	1.81	0.92	20.0
1713.57	4.80	88.10	1712.51	24.28	20.93	16.07	1.27	0.62	13.6
1723.24	4.90	91.70	1722.15	24.28	21.74	16.87	0.99	0.31	11.2
1732.89	4.60	100.10	1731.76	24.20	22.54	17.67	2.35	-0.93	26.1
1742.71	4.50	109.80	1741.55	24.00	23.29	18.44	2.37	-0.31	29.6
1752.23	4.60	116.00	1751.04	23.70	23.98	19.18	1.58	0.32	19.5
1761.91	4.40	121.20	1760.69	23.34	24.65	19.90	1.41	-0.62	16.1
1771.60	4.20	120.30	1770.35	22.97	25.27	20.58	0.65	-0.62	-2.8
1781.42	3.90	118.20	1780.15	22.63	25.88	21.24	1.02	-0.92	-6.4
1791.13	3.90	118.30	1789.84	22.32	26.46	21.87	0.00	0.00	0.3
1800.95	3.70	132.40	1799.64	21.95	26.99	22.46	2.91	-0.61	43.1
1810.58	4.40	150.80	1809.24	21.42	27.40	22.96	4.57	2.18	57.3
1820.39	4.90	161.40	1819.02	20.69	27.71	23.40	3.03	1.53	32.4
1830.21	4.80	168.70	1828.81	19.89	27.93	23.76	1.91	-0.31	22.3
1839.94	4.40	165.40	1838.50	19.13	28.10	24.07	1.48	-1.23	-10.2
1849.75	4.10	169.40	1848.29	18.42	28.26	24.36	1.29	-0.92	12.2
1859.06	3.80	174.60	1857.57	17.79	28.35	24.57	1.50	-0.97	16.8
1868.43	3.50	183.90	1866.93	17.19	28.36	24.69	2.12	-0.96	29.8
1878.10	3.10	186.60	1876.58	16.64	28.31	24.74	1.33	-1.24	8.4
1887.10	2.80	193.70	1885.57	16.18	28.23	24.75	1.57	-1.00	23.7

UN. ED GEOCOM DRILLING SERVICE

Client : PARAMOUNT RESOURCES LTD.
Well Name : PARAMOUNT BERKLEY ARROWHEAD 0-15
Location : LAT 60 24' LONG 123 02'

Page : 2 of 4
Date : 99/03/25
File : 9177C

Vertical Section Calculated Along AZ 100.67°

MD m	INC deg	DIR deg	TVD m	LAT m	DEP m	VS m	D'LEG °/30	BUILD °/30	TURN °/30
1897.19	3.10	194.90	1895.65	15.68	28.10	24.71	0.91	0.89	3.6
1907.01	3.60	202.40	1905.45	15.14	27.92	24.63	2.03	1.53	22.9
1916.49	3.90	199.10	1914.91	14.56	27.70	24.52	1.17	0.95	-10.4
1926.14	2.90	192.40	1924.54	14.01	27.54	24.47	3.34	-3.11	-20.8
1935.95	1.80	176.90	1934.34	13.61	27.49	24.50	3.86	-3.36	-47.4
1945.60	1.00	162.10	1943.99	13.38	27.53	24.57	2.71	-2.49	-46.0
1955.12	0.80	157.20	1953.51	13.24	27.58	24.65	0.67	-0.63	-15.4
1964.83	1.30	186.00	1963.22	13.07	27.59	24.70	2.20	1.54	89.0
1974.51	2.20	196.30	1972.89	12.78	27.53	24.69	2.94	2.79	31.9
1984.32	3.10	195.60	1982.69	12.34	27.41	24.65	2.75	2.75	-2.1
1993.66	3.60	207.70	1992.02	11.84	27.20	24.54	2.77	1.61	38.9
2003.36	3.20	225.30	2001.70	11.38	26.87	24.29	3.44	-1.24	54.4
2013.17	3.40	251.90	2011.49	11.10	26.40	23.88	4.68	0.61	81.3
2022.87	3.20	263.30	2021.18	10.98	25.85	23.37	2.12	-0.62	35.3
2032.11	3.10	262.40	2030.40	10.91	25.35	22.89	0.36	-0.32	-2.9
2041.92	3.50	247.20	2040.20	10.76	24.81	22.39	2.93	1.22	-46.5
2051.67	4.20	248.10	2049.93	10.51	24.21	21.84	2.16	2.15	2.8
2061.47	5.00	243.20	2059.69	10.19	23.49	21.20	2.73	2.45	-15.0
2071.15	5.00	237.50	2069.34	9.77	22.76	20.56	1.54	0.00	-17.7
2080.85	4.50	231.70	2079.00	9.31	22.10	20.00	2.14	-1.55	-17.9
2090.66	3.80	216.40	2088.79	8.81	21.61	19.60	3.99	-2.14	-46.8
2100.00	3.70	220.50	2098.11	8.33	21.23	19.32	0.92	-0.32	13.2
2109.54	3.70	233.40	2107.63	7.91	20.78	18.96	2.61	0.00	40.6
2119.25	3.90	243.10	2117.32	7.58	20.24	18.48	2.08	0.62	30.0
2128.95	4.30	244.00	2126.99	7.27	19.61	17.93	1.25	1.24	2.8
2138.76	5.00	245.50	2136.77	6.93	18.90	17.29	2.17	2.14	4.6
2148.43	4.90	245.90	2146.40	6.59	18.13	16.60	0.33	-0.31	1.2
2158.15	4.50	254.20	2156.09	6.31	17.39	15.92	2.43	-1.23	25.6
2167.86	3.50	259.40	2165.78	6.15	16.73	15.30	3.28	-3.09	16.1
2177.56	2.70	265.00	2175.46	6.08	16.21	14.81	2.64	-2.47	17.3
2187.25	2.10	249.60	2185.15	6.00	15.82	14.43	2.71	-1.86	-47.7
2196.57	1.80	239.60	2194.46	5.86	15.53	14.18	1.46	-0.97	-32.2
2206.30	2.10	229.70	2204.18	5.67	15.26	13.95	1.39	0.92	-30.5
2216.00	2.40	220.20	2213.88	5.40	15.00	13.74	1.48	0.93	-29.4
2225.70	2.50	221.20	2223.57	5.09	14.73	13.53	0.34	0.31	3.1

UN. ED GEOCOM DRILLING SERVICE

Client : PARAMOUNT RESOURCES LTD.
 Well Name : PARAMOUNT BERKLEY ARROWHEAD 0-15
 Location : LAT 60 24' LONG 123 02'

Page : 4 of 4
 Date : 99/03/25
 File : 9177C

Vertical Section Calculated Along AZ 100.67°

MD m	INC deg	DIR deg	TVD m	LAT m	DEP m	VS m	D'LEG °/30	BUILD °/30	TURN °/30
2571.70	2.40	57.70	2568.83	1.08	7.06	6.74	2.02	-1.90	-14.6
2581.52	1.70	69.30	2578.65	1.24	7.37	7.02	2.48	-2.14	35.4
2590.64	0.60	136.30	2587.76	1.25	7.53	7.17	5.15	-3.62	99.0
2600.36	1.10	201.10	2597.48	1.13	7.53	7.20	3.10	1.54	99.0
2609.66	1.50	201.40	2606.78	0.93	7.46	7.16	1.29	1.29	1.0
2619.14	1.20	174.40	2616.26	0.72	7.42	7.16	2.20	-0.95	-85.4
2628.96	0.80	133.60	2626.08	0.57	7.48	7.25	2.42	-1.22	-99.0
2638.67	0.70	92.60	2635.79	0.52	7.59	7.36	1.65	-0.31	-99.0
2648.36	0.40	32.10	2645.48	0.55	7.67	7.43	1.89	-0.93	-99.0
2657.82	0.30	3.80	2654.94	0.60	7.69	7.44	0.62	-0.32	-89.7
2667.53	0.20	246.10	2664.65	0.62	7.67	7.43	1.33	-0.31	-99.0
2676.89	0.20	205.10	2674.00	0.60	7.65	7.41	0.45	0.00	-99.0
2686.57	0.30	173.90	2683.69	0.56	7.65	7.41	0.51	0.31	-96.7
2696.39	0.60	158.80	2693.50	0.48	7.67	7.45	0.98	0.92	-46.1
2706.06	0.80	136.00	2703.18	0.39	7.73	7.53	1.05	0.62	-70.7
2715.64	1.00	146.00	2712.75	0.27	7.83	7.64	0.79	0.63	31.3
2725.46	1.20	156.50	2722.57	0.10	7.92	7.76	0.87	0.61	32.1
2734.75	1.30	166.10	2731.86	-0.09	7.98	7.86	0.75	0.32	31.0
2744.46	0.90	171.20	2741.57	-0.27	8.02	7.93	1.27	-1.24	15.8
2754.23	0.80	176.40	2751.34	-0.41	8.03	7.97	0.39	-0.31	16.0
2763.91	1.00	172.70	2761.01	-0.57	8.05	8.01	0.65	0.62	-11.5
2773.62	1.10	176.20	2770.72	-0.74	8.07	8.06	0.37	0.31	10.8
2783.33	1.60	166.30	2780.43	-0.97	8.10	8.14	1.70	1.54	-30.6
INTERMEDIATE CASING @ 2805.00m MD									
2805.00	1.60	166.30	2802.09	-1.56	8.25	8.39	0.00	0.00	0.0
2854.00	1.50	166.30	2851.07	-2.84	8.56	8.94	0.06	-0.06	0.0
2911.00	1.25	166.30	2908.06	-4.17	8.88	9.50	0.13	-0.13	0.0
2968.00	0.38	166.30	2965.05	-4.96	9.08	9.84	0.46	-0.46	0.0
3071.00	1.75	166.30	3068.03	-6.81	9.53	10.63	0.40	0.40	0.0
3090.00	2.00	166.30	3087.02	-7.42	9.68	10.88	0.40	0.39	0.0
3121.00	1.50	166.30	3118.01	-8.34	9.90	11.27	0.48	-0.48	0.0
3168.00	1.00	166.30	3165.00	-9.33	10.14	11.70	0.32	-0.32	0.0
3225.00	2.00	166.30	3221.98	-10.78	10.50	12.31	0.53	0.53	0.0
3300.00	3.75	166.30	3296.88	-14.44	11.39	13.86	0.70	0.70	0.0
EXTRAPOLATED TD @ 3301.00m MD									
3301.00	3.75	166.30	3297.88	-14.50	11.40	13.89	0.00	0.00	0.0

CLOSURE TO TD: 18.44m @ AZ 141.83°

UNITED GeoCom Drilling Services

COMPLETION REPORT

COMPANY: PARAMOUNT RESOURCES LIMITED
WELL: PARAMOUNT BERKLEY ARROWHEAD 0-15
LOCATION: LAT 60°24' LONG 123°02'

FILE: 9177 C
DATE: 99-03-25
TYPE:

TOTAL DEPTH CO-ORDINATES

<u>RECTANGULAR</u>		<u>POLAR</u>	<u>MAGNETIC DECLINATION</u>
LAT: -14.5 m	DEP: 11.4 m	18.44 m @ AZ: 141.83°	27.2° EAST

COMPLETED TVD: 3297.88 m

MEASURED DEPTH: 3301 m

PROPOSED WELL

SURFACE:	;	SEC
TARGET:	;	SEC

SURFACE TO TARGET

<u>RECTANGULAR</u>		<u>POLAR</u>
LAT:	DEP:	@ AZ:
TARGET TVD:		PROJECTED TD:

COMMENTS:

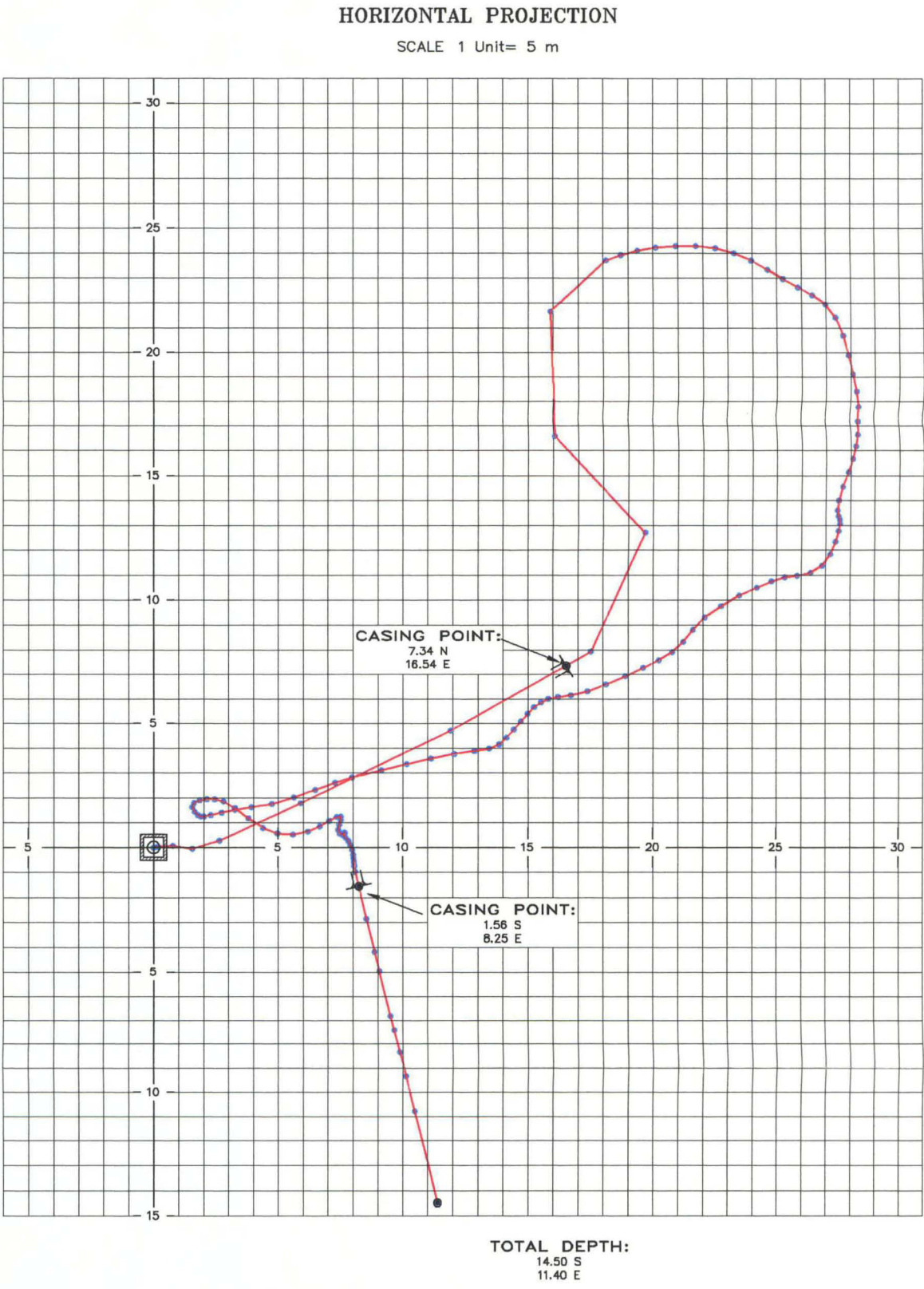
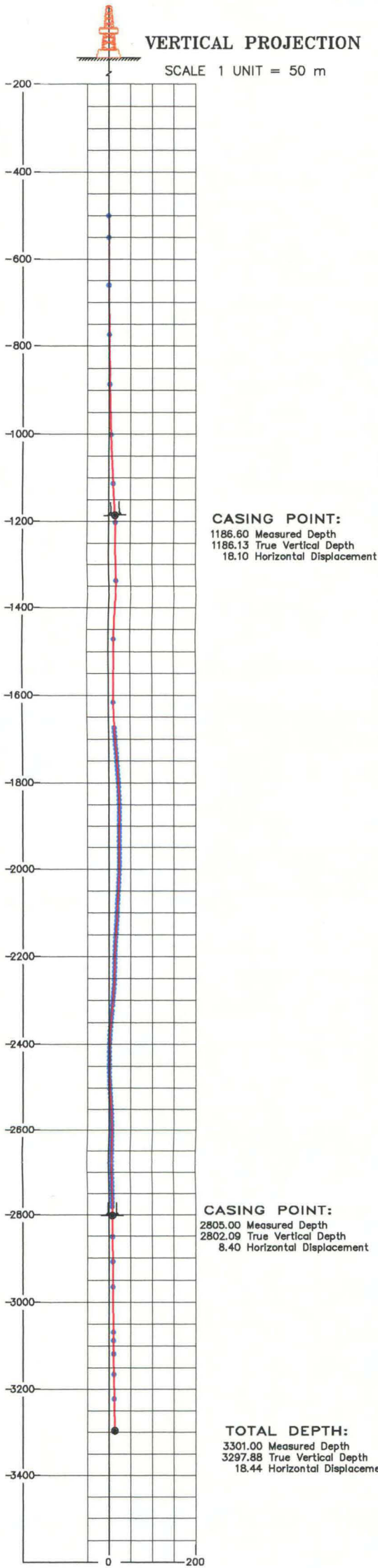
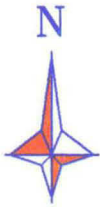
SEE COMPASS PROGRAM*

Completion Date: 99-03-25

NOTE DISTANCES & DEPTHS ARE IN METRES AND DECIMALS.
INCLINATIONS & DIRECTION ARE IN DECIMAL DEGREES
METHOD OF CALCULATION: *MINIMUM CURVATURE*
Dleg/Build: °/30m Intervals.
(-) VALUES INDICATE SOUTH FOR LATITUDE & WEST FOR DEPARTURE.
ALL DEPTHS BASED ON KB ELEVATION

PARAMOUNT BERKLEY ARROWHEAD 0-15

CLOSURE TO TD : 18.44m @ AZ 141.83°



COMPLETION

FOR

PARAMOUNT RESOURCES LIMITED

PARAMOUNT ET AL LIARD

FROM SURFACE LOCATION:

LAT 60-O5-27, LONG. 123-22-06

WELL FILE: 9185 C

99-03-29

UNITED GEOCOM DRILLING SERVICES
9204 - 37th AVENUE
EDMONTON, AB, CANADA T6E 5L4
PHONE: (780) 462-6300
FAX: (780) 466-6002

UNITED GEOCOM DRILLING SERVICES
2140 530 - 8 TH AVENUE, S.W.
CALGARY, AB, CANADA T2P 3S8
PHONE: (403) 218-2400
FAX: (403) 218-2401

UNITED GEOCOM DRILLING SERVICES

Client : PARAMOUNT RESOURCES LIMITED
Well Name : PARAMOUNT ET AL LIARD
Location : LAT 60-05-27, LONG. 123-22-06

Page : 1 of 2
Date : 1999-03-29
File : 9185C

Vertical Section Calculated Along AZ 0.00°

MD m	INC deg	DIR deg	TVD m	LAT m	DEP m	VS m	D'LEG °/30	BUILD °/30	TURN °/30
TIE-ON									
1494.00	0.80	131.05	1493.70	-10.13	2.77	-10.13	0.00	0.00	0.0
1513.00	0.86	126.15	1512.70	-10.30	2.99	-10.30	0.15	0.09	-7.7
1533.00	0.72	157.81	1532.70	-10.51	3.15	-10.51	0.68	-0.21	47.5
1552.00	1.12	186.79	1551.69	-10.80	3.18	-10.80	0.95	0.63	45.8
1571.00	1.03	205.38	1570.69	-11.14	3.08	-11.14	0.57	-0.14	29.4
1590.00	1.97	224.97	1589.68	-11.53	2.78	-11.53	1.67	1.48	30.9
1608.00	3.28	232.05	1607.67	-12.06	2.15	-12.06	2.25	2.18	11.8
1628.00	2.75	234.00	1627.64	-12.69	1.31	-12.69	0.81	-0.79	2.9
1647.00	2.34	238.91	1646.62	-13.16	0.61	-13.16	0.73	-0.65	7.8
1665.00	2.59	240.08	1664.60	-13.56	-0.05	-13.56	0.42	0.42	2.0
1684.00	2.21	253.51	1683.58	-13.87	-0.78	-13.87	1.07	-0.60	21.2
1702.00	2.05	262.91	1701.57	-14.01	-1.43	-14.01	0.64	-0.27	15.7
1722.00	2.02	260.05	1721.56	-14.12	-2.13	-14.12	0.16	-0.04	-4.3
1741.00	2.01	260.01	1740.55	-14.23	-2.79	-14.23	0.00	-0.02	-0.1
1760.00	1.62	277.77	1759.54	-14.25	-3.38	-14.25	1.07	-0.62	28.0
1779.00	1.29	301.07	1778.53	-14.11	-3.83	-14.11	1.06	-0.52	36.8
1798.00	1.01	301.07	1797.53	-13.91	-4.16	-13.91	0.44	-0.44	0.0
1818.00	1.10	281.19	1817.53	-13.78	-4.50	-13.78	0.56	0.14	-29.8
1837.00	0.96	264.76	1836.52	-13.76	-4.84	-13.76	0.51	-0.22	-25.9
1856.00	1.77	232.41	1855.52	-13.95	-5.23	-13.95	1.72	1.28	-51.1
1874.00	2.54	230.31	1873.50	-14.38	-5.76	-14.38	1.29	1.28	-3.5
1894.00	2.77	252.32	1893.48	-14.81	-6.56	-14.81	1.56	0.35	33.0
1913.00	2.71	256.73	1912.46	-15.05	-7.43	-15.05	0.35	-0.09	7.0
1932.00	1.40	277.41	1931.45	-15.12	-8.10	-15.12	2.34	-2.07	32.7
1951.00	0.72	357.56	1950.45	-14.98	-8.33	-14.98	2.31	-1.07	99.0
1970.00	1.98	50.37	1969.44	-14.65	-8.09	-14.65	2.60	1.99	83.4
1989.00	3.31	60.03	1988.42	-14.16	-7.36	-14.16	2.21	2.10	15.3
2008.00	5.30	67.39	2007.37	-13.55	-6.07	-13.55	3.25	3.14	11.6
2016.00	6.64	68.49	2015.32	-13.24	-5.30	-13.24	5.04	5.02	4.1
2019.82	8.30	74.80	2019.11	-13.09	-4.83	-13.09	14.52	13.04	49.6
2028.78	7.60	77.60	2027.98	-12.79	-3.63	-12.79	2.68	-2.34	9.4
2038.35	6.40	81.50	2037.48	-12.58	-2.48	-12.58	4.04	-3.76	12.2
2047.76	5.10	83.10	2046.84	-12.45	-1.55	-12.45	4.18	-4.14	5.1
2057.30	4.50	88.90	2056.35	-12.39	-0.75	-12.39	2.42	-1.89	18.2
2067.10	3.80	100.50	2066.13	-12.44	-0.05	-12.44	3.34	-2.14	35.5

UNITED GEOCOM DRILLING SERVICES

Client : PARAMOUNT RESOURCES LIMITED
Well Name : PARAMOUNT ET AL LIARD
Location : LAT 60-05-27, LONG. 123-22-06

Page : 2 of 2
Date : 1999-03-29
File : 9185C

Vertical Section Calculated Along AZ 0.00°

MD	INC	DIR	TVD	LAT	DEP	VS	D'LEG	BUILD	TURN
m	deg	deg	m	m	m	m	°/30	°/30	°/30
2076.74	3.00	95.00	2075.75	-12.52	0.52	-12.52	2.69	-2.49	-17.1
2110.00	1.80	95.00	2108.98	-12.64	1.90	-12.64	1.08	-1.08	0.0

Closure to TD: 12.78m @ AZ 171.45°

UNITED GeoCom Drilling Services

COMPLETION REPORT

COMPANY: PARAMOUNT RESOURCES LIMITED
WELL: PARAMOUNT ET AL LIARD
LOCATION: LAT 60-05-27, LONG. 123-22-06

FILE: 9185 C
DATE: 99-03-29
TYPE:

TOTAL DEPTH CO-ORDINATES

<u>RECTANGULAR</u>		<u>POLAR</u>	<u>MAGNETIC DECLINATION</u>
LAT: -12.64 m	DEP: 1.9 m	12.78 m @ AZ: 171.45°	

COMPLETED TVD: 2108.98 m

MEASURED DEPTH: 2110 m

PROPOSED WELL

SURFACE:	;	SEC
TARGET:	;	SEC

SURFACE TO TARGET

<u>RECTANGULAR</u>		<u>POLAR</u>
LAT:	DEP:	@ AZ:

TARGET TVD:

PROJECTED TD:

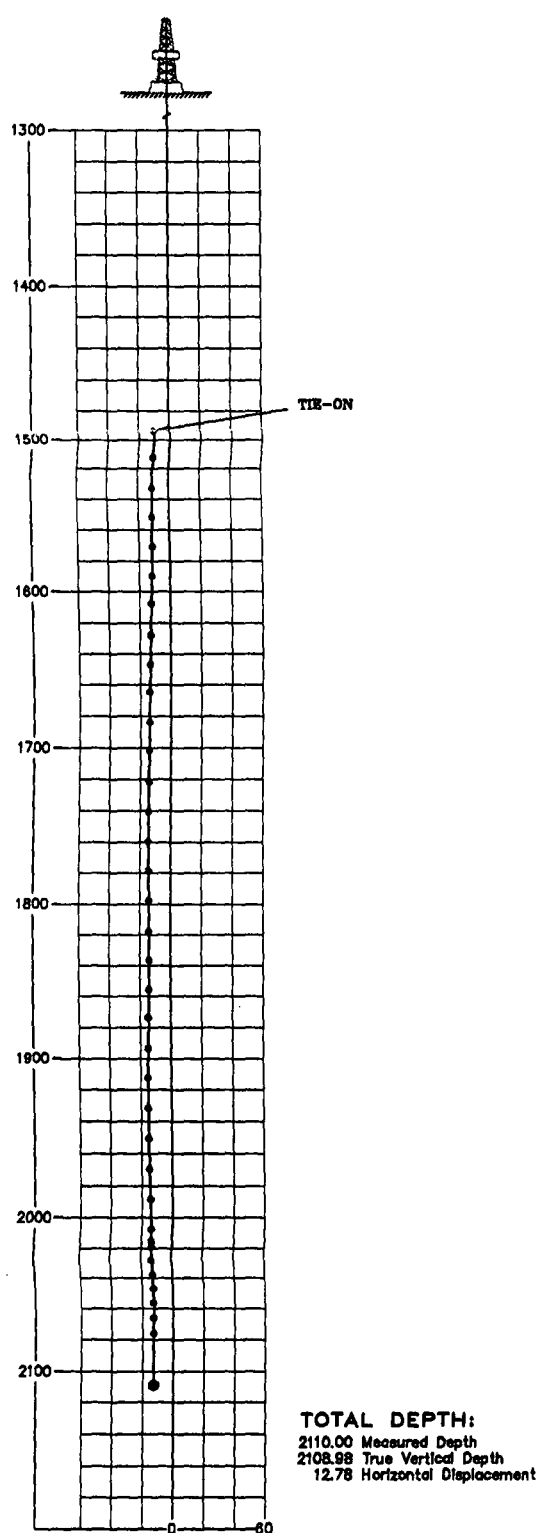
COMMENTS:

Completion Date: 99-03-29

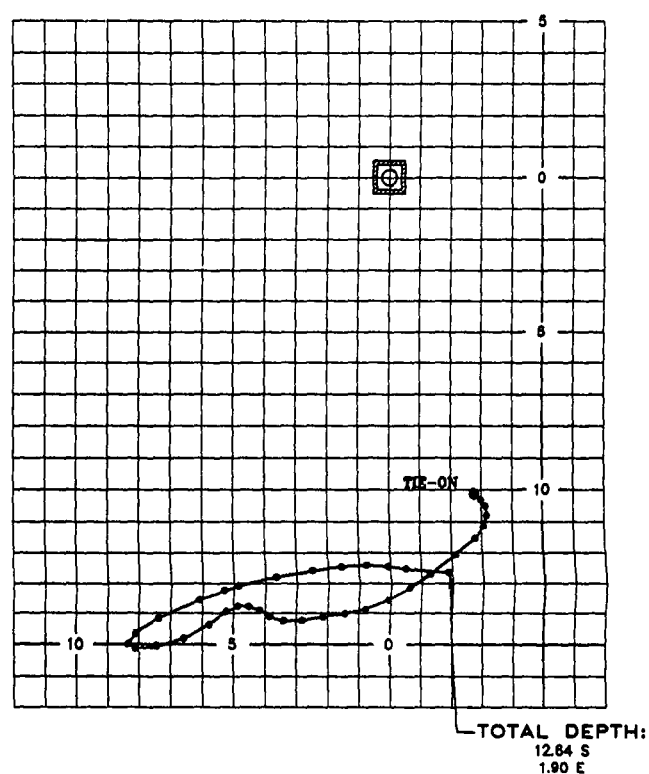
NOTES DISTANCES & DEPTHS ARE IN METRES AND DECIMALS.
INCLINATIONS & DIRECTION ARE IN DECIMAL DEGREES
METHOD OF CALCULATION: *MINIMUM CURVATURE*
Dleg/Build: °/30m Intervals.
(-) VALUES INDICATE SOUTH FOR LATITUDE & WEST FOR DEPARTURE.
ALL DEPTHS BASED ON KB ELEVATION

N

SCALE 1 Unit = 20 m



SCALE 1 Unit= 1 m



4. GEOLOGY

Drill Cuttings

5 m interval surface to total depth

Sample Distribution:

One set bagged samples and Two sets of glass vials sent to G.S.C., Calgary Attention: Alan Scott

One Set vials to Paramount

Cores

N/A

Lithology:

See following pages for descriptions

Stratigraphic Column

Attached in this section

Biostratigraphic Column

N/A

GEOLOGICAL MARKERS

GEOLOGICAL REPORT

on

PARA ET AL ARROWHEAD O-15

60° 30' 123° 00'

in the

NORTH WEST TERRITORIES

for

PARAMOUNT RESOURCES LTD.

Prepared For: PAUL COLLENS P.GEOL
Prepared by: COLIN BREDIN P.GEOL
C.L. Bredin Holdings Ltd.



COLIN BREDIN P.GEOL

TABLE OF CONTENTS

	Page
WELL DATA SUMMARY	1
CASING SUMMARY	2
LOGGING REPORT	3
FORMATION TOPS	5
FORMATION EVALUATIONS	6
SAMPLE DESCRIPTIONS	8

WELL DATA SUMMARY

WELL NAME: PARA ET AL ARROWHEAD O-15

OPERATOR: PARAMOUNT RESOURCES LTD.

LOCATION: 60 30' 123 00'

NS CO-ORDINATES: Lat. 60 24' 53.694"

EW CO-ORDINATES: Long. 123 02' 31.174"

PROVINCE: N.W.T.

AREA: Ft. Liard

DRILLING CONTRACTOR: PRECISION DRILLING INC. Rig #: 622E

WELL LICENCE NUMBER: EL369

ELEVATIONS - GROUND LEVEL: 380.50m

- KELLY BUSHING: 387.00m

SPUD DATE: FEB 14, 1998 at 2220 hours

T.D. DATE: MAR 19, 1998 at 1600 hours

SAMPLE INTERVAL: 20.00m - 1557.00m

ELECTRICAL LOGS RUN:

Rep#	Log#	Description	From(m)	To(m)
1	1	SPeD/CN/GR/DAC STI/SP	497.40	20.00
1	2	BHC Sonic	495.90	20.00
2	1	AITH/LDT/CN/DAC/GR/ML/BHC Sonic	1557.00	500.00

DRILL STEM TESTS:

DST#	From(m)	To(m)
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CORES CUT:

Cores#	From(m)	To(m)	Formation
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WELL STATUS: Operations Suspended

CASING SUMMARY

String#	Name	Casing Size (mm)	Hole Size (mm)	Joints (#)	Weight (kg/m)	Landed At (m)	Cement (tonnes)	Cement Type
1	Algoma K55	339.00	445.00	36	81.10	500.00	58.00	Expandomix with 0-1-0 tail
2	Algoma L80	244.50	311.00	57	64.74	1186.60	50.00	21 lead LW, 29 tail 0-1-0 'G'

LOGGING REPORT

Date: FEB 19, 1998
Logging Company: Computalog
Logging Engineer: J. Wasylyshyn
Truck Number: 352
Hole Size: 445.00mm
Depth (Driller's): 500.00m
Depth (Strap): 500.00m
Depth (Logger's): 499.50m
Last Casing: Depth : 20.00m **Size:** N/Amm **Weight:** N/Akg/m

MUD DETAILS

Mud Type: Gel
Mud Type: 1145.00kg/m**3
Viscosity: 93.00sec/l
pH: 9.50
Fluid Loss: 9.00cc/30min
Salinity: N/Appm

OPERATIONS SUMMARY

Hole conditions prior to logging: Good
Circulation time after T.D.: 4 hrs
Number of Dummy Trips: 1
Description of Dummy Trips: N/A
Number of Runs in Hole: Total: 2 **Succeeded:** 2 **Failed :** 0

LOGGING SEQUENCE

Logs	Time (Hrs)	Interval From (m)	Interval To (m)	Remarks
SPeD/CN/GR/DAC STI/SP	1.50	497.40	20.00	Ran in combination.
BHC Sonic	1.00	495.90	20.00	N/A

Total Hours Logging: 2.50

FURTHER REMARKS

Surface Hole

PARAMOUNT RESOURCES LTD.

Date: MAR 10, 1998**Logging Company:** Schlumberger**Logging Engineer:** Stewart Dunn**Truck Number:** 3021**Hole Size:** 311.00mm**Depth (Driller's):** 1557.10m**Depth (Strap):** 1559.00m**Depth (Logger's):** 1560.00m**Last Casing: Depth :** 500.00m **Size:** 339.00mm **Weight:** 81.10kg/m

MUD DETAILS**Mud Type:** Cutter 'D'**Mud Type:** 1100.00kg/m**3**Viscosity:** 110.00sec/l**pH:** N/A**Fluid Loss:** N/Acc/30min**Salinity:** N/Appm

OPERATIONS SUMMARY**Hole conditions prior to logging:** Good**Circulation time after T.D.:** 1.5 hours**Number of Dummy Trips:** 0**Description of Dummy Trips:** N/A**Number of Runs in Hole: Total:** 1 **Succeeded:** 1 **Failed :** 0

LOGGING SEQUENCE

Logs	Time (Hrs)	Interval From (m)	Interval To (m)	Remarks
AITH/LDT/CN/DAC/GR/ML/B HC Sonic	4.00	1557.00	500.00	Pulled tight at 1250m, pulled GRN into casing to tie in.

Total Hours Logging: 6.50

FURTHER REMARKS

Stacked tools. No dipole sonic available on short notice.

Array Induction Tool -H

FORMATION TOPS**Kelly Bushing : 387.00m**

Formation	Prognosis (m)	Sample Top (m)	Sample TVD (m)	Log Top (m)	Log TVD (m)	Subsea (m)
FORT ST. JOHN	N/A	196.00	196.00	201.00	201.00	186.00
SCATTER	240.00	276.00	276.00	276.50	276.50	110.50
GARBUTT	N/A	360.00	360.00	359.00	359.00	28.00
MATTSON	456.00	451.00	451.00	451.00	451.00	-64.00
FLETT	545.00	464.00	464.00	465.00	465.00	-78.00
PEKISKO	N/A	951.00	951.00	953.00	953.00	-566.00
BANFF	976.00	979.00	979.00	986.00	986.00	-599.00
EXSHAW	1578.00	1555.00	1547.50	1555.00	1547.55	-1160.55

FORMATION EVALUATIONS

Formation:	FORT ST. JOHN		
Age:	CRETACEOUS		
Member:	N/A		
Sample Top:	196.00m	Sample TVD:	196.00m
Log Top:	201.00m	Log TVD:	201.00m
Thickness:	N/A	Subsea:	186.00m

Evaluation: SHALE medium gray, medium gray silty, fissile, predominantly blocky, trace micromicaceous, trace of SANDSTONE lenses

Conclusion: No reservoir potential.

Formation:	SCATTER		
Age:	CRETACEOUS		
Member:	N/A		
Sample Top:	276.00m	Sample TVD:	276.00m
Log Top:	276.50m	Log TVD:	276.50m
Thickness:	N/A	Subsea:	110.50m

Evaluation: Interbedded SHALE medium gray, medium gray silty, fissile, blocky and SANDSTONE light to medium gray, gray brown, predominantly quartz, silty to very fine grained, subround, medium to well sorted, speckled glauconitic, firm to friable, clay cement to matrix, patchy oil stain, faint dry fluorescence, light amber to dark straw cut, patchy intergranular porosity 2-5%, petroliferous odor in part,

Conclusion: Limited reservoir potential, low permeability.

Formation:	GAR BUTT		
Age:	CRETACEOUS		
Member:	N/A		
Sample Top:	360.00m	Sample TVD:	360.00m
Log Top:	359.00m	Log TVD:	359.00m
Thickness:	N/A	Subsea:	28.00m

Evaluation: SHALE dark gray, dark gray to black, dark gray brown, minor medium gray silty, fissile, blocky, minor micromicaceous, trace of disseminated and nodular pyrite

Conclusion: No reservoir potential

Formation:	MATTSON		
Age:	MISSISSIPPIAN		
Member:	N/A		
Sample Top:	451.00m	Sample TVD:	451.00m
Log Top:	451.00m	Log TVD:	451.00m
Thickness:	N/A	Subsea:	-64.00m

Evaluation: Predominantly SHALE in samples, trace of SILTSTONE light to medium gray quartzose, slightly sandy, slightly argillaceous, calcareous cement, no stain, no fluorescence, no visible porosity, trace of CHERT varicolored, angular to well round, pebbles in part

Conclusion: No apparent reservoir potential. Could be Mattson, Fantasque or just unconformity rubble.

PARAMOUNT RESOURCES LTD.

Formation:	FLETT		
Age:	MISSISSIPPIAN		
Member:	N/A		
Sample Top:	464.00m	Sample TVD:	464.00m
Log Top:	465.00m	Log TVD:	465.00m
Thickness:	N/A	Subsea:	-78.00m

Evaluation: Predominantly LIMESTONE light brown, medium gray brown, gray argillaceous, cryptocrystalline to microcrystalline, mudstone, tight, cherty in part with common SHALE interbeds. 535 to 555 samples contain significant porous dolomite with dead oil stain.

Conclusion: Reservoir potential from 535 to 555m, drilled with air, WTS about .8 cu m / hr, 1600 ppm.

Formation:	PEKISKO		
Age:	MISSISSIPPIAN		
Member:	N/A		
Sample Top:	951.00m	Sample TVD:	951.00m
Log Top:	953.00m	Log TVD:	953.00m
Thickness:	N/A	Subsea:	-566.00m

Evaluation: Interbedded SHALE and LIMESTONE light brown white, slightly argillaceous, cryptocrystalline, mudstone, tight, trace of crinoid fragments

Conclusion: No reservoir potential

Formation:	BANFF		
Age:	MISSISSIPPIAN		
Member:	N/A		
Sample Top:	979.00m	Sample TVD:	979.00m
Log Top:	986.00m	Log TVD:	986.00m
Thickness:	N/A	Subsea:	-599.00m

Evaluation: Upper part is SHALE with occasional tight LIMESTONE beds, Lower part is predominantly medium to dark gray SHALE, slightly to very calcareous. Crossed a Fault zone at 1488 - 1494m, below which the SHALE was noticeably darker and less calcareous.

Conclusion: No reservoir potential.

Formation:	EXSHAW		
Age:	MISSISSIPPIAN		
Member:	N/A		
Sample Top:	1555.00m	Sample TVD:	1547.50m
Log Top:	1555.00m	Log TVD:	1547.55m
Thickness:	N/A	Subsea:	-1160.55m

Evaluation: SH dk brn, m - dk gy brn, sks ip, probable frac @ 1554.8m MD, small gas effect.

Conclusion: No reservoir potential

SAMPLE DESCRIPTIONS

Well Name:

PARA ET AL ARROWHEAD O-15

Location:

60 30' 123 00'

**10.00 to 20.00m
Interval: 10.00m**

NA: 0%, Conductor pipe, no samples

**20.00 to 25.00m
Interval: 5.00m**

NS: 0%, Air hammer, soap with mist, hole slugging, no retrievable returns

**25.00 to 55.00m
Interval: 30.00m**

TILL: 100%, Clay / soap sludge, sandy in part, occasional boulders

**55.00 to 65.00m
Interval: 10.00m**

TILL: 100%, Clay / soap sludge, sandy in part, minor pebbles

**65.00 to 140.00m
Interval: 75.00m**

TILL: 100%, Clay / soap sludge, sandy in part

**140.00 to 145.00m
Interval: 5.00m**

TILL: 100%, as above, 8-10 second gas flare ahead of air after survey at 143m and on all subsequent underbalanced surveys. Probable coal stringer.

**145.00 to 190.00m
Interval: 45.00m**

TILL: 100%, Clay / soap sludge, sandy in part

**190.00 to 195.00m
Interval: 5.00m**

SHALE: 100%, medium gray, fissile, predominantly blocky, silty in part, trace sandy

196.00m

FORT ST. JOHN

**195.00 to 210.00m
Interval: 15.00m**

SHALE: 100%, medium gray, fissile, blocky, silty, trace of sandy laminae, trace glauconitic

**210.00 to 230.00m
Interval: 20.00m**

SHALE: 100%, medium gray, medium to dark gray, fissile, predominantly blocky, silty in part, trace micromicaceous, trace of sandy laminae, trace of LIMESTONE cavings

**230.00 to 235.00m
Interval: 5.00m**

SHALE: 100%, as above, trace of SANDSTONE light gray, salt and pepper, very fine to fine grained, subangular to subround, medium sorted, glauconitic, argillaceous, no visible porosity

**235.00 to 260.00m
Interval: 25.00m**

SHALE: 100%, medium gray, medium gray silty, fissile, predominantly blocky, micromicaceous in part, trace of sandy lenses

**260.00 to 270.00m
Interval: 10.00m**

NS: 0%, No sample

276.00m

SCATTER

**270.00 to 280.00m
Interval: 10.00m**

SHALE: 100%, as above, very poor returns

**280.00 to 285.00m
Interval: 5.00m**

SHALE: 40%, as above

SANDSTONE: 20%, light to medium gray, salt and pepper, predominantly very fine grained, subangular to subround, argillaceous, speckled glauconitic, no stain, no fluorescence, no visible porosity

CAVINGS: 40%, Clay and common quartzite, feldspar, igneous pebbles, angular to rounded

285.00 to 290.00m
Interval: 5.00m

SHALE: 60%, as above
SANDSTONE: 10%, as above
CAVINGS: 30%, as above

290.00 to 295.00m
Interval: 5.00m

SHALE: 50%, as above
SANDSTONE: 30%, medium gray, medium brown, silty to very fine grained, subangular to subround, medium sorted, calcareous to dolomitic cement to matrix, argillaceous in part, no stain, no fluorescence, no visible porosity
SILTSTONE: 20%, medium gray, medium brown, dolomitic, tight, minor cavings

295.00 to 300.00m
Interval: 5.00m

SHALE: 40%, as above
SANDSTONE: 60%, light to medium gray, medium brown, salt and pepper, silty to very fine grained, subangular to subround, medium to well sorted, slightly argillaceous, predominantly firm, minor friable, calcareous cement to matrix, speckled glauconitic, no stain, no fluorescence, minor patchy intergranular porosity 2-3%

300.00 to 305.00m
Interval: 5.00m

SHALE: 50%, medium gray, fissile, blocky, silty to sandy in part
SANDSTONE: 50%, light to medium gray, medium brown, silty to very fine grained, predominantly subround, well sorted, argillaceous in part, slightly calcareous, speckled glauconitic, predominantly clay matrix and cement, no stain, no fluorescence, no visible porosity

305.00 to 310.00m
Interval: 5.00m

SHALE: 40%, as above
SANDSTONE: 60%, light gray, medium gray, medium brown, silty to very fine grained, predominantly subround, well sorted, speckled glauconitic, very calcareous in part, predominantly clay cement to matrix, no stain, very weak blooming wet cut fluorescence, very patchy intergranular porosity 2-3%

310.00 to 315.00m
Interval: 5.00m

SHALE: 60%, medium gray as above
SANDSTONE: 20%, as above
SILTSTONE: 20%, light gray, argillaceous, calcareous cement, tight

315.00 to 320.00m
Interval: 5.00m

SHALE: 40%, medium gray, medium gray silty, fissile, blocky, sandy in part
SANDSTONE: 60%, light to medium gray, gray brown, predominantly quartz, silty to very fine grained, subround, well sorted, speckled glauconitic, clay matrix, firm to friable, spotty light oil stain, faint dry fluorescence, slow streaming wet cut fluorescence, light amber cut, patchy intergranular porosity 2-3%

320.00 to 325.00m
Interval: 5.00m

SHALE: 40%, as above

	SANDSTONE: 60%, light to medium gray, gray brown, predominantly quartzose, silty to very fine grained, subround, medium to well sorted, speckled glauconitic, clay matrix, firm to friable, patchy oil stain, faint dry fluorescence, strong streaming wet cut fluorescence, dark straw cut, patchy intergranular porosity 3-5%, petroliferous odor
325.00 to 330.00m Interval: 5.00m	SHALE: 60%, medium gray, medium gray brown, fissile, blocky, sandy in part SANDSTONE: 40%, as above, patchy intergranular porosity 2-3%
330.00 to 335.00m Interval: 5.00m	SHALE: 70%, as above SANDSTONE: 30%, as above, patchy stain, slow streaming wet cut fluorescence, no visible porosity
335.00 to 340.00m Interval: 5.00m	SHALE: 70%, medium gray, medium brown, fissile, blocky, silty to sandy in part, SANDSTONE: 20%, medium gray brown, predominantly quartzose, silty to very fine grained, subround, medium sorted, argillaceous, glauconitic in part, predominantly firm, clay cement, light patchy oil stain, slow blooming wet cut fluorescence, no visible porosity SILTSTONE: 10%, light to medium brown, argillaceous, sandy in part, tight
340.00 to 350.00m Interval: 10.00m	SHALE: 80%, as above SANDSTONE: 10%, as above SILTSTONE: 10%, as above
350.00 to 355.00m Interval: 5.00m	SHALE: 80%, dark gray, medium gray, medium gray brown, fissile, blocky, sandy in part SILTSTONE: 20%, medium brown, medium gray brown, argillaceous, sandy in part, tight
355.00 to 360.00m Interval: 5.00m	SHALE: 90%, medium gray, dark gray, medium gray brown, silty in part SILTSTONE: 10%, as above
360.00m	GARBUTT
360.00 to 385.00m Interval: 25.00m	SHALE: 100%, dark gray brown, dark gray, medium gray slightly silty, fissile, predominantly blocky, micromicaceous in part, trace of SILTSTONE as above
385.00 to 390.00m Interval: 5.00m	SHALE: 100%, dark gray, dark gray brown, medium gray, silty in part, predominantly blocky, platy in part, minor micromicaceous, trace of disseminated pyrite
390.00 to 395.00m Interval: 5.00m	SHALE: 100%, dark gray, dark gray to black, dark gray brown, minor medium gray silty, fissile, blocky to platy
395.00 to 400.00m Interval: 5.00m	SHALE: 100%, dark gray, medium gray, dark gray brown, silty in part, fissile, blocky to platy, trace of nodular pyrite
400.00 to 405.00m Interval: 5.00m	SHALE: 100%, dark gray, dark gray brown, medium gray silty in part, fissile, blocky to platy

405.00 to 410.00m Interval: 5.00m	SHALE: 100%, dark gray, medium gray brown silty, fissile, blocky
410.00 to 415.00m Interval: 5.00m	SHALE: 100%, dark gray, dark gray brown silty, fissile, blocky to platy, trace of SILTSTONE medium brown argillaceous, tight
415.00 to 425.00m Interval: 10.00m	SHALE: 100%, medium to dark gray, dark gray brown, silty, fissile, blocky to platy
425.00 to 430.00m Interval: 5.00m	SHALE: 100%, medium gray, dark gray, medium to dark gray brown, fissile, platy to blocky, minor silty in part
430.00 to 441.00m Interval: 11.00m	SHALE: 100%, medium gray, dark gray, dark gray brown slightly silty, fissile, platy to blocky
441.00 to 442.00m Interval: 1.00m	NS: 0%, No sample, Conductor washed out.
442.00 to 445.00m Interval: 3.00m	SHALE: 100%, medium gray, medium to dark gray, fissile, blocky to platy, bentonitic laminae, minor medium gray brown silty
445.00 to 450.00m Interval: 5.00m	SHALE: 100%, medium gray, medium gray silty, dark gray, medium to dark gray brown, fissile, platy to blocky, silty in part, minor bentonitic laminae, trace of coal cavings
451.00m	MATTSON
450.00 to 455.00m Interval: 5.00m	SHALE: 100%, as above, Cutter 'D' Contamination from mud tanks, trace of SILTSTONE light to medium gray, quartzose, slightly sandy, slightly argillaceous, calcareous cement, no stain, no fluorescence, no visible porosity, trace of CHERT, varicolored, coarse angular to well rounded, pebbles in part
455.00 to 460.00m Interval: 5.00m	SHALE: 95%, as above, trace of CHERT varicolored, angular to well rounded LIMESTONE: 5%, light gray white, light brown, cryptocrystalline to microcrystalline, mudstone, clean, tight, trace white chalky
464.00m	FLETT
460.00 to 465.00m Interval: 5.00m	SHALE: 65%, as above LIMESTONE: 35%, light gray white, light brown white mottled, medium gray brown argillaceous, predominantly cryptocrystalline mudstone, no stain, no fluorescence, no visible porosity
465.00 to 470.00m Interval: 5.00m	LIMESTONE: 60%, as above SHALE: 40%, as above
470.00 to 475.00m Interval: 5.00m	SHALE: 20%, as above LIMESTONE: 80%, light brown white mottled, light gray white mottled, cryptocrystalline to microcrystalline, mudstone to wackestone, clean, very spotty light oil stain, weak dry cut fluorescence, no porosity
475.00 to 480.00m Interval: 5.00m	LIMESTONE: 90%, light gray brown mottled, light gray white mottled, cryptocrystalline to finely crystalline in part, mudstone to wackestone, trace with very spotty dead oil stain, no visible porosity, minor dark gray brown mottled, slightly argillaceous, tight

	SHALE: 10% , as above, trace of DOLOMITE light to medium gray, microcrystalline, packstone, silty in part, no stain, no fluorescence, trace of pin point porosity 1-2%
480.00 to 485.00m Interval: 5.00m	LIMESTONE: 70% , light brown white mottled medium, light gray white mottled dark, predominantly cryptocrystalline, minor microcrystalline to finely crystalline, mudstone to wackestone, trace of pellets and crinoid fragments, trace with spotty dead oil stain, no fluorescence, no visible porosity SHALE: 30% , dark gray to black, fissile, platy
485.00 to 490.00m Interval: 5.00m	LIMESTONE: 60% , as above DOLOMITE: 20% , light to medium gray, microcrystalline, predominantly wackestone, packstone in part, no stain, no fluorescence, no visible porosity SHALE: 20% , dark gray, dark gray to black, fissile, platy
490.00 to 495.00m Interval: 5.00m	LIMESTONE: 90% , light gray white, light gray brown mottled medium to dark, cryptocrystalline to finely crystalline, mudstone to wackestone, no stain, no fluorescence, no visible porosity SHALE: 10% , as above
495.00 to 500.00m Interval: 5.00m	LIMESTONE: 90% , light brown white mottled medium to dark, medium gray in part, cryptocrystalline, mudstone, no stain, no fluorescence, no porosity SHALE: 10% , as above
500.00 to 505.00m Interval: 5.00m	CAVINGS: 95% , cement LIMESTONE: 5% , light to medium brown mottled, cryptocrystalline, mudstone, tight, trace of SHALE dark gray to black, fissile, platy
505.00 to 510.00m Interval: 5.00m	LIMESTONE: 97% , light brown white mottled medium to dark brown, predominantly cryptocrystalline mudstone, minor microcrystalline mudstone to wackestone, no visible stain, very spotty weak blooming wet cut fluorescence, no visible porosity CHERT: 3% , light gray, light brown, medium brown, coarse, angular
510.00 to 515.00m Interval: 5.00m	LIMESTONE: 70% , mottled light to medium brown, cryptocrystalline to microcrystalline, mudstone, tight DOLOMITE: 20% , light to medium gray brown, calcareous, cryptocrystalline to microcrystalline, mudstone to wackestone, clean, tight SHALE: 10% , medium to dark gray brown, calcareous, fissile, blkt to platy
515.00 to 520.00m Interval: 5.00m	LIMESTONE: 100% , medium brown, dark gray brown, argillaceous, cryptocrystalline, mudstone, tight
520.00 to 525.00m Interval: 5.00m	LIMESTONE: 100% , medium gray, dark gray brown, argillaceous, cryptocrystalline, mudstone, tight
525.00 to 530.00m Interval: 5.00m	LIMESTONE: 100% , as above, mottled light to medium brown, cryptocrystalline, mudstone, clean, tight, trace of varigated CHERT

530.00 to 535.00m Interval: 5.00m	LIMESTONE: 100%, as above
535.00 to 540.00m Interval: 5.00m	LIMESTONE: 40%, as above DOLOMITE: 60% , light gray cryptocrystalline to microcrystalline, predominantly mudstone, slightly argillaceous, tight, minor DOLOMITE medium brown, microcrystalline to finely crystalline, wackestone to sucrosic packstone, spotty dead oil stain, patchy pin point and intercrystalline porosity from 6 to 20%, Water to Surface.
540.00 to 543.00m Interval: 3.00m	DOLOMITE: 100%, as above
543.00 to 545.00m Interval: 2.00m	DOLOMITE: 95% , medium brown, light to medium brown, predominantly microcrystalline, mudstone to wackestone, tight, minor DOLOMITE medium brown, microcrystalline, packstone, spotty dead oil stain, no fluorescence, trace of pin point and intercrystalline porosity 10 to 12% CHERT: 5% , varigated
545.00 to 550.00m Interval: 5.00m	DOLOMITE: 100% , dark gray brown, medium brown, predominantly microcrystalline to finely crystalline, cryptocrystalline in part, mudstone to wackestone, minor packstone, no stain, no fluorescence, no visible porosity, minor sparry-dolomite veining, trace of nodular pyrite, minor CHERT as above
550.00 to 555.00m Interval: 5.00m	DOLOMITE: 30% , as above LIMESTONE: 70% , mottled light gray brown, mottled medium to dark brown, predominantly cryptocrystalline, minor microcrystalline mudstone, tight, argillaceous in part, trace of SHALE dark gray to black, calcareous, fissile, platy
555.00 to 560.00m Interval: 5.00m	LIMESTONE: 90% , mottled light, medium to dark gray, dark gray brown, cryptocrystalline, mudstone, argillaceous, no stain, no fluorescence, no visible porosity SHALE: 10% , as above
560.00 to 565.00m Interval: 5.00m	LIMESTONE: 90% , medium gray, dark gray brown, cryptocrystalline, mudstone, argillaceous, tight SHALE: 10% , as above
565.00 to 570.00m Interval: 5.00m	LIMESTONE: 70% , medium gray, medium gray brown, mottled in part, cryptocrystalline mudstone, trace microcrystalline mudstone, tight SHALE: 30% , medium gray, medium to dark gray, very calcareous, fissile, blocky
570.00 to 575.00m Interval: 5.00m	LIMESTONE: 80% , as above, mottled light to medium brown, microcrystalline to cryptocrystalline, mudstone to wackestone, tight SHALE: 20% , as above
575.00 to 580.00m Interval: 5.00m	SHALE: 50% , medium to dark gray, calcareous, fissile, blocky to platy 50: 0% , light, medium , dark gray, dark gray brown, argillaceous in part, predominantly cryptocrystalline mudstone, tight

580.00 to 585.00m Interval: 5.00m	LIMESTONE: 70%, light to medium gray, gray brown, mottled in part, cryptocrystalline to microcrystalline, mudstone, slightly argillaceous, tight SHALE: 30%, as above
585.00 to 590.00m Interval: 5.00m	LIMESTONE: 85%, mottled light to medium brown, medium gray argillaceous, cryptocrystalline to microcrystalline, mudstone, tight SHALE: 15%, medium to dark gray, calcareous, fissile, blocky, common disseminated pyrite
590.00 to 595.00m Interval: 5.00m	LIMESTONE: 80%, as above SHALE: 20%, as above
595.00 to 600.00m Interval: 5.00m	LIMESTONE: 90%, light to medium gray, light to medium gray brown, cryptocrystalline to microcrystalline, predominantly mudstone, slightly argillaceous, slightly dolomitic, tight SHALE: 10%, as above
600.00 to 605.00m Interval: 5.00m	LIMESTONE: 70%, mottled light to medium brown, medium gray brown, argillaceous, predominantly cryptocrystalline mudstone, tight SHALE: 30%, medium gray, calcareous, fissile, platy to blocky
605.00 to 610.00m Interval: 5.00m	LIMESTONE: 60%, medium gray brown, light to medium brown, medium gray argillaceous, cryptocrystalline, mudstone, tight SHALE: 40%, medium gray, calcareous, fissile, platy to blocky
610.00 to 615.00m Interval: 5.00m	LIMESTONE: 80%, light to medium brown, medium to dark gray brown, predominantly mottled, cryptocrystalline, mudstone, argillaceous in part, tight, occasional crinoid fragments SHALE: 20%, medium gray, calcareous, fissile, platy
615.00 to 620.00m Interval: 5.00m	LIMESTONE: 90%, mottled light to medium gray brown, medium gray, argillaceous in part, predominantly cryptocrystalline, minor microcrystalline, mudstone to wackestone, dolomitic in part, no stain, no fluorescence, no visible porosity, trace of crinoid and bryozoa fragments SHALE: 10%, as above
620.00 to 625.00m Interval: 5.00m	LIMESTONE: 80%, mottled medium to dark brown, medium to dark gray brown, cryptocrystalline to microcrystalline, predominantly mudstone, argillaceous in part, tight SHALE: 10%, medium to dark gray, platy, calcareous CHERT: 10%, variegated, brown, white, gray, translucent
625.00 to 635.00m Interval: 10.00m	SHALE: 30%, medium gray, medium to dark gray, calcareous, fissile, platy, trace of CHERT LIMESTONE: 70%, mottled light to medium brown, gray brown, cryptocrystalline to microcrystalline, mudstone to wackestone, slightly dolomitic, very argillaceous in part, tight, trace of pellets and fossil fragments
635.00 to 640.00m Interval: 5.00m	LIMESTONE: 85%, mottled light to medium brown, predominantly cryptocrystalline, minor microcrystalline, mudstone, argillaceous in part, tight, minor nodular and disseminated pyrite

	CHERT: 5%, varigated
	SHALE: 10%, light to medium gray, medium gray calcareous, fissile, platy to blocky
640.00 to 645.00m Interval: 5.00m	LIMESTONE: 50%, as above
	SHALE: 50%, medium gray, calcareous, fissile, platy
645.00 to 650.00m Interval: 5.00m	LIMESTONE: 60%, as above
	SHALE: 40%, as above
650.00 to 655.00m Interval: 5.00m	LIMESTONE: 50%, as above, very poor returns
	SHALE: 50%, as above
655.00 to 660.00m Interval: 5.00m	LIMESTONE: 60%, mottled light to medium brown, medium gray brown, predominantly cryptocrystalline mudstone, minor microcrystalline, argillaceous in part, tight, common crinoid fragments, trace of CHERT
	SHALE: 40%, medium gray, calcareous, fissile, platy
660.00 to 665.00m Interval: 5.00m	LIMESTONE: 80%, as above
	SHALE: 20%, as above
665.00 to 670.00m Interval: 5.00m	SHALE: 20%, medium gray, medium gray calcareous, fissile, platy
	LIMESTONE: 80%, medium brown, medium gray brown, argillaceous in part, predominantly cryptocrystalline, minor microcrystalline, mudstone, tight, occasional crinoid fragments
670.00 to 675.00m Interval: 5.00m	SHALE: 15%, as above
	LIMESTONE: 85%, light to medium brown, mottled in part, medium gray brown slightly argillaceous, predominantly cryptocrystalline, minor microcrystalline, mudstone, tight, occasional crinoid and bryozoa fragments
675.00 to 680.00m Interval: 5.00m	SHALE: 10%, medium gray calcareous, fissile, platy
	LIMESTONE: 90%, light to medium brown, light to medium gray, mottled cryptocrystalline to microcrystalline, mudstone, argillaceous in part, tight, trace of crinoid fragments
680.00 to 685.00m Interval: 5.00m	LIMESTONE: 80%, as above, trace of varigated CHERT
	SHALE: 20%, as above
685.00 to 690.00m Interval: 5.00m	LIMESTONE: 80%, light to medium brown, light to medium gray brown, mottled in part, argillaceous in part, predominantly cryptocrystalline, minor microcrystalline, mudstone, tight, common fossil fragments
	SHALE: 20%, as above

690.00 to 695.00m Interval: 5.00m	LIMESTONE: 90%, as above SHALE: 10%, as above
695.00 to 700.00m Interval: 5.00m	SHALE: 20%, medium gray, medium gray calcareous, fissile, platy, cavings in part LIMESTONE: 80%, light to medium gray brown, light to medium brown, mottled in part, dark gray brown argillaceous, cryptocrystalline to microcrystalline, mudstone, occasional crinoid fragments, tight
700.00 to 705.00m Interval: 5.00m	SHALE: 10%, as above LIMESTONE: 90%, as above, con varigated CHERT
705.00 to 710.00m Interval: 5.00m	LIMESTONE: 90%, as above SHALE: 10%, as above
710.00 to 715.00m Interval: 5.00m	SHALE: 5%, medium gray calcareous CHERT: 5%, varigated, dark brown, light gray, white, medium brown LIMESTONE: 90%, light to medium brown, dark brown, mottled in part, cryptocrystalline mudstone, minor microcrystalline, argillaceous in part, tight, occasional fossil fragments, trace of sparry calcite
715.00 to 720.00m Interval: 5.00m	LIMESTONE: 90%, mottled medium brown, light brown, medium gray, cryptocrystalline to microcrystalline, mudstone, argillaceous in part, occasional fossil fragments, trace of sparry calcite, tight SHALE: 10%, medium gray, dark gray calcareous, fissile, platy
720.00 to 725.00m Interval: 5.00m	LIMESTONE: 80%, as above SHALE: 20%, as above
725.00 to 730.00m Interval: 5.00m	LIMESTONE: 80%, medium gray, slightly argillaceous, medium brown, mottled light in part, predominantly cryptocrystalline mudstone, tight, occasional bryozoa fragments SHALE: 20%, medium gray, calcareous, platy to blocky
730.00 to 735.00m Interval: 5.00m	LIMESTONE: 60%, as above SHALE: 40%, medium gray, calcareous, platy to blocky
735.00 to 740.00m Interval: 5.00m	SHALE: 60%, medium gray, medium to dark gray calcareous, platy LIMESTONE: 40%, mottled light to medium brown, medium to dark brown, medium gray brown argillaceous, predominantly cryptocrystalline mudstone, tight, common fossil fragments
740.00 to 745.00m Interval: 5.00m	LIMESTONE: 80%, light to medium brown, medium to dark brown, predominantly cryptocrystalline mudstone, tight SHALE: 20%, light to medium gray calcareous

745.00 to 750.00m Interval: 5.00m	LIMESTONE: 80%, as above, occasional crinoid fragments SHALE: 20%, as above
750.00 to 755.00m Interval: 5.00m	LIMESTONE: 90%, mottled light to medium brown, medium to dark brown, medium to dark gray brown, cryptocrystalline to microcrystalline, mudstone, tight, occasional fossil fragments SHALE: 10%, medium gray calcareous
755.00 to 760.00m Interval: 5.00m	LIMESTONE: 70%, as above, common fossil fragments SHALE: 30%, as above
760.00 to 765.00m Interval: 5.00m	LIMESTONE: 70%, mottled light to medium brown, light to medium gray brown argillaceous, predominantly cryptocrystalline, mudstone, tight, common crinoid and bryozoa fragments SHALE: 30%, medium gray, medium to dark gray, calcareous, platy
765.00 to 770.00m Interval: 5.00m	SHALE: 50%, medium to dark gray calcareous, blocky to platy LIMESTONE: 50%, medium gray, light gray brown mottled medium, cryptocrystalline, mudstone, tight, trace of varigated CHERT
770.00 to 775.00m Interval: 5.00m	SHALE: 50%, as above LIMESTONE: 50%, as above, occasional crinoid fragments
775.00 to 780.00m Interval: 5.00m	SHALE: 20%, as above LIMESTONE: 80%, as above, medium gray argillaceous, cryptocrystalline, mudstone, tight, trace of varigated CHERT
780.00 to 785.00m Interval: 5.00m	SHALE: 10%, medium gray, calcareous, platy LIMESTONE: 90%, medium gray, dark gray, dark gray brown, argillaceous, medium to dark brown mottled, cryptocrystalline, mudstone, tight, trace of crinoid fragments, trace of CHERT
785.00 to 790.00m Interval: 5.00m	SHALE: 10%, as above LIMESTONE: 90%, as above, common varigated CHERT
790.00 to 795.00m Interval: 5.00m	SHALE: 10%, as above LIMESTONE: 90%, as above, mottled light, medium, dark brown, cryptocrystalline to microcrystalline, mudstone, common CHERT
795.00 to 800.00m Interval: 5.00m	SHALE: 30%, medium gray, medium to dark gray, calcareous, platy LIMESTONE: 70%, as above
800.00 to 805.00m Interval: 5.00m	SHALE: 20%, medium gray calcareous, platy LIMESTONE: 80%, light to medium gray brown, light to medium brown, cryptocrystalline, mudstone, very argillaceous in part, tight

805.00 to 810.00m Interval: 5.00m	SHALE: 20%, as above LIMESTONE: 80%, as above, minor CHERT, medium brown, dark brown, light gray white
810.00 to 815.00m Interval: 5.00m	SHALE: 10%, medium to dark gray calcareous, platy LIMESTONE: 90%, medium to dark gray, very argillaceous, medium to dark gray brown, argillaceous, cryptocrystalline to microcrystalline, mudstone, tight, occasional fossil fragments
815.00 to 820.00m Interval: 5.00m	SHALE: 10%, as above LIMESTONE: 90%, medium to dark gray, medium to dark gray brown, very argillaceous, cryptocrystalline to microcrystalline, mudstone, tight
820.00 to 825.00m Interval: 5.00m	SHALE: 20%, as above LIMESTONE: 80%, as above, trace of sparry calcite
825.00 to 830.00m Interval: 5.00m	SHALE: 20%, as above LIMESTONE: 80%, as above, light to medium gray brown, slightly argillaceous, cryptocrystalline to microcrystalline, mudstone, mottled in part, common fossil fragments
830.00 to 835.00m Interval: 5.00m	SHALE: 20%, light to medium gray, medium gray, calcareous, platy LIMESTONE: 80%, medium gray, dark gray, cryptocrystalline, argillaceous, light to medium brown cryptocrystalline to microcrystalline, mottled in part, mudstone, tight
835.00 to 840.00m Interval: 5.00m	LIMESTONE: 60%, as above, common crinoid and bryozoa fragments SHALE: 40%, as above
840.00 to 845.00m Interval: 5.00m	SHALE: 35%, medium gray, dark gray, light gray calcareous, platy, trace of disseminated pyrite LIMESTONE: 65%, medium gray brown argillaceous, light gray brown slightly argillaceous, predominantly cryptocrystalline mudstone, tight
845.00 to 850.00m Interval: 5.00m	SHALE: 30%, as above LIMESTONE: 70%, as above
850.00 to 855.00m Interval: 5.00m	SHALE: 25%, as above LIMESTONE: 75%, light to medium gray, light to medium gray brown, medium gray argillaceous, predominantly cryptocrystalline, mudstone, tight
855.00 to 860.00m Interval: 5.00m	SHALE: 30%, as above

	LIMESTONE: 70%, as above, trace of varigated CHERT
860.00 to 867.00m Interval: 7.00m	SHALE: 25%, light gray, medium gray calcareous, platy LIMESTONE: 75%, light to medium brown, cryptocrystalline, mudstone, occasional fossil fragments, medium brown, dark brown, medium to dark gray brown argillaceous, cryptocrystalline, mudstone, tight, AIR HAMMER MALFUNCTION, DISPLACE HOLE TO INVERT
867.00 to 870.00m Interval: 3.00m	CAVINGS: 100%, shale, limestone and mud additives (predominantly lime to treat out water from invert mud)
870.00 to 875.00m Interval: 5.00m	CAVINGS: 70%, as above SHALE: 20%, medium gray, dark gray, very calcareous, fissile, platy LIMESTONE: 10%, medium gray, medium gray brown, cryptocrystalline, mudstone, tight
875.00 to 880.00m Interval: 5.00m	CAVINGS: 70%, sloughing shale and mud additives (hot lime) SHALE: 35%, dark gray, medium gray very calcareous, fissile, platy LIMESTONE: 5%, medium gray, light to medium gray brown, argillaceous, cryptocrystalline, mudstone, tight
880.00 to 885.00m Interval: 5.00m	CAVINGS: 70%, as above SHALE: 25%, as above LIMESTONE: 5%, as above, trace of crinoid fragments
885.00 to 890.00m Interval: 5.00m	CAVINGS: 60%, as above SHALE: 40%, medium gray, dark gray, very calcareous, fissile, platy, trace of LIMESTONE as above
890.00 to 895.00m Interval: 5.00m	CAVINGS: 60%, as above SHALE: 40%, medium gray, medium to dark gray, calcareous, platy, trace of LIMESTONE light to medium gray, cryptocrystalline, mudstone, tight
895.00 to 900.00m Interval: 5.00m	CAVINGS: 50%, as above SHALE: 15%, as above LIMESTONE: 35%, light gray, light gray brown, argillaceous, minor mottled, cryptocrystalline, mudstone, tight
900.00 to 905.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 60%, medium to dark gray, dark gray brown, calcareous, fissile, platy
905.00 to 915.00m Interval: 10.00m	SHALE: 60%, medium to dark gray, dark gray brown, calcareous, fissile, platy

	CAVINGS: 40%, as above
915.00 to 930.00m Interval: 15.00m	CAVINGS: 40%, as above, common lime SHALE: 60%, medium to dark gray, dark gray, calcareous, fissile, platy
930.00 to 945.00m Interval: 15.00m	CAVINGS: 40%, as above SHALE: 60%, medium to dark gray, calcareous, fissile, platy
945.00 to 950.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 60%, medium to dark gray, calcareous, fissile, platy
951.00m	PEKISKO
950.00 to 955.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 60%, as above, trace of LIMESTONE light to medium gray argillaceous, cryptocrystalline, mudstone, tight
955.00 to 960.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 60%, as above, trace of LIMESTONE light brown white, slightly argillaceous, cryptocrystalline, mudstone, tight, trace of crinoid fragments
960.00 to 965.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 60%, as above, trace of LIMESTONE as above
965.00 to 970.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 50%, as above LIMESTONE: 10%, light to medium brown, light gray brown, slightly argillaceous, cryptocrystalline, mudstone, tight
970.00 to 975.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 55%, medium to dark gray, calcareous, fissile, platy LIMESTONE: 5%, as above
979.00m	BANFF
975.00 to 980.00m Interval: 5.00m	CAVINGS: 50%, shale and hot lime SHALE: 50%, as above, minor LIMESTONE as above
980.00 to 985.00m Interval: 5.00m	CAVINGS: 60%, as above SHALE: 20%, medium to dark gray, calcareous, fissile, platy LIMESTONE: 20%, light to medium brown, light brown white, medium brown mottled in part, cryptocrystalline, mudstone, tight

985.00 to 990.00m Interval: 5.00m	CAVINGS: 60%, as above SHALE: 40%, medium to dark gray, calcareous, fissile, platy, trace of LIMESTONE as above
990.00 to 995.00m Interval: 5.00m	CAVINGS: 50%, as above SHALE: 50%, as above
995.00 to 1000.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 30%, medium to dark gray, calcareous, fissile, platy LIMESTONE: 30%, light brown white, light to medium brown, light gray brown, mottled in part, argillaceous in part, cryptocrystalline, mudstone, tight
1000.00 to 1005.00m Interval: 5.00m	CAVINGS: 40%, as above SHALE: 40%, medium to dark gray calcareous, fissile, platy LIMESTONE: 20%, as above
1005.00 to 1010.00m Interval: 5.00m	CAVINGS: 30%, as above SHALE: 70%, medium to dark gray, calcareous, fissile, platy, minor LIMESTONE light to medium brown gray, slightly argillaceous, mottled in part, cryptocrystalline, mudstone, tight
1010.00 to 1015.00m Interval: 5.00m	CAVINGS: 30%, as above SHALE: 70%, as above, minor LIMESTONE as above
1015.00 to 1020.00m Interval: 5.00m	CAVINGS: 10%, as above SHALE: 90%, medium to dark gray, dark gray, fissile, platy, slickensided in part, trace of LIMESTONE as above
1020.00 to 1025.00m Interval: 5.00m	CAVINGS: 50%, shale and hot lime SHALE: 25%, medium to dark gray, slightly calcareous, fissile, platy LIMESTONE: 25%, light to medium gray, light to medium brown, mottled in part, slightly argillaceous, predominantly cryptocrystalline, mudstone, tight
1025.00 to 1030.00m Interval: 5.00m	CAVINGS: 50%, as above SHALE: 30%, as above LIMESTONE: 20%, as above, light to medium gray argillaceous, cryptocrystalline, mudstone, tight, trace of crinoid fragments
1030.00 to 1040.00m Interval: 10.00m	CAVINGS: 50%, as above SHALE: 40%, as above

	LIMESTONE: 10%, as above
1040.00 to 1045.00m Interval: 5.00m	CAVINGS: 30%, as above SHALE: 70%, medium to dark gray, slightly calcareous, trace of LIMESTONE light gray brown, light to medium brown, cryptocrystalline, mudstone, tight
1045.00 to 1050.00m Interval: 5.00m	CAVINGS: 20%, as above SHALE: 80%, medium to dark gray, light to medium gray, very calcareous, fissile, platy, minor LIMESTONE as above
1050.00 to 1055.00m Interval: 5.00m	SHALE: 90%, medium to dark gray, slightly calcareous, fissile, platy, abundant CAVINGS and mud additives (lime) LIMESTONE: 10%, light to medium gray brown, light brown, cryptocrystalline, mudstone, tight
1055.00 to 1060.00m Interval: 5.00m	SHALE: 90%, as above, abundant CAVINGS LIMESTONE: 10%, as above
1060.00 to 1070.00m Interval: 10.00m	SHALE: 90%, medium to dark gray, slightly calcareous, fissile, platy, abundant CAVINGS LIMESTONE: 10%, light to medium gray brown, light gray brown, cryptocrystalline, mudstone, tight
1070.00 to 1085.00m Interval: 15.00m	SHALE: 100%, medium to dark gray, slightly calcareous, fissile, platy, trace of LIMESTONE as above, abundant CAVINGS
1085.00 to 1090.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, fissile, platy, abundant CAVINGS
1090.00 to 1100.00m Interval: 10.00m	SHALE: 95%, medium to dark gray, fissile, platy, abundant CAVINGS LIMESTONE: 5%, light gray, light gray brown, mottled dark in part, very argillaceous in part, cryptocrystalline, mudstone, trace of crinoid fragments
1100.00 to 1105.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, fissile, platy, trace of LIMESTONE as above, abundant CAVINGS
1105.00 to 1110.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, fissile, platy, slightly calcareous in part, abundant CAVINGS
1110.00 to 1115.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, fissile, platy, slightly calcareous in part, trace of LIMESTONE light to medium gray, argillaceous, cryptocrystalline, mudstone, abundant CAVINGS
1115.00 to 1120.00m Interval: 5.00m	SHALE: 100%, as above, trace of crinoid plates
1120.00 to 1135.00m Interval: 15.00m	SHALE: 100%, medium to dark gray, fissile, platy, slightly calcareous in part
1135.00 to 1140.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, fissile, platy, slightly calcareous in part, trace of LIMESTONE light brown, cryptocrystalline, mudstone, tight, abundant CAVINGS and mud additives (lime)

1140.00 to 1175.00m Interval: 35.00m	SHALE: 30%, medium to dark gray, fissile, platy, calcareous in part, abundant CAVINGS CAVINGS: 70%, shale and mud additives (lime)
1175.00 to 1180.00m Interval: 5.00m	SHALE: 30%, medium to dark gray, fissile, platy, calcareous in part, trace of LIMESTONE light gray argillaceous, cryptocrystalline, mudstone, trace of sparry calcite, abundant CAVINGS CVG: 70%, N/A
1180.00 to 1190.00m Interval: 10.00m	CAVINGS: 80%, as above SHALE: 20%, medium to dark gray, platy, calcareous in part
1190.00 to 1200.00m Interval: 10.00m	CAVINGS: 90%, as above SHALE: 10%, medium to dark gray, platy, calcareous
1200.00 to 1205.00m Interval: 5.00m	SH: 10%, N/A CAVINGS: 90%, as above
1205.00 to 1210.00m Interval: 5.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy, abundant CAVINGS
1210.00 to 1215.00m Interval: 5.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy, abundant CAVINGS
1215.00 to 1225.00m Interval: 10.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy, abundant CAVINGS
1225.00 to 1240.00m Interval: 15.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy, abundant CAVINGS
1240.00 to 1300.00m Interval: 60.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy, trace slickensided, abundant CAVINGS
1300.00 to 1305.00m Interval: 5.00m	SHALE: 100%, medium gray, medium to dark gray, calcareous, platy to blocky, common CAVINGS
1305.00 to 1310.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, medium to dark gray brown, calcareous, platy, common CAVINGS
1310.00 to 1315.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, medium to dark gray brown, calcareous, platy, common CAVINGS
1315.00 to 1320.00m Interval: 5.00m	SHALE: 100%, medium gray, medium to dark gray, calcareous, platy to blocky, common CAVINGS
1320.00 to 1325.00m Interval: 5.00m	SHALE: 100%, medium gray, medium to dark gray calcareous, platy to blocky, common CAVINGS
1325.00 to 1340.00m Interval: 15.00m	SHALE: 100%, medium to dark gray, medium to dark gray brown, calcareous, platy to blocky, common CAVINGS
1340.00 to 1375.00m Interval: 35.00m	SHALE: 100%, medium to dark gray, calcareous, platy to blocky, common CAVINGS
1375.00 to 1380.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, dark gray brown, slightly calcareous, platy to blocky, common cavings
1380.00 to 1400.00m Interval: 20.00m	SHALE: 100%, medium to dark gray, calcareous, platy to blocky, common CAVINGS

1400.00 to 1420.00m Interval: 20.00m	SHALE: 100%, medium to dark gray, calcareous, platy to blocky, abundant CAVINGS
1420.00 to 1425.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, calcareous, platy to blocky, predominantly CAVINGS
1425.00 to 1455.00m Interval: 30.00m	SHALE: 100%, medium to dark gray, slightly calcareous, platy to blocky, common CAVINGS
1455.00 to 1485.00m Interval: 30.00m	SHALE: 100%, medium to dark gray, slightly calcareous, platy to blocky, abundant CAVINGS
1485.00 to 1495.00m Interval: 10.00m	SHALE: 100%, medium to dark gray, slightly calcareous, platy to blocky, common CAVINGS, darker mud. APPARENT FAULT ZONE FROM 1488 to 1494m, shales darker and non-calcareous below this point
1495.00 to 1500.00m Interval: 5.00m	SHALE: 100%, medium to dark gray, dark gray brown, slightly calcareous, platy to blocky, trace of nodular pyrite
1500.00 to 1505.00m Interval: 5.00m	SHALE: 100%, medium to dark gray brown, predominantly platy
1505.00 to 1530.00m Interval: 25.00m	SHALE: 100%, medium to dark gray, dark gray brown, predominantly platy, common CAVINGS
1530.00 to 1550.00m Interval: 20.00m	SHALE: 100%, medium to dark gray, dark gray brown, platy to blocky, abundant CAVINGS
1555.00m	EXSHAW
1550.00 to 1557.00m Interval: 7.00m	SHALE: 100%, dark gray brown, dark brown, platy to blocky, slickensided in part, abundant CAVINGS, slight gas effect. TD INVERT. PLUG BACK AND CASE. SAMPLES BELOW THIS POINT ARE FROM LEG #2, AIR DRILLED.

SAMPLE DESCRIPTIONS**Well Name:****PARA ET AL ARROWHEAD O-15****Location:****60 30' 123 00'****1175.00 to 1186.60m
Interval: 11.60m****NA: N/A, BASE OF 244.5mm FIRST INTERMEDIATE CASING @ 1186.6m****1186.60 to 1213.00m
Interval: 26.40m****NA: 0%, OPEN HOLE, TOP OF CEMENT PLUG @ 1213.4m****1213.00 to 1218.00m
Interval: 5.00m****CEMENT: 100%, 0-1-0 'G', POLISH PLUG TO 1218m****1218.00 to 1220.00m
Interval: 2.00m****CEMENT: 98%, 0-1-0 'G', DRILL 216mm DIRECTIONAL HOLE****SHALE: 2%, predominantly medium gray, blocky, subround, trace platy, flaky****1220.00 to 1225.00m
Interval: 5.00m****CEMENT: 70%, 0-1-0 'G'****SHALE: 30%, medium to dark gray, blocky to platy, predominantly subround, minor flaky****1225.00 to 1230.00m
Interval: 5.00m****SHALE: 90%, medium gray, slightly calcareous, platy to blocky****CEMENT: 10%, 0-1-0 'G'****1230.00 to 1235.00m
Interval: 5.00m****SHALE: 90%, as above, minor cement****CEMENT: 10%, as above****1235.00 to 1250.00m
Interval: 15.00m****SHALE: 90%, as above****LIME: 10%, processed mud additive****1250.00 to 1255.00m
Interval: 5.00m****SHALE: 100%, medium gray, slightly calcareous, predominantly poorly, common cavings****1255.00 to 1260.00m
Interval: 5.00m****SHALE: 100%, as above****1260.00 to 1265.00m
Interval: 5.00m****SHALE: 100%, as above****1265.00 to 1270.00m
Interval: 5.00m****SHALE: 100%, as above****1270.00 to 1280.00m
Interval: 10.00m****SHALE: 100%, medium gray, slightly calcareous, platy to blocky, common cavings****1280.00 to 1300.00m
Interval: 20.00m****SHALE: 100%, as above****1300.00 to 1320.00m
Interval: 20.00m****SHALE: 100%, medium gray, slightly calcareous, predominantly platy, common cavings****1320.00 to 1340.00m
Interval: 20.00m****SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy to blocky, common cavings****1340.00 to 1360.00m
Interval: 20.00m****SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy to blocky, common cavings**

1360.00 to 1380.00m Interval: 20.00m	SHALE: 100%, medium gray, slightly calcareous, platy to blocky, abundant cavings
1380.00 to 1400.00m Interval: 20.00m	SHALE: 100%, medium gray, slightly calcareous, platy to blocky, common cavings
1400.00 to 1420.00m Interval: 20.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy to blocky, common cavings
1420.00 to 1440.00m Interval: 20.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy to blocky, common cavings
1440.00 to 1455.00m Interval: 15.00m	SHALE: 100%, medium gray, medium to dark gray, slightly calcareous, platy to blocky, common cavings
1455.00 to 1456.00m Interval: 1.00m	NA: 0%, UNLOAD HOLE WITH N2, DRY WITH AIR, SUSPEND DRILLING OPERATIONS FOR BREAK UP, PLUG BACK AND TEAR OUT.

Wellsite Geological Report

on

Re-entry of

Paramount Berkley Arrowhead O-15
60° 30' 123° 00

for

Paramount Resources Ltd.

Prepared by:

Colin Bredin P.Geol
C.L. Bredin Holdings Ltd.
1-780-621-1276
1-780-696-2366

Table of Contents

Section	Page
Well Abstract	1-1
Casing Strings	4-1
Logging Reports	9-1
Directional Surveys	11-1
Mud Data	14-1
Formation Tops	16-1
Formation Evaluation	17-1
Sample Descriptions	19-1

Paramount Berkley Arrowhead O-15 was re-entered as a continuance of a well suspended in the spring of 1998. The original well was drilled to 1557m but had deviated to 14 degrees. It was subsequently logged, plugged back and cased to 1186m. It was then drilled with a motor to 1440m where it was suspended and plugged back into casing. The hole was sabotaged, by persons unknown, who dumped a pail of assorted junk into the well between the cement plug and the wireline bridge plug.

The well was re-entered in 1999 and drilled to TD. The second intermediate hole was drilled with invert to a depth of 2805m and casing was set in the top of the Slave Point. The upper main hole was drilled underbalanced with nitrified invert until water was encountered from a fracture at 2936m. Baryte was added and the well was continued in a balanced state (density of 1065) to a total depth of 3301m MD. The well was logged with induction, density neutron, dipole sonic and a diplog. After logging, a DST was run to investigate a fault / fracture zone in the lower devonian.

Casing Data Summary

Storage Units:

Metric

Casing Type: Surface**Casing Size:** 339.7
Casing Landed @: 500.00
Casing Date:**Hole Size:** 445.0
Total Joints: 36
Plug Down Date:

of Joints / Length / O.D. / Weight: 36 joints of 81.1 kg/m Algoma L80

Cementing Details: 58 tonnes of 0-1-0 Expandomix + 1% CaCl₂**Remarks:**

Casing Type: Intermediate**Casing Size:** 244.5
Casing Landed @: 1,186.60
Casing Date:**Hole Size:** 311.0
Total Joints: 57
Plug Down Date:

of Joints / Length / O.D. / Weight: 57 Jts. of 64.74 kg/m Algoma L80

Cementing Details: 50 tonnes of 0-1-0 G**Remarks:**

Casing Type: Intermediate**Casing Size:** 177.8
Casing Landed @: 2,804.70
Casing Date: Feb 10, 1999 @ 15:00**Hole Size:** 216.0
Total Joints: 210
Plug Down Date: Feb 10, 1999 @ 21:21

of Joints / Length / O.D. / Weight: 205 Jts. (2779.2m) of IPSCO 177.8mm L80 LTC 38.69 kg/m and 2 Jts. (27.08m) of IPSCO 177.8mm L80 LTC 34.2 kg/m at bottom (2806.32m overall length) 3 Jts. left out.

Cementing Details: Cemented with 24.6 tonnes of 1-1-2 G and 17 tonnes of Thermal 40F**Remarks:** No cement returns, some flush. Landed in slips @ 04:30 hr, Feb 11, 1999

Wireline Logging Summary

Storage Units: Metric

Logging Suite Number: 1
Wireline Logging Company: Baker Atlas
District: Grande Prairie
Witness: Colin Bredin
Engineer: Roman Khafizov / D. Spelay
Unit Number: HL 6544

Was Pressure Control Equipment Utilized: Maximum Deviation: 6.400 °
Was the Logging Job Mechanically Assisted: Hole Size: 216.0

Total Lost Time: 0.00
Loggers' Total Down Time: 0.00
Total Job Time (From Rig up to Rig down): 8.00

	Measured Depth	True Vertical Depth
Casing Depth Driller	1,186.60	1,186.10
Casing Depth Logger	1,185.70	1,185.20
Total Depth Driller (Tally)	2,805.00	2,802.10
Total Depth Driller (Strap or SLM)	2,805.00	

General Remarks: No problems.

Logging Run #: 1
Date: Feb 8, 1999

Drilling Fluid Data

Drilling Fluid Type: Invert
Fluid Density: 1010 Viscosity: 53 pH: Fluid Loss:

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ ° Maximum Temperature: 122.0 °
Mud Filtrate Resistivity (Rmf): @ ° Source (Rmf):
Mud Cake Resistivity (Rmc): @ ° Source (Rmc):

Logging Run Information

Date on Bottom: Feb 8, 1999
Total Depth Logger: 2,804.70 (MD) 2,801.80 (TVD)

Logging Tools: HDIL-GR (High Definition Induction Log) from 2794.8 to 1185.7m
ZDL-CN-PE-GR-DAC (Compensated Z-Densilog - Compensated Neutron) from 2787.3 to 1185.7m
DAL-GR-XY (Digital Acoustilog) from 2801.4 to 1185.7m

Remarks: Logged in combination.

Hole Conditions: Good

Wireline Logging Summary

Storage Units:

Metric

Logging Suite Number: 2
Wireline Logging Company: Baker Atlas
District: Grande Prairie
Witness: C. Bredin

Engineer: N. Lesage
Unit Number: HL6544

Was Pressure Control Equipment Utilized:
Was the Logging Job Mechanically Assisted:

Maximum Deviation: 2.000 °
Hole Size: 156.0

Total Lost Time: 0.00
Loggers' Total Down Time: 15.00
Total Job Time (From Rig up to Rig down): 23.00

	Measured Depth	True Vertical Depth
Casing Depth Driller	2,804.70	
Casing Depth Logger	2,804.60	
Total Depth Driller (Tally)	3,301.00	
Total Depth Driller (Strap or SLM)	3,301.00	

General Remarks: Good effort by engineer. Numerous tool problems. Had to hotshot replacement density.

Logging Run #: 1
Date: Feb 24, 1999

Drilling Fluid Data

Drilling Fluid Type: Invert / Baryte

Fluid Density: 1075 Viscosity: 54 pH: Fluid Loss:

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ °
Mud Filtrate Resistivity (Rmf): @ °
Mud Cake Resistivity (Rmc): @ °
Maximum Temperature: 147.2 °
Source (Rmf): Flowline
Source (Rmc):

Logging Run Information

Date on Bottom: Feb 24, 1999
Total Depth Logger: 3,299.30 (MD) (TVD)

Logging Tools: HDIL-GR from 3296.9 to 2804.6m

Remarks: Ran in combination with density which failed.

Hole Conditions: Good

Wireline Logging Summary

Storage Units:

Metric

Logging Run #: 2
Date: Feb 24, 1999

Drilling Fluid Data

Drilling Fluid Type: Invert / Baryte
Fluid Density: 1075 Viscosity: 54 pH: Fluid Loss:

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ ° Maximum Temperature: 155.3 °
Mud Filtrate Resistivity (Rmf): @ ° Source (Rmf): Flowline
Mud Cake Resistivity (Rmc): @ ° Source (Rmc):

Logging Run Information

Date on Bottom: Feb 24, 1999
Total Depth Logger: 3,299.00 (MD) (TVD)

Logging Tools: MAC-GR-CAL from 3295.5 to 2804.6m

Remarks: Ran in combination with diplog which failed.

Hole Conditions: Good

Logging Run #: 3
Date: Feb 24, 1999

Drilling Fluid Data

Drilling Fluid Type: Invert / Baryte
Fluid Density: 1075 Viscosity: 54 pH: Fluid Loss:

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ ° Maximum Temperature: 158.2 °
Mud Filtrate Resistivity (Rmf): @ ° Source (Rmf): Flowline
Mud Cake Resistivity (Rmc): @ ° Source (Rmc):

Logging Run Information

Date on Bottom: Feb 24, 1999
Total Depth Logger: 3,298.20 (MD) (TVD)

Logging Tools: HEXDIP-GR from 3282.6 to 2804.6m

Remarks: Single run.

Hole Conditions: Good

Wireline Logging Summary

Storage Units:

Metric

Logging Run #: 4
Date: Feb 24, 1999

Drilling Fluid Data

Drilling Fluid Type: Invert / Baryte
Fluid Density: 1075 Viscosity: 54 pH: Fluid Loss:

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ ° Maximum Temperature: 160.1 °
Mud Filtrate Resistivity (Rmf): @ ° Source (Rmf): Flowline
Mud Cake Resistivity (Rmc): @ ° Source (Rmc):

Logging Run Information

Date on Bottom: Feb 24, 1999
Total Depth Logger: 3,299.00 (MD) (TVD)

Logging Tools: ZDL-CNL-GR-PE-CAL from 3298.4 to 2804.6m

Remarks: Ran replacement tool.

Hole Conditions: Good

Deviation / Directional Survey Report

Directional Drilling Company: United Geocom
Directional Drillers: John Webb
Measured While Drilling (MWD) Hands: Rik Kaminsky
Survey Type: electronic
Survey Mode: MWD
Survey Date: 1/26/99
Survey Calculation Method: minimum curvature
Vertical Section Calculated on: 0.00 ° plane

Survey Tie-In Information

Tie-In Depths	Measured Depth:	500.00	True Vertical Depth (TVD):	500.00
Tie-In Node	Latitude:	60.2453694	Longitude:	123.0231174
Tie-In Co-Ordinates				
N / S:				
E / W:				

Kick-Off (Whipstock) information

Kick-Off Depths	Measured Depth:	True Vertical Depth (TVD):
Kick-Off Node	Latitude:	Longitude:
Kick-Off Co-Ordinates		
N / S:		
E / W:		

Remarks: Bring vertical hole back to well center.

Survey Points

Storage Units:

Metric

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
500.00	500.00	0.000	0.00	0.00	0.00	0.00	0.00
550.00	550.00	0.320	78.80	0.03	0.14	0.11	0.19
660.32	660.32	0.350	91.07	0.08	0.78	0.58	0.02
774.00	774.00	0.460	104.70	-0.04	1.56	1.01	0.04
886.00	885.90	0.810	55.62	0.29	2.65	1.99	0.17
1,001.00	1,000.93	2.770	68.29	1.78	5.91	5.26	0.52
1,113.00	1,112.72	4.100	61.14	4.71	11.93	11.47	0.37
1,202.36	1,201.85	4.200	59.20	7.93	17.54	17.61	0.06
1,337.65	1,336.99	2.600	316.80	12.71	19.69	22.60	1.20
1,472.58	1,471.81	1.900	317.10	16.58	16.07	23.07	0.16
1,616.57	1,615.70	2.900	23.70	21.66	15.91	26.75	0.58
1,674.90	1,673.95	3.500	67.00	23.71	18.15	29.77	1.25
1,684.59	1,683.62	3.900	72.60	23.92	18.73	30.32	1.67
1,694.12	1,693.12	4.300	77.20	24.10	19.39	30.89	1.63
1,703.85	1,702.82	4.600	83.70	24.22	20.13	31.48	1.81
1,713.57	1,712.51	4.800	88.10	24.28	20.93	32.05	1.27
1,723.24	1,722.15	4.900	91.70	24.28	21.74	32.59	0.99
1,732.89	1,731.76	4.600	100.10	24.20	22.54	33.06	2.35
1,742.71	1,741.55	4.500	109.80	24.00	23.29	33.21	2.37
1,752.23	1,751.04	4.600	116.00	23.71	23.98	33.56	1.58
1,761.91	1,760.69	4.400	121.20	23.34	24.65	33.85	1.41
1,771.60	1,770.35	4.200	120.30	22.97	25.27	34.10	0.65
1,781.42	1,780.15	3.900	118.20	22.63	25.88	34.36	1.02
1,791.13	1,789.84	3.900	118.30	22.32	26.46	34.61	0.02
1,800.95	1,799.64	3.700	132.40	21.95	26.99	34.79	2.91
1,810.58	1,809.24	4.400	150.80	21.42	27.40	34.77	4.57
1,820.39	1,819.02	4.900	161.40	20.69	27.71	34.47	3.03
1,830.21	1,828.81	4.800	168.70	19.89	27.93	34.23	1.91
1,839.94	1,838.50	4.400	165.40	19.13	28.10	33.97	1.48
1,849.75	1,848.29	4.100	169.40	18.42	28.26	33.73	1.29
1,859.12	1,857.64	3.800	174.60	17.78	28.35	33.47	1.50
1,868.43	1,866.93	3.500	183.90	17.19	28.36	33.16	2.14
1,878.10	1,876.58	3.100	186.60	16.64	28.31	32.74	1.33
1,887.10	1,885.57	2.800	193.70	16.18	28.23	32.47	1.57
1,897.19	1,895.64	3.100	194.90	15.68	28.10	32.13	0.91
1,907.01	1,905.45	3.600	202.40	15.14	27.92	31.73	2.03

1,916.49	1,914.91	3.900	199.10	14.56	27.70	31.28	1.17
1,926.14	1,924.54	2.900	192.40	14.01	27.54	30.89	3.34
1,935.95	1,934.34	1.800	176.90	13.61	27.49	30.68	3.86
1,945.60	1,943.99	1.000	162.10	13.38	27.53	30.61	2.71
1,955.12	1,953.51	0.800	157.20	13.24	27.58	29.01	0.67
1,964.83	1,963.22	1.300	186.00	13.07	27.59	28.90	2.20
1,974.51	1,972.89	2.200	196.30	12.78	27.53	28.65	2.94
1,984.32	1,982.69	3.100	195.60	12.35	27.41	28.26	2.75
1,993.66	1,992.02	3.600	207.70	11.84	27.20	29.67	2.77
2,003.36	2,001.70	3.200	225.30	11.38	26.87	29.18	3.44
2,013.17	2,011.49	3.400	251.90	11.10	26.40	28.63	4.68
2,022.87	2,021.18	3.200	263.30	10.98	25.85	28.09	2.12
2,032.11	2,030.40	3.100	262.40	10.92	25.35	27.60	0.36
2,041.92	2,040.20	3.500	247.20	10.76	24.81	27.05	2.93
2,051.67	2,049.92	4.200	248.10	10.52	24.21	26.39	2.16
2,061.47	2,059.69	5.000	243.20	10.19	23.49	25.61	2.73
2,071.15	2,069.34	5.000	237.50	9.77	22.76	24.77	1.54
2,080.85	2,079.00	4.500	231.70	9.31	22.10	23.97	2.14
2,090.66	2,088.79	3.800	216.40	8.81	21.61	23.33	3.99
2,100.00	2,098.11	3.700	220.50	8.33	21.23	22.80	0.92
2,109.54	2,107.63	3.700	233.40	7.91	20.78	22.24	2.61
2,119.25	2,117.32	3.900	243.10	7.58	20.24	21.61	2.08
2,128.95	2,126.99	4.300	244.00	7.27	19.62	20.92	1.25
2,138.76	2,136.77	5.000	245.50	6.93	18.90	20.13	2.17
2,148.43	2,146.40	4.900	245.90	6.59	18.14	19.29	0.33
2,158.15	2,156.09	4.500	254.20	6.31	17.39	18.50	2.43
2,167.86	2,165.78	3.500	259.40	6.16	16.73	17.83	3.28
2,177.56	2,175.46	2.700	265.00	6.08	16.21	17.32	2.64
2,187.25	2,185.14	2.100	249.60	6.00	15.82	16.92	2.71
2,196.57	2,194.46	1.800	239.60	5.87	15.53	16.60	1.46
2,206.30	2,204.18	2.100	229.70	5.67	18.27	16.28	1.39
2,216.00	2,213.88	2.400	220.20	5.40	15.00	15.94	1.48
2,225.70	2,223.57	2.500	221.10	5.09	14.73	15.58	0.34
2,235.45	2,233.31	2.600	219.40	4.76	14.45	15.21	0.39
2,245.14	2,242.99	2.600	220.60	4.42	14.17	14.84	0.17
2,254.84	2,252.68	2.300	238.30	4.15	13.86	14.46	2.50
2,264.67	2,262.50	2.800	254.80	3.99	13.46	14.03	2.70
2,274.30	2,272.11	4.300	262.90	3.88	12.87	13.44	4.92
2,284.01	2,281.79	5.300	260.80	3.76	12.07	12.64	3.14
2,293.83	2,291.56	5.700	257.60	3.58	11.14	11.71	1.54

2,303.52	2,301.20	6.200	255.40	3.35	10.17	10.71	1.70
2,312.93	2,310.55	6.400	258.20	3.11	9.16	9.68	1.17
2,324.75	2,322.31	5.500	254.20	2.83	7.97	8.27	2.51
2,332.57	2,330.10	5.000	251.00	2.61	7.29	7.58	2.22
2,341.88	2,339.37	5.300	250.00	2.33	6.50	6.76	1.01
2,351.56	2,349.00	5.600	2.02	5.64	5.86	0.93	
2,361.23	2,358.63	5.400	258.40	1.76	4.75	4.97	2.60
2,370.91	2,368.27	4.500	262.40	1.62	3.93	4.20	2.99
2,380.60	2,377.94	3.500	260.20	1.52	3.26	3.57	3.13
2,390.19	2,387.51	3.000	256.00	1.41	2.73	3.06	1.73
2,399.90	2,397.21	2.200	257.00	1.31	2.30	2.64	2.48
2,409.26	2,406.57	1.100	260.10	1.25	2.04	2.39	3.54
2,418.99	2,416.30	0.500	289.70	1.25	1.90	2.22	2.19
2,428.81	2,426.12	1.000	306.70	1.32	1.79	2.19	1.66
2,438.08	2,435.39	1.300	319.10	1.44	1.66	2.19	1.26
2,447.41	2,444.71	1.300	346.00	1.63	1.57	2.26	1.94
2,457.05	2,454.35	1.300	54.30	1.80	1.63	2.42	4.54
2,466.41	2,463.71	1.800	74.30	1.90	1.86	2.65	2.34
2,476.23	2,473.52	1.700	83.70	1.96	2.15	2.90	0.93
2,485.95	2,483.24	1.900	95.70	1.96	2.45	3.11	1.31
2,495.23	2,492.51	2.700	110.90	1.86	2.81	3.29	3.23
2,504.95	2,502.22	3.700	127.10	1.59	3.27	3.42	4.13
2,514.77	2,512.01	4.200	128.50	1.18	3.81	3.90	1.56
2,524.45	2,521.67	4.100	117.00	0.80	4.39	4.45	2.59
2,533.57	2,530.77	3.800	103.10	0.58	4.98	5.01	3.29
2,543.27	2,540.45	3.700	85.70	0.53	5.60	5.63	3.52
2,552.98	2,550.14	3.500	70.80	0.65	6.20	6.23	2.95
2,562.24	2,559.38	2.300	62.30	0.86	6.68	6.72	2.25
2,571.70	2,568.83	2.400	57.70	1.08	7.06	7.13	2.02
2,581.52	2,578.65	1.700	69.30	1.24	7.37	7.45	2.48
2,590.64	2,587.76	0.600	136.30	1.26	7.53	7.61	5.15
2,600.36	2,597.48	1.100	201.10	1.13	7.54	7.60	3.10
2,609.66	2,606.78	1.500	201.40	0.93	7.46	7.51	1.29
2,619.14	2,616.26	1.200	174.40	0.72	7.42	7.46	2.20
2,628.96	2,626.08	0.800	133.60	0.57	7.48	7.51	2.42
2,638.67	2,635.79	0.700	92.60	0.52	7.59	7.61	1.65
2,648.36	2,645.48	0.400	32.10	0.55	7.67	7.69	1.89
2,657.82	2,654.94	0.300	3.80	0.60	7.69	7.71	0.62
2,667.53	2,664.65	0.200	246.10	0.62	7.67	7.70	1.33
2,676.89	2,674.01	0.200	205.10	0.60	7.65	7.68	0.45

2,686.57	2,683.69	0.300	173.90	0.56	7.65	7.67	0.51
2,696.39	2,693.50	0.600	158.80	0.48	7.67	7.68	0.98
2,706.06	2,703.17	0.800	136.00	0.39	7.73	7.67	1.05
2,715.64	2,712.75	1.000	146.00	0.27	7.83	7.77	0.79
2,725.46	2,722.57	1.200	156.50	0.10	7.92	7.87	0.87
2,734.75	2,731.86	1.300	166.10	-0.09	7.98	7.96	0.75
2,744.46	2,741.57	0.900	171.20	-0.27	8.02	8.01	1.27
2,754.23	2,751.34	0.800	176.40	-0.41	8.03	8.04	0.39
2,763.91	2,761.02	1.000	172.70	-0.56	8.05	8.07	0.65
2,773.62	2,770.72	1.100	176.20	-0.74	8.07	8.10	0.37
2,783.33	2,780.43	1.600	166.30	-0.97	8.10	8.14	1.70
2,805.00	2,802.09	1.600	166.30	-1.55	8.25	8.39	0.00
2,854.00	2,851.10	1.500					
2,911.00	2,908.00	1.250					
2,968.00	2,965.06	0.625					
3,026.00	3,023.03	1.500					
3,071.00	3,068.01	1.750					
3,090.00	3,087.01	2.000					
3,121.00	3,118.00	1.500					
3,168.00	3,165.00	1.000					
3,225.00	3,222.00	2.000					

Deviation / Directional Survey Report

Directional Drilling Company: United Geocom
Directional Drillers: Pat Franz
Measured While Drilling (MWD) Hands:
Survey Type: electronic
Survey Mode: MWD
Survey Date: 3/18/98
Survey Calculation Method: minimum curvature
Vertical Section Calculated on: 64.21 ° plane

Survey Tie-In Information

Tie-In Depths	Measured Depth:	True Vertical Depth (TVD):
Tie-In Node	Latitude:	Longitude:
Tie-In Co-Ordinates		
N / S:		
E / W:		

Kick-Off (Whipstock) Information

Kick-Off Depths	Measured Depth:	1,218.00	True Vertical Depth (TVD):	1,217.40
Kick-Off Node	Latitude:		Longitude:	
Kick-Off Co-Ordinates				
N / S:				
E / W:				

Remarks: Plugged back, Ran casing to 1186m. Ran motor to straighten hole. Initial leg was out to 14.5 degrees.

Survey Points

Storage Units:

Metric

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
500.00	500.00	0.000	0.00	0.00	0.00	0.00	0.00
550.00	550.00	0.320	78.80	0.03	0.14	0.14	0.19
660.32	660.32	0.350	91.07	0.08	0.78	0.73	0.02
774.00	773.99	0.460	104.70	-0.04	1.56	1.39	0.04
886.00	885.99	0.810	55.62	0.29	2.65	2.52	0.17
1,001.00	1,000.93	2.770	68.29	1.78	5.91	6.90	0.52
1,113.00	1,112.72	4.100	61.14	4.71	11.93	12.79	0.37
1,203.00	1,202.45	4.760	55.63	8.37	17.83	19.70	0.26
1,213.80	1,213.22	4.250	53.28	8.86	18.52	20.53	1.51
1,226.00	1,225.39	3.190	62.52	9.29	19.18	21.32	2.99
1,242.00	1,241.38	1.820	53.95	9.65	19.78	22.01	2.66
1,255.00	1,254.37	1.030	27.29	9.87	20.01	22.31	2.33
1,270.00	1,269.37	0.970	10.56	10.12	20.09	22.49	0.59
1,286.00	1,285.37	1.330	332.69	10.41	20.03	22.57	1.54
1,297.00	1,297.16	1.250	312.82	10.62	19.87	22.51	1.15
1,313.40	1,312.75	2.810	313.04	11.00	19.47	22.31	3.00
1,325.37	1,324.71	3.230	319.19	11.45	19.03	22.12	1.33
1,340.00	1,339.32	2.330	304.81	11.94	18.52	21.87	2.32
1,353.27	1,352.58	1.440	277.26	12.11	18.13	21.60	2.82
1,382.50	1,381.80	2.530	301.13	12.49	17.22	20.94	1.38
1,397.90	1,397.18	2.670	313.70	12.91	16.67	20.63	1.14
1,411.00	1,410.27	2.500	300.96	13.27	16.20	20.36	1.37
1,427.07	1,426.32	2.000	278.39	13.49	15.62	19.94	1.88
1,440.00	1,439.25	2.480	241.92	13.40	15.15	19.47	3.42
1,455.00	1,454.23	2.480	225.00	13.01	14.64	18.84	1.46

Deviation / Directional Survey Report

Directional Drilling Company:
Directional Drillers:
Measured While Drilling (MWD) Hands:
Survey Type: drift
Survey Mode:
Survey Date: 1/20/99
Survey Calculation Method:
Vertical Section Calculated on: ° plane

Survey Tie-In Information

Tie-In Depths	Measured Depth:	True Vertical Depth (TVD):
Tie-In Node	Latitude:	Longitude:
Tie-In Co-Ordinates		
N / S:		
E / W:		

Kick-Off (Whipstock) Information

Kick-Off Depths	Measured Depth:	True Vertical Depth (TVD):
Kick-Off Node	Latitude:	Longitude:
Kick-Off Co-Ordinates		
N / S:		
E / W:		

Remarks: Drill out cement to 1455m following previously drilled directional hole.

Survey Points

Storage Units:

Metric

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
1,251.00	1,251.00	2.000					
1,269.00	1,269.00	0.500					
1,303.00	1,303.00	1.500					
1,332.00	1,332.00	2.750					
1,361.00	1,361.00	2.000					
1,390.00	1,390.00	1.500					
1,419.00	1,419.00	2.000					
1,448.00	1,448.00	2.000					
1,506.00	1,506.00	2.750					
1,534.00	1,534.00	2.750					
1,564.00	1,564.00	2.500					
1,611.00	1,611.00	3.000					
1,640.00	1,640.00	3.000					
1,669.00	1,669.00	3.000					

Drilling Fluid Summary

Storage Units: Metric

Drilling Fluid Type:	Invert	From:	1,186	To:	2,805
Drilling Fluid Type:	Nitrified Invert	From:	2,805	To:	2,936
Drilling Fluid Type:	Invert / baryte	From:	2,936	To:	3,301

Formation Top Summary

Storage Units:

Metric

Kelly Bushing Elevation:
Ground Elevation:

386.70
380.50

Casing Flange Elevation:

7.20

**** All Depths measured from Kelly Bushing Elevation ****

Group Formation Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
Exshaw	1,555.00	1,567.50	1,566.60	1,564.50	1,563.60	-1,176.90	14.50
Kotcho	1,567.00	1,578.00	1,577.10	1,579.00	1,578.10	-1,191.40	423.20
Tetcho	1,958.00	2,007.00	2,005.30	2,003.00	2,001.30	-1,614.60	128.20
Kakisa	2,074.00	2,139.00	2,137.00	2,131.50	2,129.50	-1,742.80	21.40
Fort Simpson	2,093.00	2,156.00	2,153.90	2,153.00	2,150.90	-1,764.20	631.20
Muskwa	2,671.00	2,785.00	2,782.10	2,785.00	2,782.10	-2,395.40	12.00
Slave Point	2,681.00	2,797.00	2,794.10	2,797.00	2,794.10	-2,407.40	83.40
Watt Mountain	2,775.00	2,894.50	2,891.50	2,880.50	2,877.50	-2,490.80	13.00
Sulphur Point	2,786.00	2,906.00	2,903.00	2,893.50	2,890.50	-2,503.80	56.50
Horn River	2,820.00	2,950.50	2,947.50	2,950.00	2,947.00	-2,560.30	95.50
Nahanni	2,875.00	3,047.00	3,044.00	3,045.50	3,042.50	-2,655.80	57.00
Headless	2,938.00	3,100.00	3,097.00	3,102.50	3,099.50	-2,712.80	42.50
Landry	2,972.00	3,147.00	3,144.00	3,145.00	3,142.00	-2,755.30	61.50
Arnica	3,012.00	3,207.00	3,204.00	3,206.50	3,203.50	-2,816.80	40.00

Formation Top Summary

Storage Units:

Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

**** All Depths measured from Kelly Bushing Elevation ****

Group Formation Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
<i>Landry 2</i>		3,249.50	3,246.50	3,246.50	3,243.50	-2,856.80	22.50
<i>Arnica 2</i>		3,264.00	3,261.00	3,269.00	3,266.00	-2,879.30	

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Exshaw
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: lower
Period: Mississippian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1,567.50	1,566.60	-1,179.90	10.50
Log Top	1,564.50	1,563.60	-1,176.90	14.50

Evaluation:

SHALE dark gray brown, fissile, blocky to platy, common nodular and disseminated pyrite

Conclusion:

No reservoir potential.

Group:
Formation: Kotcho
Member:
Boundary Type: disconformable
Fault Type:

Era: Paleozoic
Series: upper
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1,578.00	1,577.10	-1,190.40	428.20
Log Top	1,579.00	1,578.10	-1,191.40	423.20

Evaluation:

Predominantly SHALE, light to medium gray, calcareous, fissile, platy to blocky. Upper Kotcho contains numerous argillaceous LIMESTONE thinbeds.

Conclusion:

No reservoir potential.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Tetcho
Member:
Boundary Type: disconformable
Fault Type:

Era: Paleozoic
Series: upper
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,007.00	2,005.30	-1,618.60	131.70
Log Top	2,003.00	2,001.30	-1,614.60	128.20

Evaluation:

The upper Tetcho is interbedded SILTSTONE gray brown, light gray brown, calcareous matrix, slightly argillaceous, tight, LIMESTONE light gray brown, medium gray brown, cryptocrystalline to microcrystalline, predominately mudstone, no visible porosity and SHALE medium to dark gray brown, dark brown, very calcareous in part, fissile, platy to blocky. Lower Tetcho is predominately SHALE medium gray, medium to dark gray, calcareous, fissile, platy to blocky with common thinbeds of LIMESTONE medium gray, light to medium gray brown, cryptocrystalline, mudstone, very argillaceous, no visible porosity.

Conclusion:

No apparent reservoir potential.

Group:
Formation: Kakisa
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: upper
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,139.00	2,137.00	-1,750.30	16.90
Log Top	2,131.50	2,129.50	-1,742.80	21.40

Evaluation:

Predominately LIMESTONE light to medium gray brown, medium gray brown, cryptocrystalline, mudstone, argillaceous in part, tight

Conclusion:

No reservoir potential.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Fort Simpson
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: upper
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,156.00	2,153.90	-1,767.20	628.20
Log Top	2,153.00	2,150.90	-1,764.20	631.20

Evaluation:

SHALE medium gray, medium gray calcareous, fissile, platy to blocky. The Fort Simpson is extremely dehydrated and swells immediately upon contact with water.

Conclusion:

No reservoir potential.

Group:
Formation: Muskwa
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: upper
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,785.00	2,782.10	-2,395.40	12.00
Log Top	2,785.00	2,782.10	-2,395.40	12.00

Evaluation:

SHALE medium gray, medium to dark gray brown, slightly calcareous, fissile, platy to blocky, trace slickensided.

Conclusion:

No reservoir potential.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Slave Point
Member:
Boundary Type: unconformable
Fault Type:

Era: Paleozoic
Series: middle
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,797.00	2,794.10	-2,407.40	97.40
Log Top	2,797.00	2,794.10	-2,407.40	83.40

Evaluation:

Slave Point is a LIMESTONE mottled light to dark gray brown, dark gray brown, cryptocrystalline, mudstone, slightly argillaceous, tight, medium to dark brown, cryptocrystalline to microcrystalline, mottled in part, predominately mudstone, trace of wackestone, no apparent porosity

Conclusion:

No apparent reservoir.

Group:
Formation: Watt Mountain
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: middle
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,894.50	2,891.50	-2,504.80	11.50
Log Top	2,880.50	2,877.50	-2,490.80	13.00

Evaluation:

LIMESTONE medium brown, mottled light to medium brown, dark gray brown, cryptocrystalline, mudstone, tight bordered by an upper SHALE light gray, fissile, platy, disseminated pyrite and a base SHALE light gray, waxy, calcareous to anhydritic, abundant nodular and disseminated pyrite.

Conclusion:

No reservoir potential.

Formation Evaluations

Storage Units: Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Sulphur Point
Member:
Boundary Type: unconformable
Fault Type:

Era: Paleozoic
Series: middle
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,906.00	2,903.00	-2,516.30	44.50
Log Top	2,893.50	2,890.50	-2,503.80	56.50

Evaluation:

Drilled underbalanced with nitrified invert. Predominantly LIMESTONE mottled light brown, light to medium brown, cryptocrystalline, mudstone, clean, no visible porosity. Stuck in hole at a porous fracture at 2936m. Recovered salt water, field tested at 42,000 parts per million. Cleaner and lighter in color than carbonates above or below. Shallower environment. No indication of dolomitization.

Conclusion:

No apparent gas potential.

Group:
Formation: Horn River
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: middle
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	2,950.50	2,947.50	-2,560.80	96.50
Log Top	2,950.00	2,947.00	-2,560.30	95.50

Evaluation:

Horn River is LIMESTONE mottled light to dark gray, dark gray brown, cryptocrystalline, mudstone, argillaceous in part, no porosity, with common thinbeds or laminar SHALE dark gray, very calcareous, fissile, platy, slickensided in part. Probable fracture at 3038m (log).

Conclusion:

No apparent gas potential.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Nahanni
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: middle
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	3,047.00	3,044.00	-2,657.30	53.00
Log Top	3,045.50	3,042.50	-2,655.80	57.00

Evaluation:

Predominately LIMESTONE mottled light to dark gray brown, cryptocrystalline, medium to dark brown lithographic, minor dark gray brown to black, cryptocrystalline to microcrystalline, mudstone, occasional SHALE thinbeds, dark gray to black, calcareous, fissile, platy

Conclusion:

No apparent reservoir potential.

Group:
Formation: Headless
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: middle
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	3,100.00	3,097.00	-2,710.30	47.00
Log Top	3,102.50	3,099.50	-2,712.80	42.50

Evaluation:

Predominately LIMESTONE mottled light to dark gray brown, cryptocrystalline, medium to dark brown lithographic, minor dark gray brown to black, cryptocrystalline to microcrystalline, mudstone, disseminated pyrite throughout, occasional SHALE thinbeds, dark gray to black, calcareous, fissile, platy

Conclusion:

No apparent reservoir potential.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Landry
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: lower
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	3,147.00	3,144.00	-2,757.30	60.00
Log Top	3,145.00	3,142.00	-2,755.30	61.50

Evaluation:

DOLOMITE white to translucent, pearly, massive, minor light gray, cryptocrystalline to microcrystalline, mudstone, trace of intercrystalline bitumen, trace of clear prismatic dolomite crystals, probable scattered vuggy porosity, no apparent permeability

Conclusion:

No apparent reservoir.

Group:
Formation: Arnica
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: lower
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	3,207.00	3,204.00	-2,817.30	42.50
Log Top	3,206.50	3,203.50	-2,816.80	40.00

Evaluation:

Predominately DOLOMITE light to medium brown, medium gray, dark gray brown slightly argillaceous, cryptocrystalline to microcrystalline, predominately mudstone, minor wackestone, no visible porosity, occasional SHALE laminae or thinbeds. Trace of pin point to microcrystalline porosity in upper Arnica, no apparent permeability.

Conclusion:

No apparent reservoir.

Storage Units: Metric

Kelly Bushing Elevation: 386.70
Ground Elevation: 380.50

Casing Flange Elevation: 7.20

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Landry 2
Member:
Boundary Type: nonconformable
Fault Type: unknown

Era: Paleozoic
Series: lower
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	3,249.50	3,246.50	-2,859.80	14.50
Log Top	3,246.50	3,243.50	-2,856.80	22.50

Evaluation:

DOLOMITE white to translucent, pearly, massive, coarsely crystalline in part, no visible porosity, minor medium gray, dark gray, slightly argillaceous, cryptocrystalline to microcrystalline, tight. Had a fast drilling break from 3247 to 3252m (log). Fault with fracture zone. No gas response, zone took a couple cubes of mud. Added invert and ran centrifuge which dropped the weight from 1075 to about 1050 and allowed a significant increase in connection gas on all connections below this point. Probable fracture porosity from 3249.0 to 3249.2m, 3251.4 to 3251.6m and 3253.6 to 3253.8m drilled depth.

Conclusion:

Probably wet but has reservoir potential.

Group:
Formation: Arnica 2
Member:
Boundary Type: conformable
Fault Type:

Era: Paleozoic
Series: lower
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	3,264.00	3,261.00	-2,874.30	
Log Top	3,269.00	3,266.00	-2,879.30	

Evaluation:

DOLOMITE light to medium brown, dark brown, cryptocrystalline to microcrystalline, mudstone to wackestone, tight, minor sparry white veining, trace of clear prismatic dolomite crystals, probable scattered vuggy porosity, no apparent permeability.

Conclusion:

No apparent reservoir.

Sample Descriptions

Storage Units:

Metric

1,545.00 to 1,550.00 (5.00)	100% SHALE medium to dark gray brown, fissile, platy, slightly micromicaceous
1,550.00 to 1,555.00 (5.00)	100% SHALE medium to dark gray brown, dark gray brown, fissile, platy, minor cavings
1,555.00 to 1,560.00 (5.00)	100% SHALE dark gray brown, medium to dark gray brown, fissile, platy
1,560.00 to 1,565.00 (5.00)	100% SHALE dark gray brown, medium to dark gray brown, fissile, platy
1,565.00 to 1,570.00 (5.00)	100% SHALE dark gray brown, fissile, blocky to platy, common nodular and disseminated pyrite
1,570.00 to 1,575.00 (5.00)	100% SHALE dark gray brown, fissile, blocky to platy, common nodular and disseminated pyrite
1,575.00 to 1,580.00 (5.00)	80% SHALE as above, medium to dark gray brown calcareous, light to medium gray very calcareous, fissile, platy to blocky
	20% LIMESTONE light to medium gray, argillaceous, cryptocrystalline, mudstone, tight
1,580.00 to 1,585.00 (5.00)	90% SHALE light to medium gray, light to medium gray calcareous, fissile, predominately blocky
	10% LIMESTONE light to medium gray, argillaceous, cryptocrystalline, mudstone, tight
1,585.00 to 1,590.00 (5.00)	80% SHALE light to medium gray, medium gray, calcareous, fissile, blocky to platy
	20% LIMESTONE light to medium gray, argillaceous, cryptocrystalline, mudstone, tight
1,590.00 to 1,595.00 (5.00)	80% SHALE light to medium gray, medium gray, calcareous, fissile, predominately blocky
	20% LIMESTONE light to medium gray, argillaceous, cryptocrystalline, mudstone, tight
1,595.00 to 1,600.00 (5.00)	90% SHALE light to medium gray, medium gray, calcareous, fissile, platy to blocky
	10% LIMESTONE as above
1,600.00 to 1,605.00 (5.00)	100% SHALE medium gray, light to medium gray, very calcareous in part, fissile, platy to blocky, minor LIMESTONE light to medium gray, argillaceous, tight

Sample Descriptions

Storage Units:

Metric

1,605.00 to 1,610.00 (5.00)	100% SHALE medium gray, light to medium gray, very calcareous in part, fissile, predominately blocky, minor LIMESTONE as above
1,610.00 to 1,615.00 (5.00)	100% SHALE medium gray, light to medium gray, very calcareous in part, predominately blocky, minor argillaceous LIMESTONE as above
1,615.00 to 1,620.00 (5.00)	100% SHALE light to medium gray, medium gray, very calcareous in part, fissile, platy to blocky, trace of disseminated pyrite
1,620.00 to 1,625.00 (5.00)	100% SHALE medium gray, light to medium gray, very calcareous in part, fissile, platy to blocky
1,625.00 to 1,630.00 (5.00)	100% SHALE as above, trace of disseminated pyrite
1,630.00 to 1,635.00 (5.00)	100% SHALE medium gray, light to medium gray, very calcareous in part, fissile, platy to blocky, trace of disseminated pyrite
1,635.00 to 1,640.00 (5.00)	100% SHALE as above
1,640.00 to 1,645.00 (5.00)	100% SHALE medium gray, light to medium gray, very calcareous, fissile, platy to blocky, trace of disseminated pyrite
1,645.00 to 1,650.00 (5.00)	100% SHALE as above
1,650.00 to 1,655.00 (5.00)	100% SHALE medium gray, light to medium gray, very calcareous, fissile, platy to blocky, trace of disseminated pyrite
1,655.00 to 1,660.00 (5.00)	100% SHALE as above
1,660.00 to 1,665.00 (5.00)	100% SHALE medium gray, light to medium gray calcareous, fissile, platy to blocky, trace of disseminated pyrite
1,665.00 to 1,670.00 (5.00)	100% SHALE medium gray, light to medium gray calcareous, fissile, platy to blocky
1,670.00 to 1,675.00 (5.00)	100% SHALE as above
1,675.00 to 1,680.00 (5.00)	100% SHALE medium gray, light to medium gray calcareous, fissile, platy to blocky

Sample Descriptions

Storage Units: Metric

1,680.00 to 1,685.00	100% SHALE	
(5.00)	medium gray, light to medium gray calcareous, fissile, blocky to platy	
1,685.00 to 1,690.00	100% SHALE	
(5.00)	as above	
1,690.00 to 1,695.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy	
1,695.00 to 1,700.00	100% SHALE	
(5.00)	as above	
1,700.00 to 1,705.00	100% SHALE	
(5.00)	medium gray, light to medium gray, very calcareous in part, fissile, blocky to platy	
1,705.00 to 1,710.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy	
1,710.00 to 1,715.00	100% SHALE	
(5.00)	as above	
1,715.00 to 1,720.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy	
1,720.00 to 1,725.00	100% SHALE	
(5.00)	as above	
1,725.00 to 1,730.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy	
1,730.00 to 1,735.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy, trace of disseminated pyrite	
1,735.00 to 1,740.00	100% SHALE	
(5.00)	as above	
1,740.00 to 1,745.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy	
1,745.00 to 1,750.00	100% SHALE	
(5.00)	as above	
1,750.00 to 1,755.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy	
1,755.00 to 1,760.00	100% SHALE	
(5.00)	as above	
1,760.00 to 1,765.00	100% SHALE	
(5.00)	medium gray, light to medium gray, calcareous, fissile, blocky to platy	
1,765.00 to 1,770.00	100% SHALE	
(5.00)	as above	

Sample Descriptions

Storage Units:

Metric

1,770.00 to 1,775.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,775.00 to 1,780.00	100% SHALE	
(5.00)		as above, trace of disseminated pyrite
1,780.00 to 1,785.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,785.00 to 1,790.00	100% SHALE	
(5.00)		as above
1,790.00 to 1,795.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,795.00 to 1,800.00	100% SHALE	
(5.00)		as above
1,800.00 to 1,805.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,805.00 to 1,810.00	100% SHALE	
(5.00)		as above
1,810.00 to 1,815.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,815.00 to 1,820.00	100% SHALE	
(5.00)		as above
1,820.00 to 1,825.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,825.00 to 1,830.00	100% SHALE	
(5.00)		as above
1,830.00 to 1,835.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,835.00 to 1,840.00	100% SHALE	
(5.00)		as above
1,840.00 to 1,845.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, platy to blocky
1,845.00 to 1,850.00	100% SHALE	
(5.00)		as above
1,850.00 to 1,855.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, blocky to platy
1,855.00 to 1,860.00	100% SHALE	
(5.00)		as above

Sample Descriptions

Storage Units:

Metric

1,860.00 to 1,865.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, platy to blocky
1,865.00 to 1,870.00	100% SHALE	
(5.00)		as above
1,870.00 to 1,875.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, platy to blocky
1,875.00 to 1,880.00	100% SHALE	
(5.00)		as above
1,880.00 to 1,885.00	100% SHALE	
(5.00)		medium gray, light to medium gray, calcareous, fissile, platy to blocky
1,885.00 to 1,890.00	100% SHALE	
(5.00)		medium gray, calcareous, fissile, platy to blocky
1,890.00 to 1,895.00	100% SHALE	
(5.00)		as above
1,895.00 to 1,900.00	100% SHALE	
(5.00)		medium gray, calcareous, fissile, platy to blocky
1,900.00 to 1,905.00	100% SHALE	
(5.00)		as above
1,905.00 to 1,910.00	100% SHALE	
(5.00)		medium gray, minor medium gray brown, calcareous, fissile, platy to blocky
1,910.00 to 1,915.00	100% SHALE	
(5.00)		as above
1,915.00 to 1,920.00	100% SHALE	
(5.00)		medium gray, medium gray brown, calcareous, fissile, platy to blocky
1,920.00 to 1,925.00	100% SHALE	
(5.00)		as above, trace of disseminated pyrite
1,925.00 to 1,930.00	100% SHALE	
(5.00)		medium gray, medium gray brown, calcareous, fissile, platy to blocky, trace of disseminated pyrite
1,930.00 to 1,935.00	100% SHALE	
(5.00)		medium gray, medium gray brown, calcareous, fissile, platy to blocky
1,935.00 to 1,940.00	100% SHALE	
(5.00)		as above
1,940.00 to 1,945.00	100% SHALE	
(5.00)		medium gray, medium gray brown, calcareous, fissile, platy to blocky
1,945.00 to 1,950.00	100% SHALE	
(5.00)		medium gray brown, medium gray, calcareous, fissile, platy to blocky

Sample Descriptions

Storage Units: Metric

1,950.00 to 1,955.00 (5.00)	100% SHALE as above
1,955.00 to 1,960.00 (5.00)	100% SHALE medium gray brown, medium gray, calcareous, fissile, platy to blocky
1,960.00 to 1,965.00 (5.00)	100% SHALE as above
1,965.00 to 1,970.00 (5.00)	100% SHALE medium gray brown, medium gray, slightly calcareous, fissile, platy to blocky
1,970.00 to 1,975.00 (5.00)	100% SHALE as above
1,975.00 to 1,980.00 (5.00)	100% SHALE medium gray brown, medium gray, slightly calcareous, fissile, platy to blocky
1,980.00 to 1,985.00 (5.00)	100% SHALE medium gray brown, slightly calcareous, fissile, platy to blocky
1,985.00 to 1,990.00 (5.00)	100% SHALE as above, trace slickenside
1,990.00 to 1,995.00 (5.00)	100% SHALE medium to dark gray brown, dark brown, slightly calcareous, fissile, platy to blocky
1,995.00 to 2,000.00 (5.00)	100% SHALE as above, common cavings
2,000.00 to 2,005.00 (5.00)	100% SHALE medium to dark gray brown, dark brown, slightly calcareous, fissile, platy to blocky
2,005.00 to 2,010.00 (5.00)	60% SHALE as above
	30% SILTSTONE medium gray brown, light gray brown, calcareous matrix, slightly argillaceous, tight
	10% LIMESTONE light gray brown, medium gray brown, cryptocrystalline to microcrystalline, predominately mudstone, no visible porosity
2,010.00 to 2,015.00 (5.00)	40% SHALE medium to dark gray brown, dark brown, very calcareous in part, fissile, platy to blocky
	30% LIMESTONE light to medium gray brown, cryptocrystalline, mudstone, argillaceous, tight
	30% SILTSTONE as above

Sample Descriptions

Storage Units: Metric

2,015.00 to 2,020.00 (5.00)	40% LIMESTONE light to medium gray brown, cryptocrystalline, argillaceous, mudstone, tight
	40% SHALE as above
	20% SILTSTONE light to medium gray brown, calcite matrix, argillaceous, tight
2,020.00 to 2,025.00 (5.00)	80% SHALE medium gray, medium to dark gray, calcareous, fissile, blocky to platy
	20% LIMESTONE as above
2,025.00 to 2,030.00 (5.00)	100% SHALE as above, minor LIMESTONE as above
2,030.00 to 2,035.00 (5.00)	100% SHALE medium gray, medium to dark gray, calcareous, fissile, blocky to platy
2,035.00 to 2,040.00 (5.00)	100% SHALE medium to dark gray, calcareous, fissile, blocky to platy
2,040.00 to 2,045.00 (5.00)	100% SHALE as above, minor LIMESTONE light to medium gray, argillaceous, cryptocrystalline, mudstone, tight
2,045.00 to 2,050.00 (5.00)	100% SHALE as above
2,050.00 to 2,055.00 (5.00)	100% SHALE medium gray, medium to dark gray, slightly calcareous, fissile, blocky to platy
2,055.00 to 2,060.00 (5.00)	100% SHALE medium gray, medium to dark gray, calcareous, fissile, platy to blocky
2,060.00 to 2,065.00 (5.00)	70% SHALE as above
	30% LIMESTONE medium gray, light to medium gray brown, cryptocrystalline, mudstone, very argillaceous, no visible porosity
2,065.00 to 2,070.00 (5.00)	80% SHALE as above
	20% LIMESTONE as above
2,070.00 to 2,075.00 (5.00)	90% SHALE medium gray, medium to dark gray, calcareous, fissile, platy to blocky

Sample Descriptions

Storage Units:

Metric

2,070.00 to 2,075.00 (5.00)	10%	LIMESTONE light to medium gray, very argillaceous, cryptocrystalline, mudstone, tight
2,075.00 to 2,080.00 (5.00)	100%	SHALE medium gray, medium to dark gray, calcareous, fissile, platy to blocky
2,080.00 to 2,085.00 (5.00)	100%	SHALE medium gray, medium to dark gray, slightly calcareous, fissile, platy to blocky
2,085.00 to 2,090.00 (5.00)	100%	SHALE medium gray, medium to dark gray, slightly calcareous, fissile, platy to blocky
2,090.00 to 2,095.00 (5.00)	100%	SHALE as above
2,095.00 to 2,100.00 (5.00)	100%	SHALE medium gray, light to medium gray, slightly calcareous, fissile, platy to blocky, trace of disseminated pyrite
2,100.00 to 2,105.00 (5.00)	100%	SHALE as above, trace of disseminated pyrite
2,105.00 to 2,110.00 (5.00)	60%	LIMESTONE light gray white, light to medium gray, predominately cryptocrystalline, minor microcrystalline, mudstone, argillaceous in part, no porosity
	40%	SHALE as above
2,110.00 to 2,115.00 (5.00)	70%	SHALE medium gray, light to medium gray, calcareous, fissile, platy to blocky
	30%	LIMESTONE as above
2,115.00 to 2,120.00 (5.00)	70%	SHALE as above
	30%	LIMESTONE light gray white, light to medium gray, cryptocrystalline, mudstone, argillaceous, tight
2,120.00 to 2,125.00 (5.00)	50%	LIMESTONE as above
	50%	SHALE medium gray, light to medium gray, calcareous, fissile, platy to blocky
2,125.00 to 2,130.00 (5.00)	70%	SHALE medium gray, light to medium gray, calcareous, fissile, platy to blocky
	30%	LIMESTONE light to medium gray, medium gray, cryptocrystalline, mudstone, argillaceous, tight

Sample Descriptions

Storage Units: Metric

2,130.00 to 2,135.00 (5.00)	80% SHALE medium gray, light to medium gray, calcareous, fissile, platy to blocky
	20% LIMESTONE as above
2,135.00 to 2,140.00 (5.00)	70% LIMESTONE light gray brown, medium brown, cryptocrystalline, mudstone, argillaceous, tight
	30% SHALE as above
2,140.00 to 2,145.00 (5.00)	60% LIMESTONE as above
	40% SHALE medium gray, light to medium gray, calcareous, fissile, blocky to platy
2,145.00 to 2,150.00 (5.00)	70% LIMESTONE light to medium gray brown, medium gray brown, cryptocrystalline, mudstone, argillaceous in part, tight
	30% SHALE as above
2,150.00 to 2,155.00 (5.00)	90% LIMESTONE light to medium gray brown, medium gray brown, cryptocrystalline, minor microcrystalline, mudstone, argillaceous in part, no porosity
	10% SHALE as above
2,155.00 to 2,160.00 (5.00)	60% SHALE medium gray, slightly calcareous, fissile, blocky, scattered disseminated pyrite
	40% LIMESTONE as above
2,160.00 to 2,165.00 (5.00)	80% SHALE medium gray, light to medium gray, slightly calcareous, fissile, platy to blocky
	20% LIMESTONE as above
2,165.00 to 2,170.00 (5.00)	100% SHALE as above, minor LIMESTONE as above
2,170.00 to 2,175.00 (5.00)	100% SHALE medium gray, light to medium gray, calcareous in part, fissile, platy to blocky
2,175.00 to 2,180.00 (5.00)	100% SHALE medium gray, light to medium gray, calcareous, fissile, platy to blocky

Sample Descriptions

Storage Units:

Metric

2,180.00 to 2,185.00 (5.00)	100% SHALE as above
2,185.00 to 2,190.00 (5.00)	100% SHALE medium gray, light to medium gray, calcareous, fissile, platy to blocky
2,190.00 to 2,195.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy to blocky
2,195.00 to 2,200.00 (5.00)	100% SHALE medium gray, light to medium gray, calcareous in part, fissile, platy to blocky
2,200.00 to 2,205.00 (5.00)	100% SHALE medium gray, medium gray slightly calcareous, fissile, predominately platy
2,205.00 to 2,210.00 (5.00)	100% SHALE as above
2,210.00 to 2,215.00 (5.00)	100% SHALE medium gray, medium gray slightly calcareous, fissile, predominately platy
2,215.00 to 2,220.00 (5.00)	100% SHALE as above
2,220.00 to 2,225.00 (5.00)	100% SHALE medium gray, medium gray slightly calcareous, fissile, predominately platy
2,225.00 to 2,230.00 (5.00)	100% SHALE as above
2,230.00 to 2,235.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, predominately platy
2,235.00 to 2,240.00 (5.00)	100% SHALE as above, trace of sparry calcite
2,240.00 to 2,245.00 (5.00)	100% SHALE medium gray, calcareous, fissile, platy, trace of sparry calcite
2,245.00 to 2,250.00 (5.00)	100% SHALE as above
2,250.00 to 2,255.00 (5.00)	100% SHALE medium gray, calcareous, fissile, platy
2,255.00 to 2,260.00 (5.00)	100% SHALE as above, trace of sparry calcite
2,260.00 to 2,265.00 (5.00)	100% SHALE medium gray, calcareous in part, fissile, platy
2,265.00 to 2,270.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy

Sample Descriptions

Storage Units: Metric

2,270.00 to 2,275.00 (5.00)	100% SHALE medium gray, medium gray slightly calcareous, fissile, platy
2,275.00 to 2,280.00 (5.00)	100% SHALE as above
2,280.00 to 2,285.00 (5.00)	100% SHALE medium gray, medium to dark gray, fissile, platy
2,285.00 to 2,290.00 (5.00)	100% SHALE medium gray, medium gray slightly calcareous, fissile, platy to blocky
2,290.00 to 2,295.00 (5.00)	100% SHALE medium gray, medium to dark gray, slightly calcareous in part, fissile, platy
2,295.00 to 2,300.00 (5.00)	100% SHALE as above
2,300.00 to 2,305.00 (5.00)	100% SHALE medium gray, medium to dark gray, slightly calcareous, fissile, platy, trace of sparry calcite
2,305.00 to 2,310.00 (5.00)	100% SHALE medium gray, calcareous in part, fissile, platy
2,310.00 to 2,315.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, platy to blocky
2,315.00 to 2,320.00 (5.00)	100% SHALE as above, trace of sparry calcite
2,320.00 to 2,325.00 (5.00)	100% SHALE medium gray, medium to dark gray, slightly calcareous, fissile, platy to blocky
2,325.00 to 2,330.00 (5.00)	100% SHALE as above
2,330.00 to 2,335.00 (5.00)	100% SHALE medium gray, medium to dark gray, slightly calcareous, fissile, platy to blocky
2,335.00 to 2,340.00 (5.00)	100% SHALE as above
2,340.00 to 2,345.00 (5.00)	100% SHALE medium gray, medium to dark gray, slightly calcareous, fissile, platy to blocky
2,345.00 to 2,350.00 (5.00)	100% SHALE as above
2,350.00 to 2,355.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, platy to blocky, trace of disseminated pyrite

Sample Descriptions

Storage Units:

Metric

2,355.00 to 2,360.00 (5.00)	100% SHALE as above, trace of sparry calcite
2,360.00 to 2,365.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, platy to blocky, trace of sparry calcite
2,365.00 to 2,370.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, platy to blocky, trace of disseminated pyrite
2,370.00 to 2,375.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, predominately platy
2,375.00 to 2,380.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, predominately platy
2,380.00 to 2,385.00 (5.00)	100% SHALE as above
2,385.00 to 2,390.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, predominately platy
2,390.00 to 2,395.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, predominately platy
2,395.00 to 2,400.00 (5.00)	100% SHALE as above
2,400.00 to 2,405.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, platy
2,405.00 to 2,410.00 (5.00)	100% SHALE as above
2,410.00 to 2,415.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, platy
2,415.00 to 2,420.00 (5.00)	100% SHALE as above
2,420.00 to 2,425.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,425.00 to 2,430.00 (5.00)	100% SHALE as above, trace of sparry calcite
2,430.00 to 2,435.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,435.00 to 2,440.00 (5.00)	100% SHALE as above
2,440.00 to 2,445.00 (5.00)	100% SHALE medium gray, slightly calcareous, fissile, platy

Sample Descriptions

Storage Units:

Metric

2,445.00 to 2,450.00	100% SHALE
(5.00)	as above
2,450.00 to 2,455.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy
2,455.00 to 2,460.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy, trace of sparry calcite
2,460.00 to 2,465.00	100% SHALE
(5.00)	as above
2,465.00 to 2,470.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy
2,470.00 to 2,475.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy, trace of sparry calcite
2,475.00 to 2,480.00	100% SHALE
(5.00)	as above
2,480.00 to 2,485.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy
2,485.00 to 2,490.00	100% SHALE
(5.00)	as above
2,490.00 to 2,495.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy
2,495.00 to 2,500.00	100% SHALE
(5.00)	as above
2,500.00 to 2,505.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy
2,505.00 to 2,510.00	100% SHALE
(5.00)	as above
2,510.00 to 2,515.00	100% SHALE
(5.00)	medium gray, slightly calcareous, fissile, platy
2,515.00 to 2,520.00	100% SHALE
(5.00)	as above
2,520.00 to 2,525.00	100% SHALE
(5.00)	medium gray, slightly calcareous in part, fissile, platy
2,525.00 to 2,530.00	100% SHALE
(5.00)	as above
2,530.00 to 2,535.00	100% SHALE
(5.00)	medium gray, slightly calcareous in part, fissile, platy

Sample Descriptions

Storage Units: Metric

2,535.00 to 2,540.00 (5.00)	100% SHALE medium gray, medium gray calcareous, fissile, platy, common cavings
2,540.00 to 2,545.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,545.00 to 2,550.00 (5.00)	100% SHALE as above
2,550.00 to 2,555.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,555.00 to 2,560.00 (5.00)	100% SHALE as above
2,560.00 to 2,565.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,565.00 to 2,570.00 (5.00)	100% SHALE as above
2,570.00 to 2,575.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,575.00 to 2,580.00 (5.00)	100% SHALE as above
2,580.00 to 2,585.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,585.00 to 2,590.00 (5.00)	100% SHALE as above
2,590.00 to 2,595.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,595.00 to 2,600.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,600.00 to 2,605.00 (5.00)	100% SHALE as above, platy to blocky
2,605.00 to 2,610.00 (5.00)	100% SHALE medium gray, slightly calcareous in part, fissile, platy
2,610.00 to 2,615.00 (5.00)	100% SHALE as above
2,615.00 to 2,620.00 (5.00)	100% SHALE medium gray, fissile, platy
2,620.00 to 2,625.00 (5.00)	100% SHALE as above

Sample Descriptions

Storage Units:

Metric

2,625.00 to 2,630.00	100% SHALE	
(5.00)	medium gray, fissile, platy	
2,630.00 to 2,635.00	100% SHALE	
(5.00)	as above	
2,635.00 to 2,640.00	100% SHALE	
(5.00)	medium gray, fissile, platy	
2,640.00 to 2,645.00	100% SHALE	
(5.00)	as above	
2,645.00 to 2,650.00	100% SHALE	
(5.00)	medium gray, fissile, platy	
2,650.00 to 2,655.00	100% SHALE	
(5.00)	as above	
2,655.00 to 2,660.00	100% SHALE	
(5.00)	medium gray, medium gray slightly calcareous, fissile, platy	
2,660.00 to 2,665.00	100% SHALE	
(5.00)	as above	
2,665.00 to 2,670.00	100% SHALE	
(5.00)	medium gray, medium gray slightly calcareous, fissile, platy	
2,670.00 to 2,675.00	100% SHALE	
(5.00)	medium gray, fissile, platy	
2,675.00 to 2,680.00	100% SHALE	
(5.00)	as above	
2,680.00 to 2,685.00	100% SHALE	
(5.00)	medium gray, fissile, platy	
2,685.00 to 2,690.00	100% SHALE	
(5.00)	as above	
2,690.00 to 2,695.00	100% SHALE	
(5.00)	medium gray, fissile, platy	
2,695.00 to 2,700.00	100% SHALE	
(5.00)	as above	
2,700.00 to 2,705.00	100% SHALE	
(5.00)	medium gray, fissile, platy to blocky	
2,705.00 to 2,710.00	100% SHALE	
(5.00)	as above	
2,710.00 to 2,715.00	100% SHALE	
(5.00)	medium gray, fissile, platy to blocky	

Sample Descriptions

Storage Units: Metric

2,715.00 to 2,720.00 (5.00)	100% SHALE as above
2,720.00 to 2,725.00 (5.00)	100% SHALE medium gray, fissile, platy to blocky
2,725.00 to 2,730.00 (5.00)	100% SHALE as above
2,730.00 to 2,735.00 (5.00)	100% SHALE medium gray, fissile, platy to blocky
2,735.00 to 2,740.00 (5.00)	100% SHALE as above
2,740.00 to 2,745.00 (5.00)	100% SHALE medium gray, fissile, platy to blocky
2,745.00 to 2,750.00 (5.00)	100% SHALE as above
2,750.00 to 2,755.00 (5.00)	100% SHALE medium gray, fissile, platy to blocky
2,755.00 to 2,760.00 (5.00)	100% SHALE as above
2,760.00 to 2,765.00 (5.00)	100% SHALE medium gray, fissile, platy to blocky
2,765.00 to 2,770.00 (5.00)	100% SHALE as above
2,770.00 to 2,775.00 (5.00)	100% SHALE as above, medium to dark gray brown, calcareous, fissile, platy to blocky, trace slickensided, probable fracture at 2772.6 to 2772.8m
2,775.00 to 2,780.00 (5.00)	100% SHALE medium gray, medium to dark gray brown, slightly calcareous, fissile, platy to blocky, trace slickensided
2,780.00 to 2,785.00 (5.00)	100% SHALE as above
2,785.00 to 2,790.00 (5.00)	100% SHALE medium gray, medium to dark gray brown, slightly calcareous, fissile, platy to blocky, trace slickensided
2,790.00 to 2,795.00 (5.00)	100% SHALE medium gray, medium to dark gray brown, calcareous, trace slickensided, fissile, platy to blocky, probable fracture at 2796m
2,795.00 to 2,800.00 (5.00)	70% SHALE as above, dark gray brown calcareous, common disseminated pyrite

Sample Descriptions

Storage Units:

Metric

2,795.00 to 2,800.00 (5.00)	30%	LIMESTONE medium brown, dark brown, cryptocrystalline, mass, mudstone, argillaceous in part, minor mottled light to medium gray brown, no porosity, trace of nodular and disseminated pyrite, trace of CHERT laminae, light to medium brown
2,800.00 to 2,805.00 (5.00)	70%	LIMESTONE mottled light to dark gray brown, dark brown, predominately cryptocrystalline mudstone, trace microcrystalline, argillaceous in part, tight, sulphurous odor when acidized
	30%	SHALE as above
2,805.00 to 2,810.00 (5.00)	80%	LIMESTONE medium to dark gray brown, cryptocrystalline to microcrystalline, predominately mudstone, dolomitic in part, tight
	20%	DOLOMITE dark gray brown to black, cryptocrystalline to microcrystalline, predominately mudstone, tight, trace of sparry dolomite, white to translucent, finely crystalline, wackestone to packstone, no visible porosity
2,810.00 to 2,815.00 (5.00)	100%	LIMESTONE as above, minor DOLOMITE as above, very poor sample
2,815.00 to 2,820.00 (5.00)	100%	LIMESTONE dark gray brown, predominately cryptocrystalline, minor microcrystalline, mudstone, trace of wackestone, slightly argillaceous, trace of intercrystalline bitumen, trace of sparry calcite laminae
2,820.00 to 2,825.00 (5.00)	100%	LIMESTONE as above
2,825.00 to 2,830.00 (5.00)	100%	LIMESTONE dark gray brown, cryptocrystalline to microcrystalline, mudstone, dark brown to black, argillaceous, cryptocrystalline, mudstone, tight, trace of sparry calcite
2,830.00 to 2,835.00 (5.00)	100%	LIMESTONE mottled light to dark gray brown, dark brown, cryptocrystalline, mudstone, tight, trace of microcrystalline wackestone, argillaceous in part, tight
2,835.00 to 2,840.00 (5.00)	100%	LIMESTONE as above
2,840.00 to 2,845.00 (5.00)	100%	LIMESTONE dark gray brown, cryptocrystalline to microcrystalline, mudstone, argillaceous, tight, light to medium brown microcrystalline wackestone, no porosity
2,845.00 to 2,850.00 (5.00)	100%	LIMESTONE dark gray brown, cryptocrystalline, mudstone, slightly argillaceous, tight, medium to dark brown, cryptocrystalline to microcrystalline, mottled in part, predominately mudstone, trace of wackestone, no porosity

Sample Descriptions

Storage Units:

Metric

2,850.00 to 2,855.00 (5.00)	100% LIMESTONE dark gray brown, light to medium brown, cryptocrystalline, mudstone, slightly argillaceous in part, tight
2,855.00 to 2,860.00 (5.00)	100% LIMESTONE as above
2,860.00 to 2,865.00 (5.00)	100% LIMESTONE mottled light to dark brown, dark gray brown argillaceous, predominately cryptocrystalline, minor microcrystalline, mudstone, no porosity
2,865.00 to 2,870.00 (5.00)	100% LIMESTONE medium brown, dark gray brown, mottled light in part, predominately cryptocrystalline mudstone, minor microcrystalline wackestone, no porosity
2,870.00 to 2,875.00 (5.00)	100% LIMESTONE medium brown, dark gray brown, mottled light in part, predominately cryptocrystalline mudstone, tight
2,875.00 to 2,880.00 (5.00)	100% LIMESTONE as above, trace of sparry calcite laminae
2,880.00 to 2,885.00 (5.00)	100% LIMESTONE medium brown, dark gray brown, argillaceous, cryptocrystalline, mudstone, mottled light to medium gray brown, predominately cryptocrystalline, microcrystalline in part, mudstone, no porosity, trace of sparry calcite laminae, trace of disseminated pyrite
2,885.00 to 2,890.00 (5.00)	100% LIMESTONE medium brown cryptocrystalline mudstone, minor mottled light to medium brown, cryptocrystalline mudstone, tight
2,890.00 to 2,895.00 (5.00)	100% LIMESTONE as above, trace of SHALE light gray, fissile, platy, minor disseminated pyrite
2,895.00 to 2,900.00 (5.00)	100% LIMESTONE as above
2,900.00 to 2,905.00 (5.00)	70% LIMESTONE medium brown, mottled light to medium brown, dark gray brown, cryptocrystalline, mudstone, no porosity
	20% SHALE light gray, waxy, calcareous to anhydritic, abundant nodular and disseminated pyrite
	10% ANHYDRITE light blue gray, clayey, common disseminated pyrite
2,905.00 to 2,910.00 (5.00)	100% LIMESTONE light brown, mottled light to medium brown, dark gray brown slightly argillaceous, predominately cryptocrystalline, mudstone, no porosity

Sample Descriptions

Storage Units: Metric

2,910.00 to 2,915.00 (5.00)	100%	LIMESTONE mottled light to medium brown, minor dark brown, cryptocrystalline, mudstone, tight, trace of disseminated pyrite
2,915.00 to 2,920.00 (5.00)	100%	LIMESTONE mottled light brown, light to medium brown, cryptocrystalline, mudstone, clean, no porosity
2,920.00 to 2,925.00 (5.00)	100%	LIMESTONE light brown, mottled light to medium brown, cryptocrystalline, mudstone, clean, trace microcrystalline, tight
2,925.00 to 2,930.00 (5.00)	100%	LIMESTONE light brown, mottled buff to light brown, cryptocrystalline, mudstone, clean, no porosity
2,930.00 to 2,935.00 (5.00)	100%	LIMESTONE as above, trace of SHALE black, calcareous, fissile, platy
2,935.00 to 2,940.00 (5.00)	100%	LIMESTONE buff to light brown, mottled medium brown in part, cryptocrystalline, mudstone, clean, no porosity, common sparry calcite
2,940.00 to 2,945.00 (5.00)	100%	LIMESTONE buff to light brown, mottled in part, white to light gray, cryptocrystalline, mudstone, clean, no porosity, occasional sparry calcite, minor SHALE laminae, dark gray, fissile, platy
2,945.00 to 2,950.00 (5.00)	100%	LIMESTONE as above
2,950.00 to 2,955.00 (5.00)	80%	LIMESTONE dark gray, cryptocrystalline, mudstone, argillaceous, tight, minor sparry calcite veining
	20%	SHALE dark gray, very calcareous, fissile, platy, slickensided in part
2,955.00 to 2,960.00 (5.00)	60%	SHALE dark gray to black, very calcareous, fissile, platy to blocky, slickensided in part
	40%	LIMESTONE dark gray argillaceous, cryptocrystalline, mudstone, tight, commonly slickensided
2,960.00 to 2,965.00 (5.00)	90%	LIMESTONE mottled light to dark gray, dark gray brown, cryptocrystalline, mudstone, slightly argillaceous, no porosity, trace of sparry calcite veining
	10%	SHALE as above
2,965.00 to 2,970.00 (5.00)	100%	LIMESTONE as above

Sample Descriptions

Storage Units:

Metric

2,970.00 to 2,975.00 (5.00)	100% LIMESTONE	medium to dark gray, dark gray brown, argillaceous, cryptocrystalline, mudstone, tight
2,975.00 to 2,980.00 (5.00)	100% LIMESTONE	mottled light to dark gray, dark gray brown, cryptocrystalline, mudstone, argillaceous in part, no porosity
2,980.00 to 2,985.00 (5.00)	100% LIMESTONE	as above
2,985.00 to 2,990.00 (5.00)	100% LIMESTONE	mottled light to dark gray brown, cryptocrystalline, mudstone, argillaceous in part, no porosity
2,990.00 to 2,995.00 (5.00)	100% LIMESTONE	as above, minor SHALE dark gray, very calcareous, fissile, platy
2,995.00 to 3,000.00 (5.00)	100% LIMESTONE	mottled light to dark gray brown, cryptocrystalline, mudstone, argillaceous in part, no porosity, minor SHALE laminae
3,000.00 to 3,005.00 (5.00)	100% LIMESTONE	as above
3,005.00 to 3,010.00 (5.00)	100% LIMESTONE	mottled light to dark gray brown, cryptocrystalline, mudstone, slightly argillaceous, tight, common sparry calcite veining
3,010.00 to 3,015.00 (5.00)	100% LIMESTONE	mottled medium to dark gray brown, light gray brown in part, slightly argillaceous, cryptocrystalline, mudstone, tight, minor sparry calcite veining
3,015.00 to 3,020.00 (5.00)	100% LIMESTONE	as above, minor SHALE laminae, dark gray to black, fissile, platy
3,020.00 to 3,025.00 (5.00)	100% LIMESTONE	mottled light to medium gray brown, medium to dark brown, slightly argillaceous in part, cryptocrystalline, mudstone, tight
3,025.00 to 3,030.00 (5.00)	100% LIMESTONE	as above
3,030.00 to 3,035.00 (5.00)	100% LIMESTONE	mottled light to medium gray, gray brown, dark gray brown, slightly argillaceous, cryptocrystalline, mudstone, tight
3,035.00 to 3,040.00 (5.00)	100% LIMESTONE	as above
3,040.00 to 3,045.00 (5.00)	100% LIMESTONE	mottled light to medium gray brown, dark gray brown slightly argillaceous, cryptocrystalline, mudstone, no visible porosity, probable fractures from 3040.2 to 3040.4m and 3040.8 to 3041.2m

Sample Descriptions

Storage Units:

Metric

3,045.00 to 3,050.00 (5.00)	100% LIMESTONE mottled light to medium, medium to dark gray brown, minor dark gray to black argillaceous, cryptocrystalline, mudstone, tight, minor sparry calcite veining
3,050.00 to 3,055.00 (5.00)	100% LIMESTONE as above
3,055.00 to 3,060.00 (5.00)	100% LIMESTONE mottled light to dark gray brown, dark brown slightly argillaceous, cryptocrystalline, mudstone, tight, trace of microcrystalline calcite
3,060.00 to 3,065.00 (5.00)	100% LIMESTONE as above, dark gray to black, cryptocrystalline to microcrystalline, mudstone, trace dark brown lithographic
3,065.00 to 3,070.00 (5.00)	100% LIMESTONE as above, minor SHALE dark gray to black, very calcareous, fissile, platy
3,070.00 to 3,075.00 (5.00)	100% LIMESTONE medium to dark brown lithographic, mottled light to dark gray brown, cryptocrystalline, mudstone, no porosity, minor calcareous SHALE laminae
3,075.00 to 3,080.00 (5.00)	100% LIMESTONE mottled light to dark gray brown, cryptocrystalline, medium to dark brown lithographic, minor dark gray brown to black, cryptocrystalline to microcrystalline, mudstone, occasional SHALE thinbeds, dark gray to black, calcareous, fissile, platy
3,080.00 to 3,085.00 (5.00)	100% LIMESTONE as above, occasional SHALE thinbeds
3,085.00 to 3,090.00 (5.00)	100% LIMESTONE mottled light to dark gray brown, dark gray brown slightly argillaceous, cryptocrystalline, mudstone, no porosity, minor SHALE laminae, dark gray to black, calcareous, fissile, platy
3,090.00 to 3,095.00 (5.00)	100% LIMESTONE as above
3,095.00 to 3,100.00 (5.00)	100% LIMESTONE mottled medium to dark gray, dark gray brown, cryptocrystalline, mudstone, slightly argillaceous, no porosity, trace of sparry calcite
3,100.00 to 3,105.00 (5.00)	100% LIMESTONE medium brown, dark brown, mottled light in part, cryptocrystalline, mudstone, no porosity, trace of sparry calcite veining, trace of coarse pellets
3,105.00 to 3,110.00 (5.00)	100% LIMESTONE mottled light to dark gray brown, cryptocrystalline, mudstone, clean, medium brown lithographic mudstone, no visible porosity, trace of disseminated pyrite
3,110.00 to 3,115.00 (5.00)	100% LIMESTONE mottled light to medium gray brown, clean, dark gray brown, cryptocrystalline, medium brown lithographic, mudstone, no porosity, trace of disseminated pyrite

Sample Descriptions

Storage Units:

Metric

3,115.00 to 3,120.00 (5.00)	100%	LIMESTONE as above
3,120.00 to 3,125.00 (5.00)	100%	LIMESTONE mottled light to medium brown, clean, dark gray brown, cryptocrystalline, medium brown lithographic, mudstone, no porosity, trace of disseminated pyrite
3,125.00 to 3,130.00 (5.00)	100%	LIMESTONE mottled light to medium gray brown, clean, minor dark brown, cryptocrystalline, mudstone, tight
3,130.00 to 3,135.00 (5.00)	100%	LIMESTONE mottled light to medium gray brown, medium to dark brown, cryptocrystalline, mudstone, medium brown lithographic, light gray cryptocrystalline, mudstone, minor disseminated pyrite
3,135.00 to 3,140.00 (5.00)	100%	LIMESTONE as above, light gray cryptocrystalline, mudstone, clean, tight, minor SHALE laminae, light gray green, fissile, platy, calcareous
3,140.00 to 3,145.00 (5.00)	70%	LIMESTONE as above
	20%	DOLOMITE sparry white to translucent, light gray, mudstone to wackestone, very coarsely crystalline in part, dolomitic cement, scattered intercrystalline bitumen, scattered intercrystalline pyrite, no visible porosity
	10%	SHALE light gray green, glauconitic, calcareous, trace of disseminated pyrite
3,145.00 to 3,150.00 (5.00)	90%	DOLOMITE sparry white to translucent, pearly, veining to massive, no visible porosity, light to medium gray, cryptocrystalline to finely crystalline in part, mudstone to wackestone, trace of intercrystalline bitumen, trace of pyrite, no visible porosity, trace of clear prismatic dolomite crystals, probable scattered vuggy porosity, no apparent permeability
	10%	LIMESTONE as above
3,150.00 to 3,155.00 (5.00)	100%	DOLOMITE white to translucent, pearly, massive, no visible porosity, minor light gray, cryptocrystalline to finely crystalline in part, dolomitic cement, predominately mudstone, trace of intercrystalline bitumen, no visible porosity
3,155.00 to 3,160.00 (5.00)	100%	DOLOMITE as above
3,160.00 to 3,165.00 (5.00)	100%	DOLOMITE white to translucent, pearly, massive, minor light gray, cryptocrystalline to microcrystalline, mudstone, trace of intercrystalline bitumen, no visible porosity

Sample Descriptions

Storage Units:

Metric

3,165.00 to 3,170.00 (5.00)	100% DOLOMITE as above, trace of clear prismatic dolomite crystals, probable scattered vuggy porosity, no apparent permeability
3,170.00 to 3,175.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, minor light gray, cryptocrystalline to microcrystalline, mudstone, trace of intercrystalline bitumen, trace of coarse prismatic dolomite, probable scattered vugs
3,175.00 to 3,180.00 (5.00)	100% Dolomite as above
3,180.00 to 3,185.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, tight, minor light gray, cryptocrystalline to coarsely crystalline, trace of intercrystalline bitumen, no visible porosity
3,185.00 to 3,190.00 (5.00)	100% DOLOMITE as above, predominately massive
3,190.00 to 3,195.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, tight, minor light gray, cryptocrystalline to microcrystalline, mudstone, no porosity
3,195.00 to 3,200.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, tight, minor light gray brown, cryptocrystalline, trace finely crystalline, mudstone, trace of prismatic dolomite crystals, probable scattered vuggy porosity, no apparent permeability
3,200.00 to 3,205.00 (5.00)	100% DOLOMITE as above
3,205.00 to 3,210.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, tight, light gray to light brown cryptocrystalline mudstone, dark gray to black cryptocrystalline to microcrystalline mudstone, no visible porosity
3,210.00 to 3,215.00 (5.00)	100% DOLOMITE light to medium brown, cryptocrystalline, mudstone, tight, dark brown to black, microcrystalline, wackestone, slightly argillaceous, dolomitic matrix, trace of pin point and intercrystalline porosity 3-4%
3,215.00 to 3,220.00 (5.00)	100% DOLOMITE light to medium brown, cryptocrystalline, minor microcrystalline, mudstone, no porosity, minor dark gray microcrystalline as above, trace of SHALE dark gray to black, fissile, platy
3,220.00 to 3,225.00 (5.00)	100% DOLOMITE as above
3,225.00 to 3,230.00 (5.00)	100% DOLOMITE light to medium brown, cryptocrystalline to microcrystalline, mudstone, tight, minor dark gray to black microcrystalline wackestone, no visible porosity

Sample Descriptions

Storage Units:

Metric

3,230.00 to 3,235.00 (5.00)	100% DOLOMITE as above, minor light to medium brown, microcrystalline, wackestone, no visible porosity
3,235.00 to 3,240.00 (5.00)	100% DOLOMITE light to medium brown, medium gray, dark gray brown slightly argillaceous, cryptocrystalline to microcrystalline, predominately mudstone, minor wackestone, no visible porosity
3,240.00 to 3,245.00 (5.00)	100% DOLOMITE dark gray to black microcrystalline wackestone, slightly argillaceous, no visible porosity, light to medium brown, calcareous, cryptocrystalline, mudstone, tight
3,245.00 to 3,250.00 (5.00)	100% DOLOMITE light to medium brown, cryptocrystalline to microcrystalline, mudstone to wackestone, no visible porosity, trace of DOLOMITE sparry white to translucent, pearly, massive, tight
3,250.00 to 3,255.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, coarsely crystalline in part, no visible porosity, minor DOLOMITE as above. Probable fractures at 3249.0, 3251.4 and 3253.6m
3,255.00 to 3,260.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, coarsely crystalline in part, no porosity, minor medium gray, dark gray, slightly argillaceous, cryptocrystalline to microcrystalline, tight
3,260.00 to 3,265.00 (5.00)	100% DOLOMITE white to translucent, pearly, massive, trace coarsely crystalline, minor light gray cryptocrystalline mudstone, tight, trace of prismatic dolomite crystals, probable scattered vuggy porosity, no apparent permeability
3,265.00 to 3,270.00 (5.00)	100% DOLOMITE as above, common light to medium brown, dark brown, cryptocrystalline to microcrystalline, predominately mudstone, minor wackestone, no visible porosity
3,270.00 to 3,275.00 (5.00)	100% DOLOMITE light to medium brown, dark brown to black, cryptocrystalline to microcrystalline, mudstone to wackestone, no visible porosity, minor white pearly as above
3,275.00 to 3,280.00 (5.00)	100% DOLOMITE as above, minor sparry white dolomite veining
3,280.00 to 3,285.00 (5.00)	100% DOLOMITE light to medium brown, dark brown, cryptocrystalline to microcrystalline, mudstone to wackestone, tight, minor sparry white veining, trace of clear prismatic dolomite crystals, probable scattered vuggy porosity, no apparent permeability
3,285.00 to 3,290.00 (5.00)	100% DOLOMITE as above
3,290.00 to 3,295.00 (5.00)	100% DOLOMITE light to medium brown, medium to dark brown, cryptocrystalline to microcrystalline, mudstone to wackestone, no visible porosity, minor sparry white veining, minor

Sample Descriptions

Storage Units:

Metric

SHALE thinbeds, dark gray to black, fissile, platy

3,295.00 to 3,300.00 100% **DOLOMITE**

(5.00)

as above, minor light gray, cryptocrystalline, mudstone, calcareous, tight

5. **WELL EVALUATION**

Logs are in pockets at the back of binder

Formation & Production Tests:

Three DSTs were run - reports are attached in this section

DST #1: 3245-3270 m

DST #2: 3227-3270 m

DST #3: 3033-3044 m

PARAMOUNT RESOURCES LTD.

FIELD DRILL STEM TEST REPORT

A. WELL DATA

DATE Feb-26-1999
WELL NAME Paramount Berkley Arrowhead LOCATION Arrowhead 0-15
DST No. 1 Interval 3245-3270 Formation Lardy
Last Casing: Size 177.8mm Depth 2805m Open Hole: Size 156mm Depth 3301m
Hole Troubles Hole Drag Caliper at Packer(s) 158-160mm
Mud: Wt 1075 Vis 50 W.L. 13.5 % Oil 92.8 ppm Cl 185500

B. TEST STRING DATA

Testing Company Baker Oil Tools Type of Test In Flate Straddle
Type & No. of packers Rubber In Flatable-2 Size 126mm
DP size 89mm Weight 23.06kg/m Length 2948.40
DC size 120mm Weight 70kg/m ID 58mm Length 194.16
Tailpipe size _____ Weight _____ Length _____ Perfs _____
T.D.String 3248.82 Recorder Depth 3248 Water Cushion 900m-Invert BH Choke 25.4mm
Packer depths 3245m & 3270m Wt on Packers _____
Other Equip Bottom Hole Sampler Pump out Sub-Safety Joint

C. TEST RESULTS

Temp 135.4 °C

Times: PF 10 ISI 60 Flow 90 FSI 270mins

Pressures: PF 10141 IF 15545 IH 34121 ISI 33/08
FF 32432 FH 34121 FSI 33/08

FLOW DESCRIPTION

Preflow Very weak Air Blow- Hose made Bubbles on Surface of Water in Pail
Valve Open Very Weak Air Blow- Hose went down 1/4" below Surface of Water in Pail after 60 mins Held for 30mins
Recoveries 150m Saline Invert Mud

D. SAMPLE DETAILS

Reverse Circ out Invert Mud Cushion and 150m Fluid Recovery
Caught 4 Samples of Fluid when Circ out 150m Recovery
Sent to: AGAT Labs Via: Baker Tester Date Sent: Mar-01-1999
Her Willis

E. REMARKS

Hole was Swabbing For First 5 Stands pulled out of Hole- Next 10 Stands Hole was Stable- Fluid Holding in BOPs- Close BOP- Pump Mud thru kill line to Push Mud past Packers- Hole taking Fluid Rest of Way out
Left both Packer Rubbers in Hole Supervisor Wilbert Collinco

NOTE: Data reported on this form are field readings taken

FIELD REPORT

REMARKS

SEQUENCE OF TEST EVENTS:

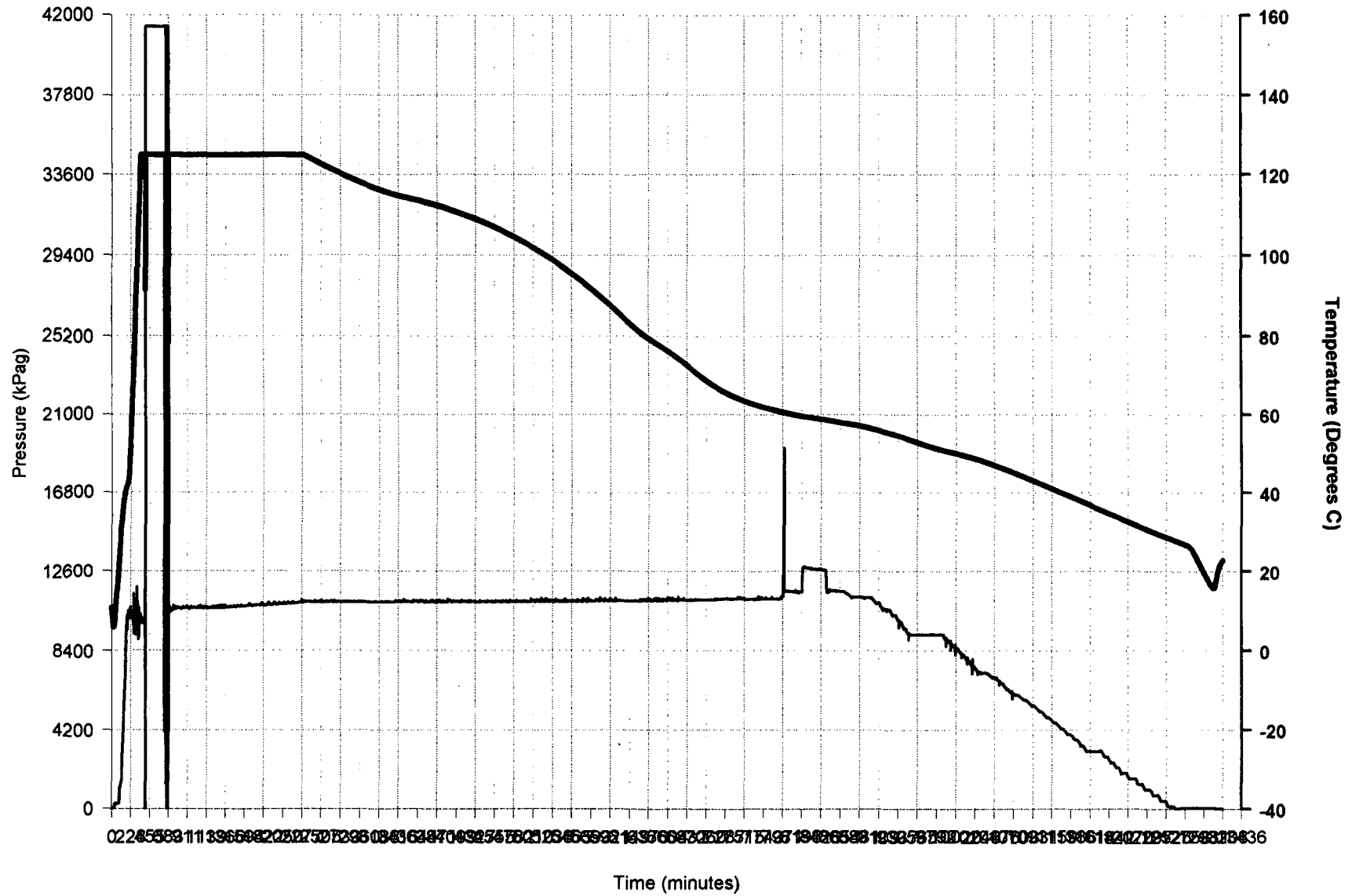
All measurements are field estimates.
7000daN hole drag both ways. Tool was
swabbing from the time we pulled free
untill approximately 1500m. Filled the hole
by forcing mud past tool with annular
closed. the electronic recorders failed
due to temperature.

[illegible]

RECOVERY VERIFICATION SIGNATURE:	
TOTAL FLUID RECOVERED	1050 m
1050 m OF invert	CONSISTING OF:
m OF	SALINITY
m OF	SALINITY
m OF	SALINITY
m OF	SALINITY
TEST WAS REVERSED OUT: YES ☒ NO ☐	
BTM. H. SAMPLER #	NSN
GAS BOMB #	SENT TO AGAT
No. OF FLUID SAMPLES TAKEN	4
	SENT TO AGAT

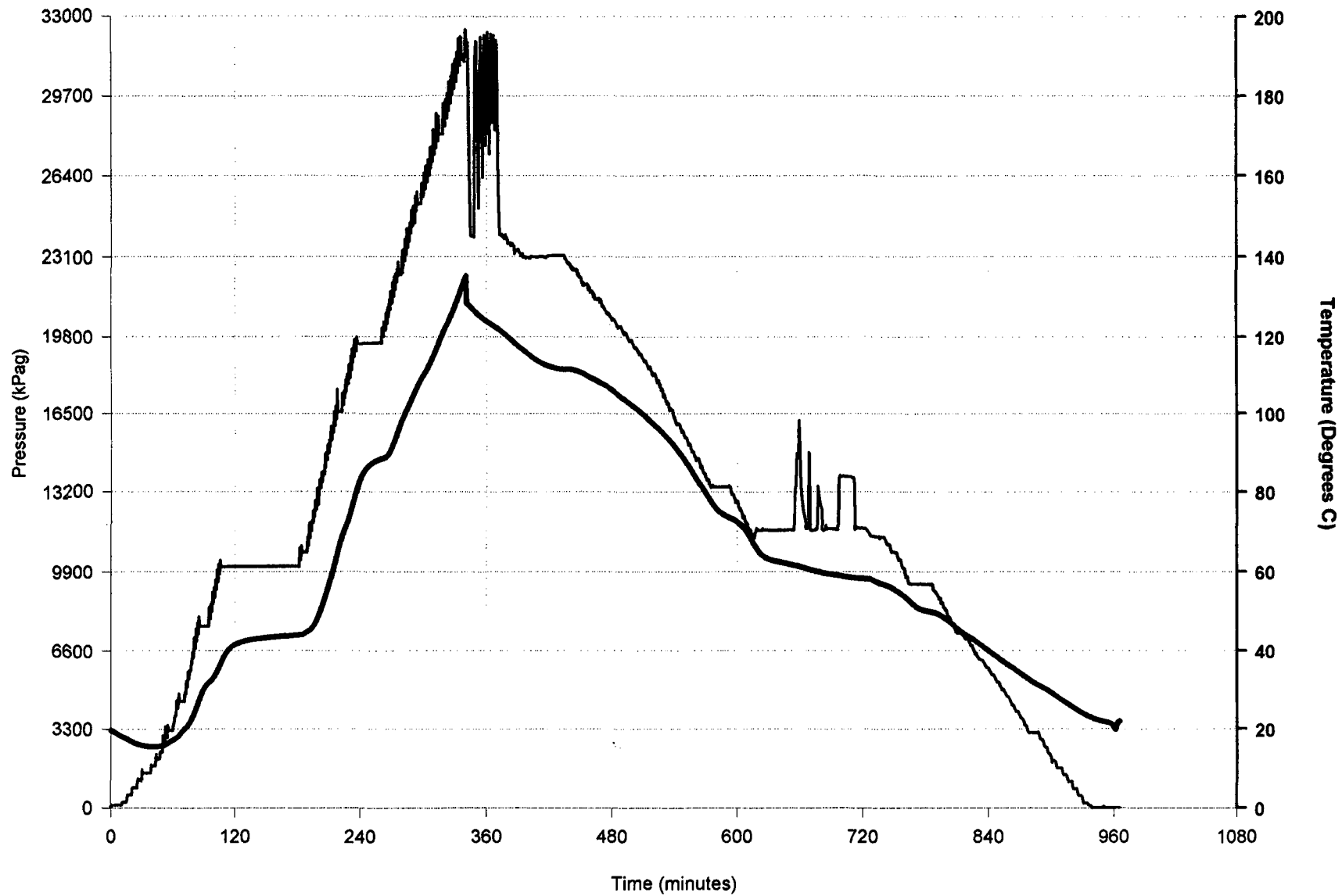
Baker Oil Tools Drill Stem Testing

Paramount Berkley Arrowhead 0-15
3000156030123000
DST #: 1
Recorder: M27



Baker Oil Tools Drill Stem Testing

Paramount Berkley Arrowhead 0-15
3000156030123000
DST #: 1
Recorder: M77





TEST TOOL & PIPE RECORD

Oil Tools

Well Name: Paramount Berkley... Location: 3000156030123000 Date 1999-02-25 Ticket # 808842

Interval Tested: from 3245 to 3270 Total Depth 3301 Test No. 1

DRILL COLLARS

JOINT	LENGTH	JOINT	LENGTH
1	0.79	11	27.51
2	9.44	12	27.62
3	27.78	13	27.55
4	27.84	14	27.58
5	27.54	15	
6	27.26	16	
7	27.77	17	
8	27.27	18	
9		19	
10		20	
1st TOTAL	175.69	2nd TOTAL	110.26

DRILL PIPE

1	28.11	11	28.38	21	28.77
2	28.45	12	28.43	22	28.06
3	28.76	13	28.16	23	28.33
4	26.78	14	28.76	24	28.32
5	29.00	15	28.91	25	28.10
6	27.99	16	27.56	26	28.90
7	28.79	17	28.89	27	28.67
8	28.36	18	28.13	28	28.65
9	28.97	19	28.29	29	27.91
10	27.88	20	28.79	30	28.80
3rd TOTAL	283.09	4th TOTAL	284.30	5th TOTAL	284.51
31	28.55	41	28.74	51	28.52
32	27.99	42	28.20	52	28.44
33	28.13	43	28.77	53	28.23
34	28.14	44	28.42	54	28.78
35	28.59	45	28.03	55	28.76
36	27.32	46	28.72	56	28.50
37	28.72	47	28.01	57	28.78
38	27.36	48	28.91	58	28.51
39	28.33	49	29.05	59	28.04
40	28.75	50	28.91	60	28.71
6th TOTAL	281.88	7th TOTAL	285.76	8th TOTAL	285.27
81	29.15	91	29.11	101	28.84
82	28.90	92	29.16	102	28.78
83	29.11	93	28.79	103	19.41
84	28.71	94	29.12	104	9.31
85	29.11	95	29.15	105	0.58
86	29.21	96	29.14	106	0.40
87	29.10	97	28.78	107	
88	29.02	98	28.77	108	
89	28.53	99	28.77	109	
90	28.71	100	29.15	110	
11th TOTAL	289.55	12th TOTAL	289.94	13th TOTAL	87.32

BEFORE TEST IN DERRICK

TOTAL DRILL COLLARS	
TOTAL DRILL PIPE	

TESTING

	IN	OUT	TOTAL
DRILL COLLARS			
DRILL PIPE			

CONVENTIONAL PIPE TALLY

BELOW BOTTOM PACKER SEAL
BETWEEN PACKER SEALS
TOOL ABOVE PACKER SEAL
DRILL COLLARS
DRILL PIPE
TOTAL STRING
TOTAL DEPTH
TOP SINGLE ABOVE TABLE

INFLATE PIPE TALLY

TOOL ABOVE INTERVAL	14.47
DRILL COLLARS	285.95
DRILL PIPE	2948.40
TOTAL STRINGS ABOVE INTERVAL	3248.82
BOTTOM OF TOP PACKER SEAL DEPTH	3245.00
TOP SINGLE ABOVE TABLE	3.82

INFLATABLE

Tool	Length
POS	0.33
DPSub	0.33
POS	0.33
Car	1.38
Hydr	1.50
BHS	1.03
Car	1.38
Jar	2.22
SJ	0.65
Pump	2.38
Scr	1.16
TPack	1.78
PSD	0.82
PS	0.42
Car	2.06
Spq	1.80
XOS	0.30
DC	18.88
XOS	0.30
PSU	0.42
Perf	0.61
BS	2.00

Tester Signature

Approved by Oil Co. Rep.

PARAMOUNT RESOURCES LTD.

FIELD DRILL STEM TEST REPORT

A. WELL DATA

DATE Feb-28-1999
WELL NAME Paramount Berkley Arrowhead LOCATION 0-15-60-25-122-02
DST No. 2 Interval 3251-3270 Formation Landry
Last Casing: Size 177.8mm Depth 2805m Open Hole: Size 156mm Depth 3301m
Hole Troubles Hole drag due to deviation Caliper at Packer(s) 158-160mm
Mud: Wt 1075 Vis 50 W.L. 13.5 % Oil 92.8 ppm Cl 185,500

B. TEST STRING DATA

Testing Company Baker Oil Tools Type of Test InFlate Straddle
Type & No. of packers Rubber InFlatable - 2 Size 136mm
DP size 89mm Weight 23.06Kgl/m Length 2940.28
DC size 120mm Weight 70Kgl/m ID 58mm Length 194.16
Tailpipe size _____ Weight _____ Length _____ Perfs _____
T.D.String 3258.44 Recorder Depth 3254 Water Cushion 900m BH Choke 2514mm
Packer depths 3251 & 3270 Wt on Packers 15000dan Invert
Other Equip 2 Bottom Hole Samplers Pump out Sub - Safety Torret

C. TEST RESULTS

Temp 148 °C

Times: PF 10 ISI 60 Flow ✓ FSI 90mins

Pressures: PF 9956 IF 12378 IH 33478 ISI 12378
FF ✓ FH 32786 FSI ✓

FLOW DESCRIPTION

Preflow Very weak Air Blow - Hose went 1 1/2" into Pail - No Gas to Surface
Valve Open Opened Tool - Top Packer Blew - Lost Packer Seat
Recoveries 200m Invert drilling mud - Slightly Contaminated with Salt Water

D. SAMPLE DETAILS

Reverse Circ out Invert Cushion Plus Fluid Recovery
Caught 4 Samples while Circ out Recovery
Sent to: AGAT Labs - Grande Prairie Via: Ken Willis Date Sent: Mar-3-1999
Baker Tester

E. REMARKS

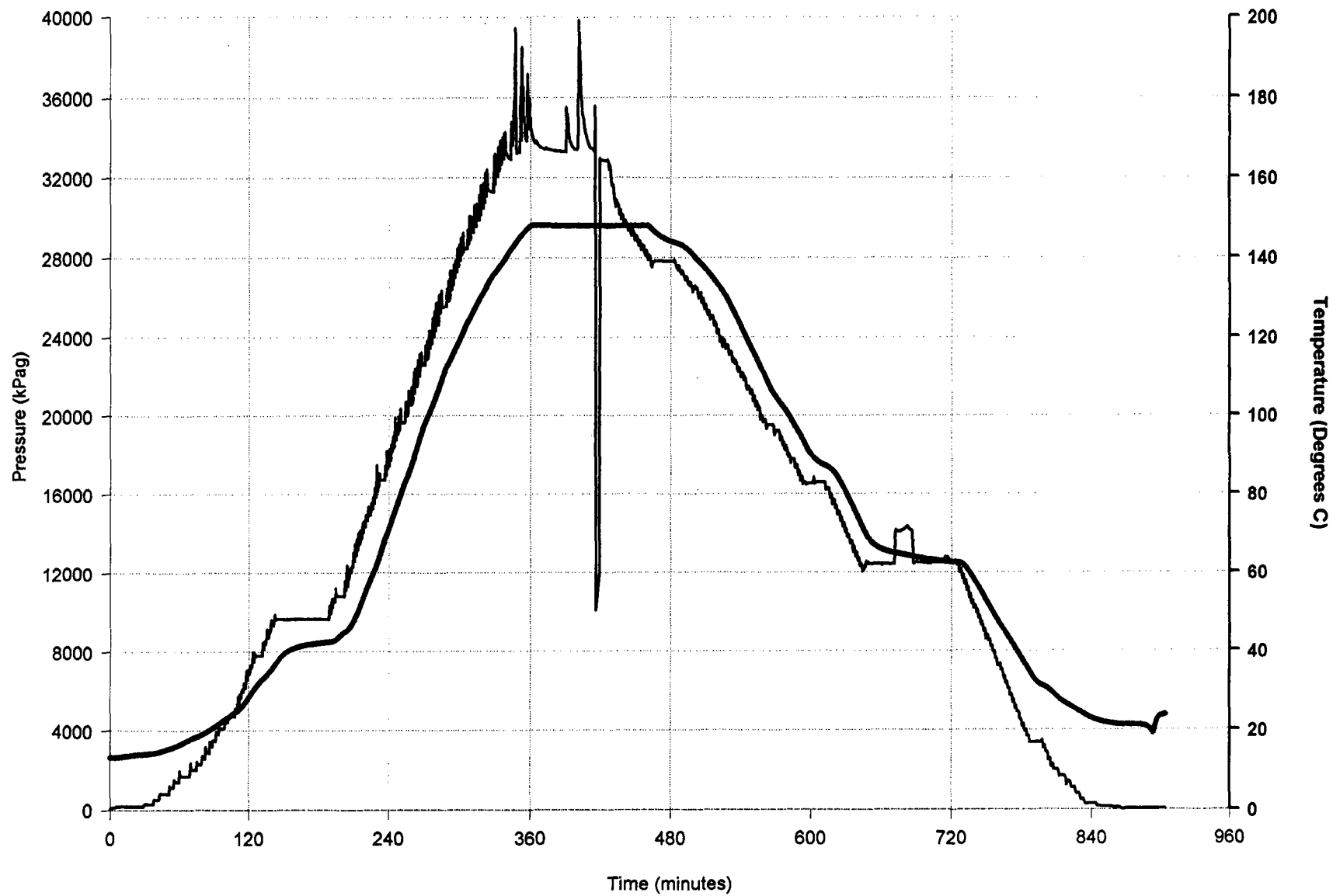
Top Packer Seat Failed when Tool Opened For Final Flow - Shut in Tool - Pulled Packers Free - Pulled out of Hole with No Problems Left Both Packer Rubbers in Hole.

Supervisor Wilbert Callitoo

NOTE: Data reported on this form are field readings taken

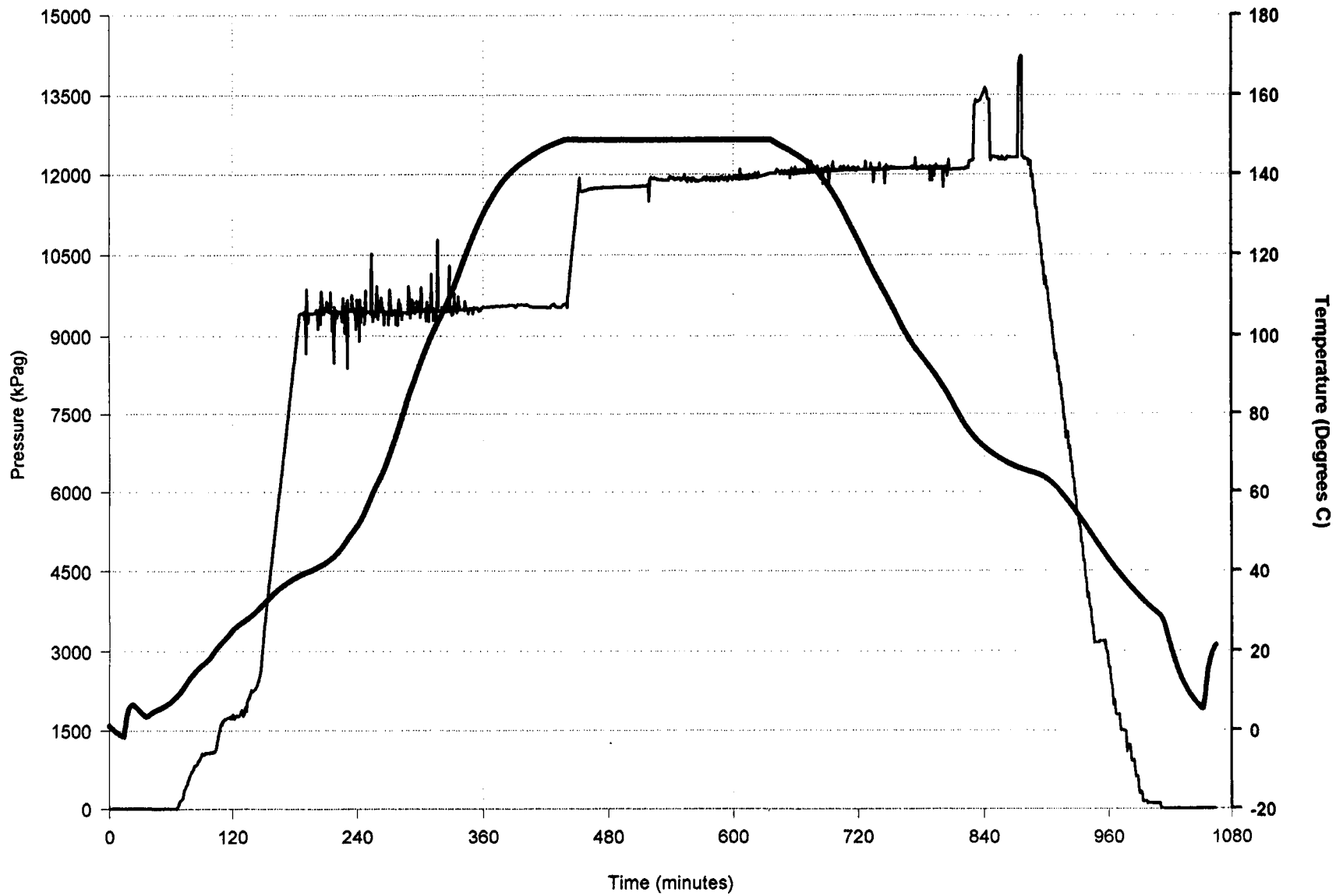
Baker Oil Tools Drill Stem Testing

Paramount Berkley Arrowhead 0-15
3000156030123000
DST #: 2
Recorder: R62



Baker Oil Tools Drill Stem Testing

Paramount Berkley Arrowhead 0-15
3000156030123000
DST #: 2
Recorder: S58





TEST TOOL & PIPE RECORD

Oil Tools

Vell Name: Paramount Berkley... Location: 3000156030123000 Date 1999-02-28 Ticket # 808843

Interval Tested: from 3251 to 3270 Total Depth 3301 Test No. 2

CONVENTIONAL

Tool Length

DRILL COLLARS

JOINT	LENGTH	JOINT	LENGTH
1	0.79	11	27.61
2	28.13	12	27.62
3	27.97	13	27.52
4	28.01	14	27.38
5	26.78	15	
6	27.02	16	
7	27.06	17	
8	27.27	18	
9		19	
10		20	

DRILL PIPE

1	28.67	11	28.34	21	28.71
2	28.60	12	28.51	22	28.12
3	27.83	13	28.16	23	28.22
4	28.10	14	28.77	24	27.76
5	28.49	15	28.13	25	28.85
6	28.36	16	28.28	26	28.78
7	28.48	17	28.34	27	28.74
8	28.93	18	27.37	28	28.65
9	28.82	19	29.15	29	27.96
10	28.03	20	28.78	30	28.55

1st TOTAL	193.03	2nd TOTAL	110.13	3rd TOTAL	284.31	4th TOTAL	283.83	5th TOTAL	284.34
31	28.84	41	28.76	51	28.53	61	28.38	71	28.83
32	28.28	42	28.17	52	27.82	62	28.64	72	29.18
33	27.94	43	28.25	53	28.53	63	28.54	73	29.08
34	28.41	44	29.03	54	28.73	64	28.90	74	29.08
35	27.78	45	27.97	55	28.81	65	28.82	75	29.06
36	28.02	46	28.15	56	28.60	66	27.95	76	29.15
37	28.51	47	28.58	57	28.77	67	28.54	77	28.81
38	27.20	48	29.00	58	28.46	68	28.78	78	29.10
39	28.72	49	29.06	59	27.98	69	28.79	79	29.04
40	28.79	50	28.85	60	28.82	70	29.11	80	29.14

6th TOTAL	282.49	7th TOTAL	285.82	8th TOTAL	285.05	9th TOTAL	286.45	10th TOTAL	290.47
81	29.12	91	29.10	101	28.84				
82	28.88	92	28.77	102	28.78				
83	29.11	93	29.19	103	19.37				
84	28.75	94	29.08	104					
85	29.10	95	29.21	105	0.58				
86	29.16	96	29.10	106	0.40				
87	29.18	97	28.83	107					
88	28.94	98	28.73	108					
89	28.26	99	28.82	109					
90	29.07	100	29.15	110					
11th TOTAL	289.57	12th TOTAL	289.98	13th TOTAL	77.97				

BEFORE TEST IN DERRICK

TOTAL DRILL COLLARS	
TOTAL DRILL PIPE	

TESTING

	IN	OUT	TOTAL
DRILL COLLARS			
DRILL PIPE			

CONVENTIONAL PIPE TALLY

BELOW BOTTOM PACKER SEAL
BETWEEN PACKER SEALS
TOOL ABOVE PACKER SEAL
DRILL COLLARS
DRILL PIPE
TOTAL STRING
TOTAL DEPTH
TOP SINGLE ABOVE TABLE

INFLATE PIPE TALLY

TOOL ABOVE INTERVAL	15.50
DRILL COLLARS	303.16
DRILL PIPE	2940.28
TOTAL STRINGS ABOVE INTERVAL	3258.94
BOTTOM OF TOP PACKER SEAL DEPTH	3251.00
TOP SINGLE ABOVE TABLE	7.94

INFLATABLE

Tool Length

POS	0.33
DPSub	0.33
POS	0.33
Car	1.38
Hydr	1.50
BHS	1.03
BHS	1.03
Car	1.38
Jar	2.22
SJ	0.65
Pump	2.38
Scr	1.16
TPack	1.78
3251.0	
PSD	0.82
PS	0.42
Car	2.06
Spg	5.53
XOS	0.30
DC	9.15
XOS	0.30
PSU	0.42
3270.0	
BPack	1.90
Perf	0.61
BS	2.00

Tester Signature _____

Approved by Oil Co. Rep. _____

PARAMOUNT RESOURCES LTD.

FIELD DRILL STEM TEST REPORT

A. WELL DATA

WELL NAME Paramount Berkley Arrowhead LOCATION 0-15-60-25-123-02 DATE Mar-1-1999
DST No. 3 Interval 3033-3044 Formation Horn River
Last Casing: Size 177.8mm Depth 2805m Open Hole: Size 150mm Depth 3301m
Hole Troubles None Apparent Caliper at Packer(s) 158mm
Mud: Wt 1065 Vis 54 W.L. 13.2 % Oil 93.4 ppm Cl 184,000

B. TEST STRING DATA

Testing Company Baker Oil Tools Type of Test Inflate Straddle
Type & No. of packers Rubber Inflatable - 2 Size 136mm
DP size 89mm Weight 23.06kg/m Length 2718.54
DC size 120mm Weight 70kg/m ID 58mm Length 204.08 Incl/Hu
Tailpipe size _____ Weight _____ Length _____ Perfs _____
T.D.String 3038.10 Recorder Depth 3035 Water Cushion Inflator BH Choke 25.4mm
Packer depths 3033-3044 Wt on Packers 120000N
Other Equip 2 Bottom Hole Samplers - Safety Joint - Pump out Sub

C. TEST RESULTS

Temp 148 °C

Times: PF 10 ISI 60 Flow 60 FSI 120

Pressures: PF 19781 IF 27463 IH 31822 ISI 30745
FF ✓ FH 31443 FSI ✓

FLOW DESCRIPTION

Preflow Good Air Blow when Tool Opened - Strong Air Blow - Hose to Bottom of Pail in 4 mins - No Gas to Surface
Valve Open Did not get Tool to Open (Found Tools were Plugged with Sand after Pulling Out)
Recoveries 870m Invert Cushion - 830m Very Gassy Brine Salt Water Tested Salinity @ 142000 PPM

D. SAMPLE DETAILS

Recovered 8 Samples of Recovered Fluid - Taken at Intervals while Reverse Circ out Fluid Recovery
Sent to: AGAT Labs - Grande Prairie Via: Ken Willis Date Sent: Mar-2-1999
Baker Oil Tools

E. REMARKS

Had Good Strong Air Blow on initial Open - Could not get any Blow on Tool Open - Found all Tools below Pump out Sub plugged with Sand

Supervisor Wilbert Callieco

NOTE: Data reported on this form are field readings taken

FIELD REPORT

BTM. H. SAMPLER #	NSN/NSN	SENT TO AGAT
GAS BOMB #		SENT TO
No. OF FLUID SAMPLES TAKEN	8	SENT TO AGAT

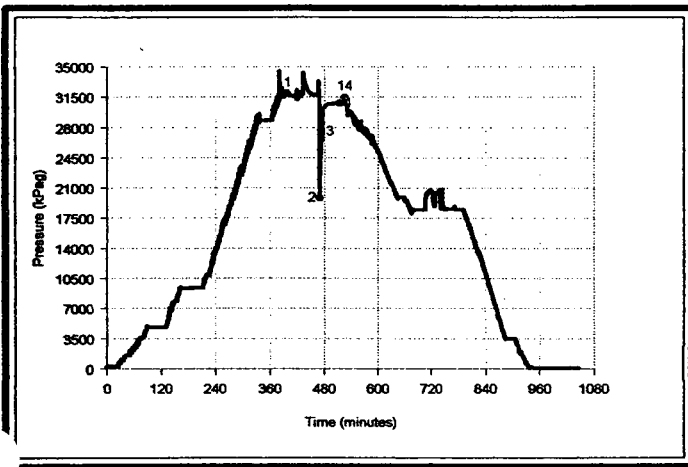


Paramount Berkley Arrowhead 0-15
3000156030123000
DST# 3

Baker Oil Tools

Formation:
Interval - from: 3033 to: 3044 m

Recorder# R62 at 3035 m



Maximum Btm Hole Temperature @ FSI: 148.8 C

		Pressure (kPag)	Time (min)	Extrapolated Pressure (kPag)
1	Initial Hydrostatic	31822		
2	Start of 1st Flow	19781		
3	End of 1st Flow	27463	4.0	
4	End of 1st Shut-in	30745	39.5	
14	Final Hydrostatic	31444		

Liquid Recovery of 1700.00 m

Recovery	Description	Salinity
870.00 m	invert cushion	
830.00 m	Gassified salt water	142000

Test Date: 1999-03-01
Test Type: Inflate Straddle
Tester Name: Ken Willis
Cushion Type: Invert
Cushion Amount: 870 m
Drill Pipe O.D.: 89.00 mm
Drill Collar I.D.: 61.00 mm
Drill Collar Length: 304.08 m
Hole Size: 156.00 mm

Blow Description:

PREFLOW - SAB in 4 min. steady throughout.
NGTS. FINAL FLOW - Opened tool had no flow.
cycled tool several times still no flow.

Remarks:

All measurements are field estimates. Salt water has lots of gas trapped with it under fluid cushion. Very noticeable break between cushion and produced water. One drill collar was plugged completely with sand. top recorder carrier, pressure activated pump out sub and cross-over sub all plugged. Both packers stripped. Recorder R62 did not show full shut-in, but showed pre-flow and part of the shut in.

Baker Oil Tools Drill Stem Testing

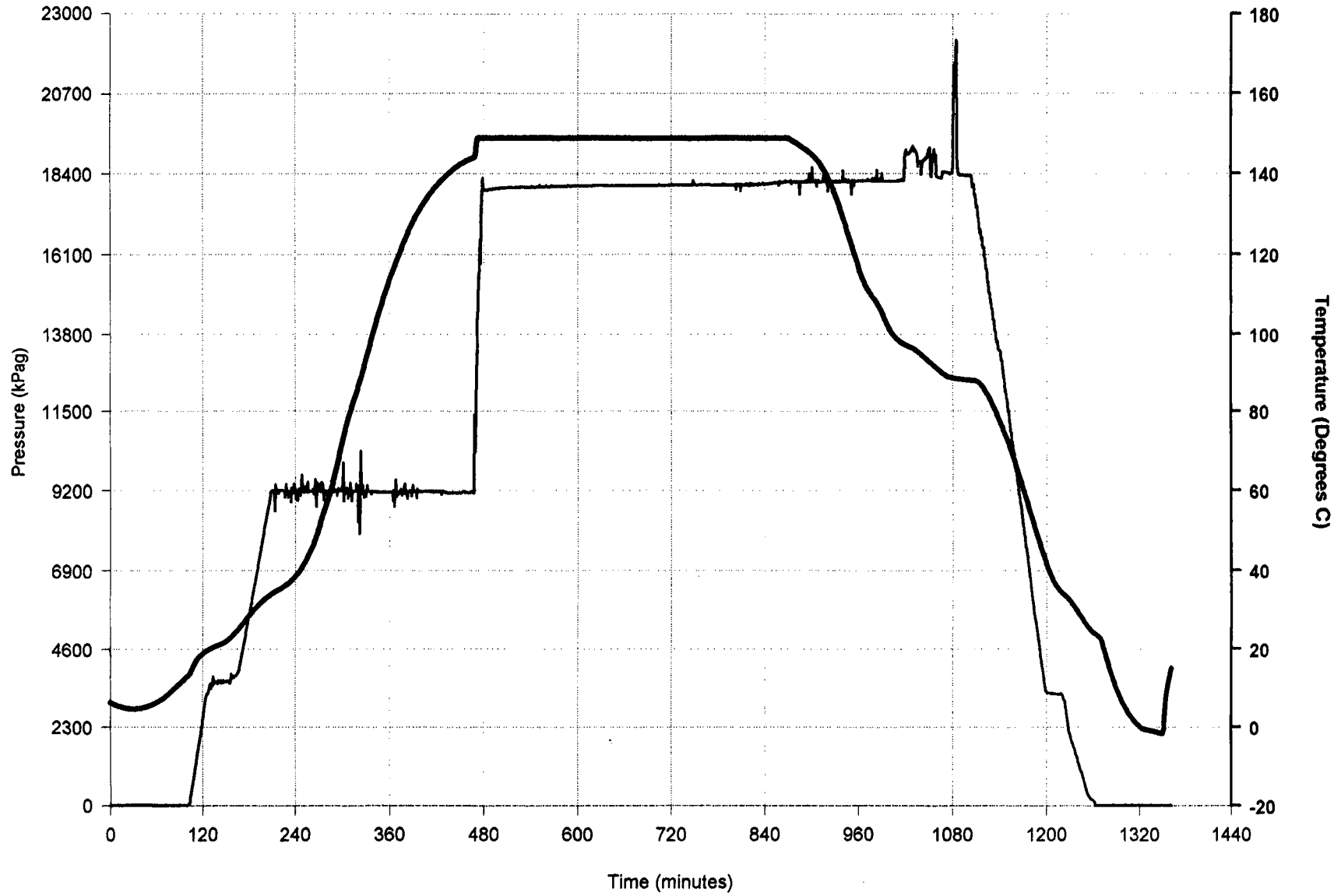
Paramount Berkley Arrowhead 0-15
3000156030123000
DST #: 3
Recorder: R62

Pressure (kPag) at Critical Points:
1: 31822 4: 30745
2: 19781 14: 31444
3: 27463



Baker Oil Tools Drill Stem Testing

Paramount Berkley Arrowhead 0-15
3000156030123000
DST #: 3
Recorder: S58





TEST TOOL & PIPE RECORD

Baker Oil Tools

Well Name: Paramount Berkley... Location: 3000156030123000 Date 1999-03-01 Ticket # 808844

Interval Tested: from 3033 to 3044 Total Depth 3301 Test No. 3

CONVENTIONAL

Tool Length

DRILL COLLARS

JOINT	LENGTH	JOINT	LENGTH
1	9.34	11	27.61
2	27.97	12	27.62
3	28.11	13	27.52
4	28.00	14	18.43
5	26.80	15	
6	27.71	16	
7	27.74	17	
8	27.23	18	
9		19	
10		20	

DRILL PIPE

1	28.12	11	28.39	21	28.78
2	28.45	12	28.44	22	28.06
3	28.75	13	28.60	23	28.32
4	27.21	14	28.76	24	28.33
5	29.00	15	28.91	25	28.10
6	28.00	16	27.57	26	28.90
7	28.80	17	28.90	27	28.67
8	28.36	18	28.02	28	28.65
9	28.98	19	28.30	29	27.92
10	27.89	20	28.79	30	28.80

1st TOTAL	202.90	2nd TOTAL	101.18	3rd TOTAL	283.56	4th TOTAL	284.68	5th TOTAL	284.53
31	28.55	41	28.77	51	28.52	61	28.29	71	29.17
32	28.00	42	28.20	52	28.44	62	29.14	72	28.85
33	28.15	43	28.78	53	28.24	63	28.12	73	29.06
34	28.14	44	28.43	54	28.79	64	28.78	74	29.13
35	28.59	45	28.02	55	28.76	65	28.99	75	29.09
36	27.34	46	28.73	56	28.50	66	27.92	76	29.09
37	28.74	47	28.01	57	28.79	67	28.58	77	28.82
38	27.36	48	28.92	58	28.52	68	28.74	78	29.03
39	28.33	49	29.06	59	28.03	69	28.77	79	29.06
40	28.77	50	28.92	60	28.71	70	29.08	80	29.10
6th TOTAL	281.97	7th TOTAL	285.84	8th TOTAL	285.30	9th TOTAL	286.41	10th TOTAL	290.40

81	29.15	91	29.12	101	0.40
82	28.90	92	29.17	102	0.58
83	29.12	93	28.80	103	
84	28.70	94	29.13	104	
85	29.11	95	29.16	105	
86	29.12	96		106	
87	29.11	97		107	
88	29.03	98		108	
89	28.54	99		109	
90	28.71	100		110	
11th TOTAL	289.49	12th TOTAL	145.38	13th TOTAL	0.98

BEFORE TEST IN DERRICK

TOTAL DRILL COLLARS	
TOTAL DRILL PIPE	

TESTING

	IN	OUT	TOTAL
DRILL COLLARS			
DRILL PIPE			

CONVENTIONAL PIPE TALLY	
BELOW BOTTOM PACKER SEAL	
BETWEEN PACKER SEALS	
TOOL ABOVE PACKER SEAL	
DRILL COLLARS	
DRILL PIPE	
TOTAL STRING	
TOTAL DEPTH	
TOP SINGLE ABOVE TABLE	

INFLATE PIPE TALLY	
TOOL ABOVE INTERVAL	15.47
DRILL COLLARS	304.08
DRILL PIPE	2718.54
TOTAL STRINGS ABOVE INTERVAL	3038.09
BOTTOM OF TOP PACKER SEAL DEPTH	3033.00
TOP SINGLE ABOVE TABLE	5.09

INFLATABLE

Tool Length

POS	0.33
XOS	0.30
POS	0.33
Car	1.38
Hydr	1.50
BHS	1.03
BHS	1.03
Car	1.38
Jar	2.22
SJ	0.65
Pump	2.38
Scr	1.16
TPack	1.78
3033.0	Top Packer Seal Depth
PSD	0.82
PS	0.42
Car	2.06
Spg	7.28
PSU	0.42
3044.0	Btm Packer Seal Depth
BPack	1.90
Perf	0.61
BS	2.00

Tester Signature

Approved by Oil Co. Rep.

6. ENVIRONMENTAL WELL REPORT

Was submitted with drilling application

7. APPENDICES TO WELL HISTORY REPORT

Oil, Gas & Water Analyses: (see attached)

Completion Data: N/A

Wellbore Diagram: (see attached)

Well Survey Plan: (see attached)



WATER ANALYSIS

CONTAINER IDENTIFICATION: **PB 22S** LABORATORY NUMBER: **WF36512S**

OPERATOR NAME: **PARAMOUNT RESOURCES LTD.**

UNIQUE WELL IDENTIFIER: **PARAMOUNT BERKLEY ARROWHEAD 0-15** ELEVATIONS: KB m **387.00** GRD m **380.50**

FIELD OR AREA: **POOL OR ZONE:** **NAME OF SAMPLER:** **COMPANY:** **BAKER**

TEST TYPE: **DST** NO: **3** TEST RECOVERY: **60 DEG. 24' 53" latitude 123 DEG. 2' 31" longitude**

SAMPLING POINT: **DRILL STEM** AMT & TYPE OF CUSHION: **MUD RESISTIVITY/Ω m** **@ 25° C**

TEST INTERVAL OR PERFS: **3033.00-3044.00** **mKB**

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

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

SEPARATOR: **TREATER** **RESERVOIR** **SOURCE** **SAMPLED** **RECEIVED**

Gauge Pressure kPa: **TEMPERATURE °C:**

DATE SAMPLED (Y-M-D): **99-03-01** DATE RECEIVED (Y-M-D): **99-03-08** DATE REPORTED (Y-M-D): **99-03-31** ANALYST: **LN NCO** OTHER INFORMATION: **DRILL STEM /**

ION	mg/L	MASS FRACTION	mmol/L
Na	32500.0	0.274	1410.0
K	4960.0	0.042	127.0
Ca	10900.0	0.092	271.0
Mg	901.0	0.008	37.1
Ba	N.A.	N.A.	N.A.
Sr	N.A.	N.A.	N.A.
Fe	110.0	0.001	2.0

ION	mg/L	MASS FRACTION	mmol/L
Cl	69000.0	0.581	1950.0
Br	N.A.	N.A.	N.A.
I	N.A.	N.A.	N.A.
HCO ₃	442.0	0.004	7.2
SO ₄	1.1	TRC*	TRC+
CO ₃	NIL	NIL	NIL
OH	NIL	NIL	NIL
H ₂ S	N.D.	N.D.	N.D.

DISSOLVED

TOTAL SOLIDS mg/L

EVAPORATED AT 110° C

EVAPORATED AT 180° C

AT IGNITION

CALCULATED

119000.0

RELATIVE DENSITY

1.092 @ 25° C

REFRACTIVE INDEX

N.A. @ 25° C

OBSERVED pH

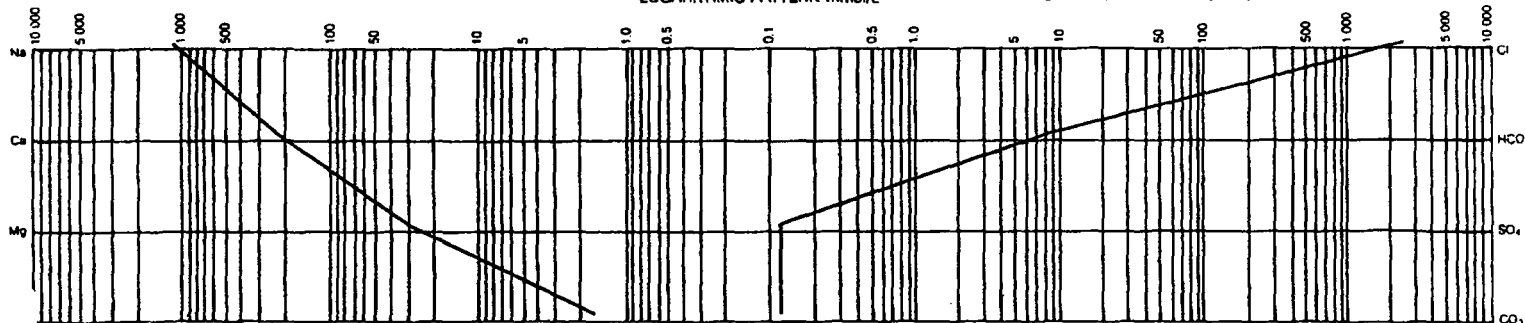
6.36 @ 25° C

RESISTIVITY/Ω·m

0.07 @ 25° C

LOGARITHMIC PATTERN mmol/L

SALINITY = 11.41%



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

AGAT Laboratories



WATER ANALYSIS

CONTAINER IDENTIFICATION PB 11J		LABORATORY NUMBER WF36512J	
PARAMOUNT RESOURCES LTD. OPERATOR NAME			
UNIQUE WELL IDENTIFIER	WELL NAME PARAMOUNT BERKLEY ARROWHEAD 0-15		ELEVATIONS KB m 387.00 GRD m 380.50
FIELD OR AREA	POOL OR ZONE	NAME OF SAMPLER	COMPANY BAKER
TEST TYPE DST	NO 2	TEST RECOVERY 60 DEG. 24' 53" latitude 123 DEG. 2' 31" longitude	
TEST INTERVAL OR PERFS 3251.00-3270.00 mKB		SAMPLING POINT DRILL STEM	AMT & TYPE OF CUSHION DRILL STEM
MUD RESISTIVITY/Ω m DRILL STEM @ 25° C			
TYPE OF PRODUCTION			
☐ PUMPING ☐ FLOWING ☐ GAS LIFT ☐ SWAB			
PRODUCTION RATES			
WATER m ³ /d		OIL m ³ /d	GAS 10 ³ m ³ /d
SEPARATOR		TREATER	RESERVOIR
GAUGE PRESSURE kPa		SOURCE	SAMPLED
TEMPERATURE °C		RECEIVED	
DATE SAMPLED (Y-M-D) 99-02-28	DATE RECEIVED (Y-M-D) 99-03-08	DATE REPORTED (Y-M-D) 99-03-31	ANALYST LN NCO
OTHER INFORMATION DRILL STEM 4			

ION	mg/L	MASS FRACTION	mmol/L
Na	45700.0	0.238	1990.0
K	9370.0	0.049	240.0
Ca	20500.0	0.107	511.0
Mg	880.0	0.005	36.2
Ba	N.A.	N.A.	N.A.
Sr	N.A.	N.A.	N.A.
Fe	0.9	TRC*	TRC+

ION	mg/L	MASS FRACTION	mmol/L
Cl	115000.0	0.599	3230.0
Br	N.A.	N.A.	N.A.
I	N.A.	N.A.	N.A.
HCO ₃	641.0	0.003	10.5
SO ₄	2.3	TRC*	TRC+
CO ₃	NIL	NIL	NIL
OH	NIL	NIL	NIL
H ₂ S	N.D.	N.D.	N.D.

DISSOLVED

TOTAL SOLIDS mg/L

EVAPORATED AT 110° C

EVAPORATED AT 180° C

AT IGNITION

CALCULATED

192000.0

RELATIVE DENSITY

1.140 @ 25° C

REFRACTIVE INDEX

N.A. @ 25° C

OBSERVED pH

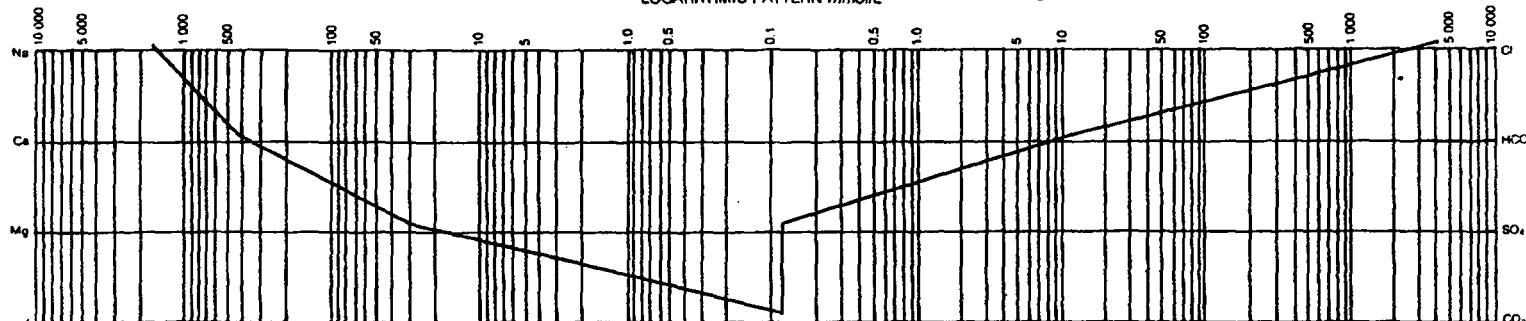
7.42 @ 25° C

RESISTIVITY/ΩM *m

0.05 @ 25° C

LOGARITHMIC PATTERN mmol/L

SALINITY = 18.16%



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

AGAT Laboratories



WATER ANALYSIS

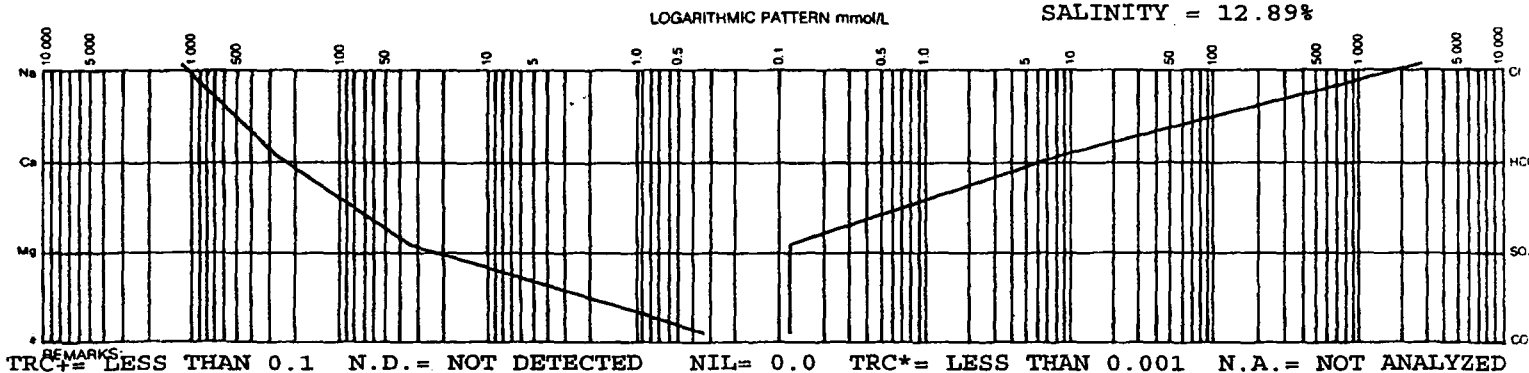
CONTAINER IDENTIFICATION PB 250		LABORATORY NUMBER WF365120	
PARAMOUNT RESOURCES LTD. OPERATOR NAME			
UNIQUE WELL IDENTIFIER	WELL NAME PARAMOUNT BERKLEY ARROWHEAD 0-15		ELEVATIONS KB m 387.00 GRD m 380.50
FIELD OR AREA	POOL OR ZONE	NAME OF SAMPLER	COMPANY BAKER
TEST TYPE DST	NO 3	TEST RECOVERY 60 DEG. 24' 53" latitude 123 DEG. 2' 31" longitude	
SAMPLING POINT BHS		AMT & TYPE OF CUSHION	MUD RESISTIVITY/Ω m 25° C
TEST INTERVAL OR PERFS 3033.00-3044.00 mKB		TYPE OF PRODUCTION ☐ PUMPING ☐ FLOWING ☐ GAS LIFT ☐ SWAB	
PRODUCTION RATES WATER m ³ /d OIL m ³ /d GAS 10 ³ m ³ /d			
SEPARATOR		TREATER	RESERVOIR
GAUGE PRESSURE kPa		TEMPERATURE °C	
DATE SAMPLED (Y-M-D) 99-03-01	DATE RECEIVED (Y-M-D) 99-03-08	DATE REPORTED (Y-M-D) 99-03-31	ANALYST LN NCO
		OTHER INFORMATION BHS NSN #1	

ION	mg/L	MASS FRACTION	mmol/L
Na	33100.0	0.252	1440.0
K	5400.0	0.041	138.0
Ca	13400.0	0.102	334.0
Mg	1010.0	0.008	41.5
Ba	N.A.	N.A.	N.A.
Sr	N.A.	N.A.	N.A.
Fe	23.1	TRC*	0.4

ION	mg/L	MASS FRACTION	mmol/L
Cl	77900.0	0.593	2200.0
Br	N.A.	N.A.	N.A.
I	N.A.	N.A.	N.A.
HCO ₃	458.0	0.003	7.5
SO ₄	2.8	TRC*	TRC+
CO ₃	NIL	NIL	NIL
OH	NIL	NIL	NIL
H ₂ S	N.D.	N.D.	N.D.

DISSOLVED

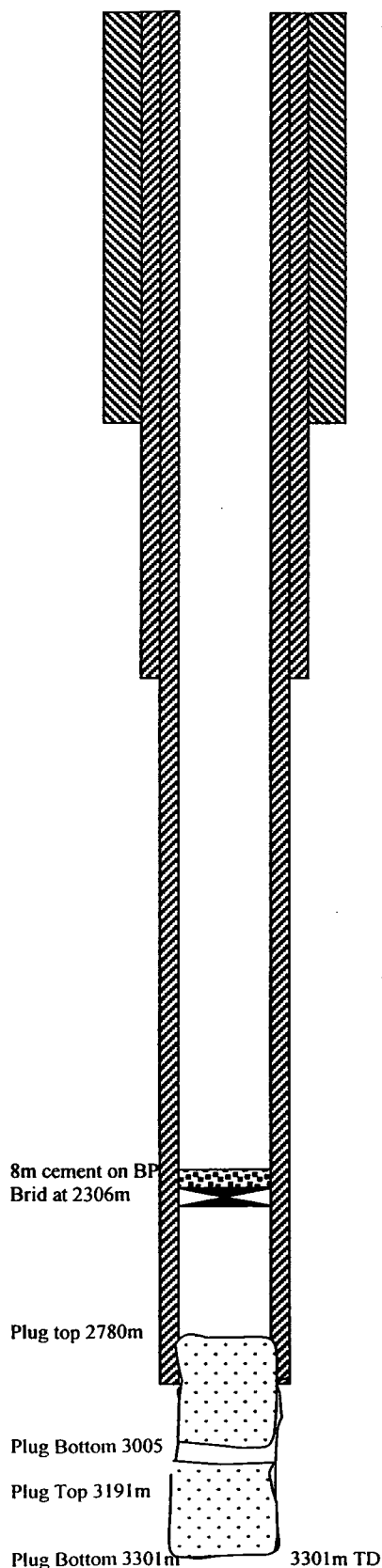
TOTAL SOLIDS mg/L	
EVAPORATED AT 110° C	EVAPORATED AT 180° C
AT IGNITION	CALCULATED 131000.0
RELATIVE DENSITY 1.091 25° C	
REFRACTIVE INDEX N.A. 25° C	
OBSERVED pH 6.41 25° C	RESISTIVITY/ΩCM cm 0.06 25° C



Well Schematic

Paramount Berkley Arrowhead O15

As Drilled March 06, 1999



Surface Hole: (surface – 500)

Hole Size: 444 mm

Surveys: ¼ @ 463

Mud Type: Air to 442, gel/chem to 500

Casing: 339.7 mm, 81.1 kg/m, K55

Landed at 499.9 m KB

Cement: Lead: 31 T 0:1:0 Class "G" + 1% CaCl₂

Tail: 27 T Expandomix + 2% CaCl₂

8 m3 returns

Intermediate Hole: (500 – 1455 m)

Hole Size: 311 mm

Surveys: This section originally kicked out to 15° so was plugged back and re-drilled To keep vertical

First Leg: 500 – 1560 m KB

(partial Drilled with foam and air hammer to 867 m, well watered out. Drill with plug back) Cutter D to 1560 m MD.

Problems: Totco surveys indicated 7°, directional survey read 15°,

Decision was made to plug back and redrill

Plug #1: 1195 – 1350 m w/ 16 T 0:1:0 High Density G + 1% CFR + 1% LTR

Casing: 244.5 mm, 64.74 kg/m, L80 landed at 1196 m

Cement: Lead: 21 T LW14 + 2% CaCl₂ + 2% LWA + 2% SMS

Tail: 29 T 0:1:0 G + 0.4% CFL3 + 1% CFLH + 2% SPC 2

5 m3 returns

1196m

2nd Intermediate Re-Entry (spud January 19, 1999)

2nd Intermediate hole : drill 216 mm 1196 m to 2805 m KB

Casing: 177.8 mm, 38.69 kg/m IL-80 - 0 - 2805 m KB

Cement: 24.6 Tonnes 1:1:2 G fill plus 17 Tonnes Thermal 40 tail

Hole Size: 216 mm

Mud Type: Invert

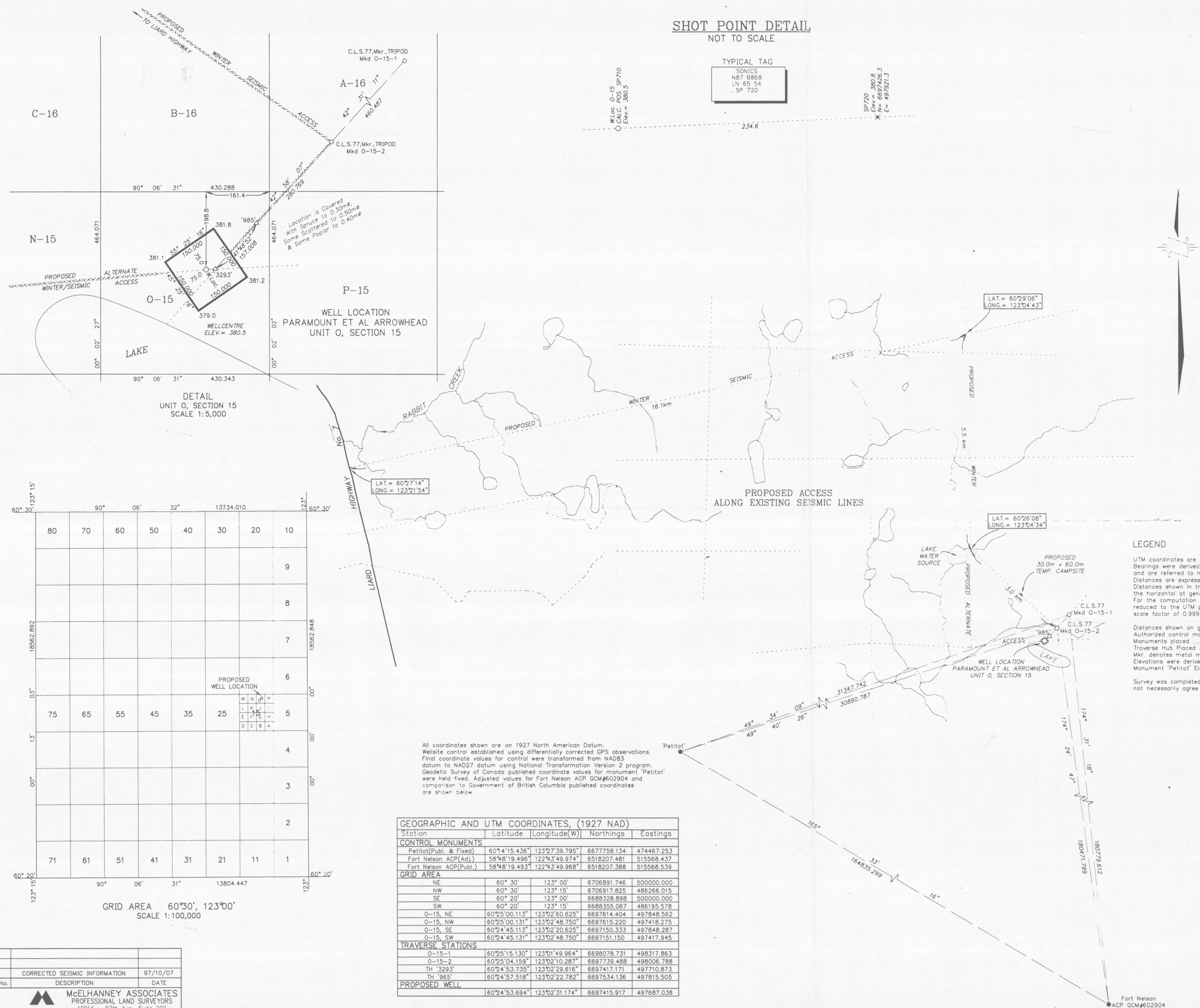
Main hole: drill 156 mm hole 2805 - 3301 m KB

Mud: Invert

Open Hole

TYPICAL TAG

SONICS
N87 8868
LN 65 54
SP 720



GRID AREA 60° 30' , 123° 00'
NORTHWEST TERRITORIES
CANADA OIL AND GAS LAND REGULATIONS



SURVEYED FOR
PARAMOUNT RESOURCES LTD.

BY : W.V. JOHNSON, CLS
SEPTEMBER, 1997.

LEGEND

UTM coordinates were computed for Zone 10, central meridian 123° W. Bearings were derived from differentially corrected GPS observations and are referred to meridian 123° W. Distances are expressed in metres and decimals thereof. Distances shown in traverse are measured distances reduced to the horizontal at general ground level. Finally, the computed coordinates and measured distances have been reduced to the UTM plane by multiplying them by an average combined scale factor of 0.9995406.

I, W.V. Johnson, of the City of Fort St. John, British Columbia, Canada Lands Surveyor, make oath and say that I have in my own proper person, according to law and the instructions of the Surveyor General of Canada Lands, faithfully and correctly executed the survey shown by this plan and field notes, and that the said plan and field notes are correct and true to the best of my knowledge and belief.

SO HELP ME GOD

Sworn before me at Fort St. John, W.V. Johnson, CLS
this 5th day of October, 1997.

Distances shown on grid area subdivisions are UTM plane.
Authorized control monuments found
Monuments placed
Traverse Hub Placed
Mkr. denotes metal marker post 2.0m long placed 0.30m N
Elevations were derived from Geodetic Survey of Canada
Monument 'Petitot' Elev. = 218.241 m

Survey was completed prior to drilling; therefore well as drilled may not necessarily agree with proposed location.

THIS SURVEY WAS EXECUTED DURING THE PERIOD
SEPTEMBER 26th TO SEPTEMBER 28th, 1997. BY W.V. JOHNSON, CLS

PARAMOUNT RESOURCES LTD.

WITNESS

DATE _____

GEOGRAPHIC AND UTM COORDINATES, (1927 NAD)				
Station	Latitude	Longitude(W)	Northings	Eastings
CONTROL MONUMENTS				
Petitot (Publ.& Fixed)	60°14'45.436"	123°27'39.795"	6677758.134	474467.253
Fort Nelson ACP(Aid)	58°48'19.496"	122°43'49.974"	6518207.481	515568.437
Fort Nelson ACP(Pub.)	58°48'19.493"	122°43'49.968"	6518207.388	515568.539
GRID AREA				
NE	60° 30' "	123° 00' "	6706891.746	500000.000
NW	60° 30' "	123° 15' "	6706917.825	486266.015
SE	60° 20' "	123° 00' "	6688328.898	500000.000
SW	60° 20' "	123° 15' "	6688355.067	486198.578
0-15, NE	60°25'00.113"	123°02'06.625"	6697614.404	494784.562
0-15, NW	60°25'00.131"	123°02'48.750"	6697615.220	494781.275
0-15, SE	60°24'45.113"	123°02'48.752"	6697510.333	497848.283
0-15, SW	60°24'45.131"	123°02'48.750"	6697511.500	494717.947
TRAVERSE STATIONS				
0-15-1	60°25'15.130"	123°01'49.964"	6698078.731	498317.863
0-15-2	60°25'04.159"	123°02'10.287"	6697739.488	498006.788
TH 3293	60°24'53.735"	123°02'29.616"	6694717.171	497710.873
TH 965	60°24'57.518"	123°02'22.782"	6697534.136	497815.035
PROPOSED WELL				
	60°24'53.694"	123°02'31.174"	6694745.917	497687.038

1	CORRECTED SEISMIC INFORMATION	9/7/10/07
REV.No.	DESCRIPTION	DATE
 McElhenny ASSOCIATES PROFESSIONAL LAND SURVEYORS 10014 - 97th Ave., Suite 202 Fort St. John, British Columbia Phone (250)787-0356, Fax: (250)787-0310		
DATE : 9/7/10/03	JOB NO. : 3111-05993WS	CSW