

**NEB/ONE**

**FINAL WELL REPORT**

**APACHE CANADA LTD.**

**APACHE PARAMOUNT LAC MAUNOIR E-35**

**Grid Area 67<sup>0</sup> 20', 125<sup>0</sup> 00'**

**DATE: Nov 7, 2005**

**COMPANY REPRESENTATIVE: Greg D. Hladun**

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## A. INTRODUCTION

Apache Canada Ltd. in partnership with Paramount Resources Ltd. drilled a 1011 meter exploratory well, spudded on February 26, 2005 and rig released March 11, 2005, to evaluate hydrocarbon potential in the Mt. Clarke formation. The drilling contractor was Akita Sahtu Drilling Rig #51 based out of Calgary, Alberta. The drilling rig used was a conventional telescopic double land rig. The well is located on exploration license #399, Block E-35.

The well is located approximately 84 km north of Colville Lake. The exact co-ordinates of the well in NAD 27 are as follows:

Latitude: 67° 14' 27.6 "N  
Longitude: 125° 7' 15.8" W

The "OK Drilling" rat hole rig started drilling the rathole on February 9, 2005. The 483 mm (19") conductor hole was air drilled to a depth of 65.0 m KB. The conductor hole had 15 m of glacial till and the remainder was dolomite. The 5 joints of 339.7 mm X 101.71 kg/m K-55, LT&C conductor pipe were set with the shoe depth at 65 m KB. The conductor pipe was cemented February 12 with 11.2 m<sup>3</sup> of Artic Set cement + 2% CaCl<sub>2</sub> with good mud returns throughout the cement job. Cement returns to surface were obtained. A 349 mm flange was welded on top of the conductor and a 349 mm diverter with an HCR valve was installed. The diverter was nippled up and function tested.

The conductor shoe was then drilled out and the 311 mm surface hole was spudded on February 26, 2005 using a directional drilling assembly and a water based gel mud. A roller cone bit was used to spud the well. The surface hole was drilled with a water based gel-chem mud. Complete lost circulation was observed at 145 m. The well was drilled ahead using LCM to fight lost circulation to a depth of 162 m. Circulation could not be obtained. The well was then drilled blind from 162 m to the surface casing setting point of 452 m KB.

A total of 33 joints of 244.5 mm, 59.53 kg/m L-80 ERW casing was run to 452 m KB. The casing was cemented with 17.0 m<sup>3</sup> of Dowell Schlumberger RFC cement + 2% CaCl<sub>2</sub>, + 0.2% D46 anti foam agent and 0.8% B139. Circulation was not obtained while cementing. A top cement job was then conducted with 4.5 m<sup>3</sup> of RFC cement. The cement top was at surface.

A 279.4 mm x 244.5 mm, 21,000 kPa Cameron slip lock type IC-2, 11"x 9 5/8" 21000kPa casing bowl was installed onto the 244.5 mm casing and BOP's were installed and pressure tested. The annular preventor was pressure tested. The cuttings from surface hole were disposed of in a surface sump.

The float collar and shoe were drilled out with fresh water and a formation integrity test was conducted. A EMW of 1338 kg/m<sup>3</sup> was obtained. The well was drilled ahead with full circulation to a depth of 1011.0 m<sup>3</sup>. The mud was converted from a fresh water mud to a saturated salt mud prior to entering the Saline River formation. The well was wiper tripped at

T.D. and the well was logged with conventional wireline logs. See geological section for log description. A cleanout trip was conducted and the drillpipe was laid down to run casing.

A total of 75 joints of 177.8 mm, 43.16 kg/m, L-80 casing was run and landed at 1011 m. The casing was cemented from T.D to surface with 18.4 m<sup>3</sup> RFC cement with 0.2% SOO1, + 0.8% B139 fluid loss additive and 0.2% D046 anti-foam agent. Full mud returns were obtained throughout the job and cement returns were obtained at surface. The rig was then released and a service rig was moved on to do the completion.

## B. GENERAL DATA

1. Well Name: Apache Paramount East Lac Maunoir E-35

Authority to Drill a Well No: 2021

Exploration Agreement Number: EL 399 Block E-35

Location: Unit: E Section: 35

Grid Area: 67 deg 20' 125 deg 0 '

Classification: Exploration

2. Well Location Area: Lac Maunoir

Coordinates( NAD 27) ...Latitude:.....67° 14' 27.6" N  
Longitude: ..... 124° 7' 15.8" W

3. Unique Well Identifier: 300E350672012500

4. Operator Apache Canada Ltd.

5. Contractor: Akita Sahtu Drilling

6. Drilling Unit: #51 Land Rig

7. Position Keeping: Not Applicable, Land Rig

8. Support Craft: Trucking via Winter Road from Norman Wells / Fort Good Hope

9. Drilling Unit Performance: Surface spud to T.D. in 13.1 days

10. Difficulties and Delays:  
- Severe lost circulation in surface hole required drilling blind.
11. Total Well Cost: \$ 3,977,000
12. Vertical well controlled with MWD directional drilling equipment.

#### C. SUMMARY OF DRILLING OPERATIONS

1. Elevations:  
Ground 532.6 m above sea level  
KB: 527.7 m above sea level  
KB To Casing Flange: 4.8 m
2. Total Depth:  
FTD: 1011.0 m KB  
PBTD: 996.0 m KB  
TVD: 1011.0 m KB
3. Date and Hour Spudded: 10:15 hr Feb 26, 2005
3. Date Drilling Completed: 17:00 hrs, Mar 8, 2005
4. Date of Rig Release: 12:00 hr Mar 7, 2005
6. Well status: Well was completed and then suspended. See completion report for suspension details.
7. Hole Sizes and Depths:  
Conductor Hole: 483.0 mm to 65 m KB  
Surface Hole: 311 mm to 452.0 m KB  
Main Hole: 216 mm to 1011.0 m KB
8. Casing and Cementing Record:  
Conductor Hole: 483.0mm  
Casing Size: 339.7 mm  
Casing Weight: 101 kg/m  
Casing Grade: K-55  
Casing Make: Ipsco  
Number of Joints: 5  
Thread: BT&C  
Depth Set: 65.0 m (KB)

Cut Height:	At Surface
Cut off Depth:	At Surface
Date Set:	February 12, 2005
Cement Volume:	11.2 m <sup>3</sup>
Cement Type:	Arctic Set
Additives:	2.0 % CaCl <sub>2</sub>

Surface Hole:	311.0mm
Casing Size:	244.5 mm
Casing Weight:	59.53 kg/m
Casing Grade:	L-80
Casing Make:	Ipsco
Number of Joints:	33
Thread:	LT&C
Depth Set:	452.0 m (KB)
Cut Height:	At Surface
Date Set:	Mar 4, 2005
Cement Volume:	17.0 m <sup>3</sup>
Float Shoe Depth:	452.0 m
Cut Off Depth:	Surface
Cement Type:	RFC
Additives:	2% CaCl <sub>2</sub> + 0.2% D46 Antifoam + 0.8% B139
Cement Top:	Surface (after top cement job consisting of 5 tonnes of RFC cement)
Casing Bowl Size:	279 mm X 244.5 mm X 21 MPa
Casing Bowl Make:	Cameron Type 'IC-2' Slip Lock

Production Hole:	216.0mm
Casing Size:	178.0 mm
Casing Weight:	43.16 kg/m
Casing Grade:	L-80
Casing Make:	Ipsco
Number of Joints:	75
Thread:	LT&C
Depth Set:	1011.0 m (KB)
Cut Height:	At Surface
Date Set:	Mar 11, 2005
Cement Volume:	18.0 m <sup>3</sup>
Float Shoe Depth:	1011.0 m
Float Collar Depth: (Top)	996.9
Cut Off Depth:	Surface
Cement Type:	RFC
Cement Additives:	0.2% SOO1 + 0.2% D-46 anti-foam + 0.8% B-139 fluid loss control
Cement Top:	Surface

9. Sidetracked Hole: N/A

10. Drilling Fluid:

Conductor Hole:	Air
Properties:	N/A
Surface Hole:	Fresh Water (Drilled blind while pumping water)
Properties:	N/A
Main:	Saturated Salt Mud
Properties at T.D	Viscosity 61 s/l Weight: 1310 kg/m <sup>3</sup> PH: 10.5 Water loss: 13.0 cc Gels: 2.5 / 8.0 Filter cake: 2.0 PV / YP: 26 / 8.0

11. Fishing Operations: None

12. Well Kicks and Well Control Operations: None

13. Formation Leak-off Tests: 1338 kg/m<sup>3</sup> EMW at 452 m KB.

14. Time Distribution:

Date	Time	Activity
Feb 3, 2005		Constructing lease at E-35
Feb 4		Building lease
Feb 5		Building lease.
Feb 6		Building lease.
Feb 7		Building lease
Feb 8		Building lease
Feb 9		Drilling Rathole.
Feb 10		Drilling Rathole.
Feb 11		Finished drilling rathole.
Feb 12		Ran conductor casing and cemented.
Feb 13		Lease ready for rig.
Feb 24	00:00 – 24:00 hrs	Moved rig from A-67 and rigged up.
Feb 25	00:00 – 24:00 hrs	Rigged up. Welded flange on conductor. Nipped up conductor. Picked up directional drilling tools.
Feb 26	00:00 – 10:15 hrs	Picked up directional tools. Drilled out float collar and shoe of conductor. Displaced to mud.

	10:15 – 24:00 hrs	Spudded surface hole at 10:15 hr Feb 26, 2005. Drilled to 145 m and lost total circulation.
Feb 27	00:00 – 24:00 hrs	Mixed LCM. Drilled blind to 157 m. MWD stopped working. Drilled to 162 m. Pumped 22 m <sup>3</sup> of LCM pills. No returns. Pulled out and laid down directional tools.
Feb 28	00:00 – 01:00 hrs	Run in with rotary assembly and roller cone bit.
	01:00 – 24:00 hrs	Drilled blind from 162 m to 224 m.
Mar 1		Drilled blind from 224 m – 306 m KB
Mar 2	00:00 – 24:00 hrs	Drilled blind from 306 m – 405 m KB.
Mar 3	00:00 – 09:00 hrs	Drilled blind from 405 m – 452 m KB.
	09:00 – 23:00 hrs	Run and cement 33 joints of 244.5 mm, 59.53 kg/m, L-80 casing.
	23:00 – 24:00 hrs	Cement surface casing with 18 tonnes “RFC cement with 2% CaCl <sub>2</sub> + 0.8% B130 + 0.2% D46 at 1740 kg/m <sup>3</sup> . No fluid returns.
March 4	00:00 – 16:00 hrs	Finish cementing casing and WOC. Top cement with 5 tonne RFC. Cement held at surface.
	16:00 – 24:00 hrs	Nipple up BOP and pressure test.
March 5	00:00 – 07:00 hrs	Ran in hole with directional BHA. Pressure tested rams.
	07:00 – 15:00 hrs	Drilled out float shoe. Conducted leakoff test. 1500 kPa applied pressure with water in hole. BHP = 5933 kPa. EMW 1338 kg/m <sup>3</sup> . 13.12 kPa/m
	15:00 – 24:00 hrs	Drilled ahead from 452 m to 595 m KB.
March 6	00:00 – 24:00 hrs	Drilled ahead to 780 m KB
March 7	00:00 – 24:00 hrs	Drilled ahead from 780 m KB to 916 m KB.
March 8	00:00 – 17:00 hrs	Drilled ahead to 1011 m.
	17:00 – 24:00 hrs	Pull wiper trip. Wash bridge at 9555- 970 m KB.
March 9	00:00 – 07:30 hrs	Finished wiper trip and pulled out to log.
	07:30 – 20:45 hrs	Log well. Run #1 FMI/DSI/EMS/GR Run #2 TLC / CNL/ HRLA/CDT
	20:45 – 24:00 hrs	Run in for wiper trip.
March 10	00:00 – 09:15 hrs	Finished wiper trip and layed down drillpipe.
	09:15 – 23:30 hrs	Ran 75 joints 177.8 mm, 43.16 kg/m, L-80, LT&C, ERW casing and cemented surface casing.
	23:30 – 24:00 hrs	Cemented casing.
March 11	00:00 – 02:00 hrs	Cemented casing with 20 tonnes (18.4 m <sup>3</sup> ) RFC + 0.2% S001 + 0.8% B139 + 0.2% D46. Density 1740 kg/m <sup>3</sup> . Plug down at 01:45 hrs. No cement returns to surface.
	02:00 – 06:00 hrs	Nipple down BOP and set casing slips with 35,000 daN hanging weight.
	06:00 – 12:00 hrs	Clean tanks. Rig released at 12:00 hrs, March 11, 2005
		See Completions Report

### Time Break Down

Operation	Hours	%
Rig Move	65.5	16.58
Drilling	150.25	38.04
Circulating	22.75	5.76
Tripping	31.25	7.91
Directional/Survey	11.75	2.97
PU/LD DP/DC/TBG	13.0	3.29
Circulate for samples	2.75	0.70
Reaming	5.5	3.35
Logging & FEWD	15.25	3.86
Cementing	3.5	0.89
Cementing	7.75	1.96
Drill	23.0	5.82
Wait on Cement	16.0	4.05
Circulate, spot LCM	8.75	2.22
Rig Repair	6.25	1.58
Safety	3.25	0.82
Other	0.75	0.19
Total	395.0	0.66

15. Deviation Survey: The bottom hole location is within 30 m well centre location.
16. Abandonment Plugs: **see Completion report. Well was completed and then abandoned.**
17. Composite Well Record: **See attached Well Logs**
18. Completion Record:
 

Start Date: March 14, 2005

Finish Date: March 24, 2005

Contractor: Nabors 414

Completion Summary: See Completion Report

Final Well Configuration: See attached Stick Diagram in Completion Report.

D: GEOLOGY

Geological Summary

**Tops: Apache Paramount Lac Maunoir E-35**

<b>Grnd:</b>	<b>527.7</b>
<b>KB (est):</b>	<b>532.6</b>

<b>Formation</b>	<b>Depth (m)</b>	<b>Subsea (m ss)</b>	<b>Isopach (m)</b>	<b>Lithology</b>
Glacial Till	0	532.6	15.0	Till
Franklin Mountain - Cherty	15.0	517.6	178.0	Karsted Dolomite
Franklin Mountain - Rhythmic	193.0	339.6	152.0	Porous dolomite/silty dolomite
Franklin Mountain - Cyclic	345.0	187.6	175.0	Dolomite/Limestone
Saline River: Upper Clastics	520.0	12.6	33.0	Shale, siltstone, sandstone, dolomite
Saline River: Upper Evaporite	553.0	-20.4	9.0	Anhydrite
Saline River: Shale	562.0	-29.4	21.0	Shale
Saline River: Lower Evaporite	583.0	-50.4	154.0	Anhydrite
Mount Cap	737.0	-204.4	198.2	Shale, siltstone, sandstone
Mount Clark	935.2	-402.6	1.0	Shale
Mt. Clark "A" Sand Top	936.2	-403.6	6.4	Sandstone: porous
Mt. Clark "A" Sand Base	942.6	-410.0	na	
Mt. Clark "B" Sand Top	943.0	-410.4	7.6	Sandstone: porous
Mt. Clark "B" Sand Base	950.6	-418.0	na	
Mt. Clark "C" Sand Top	955.7	-423.1	17.6	Sandstone: porous
Mt. Clark "C" Sand Base	973.3	-440.7	na	
Proterozoic	973.3	-440.7	na	Shale, siltstone
TD	1011.0	-478.4		

SAMPLE DESCRIPTIONS: See attached Geological Report.

CORING RECORD: No coring performed.

GAS DETECTION REPORT: See attached Strip Log

DRILL STEM TESTS: No DST's performed.

## WELL EVALUATION:

The following logs were run:

Gamma-Ray-x-y Caliper-Platform Express Compensated Neutron Dual  
Lithodensity Log 1010.7 m – 451.5m

Gamma-Ray-Caliper-Platform Express Array Induction Log  
1010.7 m – 451.5m

Gamma-Ray-Dipole Shear Sonic Imager 1010.7 m – 451.5m

Gamma-Ray-FMI 1010.7m – 451.5m

ANALYSES: See attached Geological report

GAS, OIL, & WATER ANALYSES: No additional fluid analyses were conducted on this well.

FORMATION STIMULATION: See Post Job Frac Analyses in Final Completion report.

FORMATION AND TEST RESULTS: See Final Completion report.

DETAILED TEST PRESSURE DATA READINGS: See Final Completion report.

## E. ENVIRONMENTAL WELL ANALYSIS.

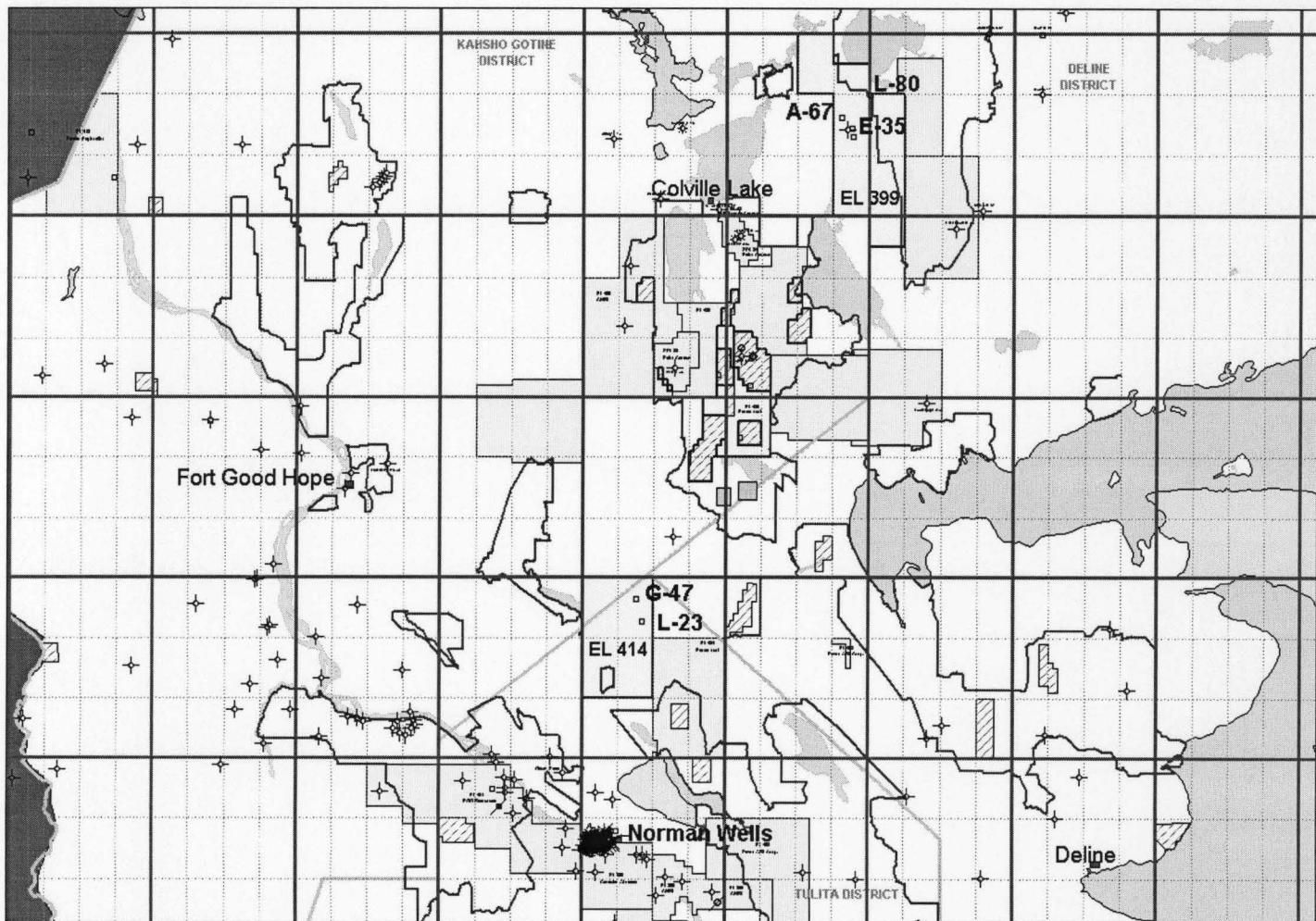
The surface hole cuttings were disposed of via the mix-bury-cover method in an on-site sump. This was possible because a water based mud was used. The production hole was drilled with a saturated salt mud and also contained salt from the naturally occurring salt formation that was drilled in the production hole. The production hole cuttings, which contained salt were mixed with sawdust, transported to Alberta by truck and barge and were disposed of in a licensed waste disposal facility.

In addition, fluid was derived from snow melt obtained from scraping the lease. This fluid was also trucked and barged to Alberta and disposed of in a licensed waste disposal facility.

F. APPENDICES TO WELL HISTORY

Locality Map  
Geological Report  
Bit Record  
Tour Sheets  
Surface Survey

## Appendix A: Location Map



## Appendix B: Geological Report

## Appendix C: Bit Records

## APACHE CORPORATION

Page 1 of 1

## Bits Summary Report

Legal Well Name: APACHE PARAMOUNT LAC MAUNOIR E-35  
 Common Well Name: APACHE PARAMOUNT LAC MAUNOIR E-35  
 Event Name: LAND-ORIG DRLG  
 Contractor Name: AKITA DRILLING  
 Rig Name: AKITA

Start: 2/22/2005  
 Rig Release: 3/11/2005  
 Rig Number: 51

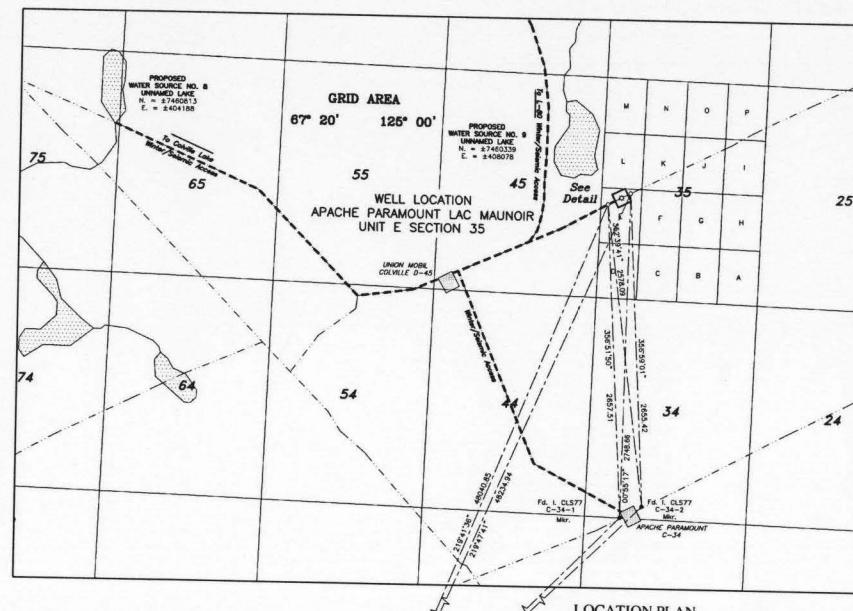
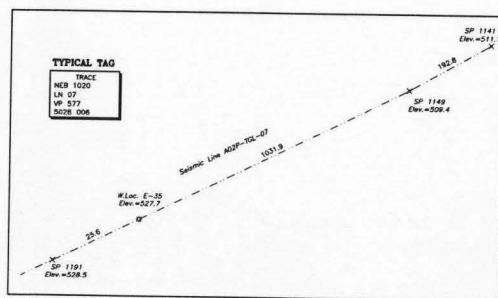
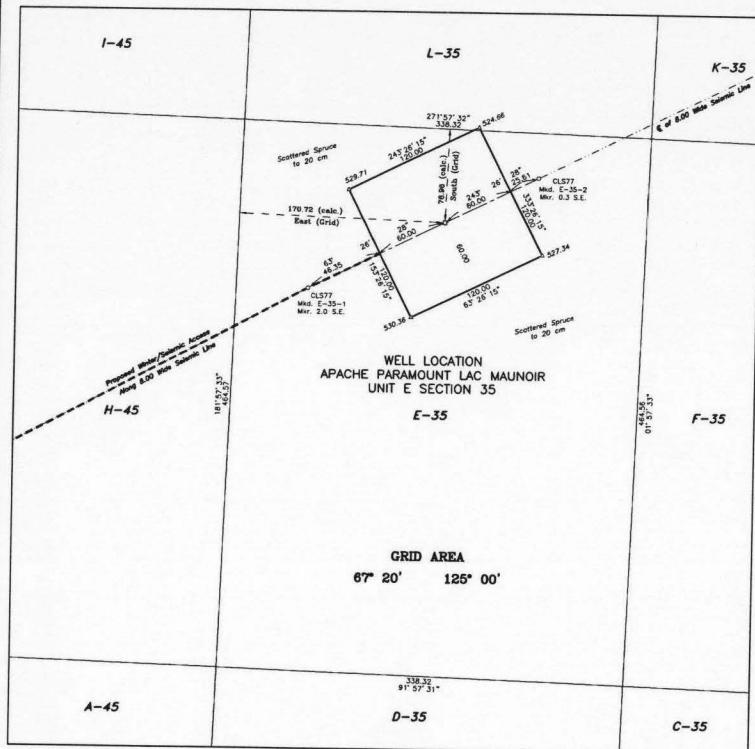
Spud Date: 2/26/2005  
 End:

Bit No/ Run	Size (mm)	Make/ Type	IADC Code	Serial Number	TFA (mm <sup>2</sup> ) JETS (mm)	TMD In/ Out (m)	Total Drilled (m)	Cum./ Tot Rot Hours	ROP	WOB Min/Max (kg)	RPM	Pump Press (kPa)	Pump Output (L/min)	deltaP Bit (kPa)	Nozzle Velocity (m/s)	HHP (kW/cm <sup>2</sup> )	API Cond. I O D L B G O R
1A/ 1	311.15	Hughes GT-S18	/ 437	6030693	595.7 15.9/15.9/15.9// ////	65.00/ 162.00	97.00	14.50 14.50	6.69	5,000/ 10,000	30 40	8,000	2,840.0	3,709	79.5	27.229	-- ---
<b>Remarks</b>																	
2A/ 2	311.15	Hughes GT-S28	/ 527	6018949	595.7 15.9/15.9/15.9// ////	162.00/ 452.00	290.00	75.00 89.50	3.87	10,000/ 12,000	60 75	500	1,117.1	541	31.3	1.563	1-1-NO-A 1-1-NO-TD
<b>Remarks</b>																	
1/ 3	215.90	Hughes HCM404Z	/	7002759	580.6 11.1/11.1/11.1/11.1/11.1 11.1//	452.00/ 1,011.00	559.00	60.25 149.75	9.28	5,000/ 9,000	30 47	13,000	1,293.4	963	37.1	3.218	-- ---
<b>Remarks</b>																	

## Appendix D: Tour Sheets



## Appendix E: Surface Survey



#### AREA REQUIRED:

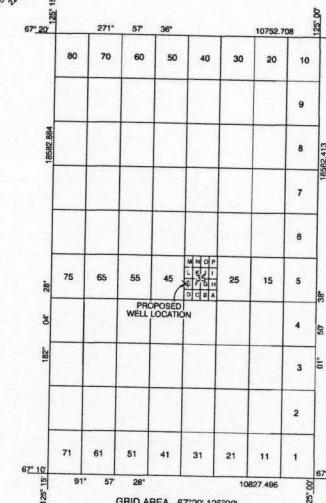
WELL SITE: 120m x 120m = 1.44 ha.

REMOTE SUMP AND CAMP SITE  
FOR C-34 GRID AREA 67° 20' 125° 00'  
TO BE USED FOR A-67.

Wellsite control established using differentially corrected GPS observations. All transformations between NAD83 and NAD27 were computed using the NADCON Transformation Version 2 program. Geodetic Survey of Canada published coordinate values for 'TWEED' GSC No. 699019 were held fixed. Found iron Posts C-34-1 and C-34-2 and comparison to previous attained coordinates are shown below.

GEOGRAPHIC AND UTM COORDINATES, (1983 NAD)				
Station	Latitude(N)	Longitude(W)	Northings	Eastings
'TWEED' (Pt.3)	69° 57' 54.86"	125° 47' 48.34"	7429862.98	377571.88
C-34-1 (Published Post)	69° 57' 00.87"	125° 07' 12.88"	7457122.02	408303.68
C-34-2 (A.S.)	69° 57' 00.87"	125° 07' 57.85"	7457121.517	408571.348
C-34-2 (A.S.)	69° 57' 04.14"	125° 07' 27.88"	7457121.58	408571.351
PROPOSED WELL E-33, WELLCENTER	69° 57' 28.20"	125° 07' 23.08"	7458931.062	408091.328

GRID AREA 67° 20' 125° 00' - GEOGRAPHIC AND UTM COORDINATES, (1983 NAD)				
NW	69° 57' 00"	125° 07' 00"	7458931.062	408091.328
SW	69° 57' 00"	125° 07' 00"	7457121.58	408571.351
NE	69° 57' 00"	125° 07' 00"	7457122.02	408303.68
E-33 N.E.	69° 57' 00"	125° 07' 00"	7458931.062	408091.328
E-33 N.W.	69° 57' 00"	125° 07' 00"	7457121.517	408571.348
E-33 S.E.	69° 57' 00"	125° 07' 00"	7457122.02	408303.68
PROPOSED WELL E-33, WELLCENTER	69° 57' 28.20"	125° 07' 23.08"	7458931.062	408091.328



PLAN AND FIELD NOTES  
OF SURVEY OF  
PROPOSED EXPLORATORY WELL  
APACHE PARAMOUNT LAC MAUNOIR  
IN UNIT E, SECTION 35  
GRID AREA 67° 20' 125° 00'

NORTHWEST TERRITORIES  
CANADA OIL AND GAS LAND REGULATIONS  
EXPLORATORY WELL, NORTHWEST TERRITORIES  
SCALE 1:20,000  
400m 200m 0m 400m 1200m 1600m

SURVEYED FOR  
APACHE CANADA LTD.

BY : JOHN E. LANDRY CLS., ALS.  
August, 2004.  
THIS SURVEY WAS EXECUTED DURING THE PERIOD OF  
July 24th to July 27th., 2004.

Certified Correct and completed on the 19th day of August, 2004.

Canada Lands Surveyor



APACHE CANADA LTD.

WITNESS

DATE

LEGEND  
UTM coordinates are computed for Zone 10, Central Meridian  
125°W. Bearings were derived from differentially corrected GPS  
Observations, and are referred to meridian 125°W.

Distances are shown in metres and decimal degrees.  
Distances shown in metres are measured distances reduced  
to the horizontal at ground level.  
For the computation of coordinates, measured distances have been  
reduced to the UTM plane by multiplying them by an average  
combined scale factor of 0.9998118.

Distances shown on grid area subdivisions are UTM plane, NAD27 Datum.

Geodetic Survey Control Monument is shown thus...  
Found iron marker post is shown thus...  
Spikes are shown thus...  
Monuments placed are shown thus...  
Well Center is shown thus...  
Shot Points are shown thus...  
Area of Survey is shown thus...  
Traverse Lines are shown thus...  
Seismic Lines are shown thus...  
Elevations are shown thus...  
Elevations shown are 2.0m long placed 0.3m away from post.

Elevations were derived from G.S.C. 'TWEED' No. 699019.  
Elev. = 413.70m.  
(Good Separation: HT2, 0)

Survey was completed prior to drilling; therefore well as drilled  
may not necessarily agree with proposed location.

REV. NO.	DESCRIPTION	BY	DATE
JOHN E. LANDRY CANADA LAND SURVEYOR		Date: Aug.19, 2004	
McELHANNAY LAND SURVEYS LTD PROFESSIONAL LAND SURVEYORS 4310-118 Avenue Edmonton, Alberta T6B 4S2 Ph: (780) 432-3425 FAX: (780) 432-7033		Scale: 1 of 1	File No.: 15556WS1
McElhanney		Job No.: 321115556	File No.: 15556WS1

Plan ID: 15556WS1