N E B COPY

ConocoPhillips Resources Canada

COPRC Mirror Lake N-20 Final Well Report

Grid # 65°00′, 126°45′

2013/05/13

TIGHT HOLE

COPRC Mirror Lake N-20

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1.0 Introduction

1.1 Summary

The COPRC Mirror Lake N-20 well was spudded on February 25, 2013 and the rig was released on March 25 2013 after reaching a total depth of 2146 m KB with a total of 27 operating days on the well.

Construction operations to support COPRC's 2012/2013 exploration program commenced on November 27 2012 when profiling of the ice cover on the Mackenzie River began. Clearing of the route of the ice bridge was done and flooding and thickening of the 6 kilometre ice bridge from Norman Wells to EL 470 began in early December 2012. The ice bridge was thick enough to support heavy loads by January 4 2013 and construction of the EL 470 ice roads began January 5 2013.

The well pad at the Mirror Lake N-20 location was completed by February 21 2013.

Beaver Drilling Rig # 2 was mobilized from the Loon Creek O-06 location to the Mirror Lake site starting on February 21 2013 and all rig loads were on location by February 23 2013. Rig up took approximately 3 days due to the extremely cold weather and short days.

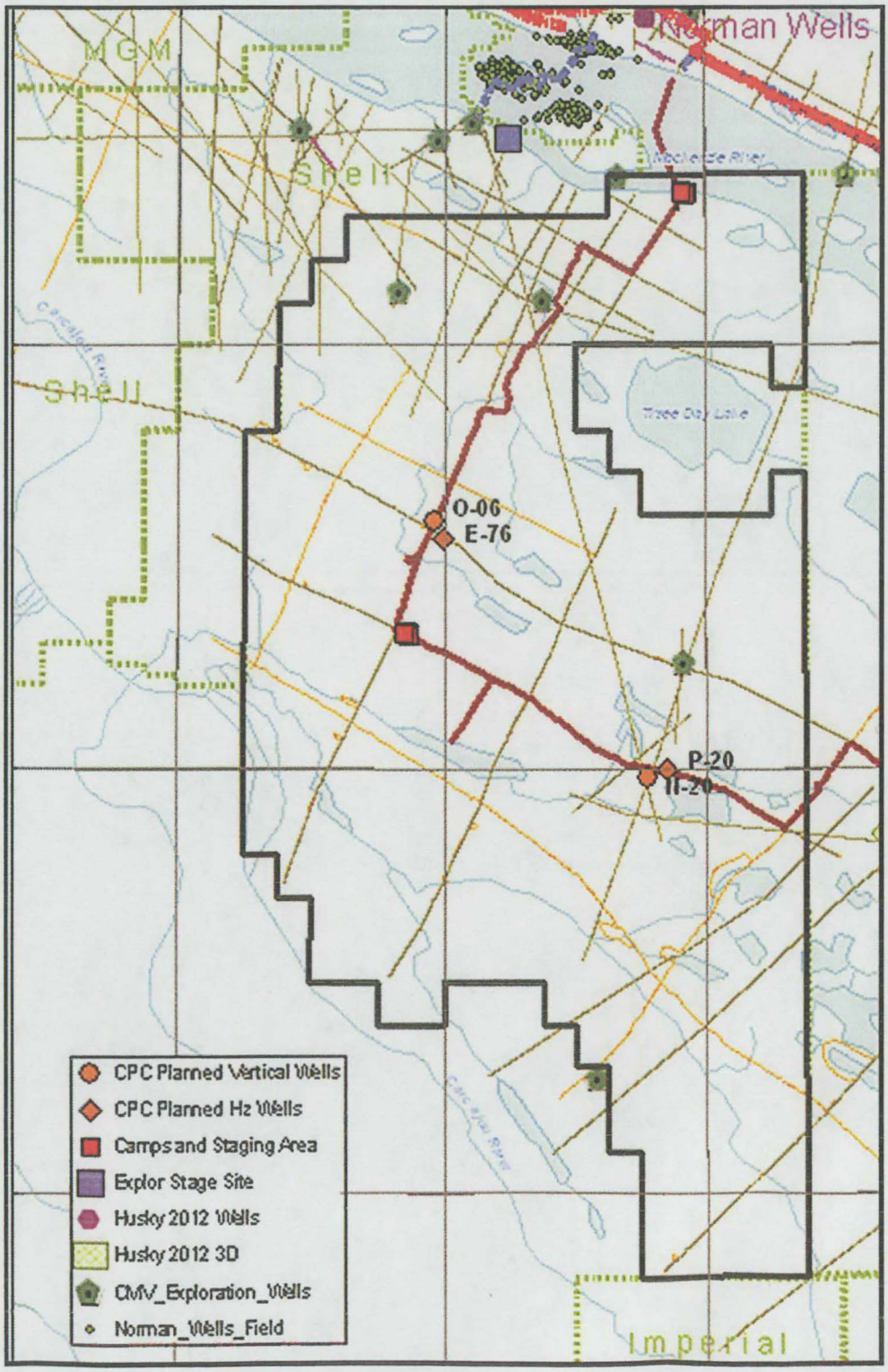
Drilling operations were conducted with no major issues and no safety incidents occurred. The Canol target zone was encountered at 1931 m KB and the secondary target, the Bluefish member, came in at approximately 2073 m KB. Wire line retrievable coring techniques were used to core a total of 248 meters from 1890 m KB to 2138 m KB. The surface hole was logged using Schlumberger's platform express suite of logs. Production hole was logged with a full suite of electric logs. A long string of 177.8 mm casing was run to bottom and cemented full length using Hi Lite fill cement from surface to 1600 m KB and Oilwell 'G' cement from 1600 m to 2146 m KB.

Completion operations commenced March 26 and were finished by March 30 2013; having conducted 3 DFIT's on the Canol formation. The intervals for the DFIT's were 2059 – 2060 m KB, 2023 – 2024 m KB and 1993 – 1994 m KB. Each interval was suspended by setting two wire line retrievable bridge plugs with recorders installed beneath the bottom WRBP's.

The bridge plugs and recorders will be recovered in the 2013/2014 winter drilling season

All equipment required for the DFIT's was rigged out by March 30 2013 and the Mirror Lake N-20 well is suspended with wellhead installed and the valves locked.

1.2 Locality Map



2.0 General Data

2.1 Well Name

COPRC Mirror Lake N-20

2.2 Unique Well Identifier

300N206500126450

2.3 Operator and Drilling Contractor

ConocoPhillips Canada Resources Corporation

Beaver Drilling Ltd. Rig #2

2.4 Difficulties and Delays

There were no significant drilling issues or delays experienced on this well.

3.0 Summary of Drilling Operations

3.1 Elevations

Ground Level: 281.30 m

Kelly Bushing: 286.50 m

KB – Ground Level: 5.20 m

3.2 Total depth

2146 m KB

3.3 Spud Date and Time

February 25 2013 @ 0500 Hours

3.4 Date Drilling Completed

Drilling completed 3/20/2103

3.5 Rig Release Date and Time

Rig Released 03/25/13 @00:00 Hrs.

3.6 Well Status

Suspended

3.7 Hole sizes and depths

Surface Hole: 311 mm to 601 m KB

Main Hole: 222 mm to 2146 m KB (TD)

3.8 Casing and Cementing Record

3.7.1 Conductor Hole

3.8.2 Surface Hole

244.5 mm, 53.57 kg/m, J-55 LTC set at 598.0 m KB

3.8.3 Main Hole

177.8 mm, 38.69 kg/m P-110 LTC set at 2146.0 m KB

3.9 Drilling Fluids

3.9.1 Surface Hole

Gel Chemical (MI Swaco)

3.9.2 Main Hole

Versaclean Mineral Oil (MI Swaco)

3.10 Formation Leak Off Tests

3.10.1 Surface Casing Drill out

A Formation Integrity Test (FIT) was conducted on Mirror Lake N-20 on February 3, 2013 after drilling out the surface casing shoe at 598 m KB and making 10 metres of new hole. The FIT at 611 m KB was conducted with 960.0 kg/m^3 OBM in the hole and was taken to a pressure of 7530 kPa with no leak off. This equates to an equivalent fracture pressure of 11484 kPa or an equivalent fracture gradient equivalent to 18.80 kPa/m.

3.11 Time Distribution

Casing: 25.0 hrs.

Cementing:25.75 hrs.

Coring: 229.00 hrs.

Drilling: 268.25 hrs.

Formation Evaluation: 52.0 hrs.

Rig Move: 135.50 hrs.

Rig Maintenance: 24.25 hrs.

Wellhead/BOP testing: 30.25 hrs.

Trouble Time: 69.25 hrs.

3.12 Deviation Survey

The maximum deviation encountered on this well was 2.90^0 at 1875.0 m KB

3.13 Suspension Status

CPORC Mirror Lake N020 is suspended. A StreamFlo 34.5 MPa wellhead with two master valves is installed and chained and locked.

3.14 Composite Well Record

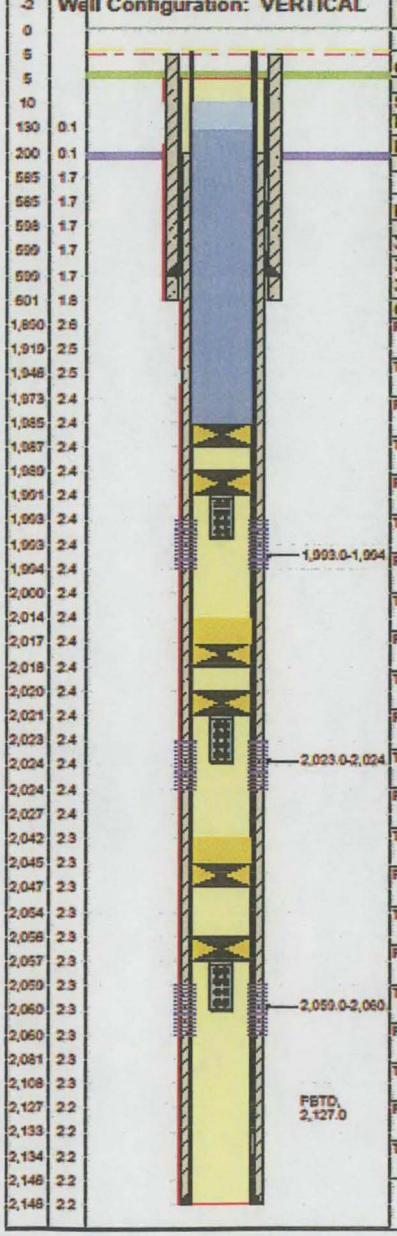
ConocoPhillips Canada

Downhole Well Profile for COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	Field Name	Licence No.	Well Configuration Type
200/C-011-L/094-P-16/99	C-011-L/94-P-16	MIRROR LAKE	EL470	VERTICAL

Ground Elevation (m)	Orig KB/RT (m)	KB-Grd (m)	KB-CF (m)	KB-TF (m)	Other Elevation Type	Other Elevation (m)
281.30	286.50	5.20	4.87	4.32	BGW	

Well Config: VERTICAL - Original Hole, 5/8/2013 10:34:49 AM



WELLHEADS

Type	Install Date

Description	Make	Model	WP (kPa)	Top Ring Gasket	Min Bore (mm)

CASING STRINGS

Casing Description	String OD (mm)	String Wt (kg/m)	String Grade	String Top Thrd	Set Depth (mKB)
Surface	244.5	59.527	J-55	LT&C	599.00
Production	177.8	38.692	P-110	LT&C	2,146.00

PBTDs

Depth (mKB)	KO MD (mKB)	TD (max) (mKB)
2,127.00		2,146.00

PERFORATIONS

Date	Top (mKB)	Btm (mKB)	Zone	Current Status
3/28/2013	1,993.00	1,994.00	Upper Lower Canol, Original H...	Plugged
3/28/2013	2,023.00	2,024.00	Middle Lower Canol, Original ...	Plugged
3/27/2013	2,059.00	2,060.00	Basal Lower Canol, Original H...	Plugged

OTHER IN HOLE

Run Date	Description	OD (mm)	ID (mm)

Top (mKB)	Bottom (mKB)	Make	Model

Run Date	Description	OD (mm)	ID (mm)
3/27/2013	Pup Joint Assembly un...	60.3	
Top (mKB) 2,057.18	Bottom (mKB) 2,059.62	Make	Model
Run Date 3/27/2013	Description Barrier - Retrievable Br...	OD (mm) 159.0	ID (mm)
Top (mKB) 2,055.79	Bottom (mKB) 2,057.18	Make Schlumberger	Model M-CW Retrievable
Run Date 3/27/2013	Description Barrier - Retrievable Br...	OD (mm) 159.0	ID (mm)
Top (mKB) 2,045.29	Bottom (mKB) 2,046.77	Make Schlumberger	Model M-CW Retrievable
Run Date 3/26/2013	Description Sand Cap	OD (mm) 159.0	ID (mm)
Top (mKB) 2,042.29	Bottom (mKB) 2,045.29	Make	Model
Run Date 3/26/2013	Description Barrier - Retrievable Br...	OD (mm) 159.0	ID (mm)
Top (mKB) 2,019.79	Bottom (mKB) 2,021.18	Make Schlumberger	Model M-CW Retrievable
Run Date 3/26/2013	Description Pup Joint Assembly un...	OD (mm) 60.3	ID (mm)
Top (mKB) 2,021.18	Bottom (mKB) 2,023.58	Make	Model
Run Date 3/26/2013	Description Barrier - Retrievable Br...	OD (mm) 159.0	ID (mm)
Top (mKB) 2,016.79	Bottom (mKB) 2,018.26	Make Schlumberger	Model M-CW Retrievable
Run Date 3/26/2013	Description Sand Cap	OD (mm) 159.0	ID (mm)
Top (mKB) 2,013.79	Bottom (mKB) 2,016.79	Make	Model
Run Date 3/26/2013	Description Barrier - Retrievable Br...	OD (mm) 159.0	ID (mm)
Top (mKB) 1,989.29	Bottom (mKB) 1,990.68	Make Schlumberger	Model M-CW Retrievable
Run Date 3/26/2013	Description Pup Joint Assembly un...	OD (mm) 60.3	ID (mm)
Top (mKB) 1,990.68	Bottom (mKB) 1,993.08	Make	Model

Template Revised 8/1/2007 Page 1/2 Report Printed: 5/8/2013

ConocoPhillips Canada

Drilling Summary

MIRROR LAKE N-20 65-00 126-45

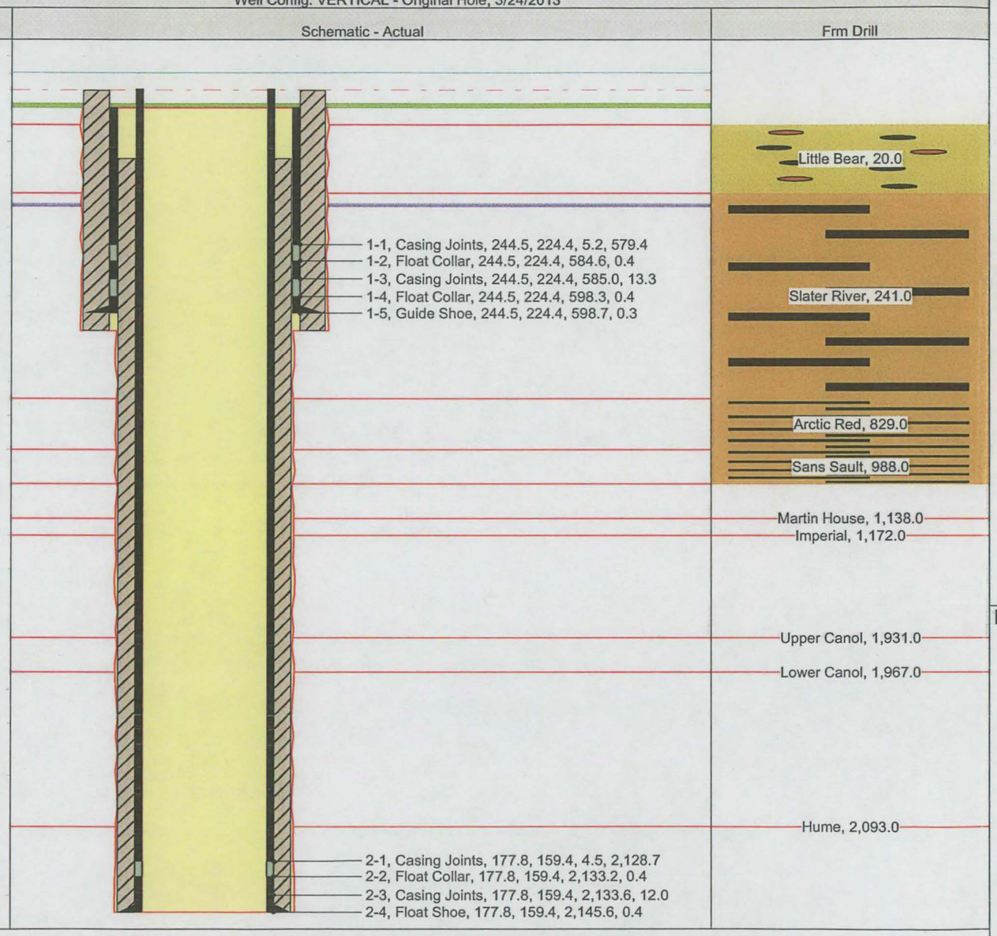
API / UWI	Field Name	Area	Operator	County	State/Province
200/C-011-L/094-P-16/99	MIRROR LAKE		CONOCOPHILLIPS		N.W.T.

Ground Elevation (m)	Casing Flange Elevation (m)	KB-Ground Distance (m)	KB-Casing Flange Distance (m)	Original Spud Date	Rig Release Date
281.30	281.63	5.20	4.87	2/25/2013	3/24/2013 11:59:00 PM

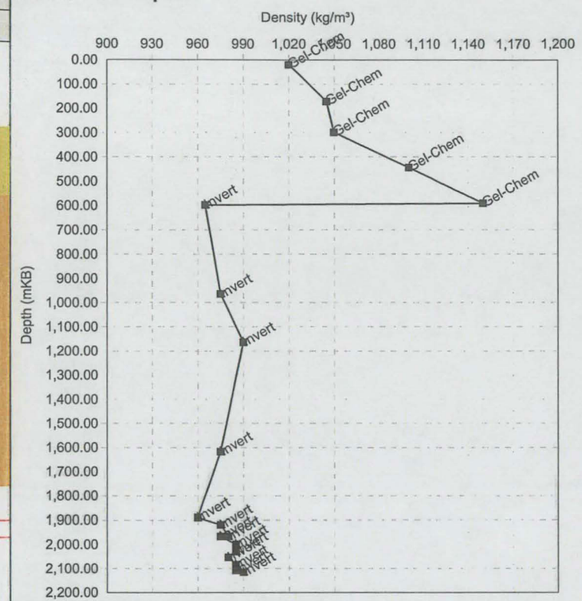
Schematic

Well Config: VERTICAL - Original Hole, 3/24/2013

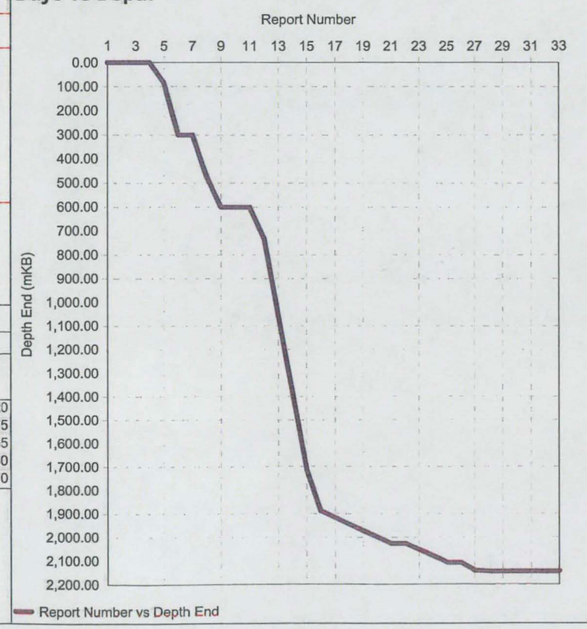
mKB (MD)	mKB (TVD)	Incl
-2		
0		
5		
5		
20		
22		
200	200	0.1
217	217	0.4
241	241	0.4
300	300	0.5
532	532	1.5
585	585	1.7
585	585	1.7
598	598	1.7
599	599	1.7
599	599	1.7
601	601	1.8
616	616	1.9
643	643	1.5
792	792	2.1
829	829	1.1
915	915	1.5
962	962	1.8
988	988	2.2
1,037	1,037	2.4
1,103	1,103	1.3
1,112	1,112	1.4
1,138	1,138	1.6
1,172	1,172	1.0
1,741	1,740	1.5
1,890	1,889	2.6
1,892	1,891	2.6
1,919	1,918	2.5
1,927	1,926	2.5
1,931	1,930	2.5
1,946	1,945	2.5
1,967	1,966	2.5
1,973	1,972	2.4
2,000	1,999	2.4
2,027	2,026	2.4
2,037	2,036	2.4
2,054	2,053	2.3
2,062	2,061	2.3
2,081	2,080	2.3
2,082	2,081	2.3
2,093	2,092	2.3
2,108	2,107	2.3
2,133	2,132	2.2
2,134	2,133	2.2
2,146	2,145	2.2
2,146	2,145	2.2



Mud WT vs Depth



Days vs Depth



Job Summary Information

Job Category	Well Configuration Type	Actual Start D...	End Date	Drilled Depth (m)
DRILLING	VERTICAL	2/21/2013	3/24/2013	2,149.00

AFE / RFE / Maint.#	Total Job AFE Amount	Total AFE+Sup	Total Fld Cost
10343209	10,274,600.00	10,274,600.00	7,938,291.67

Average ROP (m/hr)	Spud to TD Duration (hrs)	Cost Per Depth Drilled (Cost/m)
11.9	536.00	3,693.95

Objective

Summary

Beaver Drilling Ltd., 2

Rig Supervisor	Phone Mobile
Rick Yavis, Rig Manager	

Time Log Summarized by Time P-N-T

Time P-N-T	Dur (hrs)	% Total Time (%)
P	710.75	91.12
T	69.25	8.88

Interval Lessons

Start Depth (mKB)	End Depth (mKB)	LL ActivityCode	Comment	Pot Savings ($)

Interval Problems

Start Depth (mKB)	End Depth (mKB)	Trouble Code	Problem Summary	Problem Cost
300.00	300.00	Hole Conditions	Mud rings in well caused problems while short tripping.	25,302.00
300.00	300.00	Stuck Pipe	Mud ring prevented circulation and pipe movement	21,852.00
300.00	300.00	Stuck Pipe	Mud ring prevented circulation and pipe movement	4,600.00
300.00	300.00	Stuck Pipe	Mud ring prevented circulation and pipe movement	19,551.00
532.00	532.00	Lost Circulation	Lots of sand in surface hole. Lost circulation was expected. Easy to heal with just LCM	16,100.00
601.00	601.00	Lost Circulation	Lots of sand in surface hole. Lost circulation was expected. Easy to heal with just LCM	18,401.00
616.00	616.00	BHA	Trouble shoot MWD tool for gamma ray	2,300.00
643.00	643.00	Rig	Repair rad hose on #1 pump motor	3,450.00
915.00	915.00	BHA	Trouble shoot MWD tool for gamma ray	4,600.00
1,741.00	1,741.00	Rig	Change out pump control on driller control panel	2,300.00
2,027.00	2,027.00	BHA	While POOH on wireline the core catcher had backed off and the core fell out of the core barrel and went downhole inside the drill pipe. Had to trip to find core. Found core and had 100$ recovery.	174,812...
2,108.00	2,108.00	BHA	Drill rod would not seat. POOH and lay down coring assembly and RIH with drilling assembly. This trip substitued for our wiper trip before logging.	25,302.00

Bit Summary

Bit Run	Drill Bit	Bit Dull	Depth In (mKB)	Depth Out (mKB)	Drilled (m)	Drill Time (hrs)	BHA ROP (m/hr)	WOB (max) (daN)	WOB (min) (daN)	RPM (max) (rpm)	RPM (min) (rpm)
1A	311.0mm, VAREL, HE04JMRSV, 1...	2-3-WT-A-E-3-NO-TD	0.00	601.00	601.00	55.25	10.9	17,000	5,000	120	120
1	222.0mm, REED, MSR616M-A2C, ...	1-1-CT-S-X-0-NO-CP	601.00	2,146.00	1,293.00	85.50	15.1	10,000	3,000	197	75
1C	222.0mm, NOV, PR513, E140308	1-1-BT-M-X-0-NO-DTF	1,891.00	2,027.00	136.00	16.00	8.5	5,000	4,000	65	55
2C	222.0mm, NOV, CEPR5135, A1/E1...	2-2-CT-M-X-0-NO-DTF	2,027.00	2,108.00	81.00	12.00	6.8	5,500	5,000	65	60
RR1	222.0mm, REED, MSR616M-A2C, ...	1-3-WT-A-X-0-NO-TD	2,108.00	2,146.00	38.00	12.25	3.1	9,000	8,000	80	70

4. Geology

4.1 Drill Cuttings

Drill cuttings were collected at 5 metre intervals from spud to TD (2146 m KB). A set of bulk samples as well as a set of washed samples in vials have been delivered to the GSC (03/28/2013).

4.2 Cores

The interval from 1890.0 m to 2108.0 m KB was wire line cored in the Mirror Lake N-20 well. A total of 8 – 27 metre cores were cut with 100% recovery.

4.3 Lithology

Formation	Prognosis		Sample		
Marker Tops	**TVD**	**SS**	**MD**	**TVD**	**SS**
Little Bear	21.5	265	20.0	20.0	266
Slater River	217	70	241.0	241.0	46
Arctic Red	792	-505	829.0	829.0	-542
Sans Sault	962	-675	988.0	988.0	-699
Martin House	1037	-750.0	1138.0	1138.0	-851
Imperial	1112	-825.0	1172.0	1172.0	-885
Upper Canol	1892	-1605.0	1931.0	1931.0	-1644
Lower Canol	1927	-1640.0	1967.0	1967.0	-1680
Hare Indian	2037	-1750.0	2074.0	2074.0	-1787
Bluefish Member	2062	-1775.0	2084.0	2084.0	-1797
Hume	2132	-1845.0	2093.0	2093.0	-1806
TD	2146	-1859.0	2146.0	2146.0	-1859.0

5. Well Evaluation

5.1 Open Hole Logs

Hole Section	Run Number	Log description	Depth In	Depth Out
Surface	1	Resistivity/Dual Density/ Neutron/Total GR/Sonic/GPIT	600	0
Main	1	AIT/NEXT/PEX/TLD2	2148	600
	2	UBI/OBMI/OBMI2/PPC/MSIP/PBC/EDTC	2148	600
	3	UBI rerun	2148	600
	4	RST /ADT/HNGS/CMR (NTR)	2148	600
	5	CBL	600	0

5.2 DFIT Results

Completion operations commenced March 26 and were finished by March 30, 2013, 3 DFIT's having been conducted on the Canol formation. The intervals for the DFIT's were 1993 – 1994 m KB, 2023 - 2024 m KB and 2059 - 2060 m KB. Each interval was suspended by setting two wire line retrievable bridge plugs with dual pressure recorders installed beneath the bottom WRBP.

The wire line retrievable bridge plugs were left in place and the well suspended in order to allow sufficient time for pressure bleed off. The bridge plugs and recorders will be retrieved as part of the overall winter exploration program in 2013-2014.

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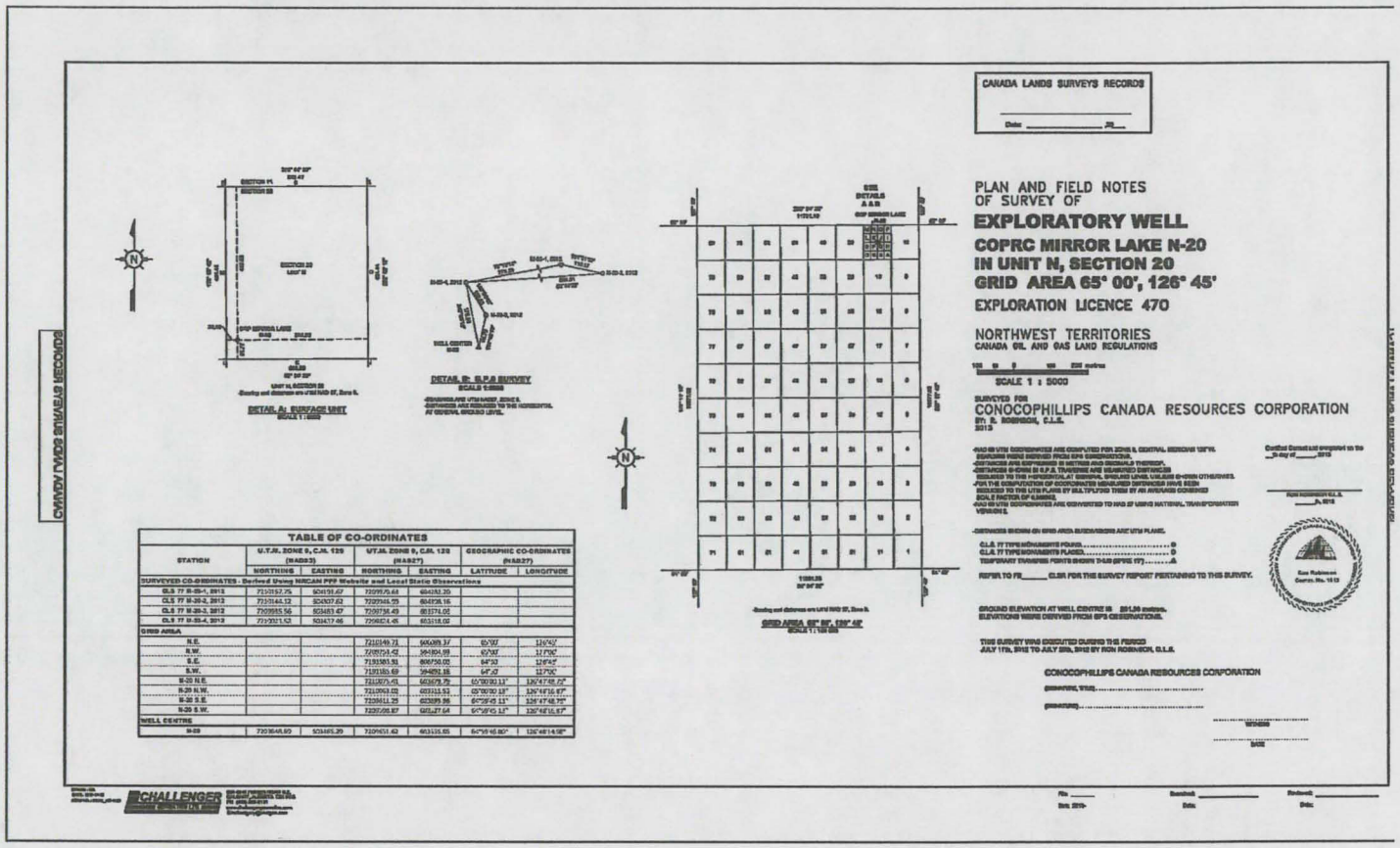
Appendices to Well History Report

I. Final Survey Plot of COPRC Mirror Lake N-20



CANADA LANDS SURVEYS RECORDS

PLAN AND FIELD NOTES
OF SURVEY OF
EXPLORATORY WELL
COPRC MIRROR LAKE N-20
IN UNIT N, SECTION 20
GRID AREA 65° 00', 126° 45'
EXPLORATION LICENCE 470

NORTHWEST TERRITORIES
CANADA OIL AND GAS LAND REGULATIONS

SCALE 1 : 5000

SURVEYED FOR
CONOCOPHILLIPS CANADA RESOURCES CORPORATION
BY: R. ROBINSON, C.L.S.
2013

DETAIL A: SURFACE VIEW
SCALE 1:1000

DETAIL B: G.P.S SURVEY
SCALE 1:5000

GRID AREA 65° 00', 126° 45'
SCALE 1:100 000

TABLE OF CO-ORDINATES

STATION	U.T.M., ZONE 9, C.M. 129 (NAD83)		U.T.M. ZONE 9, C.M. 129 (NAD27)		GEOGRAPHIC CO-ORDINATES (NAD27)	
	NORTHING	EASTING	NORTHING	EASTING	LATITUDE	LONGITUDE
SURVEYED CO-ORDINATES - Derived Using NRCAN PPP Website and Local Static Observations						
CLS 77 B-20-1, 2013	7112152.75	504191.67	7209970.64	604282.20		
CLS 77 B-20-2, 2013	7233144.12	504307.62	7202948.75	604136.16		
CLS 77 B-20-3, 2013	7209955.56	504483.47	7209736.49	603774.05		
CLS 77 B-20-4, 2013	7212021.52	503437.46	7209824.45	603118.02		
GRID AREA						
N.E.			7210149.71	605369.37	65°00'	126°45'
N.W.			7209724.42	604304.09	65°00'	127°00'
S.E.			7191583.91	606750.00	64°52	126°45'
S.W.			7193183.69	604252.16	64°52	127°00'
B-20 N.E.			7212075.41	603679.79	65°00'00.13"	126°47'48.72"
B-20 N.W.			7210963.03	602313.53	65°00'00.13"	126°48'16.67"
B-20 S.E.			7205611.25	602389.86	64°59'45.11"	126°47'48.78"
B-20 S.W.			7205106.87	601427.64	64°59'45.13"	126°48'16.67"
WELL CENTRE						
B-20	7203648.60	553485.29	7209824.42	603135.85	64°59'45.80"	126°48'14.98"

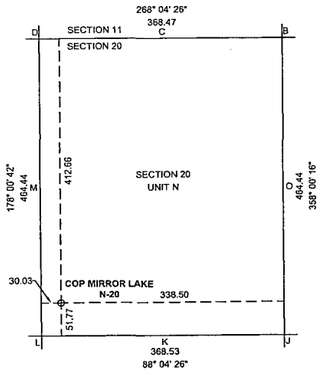
PLAN AND FIELD NOTES OF SURVEY OF EXPLORATORY WELL COPRC MIRROR LAKE N-20 IN UNIT N, SECTION 20 GRID AREA 65° 00', 126° 45' EXPLORATION LICENCE 470 NORTHWEST TERRITORIES CANADA OIL AND GAS LAND REGULATIONS

CANADA LANDS SURVEYS RECORDS

CANADA LANDS SURVEYS RECORDS

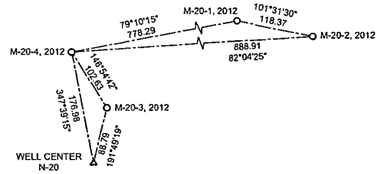
CANADA LANDS SURVEYS RECORDS

Date: _____ ,20___



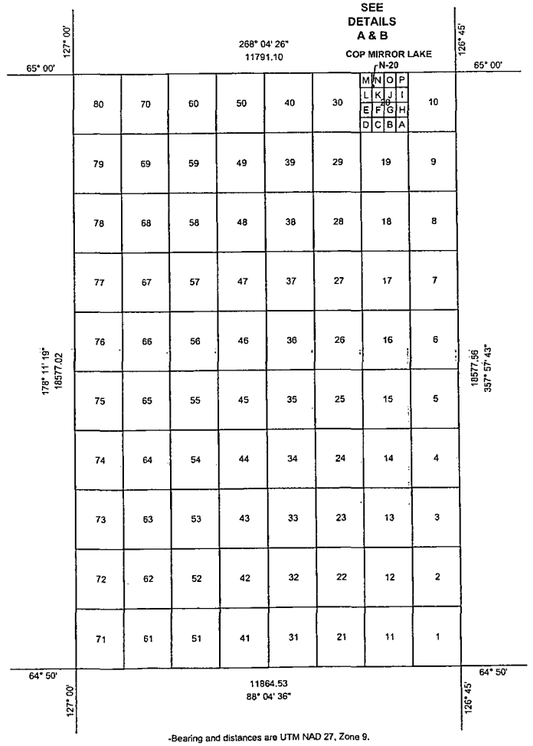
UNIT N, SECTION 20
-Bearing and distances are UTM NAD 27, Zone 9:

DETAIL A: SURFACE UNIT
SCALE 1 : 5000



DETAIL B: G.P.S SURVEY
SCALE 1:5000

-BEARINGS ARE UTM NAD27, ZONE 9.
-DISTANCES ARE REDUCED TO THE HORIZONTAL AT GENERAL GROUND LEVEL.



-Bearing and distances are UTM NAD 27, Zone 9.

GRID AREA 65° 00', 126° 45'
SCALE 1 : 100 000

PLAN AND FIELD NOTES OF SURVEY OF

EXPLORATORY WELL

COPRC MIRROR LAKE N-20
IN UNIT N, SECTION 20
GRID AREA 65° 00', 126° 45'

EXPLORATION LICENCE 470

NORTHWEST TERRITORIES
CANADA OIL AND GAS LAND REGULATIONS

100 50 0 100 200 metres
SCALE 1 : 5000

SURVEYED FOR
CONOCOPHILLIPS CANADA RESOURCES CORPORATION
BY: R. ROBINSON, C.L.S.
2013

-NAD 83 UTM COORDINATES ARE COMPUTED FOR ZONE 9, CENTRAL MERIDIAN 129°W.
BEARINGS WERE DERIVED FROM GPS OBSERVATIONS.
-DISTANCES ARE EXPRESSED IN METRES AND DECIMALS THEREOF.
-DISTANCES SHOWN IN G.P.S. TRAVERSE ARE MEASURED DISTANCES REDUCED TO THE HORIZONTAL AT GENERAL GROUND LEVEL UNLESS SHOWN OTHERWISE.
-FOR THE COMPUTATION OF COORDINATES MEASURED DISTANCES HAVE BEEN REDUCED TO THE UTM PLANE BY MULTIPLYING THEM BY AN AVERAGE COMBINED SCALE FACTOR OF 0.999682.
-NAD 83 UTM COORDINATES ARE CONVERTED TO NAD 27 USING NATIONAL TRANSFORMATION VERSION 2.

-DISTANCES SHOWN ON GRID AREA SUBDIVISIONS ARE UTM PLANE.

C.L.S. 77 TYPE MONUMENTS FOUND..... ●
C.L.S. 77 TYPE MONUMENTS PLACED..... O
TEMPORARY TRAVERSE POINTS SHOWN THUS (SPIKE 10").....△

REFER TO FB_____ CLSR FOR THE SURVEY REPORT PERTAINING TO THIS SURVEY.

Certified Correct and completed on the
__th day of _____, 2013

RON ROBINSON C.L.S.
_____th, 2013

ASSOCIATION OF CANADA LANDS SURVEYORS
Ron Robinson
Comm. No. 1613
ASSOCIATION DES ARPENTEURS DES TERRES DU CANADA

GROUND ELEVATION AT WELL CENTRE IS **281.30 metres.**
ELEVATIONS WERE DERIVED FROM GPS OBSERVATIONS.

THIS SURVEY WAS EXECUTED DURING THE PERIOD
JULY 17th, 2012 TO JULY 20th, 2012 BY RON ROBINSON, C.L.S.

CONOCOPHILLIPS CANADA RESOURCES CORPORATION

(SIGNATURE, TITLE).....

(SIGNATURE).....

.....
WITNESS

.....
DATE

TABLE OF CO-ORDINATES

STATION	U.T.M. ZONE 9, C.M. 129 (NAD83)		U.T.M. ZONE 9, C.M. 129 (NAD27)		GEOGRAPHIC CO-ORDINATES (NAD27)	
	NORTHING	EASTING	NORTHING	EASTING	LATITUDE	LONGITUDE
SURVEYED CO-ORDINATES - Derived Using NRCAN PPP Website and Local Static Observations						
CLS 77 M-20-1, 2012	7210167.75	604191.67	7209970.63	604282.20		
CLS 77 M-20-2, 2012	7210144.12	604307.62	7209946.99	604398.16		
CLS 77 M-20-3, 2012	7209935.56	603483.47	7209738.49	603574.03		
CLS 77 M-20-4, 2012	7210021.52	603427.46	7209824.45	603518.02		
GRID AREA						
N.E.			7210149.71	606089.37	65°00'	126°45'
N.W.			7209753.42	594304.93	65°00'	127°00'
S.E.			7191583.91	606750.03	64°50'	126°45'
S.W.			7191185.69	594892.18	64°50'	127°00'
N-20 N.E.			7210075.41	603879.79	65°00'00.11"	126°47'48.75"
N-20 N.W.			7210063.02	603511.52	65°00'00.13"	126°48'16.87"
N-20 S.E.			7209611.25	603895.96	64°59'45.11"	126°47'48.75"
N-20 S.W.			7209598.87	603527.64	64°59'45.13"	126°48'16.87"
WELL CENTRE						
N-20	7209848.69	603465.29	7209651.62	603555.85	64°59'46.80"	126°48'14.58"

DRAWN : MB
DATE : 2013-04-08
ACAD NO. : 38000_WS-N-20

CHALLENGER GEOMATICS LTD.
300-6940 FISHER ROAD S.E.
CALGARY, ALBERTA T2H 0W3
PH (403) 253-8101
www.challengergeomatics.com
Email:calgary@chalgeo.com

File: _____ Examined: _____ Reviewed: _____
Item: 2013- Date: Date:

II. Casing and Cementing Report

ConocoPhillips Canada

Casing Summary
MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	Licence No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Surface, 599.00mKB

Set Depth (mKB)	Set Tension (daN)	String Nominal OD (mm)	Minimum Drift (mm)	Centralizers Count	Scratchers Count
599.00	25,000.0	244.5		20	

Jts	Item Description	OD Nominal (mm)	Nominal ID (mm)	Wt (kg/m)	Grade	Top Thread	Top (mKB)	Btm (mKB)	Section Length (m)	Burst Pres (kPa)	P (collapse) (kPa)
45	Casing Joints	244.5	224.4	59.527	J-55	LT&C	0.14	584.56	584.42		17,720
1	Float Collar	244.5	224.4	59.527	J-55	LT&C	584.56	584.98	0.42		17,720
1	Casing Joints	244.5	224.4	59.527	J-55	LT&C	584.98	598.29	13.31		17,720
1	Float Collar	244.5	224.4	59.527	J-55	LT&C	598.29	598.71	0.42		17,720
1	Guide Shoe	244.5	224.4	59.527	J-55	LT&C	598.71	599.00	0.29		17,720

Production, 2,146.00mKB

Set Depth (mKB)	Set Tension (daN)	String Nominal OD (mm)	Minimum Drift (mm)	Centralizers Count	Scratchers Count
2,145.00	55,000.0	177.8		100	

Jts	Item Description	OD Nominal (mm)	Nominal ID (mm)	Wt (kg/m)	Grade	Top Thread	Top (mKB)	Btm (mKB)	Section Length (m)	Burst Pres (kPa)	P (collapse) (kPa)
178	Casing Joints	177.8	159.4	38.692	P-110	LT&C	-1.87	2,133.16	2,135.03		42,954
1	Float Collar	177.8	159.4	38.692	P-110	LT&C	2,133.16	2,133.56	0.40		42,954
1	Casing Joints	177.8	159.4	38.692	P-110	LT&C	2,133.56	2,145.60	12.04		42,954
1	Float Shoe	177.8	159.4	38.692	P-110	LT&C	2,145.60	2,146.00	0.40		42,954

Template Revised 8/1/2007 Page 1/1 Report Printed: 4/9/2013

ConocoPhillips Canada

Cement Summary

MIRROR LAKE N-20 65-00 126-45

Production

API / UWI	Surface Legal Location	District	Field Name	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Original Hole

Wellbore Name	Profile Type	Kick Off Depth (mKB)	Vertical Section Direction (°)
Original Hole	Vertical		0.00

Section	Size (mm)	Act Top (mKB)	Act Btm (mKB)
SURFAC	311.0	5.20	601.00
PROD1	222.0	601.00	2,146.00

Casing Bowl, Streamflo on 3/3/2013 3:00:00 PM

Type	Install Date
Casing Bowl	3/3/2013

Description	Make	Model	WP (kPa)	Service	SN
Casing Bowl	Streamflo	CUM-API115X115SVC...	34,500	Sweet	

Top Section, <Make?> on 3/27/2013

Type	Install Date
Top Section	3/27/2013

Description	Make	Model	WP (kPa)	Service	SN
#2 Casing Valve (east)	Stream Flo	Gate 52.4mm 69MPa	69,000	Sweet	214101-82
WH Adapter Flange	Stream Flo	179mm 69 MPa x 65mm 35MPa	34,500	Sweet	202617-06
Master Valve	Stream Flo	Gate 65mm 35MPa	34,500	Sweet	151439
Casing Valve (west)	Stream Flo	Gate 52.4mm 69MPa	69,000	Sweet	214110-83
Top Cap Flange	Stream Flo	R-27 35MPa x 73mm EUE up	34,500	Sweet	213994-099
Casing Valve (east)	Stream Flo	Gate 52.4mm 69MPa	69,000	Sweet	214101-76
#2 Casing Valve (west)	Stream Flo	Gate 52.4mm 69MPa	69,000	Sweet	214110-88
Tubing Spool	Stream Flo	279mm 35MPa x 179mm 69MPa	69,000	Sweet	215259-04
179mm Master Valve	Stream Flo	179mm Full Bore	69,000	Sweet	142793

Surface, 599.00mKB

Casing Description	Wellbore	Run Date	Set Depth (mKB)	Stick Up (mKB)	Set Tension (daN)
Surface	Original Hole	3/2/2013	599.00	-0.14	25,000.0

Centralizers Count	Scratchers Count
20	

Jts	Item Description	OD Nominal (mm)	Nominal ID (mm)	Wt (kg/m)	Grade	Top Conn Sz (mm)	Top Thread	Section Length (m)	Top (mKB)	Btm (mKB)
45	Casing Joints	244.5	224.4	59.527	J-55		LT&C	584.42	0.14	584.56
1	Float Collar	244.5	224.4	59.527	J-55		LT&C	0.42	584.56	584.98
1	Casing Joints	244.5	224.4	59.527	J-55		LT&C	13.31	584.98	598.29
1	Float Collar	244.5	224.4	59.527	J-55		LT&C	0.42	598.29	598.71
1	Guide Shoe	244.5	224.4	59.527	J-55		LT&C	0.29	598.71	599.00

Production, 2,146.00mKB

Casing Description	Wellbore	Run Date	Set Depth (mKB)	Stick Up (mKB)	Set Tension (daN)
Production	Original Hole	3/23/2013	2,146.00	1.87	55,000.0

Centralizers Count	Scratchers Count
100	

Jts	Item Description	OD Nominal (mm)	Nominal ID (mm)	Wt (kg/m)	Grade	Top Conn Sz (mm)	Top Thread	Section Length (m)	Top (mKB)	Btm (mKB)
178	Casing Joints	177.8	159.4	38.692	P-110		LT&C	2,135.03	-1.87	2,133.16
1	Float Collar	177.8	159.4	38.692	P-110		LT&C	0.40	2,133.16	2,133.56
1	Casing Joints	177.8	159.4	38.692	P-110		LT&C	12.04	2,133.56	2,145.60
1	Float Shoe	177.8	159.4	38.692	P-110		LT&C	0.40	2,145.60	2,146.00

Production, casing, 3/23/2013 18:00

Cementing Start Date	Cementing End Date	Wellbore
3/23/2013	3/23/2013	Original Hole

Evaluation Method	Cement Evaluation Results
Cement Bond Log	Will run USIT log to confirm cement top

Comment

Cemented 177.8mm casing from 200m to 1600m with 27 tonne HiLite Lead cement 30.6m3 slurry with 1.2% FLAC B348, 0.3% retarder and 0.2% antifoam at 1400kg/m3. From 1600m to 2146m 12 tonne ClassG 11.5m3 slurry with 0.4% fluild loss,0.5% dispersant,0.2% antifoam and 0.3% retarder, displaced with 43m3 water ,Total lost of returns while displacing the last 10m3 prior to bumping plug estimated cement top at 200m. Bumped plug bled back Floats held, Pump up to 18200kpa pressure test casing good.

ConocoPhillips Canada

Cement Summary

MIRROR LAKE N-20 65-00 126-45

Production

API / UWI	Surface Legal Location	District	Field Name	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

1, 200.00-2,146.00mKB

Top (mKB)	Bottom (mKB)	Full Return?	Cmnt Rtrn (m³)	Top Plug?	Bottom Plug?
200.00	2,146.00	No		No	Yes
Initial Pump Rate (m³/min)	**Final Pump Rate (m³/min)**	**Average Pump Rate (m³/min)**		**Final Pump Pressure (kPa)**	**Plug Bump Pressure (kPa)**
1.000	0.650	0.800		7,200	10,500
Pipe Reciprocated?	**Reciprocation Stroke Length (m)**	**Reciprocation Rate (spm)**		**Pipe Rotated?**	**Pipe RPM (rpm)**
Yes	3.00	1		No	
Depth tagged (mKB)	**Tag Method**	**Depth Plug Drilled Out To (mKB)**		**Drill Out Diameter (mm)**	**Drill Out Date**

Lead Cement

Fluid Type	Fluid Description	Amount (1000kg)	Class	Volume Pumped (m³)
Lead Cement	Lead Cement	27.0	Lightwt	30.60
Estimated Top (mKB)	**Estimated Bottom (mKB)**	**Percent Excess Pumped (%)**	**Yield (m³/tonnes)**	**Mix H20 Ratio (m³/tonnes)**
200.00	1,600.00	30.0	1.310	0.82
Free Water (%)	**Density (kg/m³)**	**Plastic Viscosity (cp)**	**Thickening Time (hrs)**	**1st Compressive Strength (kPa)**
	1400.0			

Cement Fluid Additives

Add	Type	Conc
Antifoam		0.2
FLAC B348		1.2
Retarder		0.3

Tail Cement

Fluid Type	Fluid Description	Amount (1000kg)	Class	Volume Pumped (m³)
Tail Cement	Tail Cement	12.0	Class G	11.50
Estimated Top (mKB)	**Estimated Bottom (mKB)**	**Percent Excess Pumped (%)**	**Yield (m³/tonnes)**	**Mix H20 Ratio (m³/tonnes)**
1,600.00	2,146.00	30.0	1.060	0.48
Free Water (%)	**Density (kg/m³)**	**Plastic Viscosity (cp)**	**Thickening Time (hrs)**	**1st Compressive Strength (kPa)**
	1600.0			

Cement Fluid Additives

Add	Type	Conc
Antifoam		0.2
Dispersant		0.5
Fluid Loss Control		0.4
Retarder		0.3

III. Coring Report

ConocoPhillips Canada

Coring

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	License No.	Program	Well Type	Well Config	Orig KB/RT (m
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470		Exploration	VERTICAL	286.50

Bottom Hole Cores

Date	Core No.	Type	Top (mKB)	Btm (mKB)	Recov (m)	Coring Company	Comment
3/9/2013 9:30:00 PM	1	WL Coring	1,890.00	1,919.00	27.0	NOV	
3/10/2013 5:00:00 PM	2	WL Coring	1,919.00	1,946.00	27.0	NOV	
3/10/2013 7:30:00 PM	3	WL Coring	1,946.00	1,973.00	27.0	NOV	
3/12/2013 1:15:00 PM	4	WL Coring	1,973.00	2,000.00	27.0	NOV	
3/13/2013 11:45:00 AM	5	WL Coring	2,000.00	2,027.00	27.0	NOV	
3/15/2013 11:30:00 PM	6	WL Coring	2,027.00	2,054.00	27.0	NOV	
3/16/2013 9:00:00 PM	7	WL Coring	2,054.00	2,081.00	27.0	NOV	
3/17/2013 8:00:00 PM	8	WL Coring	2,081.00	2,108.00	27.0	NOV	

Template Revised 8/1/2007 Page 1/1 Repo

ConocoPhillips Canada

Mud Properties Summary (legal size)

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	License No.	Well Configuration Type	Ground Elevation (m)	Casing Flange Elevation (m)	KB-Ground Distance (m)	KB-Casing Flange Distance (m)
200/C-011-L/094-P-16/99	C-011-L/94-P-16	EL470	VERTICAL	281.30	281.63	5.20	4.87

Rigs

AFE / RFE	Type	Sub-type	Plan TMD (mKB)	Plan Form	Contractor	Rig Name/#	Rig Type	Rig Accept Date	RR Date
10343209	DRILLING ORIGINAL		2,156.00		Beaver Drilling Ltd.	2	DRILLING-DOUBLE	2/21/2013	3/24/2013

Fluid / Mud Checks

Date	Depth (mKB)	Depth (TVD) (mKB)	Type	Dens (kg/m³)	Vis (s/L)	PV Calc (cp)	YP Calc (Pa)	Gel (10s) (Pa)	Gel (10m) (Pa)	API Filtrate (mL/...	pH	Pom (mL/mL)	Retort Solids (%)	CaCl (ppm)	Ca (mg/L)	Chlor (mg/L)	K	Vendor	Lime (kg/m³)	LGS (%)	Mg (mg/L)	MBT (kg/m³)	n	OW Ratio	Pf (mL/mL)	Pm (mL/mL)	Pot (mg/L)	Sand (%)	Solids, Corr. (%)	Wellbore
2/25/2013	20.00	20.00	Gel-Chem	1020.0	44	8.0	5.0	3.5	6.0	18.0	8.5				60	600	26.8...	MI Swaco		2.4		21	0.082		0.200				1.8	Original Hole
2/26/2013	172.00	172.00	Gel-Chem	1045.0	42	7.0	7.0	4.0	5.0	17.0	8.0				120	600	21.3...	MI Swaco		3.4		8	0.221		0.500				3.5	Original Hole
2/27/2013	300.00	300.00	Gel-Chem	1050.0	53	6.0	6.0	3.0	4.0	12.0	8.0				100	550	13.3...	MI Swaco		2.2		8	0.261		0.050				2.8	Original Hole
2/28/2013	444.00	443.98	Gel-Chem	1100.0	66	15.0	9.5	5.5	7.0	7.0	8.0				80	600	34.6...	MI Swaco		4.7		45	0.238		0.050				4.8	Original Hole
3/1/2013	591.00	590.93	Gel-Chem	1150.0	110	30.0	17.5	9.0	11.5	7.0	9.0				60	320	58.3...	MI Swaco		4.4		63	0.244		0.200				4.8	Original Hole
3/2/2013	591.00	590.93	Gel-Chem	1150.0	110	30.0	17.5	9.0	11.5	7.0	9.0				60	320	58.3...	MI Swaco		4.4		63	0.244		0.200				4.8	Original Hole
3/4/2013	598.00	597.93	Invert	965.0	64	14.0	4.0	6.0	9.0			6.000	7.0		33,000	171,410	32.6...	MI Swaco	22	5.7			0.139	81/19					5.7	Original Hole
3/5/2013	965.00	964.78	Invert	975.0	62	13.0	5.0	6.5	12.5				9.5		40,000	227,135	0.065	MI Swaco	19	7.7			0.784	82.3/...					7.9	Original Hole
3/6/2013	1,164.00	1,163.69	Invert	990.0	68	15.0	5.0	6.5	13.0				10.0		45,000	252,039	0.062	MI Swaco	21	7.6			0.807	82.2/...					8.1	Original Hole
3/7/2013	1,618.00	1,617.51	Invert	975.0	75	17.0	4.0	7.0	13.5				11.0		43,500	251,555	0.038	MI Swaco	22	9.1			0.887	82.6/...					9.2	Original Hole
3/8/2013	1,890.00	1,889.39	Invert	960.0	67	16.0	5.5	6.0	12.0				10.0		40,250	241,833	0.69...	MI Swaco	17	8.4			0.887	83.3/...					8.3	Original Hole
3/9/2013	1,890.00	1,889.39	Invert	960.0		16.0	5.0	6.0	12.0				10.0		40,250	241,833	22.2...	MI Swaco	17	8.3			0.198	83.3/...					8.3	Original Hole
3/10/2013	1,919.00	1,918.36	Invert	975.0	90	16.0	5.0	6.0	12.0				11.0		38,500	219,515	0.077	MI Swaco	15	9.4			0.788	82/18					9.5	Original Hole
3/11/2013	1,967.00	1,966.32	Invert	980.0	82	17.0	4.5	6.0	13.0				10.5		36,000	212,656	0.077	MI Swaco	14	8.8			0.788	83/17					9.1	Original Hole
3/11/2013	1,967.00	1,966.32	Invert	975.0	87	17.0	4.5	6.0	13.0				10.5		36,000	212,656	0.077	MI Swaco	14	8.8			0.788	83/17					9.1	Original Hole
3/13/2013	2,000.00	1,999.29	Invert	985.0	85	17.0	4.0	6.5	14.5				12.0		35,500	204,064	0.272	MI Swaco	14	11.6			0.748	82/18					10.5	Original Hole
3/14/2013	2,000.00		Invert	985.0	85	17.0	4.0	6.5	14.5						35,500	204,064		MI Swaco	14	11.6				82/18					10.5	
3/15/2013	2,030.00		Invert	985.0	85	17.0	4.0	6.5	14.5						36,000	206,659	0.294	MI Swaco	11	11.6			0.737	82/18					10.5	
3/16/2013	2,054.00		Invert	980.0	85	17.0	4.5	4.5	13.0						36,000	229,827	0.351	MI Swaco	12	10.0			0.7	83/17					10.8	
3/17/2013	2,085.00		Invert	985.0	71	14.0	4.5	4.5	12.5				12.0		37,500	227,135	0.351	MI Swaco	13	10.0			0.686	83/17					10.8	

ConocoPhillips Canada

Mud Properties Summary (legal size)

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	License No.	Well Configuration Type	Ground Elevation (m)	Casing Flange Elevation (m)	KB-Ground Distance (m)	KB-Casing Flange Distance (m)
200/C-011-L/094-P-16/99	C-011-L/94-P-16	EL470	VERTICAL	281.30	281.63	5.20	4.87

Fluid / Mud Checks

Date	Depth (mKB)	Depth (TVD) (mKB)	Type	Dens (kg/m³)	Vis (s/L)	PV Calc (cp)	YP Calc (Pa)	Gel (10s) (Pa)	Gel (10m) (Pa)	API Filtrate (mL/...	pH	Pom (mL/mL)	Retort Solids (%)	CaCl (ppm)	Ca (mg/L)	Chlor (mg/L)	K	Vendor	Lime (kg/m³)	LGS (%)	Mg (mg/L)	MBT (kg/m³)	n	OW Ratio	Pf (mL/mL)	Pm (mL/mL)	Pot (mg/L)	Sand (%)	Solids, Corr. (%)	Wellbore
3/18/2013	2,108.00	2,107.20	Invert	985.0	71	14.0	4.5	4.5	12.5						37,500	227,135	0.327	MI Swaco	13	10.0			0.663	83/17					10.8	Original Hole
3/19/2013	2,115.00	2,114.19	Invert	990.0	88	13.0	4.5	5.5	12.0						37,500	227,135	8.75...	MI Swaco	13	10.2			0.344	83/17					10.4	Original Hole
3/20/2013	2,115.00		Invert	990.0	88	13.0	4.5	5.5	12.0						37,500	227,135		MI Swaco	13	10.2				83/17					10.4	
3/21/2013	2,115.00		Invert	990.0	88	13.0	4.5	5.5	12.0						37,500	227,135		MI Swaco	13	10.2				83/17					10.4	
3/22/2013	2,115.00		Invert	990.0	88	13.0	4.5	5.5	12.0						37,500	227,135		MI Swaco	13	10.2				83/17					10.4	

IV. Drilling Fluid Summary

ConocoPhillips Canada

Mud Properties Summary (legal size)

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	License No.	Well Configuration Type	Ground Elevation (m)	Casing Flange Elevation
200/C-011-L/094-P-16/99	C-011-L/94-P-16	EL470	VERTICAL	281.30	281.6

Rigs

AFE / RFE	Type	Sub-type	Plan TMD (mKB)	Plan Form	Contractor	Rig Name/#
10343209	DRILLING ORIGINAL		2,156.00		Beaver Drilling Ltd.	2

Fluid / Mud Checks

Date	Depth (mKB)	Depth (TVD) (mKB)	Type	Dens (kg/m³)	Vis (s/L)	PV Calc (cp)	YP Calc (Pa)	Gel (10s) (Pa)	Gel (10m) (Pa)	API Filtrate (mL/...	pH	Pom (mL/mL)	Retort Solids (%)	CaCl (ppm)	Ca (mg/L)	Chlor (mg/L)	K	Vendor	Lime (kg/m³)	LGS (%
2/25/2013	20.00	20.00	Gel-Chem	1020.0	44	8.0	5.0	3.5	6.0	18.0	8.5				60	600	26.8...	MI Swaco		2.4
2/26/2013	172.00	172.00	Gel-Chem	1045.0	42	7.0	7.0	4.0	5.0	17.0	8.0				120	600	21.3...	MI Swaco		3.4
2/27/2013	300.00	300.00	Gel-Chem	1050.0	53	6.0	6.0	3.0	4.0	12.0	8.0				100	550	13.3...	MI Swaco		2.1
2/28/2013	444.00	443.98	Gel-Chem	1100.0	66	15.0	9.5	5.5	7.0	7.0	8.0				80	600	34.6...	MI Swaco		4.7
3/1/2013	591.00	590.93	Gel-Chem	1150.0	110	30.0	17.5	9.0	11.5	7.0	9.0				60	320	58.3...	MI Swaco		4.2
3/2/2013	591.00	590.93	Gel-Chem	1150.0	110	30.0	17.5	9.0	11.5	7.0	9.0				60	320	58.3...	MI Swaco		4.2
3/4/2013	598.00	597.93	Invert	965.0	64	14.0	4.0	6.0	9.0			6.000	7.0		33,000	171,410	32.6...	MI Swaco	22	5.7
3/5/2013	965.00	964.78	Invert	975.0	62	13.0	5.0	6.5	12.5				9.5		40,000	227,135	0.065	MI Swaco	19	7.7
3/6/2013	1,164.00	1,163.69	Invert	990.0	68	15.0	5.0	6.5	13.0				10.0		45,000	252,039	0.052	MI Swaco	21	7.8
3/7/2013	1,618.00	1,617.51	Invert	975.0	75	17.0	4.0	7.0	13.5				11.0		43,500	251,555	0.038	MI Swaco	22	9.1
3/8/2013	1,890.00	1,889.39	Invert	960.0	67	16.0	5.5	6.0	12.0				10.0		40,250	241,833	0.69...	MI Swaco	17	8.4
3/9/2013	1,890.00	1,889.39	Invert	960.0		16.0	5.0	6.0	12.0				10.0		40,250	241,833	22.2...	MI Swaco	17	8.3
3/10/2013	1,919.00	1,918.36	Invert	975.0	90	16.0	5.0	6.0	12.0				11.0		38,500	219,515	0.077	MI Swaco	15	9.4
3/11/2013	1,967.00	1,966.32	Invert	980.0	82	17.0	4.5	6.0	13.0				10.5		36,000	212,656	0.077	MI Swaco	14	8.8
3/11/2013	1,967.00	1,966.32	Invert	975.0	87	17.0	4.5	6.0	13.0				10.5		36,000	212,656	0.077	MI Swaco	14	8.8
3/13/2013	2,000.00	1,999.29	Invert	985.0	85	17.0	4.0	6.5	14.5				12.0		35,500	204,064	0.272	MI Swaco	14	11.6
3/14/2013	2,000.00		Invert	985.0	85	17.0	4.0	6.5	14.5						35,500	204,064		MI Swaco	14	11.6
3/15/2013	2,030.00		Invert	985.0	85	17.0	4.0	6.5	14.5						36,000	206,659	0.294	MI Swaco	11	11.6
3/16/2013	2,054.00		Invert	980.0	85	17.0	4.5	4.5	13.0						36,000	229,627	0.351	MI Swaco	12	10.1
3/17/2013	2,065.00		Invert	985.0	71	14.0	4.5	4.5	12.5				12.0		37,500	227,135	0.351	MI Swaco	13	10.1

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V. Leak Off Test Charts

ConocoPhillips Canada

LOT & Fit with Graph

COPRC MIRROR LAKE N-20 65-00 126-45

Spud Date: 2/25/2013

RR: 3/24/2013 11:59:00 PM

Leak Off and Formation Integrity Tests

FIT,3/4/2013 3:00:00 PM

Last Casing String Run	Test Date	Test Type	Leak off?	Formation Tested	P (Surf) (k...	Depth (mKB)	TVD (mKB)
Surface, 599.00mKB	3/4/2013	FIT		Slater River	7,530	611.00	610.92

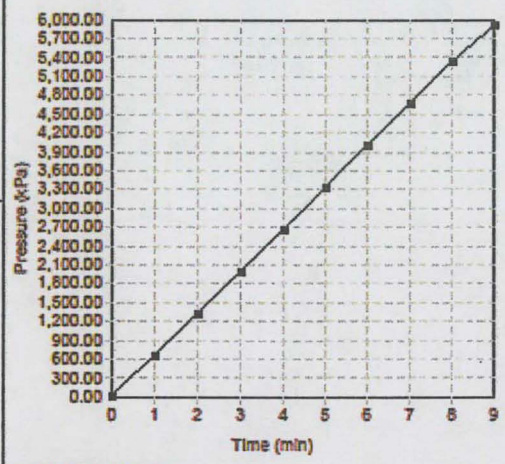
Fluid Density (kg/m³)	Fluid Type	LO Eq Fluid Den (k...	Leak Off Pressure (kPa)	Volume Pumped (m³)
960.0	OBM	2216.9	13,281	

Comment

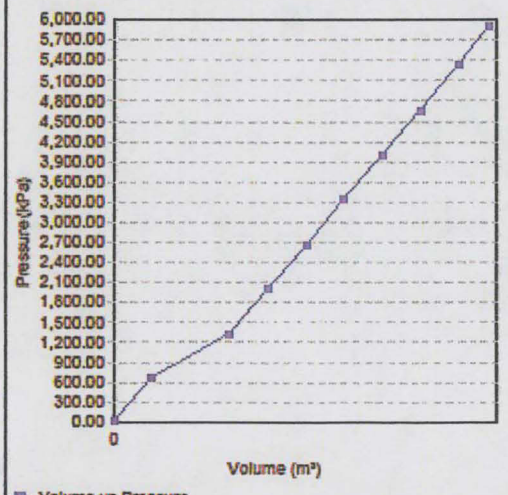
Test Data

Time (min)	Pres (kPa)	Vol (m³)	Note
0.00	0	0.00	
1.00	660	0.01	
2.00	1,330	0.03	
3.00	2,000	0.04	
4.00	2,660	0.05	
5.00	3,330	0.06	
6.00	4,000	0.07	
7.00	4,660	0.08	
8.00	5,330	0.09	
9.00	5,900	0.10	

Pressure vs. Time Graph



Pressure vs. Volume Graph



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FORMATION INTEGRITY TEST

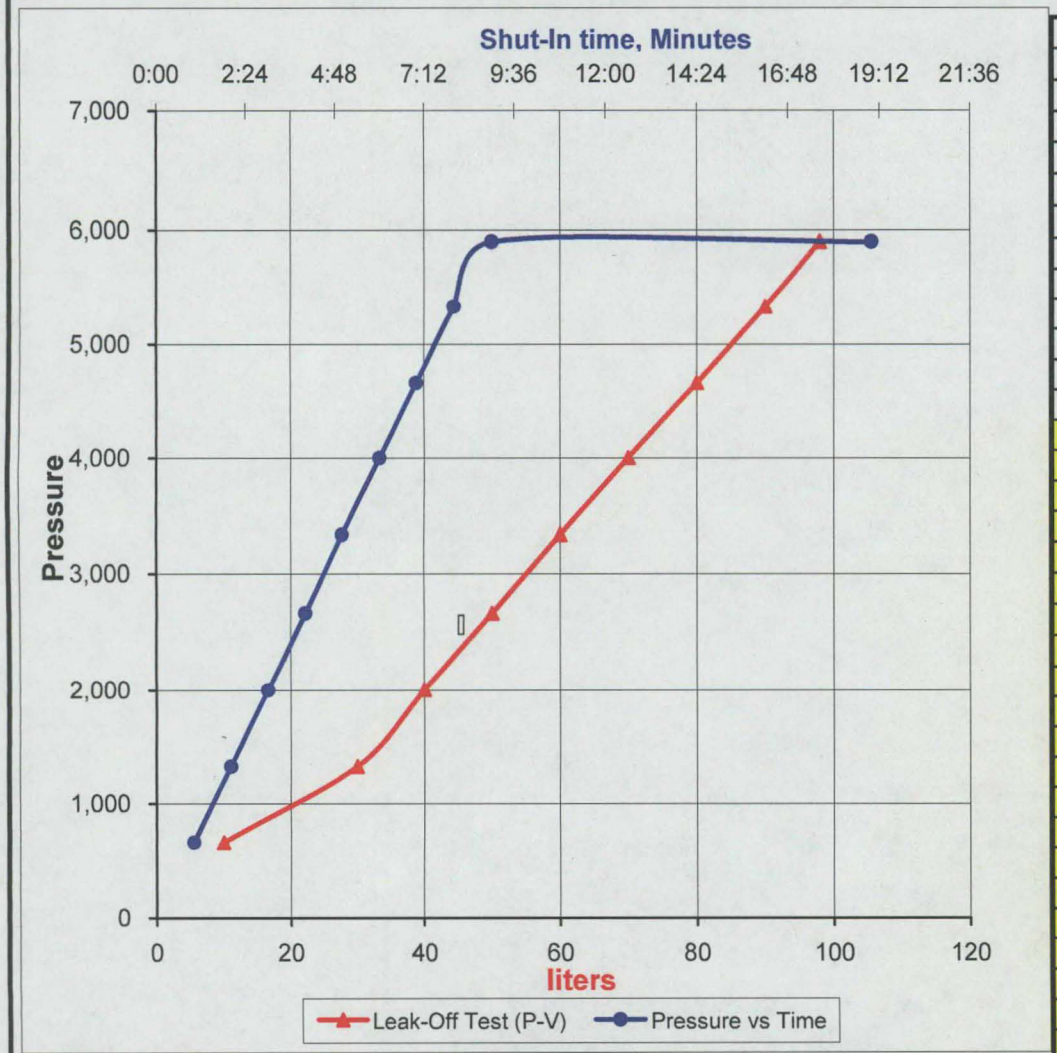
ConocoPhillips

Drilling Supervisor:	FORSBERG - HOBMAIER						
Well Name:	N-20 65-00 126-45	Rig:	Beaver #2	Date:	4-Mar-13		

Casing Shoe Depth		Hole Depth		RKB (m)	Volume Input	liters
611 m-MD	611 m-TVD	611 m-MD	611 m-TVD	5.2	Volumetric Pump Output	l/stk

Pump used:	Pumping down:	Casing Size and Description:	Hole Size:
Cement Unit	drillpipe.	244.5mm, 53.58kg/m, J-55, LT & C	222mm

Formation Integrity Test				Planned FIT			Comments:
Mud Weight (kg/m3)	Gradient (kPa/m)	Surf. AP DP Gauge	EMD (kg/m3)	Gradient (kPa/m)	Surf. AP DP Gauge	EMD (kg/m3)	
960	19.1	5,900	1,944	18.8	5,900	1,916	



Time	Time Laps	Pressure	Vol Pump	Total Vol	EMD @ Shoe
hr:min	Min	kPa	liters	liters	kg/m3
15:15	0:00		0	0	
15:16	1:00	660	10	10	1,070
15:17	2:00	1,330	10	30	1,182
15:18	3:00	2,000	10	40	1,294
15:19	4:00	2,660	10	50	1,404
15:20	5:00	3,330	10	60	1,516
15:21	6:00	4,000	10	70	1,627
15:22	7:00	4,660	10	80	1,737
15:23	8:00	5,330	10	90	1,849
15:24	9:00	5,900	8	98	1,944
15:34	19:00	5,900		98	1,944

VI. Geological Strip log

Power*Suite V11.0 developed by TriVision Geosystems Ltd. (403) 777-9454 (Canada) www.powerlogger.com

Well Information

Operator:	ConocoPhillips Canada Resources Corp.
Well Name:	COPRC Mirror Lake N-20
Location:	Unit:N Section:20, Grid: 65-00 126-45
UWI:	300N206500126450
Pool / Field:	Undefined / Mirror Lake
Well License #:	470
Province / State:	Northwest Territories
Country:	Canada

Elevations

Reference:	Ground	Ground:	281.3 m
Cut(-) / Fill(+):		Kelly Bushing:	286.5 m
K.B. to Ground:	5.2 m	Casing Flange:	281.63 m

Total Depth

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	2146 m	2146 m
Drillers TD (Strap or SLM)	m	m
Loggers TD	m	m

Well Co - Ordinates

	Longitude	Latitude	Well Type: Vertical
Surface Co-Ordinates:	126 48' 14.6" W	64 59' 46.8" N	NS: EW:
Int. Casing Co-Ordinates:			NS: EW:
Bottom Hole Co-Ordinates:			NS: EW:
UTM Surface Co-Ordinates:	Northing: 7209651.62		Easting: 603555.85

Drilling Fluid Summary

Fluid Type	From	To
Gel Chem	0 m	601 m
Invert (Versaclean)	601 m	2146 m

Casing Summary

Type	Hole Size	Casing Size	Landed At
Surface	311 mm	244.5 mm	598 m

Well Summary

Spud Date:	Feb 25, 2013 @ 17:00hrs	Contractor:	Beaver Drilling Ltd.
TD Date:	Mar 20, 2013 @ 01:00hrs	Rig Release Date:	

Work Schedule

Contractor	Geologist	Log Interval	Dates Logged
Black Gold Geotechnical	Dave Lawrence	0 m - 2146 m	Feb 25, 2013 - Mar 20, 2013

Remarks

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Total Depth

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Drillers TD (Strap or SLM)	m	m
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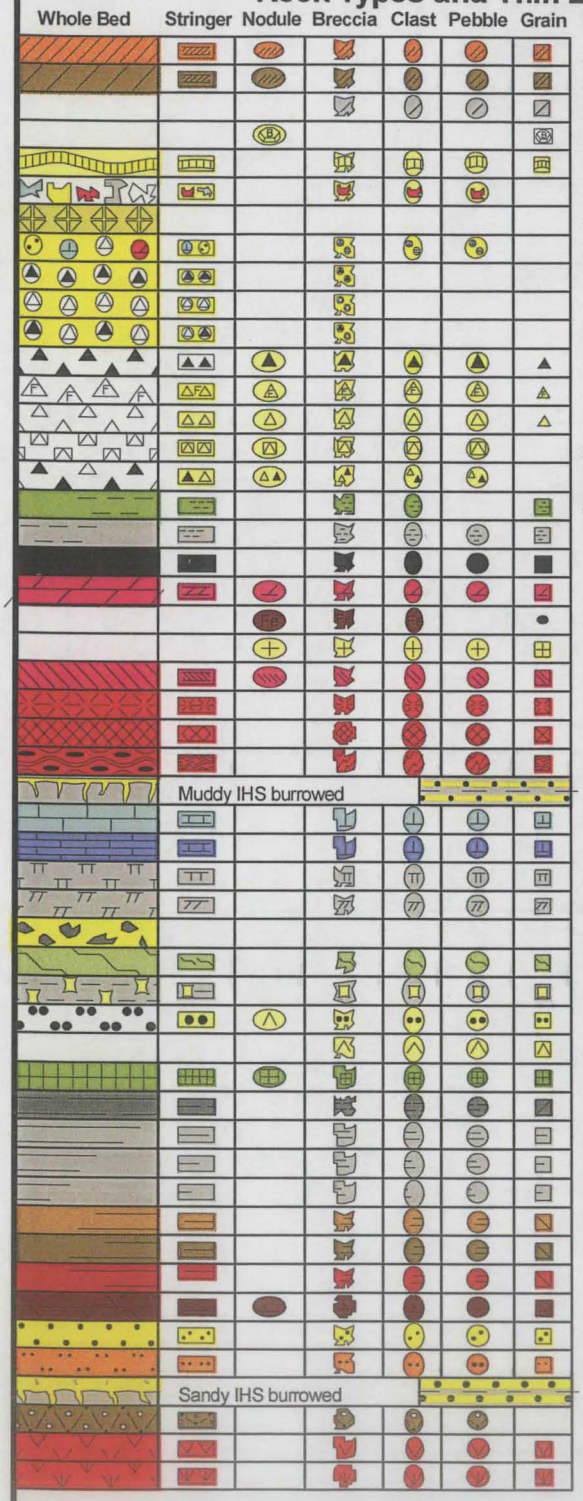
Work Schedule

Contractor	Geologist	Log Interval	Dates Logged
Black Gold Geotechnical	Dave Lawrence	0 m - 2146 m	Feb 25, 2013 - Mar 20, 2013

Remarks

Legend

Rock Types and Thin Beds



Textures

C	Chalky	e	Earthy	mx	Microcrystalline
CX	Cryptocrystalline	L	Lithographic		Slickenside
MS	Mudstone	GS	Grainstone	BFS	Bafflestone
WS	Wackestone	FLS	Floatstone	BS	Bindstone
PS	Packstone	RS	Rudstone	FS	Framestone

Accessories

	Anhydritic	G	Gibbsitic
	Argillaceous	I	Illitic
	Baritic	K	Kaolinitic
	Bentonitic	L	Lithic Fragment
	Bituminous		Marly - calcareous
	Calcareous		Marly - dolomitic
	Carbonaceous		Micromicaceous
	Cherty - dark	ML	Mixed layer clayey
F	Cherty - fossiliferous	M	Montmorillonitic
	Cherty - light		Phosphate pellets
	Cherty - tripolitic	P	Pyritic
	Cherty - varicolored		Salt casts
C	Chloritic		Sandy
	Clayey		Sideritic
	Dolomitic		Siliceous
Fe	Ferruginous staining		Silty
	Fractures		Stylolitic
	Glauconitic		Tuffaceous
	Gypsiferous	Z	Zeolitic

Fossils (Rock Builders)

	Aggregate grains		Foraminifera
	Algae - laminations	F	Fossil
	Algae - non descript		Fragmental
	Algae - ootoid		Gastropod
	Algae - skeletal		Graptolite
	Amphipora		Hydrozoa
	Belemnite		Intraclast
	Bioclastic		Mollusc
	Brachiopod		Oncolite
	Bryozoa		Oolite
	Calciphaera		Ostracod
	Cephalopod		Pelecypod
	Chaetetes		Pellet
	Coated grain		Pisolite
	Conodont		Plant Remains
	Coral	S	Plant Spores
	Coral - branching		Scaphopod
	Coral - head		Spicule
	Coral - colonial		Sponge
S	Coral - solitary	TTT	Stromatoporoid
	Crinoid	B	Stromatoporoid - bulbous
	Diatom	M	Stromatoporoid - massive
	Echnoid		Stromatoporoid - tabular
	Echnoid - spine		Tentaculites
	Fish Remains		Trilobite
	Euryamphipora		

Matrix

	Argillaceous		Marl - calcareous
BFS	Bafflestone		Marl - dolomitic
B	Bentonite		Micrite
BS	Bindstone	ML	Mixed Clay
	Bituminous	M	Montmorillonite
	Clay	MS	Mudstone
C	Chlorite	PS	Packstone
FLS	Floatstone	RS	Rudstone
FS	Framestone		Sand
G	Gibbsite		Silt
GS	Grainstone		Sparry Calcite
I	Illite	WS	Wackestone
K	Kaolinite	Z	Zeolite

Miscellaneous Grains

B	Biotite		Mineral crystal	K	Orthoclase
	Glauconite		Mineral - dark	P	Plagioclase
m	Mica flakes	M	Muscovite	o	Sand grain

Porosity Type Track

e	Earthy - low permeability - crystals / grains less than 1 / 16 mm		
⊡	Fenestral - voids from gas bubbles - shrinkage cracks - birdseye texture		
X	Intercrystalline - Interfragmental - Intergranular		
F	Fracture	O	Organic - Bridged - Intrafossil
○	Interoolitic - Interpelletoidal	P	Pinpoint - voids less than 1/ 16 mm
∽	Moldic	V	Vuggy - voids greater than 1 / 16 mm

Oil Show Track

●	Even staining (75 - 100% of the rock is stained) - fluoresces in solvent
◉	Spotted staining (50 - 75% of the rock is stained) - fluoresces in solvent
◉	Spotted staining (25 - 50% of the rock is stained) - fluoresces in solvent
⊙	Spotted staining (1 - 25% of the rock is stained) - fluoresces in solvent
○	Questionable oil staining - No fluorescents in solvent
D	Dead oil staining - asphaltic - bitumen - pyrobitumen etc.
F	Fluoresces - no visible oil staining

Trace Fossil Track

An	Anconichnus	Ar	Arenicolites	At	Arthrophycus	As	Asterosoma
Au	Aulichnites	Be	Bergaueria	Cg	Camborygma	Cf	Celliforma
Cb	Chabutolithes	Ch	Chondrites	Cl	Climactichnites	Co	Conichnus
Cp	Cosmoraphe	C	Cruziana	Cy	Cylindrichnus	Da	Dactyloidites
Dm	Dimorphichnus	D	Diplocraterion	Ea	Eatonichnus	En	Entobia
Et	Entomichnus	Esc	Escape Traces	Ga	Gastrochaenolites	Gl	Glossifungites
G	Gyrolithes	Gy	Gyrophyllites	H	Helminthopsis	K	Kouphichnium
L	Lockeia	Lo	Lorenzinia	Mp	Macanopsis	Ma	Macaronichnus
Mo	Monocraterion	Ne	Neonereites	N	Nereites	O	Ophiomorpha
Pa	Palaeophycus	Pd	Paleodictyon	Pc	Paleohelcura	Pl	Paleoscolytus
Pt	Petalichnus	Py	Phycodes	Ph	Phycosiphon	P	Planolites
Pm	Psammichnites	Ps	Psilonichnus	Rh	Rhizocorallium	Rg	Rogerella
Ro	Rosselia	Ru	Rusophycus	Sb	Scalarituba	Sc	Schaubcylindrichnus
Sy	Scoyenia	Si	Siphonichnus	S	Skolithos	Sp	Spirophycus
Su	Subphyllochorda	Syn	Synaeresis Cracks	Te	Teichichnus	Tr	Terebellina
Td	Teredolites	Th	Thalassinoides	Tc	Trichichnus	Tp	Trichophycus
Ty	Trypanites	Z	Zoophycos				

Sedimentary Structures

	Ball and pillow		Bioturb-churned	-0-	Bioturb-slightly		Bioturb-moderate
	Bioturb-mod well	-0w	Bioturb-well		Boudinage		Burrows
	Clastic Dike		Clastic sill		Desiccation crack		Dish structure
	Fault-Large scale		Fault-Small scale		Flame structure		Flute mark
	Geopetal		Groove casts		Gutter casts		Load casts
HS	Inclined heterolithic strata				Mud chips	////	Mud drapes
	Neptunian dike		Pit marks		Pull-a-part		Rill marks
	Rip up clasts		Roots / root trace		Scour and Fill		Slump structure
	Swash marks		Synersis crack		Teepee structure		Tool marks
	Water Escape						

Cement

	Anhydritic		Gypsiferous
	Baritic		Hematitic
	Bituminous		Limonitic
	Calcareous	P	Pyritic
	Chert - dark		Salt
	Chert - light		Sideritic
	Dolomitic		Siliceous
	Ferruginous		

Sorting Track

vP	Very poorly sorted - > 10 phi size grade classes
P	Poorly sorted - 6-10 phi size grade classes
M	Moderately sorted - 3-6 phi size grade classes
mW	Moderately well sorted - 2-3 phi size grade classes
W	Well sorted - < 2 phi size grade classes

Rounding Track

vA	Very Angular	r	Subrounded
A	Angular	R	Rounded
a	Subangular	wR	Well Rounded

Framework Track

Framework is a ratio between clastic material greater than 1/16 mm and primary void filler less than 1/16 mm.
? indicates questionable interpretation

Core Track

Indicates Cored Interval
Indicates Lost Core

Test Track

Indicates Tested Interval

Sedimentary Structures Bedding / Cross Bedding

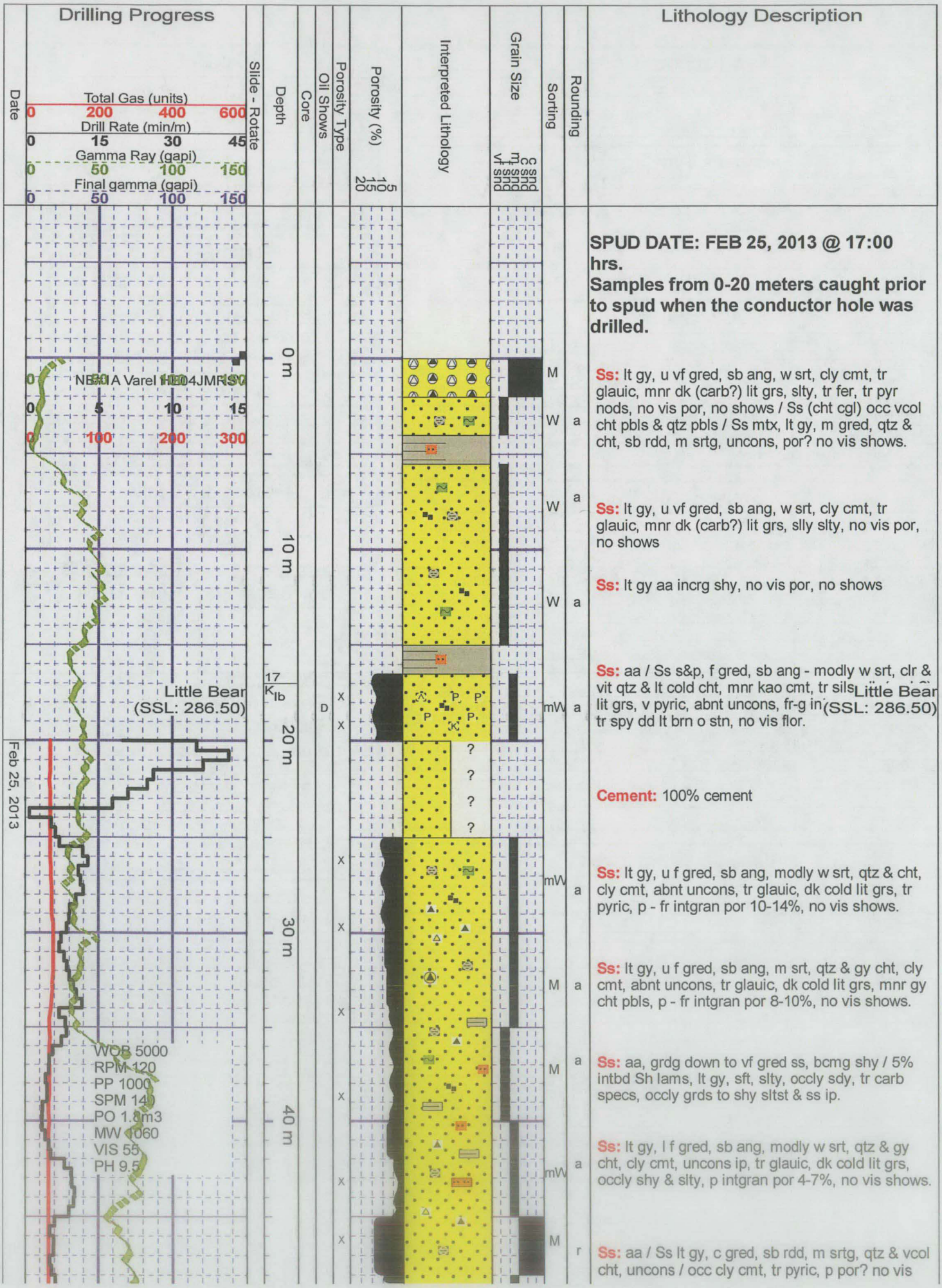
CM	Centimeter bedding		Inverted graded bedding
DM	Decimeter bedding		Massive bedding
MM	Millimeter bedding		Normal graded bedding
	Chevron x-bedding		Herringbone x-bedding
	Sigmoidal x-bedding		Hummocky x-bedding
	Swaley x-bedding		Planar/Tabular x-bedding
	Trough x-bedding		

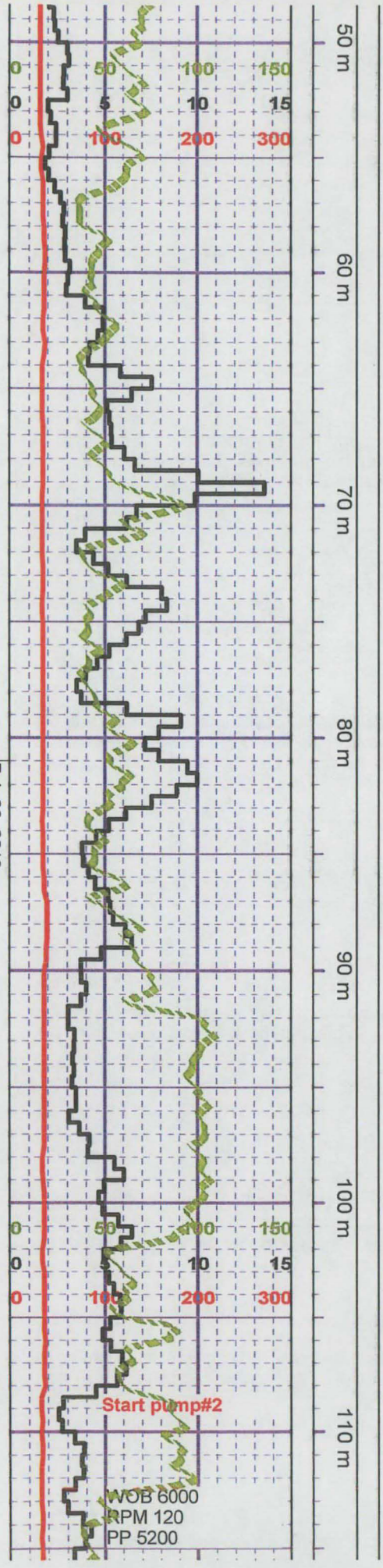
Sedimentary Structures Laminations / Cross Laminations

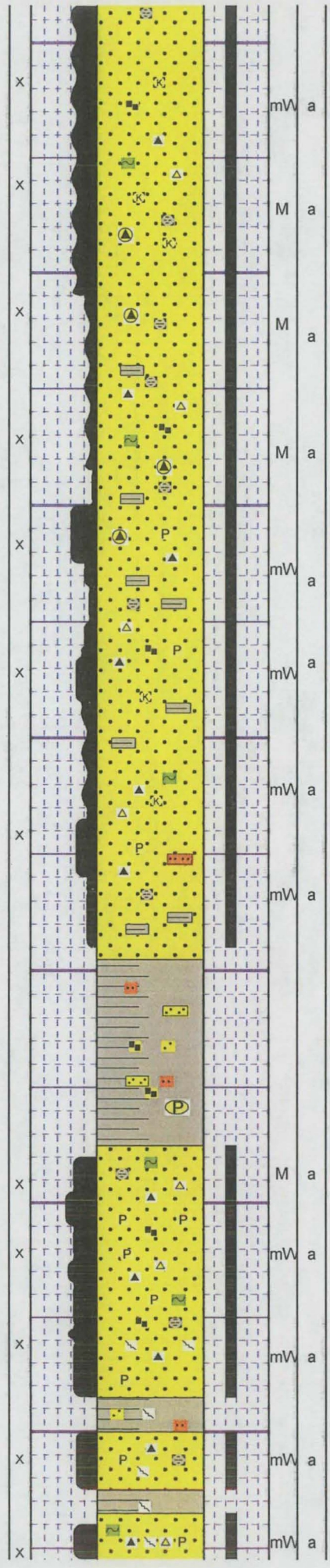
	Climbing ripple xlam		Contorted/Slumped lams
	Current ripple xlam		Flaser laminations
	High angle xlam	///	High angle parrallel lams
	Lenticular lams		Low angle xlam
	Low angle para lam		Parallel laminations
	Trough xlam		Varved laminations
	Wave ripple xlam		Wavy laminations

Sedimentary Bedding Contacts

BIO	Bioturbated	BORED	Bored	CAL	Caliche / calcrete	COR	Corrosional	DC	Dessication cracks
EX	Exposure	FS	Flooding surface	GLOSS	Glossifungites	GRAD	Gradational	HG	Hardground
INCL	Inclined - sharp	IRR	Irregular - sharp	MFS	Maximum flooding surface			MC	Mud cracks
NOD	Nodular	PB	Parasequence boundary	RS	Ravinement surface	RSE	Regressive surface of erosion		
ROOT	Rooted	SCOUR	Scour	SB	Sequence boundary	SHARP	Sharp	TRUN	Truncation
TSE	Transgressive surface of erosion			UNCON	Unconformity	WAVY	Wavy		


Drilling Progress
Date
Total Gas (units)
0 200 400 600
Drill Rate (min/m)
0 15 30 45
Gamma Ray (gapi)
0 50 100 150
Final gamma (gapi)
0 50 100 150
Slide - Rotate
Depth
Core
Oil Shows
Porosity Type
Porosity (%)
5 10 15 20
Interpreted Lithology
Grain Size
c snd
m snd
f snd
vf snd
Sorting
Rounding
Lithology Description
NB01A Varel HE04JMRS
0 5 10 15
0 100 200 300
0 m
10 m
20 m
30 m
40 m
Little Bear
(SSL: 286.50)
17
Feb 25, 2013
WOB 5000
RPM 120
PP 1000
SPM 140
PO 1.8m3
MW 1060
VIS 55
PH 9.5
SPUD DATE: FEB 25, 2013 @ 17:00 hrs.
Samples from 0-20 meters caught prior to spud when the conductor hole was drilled.
Ss: lt gy, u vf gred, sb ang, w srt, cly cmt, tr glauic, mnr dk (carb?) lit grs, slty, tr fer, tr pyr nods, no vis por, no shows / Ss (cht cgl) occ vcol cht pbls & qtz pbls / Ss mtx, lt gy, m gred, qtz & cht, sb rdd, m srtg, uncons, por? no vis shows.
Ss: lt gy, u vf gred, sb ang, w srt, cly cmt, tr glauic, mnr dk (carb?) lit grs, slly slty, no vis por, no shows
Ss: lt gy aa incrg shy, no vis por, no shows
Ss: aa / Ss s&p, f gred, sb ang - modly w srt, clr & vit qtz & lt cold cht, mnr kao cmt, tr sils lit grs, v pyric, abnt uncons, fr-g in tr spy dd lt brn o stn, no vis flor.
Little Bear
(SSL: 286.50)
Cement: 100% cement
Ss: lt gy, u f gred, sb ang, modly w srt, qtz & cht, cly cmt, abnt uncons, tr glauic, dk cold lit grs, tr pyric, p - fr intgran por 10-14%, no vis shows.
Ss: lt gy, u f gred, sb ang, m srt, qtz & gy cht, cly cmt, abnt uncons, tr glauic, dk cold lit grs, mnr gy cht pbls, p - fr intgran por 8-10%, no vis shows.
Ss: aa, grdg down to vf gred ss, bcmg shy / 5% intbd Sh lams, lt gy, sft, slty, occly sdy, tr carb specs, occly grds to shy sltst & ss ip.
Ss: lt gy, l f gred, sb ang, modly w srt, qtz & gy cht, cly cmt, uncons ip, tr glauic, dk cold lit grs, occly shy & slty, p intgran por 4-7%, no vis shows.
Ss: aa / Ss lt gy, c gred, sb rdd, m srtg, qtz & vcol cht, uncons / occ cly cmt, tr pyric, p por? no vis





shows.

Ss: s&p, u f gred, sb ang, modly w srt, qtz & gy cht, mnr kao cmt, slly sils, abnt uncons, carb lit grs, p tr glauic, 12% por? no vis shows.

Ss: s&p, u f gred, sb ang, m srtg, qtz & gy cht, mnr kao cmt, slly sils, predly uncons, carb lit grs, p tr glauic, tr occ gy cht pbl frags, 15% intgran por? no vis shows.

Ss: aa / mnr Sh lams, lt gy, blky, slty, sdy ip, tr pyr.

Ss: lt gy, f gred, sb ang, m srtg, cly cmt, abnt uncons, carb lit grs, tr pyric, tr glauic, occ vcol cht pbls, 10% por? no vis shows / mnr Sh lams aa.

Ss: aa / Ss v lt gy, vit qtzs, mnr lt gy cht, f gred, sb ang, modly w srt, cly cmt, tr mnr dk lit grs, tr pyric, p intgran por 4-7%, no vis shows.

Ss: aa

Ss: v lt gy aa / Ss s&p, u f gred, sb ang, modly w srt, kao cmt, dk lit grs, tr pyric, tr glauic, mnr carb mat, p - fr intgran por 4-9%, no vis shows.

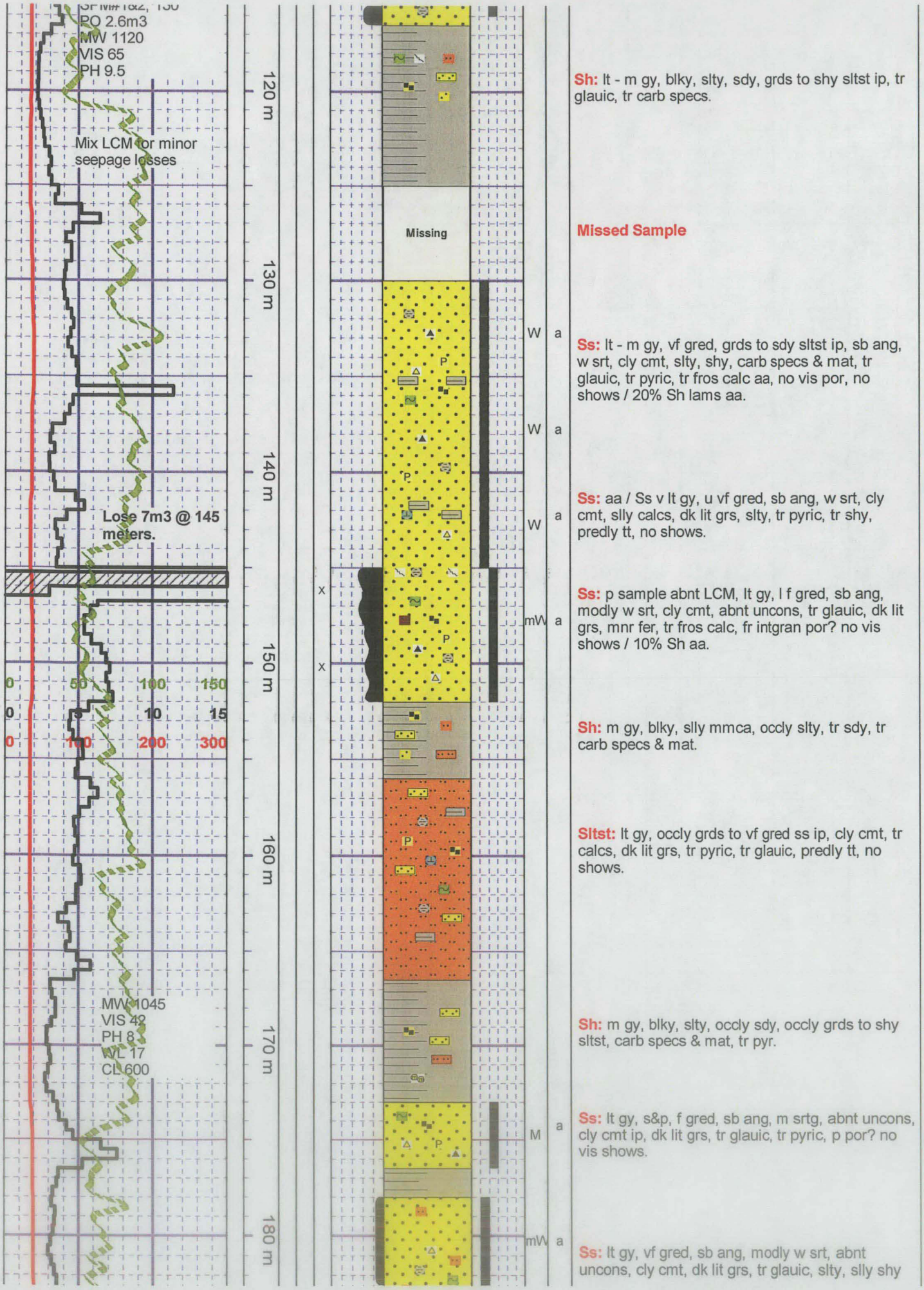
Ss: s&p aa / 10% Sh lams, lt gy, blky, slty, sdy ip, occly grds to shy vf gred ss ip, carb mat.

Sh: lt - m gy, blky, occly slty, slly sdy ip, tr carb mat, p tr pyr nods.

Ss: lt gy, s&p, u f gred, sb ang, m srtg, slly sils, mnr kao cmt, abnt uncons, dk lit grs, pyric, tr glauic, fr intgran por? 14%, no vis shows.

Ss: lt gy, s&p, u f gred, sb ang, modly w srt, cly cmt, abnt pyr, carb mat, tr glauic, g tr fros calc from vugs or fracs? fr intgran por? 10%, no vis shows / 10% sh lams aa.

Ss: lt gy, s&p, u f gred, sb ang, modly w srt, cly cmt, abnt pyr, carb mat, tr glauic, g tr fros calc from vugs or fracs? fr intgran por? 10%, no vis shows



Sh: lt - m gy, blky, slty, sdy, grds to shy sltst ip, tr glauic, tr carb specs.

Missed Sample

Ss: lt - m gy, vf gred, grds to sdy sltst ip, sb ang, w srt, cly cmt, slty, shy, carb specs & mat, tr glauic, tr pyric, tr fros calc aa, no vis por, no shows / 20% Sh lams aa.

Ss: aa / Ss v lt gy, u vf gred, sb ang, w srt, cly cmt, slly calcs, dk lit grs, slty, tr pyric, tr shy, predly tt, no shows.

Ss: p sample abnt LCM, lt gy, l f gred, sb ang, modly w srt, cly cmt, abnt uncons, tr glauic, dk lit grs, mnr fer, tr fros calc, fr intgran por? no vis shows / 10% Sh aa.

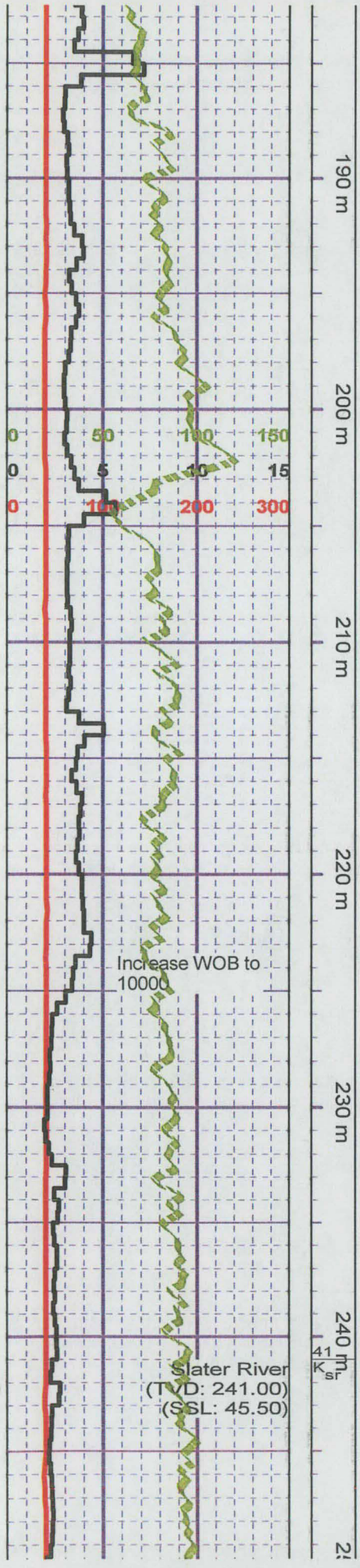
Sh: m gy, blky, slly mmca, occly slty, tr sdy, tr carb specs & mat.

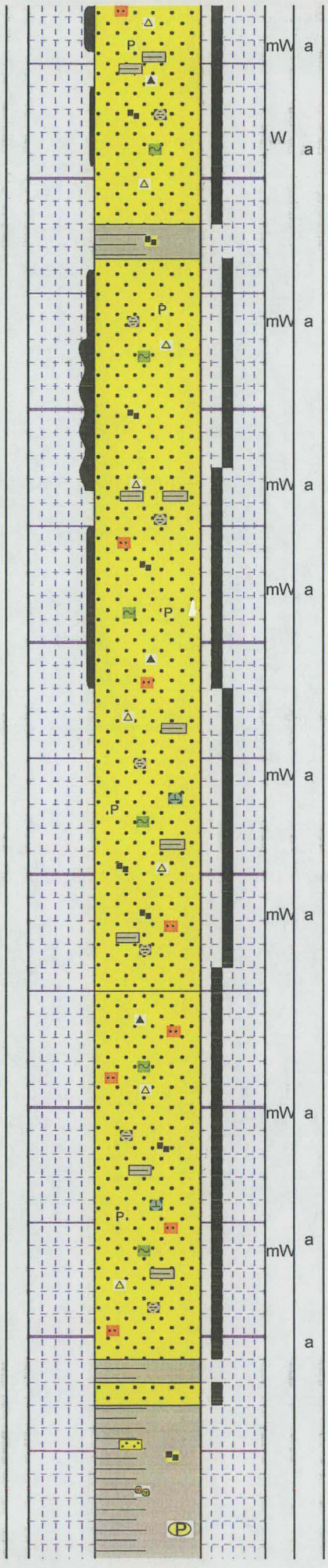
Sltst: lt gy, occly grds to vf gred ss ip, cly cmt, tr calcs, dk lit grs, tr pyric, tr glauic, predly tt, no shows.

Sh: m gy, blky, slty, occly sdy, occly grds to shy sltst, carb specs & mat, tr pyr.

Ss: lt gy, s&p, f gred, sb ang, m srtg, abnt uncons, cly cmt ip, dk lit grs, tr glauic, tr pyric, p por? no vis shows.

Ss: lt gy, vf gred, sb ang, modly w srt, abnt uncons, cly cmt, dk lit grs, tr glauic, slty, slly shy





ip, tr pyric, tt - p intgran por, no vis shows.

Ss: lt gy, l vf gred, sb ang, w srt, w cmt / cly cmt, slly calcs, dk lit grs, slty, tr glauic, shy ip, tt, no shows.

Ss: s&p, f gred, sb ang, modly w srt, cly cmt, occ uncons, dk lit grs, tr glauic, dism pyr, tr fros calc, p intgran por 7%, no vis shows

Ss: aa / Ss lt gy, vf gred, sb ang, modly w srt, cly cmt, slty, shy ip, tr glauic, tr pyric, tt, no vis shows

Ss: s&p, lt gy aa.

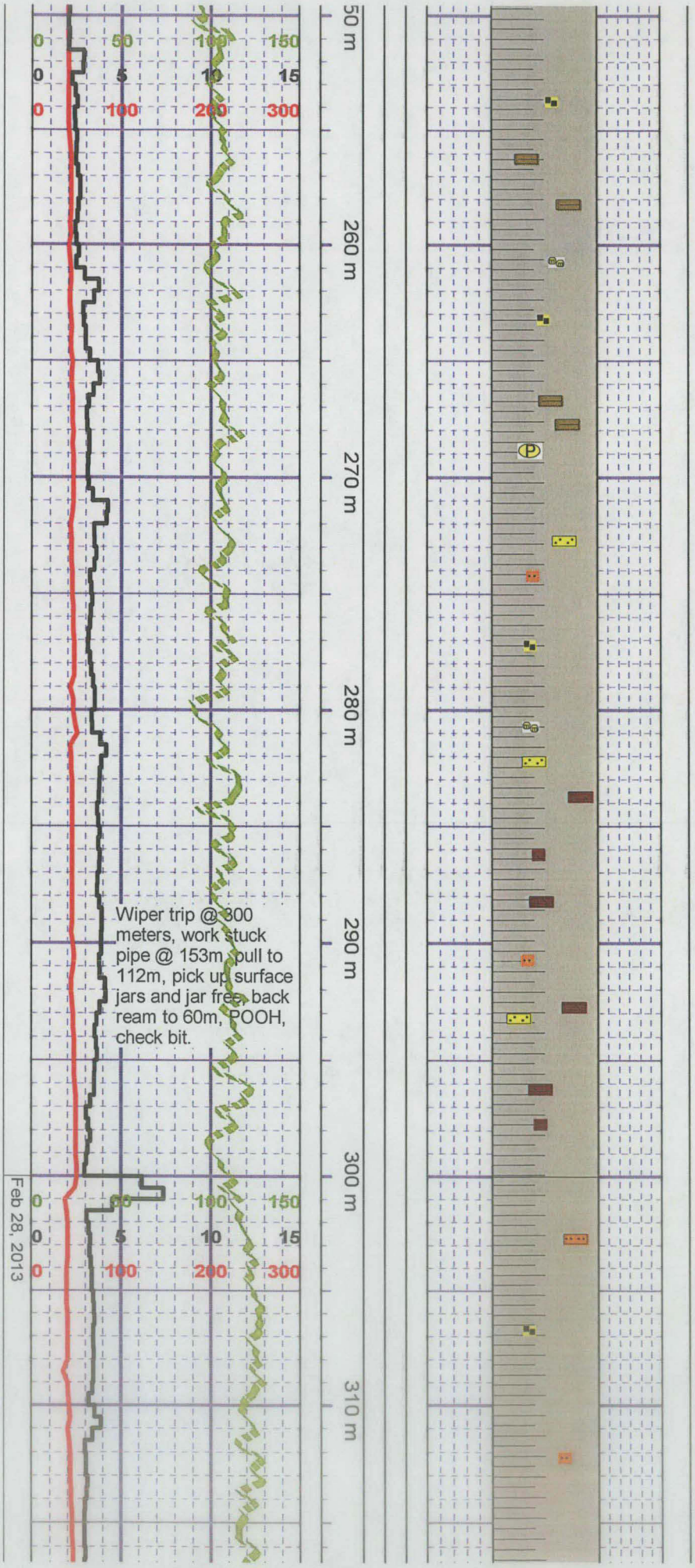
Ss: lt gy, f gred, sb ang, modly w srt, cly cmt, slly calcs, dk lit grs, tr glauic, tr pyric, mnr carb mat, slty ip, occly shy, tt - p intgran por 4%, no vis shows.

Ss: lt gy, vf gred, sb ang, modly w srt, cly cmt, slly calcs, dk lit grs, tr glauic, tr pyric, mnr carb mat, slty ip, occly shy, predly tt, no vis shows.

Ss: lt gy, vf gred, sb ang, modly w srt, cly cmt, slly calcs, dk lit grs, tr glauic, tr pyric, mnr carb mat, slty ip, occly shy, predly tt, no vis shows.

Slater River
(TVD: 241.00)
(SSL: 45.50)

Sh: lt - m gy, blky, slly mmca, slty ip, tr carb mat, tr pyr nods.



Sh: predly m gy, blky, slly mmca, slty ip, tr carb mat, tr pyr nods / 10% Ss strgs aa.

Sh: aa / mnr Sh blue gn, blky, flat wxy tex / 5% Ss strgs aa.

Sh: aa

Sh: predly m gy, blky, slly mmca, tr slty, tr carb mat, tr pyr nods / mnr gn sh aa.

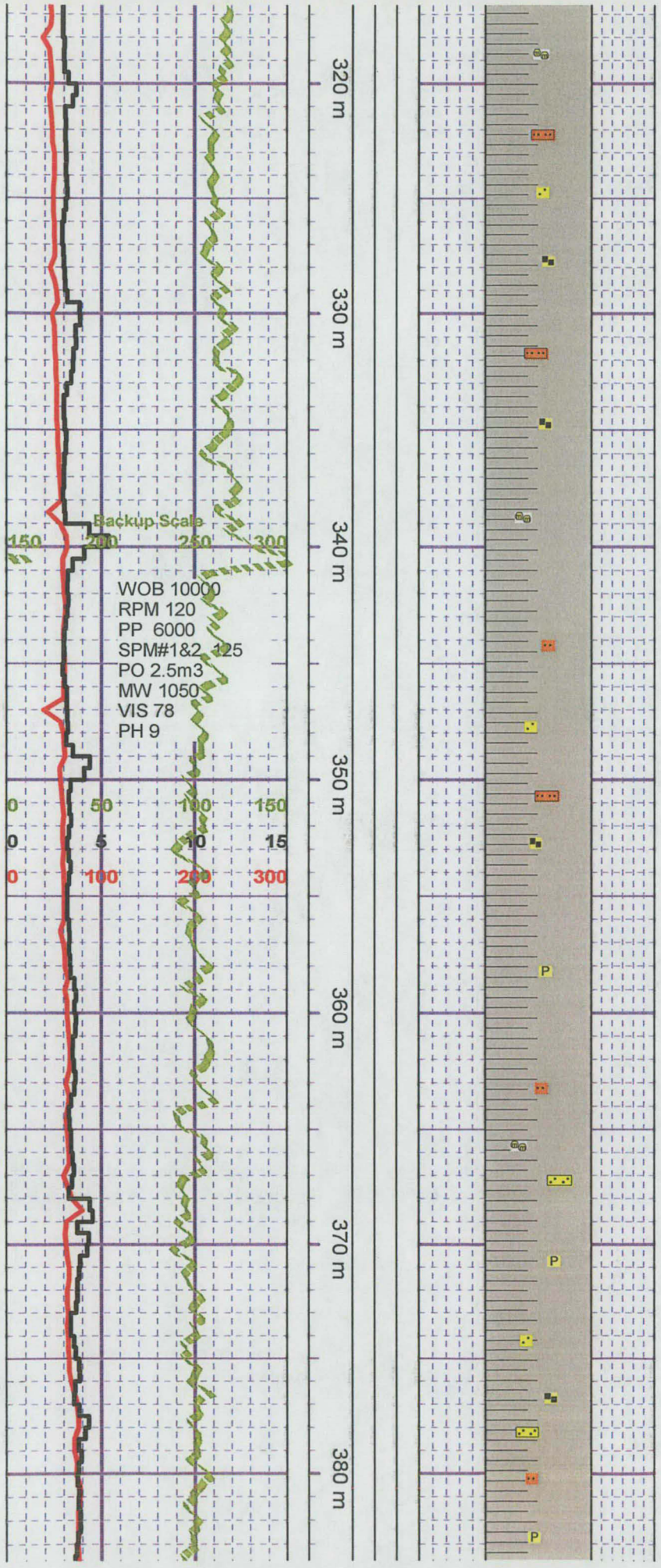
Sh: predly m gy, mnr dk gy, sbfis ip, slly mmca, slty ip, tr carb mat, tr blue gn sh aa / 10% Ss strgs aa.

Sh: predly m gy, mnr dk gy, sbfis ip, slly mmca, slty ip, tr carb mat, bcmg sidic / brn sid frags.

Sh: m gy, gy brn ip, tr dk gy, mnr sb fis, occly sidic, slly mmca, tr slty, abnt brn sid frags / tr mnr Ss strgs aa.

Sh: m gy, blky, slly mmca, tr slty, mnr sdy ip, tr carb specs / mnr Sltst strgs, lt gy, sdy ip, tr dk lit grs, cly cmt, no vis por, no shows.

Sh: m gy, blky, slly mmca, tr slty, mnr sdy ip, tr



carb specs / mnr Sltst strgs, lt gy, sdy ip, tr dk lit grs, cly cmt, no vis por, no shows.

Sh: m gy, blky, slly mmca, tr slty, mnr sdy ip, tr carb specs / mnr Sltst strgs, lt gy, sdy ip, tr dk lit grs, cly cmt, no vis por, no shows.

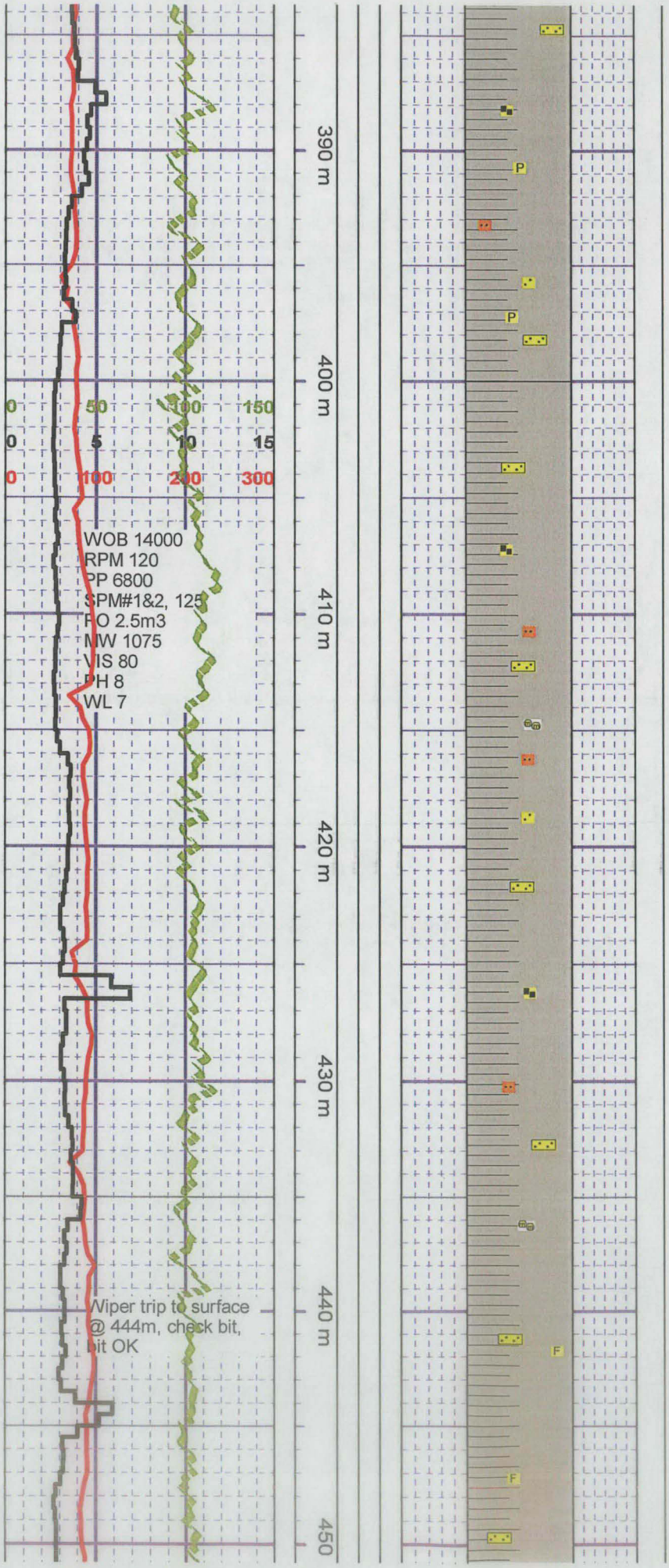
Sh: m gy, blky, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat / tr Sltst strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat / tr Sltst strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, g tr dism pyr / tr Sltst strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, g tr dism pyr / 5% Ss strgs, lt gy, l f gred, sb ang, m srtg, cly cmt, slly calcs, dk lit grs, slty ip, tt, no shows.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, g tr dism pyr / mnr Ss strgs aa



Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, g tr dism pyr / mnr Ss strgs, lt gy, vf gred, sb ang, m srtg, cly cmt, slly calcs, dk lit grs, slty ip, tt, no shows.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, g tr dism pyr / mnr Ss strgs, lt gy, vf gred, sb ang, m srtg, cly cmt, slly calcs, dk lit grs, slty ip, tt, no shows.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, / 3% Ss strgs, lt gy, vf gred, sb ang, m srtg, cly cmt, v slly calcs, dk lit grs, slty ip, tt, no shows.

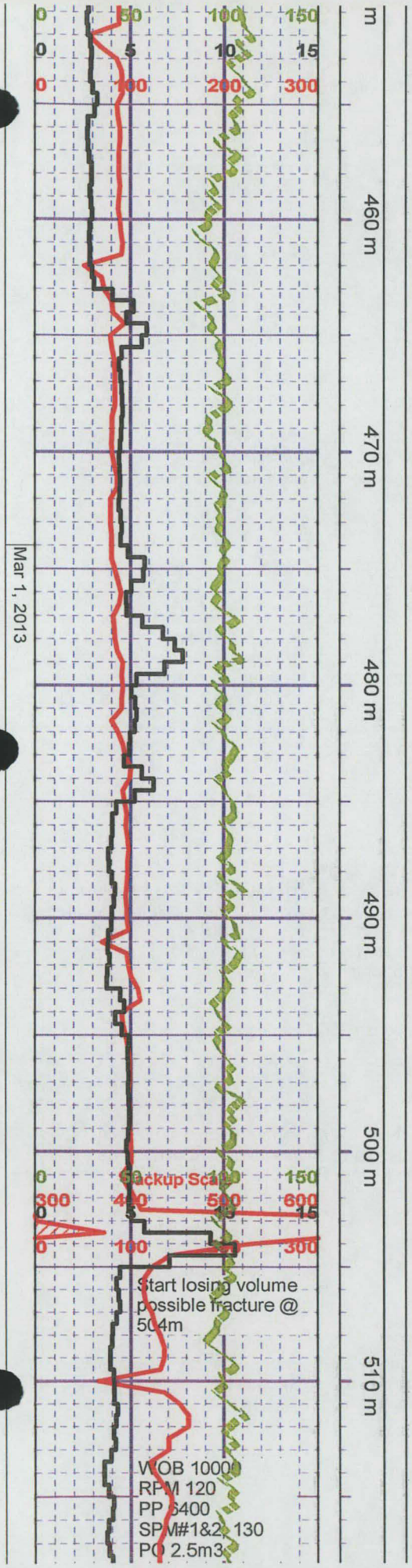
Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, / 3% Ss strgs, lt gy, vf gred, sb ang, m srtg, cly cmt, v slly calcs, dk lit grs, slty ip, tt, no shows.

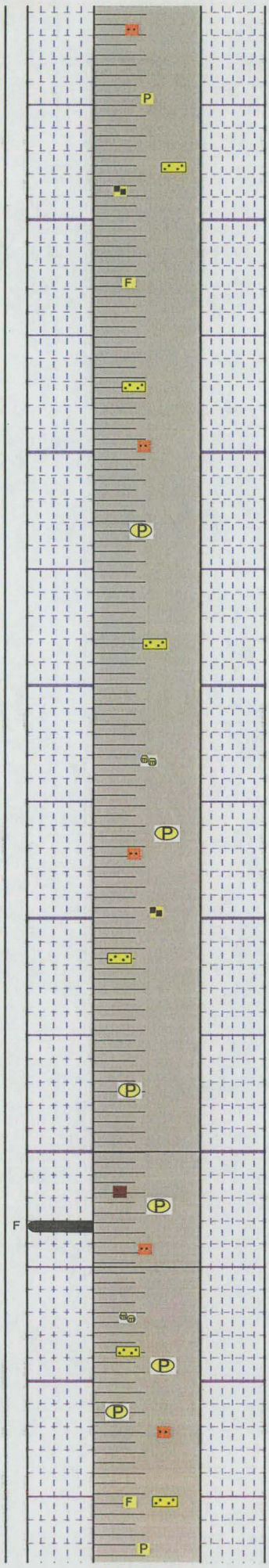
Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, / occ Ss strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb mat, / occ Ss strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr inoc / occ Ss strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr inoc / occ Ss strgs aa.





Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr inoc, tr dism pyr / occ Ss strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr sidic, tr inoc / occ Ss strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr sidic ip, tr inoc, pyr nods / mnr Ss strgs m gy, vf gred, sb ang, w srt, cly cmt, dk lit grs, tr pyric, tr glauic, slty, shy, no vis por, no shows.

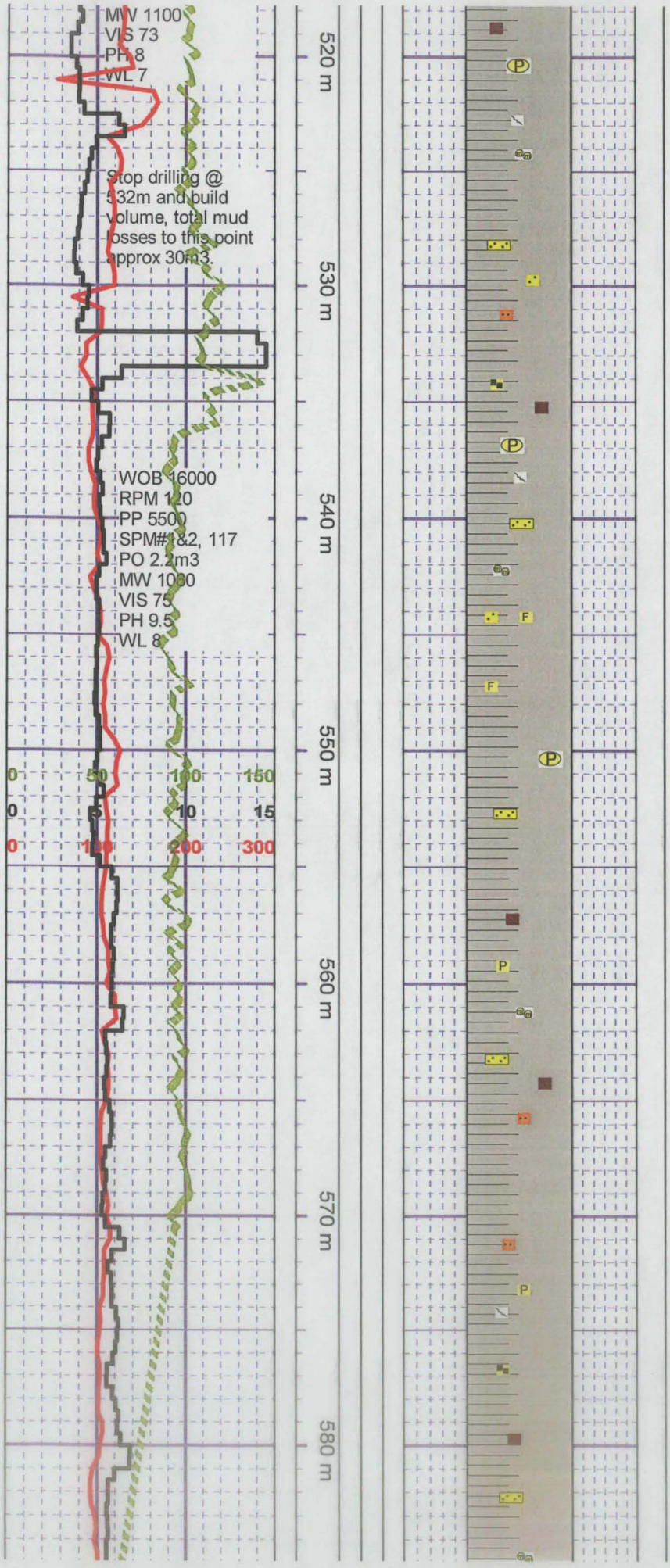
Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr sidic ip, tr inoc, pyr nods / mnr Ss strgs m gy, aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr sidic ip, tr inoc, pyr nods / mnr Ss strgs aa.

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr sidic ip, tr inoc, pyr nods / 5% Ss strgs aa.

Sh: aa, g tr pyr nods

Sh: m gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr sidic ip, tr inoc, pyr



nods / mnr Ss strgs aa.

Sh: m - occly dk gy aa.

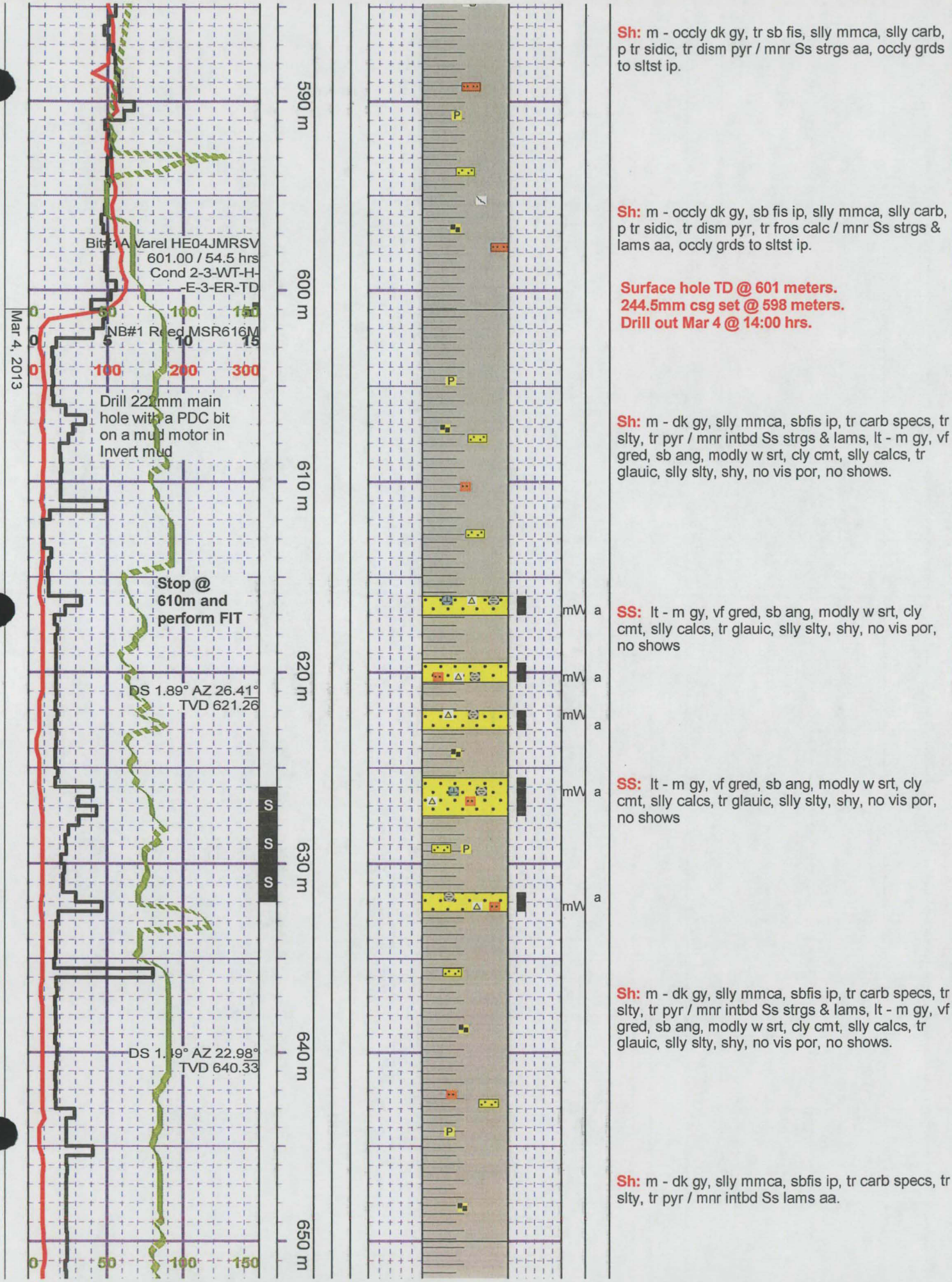
Sh: m - occly dk gy, blky, sft - frm, slly mmca, tr slty, mnr sdy ip, tr mnr carb specs, tr sidic ip, tr inoc, pyr nods, tr mnr micro fracs infilled /calc / 5% Ss strgs aa.

Sh: m - occly dk gy, blky, modly frm, slly mmca, tr slty, tr sdy ip, slly carb ip, tr sidic ip, tr inoc, pyr nods & dism pyr, tr mnr fros calc aa / 5% Ss strgs aa.

Sh: m - occly dk gy, gy brn ip, mnr sb fis, slly mmca, slly carb, occly sidic, dism pyr, tr fros calc aa, / 3% Ss strgs, m gy, vf gred, sb ang, modly w srt, cly cmt, slly calcs, dk lit grs, tr pyric, slty, shy, no vis por or shows.

Sh: m - occly dk gy, gy brn ip, mnr sb fis, slly mmca, slly carb, occly sidic, dism pyr, tr fros calc aa, / occ Ss strgs aa.

Sh: m - occly dk gy, mnr sb fis, slly mmca, slly carb, tr sidic, pyr, tr clr c xln calc / mnr Ss strgs aa.



Sh: m - occly dk gy, tr sb fis, slly mmca, slly carb, p tr sidic, tr dism pyr / mnr Ss strgs aa, occly grds to sltst ip.

Sh: m - occly dk gy, sb fis ip, slly mmca, slly carb, p tr sidic, tr dism pyr, tr fros calc / mnr Ss strgs & lams aa, occly grds to sltst ip.

Surface hole TD @ 601 meters.
244.5mm csg set @ 598 meters.
Drill out Mar 4 @ 14:00 hrs.

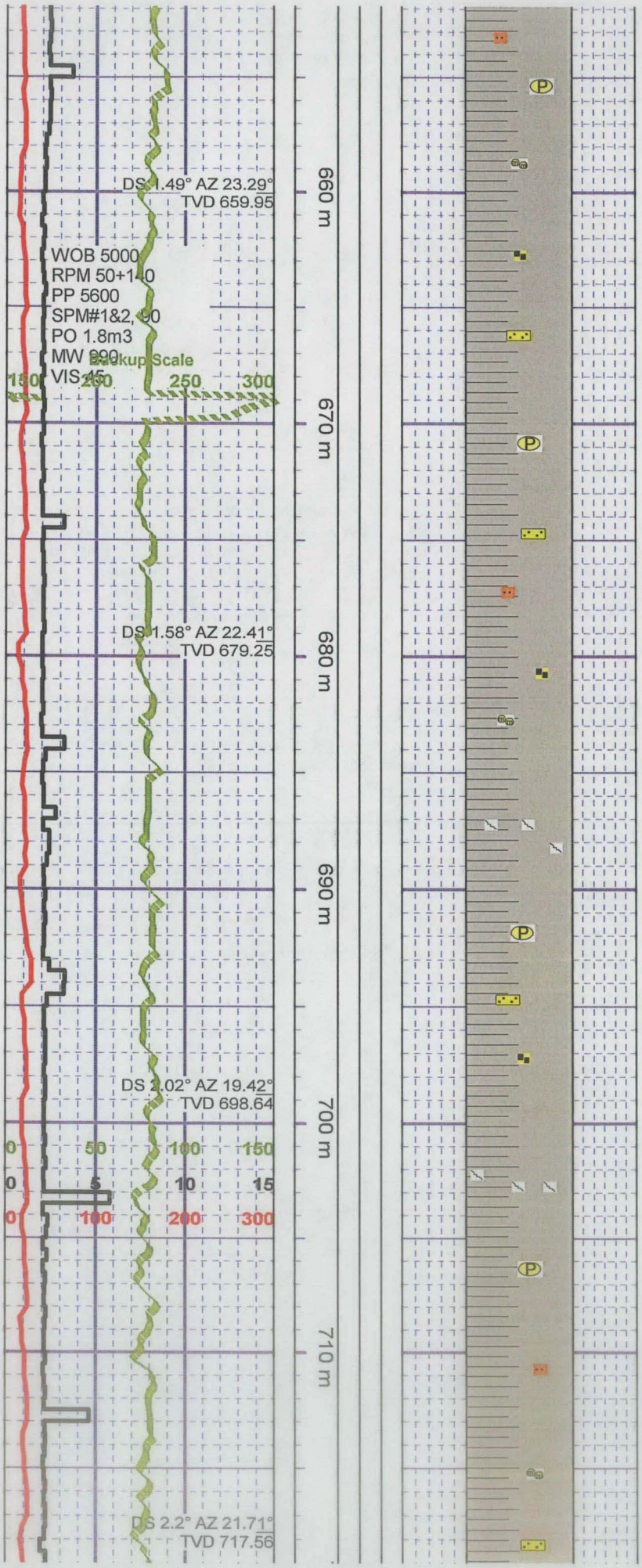
Sh: m - dk gy, slly mmca, sbfis ip, tr carb specs, tr slty, tr pyr / mnr intbd Ss strgs & lams, lt - m gy, vf gred, sb ang, modly w srt, cly cmt, slly calcs, tr glauic, slly slty, shy, no vis por, no shows.

SS: lt - m gy, vf gred, sb ang, modly w srt, cly cmt, slly calcs, tr glauic, slly slty, shy, no vis por, no shows

SS: lt - m gy, vf gred, sb ang, modly w srt, cly cmt, slly calcs, tr glauic, slly slty, shy, no vis por, no shows

Sh: m - dk gy, slly mmca, sbfis ip, tr carb specs, tr slty, tr pyr / mnr intbd Ss strgs & lams, lt - m gy, vf gred, sb ang, modly w srt, cly cmt, slly calcs, tr glauic, slly slty, shy, no vis por, no shows.

Sh: m - dk gy, slly mmca, sbfis ip, tr carb specs, tr slty, tr pyr / mnr intbd Ss lams aa.



Sh: m - dk gy, slly mmca, sbfis ip, tr carb specs, tr slty, tr fros cxln calc / mnr intbd Ss lams aa.

Sh: m - dk gy, sbfis ip, slly carb, mnr slty / occ Ss lams aa.

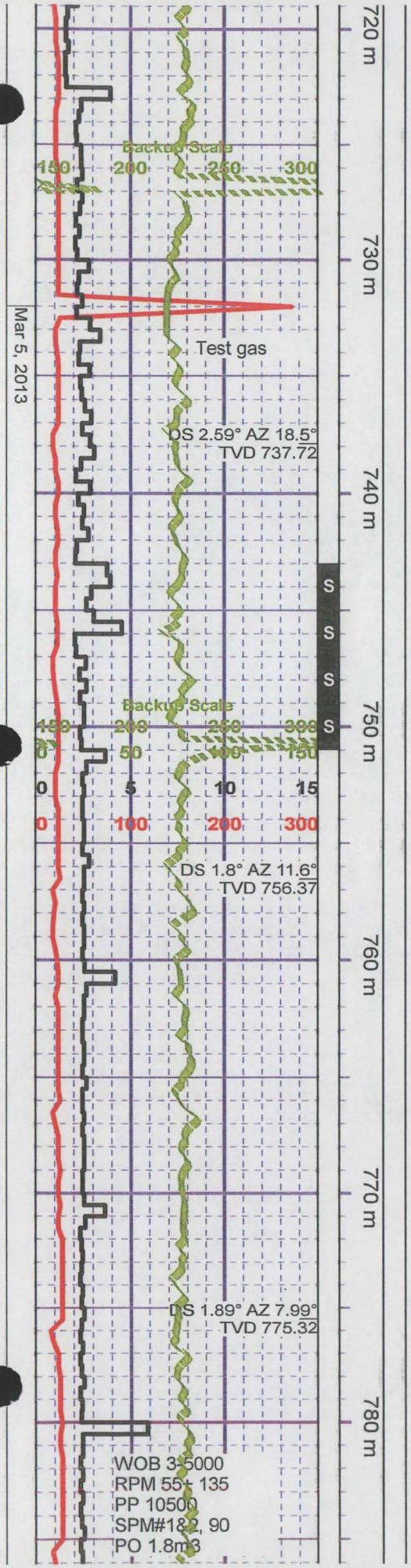
Sh: m - dk gy, sbfis ip, slly carb, mnr slty / occ Ss lams aa.

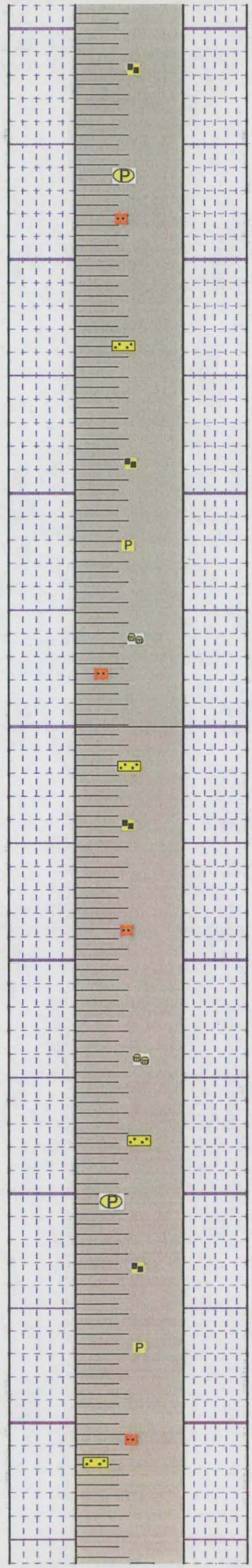
Sh: aa / abnt c xln fros calc (frac?)

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams aa.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, abnt fros c xln calc, tr mnr Ss lams aa.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams aa.





Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams aa.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams aa.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams, lt - m gy, vf gred, sb ang, modly wsrt, cly mtx, slly calcs, tr glauic, tr dk lit grs, slty ip, no vis por, no shows.

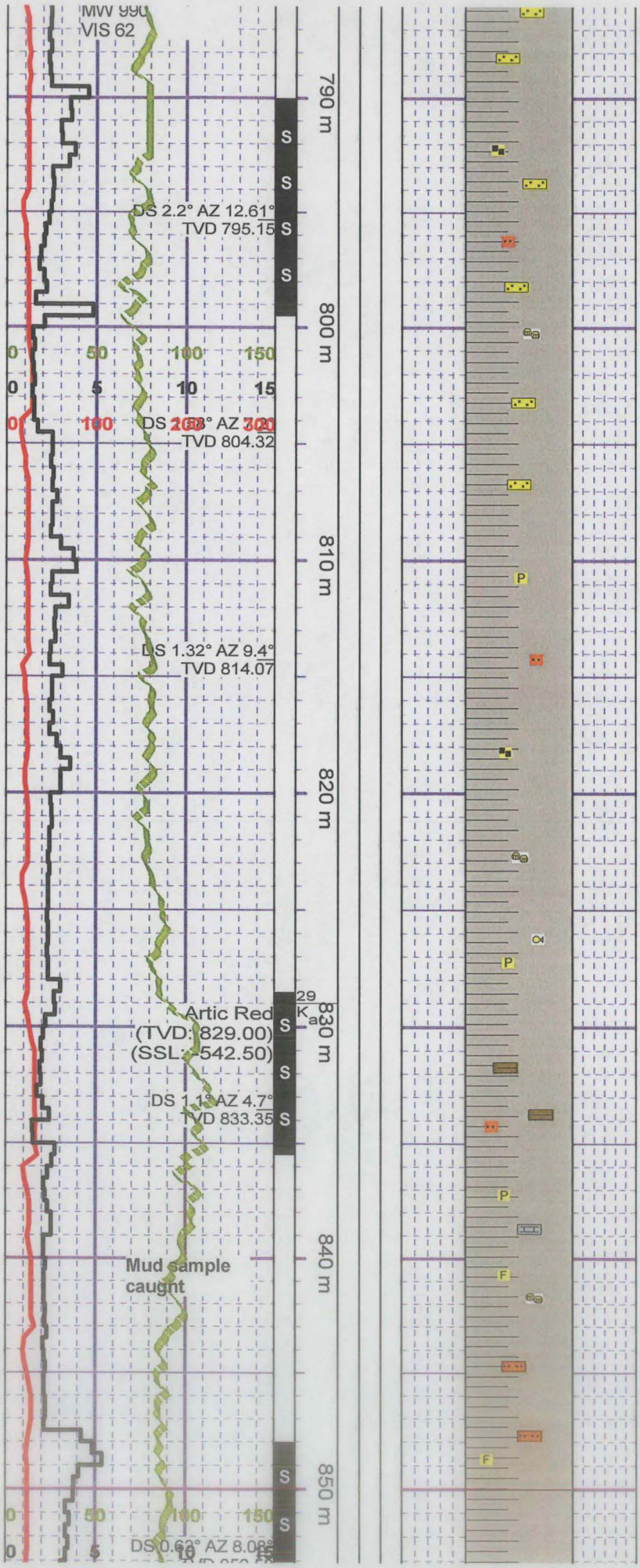
Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams, lt - m gy, vf gred, sb ang, modly wsrt, cly mtx, slly calcs, tr glauic, tr dk lit grs, slty ip, no vis por, no shows.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams, lt - m gy aa.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams, lt - m gy aa.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr, mnr calc aa, tr mnr Ss lams, lt - m gy aa.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly



mmca, tr pyr / 10% Ss lams, lt - m gy, vf gred, sb ang, modly w srt, cly mtx, slly calcs, slty, shy ip, tr pyric, dk lit grs, no vis por, no shows.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr / 5% Ss lams, lt - m gy, vf gred, sb ang, modly w srt, cly mtx, slly calcs, slty, shy ip, tr pyric, dk lit grs, no vis por, no shows.

Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr pyr / 5% Ss lams, lt - m gy, vf gred, sb ang, modly w srt, cly mtx, slly calcs, slty, shy ip, tr pyric, dk lit grs, no vis por, no shows.

Sh: aa

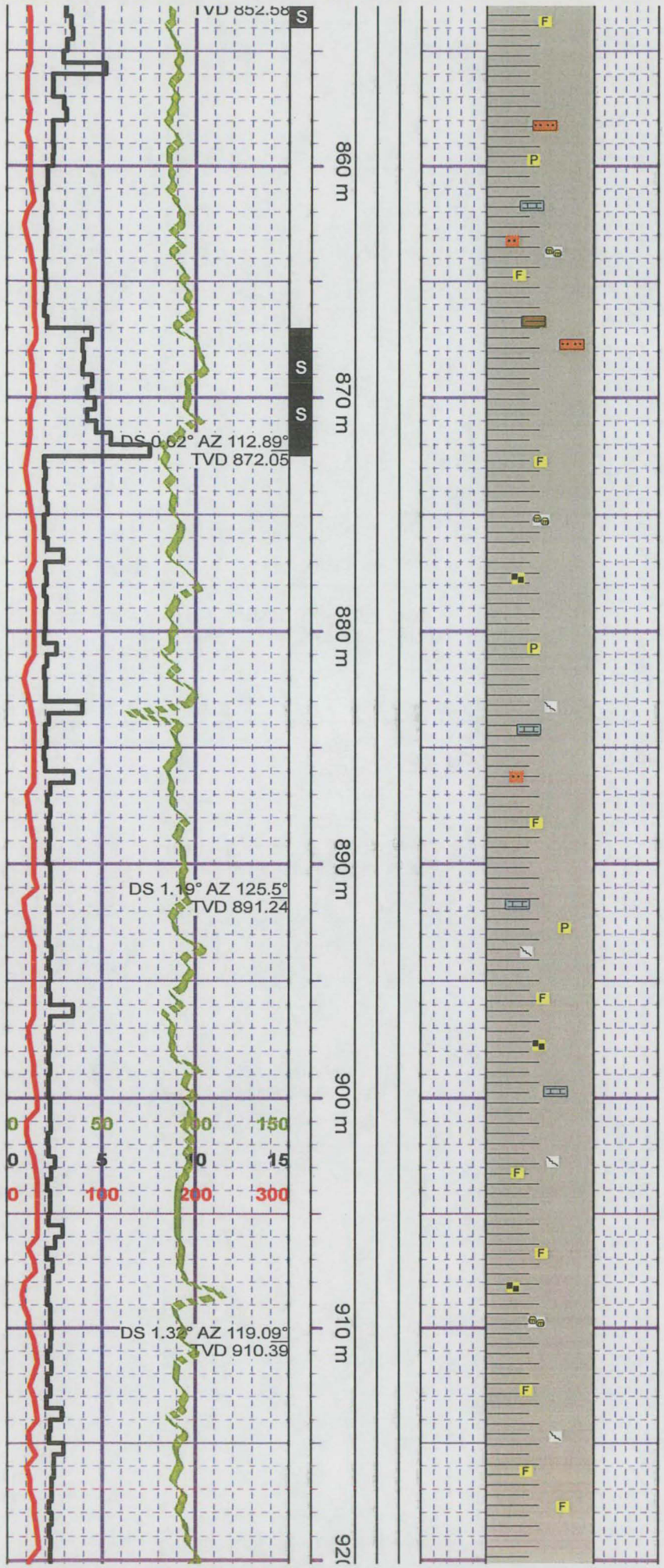
Sh: m - dk gy, sbfis ip, slly carb, tr slty, slly mmca, tr dism pyr, tr fish scales / tr mnr Ss lams aa / tr Ls strgs, bf fragal wkest, tr pyric, dns, no shows.

Artic Red
(TVD: 829.00)
(SSL: -542.50)

Sh: m - dk gy, plty, fis, slly mmca, tr pyr, tr ls aa / tr lt bue clyst, sft, wxy tex.

Sh: m - dk gy, plty ip, occly fis, slly mmca, slly carb, tr pyr, tr mnr Ls lams aa.

Sh: m - dk gy, sbfis, slly mmca, slly carb, tr pyr, tr slty ip, tr inoc / mnr 2% Sltst strgs, lt - m gy, cly & calcs cmt, grds to vf gred ss ip, tt, no shows.



Sh: m - dk gy, sbfis, slly mmca, slly carb, tr pyr, tr slty ip, tr inoc / mnr Sltst strgs aa.

Sh: m - dk gy, sbfis, slly mmca, slly carb, tr pyr, tr slty ip, tr inoc / mnr Sltst strgs aa / tr lt blue clyst aa.

Sh: m - dk gy, sbfis, slly mmca, slly carb, tr pyr, tr slty ip, tr inoc, tr fros calc.

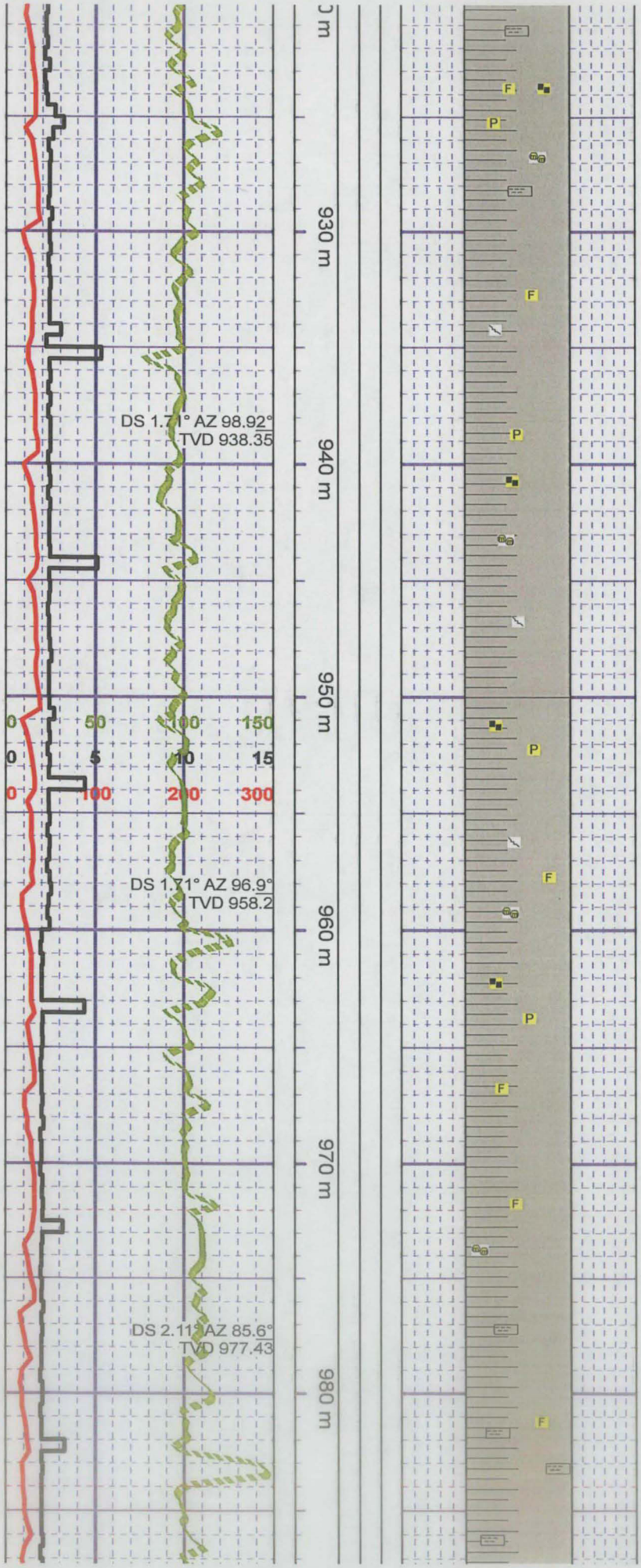
Sh: m - dk gy, sbfis, slly mmca, slly carb, tr pyr, tr slty ip, tr inoc, tr fros calc / tr mnr Ls strgs lt gy - bf brn, mdst - wkest, micr mtx, slly arg, dns, no shows.

Sh: aa / abnt inoc / mnr Ls strgs aa.

Sh: m - dk gy, sbfis, slly mmca, slly carb, tr pyr, tr slty ip, inoc, tr micro fracs infilled / calc & ls aa.

Sh: aa

Sh: m - dk gy, sbfis, slly mmca, slly carb, tr pyr, tr slty ip, abnt inoc, tr Ls aa.



Sh: aa / tr mnr Clyst lt gy, wxy, tr mica flks, dism pyr.

Sh: m gy, occly dk gy, sb fis, slly carb, slly mmca, inoc, tr micro fracs infilled / wh calc, tr mnr clyst aa.

Sh: m - dk gy, sb fis, carb, slly mmca, tr pyr, tr inoc, tr micro fracs infilled / wh calc.

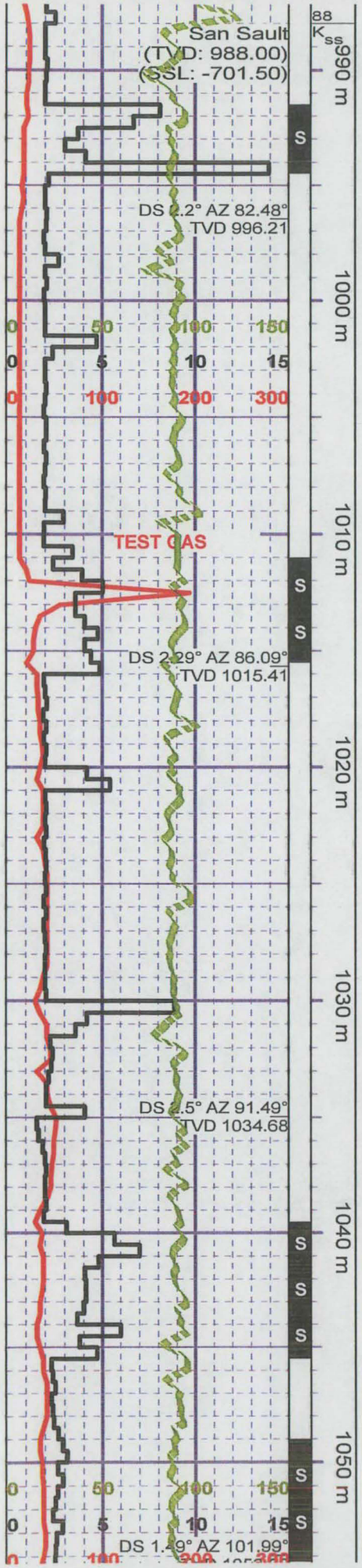
Sh: m - dk gy, sb fis, carb, slly mmca, tr pyr, tr inoc, p tr sidic ip.

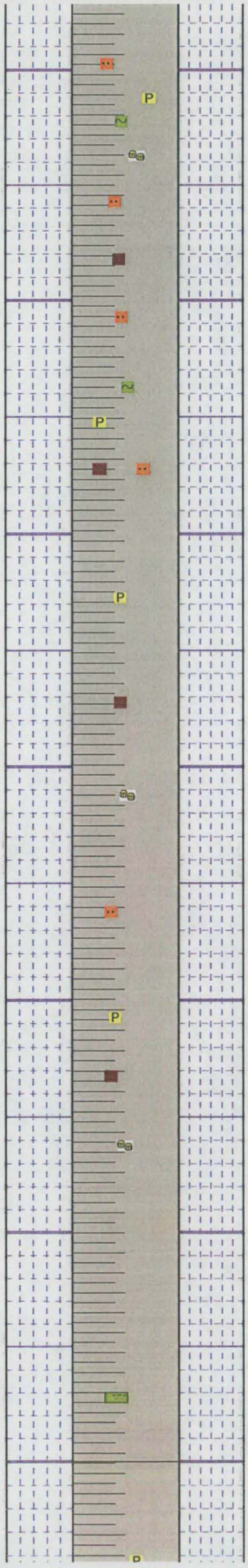
Sh: m - dk gy, sb fis, carb, slly mmca, tr pyr, tr inoc, tr micro fracs infilled / wh calc.

Sh: m - dk gy, sb fis, carb, slly mmca, tr pyr, tr inoc, tr micro fracs infilled / wh calc.

Sh: m - dk gy, sb fis, carb, slly mmca, tr pyr, tr inoc, tr lt gy clyst, wxy, tr sdy, mica flks.

Sh: m - dk gy, sb fis, carb, slly mmca, tr pyr, tr inoc, incrg lt gy clyst, wxy, tr sdy, mica flks.





San Sault
(TVD: 988.00)
(SSL: -701.50)

Sh: m gy, dk gy ip, sb fis, incrg slty, tr glauic, tr pyric, slly mmca,

Sh: m gy, dk gy ip, sb fis, slly slty, tr glauic, tr pyric, slly sidic.

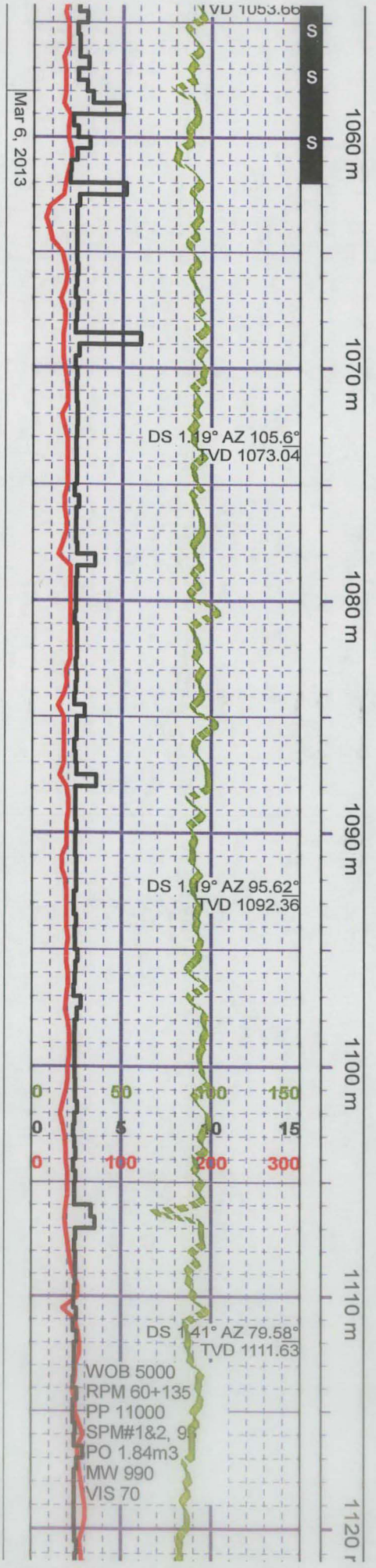
Sh: m gy, dk gy ip, sb fis, slly slty, tr glauic, tr pyric, slly sidic.

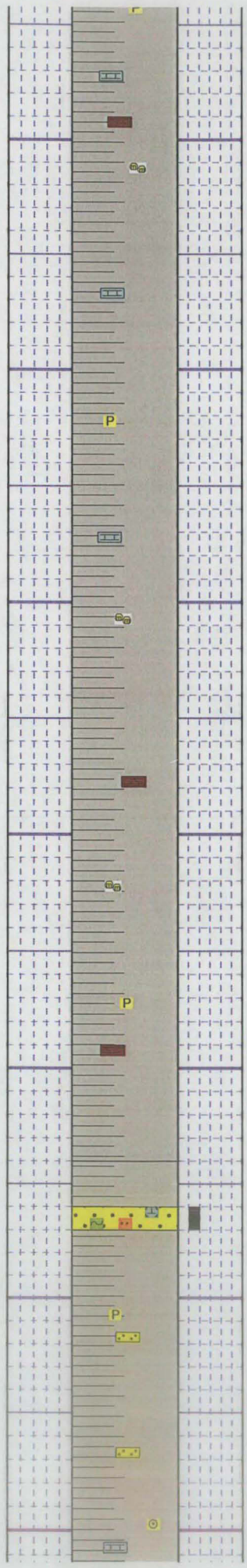
Sh: m gy, dk gy ip, sb fis, slly slty, tr pyric, slly sidic.

Sh: m gy, dk gy ip, sb fis, slly slty, tr pyric, slly sidic.

Sh: m gy, dk gy ip, sb fis, slly slty, tr pyric, slly sidic.

Sh: aa / mnr lt gn clyst lams, sft, wxy tex. c xln calc (mud add?)





Sh: m gy, dk gy ip, sb fis, p tr slly slty, tr pyric, sidic ip / tr brn sid frags / tr mnr Ls strgs lt brn, mdst, arg, grds to mrlst ip, dns, no show.

Sh: m gy, sb fis, slly mmca, tr pyr, tr mnr Ls strgs aa.

Sh: m gy, sb fis, slly mmca, tr pyr, tr mnr Ls strgs aa.

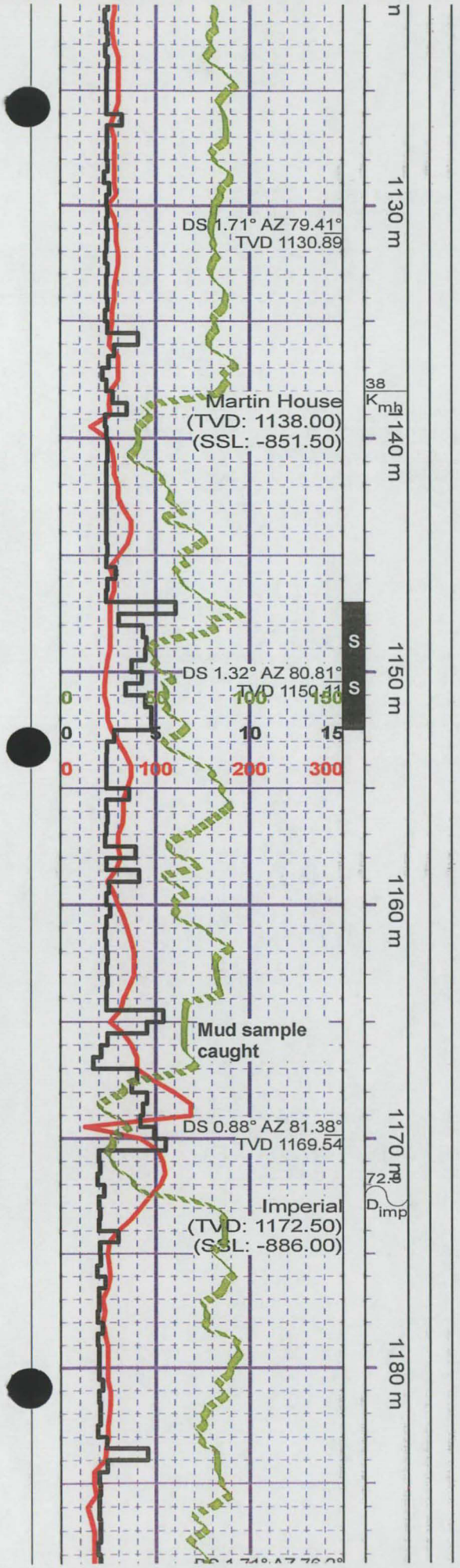
Sh: predly m gy, sb fis, slly mmca, tr pyr, tr mnr ls strgs aa / tr mnr lt brn sid frags.

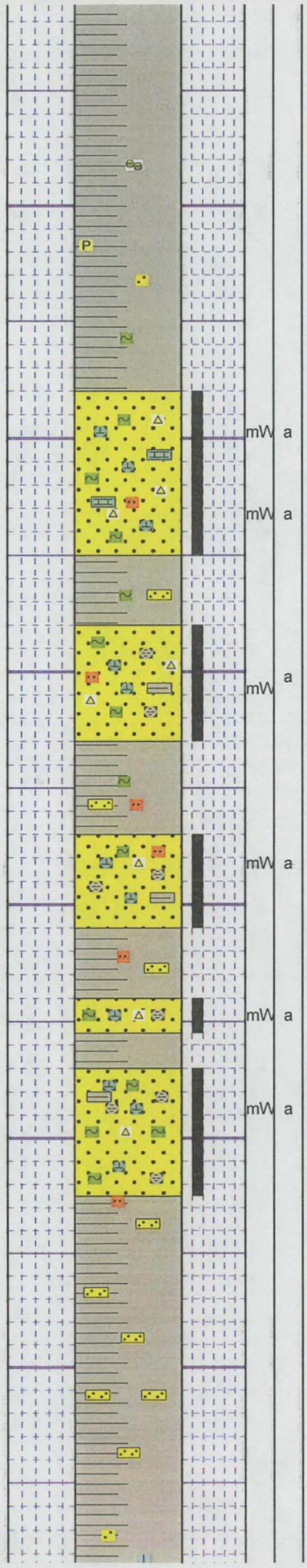
Sh: predly m gy, sb fis, slly mmca, tr pyr, tr mnr ls strgs aa / tr mnr lt brn sid frags.

Ss: lt gy, vf gred, sb ang, modly w srt, calcs, slty, tr glauic, tr mnr dk lit grs, tt, no shows.

Sh: m gy, mnr dk gy, sb fsi, slly mmca, tr pyr, p tr ss strgs aa.

Sh: m gy, sb fis, slly mmca, tr pyr, p tr ss strgs aa, tr crins / tr mnr Ls strgs aa.





Sh: m gy, mnr dk gy, sb fis, modly frm, slly mmca, pyr.

Sh: aa, sdy & glauic.

Martin House
(TVD: 1138.00)
(SSL: -851.50)

Ss: lt gy, u vf gred, sb ang, modly w srt, v calcs, grds to sdy ls ip, v glauic, tr mnr dk lit grs, slly slty, no vis por, no shows.

Ss: crm - lt gy, u vf gred, sb ang, modly w srt, calcs & cly cmt, grds to sdy ls ip, v glauic, tr mnr dk lit grs, slly slty, tr sh lams, no vis por, no shows.

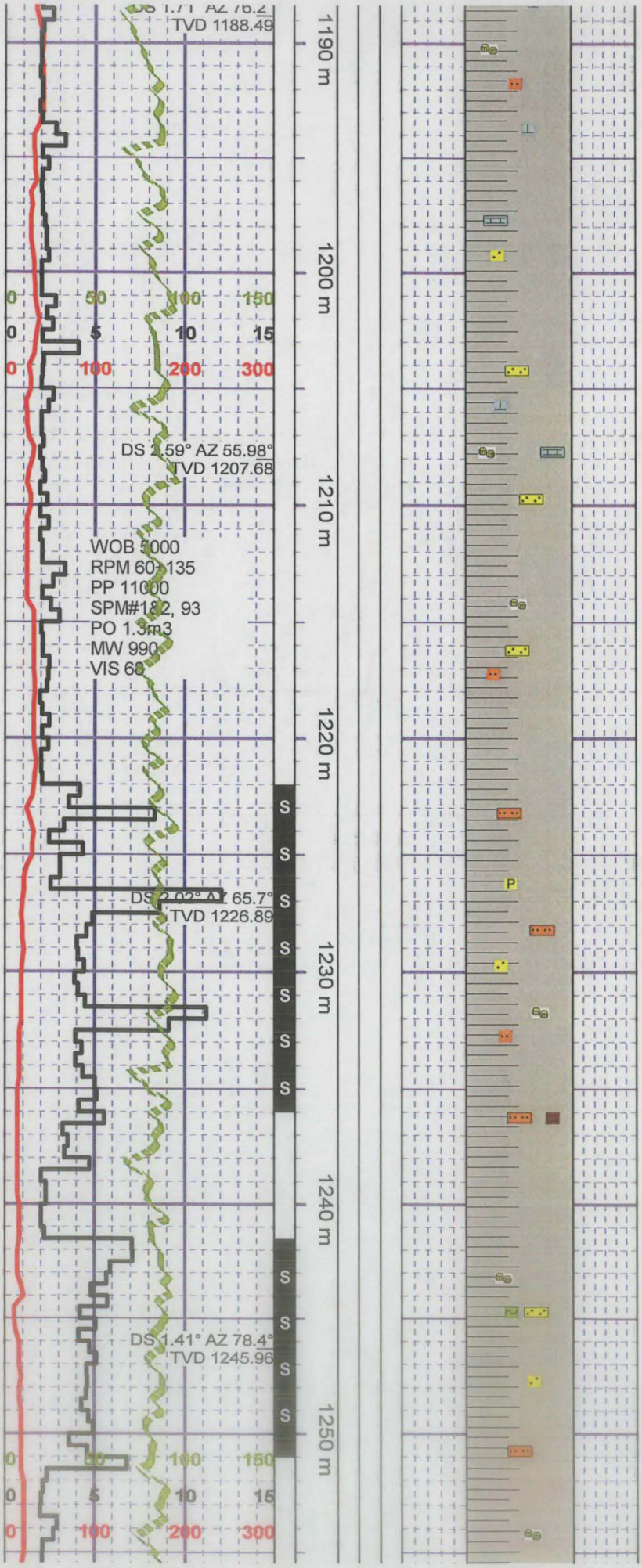
Ss: aa, m gy ip aa, shy.

Ss: crm - lt gy, l vf gred, sb ang, modly w srt, calcs & cly cmt, grds to sdy ls ip, v glauic, tr mnr dk lit grs, slly slty, tr sh lams, no vis por, no shows.

Imperial
(TVD: 1172.50)
(SSL: -886.00)

Sh: predly aa / tr lt gy gn sh lams, slly mmca, tr pyric, slly wxy tex ip.

Sh: lt gy gn, slly mmca, sb fis ip, slly wxy tex, tr slty & mnr sdy ip.



Sh: lt gy gn, slly mmca, sb fis ip, slly wxy tex, tr slty & mnr sdy ip / lt gy - bf mrlst, sft, chky, dns.

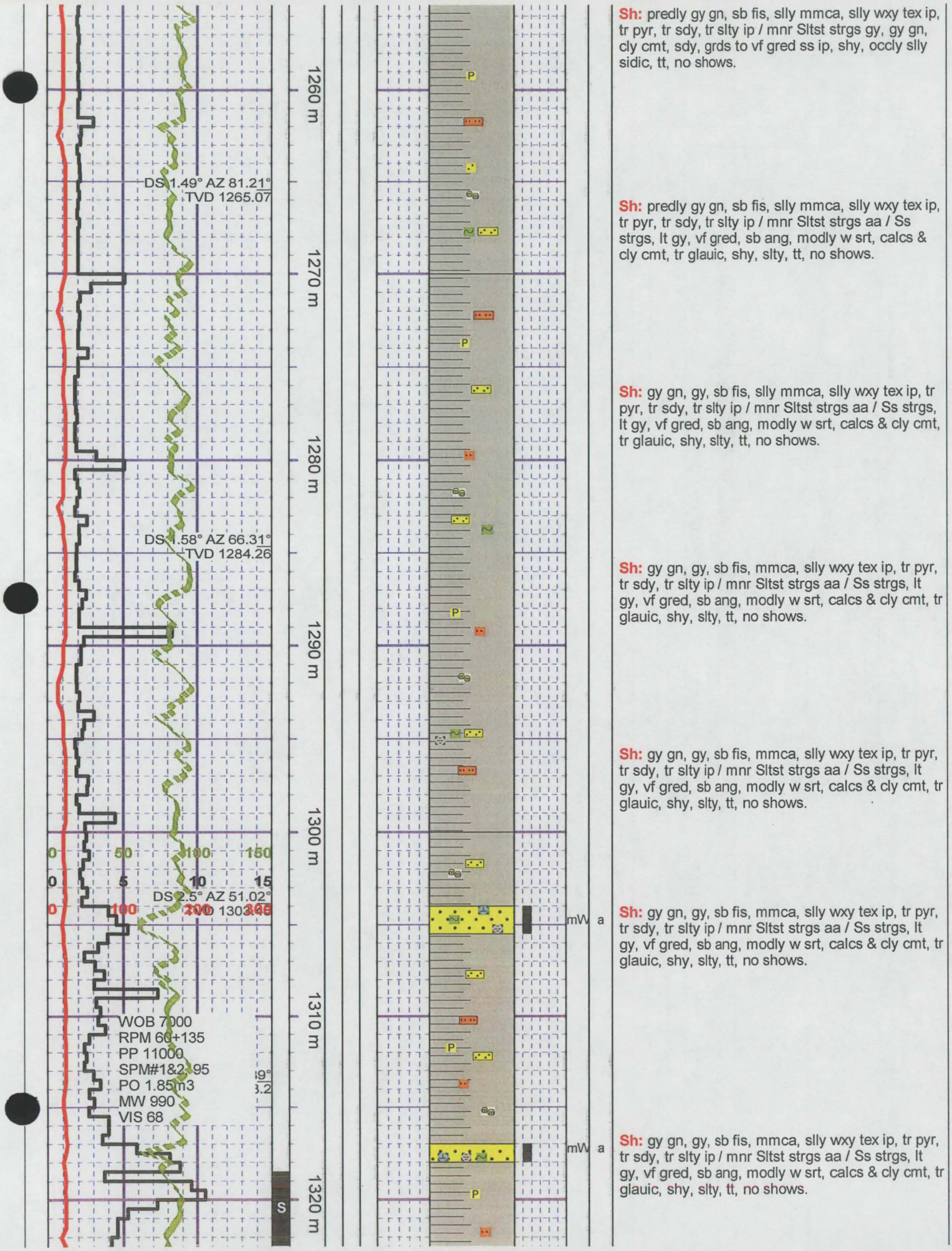
Sh: gy gn, m gy, sb fis, slly mmca, slly calcs, slly wxy tex ip, occly sdy, tr slty ip / mnr Ss strgs, lt gy, gy gn, vf gred, sb ang, modly w srt, calcs & cly cmt, slty, shy, tr sidic ip, tt, no shows.

Sh: gy gn, m gy, sb fis, slly mmca, slly calcs, slly wxy tex ip, occly sdy, tr slty ip / mnr Ss strgs, lt gy, gy gn, vf gred, sb ang, modly w srt, calcs & cly cmt, slty, shy, tr sidic ip, tt, no shows.

Sh: gy gn, m gy, gy brn ip, sb fis, slly mmca, slly wxy tex ip, pyr, occly sdy, tr slty ip / mnr Sltst strgs gy, gy gn, cly cmt, sdy, grds to vf gred ss ip, shy, occly slly sidic, tt, no shows.

Sh: gy gn, m gy, gy brn ip, sb fis, slly mmca, slly wxy tex ip, pyr, occly sdy, tr slty ip / mnr Sltst strgs gy, gy gn, cly cmt, sdy, grds to vf gred ss ip, shy, occly slly sidic, tt, no shows.

Sh: aa / tr Ls strgs, bf, lt brn, mdst - wkest, mic mtx, arg, sdy, dns, no shows



Sh: predly gy gn, sb fis, slly mmca, slly wxy tex ip, tr pyr, tr sdy, tr slty ip / mnr Sltst strgs gy, gy gn, cly cmt, sdy, grds to vf gred ss ip, shy, occly slly sidic, tt, no shows.

Sh: predly gy gn, sb fis, slly mmca, slly wxy tex ip, tr pyr, tr sdy, tr slty ip / mnr Sltst strgs aa / Ss strgs, lt gy, vf gred, sb ang, modly w srt, calcs & cly cmt, tr glauic, shy, slty, tt, no shows.

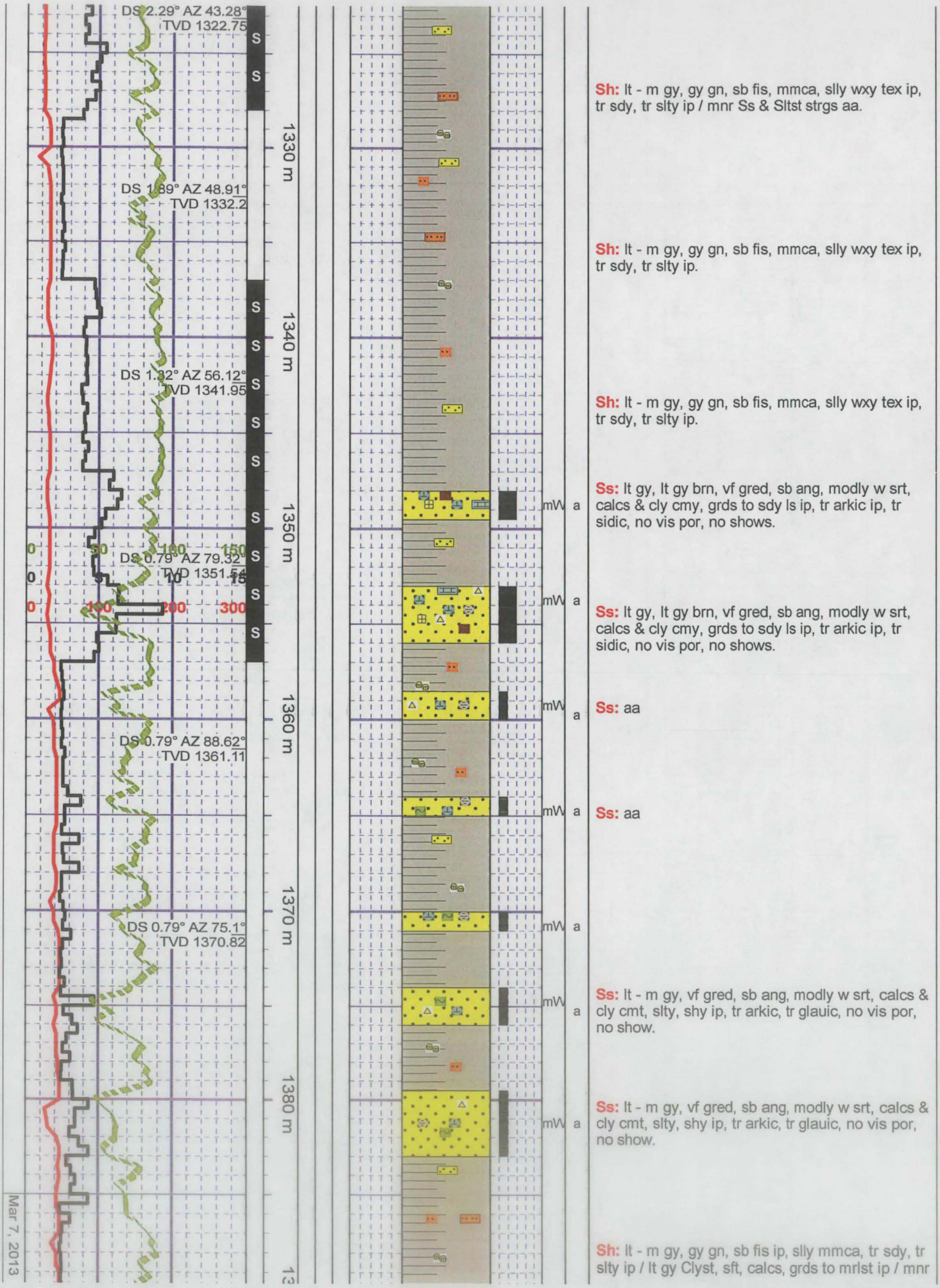
Sh: gy gn, gy, sb fis, slly mmca, slly wxy tex ip, tr pyr, tr sdy, tr slty ip / mnr Sltst strgs aa / Ss strgs, lt gy, vf gred, sb ang, modly w srt, calcs & cly cmt, tr glauic, shy, slty, tt, no shows.

Sh: gy gn, gy, sb fis, mmca, slly wxy tex ip, tr pyr, tr sdy, tr slty ip / mnr Sltst strgs aa / Ss strgs, lt gy, vf gred, sb ang, modly w srt, calcs & cly cmt, tr glauic, shy, slty, tt, no shows.

Sh: gy gn, gy, sb fis, mmca, slly wxy tex ip, tr pyr, tr sdy, tr slty ip / mnr Sltst strgs aa / Ss strgs, lt gy, vf gred, sb ang, modly w srt, calcs & cly cmt, tr glauic, shy, slty, tt, no shows.

Sh: gy gn, gy, sb fis, mmca, slly wxy tex ip, tr pyr, tr sdy, tr slty ip / mnr Sltst strgs aa / Ss strgs, lt gy, vf gred, sb ang, modly w srt, calcs & cly cmt, tr glauic, shy, slty, tt, no shows.

Sh: gy gn, gy, sb fis, mmca, slly wxy tex ip, tr pyr, tr sdy, tr slty ip / mnr Sltst strgs aa / Ss strgs, lt gy, vf gred, sb ang, modly w srt, calcs & cly cmt, tr glauic, shy, slty, tt, no shows.



Sh: lt - m gy, gy gn, sb fis, mmca, slly wxy tex ip, tr sdy, tr slty ip / mnr Ss & Sltst strgs aa.

Sh: lt - m gy, gy gn, sb fis, mmca, slly wxy tex ip, tr sdy, tr slty ip.

Sh: lt - m gy, gy gn, sb fis, mmca, slly wxy tex ip, tr sdy, tr slty ip.

Ss: lt gy, lt gy brn, vf gred, sb ang, modly w srt, calcs & cly cmy, grds to sdy ls ip, tr arkic ip, tr sidic, no vis por, no shows.

Ss: lt gy, lt gy brn, vf gred, sb ang, modly w srt, calcs & cly cmy, grds to sdy ls ip, tr arkic ip, tr sidic, no vis por, no shows.

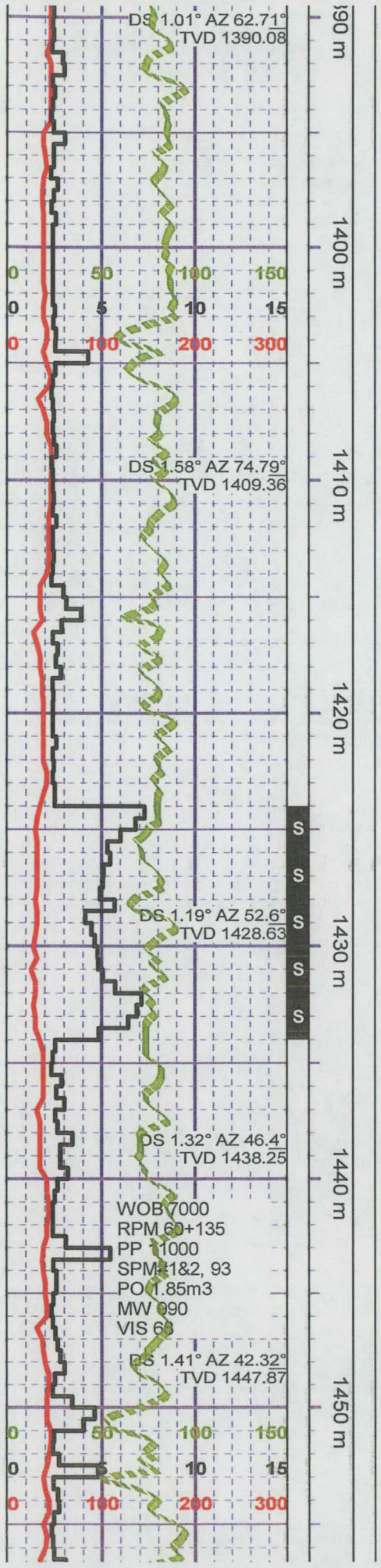
Ss: aa

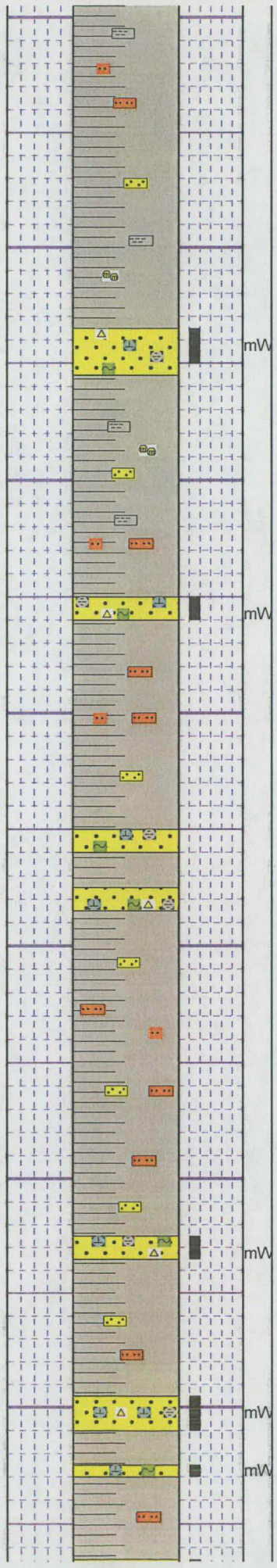
Ss: aa

Ss: lt - m gy, vf gred, sb ang, modly w srt, calcs & cly cmt, slty, shy ip, tr arkic, tr glauic, no vis por, no show.

Ss: lt - m gy, vf gred, sb ang, modly w srt, calcs & cly cmt, slty, shy ip, tr arkic, tr glauic, no vis por, no show.

Sh: lt - m gy, gy gn, sb fis ip, slly mmca, tr sdy, tr slty ip / lt gy Clyst, sft, calcs, grds to mrlst ip / mnr





Ss strgs aa.

Sh: lt - m gy, gy gn, sb fis ip, slly mmca, tr sdy, tr slty ip / lt gy Clyst, sft, calcs, grds to mrlst ip.

Ss: lt gy, crm, lt rust ip, vf gred, sb ang, modly w srt, calcs & cly cmt, slty, shy ip, tr arkic, te fer ip, tr dk lit grs, no vis por, no shows.

Ss: lt gy, crm, lt rust ip, vf gred, sb ang, modly w srt, calcs & cly cmt, slty, shy ip, tr arkic, te fer ip, tr dk lit grs, no vis por, no shows.

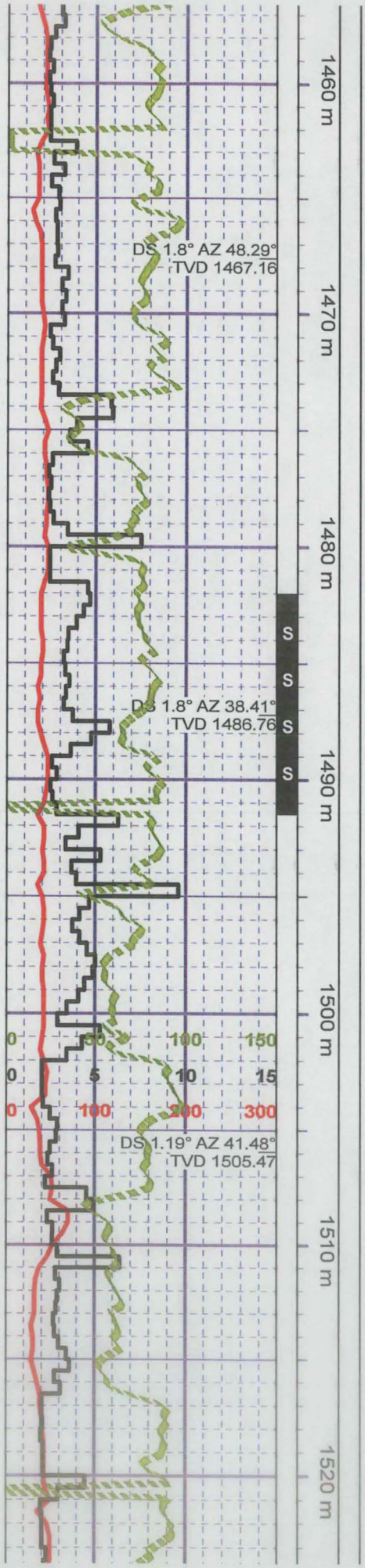
Sh: lt - m gy, gy gn, sb fis ip, slly mmca, tr sdy, tr slty ip / lt gy Clyst, sft, calcs, grds to mrlst ip / 20% Sltst strgs, lt - m gy, cly cmt, sdy, shy, tt, no shows.

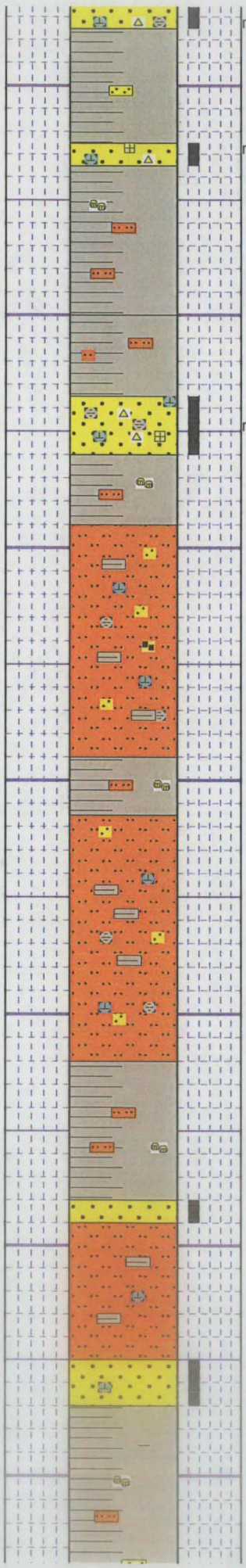
Ss: lt gy, crm, lt rust ip, vf gred, sb ang, modly w srt, calcs & cly cmt, slty, shy ip, tr arkic, te fer ip, tr dk lit grs, no vis por, no shows.

Sh: lt - m gy, slly mmca, occly slty, sft - modly frm, sb fis ip / abnt Sltst strgs & lams, lt - m gy, gy gn ip, cly mtx, slly calcs, shy, sdy ip, tt, no shows.

Ss: lt gy, vf gred, sb ang, modly w srt, sb ang, calcs & cly cmt, tr glauic, tr arkic, tr dk lit grs, slty, shy, tt, no shows.

Ss: lt gy, vf gred, sb ang, modly w srt, sb ang, calcs & cly cmt, tr glauic, tr arkic, tr dk lit grs, slty, shy, tt, no shows.





Sh: lt - m gy, slly mmca, occly slty, sft - modly frm, sb fis ip / abnt Sltst strgs & lams, lt - m gy, gy gn ip, cly mtx, slly calcs, shy, sdy ip, tt, no shows.

Ss: lt gy, vf gred, sb ang, modly w srt, sb ang, calcs & cly cmt, tr glauic, tr arkic, tr dk lit grs, slty, shy, tt, no shows.

Sh: predly m gy, slly mmca, slly slty, sft - modly frm, sb fis ip / abnt Sltst strgs & lams, lt - m gy, gy gn ip, cly mtx, slly calcs, shy, sdy ip, tt, no shows.

Ss: crm, lt - m gy, vf gred, sb ang, modly w srt, qtz / lt cold cht, calcs & cly cmt, slty, shy ip, tr mnr dk lit grs, p tr arkic, v slly sidic? ip, no vis por or show.

Sltst: lt - m gy, cly cmt, slly calcs, tr sdy, grds to slty sh ip, tr dk lit grs, tr carb mat, tt, no shows.

Sltst: lt - m gy, cly cmt, slly calcs, tr sdy, grds to slty sh ip, tr dk lit grs, tr carb mat, tt, no shows.

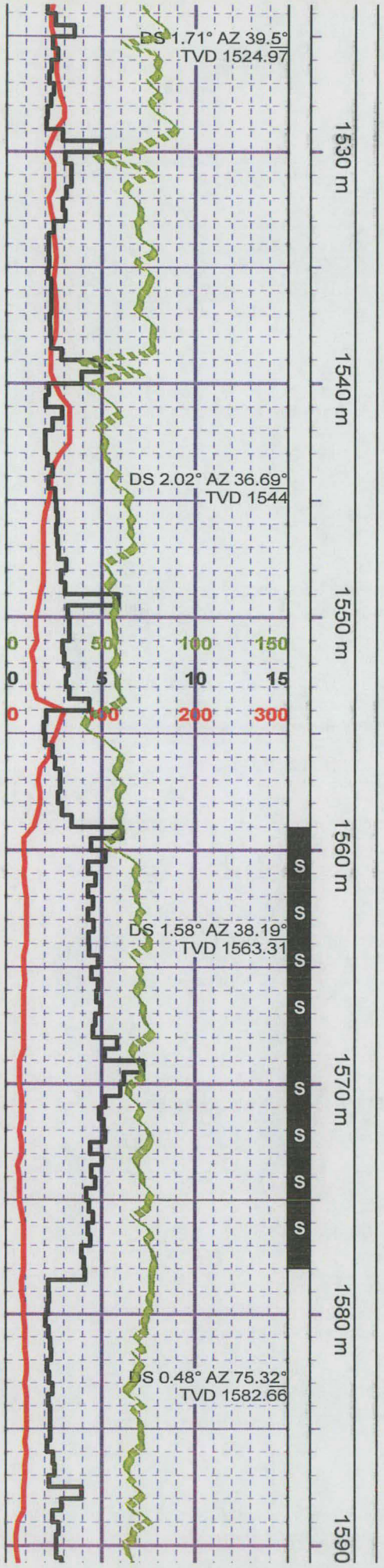
Sltst: lt - m gy, cly cmt, slly calcs, tr sdy, grds to slty sh ip, tr dk lit grs, tr carb mat, tt, no shows.

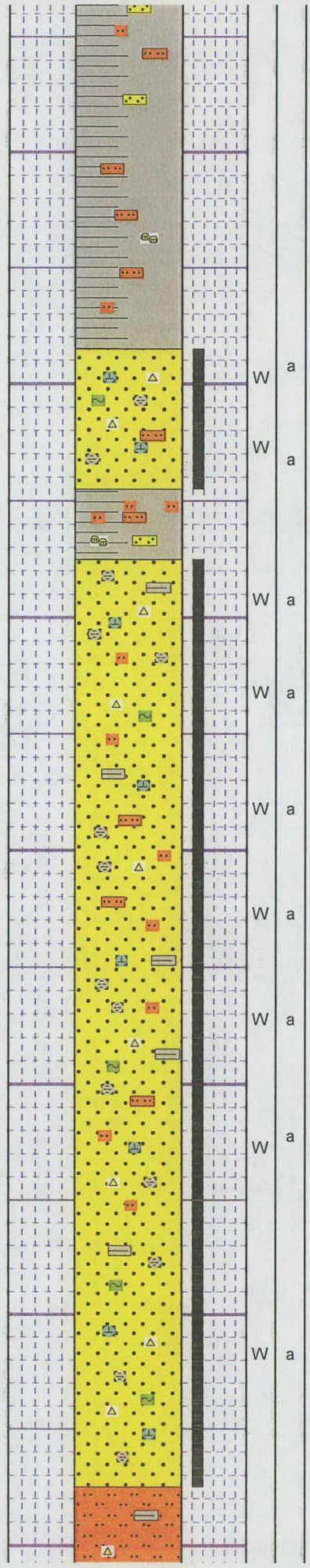
Sh: lt - m gy, blky, v slty, slly mmca, grds to shy sltst ip, sbfis ip.

Sltst: lt - m gy, cly cmt, slly calcs, tr sdy, grds to slty sh ip, tr dk lit grs, tr carb mat, tt, no shows.

Ss: crm - lt gy, vf gred, sb ang, w srt, calcs & cly cmt, tr dk lit grs, tr glauic, slty, tt, no shows.

Sh: lt - m gy, blky, v slty, sbfis ip, slly mmca, tr





Sh: m gy, slly mmca, sbfis ip, occly slty, tr slly sidic ip / abnt Sltst strgs aa / occ Ss strgs aa.

Sh: m gy, slly mmca, sbfis ip, occly slty, tr slly sidic ip / abnt Sltst strgs aa / occ Ss strgs aa.

Ss: lt gy, l vf gred, sb ang, w srt, calcs & cly cmt, tr glauic, slty, grds to sltst ip, occly shy, tt, no shows.

Sh: aa

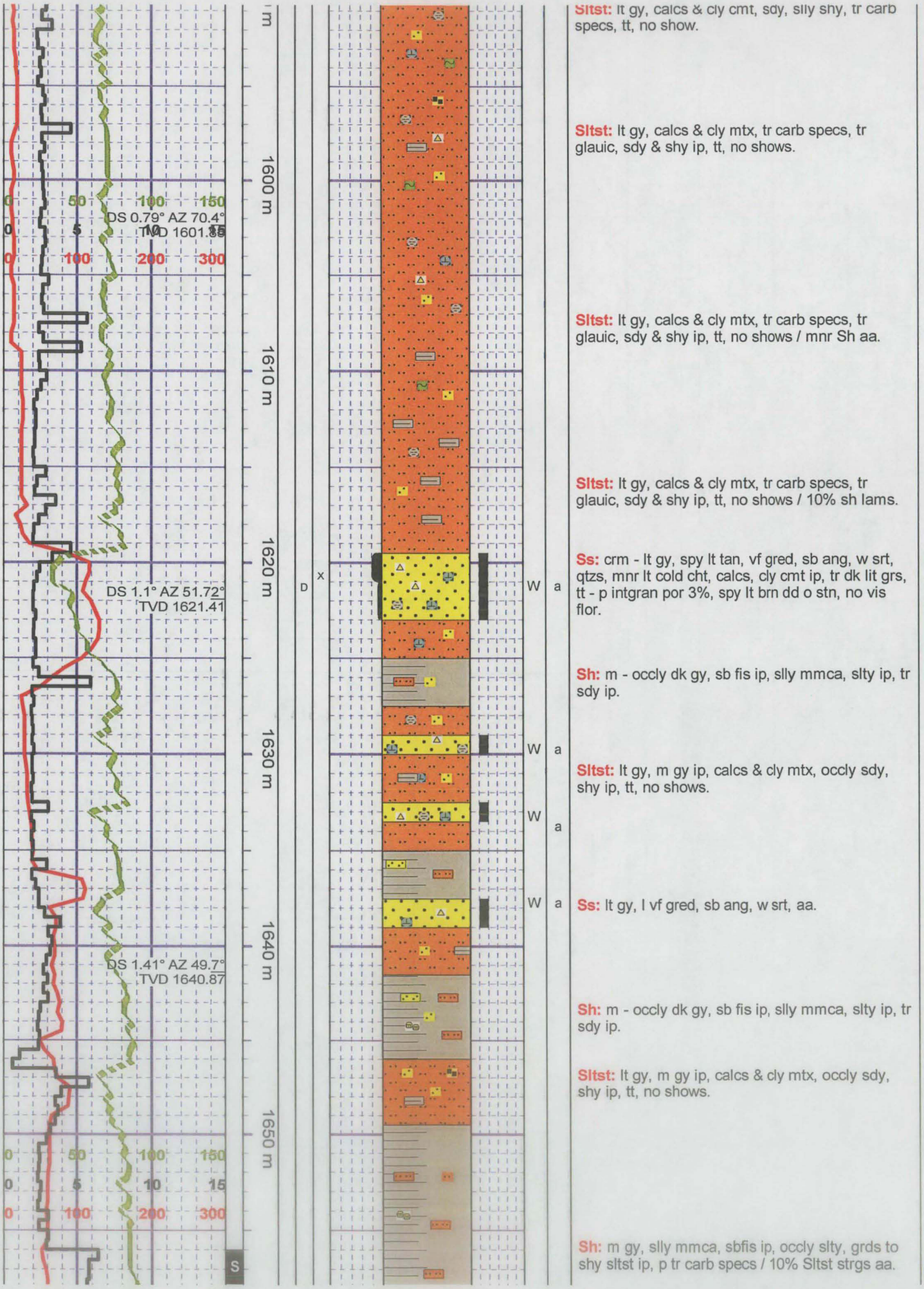
Ss: v lt gy, l vf gred, sb ang, w srt, calcs & cly cmt, tr glauic, slty, tr dk lit grs, grds to sltst ip, tr shy ip, tt, no shows.

Ss: v lt gy, l vf gred, sb ang, w srt, calcs & cly cmt, tr glauic, slty, tr dk lit grs, grds to sltst ip, tr shy ip, tt, no shows / mnr Sh lams aa.

Ss: v lt gy, l vf gred, sb ang, w srt, calcs & cly cmt, tr glauic, slty, tr dk lit grs, grds to sltst ip, tr shy ip, tt, no shows / mnr Sh lams aa.

Ss: v lt gy, l vf gred, sb ang, w srt, calcs & cly cmt, tr glauic, slty, tr dk lit grs, grds to sltst ip, tr shy ip, tt, no shows / mnr Sh lams aa.

Ss: v lt gy, l vf gred, sb ang, w srt, calcs & cly cmt, tr glauic, slty, tr dk lit grs, grds to sltst ip, tr shy ip, tt, no shows / mnr Sh lams aa.



Sltst: lt gy, calcs & cly cmt, sdy, slly shy, tr carb specs, tt, no show.

Sltst: lt gy, calcs & cly mtx, tr carb specs, tr glauic, sdy & shy ip, tt, no shows.

Sltst: lt gy, calcs & cly mtx, tr carb specs, tr glauic, sdy & shy ip, tt, no shows / mnr Sh aa.

Sltst: lt gy, calcs & cly mtx, tr carb specs, tr glauic, sdy & shy ip, tt, no shows / 10% sh lams.

Ss: crm - lt gy, spy lt tan, vf gred, sb ang, w srt, qtzs, mnr lt cold cht, calcs, cly cmt ip, tr dk lit grs, tt - p intgran por 3%, spy lt brn dd o stn, no vis flor.

Sh: m - occly dk gy, sb fis ip, slly mmca, slty ip, tr sdy ip.

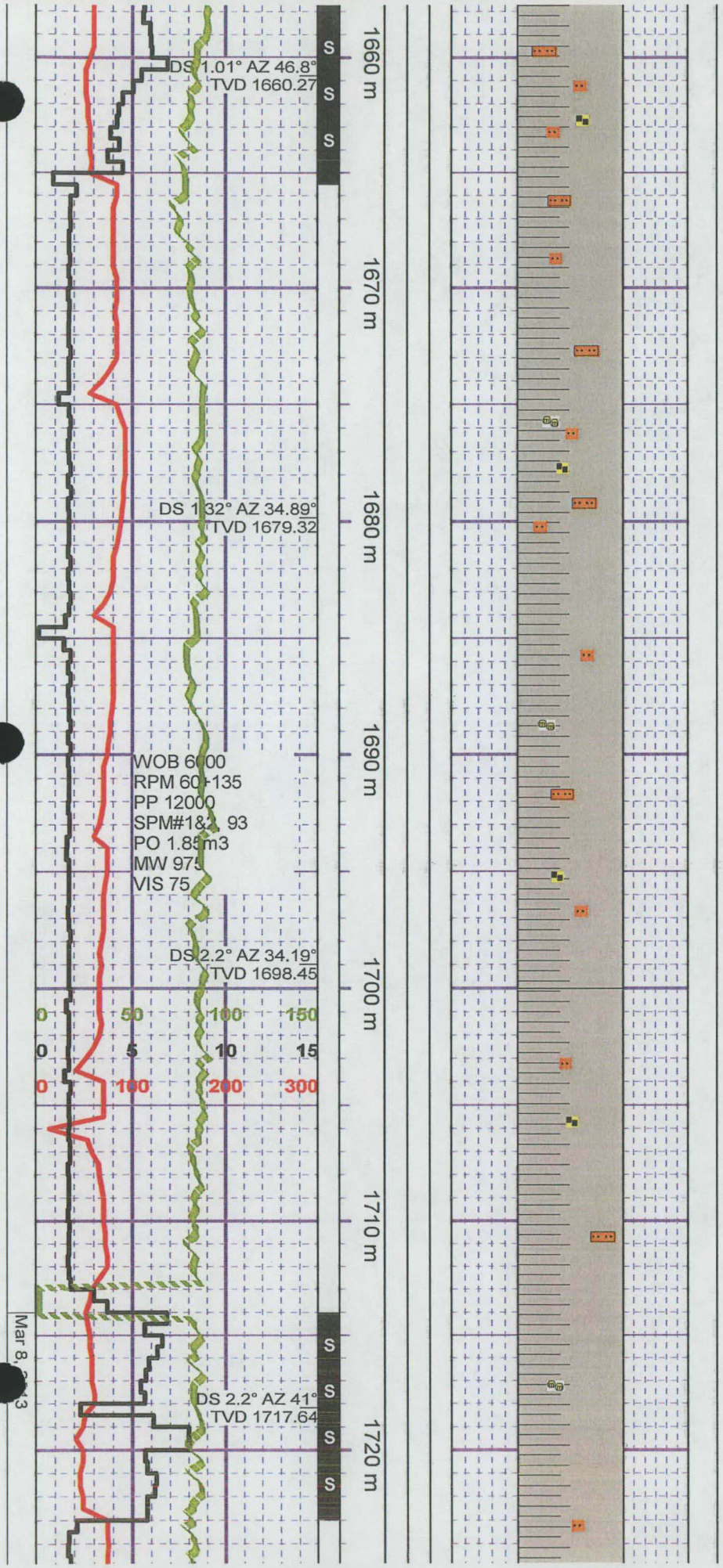
Sltst: lt gy, m gy ip, calcs & cly mtx, occly sdy, shy ip, tt, no shows.

Ss: lt gy, l vf gred, sb ang, w srt, aa.

Sh: m - occly dk gy, sb fis ip, slly mmca, slty ip, tr sdy ip.

Sltst: lt gy, m gy ip, calcs & cly mtx, occly sdy, shy ip, tt, no shows.

Sh: m gy, slly mmca, sbfis ip, occly slty, grds to shy sltst ip, p tr carb specs / 10% Sltst strgs aa.



Sh: m gy, slly mmca, sbfis ip, occly slty, grds to shy sltst ip, p tr carb specs / mnr Sltst strgs aa.

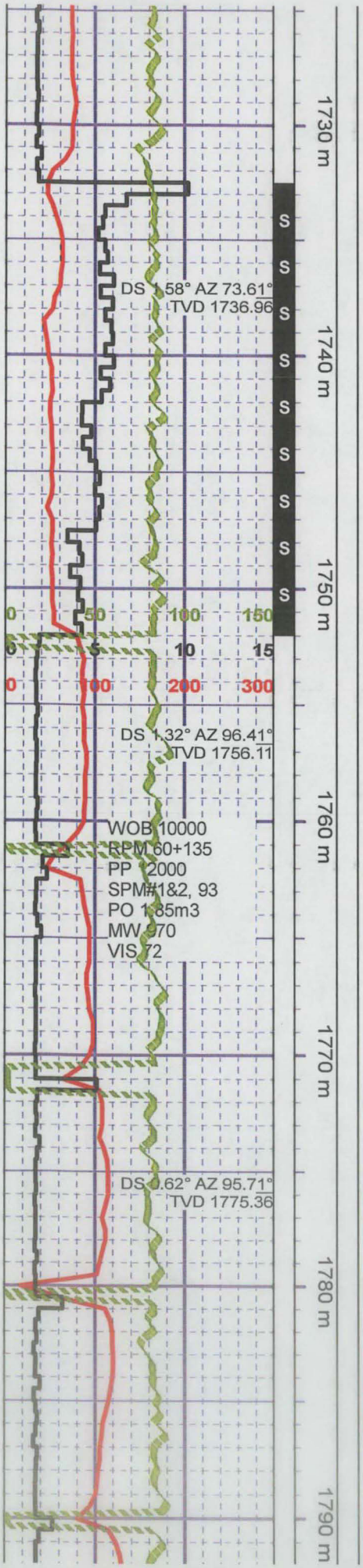
Sh: m gy, slly mmca, sbfis ip, occly slty, grds to shy sltst ip, p tr carb specs / tr Sltst strgs aa.

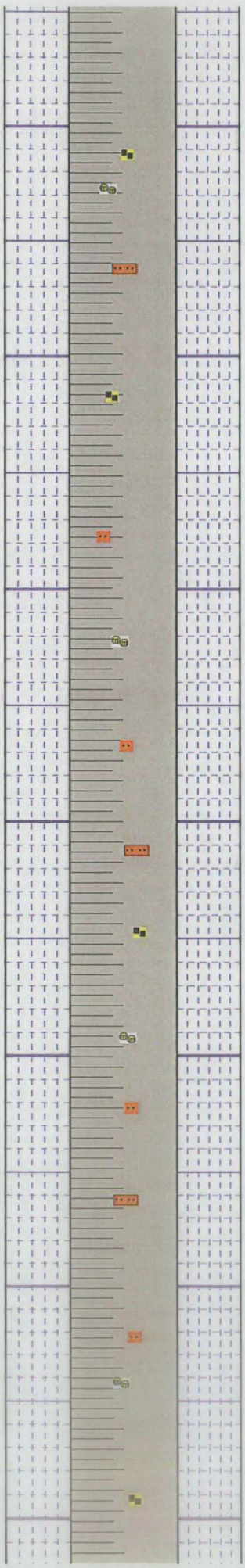
Sh: m gy, slly mmca, sbfis ip, tr slty, grds to shy sltst ip, p tr carb specs.

Sh: m gy, slly mmca, sbfis ip, tr slty, grds to shy sltst ip, p tr carb specs.

Sh: m - occly dk gy, slly mmca, sbfis ip, tr slty, p tr carb specs.

Sh: m - occly dk gy, slly mmca, sbfis, tr slty, p tr carb specs.





Sh: m - occly dk gy, slly mmca, sbfis, tr slty, p tr carb specs.

Sh: predly m gy, slly mmca, sbfis, tr slty, p tr carb specs.

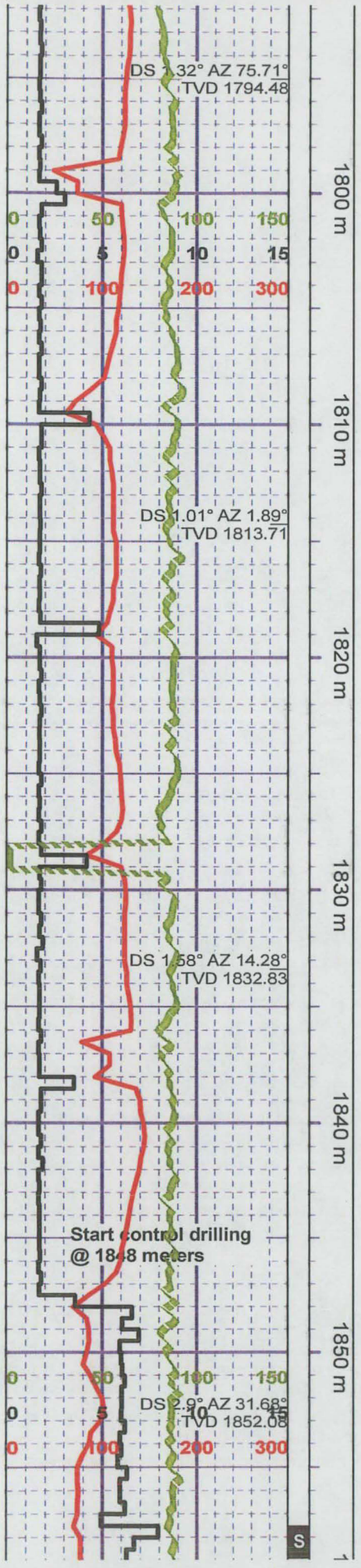
Sh: predly m gy, slly mmca, sbfis, tr slty, p tr carb specs.

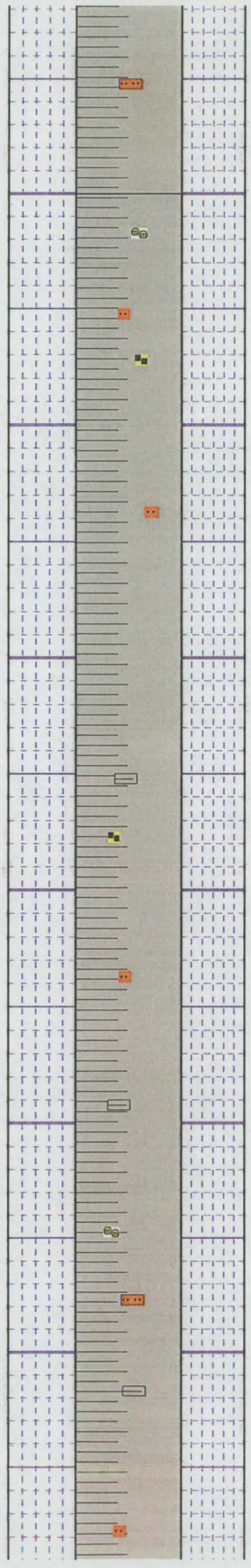
Sh: predly m gy, slly mmca, sbfis, tr slty, p tr carb specs / tr mnr Sltst strgs, m gy, cly cmt, slly calcs, shy, tt, no shows.

Sh: predly m gy, slly mmca, sbfis ip, tr slty, p tr carb specs / tr mnr Sltst strgs, m gy, cly cmt, slly calcs, shy, tt, no shows.

Sh: predly m gy, slly mmca, sbfis ip, tr slty, p tr carb specs / tr mnr Sltst strgs, m gy, cly cmt, slly calcs, shy, tt, no shows.

Sh: predly m gy, slly mmca, sbfis ip, slty ip, p tr carb specs / tr mnr Sltst strgs, m gy, cly cmt, slly calcs, shy, tt, no shows.





Sh: predly m gy, slly mmca, sbfis ip, slty ip, p tr carb specs / tr mnr Sltst strgs, m gy, cly cmt, slly calcs, shy, tt, no shows.

Sh: predly m gy, mnr dk gy, slly mmca, sbfis ip, slty ip, p tr carb specs.

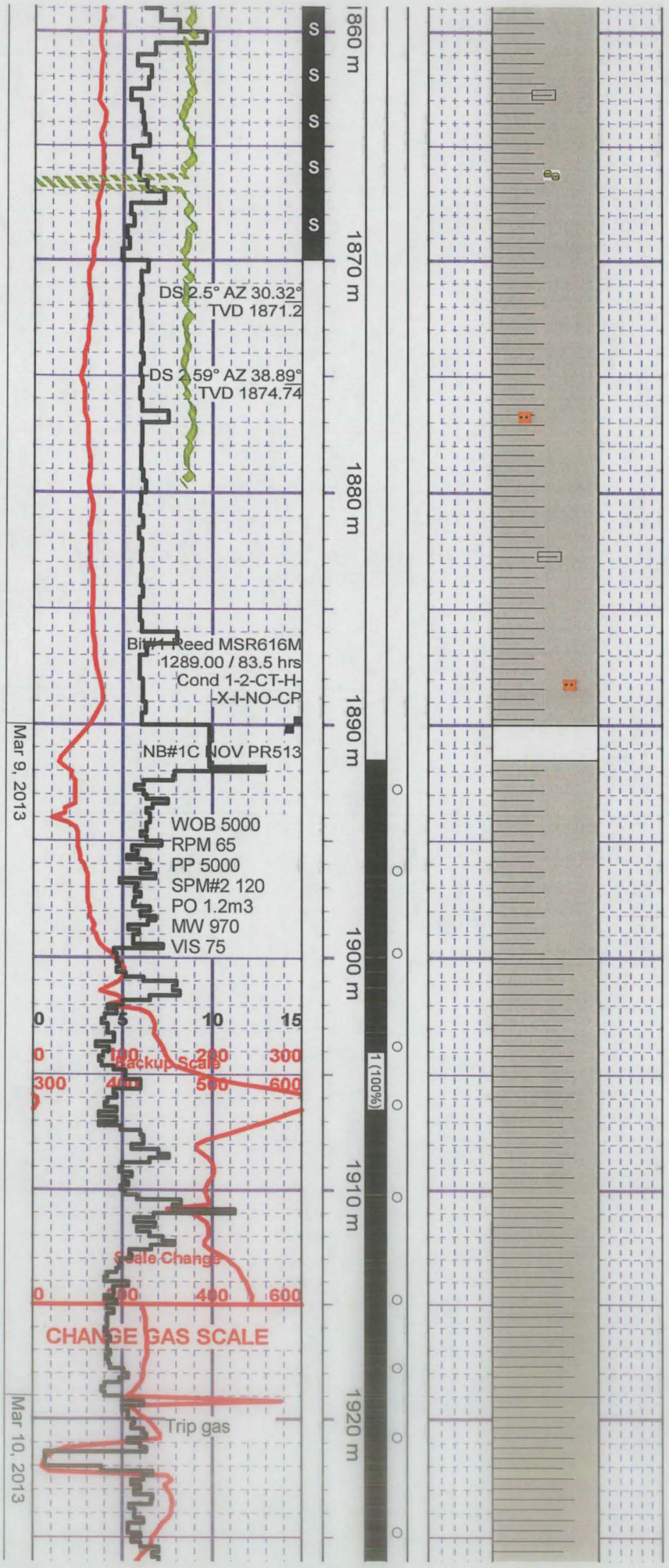
Sh: predly m gy, tr dk gy, slly mmca, sbfis ip, p tr slty ip, p tr carb specs.

Sh: predly m gy, tr dk gy, slly mmca, incrg sbfis, p tr slty ip, p tr carb specs.

Sh: predly m gy, incrg dk gy, slly mmca, sbfis, p tr slty ip, p tr carb specs.

Sh: predly m gy, mnr dkr gy, sbfis, slly mmca, tr slty ip / tr mnr Sltst lams, m gy, cly mtx, slly calcs, shy, tt, no shows.

Sh: predly m gy, mnr dkr gy, sbfis, modly frm, slly mmca, tr slty ip.



Sh: predly m gy, mnr dkr gy, sbfis, modly frm, slly mmca, tr slty ip.

Sh: predly m gy, mnr dkr gy, sbfis, modly frm, slly mmca, tr slty ip.

Sh: predly m gy, mnr dkr gy, sbfis, modly frm, slly mmca, tr slty ip.

Make 1.5 meter depth correction

Sh: m gy, frm, sbfis, slly mmca, slly slty, tr unident fos casts (bracs?) tr dk carb mat, no dry

Sh: aa, slly dkr, tr dk carb mat (pl rmns?), flor aa.

Sh: m gy, frm, sbfis, slly mmca, slly slty, tr unident fos casts (bracs?) tr dk carb mat, flor aa.

Sh: aa, grdg to dk gy.
Corepoint marker 1900m

Sh: dk gy, bcmg carb, aa / abnt fos casts aa &

Sh: m - dk gy, slly mmca, sb fis, incrg slty? tr dk carb mat aa, show aa.

Sh: dk gy, decrg fos casts, p tr carb mat, show aa.

Sh: dk gy, modly frm, sbfis, slly mmca, slly slty, p

Sh: dk gy aa, abnt fos casts (bracs?) aa / carb mat aa, no dry flor, v faint pale wh cut.

Sh: dk gy, modly frm, sbfis, slly mmca, slly slty, tr fos casts, tr dk carb mat, show aa.

Sh: dk gy, slly mmca, slly slty, tr fos & carb mat aa, flor aa.

Sh: dk gy, slly mmca, slly slty, sbfis, modly frm, no dry flor, v faint lt wh cut.

Sh: dk gy, incrg mmca, incrg slty, sbfis, modly frm, no dry flor, v faint lt wh yel cut.

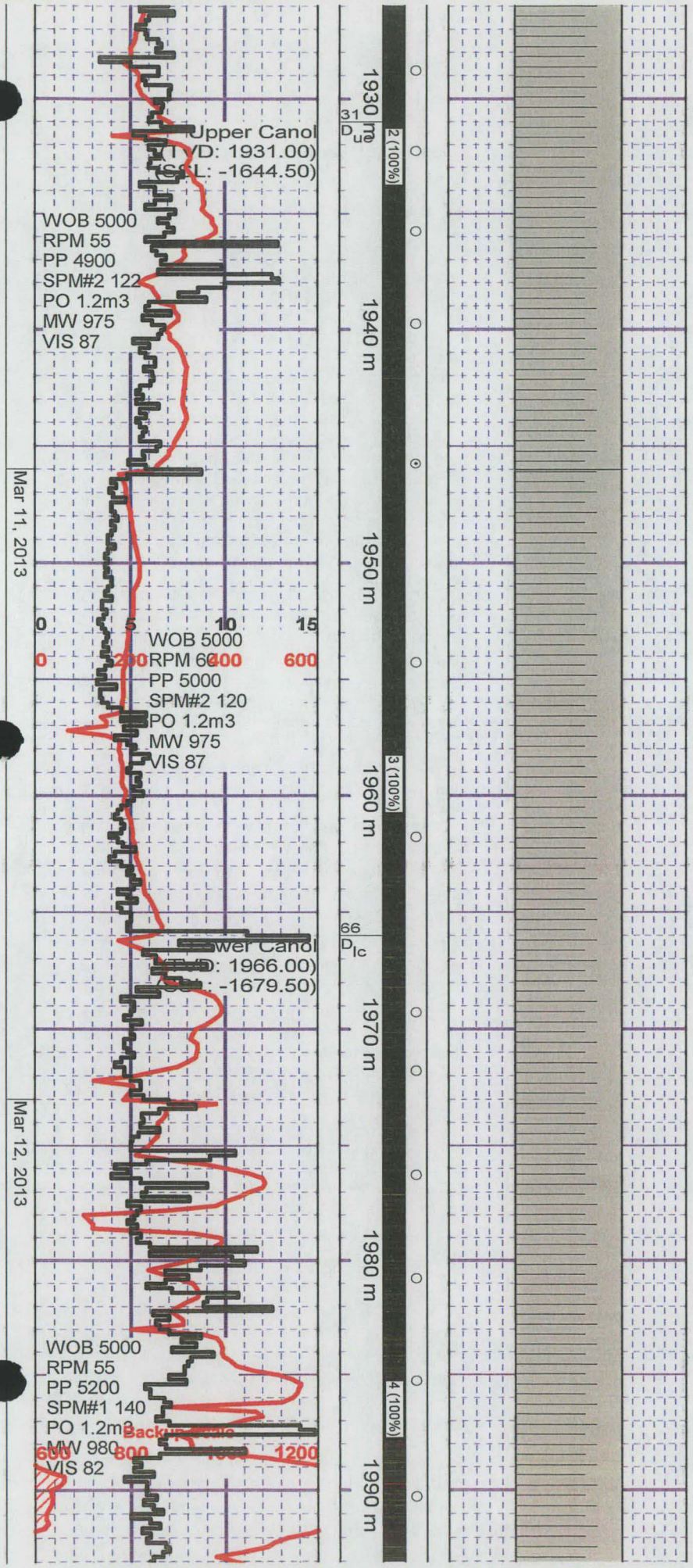
Sh: dk gy, incrg mmca, slty, sbfis, modly frm, no dry flor, v faint lt wh cut.

Sh: dk gy, sb fis, slly mmca, slty, tr dism pyr, tr v pale wh slow cloudy flor.

Sh: dk gy, sb fis, slly mmca, slty, tr dk carb specs

Sh: dk gy, sb fis, slly mmca, bcmg frm (slly sils?),

Sh: dk gy, sb fis, modly frm, slly mmca, tr slty,



Sh: dk gy, sb fis, modly frm, slly mmca, tr slty, mnr dk carb mat, tr pyr, show aa.

Sh: dk gy, sb fis, modly frm, slly mmca, tr slty, incrg dk carb mat, abnt spong spics, tr pl rmns?

Sh: dkr gy, sb fis, modly frm, slly mmca, slly slty, tr dk carb mat, tr spics, slow pale flor cut aa.

Sh: slly dkr gy, sb fis, slly mmca, sl spics, tr blk carb mat, no dry flor.

Upper Canol
(TVD: 1931.00)
(SSL: -1644.50)

Sh: v dk gy, sb fis, slly mmca, s[illegible] frm, tr blk carb mat, show aa.

Sh: v dk gy - blk, sb fis, slly mmca, slly slty, sft - modly frm, tr blk carb mat, show aa.

Sh: dk gy, sb fis, slly mmca, slly slty, sft - modly frm, tr blk carb mat, occ spics, show aa.

Sh: dk gy - dk gy brn, sb fis, slly slty, slly mmca, v abnt spics, tr dk carb mat (pl rmns), show aa.

Sh: dk gy - dk gy brn, sb fis, pyric, slly slty, slly mmca, v abnt spics, tr dk carb mat (pl rmns), fos

Sh: dk gy - dk gy brn, sb fis, slly slty, slly mmca, tr pyric, p tr spics, show aa.

Sh: dk gy, sb fis, slly slty, slly mmca, tr pyric, tr dk carb mat (pl rmns), tr spics aa, show aa.

Sh: aa / abnt fos casts (pels or ools) infilled / pyr, no dry flor, pale wh stmg cut.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), no dry flor, v pale lt wh cut flor.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), no dry flor, v faint to no show.

Sh: aa / fos casts (pels?) infilled / pyr.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), no dry flor, predly no show.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), faint to no show.

Sh: dk gy, sb fis, slly mmca, slly slty, modly frm, tr mnr carb mat (pl rms?), no dry flor, faint to no

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), show aa.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), show aa.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), show aa.

Sh: dk gy, sb fis, slly mmca, slly slty, abnt dism pyr, tr mnr carb mat (pl rms?), show aa.

Sh: dk gy, sb fis, slly mmca, modly frm, bcmg sils, slly slty, tr mnr carb mat (pl rms?), show

Lower Canol
(TVD: 1966.00)
(SSL: -1679.50)

Sh: dk gy, sb fis, slly mmca, modly frm, slly sils, carb, slly slty, no dry flor, faint pale wh cloudy cut.

Sh: aa, dism pyr.

Sh: dk gy - blk, slly mmca, frm - hd, sils? carb, tr slty, tr dism pyr, show aa.

Sh: aa, abnt carb mat.

Sh: dk gy - blky, slly mmca, frm - hd (sils), carb / abnt carb mat.

Sh: aa / abnt pyr, tr unident fos casts (pl rmns)

Sh: dk gy - blk, fis, splty, slly mmca, frm - hd (sils), tr pyric, no dry flor, faint pale slow wh

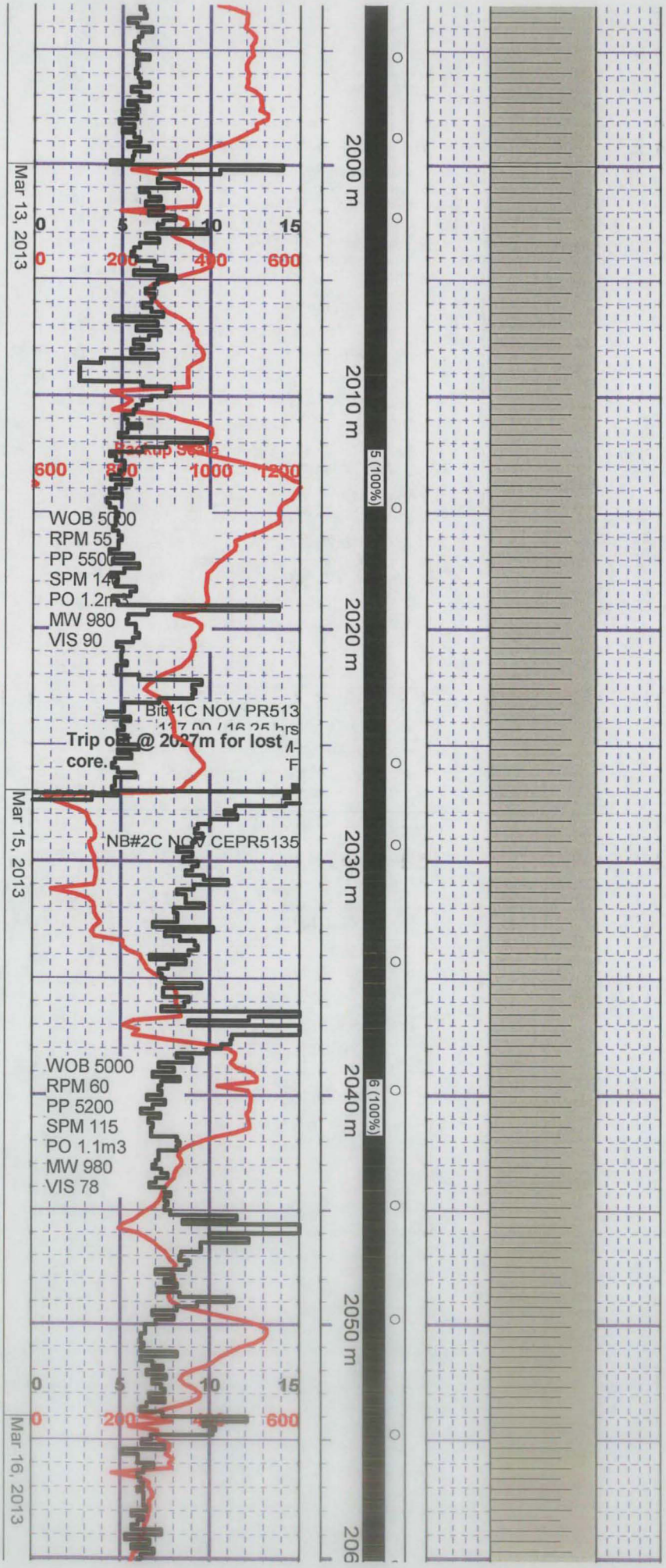
Sh: dk gy - blk, fis, splty, slly mmca, frm - hd (sils), tr pyric, no dry flor, faint pale slow wh

Sh: aa, occ carb mat, tr micro fracs infilled / carb mat & calc & tr pyr, shows aa.

Sh: dk gy, splty, slly mmca, frm - hd (sils), tr pyric, no dry flor, faint pale slow wh cloudy cut.

Sh: dk gy, frm - hd, sils, slly mmca, occ carb mat, show aa.

Sh: dk gy, hd, sils? slly mmca, occ carb mat (fos



casts & pl rmns?) show aa.

Sh: dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, show aa.

Sh: dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, v thin pyric lam, show aa.

Sh: dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, show aa.

Sh: dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, show aa.

Core# 5: No recovery at surface. Upper shoe backed off from bottom of inner tubes and core emptied out of tubes. Schlumberger wireline lost 200 lbs @ 1500m, then they lost 1200 lbs of weight @ 110 meters. Started recovering core from drill pipe after 3 stands. Core was mixed up in the first four tubes due to unorthodox lay down procedures (tubes & core possibly reversed). Tubes 5-10 were relatively in order, tubes 11-13 are mixed up as they were recovered from mouse hole after the core fell out of the drill pipe while in the mouse hole. The core was jammed in the pipe and we had to hit the pipe with a sledge hammer to free the core and the thread protector we had screwed on the bottom of the drill pipe to catch the core failed. We then pulled the mouse hole out and laved it down on the pipe racks and had

Sh: dk gy, hd, sils? slly mmca, pyric / thin lamd pyr and occ pyr nods, no dry flor, v pale slow cloudy wh cut flor.

were recovered from the outer core barrels at surface on the drill floor after the bit was removed and are relatively in order. Estimate almost full recovery.

Sh: dk gy, hd, sils? slly mmca, bcmg v slly calcs, dism pyr, occ carb mat, no dry flor, v pale wh slow cloudy cut.

Sh: dk gy, frm, slly sils, slly mmca, dism pyr, occ carb mat, no dry flor, v pale wh slow cloudy cut.

Sh: dk gy - blk, slly mmca, frm bcmg brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint

Sh: dk gy - blk, slly mmca, frm bcmg brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint

Sh: dk gy - blk, slly mmca, carb, frm, brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint

Sh: dk gy - blk, slly mmca, carb, frm, brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint slow wh cloudy cut.

Sh: blk, frm, brit, splty, slly sils, slly mmca, carb, tr pyric, mud invasion along sh lams, hydc odor? shows aa.

Sh: blk, frm, brit, splty, slly sils, slly mmca, carb, tr pyric, mud invasion along sh lams, hydc odor? shows aa.

Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, incrg calcs, tr pyric, shows aa.

Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, calcs, tr pyric, shows aa

Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, calcs, tr pyric, dk carb mat (pl

Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, calcs, bcmg slty, dk carb mat (pl

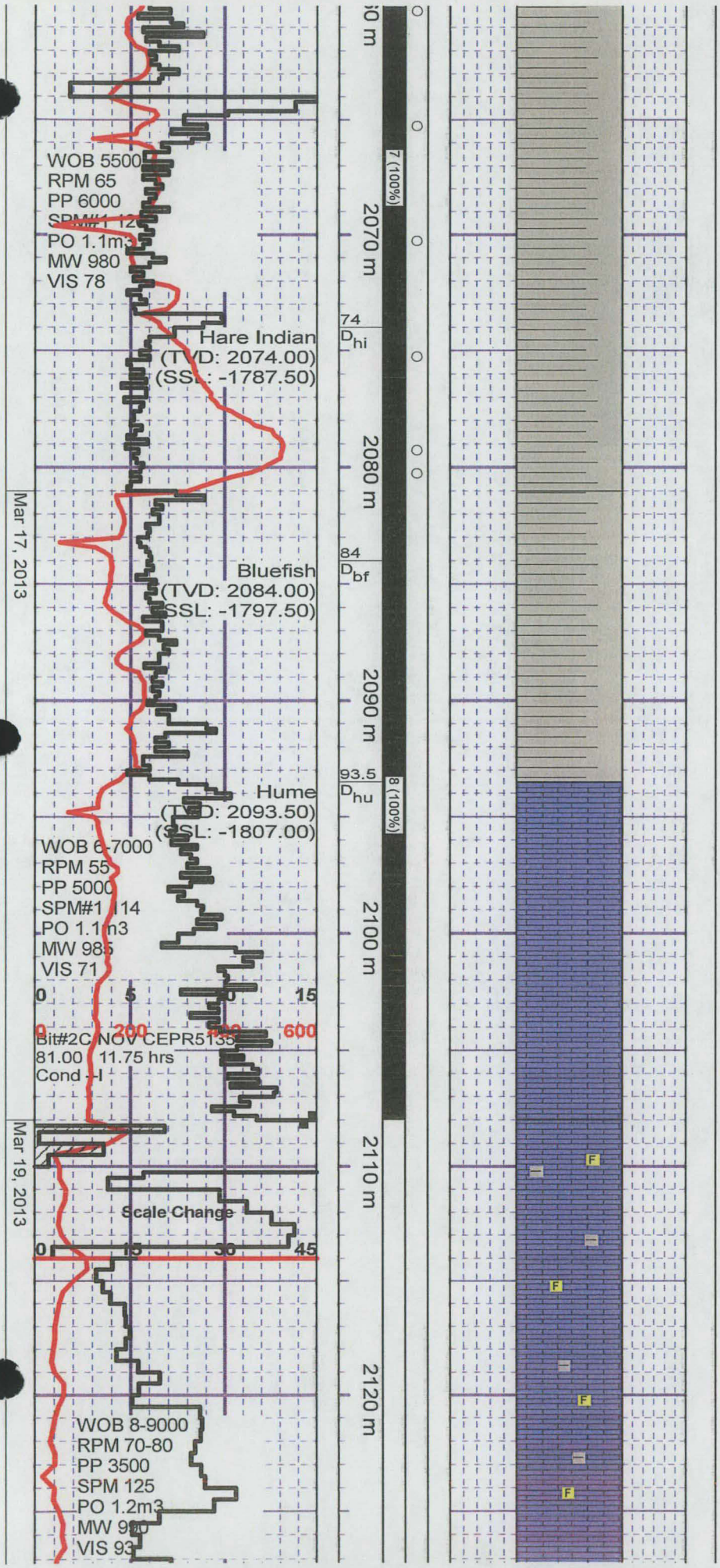
Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, v slly calcs, tr pyric, dk carb mat (pl

Sh: v dk gy, frm, brit, slly sils?, slly mmca, carb, tr pyric, tr dk carb mat (pl rmns?), shows aa.

Sh: v dk gy - blk, frm, brit, slly sils?, slly mmca, carb, tr dk carb mat (pl rmns?), shows aa

Sh: v dk gy - blk, frm, brit, sils?, slly mmca, carb, tr dism pyr, tr dk carb mat (pl rmns?), shows aa

Sh: v dk gy - blk, frm, brit, slly sils?, slly mmca, tr



pyr, carb, tr dk carb mat (pl rmns?), shows aa

Sh: v dk gy - blk, frm, brit, slly sils?, slly mmca, carb, tr dk carb mat (pl rmns?), shows aa

Sh: v dk gy - blk, frm, brit, slly sils?, slly mmca, dism pyr, carb, tr dk carb mat (pl rmns?), no dry flor, faint slow pale wh cloudy cut.

Sh: v dk gy - blk, frm, brit, slly sils?, slly mmca, dism pyr, carb, tr dk carb mat (pl rmns?), show

Sh: v dk gy, frm, splty, brit, sils? v slly mmca, carb, show aa.

Sh: v dk gy, frm, splty, brit, sils? v slly mmca, carb, slly slty, show aa.

Sh: v dk gy, frm, splty, brit, sils? v sll carb, slly slty, show aa.

Hare Indian
(TVD: 2074.00)
(SSL: -1787.50)

Sh: v dk gy, frm, splty, brit, sils?

Sh: v dk gy, frm, splty, brit, sils? v slly mmca, dk carb mat (pl rmns?), slly slty, show aa.

Sh: v dk gy, frm, splty, brit, sils? v slly mmca, v abnt spotted (pels?) dk carb mat (grds to bit?), show aa but slly brighter.

Sh: aa

Sh: v dk gy, bcmg less brit, slly mmca, carb, slly slty, dk carb mat, tr unident fos casts, shows aa

Sh: v dk gy, modly brit, plty, frm, slly sils, mmca, abnt rdd carb spots, sho

Bluefish
(TVD: 2084.00)
(SSL: -1797.50)

Sh: aa / dism pyr.

Sh: v dk gy, plty, sb fis, slly mmca, carb, v slly calcs, show aa

Sh: dk gy, plty, fis, sils, incrg calcs, carb, abnt fos casts infilled / pyr, carb mat aa, show aa.

Sh: aa, incrg calcs.

Sh: v dk gy, modly brit, plty, frm, calcs, slly sils, slly mmca, abnt fos casts occly infilled / pyr, carb

Sh: aa, v calcs.

Ls: lt brn, fragal wkest, rexld ip f

Hume
(TVD: 2093.50)
(SSL: -1807.00)

unident fos casts (cor) infilled w

Ls: lt brn, fltst, micr mtx, rexld ip

amph, unident fos casts (cor) infilled with cxln fros

Ls: aa

Ls: lt brn, mdst - wkest, slly arg, unident fos shad, dns, no shows

Ls: brn, fltst? aa, shy, (mud comtaminated)

Ls: lt brn, wkest? unident fos shad, slly arg, dns, no shows

Ls: brn, wkest, occ unident fos frags, gasts? unident cor casts infilled / calc, slly arg, dns, no vis shows.

Ls: brn, mdst - wkest, occly rexld f xln, mnr unident fos shad, dns, no shows.

Ls: gy brn, mdst - wkest, unident fos shad & debris, slly arg, no vis por or shows.

Ls: gy brn, mdst - wkest, unident fos shad & debris, slly arg, no vis por or shows.

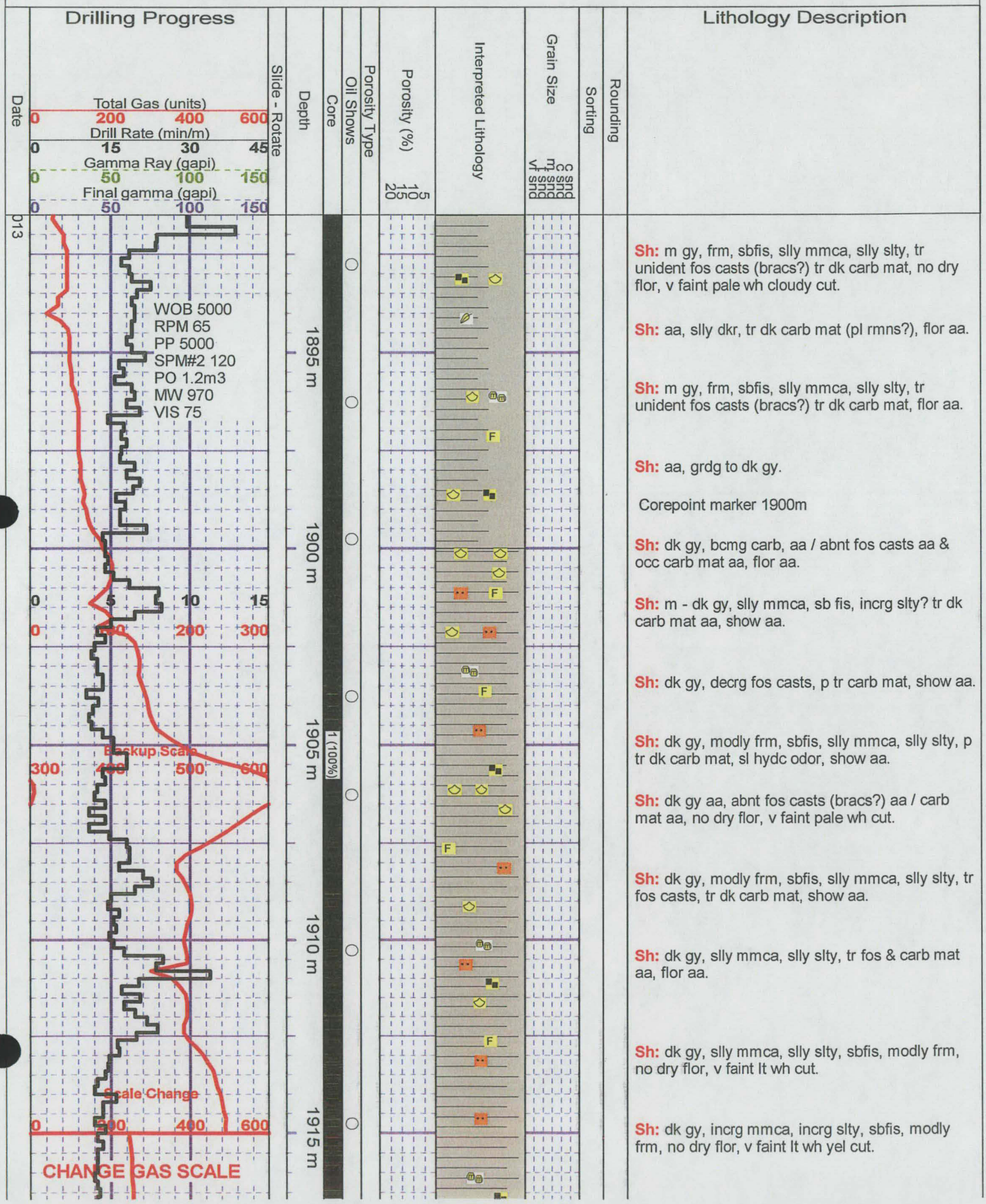
Ls: gy brn, mdst - wkest, unident fos shad & debris, slly arg, no vis por or shows.

Ls: gy brn, mdst - wkest, unident fos shad & debris, slly arg, no vis por or shows.

Mar 20, 2013
Date
Final gamma (gapi)
0 50 100 150
Gamma Ray (gapi)
0 50 100 150
Drill Rate (min/m)
0 15 30 45
Total Gas (units)
0 200 400 600
Drilling Progress
Slide - Rotate
2130 m
2140 m
Depth
Core
Oil Shows
Porosity Type
5 10 15 20
Porosity (%)
F
Interpreted Lithology
c snd
m snd
f snd
vf snd
Grain Size
Sorting
Rounding
Ls: gy brn, mdst - wkest, sft, chky, unident fos shad & debris, slly arg, no vis por or shows.
Ls: gy brn, mdst - wkest, sft, chky, unident fos shad & debris, slly arg, no vis por or shows.
TD: 2146 Meters on Mar 20, 2013 @ 01:00 hrs.
Lithology Description

Expanded Core Log (1:120) Mar 9, 2013

Core #1 Interval: 1891.50m to 1919.00m Cut: 27.5m Recovered: 27.5m (100%)



Sh: m gy, frm, sbfis, slly mmca, slly slty, tr unident fos casts (bracs?) tr dk carb mat, no dry flor, v faint pale wh cloudy cut.

Sh: aa, slly dkr, tr dk carb mat (pl rmns?), flor aa.

Sh: m gy, frm, sbfis, slly mmca, slly slty, tr unident fos casts (bracs?) tr dk carb mat, flor aa.

Sh: aa, grdg to dk gy.

Corepoint marker 1900m

Sh: dk gy, bcmg carb, aa / abnt fos casts aa & occ carb mat aa, flor aa.

Sh: m - dk gy, slly mmca, sb fis, incrg slty? tr dk carb mat aa, show aa.

Sh: dk gy, decrg fos casts, p tr carb mat, show aa.

Sh: dk gy, modly frm, sbfis, slly mmca, slly slty, p tr dk carb mat, sl hydc odor, show aa.

Sh: dk gy aa, abnt fos casts (bracs?) aa / carb mat aa, no dry flor, v faint pale wh cut.

Sh: dk gy, modly frm, sbfis, slly mmca, slly slty, tr fos casts, tr dk carb mat, show aa.

Sh: dk gy, slly mmca, slly slty, tr fos & carb mat aa, flor aa.

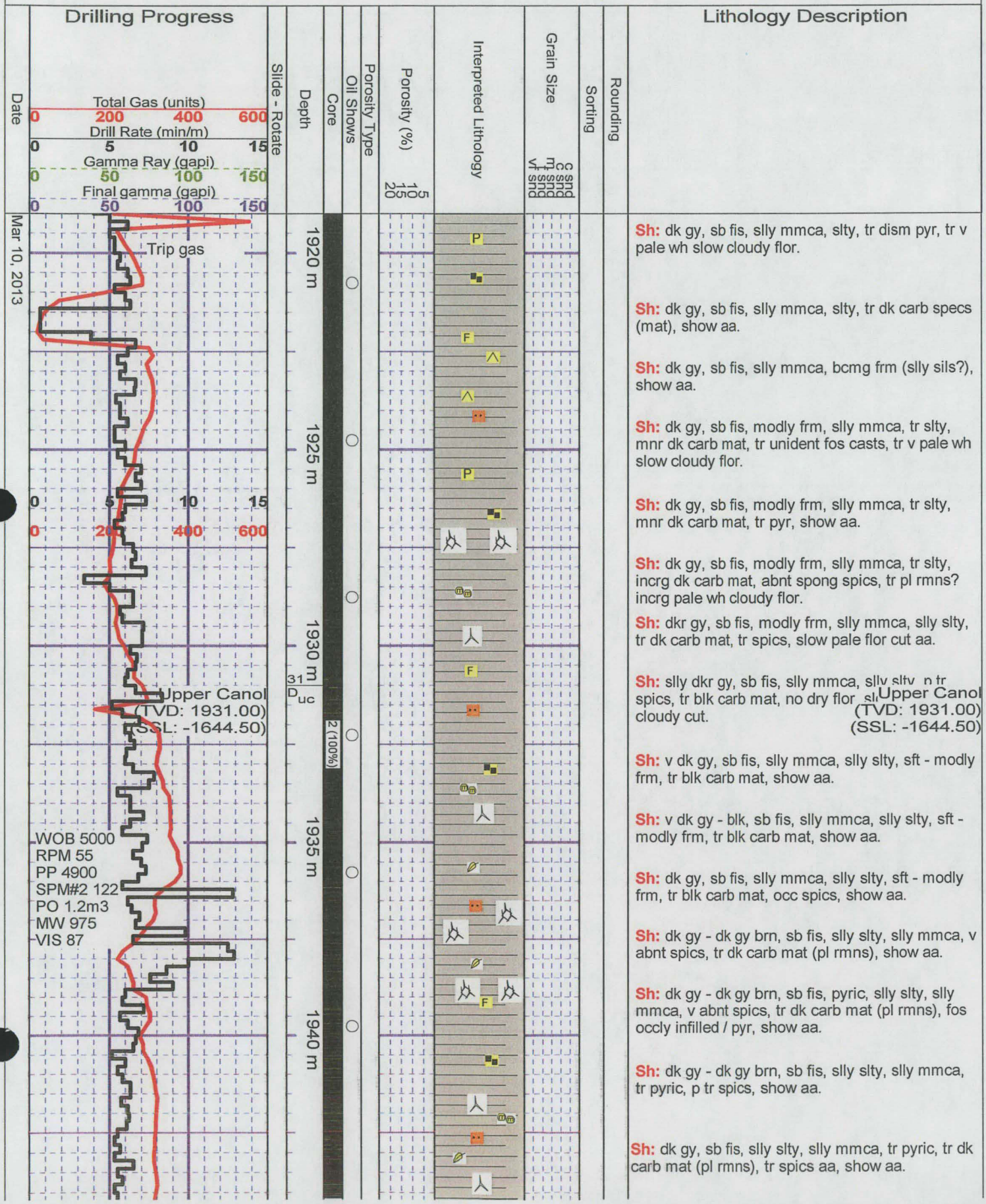
Sh: dk gy, slly mmca, slly slty, sbfis, modly frm, no dry flor, v faint lt wh cut.

Sh: dk gy, incrg mmca, incrg slty, sbfis, modly frm, no dry flor, v faint lt wh yel cut.

Drilling Progress	Slide - Rotate	Depth	Core	Oil Shows	Porosity Type	Porosity (%)	Interpreted Lithology	Grain Size	Sorting	Rounding	Lithology Description
Date Final gamma (gapi) 0 50 100 150 Gamma Ray (gapi) 0 50 100 150 Drill Rate (min/m) 0 5 10 15 Total Gas (units) 0 200 400 600			○			5 10 15 20		c sndm sndf sndvf snd			**Sh:** dk gy, incrg mmca, slty, sbfis, modly frm, no dry flor, v faint lt wh cut.

Expanded Core Log (1:120) Mar 10, 2013

Core #2 Interval: 1919.00m to 1946.00m Cut: 27m Recovered: 27m (100%)



Lithology Description

Sh: dk gy, sb fis, slly mmca, slty, tr dism pyr, tr v pale wh slow cloudy flor.

Sh: dk gy, sb fis, slly mmca, slty, tr dk carb specs (mat), show aa.

Sh: dk gy, sb fis, slly mmca, bcmg frm (slly sils?), show aa.

Sh: dk gy, sb fis, modly frm, slly mmca, tr slty, mnr dk carb mat, tr unident fos casts, tr v pale wh slow cloudy flor.

Sh: dk gy, sb fis, modly frm, slly mmca, tr slty, mnr dk carb mat, tr pyr, show aa.

Sh: dk gy, sb fis, modly frm, slly mmca, tr slty, incrg dk carb mat, abnt spong spics, tr pl rmns? incrg pale wh cloudy flor.

Sh: dkr gy, sb fis, modly frm, slly mmca, slly slty, tr dk carb mat, tr spics, slow pale flor cut aa.

Sh: slly dkr gy, sb fis, slly mmca, slly slty, tr spics, tr blk carb mat, no dry flor, slow cloudy cut.

Upper Canol
(TVD: 1931.00)
(SSL: -1644.50)

Sh: v dk gy, sb fis, slly mmca, slly slty, sft - modly frm, tr blk carb mat, show aa.

Sh: v dk gy - blk, sb fis, slly mmca, slly slty, sft - modly frm, tr blk carb mat, show aa.

Sh: dk gy, sb fis, slly mmca, slly slty, sft - modly frm, tr blk carb mat, occ spics, show aa.

Sh: dk gy - dk gy brn, sb fis, slly slty, slly mmca, v abnt spics, tr dk carb mat (pl rmns), show aa.

Sh: dk gy - dk gy brn, sb fis, pyric, slly slty, slly mmca, v abnt spics, tr dk carb mat (pl rmns), fos occly infilled / pyr, show aa.

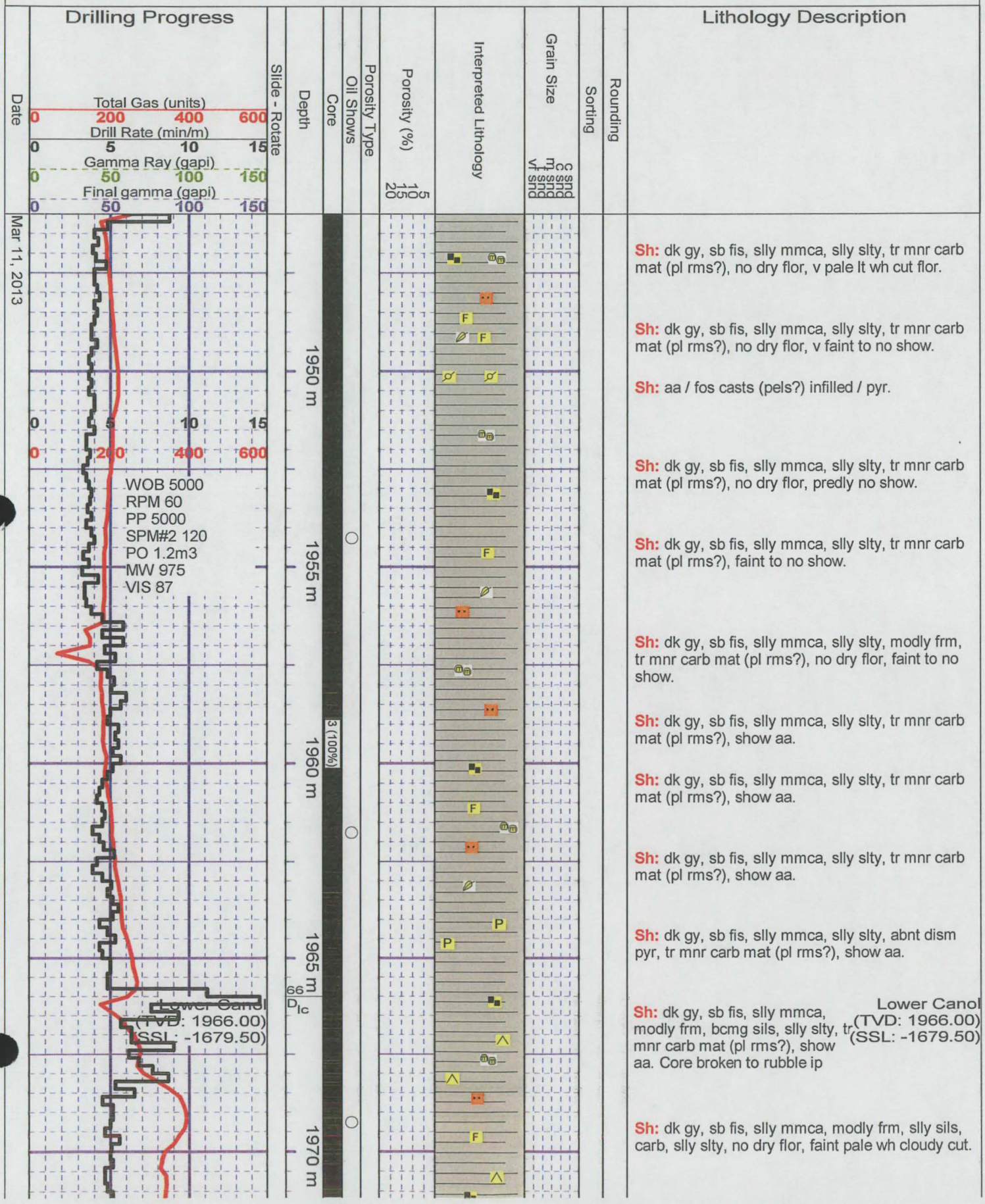
Sh: dk gy - dk gy brn, sb fis, slly slty, slly mmca, tr pyric, p tr spics, show aa.

Sh: dk gy, sb fis, slly slty, slly mmca, tr pyric, tr dk carb mat (pl rmns), tr spics aa, show aa.

Date
Final gamma (gapi)
0 50 100 150
Gamma Ray (gapi)
0 50 100 150
Drill Rate (min/m)
0 5 10 15
Total Gas (units)
0 200 400 600
Drilling Progress
Slide - Rotate
Depth
1945 m
Core
Oil Shows
Porosity Type
5 10 15 20
Porosity (%)
P
P
Interpreted Lithology
c snd
m snd
f snd
vf snd
Grain Size
Sorting
Rounding
Sh: aa / abnt fos casts (pels or ools) infilled / pyr, no dry flor, pale wh stmg cut.
Lithology Description

Expanded Core Log (1:120) Mar 11, 2013

Core #3 Interval: 1946.00m to 1973.00m Cut: 27m Recovered: 27m (100%)



Lithology Description

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), no dry flor, v pale lt wh cut flor.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), no dry flor, v faint to no show.

Sh: aa / fos casts (pels?) infilled / pyr.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), no dry flor, predly no show.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), faint to no show.

Sh: dk gy, sb fis, slly mmca, slly slty, modly frm, tr mnr carb mat (pl rms?), no dry flor, faint to no show.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), show aa.

Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), show aa.

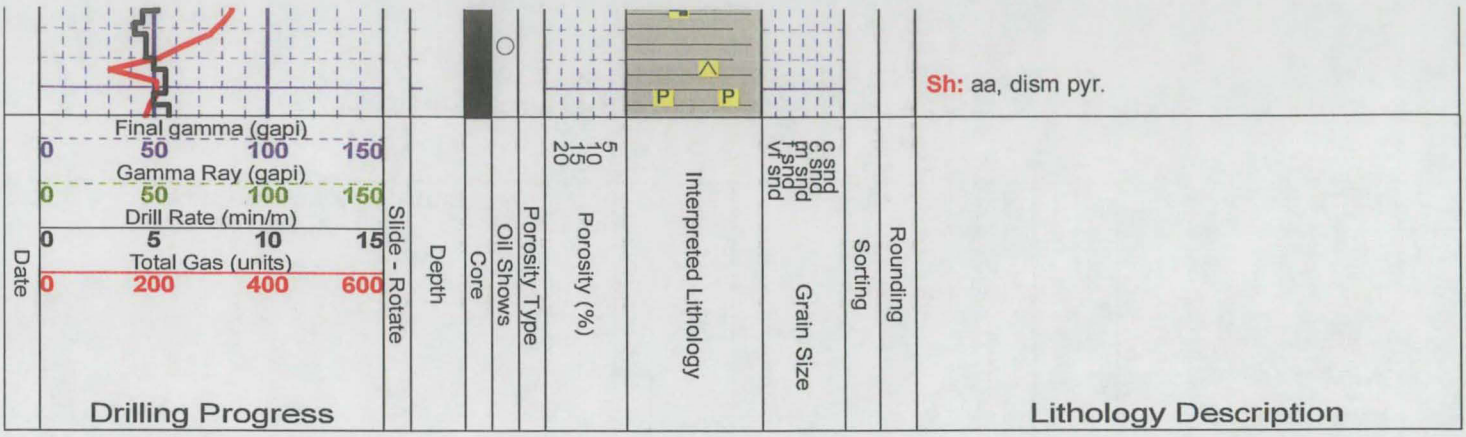
Sh: dk gy, sb fis, slly mmca, slly slty, tr mnr carb mat (pl rms?), show aa.

Sh: dk gy, sb fis, slly mmca, slly slty, abnt dism pyr, tr mnr carb mat (pl rms?), show aa.

Sh: dk gy, sb fis, slly mmca, modly frm, bcmg sils, slly slty, tr mnr carb mat (pl rms?), show aa. Core broken to rubble ip

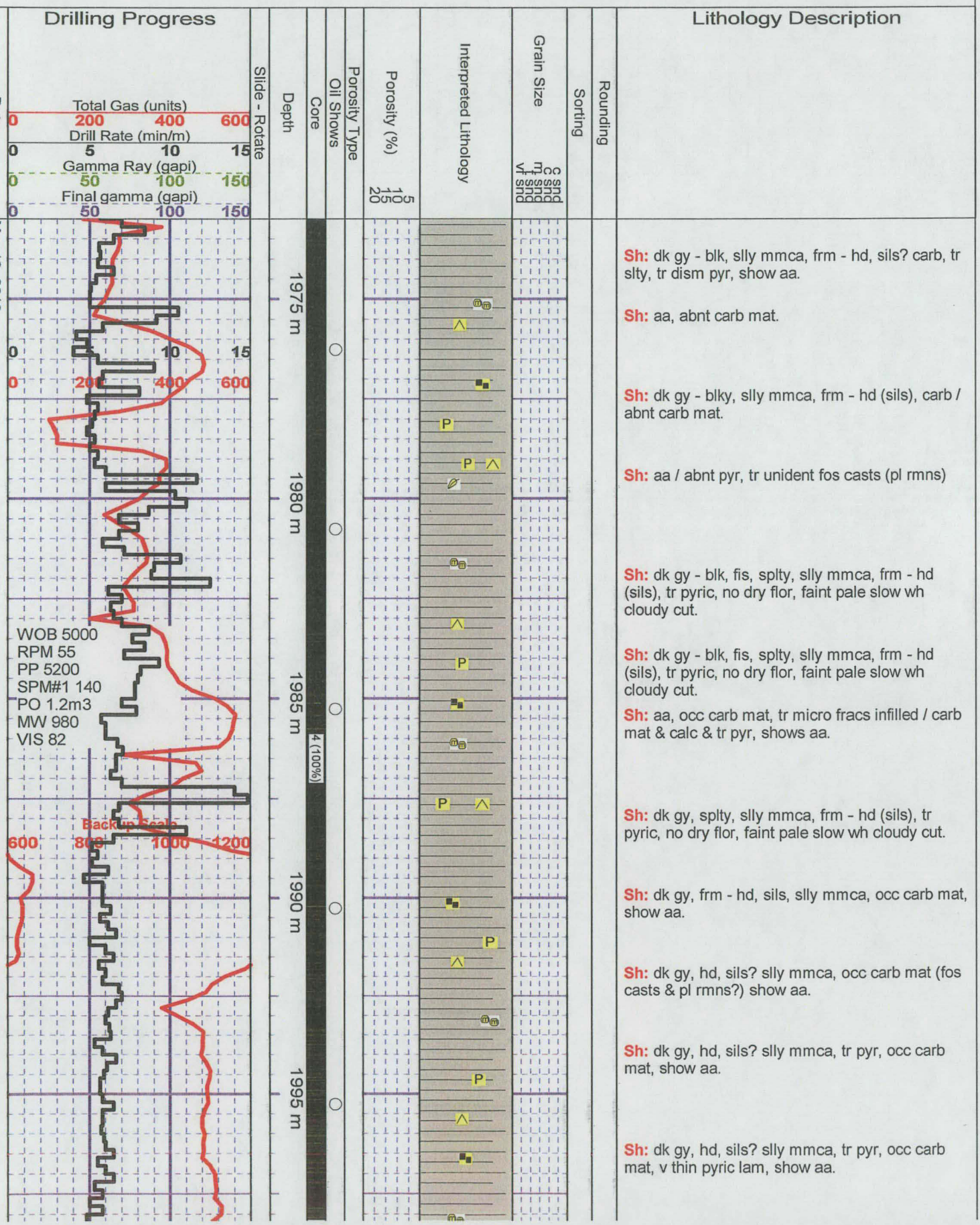
Lower Canol
(TVD: 1966.00)
(SSL: -1679.50)

Sh: dk gy, sb fis, slly mmca, modly frm, slly sils, carb, slly slty, no dry flor, faint pale wh cloudy cut.


Final gamma (gapi)
0 50 100 150
Gamma Ray (gapi)
0 50 100 150
Drill Rate (min/m)
0 5 10 15
Total Gas (units)
0 200 400 600
Slide - Rotate
Depth
Core
Oil Shows
Porosity Type
Porosity (%)
5 10 15 20
Interpreted Lithology
P
P
c sand
m sand
f sand
vf sand
Grain Size
Sorting
Rounding
Sh: aa, dism pyr.
Date
Drilling Progress
Lithology Description

Expanded Core Log (1:120) Mar 12, 2013

Core #4 Interval: 1973.00m to 2000.00m Cut: 27m Recovered: 27m (100%)



Lithology Description

Sh: dk gy - blk, slly mmca, frm - hd, sils? carb, tr slty, tr dism pyr, show aa.

Sh: aa, abnt carb mat.

Sh: dk gy - blky, slly mmca, frm - hd (sils), carb / abnt carb mat.

Sh: aa / abnt pyr, tr unident fos casts (pl rmns)

Sh: dk gy - blk, fis, splty, slly mmca, frm - hd (sils), tr pyric, no dry flor, faint pale slow wh cloudy cut.

Sh: dk gy - blk, fis, splty, slly mmca, frm - hd (sils), tr pyric, no dry flor, faint pale slow wh cloudy cut.

Sh: aa, occ carb mat, tr micro fracs infilled / carb mat & calc & tr pyr, shows aa.

Sh: dk gy, splty, slly mmca, frm - hd (sils), tr pyric, no dry flor, faint pale slow wh cloudy cut.

Sh: dk gy, frm - hd, sils, slly mmca, occ carb mat, show aa.

Sh: dk gy, hd, sils? slly mmca, occ carb mat (fos casts & pl rmns?) show aa.

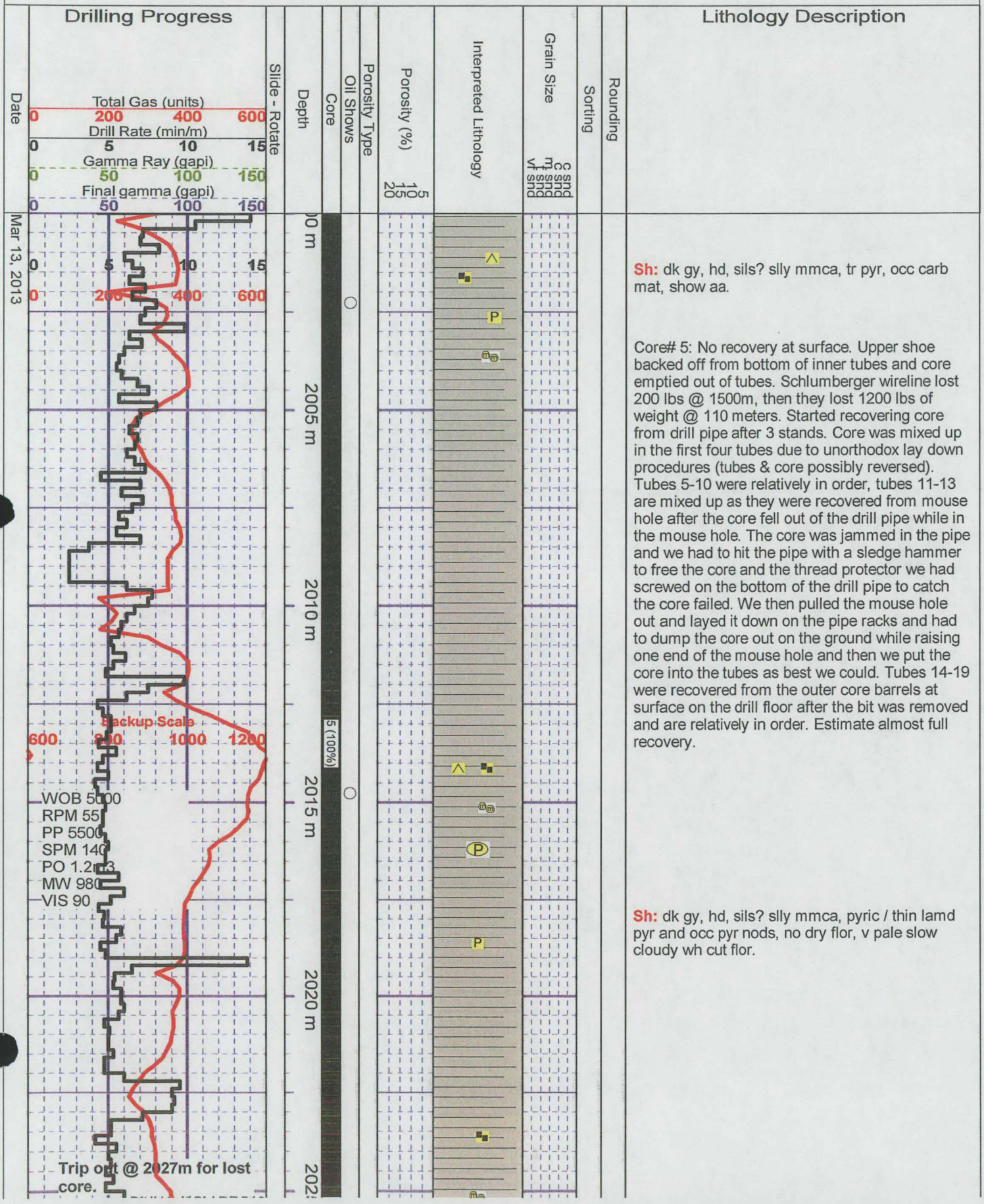
Sh: dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, show aa.

Sh: dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, v thin pyric lam, show aa.

Drilling Progress	Slide - Rotate	Depth	Core	Oil Shows	Porosity Type	Porosity (%)	Interpreted Lithology	Grain Size	Sorting	Rounding	Lithology Description
Date Final gamma (gapi) 0 50 100 150 Gamma Ray (gapi) 0 50 100 150 Drill Rate (min/m) 0 5 10 15 Total Gas (units) 0 200 400 600		200				5 10 15 20	P	c snd m snd f snd vf snd			**Sh:** dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, show aa.

Expanded Core Log (1:120) Mar 13, 2013

Core #5 Interval: 2000.00m to 2027.00m Cut: 27m Recovered: 27m (100%)



Sh: dk gy, hd, sils? slly mmca, tr pyr, occ carb mat, show aa.

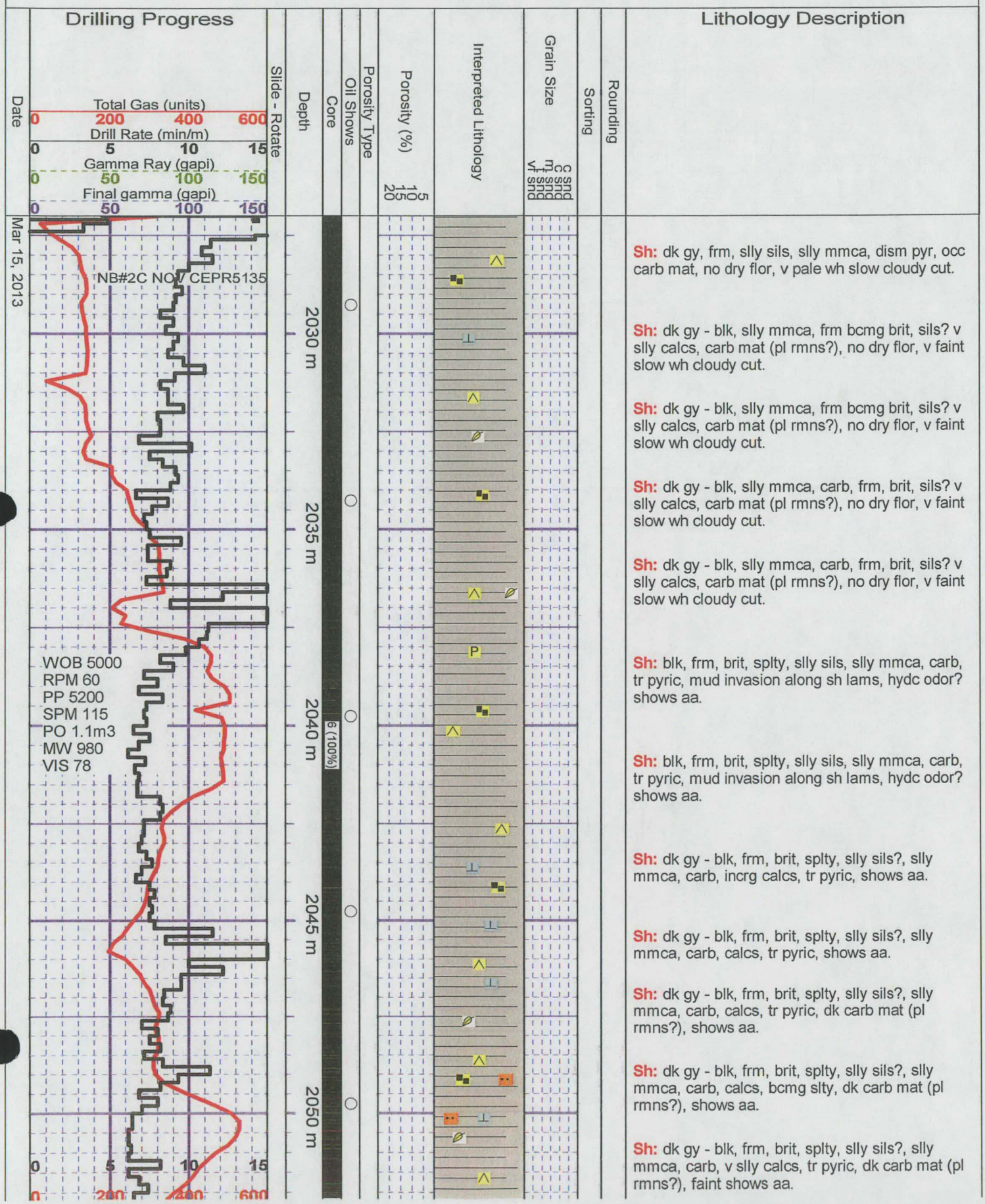
Core# 5: No recovery at surface. Upper shoe backed off from bottom of inner tubes and core emptied out of tubes. Schlumberger wireline lost 200 lbs @ 1500m, then they lost 1200 lbs of weight @ 110 meters. Started recovering core from drill pipe after 3 stands. Core was mixed up in the first four tubes due to unorthodox lay down procedures (tubes & core possibly reversed). Tubes 5-10 were relatively in order, tubes 11-13 are mixed up as they were recovered from mouse hole after the core fell out of the drill pipe while in the mouse hole. The core was jammed in the pipe and we had to hit the pipe with a sledge hammer to free the core and the thread protector we had screwed on the bottom of the drill pipe to catch the core failed. We then pulled the mouse hole out and layed it down on the pipe racks and had to dump the core out on the ground while raising one end of the mouse hole and then we put the core into the tubes as best we could. Tubes 14-19 were recovered from the outer core barrels at surface on the drill floor after the bit was removed and are relatively in order. Estimate almost full recovery.

Sh: dk gy, hd, sils? slly mmca, pyric / thin lamd pyr and occ pyr nods, no dry flor, v pale slow cloudy wh cut flor.

Bit#10, NOV PR513
137.00 / 16.25 hrs
Cond 1-1-BT-M-
-I-NO-DTF
0
10
15
Final gamma (gapi)
0
50
100
150
Gamma Ray (gapi)
0
50
100
150
Drill Rate (min/m)
0
5
10
15
Total Gas (units)
0
200
400
600
Drilling Progress
Slide - Rotate
Depth
5 m
Core
Oil Shows
Porosity Type
Porosity (%)
5
10
15
20
Interpreted Lithology
P
Grain Size
c snd
c snd
m snd
f snd
vf snd
Sorting
Rounding
Lithology Description
Sh: dk gy, hd, sils? slly mmca, bcmg v slly calcs, dism pyr, occ carb mat, no dry flor, v pale wh slow cloudy cut.
Date

Expanded Core Log (1:120) Mar 15, 2013

Core #6 Interval: 2027.00m to 2054.00m Cut: 27m Recovered: 27m (100%)



Sh: dk gy, frm, slly sils, slly mmca, dism pyr, occ carb mat, no dry flor, v pale wh slow cloudy cut.

Sh: dk gy - blk, slly mmca, frm bcmg brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint slow wh cloudy cut.

Sh: dk gy - blk, slly mmca, frm bcmg brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint slow wh cloudy cut.

Sh: dk gy - blk, slly mmca, carb, frm, brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint slow wh cloudy cut.

Sh: dk gy - blk, slly mmca, carb, frm, brit, sils? v slly calcs, carb mat (pl rmns?), no dry flor, v faint slow wh cloudy cut.

Sh: blk, frm, brit, splty, slly sils, slly mmca, carb, tr pyric, mud invasion along sh lams, hydc odor? shows aa.

Sh: blk, frm, brit, splty, slly sils, slly mmca, carb, tr pyric, mud invasion along sh lams, hydc odor? shows aa.

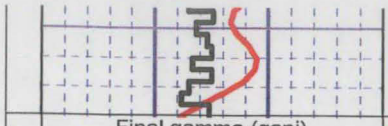
Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, incrg calcs, tr pyric, shows aa.

Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, calcs, tr pyric, shows aa.

Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, calcs, tr pyric, dk carb mat (pl rmns?), shows aa.

Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, calcs, bcmg slty, dk carb mat (pl rmns?), shows aa.

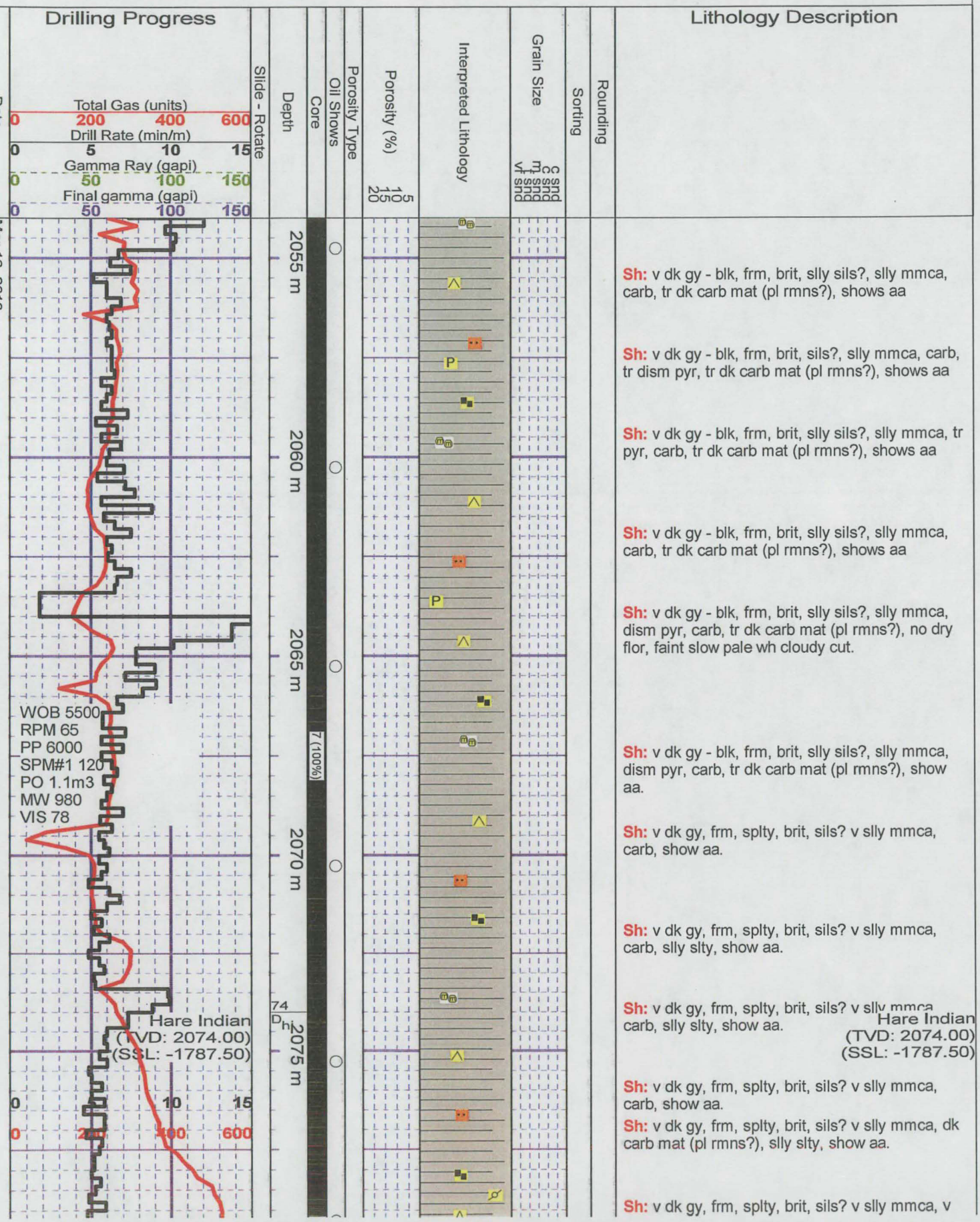
Sh: dk gy - blk, frm, brit, splty, slly sils?, slly mmca, carb, v slly calcs, tr pyric, dk carb mat (pl rmns?), faint shows aa.



Date	Drilling Progress	Slide - Rotate	Depth	Core	Oil Shows	Porosity Type	Porosity (%)	Interpreted Lithology	Grain Size	Sorting	Rounding	Lithology Description
	Final gamma (gapi) 0 50 100 150 Gamma Ray (gapi) 0 50 100 150 Drill Rate (min/m) 0 5 10 15 Total Gas (units) 0 200 400 600						5 10 15 20		c snd m snd f snd vf snd			**Sh:** v dk gy, frm, brit, slly sils?, slly mmca, carb, tr pyric, tr dk carb mat (pl rmns?), shows aa.

Expanded Core Log (1:120) Mar 16, 2013

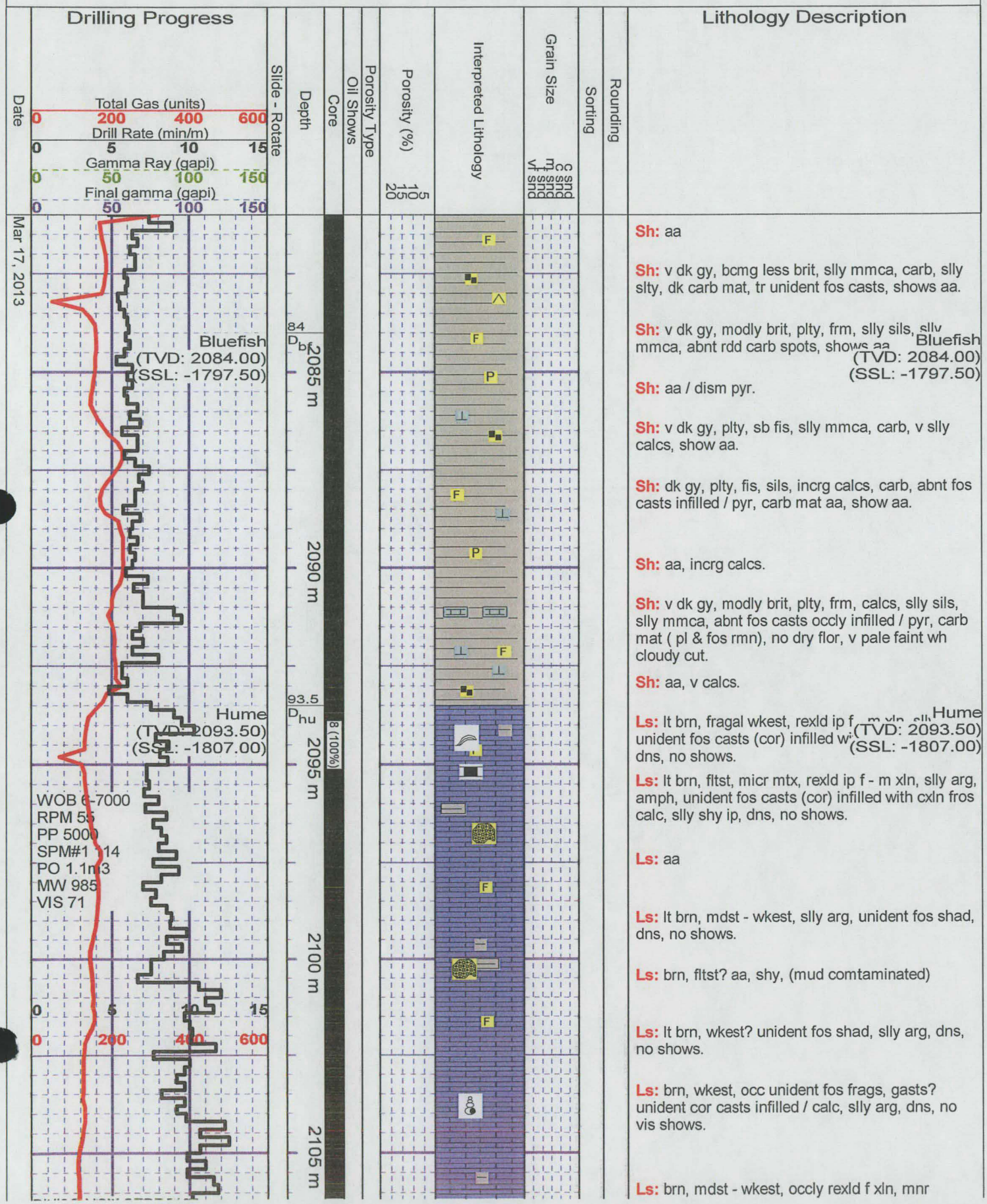
Core #7 Interval: 2054.00m to 2081.00m Cut: 27m Recovered: 27m (100%)

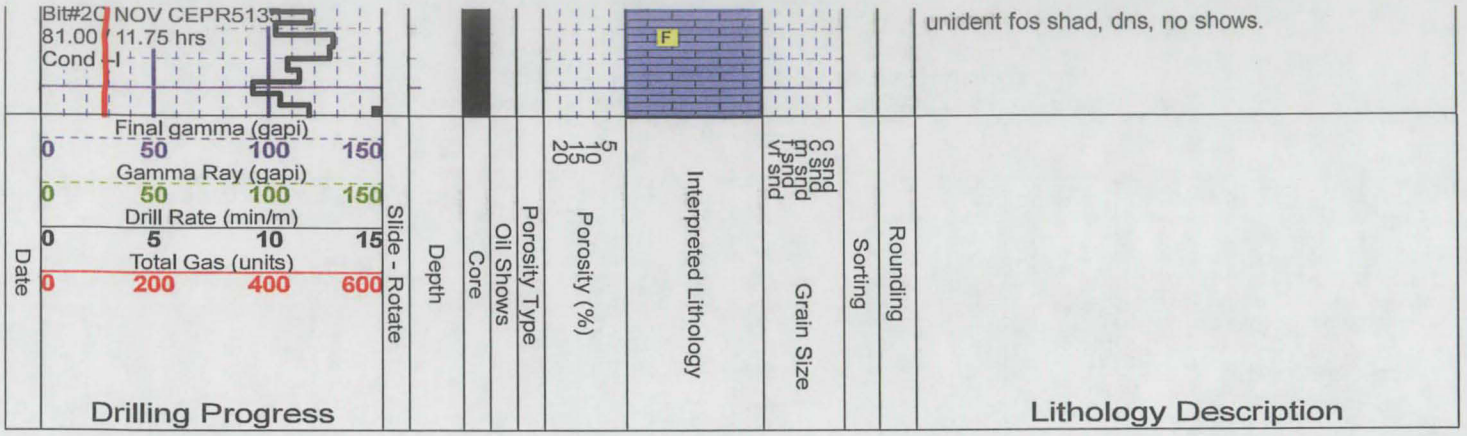


Final gamma (gapi)
0 50 100 150
Gamma Ray (gapi)
0 50 100 150
Drill Rate (min/m)
0 5 10 15
Total Gas (units)
0 200 400 600
Drilling Progress
Slide - Rotate
Depth
2080 m
Core
Oil Shows
Porosity Type
Porosity (%)
5
10
15
20
Interpreted Lithology
P
Grain Size
c snd
m snd
f snd
vf snd
Sorting
Rounding
Lithology Description
abnt spotted (pels?) dk carb mat (grds to bit?), show aa but slly brighter.
Date

Expanded Core Log (1:120) Mar 17, 2013

Core #8 Interval: 2081.00m to 2108.00m Cut: 27m Recovered: 27m (100%)



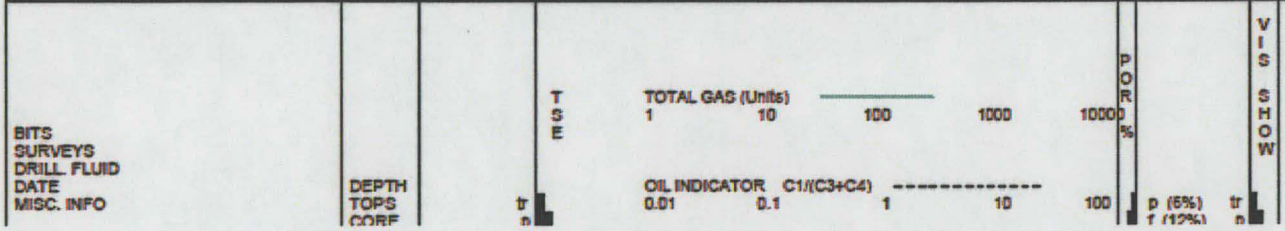

Bit#2C NOV CEPR513
81.00 ' 11.75 hrs
Cond
Final gamma (gapi)
0 50 100 150
Gamma Ray (gapi)
0 50 100 150
Drill Rate (min/m)
0 5 10 15
Total Gas (units)
0 200 400 600
Date
Drilling Progress
Slide - Rotate
Depth
Core
Oil Shows
Porosity Type
5
10
15
20
Porosity (%)
F
Interpreted Lithology
c snd
m snd
f snd
vf snd
Grain Size
Sorting
Rounding
unident fos shad, dns, no shows.
Lithology Description

VII. Mud Gas log

Continental Laboratories Ltd. — Hydrocarbon Well Log

WELL NAME:	COPRC MIRROR LAKE N-20		
LOCATION:	UWI 200C011L094P1699 LICENSE# EL470		
COMPANY:	Conocophillips Canada Resources Ltd.		
PROVINCE:	Northwest Territories	FILE:	19342
ELEVATION K.B.:	286.50 m	HOLE SIZE:	222 mm from 601 m to m
ELEVATION G.L.:	281.30 m		
LOGGING INTERVAL:	601 m to m		
LOGGING DATES:	26/ 2/2013 to	MUD SYSTEM:	Invert from: 601 m to: m
PERSONNEL:	Rahil Kiani / Fayaz Rehman		
INSTRUMENTATION:	MP 2300 Chromat		

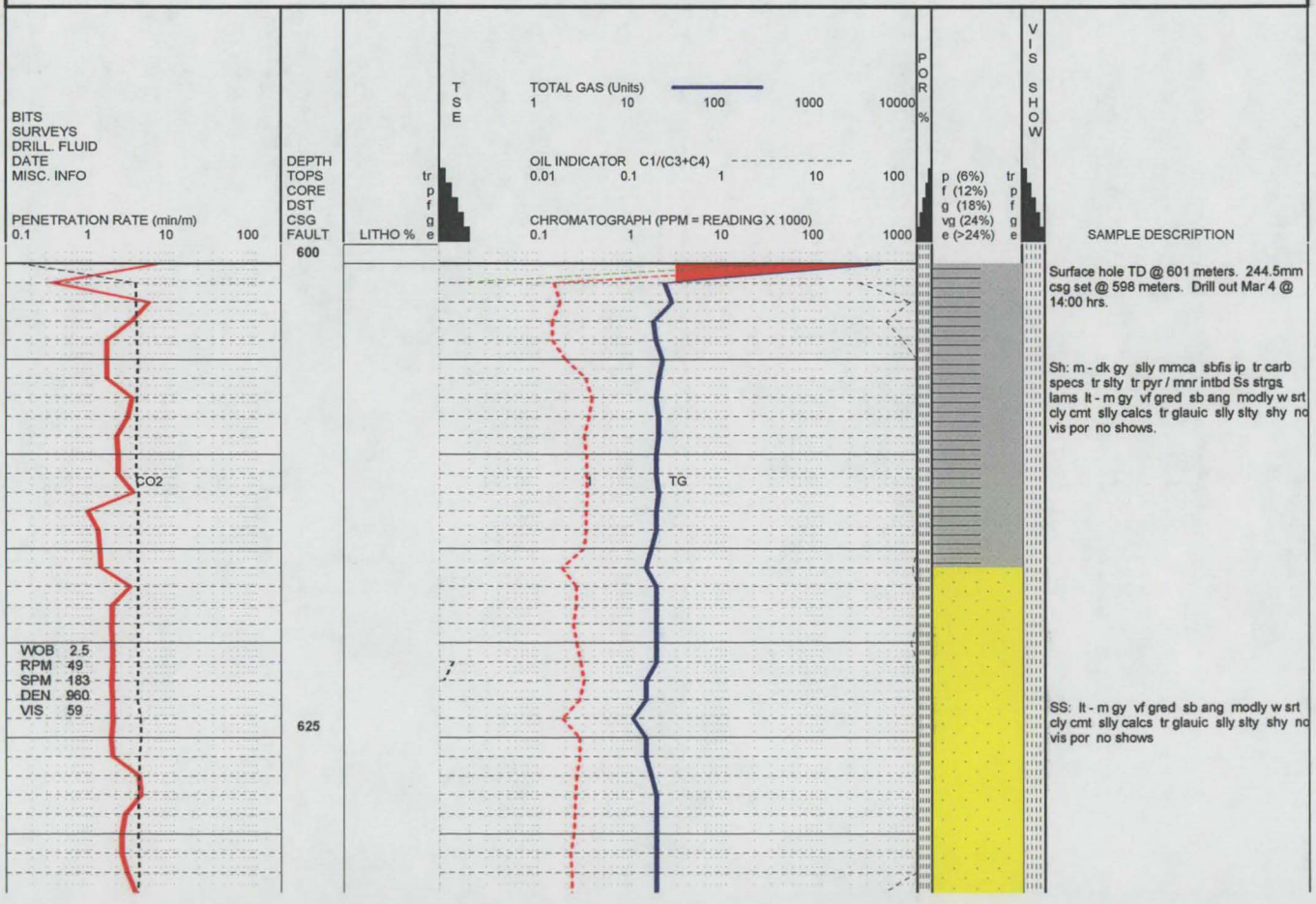
ALL LITHOLOGIC SYMBOLS ARE CANSTRAT COMPATIBLE

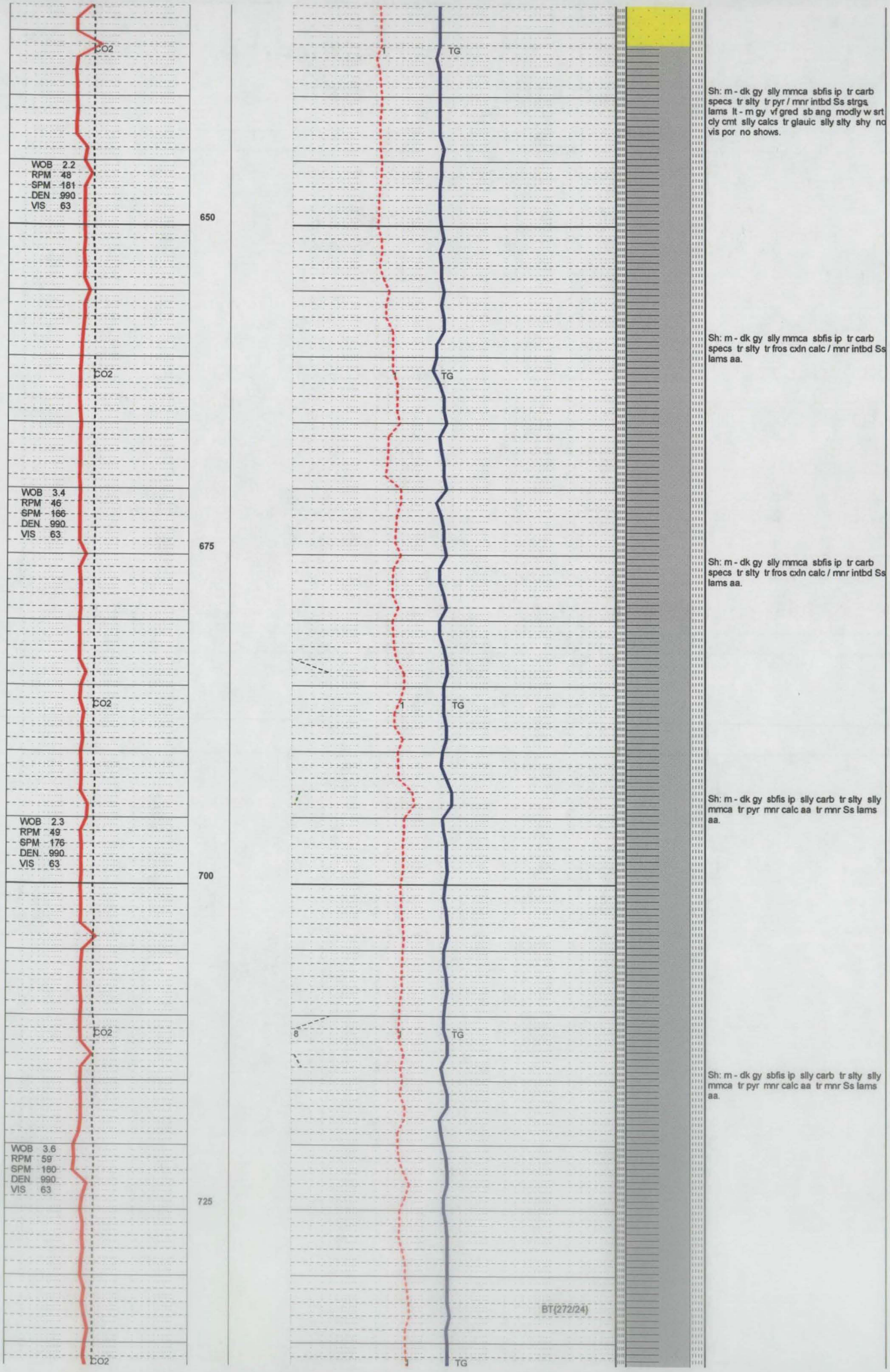


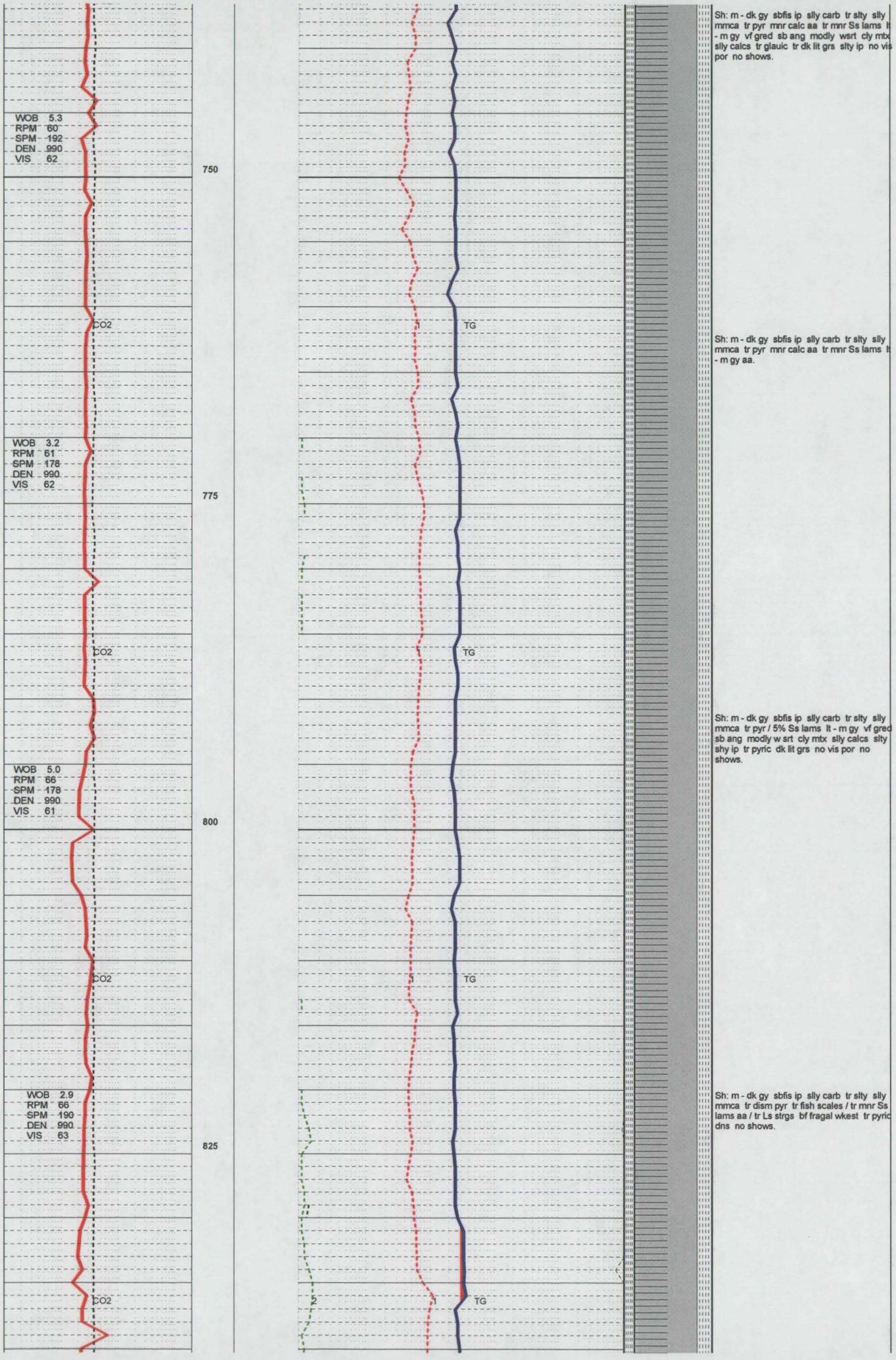
Continental Laboratories Ltd. — Hydrocarbon Well Log

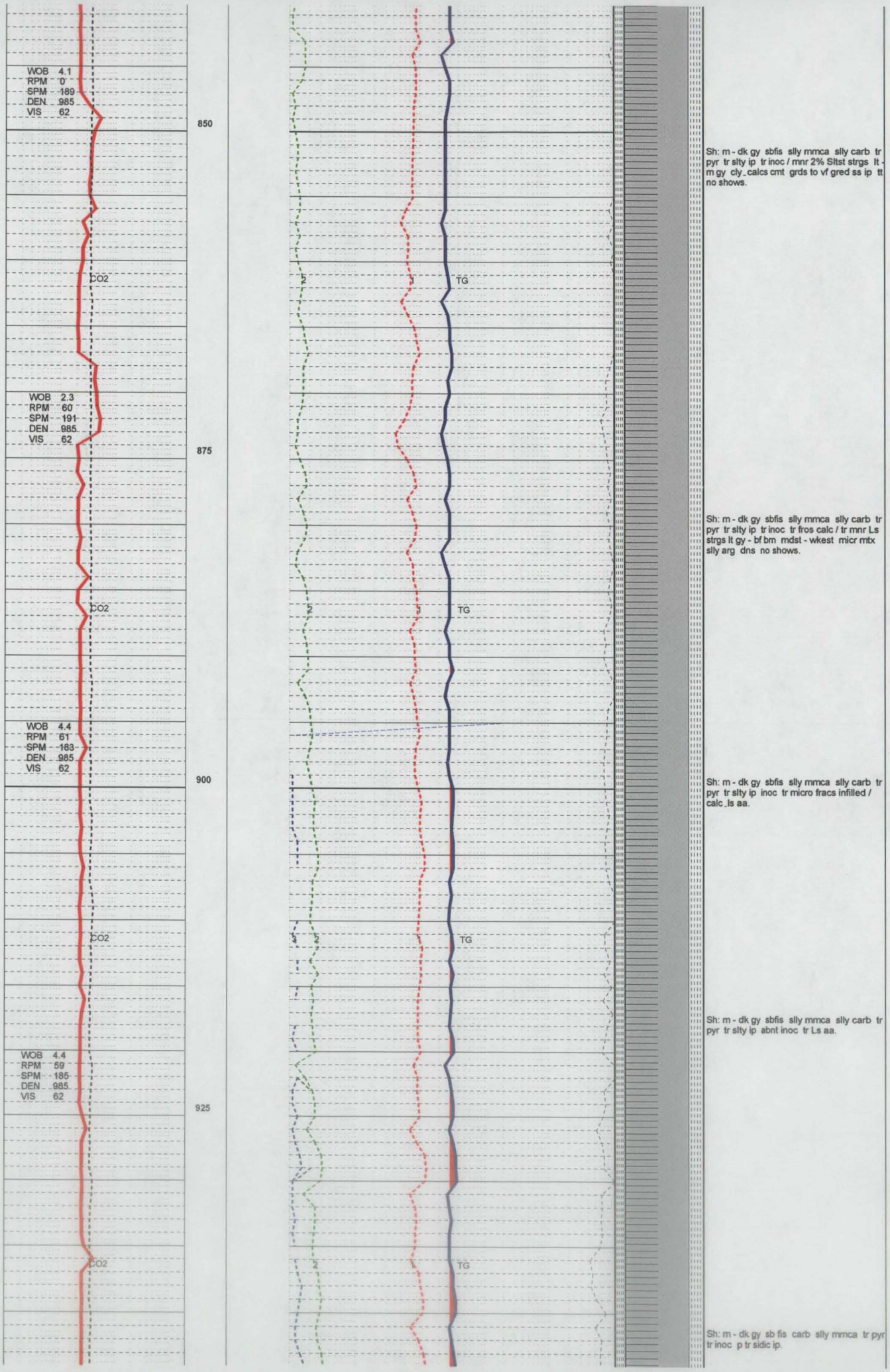
WELL NAME:	COPRC MIRROR LAKE N-20		
LOCATION:	64° 59' 46.80" N / 126° 48' 46.80" W		
COMPANY:	Conocophillips Canada Resources Ltd.		
PROVINCE:	Northwest Territories	FILE:	19342 AN
ELEVATION K.B.:	286.50 m	HOLE SIZE:	222 mm from 601 m to 1890 m
			222 mm from 1890 m to 2146 m
ELEVATION G.L.:	281.30 m		
LOGGING INTERVAL:	601 m to 2146 m		
LOGGING DATES:	26/ 2/2013 to 21/ 3/2013	MUD SYSTEM:	Invert from: 601 m to: 1890 m
			Invert from: 1890 m to: 2146 m
PERSONNEL:	R. Kiani, F. Rehman		
INSTRUMENTATION:	MP 2300 Chromat		

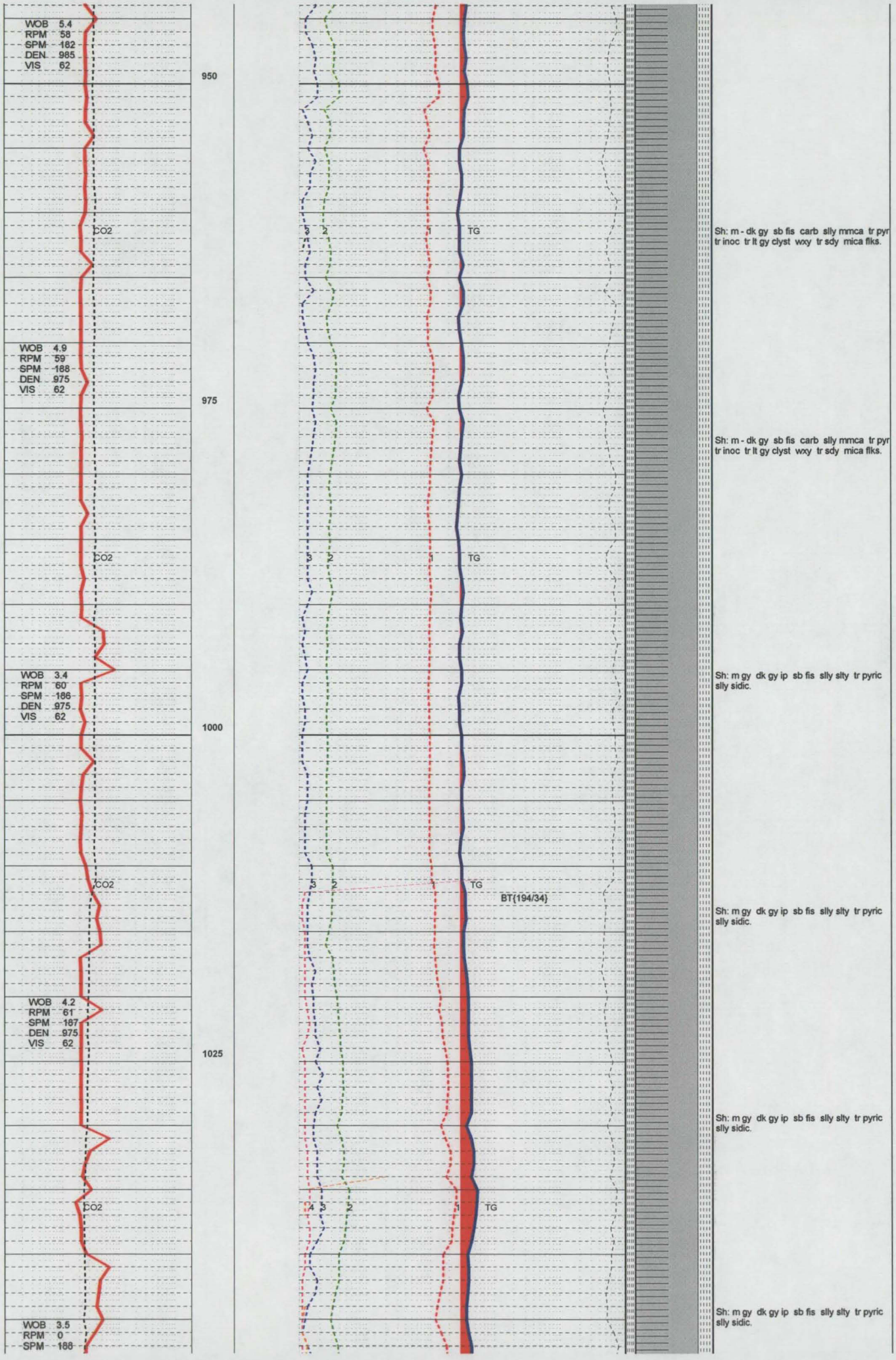
ALL LITHOLOGIC SYMBOLS ARE CANSTRAT COMPATIBLE

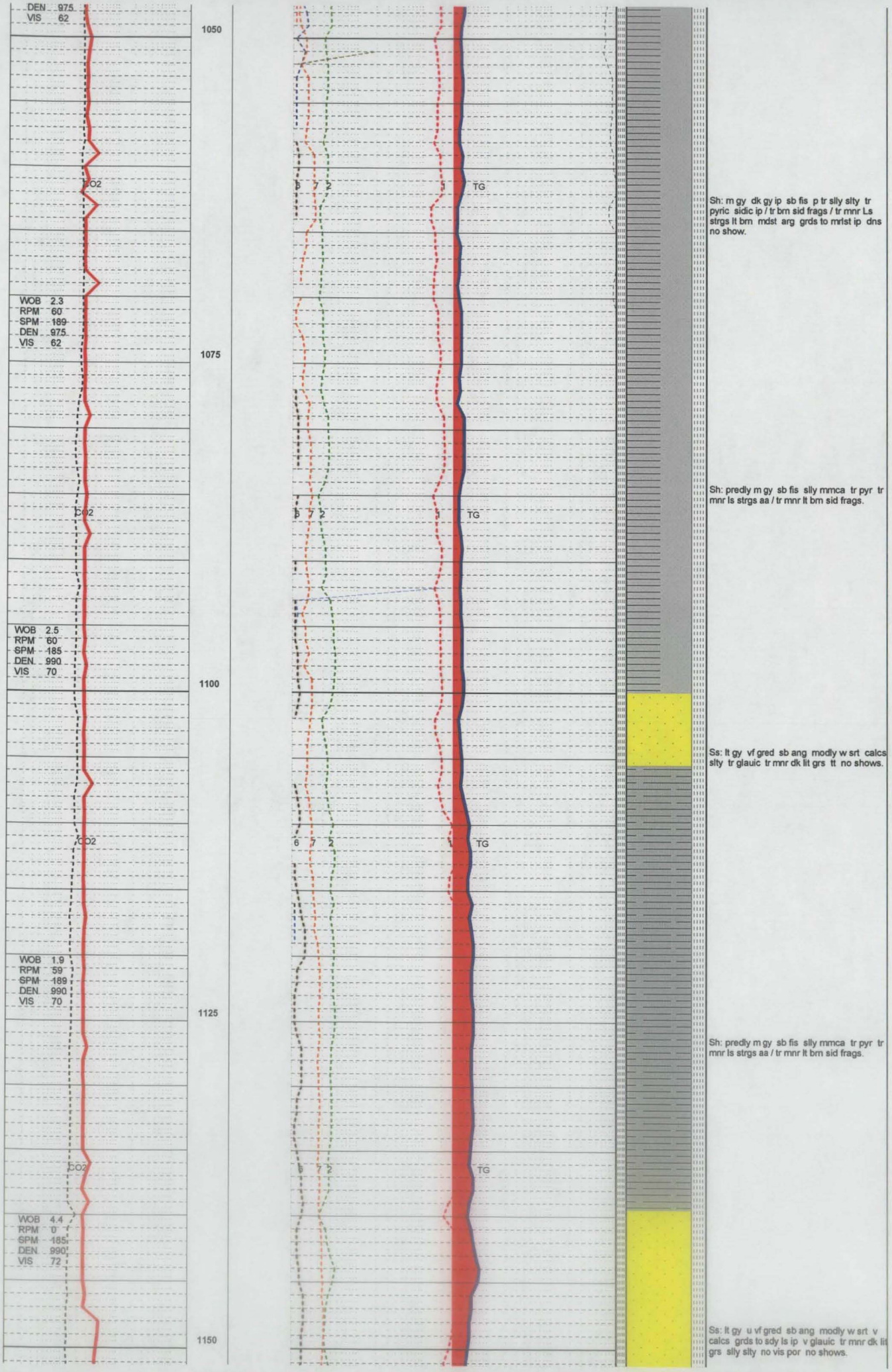


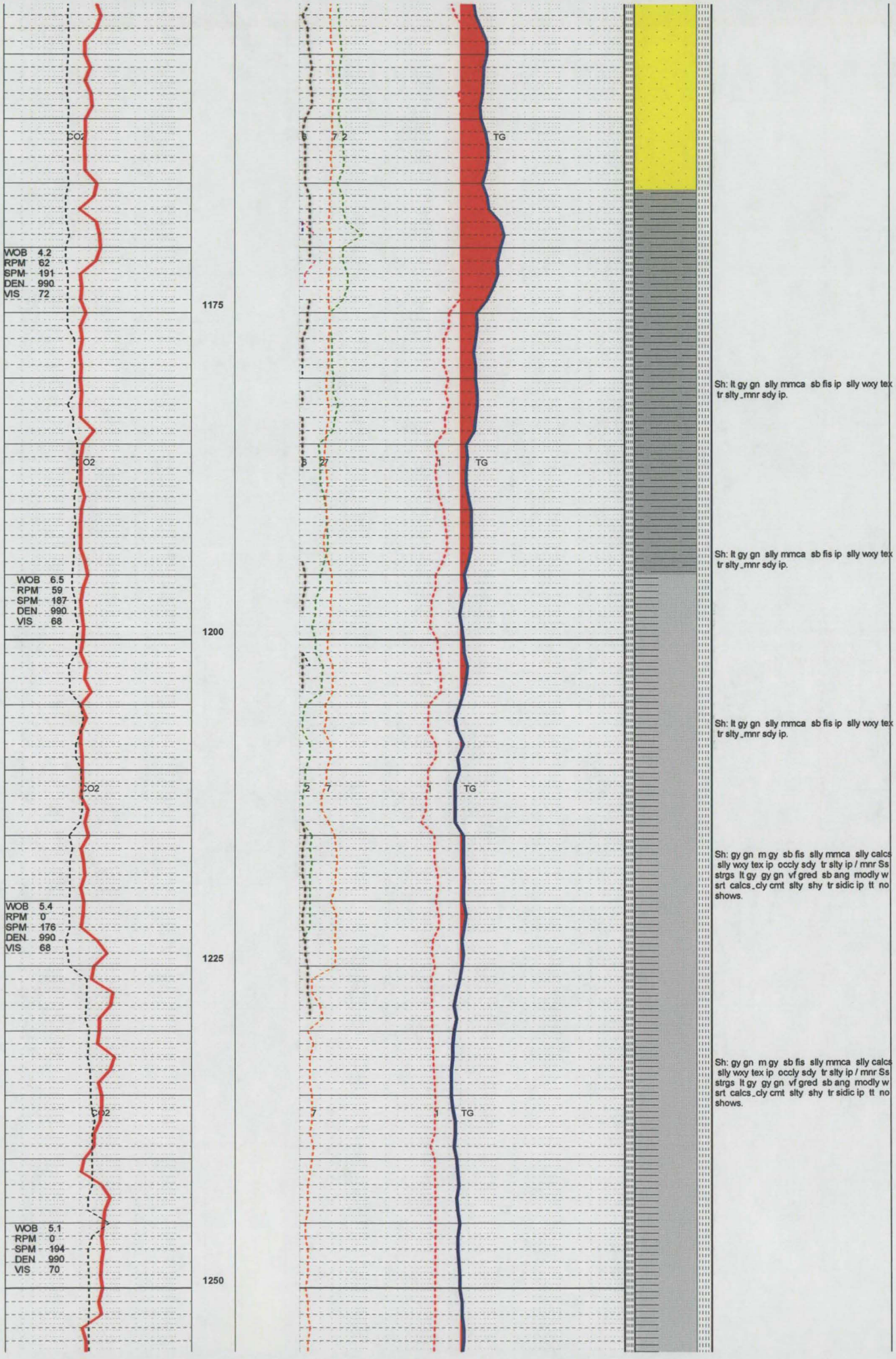

CO2
WOB 2.2
RPM 48
SPM 181
DEN 990
VIS 63
650
CO2
WOB 3.4
RPM 46
SPM 166
DEN 990
VIS 63
675
CO2
WOB 2.3
RPM 49
SPM 176
DEN 990
VIS 63
700
CO2
WOB 3.6
RPM 59
SPM 180
DEN 990
VIS 63
725
CO2
1
TG
1
TG
1
TG
8
TG
TG
Sh: m - dk gy sily mmca sbfis ip tr carb specs tr slty tr pyr / mnr intbd Ss strgs lams lt - m gy vf gred sb ang modly w srt cly cmt slly calcs tr glauic slly slty shy no vis por no shows.
Sh: m - dk gy sily mmca sbfis ip tr carb specs tr slty tr fros cxln calc / mnr intbd Ss lams aa.
Sh: m - dk gy sily mmca sbfis ip tr carb specs tr slty tr fros cxln calc / mnr intbd Ss lams aa.
Sh: m - dk gy sbfis ip slly carb tr slty slly mmca tr pyr mnr calc aa tr mnr Ss lams aa.
Sh: m - dk gy sbfis ip slly carb tr slty slly mmca tr pyr mnr calc aa tr mnr Ss lams aa.
BT(272/24)

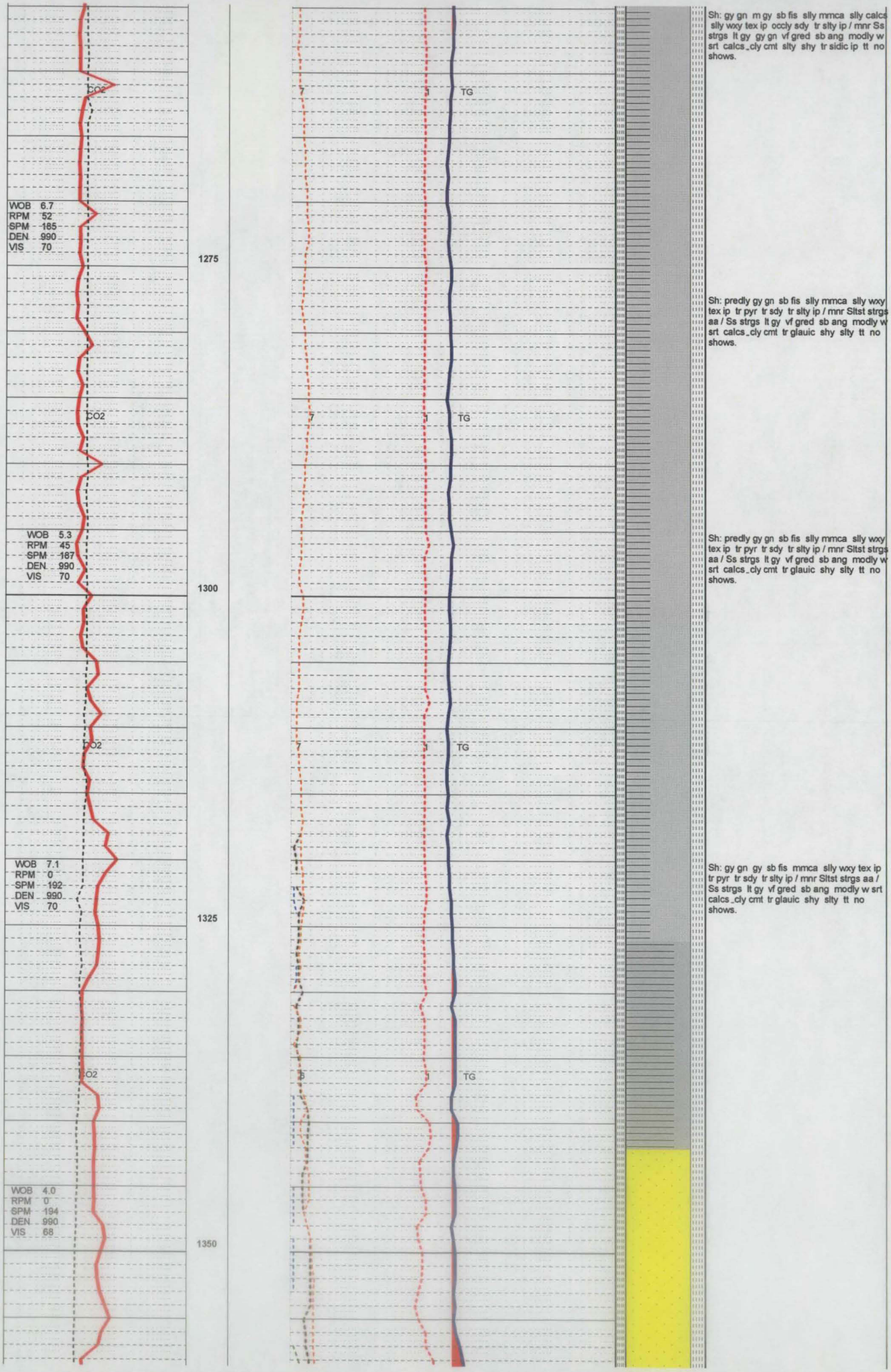

WOB 5.3
RPM 60
SPM 192
DEN 990
VIS 62
750
CO2
1
TG
Sh: m - dk gy sbfis ip slly carb tr slty slly mmca tr pyr mnr calc aa tr mnr Ss lams lt - m gy vf gred sb ang modly wsrt cly mtx slly calcs tr glauic tr dk lit grs slty ip no vis por no shows.
WOB 3.2
RPM 61
SPM 178
DEN 990
VIS 62
775
CO2
1
TG
Sh: m - dk gy sbfis ip slly carb tr slty slly mmca tr pyr mnr calc aa tr mnr Ss lams lt - m gy aa.
WOB 5.0
RPM 66
SPM 178
DEN 990
VIS 61
800
CO2
1
TG
Sh: m - dk gy sbfis ip slly carb tr slty slly mmca tr pyr / 5% Ss lams lt - m gy vf gred sb ang modly w srt cly mtx slly calcs slty shy ip tr pyric dk lit grs no vis por no shows.
WOB 2.9
RPM 66
SPM 190
DEN 990
VIS 63
825
CO2
2
1
TG
Sh: m - dk gy sbfis ip slly carb tr slty slly mmca tr dism pyr tr fish scales / tr mnr Ss lams aa / tr Ls strgs bf fragal wkest tr pyric dns no shows.


WOB 4.1
RPM 0
SPM 189
DEN 985
VIS 62
850
CO2
2
1
TG
WOB 2.3
RPM 60
SPM 191
DEN 985
VIS 62
875
CO2
2
1
TG
WOB 4.4
RPM 61
SPM 183
DEN 985
VIS 62
900
CO2
3
2
1
TG
WOB 4.4
RPM 59
SPM 185
DEN 985
VIS 62
925
CO2
2
TG
Sh: m - dk gy sbfis slly mmca slly carb tr pyr tr slty ip tr inoc / mnr 2% Sltst strgs lt - m gy cly_calcs cmt grds to vf gred ss ip tt no shows.
Sh: m - dk gy sbfis slly mmca slly carb tr pyr tr slty ip tr inoc tr fros calc / tr mnr Ls strgs lt gy - bf brn mdst - wkest micr mtx slly arg dns no shows.
Sh: m - dk gy sbfis slly mmca slly carb tr pyr tr slty ip inoc tr micro fracs infilled / calc_ls aa.
Sh: m - dk gy sbfis slly mmca slly carb tr pyr tr slty ip abnt inoc tr Ls aa.
Sh: m - dk gy sb fis carb slly mmca tr pyr tr inoc p tr sidic ip.

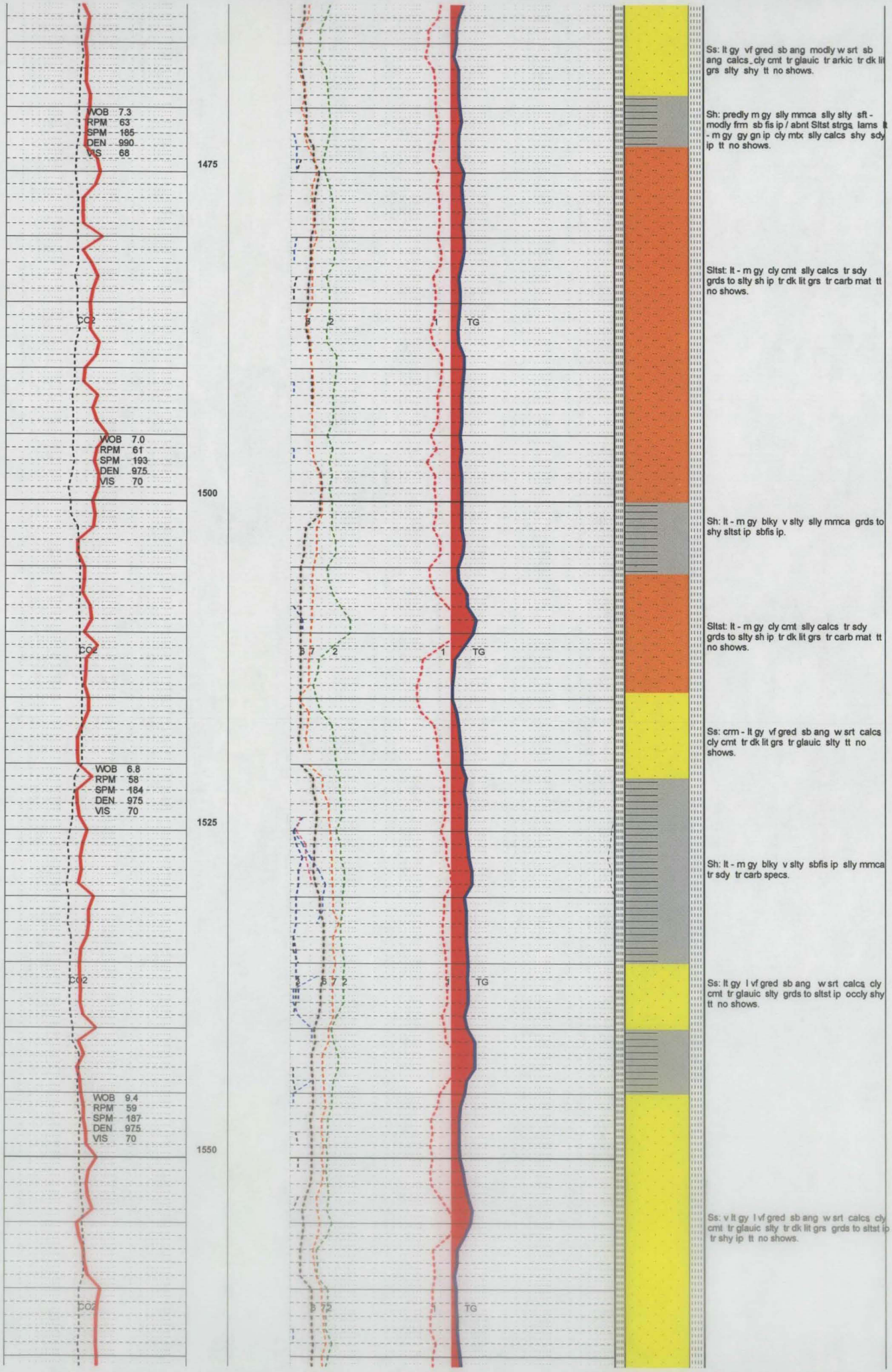

WOB 5.4
RPM 58
SPM 182
DEN 985
VIS 62
950
CO2
3 2 1 TG
Sh: m - dk gy sb fis carb slly mmca tr pyr tr inoc tr lt gy clyst wxy tr sdy mica flks.
WOB 4.9
RPM 59
SPM 188
DEN 975
VIS 62
975
CO2
3 2 1 TG
Sh: m - dk gy sb fis carb slly mmca tr pyr tr inoc tr lt gy clyst wxy tr sdy mica flks.
WOB 3.4
RPM 60
SPM 186
DEN 975
VIS 62
1000
CO2
3 2 1 TG
BT{194/34}
Sh: m gy dk gy ip sb fis slly slty tr pyric slly sidic.
WOB 4.2
RPM 61
SPM 187
DEN 975
VIS 62
1025
CO2
4 3 2 1 TG
Sh: m gy dk gy ip sb fis slly slty tr pyric slly sidic.
WOB 3.5
RPM 0
SPM 188
Sh: m gy dk gy ip sb fis slly slty tr pyric slly sidic.

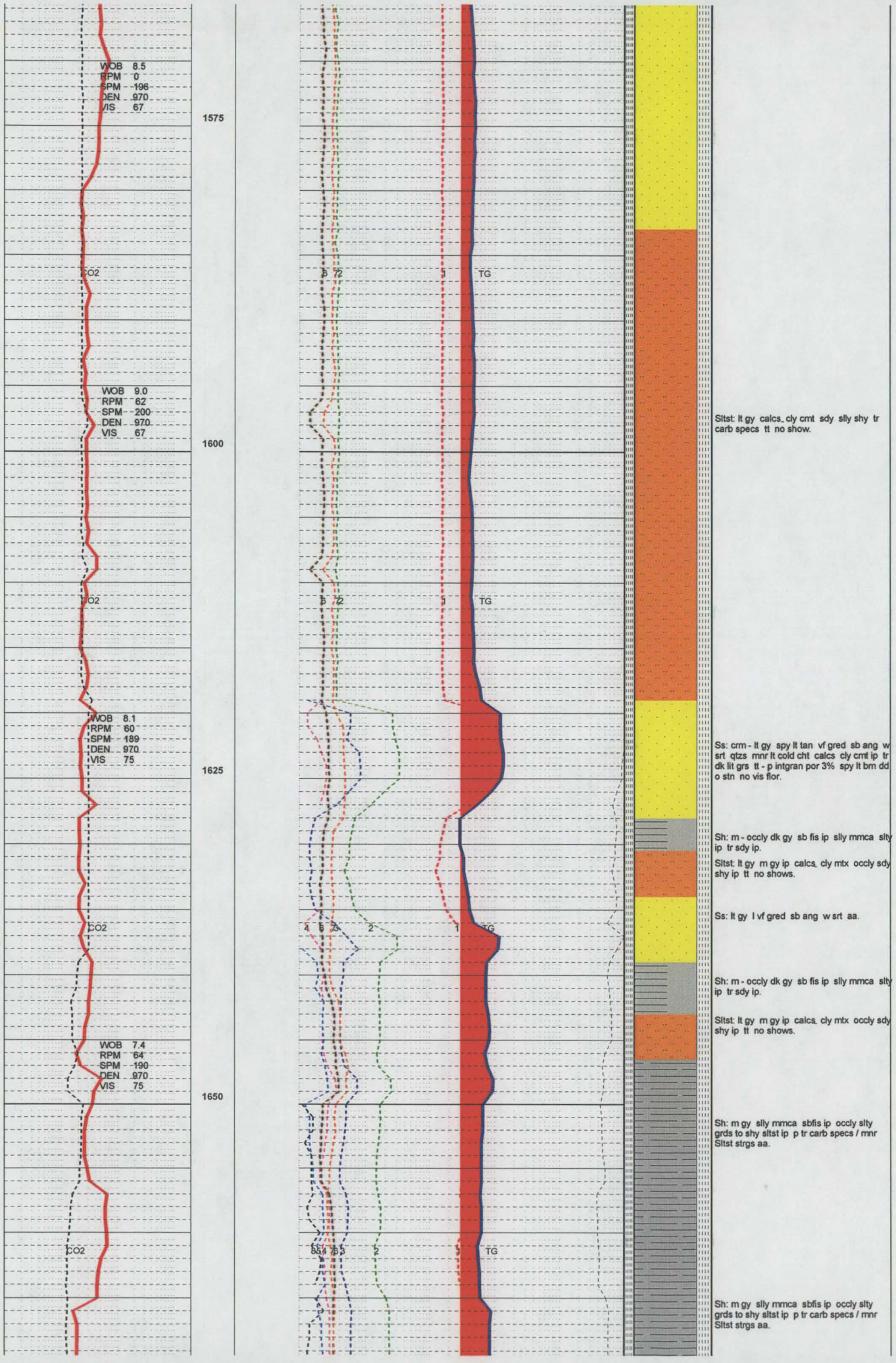

DEN 975
VIS 62
1050
CO2
WOB 2.3
RPM 60
SPM 189
DEN 975
VIS 62
1075
CO2
WOB 2.5
RPM 60
SPM 185
DEN 990
VIS 70
1100
CO2
WOB 1.9
RPM 59
SPM 189
DEN 990
VIS 70
1125
CO2
WOB 4.4
RPM 0
SPM 185
DEN 990
VIS 72
1150
3 7 2
TG
Sh: m gy dk gy ip sb fis p tr slly slty tr pyric sidic ip / tr brn sid frags / tr mnr Ls strgs lt brn mdst arg grds to mrlst ip dns no show.
Sh: predly m gy sb fis slly mmca tr pyr tr mnr ls strgs aa / tr mnr lt brn sid frags.
Ss: lt gy vf gred sb ang modly w srt calcs slty tr glauc tr mnr dk lit grs tt no shows.
Sh: predly m gy sb fis slly mmca tr pyr tr mnr ls strgs aa / tr mnr lt brn sid frags.
Ss: lt gy u vf gred sb ang modly w srt v calcs grds to sdy ls ip v glauic tr mnr dk lit grs slly slty no vis por no shows.

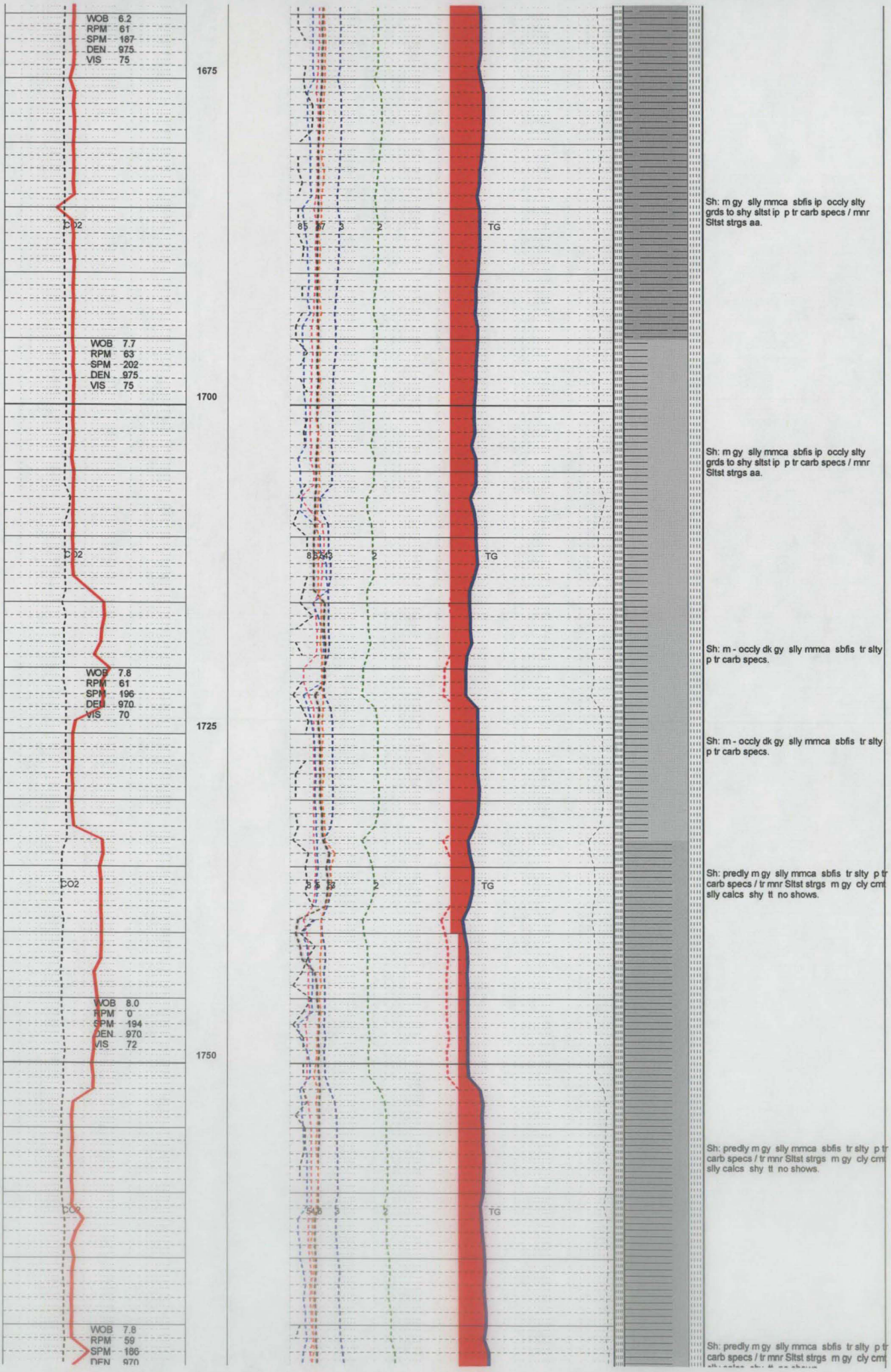

CO2
WOB 4.2
RPM 62
SPM 191
DEN 990
VIS 72
1175
TG
Sh: lt gy gn slly mmca sb fis ip slly wxy tex
tr slty_mnr sdy ip.
CO2
TG
Sh: lt gy gn slly mmca sb fis ip slly wxy tex
tr slty_mnr sdy ip.
WOB 6.5
RPM 59
SPM 187
DEN 990
VIS 68
1200
Sh: lt gy gn slly mmca sb fis ip slly wxy tex
tr slty_mnr sdy ip.
CO2
TG
WOB 5.4
RPM 0
SPM 176
DEN 990
VIS 68
1225
Sh: gy gn m gy sb fis slly mmca slly calcs
slly wxy tex ip occly sdy tr slty ip / mnr Ss
strgs lt gy gy gn vf gred sb ang modly w
srt calcs_cly cmt slty shy tr sidic ip tt no
shows.
CO2
TG
Sh: gy gn m gy sb fis slly mmca slly calcs
slly wxy tex ip occly sdy tr slty ip / mnr Ss
strgs lt gy gy gn vf gred sb ang modly w
srt calcs_cly cmt slty shy tr sidic ip tt no
shows.
WOB 5.1
RPM 0
SPM 194
DEN 990
VIS 70
1250

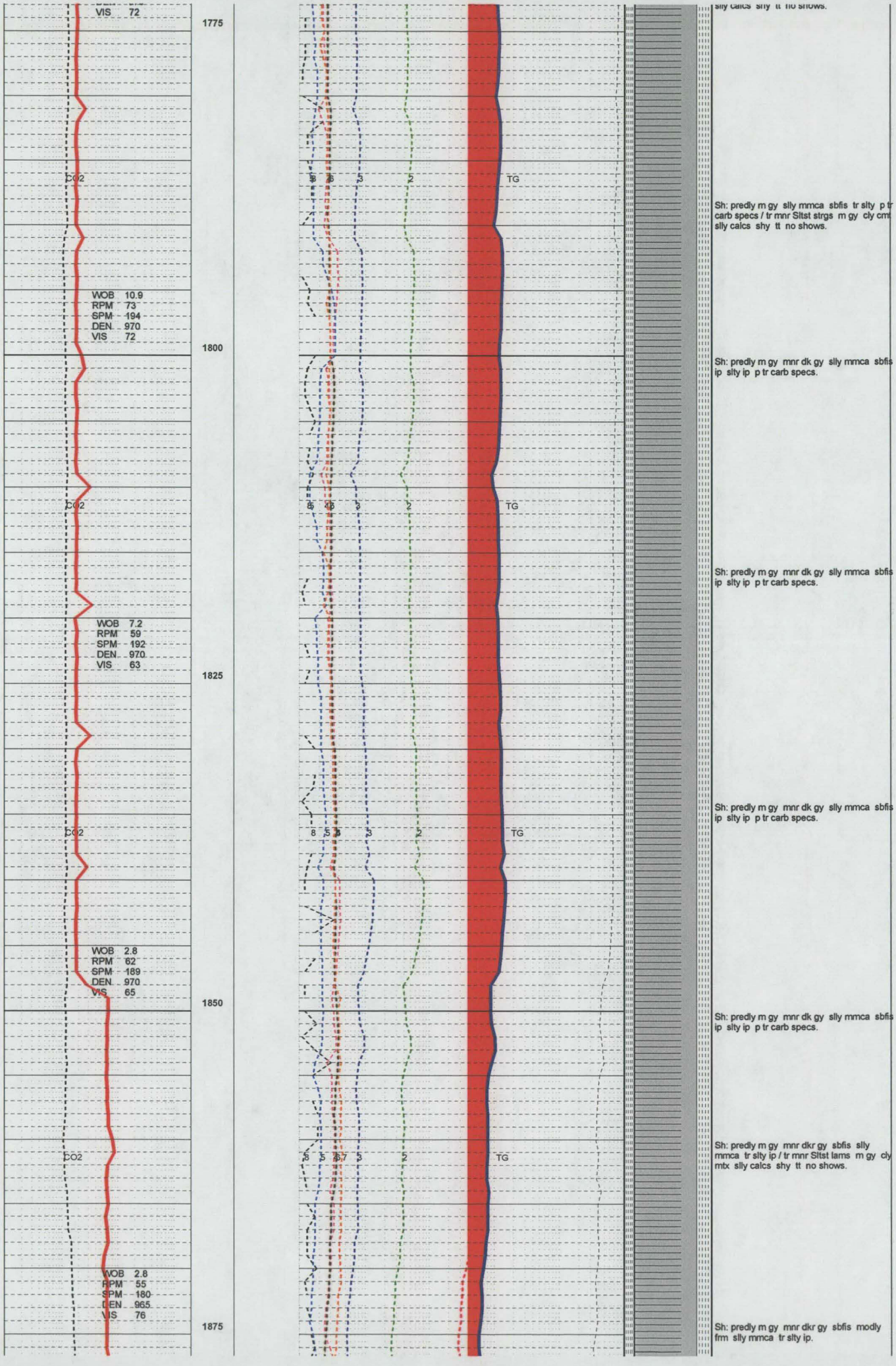

CO2
WOB 6.7
RPM 52
SPM 185
DEN 990
VIS 70
1275
CO2
WOB 5.3
RPM 45
SPM 187
DEN 990
VIS 70
1300
CO2
WOB 7.1
RPM 0
SPM 192
DEN 990
VIS 70
1325
CO2
WOB 4.0
RPM 0
SPM 194
DEN 990
VIS 68
1350
TG
TG
TG
TG
Sh: gy gn m gy sb fis slly mmca slly calcs slly wxy tex ip occly sdy tr slty ip / mnr Ss strgs lt gy gy gn vf gred sb ang modly w srt calcs_cly cmt slty shy tr sidic ip tt no shows.
Sh: predly gy gn sb fis slly mmca slly wxy tex ip tr pyr tr sdy tr slty ip / mnr Sltst strgs aa / Ss strgs lt gy vf gred sb ang modly w srt calcs_cly cmt tr glauic shy slty tt no shows.
Sh: predly gy gn sb fis slly mmca slly wxy tex ip tr pyr tr sdy tr slty ip / mnr Sltst strgs aa / Ss strgs lt gy vf gred sb ang modly w srt calcs_cly cmt tr glauic shy slty tt no shows.
Sh: gy gn gy sb fis mmca slly wxy tex ip tr pyr tr sdy tr slty ip / mnr Sltst strgs aa / Ss strgs lt gy vf gred sb ang modly w srt calcs_cly cmt tr glauic shy slty tt no shows.

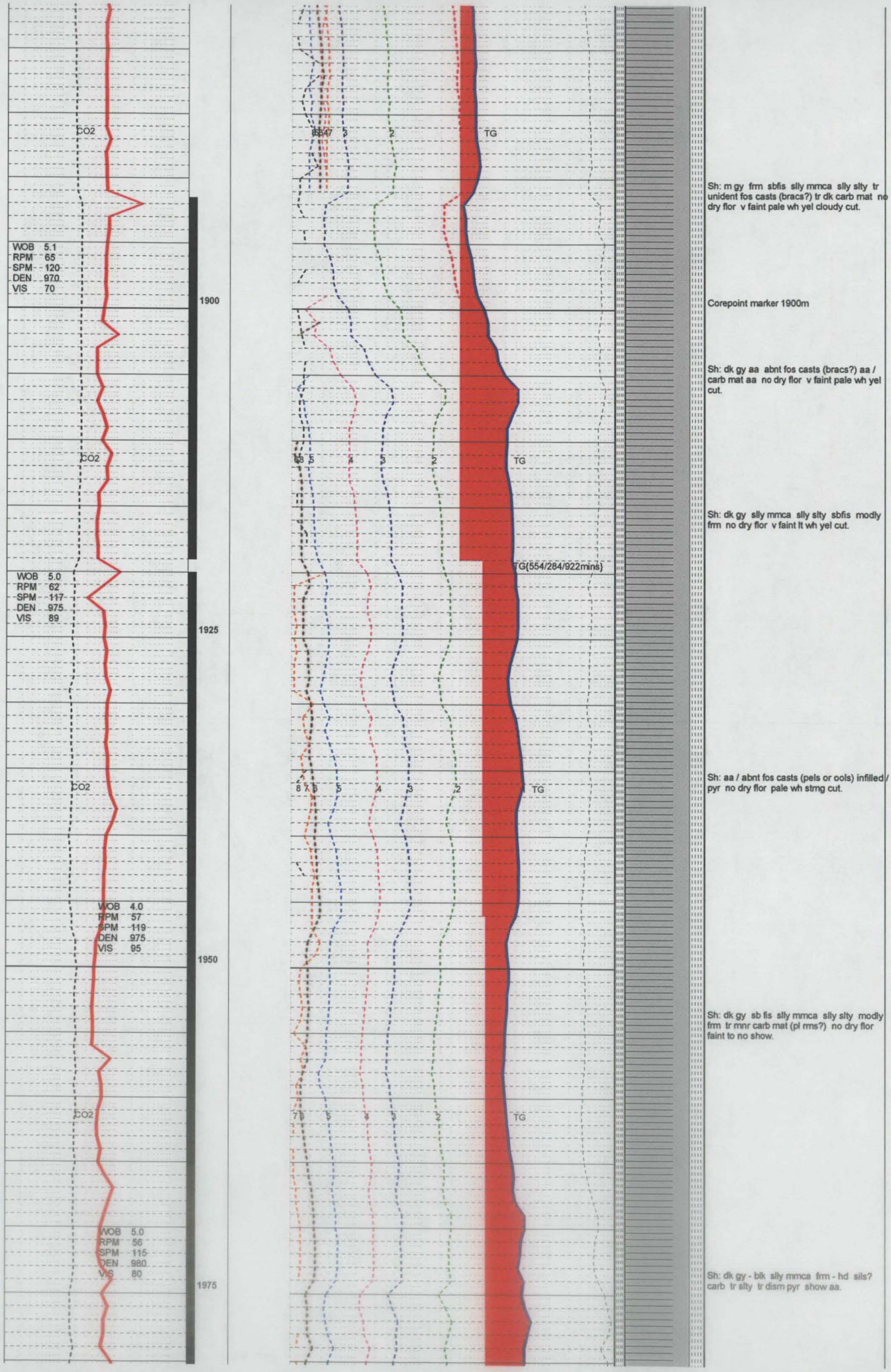
CO2
WOB 6.9
RPM 61
SPM 192
DEN 990
VIS 67
1375
CO2
WOB 6.0
RPM 60
SPM 190
DEN 990
VIS 67
1400
CO2
WOB 6.3
RPM 0
SPM 193
DEN 990
VIS 67
1425
CO2
WOB 7.2
RPM 58
SPM 186
DEN 990
VIS 68
1450
CO2
TG
Ss: lt gy lt gy brn vf gred sb ang modly w srt calcs_cly cmy grds to sdy ls ip tr arkic ip tr sidic no vis por no shows.
Sh: lt - m gy gy gn sb fis ip slly mmca tr sdy tr slty ip / lt gy Clyst sft calcs grds to mrlst ip / mnr Ss strgs aa.
Ss: lt gy crm lt rust ip vf gred sb ang modly w srt calcs_cly cmt slty shy ip tr arkic te fer ip tr dk lit grs no vis por no shows.
Sh: lt - m gy slly mmca occly slty sft - modly frm sb fis ip / abnt Sltst strgs lams lt - m gy gy gn ip cly mtx slly calcs shy sdy ip tt no shows.
Ss: lt gy vf gred sb ang modly w srt sb ang calcs_cly cmt tr glauic tr arkic tr dk lit grs slty shy tt no shows.
Sh: lt - m gy slly mmca occly slty sft - modly frm sb fis ip / abnt Sltst strgs lams lt - m gy gy gn ip cly mtx slly calcs shy sdy ip tt no shows.

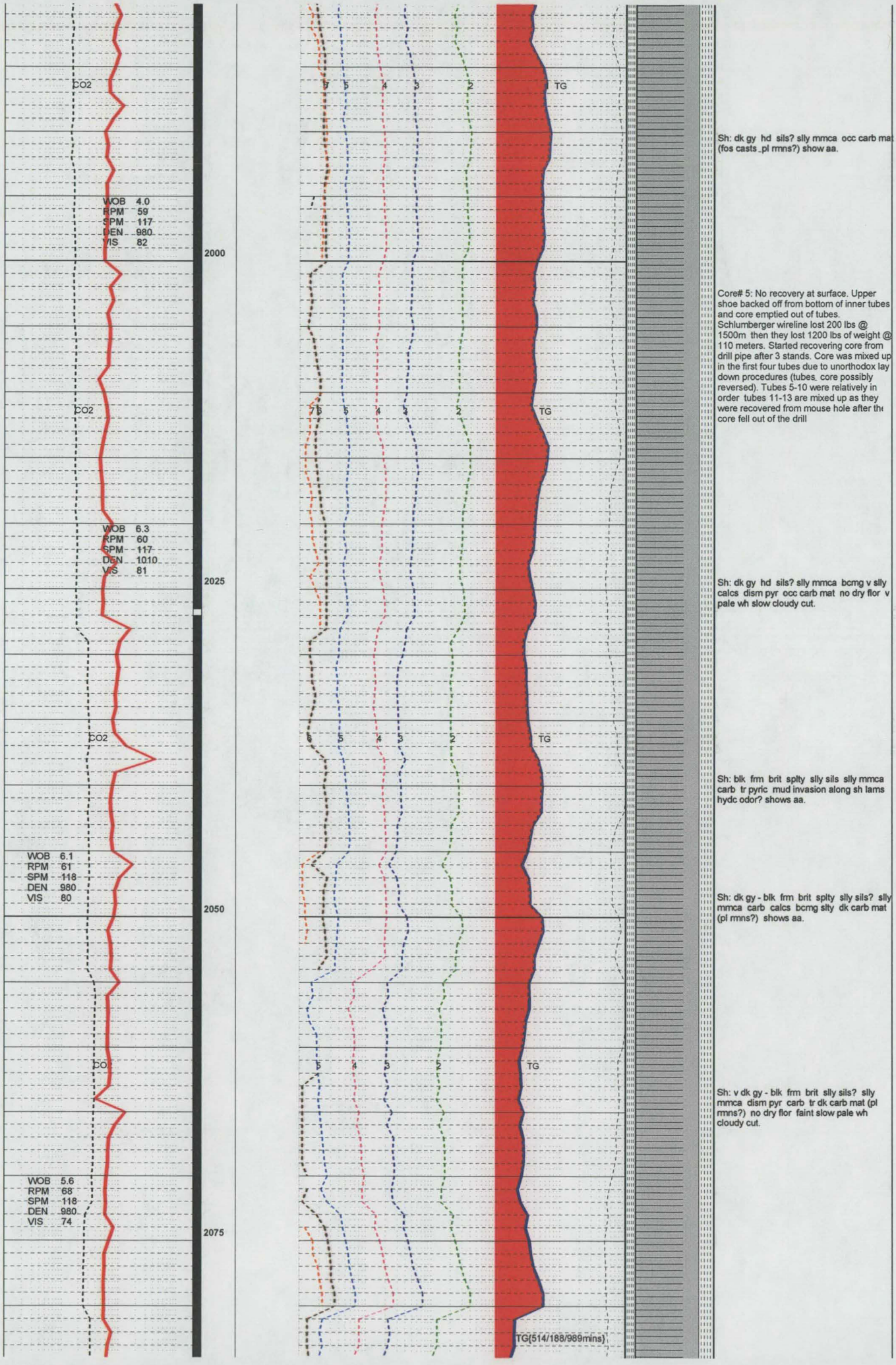

WOB 7.3
RPM 63
SPM 185
DEN 990
VIS 68
1475
CO2
WOB 7.0
RPM 61
SPM 193
DEN 975
VIS 70
1500
CO2
WOB 6.8
RPM 58
SPM 184
DEN 975
VIS 70
1525
CO2
WOB 9.4
RPM 59
SPM 187
DEN 975
VIS 70
1550
CO2
3 2 1 TG
3 7 2 1 TG
3 7 2 1 TG
3 7 2 TG
Ss: lt gy vf gred sb ang modly w srt sb ang calcs cly cmt tr glauic tr arkic tr dk lit grs slty shy tt no shows.
Sh: predly m gy slly mmca slly slty sft - modly frm sb fis ip / abnt Sltst strgs lams lt - m gy gy gn ip cly mtx slly calcs shy sdy ip tt no shows.
Sltst: lt - m gy cly cmt slly calcs tr sdy grds to slty sh ip tr dk lit grs tr carb mat tt no shows.
Sh: lt - m gy blky v slty slly mmca grds to shy sltst ip sbfis ip.
Sltst: lt - m gy cly cmt slly calcs tr sdy grds to slty sh ip tr dk lit grs tr carb mat tt no shows.
Ss: crm - lt gy vf gred sb ang w srt calcs cly cmt tr dk lit grs tr glauic slty tt no shows.
Sh: lt - m gy blky v slty sbfis ip slly mmca tr sdy tr carb specs.
Ss: lt gy l vf gred sb ang w srt calcs cly cmt tr glauic slty grds to sltst ip occly shy tt no shows.
Ss: v lt gy l vf gred sb ang w srt calcs cly cmt tr glauic slty tr dk lit grs grds to sltst ip tr shy ip tt no shows.

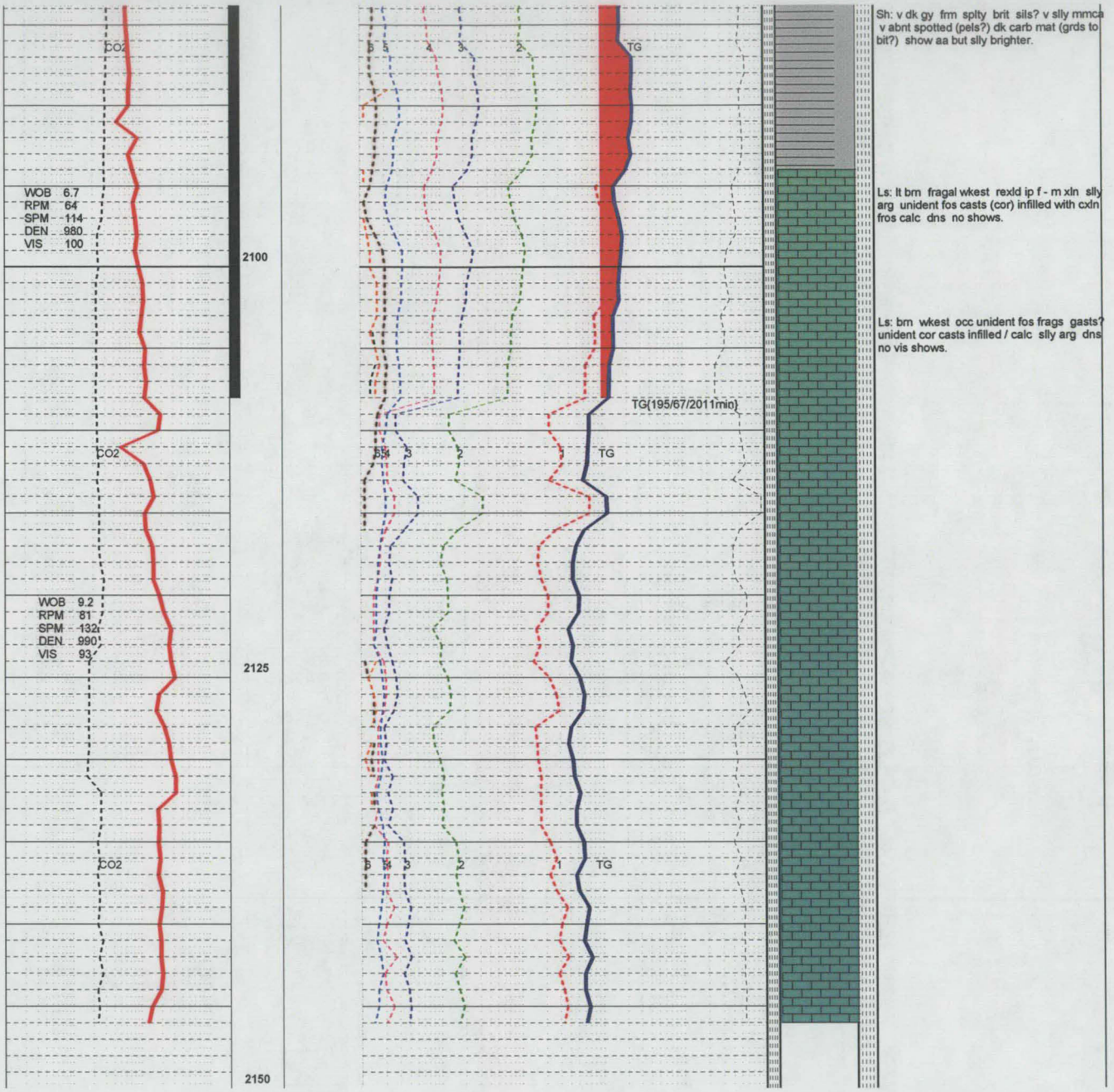

WOB 8.5
RPM 0
SPM 196
DEN 970
VIS 67
1575
CO2
TG
WOB 9.0
RPM 62
SPM 200
DEN 970
VIS 67
1600
CO2
TG
WOB 8.1
RPM 60
SPM 189
DEN 970
VIS 75
1625
CO2
TG
WOB 7.4
RPM 64
SPM 190
DEN 970
VIS 75
1650
CO2
TG
Sltst: lt gy calcs cly cmt sdy slly shy tr carb specs tt no show.
Ss: crm - lt gy spy lt tan vf gred sb ang w srt qtzs mnr lt cold cht calcs cly cmt ip tr dk lit grs tt - p intgran por 3% spy lt brn dd o stn no vis flor.
Sh: m - occly dk gy sb fis ip slly mmca slty ip tr sdy ip.
Sltst: lt gy m gy ip calcs cly mtx occly sdy shy ip tt no shows.
Ss: lt gy f vf gred sb ang w srt aa.
Sh: m - occly dk gy sb fis ip slly mmca slty ip tr sdy ip.
Sltst: lt gy m gy ip calcs cly mtx occly sdy shy ip tt no shows.
Sh: m gy slly mmca sbfis ip occly slty grds to shy sltst ip p tr carb specs / mnr Sltst strgs aa.
Sh: m gy slly mmca sbfis ip occly slty grds to shy sltst ip p tr carb specs / mnr Sltst strgs aa.


WOB 6.2
RPM 61
SPM 187
DEN 975
VIS 75
1675
CO2
TG
WOB 7.7
RPM 63
SPM 202
DEN 975
VIS 75
1700
CO2
TG
WOB 7.8
RPM 61
SPM 196
DEN 970
VIS 70
1725
CO2
TG
WOB 8.0
RPM 0
SPM 194
DEN 970
VIS 72
1750
CO2
TG
WOB 7.8
RPM 59
SPM 186
DEN 970
Sh: m gy slly mmca sbfis ip occly slty grds to shy sltst ip p tr carb specs / mnr Sltst strgs aa.
Sh: m gy slly mmca sbfis ip occly slty grds to shy sltst ip p tr carb specs / mnr Sltst strgs aa.
Sh: m - occly dk gy slly mmca sbfis tr slty p tr carb specs.
Sh: m - occly dk gy slly mmca sbfis tr slty p tr carb specs.
Sh: predly m gy slly mmca sbfis tr slty p tr carb specs / tr mnr Sltst strgs m gy cly cmt slly calcs shy tt no shows.
Sh: predly m gy slly mmca sbfis tr slty p tr carb specs / tr mnr Sltst strgs m gy cly cmt slly calcs shy tt no shows.
Sh: predly m gy slly mmca sbfis tr slty p tr carb specs / tr mnr Sltst strgs m gy cly cmt


VIS 72
1775
CO2
WOB 10.9
RPM 73
SPM 194
DEN 970
VIS 72
1800
CO2
WOB 7.2
RPM 59
SPM 192
DEN 970
VIS 63
1825
CO2
WOB 2.8
RPM 62
SPM 189
DEN 970
VIS 65
1850
CO2
WOB 2.8
RPM 55
SPM 180
DEN 965
VIS 76
1875
TG
Sh: predly m gy slly mmca sbfis tr slty p tr carb specs / tr mnr Sltst strgs m gy cly cmt slly calcs shy tt no shows.
Sh: predly m gy mnr dk gy slly mmca sbfis ip slty ip p tr carb specs.
Sh: predly m gy mnr dkr gy sbfis slly mmca tr slty ip / tr mnr Sltst lams m gy cly mtx slly calcs shy tt no shows.
Sh: predly m gy mnr dkr gy sbfis modly frm slly mmca tr slty ip.


CO2
WOB 5.1
RPM 65
SPM 120
DEN 970
VIS 70
1900
CO2
WOB 5.0
RPM 62
SPM 117
DEN 975
VIS 89
1925
CO2
WOB 4.0
RPM 57
SPM 119
DEN 975
VIS 95
1950
CO2
WOB 5.0
RPM 56
SPM 115
DEN 980
VIS 80
1975
TG
TG
TG{554/284/922mins}
TG
TG
Sh: m gy frm sbfis slly mmca slly slty tr unident fos casts (bracs?) tr dk carb mat no dry flor v faint pale wh yel cloudy cut.
Corepoint marker 1900m
Sh: dk gy aa abnt fos casts (bracs?) aa / carb mat aa no dry flor v faint pale wh yel cut.
Sh: dk gy slly mmca slly slty sbfis modly frm no dry flor v faint lt wh yel cut.
Sh: aa / abnt fos casts (pels or ools) infilled / pyr no dry flor pale wh stmg cut.
Sh: dk gy sb fis slly mmca slly slty modly frm tr mnr carb mat (pl rms?) no dry flor faint to no show.
Sh: dk gy - blk slly mmca frm - hd sils? carb tr slty tr dism pyr show aa.


CO2
WOB 4.0
RPM 59
SPM 117
DEN 980
VIS 82
2000
CO2
WOB 6.3
RPM 60
SPM 117
DEN 1010
VIS 81
2025
CO2
WOB 6.1
RPM 61
SPM 118
DEN 980
VIS 80
2050
CO
WOB 5.6
RPM 68
SPM 118
DEN 980
VIS 74
2075
6 5 4 3 2 TG
TG(514/188/989mins)
Sh: dk gy hd sils? slly mmca occ carb mat (fos casts_pl rmns?) show aa.
Core# 5: No recovery at surface. Upper shoe backed off from bottom of inner tubes and core emptied out of tubes. Schlumberger wireline lost 200 lbs @ 1500m then they lost 1200 lbs of weight @ 110 meters. Started recovering core from drill pipe after 3 stands. Core was mixed up in the first four tubes due to unorthodox lay down procedures (tubes, core possibly reversed). Tubes 5-10 were relatively in order tubes 11-13 are mixed up as they were recovered from mouse hole after the core fell out of the drill
Sh: dk gy hd sils? slly mmca bcmg v slly calcs dism pyr occ carb mat no dry flor v pale wh slow cloudy cut.
Sh: blk frm brit splty slly sils slly mmca carb tr pyric mud invasion along sh lams hydc odor? shows aa.
Sh: dk gy - blk frm brit splty slly sils? slly mmca carb calcs bcmg slty dk carb mat (pl rmns?) shows aa.
Sh: v dk gy - blk frm brit slly sils? slly mmca dism pyr carb tr dk carb mat (pl rmns?) no dry flor faint slow pale wh cloudy cut.


CO2
WOB 6.7
RPM 64
SPM 114
DEN 980
VIS 100
2100
CO2
WOB 9.2
RPM 81
SPM 132
DEN 990
VIS 93
2125
CO2
2150
5 5 4 3 2 TG
TG(195/67/2011mio)
5 5 4 3 2 1 TG
3 3 3 2 1 TG
Sh: v dk gy frm splty brit sils? v slly mmca v abnt spotted (pels?) dk carb mat (grds to bit?) show aa but slly brighter.
Ls: lt bm fragal wkest rexld ip f - m xln slly arg unident fos casts (cor) infilled with cxln fros calc dns no shows.
Ls: bm wkest occ unident fos frags gasts? unident cor casts infilled / calc slly arg dns no vis shows.

VIII. Daily Activity and Cost Summary Report

ConocoPhillips Canada

Daily Activity and Cost Summary
MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Job Category	Primary Job Type	Secondary Job Type
DRILLING	DRILLING ORIGINAL	

Actual Start Date	End Date	AFE / RFE / MainLs	Total Job AFE Amount
2/21/2013	3/24/2013	10343209	10,274,600.00

Objective

Summary

Contractor	Rig Name/No	Rig Type
Beaver Drilling Ltd.	2	DRILLING-DOUBLE

Report No.	Start Date	End Date	Depth Start (mKB)	Depth End (mKB)	Day Total	Cum Cost	Last 24hr Sum
1	2/21/2013	2/22/2013	0.00	0.00	64,438.09	64,438.09	No accidents or incidents 4 Hazard ID's: 2 Job obersvations : General tear out of rig ,Lay down Derrick ,move Drill pipe and other tubulars to Mirror Lake location.
2	2/22/2013	2/23/2013	0.00	0.00	63,486.50	127,924.59	No accidents or incidents 4 Hazard ID's: 2 Job obersvations :Tear out rig components and Matting move to Mirror Lake location ,Lay rig foot print liner,Spot Matting and Sub.
3	2/23/2013	2/24/2013	0.00	0.00	57,611.50	185,536.09	No accidents or incidents 5 Hazard ID's: 0 Job obersvations :Spot Sub. Move and pin derrick,and draw works, Move wellsite trailers and support equipment, Mud dry products
4	2/24/2013	2/25/2013	0.00	0.00	291,165.99	476,702.08	No accidents or incidents 5 Hazard ID's: 0 Job obersvations : Continue to move tubulars,Drilling tools and support equipment, Spot remaining rig components,Prepare to and raise derrick, Rig to spud, weld on Diverter Flange.
5	2/25/2013	2/26/2013	0.00	84.00	767,561.95	1,244,264.03	No accidents or incidents 4 Hazard ID's: 2 Job obersvations :Nipple up diverter, Fill mud tanks,Prepare BHA, Rig to spud, Move invert and tank farm, Perform pre-spud inspection and hold diverter drills and safety meeting. Spud well @ 17:00 hours and drill 311mm surface hole F/0- 84m with Varel Tri cone insert bit and slick rotary assembly.
6	2/26/2013	2/27/2013	84.00	300.00	71,847.11	1,316,111.14	No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Drill 311mm surface hole F/84- 300m with Varel Tri cone insert bit and slick rotary assembly. Minor losses @ 146m (7m3) with accumulated wire line surveys and rig services.
7	2/27/2013	2/28/2013	300.00	300.00	77,244.36	1,393,355.50	No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Wiper trip condition hole encounter tight hole from 260m to 153m,Work tight hole and stuck pipe at 153m, Pull loose ,pull to 112m work tight hole ,stick pipe with Surface Jars came loose back ream to 60m ,pull out check bit ,Build volume run in hole to 150m wash and ream to 300m.
8	2/28/2013	3/1/2013	300.00	474.00	94,144.79	1,487,500.29	No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Drill 311mm surface hole F/300- 444m with Varel Tri cone insert bit and slick rotary assembly.Pumping at 2.6m3/min. WOB 10-12dan,RPM 50 -120,Average ROP 13m/hr. Minor loss (15m3 24hrs.) with accumulated wire line surveys and rig services. Wiper trip to bit, Hole in better condition
9	3/1/2013	3/2/2013	474.00	601.00	278,350.77	1,765,851.06	No accidents or incidents 4 Hazard ID's: 1 Job obersvations :Drill 311mm surface hole F/474- 601m with Varel Tri cone insert bit and slick rotary assembly.Pumping at 2.3m3/min. WOB 10-18dan,RPM 50 -120,Average ROP 10.5m/hr. Drilled into a fracture @ 504m, began losing circulation (30m3) Mixed and pumped LCM pill and continue raising viscosity/ mixing LCM, Drill ahead with minor losses, Circulate hole clean,Build volume ,mixed and pumped LCM pill, Wiper trip to 130m with accumulated wire line surveys and rig services.
10	3/2/2013	3/3/2013	601.00	601.00	73,104.60	1,838,955.86	No accidents or incidents 3 Hazard ID's: 2 Job oberservations: Wiper trip,circulate condition hole to Log, pull out of hole to log,lay down 8" DCs, Rig in Schlumberger and run open hole logs. Rig to and run 244.5mm surface casing,circulate condition hole prior to cementing casing. NEB regulatory and environmental inspectors toured location and followed up on initial inspection.
11	3/3/2013	3/4/2013	601.00	601.00	95,533.45	1,934,489.31	No accidents or incidents 4 Hazard ID's: 1 Job oberservations:Circulate and condition mud, Rig to and cement surface casing, Recieved 10m3 good cement slurry returns, Nipple down diverter, Install casing bowl, Nipple up BOP's and pressure test as per program.

Template Revised 8/1/2007 Page 1/3 Report Printed: 4/9/2013

ConocoPhillips Canada

Daily Activity and Cost Summary

MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Job Category	Primary Job Type	Secondary Job Type
DRILLING	DRILLING ORIGINAL	

Actual Start Date	End Date	AFE / RFE / Maint.#	Total Job AFE Amount
2/21/2013	3/24/2013	10343209	10,274,600.00

Objective

Summary

Contractor	Rig Name/No	Rig Type
Beaver Drilling Ltd.	2	DRILLING-DOUBLE

Report No.	Start Date	End Date	Depth Start (mKB)	Depth End (mKB)	Day Total	Cum Cost	Last 24hr Sum
1	2/21/2013	2/22/2013	0.00	0.00	64,438.09	64,438.09	No accidents or incidents 4 Hazard ID's: 2 Job obersvations : General tear out of rig ,Lay down Derrick ,move Drill pipe and other tubulars to Mirror Lake location.
2	2/22/2013	2/23/2013	0.00	0.00	63,486.50	127,924.59	No accidents or incidents 4 Hazard ID's: 2 Job obersvations :Tear out rig components and Matting move to Mirror Lake location ,Lay rig foot print liner,Spot Matting and Sub.
3	2/23/2013	2/24/2013	0.00	0.00	57,611.50	185,536.09	No accidents or incidents 5 Hazard ID's: 0 Job obersvations :Spot Sub. Move and pin derrick,and draw works, Move wellsite trailers and support equipment, Mud dry products
4	2/24/2013	2/25/2013	0.00	0.00	291,165.99	476,702.08	No accidents or incidents 5 Hazard ID's: 0 Job obersvations : Continue to move tubulars,Drilling tools and support equipment, Spot remaining rig components,Prepare to and raise derrick, Rig to spud, weld on Diverter Flange.
5	2/25/2013	2/26/2013	0.00	84.00	767,561.95	1,244,264.03	No accidents or incidents 4 Hazard ID's: 2 Job obersvations :Nipple up diverter, Fill mud tanks,Prepare BHA, Rig to spud, Move invert and tank farm, Perform pre-spud inspection and hold diverter drills and safety meeting. Spud well @ 17:00 hours and drill 311mm surface hole F/0- 84m with Varel Tri cone insert bit and slick rotary assembly.
6	2/26/2013	2/27/2013	84.00	300.00	71,847.11	1,316,111.14	No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Drill 311mm surface hole F/84- 300m with Varel Tri cone insert bit and slick rotary assembly. Minor losses @ 146m (7m3) with accumulated wire line surveys and rig services.
7	2/27/2013	2/28/2013	300.00	300.00	77,244.36	1,393,355.50	No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Wiper trip condition hole encounter tight hole from 260m to 153m,Work tight hole and stuck pipe at 153m, Pull loose ,pull to 112m work tight hole ,stick pipe with Surface Jars came loose back ream to 60m ,pull out check bit ,Build volume run in hole to 150m wash and ream to 300m.
8	2/28/2013	3/1/2013	300.00	474.00	94,144.79	1,487,500.29	No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Drill 311mm surface hole F/300- 444m with Varel Tri cone insert bit and slick rotary assembly.Pumping at 2.6m3/min. WOB 10-12dan,RPM 50 -120,Average ROP 13m/hr. Minor loss (15m3 24hrs.) with accumulated wire line surveys and rig services. Wiper trip to bit, Hole in better condition
9	3/1/2013	3/2/2013	474.00	601.00	278,350.77	1,765,851.06	No accidents or incidents 4 Hazard ID's: 1 Job obersvations :Drill 311mm surface hole F/474- 601m with Varel Tri cone insert bit and slick rotary assembly.Pumping at 2.3m3/min. WOB 10-18dan,RPM 50 -120,Average ROP 10.5m/hr. Drilled into a fracture @ 504m, began losing circulation (30m3) Mixed and pumped LCM pill and continue raising viscosity/ mixing LCM, Drill ahead with minor losses, Circulate hole clean,Build volume ,mixed and pumped LCM pill, Wiper trip to 130m with accumulated wire line surveys and rig services.
10	3/2/2013	3/3/2013	601.00	601.00	73,104.80	1,838,955.86	No accidents or incidents 3 Hazard ID's: 2 Job oberservations: Wiper trip,circulate condition hole to Log, pull out of hole to log,lay down 8" DCs, Rig in Schlumberger and run open hole logs. Rig to and run 244.5mm surface casing,circulate condition hole prior to cementing casing, NEB regulatory and environmental inspectors toured location and followed up on initial inspection,
11	3/3/2013	3/4/2013	601.00	601.00	95,533.45	1,934,489.31	No accidents or incidents 4 Hazard ID's: 1 Job oberservations:Circulate and condition mud, Rig to and cement surface casing, Recieved 10m3 good cement slurry returns, Nipple down diverter, Install casing bowl, Nipple up BOP's and pressure test as per program.

ConocoPhillips Canada

Daily Activity and Cost Summary
MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Report No.	Start Date	End Date	Depth Start (mKB)	Depth End (mKB)	Day Total	Cum Cost	Last 24hr Sum
12	3/4/2013	3/5/2013	601.00	732.00	329,118.97	2,263,608.28	No accidents or incidents 4 Hazard ID's: 1 Job oberservations:Pressure test BOP's and related equipment as per program. Make up directional BHA and run in hole, Hold BOP and man down drills, Drill out shoe track,Drill ahead 601m to 611m,Preform Formation Intagrity Test ,Fluid density 960kg/m3, Surface applied 7530kpa ,Total pressure at 611m 11,484kpa, Gradent of 18.8kpa/m.Continue to drill ahead from 611m to 732m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 14.5m/hr.
13	3/5/2013	3/6/2013	732.00	1,058.00	112,058.30	2,375,666.58	No accidents or incidents 4 Hazard ID's: 1 Job oberservations: Drill ahead from 732m to 1058m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 16.71 m/hr.
14	3/6/2013	3/7/2013	1,058.00	1,385.00	129,307.69	2,504,974.27	No accidents or incidents 4 Hazard ID's: 0 Job oberservations: Drill ahead from 1058m to 1385m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 15.2 m/hr.
15	3/7/2013	3/8/2013	1,385.00	1,713.00	216,194.07	2,721,168.34	No accidents or incidents 4 Hazard ID's: 0 Job oberservations: Drill ahead from 1385m to 1713m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 60,WOB 7-10 dan,Average ROP 15.43 m/hr.
16	3/8/2013	3/9/2013	1,713.00	1,890.00	255,015.47	2,976,183.81	No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Drill ahead from 1713m to 1890m (Core Point) with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 60,WOB 7-10 dan,Average ROP 13.35 m/hr.Circulate condition hole prior to pulling out and Core, Pull out of hole lay down directional tools.
17	3/9/2013	3/10/2013	1,891.00	1,919.00	205,760.36	3,181,944.17	No accidents or incidents 5 Hazard ID's: 0 Job oberservations:Finish pulling out of hole lay down directional tools.Pick up and make up Core BBL. run in hole,circulate condition hole and clear Core barrels,retrieve Drill Rod ,Cut Core #1 from 1891.5m to 1919m. Rig in Schumberger and start pulling core #1.
18	3/10/2013	3/11/2013	1,919.00	1,946.00	85,967.15	3,267,911.32	No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Pull core #1. with Schlumberger Wire Line unit,retrieve 27.5m core ,Make up inner barrle land and cut Core #2 from 1919m to 1946m. Rig up and pull core # 2
19	3/11/2013	3/12/2013	1,946.00	1,973.00	82,695.20	3,350,606.52	No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Pull core #2. with Schlumberger Wire Line unit,retrieve 27m core ,Make up inner barrle land and cut Core #3 from 1946m to 1973m. Rig up and pull core # 3 with Schlumberger Wire Line.
20	3/12/2013	3/13/2013	1,973.00	2,000.00	76,865.50	3,427,472.02	No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Pull core #3. with Schlumberger Wire Line unit,retrieve 27m core ,Make up inner barrel land and cut Core #4 from 1973m to 2000m. Rig up and pull core # 4 with Schlumberger Wire Line.
21	3/13/2013	3/14/2013	2,000.00	2,027.00	122,688.90	3,550,160.92	No accidents or incidents 4 Hazard ID's: 1 Job oberservations: Pull core #4. with Schlumberger Wire Line unit,retrieve 27m core ,Make up inner barrel, land and cut Core #5 from 2000m to 2027m. Rig up and pull core # 5 with Schlumberger Wire Line.
22	3/14/2013	3/15/2013	2,027.00	2,027.00	88,575.50	3,638,736.42	No accidents or incidents 4 Hazard ID's: 1 Job oberservations: Pull core #5. with Schlumberger Wire Line unit, Lost core @ surface, Upper shoe backed off from inner barrel allowing core to drop out, Wireline wieght chart showed loss while pulling out, Found core wedged in the first 5 stands of drill pipe, Recovered 18m +-, Pull out of hole and found the rest of the core in the core barrel, we got full recovery. Put a new bit on the core barrel and start running in. We changed the bit because one of the inside gauge cutters was broke to keep the core in gauge.

ConocoPhillips Canada

Daily Activity and Cost Summary

MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Report No.	Start Date	End Date	Depth Start (mKB)	Depth End (mKB)	Day Total	Cum Cost	Last 24hr Sum
23	3/15/2013	3/16/2013	2,027.00	2,054.00	90,332.02	3,729,068.44	No accidents or incidents 3 Hazard ID's: 1 Job observations: Run in hole with core barrels, Drift all pipe, Circulate bottoms up, Attempt to pull bit insert and drill rods with Schlumberger wireline, Pin sheared on overshot on first attempt, Make up 1 more sinker bar,Hydrauilic jar with Spanger bar and run in on wireline, Pull drill rod, Make up and pump down core sleeve, Cut core #6 F/ 2027 - 2054 mkb. Circulate bottoms up.
24	3/16/2013	3/17/2013	2,054.00	2,081.00	77,337.15	3,806,405.59	No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull core #6 with Schlumberger wireline, Lay down core, (100% recovery) Circulate, Pump down inner sleeve, Cut core #7 F/ 2054 - 2081 mkb. Circulate bottoms up. Rig up wirelines and start in to pull core barrel.
25	3/17/2013	3/18/2013	2,081.00	2,108.00	81,841.10	3,888,246.69	No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull core # 7 with Schlumberger wireline, Lay down core, (100% recovery) Circulate, Pump down inner sleeve, Cut core #8 F/ 2081 - 2108 mkb. Circulate bottoms up. Rig up wirelines and start in to pull core barrel.
26	3/18/2013	3/19/2013	2,108.00	2,108.00	84,048.50	3,972,295.19	No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull core #8 with Schlumberger wireline, Lay down core, (100% recovery) Circulate, Make up and set drill rod with wireline, Attempt to drill 222mm hole. Drill rod unseated, Attempt to reseat drill rod, (unsucessful) Pull out of hole.
27	3/19/2013	3/20/2013	2,108.00	2,142.00	148,593.85	4,120,889.04	No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull out of hole, Lay down corre barrels and collars, Pick up drill collars and make up 222mm PDC bit (RR#1) Run in hole, Rotary drill 222mm hole F/ 2108 - 2142m with rerun Reed MSR616 bit and slick rotary BHA,pumping at 1.3m3/min. WOB 9dan,average ROP 3m/hr
28	3/20/2013	3/21/2013	2,142.00	2,146.00	137,614.50	4,258,503.54	No accidents or incidents 4 Hazard ID's: 0 Job observations: Rotary drill 222mm hole F/ 2130 - 2146m with rerun Reed MSR616 bit and slick rotary BHA,pumping at 1.3m3/min. WOB 9dan,average ROP 3m/hr, Circulate, Wiper trip 5 stands, Hole in good condition, Circulate, Pull out of hole laying down drill string, Rig in and run wireline logs with Schlumberger.
29	3/21/2013	3/22/2013	2,146.00	2,146.00	76,930.50	4,335,434.04	No accidents or incidents 4 Hazard ID's: 0 Job observations:Run wireline logs with Schlumberger.
30	3/22/2013	3/23/2013	2,146.00	2,146.00	62,873.37	4,398,307.41	No accidents or incidents 4 Hazard ID's: 0 Job observations:Run wireline logs with Schlumberger.
31	3/23/2013	3/24/2013	2,146.00	2,146.00	1,062,516...	5,460,824.28	No accidents or incidents 4 Hazard ID's: 0 Job observations:Run wireline logs with Schlumberger,Rig to and run 177.8mm casing, Circulate and prepare to and cement with Schlumberger, wait on cement.
32	3/24/2013	3/25/2013	2,146.00	2,146.00	77,315.89	5,538,140.17	No accidents or incidents 4 Hazard ID's: 0 Job observations:Wait on cement, Nipple down BOP`s, Set casing slips with 50,000 Dan, Rig down and clean mud tanks, Prepare to move to rack site and load out rental equipment
33	3/25/2013	3/26/2013	2,146.00	2,146.00	2,400,151...	7,938,291.67	No accidents or incidents 0 Hazard ID's: 0 Job observations: Move rig to rack site and load out rental equipment for demobilization,

IX. Daily Drilling Reports

Well Header
COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Jobs
DRILLING ORIGINAL, 2/21/2013 00:00

AFE / RFE / Maint.#	Estimated Days	Actual Start Date	End Date
10343209	35.29	2/21/2013	3/24/2013

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	07:00	7.00	MIRU	MOVE	DMOB	P			0.00	0.00	Tear out rig, Lay down pre fabs, Bridle up to lay down Derrick.
07:00	07:15	0.25	MIRU	MOVE	DMOB	P			0.00	0.00	Crew change hand over meeting.
07:15	08:00	0.75	MIRU	MOVE	DMOB	P			0.00	0.00	Pre job inspection and safety meeting prior to laying down Derrick.
08:00	00:00	16.00	MIRU	MOVE	DMOB	P			0.00	0.00	Lay down Derrick ,General tear out of rig. Move Drill pipe and third party rentals to Mirror Lake location.
00:00	08:00	8.00	MIRU	MOVE	DMOB	P			0.00	0.00	Rest Crews and Wait on daylight
08:00	00:00	16.00	MIRU	MOVE	DMOB	P			0.00	0.00	Tear out rig components and Matting move to Mirror Lake location ,Lay rig foot print liner,Spot Matting and Sub.
00:00	08:00	8.00	MIRU	MOVE	DMOB	P			0.00	0.00	Rest Crews and Wait on daylight
08:00	00:00	16.00	MIRU	MOVE	DMOB	P			0.00	0.00	Move to Mirror Lake location N-20 ,Spot Draw Works, Derrick,Mud tank,water tank. Spot and rig up well site shacks.
00:00	08:00	8.00	MIRU	MOVE	WODL	P			0.00	0.00	Wait on daylight watch boilers
08:00	08:15	0.25	MIRU	MOVE	SFTY	P			0.00	0.00	Safety meeting with Beaver Crews,Mullens trucking and Conoco Reps.
08:15	14:00	5.75	MIRU	MOVE	RURD	P			0.00	0.00	Spot rig & rentals
14:00	16:00	2.00	MIRU	MOVE	RURD	P			0.00	0.00	Rig up steam water & power lines
16:00	17:45	1.75	MIRU	MOVE	RURD	P			0.00	0.00	Rig to raise derrick
17:45	18:00	0.25	MIRU	MOVE	SFTY	P			0.00	0.00	Inspect derrick prior to raising RY,BB,CD,NA
18:00	19:00	1.00	MIRU	MOVE	RURD	P			0.00	0.00	Bridle down & rig monkey board
19:00	19:15	0.25	MIRU	MOVE	SFTY	P			0.00	0.00	Crew change safety meeting
19:15	21:15	2.00	MIRU	MOVE	RURD	P			0.00	0.00	Pick up prefabs
21:15	00:00	2.75	MIRU	WHDBOP	NUND	P			0.00	0.00	Weld diverter flange & drain on conducter Nipple up diverter
00:00	05:00	5.00	MIRU	WHDBOP	NUND	P			0.00	0.00	Nipple up diverter, rig up flare lines
05:00	08:00	3.00	MIRU	MOVE	RURD	P			0.00	0.00	Rig up swivel and floor
08:00	08:15	0.25	MIRU	RIGMNT	SVRG	P			0.00	0.00	Rig service function test crown saver/ function test diverter
08:15	14:15	6.00	MIRU	MOVE	RURD	P			0.00	0.00	Rig to spud
14:15	14:45	0.50	MIRU	MOVE	SFTY	P			0.00	0.00	Pre spud rig inspection
14:45	16:00	1.25	MIRU	MOVE	PULD	P			0.00	0.00	Pick up and make up BHA
16:00	16:15	0.25	MIRU	RIGMNT	SVRG	P			0.00	0.00	Rig Service function test hydril 46 seconds check & motor kills
16:15	17:00	0.75	MIRU	MOVE	SFTY	P			0.00	0.00	Pre spud safety meeting & diverter drill with consultant and toolpush
17:00	22:00	5.00	SURFAC	DRILL	DRLG	P			0.00	70.00	Drill 311 mm hole from 20m to70m with Varel tri cone insert bit and slick rotary assembly.
22:00	22:15	0.25	SURFAC	DRILL	SFTY	P			70.00	70.00	Diverter drill crews in positions
22:15	00:00	1.75	SURFAC	DRILL	DRLG	P			70.00	84.00	Drill 311 mm hole from 70m to 84m with Varel tri cone insert bit and slick rotary assembly.
00:00	01:00	1.00	SURFAC	DRILL	DRLG	P			84.00	89.00	Drill 311 mm hole from 84m to 89m with Varel tri cone insert bit and slick rotary assembly.
01:00	01:15	0.25	SURFAC	RIGMNT	SVRG	P			89.00	89.00	Rig service function test annular 19 seconds to close function test crown saver
01:15	07:45	6.50	SURFAC	DRILL	DRLG	P			89.00	145.00	Drill 311 mm hole from 89m to145m with Varel tri cone insert bit and slick rotary assembly.
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P			145.00	145.00	Crew handover meeting

Well Header

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Jobs

DRILLING ORIGINAL, 2/21/2013 00:00

AFE / RFE / Maint.#	Estimated Days	Actual Start Date	End Date
10343209	36.29	2/21/2013	3/24/2013

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	07:00	7.00	MIRU	MOVE	DMOB	P			0.00	0.00	Tear out rig, Lay down pre fabs, Bridle up to lay down Derrick.
07:00	07:15	0.25	MIRU	MOVE	DMOB	P			0.00	0.00	Crew change hand over meeting.
07:15	08:00	0.75	MIRU	MOVE	DMOB	P			0.00	0.00	Pre job inspection and safety meeting prior to laying down Derriuck.
08:00	00:00	16.00	MIRU	MOVE	DMOB	P			0.00	0.00	Lay down Derrick ,General tear out of rig. Move Drill pipe and third party rentals to Mirror Lake location.
00:00	08:00	8.00	MIRU	MOVE	DMOB	P			0.00	0.00	Rest Crews and Wait on daylight
08:00	00:00	16.00	MIRU	MOVE	DMOB	P			0.00	0.00	Tear out rig components and Matting move to Mirror Lake location ,Lay rig foot print liner,Spot Matting and Sub.
00:00	08:00	8.00	MIRU	MOVE	DMOB	P			0.00	0.00	Rest Crews and Wait on daylight
08:00	00:00	16.00	MIRU	MOVE	DMOB	P			0.00	0.00	Move to Mirror Lake location N-20 ,Spot Draw Works, Derrick,Mud tank,water tank. Spot and rig up well site shacks.
00:00	08:00	8.00	MIRU	MOVE	WODL	P			0.00	0.00	Wait on daylight watch boilers
08:00	08:15	0.25	MIRU	MOVE	SFTY	P			0.00	0.00	Safety meeting with Beaver Crews,Mullens trucking and Conoco Reps.
08:15	14:00	5.75	MIRU	MOVE	RURD	P			0.00	0.00	Spot rig & rentals
14:00	16:00	2.00	MIRU	MOVE	RURD	P			0.00	0.00	Rig up steam water & power lines
16:00	17:45	1.75	MIRU	MOVE	RURD	P			0.00	0.00	Rig to raise derrick
17:45	18:00	0.25	MIRU	MOVE	SFTY	P			0.00	0.00	Inspect derrick prior to raising RY,BB,CD,NA
18:00	19:00	1.00	MIRU	MOVE	RURD	P			0.00	0.00	Bridle down & rig monkey board
19:00	19:15	0.25	MIRU	MOVE	SFTY	P			0.00	0.00	Crew change safety meeting
19:15	21:15	2.00	MIRU	MOVE	RURD	P			0.00	0.00	Pick up prefabs
21:15	00:00	2.75	MIRU	WHDBOP	NUND	P			0.00	0.00	Weld diverter flange & drain on conducter Nipple up diverter
00:00	05:00	5.00	MIRU	WHDBOP	NUND	P			0.00	0.00	Nipple up diverter, rig up flare lines
05:00	08:00	3.00	MIRU	MOVE	RURD	P			0.00	0.00	Rig up swivel and floor
08:00	08:15	0.25	MIRU	RIGMNT	SVRG	P			0.00	0.00	Rig service function test crown saver/ function test diverter
08:15	14:15	6.00	MIRU	MOVE	RURD	P			0.00	0.00	Rig to spud
14:15	14:45	0.50	MIRU	MOVE	SFTY	P			0.00	0.00	Pre spud rig inspection
14:45	16:00	1.25	MIRU	MOVE	PULD	P			0.00	0.00	Pick up and make up BHA
16:00	16:15	0.25	MIRU	RIGMNT	SVRG	P			0.00	0.00	Rig Service function test hydril 48 seconds check & motor kills
16:15	17:00	0.75	MIRU	MOVE	SFTY	P			0.00	0.00	Pre spud safety meeting & diverter drill with consultant and toolpush
17:00	22:00	5.00	SURFAC	DRILL	DRLG	P			0.00	70.00	Drill 311 mm hole from 20m to70m with Varel tri cone Insert bit and slick rotary asseembly.
22:00	22:15	0.25	SURFAC	DRILL	SFTY	P			70.00	70.00	Diverter drill crews in positions
22:15	00:00	1.75	SURFAC	DRILL	DRLG	P			70.00	84.00	Drill 311 mm hole from 70m to 84m with Varel tri cone Insert bit and slick rotary asseembly.
00:00	01:00	1.00	SURFAC	DRILL	DRLG	P			84.00	89.00	Drill 311 mm hole from 84m to 89m with Varel tri cone Insert bit and slick rotary asseembly.
01:00	01:15	0.25	SURFAC	RIGMNT	SVRG	P			89.00	89.00	Rig service function test annular 19 seconds to close function test crown saver
01:15	07:45	6.50	SURFAC	DRILL	DRLG	P			89.00	145.00	Drill 311 mm hole from 89m to145m with Varel tri cone Insert bit and slick rotary asseembly.
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P			145.00	145.00	Crew handover meeting

Well Header

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P			145.00	145.00	Rig service function test hydril 55 seconds to close function test crown saver
08:15	15:15	7.00	SURFAC	DRILL	DRLG	P			145.00	218.00	Drill 311 mm hole from 145m to 218m with Varel tri cone Insert bit and slick rotary asseembly.Minor losses at 146m 7m3
15:15	15:45	0.50	SURFAC	DRILL	SRVY	P			218.00	218.00	Accumulated time for surveys
15:45	16:00	0.25	SURFAC	DRILL	SFTY	P			218.00	218.00	Crew hand over meeting
16:00	16:15	0.25	SURFAC	DRILL	DRLG	P			218.00	222.00	Drill 311 mm hole from 218m to 222m with Varel tri cone Insert bit and slick rotary asseembly.
16:15	16:30	0.25	SURFAC	RIGMNT	SVRG	P			222.00	222.00	Rig service function hydrill 55 sec crown saver operating properly
16:30	21:15	4.75	SURFAC	DRILL	DRLG	P			222.00	280.00	Drill 311 mm hole from 222m to 280m with Varel tri cone Insert bit and slick rotary asseembly.
21:15	21:30	0.25	SURFAC	DRILL	SFTY	P			280.00	280.00	Diverter drill crew in position well secure in 90 sec
21:30	23:15	1.75	SURFAC	DRILL	DRLG	P			280.00	300.00	Drill 311 mm hole from 280m to 300m with Varel tri cone Insert bit and slick rotary asseembly.
23:15	23:45	0.50	SURFAC	DRILL	SRVY	P			300.00	300.00	Accumilated wire line surveys
23:45	00:00	0.25	SURFAC	DRILL	CIRC	P			300.00	300.00	Circulate hole clean
00:00	00:15	0.25	SURFAC	RIGMNT	SVRG	P			300.00	300.00	Rig service function test hydril 56 sec
00:15	00:30	0.25	SURFAC	DRILL	SFTY	P			300.00	300.00	Safety meeting on tripping
00:30	02:00	1.50	SURFAC	DRILL	WPRT	T	Hole Conditions	Other	300.00	300.00	Wiper trip from 300 m to 260m, Wash and back ream to 153m. Likely filter cake build up on seepage zones
02:00	06:45	4.75	SURFAC	DRILL	JAR	T	Stuck Pipe	Packed Off	300.00	300.00	Work tight hole and stuck pipe @ 153 m with full circulation
06:45	07:45	1.00	SURFAC	DRILL	TRIP	P			300.00	300.00	Pulled loose from 153m Trip out of hole to 120m
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P			300.00	300.00	Crew hand over meeting
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P			300.00	300.00	Rig service function hydrill 55 sec crown saver operating properly
08:15	09:00	0.75	SURFAC	DRILL	WPRT	T	Hole Conditions	Other	300.00	300.00	Wiper trip up to 112m work tight hole @ 112M
09:00	10:00	1.00	SURFAC	DRILL	JAR	T	Stuck Pipe	Packed Off	300.00	300.00	Pick up surface jars to jar stuck pipe @112m
10:00	10:15	0.25	SURFAC	DRILL	SFTY	T	Hole Conditions	Other	300.00	300.00	Safety meeting on surface jarring reviewed jsa#133 jarring
10:15	14:30	4.25	SURFAC	DRILL	JAR	T	Stuck Pipe	Packed Off	300.00	300.00	Surface jarring @112m, Jarred free
14:30	16:00	1.50	SURFAC	DRILL	REAM	T	Hole Conditions	Other	300.00	300.00	Back ream pull tight hole from 112m to 95m, Partial lost circulation (6m3)
16:00	16:15	0.25	SURFAC	RIGMNT	SVRG	T	Hole Conditions	Other	300.00	300.00	Rig service function hydrill 55 sec crown saver operating properly
16:15	17:30	1.25	SURFAC	DRILL	REAM	T	Hole Conditions	Other	300.00	300.00	Back ream and pull tight hole from 95m to 60m, Partial lost circulation - 10-15% while circulating
17:30	18:15	0.75	SURFAC	DRILL	WPRT	P			300.00	300.00	Wiper trip out of hole from 60m to OOH/Clean and inspect bit
18:15	19:00	0.75	SURFAC	DRILL	WPRT	P			300.00	300.00	Run in hole 1 STD/brake down surface jars and laydown
19:00	19:15	0.25	SURFAC	RIGMNT	SVRG	P			300.00	300.00	Rig service function test hydril 55 sec & crown saver
19:15	20:15	1.00	SURFAC	DRILL	CIRC	P			300.00	300.00	Build volume bring vis up to 80,clean and organize floor
20:15	21:15	1.00	SURFAC	DRILL	TRIP	P			300.00	300.00	Run in hole to 151 m
21:15	00:00	2.75	SURFAC	DRILL	REAM	P			300.00	300.00	Ream & clean from 151 m to 281 m

Well Header

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:45	0.75	SURFAC	DRILL	REAM	P			300.00	300.00	Ream & clean from 281 m to 300 m
00:45	01:00	0.25	SURFAC	RIGMNT	SVRG	P			300.00	300.00	Rig service function test hydril 55 sec & crown saver
01:00	07:15	6.25	SURFAC	DRILL	DRLG	P			300.00	387.00	Drill 311 mm hole from 300 m to 387 m with varel tri cone insert bit & slick rotary asseembly,Pumping at 2.6m3/min.Average ROP 13.9m/hr ,WOB 10dan RPM 115
07:15	07:45	0.50	SURFAC	DRILL	SRVY	P			387.00	387.00	Accumulated time for surveys
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P			387.00	387.00	Crew hand over meeting
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P			387.00	387.00	Rig service function hydrill 55 sec crown saver operating properly
08:15	12:15	4.00	SURFAC	DRILL	DRLG	P			387.00	444.00	Drill 311 mm hole from 387m to 444m with varel tri cone insert bit & slick rotary asseembly.Pumping at 2.6m3/min.Average ROP 14.25m/hr ,WOB 10dan RPM 115
12:15	12:45	0.50	SURFAC	DRILL	SRVY	P			444.00	444.00	Accumilated wireline surveys
12:45	14:00	1.25	SURFAC	DRILL	CIRC	P			444.00	444.00	Circulate hole clean
14:00	16:00	2.00	SURFAC	DRILL	WPRT	P			444.00	444.00	Wiper trip out of hole flow check@412m/134m
16:00	17:15	1.25	SURFAC	DRILL	WPRT	P			444.00	444.00	Wiper trip out of hole flow check
17:15	18:15	1.00	SURFAC	RIGMNT	SVRG	P			444.00	444.00	Rig service crown saver operating properly/change out kelly spinner/clean and prepare floor to RIH
18:15	19:30	1.25	SURFAC	DRILL	WPRT	P			444.00	444.00	Wiper trip in the hole
19:30	20:30	1.00	SURFAC	DRILL	REAM	P			444.00	444.00	Pick up kelly & clean up hole @ 267 m TO 301 m
20:30	21:15	0.75	SURFAC	DRILL	TRIP	P			444.00	444.00	Run in hole
21:15	00:00	2.75	SURFAC	DRILL	DRLG	P			444.00	474.00	Drill 311 mm hole from 444m to 474m with varel tri cone insert bit & slick rotary asseembly < Pumping at 2.6m3/min.Average ROP 10.9m/hr ,WOB 10dan RPM 115
00:00	00:15	0.25	SURFAC	RIGMNT	SVRG	P			474.00	474.00	Rig service function test hydril 55 sec & crown saver
00:15	06:15	6.00	SURFAC	DRILL	DRLG	P			474.00	532.00	Drill 311 mm hole from 474 m to 532 m with varel tri cone insert bit & slick rotary asseembly,Pumping at 2.6m3/min. WOB 10-12dan RPM 115,Average ROP 9.6m/hr
06:15	07:00	0.75	SURFAC	DRILL	CIRC	T	Lost Circulation	Expected	532.00	532.00	Miw up pill due to lost circulation
07:00	07:45	0.75	SURFAC	DRILL	SRVY	T	Lost Circulation	Expected	532.00	532.00	Accumulated time for surveys
07:45	08:00	0.25	SURFAC	DRILL	SFTY	T	Lost Circulation	Expected	532.00	532.00	Crew hand over meeting
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	T	Lost Circulation	Expected	532.00	532.00	Rig service function hydrill 55 sec crown saver operating properly
08:15	09:45	1.50	SURFAC	DRILL	CIRC	T	Lost Circulation	Expected	532.00	532.00	Build volume mix up LCM pill work string @532m/Safety meeting on leveling substructure reviewed JSA#145
09:45	15:30	5.75	SURFAC	DRILL	DRLG	P			532.00	584.00	Drill 311 mm hole from 532m to 584m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min. WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr, Minor losses 5m3/hr
15:30	16:00	0.50	SURFAC	DRILL	SRVY	P			584.00	584.00	Accumilated wire line survey

Well Header

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
16:00	16:30	0.50	SURFAC	DRILL	DRLG	P			584.00	590.00	Drill 311 mm hole from 584m to 590m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min. WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr,Minor losses 5m3/hr
16:30	16:45	0.25	SURFAC	RIGMNT	SVRG	P			590.00	590.00	Rig service function hydrill 55 sec crown saver operating properly
16:45	18:00	1.25	SURFAC	DRILL	DRLG	P			590.00	601.00	Drill 311 mm hole from 584m to 601m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min. WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr. Minor losses 5m3/hr
18:00	19:00	1.00	SURFAC	DRILL	CIRC	P			601.00	601.00	Circulate hole clean for wiper trip pumping at 2.6m3/min. with losses 10m3/hr.& mix & build volume
19:00	19:15	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Safety meeting with Conoco safety coach Jack Brasil
19:15	23:15	4.00	SURFAC	DRILL	CIRC	T	Lost Circulation	Expected	601.00	601.00	Build volume & circ
23:15	00:00	0.75	SURFAC	DRILL	WPRT	P			601.00	601.00	Wiper trip flow check @ 596 m & 557 m
00:00	00:45	0.75	SURFAC	DRILL	WPRT	P			601.00	601.00	Wiper trip to flow check @ 157 m
00:45	01:00	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service function test hydril 56 sec & crown saver
01:00	01:45	0.75	SURFAC	DRILL	TRIP	P			601.00	601.00	Run in hole to 469 m hit bridge @ 469 m
01:45	03:00	1.25	SURFAC	DRILL	REAM	P			601.00	601.00	Ream & clean from 469 m to 479 m 540 m
03:00	03:15	0.25	SURFAC	DRILL	TRIP	P			601.00	601.00	Run in hole
03:15	03:30	0.25	SURFAC	DRILL	REAM	P			601.00	601.00	Ream & clean from 585 m to 601 m
03:30	05:30	2.00	SURFAC	DRILL	CIRC	P			601.00	601.00	Circulate & condition hole
05:30	07:45	2.25	SURFAC	DRILL	TRIP	P			601.00	601.00	Pull out of hole to log flow checks @ 599 m 556 m
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Crew hand over meeting
08:00	08:45	0.75	SURFAC	DRILL	TRIP	P			601.00	601.00	Trip out of hole lay down 9 inc DC flow check @OOH reviewed jsa#159 Lay down DC
08:45	09:00	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service crown saver operating properly
09:00	09:15	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Safety meeting with Schlumberger wire line reviewed jsa#151 rig up to and log well
09:15	14:00	4.75	SURFAC	DRILL	ELOG	P			601.00	601.00	Wire line log run #1 with Schlumberger on bottom @10:45 depth 601.5m tools ran ATI,DSI,GPIT,PPC NEB follow up inspection enviromental and regulatory
14:00	14:15	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Safety meeting with hallmark tong hand reviewed jsa#97 install shoe and float and run csg
14:15	16:00	1.75	SURFAC	CASING	RNCS	P			601.00	601.00	Rig up to run casing
16:00	16:15	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service
16:15	23:00	6.75	SURFAC	CASING	RNCS	P			601.00	601.00	Ran 244.5mm 59.53kg/m J-55 casing as follows, guide shoe,float collar,1 joint casing,float collar,46 joints casing, Total length 598.86m, Landed @ 598m
23:00	00:00	1.00	SURFAC	CASING	CIRC	P			601.00	601.00	Circulate casing, condition hole.
00:00	00:15	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service function test crown saver
00:15	01:15	1.00	SURFAC	CASING	CIRC	P			601.00	601.00	Circ casing
01:15	01:30	0.25	SURFAC	CEMENT	SFTY	P			601.00	601.00	Safety meeting on cementing

Well Header

COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
01:30	04:00	2.50	SURFAC	CEMENT	CMNT	P			601.00	601.00	Cement casing from 5m to 601m with 35 Tonne (33.90m3) Thixtropic D804A-P cement @1740kg/m3 with 2% CaCL2, 0.2% antifoam, Bumped plug and pressure tested casing to 11,500 kpa, Recieved 10m3 good cement slurry returns @ surface, Annulus remained static at surface
04:00	08:00	4.00	SURFAC	CEMENT	WOC	P			601.00	601.00	Wait on cement
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service
08:15	12:30	4.25	SURFAC	WHDBOP	NUND	P			601.00	601.00	Nipple down diverter reviewed jsa#113 nipple down bop
12:30	14:00	1.50	SURFAC	WHDBOP	NUND	P			601.00	601.00	Clean and prepare casing screw on casing bowl
14:00	16:00	2.00	SURFAC	WHDBOP	NUND	P			601.00	601.00	Nipple up BOP reviewed jsa#109 nipple up BOP
16:00	16:15	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service
16:15	20:15	4.00	SURFAC	WHDBOP	NUND	P			601.00	601.00	Nipple up BOP
20:15	20:30	0.25	SURFAC	WHDBOP	SFTY	P			601.00	601.00	Safety meeting j.s.a # 111
20:30	00:00	3.50	SURFAC	WHDBOP	BOPE	P			601.00	601.00	Pressure test BOP system,Pressure test all Manifold valves 1400kpa Low and 20,000kpa high min. each,Pipe rams,Choke line, Kill line,Kill line Check valve and HCR 1400kpa low and 20,000kpa high 10 min. each
00:00	03:15	3.25	SURFAC	WHDBOP	BOPE	P			601.00	601.00	Continue to pressure test BOPs equipment pressure test Anular 1400kpa low and 17500kpa high 10 min. each,Stabbing,Inside BOP and Upper Kelly Cock 1400kpa low and 20,000kpa high 10 min. each,Blind ram ,Casing Bowl and Casing 1400kpa Low and 19000kpa high 1
03:15	03:30	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service function test crown saver & motor kills
03:30	04:15	0.75	SURFAC	RIGMNT	SLPC	P			601.00	601.00	Slip & cut 30 m
04:15	04:30	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Rig safety inspection
04:30	04:45	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Held Man down drill
04:45	05:00	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Held BOP drill well secured 85 seconds
05:00	05:15	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Safety meeting picking up directional tools
05:15	08:00	2.75	SURFAC	DRILL	PULD	P			601.00	601.00	Pick up Directional tools
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P			601.00	601.00	Rig service crown saver operating properly
08:15	11:30	3.25	SURFAC	DRILL	TRIP	P			601.00	601.00	Trip in the hole to 576m
11:30	11:45	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Bop drill crew in position well secure in 90 sec
11:45	12:00	0.25	SURFAC	DRILL	SFTY	P			601.00	601.00	Man down drill
12:00	13:00	1.00	SURFAC	CEMENT	DRLG	P			601.00	601.00	Drill cement float and shoe from 581m to 601m tag cement @581m
13:00	14:45	1.75	SURFAC	DRILL	DRLG	P			601.00	611.00	Drill 222mm hole from 601m to 611m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 5.7m/hr.
14:45	15:00	0.25	SURFAC	DRILL	CIRC	P			611.00	611.00	Circulate bottoms up/safety meeting w/peregrine pressure tester

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
15:00	15:30	0.50	SURFAC	DRILL	FIT	P			611.00	611.00	Preform Formation Integrity Test ,Fluid density 960kg/m3, Surface applied 7530kpa ,Total pressure at 611m 11,484kpa, Gradient of 18.8kpa/m
15:30	16:00	0.50	INTRM1	DRILL	DRLG	P			611.00	616.00	Drill 222mm hole from 611m to 616m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 5m/hr.
16:00	16:30	0.50	INTRM1	DRILL	CIRC	T	BHA	MWD - Survey	616.00	616.00	Trouble shoot mwd tool
16:30	16:45	0.25	INTRM1	DRILL	DRLG	P			616.00	626.00	Drill 222mm hole from 616m to 626m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 40m/hr.
16:45	17:00	0.25	INTRM1	RIGMNT	SVRG	P			626.00	626.00	Rig service function hydrill 13 sec crown saver operating properly
17:00	18:15	1.25	INTRM1	DRILL	DRLG	P			626.00	643.00	Drill 222mm hole from 626m to 643m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 13.2m/hr.
18:15	19:00	0.75	INTRM1	RIGMNT	RGRP	T	Rig	Pump	643.00	643.00	Repair rad hose on #1 pump motor
19:00	19:15	0.25	INTRM1	DRILL	SFTY	P			643.00	643.00	Crew change safety meeting
19:15	23:30	4.25	INTRM1	DRILL	DRLG	P			643.00	732.00	Drill 222mm hole from 643m to 732m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	00:00	0.50	INTRM1	DRILL	SRVY	P			732.00	732.00	Accumulated time for surveys
00:00	00:15	0.25	INTRM1	RIGMNT	SVRG	P			732.00	732.00	Rig service function test pipe rams 3 sec & crown saver
00:15	07:15	7.00	INTRM1	DRILL	DRLG	P			732.00	847.00	Drill 222mm hole from 732 m to 847m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:15	07:45	0.50	INTRM1	DRILL	SRVY	P			847.00	847.00	Accumulated time for surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P			847.00	847.00	Crew hand over meeting
08:00	08:15	0.25	INTRM1	RIGMNT	SVRG	P			847.00	847.00	Rig service function test hydrill 13 sec crown saver operating properly
08:15	12:30	4.25	INTRM1	DRILL	DRLG	P			847.00	915.00	Drill 222mm hole from 847m to 915m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
12:30	13:30	1.00	INTRM1	DRILL	SEQP	T	BHA	MWD - Survey	915.00	915.00	Trouble shoot MWD tool for gamma ray

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
13:30	14:30	1.00	INTRM1	DRILL	DRLG	P			915.00	934.00	Drill 222mm hole from 915m to 934m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
14:30	14:45	0.25	INTRM1	DRILL	SFTY	P			934.00	934.00	Bop drill crew in position well secure in 90 sec
14:45	15:15	0.50	INTRM1	DRILL	DRLG	P			934.00	953.00	Drill 222mm hole from 934m953mto with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:15	15:45	0.50	INTRM1	DRILL	SRVY	P			953.00	953.00	Accumilated directional surveys
15:45	16:00	0.25	INTRM1	DRILL	SFTY	P			953.00	953.00	Crew change safety meetings
16:00	16:15	0.25	INTRM1	RIGMNT	SVRG	P			953.00	953.00	Rig service function test pipe rams 4 seconds to close function test crown saver
16:15	18:00	1.75	INTRM1	DRILL	DRLG	P			953.00	982.00	Drill 222mm hole from 953m982m to with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 26m/hr.
18:00	18:15	0.25	INTRM1	DRILL	SFTY	P			982.00	982.00	BOP drill well secure in 90 seconds crew in positions
18:15	18:30	0.25	INTRM1	DRILL	SFTY	P			982.00	982.00	Man down drill crew walked through rescue routes
18:30	23:30	5.00	INTRM1	DRILL	DRLG	P			982.00	1,058.00	Drill 222mm hole from 982m 1058m to with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	23:45	0.25	INTRM1	DRILL	SRVY	P			1,058.00	1,058.00	Accumulated survey time
23:45	00:00	0.25	INTRM1	DRILL	SFTY	P			1,058.00	1,058.00	Crew change safety meeting
00:00	00:15	0.25	INTRM1	RIGMNT	SVRG	P			1,058.00	1,058.00	Rig service function test hydrill 13 sec crown saver operating properly
00:15	07:30	7.25	INTRM1	DRILL	DRLG	P			1,058.00	1,174.00	Drill 222mm hole from 1058m to 1174m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:30	07:45	0.25	INTRM1	DRILL	SRVY	P			1,174.00	1,174.00	Accumilated directional surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P			1,174.00	1,174.00	Crew change safety meeting
08:00	08:15	0.25	INTRM1	RIGMNT	SVRG	P			1,174.00	1,174.00	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
08:15	15:30	7.25	INTRM1	DRILL	DRLG	P			1,174.00	1,289.00	Drill 222mm hole from 1174m to1289m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:30	16:00	0.50	INTRM1	DRILL	SRVY	P			1,289.00	1,289.00	Accumulated survey time

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
16:00	16:30	0.50	INTRM1	DRILL	DRLG	P			1,289.00	1,299.00	Drill 222mm hole from 1289m to1299m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
16:30	16:45	0.25	INTRM1	RIGMNT	SVRG	P			1,299.00	1,299.00	Rig service function test annular 13 seconds to close function test crown saver
16:45	19:15	2.50	INTRM1	DRILL	DRLG	P			1,299.00	1,326.00	Drill 222mm hole from 1299m to 1326m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
19:15	19:30	0.25	INTRM1	DRILL	SFTY	P			1,326.00	1,326.00	Crew change safety meeting
19:30	23:30	4.00	INTRM1	DRILL	DRLG	P			1,326.00	1,385.00	Drill 222mm hole from 1326m to 1385m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	00:00	0.50	INTRM1	DRILL	SRVY	P			1,385.00	1,385.00	Accumilated directional surveys
00:00	00:15	0.25	INTRM1	RIGMNT	SVRG	P			1,385.00	1,385.00	Rig service function pipe rams 3 sec crown saver operating properly
00:15	07:15	7.00	INTRM1	DRILL	DRLG	P			1,385.00	1,491.00	Drill 222mm hole from 1385m to 1491m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:15	07:45	0.50	INTRM1	DRILL	SRVY	P			1,491.00	1,491.00	Accumilated directional surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P			1,491.00	1,491.00	Crew change safety meeting
08:00	08:45	0.75	INTRM1	DRILL	DRLG	P			1,491.00	1,501.00	Drill 222mm hole from 1491m to 1501m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
08:45	09:00	0.25	INTRM1	RIGMNT	SVRG	P			1,501.00	1,501.00	Rig service function test annular 13 seconds to close function test crown saver
09:00	15:30	6.50	INTRM1	DRILL	DRLG	P			1,501.00	1,597.00	Drill 222mm hole from 1501m to1597 m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:30	16:00	0.50	INTRM1	DRILL	SRVY	P			1,597.00	1,597.00	Accumulated survey time
16:00	16:30	0.50	INTRM1	DRILL	DRLG	P			1,597.00	1,607.00	Drill 222mm hole from 1597m to1607 m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr
16:30	16:45	0.25	INTRM1	RIGMNT	SVRG	P			1,607.00	1,607.00	Rig service function test pipe rams 3 seconds to close function test crown saver working proper

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
16:45	19:00	2.25	INTRM1	DRILL	DRLG	P			1,607.00	1,641.00	Drill 222mm hole from 1607m to 1641m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
19:00	19:15	0.25	INTRM1	DRILL	SFTY	P			1,641.00	1,641.00	Crew change safety meeting
19:15	23:30	4.25	INTRM1	DRILL	DRLG	P			1,641.00	1,713.00	Drill 222mm hole from 1641m to1713m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	00:00	0.50	INTRM1	DRILL	SRVY	P			1,713.00	1,713.00	Accumilated directional surveys
00:00	01:00	1.00	INTRM1	DRILL	DRLG	P			1,713.00	1,722.00	Drill 222mm hole from 1713m to 1722m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
01:00	01:15	0.25	INTRM1	RIGMNT	SVRG	P			1,722.00	1,722.00	Rig service function hydrill 13 sec crown saver operating properly
01:15	03:00	1.75	INTRM1	DRILL	DRLG	P			1,722.00	1,741.00	Drill 222mm hole from 1722m to 1741m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
03:00	03:30	0.50	INTRM1	RIGMNT	RGRP	T	Rig	Pump	1,741.00	1,741.00	Change out pump control on driller control panel
03:30	07:30	4.00	INTRM1	DRILL	DRLG	P			1,741.00	1,818.00	Drill 222mm hole from 1741m to 1818m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:30	07:45	0.25	INTRM1	DRILL	SRVY	P			1,818.00	1,818.00	Accumilated directional surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P			1,818.00	1,818.00	Crew change safety meeting
08:00	08:15	0.25	INTRM1	RIGMNT	SVRG	P			1,818.00	1,818.00	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
08:15	10:00	1.75	INTRM1	DRILL	DRLG	P			1,818.00	1,847.00	Drill 222mm hole from 1818m to1847m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
10:00	14:45	4.75	INTRM1	DRILL	DRLG	P			1,847.00	1,890.00	Drill 222mm hole from 1847m to 1890m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,control drill at 10m/hr to core point
14:45	15:00	0.25	INTRM1	DRILL	SRVY	P			1,890.00	1,890.00	Accumulated survey time
15:00	16:00	1.00	PROD1	CORING	CIRC	P			1,890.00	1,890.00	Condition mud and circulate
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P			1,890.00	1,890.00	Rig service function test annular 13sec to close function test crown saver working proper

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
16:15	16:30	0.25	PROD1	CORING	SFTY	P			1,890.00	1,890.00	Safety meeting on tripping out of the hole, reviewed jsa#129.
16:30	19:00	2.50	PROD1	CORING	TRIP	P			1,890.00	1,890.00	Pump pill, Trip out of hole with pipe spinner lay down BHA/flow check@1881m/1789m/
19:00	19:15	0.25	PROD1	CORING	SFTY	P			1,890.00	1,890.00	Crew change safety meeting
19:15	23:30	4.25	PROD1	CORING	TRIP	P			1,890.00	1,890.00	Trip out of hole Flow check@933M/214m/
23:30	23:45	0.25	PROD1	CORING	SFTY	P			1,890.00	1,890.00	Safety meeting reviewed jsa#159 laying down DC
23:45	00:00	0.25	PROD1	CORING	PULD	P			1,890.00	1,890.00	Lay down BHA
00:00	03:30	3.50	PROD1	CORING	PULD	P			1,890.00	1,890.00	Lay down BHA Flow check OOH Strap 1891.5m Trip calc 9.22m3 meas 11.60m3 diff 2.38m3
03:30	04:00	0.50	PROD1	RIGMNT	SVRG	P			1,890.00	1,890.00	Rig service function blind rams 3 sec crown saver operating properly/Blow kelly take MWD transducer out of stand pipe
04:00	04:15	0.25	PROD1	RIGMNT	SVRG	P			1,890.00	1,890.00	Clean and prepare floor to pick up core BHA
04:15	04:30	0.25	PROD1	CORING	SFTY	P			1,890.00	1,890.00	Safety meeting with NOV core hands reviewed NOV jsa#1 picking up core tools
04:30	07:45	3.25	PROD1	CORING	PULD	P			1,890.00	1,890.00	Pick up core BHA and RIH
07:45	08:00	0.25	PROD1	CORING	SFTY	P			1,890.00	1,890.00	Crew change safety meeting
08:00	08:45	0.75	PROD1	RIGMNT	SLPC	P			1,890.00	1,890.00	Slip and cut 20m drilling line 6707mj
08:45	09:00	0.25	PROD1	RIGMNT	SVRG	P			1,890.00	1,890.00	Rig service function test annular 13 seconds to close
09:00	12:00	3.00	PROD1	CORING	TRIP	P			1,890.00	1,890.00	TRIP IN HOLE
12:00	13:00	1.00	PROD1	CORING	CIRC	P			1,890.00	1,890.00	Circulate prep floor to pick up singles
13:00	13:30	0.50	PROD1	CORING	PULD	P			1,890.00	1,890.00	Pick up drill pipe to tag bottom
13:30	14:30	1.00	PROD1	CORING	CIRC	P			1,890.00	1,890.00	Circulate bottoms up prepair to wire line retrieve drill rod.
14:30	14:45	0.25	PROD1	CORING	SFTY	P			1,890.00	1,890.00	Safety meeting with schlumberger wireline and nov core hands
14:45	16:00	1.25	PROD1	CORING	ELNE	P			1,890.00	1,890.00	Run in wireline with schlumberger to retrieve nov drill rod.
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P			1,890.00	1,890.00	Rig service function test H.C.R
16:15	17:45	1.50	PROD1	CORING	ELNE	P			1,890.00	1,890.00	Run in with schlumberger wireline to retrieve nov drill rod
17:45	18:15	0.50	PROD1	CORING	RECR	P			1,890.00	1,890.00	Rig up to run core #1 with nov core hands
18:15	18:30	0.25	PROD1	CORING	RECR	P			1,890.00	1,890.00	Pump down core #1 with nov core hands
18:30	21:30	3.00	PROD1	CORING	CORE	P			1,890.00	1,919.00	Core #1 222mm core #1 from1890m to 1919m Pumping at 1.2m3 rotating at 65rpm weight on bit 5dan average R.O.P 10m/h
21:30	22:15	0.75	PROD1	CORING	CIRC	P			1,919.00	1,919.00	Circulate bottoms up to pull core#1
22:15	22:30	0.25	PROD1	CORING	SFTY	P			1,919.00	1,919.00	Safety meeting with Schlumberger wire line and NOV core hands
22:30	22:45	0.25	PROD1	CORING	TRIP	P			1,919.00	1,919.00	Pull 2 stds up to to retive core #1
22:45	00:00	1.25	PROD1	CORING	ELNE	P			1,919.00	1,919.00	Rig to and pull core #1 with Schlumberger wire line and NOV core
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P			1,919.00	1,919.00	Rig service
00:15	07:45	7.50	PROD1	CORING	ELNE	P			1,919.00	1,919.00	Retrive core #1 with NOV core and schlumberger wire line
07:45	08:00	0.25	PROD1	CORING	SFTY	P			1,919.00	1,919.00	Crew change safety meeting
08:00	12:15	4.25	PROD1	CORING	ELNE	P			1,919.00	1,919.00	Retrive core #1 with NOV core and schlumberger wire line
12:15	12:30	0.25	PROD1	CORING	SFTY	P			1,919.00	1,919.00	Safety meeting with NOV core hands

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
12:30	14:00	1.50	PROD1	CORING	RECR	P			1,919.00	1,919.00	Lay out core #1 with nov core hands,Recover 27.5m of core (Full recovery)
14:00	14:15	0.25	PROD1	RIGMNT	SVRG	P			1,919.00	1,919.00	Rig service function test pipe rams 3 seconds to close function test crown saver
14:15	15:30	1.25	PROD1	CORING	CIRC	P			1,919.00	1,919.00	Circulate
15:30	16:00	0.50	PROD1	CORING	RECR	P			1,919.00	1,919.00	Rig up core barrels for run#2 and pump down
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P			1,919.00	1,919.00	Rig service
16:15	17:00	0.75	PROD1	CORING	CORE	P			1,919.00	1,937.00	Core #2 222mm core from 1919mto1937m rotary 60 WOB 5dan pumping at 1.2m3 R.O.P 9m/hr
17:00	17:15	0.25	PROD1	CORING	SFTY	P			1,937.00	1,937.00	Crew Handover meeting
17:15	19:30	2.25	PROD1	CORING	CORE	P			1,937.00	1,946.00	Core #2 222mm core from 1937m to 1946m rotary 60 WOB 5dan pumping at 1.2m3 R.O.P 9m/hr
19:30	20:30	1.00	PROD1	CORING	CIRC	P			1,946.00	1,946.00	Circulate bottoms up
20:30	20:45	0.25	PROD1	CORING	TRIP	P			1,946.00	1,946.00	Pull 3 stds up to 1877m to pull core #2
20:45	21:00	0.25	PROD1	CORING	SFTY	P			1,946.00	1,946.00	Safety meeting with NOV core hands and schlumberger wire line
21:00	00:00	3.00	PROD1	CORING	ELNE	P			1,946.00	1,946.00	Rig to and pull core#2 with NOV core and Schlumberger wire line
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P			1,946.00	1,946.00	Rig service
00:15	07:45	7.50	PROD1	CORING	ELNE	P			1,946.00	1,946.00	Pull core #2 with NOV core and Schlumberger wire line
07:45	08:00	0.25	PROD1	CORING	SFTY	P			1,946.00	1,946.00	Crew change safety meeting
08:00	09:15	1.25	PROD1	CORING	ELNE	P			1,946.00	1,946.00	Pull core #2 with NOV core and Schlumberger wire line
09:15	09:30	0.25	PROD1	CORING	SFTY	P			1,946.00	1,946.00	Safety meeting with NOV core
09:30	11:00	1.50	PROD1	CORING	RECR	P			1,946.00	1,946.00	Lay out core #2 with NOV hands
11:00	11:15	0.25	PROD1	RIGMNT	SVRG	P			1,946.00	1,946.00	Rig service, function test annular 13 sec. to close and fuction test crown saver
11:15	12:15	1.00	PROD1	CORING	CIRC	P			1,946.00	1,946.00	Circulate bottoms up
12:15	13:00	0.75	PROD1	CORING	RECR	P			1,946.00	1,946.00	Rig up core barrels for run #3 and pump down
13:00	15:45	2.75	PROD1	CORING	CORE	P			1,946.00	1,973.00	Core #3 222mm hole from1946m to 1973m pump rate 1.2m3 rotary at 55 wob 5dan R.O.P 12m/hr
15:45	16:00	0.25	PROD1	CORING	CIRC	P			1,973.00	1,973.00	Circulate bottoms up
16:00	16:15	0.25	PROD1	CORING	SVRG	P			1,973.00	1,973.00	Rig service function test pipe rams 3 seconds
16:15	16:45	0.50	PROD1	CORING	CIRC	P			1,973.00	1,973.00	Circulate bottoms up
16:45	17:00	0.25	PROD1	CORING	ELNE	P			1,973.00	1,973.00	Safety meeting with nov and schlumbger on retrieving core #3
17:00	17:15	0.25	PROD1	CORING	TRIP	P			1,973.00	1,973.00	Trip 4 stands out of the hole rig up to wireline for core #3
17:15	00:00	6.75	PROD1	CORING	ELNE	P			1,973.00	1,973.00	Wire line retrive core #3
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P			1,973.00	1,973.00	Rig service
00:15	05:00	4.75	PROD1	CORING	ELNE	P			1,973.00	1,973.00	Pull core #3 with NOV core hands and Schlumberger wire line
05:00	05:15	0.25	PROD1	CORING	SFTY	P			1,973.00	1,973.00	Safety meeting with NOV core hands
05:15	07:00	1.75	PROD1	CORING	RECR	P			1,973.00	1,973.00	Lay down core#3 with NOV core hands
07:00	07:15	0.25	PROD1	CORING	TRIP	P			1,973.00	1,973.00	Trip 4 stds back in the hole
07:15	07:45	0.50	PROD1	CORING	CIRC	P			1,973.00	1,973.00	Circulate bottoms up
07:45	08:00	0.25	PROD1	CORING	SFTY	P			1,973.00	1,973.00	Crew change safety meeting
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P			1,973.00	1,973.00	Rig service, function test annular 13sec. to close and funtion test crown saver

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
08:15	08:30	0.25	PROD1	CORING	SFTY	P			1,973.00	1,973.00	BOP drill Well secure in 90 sec crew in positions and function test motor kills ok Crew
08:30	09:30	1.00	PROD1	CORING	RECR	P			1,973.00	1,973.00	Rig up core barrels for run #4 and pump down
09:30	13:15	3.75	PROD1	CORING	CORE	P			1,973.00	2,000.00	Core # 4 222mm Core from 1973m-2000m to pump rate 1.2m3/min rotory at 62 wob 5dan rop 7.2m/hr
13:15	14:30	1.25	PROD1	CORING	CIRC	P			2,000.00	2,000.00	Circulate bttoms up
14:30	15:00	0.50	PROD1	CORING	TRIP	P			2,000.00	2,000.00	Pull out 3 stands and the pup joints out of the hole
15:00	15:15	0.25	PROD1	CORING	SFTY	P			2,000.00	2,000.00	Safety meeting with NOV core hands and schlumbger wireline on retrieving core #4
15:15	16:00	0.75	PROD1	CORING	ELNE	P			2,000.00	2,000.00	wireline retrieve Core #4
16:00	16:15	0.25	PROD1	CORING	SFTY	P			2,000.00	2,000.00	Held b.o.p drill well secure in 85 sec
16:15	16:30	0.25	PROD1	RIGMNT	SVRG	P			2,000.00	2,000.00	Rig serevice f.t pipe rams 4 sec & crown saver
16:30	00:00	7.50	PROD1	CORING	ELNE	P			2,000.00	2,000.00	Wireline to retrieve core # 4 with schlumberger
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P			2,000.00	2,000.00	Rig service function test H.C.R
00:15	04:00	3.75	PROD1	CORING	ELNE	P			2,000.00	2,000.00	Wire line retrieve core #4 with schlumbger(crews went through man down drill did rescue routes)
04:00	05:15	1.25	PROD1	CORING	RECR	P			2,000.00	2,000.00	Lay down core #4 with nov core hands
05:15	05:30	0.25	PROD1	CORING	TRIP	P			2,000.00	2,000.00	Trip 3 stands in the hole
05:30	07:00	1.50	PROD1	CORING	CIRC	P			2,000.00	2,000.00	Pick up kelly circulate bottoms up
07:00	07:45	0.75	PROD1	CORING	RECR	P			2,000.00	2,000.00	Make up core barrels for run #5 with nov core hands
07:45	08:00	0.25	PROD1	CORING	SFTY	P			2,000.00	2,000.00	Crew handover meeting
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P			2,000.00	2,000.00	Rig service function test hydril 14 sec & crown saver
08:15	11:45	3.50	PROD1	CORING	CORE	P			2,000.00	2,027.00	Core #5 222mm hole from2000m to 2027m pump rate 1.2m3 rotary at 55 wob 5dan core # 5. rop 7.7 m/hr
11:45	12:45	1.00	PROD1	CORING	CIRC	P			2,027.00	2,027.00	Circulate & condition
12:45	13:00	0.25	PROD1	CORING	SFTY	P			2,027.00	2,027.00	Held safety meeting n.o.v & schlumberger
13:00	13:30	0.50	PROD1	CORING	TRIP	P			2,027.00	2,027.00	Pull 3 stds d.p
13:30	16:00	2.50	PROD1	CORING	ELNE	P			2,027.00	2,027.00	Rig up schlumberger & Retrieve core # 5 with wire line
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P			2,027.00	2,027.00	Rig service function test crown saver
16:15	00:00	7.75	PROD1	CORING	ELNE	P			2,027.00	2,027.00	Retrieve core # 5 with schlumberger
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P			2,027.00	2,027.00	Rig service function test H.C.R
00:15	02:15	2.00	PROD1	CORING	ELNE	P			2,027.00	2,027.00	Retrieve core #5 with schlumberger
02:15	03:00	0.75	PROD1	CORING	RECR	T	BHA	Coring Assembly	2,027.00	2,027.00	Lay down core #5, Core barrel was empty, the core catcher had backed off down the hole.
03:00	07:45	4.75	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Trip out of hole to recover core,lay down singles while recovering core flow checks @1841m
07:45	08:00	0.25	PROD1	CORING	SFTY	T	BHA	Coring Assembly	2,027.00	2,027.00	Crew change safety meeting
08:00	09:15	1.25	PROD1	CORING	RECR	T	BHA	Coring Assembly	2,027.00	2,027.00	Recover core from 5 singles layed down
09:15	09:30	0.25	PROD1	RIGMNT	SVRG	T	BHA	Coring Assembly	2,027.00	2,027.00	Rig service function test hydril 14 sec & crown saver
09:30	09:45	0.25	PROD1	CORING	SFTY	T	BHA	Coring Assembly	2,027.00	2,027.00	Safety meeting

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
09:45	16:45	7.00	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Pull out of hole to recover core
16:45	17:00	0.25	PROD1	CORING	SFTY	T	BHA	Coring Assembly	2,027.00	2,027.00	Safety meeting on lay down core bbl & recover core
17:00	17:30	0.50	PROD1	CORING	RECR	T	BHA	Coring Assembly	2,027.00	2,027.00	Handle core barrels
17:30	19:00	1.50	PROD1	CORING	RECR	T	BHA	Coring Assembly	2,027.00	2,027.00	Recover 8m core
19:00	19:15	0.25	PROD1	CORING	SFTY	T	BHA	Coring Assembly	2,027.00	2,027.00	Crew change safety meeting
19:15	19:45	0.50	PROD1	CORING	EQRP	T	BHA	Coring Assembly	2,027.00	2,027.00	Lay down core collars inspect for core stuck in barrels.
19:45	21:00	1.25	PROD1	CORING	PULD	T	BHA	Coring Assembly	2,027.00	2,027.00	Make up bit run collars in the hole circulate collars clean
21:00	21:30	0.50	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Pull 4 stands of collars out of hole
21:30	22:00	0.50	PROD1	CORING	PULD	T	BHA	Coring Assembly	2,027.00	2,027.00	Pick up drill rod
22:00	00:00	2.00	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Trip in the hole drifting pipe on the way in
00:00	00:30	0.50	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Trip in hole drifting pipe
00:30	01:15	0.75	PROD1	RIGMNT	SLPC	T	BHA	Coring Assembly	2,027.00	2,027.00	Slip and cut 18m MJ 3165
01:15	07:45	6.50	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Trip in hole drifting pipe
07:45	08:00	0.25	PROD1	CORING	SFTY	T	BHA	Coring Assembly	2,027.00	2,027.00	Crew change safety meeting
08:00	09:30	1.50	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Run in hole & pick up 21 singles
09:30	09:45	0.25	PROD1	RIGMNT	SVRG	T	BHA	Coring Assembly	2,027.00	2,027.00	Rig service function test hydril 14 sec & crown saver
09:45	10:45	1.00	PROD1	CORING	CIRC	T	BHA	Coring Assembly	2,027.00	2,027.00	Circulate & condition hole @ 2026 m
10:45	11:00	0.25	PROD1	CORING	TRIP	T	BHA	Coring Assembly	2,027.00	2,027.00	Pull 3 stds of d.p
11:00	11:15	0.25	PROD1	CORING	SFTY	T	BHA	Coring Assembly	2,027.00	2,027.00	Safety meeting with n.o.v
11:15	15:45	4.50	PROD1	CORING	ELNE	T	BHA	Coring Assembly	2,027.00	2,027.00	Rig up schlumberger & Attempt to retrieve drill rod
15:45	16:15	0.50	PROD1	CORING	ELNE	T	BHA	Coring Assembly	2,027.00	2,027.00	Pull out drill rod & lay down drill rod
16:15	16:30	0.25	PROD1	RIGMNT	SVRG	P			2,027.00	2,027.00	Rig service function test pipe rams 3 sec & crown saver
16:30	17:45	1.25	PROD1	CORING	RECR	P			2,027.00	2,027.00	Rig up inner core bbl
17:45	18:00	0.25	PROD1	CORING	TRIP	P			2,027.00	2,027.00	Run in 3 stds d.p
18:00	18:30	0.50	PROD1	CORING	CIRC	P			2,027.00	2,027.00	Pump down inner core bbl assembly
18:30	23:30	5.00	PROD1	CORING	CORE	P			2,027.00	2,054.00	Core #6 222mm hole from 2027m to 2054m Pump rate at 1.2m3 rotary @ 60 RPM WOB 5dan R.O.P 5.4 m/hr Core #6
23:30	00:00	0.50	PROD1	CORING	CIRC	P			2,054.00	2,054.00	Circulate bottoms up sample
00:00	00:30	0.50	PROD1	CORING	CIRC	P			2,054.00	2,054.00	Circulate bottoms up sample
00:30	00:45	0.25	PROD1	RIGMNT	SVRG	P			2,054.00	2,054.00	Rig service function test annular 13 sec to close function test crown saver working proper
00:45	01:00	0.25	PROD1	CORING	TRIP	P			2,054.00	2,054.00	Trip out 3 stands
01:00	01:15	0.25	PROD1	CORING	SFTY	P			2,054.00	2,054.00	Safety meeting with nov core hands and schlumbger on wire line retrieving

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
01:15	07:45	6.50	PROD1	CORING	ELNE	P			2,054.00	2,054.00	Rig up wire line with schlumbger and wire line retrieve core #6
07:45	08:00	0.25	PROD1	CORING	SFTY	P			2,054.00	2,054.00	Crew handover meeting
08:00	13:15	5.25	PROD1	CORING	ELNE	P			2,054.00	2,054.00	Retrieve core # 6 with schlumberger
13:15	13:30	0.25	PROD1	RIGMNT	SVRG	P			2,054.00	2,054.00	Rig service function test pIPE RAMS 3 SEC & CROWN SAVER
13:30	13:45	0.25	PROD1	CORING	SFTY	P			2,054.00	2,054.00	Safety meeting on laying down core bbl
13:45	15:00	1.25	PROD1	CORING	RECR	P			2,054.00	2,054.00	Handle core bbl & lay down core # 6
15:00	15:15	0.25	PROD1	CORING	TRIP	P			2,054.00	2,054.00	Run in 3 stds d.p
15:15	16:00	0.75	PROD1	CORING	CIRC	P			2,054.00	2,054.00	circ bottoms up
16:00	16:30	0.50	PROD1	CORING	CIRC	P			2,054.00	2,054.00	Circ bottoms up
16:30	16:45	0.25	PROD1	RIGMNT	SVRG	P			2,054.00	2,054.00	Rig service function test hydril 14 sec & crown saver
16:45	18:00	1.25	PROD1	CORING	RECR	P			2,054.00	2,054.00	Make up inner core bbl & pump down inner bbl
18:00	21:00	3.00	PROD1	CORING	CORE	P			2,054.00	2,081.00	Core #7 89 mm & 222 mm hole from 2054 m to 2081 m pump @ 1.2 m3 & rotary 60 & w.o.b 5 7m/hr core # 7
21:00	22:15	1.25	PROD1	CORING	CIRC	P			2,081.00	2,081.00	Circulate bottoms up
22:15	22:45	0.50	PROD1	CORING	TRIP	P			2,081.00	2,081.00	Trip out 3 stands
22:45	23:00	0.25	PROD1	CORING	SFTY	P			2,081.00	2,081.00	Safety meeting with nov core hands and schlumbger wireline Rig up wire line
23:00	00:00	1.00	PROD1	CORING	ELNE	P			2,081.00	2,081.00	Wireline retrieve core #7 with schlumbger
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P			2,081.00	2,081.00	RIG SERVICE
00:15	07:45	7.50	PROD1	CORING	ELNE	P			2,081.00	2,081.00	Wire line retrieve core #7 with schlumbger(Held a high angle rescue with crew went through all equitment.)
07:45	08:00	0.25	PROD1	CORING	SFTY	P			2,081.00	2,081.00	crew hand over meeting
08:00	11:45	3.75	PROD1	CORING	ELNE	P			2,081.00	2,081.00	Retrieve core # 7 with schlumberger
11:45	12:00	0.25	PROD1	RIGMNT	SVRG	P			2,081.00	2,081.00	Rig service function test hydril 13 sec & crown saver
12:00	12:15	0.25	PROD1	CORING	SFTY	P			2,081.00	2,081.00	Safety meeting on laying down core # 7
12:15	13:30	1.25	PROD1	CORING	RECR	P			2,081.00	2,081.00	recover core # 7 & lay down
13:30	13:45	0.25	PROD1	CORING	TRIP	P			2,081.00	2,081.00	Run in 3 stds of d.p
13:45	15:00	1.25	PROD1	CORING	CIRC	P			2,081.00	2,081.00	Circ bottoms up
15:00	15:30	0.50	PROD1	CORING	RECR	P			2,081.00	2,081.00	Make up inner core bbl & pump down
15:30	16:00	0.50	PROD1	CORING	CIRC	P			2,081.00	2,081.00	Circ & pump down inner core bbl
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P			2,081.00	2,081.00	Rig service function test pipe rams 3 sec & crown saver
16:15	20:00	3.75	PROD1	CORING	CORE	P			2,081.00	2,108.00	Core #8 89 mm core & drill 222 mm hole from 2081 m to 2108 m pump @ 1.2 m3 rotary @ 60 w.o.b 5 rop 7.2m/hr core #8
20:00	21:30	1.50	PROD1	CORING	CIRC	P			2,108.00	2,108.00	Circulate bottoms up
21:30	22:00	0.50	PROD1	CORING	TRIP	P			2,108.00	2,108.00	Trip out 3 stands
22:00	22:15	0.25	PROD1	CORING	SFTY	P			2,108.00	2,108.00	Safety meeting with nov core hands and schlumbger on wire line
22:15	00:00	1.75	PROD1	CORING	ELNE	P			2,108.00	2,108.00	Wire line retrieve core #8 with schlumbger
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P			2,108.00	2,108.00	Rig service function test H.C.R
00:15	07:45	7.50	PROD1	CORING	ELNE	P			2,108.00	2,108.00	Wire line retrieve core #8
07:45	08:00	0.25	PROD1	CORING	SFTY	P			2,108.00	2,108.00	crew handover meeting
08:00	11:30	3.50	PROD1	CORING	ELNE	P			2,108.00	2,108.00	Retrieve core # 8 with schlumberger
11:30	11:45	0.25	PROD1	RIGMNT	SVRG	P			2,108.00	2,108.00	Rig service function test hydril 13 sec & crown saver
11:45	12:00	0.25	PROD1	CORING	SFTY	P			2,108.00	2,108.00	Held safety meeting n.o.v & schlumberger
12:00	12:45	0.75	PROD1	CORING	RECR	P			2,108.00	2,108.00	Recover core # 8 & lay down
12:45	13:45	1.00	PROD2	DRILL	CIRC	P			2,108.00	2,108.00	Circ bottom up
13:45	14:00	0.25	PROD2	DRILL	SFTY	P			2,108.00	2,108.00	Safety meeting

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
14:00	16:00	2.00	PROD2	DRILL	PULD	P			2,108.00	2,108.00	Rig up drill rod & run in to set drill rod with n.o.v & schlumberger
16:00	17:15	1.25	PROD2	DRILL	ELNE	P			2,108.00	2,108.00	Attempt to and set drill rod & set rod with schlumberger & rig out
17:15	17:30	0.25	PROD2	RIGMNT	SVRG	P			2,108.00	2,108.00	Rig service function test pipe rams 3 sec and crown saver
17:30	17:45	0.25	PROD2	DRILL	TRIP	P			2,108.00	2,108.00	Run in 3 stds of d.p
17:45	18:30	0.75	PROD2	DRILL	DRLG	P			2,108.00	2,108.00	Attempt to drill no seat on drill rod
18:30	19:45	1.25	PROD2	DRILL	CIRC	T	BHA	Coring Assembly	2,108.00	2,108.00	Circ bottoms up
19:45	00:00	4.25	PROD2	DRILL	TRIP	T	BHA	Coring Assembly	2,108.00	2,108.00	Trip out of hole drill rod didnt seat, flo0w check @ 2097m,1046m,
00:00	00:30	0.50	PROD2	DRILL	TRIP	P			2,108.00	2,108.00	Trip out of hole
00:30	00:45	0.25	PROD2	RIGMNT	SVRG	P			2,108.00	2,108.00	Rig Service Function Annular Close 12 sec.
00:45	02:15	1.50	PROD2	DRILL	TRIP	P			2,108.00	2,108.00	Trip out of hole Flow checks @ 595m OOH
02:15	04:30	2.25	PROD2	DRILL	PULD	P			2,108.00	2,108.00	Laydown drill rod and laydown core barrels
04:30	06:15	1.75	PROD2	DRILL	TRIP	P			2,108.00	2,108.00	Make up BHA and Bit, pick up 10 drill collars
06:15	07:45	1.50	PROD2	DRILL	TRIP	P			2,108.00	2,108.00	Trip into the hole
07:45	08:00	0.25	PROD2	DRILL	SFTY	P			2,108.00	2,108.00	Crew hand over meeting
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P			2,108.00	2,108.00	Rig service function hydril 14 sec & crown saver
08:15	12:00	3.75	PROD2	DRILL	TRIP	P			2,108.00	2,108.00	Run in hole fill pipe @ 811m 1628m 2102m and flowchecks
12:00	12:15	0.25	PROD2	DRILL	SFTY	P			2,108.00	2,108.00	B.O.P. drill well secured in 85 seconds
12:15	16:00	3.75	PROD2	DRILL	DRLG	P			2,108.00	2,122.00	Drill 222mm hole from 2108m to 2122 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 8dan, pumping @ 1.2m3.,RPM 90,Average ROP 3.7m/hr.
16:00	18:00	2.00	PROD2	DRILL	DRLG	P			2,122.00	2,130.00	Drill 222mm hole from 2122m to 2130 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3.,RPM 90,Average ROP 4m/hr.
18:00	18:15	0.25	PROD2	DRILL	SFTY	P			2,130.00	2,130.00	BOP drill crew in position well secure in 90 sec
18:15	18:30	0.25	PROD2	RIGMNT	SVRG	P			2,130.00	2,130.00	Rig service function pipe rams 3 sec crown saver operating properly,function test motor kills operating properly
18:30	00:00	5.50	PROD2	DRILL	DRLG	P			2,130.00	2,142.00	Drill 222mm hole from 2130m to 2142m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3.,RPM 90,Average ROP 2.2m/hr.
00:00	01:00	1.00	PROD2	DRILL	DRLG	P			2,142.00	2,146.00	Drill 222mm hole from 2142m to 2146 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3.,RPM 80,Average ROP 3 .5 m/hr.
01:00	02:00	1.00	PROD2	DRILL	CIRC	P			2,146.00	2,146.00	Circulate & condition hole @ 2146 m T.D
02:00	02:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service function test pipe rams 3 sec & crown saver
02:15	03:00	0.75	PROD2	DRILL	WPRT	P			2,146.00	2,146.00	Wiper trip 5 stds to 2040 m flow check @ 2136 m & 2040 m
03:00	04:30	1.50	PROD2	DRILL	CIRC	P			2,146.00	2,146.00	Circulate & condition hole @ 2146 m
04:30	04:45	0.25	PROD2	DRILL	SFTY	P			2,146.00	2,146.00	Safety meeting with Trottier

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COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	District	Field Name	KB-Grd (m)	License No.
200/C-011-L/094-P-16/99	NEW VENTURES	MIRROR LAKE	5.20	EL470

KB-Grd (m)	Orig KB/RT (m)	Well Configuration Type	Well Type
5.20	286.50	VERTICAL	Exploration

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Ti... P-...	Trbl Code	Trbl Class.	Depth Start (mKB)	Depth End (mKB)	Operation
04:45	07:45	3.00	PROD2	DRILL	PULD	P			2,146.00	2,146.00	Lay down drill pipe with pipe spinner & Trottier pipe handlers flow checks @ 2136 m 2042 m
07:45	08:00	0.25	PROD2	DRILL	SFTY	P			2,146.00	2,146.00	Crew hand over meeting
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service function hydrill 13 sec crown saver operating properly
08:15	15:45	7.50	PROD2	DRILL	PULD	P			2,146.00	2,146.00	Lay down drill pipe,brake down overhead lay down DC with trottier pipe handlers flow check@1080m/601m/OOH/reviewed JSA#159 lay down drill pipe with lay down truck
15:45	16:00	0.25	PROD2	DRILL	PULD	P			2,146.00	2,146.00	Rig out laydown truck
16:00	16:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service function blind rams 3 sec crown saver operating properly
16:15	20:30	4.25	PROD2	DRILL	PULD	P			2,146.00	2,146.00	Pull wear bushing/lay down NOV X/O and tools/lay down kelly bar and swivel/clean and prepare floor for wire line logs
20:30	20:45	0.25	PROD2	EVALFM	SFTY	P			2,146.00	2,146.00	Safety meeting on wire line logs with schlumberger
20:45	00:00	3.25	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Rig in and log with schlumberger,Run #1 AIT,NEXT,PEX,TLO2 ,Log depth 2148m
00:00	00:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service function test crown saver
00:15	08:00	7.75	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Wireline logs with schlumberger ,Run #1 AIT,NEXT,PEX,TLO2 Log depth 2148m, Start Run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service
08:15	16:00	7.75	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m
16:00	16:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service
16:15	00:00	7.75	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m
00:00	00:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service function test crown saver
00:15	08:00	7.75	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m Run #3 rerun UBI
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service
08:15	14:30	6.25	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Continue Open Hole program with Schlumberger, Run #3 rerun UBI
14:30	16:00	1.50	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Open hole program with Sclumberger run #4 tools ran RST,CMR,ADT,HNGS, log depth 2148m
16:00	16:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service
16:15	00:00	7.75	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Continue open hole log program with Sclumberger,Continue with run #4 tools ran RST,CMR,ADT,HNGS, log depth 2148m,RTS tool failed Run #5 Cement Bond Log
00:00	02:00	2.00	PROD2	EVALFM	ELOG	P			2,146.00	2,146.00	Wireline logs with schlumberger
02:00	02:15	0.25	PROD2	RIGMNT	SVRG	P			2,146.00	2,146.00	Rig service function test crown saver & blind rams 3 sec
02:15	02:30	0.25	PROD2	DRILL	SFTY	P			2,146.00	2,146.00	Safety meeting with Hallmark & pipe handlers

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/21/2013
Report #: 1
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	-3.71

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
64,438.09	64,438.09	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		40.0	462.00	462.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-30	West 5km/hr.

Ops and Depth @ Morning Report
Wait on day light to continue tear out and move.

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 2 Job obersvations : General tear out of rig ,Lay down Derrick ,move Drill pipe and other tubulars to Mirror Lake location.

24hr Forecast
Tear out and move to Mirror Lake location

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417; Rig Manager, Rick Yavis; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Mike Hobmaier, 403-844-3210

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	07:00	7.00	MIRU	MOVE	DMOB	P		0.00	0.00	Tear out rig, Lay down pre fabs, Bridle up to lay down Derrick.
07:00	07:15	0.25	MIRU	MOVE	DMOB	P		0.00	0.00	Crew change hand over meeting.
07:15	08:00	0.75	MIRU	MOVE	DMOB	P		0.00	0.00	Pre job inspection and safety meeting prior to laying down Derriuck.
08:00	00:00	16.00	MIRU	MOVE	DMOB	P		0.00	0.00	Lay down Derrick ,General tear out of rig. Move Drill pipe and third party rentals to Mirror Lake location.

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
378.00	378.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 2/22/2013
Report #: 2
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	-2.71

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
63,486.50	127,924.59	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		37.0	426.00	888.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-33	West 10km/hr.

Ops and Depth @ Morning Report
Wait on day light to continue load rig and move.

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 2 Job obersvations :Tear out rig components and Matting move to Mirror Lake location ,Lay rig foot print liner,Spot Matting and Sub.

24hr Forecast
Load out rig and well site shacks move to Mirror Lake location

Daily Contacts
WS Supervisor, Mike Hobmaier, 403-844-3210; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; Rig Manager, Rick Yavis; WS Supervisor, Dave Forsberg, 780-361-6417

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	08:00	8.00	MIRU	MOVE	DMOB	P		0.00	0.00	Rest Crews and Wait on daylight
08:00	00:00	16.00	MIRU	MOVE	DMOB	P		0.00	0.00	Tear out rig components and Matting move to Mirror Lake location ,Lay rig foot print liner,Spot Matting and Sub.

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
379.00	379.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/22/2013
Report #: 2
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 2/23/2013
Report #: 3
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	-1.71

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
57,611.50	185,536.09	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		37.0	426.00	1,314.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Cloudy	-30	West 10km/hr

Ops and Depth @ Morning Report
Wait on daylight finish spotting rig and rentals

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 5 Hazard ID's: 0 Job obersvations :Spot Sub. Move and pin derrick,and draw works, Move wellsite trailers and support equipment, Mud dry products

24hr Forecast
Finish spotting rig and third party equipment,Rig up

Daily Contacts
Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Dave Forsberg, 780-361-6417; Rig Manager, Rick Yavis; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Mike Hobmaier, 403-844-3210

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	08:00	8.00	MIRU	MOVE	DMOB	P		0.00	0.00	Rest Crews and Wait on daylight
08:00	00:00	16.00	MIRU	MOVE	DMOB	P		0.00	0.00	Move to Mirror Lake location N-20 ,Spot Draw Works, Derrick,Mud tank,water tank. Spot and rig up well site shacks.

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
Low Gravity Solids (%)	**MBT (kg/m³)**	**Oil Water Ratio**	**Chlorides (mg/L)**	**Calcium (mg/L)**	**Lime (kg/m³)**	**Potassium (mg/L)**
Electric Stab (V)	**ECD - Manual Entry (k...**	**Sand (%)**	**Solids, Corr. (%)**	**T (fl) (°C)**	**HTHP Pressure (kPa)**	**HTHP Filt (mL/30min)**

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
380.00	380.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 2/23/2013
Report #: 3
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/24/2013
Report #: 4
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	-0.71

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
291,165.99	476,702.08	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		44.0	510.00	1,824.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Cloudy	-30	North 5km/hr

Ops and Depth @ Morning Report
Rig to Spud

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 5 Hazard ID's: 0 Job obersvations : Continue to move tubulars,Drilling tools and support equipment, Spot remaining rig components,Prepare to and raise derrick, Rig to spud, weld on Diverter Flange.

24hr Forecast
Rig to Spud , Drill 311mm Surface hole

Daily Contacts
Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Mike Hobmaier, 403-844-3210; Command, Center, 587-794-4599; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Rig Manager, Rick Yavis; WS Supervisor, Dave Forsberg, 780-361-6417

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	08:00	8.00	MIRU	MOVE	WODL	P		0.00	0.00	Wait on daylight watch boilers
08:00	08:15	0.25	MIRU	MOVE	SFTY	P		0.00	0.00	Safety meeting with Beaver Crews,Mullens trucking and Conoco Reps.
08:15	14:00	5.75	MIRU	MOVE	RURD	P		0.00	0.00	Spot rig & rentals
14:00	16:00	2.00	MIRU	MOVE	RURD	P		0.00	0.00	Rig up steam water & power lines
16:00	17:45	1.75	MIRU	MOVE	RURD	P		0.00	0.00	Rig to raise derrick
17:45	18:00	0.25	MIRU	MOVE	SFTY	P		0.00	0.00	Inspect derrick prior to raising RY,BB,CD,NA
18:00	19:00	1.00	MIRU	MOVE	RURD	P		0.00	0.00	Bridle down & rig monkey board
19:00	19:15	0.25	MIRU	MOVE	SFTY	P		0.00	0.00	Crew change safety meeting
19:15	21:15	2.00	MIRU	MOVE	RURD	P		0.00	0.00	Pick up prefabs
21:15	00:00	2.75	MIRU	WHDBOP	NUND	P		0.00	0.00	Weld diverter flange & drain on conducter Nipple up diverter

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
381.00	381.00

Safety Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/24/2013
Report #: 4
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/24/2013
Report #: 4
Depth Progress: m
Depth End: 0.00 mKB
Rig Release Date: 3/24/2013

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/25/2013
Report #: 5
Depth Progress: 84.00 m
Depth End: 84.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	0.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
767,561.95	1,244,264.03	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		34.0	390.00	2,214.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
34	34	34	0

Road Condition	Weather	Temperature (°C)	Wind
Good	Partly Cloudy	-23	Calm

Ops and Depth @ Morning Report
Drill 311mm surface hole at 140m

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 2 Job obersvations :Nipple up diverter, Fill mud tanks,Prepare BHA, Rig to spud, Move invert and tank farm, Perform pre-spud inspection and hold diverter drills and safety meeting. Spud well @ 17:00 hours and drill 311mm surface hole F/0- 84m with Varel Tri cone insert bit and slick rotary assembly.

24hr Forecast
Drill 311mm surface hole

Daily Contacts
Drilling Engineer, Mike Greener, 403-771-5039; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Mike Hobmaier, 403-844-3210; WS Supervisor, Dave Forsberg, 780-361-6417; Rig Manager, Rick Yavis; Command, Center, 587-794-4599

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
[redacted]	05:00	5.00	MIRU	WHDBOP	NUND	P		0.00	0.00	Nipple up diverter, rig up flare lines
[redacted]	08:00	3.00	MIRU	MOVE	RURD	P		0.00	0.00	Rig up swivel and floor
08:00	08:15	0.25	MIRU	RIGMNT	SVRG	P		0.00	0.00	Rig service function test crown saver/ function test diverter
08:15	14:15	6.00	MIRU	MOVE	RURD	P		0.00	0.00	Rig to spud
14:15	14:45	0.50	MIRU	MOVE	SFTY	P		0.00	0.00	Pre spud rig inspection
14:45	16:00	1.25	MIRU	MOVE	PULD	P		0.00	0.00	Pick up and make up BHA
16:00	16:15	0.25	MIRU	RIGMNT	SVRG	P		0.00	0.00	Rig Service function test hydril 48 seconds check & motor kills
16:15	17:00	0.75	MIRU	MOVE	SFTY	P		0.00	0.00	Pre spud safety meeting & diverter drill with consultant and toolpush
17:00	22:00	5.00	SURFAC	DRILL	DRLG	P		0.00	70.00	Drill 311 mm hole from 20m to70m with Varel tri cone Insert bit and slick rotary asseembly.
22:00	22:15	0.25	SURFAC	DRILL	SFTY	P		70.00	70.00	Diverter drill crews in positions
22:15	00:00	1.75	SURFAC	DRILL	DRLG	P		70.00	84.00	Drill 311 mm hole from 70m to 84m with Varel tri cone Insert bit and slick rotary asseembly.

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
17:00	20.00	1020.0	44	8.5	8.0	5.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
2.4	21		600	60		

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
	1229.0		1.8	18		

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
18.0			1,607.45

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
		1,607.45

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
382.00	382.00

Safety Incidents

Date	Comment	Category
[redacted]		

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/25/2013
Report #: 5
Depth Progress: 84.00 m
Depth End: 84.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # 1

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1A	311.0mm, VAREL, HE04JMRSV, 1284043	0.50	2-3-WT-A-E-3-NO-TD	892	10.9

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
12.7/15.9/19.0/19.0	603.12	233.0	38,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
0.00	601.00	10.9	601.00	601.00	55.25	55.25

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	110.0	1	4.47	603.12
Drill Pipe	109.0	127.0	24	462.73	598.65
X/O SUB	59.0	123.0	1	0.61	135.92
X/O 4 H-90	62.0	162.0	1	0.31	135.31
X/O Sub	58.0	134.0	1	0.51	135.00
BELL SUB	59.0	130.0	1	0.66	134.49
6 D.C	60.0	160.0	12	112.00	133.83
Bit sub	70.0	232.0	1	0.93	21.83
X/O 4 H-90	62.0	162.0	1	0.31	20.90
BELL SUB	59.0	130.0	1	0.66	20.59
9 D.C	71.0	233.0	2	18.50	19.93
Bit sub	70.0	232.0	1	0.93	1.43

Drilling Parameters: 0.00 - 84.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
84.00	6.75	12.4	1.300	5,000	120	1,000	21,000	21,000	21,000	21,000	500.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
7.3	0.00010	34	24.3	337.4	11.4	1020.0	1033.9

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
0.26			0.0	0.0	20.7	39.0

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
SULFAMIC ACID - 25KG	1.0	74.630		sks
XCD POLYMER - 25KG	3.0	365.740		sks
FEDERAL GEL - 40KG	40.0	10.890		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/26/2013
Report #: 6
Depth Progress: 216.00 m
Depth End: 300.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	1.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
71,847.11	1,316,111.14	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		28.0	318.00	2,532.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
46	42		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-28	East 30km/hr

Ops and Depth @ Morning Report
Work stuck pipe at 153m

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Drill 311mm surface hole F/84- 300m with Varel Tri cone insert bit and slick rotary assembly. Minor losses @ 146m (7m3) with accumulated wire line surveys and rig services.

24hr Forecast
Drill 311mm surface hole

Daily Contacts
Command, Center, 587-794-4599; WS Supervisor, Mike Hobmaier, 403-844-3210; Rig Manager, Rick Yavis; Drilling Engineer, Mike Greener, 403-771-5039; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	01:00	1.00	SURFAC	DRILL	DRLG	P		84.00	89.00	Drill 311 mm hole from 84m to 89m with Varel tri cone Insert bit and slick rotary asseembly.
[redacted]	01:15	0.25	SURFAC	RIGMNT	SVRG	P		89.00	89.00	Rig service function test annular 19 seconds to close function test crown saver
01:15	07:45	6.50	SURFAC	DRILL	DRLG	P		89.00	145.00	Drill 311 mm hole from 89m to145m with Varel tri cone Insert bit and slick rotary asseembly.
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P		145.00	145.00	Crew handover meeting
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P		145.00	145.00	Rig service function test hydril 55 seconds to close function test crown saver
08:15	15:15	7.00	SURFAC	DRILL	DRLG	P		145.00	218.00	Drill 311 mm hole from 145m to 218m with Varel tri cone Insert bit and slick rotary asseembly.Minor losses at 146m 7m3
15:15	15:45	0.50	SURFAC	DRILL	SRVY	P		218.00	218.00	Accumulated time for surveys
15:45	16:00	0.25	SURFAC	DRILL	SFTY	P		218.00	218.00	Crew hand over meeting
16:00	16:15	0.25	SURFAC	DRILL	DRLG	P		218.00	222.00	Drill 311 mm hole from 218m to 222m with Varel tri cone Insert bit and slick rotary asseembly.
16:15	16:30	0.25	SURFAC	RIGMNT	SVRG	P		222.00	222.00	Rig service function hydrill 55 sec crown saver operating properly
16:30	21:15	4.75	SURFAC	DRILL	DRLG	P		222.00	280.00	Drill 311 mm hole from 222m to 280m with Varel tri cone Insert bit and slick rotary asseembly.
21:15	21:30	0.25	SURFAC	DRILL	SFTY	P		280.00	280.00	Diverter drill crew in position well secure in 90 sec
21:30	23:15	1.75	SURFAC	DRILL	DRLG	P		280.00	300.00	Drill 311 mm hole from 280m to 300m with Varel tri cone Insert bit and slick rotary asseembly.
23:15	23:45	0.50	SURFAC	DRILL	SRVY	P		300.00	300.00	Accumilated wire line surveys
23:45	00:00	0.25	SURFAC	DRILL	CIRC	P		300.00	300.00	Circulate hole clean

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
10:00	172.00	1045.0	42	8.0	7.0	7.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
3.4	8		600	120		

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
	1140.0		3.5	17		

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
17.0			4,598.21

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
[redacted]		6,205.66

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/26/2013
Report #: 6
Depth Progress: 216.00 m
Depth End: 300.00 mKB
Rig Release Date: 3/24/2013

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
383.00	383.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 1

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1A	311.0mm, VAREL, HE04JMRSV, 1284043	0.50	2-3-WT-A-E-3-NO-TD	892	10.9

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
12.7/15.9/19.0/19.0	603.12	233.0	38,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
0.00	601.00	10.9	601.00	601.00	55.25	55.25

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	110.0	1	4.47	603.12
Drill Pipe	109.0	127.0	24	462.73	598.65
X/O SUB	59.0	123.0	1	0.61	135.92
X/O 4 H-90	62.0	162.0	1	0.31	135.31
X/O Sub	58.0	134.0	1	0.51	135.00
BELL SUB	59.0	130.0	1	0.66	134.49
6 D.C	60.0	160.0	12	112.00	133.83
Bit sub	70.0	232.0	1	0.93	21.83
X/O 4 H-90	62.0	162.0	1	0.31	20.90
BELL SUB	59.0	130.0	1	0.66	20.59
9 D.C	71.0	233.0	2	18.50	19.93
Bit sub	70.0	232.0	1	0.93	1.43

Drilling Parameters: 213.00 - 300.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
300.00	28.00	12.9	2.650	10,500	120	4,700	31,000	31,000	31,000	31,000	1,500.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
63.4	0.00084	31	49.5	1,436.4	44.4	1045.0	1060.1

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
1.94			0.0	0.0	41.4	79.5

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
SAWDUST - 7.3KG	2.0	3.790		sks
CAUSTIC SODA - 50LB	1.0	26.800		sks
KI-3908 - 20L	4.0	310.000		pail
XCD POLYMER - 25KG	5.0	365.740		sks
FED SEAL - 18.14 KG	11.0	22.640		sks
BARITE - 40KG	20.0	19.850		sks
FEDERAL GEL - 40KG	55.0	10.890		sks
SAWDUST - 7.3KG	66.0	3.790		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Indian	2,074.00	2,073.23	2,037.00
sh Member	2,084.00	2,083.22	2,062.00
.ıe	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 2/27/2013
Report #: 7
Depth Progress: 0.00 m
Depth End: 300.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	2.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
84,314.36	1,400,425.50	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		30.0	342.00	2,874.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-25	Calm

Ops and Depth @ Morning Report
Drill 311mm surface hole at 370m

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Wiper trip condition hole encounter tight hole from 260m to 153m,Work tight hole and stuck pipe at 153m, Pull loose ,pull to 112m work tight hole ,stick pipe with Surface Jars came loose back ream to 60m ,pull out check bit ,Build volume run in hole to 150m wash and ream to 300m.

24hr Forecast
Drill 311mm surface hole

Daily Contacts
Drilling Engineer, Mike Greener, 403-771-5039; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Rig Manager, Tony Hiemstra; WS Supervisor, Mike Hobmaier, 403-844-3210; WS Supervisor, Dave Forsberg, 780-361-6417; Command, Center, 587-794-4599

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
	00:15	0.25	SURFAC	RIGMNT	SVRG	P		300.00	300.00	Rig service function test hydril 56 sec
	00:30	0.25	SURFAC	DRILL	SFTY	P		300.00	300.00	Safety meeting on tripping
00:30	02:00	1.50	SURFAC	DRILL	WPRT	T	Hole Cond...	300.00	300.00	Wiper trip from 300 m to 260m, Wash and back ream to 153m. Likely filter cake build up on seepage zones
02:00	06:45	4.75	SURFAC	DRILL	JAR	T	Stuck Pipe	300.00	300.00	Work tight hole and stuck pipe @ 153 m with full circulation
06:45	07:45	1.00	SURFAC	DRILL	TRIP	P		300.00	300.00	Pulled loose from 153m Trip out of hole to 120m
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P		300.00	300.00	Crew hand over meeting
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P		300.00	300.00	Rig service function hydrill 55 sec crown saver operating properly
08:15	09:00	0.75	SURFAC	DRILL	WPRT	T	Hole Cond...	300.00	300.00	Wiper trip up to 112m work tight hole @ 112M
09:00	10:00	1.00	SURFAC	DRILL	JAR	T	Stuck Pipe	300.00	300.00	Pick up surface jars to jar stuck pipe @112m
10:00	10:15	0.25	SURFAC	DRILL	SFTY	T	Hole Cond...	300.00	300.00	Safety meeting on surface jarring reviewed jsa#133 jarring
10:15	14:30	4.25	SURFAC	DRILL	JAR	T	Stuck Pipe	300.00	300.00	Surface jarring @112m, Jarred free
14:30	16:00	1.50	SURFAC	DRILL	REAM	T	Hole Cond...	300.00	300.00	Back ream pull tight hole from 112m to 95m, Partial lost circulation (6m3)
16:00	16:15	0.25	SURFAC	RIGMNT	SVRG	T	Hole Cond...	300.00	300.00	Rig service function hydrill 55 sec crown saver operating properly
16:15	17:30	1.25	SURFAC	DRILL	REAM	T	Hole Cond...	300.00	300.00	Back ream and pull tight hole from 95m to 60m, Partial lost circulation - 10-15% while circulating
17:30	18:15	0.75	SURFAC	DRILL	WPRT	P		300.00	300.00	Wiper trip out of hole from 60m to OOH/Clean and inspect bit
18:15	19:00	0.75	SURFAC	DRILL	WPRT	P		300.00	300.00	Run in hole 1 STD/brake down surface jars and laydown
19:00	19:15	0.25	SURFAC	RIGMNT	SVRG	P		300.00	300.00	Rig service function test hydril 55 sec & crown saver
19:15	20:15	1.00	SURFAC	DRILL	CIRC	P		300.00	300.00	Build volume bring vis up to 80,clean and organize floor
20:15	21:15	1.00	SURFAC	DRILL	TRIP	P		300.00	300.00	Run in hole to 151 m
21:15	00:00	2.75	SURFAC	DRILL	REAM	P		300.00	300.00	Ream & clean from 151 m to 281 m

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 2/27/2013
Report #: 7
Depth Progress: 0.00 m
Depth End: 300.00 mKB
Rig Release Date: 3/24/2013

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
17:15	300.00	1050.0	53	8.0	6.0	6.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
2.2	8		550	100		

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
	1140.0		2.8	22		

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
12.0	7.00		4,253.46

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
7.00		10,459.12

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
384.00	384.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 1

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1A	311.0mm, VAREL, HE04JMRSV, 1284043	0.50	2-3-WT-A-E-3-NO-TD	892	10.9

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
12.7/15.9/19.0/19.0	603.12	233.0	38,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
0.00	601.00	10.9	601.00	601.00	55.25	55.25

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	110.0	1	4.47	603.12
Drill Pipe	109.0	127.0	24	462.73	598.65
X/O SUB	59.0	123.0	1	0.61	135.92
X/O 4 H-90	62.0	162.0	1	0.31	135.31
X/O Sub	58.0	134.0	1	0.51	135.00
BELL SUB	59.0	130.0	1	0.66	134.49
6 D.C	60.0	160.0	12	112.00	133.83
Bit sub	70.0	232.0	1	0.93	21.83
X/O 4 H-90	62.0	162.0	1	0.31	20.90
BELL SUB	59.0	130.0	1	0.66	20.59
9 D.C	71.0	233.0	2	18.50	19.93
Bit sub	70.0	232.0	1	0.93	1.43

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/27/2013
Report #: 7
Depth Progress: 0.00 m
Depth End: 300.00 mKB
Rig Release Date: 3/24/2013

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
CAUSTIC SODA - 50LB	1.0	26.800		sks
FED SEAL - 18.14 KG	5.0	22.640		sks
XCD POLYMER - 25KG	8.0	365.740		sks
SAWDUST - 7.3KG	26.0	3.790		sks
FEDERAL GEL - 40KG	100.0	10.890		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

nations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 2/28/2013
Report #: 8
Depth Progress: 174.00 m
Depth End: 474.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	3.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
94,144.79	1,494,570.29	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	534.00	3,408.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
80	80	99	0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-25	West 5km/hr

Ops and Depth @ Morning Report
Drill 311mm surface hole at 530m

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job obersvations :Drill 311mm surface hole F/300- 444m with Varel Tri cone insert bit and slick rotary assembly.Pumping at 2.6m3/min. WOB 10-12dan,RPM 50 -120;Average ROP 13m/hr. Minor loss (15m3 24hrs.) with accumulated wire line surveys and rig services. Wiper trip to bit, Hole in better condition

24hr Forecast
Drill 311mm surface hole to casing point.

Daily Contacts
WS Supervisor, Mike Hobmaier, 403-844-3210; Command, Center, 587-794-4599; WS Supervisor, Dave Forsberg, 780-361-6417; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; Rig Manager, Tony Hiemstra

Last Casing String

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
	00:45	0.75	SURFAC	DRILL	REAM	P		300.00	300.00	Ream & clean from 281 m to 300 m
	01:00	0.25	SURFAC	RIGMNT	SVRG	P		300.00	300.00	Rig service function test hydril 55 sec & crown saver
01:00	07:15	6.25	SURFAC	DRILL	DRLG	P		300.00	387.00	Drill 311 mm hole from 300 m to 387 m with varel tri cone insert bit & slick rotary asseembly,Pumping at 2.6m3/min.Average ROP 13.9m/hr ,WOB 10dan RPM 115
07:15	07:45	0.50	SURFAC	DRILL	SRVY	P		387.00	387.00	Accumulated time for surveys
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P		387.00	387.00	Crew hand over meeting
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P		387.00	387.00	Rig service function hydrill 55 sec crown saver operating properly
08:15	12:15	4.00	SURFAC	DRILL	DRLG	P		387.00	444.00	Drill 311 mm hole from 387m to 444m with varel tri cone insert bit & slick rotary asseembly.Pumping at 2.6m3/min.Average ROP 14.25m/hr ,WOB 10dan RPM 115
12:15	12:45	0.50	SURFAC	DRILL	SRVY	P		444.00	444.00	Accumilated wireline surveys
12:45	14:00	1.25	SURFAC	DRILL	CIRC	P		444.00	444.00	Circulate hole clean
14:00	16:00	2.00	SURFAC	DRILL	WPRT	P		444.00	444.00	Wiper trip out of hole flow check@412m/134m
16:00	17:15	1.25	SURFAC	DRILL	WPRT	P		444.00	444.00	Wiper trip out of hole flow check
17:15	18:15	1.00	SURFAC	RIGMNT	SVRG	P		444.00	444.00	Rig service crown saver operating properly/change out kelly spinner/clean and prepare floor to RIH
18:15	19:30	1.25	SURFAC	DRILL	WPRT	P		444.00	444.00	Wiper trip in the hole
19:30	20:30	1.00	SURFAC	DRILL	REAM	P		444.00	444.00	Pick up kelly & clean up hole @ 267 m TO 301 m
20:30	21:15	0.75	SURFAC	DRILL	TRIP	P		444.00	444.00	Run in hole
21:15	00:00	2.75	SURFAC	DRILL	DRLG	P		444.00	474.00	Drill 311 mm hole from 444m to 474m with varel tri cone insert bit & slick rotary asseembly < Pumping at 2.6m3/min.Average ROP 10.9m/hr ,WOB 10dan RPM 115

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
19:30	444.00	1100.0	66	8.0	15.0	9.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
4.7	45		600	80		

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
	1140.0		4.8	24		

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
7.0			4,381.29

ud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
7.00		14,840.41

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 2/28/2013
Report #: 8
Depth Progress: 174.00 m
Depth End: 474.00 mKB
Rig Release Date: 3/24/2013

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
385.00	385.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 1

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1A	311.0mm, VAREL, HE04JMRSV, 1284043	0.50	2-3-WT-A-E-3-NO-TD	892	10.9

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
12.7/15.9/19.0/19.0	603.12	233.0	38,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
0.00	601.00	10.9	601.00	601.00	55.25	55.25

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	110.0	1	4.47	603.12
Drill Pipe	109.0	127.0	24	462.73	598.65
X/O SUB	59.0	123.0	1	0.61	135.92
X/O 4 H-90	62.0	162.0	1	0.31	135.31
X/O Sub	58.0	134.0	1	0.51	135.00
BELL SUB	59.0	130.0	1	0.66	134.49
6 D.C	60.0	160.0	12	112.00	133.83
Bit sub	70.0	232.0	1	0.93	21.83
X/O 4 H-90	62.0	162.0	1	0.31	20.90
BELL SUB	59.0	130.0	1	0.66	20.59
9 D.C	71.0	233.0	2	18.50	19.93
Bit sub	70.0	232.0	1	0.93	1.43

Drilling Parameters: 444.00 - 474.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
474.00	41.75	10.9		10,000	120	5,800	34,000	34,000	34,000	34,000	1,600.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
	0.00084	25				1050.0	

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
			0.0	0.0	0.0	0.0

Error

Unable to calculate annular pressure drop because pressure drop data is missing from AV calc

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 2/28/2013
Report #: 8
Depth Progress: 174.00 m
Depth End: 474.00 mKB
Rig Release Date: 3/24/2013

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
XCD POLYMER - 25KG	8.0	365.740		sks
FED PAC R - 22.68KG	1.0	139.450		sks
CAUSTIC SODA - 50LB	2.0	26.800		sks
FED SEAL - 18.14 KG	18.0	22.640		sks
FEDERAL GEL - 40KG	51.0	10.890		sks
SAWDUST - 7.3KG	79.0	3.790		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
?	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/1/2013
Report #: 9
Depth Progress: 127.00 m
Depth End: 601.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	4.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
278,350.77	1,772,921.06	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		41.0	474.00	3,882.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
87	87		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Partly Cloudy	-22	West 5km/hr

Ops and Depth @ Morning Report
Pull out of hole to Log.

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 1 Job obersvations :Drill 311mm surface hole F/474- 601m with Varel Tri cone insert bit and slick rotary assembly.Pumping at 2.3m3/min. WOB 10-18dan,RPM 50 -120,Average ROP 10.5m/hr. Drilled into a fracture @ 504m, began losing circulation (30m3) Mixed and pumped LCM pill and continue raising viscosity/ mixing LCM, Drill ahead with minor losses, Circulate hole clean,Build volume ,mixed and pumped LCM pill, Wiper trip to 130m with accumulated wire line surveys and rig services.

24hr Forecast
Log surface hole ,Start running 244.5mm casing.

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417; WS Supervisor, Mike Hobmaier, 403-844-3210; Rig Manager, Tony Hiemstra; Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599

Last Casing String

Time Log

	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
	00:15	0.25	SURFAC	RIGMNT	SVRG	P		474.00	474.00	Rig service function test hydril 55 sec & crown saver
00:15	06:15	6.00	SURFAC	DRILL	DRLG	P		474.00	532.00	Drill 311 mm hole from 474 m to 532 m with varel tri cone insert bit & slick rotary asseembly,Pumping at 2.6m3/min. WOB 10-12dan RPM 115,Average ROP 9.6m/hr
06:15	07:00	0.75	SURFAC	DRILL	CIRC	T	Lost Circu...	532.00	532.00	Miw up pill due to lost circulation
07:00	07:45	0.75	SURFAC	DRILL	SRVY	T	Lost Circu...	532.00	532.00	Accumulated time for surveys
07:45	08:00	0.25	SURFAC	DRILL	SFTY	T	Lost Circu...	532.00	532.00	Crew hand over meeting
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	T	Lost Circu...	532.00	532.00	Rig service function hydrill 55 sec crown saver operating properly
08:15	09:45	1.50	SURFAC	DRILL	CIRC	T	Lost Circu...	532.00	532.00	Build volume mix up LCM pill work string @532m/Safety meeting on leveling substructure reviewed JSA#145
09:45	15:30	5.75	SURFAC	DRILL	DRLG	P		532.00	584.00	Drill 311 mm hole from 532m to 584m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min. WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr, Minor losses 5m3/hr
15:30	16:00	0.50	SURFAC	DRILL	SRVY	P		584.00	584.00	Accumilated wire line survey
16:00	16:30	0.50	SURFAC	DRILL	DRLG	P		584.00	590.00	Drill 311 mm hole from 584m to 590m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min. WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr,Minor losses 5m3/hr
16:30	16:45	0.25	SURFAC	RIGMNT	SVRG	P		590.00	590.00	Rig service function hydrill 55 sec crown saver operating properly
16:45	18:00	1.25	SURFAC	DRILL	DRLG	P		590.00	601.00	Drill 311 mm hole from 584m to 601m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min. WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr. Minor losses 5m3/hr
18:00	19:00	1.00	SURFAC	DRILL	CIRC	P		601.00	601.00	Circulate hole clean for wiper trip pumping at 2.6m3/min. with losses 10m3/hr.& mix & build volume
19:00	19:15	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Safety meeting with Conoco safety coach Jack Brasil
19:15	23:15	4.00	SURFAC	DRILL	CIRC	T	Lost Circu...	601.00	601.00	Build volume & circ
	00:00	0.75	SURFAC	DRILL	WPRT	P		601.00	601.00	Wiper trip flow check @ 596 m & 557 m

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/1/2013
Report #: 9
Depth Progress: 127.00 m
Depth End: 601.00 mKB
Rig Release Date: 3/24/2013

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
16:15	591.00	1150.0	110	9.0	30.0	17.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
4.4	63		320	60		

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
	1204.0		4.8	22		

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
7.0			8,348.27

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
7.00		23,188.68

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
386.00	386.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 1

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1A	311.0mm, VAREL, HE04JMRSV, 1284043	0.50	2-3-WT-A-E-3-NO-TD	892	10.9

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
12.7/15.9/19.0/19.0	603.12	233.0	38,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
0.00	601.00	10.9	601.00	601.00	55.25	55.25

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	110.0	1	4.47	603.12
Drill Pipe	109.0	127.0	24	462.73	598.65
X/O SUB	59.0	123.0	1	0.61	135.92
X/O 4 H-90	62.0	162.0	1	0.31	135.31
X/O Sub	58.0	134.0	1	0.51	135.00
BELL SUB	59.0	130.0	1	0.66	134.49
6 D.C	60.0	160.0	12	112.00	133.83
Bit sub	70.0	232.0	1	0.93	21.83
X/O 4 H-90	62.0	162.0	1	0.31	20.90
BELL SUB	59.0	130.0	1	0.66	20.59
9 D.C	71.0	233.0	2	18.50	19.93
Bit sub	70.0	232.0	1	0.93	1.43

Drilling Parameters: 584.00 - 601.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
601.00	55.25	9.7		17,000	120	5,800	38,000	38,000	38,000	38,000	1,700.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
	0.00084	25				1150.0	

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
			0.0	0.0	0.0	0.0

Error
Unable to calculate annular pressure drop because pressure drop data is missing from AV calc

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
CAUSTIC SODA - 50LB	2.0	26.800		sks
FEDERAL GEL - 40KG	129.0	10.890		sks
KWIK SEAL MED. -18KG	4.0			sks
SAWDUST - 7.3KG	131.0	3.790		sks
FED SEAL - 18.14 KG	2.0	22.640		sks
XCD POLYMER - 25KG	16.0	365.740		sks
BARITE - 40KG	25.0	19.850		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

ations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/2/2013
Report #: 10
Depth Progress: 0.00 m
Depth End: 601.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	5.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
73,104.80	1,846,025.86	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		44.0	510.00	4,392.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Cloudy	-20	Calm

Ops and Depth @ Morning Report
Wait on cement

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 3 Hazard ID's: 2 Job oberservations: Wiper trip,circulate condition hole to Log, pull out of hole to log,lay down 8" DCs, Rig in Schlumberger and run open hole logs. Rig to and run 244.5mm surface casing,circulate condition hole prior to cementing casing, NEB regulatory and environmental inspectors toured location and followed up on initial inspection,

24hr Forecast
Nipple up BOPs.

Daily Contacts
Rig Manager, Tony Hiemstra; Command, Center, 587-794-4599; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Mike Hobmaier, 403-844-3210; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Dave Forsberg, 780-361-6417

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
	00:45	0.75	SURFAC	DRILL	WPRT	P		601.00	601.00	Wiper trip to flow check @ 157 m
	01:00	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service function test hydril 56 sec & crown saver
01:00	01:45	0.75	SURFAC	DRILL	TRIP	P		601.00	601.00	Run in hole to 469 m hit bridge @ 469 m
01:45	03:00	1.25	SURFAC	DRILL	REAM	P		601.00	601.00	Ream & clean from 469 m to 479 m 540 m
03:00	03:15	0.25	SURFAC	DRILL	TRIP	P		601.00	601.00	Run in hole
03:15	03:30	0.25	SURFAC	DRILL	REAM	P		601.00	601.00	Ream & clean from 585 m to 601 m
03:30	05:30	2.00	SURFAC	DRILL	CIRC	P		601.00	601.00	Circulate & condition hole
05:30	07:45	2.25	SURFAC	DRILL	TRIP	P		601.00	601.00	Pull out of hole to log flow checks @ 599 m 556 m
07:45	08:00	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Crew hand over meeting
08:00	08:45	0.75	SURFAC	DRILL	TRIP	P		601.00	601.00	Trip out of hole lay down 9 inc DC flow check @OOH reviewed jsa#159 Lay down DC
08:45	09:00	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service crown saver operating properly
09:00	09:15	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Safety meeting with Schlumberger wire line reviewed jsa#151 rig up to and log well
09:15	14:00	4.75	SURFAC	DRILL	ELOG	P		601.00	601.00	Wire line log run #1 with Schlumberger on bottom @10:45 depth 601.5m tools ran ATI,DSI,GPIT,PPC NEB follow up inspection enviromental and regulatory
14:00	14:15	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Safety meeting with hallmark tong hand reviewed jsa#97 install shoe and float and run csg
14:15	16:00	1.75	SURFAC	CASING	RNCS	P		601.00	601.00	Rig up to run casing
16:00	16:15	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service
16:15	23:00	6.75	SURFAC	CASING	RNCS	P		601.00	601.00	Ran 244.5mm 59.53kg/m J-55 casing as follows, guide shoe,float collar,1 joint casing,float collar,46 joints casing, Total length 598.86m, Landed @ 598m
23:00	00:00	1.00	SURFAC	CASING	CIRC	P		601.00	601.00	Circulate casing, condition hole.

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
16:15	591.00	1150.0	110	9.0	30.0	17.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
4.4	63		320	60		

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
	1204.0		4.8	22		

trate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
7.0			409.30

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
7.00		23,597.98

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/2/2013
Report #: 10
Depth Progress: 0.00 m
Depth End: 601.00 mKB
Rig Release Date: 3/24/2013

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
387.00	387.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
FEDERAL GEL - 40KG	4.0	10.890		sks
XCD POLYMER - 25KG	1.0	365.740		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/3/2013
Report #: 11
Depth Progress: 0.00 m
Depth End: 601.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	6.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
95,533.45	1,941,559.31	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		45.0	522.00	4,914.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-25	South 5km/hr

Ops and Depth @ Morning Report
Pick up Schlumberger Directional BHA

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 1 Job oberservations:Circulate and condition mud, Rig to and cement surface casing, Recieved 10m3 good cement slurry returns, Nipple down diverter, Install casing bowl, Nipple up BOP's and pressure test as per program.

24hr Forecast
Make up Directional tools,Run in,Drill out and Drill ahead.

Daily Contacts
Command, Center, 587-794-4599; Drilling Engineer, Mike Greener, 403-771-5039; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417; WS Supervisor, Mike Hobmaier, 403-844-3210; Rig Manager, Tony Hiemstra

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
	00:15	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service function test crown saver
	01:15	1.00	SURFAC	CASING	CIRC	P		601.00	601.00	Circ casing
	01:30	0.25	SURFAC	CEMENT	SFTY	P		601.00	601.00	Safety meeting on cementing
01:30	04:00	2.50	SURFAC	CEMENT	CMNT	P		601.00	601.00	Cement casing from 5m to 601m with 35 Tonne (33.90m3) Thixtropic D804A-P cement @1740kg/m3 with 2% CaCL2, 0.2% antifoam, Bumped plug and pressure tested casing to 11,500 kpa, Recieved 10m3 good cement slurry returns @ surface, Annulus remained.static at surface
04:00	08:00	4.00	SURFAC	CEMENT	WOC	P		601.00	601.00	Wait on cement
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service
08:15	12:30	4.25	SURFAC	WHDBOP	NUND	P		601.00	601.00	Nipple down diverter reviewed jsa#113 nipple down bop
12:30	14:00	1.50	SURFAC	WHDBOP	NUND	P		601.00	601.00	Clean and prepare casing screw on casing bowl
14:00	16:00	2.00	SURFAC	WHDBOP	NUND	P		601.00	601.00	Nipple up BOP reviewed jsa#109 nipple up BOP
16:00	16:15	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service
16:15	20:15	4.00	SURFAC	WHDBOP	NUND	P		601.00	601.00	Nipple up BOP
20:15	20:30	0.25	SURFAC	WHDBOP	SFTY	P		601.00	601.00	Safety meeting j.s.a # 111
20:30	00:00	3.50	SURFAC	WHDBOP	BOPE	P		601.00	601.00	Pressure test BOP system,Pressure test all Manifold valves 1400kpa Low and 20,000kpa high min. each,Pipe rams,Choke line, Kill line,Kill line Check valve and HCR 1400kpa low and 20,000kpa high 10 min. each

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
			2,114.95

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
		25,712.93

Last BOP Drill

	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
Drill (Pit)				

Since Lost Time Incident (days)	Days Since Recordable Incident (days)
388.00	388.00

Safety Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/3/2013
Report #: 11
Depth Progress: 0.00 m
Depth End: 601.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m),	IADC Bit Dull	TFA (Incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
CAL-CARB O - 25KG	50.0	7.980		sks
CELLOFLAKE 3/8- 25LB	25.0	67.880		sks
SAWDUST - 7.3KG	5.0	3.790		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/4/2013
Report #: 12
Depth Progress: 131.00 m
Depth End: 732.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	7.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
329,118.97	2,270,678.28	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		43.0	478.00	5,392.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
21	18		0

Road Condition	Weather	Temperature (°C)	Wind
Good	O/C Snow	-23	North West 20km/hr

Ops and Depth @ Morning Report
Drill 222mm hole ahead at 825m

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 1 Job oberservations:Pressure test BOP's and related equipment as per program. Make up directional BHA and run in hole, Hold BOP and man down drills, Drill out shoe track,Drill ahead 601m to 611m,Preform Formation Integrity Test ,Fluid density 960kg/m3, Surface applied 7530kpa ,Total pressure at 611m 11,484kpa, Gradent of 18.8kpa/m.Continue to drill ahead from 611m to 732m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 14.5m/hr.

24hr Forecast
Drill ahead to Core point

Daily Contacts
WS Supervisor, Mike Hobmaier, 403-844-3210; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417; Command, Center, 587-794-4599; Drilling Engineer, Mike Greener, 403-771-5039; Rig Manager, Tony Hiemstra

Last Casing String
Surface, 599.00mKB

Time Log

	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
	03:15	3.25	SURFAC	WHDBOP	BOPE	P		601.00	601.00	Continue to pressure test BOPs equipment pressure test Anular 1400kpa low and 17500kpa high 10 min. each,Stabbing,Inside BOP and Upper Kelly Cock 1400kpa low and 20,000kpa high 10 min. each,Blind ram ,Casing Bowl and Casing 1400kpa Low and 19000kpa high 1
03:15	03:30	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service function test crown saver & motor kills
03:30	04:15	0.75	SURFAC	RIGMNT	SLPC	P		601.00	601.00	Slip & cut 30 m
04:15	04:30	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Rig safety inspection
04:30	04:45	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Held Man down drill
04:45	05:00	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Held BOP drill well secured 85 seconds
05:00	05:15	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Safety meeting picking up directional tools
05:15	08:00	2.75	SURFAC	DRILL	PULD	P		601.00	601.00	Pick up Directional tools
08:00	08:15	0.25	SURFAC	RIGMNT	SVRG	P		601.00	601.00	Rig service crown saver operating properly
08:15	11:30	3.25	SURFAC	DRILL	TRIP	P		601.00	601.00	Trip in the hole to 576m
11:30	11:45	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Bop drill crew in position well secure in 90 sec
11:45	12:00	0.25	SURFAC	DRILL	SFTY	P		601.00	601.00	Man down drill
12:00	13:00	1.00	SURFAC	CEMENT	DRLG	P		601.00	601.00	Drill cement float and shoe from 581m to 601m tag cement @581m
13:00	14:45	1.75	SURFAC	DRILL	DRLG	P		601.00	611.00	Drill 222mm hole from 601m to 611m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 5.7m/hr.
14:45	15:00	0.25	SURFAC	DRILL	CIRC	P		611.00	611.00	Circulate bottoms up/safety meeting w/peregrine pressure tester
15:00	15:30	0.50	SURFAC	DRILL	FIT	P		611.00	611.00	Preform Formation Integrity Test ,Fluid density 960kg/m3, Surface applied 7530kpa ,Total pressure at 611m 11,484kpa, Gradient of 18.8kpa/m
15:30	16:00	0.50	INTRM1	DRILL	DRLG	P		611.00	616.00	Drill 222mm hole from 611m to 616m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 5m/hr.
	16:30	0.50	INTRM1	DRILL	CIRC	T	BHA	616.00	616.00	Trouble shoot mwd tool
	16:45	0.25	INTRM1	DRILL	DRLG	P		616.00	626.00	Drill 222mm hole from 616m to 626m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 40m/hr.
16:45	17:00	0.25	INTRM1	RIGMNT	SVRG	P		626.00	626.00	Rig service function hydrill 13 sec crown saver operating properly

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/4/2013
Report #: 12
Depth Progress: 131.00 m
Depth End: 732.00 mKB
Rig Release Date: 3/24/2013

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
17:00	18:15	1.25	INTRM1	DRILL	DRLG	P		626.00	643.00	Drill 222mm hole from 626m to 643m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 13.2m/hr.
18:15	19:00	0.75	INTRM1	RIGMNT	RGRP	T	Rig	643.00	643.00	Repair rad hose on #1 pump motor
19:00	19:15	0.25	INTRM1	DRILL	SFTY	P		643.00	643.00	Crew change safety meeting
19:15	23:30	4.25	INTRM1	DRILL	DRLG	P		643.00	732.00	Drill 222mm hole from 643m to 732m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	00:00	0.50	INTRM1	DRILL	SRVY	P		732.00	732.00	Accumulated time for surveys

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
13:30	598.00	965.0	64		14.0	4.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
5.7		81/19	171,410	33,000	22	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
550.0	980.0		5.7	6	3,500	7.0

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	10.00		

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
17.00		25,712.93

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)				

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
389.00	389.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment
Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters: 616.00 - 732.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
131.00	9.00	20.2	1.700	6,000	50	7,200	43,000	43,000	43,000	43,000	1,600.0

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/4/2013
Report #: 12
Depth Progress: 131.00 m
Depth End: 732.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
36.5	0.00094	18	48.8	1,289.2	201.8	965.0	993.1

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
5.19	80.43	15.19	61.4	94.9	26.9	102.8

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Deck	2/4/2013		80	80	
Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
3/4/2013	621.34	1.89	26.41	621.26	7.76	7.61	1.50	7.61	0.24
3/4/2013	640.42	1.49	22.98	640.33	8.30	8.12	1.73	8.12	0.65
3/4/2013	660.05	1.49	23.29	659.95	8.81	8.59	1.93	8.59	0.01
3/4/2013	679.36	1.58	22.41	679.26	9.31	9.07	2.13	9.07	0.14
3/4/2013	698.75	2.02	19.42	698.64	9.92	9.64	2.35	9.64	0.70
3/4/2013	732.00	2.02	19.42	731.86	11.13	10.78	2.78	10.78	0.42

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
sh Member	2,084.00	2,083.22	2,062.00
	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/5/2013
Report #: 13
Depth Progress: 326.00 m
Depth End: 1,058.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	8.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
112,058.30	2,382,736.58	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		41.0	454.00	5,846.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
28	21		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-30	East 9 km

Ops and Depth @ Morning Report	Wellbore
Drill 222mm hole @ 1155 mkb	Original Hole

Last 24hr Summary

No accidents or incidents 4 Hazard ID's: 1 Job oberservations: Drill ahead from 732m to 1058m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 16.71 m/hr.

24hr Forecast

Drill ahead to Core point

Daily Contacts

Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Brian Neigum, 403-548-5013; Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599; WS Supervisor, Mike Hobmaier, 403-844-3210; Rig Manager, Rick Yavis

Last Casing String

Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
[illegible]	00:15	0.25	INTRM1	RIGMNT	SVRG	P		732.00	732.00	Rig service function test pipe rams 3 sec & crown saver
	07:15	7.00	INTRM1	DRILL	DRLG	P		732.00	847.00	Drill 222mm hole from 732 m to 847m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:15	07:45	0.50	INTRM1	DRILL	SRVY	P		847.00	847.00	Accumulated time for surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P		847.00	847.00	Crew hand over meeting
08:00	08:15	0.25	INTRM1	RIGMNT	SVRG	P		847.00	847.00	Rig service function test hydrill 13 sec crown saver operating properly
08:15	12:30	4.25	INTRM1	DRILL	DRLG	P		847.00	915.00	Drill 222mm hole from 847m to 915m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
12:30	13:30	1.00	INTRM1	DRILL	SEQP	T	BHA	915.00	915.00	Trouble shoot MWD tool for gamma ray
13:30	14:30	1.00	INTRM1	DRILL	DRLG	P		915.00	934.00	Drill 222mm hole from 915m to 934m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
14:30	14:45	0.25	INTRM1	DRILL	SFTY	P		934.00	934.00	Bop drill crew in position well secure in 90 sec
14:45	15:15	0.50	INTRM1	DRILL	DRLG	P		934.00	953.00	Drill 222mm hole from 934m953mto with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:15	15:45	0.50	INTRM1	DRILL	SRVY	P		953.00	953.00	Accumilated directional surveys
15:45	16:00	0.25	INTRM1	DRILL	SFTY	P		953.00	953.00	Crew change safety meetings
16:00	16:15	0.25	INTRM1	RIGMNT	SVRG	P		953.00	953.00	Rig service function test pipe rams 4 seconds to close function test crown saver
16:15	18:00	1.75	INTRM1	DRILL	DRLG	P		953.00	982.00	Drill 222mm hole from 953m982m to with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 26m/hr.
[illegible]	18:15	0.25	INTRM1	DRILL	SFTY	P		982.00	982.00	BOP drill well secure in 90 seconds crew in positions
	18:30	0.25	INTRM1	DRILL	SFTY	P		982.00	982.00	Man down drill crew walked through rescue routes
	23:30	5.00	INTRM1	DRILL	DRLG	P		982.00	1,058.00	Drill 222mm hole from 982m 1058m to with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	23:45	0.25	INTRM1	DRILL	SRVY	P		1,058.00	1,058.00	Accumulated survey time

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/5/2013
Report #: 13
Depth Progress: 326.00 m
Depth End: 1,058.00 mKB
Rig Release Date: 3/24/2013

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
23:45	00:00	0.25	INTRM1	DRILL	SFTY	P		1,058.00	1,058.00	Crew change safety meeting

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
16:30	965.00	975.0	62		13.0	5.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
7.7		82.3/17.7	227,135	40,000	19	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
595.0	1048.0		7.9	25	3,500	6.3

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	5.90		8,977.80

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
22.90		34,690.73

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	0	3/5/2013	1	3/6/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
390.00	390.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment
Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters: 953.00 - 1,058.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
457.00	28.50	15.6	1.800	5,000	60	10,000	49,000	49,000	49,000	49,000	1,600.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
43.8	0.00113	15	51.7	1,460.4	184.2	975.0	992.8

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
8.23	80.43	16.10	67.0	67.0	28.4	108.8

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/5/2013
Report #: 13
Depth Progress: 326.00 m
Depth End: 1,058.00 mKB
Rig Release Date: 3/24/2013

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
CAL-CHLR 94-97%-40KG	40.0	46.970		sks
OPTISEAL III 25KG	5.0	99.950		sks
[redacted]AMUL - 208LT	2.0	940.470		bbl
[redacted]SATROL M - 22KG	5.0	49.450		sks
VERSATROL M - 22KG	8.0	49.450		sks
VERSACOAT HF - 208LT	1.0	906.590		bbl
VERSAMUL - 208LT	1.0	940.470		bbl
OPTISEAL IV 25KG	5.0	61.180		sks
CAL-CHLR 94-97%-40KG	10.0	46.970		sks
VERSAMUL - 208LT	1.0	940.470		bbl
OPTISEAL IV 25KG	3.0	61.180		sks
CAL-CHLR 94-97%-40KG	7.0	46.970		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
3/5/2013	717.69	2.20	21.71	717.56	10.61	10.29	2.59	10.29	0.31
3/5/2013	737.87	2.59	18.50	737.73	11.37	11.01	2.86	11.01	2.92
3/5/2013	756.53	1.80	11.60	756.38	12.08	11.69	3.05	11.69	1.34
3/5/2013	775.49	1.89	7.99	775.33	12.69	12.29	3.15	12.29	0.23
3/5/2013	795.33	2.20	12.61	795.15	13.40	12.99	3.28	12.99	0.53
3/5/2013	804.51	1.58	7.20	804.33	13.70	13.29	3.34	13.29	2.11
3/5/2013	814.26	1.32	9.40	814.08	13.94	13.53	3.37	13.53	0.82
3/5/2013	852.78	0.62	8.08	852.59	14.59	14.18	3.47	14.18	0.55
3/5/2013	872.25	0.62	112.89	872.06	14.68	14.24	3.58	14.24	1.51
3/5/2013	891.44	1.19	125.50	891.25	14.60	14.08	3.84	14.08	0.94
3/5/2013	938.56	1.71	98.92	938.35	14.55	13.69	4.93	13.69	0.53
3/5/2013	958.42	1.71	96.90	958.20	14.69	13.61	5.52	13.61	0.09
3/5/2013	977.66	2.11	85.60	977.43	14.93	13.60	6.16	13.60	0.85
3/5/2013	996.46	2.20	82.48	996.22	15.30	13.67	6.86	13.67	0.24
3/5/2013	1,015.67	2.29	86.09	1,015.41	15.71	13.75	7.61	13.75	0.26
3/5/2013	1,024.91	2.11	85.51	1,024.65	15.91	13.77	7.96	13.77	0.59
3/5/2013	1,034.96	2.50	87.81	1,034.69	16.14	13.80	8.37	13.80	1.20
3/5/2013	1,044.46	2.20	99.71	1,044.18	16.31	13.76	8.76	13.76	1.42

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
[redacted]Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/6/2013
Report #: 14
Depth Progress: 327.00 m
Depth End: 1,385.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	9.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
129,307.69	2,512,044.27	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		43.0	462.00	6,308.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
58	35		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-36	East 9 km

Ops and Depth @ Morning Report
Drill 222mm hole @ 1470 mkb

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job oberservations: Drill ahead from 1058m to 1385m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 15.2 m/hr.

24hr Forecast
Drill ahead to Core point

Daily Contacts
WS Supervisor, Brian Neigum, 403-548-5013; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Command, Center, 587-794-4599; WS Supervisor, Mike Hobmaier, 403-844-3210; Rig Manager, Rick Yavis; Drilling Engineer, Mike Greener, 403-771-5039

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	INTRM1	RIGMNT	SVRG	P		1,058.00	1,058.00	Rig service function test hydrill 13 sec crown saver operating properly
	07:30	7.25	INTRM1	DRILL	DRLG	P		1,058.00	1,174.00	Drill 222mm hole from 1058m to 1174m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:30	07:45	0.25	INTRM1	DRILL	SRVY	P		1,174.00	1,174.00	Accumilated directional surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P		1,174.00	1,174.00	Crew change safety meeting
08:00	08:15	0.25	INTRM1	RIGMNT	SVRG	P		1,174.00	1,174.00	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
08:15	15:30	7.25	INTRM1	DRILL	DRLG	P		1,174.00	1,289.00	Drill 222mm hole from 1174m to1289m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:30	16:00	0.50	INTRM1	DRILL	SRVY	P		1,289.00	1,289.00	Accumulated survey time
16:00	16:30	0.50	INTRM1	DRILL	DRLG	P		1,289.00	1,299.00	Drill 222mm hole from 1289m to1299m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
16:30	16:45	0.25	INTRM1	RIGMNT	SVRG	P		1,299.00	1,299.00	Rig service function test annular 13 seconds to close function test crown saver
16:45	19:15	2.50	INTRM1	DRILL	DRLG	P		1,299.00	1,326.00	Drill 222mm hole from 1299m to 1326m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
19:15	19:30	0.25	INTRM1	DRILL	SFTY	P		1,326.00	1,326.00	Crew change safety meeting
19:30	23:30	4.00	INTRM1	DRILL	DRLG	P		1,326.00	1,385.00	Drill 222mm hole from 1326m to 1385m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	00:00	0.50	INTRM1	DRILL	SRVY	P		1,385.00	1,385.00	Accumilated directional surveys

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/6/2013
Report #: 14
Depth Progress: 327.00 m
Depth End: 1,385.00 mKB
Rig Release Date: 3/24/2013

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
07:15	1,164.00	990.0	68		15.0	5.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
7.6		82.2/17.8	252,039	45,000	21	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
630.0	1060.9		8.1	26	3,500	6.3

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	5.90		30,346.09

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
28.80		65,036.82

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	1	3/5/2013	0	3/6/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
391.00	391.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters: 1,289.00 - 1,385.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
784.00	50.00	13.7	1.800	7,000	60	11,500	52,000	57,000	57,000	57,000	2,700.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
44.5	0.00115	13	51.7	1,482.8	235.9	990.0	1007.4

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
11.29	80.43	16.10	67.0	67.0	28.4	108.8

Error:

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
OPTISEAL IV 25KG	3.0	61.180		sks
CAL-CHLR 94-97%-40KG	8.0	46.970		sks
VERSAMUL - 208LT	1.0	940.470		bbl
OPTISEAL III 25KG	5.0	99.950		sks
[illegible]SAMUL - 208LT	1.0	940.470		bbl
[illegible]EAL IV 25KG	5.0	61.180		sks
[illegible]20KG	15.0	8.680		sks
VERSACLEAN INVERT	18.6	1,450.000		m3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
3/6/2013	1,034.96	2.50	91.49	1,034.69	16.14	13.80	8.37	13.80	1.20
3/6/2013	1,053.95	1.49	101.99	1,053.67	16.43	13.70	9.06	13.70	2.26
3/6/2013	1,073.33	1.19	105.60	1,073.04	16.59	13.60	9.50	13.60	0.48
3/6/2013	1,074.17	1.19	105.60	1,073.88	16.59	13.59	9.51	13.59	0.00
3/6/2013	1,092.66	1.19	95.62	1,092.37	16.75	13.52	9.89	13.52	0.34
3/6/2013	1,111.93	1.41	79.58	1,111.63	17.03	13.55	10.32	13.55	0.66
3/6/2013	1,131.20	1.71	79.41	1,130.90	17.42	13.64	10.84	13.64	0.47
3/6/2013	1,150.43	1.32	80.81	1,150.12	17.81	13.73	11.34	13.73	0.61
3/6/2013	1,169.86	0.88	81.38	1,169.55	18.09	13.79	11.71	13.79	0.68
3/6/2013	1,188.82	1.71	76.20	1,188.50	18.43	13.88	12.12	13.88	1.32
3/6/2013	1,208.02	2.59	55.98	1,207.69	19.08	14.19	12.76	14.19	1.80
3/6/2013	1,227.25	2.02	65.70	1,226.90	19.82	14.57	13.43	14.57	1.08
3/6/2013	1,246.32	1.41	78.40	1,245.96	20.32	14.76	13.97	14.76	1.13
3/6/2013	1,265.44	1.49	81.21	1,265.08	20.71	14.84	14.44	14.84	0.17
3/6/2013	1,284.64	1.58	66.31	1,284.27	21.16	14.99	14.93	14.99	0.64
3/6/2013	1,303.85	2.50	51.02	1,303.47	21.82	15.36	15.50	15.36	1.66
3/6/2013	1,313.60	2.59	50.89	1,313.21	22.25	15.63	15.84	15.63	0.28
3/6/2013	1,323.16	2.29	43.28	1,322.76	22.66	15.90	16.14	15.90	1.38
3/6/2013	1,332.61	1.89	48.91	1,332.20	23.00	16.14	16.38	16.14	1.43
3/6/2013	1,342.37	1.32	56.12	1,341.96	23.27	16.31	16.60	16.31	1.86
3/6/2013	1,351.96	0.79	79.32	1,351.55	23.44	16.39	16.75	16.39	2.10
3/6/2013	1,361.53	0.79	88.62	1,361.12	23.54	16.40	16.88	16.40	0.40

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
[illegible] Red	829.00	828.81	792.00
[illegible]ault	988.00	987.77	962.00
[illegible] House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/7/2013
Report #: 15
Depth Progress: 328.00 m
Depth End: 1,713.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	10.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
219,474.07	2,731,518.34	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	6,758.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
49	30		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Overcast	-27	East 11 km

Ops and Depth @ Morning Report
Drill 222mm hole @ 1775 mkb

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job oberservations: Drill ahead from 1385m to 1713m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 60,WOB 7-10 dan,Average ROP 15.43 m/hr.

24hr Forecast
Drill 222mm hole ahead to Core point

Daily Contacts
WS Supervisor, Brian Neigum, 403-548-5013; Command, Center, 587-794-4599; WS Supervisor, Mike Hobmaier, 403-844-3210; Drilling Engineer, Mike Greener, 403-771-5039; Rig Manager, Rick Yavis; Drilling Superintend, Sheldon Vamplew, 403-999-1302

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	INTRM1	RIGMNT	SVRG	P		1,385.00	1,385.00	Rig service function pipe rams 3 sec crown saver operating properly
	07:15	7.00	INTRM1	DRILL	DRLG	P		1,385.00	1,491.00	Drill 222mm hole from 1385m to 1491m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:15	07:45	0.50	INTRM1	DRILL	SRVY	P		1,491.00	1,491.00	Accumilated directional surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P		1,491.00	1,491.00	Crew change safety meeting
08:00	08:45	0.75	INTRM1	DRILL	DRLG	P		1,491.00	1,501.00	Drill 222mm hole from 1491m to 1501m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
08:45	09:00	0.25	INTRM1	RIGMNT	SVRG	P		1,501.00	1,501.00	Rig service function test annular 13 seconds to close function test crown saver
09:00	15:30	6.50	INTRM1	DRILL	DRLG	P		1,501.00	1,597.00	Drill 222mm hole from 1501m to1597 m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:30	16:00	0.50	INTRM1	DRILL	SRVY	P		1,597.00	1,597.00	Accumulated survey time
16:00	16:30	0.50	INTRM1	DRILL	DRLG	P		1,597.00	1,607.00	Drill 222mm hole from 1597m to1607 m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
16:30	16:45	0.25	INTRM1	RIGMNT	SVRG	P		1,607.00	1,607.00	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
16:45	19:00	2.25	INTRM1	DRILL	DRLG	P		1,607.00	1,641.00	Drill 222mm hole from 1607m to 1641m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
19:00	19:15	0.25	INTRM1	DRILL	SFTY	P		1,641.00	1,641.00	Crew change safety meeting
19:15	23:30	4.25	INTRM1	DRILL	DRLG	P		1,641.00	1,713.00	Drill 222mm hole from 1641m to1713m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	00:00	0.50	INTRM1	DRILL	SRVY	P		1,713.00	1,713.00	Accumilated directional surveys

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/7/2013
Report #: 15
Depth Progress: 328.00 m
Depth End: 1,713.00 mKB
Rig Release Date: 3/24/2013

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
16:45	1,618.00	975.0	75		17.0	4.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
9.1		82.6/17.4	251,555	43,500	22	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
580.0	1038.5		9.2	26	3,500	6.0

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	6.60		1,440.22

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
35.40		66,477.04

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	2	3/5/2013	-1	3/6/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
392.00	392.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters: 1,597.00 - 1,713.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
1,112.00	71.25	16.6	1.900	10,000	60	12,400	60,000	70,000	70,000	70,000	3,500.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
51.5	0.00133	13	54.5	1,627.1	316.4	975.0	993.8

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
14.35	80.43	16.10	70.7	70.7	30.0	114.9

Error:

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/7/2013
Report #: 15
Depth Progress: 328.00 m
Depth End: 1,713.00 mKB
Rig Release Date: 3/24/2013

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
VERSAMUL - 208LT	1.0	940.470		bbl
OPTISEAL III 25KG	5.0	99.950		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
?013	1,371.24	0.79	75.10	1,370.83	23.65	16.42	17.02	16.42	0.57
)13	1,390.50	1.01	62.71	1,390.08	23.93	16.53	17.30	16.53	0.46
-013	1,409.79	1.58	74.79	1,409.37	24.32	16.68	17.70	16.68	0.98
3/7/2013	1,429.06	1.19	52.60	1,428.63	24.76	16.87	18.12	16.87	1.02
3/7/2013	1,438.69	1.32	46.40	1,438.26	24.97	17.01	18.28	17.01	0.59
3/7/2013	1,448.31	1.41	42.32	1,447.88	25.20	17.17	18.44	17.17	0.41
3/7/2013	1,467.61	1.80	48.29	1,467.17	25.74	17.55	18.82	17.55	0.66
3/7/2013	1,487.22	1.80	38.41	1,486.77	26.35	18.00	19.25	18.00	0.47
3/7/2013	1,505.93	1.19	41.48	1,505.47	26.83	18.37	19.56	18.37	0.99
3/7/2013	1,525.44	1.71	39.50	1,524.98	27.32	18.75	19.88	18.75	0.80
3/7/2013	1,544.48	2.02	36.69	1,544.01	27.93	19.24	20.26	19.24	0.51
3/7/2013	1,563.80	1.58	38.19	1,563.32	28.53	19.72	20.63	19.72	0.69
3/7/2013	1,583.15	0.48	75.32	1,582.66	28.87	19.95	20.87	19.95	1.91
3/7/2013	1,602.34	0.79	70.40	1,601.85	29.06	20.01	21.07	20.01	0.49
3/7/2013	1,621.91	1.10	51.72	1,621.42	29.37	20.17	21.35	20.17	0.66
3/7/2013	1,641.37	1.41	49.70	1,640.88	29.80	20.45	21.67	20.45	0.48
3/7/2013	1,660.77	1.01	46.80	1,660.27	30.21	20.72	21.98	20.72	0.63
3/7/2013	1,679.83	1.32	34.89	1,679.33	30.59	21.01	22.23	21.01	0.62
3/7/2013	1,698.97	2.20	34.19	1,698.46	31.16	21.50	22.56	21.50	1.38

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/8/2013
Report #: 16
Depth Progress: 177.00 m
Depth End: 1,890.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	11.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
255,015.47	2,986,533.81	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	7,208.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
45	32		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Overcast	-23	SE 15 KM

Ops and Depth @ Morning Report
Make up core barrel

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Drill ahead from 1713m to 1890m (Core Point) with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 60,WOB 7-10 dan,Average ROP 13.35 m/hr.Circulate condition hole prior to pulling out and Core, Pull out of hole lay down directional tools.

24hr Forecast
Cut core #1

Daily Contacts
Rig Manager, Rick Yavis; WS Supervisor, Brian Neigum, 403-548-5013; WS Supervisor, Mike Hobmaier, 403-844-3210; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Command, Center, 587-794-4599; Drilling Engineer, Mike Greener, 403-771-5039

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
	01:00	1.00	INTRM1	DRILL	DRLG	P		1,713.00	1,722.00	Drill 222mm hole from 1713m to 1722m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
01:00	01:15	0.25	INTRM1	RIGMNT	SVRG	P		1,722.00	1,722.00	Rig service function hydrill 13 sec crown saver operating properly
01:15	03:00	1.75	INTRM1	DRILL	DRLG	P		1,722.00	1,741.00	Drill 222mm hole from 1722m to 1741m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
03:00	03:30	0.50	INTRM1	RIGMNT	RGRP	T	Rig	1,741.00	1,741.00	Change out pump control on driller control panel
03:30	07:30	4.00	INTRM1	DRILL	DRLG	P		1,741.00	1,818.00	Drill 222mm hole from 1741m to 1818m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
07:30	07:45	0.25	INTRM1	DRILL	SRVY	P		1,818.00	1,818.00	Accumilated directional surveys
07:45	08:00	0.25	INTRM1	DRILL	SFTY	P		1,818.00	1,818.00	Crew change safety meeting
08:00	08:15	0.25	INTRM1	RIGMNT	SVRG	P		1,818.00	1,818.00	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
08:15	10:00	1.75	INTRM1	DRILL	DRLG	P		1,818.00	1,847.00	Drill 222mm hole from 1818m to1847m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
10:00	14:45	4.75	INTRM1	DRILL	DRLG	P		1,847.00	1,890.00	Drill 222mm hole from 1847m to 1890m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15* and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,control drill at 10m/hr to core point
14:45	15:00	0.25	INTRM1	DRILL	SRVY	P		1,890.00	1,890.00	Accumulated survey time
15:00	16:00	1.00	PROD1	CORING	CIRC	P		1,890.00	1,890.00	Condition mud and circulate
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P		1,890.00	1,890.00	Rig service function test annular 13sec to close function test crown saver working proper
16:15	16:30	0.25	PROD1	CORING	SFTY	P		1,890.00	1,890.00	Safety meeting on tripping out of the hole, reviewed jsa#129.
	19:00	2.50	PROD1	CORING	TRIP	P		1,890.00	1,890.00	Pump pill, Trip out of hole with pipe spinner lay down BHA/flow check@1881m/1789m/
	19:15	0.25	PROD1	CORING	SFTY	P		1,890.00	1,890.00	Crew change safety meeting
19:15	23:30	4.25	PROD1	CORING	TRIP	P		1,890.00	1,890.00	Trip out of hole Flow check@933M/214m/
23:30	23:45	0.25	PROD1	CORING	SFTY	P		1,890.00	1,890.00	Safety meeting reviewed jsa#159 laying down DC
23:45	00:00	0.25	PROD1	CORING	PULD	P		1,890.00	1,890.00	Lay down BHA

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/8/2013
Report #: 16
Depth Progress: 177.00 m
Depth End: 1,890.00 mKB
Rig Release Date: 3/24/2013

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
15:20	1,890.00	960.0	67		16.0	5.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
8.4		83.3/16.7	241,833	40,250	17	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
630.0	1038.5		8.3	39	3,500	5.7

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	10.20		42,994.02

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
45.60		109,471.06

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	3	3/5/2013	-2	3/6/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
393.00	393.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters: 1,847.00 - 1,890.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
1,289.00	84.50	11.1	1.800	3,000	60	12,900	66,000	73,000	79,000	76,000	3,700.0

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
43.8	0.00113	11	51.7	1,460.4	311.8	975.0	991.8

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
16.00	80.43	16.10	67.0	67.0	28.4	108.8

Error:

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/8/2013
Report #: 16
Depth Progress: 177.00 m
Depth End: 1,890.00 mKB
Rig Release Date: 3/24/2013

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
OPTISEAL IV 25KG	5.0	61.180		sks
VERSAMOD - 208LT	1.0	1,071.390		bbl
VERSAMUL - 208LT	1.0	940.470		bbl
TRUVIS - 25KG	6.0	152.410		sks
OPTISEAL IV 25KG	10.0	61.180		sks
[redacted]CACLEAN INVERT	27.0	1,450.000		m3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
3/8/2013	40.00	0.25	28.29	40.00	0.09	0.08	0.04	0.08	0.19
3/8/2013	50.00	0.23	31.74	50.00	0.13	0.11	0.06	0.11	0.07
3/8/2013	60.00	0.12	75.78	60.00	0.16	0.13	0.08	0.13	0.51
3/8/2013	70.00	0.21	313.52	70.00	0.17	0.15	0.08	0.15	0.87
3/8/2013	80.00	0.35	335.66	80.00	0.20	0.19	0.05	0.19	0.52
3/8/2013	90.00	0.18	69.05	90.00	0.23	0.22	0.06	0.22	1.20
3/8/2013	100.00	0.18	80.40	100.00	0.25	0.23	0.09	0.23	0.11
3/8/2013	110.00	0.20	9.13	110.00	0.27	0.25	0.11	0.25	0.67
3/8/2013	120.00	0.24	28.32	120.00	0.31	0.29	0.12	0.29	0.25
3/8/2013	130.00	0.08	16.16	130.00	0.34	0.31	0.13	0.31	0.50
3/8/2013	140.00	0.16	353.07	140.00	0.36	0.33	0.13	0.33	0.29
3/8/2013	150.00	0.15	30.36	150.00	0.38	0.36	0.13	0.36	0.30
3/8/2013	160.00	0.09	90.27	160.00	0.40	0.37	0.15	0.37	0.39
3/8/2013	170.00	0.04	310.57	170.00	0.40	0.37	0.16	0.37	0.37
3/8/2013	180.00	0.20	102.31	180.00	0.41	0.37	0.17	0.37	0.69
3/8/2013	190.00	0.29	54.90	190.00	0.43	0.38	0.21	0.38	0.63
3/8/2013	200.00	0.15	38.48	200.00	0.47	0.40	0.24	0.40	0.46
3/8/2013	210.00	0.26	56.06	210.00	0.50	0.43	0.26	0.43	0.38
3/8/2013	220.00	0.50	350.81	220.00	0.55	0.48	0.27	0.48	1.37
3/8/2013	230.00	0.40	0.68	230.00	0.62	0.56	0.27	0.56	0.37
3/8/2013	240.00	0.38	5.13	240.00	0.68	0.63	0.27	0.63	0.12
3/8/2013	250.00	0.46	357.72	250.00	0.75	0.70	0.27	0.70	0.30
3/8/2013	260.00	0.42	359.19	260.00	0.82	0.78	0.27	0.78	0.14
3/8/2013	270.00	0.49	1.85	270.00	0.90	0.86	0.27	0.86	0.22
3/8/2013	280.00	0.51	349.03	280.00	0.98	0.94	0.26	0.94	0.34
3/8/2013	290.00	0.43	355.75	290.00	1.06	1.03	0.25	1.03	0.29
3/8/2013	300.00	0.53	349.42	300.00	1.13	1.11	0.24	1.11	0.34
3/8/2013	310.00	0.59	350.93	310.00	1.23	1.21	0.22	1.21	0.19
3/[redacted]013	320.00	0.56	351.07	320.00	1.32	1.30	0.21	1.30	0.09
[redacted]13	330.00	0.61	352.92	329.99	1.42	1.41	0.19	1.41	0.16
3/8/2013	340.00	0.69	347.51	339.99	1.53	1.52	0.18	1.52	0.30
3/8/2013	350.00	0.72	349.69	349.99	1.64	1.64	0.15	1.64	0.12
3/8/2013	360.00	0.77	351.75	359.99	1.77	1.77	0.13	1.77	0.17
3/8/2013	370.00	0.92	354.12	369.99	1.92	1.91	0.11	1.91	0.46

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/8/2013
Report #: 16
Depth Progress: 177.00 m
Depth End: 1,890.00 mKB
Rig Release Date: 3/24/2013

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)
3/8/2013	380.00	0.91	354.18	379.99	2.07	2.07	0.10	2.07	0.03
3/8/2013	390.00	1.03	354.31	389.99	2.24	2.24	0.08	2.24	0.36
3/8/2013	400.00	1.00	356.99	399.99	2.42	2.42	0.07	2.42	0.17
3/8/2013	410.00	0.97	3.85	409.99	2.59	2.59	0.07	2.59	0.36
3/8/2013	420.00	1.11	3.02	419.98	2.77	2.77	0.08	2.77	0.42
3/8/2013	430.00	1.09	6.62	429.98	2.96	2.96	0.09	2.96	0.22
3/8/2013	440.00	1.12	6.00	439.98	3.15	3.15	0.11	3.15	0.10
3/8/2013	450.00	1.06	13.19	449.98	3.34	3.34	0.15	3.34	0.45
3/8/2013	460.00	1.17	12.47	459.98	3.53	3.53	0.19	3.53	0.33
3/8/2013	470.00	1.33	12.19	469.97	3.75	3.74	0.24	3.74	0.48
3/8/2013	480.00	1.46	12.58	479.97	3.99	3.98	0.29	3.98	0.39
3/8/2013	490.00	1.44	14.76	489.97	4.24	4.23	0.35	4.23	0.18
3/8/2013	500.00	1.41	11.07	499.97	4.49	4.47	0.40	4.47	0.29
3/8/2013	510.00	1.47	12.17	509.96	4.74	4.71	0.45	4.71	0.20
3/8/2013	520.00	1.43	14.65	519.96	4.99	4.96	0.51	4.96	0.22
3/8/2013	530.00	1.51	17.81	529.96	5.24	5.21	0.58	5.21	0.34
3/8/2013	540.00	1.40	16.93	539.95	5.49	5.45	0.66	5.45	0.34
3/8/2013	550.00	1.48	19.12	549.95	5.74	5.69	0.74	5.69	0.29
3/8/2013	560.00	1.50	17.22	559.95	5.99	5.93	0.82	5.93	0.16
3/8/2013	570.00	1.56	18.20	569.94	6.25	6.19	0.90	6.19	0.20
3/8/2013	1,718.17	2.20	41.00	1,717.64	31.89	22.08	23.01	22.08	0.41
3/8/2013	1,737.50	1.58	73.61	1,736.96	32.50	22.43	23.51	22.43	1.89
3/8/2013	1,756.66	1.32	96.41	1,756.12	32.87	22.48	23.98	22.48	0.98
3/8/2013	1,775.91	0.62	95.71	1,775.37	33.09	22.45	24.31	22.45	1.09
3/8/2013	1,795.03	1.32	75.71	1,794.48	33.35	22.49	24.62	22.49	1.20
3/8/2013	1,814.27	1.01	1.89	1,813.72	33.66	22.72	24.84	22.72	2.22
3/8/2013	1,833.39	1.58	14.28	1,832.83	34.00	23.14	24.91	23.14	0.99
3/8/2013	1,852.66	2.90	31.68	1,852.09	34.70	23.81	25.24	23.81	2.29
3/8/2013	1,871.80	2.50	30.32	1,871.21	35.57	24.59	25.70	24.59	0.63
3/8/2013	1,875.84	2.59	38.89	1,875.24	35.74	24.73	25.80	24.73	2.90
3/8/2013	2,146.00	2.20	40.00	2,145.17	46.97	33.46	32.97	33.46	0.04

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/9/2013
Report #: 17
Depth Progress: 28.00 m
Depth End: 1,919.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	12.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
205,760.36	3,192,294.17	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	7,658.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
250	65		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Overcast	-20	3 km

Ops and Depth @ Morning Report
Pulling Core with wirelne @ 840 mkb

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 5 Hazard ID's: 0 Job oberservations:Finish pulling out of hole lay down directional tools.Pick up and make up Core BBL. run in hole,circulate condition hole and clear Core barrels,retrieve Drill Rod ,Cut Core #1 from 1891.5m to 1919m. Rig in Schumberger and start pulling core #1.

24hr Forecast
Continue Core program Cut core #2

Daily Contacts
Rig Manager, Rick Yavis; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Command, Center, 587-794-4599; WS Supervisor, Brian Neigum, 403-548-5013; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Mike Hobmaier, 403-844-3210

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	03:30	3.50	PROD1	CORING	PULD	P		1,890.00	1,890.00	Lay down BHA Flow check OOH Strap 1891.5m Trip calc 9.22m3 meas 11.60m3 diff 2.38m3
[redacted]	04:00	0.50	PROD1	RIGMNT	SVRG	P		1,890.00	1,890.00	Rig service function blind rams 3 sec crown saver operating properly/Blow kelly take MWD transducer out of stand pipe
04:00	04:15	0.25	PROD1	RIGMNT	SVRG	P		1,890.00	1,890.00	Clean and prepare floor to pick up core BHA
04:15	04:30	0.25	PROD1	CORING	SFTY	P		1,890.00	1,890.00	Safety meeting with NOV core hands reviewed NOV jsa#1 picking up core tools
04:30	07:45	3.25	PROD1	CORING	PULD	P		1,890.00	1,890.00	Pick up core BHA and RIH
07:45	08:00	0.25	PROD1	CORING	SFTY	P		1,890.00	1,890.00	Crew change safety meeting
08:00	08:45	0.75	PROD1	RIGMNT	SLPC	P		1,890.00	1,890.00	Slip and cut 20m drilling line 6707mj
08:45	09:00	0.25	PROD1	RIGMNT	SVRG	P		1,890.00	1,890.00	Rig service function test annular 13 seconds to close
09:00	12:00	3.00	PROD1	CORING	TRIP	P		1,890.00	1,890.00	TRIP IN HOLE
12:00	13:00	1.00	PROD1	CORING	CIRC	P		1,890.00	1,890.00	Circulate prep floor to pick up singles
13:00	13:30	0.50	PROD1	CORING	PULD	P		1,890.00	1,890.00	Pick up drill pipe to tag bottom
13:30	14:30	1.00	PROD1	CORING	CIRC	P		1,890.00	1,890.00	Circulate bottoms up prepair to wire line retrieve drill rod.
14:30	14:45	0.25	PROD1	CORING	SFTY	P		1,890.00	1,890.00	Safety meeting with schlumberger wireline and nov core hands
14:45	16:00	1.25	PROD1	CORING	ELNE	P		1,890.00	1,890.00	Run in wireline with schlumberger to retrieve nov drill rod.
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P		1,890.00	1,890.00	Rig service function test H.C.R
16:15	17:45	1.50	PROD1	CORING	ELNE	P		1,890.00	1,890.00	Run in with schlumberger wireline to retrieve nov drill rod
17:45	18:15	0.50	PROD1	CORING	RECR	P		1,890.00	1,890.00	Rig up to run core #1 with nov core hands
18:15	18:30	0.25	PROD1	CORING	RECR	P		1,890.00	1,890.00	Pump down core #1 with nov core hands
18:30	21:30	3.00	PROD1	CORING	CORE	P		1,890.00	1,919.00	Core #1 222mm core #1 from1890m to 1919m Pumping at 1.2m3 rotating at 65rpm weight on bit 5dan average R.O.P 10m/h
21:30	22:15	0.75	PROD1	CORING	CIRC	P		1,919.00	1,919.00	Circulate bottoms up to pull core#1
22:15	22:30	0.25	PROD1	CORING	SFTY	P		1,919.00	1,919.00	Safety meeting with Schlumberger wire line and NOV core hands
22:30	22:45	0.25	PROD1	CORING	TRIP	P		1,919.00	1,919.00	Pull 2 stds up to to retive core #1
22:45	00:00	1.25	PROD1	CORING	ELNE	P		1,919.00	1,919.00	Rig to and pull core #1 with Schlumberger wire line and NOV core

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
17:00	1,890.00	960.0			16.0	5.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
8.3		83.3/16.7	241,833	40,250	17	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
[redacted] 630.0	1038.0		8.3		3,500	5.7

Ad[redacted]itrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	2.30		3,335.00

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
47.90		112,806.06

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/9/2013
Report #: 17
Depth Progress: 28.00 m
Depth End: 1,919.00 mKB
Rig Release Date: 3/24/2013

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	4	3/5/2013	-3	3/6/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
394.00	394.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment
Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 3

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1C	222.0mm, NOV, PR513, E140308	0.34	1-1-BT-M-X-0-NO-DTF	770	8.5

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
14.0/14.0/14.0/14.0/14.0	2,027.00	165.0	65,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
1,891.00	2,027.00	8.5	136.00	2,027.50	16.00	16.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	108.0	165.0	1	15.80	2,027.00
Drill pipe - Stands	109.0	127.0	99	1,905.07	2,011.20
X/O	75.0	165.0	1	0.77	106.13
8 core collars	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/9/2013
Report #: 17
Depth Progress: 28.00 m
Depth End: 1,919.00 mKB
Rig Release Date: 3/24/2013

Drilling Parameters: 1,891.00 - 1,919.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
28.00	3.00	9.3	1.174	5,000	65	5,100	59,000	64,000	64,000	64,000	

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
6.8	0.00018	7	25.4	348.1	545.0	960.0	989.0

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
17.88	80.43	16.10	43.7	43.7	18.5	67.8

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/3/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
VERSACLEAN INVERT	2.3	1,450.000		m3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/10/2013
Report #: 18
Depth Progress: 27.00 m
Depth End: 1,946.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	13.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
85,967.15	3,278,261.32	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	8,108.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
	314		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-17	10 NW

Ops and Depth @ Morning Report	Wellbore
Pulling Core with wirelne @ 305 mkb	Original Hole

Last 24hr Summary

No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Pull core #1. with Schlumberger Wire Line unit,retrieve 27.5m core ,Make up inner barrle land and cut Core #2 from 1919m to 1946m. Rig up and pull core # 2

24hr Forecast

Continue Core program Cut core #3

Daily Contacts

Drilling Engineer, Mike Greener, 403-771-5039; Rig Manager, Rick Yavis; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Mike Hobmaier, 403-844-3210; Command, Center, 587-794-4599; WS Supervisor, Brian Neigum, 403-548-5013

Last Casing String

Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P		1,919.00	1,919.00	Rig service
	07:45	7.50	PROD1	CORING	ELNE	P		1,919.00	1,919.00	Retrive core #1 with NOV core and schlumberger wire line
	08:00	0.25	PROD1	CORING	SFTY	P		1,919.00	1,919.00	Crew change safety meeting
	12:15	4.25	PROD1	CORING	ELNE	P		1,919.00	1,919.00	Retrive core #1 with NOV core and schlumberger wire line
12:15	12:30	0.25	PROD1	CORING	SFTY	P		1,919.00	1,919.00	Safety meeting with NOV core hands
12:30	14:00	1.50	PROD1	CORING	RECR	P		1,919.00	1,919.00	Lay out core #1 with nov core hands,Recover 27.5m of core (Full recovery)
14:00	14:15	0.25	PROD1	RIGMNT	SVRG	P		1,919.00	1,919.00	Rig service function test pipe rams 3 seconds to close function test crown saver
14:15	15:30	1.25	PROD1	CORING	CIRC	P		1,919.00	1,919.00	Circulate
15:30	16:00	0.50	PROD1	CORING	RECR	P		1,919.00	1,919.00	Rig up core barrels for run#2 and pump down
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P		1,919.00	1,919.00	Rig service
16:15	17:00	0.75	PROD1	CORING	CORE	P		1,919.00	1,937.00	Core #2 222mm core from 1919mto1937m rotary 60 WOB 5dan pumping at 1.2m3 R.O.P 9m/hr
17:00	17:15	0.25	PROD1	CORING	SFTY	P		1,937.00	1,937.00	Crew Handover meeting
17:15	19:30	2.25	PROD1	CORING	CORE	P		1,937.00	1,946.00	Core #2 222mm core from 1937m to 1946m rotary 60 WOB 5dan pumping at 1.2m3 R.O.P 9m/hr
19:30	20:30	1.00	PROD1	CORING	CIRC	P		1,946.00	1,946.00	Circulate bottoms up
20:30	20:45	0.25	PROD1	CORING	TRIP	P		1,946.00	1,946.00	Pull 3 stds up to 1877m to pull core #2
20:45	21:00	0.25	PROD1	CORING	SFTY	P		1,946.00	1,946.00	Safety meeting with NOV core hands and schlumberger wire line
21:00	00:00	3.00	PROD1	CORING	ELNE	P		1,946.00	1,946.00	Rig to and pull core#2 with NOV core and Schlumberger wire line

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
16:00	1,919.00	975.0	90		16.0	5.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
9.4		82/18	219,515	38,500	15	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
735.0	1023.5		9.5	20	3,500	5.7

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	0.50		1,003.25

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
48.40		113,809.31

BOP Drill

	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
rill (Pit)	5	3/5/2013	-4	3/6/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
395.00	395.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/10/2013
Report #: 18
Depth Progress: 27.00 m
Depth End: 1,946.00 mKB
Rig Release Date: 3/24/2013

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment

Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 3

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1C	222.0mm, NOV, PR513, E140308	0.34	1-1-BT-M-X-0-NO-DTF	770	8.5

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
14.0/14.0/14.0/14.0/14.0	2,027.00	165.0	65,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
1,891.00	2,027.00	8.5	136.00	2,027.50	16.00	16.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	108.0	165.0	1	15.80	2,027.00
Drill pipe - Stands	109.0	127.0	99	1,905.07	2,011.20
X/O	75.0	165.0	1	0.77	106.13
8 core collars	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 1,919.00 - 1,946.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
55.00	6.00	9.0	1.160	5,000	55	5,000	59,000	64,000	64,000	64,000	

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/10/2013
Report #: 18
Depth Progress: 27.00 m
Depth End: 1,946.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
6.7	0.00017	7	25.1	345.1	133.8	975.0	982.0

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
18.13	80.43	16.10	43.2	43.2	18.3	67.0

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
[redacted] Deck	2/4/2013		80	80	
[redacted] Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
CAL-CHLR 94-97%-40KG	5.0	46.970		sks
LIME - 20KG	5.0	8.680		sks
VERSACLEAN INVERT	0.5	1,450.000		m3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/11/2013
Report #: 19
Depth Progress: 27.00 m
Depth End: 1,973.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	14.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
82,695.20	3,360,956.52	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		41.0	454.00	8,562.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
250	174		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-24	10W

Ops and Depth @ Morning Report
Recover core #3

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Pull core #2. with Schlumberger Wire Line unit,retrieve 27m core ,Make up inner barrle land and cut Core #3 from 1946m to 1973m. Rig up and pull core # 3 with Schlumberger Wire Line.

24hr Forecast
Continue Core program Cut core #4

Daily Contacts
Rig Manager, Rick Yavis; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Brian Neigum, 403-548-5013; WS Supervisor, Mike Hobmaier, 403-844-3210; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Command, Center, 587-794-4599

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P		1,946.00	1,946.00	Rig service
[illegible]	07:45	7.50	PROD1	CORING	ELNE	P		1,946.00	1,946.00	Pull core #2 with NOV core and Schlumberger wire line
[illegible]	08:00	0.25	PROD1	CORING	SFTY	P		1,946.00	1,946.00	Crew change safety meeting
08:00	09:15	1.25	PROD1	CORING	ELNE	P		1,946.00	1,946.00	Pull core #2 with NOV core and Schlumberger wire line
09:15	09:30	0.25	PROD1	CORING	SFTY	P		1,946.00	1,946.00	Safety meeting with NOV core
09:30	11:00	1.50	PROD1	CORING	RECR	P		1,946.00	1,946.00	Lay out core #2 with NOV hands
11:00	11:15	0.25	PROD1	RIGMNT	SVRG	P		1,946.00	1,946.00	Rig service, function test annular 13 sec. to close and fuction test crown saver
11:15	12:15	1.00	PROD1	CORING	CIRC	P		1,946.00	1,946.00	Circulate bottoms up
12:15	13:00	0.75	PROD1	CORING	RECR	P		1,946.00	1,946.00	Rig up core barrels for run #3 and pump down
13:00	15:45	2.75	PROD1	CORING	CORE	P		1,946.00	1,973.00	Core #3 222mm hole from1946m to 1973m pump rate 1.2m3 rotary at 55 wob 5dan R.O.P 12m/hr
15:45	16:00	0.25	PROD1	CORING	CIRC	P		1,973.00	1,973.00	Circulate bottoms up
16:00	16:15	0.25	PROD1	CORING	SVRG	P		1,973.00	1,973.00	Rig service function test pipe rams 3 seconds
16:15	16:45	0.50	PROD1	CORING	CIRC	P		1,973.00	1,973.00	Circulate bottoms up
16:45	17:00	0.25	PROD1	CORING	ELNE	P		1,973.00	1,973.00	Safety meeting with nov and schlumbger on retrieving core #3
17:00	17:15	0.25	PROD1	CORING	TRIP	P		1,973.00	1,973.00	Trip 4 stands out of the hole rig up to wireline for core #3
17:15	00:00	6.75	PROD1	CORING	ELNE	P		1,973.00	1,973.00	Wire line retrive core #3

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
14:00	1,967.00	975.0	87		17.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
8.8		83/17	212,656	36,000	14	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
680.0	1025.0		9.1	18	3,500	5.7

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	0.50		7,429.70

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
48.90		121,239.01

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	6	3/5/2013	-5	3/6/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
396.00	396.00

[illegible] Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/11/2013
Report #: 19
Depth Progress: 27.00 m
Depth End: 1,973.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment
Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 3

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1C	222.0mm, NOV, PR513, E140308	0.34	1-1-BT-M-X-0-NO-DTF	770	8.5

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
14.0/14.0/14.0/14.0/14.0	2,027.00	165.0	65,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
1,891.00	2,027.00	8.5	136.00	2,027.50	16.00	16.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	108.0	165.0	1	15.80	2,027.00
Drill pipe - Stands	109.0	127.0	99	1,905.07	2,011.20
X/O	75.0	165.0	1	0.77	106.13
8 core collars	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 1,946.00 - 1,973.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
82.00	8.75	9.8	1.157	5,000	60	5,050	58,000	66,000	66,000	66,000	

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/11/2013
Report #: 19
Depth Progress: 27.00 m
Depth End: 1,973.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
6.6	0.00017	7	25.1	343.3	134.9	975.0	982.0

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
18.39	80.43	16.10	43.0	43.0	18.3	66.8

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Deck	2/4/2013		80	80	
Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
VERSACLEAN INVERT	4.8	1,450.000		m3
CAL-CHLR 94-97%-40KG	10.0	46.970		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/12/2013
Report #: 20
Depth Progress: 27.00 m
Depth End: 2,000.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	15.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
76,865.50	3,437,822.02	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	9,012.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
558	320	378	0

Road Condition	Weather	Temperature (°C)	Wind
Good	Overcast	-26	7 KM NW

Ops and Depth @ Morning Report
Circulate bottoms up before dropping core barrels

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 5 Hazard ID's: 0 Job oberservations: Pull core #3. with Schlumberger Wire Line unit,retrieve 27m core ,Make up inner barrel land and cut Core #4 from 1973m to 2000m. Rig up and pull core # 4 with Schlumberger Wire Line.

24hr Forecast
Continue Core program Cut core #5

Daily Contacts
WS Supervisor, Dave Forsberg, 780-361-6417; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Command, Center, 587-794-4599; Rig Manager, Rick Yavis; WS Supervisor, Brian Neigum, 403-548-5013; Drilling Engineer, Mike Greener, 403-771-5039

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
[illegible]	00:15	0.25	PROD1	RIGMNT	SVRG	P		1,973.00	1,973.00	Rig service
	05:00	4.75	PROD1	CORING	ELNE	P		1,973.00	1,973.00	Pull core #3 with NOV core hands and Schlumberger wire line
	05:15	0.25	PROD1	CORING	SFTY	P		1,973.00	1,973.00	Safety meeting with NOV core hands
05:15	07:00	1.75	PROD1	CORING	RECR	P		1,973.00	1,973.00	Lay down core#3 with NOV core hands
07:00	07:15	0.25	PROD1	CORING	TRIP	P		1,973.00	1,973.00	Trip 4 stds back in the hole
07:15	07:45	0.50	PROD1	CORING	CIRC	P		1,973.00	1,973.00	Circulate bottoms up
07:45	08:00	0.25	PROD1	CORING	SFTY	P		1,973.00	1,973.00	Crew change safety meeting
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P		1,973.00	1,973.00	Rig service, function test annular 13sec. to close and funtion test crown saver
08:15	08:30	0.25	PROD1	CORING	SFTY	P		1,973.00	1,973.00	BOP drill Well secure in 90 sec crew in positions and function test motor kills ok Crew
08:30	09:30	1.00	PROD1	CORING	RECR	P		1,973.00	1,973.00	Rig up core barrels for run #4 and pump down
09:30	13:15	3.75	PROD1	CORING	CORE	P		1,973.00	2,000.00	Core # 4 222mm Core from 1973m-2000m to pump rate 1.2m3/min rotory at 62 wob 5dan rop 7.2m/hr
13:15	14:30	1.25	PROD1	CORING	CIRC	P		2,000.00	2,000.00	Circulate bttoms up
14:30	15:00	0.50	PROD1	CORING	TRIP	P		2,000.00	2,000.00	Pull out 3 stands and the pup joints out of the hole
15:00	15:15	0.25	PROD1	CORING	SFTY	P		2,000.00	2,000.00	Safety meeting with NOV core hands and schlumbger wireline on retrieving core #4
15:15	16:00	0.75	PROD1	CORING	ELNE	P		2,000.00	2,000.00	wireline retrieve Core #4
16:00	16:15	0.25	PROD1	CORING	SFTY	P		2,000.00	2,000.00	Held b.o.p drill well secure in 85 sec
16:15	16:30	0.25	PROD1	RIGMNT	SVRG	P		2,000.00	2,000.00	Rig serevice f.t pipe rams 4 sec & crown saver
16:30	00:00	7.50	PROD1	CORING	ELNE	P		2,000.00	2,000.00	Wireline to retrieve core # 4 with schlumberger

Fluid / Mud Checks: Mud Engineer: Tri Pham

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
13:15	1,967.00	980.0	82		17.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
8.8		83/17	212,656	36,000	14	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
680.0	1025.0		9.1	18	3,500	5.7

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	0.50		

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
49.40		121,239.01

BOP Drill

	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	0	3/12/2013	1	3/13/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
397.00	397.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/12/2013
Report #: 20
Depth Progress: 27.00 m
Depth End: 2,000.00 mKB
Rig Release Date: 3/24/2013

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment
Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 3

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1C	222.0mm, NOV, PR513, E140308	0.34	1-1-BT-M-X-0-NO-DTF	770	8.5

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
14.0/14.0/14.0/14.0/14.0	2,027.00	165.0	65,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
1,891.00	2,027.00	8.5	136.00	2,027.50	16.00	16.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	108.0	165.0	1	15.80	2,027.00
Drill pipe - Stands	109.0	127.0	99	1,905.07	2,011.20
X/O	75.0	165.0	1	0.77	106.13
8 core collars	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 1,973.00 - 2,000.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
109.00	12.50	7.2	1.170	5,000	55	6,200	61,000	66,000	66,000	66,000	

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/12/2013
Report #: 20
Depth Progress: 27.00 m
Depth End: 2,000.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
6.8	0.00018	6	25.3	351.1	139.1	975.0	982.1

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
18.64	80.43	16.10	43.5	43.5	18.5	67.5

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
[illegible] Deck	2/4/2013		80	80	
[illegible]lti Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/13/2013
Report #: 21
Depth Progress: 27.00 m
Depth End: 2,027.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	16.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
122,688.90	3,560,510.92	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	9,462.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
450		671	0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-39	2 km

Ops and Depth @ Morning Report
Trip core barrel for the core catcher

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 1 Job oberservations: Pull core #4. with Schlumberger Wire Line unit,retrieve 27m core ,Make up inner barrel, land and cut Core #5 from 2000m to 2027m. Rig up and pull core # 5 with Schlumberger Wire Line.

24hr Forecast
Trip the drill string to recover the unscrewed core catcher

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; Rig Manager, Rick Yavis; WS Supervisor, Brian Neigum, 403-548-5013; Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599; WS Supervisor, Dave Forsberg, 780-361-6417

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P		2,000.00	2,000.00	Rig service function test H.C.R
[redacted]	04:00	3.75	PROD1	CORING	ELNE	P		2,000.00	2,000.00	Wire line retrieve core #4 with schlumbger(crews went through man down drill did rescue routes)
04:00	05:15	1.25	PROD1	CORING	RECR	P		2,000.00	2,000.00	Lay down core #4 with nov core hands
05:15	05:30	0.25	PROD1	CORING	TRIP	P		2,000.00	2,000.00	Trip 3 stands in the hole
05:30	07:00	1.50	PROD1	CORING	CIRC	P		2,000.00	2,000.00	Pick up kelly circulate bottoms up
07:00	07:45	0.75	PROD1	CORING	RECR	P		2,000.00	2,000.00	Make up core barrels for run #5 with nov core hands
07:45	08:00	0.25	PROD1	CORING	SFTY	P		2,000.00	2,000.00	Crew handover meeting
08:00	08:15	0.25	PROD1	RIGMNT	SVRG	P		2,000.00	2,000.00	Rig service function test hydril 14 sec & crown saver
08:15	11:45	3.50	PROD1	CORING	CORE	P		2,000.00	2,027.00	Core #5 222mm hole from2000m to 2027m pump rate 1.2m3 rotary at 55 wob 5dan core # 5. rop 7.7 m/hr
11:45	12:45	1.00	PROD1	CORING	CIRC	P		2,027.00	2,027.00	Circulate & condition
12:45	13:00	0.25	PROD1	CORING	SFTY	P		2,027.00	2,027.00	Held safety meeting n.o.v & schlumberger
13:00	13:30	0.50	PROD1	CORING	TRIP	P		2,027.00	2,027.00	Pull 3 stds d.p
13:30	16:00	2.50	PROD1	CORING	ELNE	P		2,027.00	2,027.00	Rig up schlumberger & Retrieve core # 5 with wire line
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P		2,027.00	2,027.00	Rig service function test crown saver
16:15	00:00	7.75	PROD1	CORING	ELNE	P		2,027.00	2,027.00	Retrieve core # 5 with schlumberger

Fluid / Mud Checks: Mud Engineer: Andries

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
07:15	2,000.00	985.0	85		17.0	4.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
11.6		82/18	204,064	35,500	14	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
737.0	1020.7		10.5	20	3,500	5.8

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	0.20		

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
49.60		121,239.01

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	1	3/12/2013	0	3/13/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
398.00	398.00

[redacted]y Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/13/2013
Report #: 21
Depth Progress: 27.00 m
Depth End: 2,027.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 3

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1C	222.0mm, NOV, PR513, E140308	0.34	1-1-BT-M-X-0-NO-DTF	770	8.5

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
14.0/14.0/14.0/14.0/14.0	2,027.00	165.0	65,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
1,891.00	2,027.00	8.5	136.00	2,027.50	16.00	16.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	108.0	165.0	1	15.80	2,027.00
Drill pipe - Stands	109.0	127.0	99	1,905.07	2,011.20
X/O	75.0	165.0	1	0.77	106.13
8 core collars	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 2,000.00 - 2,027.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
136.00	16.00	7.7	1.107	4,000	55	5,500	65,000	69,000	69,000	69,000	

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/13/2013
Report #: 21
Depth Progress: 27.00 m
Depth End: 2,027.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
5.9	0.00015	6	24.0	317.5	169.2	985.0	993.5

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
18.89	80.43	15.96	41.2	60.9	17.5	63.9

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/14/2013
Report #: 22
Depth Progress: 0.00 m
Depth End: 2,027.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	17.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
88,575.50	3,649,086.42	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	9,912.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
			0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-37	2 km SE

Ops and Depth @ Morning Report
Trip core barrel in @ 1561 mkb

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 1 Job oberservations: Pull core #5. with Schlumberger Wire Line unit, Lost core @ surface, Upper shoe backed off from inner barrel allowing core to drop out, Wireline wieght chart showed loss while pulling out, Found core wedged in the first 5 stands of drill pipe, Recovered 18m +-, Pull out of hole and found the rest of the core in the core barrel, we got full recovery. Put a new bit on the core barrel and start running in.
We changed the bit because one of the inside gauge cutters was broke to keep the core in gauge.

24hr Forecast
Trip in Cut core # 6 & pull core on wireline

Daily Contacts
Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599; WS Supervisor, Dave Forsberg, 780-361-6417; Rig Manager, Rick Yavis; WS Supervisor, Brian Neigum, 403-548-5013; Drilling Superintend, Sheldon Vamplew, 403-999-1302

Last Casing String
Surface, 599.00mKB

Time Log

Start	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P		2,027.00	2,027.00	Rig service function test H.C.R
00:15	02:15	2.00	PROD1	CORING	ELNE	P		2,027.00	2,027.00	Retrieve core #5 with schlumberger
02:15	03:00	0.75	PROD1	CORING	RECR	T	BHA	2,027.00	2,027.00	Lay down core #5, Core barrel was empty, the core catcher had backed off down the hole.
03:00	07:45	4.75	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Trip out of hole to recover core,lay down singles while recovering core flow checks @1841m
07:45	08:00	0.25	PROD1	CORING	SFTY	T	BHA	2,027.00	2,027.00	Crew change safety meeting
08:00	09:15	1.25	PROD1	CORING	RECR	T	BHA	2,027.00	2,027.00	Recover core from 5 singles layed down
09:15	09:30	0.25	PROD1	RIGMNT	SVRG	T	BHA	2,027.00	2,027.00	Rig service function test hydril 14 sec & crown saver
09:30	09:45	0.25	PROD1	CORING	SFTY	T	BHA	2,027.00	2,027.00	Safety meeting
09:45	16:45	7.00	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Pull out of hole to recover core
16:45	17:00	0.25	PROD1	CORING	SFTY	T	BHA	2,027.00	2,027.00	Safety meeting on lay down core bbl & recover core
17:00	17:30	0.50	PROD1	CORING	RECR	T	BHA	2,027.00	2,027.00	Handle core barrels
17:30	19:00	1.50	PROD1	CORING	RECR	T	BHA	2,027.00	2,027.00	Recover 8m core
19:00	19:15	0.25	PROD1	CORING	SFTY	T	BHA	2,027.00	2,027.00	Crew change safety meeting
19:15	19:45	0.50	PROD1	CORING	EQRP	T	BHA	2,027.00	2,027.00	Lay down core collars inspect for core stuck in barrels.
19:45	21:00	1.25	PROD1	CORING	PULD	T	BHA	2,027.00	2,027.00	Make up bit run collars in the hole circulate collars clean
21:00	21:30	0.50	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Pull 4 stands of collars out of hole
21:30	22:00	0.50	PROD1	CORING	PULD	T	BHA	2,027.00	2,027.00	Pick up drill rod
22:00	00:00	2.00	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Trip in the hole drifting pipe on the way in

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
08:15	2,000.00	985.0	85		17.0	4.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
11.6		82/18	204,064	35,500	14	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
737.0			10.5			5.8

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	0.20		435.00

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
49.80		121,674.01

BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	2	3/12/2013	-1	3/13/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
399.00	399.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/14/2013
Report #: 22
Depth Progress: 0.00 m
Depth End: 2,027.00 mKB
Rig Release Date: 3/24/2013

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment

Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
VERSACLEAN INVERT	0.3	1,450.000		m3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/15/2013
Report #: 23
Depth Progress: 27.00 m
Depth End: 2,054.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	18.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
90,332.02	3,739,418.44	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		40.0	454.00	10,366.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
428	143	425	0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-36	2 km

Ops and Depth @ Morning Report
Pull core with wireline @ 1050 mkb

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 3 Hazard ID's: 1 Job observations: Run in hole with core barrels, Drift all pipe, Circulate bottoms up, Attempt to pull bit insert and drill rods with Schlumberger wireline, Pin sheared on overshot on first attempt, Make up 1 more sinker bar,Hydrauilic jar with Spanger bar and run in on wireline, Pull drill rod, Make up and pump down core sleeve, Cut core #6 F/ 2027 - 2054 mkb. Circulate bottoms up.

24hr Forecast
Pull core # 6 & cut core #7

Daily Contacts
Rig Manager, Rick Yavis; WS Supervisor, Brian Neigum, 403-548-5013; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Dave Forsberg, 780-361-6417; Command, Center, 587-794-4599; Drilling Superintend, Sheldon Vamplew, 403-999-1302

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
[illegible]0	00:30	0.50	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Trip in hole drifting pipe
[illegible]0	01:15	0.75	PROD1	RIGMNT	SLPC	T	BHA	2,027.00	2,027.00	Slip and cut 18m MJ 3165
01:15	07:45	6.50	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Trip in hole drifting pipe
07:45	08:00	0.25	PROD1	CORING	SFTY	T	BHA	2,027.00	2,027.00	Crew change safety meeting
08:00	09:30	1.50	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Run in hole & pick up 21 singles
09:30	09:45	0.25	PROD1	RIGMNT	SVRG	T	BHA	2,027.00	2,027.00	Rig service function test hydril 14 sec & crown saver
09:45	10:45	1.00	PROD1	CORING	CIRC	T	BHA	2,027.00	2,027.00	Circulate & condition hole @ 2026 m
10:45	11:00	0.25	PROD1	CORING	TRIP	T	BHA	2,027.00	2,027.00	Pull 3 stds of d.p
11:00	11:15	0.25	PROD1	CORING	SFTY	T	BHA	2,027.00	2,027.00	Safety meeting with n.o.v
11:15	15:45	4.50	PROD1	CORING	ELNE	T	BHA	2,027.00	2,027.00	Rig up schlumberger & Attempt to retrieve drill rod
15:45	16:15	0.50	PROD1	CORING	ELNE	T	BHA	2,027.00	2,027.00	Pull out drill rod & lay down drill rod
16:15	16:30	0.25	PROD1	RIGMNT	SVRG	P		2,027.00	2,027.00	Rig service function test pipe rams 3 sec & crown saver
16:30	17:45	1.25	PROD1	CORING	RECR	P		2,027.00	2,027.00	Rig up inner core bbl
17:45	18:00	0.25	PROD1	CORING	TRIP	P		2,027.00	2,027.00	Run in 3 stds d.p
18:00	18:30	0.50	PROD1	CORING	CIRC	P		2,027.00	2,027.00	Pump down inner core bbl assembly
18:30	23:30	5.00	PROD1	CORING	CORE	P		2,027.00	2,054.00	Core #6 222mm hole from 2027m to 2054m Pump rate at 1.2m3 rotary @ 60 RPM WOB 5dan R.O.P 5.4 m/hr Core #6
23:30	00:00	0.50	PROD1	CORING	CIRC	P		2,054.00	2,054.00	Circulate bottoms up sample

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
23:00	2,030.00	985.0	85		17.0	4.0

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
11.6		82/18	206,659	36,000	11	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
737.0			10.5			5.8

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	0.20		1,305.52

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
50.00		122,979.53

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	3	3/12/2013	-2	3/13/2013

[illegible] Since Lost Time Incident (days)	Days Since Recordable Incident (days)
400.00	400.00

Safety Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/15/2013
Report #: 23
Depth Progress: 27.00 m
Depth End: 2,054.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 4

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
2C	222.0mm, NOV, CEPR5135, A1/E140305	0.34	2-2-CT-M-X-0-NO-DTF	484	6.8

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1	2,108.00	165.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
2,027.00	2,108.00	6.8	81.00	2,108.00	12.00	12.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	109.0	165.0		10.39	2,108.00
Drill pipe - Singles	109.0	127.0	1	9.61	2,097.61
Drill pipe - Stands	109.0	127.0	103	1,981.87	2,088.00
X/O	109.0	165.0	1	0.77	106.13
Core Collers	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 2,027.00 - 2,054.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
27.00	5.00	5.4	1.150	5,000	60	5,200	65,000	71,000	71,000	71,000	

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/15/2013
Report #: 23
Depth Progress: 27.00 m
Depth End: 2,054.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
16.6	0.00043	17	39.6	867.2	179.3	985.0	993.9

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
19.15	80.43	16.10	42.8	42.8	18.2	66.4

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
[illegible] Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
VERSAMUL - 208LT	1.0	940.470		bbl
CAL-CHLR 94-97%-40KG	5.0	46.970		sks
LIME - 20KG	15.0	8.680		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/16/2013
Report #: 24
Depth Progress: 27.00 m
Depth End: 2,081.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	19.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
77,337.15	3,816,755.59	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		39.0	450.00	10,816.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
363	204		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-26	7 km NM

Ops and Depth @ Morning Report
Pull core with wireline @ 930 mkb

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull core #6 with Schlumberger wireline, Lay down core, (100% recovery) Circulate, Pump down inner sleeve, Cut core #7 F/ 2054 - 2081 mkb. Circulate bottoms up. Rig up wireliners and start in to pull core barrel.

24hr Forecast
Pull core # 7 & cut core #8

Daily Contacts
Drilling Foreman, DAVE FORSBERG; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Rig Manager, Rick Yavis; WS Supervisor, Brian Neigum, 403-548-5013; Command, Center, 587-794-4599; Drilling Engineer, Mike Greener, 403-771-5039; WS Supervisor, Dave For

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:30	0.50	PROD1	CORING	CIRC	P		2,054.00	2,054.00	Circulate bottoms up sample
[redacted]	00:45	0.25	PROD1	RIGMNT	SVRG	P		2,054.00	2,054.00	Rig service function test annular 13 sec to close function test crown saver working proper
00:45	01:00	0.25	PROD1	CORING	TRIP	P		2,054.00	2,054.00	Trip out 3 stands
01:00	01:15	0.25	PROD1	CORING	SFTY	P		2,054.00	2,054.00	Safety meeting with nov core hands and schlumbger on wire line retrieving
01:15	07:45	6.50	PROD1	CORING	ELNE	P		2,054.00	2,054.00	Rig up wire line with schlumbger and wire line retrieve core #6
07:45	08:00	0.25	PROD1	CORING	SFTY	P		2,054.00	2,054.00	Crew handover meeting
08:00	13:15	5.25	PROD1	CORING	ELNE	P		2,054.00	2,054.00	Retrieve core # 6 with schlumberger
13:15	13:30	0.25	PROD1	RIGMNT	SVRG	P		2,054.00	2,054.00	Rig service function test pIPE RAMS 3 SEC & CROWN SAVER
13:30	13:45	0.25	PROD1	CORING	SFTY	P		2,054.00	2,054.00	Safety meeting on laying down core bbl
13:45	15:00	1.25	PROD1	CORING	RECR	P		2,054.00	2,054.00	Handle core bbl & lay down core # 6
15:00	15:15	0.25	PROD1	CORING	TRIP	P		2,054.00	2,054.00	Run in 3 stds d.p
15:15	16:00	0.75	PROD1	CORING	CIRC	P		2,054.00	2,054.00	circ bottoms up
16:00	16:30	0.50	PROD1	CORING	CIRC	P		2,054.00	2,054.00	Circ bottoms up
16:30	16:45	0.25	PROD1	RIGMNT	SVRG	P		2,054.00	2,054.00	Rig service function test hydril 14 sec & crown saver
16:45	18:00	1.25	PROD1	CORING	RECR	P		2,054.00	2,054.00	Make up inner core bbl & pump down inner bbl
18:00	21:00	3.00	PROD1	CORING	CORE	P		2,054.00	2,081.00	Core #7 89 mm & 222 mm hole from 2054 m to 2081 m pump @ 1.2 m3 & rotary 60 & w.o.b 5 7m/hr core # 7
21:00	22:15	1.25	PROD1	CORING	CIRC	P		2,081.00	2,081.00	Circulate bottoms up
22:15	22:45	0.50	PROD1	CORING	TRIP	P		2,081.00	2,081.00	Trip out 3 stands
22:45	23:00	0.25	PROD1	CORING	SFTY	P		2,081.00	2,081.00	Safety meeting with nov core hands and schlumbger wireline Rig up wire line
23:00	00:00	1.00	PROD1	CORING	ELNE	P		2,081.00	2,081.00	Wireline retrieve core #7 with schlumbger

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
10:00	2,054.00	980.0	85		17.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
10.0		83/17	229,827	36,000	12	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
773.0			10.8			5.8

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	1.10		321.65

[redacted]ud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
51.10		123,301.18

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/16/2013
Report #: 24
Depth Progress: 27.00 m
Depth End: 2,081.00 mKB
Rig Release Date: 3/24/2013

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	4	3/12/2013	-3	3/13/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
401.00	401.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment
Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 4

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
2C	222.0mm, NOV, CEPR5135, A1/E140305	0.34	2-2-CT-M-X-0-NO-DTF	484	6.8

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1	2,108.00	165.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
2,027.00	2,108.00	6.8	81.00	2,108.00	12.00	12.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	109.0	165.0		10.39	2,108.00
Drill pipe - Singles	109.0	127.0	1	9.61	2,097.61
Drill pipe - Stands	109.0	127.0	103	1,981.87	2,088.00
X/O	109.0	165.0	1	0.77	106.13
Core Collers	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/16/2013
Report #: 24
Depth Progress: 27.00 m
Depth End: 2,081.00 mKB
Rig Release Date: 3/24/2013

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 2,054.00 - 2,081.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
54.00	8.00	9.0	1.170	5,500	65	5,200	65,000	71,000	71,000	71,000	

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
17.4	0.00045	17	40.3	893.0	180.4	980.0	988.8

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
19.40	80.43	16.10	43.5	43.5	18.5	67.5

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
[illegible]/2013 16:00	1,962.00	0.616	1,651	63

[illegible] Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
CAL-CHLR 94-97%-40KG	5.0	46.970		sks
LIME - 20KG	10.0	8.680		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
[illegible]er Canol	1,967.00	1,966.32	1,927.00
[illegible] Indian	2,074.00	2,073.23	2,037.00
[illegible]ish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/17/2013
Report #: 25
Depth Progress: 27.00 m
Depth End: 2,108.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	20.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
81,841.10	3,898,596.69	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		41.0	474.00	11,290.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
197	149		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-24	11 km nw

Ops and Depth @ Morning Report
Pull core 8 with wireline @ 600 mkb

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull core # 7 with Schlumberger wireline, Lay down core, (100% recovery) Circulate, Pump down inner sleeve, Cut core #8 F/ 2081 - 2108 mkb. Circulate bottoms up. Rig up wireliners and start in to pull core barrel.

24hr Forecast
Finish recovering core 8 & drill ahead to TD

Daily Contacts
Command, Center, 587-794-4599; WS Supervisor, Dave Forsberg, 780-361-6417; WS Supervisor, Brian Neigum, 403-548-5013; Rig Manager, Rick Yavis; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	PROD1	RIGMNT	SVRG	P		2,081.00	2,081.00	RIG SERVICE
[redacted]	07:45	7.50	PROD1	CORING	ELNE	P		2,081.00	2,081.00	Wire line retrieve core #7 with schlumbger(Held a high angle rescue with crew went through all equitment.)
07:45	08:00	0.25	PROD1	CORING	SFTY	P		2,081.00	2,081.00	crew hand over meeting
08:00	11:45	3.75	PROD1	CORING	ELNE	P		2,081.00	2,081.00	Retrieve core # 7 with schlumberger
11:45	12:00	0.25	PROD1	RIGMNT	SVRG	P		2,081.00	2,081.00	Rig service function test hydril 13 sec & crown saver
12:00	12:15	0.25	PROD1	CORING	SFTY	P		2,081.00	2,081.00	Safety meeting on laying down core # 7
12:15	13:30	1.25	PROD1	CORING	RECR	P		2,081.00	2,081.00	recover core # 7 & lay down
13:30	13:45	0.25	PROD1	CORING	TRIP	P		2,081.00	2,081.00	Run in 3 stds of d.p
13:45	15:00	1.25	PROD1	CORING	CIRC	P		2,081.00	2,081.00	Circ bottoms up
15:00	15:30	0.50	PROD1	CORING	RECR	P		2,081.00	2,081.00	Make up inner core bbl & pump down
15:30	16:00	0.50	PROD1	CORING	CIRC	P		2,081.00	2,081.00	Circ & pump down inner core bbl
16:00	16:15	0.25	PROD1	RIGMNT	SVRG	P		2,081.00	2,081.00	Rig service function test pipe rams 3 sec & crown saver
16:15	20:00	3.75	PROD1	CORING	CORE	P		2,081.00	2,108.00	Core #8 89 mm core & drill 222 mm hole from 2081 m to 2108 m pump @ 1.2 m3 rotary @ 60 w.o.b 5 rop 7.2m/hr core #8
20:00	21:30	1.50	PROD1	CORING	CIRC	P		2,108.00	2,108.00	Circulate bottoms up
21:30	22:00	0.50	PROD1	CORING	TRIP	P		2,108.00	2,108.00	Trip out 3 stands
22:00	22:15	0.25	PROD1	CORING	SFTY	P		2,108.00	2,108.00	Safety meeting with nov core hands and schlumbger on wire line
22:15	00:00	1.75	PROD1	CORING	ELNE	P		2,108.00	2,108.00	Wire line retrieve core #8 with schlumbger

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
17:00	2,085.00	985.0	71		14.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
10.0		83/17	227,135	37,500	13	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
774.0	1016.5		10.8		3,500	5.8

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	1.10		6,575.60

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
52.20		129,876.78

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	5	3/12/2013	-4	3/13/2013

[redacted]Since Lost Time Incident (days)	Days Since Recordable Incident (days)
402.00	402.00

Safety Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/17/2013
Report #: 25
Depth Progress: 27.00 m
Depth End: 2,108.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 4

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
2C	222.0mm, NOV, CEPR5135, A1/E140305	0.34	2-2-CT-M-X-0-NO-DTF	484	6.8

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1	2,108.00	165.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
2,027.00	2,108.00	6.8	81.00	2,108.00	12.00	12.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	109.0	165.0		10.39	2,108.00
Drill pipe - Singles	109.0	127.0	1	9.61	2,097.61
Drill pipe - Stands	109.0	127.0	103	1,981.87	2,088.00
X/O	109.0	165.0	1	0.77	106.13
Core Collers	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 2,081.00 - 2,108.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
81.00	11.75	7.2	1.117	5,000	60	4,700	66,000	71,000	71,000	71,000	

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/17/2013
Report #: 25
Depth Progress: 27.00 m
Depth End: 2,108.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
15.2	0.00039	17	38.5	818.1	166.3	985.0	993.1

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
19.65	80.43	16.01	41.6	61.5	17.6	64.5

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Deck	2/4/2013		80	80	
Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
LIME - 20KG	5.0	8.680		sks
CAL-CHLR 94-97%-40KG	5.0	46.970		sks
VERSAMUL - 208LT	5.0	940.470		bbl
VERSACLEAN INVERT	1.1	1,450.000		m3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/18/2013
Report #: 26
Depth Progress: 0.00 m
Depth End: 2,108.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	21.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
116,786.50	4,015,383.19	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		41.0	474.00	11,764.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
	38		0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-26	11 km

Ops and Depth @ Morning Report	Wellbore
Make up BHA to finish drilling	Original Hole

Last 24hr Summary

No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull core #8 with Schlumberger wireline, Lay down core, (100% recovery) Circulate, Make up and set drill rod with wireline, Attempt to drill 222mm hole. Drill rod unseated, Attempt to reseat drill rod, (unsucessful) Pull out of hole.

24hr Forecast

Drill to TD

Daily Contacts

WS Supervisor, Brian Neigum, 403-548-5013; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Rig Manager, Rick Yavis; Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599; WS Supervisor, Dave Forsberg, 780-361-6417

Last Casing String

Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
[illegible]	00:15	0.25	PROD1	RIGMNT	SVRG	P		2,108.00	2,108.00	Rig service function test H.C.R
	07:45	7.50	PROD1	CORING	ELNE	P		2,108.00	2,108.00	Wire line retrieve core #8
[illegible]	08:00	0.25	PROD1	CORING	SFTY	P		2,108.00	2,108.00	crew handover meeting
08:00	11:30	3.50	PROD1	CORING	ELNE	P		2,108.00	2,108.00	Retrieve core # 8 with schlumberger
11:30	11:45	0.25	PROD1	RIGMNT	SVRG	P		2,108.00	2,108.00	Rig service function test hydril 13 sec & crown saver
11:45	12:00	0.25	PROD1	CORING	SFTY	P		2,108.00	2,108.00	Held safety meeting n.o.v & schlumberger
12:00	12:45	0.75	PROD1	CORING	RECR	P		2,108.00	2,108.00	Recover core # 8 & lay down
12:45	13:45	1.00	PROD2	DRILL	CIRC	P		2,108.00	2,108.00	Circ bottom up
13:45	14:00	0.25	PROD2	DRILL	SFTY	P		2,108.00	2,108.00	Safety meeting
14:00	16:00	2.00	PROD2	DRILL	PULD	P		2,108.00	2,108.00	Rig up drill rod & run in to set drill rod with n.o.v & schlumberger
16:00	17:15	1.25	PROD2	DRILL	ELNE	P		2,108.00	2,108.00	Attempt to and set drill rod & set rod with schlumberger & rig out
17:15	17:30	0.25	PROD2	RIGMNT	SVRG	P		2,108.00	2,108.00	Rig service function test pipe rams 3 sec and crown saver
17:30	17:45	0.25	PROD2	DRILL	TRIP	P		2,108.00	2,108.00	Run in 3 stds of d.p
17:45	18:30	0.75	PROD2	DRILL	DRLG	P		2,108.00	2,108.00	Attempt to drill no seat on drill rod
18:30	19:45	1.25	PROD2	DRILL	CIRC	T	BHA	2,108.00	2,108.00	Circ bottoms up
19:45	00:00	4.25	PROD2	DRILL	TRIP	T	BHA	2,108.00	2,108.00	Trip out of hole drill rod didnt seat, flo0w check @ 2097m,1046m,

Fluid / Mud Checks: Mud Engineer: Andreis Kolos

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
08:30	2,108.00	985.0	71		14.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
10.0		83/17	227,135	37,500	13	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
774.0			10.8			5.8

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	3.50		3,183.00

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
55.70		133,059.78

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	6	3/12/2013	-5	3/13/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
403.00	403.00

[illegible]v Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/18/2013
Report #: 26
Depth Progress: 0.00 m
Depth End: 2,108.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 4

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
2C	222.0mm, NOV, CEPR5135, A1/E140305	0.34	2-2-CT-M-X-0-NO-DTF	484	6.8

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1	2,108.00	165.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
2,027.00	2,108.00	6.8	81.00	2,108.00	12.00	12.00

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	109.0	165.0		10.39	2,108.00
Drill pipe - Singles	109.0	127.0	1	9.61	2,097.61
Drill pipe - Stands	109.0	127.0	103	1,981.87	2,088.00
X/O	109.0	165.0	1	0.77	106.13
Core Collers	108.0	165.0	8	75.82	105.36
Stabilizer	108.0	165.0	1	0.83	29.54
Seat sub	108.0	165.0	1	0.49	28.71
Core Barrel	108.0	165.0	1	9.57	28.22
Stabilizer	108.0	165.0	1	1.23	18.65
Core Barrel	108.0	165.0	1	7.93	17.42
Stabilizer	108.0	165.0	1	1.23	9.49
Core Barrel	108.0	165.0	1	7.92	8.26

Drilling Parameters: 2,108.00 - 2,108.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
81.00	12.00	0.0	1.117	5,000	60	4,400	66,000	71,000	71,000	71,000	

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/18/2013
Report #: 26
Depth Progress: 0.00 m
Depth End: 2,108.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
15.2	0.00039	19	38.5	818.1	155.1	985.0	992.5

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
19.65	80.43	16.01	41.6	61.5	17.6	64.5

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
[illegible] Deck	2/4/2013		80	80	
[illegible]lti Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
BARITE - 40KG	80.0	19.850		sks
VERSACLEAN INVERT	1.1	1,450.000		m3

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/19/2013
Report #: 27
Depth Progress: 34.00 m
Depth End: 2,142.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	22.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
148,593.85	4,163,977.04	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		41.0	474.00	12,238.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
64	63	151	0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-33	East 10km/hr

Ops and Depth @ Morning Report
Lay down Drill string at 1950m

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations: Pull out of hole, Lay down corre barrels and collars, Pick up drill collars and make up 222mm PDC bit (RR#1) Run in hole, Rotary drill 222mm hole F/ 2108 - 2142m with rerun Reed MSR616 bit and slick rotary BHA,pumping at 1.3m3/min. WOB 9dan,average ROP 3m/hr

24hr Forecast
Drill to TD, Lay down drill string.

Daily Contacts
WS Supervisor, Brian Neigum, 403-548-5013; WS Supervisor, Dave Forsberg, 780-361-6417; Rig Manager, Rick Yavis; Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599; Drilling Superintend, Sheldon Vamplew, 403-999-1302

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
[illegible]	00:30	0.50	PROD2	DRILL	TRIP	P		2,108.00	2,108.00	Trip out of hole
[illegible]	00:45	0.25	PROD2	RIGMNT	SVRG	P		2,108.00	2,108.00	Rig Service Function Annular Close 12 sec.
00:45	02:15	1.50	PROD2	DRILL	TRIP	P		2,108.00	2,108.00	Trip out of hole Flow checks @ 595m OOH
02:15	04:30	2.25	PROD2	DRILL	PULD	P		2,108.00	2,108.00	Laydown drill rod and laydown core barrels
04:30	06:15	1.75	PROD2	DRILL	TRIP	P		2,108.00	2,108.00	Make up BHA and Bit, pick up 10 drill collars
06:15	07:45	1.50	PROD2	DRILL	TRIP	P		2,108.00	2,108.00	Trip into the hole
07:45	08:00	0.25	PROD2	DRILL	SFTY	P		2,108.00	2,108.00	Crew hand over meeting
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P		2,108.00	2,108.00	Rig service function hydril 14 sec & crown saver
08:15	12:00	3.75	PROD2	DRILL	TRIP	P		2,108.00	2,108.00	Run in hole fill pipe @ 811m 1628m 2102m and flowchecks
12:00	12:15	0.25	PROD2	DRILL	SFTY	P		2,108.00	2,108.00	B.O.P. drill well secured in 85 seconds
12:15	16:00	3.75	PROD2	DRILL	DRLG	P		2,108.00	2,122.00	Drill 222mm hole from 2108m to 2122 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 8dan, pumping @ 1.2m3.,RPM 90,Average ROP 3.7m/hr.
16:00	18:00	2.00	PROD2	DRILL	DRLG	P		2,122.00	2,130.00	Drill 222mm hole from 2122m to 2130 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3.,RPM 90,Average ROP 4m/hr.
18:00	18:15	0.25	PROD2	DRILL	SFTY	P		2,130.00	2,130.00	BOP drill crew in position well secure in 90 sec
18:15	18:30	0.25	PROD2	RIGMNT	SVRG	P		2,130.00	2,130.00	Rig service function pipe rams 3 sec crown saver operating properly,function test motor kills operating properly
18:30	00:00	5.50	PROD2	DRILL	DRLG	P		2,130.00	2,142.00	Drill 222mm hole from 2130m to 2142m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3.,RPM 90,Average ROP 2.2m/hr.

Fluid / Mud Checks: Mud Engineer: Andreis Kolos

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
18:00	2,115.00	990.0	88		13.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
10.2		83/17	227,135	37,500	13	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
774.0			10.4	21		5.5

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	3.50		1,674.35

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
59.20		134,734.13

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/19/2013
Report #: 27
Depth Progress: 34.00 m
Depth End: 2,142.00 mKB
Rig Release Date: 3/24/2013

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	0	3/19/2013	1	3/20/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
404.00	404.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Drill Strings: BHA # 5

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
RR1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-3-WT-A-X-0-NO-TD	581	3.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,145.89	166.0	73,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Slick Rotary assembly

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	114.3	1	9.35	2,145.89
Drill Pipe	109.0	127.0	106	2,039.65	2,136.54
XO Sub	74.0	166.0	1	0.61	96.89
XO Sub	83.0	156.0	1	0.34	96.28
XO Sub	58.0	148.0	1	0.74	95.94
Drill Collar	60.0	160.0	10	93.97	95.20
Bit Sub	70.0	160.0	1	0.95	1.23

Drilling Parameters: 2,122.00 - 2,142.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
34.00	11.25	2.7	1.300	9,000	80	3,700	73,000	73,000	73,000	73,000	6,500.0

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/20/2013
Report #: 28
Depth Progress: 8.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	23.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
137,614.50	4,301,591.54	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		45.0	490.00	12,728.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)
63	63	66	0

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-35	South East 10km/hr

Ops and Depth @ Morning Report
Continue to run Open hole logs.

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations: Rotary drill 222mm hole F/ 2130 - 2146m with rerun Reed MSR616 bit and slick rotary BHA,pumping at 1.3m3/min. WOB 9dan,average ROP 3m/hr, Circulate, Wiper trip 5 stands, Hole in good condition, Circulate, Pull out of hole laying down drill string, Rig in and run wireline logs with Schlumberger.

24hr Forecast
Continue to run Open hole logs.

Daily Contacts
WS Supervisor, Mike Hobmaier, 403-844-3210; Command, Center, 587-794-4599; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417; Drilling Engineer, Mike Greener, 403-771-5039; Rig Manager, Rick Yavis

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00	01:00	1.00	PROD2	DRILL	DRLG	P		2,142.00	2,146.00	Drill 222mm hole from 2142m to 2146 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3.,RPM 80,Average ROP 3 .5 m/hr.
01:00	02:00	1.00	PROD2	DRILL	CIRC	P		2,146.00	2,146.00	Circulate & condition hole @ 2146 m T.D
02:00	02:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service function test pipe rams 3 sec & crown saver
02:15	03:00	0.75	PROD2	DRILL	WPRT	P		2,146.00	2,146.00	Wiper trip 5 stds to 2040 m flow check @ 2136 m & 2040 m
03:00	04:30	1.50	PROD2	DRILL	CIRC	P		2,146.00	2,146.00	Circulate & condition hole @ 2146 m
04:30	04:45	0.25	PROD2	DRILL	SFTY	P		2,146.00	2,146.00	Safety meeting with Trottier
04:45	07:45	3.00	PROD2	DRILL	PULD	P		2,146.00	2,146.00	Lay down drill pipe with pipe spinner & Trottier pipe handlers flow checks @ 2136 m 2042 m
07:45	08:00	0.25	PROD2	DRILL	SFTY	P		2,146.00	2,146.00	Crew hand over meeting
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service function hydrill 13 sec crown saver operating properly
08:15	15:45	7.50	PROD2	DRILL	PULD	P		2,146.00	2,146.00	Lay down drill pipe,brake down overhead lay down DC with trottier pipe handlers flow check@1080m/601m/OOH/reviewed JSA#159 lay down drill pipe with lay down truck
15:45	16:00	0.25	PROD2	DRILL	PULD	P		2,146.00	2,146.00	Rig out laydown truck
16:00	16:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service function blind rams 3 sec crown saver operating properly
16:15	20:30	4.25	PROD2	DRILL	PULD	P		2,146.00	2,146.00	Pull wear bushing/lay down NOV X/O and tools/lay down kelly bar and swivel/clean and prepare floor for wire line logs
20:30	20:45	0.25	PROD2	EVALFM	SFTY	P		2,146.00	2,146.00	Safety meeting on wire line logs with schlumberger
20:45	00:00	3.25	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Rig in and log with schlumberger,Run #1 AIT,NEXT,PEX,TLO2 ,Log depth 2148m

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
16:15	2,115.00	990.0	88		13.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
10.2		83/17	227,135	37,500	13	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
774.0			10.4			5.5

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	3.50		833.70

Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
62.70		135,567.83

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/20/2013
Report #: 28
Depth Progress: 8.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	1	3/19/2013	0	3/20/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
405.00	405.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # 2

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-1-CT-S-X-0-NO-CP	581	15.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,303.47	232.0	66,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Dyna-Drill 7/8 5 Stage set @ 1.15*

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	109.0	1	6.93	2,303.47
Drill pipe - Stands	109.0	127.0	106	2,039.65	2,296.54
X/0	74.0	166.0	1	0.61	256.89
X/o	83.0	156.0	1	0.34	256.28
X/O SUB	59.0	123.0	1	0.61	255.94
X/O Sub	58.0	134.0	1	0.51	255.33
x/o	58.0	148.0	1	0.74	254.82
6 D.C	60.0	160.0	12	112.00	254.08
6 D.C	60.0	160.0	10	93.97	142.08
Bit sub	70.0	232.0	1	0.95	48.11
X/O 4 H-90	62.0	162.0	1	0.48	47.16
Jar	76.0	157.0	1	9.18	46.68
N.M. DC	72.0	168.0	2	18.96	37.50
Landing Sub	86.0	164.0	1	0.55	18.54
X-PULSE	70.0	164.0	1	9.48	17.99
MUD MOTOR	34.0	131.0	1	8.23	8.51

Drilling Parameters: 2,142.00 - 2,146.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
1,293.00	85.50	4.0		8,000	75	3,900					

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
	0.00113	37				990.0	

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
	80.43		0.0	0.0	0.0	0.0

Error: Unable to calculate annular pressure drop because pressure drop data is missing from AV calc

Drill Strings: BHA # 5

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)
RR1	222.0mm, REED, MSR616M-A2C, A141415	0.28	1-3-WT-A-X-0-NO-TD	581	3.1

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)
11.1/11.1/11.1/11.1/11.1/11.1	2,145.89	166.0	73,000

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)
601.00	2,146.00	13.6	1,331.00	1,932.00	97.75	97.75

Comment: Slick Rotary assembly

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)
Kelly	70.0	114.3	1	9.35	2,145.89
Drill Pipe	109.0	127.0	106	2,039.65	2,136.54
XO Sub	74.0	166.0	1	0.61	96.89
XO Sub	83.0	156.0	1	0.34	96.28
XO Sub	58.0	148.0	1	0.74	95.94
Drill Collar	60.0	160.0	10	93.97	95.20
Bit Sub	70.0	160.0	1	0.95	1.23

Drilling Parameters: 2,142.00 - 2,146.00 mKB

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq
38.00	12.25	4.0	1.300	8,000	75	3,900	73,000	73,000	73,000	73,000	6,500.0

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/20/2013
Report #: 28
Depth Progress: 8.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)
16.8	0.00043	20	37.3	773.4	460.8	990.0	1011.9

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...
19.34	80.43	16.12	44.4	48.4	19.8	76.2

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
ti Deck	2/4/2013		80	80	
ti Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
BARITE - 40KG	42.0	19.850		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/21/2013
Report #: 29
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	24.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
76,930.50	4,378,522.04	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		40.0	438.00	13,166.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-30	East 10km/hr

Ops and Depth @ Morning Report	Wellbore
Continue to run Open hole logs.	Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations:Run wireline logs with Schlumberger.

24hr Forecast
Continue to run Open hole logs.

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417; Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599; Rig Manager, Rick Yavis; WS Supervisor, Mike Hobmaier, 403-844-3210

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service function test crown saver
15	08:00	7.75	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Wireline logs with schlumberger ,Run #1 AIT,NEXT,PEX,TLO2 Log depth 2148m, Start Run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service
08:15	16:00	7.75	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m
16:00	16:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service
16:15	00:00	7.75	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
08:30	2,115.00	990.0	88		13.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
10.2		83/17	227,135	37,500	13	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
774.0			10.4			5.5

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	3.50		

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
66.20		135,567.83

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	2	3/19/2013	-1	3/20/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
406.00	406.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

h In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/21/2013
Report #: 29
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/1 .013 14:00	1,957.00	1.173	1/2/ 4,900	120
3/ 2013 16:00	1,962.00	0.616	/11/ 1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/22/2013
Report #: 30
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	25.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
107,623.37	4,486,145.41	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		42.0	462.00	13,628.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Partly Cloudy	-20	East 10km/hr

Ops and Depth @ Morning Report
Run 177.8mm Production casing at 400m

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations:Run wireline logs with Schlumberger.

24hr Forecast
Run and cement 177.8mm production casing

Daily Contacts
Rig Manager, Rick Yavis; WS Supervisor, Mike Hobmaier, 403-844-3210; WS Supervisor, Dave Forsberg, 780-361-6417; Drilling Superintend, Sheldon Vamplew, 403-999-1302; Drilling Engineer, Mike Greener, 403-771-5039; Command, Center, 587-794-4599

Last Casing String
Surface, 599.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service function test crown saver
00:15	08:00	7.75	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m Run #3 rerun UBI
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service
08:15	14:30	6.25	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Continue Open Hole program with Schlumberger, Run #3 rerun UBI
14:30	16:00	1.50	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Open hole program with Sclumberger run #4 tools ran RST,CMR,ADT,HNGS, log depth 2148m
16:00	16:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service
16:15	00:00	7.75	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Continue open hole log program with Sclumberger,Continue with run #4 tools ran RST,CMR,ADT,HNGS, log depth 2148m,RTS tool failed Run #5 Cement Bond Log

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
13:45	2,115.00	990.0	88		13.0	4.5

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)
10.2		83/17	227,135	37,500	13	

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)
774.0			10.4			5.5

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost
	3.50		342.87

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
69.70		135,910.70

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	3	3/19/2013	-2	3/20/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
407.00	407.00

Safety Incidents

Date	Comment	Category

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/22/2013
Report #: 30
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units
FED ZAN D - 11.34 KG	3.0	114.290		sks

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/23/2013
Report #: 31
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	26.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
1,062,516.87	5,548,662.28	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		52.0	2,168.00	15,796.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-16	Calm

Ops and Depth @ Morning Report
Clear tanks and tear out rig.

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations:Run wireline logs with Schlumberger,Rig to and run 177.8mm casing, Circulate and prepare to and cement with Schlumberger, wait on cement.

24hr Forecast
Nipple down ,Clean tanks and tear out rig

Daily Contacts
Command, Center, 587-794-4599; WS Supervisor, Dave Forsberg, 780-361-6417; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Mike Hobmaier, 403-844-3210; Drilling Engineer, Mike Greener, 403-771-5039; Rig Manager, Rick Yavis

Last Casing String
Production, 2,146.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	02:00	2.00	PROD2	EVALFM	ELOG	P		2,146.00	2,146.00	Wireline logs with schlumberger
02:00	02:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service function test crown saver & blind rams 3 sec
02:15	02:30	0.25	PROD2	DRILL	SFTY	P		2,146.00	2,146.00	Safety meeting with Hallmark & pipe handlers
02:30	03:45	1.25	PROD2	CASING	RNCS	P		2,146.00	2,146.00	Rig up tong hand & Trottier pipe handlers
03:45	07:45	4.00	PROD2	CASING	RNCS	P		2,146.00	2,146.00	Run casing
07:45	08:00	0.25	PROD2	CASING	SFTY	P		2,146.00	2,146.00	Crew hand over meeting
08:00	08:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service
08:15	09:45	1.50	PROD2	CASING	RNCS	P		2,146.00	2,146.00	Run casing to 1155m w/hallmark tong hands
09:45	10:30	0.75	PROD2	CASING	CIRC	P		2,146.00	2,146.00	Circulate casing @1155m
10:30	12:15	1.75	PROD2	CASING	RNCS	P		2,146.00	2,146.00	Run casing from 1155m to 1556m w/hallmark tong hand
12:15	12:45	0.50	PROD2	CASING	CIRC	P		2,146.00	2,146.00	Circulate casing @1556m
12:45	15:30	2.75	PROD2	CASING	RNCS	P		2,146.00	2,146.00	Run casing from 1556m to 2146m.Ran 1-177.8mm Float Shoe,1jt. 177.8mm X 38.6kg/m P110 LT&C casing,1 177.8mm Float Collar and 178 joints 177.8mm X 38.6kg/m P110 LT&C casing.Total length 2147.87m set at 2146m
15:30	16:00	0.50	PROD2	CASING	CIRC	P		2,146.00	2,146.00	Circ & condition hole
16:00	16:15	0.25	PROD2	RIGMNT	SVRG	P		2,146.00	2,146.00	Rig service
16:15	17:30	1.25	PROD2	CASING	CIRC	P		2,146.00	2,146.00	Circulate casing on bottom
17:30	17:45	0.25	PROD2	CEMENT	SFTY	P		2,146.00	2,146.00	Safety meeting with Schlumberger cementers
17:45	21:15	3.50	PROD2	CEMENT	CMNT	P		2,146.00	2,146.00	Rig to and cement 177.8mm production casing as follows,pumped 5m3 Preflush ahead,from 200m to 1600m 30.6m3 slurry (27tonne) 1400kg/m3 HiLite cement with 1.2%FLACB348,0.3% Retarder and 0.2% AntiFoam,From 1600m to 2146m 11.5m3 1600kg/m3 slurry (12tonne) Class `G`cement with 0.4 % Fluid Loss,0.5 % Dispersant.0.2 % Antifoam and 0.3 % Retarder.Displaced with 43m3 water,Full circulation through job until the last 10m3 of displacement with total losses at that point estemaited cement top at 200m,Floats held ,pressure test casing to 18200kpa.
21:15	00:00	2.75	PROD2	CEMENT	SFTY	P		2,146.00	2,146.00	Wait on cement

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/23/2013
Report #: 31
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)

Low Gravity Solids (%)	MBT (kg/m³)	Oil Water Ratio	Chlorides (mg/L)	Calcium (mg/L)	Lime (kg/m³)	Potassium (mg/L)

Electric Stab (V)	ECD - Manual Entry (k...	Sand (%)	Solids, Corr. (%)	T (fl) (°C)	HTHP Pressure (kPa)	HTHP Filt (mL/30min)

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
		135,910.70

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	4	3/19/2013	-3	3/20/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
408.00	408.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig: Beaver Drilling Ltd. 2

Report Date: 3/24/2013
Report #: 32
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	27.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
77,315.89	5,625,978.17	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		44.0	464.00	16,260.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Clear	-15	East 115kméhr.

Ops and Depth @ Morning Report
Rest crew and truck drivers.

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 4 Hazard ID's: 0 Job observations:Wait on cement, Nipple down BOP`s, Set casing slips with 50,000 Dan, Rig down and clean mud tanks, Prepare to move to rack site and load out rental equipment

24hr Forecast
Tear out rig and move to rack site.

Daily Contacts
Command, Center, 587-794-4599; WS Supervisor, Mike Hobmaier, 403-844-3210; Rig Manager, Rick Yavis; Drilling Engineer, Mike Greener, 403-771-5039; Drilling Superintend, Sheldon Vamplew, 403-999-1302; WS Supervisor, Dave Forsberg, 780-361-6417; Rig Manager

Last Casing String
Production, 2,146.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	01:30	1.50	PROD2	CEMENT	WOC	P		2,146.00	2,146.00	Wait on cement
01:30	01:45	0.25	PROD2	WHDBOP	SFTY	P		2,146.00	2,146.00	Safety meeting tear out b.o.p
01:45	05:15	3.50	PROD2	WHDBOP	NUND	P		2,146.00	2,146.00	Nipple down b.o.p & set slips
05:15	07:45	2.50	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Tear out rig wait on vac trucks to clean tanks
07:45	08:00	0.25	DEMOB	MOVE	SFTY	P		2,146.00	2,146.00	Crew hand over meeting
08:00	10:00	2.00	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Inspect Drrick and lay down
10:00	14:00	4.00	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Continue tear out rig
14:00	16:00	2.00	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Clean tanks and general tear out of rig.
16:00	20:00	4.00	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Clean tanks and general tear out of rig.
20:00	00:00	4.00	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Clean tanks and general tear out of rig,flush Boiler and water tank Rig release March 24 @ 24:00 Hrs.

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
Low Gravity Solids (%)	**MBT (kg/m³)**	**Oil Water Ratio**	**Chlorides (mg/L)**	**Calcium (mg/L)**	**Lime (kg/m³)**	**Potassium (mg/L)**
Electric Stab (V)	**ECD - Manual Entry (k...**	**Sand (%)**	**Solids, Corr. (%)**	**T (fl) (°C)**	**HTHP Pressure (kPa)**	**HTHP Filt (mL/30min)**

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
		135,910.70

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	5	3/19/2013	-4	3/20/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
409.00	409.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

ConocoPhillips Canada

Daily Drilling

COPRC MIRROR LAKE N-20 65-00 126-45

Rig: Beaver Drilling Ltd. 2

Report Date: 3/24/2013
Report #: 32
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date: 3/24/2013

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig:

Report Date: 3/25/2013
Report #: 33
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date:

API / UWI	Surface Legal Location	MaxWell Job Number	License No.
200/C-011-L/094-P-16/99	C-011-L/94-P-16	JOB01@2006	EL470

Ground Elevation (m)	Original KB/RT Elevation (m)	Casing Flange Elevation (m)	Original Spud Date	Days From Spud (days)
281.30	286.50	281.63	2/25/2013	28.29

Job Category	Primary Job Type	Actual Start Date	End Date	Final Job Status	Final Report?
DRILLING	DRILLING ORIGINAL	2/21/2013 00:00	3/25/2013 12:00	DRILLED & CASE	Yes

Daily Cost Total	Cumulative Cost	Total Job AFE Amount	Total AFE+Sup	AFE / RFE / Maint.#	Estimated Days
2,735,884.58	8,361,862.75	10,274,600.00	10,274,600.00	10343209	36.29

Planned Depth (TMD) (mKB)	Override TVD (mKB)	Head Count	Personnel Total Hours (hrs)	Cum Personnel Total Hours (hrs)
2,156.00		49.0	492.00	16,752.00

Avg Connection Gas	Avg Background Gas	Avg Trip Gas	Max H2S (ppm)

Road Condition	Weather	Temperature (°C)	Wind
Good	Partly Cloudy	-8	East 20km/hr.

Ops and Depth @ Morning Report
Rest crew and truck drivers to finish racking rig.

Wellbore
Original Hole

Last 24hr Summary
No accidents or incidents 0 Hazard ID's: 0 Job observations: Move rig to rack site and load out rental equipment for demobilization,

24hr Forecast
Finish racking rig on rack site

Daily Contacts
Drilling Superintend, Sheldon Vamplew, 403-999-1302; Rig Manager, Rick Yavis; WS Supervisor, Mike Hobmaier, 403-844-3210; Rig Manager, RICK YAVIS; WS Supervisor, Dave Forsberg, 780-361-6417; Command, Center, 587-794-4599; Drilling Engineer, Mike Greener,

Last Casing String
Production, 2,146.00mKB

Time Log

Start Time	End Time	Dur (hrs)	Phase	Op Code	Activity Code	Time P-T-X	Trbl Code	Depth Start (mKB)	Depth End (mKB)	Operation
00:00	00:15	0.25	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Held prejob safety meeting with Beaver crews,Mullen trucking and Conoco representitives prior to tearing out rig and moving to rack site.
:15	12:00	11.75	DEMOB	MOVE	DMOB	P		2,146.00	2,146.00	Tear outrig and move to rack site,along with rentals this well was recorded using the Totco System

Fluid / Mud Checks: Mud Engineer: <Mud Engineer?>

Time	Depth (mKB)	Density (kg/m³)	Funnel Viscosity (s/L)	pH	PV Override (cp)	YP Override (Pa)
Low Gravity Solids (%)	**MBT (kg/m³)**	**Oil Water Ratio**	**Chlorides (mg/L)**	**Calcium (mg/L)**	**Lime (kg/m³)**	**Potassium (mg/L)**
Electric Stab (V)	**ECD - Manual Entry (k...**	**Sand (%)**	**Solids, Corr. (%)**	**T (fl) (°C)**	**HTHP Pressure (kPa)**	**HTHP Filt (mL/30min)**

API Filtrate (mL/30min)	Mud Lost to Surface (m³)	Mud Lost to Hole (m³)	Daily Mud Cost

Cum Mud Lost to Surface (m³)	Cum Mud Lost to Hole (m³)	Cumulative Mud Cost
		135,910.70

Last BOP Drill

Type	Days Since Last...	Last Date	Days Until Next ...	Next Check Date
BOP Drill (Pit)	6	3/19/2013	-5	3/20/2013

Days Since Lost Time Incident (days)	Days Since Recordable Incident (days)
410.00	410.00

Safety Incidents

Date	Comment	Category

Drill Strings: BHA # <BHA No.?>

Bit Run	Drill Bit	Length (m)	IADC Bit Dull	TFA (incl Noz) (mm²)	BHA ROP (m/hr)

Nozzles (mm)	String Length (m)	OD (mm)	Rotating Hook Load (maximum) (daN)

Depth In (mKB)	Depth Out (mKB)	Avg ROP (m/hr)	Depth This Job (m)	Total Depth Drilled ...	Job Drill Hrs (hrs)	Total Drill Hrs (hrs)

Comment

Drill String Components

Item Description	ID (mm)	OD (mm)	Jts	Len (m)	Cum Len (m)

Drilling Parameters:

Cum Depth (m)	Cum Drill...	Int ROP (...	Flow Rat...	WOB (daN)	RPM (r...	SPP (kPa)	Drill Str Wt (d...	SO Str Wt (da...	PU Str Wt (daN)	Off-Btm Str W...	Drill Tq

ConocoPhillips Canada

Daily Drilling
COPRC MIRROR LAKE N-20 65-00 126-45
Rig:

Report Date: 3/25/2013
Report #: 33
Depth Progress: 0.00 m
Depth End: 2,146.00 mKB
Rig Release Date:

Hydraulic Calculations

Bit Hydraulic Pow...	HP/Area (kW/mm²)	% P @ bit (%)	Bit Jet Velocity (m/s)	Bit dP (kPa)	Ann. dP (kPa)	Mud Density (kg/m³)	ECD End (kg/m³)

Drill String Volume (m³)	Bit to Shoe Volume (...	Shoe to Top of Casin...	Min Casing AV (m/min)	Max Casing AV (m/min)	Min Open Hole AV (m/...	Max Open Hole AV (m...

Error

Mud Pumps: 1, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
1	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/20/2013 00:00	2,145.00	0.782	1,619	80
3/23/2013 08:00				75

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		

Mud Pumps: 2, NATIONAL, 8-P-80

Pump Number	Make	Model	Rod Diameter (mm)	Stroke Length (mm)
2	NATIONAL	8-P-80		216.0

Pump Checks

Date	Depth (mKB)	Q (m³/min)	Pres (kPa)	Strokes (spm)
3/11/2013 14:00	1,957.00	1.173	4,900	120
3/11/2013 16:00	1,962.00	0.616	1,651	63

Pump Operations

Start Date	End Date	Liner Size (mm)	P (max) (kPa)	Vol/Stk OR (m³/stk)
1/29/2013		140.0		
2/5/2013		140.0		

Shaker Screens

Description	Start Date	End Date	Scr Sz X	Scr Sz Y	Note
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		80	80	
Multi Deck	2/4/2013		100	100	
Multi Deck	2/4/2013		100	100	

Centrifuges/Cyclones: HGS Centrifuge, Brandt, 4000

Number	Make	Model	Diameter (mm)
1	Brandt	4000	

Centrifuge/Cyclone Checks

Date	Hrs (hrs)	RPM (rpm)	Dens OF (kg/m³)	Q (ovrflw) (L/min)	Dens UF (kg/m³)	Q (undrflw) (L/min)

Fluid / Mud Additive Amounts

Description	Consumed	Cost	Size	Units

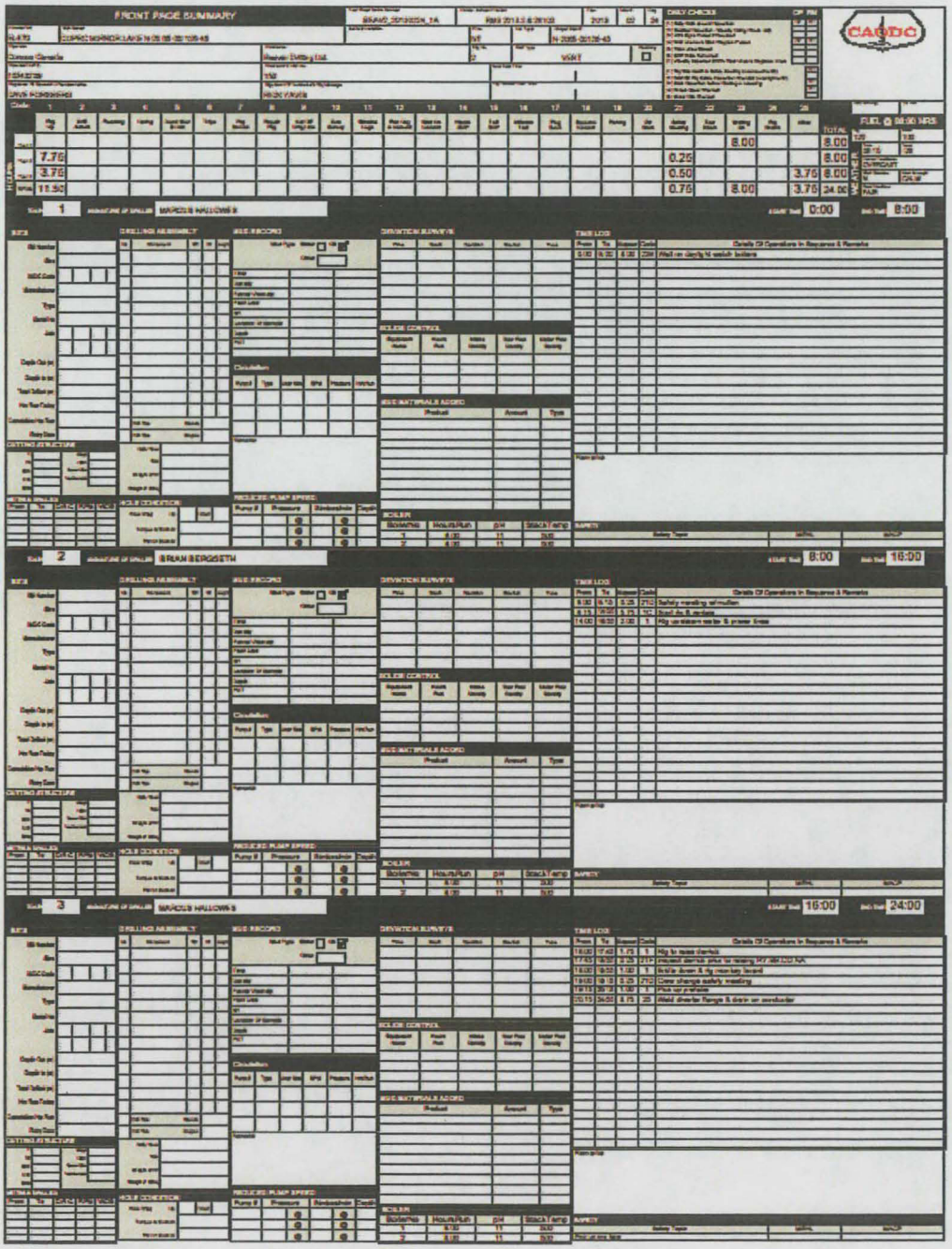
Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	NS (m)	EW (m)	VS (m)	DLS (°/30m)

Formations

Formation Name	Drill Top MD (mKB)	Drill Top TVD (mKB)	Prog Top TVD (mKB)
Little Bear	20.00	20.00	22.00
Slater River	241.00	241.00	217.00
Arctic Red	829.00	828.81	792.00
Sans Sault	988.00	987.77	962.00
Martin House	1,138.00	1,137.69	1,037.00
Imperial	1,172.00	1,171.68	1,112.00
Upper Canol	1,931.00	1,930.35	1,892.00
Lower Canol	1,967.00	1,966.32	1,927.00
Hare Indian	2,074.00	2,073.23	2,037.00
Bluefish Member	2,084.00	2,083.22	2,062.00
Hume	2,093.00	2,092.21	2,082.00

X. Tour sheets – Drilling Rig



FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130224_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 24

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prior: NT | Last Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time | Rig Release Date Time

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: RICK YAVIS

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	RY
(3.) Derailed Inspection - Weekly (Using Check List)		
(3.) WCB Signs Posted If Required		
(4.) Well Licence & Sign Diagram Posted	DF	RY
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOP,Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (once/week/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (once/month)		RY
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Casing	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1																							8.00			8.00
Tour 2	7.75																				0.25					8.00
Tour 3	3.75																				0.50				3.75	8.00
TOTAL	11.50																				0.75		8.00		3.75	24.00

Daily Footing | Up Time

FUEL @ 08:00 HRS

Tour: 120 | Meter: 100

WEATHER

Time: 08:15 | Temp: -26 | Visibility Conditions: OVERCAST | Wind Direction: N | Wind Strength: CALM | Road Condition: FAIR

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number | Size | IADC Code | Manufacturer | Type | Serial No | Jets | Depth Out (m) | Depth In (m) | Total Drilled (m) | Hrs Run Today | Cumulative Hrs Run | Entry Date

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Last Run Jets	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	8:00	8.00	23B	Wait on daylight watch boilers

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 2 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number | Size | IADC Code | Manufacturer | Type | Serial No | Jets | Depth Out (m) | Depth In (m) | Total Drilled (m) | Hrs Run Today | Cumulative Hrs Run | Entry Date

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Last Run Jets	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	21D	Safety meeting w/muffen
8:15	14:00	5.75	1C	Spot rig & rentals
14:00	16:00	2.00	1	Rig up steam water & power lines

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number | Size | IADC Code | Manufacturer | Type | Serial No | Jets | Depth Out (m) | Depth In (m) | Total Drilled (m) | Hrs Run Today | Cumulative Hrs Run | Entry Date

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Last Run Jets	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	17:45	1.75	1	Rig to raise derrick
17:45	18:00	0.25	21F	Inspect derrick prior to raising RY,BB,CD,NA
18:00	19:00	1.00	1	Bridle down & rig monkey board
19:00	19:15	0.25	21D	Crew change safety meeting
19:15	20:15	1.00	1	Pick up prefabs
20:15	24:00	3.75	25	Weld diverter flange & drain on conducter

Remarks

SAFETY

Safety Topic	MEHL	MACP
Pick up pre fabs		

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130225_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 25

Location No	Well Name	Surface Location	Prov	Lic Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Pre-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	RICK YAVIS	

DAILY CHECKS (OP / RM)

	OP	RM
(1.) Daily Walk Around Inspection	DF	RY
(2.) Detailed Inspection - Weekly (Using Check List)	DF	RY
(3.) H2S Signs Posted if Required		
(4.) Well License & Stick Diagram Posted	DF	RY
(5.) Flare Lines Staked	DF	RY
(6.) BOP Drills Performed	DF	RY
(7.) Visually Inspected BOPs, Flare Lines & Degasser Lines	DF	RY
(1.) Rig Site Health & Safety Meeting (once/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (once/fortnight)		
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		RY
(5.) Upper Kelly Checked		RY

CAODC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1	3.00													5.00												8.00
Tour 2	6.00					1.25	0.25														0.50					8.00
Tour 3		6.75					0.25														1.00					8.00
TOTAL	9.00	6.75				1.25	0.50							5.00							1.50					24.00

Daily Mudding: FUEL @ 08:00 HRS | Up Hole:

WEATHER

Rig	Barom
160	190
Time	Temp
05:30	-25
Current Conditions	
OVERCAST	
Wind Direction	Wind Strength
N	UP TO 19 KM/H
Road Conditions	
POOR	

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Grade | TO | ODC | MDC | Pressure Drop | LOC | Total Run Jets | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	5:00	5.00	14C	Nipple up diverter, rig up flare lines
5:00	8:00	3.00	1	Rig up swivel and floor

Remarks
Boiler fuel 190cm boiler one boiler two 85cm

SAFETY

Safety Topic	MEHL	MACP
nipple up diverter		

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	0.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Grade | TO | ODC | MDC | Pressure Drop | LOC | Total Run Jets | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	13:15
Density	1000
Funnel Viscosity	34
Fluid Loss	
pH	11
Location Of Sample	TANKS
Depth	
PVT	30

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
SUFAMIC ACID - 25KG	1	SXS
Bentonite	10	SXS
Kelzan	1	bb

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function test crown saver/ function test diverter
8:15	14:15	6.00	1	Rig to spud
14:15	14:45	0.50	21F	Pre spud rig inspection
14:45	16:00	1.25	6C	Pick up bha

Remarks
Level 1 inspection on sub, derrick, swivel, bails, elevators,and blocks
Blow down boiler 200l

SAFETY

Safety Topic	MEHL	MACP
PRE SPUD		

TOUR 3

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	69.00
Hrs Run Today	6.75
Cumulative Hrs Run	6.75
Entry Date	

CUTTING STRUCTURE: I | Grade | TO | ODC | MDC | Pressure Drop | LOC | Total Run Jets: 10.22 | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.52
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
4	6" D.C	160	60	37.35
0	Drill Pipe: Stands			0.00
0	Drill Pipe: Singles			0.00

Kelly Down: 6.00 | Total: 64.03 | Weight of DC | Weight of String: 21.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	16:15	18:30
Density	1010	1040
Funnel Viscosity	42	57
Fluid Loss		
pH		10
Location Of Sample	TANKS	SHAKER
Depth		33.00
PVT	43	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	140	1000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

METRES DRILLED

From	To	D-R-C	RPM	WOB
15.00	84.00	DRILL	120	5

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
19:30	30.00	0.50	0	WIRELINE
22:45	61.00	0.70	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	30	SXS
Kelzan XCD	2	SXS

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig Service function test hydril 48 seconds check & motor kills
16:15	17:00	0.75	21F	Pre spud safety meeting & diverter drill with consultant and toolpush
17:00	22:00	5.00	2	Drill 311 mm hole from 20m to70m with Varel tri cone Insert bit and slick rotary assembly.
22:00	22:15	0.25	21A	Diverter drill crews in positions
22:15	24:00	1.75	2	Drill 311 mm hole from 70m to 84m with Varel tri cone Insert bit and slick rotary assembly.

Remarks
Level one inspection on tongs sub and overhead mh
Blew down boilers 100L

SAFETY

Safety Topic	MEHL	MACP
diverter drill		

FRONT PAGE SUMMARY

Tour Sheet End of Number: BEAV2_20130225_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 25

License No	Well Name	Surface Location	Prov	Lsd	Sec	Twp	Rge	Mer	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT						N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time	
DAVE FORSBERG	RICK YAVIS		

DAILY CHECKS

	QP	RM
(1.) Daily Walk Around Inspection	DF	RY
(2.) Detailed Inspection - Weekly (Using Check List)	DF	RY
(3.) H2S Signs Posted If Required		
(4.) Well Licence & Blast Diagram Posted	DF	RY
(5.) Flare Lines Shaked	DF	RY
(6.) BOP Drills Performed	DF	RY
(7.) Visually Inspected BOP,s Flare Lines & Degasser Lines	DF	RY
(1.) Rig Site Health & Safety Meeting (sometimes/monthly)		RY
(2.) CAODC Rig Safety Inspection Checklist (weekly/monthly)		
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		RY

CAODC

Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	TOTAL
	Rig Up	Drill Actual	Reaming	Coring	Cond Mud & Circ	Trips	Rig Service	Repair Rig	Cut Off Drlg Line	Dev Survey	Wireline Logs	Run Csg & Cement	Wait On Cement	Nipple BOP	Test BOP	Drillstem Test	Plug Back	Squeeze Cement	Fishing	Dir Work	Safety Meeting	Tear Down	Waiting On	Rig Watch	Other	
Tour 1	3.00													5.00												8.00
Tour 2	6.00					1.25	0.25														0.50					8.00
Tour 3		6.75					0.25														1.00					8.00
TOTAL	9.00	6.75				1.25	0.50							5.00							1.50					24.00

HOURS

Kelly Bushing | Up Hole

FUEL @ 08:00 HRS

WEATHER: Rig 160 | Boiler 190 | Time 05:30 | Temp -25 | Current Conditions: OVERCAST | Wind Direction: N | Wind Strength: UP TO 19 KM/H | Road Conditions: POOR

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Reason Pull | LOC | Inner Rows | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks: Boiler fuel 190cm boiler one boiler two 85cm

SAFETY

Safety Topic	MEHL	MACP
nipple up diverter		

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	0.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Reason Pull | LOC | Inner Rows | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks: Level 1 inspection on sub, derrick, swivel, bails, elevators,and blocks
Blow down boiler 200l

SAFETY

Safety Topic	MEHL	MACP
PRE SPUD		

TOUR 3

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.8 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	69.00
Hrs Run Today	6.75
Cumulative Hrs Run	6.75
Entry Date	

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Reason Pull | LOC | Inner Rows | BRG: 10.22

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.58
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
4	6" D.C	160	60	37.35

0 Drill Pipe: Stands 0.00 | 0 Drill Pipe: Singles 0.00 | Kelly Down 6.00 | Total 64.03 | Weight of DC | Weight of String 21.00

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	20:00	22:45
Density	1060	1100
Funnel Viscosity	55	57
Fluid Loss		
pH	9.5	9.5
Location Of Sample	Shaker	Shaker
Depth	51.00	74.00
PVT	41	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	140	1000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks: Level one inspection on tongs sub and overhead mh
Blew down boilers 100L

SAFETY

Safety Topic	MEHL	MACP
diverter drill		

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130226_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 26

Licence No: EL470	Well Name: COPRC MIRROR LAKE N-20 65-00 126-45	Surface Location	From: NT	Loc Type	Unique Well Id: N-2065-00126-45
Operator: Conoco Canada	Contractor: Beaver Drilling Ltd.		Rig No: 2	Well Type: VERT	Re-Entry: ☐
Operator's AFE: 10343209	Contractor's Job No: 150		Spud Date Time: 25-Feb-2013	17:00	
Signature Of Operator's Representative: DAVE FORSBERG	Signature Of Contractor's Rig Manager: RICK YAVIS		Rig Release Date Time		

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted If Required	DF	RY
(4.) Well Licence & Sign Diagram Posted	DF	RY
(5.) Flare Lines Staked		
(6.) BOP Drills Performed	DF	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	DF	RY
(1.) Rig Site Health & Safety Meeting (one/crew/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (one/rig/month)		
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

CAODC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1		7.50					0.25														0.25					8.00
Tour 2		7.00					0.25			0.50											0.25					8.00
Tour 3		6.75			0.25		0.25			0.50											0.25					8.00
TOTAL		21.25			0.25		0.75			1.00											0.75					24.00

Kelly Bushing: | Up Hole:

FUEL @ 08:00 HRS

WEATHER

Rig	195
Sump	185
Time	05:45
Temp	-20
Current Condition	PARTLY CLOUDY
Wind Direction	N
Wind Strength	CALM
Road Condition	POOR

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	
Hrs Run Today	7.50
Cumulative Hrs Run	14.25
Entry Date	

CUTTING STRUCTURE: I1 | Grade | TO | ODC | MDC | Reason For Pull | LOC | Inner/Outer Jets | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.82
1	Drill Pipe	Stands		18.84
0	Drill Pipe	Singles		0.00
	Kelly Down			2.18
	Total			145.00
	Weight of DC			
	Weight of String			28.00

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	00:30	03:00
Density	1120	1120
Funnel Viscosity	65	65
Fluid Loss		
pH	9.5	9.5
Location Of Sample	Shaker	Shaker
Depth	87.00	105.00
PVT	39	39

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	130	5200	7.50
2	PARALLEL	140	130	5200	7.50

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
03:45	92.00	0.40	0	WIRELINE
06:30	121.00	0.50	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	20	sks
Kelzan	2	sks
Sawdust	6	sks

METRES DRILLED

From	To	D-R-C	RPM	WOB
84.00	145.00	DRILL	120	6

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

REDUCED PUMP SPEED

Pump #	Pressure	@	Strokes/min	@	Depth
		@		@	
		@		@	
		@		@	

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	1:00	1.00	2	Drill 311 mm hole from 84m to 89m with Varel tri cone Insert bit and slick rotary assembly.
1:00	1:15	0.25	7	Rig service function test annular 19 seconds to close function test crown saver
1:15	7:45	6.50	2	Drill 311 mm hole from 89m to145m with Varel tri cone Insert bit and slick rotary assembly.
7:45	8:00	0.25	21	Crew handover meeting

Remarks
Level one inspection on tongs,sub and overhead equitment
Blew boilers down 100L
Boiler fuel 1 185
Boiler fuel 2 200 Tony Hiemstra completed a Conoco Phillips arctic hse orientation with medic Leanne Kenning

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	203.00
Hrs Run Today	7.00
Cumulative Hrs Run	21.25
Entry Date	

CUTTING STRUCTURE: I1 | Grade | TO | ODC | MDC | Reason For Pull | LOC | Inner/Outer Jets: 9.55 | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.82
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
7	5" D.P	165	108	86.71
0	Drill Pipe	Stands		0.00
0	Drill Pipe	Singles		0.00
	Kelly Down			12.49
	Total			213.00
	Weight of DC			
	Weight of String			28.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	08:45	12:00
Density	1060	1070
Funnel Viscosity	44	54
Fluid Loss		
pH		
Location Of Sample	shaker	SHAKER
Depth	148.00	160.00
PVT	32	39

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	4800	6.00
2	PARALLEL	140	135	4800	6.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
	143.00	0.20	0	WIRELINE
	181.00	0.50	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
FED SEAL - 18.14KG	11	SXS
Bentonite	20	SXS
Sawdust	60	SXS
CAUSTIC SODA - 50LB	1	SXS
Kelzan XCD	3	SXS

METRES DRILLED

From	To	D-R-C	RPM	WOB
145.00	213.00	DRILL	120	5.5

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

REDUCED PUMP SPEED

Pump #	Pressure	@	Strokes/min	@	Depth
		@		@	
		@		@	

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function test hydrill 55 seconds to close function test crown saver
8:15	15:15	7.00	2	Drill 311 mm hole from 145m to 218m with Varel tri cone Insert bit and slick rotary assembly.Minor losses at 146m 7m3
15:15	15:45	0.50	10	Accumulated time for surveys
15:45	16:00	0.25	21	Crew hand over meeting

Remarks
level 1 inspection on blocks sub swivel evevators bails derrick .
blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP

TOUR 3

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	285.00
Hrs Run Today	6.75
Cumulative Hrs Run	28.00
Entry Date	

CUTTING STRUCTURE: I1 | Grade | TO | ODC | MDC | Reason For Pull | LOC | Inner/Outer Jets: 10.18 | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.82
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
4	Drill Pipe	Stands		76.13
0	Drill Pipe	Singles		0.00
	Kelly Down			13.01
	Total			222.94
	Weight of DC			
	Weight of String			

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	17:00	18:30
Density	1040	1040
Funnel Viscosity	55	53
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	232.00	247.00
PVT	35	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	4700	6.00
2	PARALLEL	140	135	4700	6.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
	219.00	0.10	0	WIRELINE
	257.00	0.90	0	WIRELINE
	287.00	0.10	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	15	sks
KI-3908 - 20L	4	sks
SAWDUST - 7.3KG	2	sks
BARITE - 40KG	20	sks

METRES DRILLED

From	To	D-R-C	RPM	WOB
219.00	300.00	DRILL	120	10.5

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

REDUCED PUMP SPEED

Pump #	Pressure	@	Strokes/min	@	Depth
1	575	@	89	@	272.00
		@		@	
		@		@	

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	2	Drill 311 mm hole from 218m to 222m with Varel tri cone Insert bit and slick rotary assembly.
16:15	16:30	0.25	7	Rig service function hydrill 55 sec crown saver operating properly
16:30	21:15	4.75	2	Drill 311 mm hole from 222m to 280m with Varel tri cone Insert bit and slick rotary assembly.
21:15	21:30	0.25	21A	Diverter drill crew in position well secure in 90 sec
21:30	23:15	1.75	2	Drill 311 mm hole from 280m to 300m with Varel tri cone Insert bit and slick rotary assembly.
23:15	23:45	0.50	10A	Accumulated wire line surveys
23:45	24:00	0.25	5	Circulate hole clean

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S
Blew down boiler 2 times 100 litres

SAFETY

Safety Topic	MEHL	MACP
Making connections		

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130226_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 26

Licence No	Well Name	Surface Location	Prov	Lat Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	Rig Release Date Time
10343209	150	25-Feb-2013 17:00	

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager
DAVE FORSBERG	RICK YAVIS

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Sitck Diagram Posted	DF	RY
(5.) Flare Lines Staked	DF	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	DF	RY
(1.) Rig Site Health & Safety Meeting (one/crew/month)		RY
(2.) CADDC Rig Safety Inspection Checklist (one/rig/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor KBs Checked		

CADDC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1		7.50					0.25														0.25					8.00
Tour 2		7.00					0.25			0.50											0.25					8.00
Tour 3		6.75			0.25		0.25			0.50											0.25					8.00
TOTAL		21.25			0.25		0.75			1.00											0.75					24.00

Kelly Bushing: | Dg Floor:

FUEL @ 08:00 HRS

WEATHER

Rig	Boiler
195	185
Time	Temp
05:45	-20
Current Conditions: PARTLY CLOUDY	
Wind Direction: N	Wind Strength: CALM
Road Condition: POOR	

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 0:00 END TIME: 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	
Hrs Run Today	7.50
Cumulative Hrs Run	14.25
Entry Date	

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
MDC		Form-Inf-Ab	
LOC		Total Pull Jnts	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.59
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	110.40
1	Drill Pipe	Stands		18.84
0	Drill Pipe	Singles		0.00
	Kelly Down			2.18
	Total			145.00
	Weight of DC			
	Weight of String			28.00

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	06:45
Density	1110
Funnel Viscosity	54
Fluid Loss	
pH	9.5
Location Of Sample	Shaker
Depth	137.00
PVT	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	130	5200	7.50
2	PARALLEL	140	130	5200	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level one inspection on tongs,sub and overhead equitment
Blew boilers down 100L
Boiler fuel 1 185
Boiler fuel 2 200 Tony Hiemstra completed a Conoco Phillips arctic hse orientation with medic Leanne Kenning

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 8:00 END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	203.00
Hrs Run Today	7.00
Cumulative Hrs Run	21.25
Entry Date	

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
MDC		Form-Inf-Ab	
LOC		Total Pull Jnts	9.55
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.59
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	110.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
7	5" D.P	165	108	66.71
0	Drill Pipe	Stands		0.00
0	Drill Pipe	Singles		0.00
	Kelly Down			12.49
	Total			213.00
	Weight of DC			
	Weight of String			28.00

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	15:30
Density	1050
Funnel Viscosity	52
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	213.00
PVT	39

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	4800	6.00
2	PARALLEL	140	135	4800	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
level 1 inspection on blocks sub swivel evevators bails derrick .
blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP

TOUR 3

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 16:00 END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	285.00
Hrs Run Today	6.75
Cumulative Hrs Run	28.00
Entry Date	

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
MDC		Form-Inf-Ab	
LOC		Total Pull Jnts	10.18
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.59
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	110.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
4	Drill Pipe	Stands		76.13
0	Drill Pipe	Singles		0.00
	Kelly Down			13.01
	Total			222.94
	Weight of DC			
	Weight of String			

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	19:30	21:15
Density	1040	1045
Funnel Viscosity	54	58
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	264.00	280.00
PVT	38	35

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	4700	6.00
2	PARALLEL	140	135	4700	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	575	@	89	@	220.80
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S
Blew down boiler 2 times 100 litres

SAFETY

Safety Topic	MEHL	MACP
Making connections		

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130227_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 27

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Lic Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: Tony Hiemstra | Rig Release Date Time

DAILY CHECKS (OP / RM)

	OP	RM
(1.) Daily Walk Around Inspection	DP	TH
(2.) Detailed Inspection - Weekly (Using Check List)	DP	TH
(3.) H2S Signs Posted If Required	DP	TH
(4.) Well License & Slick Diagram Posted	DP	TH
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (once/week/month)		TH
(2.) CAODC Rig Safety Inspection Checklist (once/quarter/month)		
(3.) Mast Inspection before Raising or Lowering		TH
(4.) Crown Saver Checked		
(5.) Water Kills Checked		

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1						2.50	0.25														0.50				4.75	8.00
Tour 2			1.50			0.75	0.25												5.25		0.25					8.00
Tour 3			4.00		1.00	2.50	0.50																			8.00
TOTAL			5.50		1.00	5.75	1.00												5.25		0.75				4.75	24.00

Daily Benching | Dy Feet

FUEL @ 08:00 HRS: Rig 178 | Boiler 180

WEATHER: Time 05:15 | Temp -26 | Current Conditions CLEAR | Wind Direction | Wind Strength | Road Condition POOR

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	285.00
Hrs Run Today	
Cumulative Hrs Run	28.00
Entry Date	

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Number of Bearings | LOC | Total Pump Jets 10.18 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.00
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
8	Drill Pipe	Stands		153.44
0	Drill Pipe	Singles		0.00
	Kelly Down			13.01
	Total			300.25
	Weight of DC			
	Weight of String			28.00

HOLE CONDITION: Hole Drag Up / Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	03:45	04:30
Density	1030	1030
Funnel Viscosity	35	45
Fluid Loss		
pH	9	9
Location Of Sample	shaker	shaker
Depth	300.00	300.00
PVT	40	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	5000	6.00
2	PARALLEL	140	135	5000	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	64	SXS
SAWDUST - 7.3KG	18	SXS
Kelzan XCD	5	SXS
FED SEAL - 18.14KG	5	SXS

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	6.00	11	450
2	6.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test hydril 56 sec
0:15	0:30	0.25	21	Safety meeting on tripping
0:30	2:00	1.50	6M	Wiper trip from 300 m to 260m, Wash and back ream to 153m
2:00	6:45	4.75	25	Work tight hole and stuck pipe @ 153 m with full circulation
6:45	7:45	1.00	6B	Pulled loose from 153m Trip out of hole to 120m
7:45	8:00	0.25	21	Crew hand over meeting

Remarks: blow down boiler 200 l boiler 2 fuel 200cm

SAFETY

Safety Topic	MEHL	MACP
tipping		

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	285.00
Hrs Run Today	
Cumulative Hrs Run	28.00
Entry Date	

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Number of Bearings | LOC | Total Pump Jets 10.18 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.00
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
8	Drill Pipe	Stands		153.44
0	Drill Pipe	Singles		0.00
	Kelly Down			13.01
	Total			300.25
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up / Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	100	4000	7.00
2	PARALLEL	140	100	4000	2.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	35	sks
Kelzan	3	sks
Sawdust	8	sks
Caustic	1	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function hydrill 55 sec crown saver operating properly
8:15	9:00	0.75	6M	Wiper trip up to 112m work tight hole @ 112M
9:00	10:00	1.00	19A	Pick up surface jars to jar stuck pipe @112m
10:00	10:15	0.25	21	Safety meeting on surface jarring reviewed jsa#133 jarring
10:15	14:30	4.25	19A	Surface jarring @112m, Jarred free
14:30	16:00	1.50	3B	Back ream pull tight hole from 112m to 95m, Partial lost circulation (6m3)

Remarks

SAFETY

Safety Topic	MEHL	MACP
Jarring		

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	285.00
Hrs Run Today	
Cumulative Hrs Run	28.00
Entry Date	

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Number of Bearings | LOC | Total Pump Jets 10.18 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
151.00	281.00	REAM	120	2

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.00
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
8	Drill Pipe	Stands		153.84
0	Drill Pipe	Singles		0.00
	Kelly Down			13.01
	Total			300.65
	Weight of DC			
	Weight of String			28.00

HOLE CONDITION: Hole Drag Up / Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	19:30	
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	5000	2.00
2	PARALLEL	140	135	5000	2.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function hydrill 55 sec crown saver operating properly
16:15	17:30	1.25	3B	Back ream and pull tight hole from 95m to 60m, Partial lost circulation - 10-15% while circulating
17:30	18:15	0.75	6M	Wiper trip out of hole from 60m to OOH/Clean and inspect bit
18:15	19:00	0.75	6M	Run in hole 1 STD/brake down surface jars and laydown
19:00	19:15	0.25	7	Rig service function test hydril 55 sec & crown saver
19:15	20:15	1.00	5A	Build volume bring vis up to 80,clean and organize floor
20:15	21:15	1.00	6A	Run in hole to 151 m
21:15	24:00	2.75	3A	Ream & clean from 151 m to 281 m

Remarks: Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130228_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 28

Licence No	Well Name	Surface Location	Prov	Loc Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	Rig Release Date Time
10343209	150	25-Feb-2013 17:00	

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager
DAVE FORSBERG	Tony Hiemstra

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DP	TH
(1a.) Detailed Inspection - Weekly (Using Check List)	DP	TH
(2.) H2S Signs Posted If Required	DP	TH
(4.) Well Licence & Stick Diagram Posted	DP	TH
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (emphasis/month)		TH
(2.) CAODC Rig Safety Inspection Checklist (emphasis/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		TH
(5.) Motor Kills Checked		

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1		6.25	0.75				0.25			0.50											0.25					8.00
Tour 2		4.00			1.25	2.00	0.25			0.50																8.00
Tour 3		2.75			1.00	3.25	1.00																			8.00
TOTAL		13.00	0.75		2.25	5.25	1.50			1.00											0.25					24.00

Daily Mudding: | Rig Fuel:

FUEL @ 08:00 HRS

Rig	Stock
193	182
Time	Time
06:30	-20

WEATHER

Current Conditions: CLEAR | Road Conditions: | Wind Strength:

Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	387.00
Hrs Run Today	6.25
Cumulative Hrs Run	34.25
Entry Date	

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
IADC		Reason Pull	
LOC		Total Rot Hrs	11.30
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
300.00	387.00	DRILL	120	10

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.59
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
12	Drill Pipe	Stands		230.81
1	Drill Pipe	Singles		9.60

Kelly Down	13.41
Total	387.62
Weight of DC	
Weight of String	34.00

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	00:30	02:15
Density	1050	1050
Funnel Viscosity	65	68
Fluid Loss		
pH	9	9
Location Of Sample	shaker	shaker
Depth	300.00	329.00
PVT	43	42

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	130	5400	7.00
2	PARALLEL	140	130	5400	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
	326.00	0.20	0	WIRELINE
	355.00	0.90	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	8.00	1050	1040	1750

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	40	sxs
Kelzan XCD	5	sxs
SAWDUST - 7.3KG	49	sxs
FED SEAL - 18.14KG	11	sxs

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:45	0.75	3A	Ream & clean from 281 m to 300 m
0:45	1:00	0.25	7	Rig service function test hydrill 55 sec & crown saver
1:00	7:15	6.25	2	Drill 311 mm hole from 300 m to 387 m with varel tri cone insert bit & slick rotary asseembly
7:15	7:45	0.50	10	Accumulated time for surveys
7:45	8:00	0.25	21	Crew hand over meeting

Remarks

Blow down boiler 200 l

boiler # 2 fuel 197cm

SAFETY

Safety Topic	MEHL	MACP
I.R.S		

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	429.00
Hrs Run Today	4.00
Cumulative Hrs Run	38.25
Entry Date	

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
IADC		Reason Pull	
LOC		Total Rot Hrs	11.22
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
387.00	444.00	DRILL	120	14

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.59
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
15	Drill Pipe	Stands		288.21
1	Drill Pipe	Singles		9.55

Kelly Down	13.41
Total	444.97
Weight of DC	
Weight of String	

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	08:30	10:00
Density	1075	1075
Funnel Viscosity	80	80
Fluid Loss		
pH	8	
Location Of Sample	shaker	shaker
Depth	396.00	411.00
PVT	38	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	5400	
2	PARALLEL	140	135	5400	

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1149	@	97	@	396.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
	393.00	1.20	0	WIRELINE
	431.00	0.00	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAUSTIC SODA - 50LB	1	sks
FED PAC R - 22.68KG	1	sks
Sawdust	15	sks
FED SEAL - 18.14KG	5	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function hydrill 55 sec crown saver operating properly
8:15	12:15	4.00	2	Drill 311 mm hole from 387m to 444m with varel tri cone insert bit & stick rotary asseembly
12:15	12:45	0.50	10A	Accumulated wireline surveys
12:45	14:00	1.25	5	Circulate hole clean
14:00	16:00	2.00	6M	Wiper trip out of hole flow check@412m/134m

Remarks

Level 1 inspection on tongs and overhead equipment D.S

Blew down boiler 2 times 100 litres

SAFETY

Safety Topic	MEHL	MACP
IRS		

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	474.00
Hrs Run Today	2.75
Cumulative Hrs Run	41.00
Entry Date	

CUTTING STRUCTURE

TI		Gage	
TO		ODC	
IADC		Reason Pull	
LOC		Total Rot Hrs	11.56
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
444.00	474.00	DRILL	120	10

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.59
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
17	Drill Pipe	Stands		327.30
0	Drill Pipe	Singles		0.00

Kelly Down	12.90
Total	474.00
Weight of DC	
Weight of String	34.00

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	22:45
Density	1100
Funnel Viscosity	75
Fluid Loss	
pH	8
Location Of Sample	shaker
Depth	463.00
PVT	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	130	5800	3.00
2	PARALLEL	140	130	5800	3.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	8.00	1100	1080	1600

MUD MATERIALS ADDED

Product	Amount	Type
Kelzan XCD	3	sxs
Bentonite	11	sxs
SAWDUST - 7.3KG	15	sxs
FED SEAL - 18.14KG	2	sxs
CAUSTIC SODA - 50LB	1	sxs

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	17:15	1.25	6M	Wiper trip out of hole flow check@OOH
17:15	18:15	1.00	7	Rig service crown saver operating properly/change out kelly spinner/clean and prepare floor to RIH
18:15	19:30	1.25	6M	Wiper trip in the hole
19:30	20:30	1.00	5D	Pick up kelly & clean up hole @ 267 m TO 301 m
20:30	21:15	0.75	6A	Run in hole
21:15	24:00	2.75	2	Drill 311 mm hole from 447m to 474m with varel tri cone insert bit & slick rotary asseembly

Remarks

blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130228_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 02 | Day: 28

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 | 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: Tony Hiemstra | Rig Release Date Time

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — OP DF / RM TH
- (3.) Detailed Inspection - Weekly (Using Check List) — OP DF / RM TH
- (3.) H2S Signs Posted if Required — OP DF / RM TH
- (4.) Well Licence & Sick Diagram Posted — OP DF / RM TH
- (5.) Flare Lines Staked — OP / RM
- (6.) BOP Drills Performed — OP / RM
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — OP / RM
- (1.) Rig Site Health & Safety Meeting (one/crew/month) — RM TH
- (2.) CAODC Rig Safety Inspection Checklist (one/light/month) — RM
- (3.) Mast Inspection before Raising or Lowering — RM
- (4.) Crown Saver Checked — RM TH
- (5.) Motor Kills Checked — RM

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Casing	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1		6.25	0.75				0.25			0.50											0.25					8.00
HOURS Tour 2		4.00			1.25	2.00	0.25			0.50																8.00
HOURS Tour 3		2.75			1.00	3.25	1.00																			8.00
HOURS TOTAL		13.00	0.75		2.25	5.25	1.50			1.00											0.25					24.00

Daily Working | Up Hole

FUEL @ 08:00 HRS

WEATHER: Rig 193 | Baker 182 | Time 06:30 | Temp -20 | Current Conditions: CLEAR | Wind Direction | Wind Strength | Road Condition: FAIR

TOUR 1 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	387.00
Hrs Run Today	6.25
Cumulative Hrs Run	34.25
Entry Date	

CUTTING STRUCTURE

I		Gauge	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Run (hrs)	11.30
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
12	Drill Pipe	Stands		230.81
1	Drill Pipe	Singles		9.60

Kelly Down: 13.41 | Total: 387.62 | Weight of DC | Weight of String: 34.00

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	03:15	06:30
Density	1050	1050
Funnel Viscosity	78	86
Fluid Loss		
pH	9	8
Location Of Sample	shaker	shaker
Depth	339.00	371.00
PVT	40	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	130	5400	7.00
2	PARALLEL	140	130	5400	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	8.00	1050	1040	1750

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blow down boiler 200 l
boiler # 2 fuel 197cm

SAFETY

Safety Topic	MEHL	MACP
I.R.S		

TOUR 2 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	429.00
Hrs Run Today	4.00
Cumulative Hrs Run	38.25
Entry Date	

CUTTING STRUCTURE

I		Gauge	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Run (hrs)	11.22
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
15	Drill Pipe	Stands		288.21
1	Drill Pipe	Singles		9.55

Kelly Down: 13.41 | Total: 444.97 | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	12:00	
Density	1075	
Funnel Viscosity	80	
Fluid Loss		
pH		
Location Of Sample	shaker	
Depth	435.00	
PVT	38	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	135	5400	
2	PARALLEL	140	135	5400	

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1149	@	97	@	396.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level 1 inspection on tongs and overhead equipment D.S
Blew down boiler 2 times 100 litres

SAFETY

Safety Topic	MEHL	MACP
IRS		

TOUR 3 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	474.00
Hrs Run Today	2.75
Cumulative Hrs Run	41.00
Entry Date	

CUTTING STRUCTURE

I		Gauge	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Run (hrs)	11.56
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
17	Drill Pipe	Stands		327.30
0	Drill Pipe	Singles		0.00

Kelly Down: 12.90 | Total: 474.00 | Weight of DC | Weight of String: 34.00

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	130	5800	3.00
2	PARALLEL	140	130	5800	3.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	8.00	1100	1080	1600

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130301_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 01

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location: | Prov: NT | Lic Type: | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 | 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: Tony Hiemstra | Rig Release Date Time:

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	TH
(2.) Detailed Inspection - Weekly (Using Check List)	DF	TH
(3.) H2S Signs Posted if Required	DF	TH
(4.) Well Licence & Site Diagram Posted	DF	TH
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (once/crew/month)		TN
(2.) CAODC Rig Safety Inspection Checklist (once/month)		
(3.) Hard Inspection before Raising or Lowering		TN
(4.) Crown Saver Checked		TN
(5.) Motor Kills Checked		

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1		6.00			0.75		0.25			0.75											0.25					8.00
Tour 2		5.75			1.50		0.25			0.50																8.00
Tour 3		1.75			5.00	0.75	0.25														0.25					8.00
TOTAL		13.50			7.25	0.75	0.75			1.25											0.50					24.00

Kelly Bushing: | Op Fuel:

FUEL @ 08:00 HRS

Rig: 175 | Water: 183

Time: 06:30 | Temp: -24

WEATHER

Current Conditions: PARTLY CLOUDY | Wind Direction: | Wind Strength:

Road Conditions: FAIR

TOUR: 1 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	517.00
Hrs Run Today	6.00
Cumulative Hrs Run	47.00
Entry Date	

CUTTING STRUCTURE: II | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Rot Hrs | BRG | 11.00

METRES DRILLED

From	To	D-R-C	RPM	WOB
474.00	532.00	DRILL	120	10

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	113.00
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
20	Drill Pipe	Stands		385.57
1	Drill Pipe	Singles		9.63

Kelly Down: 3.00 | Total: 532.00 | Weight of DC: | Weight of String: 38.00

HOLE CONDITION

Hole Drag: Up 0 Down 0 | Torque At Bottom: | Fill On Bottom:

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other:

Time	01:00	03:00
Density	1100	1100
Funnel Viscosity	79	71
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	481.00	498.00
PVT	39	39

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	CONFINED	140	130	6400	7.00
2	CONFINED	140	130	6400	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
	470.00	1.30	0	WIRELINE
	509.00	0.00	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	8.00	1100	1080	1600

MUD MATERIALS ADDED

Product	Amount	Type
SAWDUST - 7.3KG	42	sxs
Bentonite	32	sxs
Kelzan XCD	5	sxs

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test hydril 55 sec & crown saver
0:15	6:15	6.00	2	Drill 311 mm hole from 474 m to 532 m with varel tri cone insert bit & slick rotary asseembly,Pumping at 2.6m3/min, WOB 10-12dan RPM 115,Average ROP 9.6m/hr
6:15	7:00	0.75	5E	Mix up pill due to lost circulation
7:00	7:45	0.75	10	Accumulated time for surveys
7:45	8:00	0.25	21	Crew hand over meeting

Remarks
Blow down boiler 200 l
boiler #2 fuel 180 cm

SAFETY

Safety Topic	MEHL	MACP

TOUR: 2 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	569.00
Hrs Run Today	5.75
Cumulative Hrs Run	52.75
Entry Date	

CUTTING STRUCTURE: II | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Rot Hrs | BRG | 10.79

METRES DRILLED

From	To	D-R-C	RPM	WOB
532.00	584.00	DRILL	120	17

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	113.00
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
23	Drill Pipe	Stands		443.39
0	Drill Pipe	Singles		0.00

Kelly Down: 7.00 | Total: 584.19 | Weight of DC: | Weight of String: 38.00

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom: | Fill On Bottom:

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other:

Time	10:00	11:15
Density	1080	1095
Funnel Viscosity	75	98
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	535.00	547.00
PVT	40	37

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	115	5800	6.00
2	PARALLEL	140	115	5800	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
	547.00	0.10	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	71	sks
Kelzan	7	sks
Sawdust	53	sks
CELLOFLAKE 3/8-25LB	14	sks
FED SEAL - 18.14KG	2	sks
CAUSTIC SODA - 50LB	2	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function hydrill 55 sec crown saver operating properly
8:15	9:45	1.50	5A	Build volume mix up LCM pill work string @532m/Safety meeting on leveling substructure reviewed JSA#145
9:45	15:30	5.75	2	Drill 311 mm hole from 532m to 584m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min, WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr, Minor losses 5m3/hr
15:30	16:00	0.50	10A	Accumilated wire line survey

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S.
Blew down boilers 2 times 100 litres

SAFETY

Safety Topic	MEHL	MACP
Level sub		

TOUR: 3 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	601.00
Depth In (m)	15.00
Total Drilled (m)	586.00
Hrs Run Today	1.75
Cumulative Hrs Run	54.50
Entry Date	

CUTTING STRUCTURE: II | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Rot Hrs | BRG | 10.75

METRES DRILLED

From	To	D-R-C	RPM	WOB
584.00	601.00	DRILL	120	17

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	113.00
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
24	Drill Pipe	Stands		462.73
0	Drill Pipe	Singles		0.00

Kelly Down: 4.47 | Total: 601.00 | Weight of DC: | Weight of String: 38.00

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom: | Fill On Bottom:

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other:

Time	17:30	22:45
Density	1115	1100
Funnel Viscosity	110	70
Fluid Loss		
pH		
Location Of Sample	shaker	tanks
Depth	596.00	609.00
PVT	30	45

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	115	5800	3.00
2	PARALLEL	140	115	5800	3.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
SAWDUST - 7.3KG	36	sxs
Bentonite	26	sxs
Kelzan XCD	4	sxs
Kwickseal	4	sxs
CELLOFLAKE 3/8-25LB	9	sxs
BARITE - 40KG	25	sxs

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:30	0.50	2	Drill 311 mm hole from 584m to 590m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min, WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr,Minor losses 5m3/hr
16:30	16:45	0.25	7	Rig service function hydrill 55 sec crown saver operating properly
16:45	18:00	1.25	2	Drill 311 mm hole from 584m to 601m with varel tri cone insert bit & slick rotary asseembly,Pumping at 1.75m3/min, WOB 8 to 12dan,50 to 115rpm,ROP 9m/hr. Minor losses 5m3/hr
18:00	19:00	1.00	5	Circulate hole clean for wiper trip pumping at 2.6m3/min, with losses 10m3/hr,& mix & build volume
19:00	19:15	0.25	21	Safety meeting with Conoco safety coach Jack Brasil
19:15	23:15	4.00	5A	Build volume & circ
23:15	24:00	0.75	6M	Wiper trip flow check @ 596 m & 557 m

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130301_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 01

Licence No	Well Name	Surface Location	Prov	Lsd	Lsd Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45	

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time
10343209	150	25-Feb-2013 17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	Tony Hiemstra	

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	TH
(1.) Detailed Inspection - Weekly (Using Check List)	DF	TH
(2.) H2S Signs Posted if Required	DF	TH
(4.) Well Licence & Slick Diagram Posted	DF	TH
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (once/crew/month)		TH
(2.) CADDC Rig Safety Inspection Checklist (once/rig/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		TH
(5.) Motor Kills Checked		

CADDC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1		6.00			0.75		0.25			0.75											0.25					8.00
Tour 2		5.75			1.50		0.25			0.50																8.00
Tour 3		1.75			5.00	0.75	0.25														0.25					8.00
TOTAL		13.50			7.25	0.75	0.75			1.25											0.50					24.00

Kelly Bushing | Dp Flnd

FUEL @ 08:00 HRS

WEATHER: Rig 175 | Baro 183 | Time 06:30 | Temp -24 | Current Conditions: PARTLY CLOUDY | Wind Direction | Wind Strength | Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	517.00
Hrs Run Today	6.00
Cumulative Hrs Run	47.00
Entry Date	

CUTTING STRUCTURE: TI | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Pump Jets 11.00 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.66
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
20	Drill Pipe	Stands		385.57
1	Drill Pipe	Singles		9.63
	Kelly Down			3.00
	Total			532.00
	Weight of DC			
	Weight of String			38.00

HOLE CONDITION: Hole Drag Up 0 Down 0 | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	05:00
Density	1100
Funnel Viscosity	73
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	520.00
PVT	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1		140	130	6400	7.00
2		140	130	6400	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	8.00	1100	1080	1600

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blow down boiler 200 l
boiler #2 fuel 180 cm

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	
Depth In (m)	15.00
Total Drilled (m)	569.00
Hrs Run Today	5.75
Cumulative Hrs Run	52.75
Entry Date	

CUTTING STRUCTURE: TI | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Pump Jets 10.79 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.66
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
23	Drill Pipe	Stands		443.39
0	Drill Pipe	Singles		0.00
	Kelly Down			7.00
	Total			584.19
	Weight of DC			
	Weight of String			38.00

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	12:15	13:45
Density	1100	1100
Funnel Viscosity	84	92
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	556.00	565.00
PVT	36	33

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	115	5800	6.00
2	PARALLEL	140	115	5800	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S.
Blew down boilers 2 times 100 litres

SAFETY

Safety Topic	MEHL	MACP
Level sub		

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 / 15.9 12.7
Depth Out (m)	601.00
Depth In (m)	15.00
Total Drilled (m)	586.00
Hrs Run Today	1.75
Cumulative Hrs Run	54.50
Entry Date	

CUTTING STRUCTURE: TI | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Pump Jets 10.75 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	111.66
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
24	Drill Pipe	Stands		462.73
0	Drill Pipe	Singles		0.00
	Kelly Down			4.47
	Total			601.00
	Weight of DC			
	Weight of String			38.00

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	115	5800	3.00
2	PARALLEL	140	115	5800	3.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130302_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 02

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 | 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: Tony Hiemstra | Rig Release Date Time

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	TH
(2.) Detailed Inspection - Weekly (Using Check List)	DF	TH
(3.) H2S Signs Posted If Required	DF	TH
(4.) Well Licence & Stick Diagram Posted	DF	TH
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (once/week/month)		TH
(2.) CAODC Rig Safety Inspection Checklist (once/fortnight/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		TH
(5.) Motor Kills Checked		

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1			1.50		2.00	4.00	0.25														0.25					8.00
Tour 2						0.75	0.25				4.75	1.75									0.50					8.00
Tour 3					1.00		0.25					6.75														8.00
TOTAL			1.50		3.00	4.75	0.75				4.75	8.50									0.75					24.00

WEATHER

Kelly Bushing | Up Fuel: FUEL @ 08:00 HRS

Wt: 180 | Visc: 188

Time: 06:30 | Temp: -20

General Conditions: PARTLY CLOUDY

Wind Direction | Wind Strength

Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1A
Size	311
IADC Code	4 1 7
Manufacturer	VAREL
Type	HE04JMRSV
Serial No	1284043
Jets	19 19 15.9 12.7
Depth Out (m)	601.00
Depth In (m)	15.00
Total Drilled (m)	586.00
Hrs Run Today	
Cumulative Hrs Run	54.50
Entry Date	

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Pressure Loss	
LOC		Total Flow (gpm)	10.75
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.28
1	Bit sub	232	70	0.93
2	9" D.C	233	71	18.50
1	BELL SUB	130	59	0.66
1	X/O 4" H-90	162	62	0.31
12	6" D.C	160	60	113.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
24	Drill Pipe	Stands		462.73
0	Drill Pipe	Singles		0.00

Kelly Down: 3.47 | Total: 600.00 | Weight of DC | Weight of String: 38.00

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	03:45
Density	1100
Funnel Viscosity	60
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	609.00
PVT	50

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	110	4700	3.00
2	PARALLEL	140	110	4700	3.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Drection	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	4	SXS
Kelzan XCD	1	SXS
Cal Carb 0	50	SXS
SAWDUST - 7.3KG	5	SXS
CELLOFLAKE 3/8-25LB	2	SXS

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	430
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:45	0.75	6M	Wiper trip to flow check @ 157 m
0:45	1:00	0.25	7	Rig service function test hydril 56 sec & crown saver
1:00	1:45	0.75	6A	Run in hole to 469 m hit bridge @ 469 m
1:45	3:00	1.25	3A	Ream & clean from 469 m to 479 m 540 m
3:00	3:15	0.25	6A	Run in hole
3:15	3:30	0.25	3A	Ream & clean from 585 m to 601 m
3:30	5:30	2.00	5D	Circulate & condition hole
5:30	7:45	2.25	6B	Pull out of hole to log flow checks @ 599 m 556 m
7:45	8:00	0.25	21	Crew hand over meeting

Remarks

Blow down boiler 200 l mud on trip calc 1.97 m3 meas 2.27 m3 diff + .30 m3

boiler 2 fuel 163 cm

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Pressure Loss	
LOC		Total Flow (gpm)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
12	6" D.C	160	60	113.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
24	Drill Pipe	Stands		462.73
0	Drill Pipe	Singles		0.00

Kelly Down: 12.87 | Total: 588.72 | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	40	0	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Drection	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	440
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:45	0.75	6B	Trip out of hole lay down 9 inc DC flow check @OOH reviewed jsa#159 Lay down DC
8:45	9:00	0.25	7	Rig service crown saver operating properly
9:00	9:15	0.25	21	Safety meeting with Schlumberger wire line reviewed jsa#151 rig up to and log well
9:15	14:00	4.75	11A	Wire line log run #1 with Schlumberger on bottom @10:45 depth 601.5m tools ran ATI,DSI,GPIT,PPC NEB follow up inspection enviromental and regulatory
14:00	14:15	0.25	21	Safety meeting with hallmark tong hand reviewed jsa#97 install shoe and float and run csg
14:15	16:00	1.75	12A	Rig up to run casing

Remarks

Level 1 inspection on tongs,slips and overhead equipment D.S

Blew down boilers 2 times 100 litres

Trip calc 4.55m3 meas 7.34m3 diff 2.79m3

SAFETY

Safety Topic	MEHL	MACP
wire line logs		

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Pressure Loss	
LOC		Total Flow (gpm)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
	Drill Pipe	Stands		
	Drill Pipe	Singles		

Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	23:30
Density	1100
Funnel Viscosity	63
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	601.00
PVT	35

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	125	2200	2.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Drection	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	580

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service
16:15	23:00	6.75	12B	Ran 244.5mm 59.53kg/m J-55 casing as follows, guide shoe,float collar,1 joint casing,float collar,46 joints casing, Total length 598.86m, Landed @ 598m
23:00	24:00	1.00	5D	Circulate casing, condition hole.

Remarks

blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
run casing		

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130303_1C | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 03

License No: EL470	Well Name: COPRC MIRROR LAKE N-20 65-00 126-45	Surface Location	Prov: NT	Lic Type	Unique Well Id: N-2065-00126-45
Operator: Conoco Canada	Contractor: Beaver Drilling Ltd.		Rig No: 2	Well Type: VERT	Re-Entry: ☐
Operator's AFE: 10343209	Contractor's Job No: 150		Spud Date Time: 25-Feb-2013	17:00	
Signature Of Operator's Representative: DAVE FORSBERG	Signature Of Contractor's Rig Manager: Tony Hiemstra		Rig Release Date Time		

DAILY CHECKS (OP / RM)

	OP	RM
(1.) Daily Walk Around Inspection	OP	TH
(1.) Detailed Inspection - Weekly (Using Check List)	OP	TH
(3.) H2S Signs Posted if Required	OP	TH
(4.) Well Licence & Stick Diagram Posted	OP	TH
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (once/month)		TH
(2.) CADDC Rig Safety Inspection Checklist (once/month)		
(3.) Mast Inspection before Raising or Lowering		TH
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

CADDC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1					1.00		0.25					2.50	4.00								0.25					8.00
Tour 2							0.25							6.25											1.50	8.00
Tour 3							0.25							4.00	3.50						0.25					8.00
TOTAL					1.00		0.75					2.50	4.00	10.25	3.50						0.50				1.50	24.00

Kelly Bushing: | Drill Floor:

FUEL @ 08:00 HRS

WEATHER: Rig: 180 | Derrick: 200 | Time: 06:30 | Tong: -18 | Current Conditions: OVERCAST | Wind Direction: | Wind Strength: | Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Gage | TD | ODC | MDC | Reason Pulled | LOC | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag: Up / Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test crown saver
0:15	1:15	1.00	5D	Circ casing
1:15	1:30	0.25	21	Safety meeting on cemeting
1:30	4:00	2.50	12	Cement casing from 5m to 601m with 35 Tonne (33.90m3) Thixtropic D804A-P cement @1740kg/m3 with 2% CaCL2, 0.2% antifoam, Bumped plug and pressure tested casing to 11,500 kpa, Recieved 10m3 good cement slurry returns @ surface, Annulus remained static after job complete
4:00	8:00	4.00	13	Wait on cement

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Gage | TD | ODC | MDC | Reason Pulled | LOC | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag: Up / Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service
8:15	12:30	4.25	14C	Nipple down diverter reviewed jsa#113 nipple down bop
12:30	14:00	1.50	25	Clean and prepare casing screw on casing bowl
14:00	16:00	2.00	14A	Nipple up BOP reviewed jsa#109 nipple up BOP

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S
blew down boilers 100 litres

SAFETY

Safety Topic	MEHL	MACP

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Data	

CUTTING STRUCTURE: I | Gage | TD | ODC | MDC | Reason Pulled | LOC | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag: Up / Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service
16:15	20:15	4.00	14A	Nipple up BOP
20:15	20:30	0.25	21	Safety meeting j.s.a # 111
20:30	24:00	3.50	15A	Pressure test BOP system,Pressure test all Manifold valves 1400kpa Low and 20,000kpa high min. each,Pipe rams,Choke line, Kill line,Kill line Check valve and HCR 1400kpa low and 20,000kpa high 10 min. each

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
pressure test		

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130304_1D | Vendor Software Version: RMS 2013.2.6.25103 | Year: 2013 | Month: 03 | Day: 04

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: Tony Hiemstra | Rig Release Date Time:

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	TH
(2.) Detailed Inspection - Weekly (Using Check List)	DF	TH
(3.) H2S Signs Posted if Required	DF	TH
(4.) Well License & Sour Diagram Posted	DF	TH
(5.) Flare Lines Staked	DF	TH
(6.) BOP Drills Performed	DF	TH
(7.) Visually Inspected BOP Re-Flare Lines & Degasser Lines	DF	TH
(1.) Rig Site Health & Safety Meeting (one/crew/month)		TH
(2.) CAODC Rig Safety Inspection Checklist (one/rig/month)		
(3.) Mast Inspection before Raising or Lowering		TH
(4.) Crown Saver Checked		TH
(5.) Motor Kills Checked		TH

CAODC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Wash	25 Other	TOTAL
Tour 1							0.25		0.75						3.25					2.75	1.00					8.00
Tour 2		3.25			0.25	3.25	0.25								0.50						0.50					8.00
Tour 3		5.75					1.00			0.50										0.50	0.25					8.00
TOTAL		9.00			0.25	3.25	1.50		0.75	0.50					3.75					3.25	1.75					24.00

Daily Sampling: Dry Feed: FUEL @ 08:00 HRS

WEATHER: Temp 190 | Water 190 | Time 05:45 | Temp -20 | Visual Conditions: PARTLY CLOUDY | Wind Direction | Wind Strength: CALM | Road Condition: FAIR

TOUR 1 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: In | Out | TO | ODC | MDC | Reason Pulled | LOC | Total Rotating Hrs | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.88
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
24	Drill Pipe Stands			462.73
0	Drill Pipe Singles			0.00
	Kelly Down			0.00
	Total			623.01
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	3:15	3.25	15A	Continue to pressure test BOPs equipment pressure test Anular 1400kpa low and 17500kpa high 10 min. each,Stabbing,Inside BOP and Upper Kelly Cock 1400kpa low and 20,000kpa high 10 min. each,Blind ram ,Casing Bowl and Casing 1400kpa Low and 19000kpa high 10 min. each Function test Accunulator, Starting pressure 19500kpa function Anular,Pipe rams and HCR remaining pressure 10750kpa,Recharged 3 minutes.
3:15	3:30	0.25	7	Rig service function test crown saver & motor kills
3:30	4:15	0.75	9A	Slip & cut 30 m
4:15	4:30	0.25	21F	Rig safety inspection
4:30	4:45	0.25	21C	Held Man down drill
4:45	5:00	0.25	21A	Held BOP drill well secured 85 seconds
5:00	5:15	0.25	21	Safety meeting picking up directional tools
5:15	8:00	2.75	20D	Pick up Directional tools

Remarks: Blow down boiler 200l

SAFETY

Safety Topic	MEHL	MACP
MAKE UP DIR TOOLS		

TOUR 2 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	15.00
Hrs Run Today	2.25
Cumulative Hrs Run	2.25
Entry Date	

CUTTING STRUCTURE: In | Out | TO | ODC | MDC | Reason Pulled | LOC | Total Rotating Hrs: 6.67 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
601.00	616.00	DRILL	50	6

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.88
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
23	Drill Pipe Stands			443.39
0	Drill Pipe Singles			0.00
	Kelly Down			12.77
	Total			616.44
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	13:15
Density	960
Funnel Viscosity	59
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	593.00
PVT	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	11400	4.00
2	PARALLEL	140	95	11400	4.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service crown saver operating properly
8:15	11:30	3.25	6A	Trip in the hole to 576m
11:30	11:45	0.25	21A	Bop drill crew in position well secure in 90 sec
11:45	12:00	0.25	21A	Man down drill
12:00	13:00	1.00	2C	Drill cement float and shoe from 581m to 601m tag cement @581m
13:00	14:45	1.75	2	Drill 222mm hole from 601m to 611m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 5.7m/hr.
14:45	15:00	0.25	5	Circulate bottoms up/safety meeting w/peregrine pressure tester
15:00	15:30	0.50	15A	Preform Formation Integrity Test at 611m, Fluid density 950kg/m3,Surface applied of 7530kpa,Total pressure 11,484kpa ,Formation gradient 18.80kpa/m
15:30	16:00	0.50	2	Drill 222mm hole from 611m to 616m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 5m/hr.

Remarks: Level 1 inspection on tong,sub and overhead equipment D.S
Blew down boiler 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
		5700

TOUR 3 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	131.00
Hrs Run Today	5.75
Cumulative Hrs Run	8.00
Entry Date	

CUTTING STRUCTURE: In | Out | TO | ODC | MDC | Reason Pulled | LOC | Total Rotating Hrs: 16.38 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
616.00	732.00	DRILL	50	6

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.88
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
29	Drill Pipe Stands			558.99
0	Drill Pipe Singles			0.00
	Kelly Down			12.77
	Total			732.04
	Weight of DC			
	Weight of String			43.00

HOLE CONDITION: Hole Drag Up 0 | Down 0 | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	20:45	23:45
Density	990	990
Funnel Viscosity	63	62
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	674.00	729.00
PVT	40	45

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	90	8200	6.00
2	PARALLEL	140	90	8200	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
18:00	621.34	1.89	26.41	DIRECTIONAL
20:30	640.42	1.49	22.98	DIRECTIONAL
20:45	660.05	1.49	23.29	DIRECTIONAL
21:45	679.36	1.58	22.41	DIRECTIONAL
23:00	698.75	2.02	19.42	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	40	sxs
VERSAMUL - 208LT	2	drm
OPTISEAL IV 25KG	5	sxs
VERSTROL M - 22KG	5	sxs

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	10.5	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:30	0.50	20E	Trouble shoot mwd tool
16:30	16:45	0.25	2	Drill 222mm hole from 616m to 626m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 40m/hr.
16:45	17:00	0.25	7	Rig service function hydrill 13 sec crown saver operating properly
17:00	18:15	1.25	2	Drill 222mm hole from 626m to 643m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 13.2m/hr.
18:15	19:00	0.75	7B	Repair rad hose on #1 pump motor
19:00	19:15	0.25	21	Crew change safety meeting
19:15	23:30	4.25	2	Drill 222mm hole from 643m to 732m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	24:00	0.50	10	Accumulated time for surveys

Remarks: Motor kills on loader operating properly D.C

SAFETY

Safety Topic	MEHL	MACP
		5700

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130305_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 05

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Pool: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: MIKE HOBMAIER | Signature Of Contractor's Rig Manager: Tony Hiemstra | Rig Release Date Time

DAILY CHECKS (OP / RM)

(1.) Daily Walk Around Inspection — MH / RY
(2.) Detailed Inspection - Weekly (Using Check List) — MH / RY
(3.) H2S Signs Posted if Required — MH / RY
(4.) Well Licence & Stick Diagram Posted — MH / RY
(5.) Flare Lines Staked — MH / RY
(6.) BOP Drills Performed — MH / RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — MH / RY
(1.) Rig Site Health & Safety Meeting (once/week/month) — RY
(2.) CAODC Rig Safety Inspection Checklist (once/month) — RY
(3.) Hoist Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Wash	25 Other	TOTAL
HOURS Tour 1		7.00					0.25			0.50											0.25					8.00
Tour 2		5.75					0.25													0.50	0.50				1.00	8.00
Tour 3		6.75					0.25			0.25											0.75					8.00
TOTAL		19.50					0.75			0.75										0.50	1.50				1.00	24.00

Kelly Bushing | Dry Fuel

FUEL @ 08:00 HRS

Rig: 182 | Boiler: 182

WEATHER: Time: 05:30 | Temp: -24 | Current Conditions: LIGHT SNOW | Wind Direction: E | Wind Velocity: UP TO 19 KM/H | Wind Condition: FAIR

TOUR: 1 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	246.00
Hrs Run Today	7.00
Cumulative Hrs Run	15.00
Entry Date	

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
35	Drill Pipe	Stands		674.75
0	Drill Pipe	Singles		0.00
	Kelly Down			12.77
	Total			847.80
	Weight of DC			
	Weight of String			47.00

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other ☐

Time	02:45	06:30
Density	990	990
Funnel Viscosity	62	60
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	770.00	828.00
PVT	43	46

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	90	9300	7.00
2	PARALLEL	140	90	9300	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2654	@	80	@	732.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:15	717.69	2.20	21.71	DIRECTIONAL
02:30	737.87	2.59	18.5	DIRECTIONAL
03:00	756.53	1.80	11.6	DIRECTIONAL
03:00	756.53	1.80	11.6	DIRECTIONAL
04:15	775.49	1.89	7.99	DIRECTIONAL
05:15	795.33	2.20	12.61	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test pipe ram's 3 sec & crown saver
0:15	7:15	7.00	2	Drill 222mm hole from 732 m to 847m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
7:15	7:45	0.50	10	Accumulated time for surveys
7:45	8:00	0.25	21	Crew hand over meeting

Remarks
Blow DOWN BOILER 200 L
boiler #2 fuel 192 cm

SAFETY

Safety Topic	MEHL	MACP
Making connections		5500

CUTTING STRUCTURE

II		Gage	
TO		ODC	
MDC		Pull Diff. (lbs)	
LOC		Total Pull (lbs)	16.40
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
732.00	847.00	DRILL	55	4

HOLE CONDITION

Hole Drag: Up 0 Down 0
Torque At Bottom:
Fill On Bottom:

TOUR: 2 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	352.00
Hrs Run Today	5.75
Cumulative Hrs Run	20.75
Entry Date	

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
40	Drill Pipe	Stands		771.06
1	Drill Pipe	Singles		9.64
	Kelly Down			12.77
	Total			953.75
	Weight of DC			
	Weight of String			

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	10:30	14:45
Density	985	985
Funnel Viscosity	62	62
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	883.00	936.00
PVT	42	45

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	10000	7.00
2	PARALLEL	140	93	10000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2047	@	66	@	858.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:30	852.78	0.62	8.08	DIRECTIONAL
10:45	872.25	0.62	112.89	DIRECTIONAL
11:45	891.44	1.19	125.5	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	10	sks
VERSTROL M - 22KG	5	sks
OPTISEAL IV 25KG	5	sks
VERSACOAT HF - 208LT	1	bbl
VERSAMUL - 208LT	1	bbl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function test hydril 13 sec crown saver operating properly
8:15	12:30	4.25	2	Drill 222mm hole from 847m to 915m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
12:30	13:30	1.00	25	Trouble shoot MWD tool for gamma ray
13:30	14:30	1.00	2	Drill 222mm hole from 915m to 934m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
14:30	14:45	0.25	21A	Bop drill crew in position well secure in 90 sec
14:45	15:15	0.50	2	Drill 222mm hole from 934m953mto with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:15	15:45	0.50	20A	Accumulated directional surveys
15:45	16:00	0.25	21	Crew change safety meetings

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S
Blew down boiler 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
making connections		5500

CUTTING STRUCTURE

II		Gage	
TO		ODC	
MDC		Pull Diff. (lbs)	
LOC		Total Pull (lbs)	16.98
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
847.00	953.00	DRILL	60	4

HOLE CONDITION

Hole Drag: Up Down
Torque At Bottom:
Fill On Bottom:

TOUR: 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	457.00
Hrs Run Today	
Cumulative Hrs Run	20.75
Entry Date	

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
46	Drill Pipe	Stands		885.83
0	Drill Pipe	Singles		0.00
	Kelly Down			12.77
	Total			1058.88
	Weight of DC			
	Weight of String			

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	16:30	18:30
Density	975	975
Funnel Viscosity	62	62
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	955.00	971.00
PVT	44	42

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	10000	7.00
2	PARALLEL	140	95	10000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2321	@	69	@	953.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
16:30	938.56	1.71	98.92	DIRECTIONAL
17:30	958.42	1.71	96.9	DIRECTIONAL
18:45	977.66	2.11	85.6	DIRECTIONAL
20:15	996.46	2.20	82.48	DIRECTIONAL
21:30	1015.67	2.29	86.09	DIRECTIONAL
22:15	1024.91	2.11	85.51	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	7	sks
VERSTROL M - 22KG	3	sks
OPTISEAL IV 25KG	3	sks
VERSAMUL - 208LT	1	bbl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	11	460

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function test pipe rams 4 seconds to close function test crown saver
16:15	18:00	1.75	2	Drill 222mm hole from 953m982m to with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 26m/hr.
18:00	18:15	0.25	21A	BOP drill well secure in 90 seconds crew in positions
18:15	18:30	0.25	21	Man down drill crew walked through rescue routes
18:30	23:30	5.00	2	Drill 222mm hole from 982m 1058m to with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	23:45	0.25	10	Accumulated survey time
23:45	24:00	0.25	21	Crew change safety meeting

Remarks
Level one inspection on tongs sub and all overhead equitment mh
Blew down boilers 2 times 200L

SAFETY

Safety Topic	MEHL	MACP
BOP drill		5500

CUTTING STRUCTURE

II		Gage	
TO		ODC	
MDC		Pull Diff. (lbs)	
LOC		Total Pull (lbs)	22.02
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
953.00	1034.00	DRILL	60	5

HOLE CONDITION

Hole Drag: Up Down
Torque At Bottom:
Fill On Bottom:

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130305_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 05

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: MIKE HOBMAIER | Signature Of Contractor's Rig Manager: Tony Hiemstra | Rig Release Date Time

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — MH / RY
- (2.) Detailed Inspection - Weekly (Using Check List) — MH / RY
- (3.) H2S Signs Posted if Required — MH / RY
- (4.) Well Licence & Sick Diagram Posted — MH / RY
- (5.) Flare Lines Staked — MH / RY
- (6.) BOP Drills Performed — MH / RY
- (7.) Visually Inspected BOP's-Flare Lines & Degasser Lines — MH / RY
- (1.) Rig Site Health & Safety Meeting (once/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (once/month) — RY
- (3.) Mast Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked — RY

CAODC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1		7.00					0.25			0.50											0.25					8.00
Tour 2		5.75					0.25													0.50	0.50				1.00	8.00
Tour 3		6.75					0.25			0.25											0.75					8.00
TOTAL		19.50					0.75			0.75										0.50	1.50				1.00	24.00

FUEL @ 08:00 HRS

Rig: 182 | Meter: 182 | Time: 05:30 | Time: 24 | Surface Conditions: LIGHT SNOW | Wind Direction: E | Wind Strength: UP TO 19 KM/H | Road Conditions: FAIR

WEATHER

TOUR 1 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	246.00
Hrs Run Today	7.00
Cumulative Hrs Run	15.00
Entry Date	

CUTTING STRUCTURE: TI | Grade | TO | ODC | NDC | Pulled-(pt) | LOC | Total Run (m) 16.40 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
35	Drill Pipe	Stands		674.75
0	Drill Pipe	Singles		0.00

Kelly Down: 12.77 | Total: 847.80 | Weight of DC | Weight of String: 47.00

HOLE CONDITION: Hole Drag Up 0 Down 0 | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other ☐

Time	07:30
Density	985
Funnel Viscosity	62
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	847.00
PVT	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	90	9300	7.00
2	PARALLEL	140	90	9300	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2654	@	80	@	732.00
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
05:45	804.51	1.58	7.2	DIRECTIONAL
06:30	814.26	1.32	9.4	

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blow DOWN BOILER 200 L
boiler #2 fuel 192 cm

SAFETY

Safety Topic	MEHL	MACP
Making connections		5500

TOUR 2 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	352.00
Hrs Run Today	5.75
Cumulative Hrs Run	20.75
Entry Date	

CUTTING STRUCTURE: TI | Grade | TO | ODC | NDC | Pulled-(pt) | LOC | Total Run (m) 16.96 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
40	Drill Pipe	Stands		771.06
1	Drill Pipe	Singles		9.64

Kelly Down: 12.77 | Total: 953.75 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	10000	7.00
2	PARALLEL	140	93	10000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2047	@	66	@	858.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S
Blew down boiler 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
making connections		5500

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	457.00
Hrs Run Today	
Cumulative Hrs Run	20.75
Entry Date	

CUTTING STRUCTURE: TI | Grade | TO | ODC | NDC | Pulled-(pt) | LOC | Total Run (m) 22.02 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	160	60	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
46	Drill Pipe	Stands		885.83
0	Drill Pipe	Singles		0.00

Kelly Down: 12.77 | Total: 1058.88 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	20:00	22:30
Density	975	975
Funnel Viscosity	62	61
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	1005.00	1041.00
PVT	39	43

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	10000	7.00
2	PARALLEL	140	95	10000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2321	@	69	@	853.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
	1034.96	2.50	87.81	DIRECTIONAL
	1044.46	2.20	99.71	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level one inspection on tongs sub and all overhead equitment mh
Blew down boilers 2 times 200L

SAFETY

Safety Topic	MEHL	MACP
BOP drill		5500

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130306_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 06

Licence No: EL470	Well Name: COPRC MIRROR LAKE N-20 65-00 126-45	Surface Location	
Prov: NT	Lsd Type	Unique Well Id: N-2065-00126-45	
Operator: Conoco Canada	Contractor: Beaver Drilling Ltd.	Rig No: 2	Well Type: VERT	Re-Entry: ☐
Operator's AFE: 10343209	Contractor's Job No: 150	Spud Date Time: 25-Feb-2013 17:00	
Signature Of Operator's Representative: MIKE HOBMAIER	Signature Of Contractor's Rig Manager: RICK YAVIS	Rig Release Date Time	

DAILY CHECKS (OP / RM)

(1.) Daily Walk Around Inspection — MH / RY
(2.) Detailed Inspection - Weekly (Using Check List) —
(3.) H2S Signs Posted If Required —
(4.) Well Licence & Stack Diagram Posted — MH / RY
(5.) Flare Lines Staked — MH / RY
(6.) BOP Drills Performed —
(7.) Visually Inspected BOP's, Flare Lines & Degasser Lines — MH / RY
(1.) Rig Site Health & Safety Meeting (once/month) — RY
(2.) CAODC Rig Safety Inspection Checklist (once/fortnight) —
(3.) Most Inspection before Rotating or Lowering —
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked —

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1		7.25					0.25													0.25	0.25					8.00
Tour 2		7.25					0.25			0.50																8.00
Tour 3		7.00					0.25													0.50	0.25					8.00
TOTAL		21.50					0.75			0.50										0.75	0.50					24.00

Daily Mud Wt/Vis: — | Op Fluid: —

FUEL @ 08:00 HRS

WEATHER: Rig 170 | Base 170 | Time 05:45 | Temp -33 | General Conditions: PARTLY CLOUDY | Wind Direction: N | Wind Strength: UP TO 19 KM/H | Road Condition: FAIR

TOUR 1 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	573.00
Hrs Run Today	7.25
Cumulative Hrs Run	28.00
Entry Date	

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Grade / ODC / Reason Pulled / Total Rot Hrs: 20.46

METRES DRILLED

From	To	D-R-C	RPM	WOB
1058.00	1174.00	DRILL	60	5

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	8.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.99
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	111.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
52	Drill Pipe		Stands	1001.36
0	Drill Pipe		Singles	0.00
	Kelly Down			12.77
	Total			1174.41
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	04:30	05:45
Density	990	990
Funnel Viscosity	70	72
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1125.00	1145.00
PVT	44	42

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	10500	7.00
2	PARALLEL	140	93	10500	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	1937	@	62	@	1067.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:00	1034.96	2.50	91.49	DIRECTIONAL
01:30	1053.95	1.49	101.99	DIRECTIONAL
02:30	1073.33	1.19	105.6	DIRECTIONAL
02:30	1074.17	1.19	105.6	DIRECTIONAL
03:30	1092.66	1.19	95.62	DIRECTIONAL
04:45	1111.93	1.41	79.58	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	8	sks
VERSAMUL - 208LT	1	bbl
VERSTROL M - 22KG	2	sks
OPTISEAL IV 25KG	3	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test hydrill 13 sec crown saver operating properly
0:15	7:30	7.25	2	Drill 222mm hole from 1058m to 1174m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min, motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
7:30	7:45	0.25	20A	Accumulated directional surveys
7:45	8:00	0.25	21D	Crew change safety meeting

Remarks
Blew down boilers 2 times 200 litres
Big boiler 185

SAFETY

Safety Topic	MEHL	MACP
rig service		5500

TOUR 2 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	688.00
Hrs Run Today	7.25
Cumulative Hrs Run	35.25
Entry Date	

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Grade / ODC / Reason Pulled / Total Rot Hrs: 19.52

METRES DRILLED

From	To	D-R-C	RPM	WOB
1174.00	1289.00	DRILL	60	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	163	85	8.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.99
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	111.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
58	Drill Pipe		Stands	1116.32
0	Drill Pipe		Singles	0.00
	Kelly Down			12.77
	Total			1289.37
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	09:00	11:15
Density	990	990
Funnel Viscosity	68	70
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	1190.00	1222.00
PVT	42	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	11000	7.50
2	PARALLEL	140	95	11000	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2234	@	68	@	1174.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
08:45	1169.86	0.88	81.38	DIRECTIONAL
10:00	1188.82	1.71	76.2	DIRECTIONAL
11:00	1208.02	2.59	55.98	DIRECTIONAL
12:45	1227.25	2.02	65.7	DIRECTIONAL
14:30	1246.32	1.41	78.4	DIRECTIONAL
15:30	1265.44	1.49	81.21	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
OPTISEAL III 25KG	5	sks
VERSTROL M - 22KG	5	sks
VERSAMUL - 208LT	1	bbl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
8:15	15:30	7.25	2	Drill 222mm hole from 1174m to1289m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:30	16:00	0.50	10	Accumulated survey time

Remarks
Level one inspection on tongs,sub and overhead equitment MH
Blew down boilers 100L 2 times

SAFETY

Safety Topic	MEHL	MACP
Steam Use reviewed JSA 177		5500

TOUR 3 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	784.00
Hrs Run Today	7.00
Cumulative Hrs Run	42.25
Entry Date	

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Grade / ODC / Reason Pulled / Total Rot Hrs: 18.56

METRES DRILLED

From	To	D-R-C	RPM	WOB
1289.00	1345.00	DRILL	60	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	8.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.99
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	111.87
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
63	Drill Pipe		Stands	1212.47
0	Drill Pipe		Singles	0.00
	Kelly Down			12.77
	Total			1385.52
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	18:30	20:30
Density	990	990
Funnel Viscosity	68	67
Fluid Loss		
pH		
Location Of Sample	Shaker	shaker
Depth	1320.00	1340.00
PVT	45	43

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	11500	7.50
2	PARALLEL	140	95	11500	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2318	@	66	@	1288.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
16:45	1284.64	1.58	66.31	DIRECTIONAL
18:15	1303.85	2.50	51.02	DIRECTIONAL
19:30	1313.60	2.59	50.89	DIRECTIONAL
20:00	1323.16	2.29	43.28	DIRECTIONAL
21:00	1332.61	1.89	48.91	DIRECTIONAL
22:15	1342.37	1.32	56.12	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
VERSAMUL - 208LT	1	bbl
LIME - 20KG	15	sks
VERSTROL M - 22KG	5	sks
OPTISEAL IV 25KG	5	sks
VERSAMUL - 208LT	1	brl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:30	0.50	2	Drill 222mm hole from 1289m to1299m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
16:30	16:45	0.25	7	Rig service function test annular 13 seconds to close function test crown saver
16:45	17:00	0.25	2	Drill 222mm hole from 1299m to 1326m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
17:00	17:15	0.25	21	Crew change safety meeting
17:15	23:30	6.25	2	Drill 222mm hole from 1326m to 1385m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	24:00	0.50	20A	Accumulated directional surveys

Remarks
Blew down boilers 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
working in cold weather		5500

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130306_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 06

Licence No: EL470	Well Name: COPRC MIRROR LAKE N-20 65-00 126-45	Surface Location	Prov: NT	Lic Type	Unique Well Id: N-2065-00126-45
Operator: Conoco Canada		Contractor: Beaver Drilling Ltd.	Rig No: 2	Well Type: VERT	Re-Entry: ☐
Operator's AFE: 10343209		Contractor's Job No: 150	Spud Date Time: 25-Feb-2013	17:00	
Signature Of Operator's Representative: MIKE HOBMAIER		Signature Of Contractor's Rig Manager: RICK YAVIS	Rig Release Date Time		

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	MH	RY
(2.) Derailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Stick Diagram Posted	MH	RY
(5.) Flare Lines Staked	MH	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	MH	RY
(1.) Rig Site Health & Safety Meeting (orientation/HP)		RY
(2.) CAODC Rig Safety Inspection Checklist (start/finish/HP)		
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		XY
(5.) Motor Kills Checked		

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1		7.25					0.25													0.25	0.25					8.00
Tour 2		7.25					0.25			0.50																8.00
Tour 3		7.00					0.25													0.50	0.25					8.00
TOTAL		21.50					0.75			0.50										0.75	0.50					24.00

FUEL @ 08:00 HRS: Rig 170 | Meter 170 | Time 05:45 | Temp -33

WEATHER: Current Conditions: PARTLY CLOUDY | Wind Direction: N | Wind Strength: UP TO 15 KM/H | Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	573.00
Hrs Run Today	7.25
Cumulative Hrs Run	28.00
Entry Date	

CUTTING STRUCTURE: TI | TO | IDC | LOC | BRG | Gauge | ODC | Reason Pulled | Total Rotating Hrs: 20.48

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
52	Drill Pipe	Stands		1001.36
0	Drill Pipe	Singles		0.00

Kelly Down: 12.77 | Total: 1174.41 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	07:00	
Density	990	
Funnel Viscosity	72	
Fluid Loss		
pH		
Location Of Sample	shaker	
Depth	1155.00	
PVT	44	

Remarks

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	10500	7.00
2	PARALLEL	140	93	10500	7.00

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	1937	@	62	@	1087.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
06:00	1131.20	1.71	79.41	DIRECTIONAL
07:30	1150.43	1.32	80.81	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blew down boilers 2 times 200 litres
Big boiler 185

SAFETY

Safety Topic	MEHL	MACP
rig service		5500

TOUR 2

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	688.00
Hrs Run Today	7.25
Cumulative Hrs Run	35.25
Entry Date	

CUTTING STRUCTURE: TI | TO | IDC | LOC | BRG | Gauge | ODC | Reason Pulled | Total Rotating Hrs: 19.52

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	163	85	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
58	Drill Pipe	Stands		1116.32
0	Drill Pipe	Singles		0.00

Kelly Down: 12.77 | Total: 1289.37 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	13:15	15:00
Density	990	990
Funnel Viscosity	68	65
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	1244.00	1270.00
PVT	45	43

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	11000	7.50
2	PARALLEL	140	95	11000	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2234	@	68	@	1174.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level one inspection on tongs,sub and overhead equitment MH
Blew down boilers 100L 2 times

SAFETY

Safety Topic	MEHL	MACP
Steam use reviewed JSA 177		5500

TOUR 3

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	784.00
Hrs Run Today	7.00
Cumulative Hrs Run	42.25
Entry Date	

CUTTING STRUCTURE: TI | TO | IDC | LOC | BRG | Gauge | ODC | Reason Pulled | Total Rotating Hrs: 18.56

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
63	Drill Pipe	Stands		1212.47
0	Drill Pipe	Singles		0.00

Kelly Down: 12.77 | Total: 1385.52 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	22:15	
Density	990	
Funnel Viscosity	67	
Fluid Loss		
pH		
Location Of Sample	shaker	
Depth	1356.00	
PVT	42	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	11500	7.50
2	PARALLEL	140	95	11500	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2318	@	66	@	1296.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
22:45	1351.96	0.79	79.32	DIRECTIONAL
23:30	1361.53	0.79	88.62	

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blew down boilers 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
working in cold weather		5500

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130307_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 07

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: MIKE HOBMAIER | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time:

DAILY CHECKS (OP / RM)

	OP	RM
(1.) Daily Walk Around Inspection	MH	RY
(2.) Detailed Inspection - Weekly (Using Check List)	MH	RY
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Sour Diagram Posted	MH	RY
(5.) Flare Lines Staked	MH	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs, Flare Lines & Degasser Lines	MH	RY
(1.) Rig Site Health & Safety Meeting (once/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (once/fortnight)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

CAODC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1		7.00					0.25													0.50	0.25					8.00
Tour 2		7.25					0.25			0.50																8.00
Tour 3		7.00					0.25													0.50	0.25					8.00
TOTAL		21.25					0.75			0.50										1.00	0.50					24.00

FUEL @ 08:00 HRS: Rig 165 | Base 155

WEATHER: Time 05:45 | Temp -37 | General Conditions CLEAR | Wind Direction N | Wind Velocity UP TO 19 KM/H | Road Conditions FAIR

TOUR 1

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	890.00
Hrs Run Today	7.00
Cumulative Hrs Run	49.25
Entry Date	

CUTTING STRUCTURE: T1 | Gage | T0 | ODC | MDC | Reason Pulled | LOC | Total Rotating Hrs 18.07 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
1385.00	1491.00	DRILL	60	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.16
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	112.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
68	Drill Pipe	Stands		1308.79
0	Drill Pipe	Singles		9.71
	Kelly Down			12.77
	Total			1491.55
	Weight of DC			
	Weight of String			

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	03:00	05:00
Density	990	990
Funnel Viscosity	67	68
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1425.00	1451.00
PVT	46	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	11000	7.50
2	PARALLEL	140	93	11000	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1974	@	54	@	1384.00
		@		@	
		@		@	

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:30	1371.24	0.79	75.1	DIRECTIONAL
01:30	1390.50	1.01	62.71	DIRECTIONAL
02:45	1409.79	1.58	74.79	DIRECTIONAL
04:30	1429.06	1.19	52.6	DIRECTIONAL
05:15	1438.69	1.32	46.4	DIRECTIONAL
05:45	1448.31	1.41	42.32	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function pipe rams 3 sec crown saver operating properly
0:15	7:15	7.00	2	Drill 222mm hole from 1385m to 1491m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
7:15	7:45	0.50	20A	Accumulated directional surveys
7:45	8:00	0.25	21	Crew change safety meeting

Remarks
Blew down boiler 200 litres
new boiler 180

SAFETY

Safety Topic	MEHL	MACP
steam use		5500

TOUR 2

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	996.00
Hrs Run Today	7.25
Cumulative Hrs Run	56.50
Entry Date	

CUTTING STRUCTURE: T1 | Gage | T0 | ODC | MDC | Reason Pulled | LOC | Total Rotating Hrs 17.83 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
1491.00	1597.00	DRILL	60	5

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.16
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	112.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
73	Drill Pipe	Stands		1414.61
1	Drill Pipe	Singles		9.66
	Kelly Down			12.77
	Total			1597.32
	Weight of DC			
	Weight of String			

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	08:00	11:00
Density	975	975
Funnel Viscosity	70	70
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	1485.00	1539.00
PVT	42	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	11500	7.50
2	PARALLEL	140	95	11500	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2524	@	72	@	1500.63
		@		@	
		@		@	

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:00	1487.22	1.80	38.41	DIRECTIONAL
10:15	1505.93	1.19	41.48	DIRECTIONAL
11:30	1525.44	1.71	39.5	DIRECTIONAL
12:45	1544.48	2.02	36.69	DIRECTIONAL
14:45	1563.80	1.58	38.19	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
VERSTROL M - 22KG	5	sks
OPTISEAL III 25KG	5	sks
VERSAMUL - 208LT	1	bbl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:45	0.75	2	Drill 222mm hole from 1491m to 1501m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
8:45	9:00	0.25	7	Rig service function test annular 13 seconds to close function test crown saver
9:00	15:30	6.50	2	Drill 222mm hole from 1501m to1597 m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
15:30	16:00	0.50	10	Accumulated survey time

Remarks
Level one inspection on tongs sub and all overhead equitment MH
Blew down boilers two times at 100L

SAFETY

Safety Topic	MEHL	MACP
making connections		5500

TOUR 3

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1112.00
Hrs Run Today	7.00
Cumulative Hrs Run	63.50
Entry Date	

CUTTING STRUCTURE: T1 | Gage | T0 | ODC | MDC | Reason Pulled | LOC | Total Rotating Hrs 17.51 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
1597.00	1713.00	DRILL	60	10

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.96
1	Jar	157	76	9.16
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	112.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
79	Drill Pipe	Stands		1530.48
1	Drill Pipe	Singles		9.66
	Kelly Down			12.77
	Total			1713.19
	Weight of DC			
	Weight of String			70.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	18:30	21:30
Density	970	975
Funnel Viscosity	75	75
Fluid Loss		
pH		
Location Of Sample	Shaker	shaker
Depth	1634.00	1676.00
PVT	45	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	12400	7.50
2	PARALLEL	140	95	12400	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2095	@	58	@	1606.00
		@		@	
		@		@	

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
16:00	1583.15	0.48	75.32	DIRECTIONAL
17:30	1602.34	0.79	70.4	DIRECTIONAL
18:45	1621.91	1.10	51.72	DIRECTIONAL
20:00	1641.37	1.41	49.7	DIRECTIONAL
21:45	1660.77	1.01	46.8	DIRECTIONAL
22:30	1679.83	1.32	34.89	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	500
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:30	0.50	2	Drill 222mm hole from 1597m to1607 m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
16:30	16:45	0.25	7	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
16:45	19:00	2.25	2	Drill 222mm hole from 1607m to 1641m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
19:00	19:15	0.25	21	Crew change safety meeting
19:15	23:30	4.25	2	Drill 222mm hole from 1641m to1713m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
23:30	24:00	0.50	20A	Accumulated directional surveys

Remarks
Blew down boilers 200 litres

SAFETY

Safety Topic	MEHL	MACP
taking samples		5500

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130307_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 07

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 | 17:00

Signature Of Operator's Representative: MIKE HOBMAIER | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — MH / RY
- (2.) Detailed Inspection - Weekly (Using Check List) — MH / RY
- (3.) H2S Signs Posted if Required — MH / RY
- (4.) Well Licence & Stick Diagram Posted — MH / RY
- (5.) Flare Lines Staked — MH / RY
- (6.) BOP Drills Performed — MH / RY
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — MH / RY
- (1.) Rig Site Health & Safety Meeting (one/crew/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (one/rig/month) —
- (3.) Mast Inspection before Raising or Lowering —
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked —

CAODC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Welsh	25 Other	TOTAL
Tour 1		7.00					0.25													0.50	0.25					8.00
Tour 2		7.25					0.25			0.50																8.00
Tour 3		7.00					0.25													0.50	0.25					8.00
TOTAL		21.25					0.75			0.50										1.00	0.50					24.00

Daily Bushing | Dip Fuel: FUEL @ 08:00 HRS

WEATHER

Rig: 165 | Sonic: 155 | Time: 05:45 | Temp: -37 | Current Conditions: CLEAR | Wind Direction: N | Wind Strength: UP TO 19 KM/H | Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 / 11.1 / 11.1 / 11.1 / 11.1 / 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	890.00
Hrs Run Today	7.00
Cumulative Hrs Run	49.25
Entry Date	

CUTTING STRUCTURE

	Grade	
TO	ODC	
MDC	Pos/Pos/Abr	
LOC	Total Rundistance	18.07
BRG		

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.86
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	115.60
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
68	Drill Pipe		Stands	1308.79
0	Drill Pipe		Singles	9.71

Kelly Down: 12.77 | Total: 1491.55 | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	06:30	
Density	990	
Funnel Viscosity	68	
Fluid Loss		
pH		
Location Of Sample	shaker	
Depth	1472.00	
PVT	43	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	11000	7.50
2	PARALLEL	140	93	11000	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1974	@	54	@	1384.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
07:15	1467.61	1.80	48.29	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blew down boiler 200 litres
new boiler 180

SAFETY

Safety Topic	MEHL	MACP
steam use		5500

TOUR 2

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 / 11.1 / 11.1 / 11.1 / 11.1 / 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	996.00
Hrs Run Today	7.25
Cumulative Hrs Run	56.50
Entry Date	

CUTTING STRUCTURE

	Grade	
TO	ODC	
MDC	Pos/Pos/Abr	
LOC	Total Rundistance	17.63
BRG		

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.86
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	115.60
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
73	Drill Pipe		Stands	1414.61
1	Drill Pipe		Singles	9.66

Kelly Down: 12.77 | Total: 1597.32 | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	13:00	15:00
Density	970	970
Funnel Viscosity	67	72
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	1563.00	1583.00
PVT	43	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	11500	7.50
2	PARALLEL	140	95	11500	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2524	@	72	@	1500.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Level one inspection on tongs sub and all overhead equitment MH
Blew down boilers two times at 100L

SAFETY

Safety Topic	MEHL	MACP
making connections		5500

TOUR 3

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 / 11.1 / 11.1 / 11.1 / 11.1 / 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1112.00
Hrs Run Today	7.00
Cumulative Hrs Run	63.50
Entry Date	

CUTTING STRUCTURE

	Grade	
TO	ODC	
MDC	Pos/Pos/Abr	
LOC	Total Rundistance	17.51
BRG		

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.86
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	115.60
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
79	Drill Pipe		Stands	1530.48
1	Drill Pipe		Singles	9.66

Kelly Down: 12.77 | Total: 1713.19 | Weight of DC: 70.00 | Weight of String

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	12400	7.50
2	PARALLEL	140	95	12400	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2095	@	58	@	1606.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
23:30	1698.97	2.20	34.19	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks

Remarks
Blew down boilers 200 litres

SAFETY

Safety Topic	MEHL	MACP
taking samples		5500

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130308_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 08

Licence No: EL470	Well Name: COPRC MIRROR LAKE N-20 65-00 126-45	Surface Location:	Pool: NT / Loc Type: / Unique Well Id: N-2065-00126-45
Operator: Conoco Canada	Contractor: Beaver Drilling Ltd.	Rig No: 2	Well Type: VERT / Re-Entry: ☐
Operator's AFE: 10343209	Contractor's Job No: 150	Spud Date Time: 25-Feb-2013 17:00	
Signature Of Operator's Representative: MIKE HOBMAIER	Signature Of Contractor's Rig Manager: RICK YAVIS	Rig Release Date Time:	

DAILY CHECKS (OP / RM)

(1.) Daily Walk Around Inspection — MH / RY
(1.) Detailed Inspection - Weekly (Using Check List) — MH / RY
(2.) #28 Signs Posted If Required — MH / RY
(4.) Well Licence & Sitch Diagram Posted — MH / RY
(5.) Flare Lines Staked — MH / RY
(6.) BOP Drills Performed — MH / RY
(7.) Visually Inspected BOP's Flare Lines & Degasser Lines — MH / RY
(1.) Rig Site Health & Safety Meeting (once/month/crew) — RY
(3.) CADDC Rig Safety Inspection Checklist (once/month) — RY
(3.) Mast Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

CADDC

HOURS

Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	TOTAL
	Rig Up	Drill Actual	Reaming	Coring	Cond Mud & Circ	Trips	Rig Service	Repair Rig	Cut Off Drlg Line	Dev Survey	Wireline Logs	Run Csg & Cement	Wait On Cement	Nipple BOP	Test BOP	Drill/Stem Test	Plug Back	Squeeze Cement	Fishing	Dir Work	Safety Meeting	Tear Down	Waiting On	Rig Watch	Other	
Tour 1		6.75					0.25	0.50												0.25	0.25					8.00
Tour 2		6.50			1.00		0.25			0.25																8.00
Tour 3						7.00	0.25														0.75					8.00
TOTAL		13.25			1.00	7.00	0.75	0.50		0.25										0.25	1.00					24.00

Kelly Bushing: | Dp Fuel: FUEL @ 08:00 HRS

WEATHER

Rig: 165 | Center: 160
Time: 05:00 | Temp: -25
Current Condition: LIGHT SNOW
Wind Direction: | Wind Strength: UP TO 19 KM/H
Road Condition: FAIR

TOUR 1 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1208.00
Hrs Run Today	6.75
Cumulative Hrs Run	70.25
Entry Date	

CUTTING STRUCTURE: I / O / DC / LOC / BRG; Grade / ODC / Reason Pulled / Inner Rows / Outer Rows: 17,20

METRES DRILLED

From	To	D-R-C	RPM	WOB
1713.00	1818.00	DRILL	60	10

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	163	72	9.46
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.86
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
85	Drill Pipe	Stands		1636.48
1	Drill Pipe	Singles		9.46
	Kelly Down			12.77
	Total			1818.99
	Weight of DC			
	Weight of String			72.00

HOLE CONDITION: Hole Drag Up 2 / Down 3; Torque At Bottom 3800; Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	01:15	03:15
Density	970	970
Funnel Viscosity	70	70
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1712.00	1732.00
PVT	44	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	12000	7.50
2	PARALLEL	140	93	12000	7.50

Remarks:

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1763	@	50	@	1727.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
02:00	1718.17	2.20	41	DIRECTIONAL
04:45	1737.50	1.58	73.61	DIRECTIONAL
05:45	1756.66	1.32	96.41	DIRECTIONAL
06:45	1775.91	0.62	95.71	DIRECTIONAL
07:45	1795.03	1.32	75.71	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
OPTISEAL IV 25KG	5	sks
VERSAMUL - 208LT	2	bbl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	490
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	1:00	1.00	2	Drill 222mm hole from 1713m to 1722m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
1:00	1:15	0.25	7	Rig service function hydrill 13 sec crown saver operating properly
1:15	3:00	1.75	2	Drill 222mm hole from 1722m to 1741m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
3:00	3:30	0.50	8	Change out pump control on driller control panel
3:30	7:30	4.00	2	Drill 222mm hole from 1741m to 1818m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
7:30	7:45	0.25	20A	Accumulated directional surveys
7:45	8:00	0.25	21	Crew change safety meeting

Remarks:
Blew down boilers 2 times 200 litres
New boiler 180

SAFETY

Safety Topic	MEHL	MACP
		5500

TOUR 2 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1289.00
Hrs Run Today	6.50
Cumulative Hrs Run	76.75
Entry Date	

CUTTING STRUCTURE: I / O / DC / LOC / BRG; Grade / ODC / Reason Pulled / Inner Rows / Outer Rows: 16,79

METRES DRILLED

From	To	D-R-C	RPM	WOB
1818.00	1847.00	DRILL	60	9
1847.00	1890.00	DRILL	60	3

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	163	72	9.46
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.86
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
89	Drill Pipe	Stands		1713.19
1	Drill Pipe	Singles		9.60
	Kelly Down			6.93
	Total			1890.00
	Weight of DC			
	Weight of String			76.00

HOLE CONDITION: Hole Drag Up 3 / Down 2; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	10:00	12:00
Density	970	970
Funnel Viscosity	63	65
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1850.00	1867.00
PVT	44	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	12900	7.50
2	PARALLEL	140	95	12900	7.50

Remarks:

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2421	@	72	@	1805.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:00	1814.27	1.01	1.89	DIRECTIONAL
09:45	1833.39	1.58	14.28	DIRECTIONAL
12:15	1852.66	2.90	31.68	DIRECTIONAL
14:30	1871.80	2.50	30.32	DIRECTIONAL
16:00	1875.84	2.59	38.89	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
OPTISEAL IV 25KG	10	sks
TRUVIS - 25KG	6	sks
VERSAMOD - 208LT	1	bbl
VERSAMUL - 208LT	1	bbl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	11	500

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function test pipe rams 3 seconds to close function test crown saver working proper
8:15	10:00	1.75	2	Drill 222mm hole from 1818m to1847m with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,table RPM 50,WOB 2 to 3dan,Average ROP 21m/hr.
10:00	14:45	4.75	2	Drill 222mm hole from 1847m tom with Reed MSR616M bit,Dyna Drill 7/8 5stage motor set at 1.15° and Schlumberger directional BHA, Pumping at 1.7m3/min. motor RPM 130,control drill at 10m/hr to core point
14:45	15:00	0.25	10	Accumulated survey time
15:00	16:00	1.00	5	Condition mud and circulate

Remarks:
Level one inspection on tongs, sub and overhead equitment MH
Blew down boilers 2 times at 100L

SAFETY

Safety Topic	MEHL	MACP
IRS		5500

TOUR 3 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1289.00
Hrs Run Today	
Cumulative Hrs Run	76.75
Entry Date	

CUTTING STRUCTURE: I / O / DC / LOC / BRG; Grade / ODC / Reason Pulled / Inner Rows / Outer Rows: 16,79

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.46
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.86
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	113.40
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
89	Drill Pipe	Stands		1713.19
1	Drill Pipe	Singles		9.60
	Kelly Down			12.77
	Total			1895.84
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	10400	0.50
2	PARALLEL	140	95	10400	0.50

Remarks:

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2249	@	65	@	1847.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Barite	80	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	10.5	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function test annular 13sec to close function test crown saver working proper
16:15	16:30	0.25	21	Safety meeting on tripping out of the hole, reviewed jsa#129.
16:30	19:00	2.50	6B	Pump pill, Trip out of hole with pipe spinner lay down BHA/flow check@1881m/1789m/
19:00	19:15	0.25	21	Crew change safety meeting
19:15	23:30	4.25	6B	Trip out of hole Flow check@933M/214m/
23:30	23:45	0.25	21	Safety meeting reviewed jsa#159 laying down DC
23:45	24:00	0.25	6D	Lay down BHA

Remarks:
Blew down boilers 200 litres

SAFETY

Safety Topic	MEHL	MACP
Triping out of hole		5500

FRONT PAGE SUMMARY

Your Sheet Serial Number: BEAV2_20130308_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 08

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Unique Well Id: N-2065-00126-45 | Lic Type

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 | 17:00

Signature Of Operator's Representative: MIKE HOBMAIER | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection -	MH	RY
(2.) Detailed Inspection - Weekly (Using Check List)	MH	
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Sick Diagram Posted	MH	RY
(5.) Flare Lines Staked	MH	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Organizer Lines	MH	BY
(1.) Rig Site Health & Safety Meeting (once/month/well)		BY
(2.) CAODC Rig Safety Inspection Checklist (once/month/well)		
(3.) Meet Inspection before Raising or Lowering		BY
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Wash	25 Other	TOTAL
HOURS Tour 1		6.75					0.25	0.50												0.25	0.25					8.00
Tour 2		6.50			1.00		0.25			0.25																8.00
Tour 3						7.00	0.25														0.75					8.00
TOTAL		13.25			1.00	7.00	0.75	0.50		0.25										0.25	1.00					24.00

Daily Stocking | Up Fuel

FUEL @ 08:00 HRS

Fuel	165
Water	160
Time	05:00
Temp	-25

Current Conditions: LIGHT SNOW | Wind Direction | Wind Strength: UP TO 19 KM/H | Road Condition: FAIR

TOUR 1 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1208.00
Hrs Run Today	6.75
Cumulative Hrs Run	70.25
Entry Date	

CUTTING STRUCTURE: In | Out | To | ODC | NDC | Pressure Loss | LOC | Total Pump Hrs 17.20 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	163	72	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.98
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	115.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
85	Drill Pipe	Stands		1636.48
1	Drill Pipe	Singles		9.46

Kelly Down: 12.77 | Total: 1818.99 | Weight of DC | Weight of String: 72.00

HOLE CONDITION: Hole Drag Up: 2 Down: 3 | Torque At Bottom: 3800 | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	04:15	07:00
Density	970	970
Funnel Viscosity	72	73
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1746.00	1799.00
PVT	43	46

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	93	12000	7.50
2	PARALLEL	140	93	12000	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1763	@	50	@	1722.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
				Blew down boilers 2 times 200 litres
				New boiler 180

SAFETY

Safety Topic	MEHL	MACP
		5500

TOUR 2 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1289.00
Hrs Run Today	6.50
Cumulative Hrs Run	76.75
Entry Date	

CUTTING STRUCTURE: In | Out | To | ODC | NDC | Pressure Loss | LOC | Total Pump Hrs 16.79 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	163	72	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.98
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	115.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
89	Drill Pipe	Stands		1713.19
1	Drill Pipe	Singles		9.60

Kelly Down: 6.93 | Total: 1890.00 | Weight of DC | Weight of String: 76.00

HOLE CONDITION: Hole Drag Up: 3 Down: 2 | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	13:15	
Density	965	
Funnel Viscosity	76	
Fluid Loss		
pH		
Location Of Sample	shaker	
Depth	1874.00	
PVT	46	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	12900	7.50
2	PARALLEL	140	95	12900	7.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	2421	@	72	@	1805.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
				Level one inspection on tongs, sub and overhead equitment MH
				Blew down boilers 2 times at 100L

SAFETY

Safety Topic	MEHL	MACP
IRS		5500

TOUR 3 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1289.00
Hrs Run Today	
Cumulative Hrs Run	76.75
Entry Date	

CUTTING STRUCTURE: In | Out | To | ODC | NDC | Pressure Loss | LOC | Total Pump Hrs 16.79 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222 mm BIT	222	60	0.28
1	MUD MOTOR	131	34	8.23
1	X-PULSE	164	70	9.48
1	Landing Sub	164	86	0.55
2	N.M. DC	168	72	18.98
1	Jar	157	76	9.18
1	X/O 4" H-90	162	62	0.48
12	6" D.C	160	60	115.80
1	X/O Sub	134	58	0.51
1	X/O SUB	123	59	0.61
89	Drill Pipe	Stands		1713.19
1	Drill Pipe	Singles		9.60

Kelly Down: 12.77 | Total: 1895.84 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	140	95	10400	0.50
2	PARALLEL	140	95	10400	0.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2249	@	65	@	1297.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
				Blew down boilers 200 litres

SAFETY

Safety Topic	MEHL	MACP
Triping out of hole		5500

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130309_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 09

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Lea Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00 | Rig Release Date Time:

Signature Of Operator's Representative: MIKE HOBMAIER | Signature Of Contractor's Rig Manager: RICK YAVIS

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — MH / RY
- (3.) Detailed Inspection - Weekly (Using Check List) —
- (3.) H2S Signs Posted If Required —
- (4.) Well License & Stick Diagram Posted — MH / RY
- (5.) Flare Lines Staked — MH / RY
- (6.) BOP Drills Performed — MH / RY
- (7.) Visually Inspected BOPs Flare Lines & Degasser Lines — MH / RY
- (1.) Rig Site Health & Safety Meeting (once/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (once/month) —
- (3.) Mast Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked —
- (5.) Motor Kills Checked —

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Ob Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1						6.75	0.75														0.50					8.00
Tour 2					2.00	3.50	0.25		0.75		1.25										0.25					8.00
Tour 3				3.75	0.75	0.25	0.25				2.75										0.25					8.00
TOTAL				3.75	2.75	10.50	1.25		0.75		4.00										1.00					24.00

Kelly Bushing | Drill Pond

FUEL @ 08:00 HRS

Rig: 180 | Boiler: 190

WEATHER

Time: 05:45 | Temp: -24 | Current Conditions: OVERCAST | Wind Direction: W | Wind Strength: UP TO 19 KM/H | Road Conditions: FAIR

TOUR 1

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	09-Mar-2013

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Reason Pull	
LOC		Bond Run Jets	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
89	Drill Pipe	Stands		1713.19
1	Drill Pipe	Singles		9.60
	Kelly Down			12.77
	Total			1828.92
	Weight of DC			
	Weight of String			

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	07:30	
Density	970	
Funnel Viscosity	80	
Fluid Loss		
pH		
Location Of Sample	Shaker	
Depth		
PVT	45	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	490
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	3:30	3.50	6D	Lay down BHA Flow check OOH Strap 1891.5m Trip calc 9.22m3 meas 11.60m3 diff 2.38m3
3:30	4:00	0.50	7	Rig service function blind rams 3 sec crown saver operating properly/Blow kelly take MWD transducer out of stand pipe
4:00	4:15	0.25	7A	Clean and prepare floor to pick up core BHA
4:15	4:30	0.25	21	Safety meeting with NOV core hands reviewed NOV jsa#1 picking up core tools
4:30	7:45	3.25	6C	Pick up core BHA and RIH
7:45	8:00	0.25	21	Crew change safety meeting

Remarks

Blew down boilers 2 times 200 litres
Trip calc 9.22m3 meas 11.60m3 diff 2.38m3
new boiler 185

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	09-Mar-2013

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Reason Pull	
LOC		Bond Run Jets	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	8.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
89	Drill Pipe	Stands		1713.19
1	Drill Pipe	Singles		9.60
	Kelly Down			12.77
	Total			1841.69
	Weight of DC			
	Weight of String			

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	11:30	14:30
Density	970	970
Funnel Viscosity	75	75
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	1841.00	1890.00
PVT	45	45

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	11	485

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:45	0.75	9A	Slip and cut 20m drilling line 6707mj
8:45	9:00	0.25	7	Rig service function test annular 13 seconds to close
9:00	12:00	3.00	6A	TRIP IN HOLE
12:00	13:00	1.00	5	Circulate prep floor to pick up singles
13:00	13:30	0.50	6E	Pick up drill pipe to tag bottom
13:30	14:30	1.00	5	Circulate bottoms up prepair to wire line retrieve drill rod.
14:30	14:45	0.25	21	Safety meeting with schlumberger wireline and nov core hands
14:45	16:00	1.25	11	Run in wireline with schlumberger to retrieve nov drill rod.

Remarks

Level one inspection on tongs sub and overhead equitment MH
Flow checks running in the hole @ 607m 972m
Blew down boilers 2 times 100L

SAFETY

Safety Topic	MEHL	MACP
Slip and cut drilling line		5022

TOUR 3

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	09-Mar-2013

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Reason Pull	
LOC		Bond Run Jets	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
1891.00	1919.00	CORE	65	5

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	8.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
93	Drill Pipe	Stands		1790.14
1	Drill Pipe	Singles		9.65
	Kelly Down			13.08
	Total			1919.00
	Weight of DC			
	Weight of String			64.00

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	21:15	
Density	970	
Funnel Viscosity	75	
Fluid Loss		
pH		
Location Of Sample	shaker	
Depth	1916.00	
PVT	42	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	140	135	5100	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	1301	@	66	@	1873.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function test H.C.R
16:15	17:45	1.50	11	Run in with schlumberger wireline to retrieve nov drill rod
17:45	18:15	0.50	4A	Rig up to run core #1 with nov core hands
18:15	18:30	0.25	4A	Pump down core #1 with nov core hands
18:30	21:30	3.00	4	drill 222mm core #1 from1891.5m to 1919m Pumping at 1.2m3 rotating at 65rpm weight on bit 5dan average R.O.P 10m/h
21:30	22:15	0.75	5	Circulate bottoms up to pull core#1
22:15	22:30	0.25	21	Safety meeting with Sclumberger wire line and NOV core hands
22:30	22:45	0.25	6B	Pull 2 stds up to 1868m to retive core #1
22:45	24:00	1.25	11	Rig to and pull core #1 with Sclumberger wire line and NOV core

Remarks

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130310_1B | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 10

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Lic Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: MIKE HOBMAIER | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	MH	RY
(1.) Detailed Inspection - Weekly (Using Check List)		
(2.) H2S Signs Posted if Required		
(4.) Well Licence & Stick Diagram Posted	MH	RY
(5.) Flare Lines Staked	MH	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	MH	RY
(1.) Rig Site Health & Safety Meeting (pre/post-manth)		RY
(1.) CAODC Rig Safety Inspection Checklist (mid/tightmanth)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Wash	25 Other	TOTAL
HOURS Tour 1							0.25				7.50										0.25					8.00
Tour 2				6.25	1.25		0.25														0.25					8.00
Tour 3				3.00	1.00	0.25	0.25				3.00										0.50					8.00
TOTAL				9.25	2.25	0.25	0.75				10.50										1.00					24.00

Daily Mudding: FUEL @ 08:00 HRS | Up Feet

WEATHER: Rig 190 | Camp 200 | Time 08:15 | Temp -20 | Survey Conditions OVERCAST | Wind Direction N | Wind Strength CALM | Road Conditions FAIR

TOUR 1 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	09-Mar-2013

CUTTING STRUCTURE: T1 | TO | MDC | LDC | BRG | Gage | ODC | Reason Pull | Total Regrinds

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
93	Drill Pipe	Stands		1790.14
1	Drill Pipe	Singles		9.65

Kelly Down 13.08 | Total 1919.00 | Weight of DC | Weight of String 64.00

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
VERSAMUL - 208LT	1	brl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service
0:15	7:45	7.50	11	Retrive core #1 with NOV core and schlumberger wire line
7:45	8:00	0.25	21	Crew change safety meeting

Remarks
Blew down boilers 2 times 200 litres
Big boiler fuel 190

SAFETY

Safety Topic	MEHL	MACP
		5500

METRES DRILLED

From	To	D-R-C	RPM	WOB

TOUR 2 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	09-Mar-2013

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
93	Drill Pipe	Stands		1790.14
1	Drill Pipe	Singles		9.65

Kelly Down 12.77 | Total 1918.69 | Weight of DC | Weight of String 64.00

HOLE CONDITION

Hole Drag Up 1 | Down 1 | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	14:15	16:00
Density	975	975
Funnel Viscosity	90	88
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1920.00	1928.00
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	140	120	5000	1.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	695	@	63	@	1918.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	5	sks
LIME - 20KG	5	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	10.5	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	12:15	4.25	4	Retrive core #1 with NOV core and schlumberger wire line
12:15	12:30	0.25	21	Safety meeting with NOV core hands
12:30	14:00	1.50	4A	Lay out core #1 with nov core hands,Recover 27.5m of core (Full recovery)
14:00	14:15	0.25	7	Rig service function test pipe rams 3 seconds to close function test crown saver
14:15	15:30	1.25	5	Circulate
15:30	16:00	0.50	4A	Rig up core barrels for run#2 and pump down

Remarks
Level one inspection on tongs sub and overhead equitment MH
Blew down boilers 2 times @100L

SAFETY

Safety Topic	MEHL	MACP
laying down core barrels		5580

METRES DRILLED

From	To	D-R-C	RPM	WOB

TOUR 3 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	56.00
Hrs Run Today	3.00
Cumulative Hrs Run	3.00
Entry Date	09-Mar-2013

CUTTING STRUCTURE: T1 | TO | MDC | LDC | BRG | Gage | ODC | Reason Pull | Total Regrinds 18.67

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
95	Drill Pipe	Stands		1828.34
0	Drill Pipe	Singles		0.00

Kelly Down 11.53 | Total 1946.00 | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	19:45
Density	975
Funnel Viscosity	89
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	1946.00
PVT	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	140	123	5000	4.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service
16:15	17:00	0.75	4	Drill 222mm core from 1919mto1937m rotary 60 WOB 5dan pumping at 1.2m3 R.O.P 9m/hr
17:00	17:15	0.25	21	Crew Handover meeting
17:15	19:30	2.25	4	Drill 222mm core from 1937m to 1946m rotary 60 WOB 5dan pumping at 1.2m3 R.O.P 9m/hr
19:30	20:30	1.00	5	Circulate bottoms up
20:30	20:45	0.25	6B	Pull 3 stds up to 1877m to pull core #2
20:45	21:00	0.25	21	Safety meeting with NOV core hands and schlumberger wire line
21:00	24:00	3.00	11	Rig to and pull core#2 with NOV core and Schlumberger wire line

Remarks
Blew down boilers 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
Wire line core		5580

METRES DRILLED

From	To	D-R-C	RPM	WOB
1919.00	1946.00	CORE	60	5

FRONT PAGE SUMMARY

Two Sheet Serial Number: BEAV2_20130311_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 11

Licence No	Well Name	Surface Location	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45	NT	N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
MIKE HOBMAIER	RICK YAVIS	

DAILY CHECKS

	OP	RM
(1.) Daily Well Ground Inspection	MH	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Stck Diagram Posted	MH	RY
(5.) Flare Lines Staked	MH	RY
(6.) BOP Drills Performed	MH	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	MH	RY
(1.) Rig Site Health & Safety Meeting (one/crew/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (once/rig/month)		
(3.) Hoist Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1							0.25				7.50										0.25					8.00
Tour 2				5.00	1.25		0.25				1.25										0.25					8.00
Tour 3					0.50	0.25	0.25				7.00															8.00
TOTAL				5.00	1.75	0.25	0.75				15.75										0.50					24.00

WEATHER

Kelly Bushing: | Ground Level:

FUEL @ 08:00 HRS

Wind: 180 | Bridal: 185
Time: 05:45 | Temp: -18
Current Conditions: OVERCAST
Wind Direction: W | Wind Strength: UP TO 19 KM/H
Road Condition: POOR

TOUR 1

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14 / 14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	09-Mar-2013

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
95	Drill Pipe	Stands		1828.34
0	Drill Pipe	Singles		0.00
	Kelly Down			11.53
	Total			1946.00
	Weight of DC			
	Weight of String			

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other ☐

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service
0:15	7:45	7.50	11	Pull core #2 with NOV core and Schlumberger wire line
7:45	8:00	0.25	21	Crew change safety meeting

Remarks
Blew down boilers 2 times 200 litres
Big boiler fuel 190

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down
Torque At Bottom
Fill On Bottom

CUTTING STRUCTURE

	Grade
I	
O	ODC
MDC	Pulled Bit
LOC	Total Pull Depth
BRG	

SAFETY

Safety Topic	MEHL	MACP
Cleaning rig		5580

TOUR 2

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14 / 14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	83.00
Hrs Run Today	3.00
Cumulative Hrs Run	9.00
Entry Date	09-Mar-2013

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.83
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	8.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
96	Drill Pipe	Stands		1847.56
1	Drill Pipe	Singles		9.63
	Kelly Down			10.00
	Total			1973.32
	Weight of DC			
	Weight of String			64.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	11:00	13:45
Density	975	975
Funnel Viscosity	55	87
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1941.00	1955.00
PVT	41	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	140	120	5000	4.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	1682	@	77	@	1947.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	10	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	10.5	400
2	8.00	11	420

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	9:15	1.25	11	Pull core #2 with NOV core and Schlumberger wire line
9:15	9:30	0.25	21	Safety meeting with NOV core
9:30	11:00	1.50	4A	Lay out core #2 with NOV hands
11:00	11:15	0.25	7	Rig service, function test annular 13 sec. to close and fuction test crown saver
11:15	12:15	1.00	5	Circulate bottoms up
12:15	13:00	0.75	4A	Rig up core barrels for run #3 and pump down
13:00	15:45	2.75	4	Drill 222mm hole from1946m to 1973m pump rate 1.2m3 rotary at 55 wob 5dan R.O.P 12m/hr
15:45	16:00	0.25	5	Circulate bottoms up

Remarks
Level one inspection on tong and sub and all overhead equitment MH
Blew down boilers 100L 2 times

METRES DRILLED

From	To	D-R-C	RPM	WOB
1946.00	1973.00	REAM	60	5

HOLE CONDITION

Hole Drag: Up | Down
Torque At Bottom
Fill On Bottom

CUTTING STRUCTURE

	Grade
I	
O	ODC
MDC	Pulled Bit
LOC	Total Pull Depth 9.22
BRG	

SAFETY

Safety Topic	MEHL	MACP
handle core barrels		5580

TOUR 3

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14 / 14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	83.00
Hrs Run Today	
Cumulative Hrs Run	9.00
Entry Date	09-Mar-2013

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.83
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	8.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
96	Drill Pipe	Stands		1847.56
1	Drill Pipe	Singles		9.63
	Kelly Down			10.00
	Total			1973.32
	Weight of DC			
	Weight of String			64.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	140	114	5000	1.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	1651	@	63	@	1983.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function test pipe rams 3 seconds
16:15	16:45	0.50	5	Circulate bottoms up
16:45	17:00	0.25	11	Safety meeting with nov and schlumberger on retrieving core #3
17:00	17:15	0.25	6B	Trip 4 stands out of the hole rig up to wireline for core #3
17:15	24:00	6.75	11	Wire line retrive core #3

Remarks
Blew down boilers 2 times 200 litres

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down
Torque At Bottom
Fill On Bottom

CUTTING STRUCTURE

	Grade
I	
O	ODC
MDC	Pulled Bit
LOC	Total Pull Depth 9.22
BRG	

SAFETY

Safety Topic	MEHL	MACP
		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130312_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 12

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 | 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — OP RY
- (2.) Detailed Inspection - Weekly (Using Check List) — OP RY
- (3.) H2S Signs Posted if Required — OP RY
- (4.) Well Licence & Stick Diagram Posted — OP RY
- (5.) Flare Lines Staked — OP RY
- (6.) BOP Drills Performed — OP RY
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — OP RY
- (1.) Rig Site Health & Safety Meeting (ans/crew/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (ans/rig/month) — RY
- (3.) Mast Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked — RY

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Wash	25 Other	TOTAL
HOURS Tour 1				1.75	0.50	0.25	0.25				4.75										0.50					8.00
Tour 2				4.75	1.25	0.50	0.25				0.75										0.50					8.00
Tour 3							0.25				7.50										0.25					8.00
TOTAL				6.50	1.75	0.75	0.75				13.00										1.25					24.00

Daily Sounding | Rig Fuel: FUEL @ 08:00 HRS

WEATHER: Rig 185 | Derrick 170 | Time 05:45 | Temp -25 | Current Conditions: OVERCAST | Wind Direction: N | Wind Strength: UP TO 19 KM/H | Road Condition: POOR

TOUR 1

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	83.00
Hrs Run Today	
Cumulative Hrs Run	9.00
Entry Date	09-Mar-2013

CUTTING STRUCTURE: T1 | Grade | TO | ODC | MDC | Pressure Drop | LOC | Total Flow Area | 9.22 | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
96	Drill Pipe	Stands		1847.56
1	Drill Pipe	Singles		9.63

Kelly Down: 10.00 | Total: 1973.32 | Weight of DC | Weight of String: 64.00

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service
0:15	5:00	4.75	11	Pull core #3 with NOV core hands and Schlumberger wire line
5:00	5:15	0.25	21	Safety meeting with NOV core hands
5:15	7:00	1.75	4A	Lay down core#3 with NOV core hands
7:00	7:15	0.25	6A	Trip 4 stds back in the hole
7:15	7:45	0.50	5	Circulate bottoms up
7:45	8:00	0.25	21	Crew change safety meeting

Remarks
Blew down boilers 2 times 200 litres
Big boiler fuel 180

SAFETY

Safety Topic	MEHL	MACP
Lay down core		5580

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down
Torque At Bottom
Fill On Bottom

TOUR 2

SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	110.00
Hrs Run Today	3.75
Cumulative Hrs Run	12.75
Entry Date	09-Mar-2013

CUTTING STRUCTURE: T1 | Grade | TO | ODC | MDC | Pressure Drop | LOC | Total Flow Area | 8.63 | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
97	Drill Pipe	Stands		1876.45
1	Drill Pipe	Singles		9.63

Kelly Down: 8.00 | Total: 2000.21 | Weight of DC | Weight of String: 64.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	09:45	13:15
Density	980	980
Funnel Viscosity	80	82
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1973.00	2000.00
PVT	41	40

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	140	5200	5.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1639	@	66	@	1982.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	400
2	8.00	10.5	425

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service, function test annular 13sec, to close and funtion test crown saver
8:15	8:30	0.25	21A	BOP drill Well secure in 90 sec crew in positions and function test motor kills ok Crew
8:30	9:30	1.00	4A	Rig up core barrels for run #4 and pump down
9:30	13:15	3.75	4	Drill 222mm Core from 1973m-2000m to pump rate 1.2m3/min rotory at 62 wob 5dan rop 7.2m/hr
13:15	14:30	1.25	5	Circulate bttoms up
14:30	15:00	0.50	6B	Pull out 3 stands and the pup joints out of the hole
15:00	15:15	0.25	21	Safety meeting with NOV core hands and schlumbger wireline on retrieving core #4
15:15	16:00	0.75	11	wireline retrieve Core #4

Remarks
Level one inspection on tongs sub and overhead equitment MH
Blew down boilers 2 times at 100L
Function test motor kills working properly

SAFETY

Safety Topic	MEHL	MACP
BOP Drill		5580

METRES DRILLED

From	To	D-R-C	RPM	WOB
1973.00	2000.00	CORE	55	5

HOLE CONDITION

Hole Drag: Up | Down
Torque At Bottom
Fill On Bottom

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	110.00
Hrs Run Today	
Cumulative Hrs Run	12.75
Entry Date	09-Mar-2013

CUTTING STRUCTURE: T1 | Grade | TO | ODC | MDC | Pressure Drop | LOC | Total Flow Area | 8.63 | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
97	Drill Pipe	Stands		1866.82
2	Drill Pipe	Singles		17.28

Kelly Down: 12.77 | Total: 2003.00 | Weight of DC | Weight of String: 64.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	21A	Held b.o.p drill well secure in 65 sec
16:15	16:30	0.25	7	Rig servevice f.t pipe ram's 4 sec & crown saver
16:30	24:00	7.50	11	Wireline to retrieve core # 4 with schlumberger

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
I.R.S		5580

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down
Torque At Bottom
Fill On Bottom

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130313_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 13

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Loc Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	RY
(2.) Derailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well License & Stick Diagram Posted	DF	RY
(5.) Flare Lines Staked	DF	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	DF	RY
(1.) Rig Site Health & Safety Meeting (smotrewsheet/month)		RY
(2.) CADDC Rig Safety Inspection Checklist (once/month)		
(3.) Hoist Inspection before Rotary or Lowering		RY
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

CADDC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Casng	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Wash	25 Other	TOTAL
HOURS Tour 1				2.00	1.50	0.25	0.25				3.75										0.25					8.00
Tour 2				3.50	1.00	0.50	0.25				2.50										0.25					8.00
Tour 3							0.25				7.75															8.00
TOTAL				5.50	2.50	0.75	0.75				14.00										0.50					24.00

Kelly Bushing | Grd Elevation

FUEL @ 08:00 HRS

WEATHER: Rig 145 | Meter 14 | Time 05:45 | Temp -25 | Current Conditions: LIGHT SNOW | Wind Direction: N | Wind Strength: UP TO 29 KM/H | Road Conditions: POOR

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	14 14 14
	14 14
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	110.00
Hrs Run Today	
Cumulative Hrs Run	12.75
Entry Date	09-Mar-2013

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Pulled In | LOC | Total Pull Units 8.63 | BRG

METRES DRILLED: From | To | D-R-C | RPM | WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	85	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
97	Drill Pipe	Stands		1866.82
1	Drill Pipe	Singles		9.63
	Kelly Down			12.77
	Total			1982.58
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	06:15
Density	980
Funnel Viscosity	90
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	2000.00
PVT	39

Circulation: Pump # | Type | Liner Size | SPM | Pressure | Hrs Run

Remarks

REDUCED PUMP SPEED: Pump # | Pressure | Strokes/min | Depth

DEVIATION SURVEYS

Time | Depth | Deviation | Direction | Type

SOLIDS CONTROL: Equipment Name | Hours Run | Intake Density | Over Flow Density | Under Flow Density

MUD MATERIALS ADDED: Product | Amount | Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test H.C.R
0:15	4:00	3.75	11	Wire line retrieve core #4 with schlumberger(crews went through man down drill did rescue routes)
4:00	5:15	1.25	4A	Lay down core #4 with nov core hands
5:15	5:30	0.25	6A	Trip 3 stands in the hole
5:30	7:00	1.50	5	Pick up kelly circulate bottoms up
7:00	7:45	0.75	4A	Make up core barrels for run #5 with nov core hands
7:45	8:00	0.25	21	Crew handover meeting

Remarks
Blew down boilers 2 times at 100L
fuel measurment
boiler1 140 cm
boiler2 170 cm

SAFETY

Safety Topic	MEHL	MACP
Laying down core barrels		5580

TOUR 2 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	11.1 11.1 11.1
	11.1 11.1
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	137.00
Hrs Run Today	3.50
Cumulative Hrs Run	16.25
Entry Date	09-Mar-2013

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Pulled In | LOC | Total Pull Units 8.43 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
2000.00	2027.00	CORE	55	4

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
99	Drill Pipe	Stands		1905.07
0	Drill Pipe	Singles		0.00
	Kelly Down			15.80
	Total			2027.00
	Weight of DC			
	Weight of String			69.00

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	09:00	12:30
Density	1010	1010
Funnel Viscosity	85	81
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2004.00	2023.00
PVT	38	37.5

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	115	5400	4.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
1	2033 @	79 @	1997.00

DEVIATION SURVEYS

Time | Depth | Deviation | Direction | Type

SOLIDS CONTROL: Equipment Name | Hours Run | Intake Density | Over Flow Density | Under Flow Density

MUD MATERIALS ADDED: Product | Amount | Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	430
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function test hydril 14 sec & crown saver
8:15	11:45	3.50	4	Core 222mm hole from2000m to 2027m pump rate 1.2m3 rotary at 55 wob 5dan core # 5 rop 7.7 m/hr
11:45	12:45	1.00	5D	Circulate & condition
12:45	13:00	0.25	21	Held safety meeting n.o.v & schlumberger
13:00	13:30	0.50	6B	Pull 3 stds d.p
13:30	16:00	2.50	11	Rig up schlumberger & Retrieve core # 5 with wire line

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
Rigging up & pulling core		5580

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	11.1 11.1 11.1
	11.1 11.1
Depth Out (m)	
Depth In (m)	1890.00
Total Drilled (m)	137.00
Hrs Run Today	
Cumulative Hrs Run	16.25
Entry Date	09-Mar-2013

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Pulled In | LOC | Total Pull Units 8.43 | BRG

METRES DRILLED: From | To | D-R-C | RPM | WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	85	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
99	Drill Pipe	Stands		1905.07
0	Drill Pipe	Singles		0.00
	Kelly Down			17.36
	Total			2028.56
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation: Pump # | Type | Liner Size | SPM | Pressure | Hrs Run

Remarks

REDUCED PUMP SPEED: Pump # | Pressure | Strokes/min | Depth

DEVIATION SURVEYS

Time | Depth | Deviation | Direction | Type

SOLIDS CONTROL: Equipment Name | Hours Run | Intake Density | Over Flow Density | Under Flow Density

MUD MATERIALS ADDED: Product | Amount | Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	10.5	460

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function test crown saver
16:15	24:00	7.75	11	Retrieve core # 5 with schlumberger

Remarks
Level one inspection on tongs sub and overhead equitment MH
Blew down boilers 2 times @ 100L

SAFETY

Safety Topic	MEHL	MACP
		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130314_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 14

License No	Well Name	Surface Location	Prov	Loc Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	RICK YAVIS	

DAILY CHECKS (OP / RM)

(1.) Daily Walk Around Inspection — OP: DF RM: RY
(2.) Detailed Inspection - Weekly (Using Check List) — OP: DF RM: RY
(3.) H2S Signs Posted if Required — OP: DF RM: RY
(4.) Well Licence & Sitch Diagram Posted — OP: DF RM: RY
(5.) Flare Lines Staked — OP: DF RM: RY
(6.) BOP Drills Performed — OP: DF RM: RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — OP: DF RM: RY
(1.) Rig Site Health & Safety Meeting (once/week/month) — RM: RY
(2.) CAODC Rig Safety Inspection Checklist (once/month) — RM:
(3.) Mast Inspection before Raising or Lowering — RM:
(4.) Crown Saver Checked — RM: RY
(5.) Motor Kills Checked — RM:

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Casng	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1				0.75		4.75	0.25				2.00										0.25					8.00
Tour 2						6.25	0.25														0.25				1.25	8.00
Tour 3				2.00		5.00															0.50				0.50	8.00
TOTAL				2.75		16.00	0.50				2.00										1.00				1.75	24.00

Kelly Bushing: | Dip Feet:

FUEL @ 08:00 HRS: Rig 180 | Light 180

WEATHER: Time 05:45 | Temp -37 | Current Conditions: CLEAR | Wind Direction: N | Wind Strength: CALM | Road Conditions: FAIR

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1C
Size	222
IADC Code	
Manufacturer	NOV
Type	PR513
Serial No	E140308
Jets	11.1 11.1 11.1 11.1 11.1
Depth Out (m)	2027.00
Depth In (m)	1890.00
Total Drilled (m)	137.00
Hrs Run Today	
Cumulative Hrs Run	16.25
Entry Date	09-Mar-2013

CUTTING STRUCTURE: TI 1 | Gage 0 | TO 1 | ODC NO | MDC BT | Reason Pull DTF | LOC M | Total Run (hrs) 8.43 | BRG X

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	85	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
99	Drill Pipe	Stands		1905.07
0	Drill Pipe	Singles		0.00

Kelly Down: 17.36 | Total: 2028.56 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ | Other

Time			
Density			
Funnel Viscosity			
Fluid Loss			
pH			
Location Of Sample			
Depth			
PVT			

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min	Depth
		@		@
		@		@
		@		@

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	10.5	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test H.C.R
0:15	2:15	2.00	11	Retrieve core #5 with schlumberger
2:15	3:00	0.75	4A	Lay down core #5
3:00	7:45	4.75	6B	Trip out of hole to recover core,lay down singles while recovering core flow checks @1841m
7:45	8:00	0.25	21D	Crew change safety meeting

Remarks
Blew down boilers 2 times @100L
Fuel meas boiler1180 Boiler2160

SAFETY

Safety Topic	MEHL	MACP

TOUR 2 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 8:00 | END TIME: 16:00

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	9:15	1.25	25	Recover core from 5 singles layed down
9:15	9:30	0.25	7	Rig service function test hydril 14 sec & crown saver
9:30	9:45	0.25	21	Safety meeting
9:45	16:00	6.25	6B	Pull out of hole to recover core

Remarks
Blow down boiler 200 l
Flow checks @ 1740m, 1324m

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	2
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	14-Mar-2013

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	85	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
99	Drill Pipe	Stands		1905.07
0	Drill Pipe	Singles		0.00

Kelly Down: 17.36 | Total: 2028.56

MUD RECORD

Mud Type: Water ☐ Oil ☑ | Other

Time			
Density			
Funnel Viscosity			
Fluid Loss			
pH			
Location Of Sample			
Depth			
PVT			

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min	Depth
		@		@
		@		@
		@		@

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	10.5	475

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:45	0.75	6B	Pull out to recover core
16:45	17:00	0.25	21	Safety meeting on lay down core bbl & recover core
17:00	17:30	0.50	4A	Handle core barrels
17:30	19:00	1.50	4A	Recover 8m core
19:00	19:15	0.25	21D	Crew change safety meeting
19:15	19:45	0.50	6J	Lay down core collars inspect for core stuck in collars
19:45	21:00	1.25	6C	Make up bit run collars in the hole circulate collars clean (Function test blind rams)
21:00	21:30	0.50	6B	Pull 4 stands of collars out of hole
21:30	22:00	0.50	25	Pick up drill rod
22:00	24:00	2.00	6A	Trip in the hole drifting pipe on the way in

Remarks
Flow check @ 622m, out, Calculated 8.79m3, Measured 10.63m3 difference 1.84m3

SAFETY

Safety Topic	MEHL	MACP
tripping in the hole while drifting		5580

FRONT PAGE SUMMARY

Tour Sheet Excel Number: BEAV2_20130315_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 15

License No	Well Name	Surface Location	Prov	Loc Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	RICK YAVIS	

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — DF / RY
- (2.) Detailed Inspection - Weekly (Using Check List) — DF / RY
- (3.) H2S Signs Posted if Required — DF / RY
- (4.) Well Licence & Stick Diagram Posted — DF / RY
- (5.) Flare Lines Staked — DF / RY
- (6.) BOP Drills Performed — DF / RY
- (7.) Visually Inspected BOPs Flare Lines & Degasser Lines — DF / RY
- (1.) Rig Site Health & Safety Meeting (once/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (once/month) — RY
- (3.) Hoist Inspection Before Raising or Lowering — RY
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked — RY

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1						7.00			0.75												0.25					8.00
Tour 2					1.25	1.75	0.25				4.50										0.25					8.00
Tour 3				6.00	1.00	0.25	0.25				0.50															8.00
TOTAL				6.00	2.25	9.00	0.50		0.75		5.00										0.50					24.00

Daily Servicing: Op Fuel

FUEL @ 08:00 HRS

Rig	Boiler
195	190

WEATHER

Time	Temp
05:00	-37

Ground Conditions: CLEAR

Wind Direction	Wind Strength
N	CALM

Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	14-Mar-2013

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Gage / ODC / Reason Pulled / Bit Run (km)

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
99	Drill Pipe	Stands		1905.07
0	Drill Pipe	Singles		0.00
	Kelly Down			17.36
	Total			2028.56
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	115	4400	1.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	420
2	8.00	11	410

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:30	0.50	6A	Trip in hole drifting pipe
0:30	1:15	0.75	9A	Slip and cut 18m MJ 3165
1:15	7:45	6.50	6A	Trip in hole drifting pipe
7:45	8:00	0.25	21D	Crew change safety meeting

Remarks
boiler fuel meas. boiler #1 190cm, boiler #2 195cm
blew down boiler 100L water

SAFETY

Safety Topic	MEHL	MACP
		5580

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	14-Mar-2013

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Gage / ODC / Reason Pulled / Bit Run (km)

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	108	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
99	Drill Pipe	Stands		1905.18
1	Drill Pipe	Singles		9.61
	Kelly Down			12.77
	Total			2033.69
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	115	4300	3.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2440	@	80	@	1905.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	430
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	9:30	1.50	6A	Run in hole & pick up 21 singles
9:30	9:45	0.25	7	Rig service function test hydril 14 sec & crown saver
9:45	11:00	1.25	5D	Circulate & condition hole @ 2026 m
11:00	11:15	0.25	6B	Pull 3 stds of d.p
11:15	11:30	0.25	21	Safety meeting with n.o.v
11:30	16:00	4.50	11	Rig up schlumberger & Attempt to retrieve drill rod

Remarks
Blow down boiler 200 L LEVEL 1 INSPECTION ON BLOCKS SWIVEL HOOK SUB BAILS ELEVATORS & DERRICK. BLOW DOWN BOILER 200 L

SAFETY

Safety Topic	MEHL	MACP
picking up singles & retrieveing drill rod		5580

TOUR 3

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 / 11,1 / 11,1 / 11,1 / 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	27.00
Hrs Run Today	5.00
Cumulative Hrs Run	5.00
Entry Date	14-Mar-2013

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Gage / ODC / Reason Pulled / Bit Run (km): 5.40

METRES DRILLED

From	To	D-R-C	RPM	WOB
2027.00	2054.00	REAM	60	5

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	84	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	76.42
1	X/O	165	75	0.77
101	Drill Pipe	Stands		1927.26
1	Drill Pipe	Singles		9.63
	Kelly Down			11.00
	Total			2054.02
	Weight of DC			
	Weight of String			69.00

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	21:15	23:15
Density	980	980
Funnel Viscosity	80	78
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2040.00	2050.00
PVT	47	47

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	115	5200	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1815	@	80	@	2035.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	5	sks
LIME - 20KG	15	sks
VERSAMUL - 208LT	1	bbl

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	10.5	475

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:30	0.50	11	Pull out drill rod & lay down drill rod
16:30	16:45	0.25	7	Rig service function test pipe ram's 3 sec & crown saver
16:45	17:45	1.00	4A	Rig up inner core bbl
17:45	18:00	0.25	6A	Run in 3 stds d.p
18:00	18:30	0.50	5D	Pump down inner core bbl assembly
18:30	23:30	5.00	4	Core 222mm hole from 2027m to 2054m Pump rate at 1.2m3 rotary @ 60 RPM WOB 5dan R.O.P 5.4 m/hr Core #6
23:30	24:00	0.50	5	Circulate bottoms up sample

Remarks
Level one inspection on tongs sub and overhead equitment MH
Blew down boilers 2 times at 100L

SAFETY

Safety Topic	MEHL	MACP
Coring		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130316_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 16

Licence No	Well Name	Surface Location	Prov	Lsd	Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45	

Operator	Contractor	Rig No	Well Type	Pre-Drlg
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	Rig Release Date Time
10343209	150	25-Feb-2013 17:00	

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager
DAVE FORSBERG	RICK YAVIS

DAILY CHECKS (OP / RM)
(1.) Daily Walk Around Inspection — OP RY
(2.) Detailed Inspection - Weekly (Using Check List) —
(3.) H2S Signs Posted if Required —
(4.) Well Licence & Stick Diagram Posted — OP RY
(5.) Flare Lines Staked —
(6.) BOP Drills Performed — OP RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — OP RY
(1.) Rig Site Health & Safety Meeting (one/crewmember) — RY
(2.) CAODC Rig Safety Inspection Checklist (weekly/monthly) —
(3.) Most Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked —
(5.) Mast Kills Checked —

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Casng	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1					0.50	0.25	0.25				6.50										0.50					8.00
Tour 2				1.25	0.75	0.25	0.25				5.25										0.25					8.00
Tour 3				4.25	1.75	0.50	0.25				1.00										0.25					8.00
TOTAL				5.50	3.00	1.00	0.75				12.75										1.00					24.00

Daily Mudding | Up Feed

FUEL @ 08:00 HRS

Amt	Litres
185	190

WEATHER

Time	Temp
06:00	-37

Overall Conditions: CLEAR
Wind Direction: N | Wind Strength: CALM
Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	27.00
Hrs Run Today	
Cumulative Hrs Run	5.00
Entry Date	14-Mar-2013

CUTTING STRUCTURE

I		Gage	
O		ODC	
MDC		Pull Bit In.	
LOC		Total Run (hrs)	5.40
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	85	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.42
1	X/O	165	75	0.77
100	Drill Pipe Stands			1924.20
1	Drill Pipe Singles			9.63

Kelly Down	15.83
Total	2055.79
Weight of DC	
Weight of String	70.00

HOLE CONDITION

Hole Drag	Up		Down
Torque At Bottom			
Fill On Bottom			

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other ☐

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	115	4700	1.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1344	@	63	@	2053.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	475
2	8.00	10.5	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:30	0.50	5	Circulate bottoms up sample
0:30	0:45	0.25	7	Rig service function test annular 13 sec to close function test crown saver working proper
0:45	1:00	0.25	6B	Trip out 3 stands
1:00	1:15	0.25	21	Safety meeting with nov core hands and schlumbger on wire line retrieving
1:15	7:45	6.50	11	Rig up wire line with schlumbger and wire line retrieve core #5
7:45	8:00	0.25	21	Crew handover meeting

Remarks
Blew down boilers 2 times @ 100L
Boiler fuel 1 190cm
Boiler fuel 2 190cm

SAFETY

Safety Topic	MEHL	MACP
rig up wireline	5580	

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	27.00
Hrs Run Today	
Cumulative Hrs Run	5.00
Entry Date	14-Mar-2013

CUTTING STRUCTURE

I		Gage	
O		ODC	
MDC		Pull Bit In.	
LOC		Total Run (hrs)	5.40
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	85	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.42
1	X/O	165	75	0.77
100	Drill Pipe Stands			1924.20
1	Drill Pipe Singles			9.63

Kelly Down	15.83
Total	2055.79
Weight of DC	
Weight of String	70.00

HOLE CONDITION

Hole Drag	Up		Down
Torque At Bottom			
Fill On Bottom			

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	440
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	13:15	5.25	11	Retrieve core # 5 with schlumberger
13:15	13:30	0.25	7	Rig service function test pIPE RAM'S 3 SEC & CROWN SAVER
13:30	13:45	0.25	21	Safety meeting on laying down core bbl
13:45	15:00	1.25	4A	Handle core bbl & lay down core # 6
15:00	15:15	0.25	6A	Run in 3 stds d.p
15:15	16:00	0.75	5D	circ bottoms up

Remarks
LEVEL 1 INSPECTION ON BLOCKS SWIVEL HOOK SUB BAILS ELEVATORS & DERRICK. BLOW DOWN BOILER 200 L

SAFETY

Safety Topic	MEHL	MACP
	5580	

TOUR 3

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	54.00
Hrs Run Today	3.00
Cumulative Hrs Run	8.00
Entry Date	14-Mar-2013

CUTTING STRUCTURE

I		Gage	
O		ODC	
MDC		Pull Bit In.	
LOC		Total Run (hrs)	6.75
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
2054.00	2061.00	REAM	65	5.5

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	84	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.42
1	X/O	165	75	0.77
102	Drill Pipe Stands			1962.76
1	Drill Pipe Singles			1.57

Kelly Down	11.00
Total	2081.46
Weight of DC	
Weight of String	71.00

HOLE CONDITION

Hole Drag	Up	1	Down 1
Torque At Bottom			
Fill On Bottom			

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	18:45	20:30
Density	980	980
Funnel Viscosity	74	74
Fluid Loss		
pH		
Location Of Sample	Shaker	Shaker
Depth	2065.00	2075.00
PVT	45	45

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	120	6000	

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1720	@	79	@	2041.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
CAL-CHLR 94-97%-40KG	5	sks
LIME - 20KG	10	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	10.5	460

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:30	0.50	5D	Circ bottoms up
16:30	16:45	0.25	7	Rig service function test hydril 14 sec & crown saver
16:45	18:00	1.25	4A	Make up inner core bbl & pump down inner bbl
18:00	21:00	3.00	4	cut 89 mm core & 222 mm hole from 2054 m to 2081 m pump @ 1.2 m3 & rotary 60 & w.o.b 5 7m/hr core # 7
21:00	22:15	1.25	5	Circulate bottoms up
22:15	22:45	0.50	6B	Trip out 3 stands
22:45	23:00	0.25	21	Safety meeting with nov core hands and schlumbger wireline Rig up wire line
23:00	24:00	1.00	11	Wireline retrieve core #7 with schlumbger

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
	5580	

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
BEAV2_20130317_1A	RMS 2013.2.6.26103	2013	03	17

License No	Well Name	Surface Location	Prov	Lic Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	RICK YAVIS	

DAILY CHECKS (OP / RM)

(1.) Daily Walk Around Inspection — DF / RY
(2.) Detailed Inspection - Weekly (Using Check List) —
(3.) H2S Signs Posted if Required —
(4.) Well Licence & Slick Diagram Posted — DF / RY
(5.) Flare Lines Staked — DF / RY
(6.) BOP Drills Performed — DF / RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — DF / RY
(1.) Rig Site Health & Safety Meeting (once/crew/month) — RY
(2.) CADDC Rig Safety Inspection Checklist (once/rig/month) —
(3.) Mast Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked —
(5.) Motor Kills Checked —

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1							0.25				7.50										0.25					8.00
Tour 2				1.75	1.75	0.25	0.25				3.75										0.25					8.00
Tour 3				3.75	1.50	0.50	0.25				1.75										0.25					8.00
TOTAL				5.50	3.25	0.75	0.75				13.00										0.75					24.00

FUEL @ 08:00 HRS

Rig	Camp
190	195

WEATHER

Time	Temp
05:45	-26

Current Conditions: PARTLY CLOUDY
Wind Direction: W — Wind Strength: UP TO 19 KM/H
Road Condition: FAIR

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME: 0:00 — END TIME: 8:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 / 11,1 / 11,1
	11,1 / 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	54.00
Hrs Run Today	
Cumulative Hrs Run	8.00
Entry Date	14-Mar-2013

CUTTING STRUCTURE

TI		Wear	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Rot Hrs	6.75
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	84	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
102	Drl Pipe	Stands		1962.76
1	Drl Pipe	Singles		1.57
	Kelly Down			11.00
	Total			2081.46
	Weight of DC			
	Weight of String			71.00

HOLE CONDITION

Hole Drag: Up / Down
Torque At Bottom
Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	10.5	460
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	RIG SERVICE
0:15	7:45	7.50	11	Wire line retrieve core #7 with schlumbger(Held a high angle rescue with crew went through all equitment.)
7:45	8:00	0.25	21	crew hand over meeting

Remarks
Level one inspection on tongs sub and overhead equitment MH
Blew down boilers 2 times at 100L
Boiler fuel 1195cm
Boiler fuel 2 180cm

SAFETY

Safety Topic	MEHL	MACP
High angle rescue		5580

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME: 8:00 — END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

TI		Wear	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Rot Hrs	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
	Drl Pipe	Stands		
	Drl Pipe	Singles		
	Kelly Down			
	Total			
	Weight of DC			
	Weight of String			

HOLE CONDITION

Hole Drag: Up / Down
Torque At Bottom
Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	14:15
Density	980
Funnel Viscosity	130
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	2088.00
PVT	42

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	125	2000	2.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
LIME - 20KG	5	SXS
CAL-CHLR 94-97%-40KG	5	SXS

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	11:45	3.75	11	Retrieve core # 7 with schlumberger
11:45	12:00	0.25	7	Rig service function test hydril 13 sec & crown saver
12:00	12:15	0.25	21	Safety meeting on laying down core # 7
12:15	13:30	1.25	4A	recover core # 7 & lay down
13:30	13:45	0.25	6A	Run in 3 stds of d.p
13:45	15:00	1.25	5D	Circ bottoms up
15:00	15:30	0.50	4A	Make up inner core bbl & pump down
15:30	16:00	0.50	5D	Circ & pump down inner core bbl

Remarks
level 1 inspection on blocks sub bails elevators swivel & derrick .
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
Rig rescue		5580

TOUR 3

SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME: 16:00 — END TIME: 24:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11,1 / 11,1 / 11,1
	11,1 / 11,1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	81.00
Hrs Run Today	3.75
Cumulative Hrs Run	11.75
Entry Date	14-Mar-2013

CUTTING STRUCTURE

TI		Wear	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Rot Hrs	6.89
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
2081.00	2108.00	CORE	60	5

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	84	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.62
1	X/O	165	75	0.77
103	Drl Pipe	Stands		1981.87
1	Drl Pipe	Singles		9.61
	Kelly Down			10.77
	Total			2108.38
	Weight of DC			
	Weight of String			71.00

HOLE CONDITION

Hole Drag: Up / Down
Torque At Bottom
Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	17:15
Density	980
Funnel Viscosity	100
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	2091.00
PVT	42

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	115	4950	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2360	@	83	@	2090.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	10.5	475

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function test pipe ram's 3 sec & crown saver
16:15	20:00	3.75	4	Cut 89 mm core & drill 222 mm hole from 2081 m to 2108 m pump @ 1.2 m3 rotary @ 60 w.o.b 5 rop 7.2m/hr core #8
20:00	21:30	1.50	5	Circulate bottoms up
21:30	22:00	0.50	6B	Trip out 3 stands
22:00	22:15	0.25	21	Safety meeting with nov core hands and schlumbger on wire line
22:15	24:00	1.75	11	Wire line retrieve core #8 with schlumbger

Remarks
Level one inspection on tong sub overhead head equitment MH
Blew down boilers 2 times at 100L

SAFETY

Safety Topic	MEHL	MACP
wire line		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vender Software Version	Year	Month	Day
BEAV2_20130318_1A	RMS 2013.2.6.26103	2013	03	18

License No	Well Name	Surface Location	Prov	Loc Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	RICK YAVIS	

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DP	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Stick Diagram Posted	DP	RY
(5.) Flare Lines Staked	DP	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	DP	RY
(1.) Rig Site Health & Safety Meeting (one/crew/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (one/rig/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1							0.25				7.50										0.25					8.00
Tour 2				0.75	1.00		0.25				3.50										0.50				2.00	8.00
Tour 3					1.25	4.50	0.25																		2.00	8.00
TOTAL				0.75	2.25	4.50	0.75				11.00										0.75				4.00	24.00

Daily Mud Cost | Cum Mud Cost | Daily Fuel | Cum Fuel

FUEL @ 08:00 HRS

WEATHER: Rig 195 | Sealed 195 | Time 06:00 | Temp -27 | Current Conditions OVERCAST | Wind Direction N | Wind Strength UP TO 19 KM/H | Road Condition FAIR

TOUR 1

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 0:00 END TIME: 8:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	
Depth In (m)	2027.00
Total Drilled (m)	81.00
Hrs Run Today	
Cumulative Hrs Run	11.75
Entry Date	14-Mar-2013

CUTTING STRUCTURE: In | Gage | TO | ODC | MDC | Reason Pulled | LOC | Tool Pumped | BRG 6.89

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	84	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
103	Drill Pipe	Stands		1981.87
1	Drill Pipe	Singles		9.61

Kelly Down 10.77 | Total 2108.38 | Weight of DC | Weight of String 71.00

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	10.5	480
2	8.00	11	475

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test H.C.R
0:15	7:45	7.50	11	Wire line retrieve core #8
7:45	8:00	0.25	21	crew handover meeting

Remarks
Blew down boilers two times @ 100L
Boiler fuel 1 195cm
Boiler fuel 2 165cm

SAFETY

Safety Topic	MEHL	MACP
working at heights		5580

TOUR 2

SIGNATURE OF DRILLER: BRIAN BERGSETH

START TIME: 8:00 END TIME: 16:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	
Depth In (m)	1891.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	11.75
Entry Date	14-Mar-2013

CUTTING STRUCTURE: In | Gage | TO | ODC | MDC | Reason Pulled | LOC | Tool Pumped | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
	Drill Pipe	Stands		
	Drill Pipe	Singles		

Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	10.5	430
2	8.00	10	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	11:30	3.50	11	Retrieve core # 8 with schlumberger
11:30	11:45	0.25	7	Rig service function test hydril 13 sec & crown saver
11:45	12:00	0.25	21	Held safety meeting n.o.v & schlumberger
12:00	12:45	0.75	4A	Recover core # 8 & lay down
12:45	13:45	1.00	5D	Circ bottom up
13:45	14:00	0.25	21	Safety meeting
14:00	16:00	2.00	25	Rig up drill rod & run in to set drill rod with n.o.v & schlumberger

Remarks
Level 1 inspection on blocks swivel sub derrick elevators bails .
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
Lay down core & make up drill rod		5580

TOUR 3

SIGNATURE OF DRILLER: MARCUS HALLOWES

START TIME: 16:00 END TIME: 24:00

BITS

Bit Number	2c
Size	222
IADC Code	
Manufacturer	NOV
Type	CEPR5135
Serial No	A1/E140305
Jets	11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	2108.00
Depth In (m)	1891.00
Total Drilled (m)	217.00
Hrs Run Today	
Cumulative Hrs Run	11.75
Entry Date	14-Mar-2013

CUTTING STRUCTURE: In | Gage | TO | ODC | MDC | Reason Pulled | LOC | Tool Pumped | BRG 18.47

METRES DRILLED

From	To	D-R-C	RPM	WOB
2108.00	2108.00	DRILL	65	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Core bit	222	78	0.34
1	Core Barrel	165	108	7.92
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	7.93
1	Stabilizer	165	108	1.23
1	Core Barrel	165	108	9.57
1	Seat sub	165	108	0.49
1	Stabilizer	165	108	0.83
8	Core Collers	165	108	75.82
1	X/O	165	75	0.77
103	Drill Pipe	Stands		1981.87
1	Drill Pipe	Singles		9.61

Kelly Down 12.77 | Total 2110.38 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	95	4400	1.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	10.5	460

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	17:15	1.25	25	Attempt to and set drill rod & set rod with schlumberger & rig out
17:15	17:30	0.25	7	Rig service function test pipe ram's 3 sec and crown saver
17:30	17:45	0.25	6A	Run in 3 stds of d.p
17:45	18:30	0.75	25	Attempt to drill no seat on drill rod
18:30	19:45	1.25	5D	Circ bottoms up
19:45	24:00	4.25	6B	Trip out of hole drill rod didnt seat, flo0w check @ 2097m,1046m,

Remarks
flow check @ 2097m and 1046m
Blew down boiler 2 times at 100L

SAFETY

Safety Topic	MEHL	MACP
		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130319_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 19

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Lea Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time

DAILY CHECKS (OP / RM)

	OP	RM
(1.) Daily Walk Around Inspection	OP	RY
(2.) Detailed Inspection - Weekly (Using Check List)	OP	RY
(3.) H2S Signs Posted if Required	OP	RY
(4.) Well License & Stick Diagram Posted	OP	RY
(5.) Flare Lines Staked	OP	RY
(6.) BOP Drills Performed	OP	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	OP	RY
(1.) Rig Site Health & Safety Meeting (once/week/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (once/month/week)		RY
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		RY
(5.) Water Kills Checked		RY

CAODC

Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
HOURS	Rig Up	Drill Actual	Reaming	Coring	Cond Mud & Circ	Trips	Rig Service	Repair Rig	Cut Off Drlg Line	Dev Survey	Wireline Logs	Run Csg & Cement	Wait On Cement	Nipple BOP	Test BOP	Drillstem Test	Plug Back	Squeeze Cement	Fishing	Dir Work	Safety Meeting	Tear Down	Waiting On	Rig Watch	Other	TOTAL
Tour 1						7.50	0.25														0.25					8.00
Tour 2		3.75				3.75	0.25														0.25					8.00
Tour 3		7.50					0.25														0.25					8.00
TOTAL		11.25				11.25	0.75														0.75					24.00

Daily Running | Up Front

FUEL @ 08:00 HRS

Rig: 165 | Water: 155

WEATHER: Time: 05:00 | Temp: -28 | Current Conditions: OVERCAST | Wind Direction: N | Wind Strength: UP TO 19 KM/H | Road Condition: FAIR

TOUR: 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1RR
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	601.00
Total Drilled (m)	1289.00
Hrs Run Today	
Cumulative Hrs Run	76.75
Entry Date	

CUTTING STRUCTURE: Inner | Outer | Gauge | TO | ODC | Ream Add Gauge | MDC | LOC | Total Rev/min 16.79 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222mm	222	57	0.39
1	Bit sub	232	70	0.95
10	6" D.C	160	60	93.97
1	x/o	148	58	0.74
1	X/o	156	83	0.34
1	X/0	166	74	0.61
103	Drill Pipe	Stands		1981.87
1	Drill Pipe	Singles		9.61
	Kelly Down			12.77
	Total			2101.25
	Weight of DC			
	Weight of String			

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other ☐

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	10.5	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:30	0.50	6B	Trip out of hole
0:30	0:45	0.25	7	RIG SERVICE
0:45	2:15	1.50	6B	Trip out of hole Flow checks @ 595m OOH
2:15	4:30	2.25	6D	Laydown drill rod and laydown core barrels
4:30	6:15	1.75	6A	Make up BHA and Bit, pick up 10 drill collars
6:15	7:45	1.50	6A	Trip into the hole
7:45	8:00	0.25	21	Crew hand over meeting

Remarks
Blew down boilers 2 times 100L
Trip sheet calc 9.37m3 meas 9.73m3 diff 0.36m3
Boiler fuel #1 155cm
#2 145cm

SAFETY

Safety Topic	MEHL	MACP
lay out BHA		5580

TOUR: 2 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	1RR
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	2108.00
Total Drilled (m)	14.00
Hrs Run Today	3.75
Cumulative Hrs Run	80.50
Entry Date	

CUTTING STRUCTURE: Inner | Outer | Gauge | TO | ODC | Ream Add Gauge | MDC | LOC | Total Rev/min 0.17 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
2108.00	2122.00	DRILL	70	8

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222mm	222	57	0.39
1	Bit sub	160	70	0.95
10	6" D.C	160	60	93.97
1	x/o	148	58	0.74
1	X/o	156	83	0.34
1	X/0	166	74	0.61
105	Drill Pipe	Stands		2020.42
0	Drill Pipe	Singles		0.00
	Kelly Down			4.60
	Total			2122.02
	Weight of DC			
	Weight of String			73.00

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	14:15
Density	990
Funnel Viscosity	93
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	2118.00
PVT	43

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	125	3500	4.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	440
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function hydril 14 sec & crown saver
8:15	12:00	3.75	6A	Run in hole fill pipe @ 811m 1628m 2102m and flowchecks
12:00	12:15	0.25	21A	B.O.P. drill well secured in 85 seconds
12:15	16:00	3.75	2	Drill 222mm hole from 2108m to 2122 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 8dan, pumping @ 1.2m3,.RPM 90,Average ROP 3.7m/hr.

Remarks
level 1 inspection on blocks sub derrick elevators swivel bails .
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
B.O.P DRILL		5580

TOUR: 3 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	1RR
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11,1 11,1 11,1 11,1 11,1 11,1
Depth Out (m)	
Depth In (m)	2108.00
Total Drilled (m)	34.00
Hrs Run Today	7.50
Cumulative Hrs Run	88.00
Entry Date	

CUTTING STRUCTURE: Inner | Outer | Gauge | TO | ODC | Ream Add Gauge | MDC | LOC | Total Rev/min 0.39 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
2122.00	2142.00	DRILL	80	9

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222mm	222	57	0.39
1	Bit sub	160	70	0.95
10	6" D.C	160	60	93.97
1	x/o	148	58	0.74
1	X/o	156	83	0.34
1	X/0	166	74	0.61
106	Drill Pipe	Stands		2039.65
0	Drill Pipe	Singles		0.00
	Kelly Down			5.35
	Total			2142.00
	Weight of DC			
	Weight of String			73.00

HOLE CONDITION: Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other ☐

Time	16:45	20:00
Density	990	990
Funnel Viscosity	93	93
Fluid Loss		
pH		
Location Of Sample	SHAKER	shaker
Depth	2124.00	2130.00
PVT	42	42

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	130	3700	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1640	@	82	@	2129.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
BARITE - 40KG	42	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	18:00	2.00	2	Drill 222mm hole from 2122m to 2130 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3,.RPM 90,Average ROP 4m/hr.
18:00	18:15	0.25	21A	BOP drill crew in position well secure in 90 sec
18:15	18:30	0.25	7	Rig service function pipe rams 3 sec crown saver operating properly,function test motor kills operating properly
18:30	24:00	5.50	2	Drill 222mm hole from 2130m to 2142m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3,.RPM 90,Average ROP Xm/hr.

Remarks
Blew down boilers two times 200 litres

SAFETY

Safety Topic	MEHL	MACP
BOP DRILL		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130320_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 20

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Lic Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 | 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time

DAILY CHECKS (OP / RM)

- (1.) Daily Weir Amand Inspection
- (2.) Detailed Inspection - Weekly (Using Check List)
- (3.) H2S Signs Posted if Required
- (4.) Well Licence & BOP Diagram Posted
- (5.) Flare Lines Staked
- (6.) BOP Drills Performed
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines
- (1.) Rig Site Health & Safety Meeting (area/crew/monthly)
- (2.) CAODC Rig Safety Inspection Checklist (area/rig/monthly)
- (3.) Mast Inspection before Raising or Lowering
- (4.) Crown Saver Checked
- (5.) Motor Kills Checked

CAODC

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drilling Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1		1.00			2.50	3.75	0.25														0.50					8.00
Tour 2						7.50	0.25																		0.25	8.00
Tour 3							0.25				3.25										0.25				4.25	8.00
TOTAL		1.00			2.50	11.25	0.75				3.25										0.75				4.50	24.00

FUEL @ 08:00 HRS

Daily Booking	Op Fuel
129	109
Time 05:00	Temp -36
Current Conditions: PARTLY CLOUDY	
Wind Direction: N	Wind Strength: UP TO 19 KM/H
Road Condition: GOOD	

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	1RR
Size	222
IADC Code	
Manufacturer	REED
Type	MSR616M-A2C
Serial No	A141415
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	2146.00
Depth In (m)	2108.00
Total Drilled (m)	38.00
Hrs Run Today	1.00
Cumulative Hrs Run	89.00
Entry Date	

CUTTING STRUCTURE: TI | Gage | TO | ODC | MDC | Reason Pulled | LOC | Total Reaming | BRG: 0.43

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	222mm	222	57	0.39
1	Bit sub	232	70	0.95
10	6" D.C	160	60	83.97
1	X/o	148	58	0.74
1	X/o	156	83	0.34
1	X/0	166	74	0.61

106 Drill Pipe Stands 2039.65 | 0 Drill Pipe Singles 0.00

Kelly Down 9.35 | Total 2146.00 | Weight of DC | Weight of String 73.00

METRES DRILLED

From	To	D-R-C	RPM	WOB
2142.00	2146.00	DRILL	75	8

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	01:45
Density	990
Funnel Viscosity	93
Fluid Loss	
pH	
Location Of Sample	SHKER
Depth	2146.00
PVT	38

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	130	3900	4.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1619	@	80	@	2145.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
BARITE - 40KG	42	SXS

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	1:00	1.00	2	Drill 222mm hole from 2130m to 2146 m with rerun Reed MSR616 bit and slick rotary BHA, WOB 9dan, pumping @ 1.2m3..RPM 80,Average ROP 3 ,5 m/hr.
1:00	2:00	1.00	5D	Circulate & condition hole @ 2146 m T.D
2:00	2:15	0.25	7	Rig service function test pipe ram's 3 sec & crown saver
2:15	3:00	0.75	6M	Wiper trip 5 stds to 2040 m flow check @ 2136 m & 2040 m
3:00	4:30	1.50	5D	Circulate & condition hole @ 2146 m
4:30	4:45	0.25	21	Safety meeting with Trottier
4:45	7:45	3.00	6F	Lay down drill pipe with pipe spinner & Trottier pipe handlers flow checks @ 2136 m 2042 m
7:45	8:00	0.25	21	Crew hand over meeting

Remarks
Blow down boiler 200 l
boiler #2 fuel 130 cm

SAFETY

Safety Topic	MEHL	MACP
lay down d.p		5580

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: TI | Gage | TO | ODC | MDC | Reason Pulled | LOC | Total Reaming | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe Stands | Drill Pipe Singles

Kelly Down | Total | Weight of DC | Weight of String

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service function hydrill 13 sec crown saver operating properly
8:15	15:45	7.50	6F	Lay down drill pipe,brake down overhead lay down DC with trottier pipe handlers flow check@1080m/601m/OOH/reviewed JSA#159 lay down drill pipe with lay down truck
15:45	16:00	0.25	25	Rig out laydown truck

Remarks
level 1 inspection on tongs,sub and overhead equipment D.S
Blew down boilers 2 times 200 litres
Trip Calc 11.01m3 meas 10.98m3 diff .03m3

SAFETY

Safety Topic	MEHL	MACP
laying down DP		

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: TI | Gage | TO | ODC | MDC | Reason Pulled | LOC | Total Reaming | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe Stands | Drill Pipe Singles

Kelly Down | Total | Weight of DC | Weight of String

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function blind rams 3 sec crown saver operating properly
16:15	20:30	4.25	25	Pull wear bushing/lay down NOV X/O and tools/lay down kelly bar and swivel/clean and prepare floor for wire line logs
20:30	20:45	0.25	21	Safety meeting on wire line logs with schlumberger
20:45	24:00	3.25	11	Rig in and log with schlumberger,Run #1 AIT,NEXT,PEX,TLO2 ,Log depth 2148m

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
loging		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130321_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 21

Licence No	Well Name	Surface Location	Prov	Loc Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time
10343209	150	25-Feb-2013 17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	RICK YAVIS	

DAILY CHECKS (OP / RM)

(1.) Daily Walk Around Inspection — OP: DF, RM: RY
(2.) Detailed Inspection - Weekly (Using Check List) — OP: DF, RM: RY
(3.) H2S Signs Posted (If Required) — OP: DF, RM: RY
(4.) Well Licence & Slick Diagram Posted — OP: DF, RM: RY
(5.) Flare Lines Staked — OP: DF, RM: RY
(6.) BOP Drills Performed — OP: DF, RM: RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — OP: DF, RM: RY
(1.) Rig Site Health & Safety Meeting (once/week/4wk) — RM: RY
(2.) CAODC Rig Safety Inspection Checklist (once/month) — RM: RY
(3.) Hoist Inspection before Raising or Lowering — RM: RY
(4.) Crown Saver Checked — RM: RY
(5.) Motor Kills Checked — RM: RY

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1							0.25				7.75															8.00
Tour 2							0.25				7.75															8.00
Tour 3							0.25				7.75															8.00
TOTAL							0.75				23.25															24.00

Kelly Bushing: | Dry Feet:

FUEL @ 08:00 HRS

Rig: 147 | Meter: 190
Time: 04:45 | Temp: -35
Current Conditions: CLEAR
Wind Direction: E | Wind Strength: CALM
Road Conditions: GOOD

WEATHER

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Tool Pumpable	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands
Drill Pipe: Singles
Kelly Down:
Total:
Weight of DC:
Weight of String:

HOLE CONDITION

Hole Drag: Up / Down
Torque At Bottom:
Fill On Bottom:

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other:

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	480
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test crown saver
0:15	8:00	7.75	11	Wireline logs with schlumberger ,Run #1 AIT,NEXT,PEX,TLO2 Log depth 2148m, Start Run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.

Remarks
Blow down boiler 200 l
boiler#2 fuel @ 127cm

SAFETY

Safety Topic	MEHL	MACP
		5580

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Tool Pumpable	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands
Drill Pipe: Singles
Kelly Down:
Total:
Weight of DC:
Weight of String:

HOLE CONDITION

Hole Drag: Up / Down
Torque At Bottom:
Fill On Bottom:

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other:

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service
8:15	16:00	7.75	11A	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m

Remarks
Level 1 inspection on tongs,sub and overhead equipment D.S
Blew down boilers 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
		5580

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Tool Pumpable	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands
Drill Pipe: Singles
Kelly Down:
Total:
Weight of DC:
Weight of String:

HOLE CONDITION

Hole Drag: Up / Down
Torque At Bottom:
Fill On Bottom:

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other:

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	440
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service
16:15	24:00	7.75	11A	Continue Open Hole program with Schlumberger run #2 with UBI,Dual OBMI,GPIT,PPC,MISP,PBC,EDTC.Log depth 2148m

Remarks
Blow down boiler 200 l

SAFETY

Safety Topic	MEHL	MACP
		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130322_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 22

Licence No	Well Name	Surface Location	Prov	Lic Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE FORSBERG	RICK YAVIS	

DAILY CHECKS

	OP DF	OP RY
(1.) Daily Walk Around Inspection		
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted If Required		
(4.) Well Licence & Slick Diagram Posted	DF	RY
(5.) Flare Lines Staked	DF	RY
(6.) BOP Drills Performed	DF	RY
(7.) Visually Inspected BOP,Flare Lines & Degasser Lines	DF	RY
(1.) Rig Site Health & Safety Meeting (prestone/murphy)		RY
(2.) CAODC Rig Safety Inspection Checklist (analog/mwd/tk)		
(3.) Visual Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1							0.25				7.75															8.00
Tour 2							0.25				7.75															8.00
Tour 3							0.25				7.75															8.00
TOTAL							0.75				23.25															24.00

Daily Bookings | Up Time

FUEL @ 08:00 HRS

Rig	Camp
142	145

WEATHER

Time	Temp
05:30	-32

Current Conditions: CLEAR

Wind Direction	Wind Strength
SW	CALM

Road Condition: GOOD

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Regrade | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	440
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test crown saver
0:15	8:00	7.75	11	Continue Open Hole program with Schlumberger run #2 with UBI,Dual QBMI,GPIT,PPC,MISP,PBC,EDTC,Log depth 2148m Run #3 rerun UBI

Remarks: Blow down boiler 100 l

SAFETY

Safety Topic	MEHL	MACP
		5580

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Regrade | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	460
2	8.00	11	490

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service
8:15	14:30	6.25	11A	Continue Open Hole program with Schlumberger, Run #3 rerun UBI
14:30	16:00	1.50	11A	Open hole program with Schlumberger run #4 tools ran RST,CMR,ADT,HNGS, log depth 2148m

Remarks: Level 1 inspection on tong,sub and overhead equipment D.S
Blew down boiler 2 times 200 litres

SAFETY

Safety Topic	MEHL	MACP
		5580

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: I | Grade | TO | ODC | MDC | Reason Pulled | LOC | Total Regrade | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service
16:15	24:00	7.75	11A	Continue open hole log program with Schlumberger,Continue with run #4 tools ran RST,CMR,ADT,HNGS, log depth 2148m,RTS tool failed Run #5 Cement Bond Log

Remarks: Blow down boiler 100 l

SAFETY

Safety Topic	MEHL	MACP
		5580

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130323_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 23

License No: EL470 | Well Name: COPRC MIRROR LAKE N-20 65-00 126-45 | Surface Location | Prov: NT | Lic Type | Unique Well Id: N-2065-00126-45

Operator: Conoco Canada | Contractor: Beaver Drilling Ltd. | Rig No: 2 | Well Type: VERT | Re-Entry: ☐

Operator's AFE: 10343209 | Contractor's Job No: 150 | Spud Date Time: 25-Feb-2013 17:00

Signature Of Operator's Representative: DAVE FORSBERG | Signature Of Contractor's Rig Manager: RICK YAVIS | Rig Release Date Time:

DAILY CHECKS (OP / RM)

	OP	RM
(1.) Daily Walk Around Inspection	DF	RY
(1.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted If Required		
(4.) Well Licence & Sign Diagram Posted	DF	RY
(5.) Flare Lines Staked	DF	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	DF	RY
(1.) Rig Site Health & Safety Meeting (once/week/month)		RY
(2.) CADDC Rig Safety Inspection Checklist (once/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

CADDC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Casing	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1							0.25				2.00	5.25									0.50					8.00
Tour 2					1.75		0.25					6.00														8.00
Tour 3					1.25		0.25					3.50	2.75								0.25					8.00
TOTAL					3.00		0.75				2.00	14.75	2.75								0.75					24.00

FUEL @ 08:00 HRS

WEATHER: Rig 1.33 | Beaker 0.98 | Time 05:45 | Temp -24 | Ground Conditions CLEAR | Wind Direction SW | Wind Strength CALM | Road Conditions FAIR

TOUR 1 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: In | Gage | To | ODC | MDC | Reason Pulled | LOC | Tool Run Jobs | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	2:00	2.00	11	Wireline logs with schlumberger
2:00	2:15	0.25	7	Rig service function test crown saver & blind ram's 3 sec
2:15	2:30	0.25	21	Safety meeting with Hallmark & pipe handlers
2:30	3:45	1.25	12A	Rig up tong hand & Trottier pipe handlers
3:45	7:45	4.00	12B	Run casing
7:45	8:00	0.25	21	Crew hand over meeting

Remarks: Blow down boiler 100 l

SAFETY

Safety Topic	MEHL	MACP
run casing		5580

TOUR 2 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: In | Gage | To | ODC | MDC | Reason Pulled | LOC | Tool Run Jobs | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	140	75	2100	0.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	480

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	7	Rig service
8:15	9:45	1.50	12B	Run casing to 1155m w/hallmark tong hands
9:45	10:30	0.75	5	Circulate casing @1155m
10:30	12:15	1.75	12B	Run casing from 1155m to 1556m w/hallmark tong hand
12:15	12:45	0.50	5	Circulate casing @1556m
12:45	15:30	2.75	12B	Run casing from 1556m to 2146m.Ran 1-177.8mm Float Shoe,1jt. 177.8mm X 38.6kg/m P110 LT&C casing,1 177.8mm Float Collar and 178 joints 177.8mm X 38.6kg/m P110 LT&C casing.Total length 2147.87m set at 2146m
15:30	16:00	0.50	5D	Circ & condition hole

Remarks: Level 1 inspection on tongs,sub and overhead equipment D.S
Blew down boiler 2 times 100 litres
Splash gard destroyed by Hallmark power tongs while running casing

SAFETY

Safety Topic	MEHL	MACP
run casing		5580

TOUR 3 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: In | Gage | To | ODC | MDC | Reason Pulled | LOC | Tool Run Jobs | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands | Drill Pipe: Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag: Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	470

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service
16:15	17:30	1.25	5	Circulate casing on bottom
17:30	17:45	0.25	21	Safety meeting with Schlumberger cementers
17:45	21:15	3.50	12	Rig to and cement 177.8mm production casing as follows,pumped 4m3 Preflush ahead,from 200m to 1600m 30.6m3 slurry (27tonne) 1400kg/m3 HiLite cement with 1.2%FLACB348,0.3% Retarder and 0.2% AntiFoam,From 1600m to 2146m 11.5m3 1600kg/m3 slurry (12tonne) Class "G" cement with 0.4% FluidLoss,0.5 %Dispersant,0.2%Anti Foam and 0.3 % Retarder. Displaced with 43m3 water,Full circulation through out job untill last 10m3 of displacement with total losses at that point estemailed cement top at 200m. Floats held Pressuretest casing at 18200kpa.
21:15	24:00	2.75	13	Wait on cement

Remarks

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number: BEAV2_20130324_1A | Vendor Software Version: RMS 2013.2.6.26103 | Year: 2013 | Month: 03 | Day: 24

Licence No: EL470	Well Name: COPRC MIRROR LAKE N-20 65-00 126-45	Surface Location:	Fmn: NT	Lsd Type:	Unique Well Id: N-2065-00126-45
Operator: Conoco Canada	Contractor: Beaver Drilling Ltd.	Rig No: 2	Well Type: VERT	Rig Heavy: ☐	
Operator's AFE: 10343209	Contractor's Job No: 150	Spud Date Time: 25-Feb-2013 17:00			
Signature Of Operator's Representative: DAVE FORSBERG	Signature Of Contractor's Rig Manager: RICK YAVIS	Rig Release Date Time: 24-Mar-2013 23:59			

DAILY CHECKS

	OP	RM
(1.) Daily Well Ansurst Inspection	DF	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted If Required	DF	RY
(4.) Well Licence & Sour Diagram Posted		
(5.) Flare Lines Raised		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (one/crew/month)	RY	
(2.) CAODC Rig Safety Inspection Checklist (once/month)	RY	
(3.) Mast Inspection before Raising or Lowering	RY	
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Wash	25 Other	TOTAL
Tour 1													1.50	3.50							0.50	2.50				8.00
Tour 2																						8.00				8.00
Tour 3																						8.00				8.00
TOTAL													1.50	3.50							0.50	18.50				24.00

FUEL @ 08:00 HRS

Up	Level
91	50
Time	Temp
05:00	-24

WEATHER

Current Conditions	
	CLEAR
Wind Direction	Wind Strength
SW	CALM
Road Conditions	
FAIR	

TOUR 1

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 0:00 | END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: In | Gage | To | ODC | MDC | Func'nl Ab | LOC | Bnd Retain | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
	Drill Pipe	Stands		
	Drill Pipe	Singles		

Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	1:30	1.50	13	Wait on cement
1:30	1:45	0.25	21	Safety meeting tear out b.o.p
1:45	5:15	3.50	14B	Nipple down b.o.p & set slips
5:15	7:45	2.50	22	Tear out rig wait on vac trucks to clean tanks
7:45	8:00	0.25	21	Crew hand over meeting

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME: 8:00 | END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: In | Gage | To | ODC | MDC | Func'nl Ab | LOC | Bnd Retain | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
	Drill Pipe	Stands		
	Drill Pipe	Singles		

Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	10:00	2.00	22	INSPECT DERRICK & LAY OVER RY/DS/DC/JA
10:00	14:00	4.00	22	TEAR DOWN RIG & WAIT ON VAC TRUCKS TO CLEAN TANKS
14:00	16:00	2.00	22	TEAR DOWN RIG & CLEAN TANKS

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

SAFETY

Safety Topic	MEHL	MACP

TOUR 3

SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME: 16:00 | END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE: In | Gage | To | ODC | MDC | Func'nl Ab | LOC | Bnd Retain | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
	Drill Pipe	Stands		
	Drill Pipe	Singles		

Kelly Down | Total | Weight of DC | Weight of String

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	20:00	4.00	22	TEAR DOWN & CLEAN TANKS
20:00	24:00	4.00	22	TEAR DOWN FLUSH BOILER & CLEAN WATER TANK RIG RELEASED @23:59 HRS DF

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag: Up | Down

Torque At Bottom

Fill On Bottom

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
BEAV2_20130325_1B	RMS 2013.2.6.26103	2013	03	25

License No	Well Name	Surface Location
EL470	COPRC MIRROR LAKE N-20 65-00 126-45	

Prov	Lsd Type	Unique Well Id
NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time	
DAVE FORSBERG	RICK YAVIS	24-Mar-2013	23:59

DAILY CHECKS

	DP	RM
(1.) Daily Walk Around Inspection	DP	RY
(2.) Detailed Inspection - Weekly (Hang Check List)		
(3.) H2S Signs Posted if Required	DP	RY
(4.) Well Licence & Blck Diagram Posted		
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (once/week/month)		
(2.) CADOC Rig Safety Inspection Checklist (once/fortnight/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

CADOC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1																							8.00			8.00
Tour 2																					0.25	7.75				8.00
Tour 3																						4.00	4.00			8.00
TOTAL																					0.25	11.75	12.00			24.00

Kelly Bushing | Dp Float

FUEL @ 08:00 HRS

Rig 50 | Safer 0

Time 05:45 | Temp -10

WEATHER: Current Conditions CLEAR | Wind Direction SW | Wind Strength CALM | Road Conditions FAIR

TOUR 1 — SIGNATURE OF DRILLER: RICK YAVIS — START TIME 0:00 — END TIME 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

II		Gauge	
TO		ODC	
MDC		Reason for Pull	
LOC		Tool Pusher	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe Stands | Drill Pipe Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	8:00	8.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 2 — SIGNATURE OF DRILLER: DEVAN SCHLITTER — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

II		Gauge	
TO		ODC	
MDC		Reason for Pull	
LOC		Tool Pusher	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe Stands | Drill Pipe Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	21D	MEETINGS - PRE-JOB SAFETY W/MULLEN TRUCKING
8:15	16:00	7.75	22C	LOAD RIG

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 3 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

II		Gauge	
TO		ODC	
MDC		Reason for Pull	
LOC		Tool Pusher	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe Stands | Drill Pipe Singles | Kelly Down | Total | Weight of DC | Weight of String

HOLE CONDITION

Hole Drag Up | Down | Torque At Bottom | Fill On Bottom

MUD RECORD

Mud Type Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	20:00	4.00	22A	MOVE RIG
20:00	24:00	4.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
BEAV2_20130326_1A	RMS 2013.2.6.26103	2013	03	26

Licence No	Well Name	Surface Location	Prov	Lic Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time	
DAVE FORSBERG	RICK YAVIS	24-Mar-2013	23:59

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DF	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Stick Diagram Posted	DF	RY
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (one/crew/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (one/rig/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

HOURS

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Tear Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
Tour 1																							8.00			8.00
Tour 2																					0.25	7.75				8.00
Tour 3																						4.00	4.00			8.00
TOTAL																					0.25	11.75	12.00			24.00

WEATHER

Daily Sketch | Dip Test

FUEL @ 08:00 HRS

Rig	Temp
0	0
Time	Temp
06:45	-12
Current Conditions	
CLEAR	
Wind Direction	Wind Strength
SW	CALM
Road Condition	
POOR	

TOUR 1

SIGNATURE OF DRILLER: RICK YAVIS

START TIME: 0:00 END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
O		ODC	
MDC		Reason Pulled	
LOC		Tool Run (hrs)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe	Stands
Drill Pipe	Singles
Kelly Down	
Total	
Weight of DC	
Weight of String	

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	8:00	8.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 8:00 END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
O		ODC	
MDC		Reason Pulled	
LOC		Tool Run (hrs)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe	Stands
Drill Pipe	Singles
Kelly Down	
Total	
Weight of DC	
Weight of String	

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	8:15	0.25	21D	MEETINGS - PRE-JOB SAFETY
8:15	16:00	7.75	22A	MOVE RIG TO RACK SITE

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 3

SIGNATURE OF DRILLER: RICK YAVIS

START TIME: 16:00 END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

I		Gage	
O		ODC	
MDC		Reason Pulled	
LOC		Tool Run (hrs)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe	Stands
Drill Pipe	Singles
Kelly Down	
Total	
Weight of DC	
Weight of String	

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	20:00	4.00	22A	MOVE RIG
20:00	24:00	4.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
BEAV2_20130327_1A	RMS 2013.2.6.26103	2013	03	27

License No	Well Name	Surface Location	Prov	Loc Type	Unique Well Id
EL470	COPRC MIRROR LAKE N-20 65-00 126-45		NT		N-2065-00126-45

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2	VERT	☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10343209	150	25-Feb-2013	17:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time	
DAVE FORSBERG	RICK YAVIS	24-Mar-2013	23:59

DAILY CHECKS

	OP DF	RM RY
(1.) Daily Walk Around Inspection		
(1.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well License & Slick Diagram Posted	OP DF	RM RY
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (emd/crew/monthly)		RY
(2.) CAODC Rig Safety Inspection Checklist (weekly/monthly)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

CAODC

Code	1 Rig Up	2 Drill Actual	3 Reaming	4 Coring	5 Cond Mud & Circ	6 Trips	7 Rig Service	8 Repair Rig	9 Cut Off Drlg Line	10 Dev Survey	11 Wireline Logs	12 Run Csg & Cement	13 Wait On Cement	14 Nipple BOP	15 Test BOP	16 Drillstem Test	17 Plug Back	18 Squeeze Cement	19 Fishing	20 Dir Work	21 Safety Meeting	22 Trav Down	23 Waiting On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1																							8.00			8.00
Tour 2																						8.00				8.00
Tour 3																									8.00	8.00
TOTAL																						8.00	8.00		8.00	24.00

Daily Sampling: Up Feet

FUEL @ 08:00 HRS

Log	Prior
0	0

WEATHER

Time	Temp
06:45	14

Ice/Lake Conditions: CLEAR

Wind Direction	Wind Strength
SW	CALM

Road Condition: POOR

TOUR 1

SIGNATURE OF DRILLER: RICK YAVIS

START TIME: 0:00 END TIME: 8:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

In		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Tool Run (hrs)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands

Drill Pipe: Singles

Kelly Down

Total

Weight of DC

Weight of String

HOLE CONDITION

Hole Drag: Up / Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time			
Density			
Funnel Viscosity			
Fluid Loss			
pH			
Location Of Sample			
Depth			
PVT			

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	8:00	8.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 2

SIGNATURE OF DRILLER: DEVAN SCHLITTER

START TIME: 8:00 END TIME: 16:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

In		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Tool Run (hrs)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands

Drill Pipe: Singles

Kelly Down

Total

Weight of DC

Weight of String

HOLE CONDITION

Hole Drag: Up / Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time			
Density			
Funnel Viscosity			
Fluid Loss			
pH			
Location Of Sample			
Depth			
PVT			

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	16:00	8.00	22A	MOVE SHACKS TO RACK SITE

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 3

SIGNATURE OF DRILLER: RICK YAVIS

START TIME: 16:00 END TIME: 24:00

BITS

Bit Number	
Size	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

CUTTING STRUCTURE

In		Gage	
TO		ODC	
MDC		Reason Pulled	
LOC		Tool Run (hrs)	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

Drill Pipe: Stands

Drill Pipe: Singles

Kelly Down

Total

Weight of DC

Weight of String

HOLE CONDITION

Hole Drag: Up / Down

Torque At Bottom

Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time			
Density			
Funnel Viscosity			
Fluid Loss			
pH			
Location Of Sample			
Depth			
PVT			

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	0.00	11	0
2	0.00	11	0

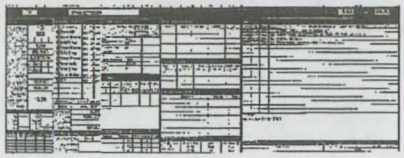
TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	24:00	8.00	25	FINISH & FLY OUT

Remarks

SAFETY

Safety Topic	MEHL	MACP



XI. Bit record

ConocoPhillips Canada

Bit Summary
COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	License No.	Progress	Well Type	Well Config	Orig KB/RT (m)	KB-Grd (m)
200/C-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470		Exploration	VERTICAL	286.50	5.20

Bits

BHA No.	Bit Run	Size (mm)	Make	Model	SN	IADC Codes	TFA (incl Noz) (mm²)	Nozzles (mm)	Depth In (mKB)	Depth Out (mKB)	Drilled (m)	Drill Time (hrs)	BHA ROP (m/hr)	WOB (max) (daN)	WOB (min) (daN)	RPM (max) (rpm)	RPM (min) (rpm)	Bit Dull
1	1A	311.0	VAREL	HE04JMR...	1264043	417	892	12.7/15.9/19.0/19.0	0.00	601.00	601.00	55.25	10.9	17,000	5,000	120	120	2-3-WT-A-E-3-NO-TD
2	1	222.0	REED	MSR616M...	A141415	___	581	11.1/11.1/11.1/11.1/11.1/...	601.00	2,145.00	1,293....	85.50	15.1	10,000	3,000	197	75	1-1-CT-S-X-0-NO-CP
3	1C	222.0	NOV	PR513	E140308	___	770	14.0/14.0/14.0/14.0/14.0	1,891.00	2,027.00	136.00	16.00	8.5	5,000	4,000	65	55	1-1-BT-M-X-0-NO-DTF
4	2C	222.0	NOV	CEPR5135	A1/E14...	___	484	11.1/11.1/11.1/11.1/11.1	2,027.00	2,108.00	81.00	12.00	6.8	5,500	5,000	65	60	2-2-CT-M-X-0-NO-DTF
5	RR1	222.0	REED	MSR616M...	A141415	___	581	11.1/11.1/11.1/11.1/11.1/...	2,108.00	2,145.00	38.00	12.25	3.1	9,000	6,000	80	70	1-3-WT-A-X-0-NO-TD

Template Revised 8/1/2007 Page 1/1 Report Printed: 4/5/2

XII. Directional Summary

ConocoPhillips Alaska

Directional Survey

MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	District	Field Name	Licence No.
200/C-011-L/094-P-16/99	C-011-L/94-P-15	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	285.50	5.20

Parent Wellbore	Wellbore Name	Kick Off Date	Kick Off Method	KO MD (mKB)	KO (TVD) (mKB)	VS Dir (°)
Original Hole	Original Hole					0.00

Date	Description	As Ran	Proposed?
2/25/2013	Ets Dir. survey for Original Hole	No	No

MD Tie In (mKB)	TVDTie In (mKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NS Tie In (m)	EW Tie In (m)

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	VS (m)	NS (m)	EW (m)	DLS (°/30m)	Method	Survey Company
3/8/2013	40.00	0.25	28.29	40.00	0.09	0.08	0.08	0.04	0.19	MWD	
3/8/2013	50.00	0.23	31.74	50.00	0.13	0.11	0.11	0.06	0.07	MWD	
3/8/2013	60.00	0.12	75.78	60.00	0.16	0.13	0.13	0.08	0.51	MWD	
3/8/2013	70.00	0.21	313.52	70.00	0.17	0.15	0.15	0.08	0.87	MWD	
3/8/2013	80.00	0.35	335.66	80.00	0.20	0.19	0.19	0.05	0.52	MWD	
3/8/2013	90.00	0.16	69.05	90.00	0.23	0.22	0.22	0.06	1.20	MWD	
3/8/2013	100.00	0.18	80.40	100.00	0.25	0.23	0.23	0.09	0.11	MWD	
3/8/2013	110.00	0.20	9.13	110.00	0.27	0.25	0.25	0.11	0.67	MWD	
3/8/2013	120.00	0.24	28.32	120.00	0.31	0.29	0.29	0.12	0.25	MWD	
3/8/2013	130.00	0.08	15.16	130.00	0.34	0.31	0.31	0.13	0.50	MWD	
3/8/2013	140.00	0.16	353.07	140.00	0.36	0.33	0.33	0.13	0.29	MWD	
3/8/2013	150.00	0.15	30.36	150.00	0.38	0.36	0.36	0.13	0.30	MWD	
3/8/2013	160.00	0.09	90.27	160.00	0.40	0.37	0.37	0.15	0.39	MWD	
3/8/2013	170.00	0.04	310.57	170.00	0.40	0.37	0.37	0.16	0.37	MWD	
3/8/2013	180.00	0.20	102.31	180.00	0.41	0.37	0.37	0.17	0.59	MWD	
3/8/2013	190.00	0.29	54.90	190.00	0.43	0.38	0.38	0.21	0.63	MWD	
3/8/2013	200.00	0.15	38.45	200.00	0.47	0.40	0.40	0.24	0.46	MWD	
3/8/2013	210.00	0.26	56.06	210.00	0.50	0.43	0.43	0.26	0.38	MWD	
3/8/2013	220.00	0.50	350.81	220.00	0.55	0.48	0.48	0.27	1.37	MWD	
3/8/2013	230.00	0.40	0.68	230.00	0.62	0.56	0.56	0.27	0.37	MWD	
3/8/2013	240.00	0.38	5.13	240.00	0.68	0.63	0.63	0.27	0.12	MWD	
3/8/2013	250.00	0.46	357.72	250.00	0.75	0.70	0.70	0.27	0.30	MWD	
3/8/2013	260.00	0.42	359.19	260.00	0.82	0.78	0.78	0.27	0.14	MWD	
3/8/2013	270.00	0.49	1.85	270.00	0.90	0.86	0.86	0.27	0.22	MWD	
3/8/2013	280.00	0.51	349.03	280.00	0.98	0.94	0.94	0.26	0.34	MWD	
3/8/2013	290.00	0.43	355.75	290.00	1.06	1.03	1.03	0.25	0.29	MWD	
3/8/2013	300.00	0.53	349.42	300.00	1.13	1.11	1.11	0.24	0.34	MWD	
3/8/2013	310.00	0.59	350.93	310.00	1.23	1.21	1.21	0.22	0.19	MWD	
3/8/2013	320.00	0.56	351.07	320.00	1.32	1.30	1.30	0.21	0.09	MWD	
3/8/2013	330.00	0.61	352.92	329.99	1.42	1.41	1.41	0.19	0.16	MWD	
3/8/2013	340.00	0.69	347.51	339.99	1.53	1.52	1.52	0.18	0.30	MWD	
3/8/2013	350.00	0.72	349.69	349.99	1.64	1.64	1.64	0.15	0.12	MWD	
3/8/2013	360.00	0.77	351.75	359.99	1.77	1.77	1.77	0.13	0.17	MWD	
3/8/2013	370.00	0.92	354.12	369.99	1.92	1.91	1.91	0.11	0.46	MWD	
3/8/2013	380.00	0.91	354.18	379.99	2.07	2.07	2.07	0.10	0.03	MWD	
3/8/2013	390.00	1.03	354.31	389.99	2.24	2.24	2.24	0.08	0.36	MWD	
3/8/2013	400.00	1.00	356.99	399.99	2.42	2.42	2.42	0.07	0.17	MWD	
3/8/2013	410.00	0.97	3.85	409.99	2.59	2.59	2.59	0.07	0.36	MWD	
3/8/2013	420.00	1.11	3.02	419.98	2.77	2.77	2.77	0.08	0.42	MWD	
3/8/2013	430.00	1.09	6.62	429.98	2.96	2.96	2.96	0.09	0.22	MWD	
3/8/2013	440.00	1.12	6.00	439.96	3.15	3.15	3.15	0.11	0.10	MWD	
3/8/2013	450.00	1.06	13.19	449.98	3.34	3.34	3.34	0.15	0.45	MWD	
3/8/2013	460.00	1.17	12.47	459.98	3.53	3.53	3.53	0.19	0.33	MWD	
3/8/2013	470.00	1.33	12.19	469.97	3.75	3.74	3.74	0.24	0.48	MWD	
3/8/2013	480.00	1.46	12.58	479.97	3.99	3.98	3.98	0.29	0.39	MWD	
3/8/2013	490.00	1.44	14.76	489.97	4.24	4.23	4.23	0.35	0.18	MWD	
3/8/2013	500.00	1.41	11.07	499.97	4.49	4.47	4.47	0.40	0.29	MWD	
3/8/2013	510.00	1.47	12.17	509.96	4.74	4.71	4.71	0.45	0.20	MWD	
3/8/2013	520.00	1.43	14.65	519.96	4.99	4.96	4.96	0.51	0.22	MWD	
3/8/2013	530.00	1.51	17.81	529.96	5.24	5.21	5.21	0.58	0.34	MWD	
3/8/2013	540.00	1.40	16.93	539.95	5.49	5.45	5.45	0.66	0.34	MWD	
3/8/2013	550.00	1.48	19.12	549.95	5.74	5.69	5.69	0.74	0.29	MWD	
3/8/2013	560.00	1.50	17.22	559.95	5.99	5.93	5.93	0.82	0.16	MWD	
3/8/2013	570.00	1.56	18.20	569.94	6.25	6.19	6.19	0.90	0.20	MWD	
3/4/2013	621.34	1.89	26.41	621.26	7.76	7.61	7.51	1.50	0.24	MWD	

Template Revised 8/1/2007 — Page 1/3 — Report Printed: 4/9/2013

ConocoPhillips Canada

Directional Survey

MIRROR LAKE N-20 65-00 126-45

UWI	Surface Legal Location	District	Field Name	License No.
[redacted]-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Parent Wellbore	Wellbore Name	Kick Off Date	Kick Off Method	KO MD (mKB)	KO (TVD) (mKB)	VS Dir (°)
Original Hole	Original Hole					0.00

Date	Description	As Ran	Proposed?
2/25/2013	Ets Dir. survey for Original Hole	No	No

MD Tie In (mKB)	TVDTie In (mKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (m)	EWTie In (m)

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	VS (m)	NS (m)	EW (m)	DLS (°/30m)	Method	Survey Company
3/8/2013	40.00	0.25	28.29	40.00	0.09	0.08	0.08	0.04	0.19	MWD	
3/8/2013	50.00	0.23	31.74	50.00	0.13	0.11	0.11	0.06	0.07	MWD	
3/8/2013	60.00	0.12	75.78	60.00	0.16	0.13	0.13	0.08	0.51	MWD	
3/8/2013	70.00	0.21	313.52	70.00	0.17	0.15	0.15	0.08	0.87	MWD	
3/8/2013	80.00	0.35	335.66	80.00	0.20	0.19	0.19	0.05	0.52	MWD	
3/8/2013	90.00	0.18	69.05	90.00	0.23	0.22	0.22	0.06	1.20	MWD	
3/8/2013	100.00	0.18	80.40	100.00	0.25	0.23	0.23	0.09	0.11	MWD	
3/8/2013	110.00	0.20	9.13	110.00	0.27	0.25	0.25	0.11	0.67	MWD	
3/8/2013	120.00	0.24	28.32	120.00	0.31	0.29	0.29	0.12	0.25	MWD	
3/8/2013	130.00	0.08	16.16	130.00	0.34	0.31	0.31	0.13	0.50	MWD	
3/8/2013	140.00	0.16	353.07	140.00	0.36	0.33	0.33	0.13	0.29	MWD	
3/8/2013	150.00	0.15	30.36	150.00	0.38	0.36	0.36	0.13	0.30	MWD	
3/8/2013	160.00	0.09	90.27	160.00	0.40	0.37	0.37	0.15	0.39	MWD	
3/8/2013	170.00	0.04	310.57	170.00	0.40	0.37	0.37	0.16	0.37	MWD	
3/8/2013	180.00	0.20	102.31	180.00	0.41	0.37	0.37	0.17	0.69	MWD	
3/8/2013	190.00	0.29	54.90	190.00	0.43	0.38	0.38	0.21	0.63	MWD	
3/8/2013	200.00	0.15	38.48	200.00	0.47	0.40	0.40	0.24	0.46	MWD	
3/8/2013	210.00	0.26	56.06	210.00	0.50	0.43	0.43	0.26	0.38	MWD	
[redacted]013	220.00	0.50	350.81	220.00	0.55	0.48	0.48	0.27	1.37	MWD	
[redacted]013	230.00	0.40	0.68	230.00	0.62	0.56	0.56	0.27	0.37	MWD	
3/8/2013	240.00	0.38	5.13	240.00	0.68	0.63	0.63	0.27	0.12	MWD	
3/8/2013	250.00	0.46	357.72	250.00	0.75	0.70	0.70	0.27	0.30	MWD	
3/8/2013	260.00	0.42	359.19	260.00	0.82	0.78	0.78	0.27	0.14	MWD	
3/8/2013	270.00	0.49	1.85	270.00	0.90	0.86	0.86	0.27	0.22	MWD	
3/8/2013	280.00	0.51	349.03	280.00	0.98	0.94	0.94	0.26	0.34	MWD	
3/8/2013	290.00	0.43	355.75	290.00	1.06	1.03	1.03	0.25	0.29	MWD	
3/8/2013	300.00	0.53	349.42	300.00	1.13	1.11	1.11	0.24	0.34	MWD	
3/8/2013	310.00	0.59	350.93	310.00	1.23	1.21	1.21	0.22	0.19	MWD	
3/8/2013	320.00	0.56	351.07	320.00	1.32	1.30	1.30	0.21	0.09	MWD	
3/8/2013	330.00	0.61	352.92	329.99	1.42	1.41	1.41	0.19	0.16	MWD	
3/8/2013	340.00	0.69	347.51	339.99	1.53	1.52	1.52	0.18	0.30	MWD	
3/8/2013	350.00	0.72	349.69	349.99	1.64	1.64	1.64	0.15	0.12	MWD	
3/8/2013	360.00	0.77	351.75	359.99	1.77	1.77	1.77	0.13	0.17	MWD	
3/8/2013	370.00	0.92	354.12	369.99	1.92	1.91	1.91	0.11	0.46	MWD	
3/8/2013	380.00	0.91	354.18	379.99	2.07	2.07	2.07	0.10	0.03	MWD	
3/8/2013	390.00	1.03	354.31	389.99	2.24	2.24	2.24	0.08	0.36	MWD	
3/8/2013	400.00	1.00	356.99	399.99	2.42	2.42	2.42	0.07	0.17	MWD	
3/8/2013	410.00	0.97	3.85	409.99	2.59	2.59	2.59	0.07	0.36	MWD	
3/8/2013	420.00	1.11	3.02	419.98	2.77	2.77	2.77	0.08	0.42	MWD	
3/8/2013	430.00	1.09	6.62	429.98	2.96	2.96	2.96	0.09	0.22	MWD	
3/8/2013	440.00	1.12	6.00	439.98	3.15	3.15	3.15	0.11	0.10	MWD	
3/8/2013	450.00	1.06	13.19	449.98	3.34	3.34	3.34	0.15	0.45	MWD	
3/8/2013	460.00	1.17	12.47	459.98	3.53	3.53	3.53	0.19	0.33	MWD	
3/8/2013	470.00	1.33	12.19	469.97	3.75	3.74	3.74	0.24	0.48	MWD	
3/8/2013	480.00	1.46	12.58	479.97	3.99	3.98	3.98	0.29	0.39	MWD	
3/8/2013	490.00	1.44	14.76	489.97	4.24	4.23	4.23	0.35	0.18	MWD	
3/8/2013	500.00	1.41	11.07	499.97	4.49	4.47	4.47	0.40	0.29	MWD	
3/8/2013	510.00	1.47	12.17	509.96	4.74	4.71	4.71	0.45	0.20	MWD	
[redacted]013	520.00	1.43	14.65	519.96	4.99	4.96	4.96	0.51	0.22	MWD	
[redacted]2013	530.00	1.51	17.81	529.96	5.24	5.21	5.21	0.58	0.34	MWD	
3/8/2013	540.00	1.40	16.93	539.95	5.49	5.45	5.45	0.66	0.34	MWD	
3/8/2013	550.00	1.48	19.12	549.95	5.74	5.69	5.69	0.74	0.29	MWD	
3/8/2013	560.00	1.50	17.22	559.95	5.99	5.93	5.93	0.82	0.16	MWD	
3/8/2013	570.00	1.56	18.20	569.94	6.25	6.19	6.19	0.90	0.20	MWD	
3/4/2013	621.34	1.89	26.41	621.26	7.76	7.61	7.61	1.50	0.24	MWD	

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Directional Survey

MIRROR LAKE N-20 65-00 126-45

UWI	Surface Legal Location	District	Field Name	License No.
[redacted]-011-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	VS (m)	NS (m)	EW (m)	DLS (°/30m)	Method	Survey Company
3/4/2013	640.42	1.49	22.98	640.33	8.30	8.12	8.12	1.73	0.65	MWD	
3/4/2013	660.05	1.49	23.29	659.95	8.81	8.59	8.59	1.93	0.01	MWD	
3/4/2013	679.36	1.58	22.41	679.26	9.31	9.07	9.07	2.13	0.14	MWD	
3/4/2013	698.75	2.02	19.42	698.64	9.92	9.64	9.64	2.35	0.70	MWD	
3/5/2013	717.69	2.20	21.71	717.56	10.61	10.29	10.29	2.59	0.31	MWD	
3/4/2013	732.00	2.02	19.42	731.86	11.13	10.78	10.78	2.78	0.42	Interp.	
3/5/2013	737.87	2.59	18.50	737.73	11.37	11.01	11.01	2.86	2.92	MWD	
3/5/2013	756.53	1.80	11.60	756.38	12.08	11.69	11.69	3.05	1.34	MWD	
3/5/2013	775.49	1.89	7.99	775.33	12.69	12.29	12.29	3.15	0.23	MWD	
3/5/2013	795.33	2.20	12.61	795.15	13.40	12.99	12.99	3.28	0.53	MWD	
3/5/2013	804.51	1.58	7.20	804.33	13.70	13.29	13.29	3.34	2.11	MWD	
3/5/2013	814.26	1.32	9.40	814.08	13.94	13.53	13.53	3.37	0.82	MWD	
3/5/2013	852.78	0.62	8.08	852.59	14.59	14.18	14.18	3.47	0.55	MWD	
3/5/2013	872.25	0.62	112.89	872.06	14.68	14.24	14.24	3.58	1.51	MWD	
3/5/2013	891.44	1.19	125.50	891.25	14.60	14.08	14.08	3.84	0.94	MWD	
3/5/2013	938.56	1.71	98.92	938.35	14.55	13.69	13.69	4.93	0.53	MWD	
3/5/2013	958.42	1.71	96.90	958.20	14.69	13.61	13.61	5.52	0.09	MWD	
3/5/2013	977.66	2.11	85.60	977.43	14.93	13.60	13.60	6.16	0.85	MWD	
3/5/2013	996.46	2.20	82.48	996.22	15.30	13.67	13.67	6.86	0.24	MWD	
3/5/2013	1,015.67	2.29	86.09	1,015.41	15.71	13.75	13.75	7.61	0.26	MWD	
3/5/2013	1,024.91	2.11	85.51	1,024.65	15.91	13.77	13.77	7.96	0.59	MWD	
3/5/2013	1,034.96	2.50	87.81	1,034.69	16.14	13.80	13.80	8.37	1.20	MWD	
3/6/2013	1,034.96	2.50	91.49	1,034.69	16.14	13.80	13.80	8.37	1.20	MWD	
3/5/2013	1,044.46	2.20	99.71	1,044.18	16.31	13.76	13.76	8.76	1.42	MWD	
[redacted]13	1,053.95	1.49	101.99	1,053.67	16.43	13.70	13.70	9.06	2.26	MWD	
[redacted]2013	1,073.33	1.19	105.60	1,073.04	16.59	13.60	13.60	9.50	0.48	MWD	
3/6/2013	1,074.17	1.19	105.60	1,073.88	16.59	13.59	13.59	9.51	0.00	MWD	
3/6/2013	1,092.66	1.19	95.62	1,092.37	16.75	13.52	13.52	9.89	0.34	MWD	
3/6/2013	1,111.93	1.41	79.58	1,111.63	17.03	13.55	13.55	10.32	0.66	MWD	
3/6/2013	1,131.20	1.71	79.41	1,130.90	17.42	13.64	13.64	10.84	0.47	MWD	
3/6/2013	1,150.43	1.32	80.81	1,150.12	17.81	13.73	13.73	11.34	0.61	MWD	
3/6/2013	1,169.86	0.88	81.38	1,169.55	18.09	13.79	13.79	11.71	0.68	MWD	
3/6/2013	1,188.82	1.71	76.20	1,188.50	18.43	13.88	13.88	12.12	1.32	MWD	
3/6/2013	1,208.02	2.59	55.98	1,207.69	19.08	14.19	14.19	12.76	1.80	MWD	
3/6/2013	1,227.25	2.02	65.70	1,226.90	19.82	14.57	14.57	13.43	1.08	MWD	
3/6/2013	1,246.32	1.41	78.40	1,245.96	20.32	14.76	14.76	13.97	1.13	MWD	
3/6/2013	1,265.44	1.49	81.21	1,265.08	20.71	14.84	14.84	14.44	0.17	MWD	
3/6/2013	1,284.64	1.58	66.31	1,284.27	21.16	14.99	14.99	14.93	0.64	MWD	
3/6/2013	1,303.85	2.50	51.02	1,303.47	21.82	15.36	15.36	15.50	1.66	MWD	
3/6/2013	1,313.60	2.59	50.89	1,313.21	22.25	15.63	15.63	15.84	0.28	MWD	
3/6/2013	1,323.16	2.29	43.28	1,322.76	22.66	15.90	15.90	16.14	1.38	MWD	
3/6/2013	1,332.61	1.89	48.91	1,332.20	23.00	16.14	16.14	16.38	1.43	MWD	
3/6/2013	1,342.37	1.32	56.12	1,341.96	23.27	16.31	16.31	16.60	1.86	MWD	
3/6/2013	1,351.96	0.79	79.32	1,351.55	23.44	16.39	16.39	16.75	2.10	MWD	
3/6/2013	1,361.53	0.79	88.62	1,361.12	23.54	16.40	16.40	16.88	0.40	MWD	
3/7/2013	1,371.24	0.79	75.10	1,370.83	23.65	16.42	16.42	17.02	0.57	MWD	
3/7/2013	1,390.50	1.01	62.71	1,390.08	23.93	16.53	16.53	17.30	0.46	MWD	
3/7/2013	1,409.79	1.58	74.79	1,409.37	24.32	16.68	16.68	17.70	0.98	MWD	
3/7/2013	1,429.06	1.19	52.60	1,428.63	24.76	16.87	16.87	18.12	1.02	MWD	
3/7/2013	1,438.69	1.32	46.40	1,438.26	24.97	17.01	17.01	18.28	0.59	MWD	
3/7/2013	1,448.31	1.41	42.32	1,447.88	25.20	17.17	17.17	18.44	0.41	MWD	
3/7/2013	1,467.61	1.80	48.29	1,467.17	25.74	17.55	17.55	18.82	0.66	MWD	
3/7/2013	1,487.22	1.80	38.41	1,486.77	26.35	18.00	18.00	19.25	0.47	MWD	
[redacted]013	1,505.93	1.19	41.48	1,505.47	26.83	18.37	18.37	19.56	0.99	MWD	
[redacted]013	1,525.44	1.71	39.50	1,524.98	27.32	18.75	18.75	19.88	0.80	MWD	
3/ /2013	1,544.48	2.02	36.69	1,544.01	27.93	19.24	19.24	20.26	0.51	MWD	
3/7/2013	1,563.80	1.58	38.19	1,563.32	28.53	19.72	19.72	20.63	0.69	MWD	
3/7/2013	1,583.15	0.48	75.32	1,582.66	28.87	19.95	19.95	20.87	1.91	MWD	
3/7/2013	1,602.34	0.79	70.40	1,601.85	29.06	20.01	20.01	21.07	0.49	MWD	
3/7/2013	1,621.91	1.10	51.72	1,621.42	29.37	20.17	20.17	21.35	0.66	MWD	
3/7/2013	1,641.37	1.41	49.70	1,640.88	29.80	20.45	20.45	21.67	0.48	MWD	

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Directional Survey

MIRROR LAKE N-20 65-00 126-45

UWI	Surface Legal Location	District	Field Name	License No.
J11-L/094-P-16/99	C-011-L/94-P-16	NEW VENTURES	MIRROR LAKE	EL470
Program	**Well Type**	**Well Configuration Type**	**Original KB/RT Elevation (m)**	**KB-Ground Distance (m)**
	Exploration	VERTICAL	286.50	5.20

Survey Data

Date	MD (mKB)	Incl (°)	Azm (°)	TVD (mKB)	Depart (m)	VS (m)	NS (m)	EW (m)	DLS (°/30m)	Method	Survey Company
3/7/2013	1,660.77	1.01	46.80	1,660.27	30.21	20.72	20.72	21.98	0.63	MWD	
3/7/2013	1,679.83	1.32	34.89	1,679.33	30.59	21.01	21.01	22.23	0.62	MWD	
3/7/2013	1,698.97	2.20	34.19	1,698.46	31.16	21.50	21.50	22.56	1.38	MWD	
3/8/2013	1,718.17	2.20	41.00	1,717.64	31.89	22.08	22.08	23.01	0.41	MWD	
3/8/2013	1,737.50	1.58	73.61	1,736.96	32.50	22.43	22.43	23.51	1.89	MWD	
3/8/2013	1,756.66	1.32	96.41	1,756.12	32.87	22.48	22.48	23.98	0.98	MWD	
3/8/2013	1,775.91	0.62	95.71	1,775.37	33.09	22.45	22.45	24.31	1.09	MWD	
3/8/2013	1,795.03	1.32	75.71	1,794.48	33.35	22.49	22.49	24.62	1.20	MWD	
3/8/2013	1,814.27	1.01	1.89	1,813.72	33.66	22.72	22.72	24.84	2.22	MWD	
3/8/2013	1,833.39	1.58	14.28	1,832.83	34.00	23.14	23.14	24.91	0.99	MWD	
3/8/2013	1,852.66	2.90	31.68	1,852.09	34.70	23.81	23.81	25.24	2.29	MWD	
3/8/2013	1,871.80	2.50	30.32	1,871.21	35.57	24.59	24.59	25.70	0.63	MWD	
3/8/2013	1,875.84	2.59	38.89	1,875.24	35.74	24.73	24.73	25.80	2.90	MWD	
3/8/2013	2,146.00	2.20	40.00	2,145.17	46.97	33.46	33.46	32.97	0.04	Extrap.	

XIII. Completions Daily Reports

ConocoPhillips Canada

Daily Morning Report
COPRC MIRROR LAKE N-20 65-00 126-45

Report #: 1
Report Date: 3/26/2013
Final Job Status: HOLD
Final Report? Yes

Job Cat: COMPLETIONS Job Typ: INITIAL COMPLETION Sub Typ:

District	API / UWI	Licence No.	KB-Ground Distance (m)	KB-Casing Flange Distance (m)
NEW VENTURES	200/C-011-L/094-P-16/99	EL470	5.20	4.87

JOB INFORMATION

Actual Start Date	End Date	Abandon Date	MaxWell Job Number	Responsible Grp 1
3/26/2013 09:00	3/30/2013 16:00		JOB1@2012	coved

Objective
ORGINAL COMPLETION

Rig	Cum Rig Time (hrs)	Personnel Regular Hours (hrs)	Cum Personnel Total Hours (hrs)
		280.00	280.00

Daily Contacts
Completions Engineer, Kyle Metzgar, 403-971-8424; Completions Engineer, Theron LeGarde, 403-710-9753; WS Foreman, Myles Hahn, 780-402-0500; WS Supervisor, Doug Smith, 780-518-5273; WS Superintendent, Derrick Cove, 780-831-1314

Report Start Date	Report End Date	Rig Time (hrs)	P(tub) (kPa)	P (cas) (kPa)	Weather	Temperature (°C)	Lease Condition
3/26/2013 09:00	3/27/2013 06:00			0	Clear	-15	icy

Last 24hr Summary
Installed tubing spool and tested. Installed master valve and work spool. Performed 10 minute SCVF test. Good test. Rigged in Schlumberger wireline. Ran in hole154mm gauge ring junk basket combo and tagged PBTD at 2127mKB. Ran in hole Gamma Ray CBL logging tools. Logged well from 2127mKB to surface.

24hr Forecast
Finish POOH with logging tools. RIH and perforate. RIH with BP c/w recorders and perform D-fit test.

TIME LOG

Start Time	Dur (hrs)	Time P-T-X	Operation
09:00	2.50	P	Arrived on site. Drilling equipment was still moving off location.
11:30	2.00	P	Drilling equipment was now all moved clear from wellhead. Loaded picker load at KM 45.9 and moved onto location. Reviewed and discussed CPC PJHA with all personnel (SLB, Stream Flo, Canol and Peregrine) regarding daily activities and all associated hazards.
13:30	4.00	P	Removed surface casing valves. Cut and dressed casing. Installed 279mm 34.5MPa x 179mm 69MPa tubing spool. Pressure tested primary seals to 34000 kPa for 10 minutes. Good test. Installed 179mm 69MPa master valve (torqued with hydraulic wrench). Installed McClellands 69MPa work spool and Schlumberger 35MPa spool. Performed a ten minute SCVF test. Zero bubble (no flow) detected in ten minutes. Good test.
17:30	1.00	P	Rigged in HD safe work platform. Installed Schlumberger tool trap and BOPs.
18:30	0.50	P	Crew shift change. Reviewed and discussed CPC PJHA #260303 with all personnel regarding night time activities and all associated hazards. Performed cross shift.
19:00	1.00	P	Tarped in wellhead and rigged in Connely Max dry heat unit. Finished rig in of all Schlumberger wireline equipment.
20:00	2.50	P	Ran in hole with a 154mm gauge ring. Displacing wellbore fluid to Vac. Soft Tagged PBTD @ 2127.0 mKB. Pumped 80 L of Glycol into wellbore to prevent freezing. Retrieved Tool string to surface.
22:30	2.00	P	Assembled SLB 42.86 mm Gamma ray/ Casing collar locator, Cement bond log/ Variable Density Log tool.
00:30	5.50	P	RIH/w logging tool to PBTD @ 2127.0 mKB. High speed down identified Cement top @ 195.0 mKB. Tagged PBTD @ 2127.0 mKB. Performed 150 m repeat pass. Performed Log from PBTD to surface @ 10 m/min.

FLUID SUMMARY

Fluid	To lease (m³)	From lease (m³)	To well (m³)	From well (m³)	Left to recover (m³)

CUMULATIVE JOB FLARED GAS BY ZONE

Zone	Volume Gas Total (E3m³)

PERFORATIONS

Date	Zone	Top (mKB)	Btm (mKB)	Shot Dens (shots/m)	Current Status
3/27/2013 12:26	Basal Lower Canol, Origin...	2,059.00	2,060.00	20.0	Plugged
3/26/2013 04:00	Middle Lower Canol, Origi...	2,023.00	2,024.00	20.0	Plugged
3/26/2013 18:23	Upper Lower Canol, Origi...	1,993.00	1,994.00	20.0	Plugged

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ConocoPhillips Canada

Daily Morning Report
COPRC MIRROR LAKE N-20 65-00 126-45

Report #: 2
Report Date: 3/27/2013
Final Job Status: HOLD
Final Report? Yes

Job Cat: COMPLETIONS Job Typ: INITIAL COMPLETION Sub Typ:

District	API / UWI	Licence No.	KB-Ground Distance (m)	KB-Casing Flange Distance (m)
NEW VENTURES	200/C-011-L/094-P-16/99	EL470	5.20	4.87

JOB INFORMATION

Actual Start Date	End Date	Abandon Date	MaxWell Job Number	Responsible Grp 1
3/26/2013 09:00	3/30/2013 16:00		JC61@2012	coved

Objective
ORGINAL COMPLETION

Rig	Cum Rig Time (hrs)	Personnel Regular Hours (hrs)	Cum Personnel Total Hours (hrs)
		279.00	559.00

Daily Contacts
Completions Engineer, Kyle Metzgar, 403-971-8424; Completions Engineer, Theron LeGarde, 403-710-9753; WS Superintendent, Derrick Cove, 780-831-1314; WS Foreman, Myles Hahn, 780-402-0500; WS Supervisor, Doug Smith, 780-518-6273

Report Start Date	Report End Date	Rig Time (hrs)	P(tub) (kPa)	P (cas) (kPa)	Weather	Temperature (°C)	Lease Condition
3/27/2013 06:00	3/28/2013 06:00			0	Clear	-10	Icy

Last 24hr Summary
Finished POOH with logging tools. Perforated "Basal" Lower Canol from 2059.0mKB to 2060.0mKB. Performed D-fit test on "Basal" Lower canol interval with BP in hole c/w recorders on bottom. Dynamically set BP when pumping D-fit. BP CE set at 2056.5mKB. Set back up BP w c/e @ 2046.0 mKB. Pressure tested to 40,000 kPa for 10 min. Dump bailed 3 Linear meters of sand on top of BP. Perforated the "Middle" Lower Canol from 2023.0 - 2024.0 mKB.

24hr Forecast
Perform D-fit on the "Middle" Lower Canol. Set BP, RIH/w back up BP, Pressure test to 40.0 MPa. Dump sand. Perforate the "Upper " Lower Canol, Perform D-Fit, Set Back up BP. Pressure test to 40.0 MPa.

TIME LOG

Start Time	Dur (hrs)	Time P-T-X	Operation
06:00	0.50	P	Continued to log well to surface (Gamma ray/cement bond log).
06:30	0.50	P	Crew shift change. Held a daily safety and operations meeting with all personnel. Reviewed and discussed CPC PJHA #032703 regarding daily activities and all associated hazards. Discussed ERP plan and emergency procedures.
07:00	0.75	P	Finished logging to surface. Pulled and laid down logging tools. Correlated on depth to Platform Express Compensated Neutron Dual Lithology Density Log dated Mar.20/13.
07:45	1.00	P	Filled wellbore (0.1m³ to fill) and pressure tested casing to 51.5MPa. Pressure held solid for 15 minutes. Good test.
08:45	5.25	P	Rigged in Schlumberger 177.8mm lubricator. Held tailgate meeting and discussed arming perforating gun. Armed gun and stabbed lubricator onto the well. Filled lubricator with and pressure tested it to 33MPa. Good test. Ran in hole with a 3m x 127mm ERHSC carrier c/w 1m of 23 gr Owen SDP 3375-311 NT charges @ 20 spm 60 degree phasing. Correlated gun on depth to Schlumberger Platform Express dual Lithology density log dated March 20, 2013 (Gun Gamma tool ran to correlate to open hole log). Pressured casing up to 4500 kPa and perforated the "Basal" Lower Canol interval from 2059.0mKB to 2060.0mKB. Pressure immediately after shooting = 3959 kPa 1 minute = 3209 kPa / 2 minutes = 3109 kPa / 3 minutes = 3063 / 4 minutes = 3069 kPa / 5 minutes = 3079 kPa Pulled out of the hole maintaining minimum of 2500kPa on casing. All shots fired with correct orientation. Carrier was in good shape.
14:00	4.00	P	Armed a Smith CW retrievable BP for 177.8 mm, 38.69kg/m casing c/w Tandem Lonkar 10K Recorders installed below in a bullnosed 60.3 mm Perforated pup jt, programmed as follows : 2 second picks for the first 12 hrs 10 second picks for the next 24 hrs 1 min picks for remainder of Test. Up to 356 days Top Gauge #1, SN # 9730 - Battery on @ 14:03 hrs. Bottom Gauge #2, SN # 9731 - Battery on @ 14:03 hrs. Stabbed lubricator onto the well and pressure tested it to 33MPa. Bled down to well pressure (2600 kPa). Opened master and ran in hole with BP. Correlated it on depth to Schlumberger Gamma ray log dated March 27, 2012. Started to pump D-fit. Brought pump rate up to 0.15m³ pumping 70% Propylene Glycol / 30% water. Seen first break at 18MPa and 3 more breaks after. D-fit was called on location by Theron Lagarde. Performed a dynamic set of bridge plug while pumping (total of 1.0m³ pumped). BP was set at 16:41 with CE at 2056.5mKB. Good setting indication was seen in line truck and 420lbs weight was lost. Sat and monitored well for 10 minutes. BP leaked off 2000 kPa in ten minutes and appeared to be leaking. Pulled out of the hole with wireline. Laid down setting tool BP top at 2055.79mKB / CE at 2056.50mKB / BP bottom at 2057.18mKB (bull nose bottom at 2059.62mKB). Basal Lower Canol Top gauge S/N 9730 - Sensor port 2058.50mKB. Bottom gauge S/N 9731 - Sensor port 2059.25mKB.
18:00	0.50	P	Armed a Smith CW retrievable BP for 177.8 mm, 38.69kg/m casing. RIH/w Bridge plug
18:30	0.50	P	Crew shift change. Reviewed and discussed CPC PJHA #270313 with all personnel. Identified potential hazards associated with "E-line, D-FIT" operations. All safety concerns were noted and documented in CPC PJHA. Dicussed ERP plan and emergency procedures in case of incident. Checked all valid tickets.

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ConocoPhillips Canada

Daily Morning Report
COPRC MIRROR LAKE N-20 65-00 126-45

Report #: 3
Report Date: 3/28/2013
Final Job Status: HOLD
Final Report? Yes

Job Cat: COMPLETIONS Job Typ: INITIAL COMPLETION Sub Typ:

District	API / UWI	License No.	KB-Ground Distance (m)	KB-Casing Flange Distance (m)
NEW VENTURES	200/C-011-L/094-P-16/99	EL470	5.20	4.87

JOB INFORMATION

Actual Start Date	End Date	Abandon Date	MaxWell Job Number	Responsible Grp 1
3/26/2013 09:00	3/30/2013 16:00		JOB1@2012	coved

Objective
ORGINAL COMPLETION

Rig	Cum Rig Time (hrs)	Personnel Regular Hours (hrs)	Cum Personnel Total Hours (hrs)
		279.00	838.00

Daily Contacts
WS Supervisor, Doug Smith, 780-518-6273; Completions Engineer, Theron LeGarde, 403-710-9753; WS Foreman, Myles Hahn, 780-402-0500; Completions Engineer, Kyle Metzgar, 403-971-8424; WS Superintendent, Derrick Cove, 780-831-1314

Report Start Date	Report End Date	Rig Time (hrs)	P(tub) (kPa)	P (cas) (kPa)	Weather	Temperature (°C)	Lease Condition
3/28/2013 06:00	3/29/2013 06:00			0	Slight Overcast	-25	Icy

Last 24hr Summary
RIH with Smith CW BP c/w 69MPa recorders below. Performed D-fit test on "Middle" Lower Canol formation from 2023.0 to 2024.0mKB. Performed a dynamic set of BP with CE at 2020.5mKB. Set a second BP above with CE at 2017.5mKB. Pressure tested BP to 40MPa. Dumped bailed 3 linear meters of sand on top of bridge plug. Perforated "Upper" Lower Canol formation from 1993.0 to 1994.0mKB. Performed D-fit test on "Upper" Lower Canol formation from 1993.0 to 1994.0 mKB. Performed a dynamic set of BP with CE at 1990.0 mKB. Set a second BP above with CE at 1986.0 mKB. Rigged out E-line unit and related equipment.

24hr Forecast
Rig out remaining equipment on location. Secure wellhead with lock and Chain.

TIME LOG

Start Time	Dur (hrs)	Time P-T-X	Operation
06:00	0.50	P	Armed a Smith CW retrievable BP for 177.8 mm, 38.69kg/m casing c/w Tandem Lonkar 10K Recorders installed below in a bullnosed 60.3 mm Perforated pup jt, programmed as follows : 2 second picks for the first 12 hrs 10 second picks for the next 24 hrs 1 min picks for remainder of Test. Up to 355 days Top Gauge #1, SN # 9732 - Battery on @ 06:31 hrs. Bottom Gauge #2, SN # 9733 - Battery on @ 06:31 hrs.
06:30	0.50	P	Crew shift change. Held a daily safety and operations meeting with all personnel. Reviewed and discussed CPC PJHA #032803 regarding daily activities and all associated hazards. Discussed ERP plan and emergency procedures.
07:00	4.00	P	Stabbed lubricator onto the well and pressure tested it to 33MPa. Bled down to well pressure (SICP: 3400kPa). Opened master and ran in hole with BP. Correlated BP on depth to Schlumberger Gamma ray log dated March 27, 2012. Started to pump D-fit. Brought pump rate up to 0.15m³ pumping 70% Propylene Glycol / 30% water. Broke formation at 18MPa. Theron Legarde was on location calling D-fit. Performed a dynamic set of bridge plug while pumping (total of 0.72m³ pumped). BP was set at 09:42 with CE at 2020.5mKB. Good setting indication was seen in line truck and 650lbs weight was lost. Sat and monitored well for 10 minutes. BP appears to be holding. Pulled out of the hole with wireline. BP top at 2019.79mKB / CE at 2020.50mKB / BP bottom at 2021.18mKB (Bull nose bottom at 2023.58mKB). Middle Lower Canol Top gauge S/N 9732 - Sensor port 2022.46mKB. Bottom gauge S/N 9733 - Sensor port 2023.21mKB.
11:00	3.00	P	Armed a Smith CW retrievable BP for 177.8 mm, 38.69kg/m casing. SICP: 11000 kPa. Pressured lubricator up to 11MPa. Opened master and ran in hole. Correlated BP on depth to Schlumberger Gamma ray log dated March 27, 2012. Set BP with CE at 2017.5mKB. Good setting indication was seen in line truck and 280lbs weight was lost. Pulled out of the hole and laid down setting tool. BP top at 2016.79mKB / CE at 2017.50mKB / BP bottom at 2018.26mKB.
14:00	0.75	P	SICP: 10670 kPa. Pressure tested bridge plug to 40MPa for 10 minutes. Pressure held solid. Good test.
14:45	2.00	P	Filled bailer with 98 kg, 32.3 kg/m for 177.8 mm casing coarse sand and ran in hole. Tagged BP top at 2016.79mKB Spotted 3.0 Linear meters on top of BP. Pulled out of the hole. Laid down bailer. Sand top @ 2013.79mKB.
16:45	1.75	P	Held tailgate meeting and discussed arming perforating gun. Armed a 3m ERHSC carrier c/w 1m of 23 gr Owen SDP 3375-311 MT charges @ 20 spm 60 degree phasing. Hoisted gun into lubricator and stabbed onto well. Filled lubricator and tested it to 10MPa. Opened master and ran in hole. Correlated gun on depth to Schlumberger GR/CCL log dated Mar.27/13. Pressured casing up to 4500kPa. 18:23 Perforated the " Upper" Lower Canol formation over the interval from 1993.0mKB to 1994.0mKB. SICP prior to shooting = 4548 kPa ISIP= 3425 kPa 1 min = 3641 kPa (pressure bouncing) / 2 min = 3121 kPa / 3 min = 3310 kPa / 4 min = 3273 kPa / 5 min = 3263 kPa
18:30	0.50	P	Crew shift change. Reviewed and discussed CPC PJHA #280313 with all personnel. Identified potential hazards associated with "E-line, D-FIT" operations. All safety concerns were noted and documented in CPC PJHA. Dicussed ERP plan and emergency procedures in case of incident. Checked all valid tickets.

ConocoPhillips Canada

Daily Morning Report
COPRC MIRROR LAKE N-20 65-00 126-45

Report #: 4
Report Date: 3/29/2013
Final Job Status: HOLD
Final Report? Yes

Job Cat: COMPLETIONS Job Typ: INITIAL COMPLETION Sub Typ:

District	API / UWI	License No.	KB-Ground Distance (m)	KB-Casing Flange Distance (m)
NEW VENTURES	200/C-011-L/094-P-16/99	EL470	5.20	4.87

JOB INFORMATION

Actual Start Date	End Date	Abandon Date	MaxWell Job Number	Responsible Grp 1
3/26/2013 09:00	3/30/2013 15:00		JOB1@2012	coved

Objective
ORGINAL COMPLETION

Rig	Cum Rig Time (hrs)	Personnel Regular Hours (hrs)	Cum Personnel Total Hours (hrs)
		289.00	1,127.00

Daily Contacts
WS Foreman, Myles Hahn, 780-402-0500; WS Supervisor, Doug Smith, 780-518-6273; WS Superintendent, Derrick Cove, 780-831-1314; Completions Engineer, Kyle Metzgar, 403-971-8424; Completions Engineer, Theron LeGarde, 403-710-5753

Report Start Date	Report End Date	Rig Time (hrs)	P(tub) (kPa)	P (cas) (kPa)	Weather	Temperature (°C)	Lease Condition
3/29/2013 06:00	3/29/2013 20:30			0	Clear	-25	Icy

Last 24hr Summary
Rig out remaining equipment on location. Washed wellhead and cleaned up debris. Readied equipment to be moved in AM.

24hr Forecast
Move all equipment off location.

TIME LOG

Start Time	Dur (hrs)	Time P-T-X	Operation
06:00	14.50	P	Sent picker to town to grab a trailer. Loaded picker load (HD work platform, McClellands spool + Basket, garbage box, lift of planks) and moved to KM 7 rack site. Rigged out light towers and dry heat exchanger. Moved second picker load off location. Connely max dry heat unit was moved to KM 7 rack site and the 4 light towers were moved to CPC rack site in NW. Washed wellhead and sucked out cellar. Cleaned wellsite command center. Chained and locked wellhead (combination 6127). Completons equipment at rack site: - HD Work platform (dual tier) - McClellands 69MPa work spool (one side has dual valves c/w 10k choke / other side has single valve) - McClellands 179mm 69MPa x 179mm 34.5MPa adapter spool c/w studs - McClellands Hammer wrenches ** Leftover Propylene glycol was off loaded into a 400bbl tank in CPC rack site (Hodgsons yard NW) - glycol was transferred to town in a dirty vac truck **

FLUID SUMMARY

Fluid	To lease (m³)	From lease (m³)	To well (m³)	From well (m³)	Left to recover (m³)
FRESH WATER	0.00	0.00	0.00	0.00	2.51

CUMULATIVE JOB FLARED GAS BY ZONE

Zone	Volume Gas Total (E3m³)

PERFORATIONS

Date	Zone	Top (mKB)	Btm (mKB)	Shot Dens (shots/m)	Current Status
3/27/2013 12:26	Basal Lower Canol, Origin...	2,059.00	2,060.00	20.0	Plugged
3/28/2013 04:00	Middle Lower Canol, Origi...	2,023.00	2,024.00	20.0	Plugged
3/28/2013 18:23	Upper Lower Canol, Origi...	1,993.00	1,994.00	20.0	Plugged

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ConocoPhillips Canada

Daily Morning Report
COPRC MIRROR LAKE N-20 65-00 126-45

Report #: 5
Report Date: 3/30/2013
Final Job Status: HOLD
Final Report? Yes

Job Cat: COMPLETIONS Job Typ: INITIAL COMPLETION Sub Typ:

District	API / UWI	Licence No.	KB-Ground Distance (m)	KB-Casing Flange Distance (m)
NEW VENTURES	200/C-011-L/094-P-16/99	EL470	5.20	4.87

JOB INFORMATION

Actual Start Date	End Date	Abandon Date	MaxWell Job Number	Responsible Grp 1
3/25/2013 09:00	3/30/2013 16:00		JOB1@2012	coved

Objective
ORGINAL COMPLETION

Rig	Cum Rig Time (hrs)	Personnel Regular Hours (hrs)	Cum Personnel Total Hours (hrs)
		55.00	1,182.00

Daily Contacts
WS Foreman, Myles Hahn, 780-402-0500; Completions Engineer, Kyle Metzgar, 403-971-8424; WS Supervisor, Doug Smith, 780-518-6273; WS Superintendent, Derrick Cove, 780-831-1314; Completions Engineer, Theron LeGarde, 403-710-9753

Report Start Date	Report End Date	Rig Time (hrs)	P(tub) (kPa)	P (cas) (kPa)	Weather	Temperature (°C)	Lease Condition
3/30/2013 07:00	3/30/2013 16:00			0	Clear	-22	Icy

Last 24hr Summary
Loaded out remaining equipment, Hauled to km 7 rack site. Cleaned up location. Turn site over to construction operations

24hr Forecast
Final report

TIME LOG

Start Time	Dur (hrs)	Time P-T-X	Operation
07:00	0.50	P	Conducted Pre-job hazard assesment with all personnel, identified potential hazards associated with "Move out" operations. All safety concerns were noted and documented in CPC PJHA. Dicussed ERP plan and emergency procedures in case of incident. Checked all valid tickets.
07:30	8.00	P	Loaded out and moved out Remaining wellsite equipment. Wellhead secured with lock and chain. Combination # 6127. Tbg hanger chained to wellhead. Completions equipment Left at km 7 rack site 261 jts 73mm J-55 tubing 1 complete string of 73 mm pup jts 1 set of Smith profile nipples "X" and "XN" 1 pail kendex storage compound 1 CPC Lease access sign. 2- 21 MPa pressure gauges 2- ¼ npt needle valves 4- ½ plugs Assorted ring gaskets and studs 2- 3000 psi stream flow valves left over from drilling. HD Equipment left @ km 7 rack site. 1-dual tiered work platform c/w long and short stairs Turn wellsite over to construction operations. Final Report.

FLUID SUMMARY

Fluid	To lease (m³)	From lease (m³)	To well (m³)	From well (m³)	Left to recover (m³)
FRESH WATER	0.00	0.00	0.00	0.00	2.51

CUMULATIVE JOB FLARED GAS BY ZONE

Zone	Volume Gas Total (E3m³)

PERFORATIONS

Date	Zone	Top (mKB)	Btm (mKB)	Shot Dens (shots/m)	Current Status
3/27/2013 12:26	Basal Lower Canol, Origin...	2,059.00	2,060.00	20.0	Plugged
3/28/2013 04:00	Middle Lower Canol, Origi...	2,023.00	2,024.00	20.0	Plugged
3/28/2013 18:23	Upper Lower Canol, Origi...	1,993.00	1,994.00	20.0	Plugged

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XIV. Final Completion Schematic

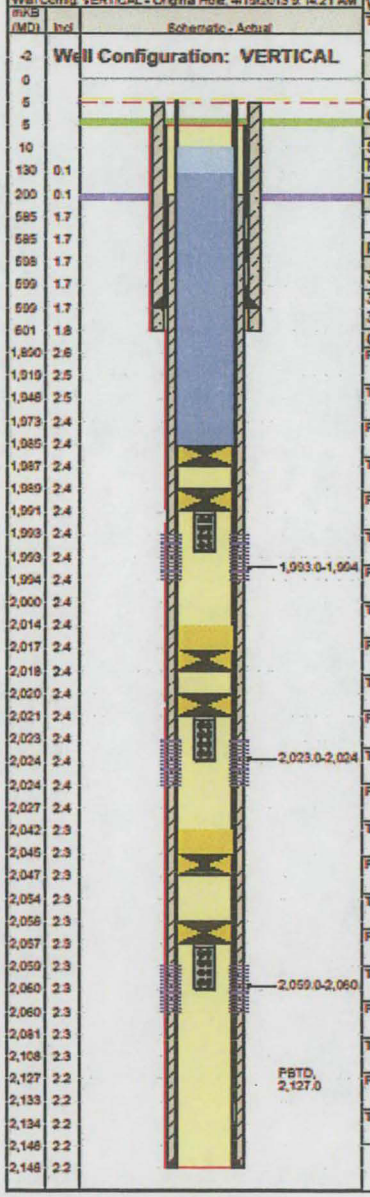
ConocoPhillips Canada

Downhole Well Profile for COPRC MIRROR LAKE N-20 65-00 126-45

API / UWI	Surface Legal Location	Field Name	License No.	Well Configuration Type
200/C-011-L/094-P-16/99	C-011-L/94-P-16	MIRROR LAKE	EL470	VERTICAL

Ground Elevation (m)	Orig KB/RT (m)	KB-Grd (m)	KB-CF (m)	KB-TF (m)	Other Elevation Type	Other Elevation (m)
281.30	286.50	5.20	4.87	4.32	BGW	

Well Config: VERTICAL - Original Hole, 4/19/2013 9:14:21 AM



WELLHEADS

Type	Install Date

Description	Make	Model	WP (kPa)	Top Ring Gasket	Min Bore (mm)

CASING STRINGS

Casing Description	String OD (mm)	String Wt (kg/m)	String Grade	String Top Thrd	Set Depth (mKB)
Surface	244.5	59.527	J-55	LT&C	599.00
Production	177.8	38.692	P-110	LT&C	2,146.00

PBTDs

Depth (mKB)	KO MD (mKB)	TD (max) (mKB)
2,127.00		2,146.00

PERFORATIONS

Date	Top (mKB)	Btm (mKB)	Zone	Current Status
3/26/2013	1,993.00	1,994.00	Upper Lower Canol, Original H...	Plugged
3/26/2013	2,023.00	2,024.00	Middle Lower Canol, Original ...	Plugged
3/27/2013	2,059.00	2,060.00	Basal Lower Canol, Original H...	Plugged

OTHER IN HOLE

Run Date	Description	OD (mm)	ID (mm)

Top (mKB)	Bottom (mKB)	Make	Model

Run Date	Description	OD (mm)	ID (mm)
3/27/2013	Pup Joint Assembly un...	60.3	
Top (mKB)	Bottom (mKB)	Make	Model
2,057.18	2,059.62		
Run Date	Description	OD (mm)	ID (mm)
3/27/2013	Barrier - Retrievable Br...	159.0	
Top (mKB)	Bottom (mKB)	Make	Model
2,055.79	2,057.18	Schlumberger	M-CW Retrievable
Run Date	Description	OD (mm)	ID (mm)
3/27/2013	Barrier - Retrievable Br...	159.0	
Top (mKB)	Bottom (mKB)	Make	Model
2,045.29	2,046.77	Schlumberger	M-CW Retrievable
Run Date	Description	OD (mm)	ID (mm)
3/26/2013	Sand Cap	159.0	
Top (mKB)	Bottom (mKB)	Make	Model
2,042.29	2,045.29		
Run Date	Description	OD (mm)	ID (mm)
3/26/2013	Barrier - Retrievable Br...	159.0	
Top (mKB)	Bottom (mKB)	Make	Model
2,019.79	2,021.18	Schlumberger	M-CW Retrievable
Run Date	Description	OD (mm)	ID (mm)
3/26/2013	Pup Joint Assembly un...	60.3	
Top (mKB)	Bottom (mKB)	Make	Model
2,021.18	2,023.58		
Run Date	Description	OD (mm)	ID (mm)
3/26/2013	Barrier - Retrievable Br...	159.0	
Top (mKB)	Bottom (mKB)	Make	Model
2,016.79	2,018.26	Schlumberger	M-CW Retrievable
Run Date	Description	OD (mm)	ID (mm)
3/26/2013	Sand Cap	159.0	
Top (mKB)	Bottom (mKB)	Make	Model
2,013.79	2,016.79		
Run Date	Description	OD (mm)	ID (mm)
3/26/2013	Barrier - Retrievable Br...	159.0	
Top (mKB)	Bottom (mKB)	Make	Model
1,989.29	1,990.68	Schlumberger	M-CW Retrievable
Run Date	Description	OD (mm)	ID (mm)
3/26/2013	Pup Joint Assembly un...	60.3	
Top (mKB)	Bottom (mKB)	Make	Model
1,990.68	1,993.08		

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XV. Electric Logs