IX. Tour sheets – Drilling Rig

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140227_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	27
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	23-Feb-2014 23:59

DAILY CHECKS (OP RM RT RY)
(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted If Required
(4.) Well Licence & Shell Diagram Posted
(5.) Flare Lines Staked
(6.) BOP Drills Performed
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines
(1.) Rig Site Health & Safety Meeting (one/bi-weekly)
(2.) CAODC Rig Safety Inspection Checklist (one/fortnight)
(3.) Mast Inspection before Raising or Lowering
(4.) Crown Saver Checked
(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
Tour 1																									8.00	8.00
Tour 2																									8.00	8.00
Tour 3																									8.00	8.00
TOTAL																									24.00	24.00

FUEL @ 08:00 HRS

WEATHER: Deg 0 | Scale 0 | Time 15:45 | Temp -21 | Cutting Conditions CLEAR | Wind Direction N | Wind Strength CALM | Road Condition GOOD

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; O; DC; LOC; BRG; Gauge; Reason Pulled; Total Run (m/hr)

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 Sequence & Remarks
0:00	8:00	8.00	25	OTHER

Remarks

SAFETY: Safety Topic | MEHL | MACP

TOUR 2 SIGNATURE OF DRILLER MARCUS HALLOWES 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; O; DC; LOC; BRG; Gauge; Reason Pulled; Total Run (m/hr)

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 Sequence & Remarks
8:00	16:00	8.00	25	WAIT ON PLANE AND TRAVEL HOME

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; O; DC; LOC; BRG; Gauge; Reason Pulled; Total Run (m/hr)

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 Sequence & Remarks
16:00	24:00	8.00	25	OTHER

Remarks

SAFETY: Safety Topic | MEHL | MACP

FRONT PAGE SUMMARY

Licence No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Tour Sheet Serial Number	BEAV2_20140226_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	26
Surface Location	P-20-65-00-126-45
Prov	NT
Lsc Type	CLSS
Unique Well Id	
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	23-Feb-2014 23:59

DAILY CHECKS — OP RM

	RT	RY
(1.) Daily Walk Around Inspection		
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well License & Atsb Diagram Posted		
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Weekly Inspected BO Pn-Flare Lines & Degasser Lines		
	RY	
(1.) Rig Site Health & Safety Meeting (one/crew/month)		
(2.) CAODC Rig Safety Inspection Checklist (one/rig/month)		
(3.) Next Inspection before Raising or Lowering		
(4.) Crown Saver Checked		
(5.) Motor Kills Checked		

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	
HOURS Tour 1																							8.00			8.00
HOURS Tour 2	8.00																									8.00
HOURS Tour 3	4.00																						4.00			8.00
HOURS TOTAL	12.00																						12.00			24.00

Kelly Bushing | Up Fuel

FUEL @ 08 00 HRS

WEATHER: Rig 0 | Meter 0 | Time 06:30 | Temp -25 | Crown Condition CLEAR | Wind Direction W | Wind Strength CALM | Road Condition GOOD

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 Pulled	
LOC		Total Run In 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 Sequence & Remarks
0:00	8:00	8.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 2 SIGNATURE OF DRILLER MARCUS HALLOWES 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 Pulled	
LOC		Total Run In 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 Sequence & Remarks
8:00	16:00	8.00	1A	TIDY UP RACK SITE

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 3 SIGNATURE OF DRILLER CURTIS DAY 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 Pulled	
LOC		Total Run In 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 Sequence & Remarks
16:00	20:00	4.00	1A	TIDY UP RACK SITE
20:00	24:00	4.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140225_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	25
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	23-Feb-2014 23:59

DAILY CHECKS (OP RM / RT RY)
(1.) Daily Walk Around Inspection
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) ICS Signs Posted If Required
(4.) Well Licence & Sick Diagram Posted
(5.) Flare Lines Sisted
(6.) BOP Drills Performed
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines
(1.) Rig Site Health & Safety Meeting (crew involvement)
(2.) CAODC Rig Safety Inspection Checklist (crew involvement)
(3.) Heat Inspection before Raising or Lowering
(4.) Crown Saver Checked
(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																							8.00			8.00
Tour 2	7.75																				0.25					8.00
Tour 3	4.00																						4.00			8.00
TOTAL	11.75																				0.25		12.00			24.00

Kelly Bushing / Up Field

FUEL @ 08.00 HRS
Rig 0 Diesel 0

WEATHER
Time 06:00 Temp -25
Overnight Conditions CLEAR
Wind Direction W Wind Strength UP TO 19 KMH
Road Condition GOOD

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: TI, TO, MDC, LOC, BRG; Gauge, ODC, Reason Pulled, Total Rev (k/m)

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	0.00	11	0
2	0.00	11	0

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	8:00	8.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 2 SIGNATURE OF DRILLER MARCUS HALLOWES 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, TO, MDC, LOC, BRG; Gauge, ODC, Reason Pulled, Total Rev (k/m)

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	0.00	11	0
2	0.00	11	0

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	21D	MEETINGS - PRE-JOB SAFETY
8:15	16:00	7.75	1A	MOVE RIG RACK SITE

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 3 SIGNATURE OF DRILLER CURTIS DAY 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, TO, MDC, LOC, BRG; Gauge, ODC, Reason Pulled, Total Rev (k/m)

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	0.00	11	0
2	0.00	11	0

METRES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION: Hole Drag Up / Down; Torque At Bottom; Fill On Bottom

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	20:00	4.00	1A	MOVE RIG TO RACK SITE
20:00	24:00	4.00	23B	W/O DAYLIGHT

Remarks

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140224_1B
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	24
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Contractor	Beaver Drilling Ltd.
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig No	2
Well Type	
Re-Entry	☐
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	23-Feb-2014 23:59

DAILY CHECKS (OP / RM)

(1.) Daily Walk Around Inspection — RT / RY
(2.) Detailed Inspection - Weekly (Using Check List) — RT / RY
(3.) H2S Signs Posted if Required — RT / RY
(4.) Well License & Sub Diagram Posted — HY / RY
(5.) Flare Lines Staked — HY / RY
(6.) BOP Drills Performed — HY / RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — HY / RY
(1.) Rig Site Health & Safety Meeting (emp/crew/month) — RY
(2.) CAODC Rig Safety Inspection Checklist (one/month) — RY
(3.) Mast Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

CAODC

NOV

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														0.25	7.50				8.00
Tour 2																						8.00				8.00
Tour 3																						4.00	4.00			8.00
TOTAL							0.25														0.25	19.50	4.00			24.00

Kelly Bushing | Up Fuel: FUEL @ 08:00 HRS

WEATHER: Rig 90 | Barom 42 | Time 05:00 | Temp -30 | Lot/Wx Condition CLEAR | Wind Direction W | Wind Strength UP TO 18 KMH | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER: CURTIS DAY | 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 / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Run In Hrs

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	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig Service, grease all moving parts, check oil level in floor motor.
0:15	7:45	7.50	22	Secure derrick, wrap up power cords, tie everything down for rig move, de-ice matting
7:45	8:00	0.25	21	Crew hand over meeting

Remarks: blow boiler 100l

SAFETY: Safety Topic / MEHL / MACP

TOUR 2 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 8:00 | END TIME 16:00

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	16:00	8.00	22	COOL BOILER & CLEAN SAME WINTERIZE RIG LOAD OUT BACK END OF RIG

Remarks

TOUR 3 | SIGNATURE OF DRILLER: RICK YAVIS | START TIME 16:00 | END TIME 24:00

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	20:00	4.00	22C	LOAD OUT BACK END
20:00	24:00	4.00	23B	W/O DAYLIGHT TO RACK RIG

Remarks

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140223_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	23
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique WellId	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	23-Feb-2014 23:59

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — RT / RY
- (2.) Detailed Inspection - Weekly (Using Check List) — RT / RY
- (3.) H2S Signs Posted If Required — RY
- (4.) Well Licence & Sick Diagram Posted
- (5.) Flare Lines Staked
- (6.) BOP Drills Performed
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines
- (1.) Rig Site Health & Safety Meeting (one/one/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (one/fortnight)
- (3.) Mast Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked
- (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							6.00							0.50	1.25				8.00
Tour 2							0.25															7.75				8.00
Tour 3							0.25														0.75	7.00				8.00
TOTAL							0.75							6.00							1.25	16.00				24.00

Kelly Bushing | Up Fluid

FUEL @ 08.00 HRS

Rig	107
Boiler	107
Time	05:45
Temp	-36
Current Conditions	CLEAR
Wind Direction	N
Wind Strength	CALM
Road Conditions	GOOD

TOUR 1 — SIGNATURE OF DRILLER: CURTIS DAY — 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, TO, MDC, LDC, BRG; Gauge, ODC, Reason Pulled, Total Run (hrs)

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:15	3:00	2.75	14B	Nipple Down BOP's & rack back in sub
3:00	3:15	0.25	21D	Safety meeting on Installing Well head with Stream-Flo
3:15	6:30	3.25	14E	Install Well Head and pressure test seal assembly
6:30	7:45	1.25	22	Tear out flare lines, flare stack, pick up all planks and boards
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps and toolpush present, daily walk around, rig inspection R/T

Remarks
boiler blowdown 100l

SAFETY

Safety Topic	MEHL	MACP
Nipple Down		

TOUR 2 — SIGNATURE OF DRILLER: MARCUS HALLOWES — 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, TO, MDC, LDC, BRG; Gauge, ODC, Reason Pulled, Total Run (hrs)

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	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	RIG SERVICE
8:15	9:30	1.25	22	Tear out pumps, all lines to pumps, prep pipe tubs and rentals, move off location to rack site
9:30	16:00	6.50	22B	Rig out top drive, torque tube and prepare derrick to lay down

Remarks

SAFETY

Safety Topic	MEHL	MACP

TOUR 3 — SIGNATURE OF DRILLER: CURTIS DAY — 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, TO, MDC, LDC, BRG; Gauge, ODC, Reason Pulled, Total Run (hrs)

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	0.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	16:15	0.25	7	RIG SERVICE
16:15	17:15	1.00	22B	Continue to rig out top drive, HPU, torque tube and prepare derrick to lay down
17:15	18:45	1.50	22	Tear out steam and water lines, tear out boilers and prepare small boiler to send to Nisku for inspection. Winterize rig to move to rack site
18:45	19:00	0.25	21	Crew hand over meeting
19:00	21:45	2.75	22	Tear out and prepare to lay down derrick
21:45	22:15	0.50	21F	Safety meeting, complete safety inspection of derrick prior to lay down, RY CD BB ER
22:15	24:00	1.75	22	Continue to tear out rig to move to rack site

Remarks
blow boiler 100l

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Licence No	Well Name	Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
1211	COPRC MIRROR LAKE P-20 65-00 126-45	BEAV2_20140222_1A	RMS 2013.8.14.27104	2014	02	22

Surface Location	Prov	Lic Type	Unique Well Id
P-20-65-00-126-45	NT	CLSS	

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2		☐

Operator's AFE	Contractor's Job No	Spud Date Time
10351812	152	29-Jan-2014 00:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
RICHARD TURGEON	RICK YAVIS	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection: RT RY
(2.) Detailed Inspection - Weekly (Using Check List): RT RY
(3.) H2S Signs Posted if Required: RT RY
(4.) Well Licence & Sick Diagram Posted: RT RY
(5.) Flare Lines Staked: RT RY
(6.) BOP Drills Performed: RT RY
(7.) Weekly Inspected BOPs-Flare Lines & Degasser Lines: RT RY
(1.) Rig Site Health & Safety Meeting (one/week/crew): RY
(2.) CAODC Rig Safety Inspection Checklist (one/4/month): RY
(3.) Mast Inspection before Raising or Lowering: RY
(4.) Crown Saver Checked: RY
(5.) Motor Kills Checked: RY

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				5.00			2.25							0.50					8.00
Tour 2							0.25				4.75	2.75									0.25					8.00
Tour 3												7.00									1.00					8.00
TOTAL							0.50				9.75	9.75		2.25							1.75					24.00

Kelly Bushing | Off Fuel

FUEL @ 08:00 HRS: Rig 55 | Enter 120

WEATHER: Time 05:45 | Temp -42 | Current Conditions CLEAR | Wind Direction N | Wind Strength CALM | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER CURTIS DAY | 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	

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, function test blind rams 6 sec to close and open,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:15	2:30	2.25	14A	install flange for Pressure USIT log
2:30	2:45	0.25	21	Safety meeting on pressure logging with schlumberger
2:45	5:00	2.25	11B	Rig up pressure USIT log
5:00	7:45	2.75	11B	Wire line log with Schlumberger
7:45	8:00	0.25	21D	Crew handover meeting, Conoco reps and tool push present, daily walk around rig inspection R/T

Remarks
blow boilers 200l boiler#2 feul .55

CUTTING STRUCTURE

I		Gauge	
TO		DDC	
MDC		Pressure Failure	
LDC		Total Pump Hrs	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

SAFETY

Safety Topic	MEHL	MACP
Logging		

TOUR 2 | SIGNATURE OF DRILLER MARCUS HALLOWES | 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	

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	11:15	3.25	11B	Run USIT log #2 pressure pass
11:15	12:45	1.50	11B	Rig out loggers and pressure pass head
12:45	13:00	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, function test HCR 3 sec to open and close,grease all moving parts, check oil levels in floor motor, pumps and HPU
13:00	14:00	1.00	12A	Rig up power tongs and lay down truck
14:00	14:15	0.25	21D	Safety meeting with hallmark power tongs and trottier pipe handlers
14:15	16:00	1.75	12B	Run 114.3mm, 17.26kg, p-110 casing tie back liner, space out

Remarks
Level one overhead inspection mh
Blew down boilers 50L

CUTTING STRUCTURE

I		Gauge	
TO		DDC	
MDC		Pressure Failure	
LDC		Total Pump Hrs	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

SAFETY

Safety Topic	MEHL	MACP
run wire line logs		

TOUR 3 | SIGNATURE OF DRILLER CURTIS DAY | 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	

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	19:00	3.00	12B	Run 114.3mm, 17.26kg, p-110 casing
19:00	19:15	0.25	21D	Crew handover meeting, Conoco reps and toolpush present, daily walk around, rig inspection D/O
19:15	21:30	2.25	12B	Make up tie-back hanger and landing joint, land mandrel seal assembly and tie into top of liner top packer
21:30	21:45	0.25	21D	Safety meeting with Schlumberger, on pressure test 4-1/2" x 7" casing annulas, to 15,000kpa, for 10 min. (held OK)
21:45	22:30	0.75	12E	Pressure test liner hanger seals to 35,000kPA for 15 minutes and 4-1/2" x 7" casing annulas, to 15,000kpa, for 10 min. (held OK) Schlumberger cement pumper
22:30	22:45	0.25	21D	Safety meeting on rig out laydown truck and power tongs
22:45	23:45	1.00	12A	Rig out Trottier laydown truck and Hallmark power tongs
23:45	24:00	0.25	21D	Safety meeting on nipple down BOP's

Remarks
blow boilers 200l

CUTTING STRUCTURE

I		Gauge	
TO		DDC	
MDC		Pressure Failure	
LDC		Total Pump Hrs	
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140221_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	21
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	28-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

	RT	RY
(1.) Daily Walk Around Inspection		
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) IOS Signs Posted If Required		
(4.) Well Licence & Sick Diagram Posted	RT	RY
(5.) Flare Lines Stated	RT	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	RT	RY
(1.) Rig Site Health & Safety Meeting (one/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (one/month)		
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		
(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 Welding On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1					2.50	3.25	0.25					1.50									0.50					8.00
Tour 2						5.50	0.25					2.25														8.00
Tour 3							4.50					0.75		2.50							0.25					8.00
TOTAL					2.50	8.75	5.00					4.50		2.50							0.75					24.00

Kelly Washing | Up Fuel

FUEL @ 08:00 HRS

Rig	87
Drlrs	125
Time	06:30
Temp	-40
Current Condition	CLEAR
Wind Direction	N
Wind Strength	CALM
Road Condition	GOOD

WEATHER

TOUR 1 SIGNATURE OF DRILLER CURTIS DAY 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		Gauge	
TO		ODC	
MDC		Pulled Bit	
LOC		Total Pump 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	02:30	03:30
Density	1135	1135
Funnel Viscosity	130	130
Fluid Loss		
pH		
Location Of Sample	suction tank	suction tank
Depth	3155.00	3155.00
PVT	37	37

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	75	3900	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
Centrifuge #1	3.00	1140	1100	1790
Centrifuge #2	3.00	1140	1040	1710

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 Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver function test pipe rams 8 seconds close open,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:15	3:30	3.25	6A	Run in hole slow with drill pipe and HWDP on 114.3mm, 17.26kg/m, P-110, LTC production casing liner, packer hanger
3:30	6:00	2.50	5	Fill hole break circulation, circulate and clean hole
6:00	6:15	0.25	21	Safety meeting on cementing with Schlumberger prior to cementing 114.3mm production liner
6:15	7:45	1.50	12	Rig up Schlumberger cementers to cement 114.3mm production liner, pump 8m3 of 1000kg/m3 CWB pre-flush, stop and pressure test lines to 35,000kpa (held OK), bleed off pressure, pump 5m3 of 1200kg/m3 MUDPUSH II pre-flush spacer
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps and tool push present, daily walk around rig inspection R/T

Remarks
blow boilers 200l fuel for boiler #2 .80cm

SAFETY

Safety Topic	MEHL	MACP
Rig to Cement Casing		2954

TOUR 2 SIGNATURE OF DRILLER MARCUS HALLOWES 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		Gauge	
TO		ODC	
MDC		Pulled Bit	
LOC		Total Pump 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	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	10:15	2.25	12	Pump 20 tonne/14.7m3 (20% excess) of 1900kg/m3 Conventional Class "G" Taail Cement with 0.6% Fluid Loss + 0.5% Dispersant + 0.2% Retarder + 72L/tonne Gas Control Agent, from 3148.70mMD to 1727.49mMD. Drop dart and displace 19.8m3 of fresh water. Bump plug 3,500kpa over final circulating pressure of 19,200kpa at 09:05 Hrs. February 21 2014. Bleed off pressure (floats held OK), pressure up to 28,000kpa and set liner top packer at 1727.49mMD, circulate out pre-flush and 2m3 of excess cement, displace hole with fresh water. Rig out cementers, flow check
10:15	10:45	0.50	6F	Safety meeting with trottier pipe handlers, rig up Laydown truck
10:45	11:00	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver function test Hydill 23 seconds close open,grease all moving parts, check oil levels in floor motor, pumps and HPU
11:00	16:00	5.00	6F	Rig up lay down truck, lay down drill pipe and heavy weight drill pipe, run in the rest of drill pipe in the derrick, lay down drill pipe

Remarks
Level 1 overheaad inspection MH
Blow down boilers 2 times 100l

SAFETY

Safety Topic	MEHL	MACP
Lay down pipe with lay down machine		

TOUR 3 SIGNATURE OF DRILLER CURTIS DAY 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		Gauge	
TO		ODC	
MDC		Pulled Bit	
LOC		Total Pump 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	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	16:15	0.25	7	Rig service function test rig smart anti collision function test blind rams 8 second close open check fluids on floor motor and HPU
16:15	17:00	0.75	12A	Rig out Lay down truck to run USIT log and pressure USIT log
17:00	19:00	2.00	7A	Pull rotary table wash and clean invert out of table and bushings
19:00	19:15	0.25	21	Crew handover meeting, Conoco reps and tool push present, daily walk around rig inspection D/O
19:15	21:30	2.25	7A	Clean up floor, clean out invert from bird baths
21:30	24:00	2.50	14B	Tear out and clean flow line, flow nipple , rig out and clean catch can, clean ring seal seat and bolt holes in top of BOP for installing pressure stripper head for Pressure USIT log

Remarks

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Tour Sheet Serial Number	BEAV2_20140220_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	20
Surface Location	P-20-65-00-126-45
Prov	NT
Lea Type	CLSS
Unique Well Id	
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

- (1.) Daily Walk Around Inspection — RT RY
- (2.) Detailed Inspection - Weekly (Using Check List) — RT RY
- (3.) H2S Signs Posted if Required
- (4.) Well Licence & Sub. Diagram Posted — RT RY
- (5.) Flare Lines Staked — RT RY
- (6.) BOP Drills Performed — RT RY
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT RY
- (1.) Rig Site Health & Safety Meeting (analze elements) — RY
- (2.) CAODC Rig Safety Inspection Checklist (analyze elements)
- (3.) Meet Inspector before Raising or Lowering
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked

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					1.00	6.25	0.25														0.50					8.00
Tour 2					0.25	2.00	0.25					4.75									0.25				0.50	8.00
Tour 3					1.50	2.75	0.25	0.25				3.00									0.25					8.00
TOTAL					2.75	11.00	0.75	0.25				7.75									1.00				0.50	24.00

Kelly Bushing / Op Field

FUEL @ 08.00 HRS

WEATHER: Air 115 / Barom 175; Time 05:00 / Temp -36; Cloud Conditions OVERCAST; Wind Direction N / Wind Strength CALM; Road Condition GOOD

TOUR 1 — SIGNATURE OF DRILLER: CURTIS DAY

START TIME 0:00 — END TIME 8:00

BITS

Bit Number	5 RR
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	3152.00
Depth In (m)	3142.00
Total Drilled (m)	10.00
Hrs Run Today	
Cumulative Hrs Run	42.25
Entry Date	

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Revs (x10⁶) 0.24

METPES DRILLED: From / To / D-R-C / RPM / WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	60	0.19
1	152mm BIT SUB	152	60	0.91
9	4" H.W	101	65	84.45
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
126	4 " D.P	101	70	[illegible]
30	4" H.W	101	65	[illegible]

83 Drill Pipe Stands 1578.72

0 Drill Pipe Singles 0.00

Kelly Down -3.92

Total 3152.00

Weight of DC

Weight of String 66.00

HOLE CONDITION: Hole Drag Up 5 Down 7; Torque At Bottom; Fill On Bottom

MUD PECORD

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	127	125	12800	1.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
2	6414 @	83 @	3143.08
	@	@	
	@	@	

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 Sequence & Remarks
0:00	1:00	1.00	5D	Circulate condition hole at 3152m. prior to trip out to run 114.3mm casing liner
1:00	1:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver function test Hdril 23 seconds close open,grease all moving parts, check oil levels in floor motor, pumps and HPU
1:15	5:30	4.25	6B	Pull out of hole, with flow checks 3152m to 1307m, to run 114.3mm production liner
5:30	5:45	0.25	21D	Safety meeting with Trottier Pipe Handlers, lay down machine
5:45	7:45	2.00	6B	Rig up lay down machine and lay down drill pipe from 1307m to 995m
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps and tool push present, daily walk around rig inspection R/T

Remarks

blow down boilers 200 l fuel boiler#2 .82 flow checks @ 3136 m 3030 m 2284 m 1307m

SAFETY

Safety Topic	MEHL	MACP
Picking up laydown equipment and lay down drill pipe		2654

TOUR 2 — SIGNATURE OF DRILLER: MARCUS HALLOWES

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 / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Revs (x10⁶)

METPES 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 PECORD

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

PEDUCED 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 Sequence & Remarks
8:00	9:00	1.00	6F	Lay down drill pipe from 995m to 99m
9:00	10:00	1.00	6B	Trip out of the hole rack 5 stands of HW and breakdown BHA
10:00	10:30	0.50	25	Install bushing puller on drill pipe and pull wear bushing
10:30	10:45	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, function test blind rams 8 sec to close and open,grease all moving parts, check oil levels in floor motor, pumps and HPU
10:45	11:45	1.00	12A	Rig up power tongs to run 114.3mm production casing liner
11:45	12:00	0.25	21D	Safety meeting with hallmark power tongs and trottier pipe handlers
12:00	15:15	3.25	12B	Run 114.3mm, 17.26kg/m, P-110, LTC production casing liner, to 716m
15:15	15:30	0.25	5	Fill casing and break circulation at 716m
15:30	16:00	0.50	12B	Run 114.3mm, 17.26kg/m, P-110, LTC production casing liner, from 716m to 1016m

Remarks

Level one overhead inspection mh

Blew down boilers 2 times @ 50L

Trip sheet record calc 10.54m3 meas 11.48m3 Diff .94m3

SAFETY

Safety Topic	MEHL	MACP
Lay down drill pipe with lay down machine		2654

TOUR 3 — SIGNATURE OF DRILLER: CURTIS DAY

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 / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Revs (x10⁶)

METPES 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 PECORD

Mud Type Water ☐ Oil ☑ Other

Time	16:30
Density	1140
Funnel Viscosity	130
Fluid Loss	
pH	
Location Of Sample	suction tank
Depth	3155.00
PVT	135

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	85	2700	1.00

Remarks

PEDUCED 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 Sequence & Remarks
16:00	16:30	0.50	12B	Run 4 1/2 liner from 716m to 1016m
16:30	16:45	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, function test H.C.R 3 sec to open and close,grease all moving parts, check oil levels in floor motor, pumps and HPU
16:45	18:30	1.75	12B	Run 1727.49m of 114.3mm, 17.26kg/m, P-110, LTC production casing liner
18:30	19:00	0.50	5	Run 1 stand of 4" drill pipe, break circulation
19:00	19:15	0.25	21D	Crew handover meeting, Conoco reps and tool push present, daily walk around rig inspection D/O
19:15	20:00	0.75	12A	Rig out Hallmark power tongs and Trottier lay down truck
20:00	22:45	2.75	6A	Run in hole slow with drill pipe and HWOP on 114.3mm, 17.26kg/m, P-110, LTC production casing liner, packer hanger
22:45	23:00	0.25	8B	Replace hydraulic hose on top drive
23:00	24:00	1.00	5	Top fill and break circulation at 12m above 177.8mm casing shoe, 2140m

Remarks

blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
		2654

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140219_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	19
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Rising Check List) — RY
(3.) H2S Sign Posted If Required — RT RY
(4.) Well Licence & Stick Diagram Posted — RT RY
(5.) Flare Lines Bleed — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RY
(1.) Rig Site Health & Safety Meeting (one/month) — RY
(2.) CAODC Rig Safety Inspection Checklist (one/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 Ripple 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						4.00	0.75													2.75	0.50					8.00
Tour 2			1.75			4.75	0.25	0.50	0.75																	8.00
Tour 3		0.50	6.25		0.75		0.25														0.25					8.00
TOTAL		0.50	8.00		0.75	8.75	1.25	0.50	0.75											2.75	0.75					24.00

HOURS

Daily Drilling | Up Time

FUEL @ 08.00 HRS: Rig 155 | Stolen 180

WEATHER: Time 05:00 | Temp -32 | Current Conditions OVERCAST | Wind Direction N | Wind Strength UP TO 19 KM/H | Road Conditions GOOD

TOUR 1 SIGNATURE OF DRILLER CURTIS DAY START TIME 0:00 END TIME 8:00

BITS

Bit Number	5 RR
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	
Depth In (m)	3142.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	41.75
Entry Date	

CUTTING STRUCTURE: I | O | D | TO | BC | MDC | Reason Pulled | LOC | Total Run (m/hr) | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	60	0.19
1	152mm BIT SUB	152	60	0.91
8	4" H.W	101	65	75.67
1	Jar	131	59	5.07
2	4" H.W	101	65	18.50
126	4 " D.P	101	70	1115.16
30	4" H.W	101	65	278.14
80	Drill Pipe Stands			1521.65
0	Drill Pipe Singles			0.00

Kelly Down 0.00
Total 3098.85
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	00:30	03:30
Density	1140	1140
Funnel Viscosity	72	72
Fluid Loss		
pH		
Location Of Sample	suction tank	suction tank
Depth	3140.00	3140.00
PVT	41	41

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 Sequence & Remarks
0:00	2:15	2.25	8B	Pull out of hole for piled-up mud motor flow checks at 519m and out of hole
2:15	2:30	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
2:30	2:45	0.25	21	Safety meeting with directional hands
2:45	5:30	2.75	20D	Handle directional tools and lay down tools
5:30	6:00	0.50	7A	Clean up rig floor and prepare to run in hole
6:00	7:45	1.75	6A	Make up. 156mm Smith MSi613 PDC bit with float sub and float, run in hole
7:45	8:00	0.25	21D	Crew handover meeting, Conoco reps and tool push present, daily walk around rig inspection R/T

Remarks
blow boiers 200l, fuel for #2 boiler is .82cm
reviewed beaver drilling incident report #5-14

SAFETY

Safety Topic	MEHL	MACP
handel directional tools & lay down tools		2654

TOUR 2 SIGNATURE OF DRILLER MARCUS HALLOWES START TIME 8:00 END TIME 16:00

BITS

Bit Number	5 RR
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	
Depth In (m)	3142.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	41.75
Entry Date	

CUTTING STRUCTURE: I | O | D | TO | BC | MDC | Reason Pulled | LOC | Total Run (m/hr) | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	58	0.19
1	152mm BIT SUB	152	60	0.91
9	4" H.W	101	65	84.45
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
126	4 " D.P	101	70	1115.16
30	4" H.W	101	65	278.14
80	Drill Pipe Stands			1521.65
0	Drill Pipe Singles			0.00

Kelly Down 0.00
Total 3098.85
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
2	SINGLE	127	130	10000	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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	9:30	1.50	6A	Trip into the hole to 1022m
9:30	9:45	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
9:45	10:30	0.75	9A	Slip and cut 30m of drill line 10884m
10:30	12:30	2.00	6A	Trip in the hole from 1022m to 1595m fill pipe and flow check at 1595m
12:30	13:00	0.50	8B	Repair grabber box dies, on top drive
13:00	14:15	1.25	6A	Trip in the hole from 1595m to 2138m
14:15	16:00	1.75	3A	Wash and ream from 2152m to 2320m

Remarks
Level one overhead inspection MH
Blow down boilers 2 times 100L

SAFETY

Safety Topic	MEHL	MACP
Run in hole with top drive		2654

TOUR 3 SIGNATURE OF DRILLER CURTIS DAY START TIME 16:00 END TIME 24:00

BITS

Bit Number	5 RR
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	3152.00
Depth In (m)	3142.00
Total Drilled (m)	10.00
Hrs Run Today	0.50
Cumulative Hrs Run	0.50
Entry Date	

CUTTING STRUCTURE: I | O | D | TO | BC | MDC | Reason Pulled | LOC 20.00 | Total Run (m/hr) | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
3142.00	3152.00	DRILL	80	8

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	60	0.19
1	152mm BIT SUB	152	60	0.91
9	4" H.W	101	65	84.45
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
126	4 " D.P	101	70	1115.16
30	4" H.W	101	65	278.14
83	Drill Pipe Stands			1578.72
0	Drill Pipe Singles			0.00

Kelly Down -3.92
Total 3152.00
Weight of DC
Weight of String 66.00

HOLE CONDITION: Hole Drag Up 5 Down 7; Torque At Bottom 12300; Fill On Bottom

MUD RECORD

Mud Type Water ☐ Oil ☑ Other

Time	19:30	22:30
Density	1140	1140
Funnel Viscosity	75	75
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	3140.00	3140.00
PVT	41	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	125	12600	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
Barite	42	sx

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 Sequence & Remarks
16:00	16:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver function test pipe rams 8 seconds close open,grease all moving parts, check oil levels in floor motor, pumps and HPU
16:15	18:45	2.50	3A	Wash and ream from 2320m to 2604m
18:45	19:00	0.25	21D	Crew handover meeting, Conoco reps and tool push present, daily walk around rig inspection D/O
19:00	22:45	3.75	3A	Wash and ream from 2604m to 3142m
22:45	23:15	0.50	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, from 3142m to 3152m
23:15	24:00	0.75	5D	Circulate condition hole at 3152m

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
tripping in hole with top drive		2654

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Contractor	Beaver Drilling Ltd.
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Tour Sheet Serial Number	BEAV2_20140218_1A
Surface Location	P-20-65-00-126-45
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	18
From	NT
Lat Type	CLSS
Unique Well Id	
Rig No	2
Well Type	
Re-Entry	☐
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	

DAILY CHECKS (OP RM)

(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Using Crack List) — RT RY
(2.) H2S Signs Posted if Required — RT RY
(4.) Well Licence & Site Diagram Posted — RT RY
(5.) Flare Lines Staked — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT RY
(1.) Rig Site Health & Safety Meeting (crew/environment) — RY
(2.) CAODC Rig Safety Inspection Checklist (crew/equipment) — RY
(3.) Meet Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

Daily Washing | Up Trip

FUEL @ 08 00 HRS

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		6.75					0.25			0.75											0.25					8.00
Tour 2		5.25				2.50	0.25																			8.00
Tour 3						7.00	0.25	0.50													0.25					8.00
TOTAL		12.00				9.50	0.75	0.50		0.75											0.50					24.00

WEATHER

Rig	150
Rotor	182
Time	05:00
Temp	-32
Current Conditions	PARTLY CLOUDY
Wind Direction	N
Wind Strength	UP TO 19 KMH
Road Condition	GOOD

TOUR 1 SIGNATURE OF DRILLER CURTIS DAY START TIME 0:00 END TIME 8:00

BITS

Bit Number	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	863.00
Hrs Run Today	6.75
Cumulative Hrs Run	36.50
Entry Date	

CUTTING STRUCTURE: I / O / DC / LOC / BRG; Gauge / IDC / Reason Pulled / Total Run (hrs) 23.64

METRES DRILLED

From	To	D-R-C	RPM	WOB
2837.00	3015.00	DRILL	80	9

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	63	0.19
1	Mud motor	123	63	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	9.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.78
1	x/o	120	56	0.87
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.37
1	Jar	131	59	5.07
14	4" H.W	101	65	9.12
73	Drill Pipe	Stands		1388.61
1	Drill Pipe	Singles		9.48

Kelly Down -3.00
Total 3015.62
Weight of DC
Weight of String 66.00

HOLE CONDITION: Hole Drag Up 5 Down 5; Torque At Bottom 11100; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	01:15	03:45
Density	1110	1110
Funnel Viscosity	65	65
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2866.00	2918.00
PVT	49	47

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	120	16800	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	7503	@	80	@	2837.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:30	2818.00	89.70	286.6	DIRECTIONAL
01:00	2837.00	89.90	286.6	DIRECTIONAL
02:15	2856.00	89.90	284.7	DIRECTIONAL
03:00	2875.00	88.80	283.8	DIRECTIONAL
03:45	2894.00	89.00	285.5	DIRECTIONAL
04:15	2913.00	89.10	286	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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:15	7:00	6.75	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2837m to 3015m
7:00	7:45	0.75	10	Accumulated time for surveys
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection R/T.daily walk around rig inspection D/O.

Remarks
blow down boilers 200 litters. feul for #2 boiler is .98

SAFETY

Safety Topic	MEHL	MACP
washing & cleaning rig		3247

TOUR 2 SIGNATURE OF DRILLER MARCUS HALLOWES START TIME 8:00 END TIME 16:00

BITS

Bit Number	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	990.00
Hrs Run Today	5.25
Cumulative Hrs Run	41.75
Entry Date	

CUTTING STRUCTURE: I / O / DC / LOC / BRG; Gauge / IDC / Reason Pulled / Total Run (hrs) 23.71

METRES DRILLED

From	To	D-R-C	RPM	WOB
3015.00	3142.00	DRILL	80	10

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	63	0.19
1	Mud motor	123	63	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	9.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.78
1	x/o	120	56	0.87
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.37
1	Jar	131	59	5.07
14	4" H.W	101	65	9.12
80	Drill Pipe	Stands		1521.65
0	Drill Pipe	Singles		0.00

Kelly Down 0.00
Total 3142.18
Weight of DC
Weight of String 66.00

HOLE CONDITION: Hole Drag Up 6 Down 6; Torque At Bottom 11100; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☐ Other

Time	08:45	11:00
Density	1140	1140
Funnel Viscosity	68	69
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	3028.00	3061.00
PVT	49	46

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	117	17100	5.25

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	7869	@	82	@	3027.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:00	3008.00	89.70	284.5	DIRECTIONAL
09:45	3027.00	89.90	285.1	DIRECTIONAL
10:30	3046.00	89.70	284.3	DIRECTIONAL
11:00	3065.00	89.80	283.8	DIRECTIONAL
12:00	3065.00	89.90	284.9	DIRECTIONAL
12:45	3103.00	89.90	283.7	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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:30	0.50	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 3015m to 3028m
8:30	8:45	0.25	7	Rig service function test rig smart anti-collision system, function test Hydrill 25 sec to close and open , function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:45	13:30	4.75	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 3028m to 3142m
13:30	16:00	2.50	6B	Trip out of the hole, flow checks at 3125m, 3008m

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
Changing graber box dies		2654

TOUR 3 SIGNATURE OF DRILLER CURTIS DAY 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 / O / DC / LOC / BRG; Gauge / IDC / Reason Pulled / Total Run (hrs)

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	19:45	21:45
Density	1140	1140
Funnel Viscosity	70	70
Fluid Loss		
pH		
Location Of Sample	suction tank	suction tank
Depth	3098.00	3098.00
PVT	40	38

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 Sequence & Remarks
16:00	16:15	0.25	6B	Trip out of the hole, flow check at 2606m
16:15	16:45	0.50	8	Change slip dies
16:45	17:45	1.00	6B	Trip out of the hole, flow checks at 2316m
17:45	18:00	0.25	7	Rig service function test rig smart anti-collision system, function test HCR 3 sec to open and close , function test crown saver,grease all moving parts, check oil levels in floor motor and HPU
18:00	18:45	0.75	6B	Trip out of the hole, to lay down directional tools
18:45	19:00	0.25	21D	Crew handover meeting, Conoco reps, and toolpush present
19:00	24:00	5.00	6B	Trip out of the hole, flow checks at 1437m

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
		2654

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140217_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	17
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date-Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS (OP / RM)
(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Using Check List) — RT RY
(3.) H2S Signs Posted If Required — RT RY
(4.) Well Licence & Stick Diagram Posted — RT RY
(5.) Flare Lines Staked — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BO Pe-Flare Lines & Degasser Lines — RT RY
(1.) Rig Site Health & Safety Meeting (one/a month) — RY
(2.) CAODC Rig Safety Inspection Checklist (one/month) — RY
(3.) Mast Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

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		6.50					0.25			0.75											0.50					8.00
Tour 2		7.00					0.25													0.75						8.00
Tour 3		6.00					0.25	0.50		0.75											0.50					8.00
TOTAL		19.50					0.75	0.50		1.50										0.75	1.00					24.00

FUEL @ 08:00 HRS: Rig 145; Drlg 185; Time 04:15; Temp -36

WEATHER: Surface Conditions OVERCAST; Wind Direction N; Wind Strength UP TO 19 KMH; Road Condition GOOD

TOUR 1 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 0:00 — END TIME 8:00

BITS

Bit Number	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	362.00
Hrs Run Today	6.50
Cumulative Hrs Run	16.75
Entry Date	

CUTTING STRUCTURE: I1 / O1 / TO / MDC / LOC / BRG / Gauge / OBC / Pressure Failure / Total Pump Hrs 21.61

METRES DRILLED

From	To	D-R-C	RPM	WOB
2354.00	2514.00	DRILL	80	8

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	63	0.19
1	Mud motor	123	63	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	9.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.78
1	x/o	120	56	0.87
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.27
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
47	Drill Pipe	Stands		894.18
0	Drill Pipe	Singles		0.00

Kelly Down 0.00
Total 2514.71
Weight of DC
Weight of String 67.00

HOLE CONDITION: Hole Drag Up 5 Down 5; Torque At Bottom 11600; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	02:30	04:30
Density	1030	1025
Funnel Viscosity	68	68
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2419.00	2436.00
PVT	45	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	134	16600	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	6181	@	82	@	2354.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
01:00	2342.50	90.40	283.8	DIRECTIONAL
01:45	2361.50	90.70	284.4	DIRECTIONAL
02:45	2380.50	90.60	283.4	DIRECTIONAL
03:45	2399.50	89.40	283.6	DIRECTIONAL
05:00	2418.50	89.88	284.94	DIRECTIONAL
05:15	2437.50	89.60	285.9	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Truvis	8	sx
Calcium Chloride	6	sx

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	6.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:30	0.50	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2354m to 2362 m
0:30	0:45	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:45	1:00	0.25	21A	Held b.o.p drill with crew well secure in 85 sec
1:00	7:00	6.00	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2362 m to 2514 m
7:00	7:45	0.75	10	Accumulated time for dir surveys
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection R/T.daily walk around rig inspection D/O.

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
b.o.p drill		4827

TOUR 2 — SIGNATURE OF DRILLER: BRADY YAVIS — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	533.00
Hrs Run Today	7.00
Cumulative Hrs Run	23.75
Entry Date	

CUTTING STRUCTURE: I1 / O1 / TO / MDC / LOC / BRG / Gauge / OBC / Pressure Failure / Total Pump Hrs 22.44

METRES DRILLED

From	To	D-R-C	RPM	WOB
2514.00	2686.00	DRILL	80	9

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	58	0.19
1	Mud motor	123	57	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	9.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.78
1	x/o	120	56	0.87
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.27
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
56	Drill Pipe	Stands		1065.24
0	Drill Pipe	Singles		0.00

Kelly Down 0.00
Total 2685.77
Weight of DC
Weight of String 68.00

HOLE CONDITION: Hole Drag Up 5 Down 5; Torque At Bottom 11700; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☐ Other

Time	08:15	13:45
Density	1050	1060
Funnel Viscosity	68	69
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2502.00	2628.00
PVT	42	47

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	120	16200	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	6677	@	83	@	2514.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:45	2514.00	87.80	286.8	DIRECTIONAL
11:15	2552.00	88.10	287	DIRECTIONAL
12:15	2571.00	88.30	287.1	DIRECTIONAL
13:00	2589.50	89.10	285.4	DIRECTIONAL
14:15	2609.00	89.70	285.6	DIRECTIONAL
14:45	2628.00	89.80	287	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Versamul	1	brl
Calcium Chloride	30	sxs
Barite	125	sxs

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 rig smart anti-collision system,function test crown saver, function test hydill 13 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:15	15:15	7.00	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2514m to 2686m
15:15	16:00	0.75	20A	Accumulated time for directonal surveys

Remarks
Level one overhead inspection BY
blow down boilers 2 times 100L

SAFETY

Safety Topic	MEHL	MACP
Prepare casing		3639

TOUR 3 — SIGNATURE OF DRILLER: CURTIS DAY — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	685.00
Hrs Run Today	6.00
Cumulative Hrs Run	29.75
Entry Date	

CUTTING STRUCTURE: I1 / O1 / TO / MDC / LOC / BRG / Gauge / OBC / Pressure Failure / Total Pump Hrs 23.03

METRES DRILLED

From	To	D-R-C	RPM	WOB
2686.00	2837.00	DRILL	80	9

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	63	0.19
1	Mud motor	123	63	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	9.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.78
1	x/o	120	56	0.87
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.27
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
64	Drill Pipe	Stands		1217.38
0	Drill Pipe	Singles		0.00

Kelly Down 0.00
Total 2837.91
Weight of DC
Weight of String 68.00

HOLE CONDITION: Hole Drag Up 5000 Down 5000; Torque At Bottom 11500; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	21:00	22:45
Density	1110	1110
Funnel Viscosity	68	68
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2762.00	2818.00
PVT	43	50

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	120	16600	7.00

Remarks

PEDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
2	6733	@	78	@	2764.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
19:00	2703.50	89.60	286.7	DIRECTIONAL
19:30	2722.50	89.00	287.3	DIRECTIONAL
21:00	2741.50	88.90	284.9	DIRECTIONAL
22:00	2760.50	89.10	285.6	DIRECTIONAL
22:45	2779.50	89.30	286.4	DIRECTIONAL
23:30	2798.50	89.40	286.3	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Versacoat HF	1	bbl

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	17:15	1.25	2	Drill 156mm hole, Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2686m to 2704m
17:15	17:30	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, function test HCR 3 sec to open, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
17:30	17:45	0.25	21A	Held BOP drill with crew, well secure in 90 sec
17:45	19:00	1.25	2	Drill 156mm hole, Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2704m to 2723 m
19:00	19:15	0.25	21	Crew handover meeting, Conoco reps. and toolpush
19:15	20:15	1.00	2	Drill 156mm hole, Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2723m to 2761 m
20:15	20:45	0.50	8C	Changed out seat & valve in pump # 2 flywheel side
20:45	23:15	2.50	2	Drill 156mm hole, Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend 1.66m bit to bend mud motor from 2761m to 2837m
23:15	24:00	0.75	10	Accumulated time for directional surveys

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
B.O.P drill		3247

FRONT PAGE SUMMARY

Licence No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Tour Sheet Serial Number	BEAV2_20140216_1A
Surface Location	P-20-65-00-126-45
Contractor	Beaver Drilling Ltd.
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Vendor Software Version	RMS 2013.8.14.27104
Year / Month / Day	2014 / 02 / 16
Prov	NT
Lsd Type	CLSS
Unique Well Id	
Rig No	2
Well Type	
Re-Entry	☐
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Hamp Check List) — RT RY
(3.) H2S Sign Posted If Required — RT RY
(4.) Well Licence & Sub Diagram Posted — RT RY
(5.) Flare Lines Staked — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RY
(8.) Rig Site Health & Safety Meeting (environment) — RY
(9.) CADDC Rig Safety Inspection Checklist (environment) — RY
(10.) Next Inspection before Raising or Lowering — RY
(11.) Crown Saver Checked — RY
(12.) Motor Mills Checked — RY

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						6.25	0.25														0.50				1.00	8.00
Tour 2		4.50			1.50	0.75	0.50								0.25					0.25	0.25					8.00
Tour 3		6.75					0.25			0.75											0.25					8.00
TOTAL		11.25			1.50	7.00	1.00			0.75					0.25					0.25	1.00				1.00	24.00

Kelly Bushing / Up Fuel

FUEL @ 08:00 HRS: Rig 160 / Prior 182

WEATHER: Time 05:30 / Temp -36 / Cloud Conditions PARTLY CLOUDY / Wind Direction W / Wind Sill Length 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	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	0.00
Entry Date	

CUTTING STRUCTURE: II / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Run Hrs

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	63	0.19
1	Mud motor	123	63	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	5.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.79
1	x/o	120	56	0.67
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.27
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
28	Drill Pipe	Stands		592.54
0	Drill Pipe	Singles		0.00
	Kelly Down			0.00
	Total			2153.07
	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

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

METPES DRILLED

From	To	D-R-C	RPM	WOB

HOLE CONDITION

Hole Drag Up / Down

Torque At Bottom

Fill On Bottom

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
		@		@	
		@		@	
		@		@	

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart anti-collision system, function test blind ram's 3 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:15	1:15	1.00	25	Tighten bolt on Packoff Seal Assembly, pressure test Packoff Seal Assembly, held OK. Unscrew from packoff, make up running tool for and install wear bushing
1:15	1:30	0.25	21D	Safety meeting prior to pick up directional tools
1:30	3:30	2.00	6C	Pick up and make up, Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, MWD and LWD tools, 2-joints of HWDP, Jars, 1-joint of HWDP
3:30	7:45	4.25	6A	Trip in hole with Pick up and make up, Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, MWD and LWD tools, 2-joints of HWDP, Jars, 1-joint of HWDP
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection R/T,daily walk around rig inspection D/O.

Remarks
blow down boilers 200 l boiler # 2 fuel 1.12

SAFETY

No	Safety Topic	MEHL	MACP
	pick up & make up dir tools & trip in hole		

TOUR 2 — SIGNATURE OF DRILLER: DEVAN SCHLITTER — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	58.00
Hrs Run Today	3.50
Cumulative Hrs Run	3.50
Entry Date	

CUTTING STRUCTURE: II / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Run Hrs 16.57

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	63	0.19
1	Mud motor	123	63	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	5.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.79
1	x/o	120	56	0.67
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.27
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
31	Drill Pipe	Stands		589.61
0	Drill Pipe	Singles		0.00
	Kelly Down			0.00
	Total			2210.14
	Weight of DC			
	Weight of String			61500.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	11:30	16:00
Density	970	980
Funnel Viscosity	60	64
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2154.00	2200.00
PVT	51	51

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	127	120	12000	5.50

Remarks

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
Truvis	3	sks
Lime	40	sks

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

METPES DRILLED

From	To	D-R-C	RPM	WOB
2152.00	2210.00	DRILL	80	10

HOLE CONDITION

Hole Drag Up 5000 Down 6000

Torque At Bottom 8600

Fill On Bottom

PEDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1661	@	43	@	2171.00
		@		@	
		@		@	

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	Rig service function test rig smart anti-collision system, function test pipe rams 4 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:15	9:00	0.75	6A	Trip in the hole to 1996m, fill pipe and test MWD tool
9:00	9:15	0.25	21A	BOP drill crew in position well secure in 90 sec
9:15	10:15	1.00	5	Wash to bottom from 1996m Tag cement at 2133m
10:15	11:15	1.00	2C	Drill cemet float and shoe, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2132m to 2152m
11:15	11:45	0.50	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2152m to 2157m
11:45	12:15	0.50	5	Circulate bottoms up, prior to formation integrity test
12:15	12:30	0.25	15A	Conduct formation integrity test, hold pressure for 10 min. AT 4860kpa. Held OK.
12:30	14:00	1.50	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2157m to 2174m
14:00	14:15	0.25	7A	Clean suction screen, on mud pumps
14:15	15:45	1.50	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2174m to 2210m

Remarks
Level 1 inspection on tongs and overhead equipment D.S
Blew down boilers 2 times each 100L

SAFETY

No	Safety Topic	MEHL	MACP
	Run in hole with top drive		5815

TOUR 3 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	5
Size	156
IADC Code	
Manufacturer	Smith
Type	MS1613UBPXX
Serial No	JH8401
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1
Depth Out (m)	
Depth In (m)	2152.00
Total Drilled (m)	202.00
Hrs Run Today	6.75
Cumulative Hrs Run	10.25
Entry Date	

CUTTING STRUCTURE: II / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Run Hrs 19.71

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	Bit	156	63	0.19
1	Mud motor	123	63	8.93
1	NM Pony Monel	119	57	3.10
1	Slick monel	119	67	9.47
1	Landing Sub	119	63	0.58
1	4.75 LWD SAWR	130	70	6.18
1	4.75 LWD ABS	131	70	4.79
1	x/o	120	56	0.67
1	Slick monel	119	67	9.50
1	X/O	128	58	0.82
3	4" H.W	101	65	28.27
1	Jar	131	59	5.07
1	4" H.W	101	65	9.12
39	Drill Pipe	Stands		741.93
0	Drill Pipe	Singles		0.00
	Kelly Down			-8.46
	Total			2354.00
	Weight of DC			
	Weight of String			67.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	20:30	22:45
Density	1010	1010
Funnel Viscosity	63	64
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2290.00	2329.00
PVT	49	48

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	127	134	15600	7.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
16:30	2190.00	88.00	280.5	DIRECTIONAL
17:30	2209.00	88.50	281.1	DIRECTIONAL
18:15	2228.00	89.20	281.2	DIRECTIONAL
19:15	2247.00	89.30	281.5	DIRECTIONAL
20:15	2266.00	88.20	276.5	DIRECTIONAL
21:15	2285.00	89.30	281	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Barite	56	sx
Lime	9	sx
Truvis	4	sx
Calcium Chloride	4	sx

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

METPES DRILLED

From	To	D-R-C	RPM	WOB
2210.00	2354.00	DRILL	80	10

HOLE CONDITION

Hole Drag Up 5000 Down 6000

Torque At Bottom 10600

Fill On Bottom

PEDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	5153	@	78	@	2329.00
		@		@	
		@		@	

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	16:15	0.25	7	Rig service function test rig smart anti-collision system, function test hydrill 13 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
16:15	19:00	2.75	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2210m to 2267 m
19:00	19:15	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection
19:15	23:15	4.00	2	Drill 156mm hole, with Smith 156mm MSi613 PDC bit, Weatherford 7/8 Lobe, 3.8 Stage (rpm at 0.135/L), 1.36deg bend, 1.66m bit to bend mud motor, from 2267m to 2354m
23:15	24:00	0.75	10	acclumlated time for dir surveys

Remarks
blow down boilers 200 l

SAFETY

No	Safety Topic	MEHL	MACP
			5815

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140215_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	15
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Field	NT
Lsc Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS (OP RM)
(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Using Check List) — RT RY
(3.) H2S Spot Protocol Reviewed — RT RY
(4.) Well Licence & Sick Diagram Posted — RT RY
(5.) Flare Lines Staked — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT RY
(1.) Rig Site Health & Safety Meeting (one/week/month) — RY
(2.) CADDC Rig Safety Inspection Checklist (one/fortnight) — RY
(3.) Mast Inspected before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

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					6.00		0.25					1.50									0.25					8.00
Tour 3							0.25					3.25	2.50												2.00	8.00
TOTAL					6.00		0.75					12.25	2.50								0.50				2.00	24.00

FUEL @ 08.00 HRS: Rig 150, Boiler 180

WEATHER: Time 05:45, Temp -36, Overcast Conditions CLEAR, 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; 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; TO; IDC; LOC; BRG; Gauge; EDC; Reason Pulled; Total Run (m/h)

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	127	100	700	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	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart anti-collision system, function test hydril 14 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:15	4:00	3.75	12B	Run 177.8mm intermediate Casing, 1- 177.8mm float shoe, 1-joint of 177.8mm, 38.69kg/m, P-110, LTC casing, 1-177.8mm float collar, 160-joints of 177.8mm, 38.69kg/m, P-110, LTC intermediate casing, from 2152mMD to 5.20m,
4:00	7:45	3.75	12B	Run 35 Volant Hydroform centralizers from 2152mMD to 1698m, run 10-Weatherford Micro Seal Packers, from 1818mMD to 1698mMD, RUN 41 Topco bow spring centralizers to surface
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection R/T,daily walk around rig inspection D/O.

Remarks
blow down boilers 200 l fuel for boiler # 2 1.17

SAFETY

Safety Topic	MEHL	MACP
run casing		4991

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; TO; IDC; LOC; BRG; Gauge; EDC; Reason Pulled; Total Run (m/h)

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	127	115	1700	1.50
2	SINGLE	127	5	1700	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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	Rig service function test rig smart anti-collision system, function test HCR 2 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:15	9:15	1.00	12B	Fill every 20 joints and break circulation every 700m. Tag bottom at 2152mMD. Total length of 177.8mm intermediate casing: 2151.70m, float collar at 2136.75mMD
9:15	10:30	1.25	5	Circulate 2 bottoms up, hole clean
10:30	11:00	0.50	12B	Lay down joint of casing install mandrell hanger and land
11:00	15:45	4.75	5	Circulate casing on bottom, rig out laydown truck and power tongs
15:45	16:00	0.25	21	Safety meeting with Schlumberger cementers, prior to cement 177.8mm intermediate casing, Reviewed jsa.#105 rig to and cement casing

Remarks
Level 1 inspection on tongs and overhead equipment D.S
Blew down boilers 2 times 100L
7" SLX 150 ton side door casing elavator certification serial # HTHE-38, inspection H-23735, work order 100113

SAFETY

Safety Topic	MEHL	MACP
Rig to and cement casing		4991

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; TO; IDC; LOC; BRG; Gauge; EDC; Reason Pulled; Total Run (m/h)

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	18:30
Density	1025
Funnel Viscosity	78
Fluid Loss	
pH	
Location Of Sample	shaker
Depth	2159.00
PVT	40

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 Sequence & Remarks
16:00	19:15	3.25	12	Rig in Schlumberger cementers to cement 177.8mm intermediate casing, pump 8m3 of 1000kg/m3 CW8 pre-flush, stop and pressure test lines to 21,000kPA (held OK), bleed off pressure, pump 8m3 of 1200kg/m3 MUDPUSH II pre-flush spacer, pump 19 tonne/26.2m3 (35% excess) HiLITE 1400 lead cement with 0.2%Anti Foam + 0.6% Fluid Loss + 0.6% Low Temp Dispersant + 60L/tonne Gas Control Agent + 0.3% Antisettling, from 1500m to 5.20m. pump 16 tonne/12.3m3 (35% excess), 1900kg/m3 Conventional Class G Tail Cement with 0.6% Fluid Loss + 0.5% Dispersant + 0.2% Anti Foam + 0.2% Retarder +72L/tonne Gas Control Agent, from 2152m to 1500m. Drop plug and displace 42.6m3 of Invert. Bump plug, 3,500kpa over final circulating pressure of 9,500kpa. At 19:05 Hrs, February 15 2014. Bleed off pressure, Pressure test casing to 18,500kpa for 10 min. Bleed off pressure, floats did not hold. Closed valves on cementing head
19:15	19:30	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
19:30	22:00	2.50	13	Wait on cement with valves on cementing head closed
22:00	23:15	1.25	25	Opened valves on cementing head, drained head, vac truck sucked out cementing head and landing joint, drain BOP stack, removed cementing head, turned landing joint out of mandrel hanger, lay down landing joint
23:15	24:00	0.75	25	Pick up 1 joint of 4" drill pipe, installed Pack-off Seal Assembly running tool, pick up Pack-off Seal Assembly, run in and set

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Licence No	Well Name	Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
1211	COPRC MIRROR LAKE P-20 65-00 126-45	BEAV2_20140214_1A	RMS 2013.8.14.27104	2014	02	14

Surface Location	Field	Lic Type	Unique Well Id
P-20-65-00-126-45	NT	CLSS	

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2		☐

Operator's AFE	Contractor's Job No	Spud Date Time
10351812	152	29-Jan-2014 00:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
RICHARD TURGEON	RICK YAVIS	

DAILY CHECKS — OP RM

- (1.) Daily Walk Around Inspection — RT RY
- (2.) Detailed Inspection - Weekly (Using Check List) — RT RY
- (3.) H2S Signs Posted if required — RT RY
- (4.) Well Licence & Sick Diagram Posted — RT RY
- (5.) Flare Lines Staked — RT RY
- (6.) BOP Drills Performed — RT RY
- (7.) Visually Inspected BO Pk-Flare Lines & Degasser Lines — RT RY
- (1.) Rig Site Health & Safety Meeting (one/week/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (one/fortnight) — RY
- (3.) Hoist Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked — RY

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				6.00									0.50	0.50				0.75	8.00
Tour 2							0.25				4.75										0.25				2.75	8.00
Tour 3							0.25					2.75									2.00				3.00	8.00
TOTAL							0.75				10.75	2.75								0.50	2.75				6.50	24.00

Daily Bore/Mud — Up Fuel

FUEL @ 08:00 HRS: Up 145 — Down 182

WEATHER: Time 05:45 — Temp -35 — General Conditions CLEAR — Wind Direction N — Wind Strength UP TO 10 KM/H — 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: TI; TO; MDC; LOC; BRG; Gage; OOC; Reason Pulled; Total Run (m/hr)

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:30	0.50	20D	Handle directional tools & lay down tools
0:30	1:15	0.75	25	attempt to pull out wear bushing
1:15	1:30	0.25	7	Rig service function test rig smart anti-collision system, function test blind ram's 3 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
1:30	1:45	0.25	21	Safety meeting with Schlumberger prior to open hole log
1:45	7:45	6.00	11	Wireline open hole logs, AIT-TLD-HGNS-GR-BHC-TLD2-EMS-EMA-ECRD tools, to point of refusal at 2065.75mMD. Inc: 71deg. with Schlumberger
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection R/T.

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
logging		

TOUR 2 — SIGNATURE OF DRILLER DEVAN SCHLITTER — START TIME 8:00 — END TIME 16:00

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	11:30	3.50	11A	Wireline logs with Schlumberger.
11:30	11:45	0.25	21	Safety meeting prior to rigging out loggers.
11:45	13:00	1.25	11	Rig out Schlumberger loggers.
13:00	13:15	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec to close, function test crown saver,grease all moving parts, check oil levels in floor motor and HPU
13:15	16:00	2.75	25	Mill and attempt to retreive damaged wear bushing/modify wear bushing puller

Remarks
Level 1 inspection on tongs and overhead equipment D.S
Blew down boilers 2 times 100L

SAFETY

Safety Topic	MEHL	MACP
		4991

TOUR 3 — SIGNATURE OF DRILLER BRIAN BERGSETH — START TIME 16:00 — END TIME 24:00

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	16:15	0.25	7	Rig service function test rig smart anti-collision system, function test HCR 3 sec to open, function test crown saver,grease all moving parts, check oil levels in floor motor and HPU
16:15	18:45	2.50	25	Mill and attempt to retreive damaged wear bushing/modify wear bushing puller
18:45	19:00	0.25	21D	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection R/T,daily walk around rig inspection D/O.
19:00	19:30	0.50	25	Retreive wear bushing
19:30	20:45	1.25	21	Safety meeting, with Hallmark power tongs and Mike lay down truck, prior to rigging up
20:45	22:00	1.25	12A	Rig up Hallmark power tongs and Mike lay down truck, rig in hole fill line
22:00	22:30	0.50	21	Safety meeting prior to running 177.8mm intermediate casing.
22:30	24:00	1.50	12A	Make up float shoe, 1x joint of 177.8mm intermediate casing, float collar. Test floats, run in 177.8mm intermediate casing, with Hallmark power tongs

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
rig up laydown truck run casing		4991

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140213_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	13
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Using Check List) — RY
(3.) H2S Signs Posted If Required — RT RY
(4.) Well Diagram & Site Diagram Posted — RT RY
(5.) Flare Lines Staked — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RY
(1.) Rig Site Health & Safety Meeting (weekly/monthly) — RY
(2.) CAODC Rig Safety Inspection Checklist (ann/biannually) — RY
(3.) Next Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

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		6.50					0.25	0.50		0.50											0.25					8.00
Tour 2		1.00			2.75	3.00	0.25		1.00																	8.00
Tour 3					0.25	6.50	0.25													0.50	0.50					8.00
TOTAL		7.50			3.00	9.50	0.75	0.50	1.00	0.50										0.50	0.75					24.00

Kelly Bushing | Up Fuel

FUEL @ 09:00 HRS

WEATHER: Rig 147 | Elev 195 | Time 05:00 | Temp -36 | Current Conditions CLEAR | Wind Direction N | Wind Strength UP TO 19 KMH | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHI18B
Serial No	RA3595
Jets	20 20 / 20
Depth Out (m)	
Depth In (m)	1921.00
Total Drilled (m)	
Hrs Run Today	6.50
Cumulative Hrs Run	30.25
Entry Date	11-Feb-2014

CUTTING STRUCTURE: II | TO | MDC | LOC | BRG | Gauge | IDC | Reason Pulled | Total Run (m hrs)

METRES DRILLED

From	To	D-R-C	RPM	WOB
2104.00	2146.00	DRILL	40	17

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
91	Drill Pipe	Stands		1730.84
0	Drill Pipe	Singles		0.00

Kelly Down: -4.00
Total: 2146.20
Weight of DC:
Weight of String: 71.00

HOLE CONDITION: Hole Drag Up 8 Down 8 | Torque At Bottom 8000 | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	02:00	04:30
Density	1005	1000
Funnel Viscosity	76	78
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2131.00	2116.00
PVT	45	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	103	16800	7.00
2	PARALLEL	127	103	16800	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	3111	@	80	@	2111.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
01:45	2091.00	77.91	276.74	DIRECTIONAL
03:15	2100.50	79.72	277.98	DIRECTIONAL
04:45	2110.00	81.80	277.5	DIRECTIONAL
06:15	2119.50	84.20	277.36	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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	1:15	1.25	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2104m to 2112 m
1:15	1:30	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
1:30	6:45	5.25	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8lobe, 5 stage (0.077rev/L), set at 1.93deg. with 0.81m from bit to bend, from 2112m to 2146m
6:45	7:15	0.50	8G	Replace rubber on bottom of shaker
7:15	7:45	0.50	10	Accumulated time for dir surveys
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily walk around rig inspection R/T.

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
mouse hole conections with top drive		4991

TOUR 2 | SIGNATURE OF DRILLER: DEVAN SCHLITTER | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHI18B
Serial No	RA3595
Jets	20 20 / 20
Depth Out (m)	2152.00
Depth In (m)	1921.00
Total Drilled (m)	231.00
Hrs Run Today	1.00
Cumulative Hrs Run	31.25
Entry Date	11-Feb-2014

CUTTING STRUCTURE: II | TO | MDC | LOC | BRG | Gauge | IDC | Reason Pulled | Total Run (m hrs) 7.39

METRES DRILLED

From	To	D-R-C	RPM	WOB
2146.00	2152.00	DRILL	40	20

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
91	Drill Pipe	Stands		1730.84
1	Drill Pipe	Singles		9.49

Kelly Down: -7.69
Total: 2152.00
Weight of DC:
Weight of String: 73.00

HOLE CONDITION: Hole Drag Up 8 Down 8 | Torque At Bottom 8400 | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	10:45	15:00
Density	1005	1008
Funnel Viscosity	78	79
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2150.00	2150.00
PVT	46	46

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	103	17200	5.50
2	PARALLEL	127	103	17200	5.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2672	@	76	@	2149.00
		@		@	
		@		@	

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	70	SXS

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	8:30	0.50	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2146m to 2150m
8:30	8:45	0.25	7	Rig service function test rig smart anti-collision system, function test hydrill 13 sec to close, crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:45	9:15	0.50	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2150m to 2152m
9:15	10:45	1.50	5	Circulate hole clean prior to wiper trip
10:45	12:30	1.75	6M	Wiper trip up to 1699m flow check at 2140m, 2063m, 1699m
12:30	13:30	1.00	9A	Slip and cut drill line. Cut 54.4m at 2139 MJ
13:30	14:45	1.25	6M	Wiper trip in the hole to 2152mMD, bottom
14:45	16:00	1.25	5	Circulate hole clean and condition mud

Remarks
Level 1 inspection on tongs and overhead equipment D.S
Blew down boilers 2 times 100L
Wiper trip Calc 1.39m3 meas 1.48m3 Diff +0.09

SAFETY

Safety Topic	MEHL	MACP
Pull out of the hole with top drive		4991

TOUR 3 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHI18B
Serial No	RA3595
Jets	20 20 / 20
Depth Out (m)	2152.00
Depth In (m)	1921.00
Total Drilled (m)	231.00
Hrs Run Today	
Cumulative Hrs Run	31.25
Entry Date	11-Feb-2014

CUTTING STRUCTURE: II 2 | TO 3 | MDC WT | LOC G | BRG 1 | Gauge 1 | IDC NO | Reason Pulled TD | Total Run (m hrs) 7.39

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
91	Drill Pipe	Stands		1730.84
1	Drill Pipe	Singles		9.49

Kelly Down: -7.69
Total: 2152.00
Weight of DC:
Weight of String: 73.00

HOLE CONDITION: Hole Drag Up | Down 2287 | 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	127	103	17200	0.50
2	PARALLEL	127	103	17200	0.50

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	4385	@	88	@	2141.00
		@		@	
		@		@	

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	450
2	8.00	11	0

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	5	Circulate hole clean and condition mud
16:15	16:30	0.25	7	Rig service function test rig smart anti-collision system, function test HCR 3 sec to open, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
16:30	19:45	3.25	6B	Trip out of the hole,
19:45	20:00	0.25	21D	Crew handover meeting, safety meeting with night crew, tripping out of hole, Conoco reps. and toolpush present, daily walk around, rig inspection D/O.
20:00	23:15	3.25	6B	Trip out of the hole to run open hole log,
23:15	23:30	0.25	21	safety meeting on handle dir tools & lay down tools
23:30	24:00	0.50	20D	handle directional tools & lay down tools

Remarks
blow down boilers 200l flow checks @ 2139 m 2071m 1615 m1040m 587 m & out of hole
mud on trip cacl 8.22 m3 meas 9.22 m3 diff + 1.00 m3

SAFETY

Safety Topic	MEHL	MACP
trip out of hole with top drive j.s.a # 259		4991

FRONT PAGE SUMMARY

Licence No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Contractor	Beaver Drilling Ltd.
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Tour Sheet Serial Number	BEAV2_20140212_1B
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	12
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique WellId	
Rig No	2
Well Type	
Re-Entry	☐
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection	RT	RY
(2.) Detailed Inspection - Weekly (Using Check List)		RY
(3.) ICS Style Posted If Required	RT	
(4.) Well Location & Sub. Diagram Posted	RT	RY
(5.) Flare Lines Staked	RT	RY
(6.) BOP Drills Performed	RT	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	RT	RY
(1.) Rig Site Health & Safety Meeting (one/one/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (one/fiftnmnth)		
(3.) Mast 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 Drill/Strm 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					0.25	0.25		0.50	0.50										0.25					8.00
Tour 2		6.50					1.00													0.50						8.00
Tour 3		7.00					0.25			0.50											0.25					8.00
TOTAL		19.75					1.50	0.25		1.00	0.50									0.50	0.50					24.00

Kelly Bushing: FUEL @ 08 00 HRS; Ground Level

WEATHER: Rig 180; Chill 190; Time 04:30; Temp -36; Current Conditions CLEAR; 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	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHi18B
Serial No	RA3595
Jets	20 20 20
Depth Out (m)	
Depth In (m)	1921.00
Total Drilled (m)	105.00
Hrs Run Today	6.25
Cumulative Hrs Run	10.25
Entry Date	11-Feb-2014

CUTTING STRUCTURE: I; O; DC; BRG; Gauge; OOC; Reason Pulled; Total Run (m hr) 10.24

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
84	Drill Pipe	Stands		1597.67
1	Drill Pipe	Singles		9.54

Kelly Down 0.00; Total 2026.57; Weight of DC; Weight of String 71.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	01:00	04:00
Density	1010	1010
Funnel Viscosity	73	73
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1980.00	1198.00
PVT	44	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	103	16400	6.00
2	PARALLEL	127	103	16400	6.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
02:00	1977.00	46.31	280.45	DIRECTIONAL
04:00	1986.50	48.39	279.96	DIRECTIONAL
05:45	1996.00	50.69	277.67	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	1.50	1010	1000	1820

MUD MATERIALS ADDED

Product	Amount	Type
Truvis	7	SX

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:45	0.75	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 1993m to 1996m
0:45	1:00	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec to close crown saver,grease all moving parts.
1:00	1:30	0.50	11A	Relog 11 m of gamma
1:30	5:45	4.25	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 1998m to 2016 m
5:45	6:00	0.25	8B	Changed out batterys on low angle sencor. on top drive bails
6:00	7:15	1.25	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2016m to 2026m
7:15	7:45	0.50	10	Acclumlated time for dir surveys
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily rig walk around rig inspection R/T

Remarks
BLOW DOWN BOILERS 200 L

METRES DRILLED

From	To	D-R-C	RPM	WOB
1993.00	2026.00	DRILL	40	16

HOLE CONDITION

Hole Drag Up 6 Down 6; Torque At Bottom 7550; Fill On Bottom

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2748	@	83	@	1997.00
		@		@	
		@		@	

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

SAFETY

Safety Topic	MEHL	MACP
beaver's 10 golden rules of drilling safety		4932

TOUR 2 — SIGNATURE OF DRILLER: DEVAN SCHLITTER — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHi18B
Serial No	RA3595
Jets	20 20 20
Depth Out (m)	
Depth In (m)	1921.00
Total Drilled (m)	148.00
Hrs Run Today	6.50
Cumulative Hrs Run	16.75
Entry Date	11-Feb-2014

CUTTING STRUCTURE: I; O; DC; BRG; Gauge; OOC; Reason Pulled; Total Run (m hr) 8.84

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
87	Drill Pipe	Stands		1654.73
0	Drill Pipe	Singles		0.00

Kelly Down -5.00; Total 2069.09; Weight of DC; Weight of String 71000.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	08:00	12:30
Density	1010	1010
Funnel Viscosity	78	79
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2027.00	2048.00
PVT	43	42

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	103	15500	7.00
2	PARALLEL	127	103	15500	7.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:15	2015.00	57.30	277.6	DIRECTIONAL
11:30	2024.50	60.60	278.5	DIRECTIONAL
13:15	2034.00	64.20	278.5	DIRECTIONAL
15:15	2043.50	66.00	277.5	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
OptiSeal III	2	SXS
Versatrol	3	SXS
Cal-Carb	10	SXS

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	9:15	1.25	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2026m to 2036m
9:15	9:30	0.25	7	Rig service function test rig smart anti-collision system, function test Hydrill 13sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
9:30	10:15	0.75	7A	Clean suction screen on mud pump, change shaker screen
10:15	15:30	5.25	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2036m to 2069m
15:30	16:00	0.50	20A	Accumilated directional surveys

Remarks
Level 1 inspection on tongs and overhead equipment D.S
Blew down boilers 2 times 100L

METRES DRILLED

From	To	D-R-C	RPM	WOB
2026.00	2069.00	DRILL	40	16

HOLE CONDITION

Hole Drag Up 8 Down 8; Torque At Bottom 8750; Fill On Bottom

PEDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	3367	@	80	@	2034.00
		@		@	
		@		@	

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

SAFETY

Safety Topic	MEHL	MACP
Pick up DP with tugger and place in mouse hole		4932

TOUR 3 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHi18B
Serial No	RA3595
Jets	20 20 20
Depth Out (m)	
Depth In (m)	1921.00
Total Drilled (m)	183.00
Hrs Run Today	7.00
Cumulative Hrs Run	23.75
Entry Date	11-Feb-2014

CUTTING STRUCTURE: I; O; DC; BRG; Gauge; OOC; Reason Pulled; Total Run (m hr) 7.71

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
89	Drill Pipe	Stands		1692.77
0	Drill Pipe	Singles		0.00

Kelly Down -8.13; Total 2104.00; Weight of DC; Weight of String 71.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	18:30	21:30
Density	1005	1000
Funnel Viscosity	78	76
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	2080.00	2093.00
PVT	48	47

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	103	15600	7.00
2	PARALLEL	127	103	15600	7.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
17:00	2053.00	67.70	277	DIRECTIONAL
19:30	2062.50	70.22	276.74	DIRECTIONAL
21:45	2072.00	72.78	276.88	DIRECTIONAL
23:45	2081.50	75.30	278.37	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	17:00	1.00	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2069m to 2074m
17:00	17:15	0.25	7	Rig service function test rig smart anti-collision system, function test HCR 2sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
17:15	19:00	1.75	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2074m to 2081m
19:00	19:15	0.25	21	Crew handover meeting, Conoco reps. and toolpush present, daily rig walk around rig inspection D/O
19:15	23:30	4.25	2	Drill 222mm hole, with Smith FHi18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 2081m to 2104 m
23:30	24:00	0.50	10	Acclumlated time for dir surveys

Remarks
blow down boilers 200 l

METRES DRILLED

From	To	D-R-C	RPM	WOB
2069.00	2104.00	DRILL	40	16

HOLE CONDITION

Hole Drag Up 8 Down 8; Torque At Bottom 7950; Fill On Bottom

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	4978	@	97	@	2072.00
		@		@	
		@		@	

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

SAFETY

Safety Topic	MEHL	MACP
		4932

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140211_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	11
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
N-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Using Check List) — RT RY
(3.) H2S Signs Posted (If Required) — RT RY
(4.) Well Licence & Sitic Diagram Posted — RT RY
(5.) Flare Lines Staked — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT RY
(1.) Rig Site Health & Safety Meeting (one/month) — RY
(2.) CAODC Rig Safety Inspection Checklist (one/month) — RY
(3.) Mast Inspect on before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

Kelly Bushing | Op Fuel

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		0.75											0.75	0.50				3.25	8.00
Tour 2		4.00			0.75	2.50	0.25													0.50						8.00
Tour 3		6.25					0.25	0.50		0.50											0.50					8.00
TOTAL		10.25			0.75	5.00	0.75	0.50	0.75	0.50										1.25	1.00				3.25	24.00

FUEL @ 08:00 HRS

Rig	120	Boiler	120
Time	05:00	Temp	-32
Surface Conditions	CLEAR		
Wind Direction	N	Wind Strength	CALM
Road Condition	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: II / TO / MDC / LOC / BRG / Gage / IDC / Pressure Failure / Total Pipe In Ft

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
79	Drill Pipe	Stands		1502.53
0	Drill Pipe	Singles		0.00

Kelly Down	0.00
Total	1921.89
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	127	105	16000	8.00
2	PARALLEL	127	105	16000	8.00

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test blind ram's 3 sec to close and crown saver
0:15	3:30	3.25	25	Attempt to pull wear bushing wwith bushing puller and a stand of HWDP, was able to get bit and mud motor with a 1.93deg bend, through wear bushing
3:30	3:45	0.25	21	Safety meeting with Pathfinder directional hands and Extreem MWD hand prior to handle directional tools
3:45	4:30	0.75	20D	Scribe and handle directional tools, check MWD
4:30	6:00	1.50	6A	Trip in hole with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend
6:00	6:45	0.75	9A	Hang blocks and top drive, slip and cut 21 m drilling line
6:45	7:45	1.00	6A	Trip in hole with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend
7:45	8:00	0.25	21	Crew handover meeting, Conoco reps. and toolpush present

Remarks
blow down boilers 200 l

SAFETY

No	Safety Topic	MEHL	MACP
	rin in hole with top drive		4960

TOUR 2 — SIGNATURE OF DRILLER: DEVAN SCHLITTER — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHI18B
Serial No	RA3595
Jets	20 20 20
Depth Out (m)	
Depth In (m)	1921.00
Total Drilled (m)	27.00
Hrs Run Today	4.00
Cumulative Hrs Run	4.00
Entry Date	11-Feb-2014

CUTTING STRUCTURE: II / TO / MDC / LOC / BRG / Gage / IDC / Pressure Failure / Total Pipe In Ft: 6.75

METRES DRILLED

From	To	D-R-C	RPM	WOB
1921.00	1948.00	DRILL	10	16

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
81	Drill Pipe	Stands		1540.59
0	Drill Pipe	Singles		0.00

Kelly Down	-11.95
Total	1948.00
Weight of DC	
Weight of String	71000.00

HOLE CONDITION: Hole Drag Up 8 / Down 8; Torque At Bottom 7900; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	11:00	14:15
Density	1010	1015
Funnel Viscosity	70	70
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1940.00	1953.00
PVT	48	47

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	105	16000	5.00
2	PARALLEL	127	105	16000	5.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	4000	@	92	@	1920.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
12:00	1910.50	28.80	283.4	DIRECTIONAL
13:30	1920.00	30.90	281.1	DIRECTIONAL
15:15	1929.50	34.60	284.4	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Calcium Chloride	25	sxs

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 Sequence & Remarks
8:00	8:15	0.25	7	Rig service function test rig smart anti-collision system, function test pipe rams 5 sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:15	10:45	2.50	6A	Trip in the hole fill pipe, flow check at 647m,1495m
10:45	11:00	0.25	5	Wash to bottom from 1912m to 1921m
11:00	15:00	4.00	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 1921m to 1948m
15:00	15:30	0.50	5	Work tight hole at 1941m
15:30	16:00	0.50	20A	Accumulated directional surveys

Remarks
Level one inspection on tongs and overhead euipment DS
Blow down boilers 2times 100L

SAFETY

No	Safety Topic	MEHL	MACP
	RIH with a top drive		4873

TOUR 3 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHI18B
Serial No	RA3595
Jets	20 20 20
Depth Out (m)	
Depth In (m)	1921.00
Total Drilled (m)	72.00
Hrs Run Today	
Cumulative Hrs Run	4.00
Entry Date	11-Feb-2014

CUTTING STRUCTURE: II / TO / MDC / LOC / BRG / Gage / IDC / Pressure Failure / Total Pipe In Ft: 18.00

METRES DRILLED

From	To	D-R-C	RPM	WOB
1948.00	1993.00	DRILL	40	15

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
83	Drill Pipe	Stands		1578.64
0	Drill Pipe	Singles		0.00

Kelly Down	-5.00
Total	1993.00
Weight of DC	
Weight of String	71.00

HOLE CONDITION: Hole Drag Up 4 / Down 4; Torque At Bottom 7800; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	19:00	21:30
Density	1010	1010
Funnel Viscosity	70	70
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1978.00	1978.00
PVT	44.8	44.3

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	105	16000	6.00
2	PARALLEL	127	105	16000	6.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	4007	@	94	@	1955.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
17:30	1939.00	37.70	282.9	DIRECTIONAL
19:15	1948.50	40.30	282.34	DIRECTIONAL
21:15	1958.00	42.51	282.34	DIRECTIONAL
23:15	1967.50	44.32	279.87	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
OptiSeal III	5	sx
Versatrol	5	sx

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 Sequence & Remarks
16:00	17:30	1.50	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 1948m to 1959m
17:30	17:45	0.25	7	Rig service function test rig smart anti-collision system, function test Hydrill 13sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
17:45	19:00	1.25	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 1959m to 1967 m
19:00	19:15	0.25	21D	Crew handover meeting, Conoco reps. and toolpush present
19:15	19:30	0.25	21A	Held BOP drill with rig crew. Conoco rep
19:30	20:00	0.50	8B	Change dies in grabber box on top drive
20:00	23:30	3.50	2	Drill 222mm hole, with Smith FHI18B tricone bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.93 deg. with 0.81m from bit to bend, from 1967m to 1993m
23:30	24:00	0.50	10	Acclumlated time for dir surveys

Remarks
blow down boilers 200 l

SAFETY

No	Safety Topic	MEHL	MACP
	b.o.p drill		4873

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Tour Sheet Serial Number	BEAV2_20140210_1A
Vendor Software Version	RMS 2013.8.14.27104
Year / Month / Day	2014 / 02 / 10
Surface Location	P-20-65-00-126-45
Area	NT
Lsd Type	CLSS
Unique Well Id	
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	

DAILY CHECKS (OP / RM)

	OP	RM
(1.) Daily Walk Around Inspection	RT	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted (if Required)		
(4.) Well Licence & Sub Diagrams Posted	RT	RY
(5.) Flare Lines Staked	RT	RY
(6.) BOP Drills Performed	RT	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	RT	RY
(1.) Rig Site Health & Safety Meeting (one/one/month)		RY
(2.) CAODC Rig Safety Inspection Checklist (one/six/month)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		RY

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		5.25					0.25	1.50												0.25	0.75					8.00
Tour 2		1.75			0.50	1.50	0.25	3.50		0.25											0.25					8.00
Tour 3						5.00	0.25													2.00	0.75					8.00
TOTAL		7.00			0.50	6.50	0.75	5.00		0.25										2.25	1.75					24.00

WEATHER: Daily Drilling / Up Fuel: FUEL @ 08.00 HRS; Rig: 158; Solar: 188; Time: 05:00; Temp: -27; Current Conditions: OVERCAST; Wind Direction: NE; Wind Strength: UP TO 19 KM/H; Road Condition: GOOD

TOUR 1 — SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME 0:00 — END TIME 8:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	1329.00
Hrs Run Today	6.00
Cumulative Hrs Run	60.50
Entry Date	06-Feb-2014

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Gauge / OOC / Reason Pulled / Total Run (m hrs) 21.97

METRES DRILLED

From	To	D-R-C	RPM	WOB
1655.00	1902.00	DRILL	65	8

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
79	Drill Pipe Stands			1502.53
1	Drill Pipe Singles			9.52

Kelly Down: 0.00; Total: 1931.41; Weight of DC: ; Weight of String: 69000.00

HOLE CONDITION: Hole Drag Up 2000 Down 2000; Torque At Bottom 10100; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	01:15	04:15
Density	1005	1005
Funnel Viscosity	65	65
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1855.00	1892.00
PVT	45	43

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	105	17200	8.00
2	PARALLEL	127	105	17200	8.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:00	1834.00	14.58	285.16	DIRECTIONAL
01:15	1843.50	16.22	285.66	DIRECTIONAL
02:30	1853.00	18.12	286.88	DIRECTIONAL
03:45	1862.50	20.00	286.2	DIRECTIONAL
04:45	1873.00	21.61	284.46	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Calcium Chloride	9	sx
OptiSeal III	5	sx
Truvis	7	sx
Versamul	1	bbl
Versatrol	5	bbl

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 Sequence & Remarks
0:00	1:00	1.00	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1855m to1864 m
1:00	1:15	0.25	7	Rig service function test rig smart anti-collision system, function test H.C.R 3sec O/C crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU Change oil on floor motor
1:15	5:30	4.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1864m to 1902m
5:30	7:00	1.50	8C	work on pump # 1 cap gasket
7:00	7:15	0.25	21	Weekly safety meeting with conoco rep present
7:15	7:30	0.25	20A	Accumulated directional surveys
7:30	8:00	0.50	21D	Crew handover meeting, Conoco reps. and toolpush present

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 100L

SAFETY

Safety Topic	MEHL	MACP
Driving home on long change	78	4932

TOUR 2 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	1921.00
Depth In (m)	602.00
Total Drilled (m)	1319.00
Hrs Run Today	1.75
Cumulative Hrs Run	62.25
Entry Date	06-Feb-2014

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG; Gauge / OOC / Reason Pulled / Total Run (m hrs) 21.19

METRES DRILLED

From	To	D-R-C	RPM	WOB
1902.00	1921.00	DRILL	65	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
79	Drill Pipe Stands			1502.53
0	Drill Pipe Singles			0.00

Kelly Down: 0.00; Total: 1921.89; Weight of DC: ; Weight of String: 70.00

HOLE CONDITION: Hole Drag Up 1000 Down 2000; Torque At Bottom 10100; Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	08:00	13:30
Density	1005	1005
Funnel Viscosity	68	68
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1846.00	1905.00
PVT	51	50

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	105	17100	4.00
2	PARALLEL	127	105	17100	4.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
13:00	1881.50	23.70	283	DIRECTIONAL
13:45	1891.50	25.50	284.7	DIRECTIONAL
14:45	1901.00	27.00	282.34	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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:15	8:45	0.50	6B	Pull out 10 stds of drill pipe off bottom
8:45	12:15	3.50	8C	Change out middle module in pump # 1
12:15	12:45	0.50	6A	Trip in hole, 10 stands to bottom
12:45	14:30	1.75	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1902m to 1921m
14:30	15:00	0.50	5D	Circulate bottoms up, prior to tripping out of hole
15:00	15:15	0.25	10	Accumulated time for dir surveys
15:15	15:30	0.25	21	Crew handover meeting, Conoco reps. and toolpush present
15:30	16:00	0.50	6B	Trip out of hole to dial up mud motor, from 1.53deg. to 1.93deg. flow check at 1919m flow check at 1902 m

Remarks
Level one overhead inspection
Blow down boilers 2 times @ 100L

SAFETY

Safety Topic	MEHL	MACP
		4932

TOUR 3 — SIGNATURE OF DRILLER: DEVAN SCHLITTER — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	4
Size	222
IADC Code	
Manufacturer	Smith
Type	FHi18B
Serial No	RA3595
Jets	20 20 / 20
Depth Out (m)	
Depth In (m)	1921.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	0.00
Entry Date	

CUTTING STRUCTURE: TI 1 / TO 5 / MDC BT / LOC G / BRG X; Gauge 0 / OOC CT / Reason Pulled BHA / Total Run (m hrs) 21.19

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
79	Drill Pipe Stands			1502.53
0	Drill Pipe Singles			0.00

Kelly Down: 0.00; Total: 1921.89; 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	22:30
Density	1005
Funnel Viscosity	70
Fluid Loss	
pH	
Location Of Sample	shaker tank
Depth	0.00
PVT	41

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
Barite	37	sx

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 Sequence & Remarks
16:00	16:30	0.50	6B	Trip out of hole F/C@1825m
16:30	16:45	0.25	7	Rig service function test rig smart anti-collision system, function test hrdrill 13 sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
16:45	21:15	4.50	6B	Trip out of hole with flow checks at 1825m/1096m/390m out of hole, funtion test blind rams 4sec open/close
21:15	21:30	0.25	21D	Safety meeting with pathinder directional services
21:30	23:30	2.00	20D	Install a 222mm Smith, 4-3-7 insert tri-cone bit, set angle of the mud motor to 1.93deg., clean and prepare to trip in the hole
23:30	23:45	0.25	21A	BOP drill crew in position well secure in 90 sec check motor kills
23:45	24:00	0.25	21D	Crew handover meeting, Conoco reps. and toolpush present

Remarks
Level 1 inspection on tongs and overhead equipment D.S
Blew down boilers 2 times 100L
Trip Calc 6.64m3 Meas 8.12m3 Diff+ 1.48m3

SAFETY

Safety Topic	MEHL	MACP
Tripping out of hole		4932

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140209_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	09
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique WellId	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS (OP RM)
(1.) Daily Walk Around Inspection - RT RY
(2.) Detailed Inspection - Weekly (Using Check List) - RT RY
(3.) H2S Signs Posted if Required - RT RY
(4.) Well Licence & Stack Diagram Posted - RT RY
(5.) Flare Lines Staked - RT RY
(6.) BOP Drills Performed - RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines - RT RY
(1.) Rig Site Health & Safety Meeting (week/month) - RY
(2.) CAODC Rig Safety Inspection Checklist (one/month) - RY
(3.) Mast Inspection before Raising or Lowering - RY
(4.) Crown Saver Checked - RY
(5.) Motor Kills Checked - RY

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 Drilg 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 Welding On	24 Rig Watch	25 Other	TOTAL
HOURS Tour 1		6.25					0.25													0.50	0.25				0.75	8.00
Tour 2		7.00					0.25			0.75																8.00
Tour 3		7.00					0.25													0.50	0.25					8.00
TOTAL		20.25					0.75			0.75										1.00	0.50				0.75	24.00

Daily Drilling | Op Fwd

FUEL @ 08:00 HRS: Rig 135 | Fuel 180

WEATHER: Time 06:00 | Temp -30 | Current Conditions OVERCAST | Wind Direction N | Wind Strength UP TO 19 KMH | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	1043.00
Hrs Run Today	6.25
Cumulative Hrs Run	40.50
Entry Date	06-Feb-2014

CUTTING STRUCTURE: II | TO | MDC | LOC | BRG | Gauge | OOC | Reason Pulled | Total Run in Hrs 25.75

METRES DRILLED

From	To	D-R-C	RPM	WOB
1522.00	1646.00	DRILL	60	8

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
64	Drill Pipe Stands			1217.32
1	Drill Pipe Singles			9.52

Kelly Down 0.00
Total 1646.20
Weight of DC
Weight of String 63000.00

HOLE CONDITION: Hole Drag Up 1000 Down 2000
Torque At Bottom
Fill On Bottom 9600.00

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	01:00	03:45
Density	1000	1005
Funnel Viscosity	58	60
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1524.00	1579.00
PVT	48	45

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	107	16200	8.00
2	PARALLEL	127	107	16200	8.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2651	@	84	@	1360.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
04:00	1539.50	0.90	135.5	DIRECTIONAL
05:30	1577.50	0.70	120.3	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Truvis	15	sx
Versamul	1	bbl
Calcium Chloride	9	sx
Lime	25	sx
Barite	66	sx

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 Sequence & Remarks
0:00	1:15	1.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1522m to 1541m
1:15	2:00	0.75	25	Work tight spot @1537m to 1541m
2:00	3:00	1.00	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1541m to 1560m
3:00	3:15	0.25	7	Rig service function test rig smart anti-collision system, function test, function test hydril 14 sec C/O crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
3:15	7:15	4.00	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1560m to1646m
7:15	7:45	0.50	20A	Accumulated directional surveys
7:45	8:00	0.25	21D	Crew handover meeting, Conoco reps, and toolpush present

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 100L

SAFETY

Safety Topic	MEHL	MACP
Blowing down boiler		4932

TOUR 2 | SIGNATURE OF DRILLER BRIAN BERGSETH | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	1175.00
Hrs Run Today	7.00
Cumulative Hrs Run	47.50
Entry Date	06-Feb-2014

CUTTING STRUCTURE: II | TO | MDC | LOC | BRG | Gauge | OOC | Reason Pulled | Total Run in Hrs 24.74

METRES DRILLED

From	To	D-R-C	RPM	WOB
1646.00	1777.00	DRILL	65	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
72	Drill Pipe Stands			1369.41
0	Drill Pipe Singles			0.00

Kelly Down -11.77
Total 1777.00
Weight of DC
Weight of String 68.00

HOLE CONDITION: Hole Drag Up 1 Down 1
Torque At Bottom 10100
Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	08:00	13:00
Density	1010	1010
Funnel Viscosity	65	68
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1655.00	1750.00
PVT	40	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	105	17000	7.00
2	PARALLEL	127	105	17000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2783	@	83	@	1655.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:15	1654.00	1.00	54.8	DIRECTIONAL
11:00	1692.00	1.20	31.4	DIRECTIONAL
12:30	1711.00	1.80	359.8	DIRECTIONAL
13:30	1720.00	1.90	10.6	DIRECTIONAL
14:15	1730.00	1.60	353.8	DIRECTIONAL
14:45	1739.00	2.30	320.9	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
OptiSeal III	5	sx
Versatrol	5	sx
Barite	6	sx

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 Sequence & Remarks
8:00	8:15	0.25	7	Rig service function test rig smart anti-collision system, function test pipe ram's 4 sec crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:15	15:15	7.00	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1646m to 1777 m
15:15	16:00	0.75	10	Accumulated time for surveys

Remarks
Level one overhead inspection
Blew down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
spooling tugger & boom lines j.s.a # 43		4873

TOUR 3 | SIGNATURE OF DRILLER MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	1253.00
Hrs Run Today	7.00
Cumulative Hrs Run	54.50
Entry Date	06-Feb-2014

CUTTING STRUCTURE: II | TO | MDC | LOC | BRG | Gauge | OOC | Reason Pulled | Total Run in Hrs 22.99

METRES DRILLED

From	To	D-R-C	RPM	WOB
1777.00	1855.00	DRILL	65	8

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
75	Drill Pipe Stands			1426.49
1	Drill Pipe Singles			9.47

Kelly Down 0.00
Total 1855.32
Weight of DC
Weight of String 69000.00

HOLE CONDITION: Hole Drag Up 2000 Down 2000
Torque At Bottom 10100
Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	19:15	22:00
Density	1005	1005
Funnel Viscosity	63	65
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1826.00	1840.00
PVT	49	47

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	105	16500	8.00
2	PARALLEL	127	105	16500	8.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	2520	@	78	@	1787.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
16:45	1758.00	5.10	309.2	DIRECTIONAL
17:30	1767.50	6.10	306.6	DIRECTIONAL
18:45	1786.00	8.48	304.86	DIRECTIONAL
19:45	1796.50	9.90	302.26	DIRECTIONAL
20:45	1805.50	10.78	296.84	DIRECTIONAL
21:45	1815.00	11.62	293.18	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Truvis	3	sx
Calcium Chloride	11	sx
clean up	1	pl

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 Sequence & Remarks
16:00	16:45	0.75	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1777m to 1788 m
16:45	17:00	0.25	7	Rig service function test rig smart anti-collision system, function test hydril 14 sec to close crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
17:00	19:00	2.00	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1777m to 1808m
19:00	19:15	0.25	21	Crew handover meeting, Conoco reps, and toolpush present
19:15	23:30	4.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1808m to 1855m
23:30	24:00	0.50	20A	Accumulated Directional surveys

Remarks
Level one overhead inspection mh
Blew down boilers 2 times@ 50L

SAFETY

Safety Topic	MEHL	MACP
Mixing mud products		4873

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Tour Sheet Serial Number	BEAV2_20140208_1A
Surface Location	P-20-65-00-126-45
Contractor	Beaver Drilling Ltd.
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	08
Flow	NT
Loc Type	CLSS
Unique Well Id	
Rig No	2
Well Type	
Re-Entry	☐
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	

DAILY CHECKS — OP RM

	RT	RY
(1.) Daily Walk Around Inspection		
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required	RT	RY
(4.) Well Licence & Rock Diagram Posted	RT	RY
(5.) Flare Lines Staked	RT	
(6.) BOP Drills Performed	RT	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	RT	RY
(1.) Rig Site Health & Safety Meeting (whole restmark)		RY
(2.) CAODC Rig Safety Inspection Checklist (remarkpoint)		
(3.) Meet Inspection before Raising or Lowering		
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		

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	Tour Down	Waiting On	Rig Watch	Other	
HOURS Tour 1		7.00					0.25													0.50	0.25					8.00
Tour 2		7.25					0.25			0.50																8.00
Tour 3		6.25					0.25	1.00												0.50						8.00
TOTAL		20.50					0.75	1.00		0.50										1.00	0.25					24.00

Daily Drilling | Up Hole

FUEL @ 08.00 HRS

WEATHER: Rig 140 | Base 140 | Time 06:15 | Temp -24 | General Conditions OVERCAST | Wind Direction N | Wind Average UP TO 19 KM/H | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	606.00
Hrs Run Today	7.00
Cumulative Hrs Run	20.75
Entry Date	06-Feb-2014

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Pulled Date | LDC | Total Run (m hrs) 29.20 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
1047.00	1206.00	DRILL	60	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	341.48
41	Drill Pipe Stands			779.78
1	Drill Pipe Singles			9.51
	Kelly Down			0.00
	Total			1208.65
	Weight of DC			
	Weight of String			51000.00

HOLE CONDITION: Hole Drag Up 1000 Down 1000 | Torque At Bottom 9400 | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	01:15	05:30
Density	985	980
Funnel Viscosity	56	55
Fluid Loss		
pH		
Location Of Sample	SHAKER	shaker
Depth	1085.00	1180.00
PVT	47	51

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	109	16000	8.00
2	PARALLEL	127	109	16000	8.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min		Depth
1	1700 @	73	@	1084.00
	@		@	
	@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:45	1045.10	1.50	14.84	DIRECTIONAL
02:30	1083.10	1.28	27.45	DIRECTIONAL
04:15	1121.00	1.59	29.26	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	0.00	0	0	0
Centrifuge #2	0.00	0	0	0

MUD MATERIALS ADDED

Product	Amount	Type
Lime	25	SX
Calcium Chloride	20	SX
OptiSeal III	5	SX
Versatrol	5	SX

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	1:15	1.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1047m to1085 m
1:15	1:30	0.25	7	Rig service function test rig smart anti-collision system, function test, function test pipe rams 8 sec C/O crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
1:30	7:15	5.75	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1085m to 1206m
7:15	7:45	0.50	20A	Accumulated directional surveys
7:45	8:00	0.25	21D	Crew handover meeting, Conoco reps. and toolpush present

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
Connections with top drive	52	5109

TOUR 2 | SIGNATURE OF DRILLER BRIAN BERGSETH | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	787.00
Hrs Run Today	7.25
Cumulative Hrs Run	28.00
Entry Date	06-Feb-2014

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Pulled Date | LDC | Total Run (m hrs) 28.11 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
1206.00	1389.00	DRILL	65	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	341.48
51	Drill Pipe Stands			970.02
0	Drill Pipe Singles			0.00
	Kelly Down			0.00
	Total			1389.38
	Weight of DC			
	Weight of String			58.00

HOLE CONDITION: Hole Drag Up 1000 Down 1000 | Torque At Bottom 9500 | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	08:00	11:15
Density	975	970
Funnel Viscosity	56	56
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1218.00	1275.00
PVT	48.5	44.5

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	110	16200	7.00
2	PARALLEL	127	110	16200	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min		Depth
1	1956 @	78	@	1217.00
	@		@	
	@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:00	1197.00	0.90	31.8	DIRECTIONAL
09:45	1235.00	0.70	28.1	DIRECTIONAL
12:00	1273.00	1.10	150.4	DIRECTIONAL
13:30	1311.00	1.00	101.4	DIRECTIONAL
15:15	1349.50	1.20	349.9	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Lime	20	SX
OptiSeal III	5	SX
Versatrol	5	SX

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 rig smart anti-collision system, function test, function test hydril 14 sec C/O crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
8:15	15:30	7.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1206m to 1389 m
15:30	16:00	0.50	10	Acclumulated time for directional surveys

Remarks
Level one overhead inspection
Blew down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
working with steam j.s.a #179 & l.r.s		5109

TOUR 3 | SIGNATURE OF DRILLER MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	920.00
Hrs Run Today	6.25
Cumulative Hrs Run	34.25
Entry Date	06-Feb-2014

CUTTING STRUCTURE: I | Gage | TO | ODC | MDC | Pulled Date | LDC | Total Run (m hrs) 26.86 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
1389.00	1522.00	DRILL	65	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	341.48
58	Drill Pipe Stands			1103.25
0	Drill Pipe Singles			0.00
	Kelly Down			0.00
	Total			1522.61
	Weight of DC			
	Weight of String			60000.00

HOLE CONDITION: Hole Drag Up 1000 Down 1000 | Torque At Bottom 9600 | Fill On Bottom

MUD RECORD

Mud Type: Water ☐ Oil ☑ Other

Time	19:30	22:00
Density	980	980
Funnel Viscosity	58	58
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	1465.00	1503.00
PVT	43	50

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	107	16200	8.00
2	PARALLEL	127	107	16200	8.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min		Depth
2	2361 @	80	@	1407.00
	@		@	
	@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
17:15	1387.50	1.40	15.4	DIRECTIONAL
19:00	1425.50	0.40	0.1	DIRECTIONAL
21:45	1463.50	0.62	1.66	DIRECTIONAL
23:45	1501.00	0.88	5.67	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Calcium Chloride	12	SX

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	16:45	0.75	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1389m to 1408 m
16:45	17:00	0.25	7	Rig service function test rig smart anti-collision system, function test, function test hydril 14 sec C/O crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
17:00	20:15	3.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1408m to 1484 m
20:15	21:15	1.00	8C	Change out cap gasket on # 2 pump change out seal retainer on pump #1
21:15	23:30	2.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 1484m to 1522m
23:30	24:00	0.50	20A	Accumulated directional surveys

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50 L

SAFETY

Safety Topic	MEHL	MACP
Working on casing		5109

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140207_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	07
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Lea Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — RT / RY
- (2.) Detailed Inspection - Weekly (Using Check List) — RT / RY
- (3.) H2S Signs Posted If Required — RT / RY
- (4.) Well Licence & Stick Diagram Posted — RT / RY
- (5.) Flare Lines Staked — RT / RY
- (6.) BOP Drills Performed — RT / RY
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT / RY
- (1.) Rig Site Health & Safety Meeting (one/week/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (one/month) — RY
- (3.) Uwi Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked — RY

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		1.25				2.25	0.25													3.25	1.00					8.00
Tour 2		6.50					0.25			0.50											0.25				0.50	8.00
Tour 3		7.25					0.25													0.50						8.00
TOTAL		15.00				2.25	0.75			0.50										3.75	1.25				0.50	24.00

Safety Meeting | Dip Fuel

FUEL @ 08.00 HRS: Drg 170 | Boiler 170

WEATHER: Time 06:00 | Temp -18 | Current Conditions OVERCAST | Wind Direction NE | Wind Strength CALM | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	0.25
Entry Date	06-Feb-2014

CUTTING STRUCTURE: I | TO | MDC | LOC | BRG | Gauge | ODC | Reason Pulled | Total Run (m)

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
8	Drill Pipe	Stands		152.19
1	Drill Pipe	Singles		9.51

Kelly Down 0.00 | Total 581.06 | Weight of DC | Weight of String

HOLE CONDITION: Hole Drag Up 1000 Down 1000 | Torque At Bottom 8200 | 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	127	120	4500	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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
0:15	0:30	0.25	21D	Safety meeting with pathfinder directional services
0:30	3:45	3.25	20D	Pick up, make up directional tools
3:45	6:00	2.25	6A	Trip in the hole with 222mm, 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend
6:00	6:15	0.25	21A	B.O.P drill held well secure in 90 sec crew in positions function test motor kills
6:15	6:30	0.25	21F	Pre drill out safety meeting inspection done and corrections made
6:30	7:30	1.00	2C	Drill out float and shoe float tagged @ 587m. drill out cement shoe tagged @ 601m
7:30	7:45	0.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend from 602m to 609m
7:45	8:00	0.25	21D	Crew handover meeting, Conoco reps, and toolpush present

Remarks
Level one overhead inspection MH
Blow down boilers 100L 2 times

SAFETY

Safety Topic	MEHL	MACP
Pick up directional tools		

TOUR 2 | SIGNATURE OF DRILLER: BRIAN BERGSETH | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	216.00
Hrs Run Today	6.50
Cumulative Hrs Run	6.50
Entry Date	06-Feb-2014

CUTTING STRUCTURE: I | TO | MDC | LOC | BRG | Gauge | ODC | Reason Pulled | Total Run (m) 33.23

METRES DRILLED

From	To	D-R-C	RPM	WOB
602.00	818.00	DRILL	70	6

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
21	Drill Pipe	Stands		399.44
0	Drill Pipe	Singles		0.00

Kelly Down 0.00 | Total 818.80 | Weight of DC | Weight of String 45.00

HOLE CONDITION: Hole Drag Up 1000 Down 1000 | Torque At Bottom 8800 | Fill On Bottom

MUD RECORD: Mud Type Water ☐ Oil ☑ Other

Time	08:30	10:30
Density	990	990
Funnel Viscosity	58	60
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	609.00	648.00
PVT	44	41

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	105	13000	7.00
2	PARALLEL	127	105	13000	7.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	1984	@	85	@	818.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
09:45	608.40	1.60	7.2	DIRECTIONAL
11:30	645.63	0.60	311.2	DIRECTIONAL
12:30	683.60	9.00	318	DIRECTIONAL
13:45	721.66	0.90	317.9	DIRECTIONAL
15:00	759.75	0.90	254.4	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	2.00	1030	1000	1840
Centrifuge #2	2.00	1030	1000	1820

MUD MATERIALS ADDED

Product	Amount	Type
Lime	48	bags
Versacoat HF	1	BBL
Versamul	1	BBL

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	8:30	0.50	25	Formation integrity test with Peregrine pressure tester
8:30	8:45	0.25	21A	BOP drill well secure in 70 secs
8:45	9:00	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
9:00	15:30	6.50	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend. from 602m to 818m
15:30	16:00	0.50	10	Accumulated time for directional surveys

Remarks
blow down boilers 200 l level 1 inpection on all overhead equipment .

SAFETY

Safety Topic	MEHL	MACP
b.o.p drill		5050

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 / 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	445.00
Hrs Run Today	7.25
Cumulative Hrs Run	13.75
Entry Date	06-Feb-2014

CUTTING STRUCTURE: I | TO | MDC | LOC | BRG | Gauge | ODC | Reason Pulled | Total Run (m) 32.36

METRES DRILLED

From	To	D-R-C	RPM	WOB
818.00	1047.00	DRILL	60	6

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	BIT 222 MM	222	60	0.20
1	MUD MOTOR	169	64	9.62
1	N.M SUB	173	72	0.54
1	NM pony monel	171	70	2.97
1	4.5"H90 FLEX MONEL	171	70	9.35
1	6.75" Gap Sub	162	88	0.54
1	6.75" Flex Monel	171	70	9.20
1	6.75" NM Flex Monel	171	70	8.28
1	6.75" X/O	168	59	0.80
3	4" H.W	101	65	28.27
1	Jars	161	69	5.13
37	4" H.W	101	65	344.46
33	Drill Pipe	Stands		627.76
0	Drill Pipe	Singles		0.00

Kelly Down 0.00 | Total 1047.12 | Weight of DC | Weight of String 47000.00

HOLE CONDITION: Hole Drag Up 1000 Down 1000 | Torque At Bottom 9100 | Fill On Bottom

MUD RECORD: Mud Type Water ☐ Oil ☑ Other

Time	16:00	19:30
Density	995	970
Funnel Viscosity	60	55
Fluid Loss		
pH		
Location Of Sample	SHAKER	SHAKER
Depth	856.00	915.00
PVT	47	49

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	127	110	15000	8.00
2	PARALLEL	127	110	15000	8.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure		Strokes/min		Depth
1	963	@	78	@	856.00
		@		@	
		@		@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
16:15	797.80	0.70	282.2	DIRECTIONAL
17:30	835.87	0.40	326.9	DIRECTIONAL
18:45	873.90	0.40	355.6	DIRECTIONAL
20:30	912.00	0.80	20.4	DIRECTIONAL
23:00	988.00	0.70	19.5	DIRECTIONAL

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	2.00	995	985	1780

MUD MATERIALS ADDED

Product	Amount	Type
OptiSeal III	5	SX
Versatrol	5	SX
Calcium Chloride	1	SX

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	17:00	1.00	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 818m to 856m
17:00	17:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver,grease all moving parts, check oil levels in floor motor, pumps and HPU
17:15	23:30	6.25	2	Drill 222mm hole, with 513 Ulterra PDC bit, Wenzel mud motor, 7/8 lobe, 5 stage (0.077rev/L), set at 1.59 deg. with 0.81m from bit to bend, from 856m to 1047m
23:30	24:00	0.50	20A	Accumulated directional surveys

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50 L

SAFETY

Safety Topic	MEHL	MACP
Catching samples	47000	5050

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Contractor	Beaver Drilling Ltd.
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Tour Sheet Serial Number	BEAV2_20140206_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	06
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique Well Id	
Rig No	2
Well Type	
Re-Entry	☐
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	

DAILY CHECKS (OP / RM)
- (1.) Daily Walk Around Inspection — RT / RY
- (2.) Detailed Inspection - Weekly (Using Check List)
- (3.) H2S Sign Posted if Required
- (4.) Well Licence & Stick Diagram Posted — RT / RY
- (5.) Flare Lines Staked
- (6.) BOP Drills Performed
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT / RY
- (1.) Rig Site Health & Safety Meeting (area/crewmembers) — RY
- (2.) CAODC Rig Safety Inspection Checklist (area/Highlands)
- (3.) Hand Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked
- (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														4.00							0.25				3.75	8.00
Tour 2							0.25							6.75	1.00											8.00
Tour 3							0.25								7.25										0.50	8.00
TOTAL							0.50							10.75	8.25						0.25				4.25	24.00

Kelly Bushing / Ground: FUEL @ 08.00 HRS

WEATHER: Hour 164 / Date 193 / Time 05:45 / Temp -10 / Cloud Condition PARTLY CLOUDY / Wind Direction NE / Wind Strength CALM / Road Condition GOOD

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 / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Run (m/hr)

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	1:00	1.00	14C	Nipple down diverter system, clean tanks change pumps over to 5 inch liners
1:00	4:45	3.75	25	Dig cellar down 1.5m
4:45	7:45	3.00	14A	Cut conductor and prep casing, weld on casing bowl
7:45	8:00	0.25	21D	Crew handover meeting, Conoco reps, and toolpush present

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
weld on casing bowl working on pumps		

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 / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Run (m/hr)

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	Rig service, check BOP slings and shackles
8:15	11:00	2.75	14A	Weld on casing bowl and change #1 pump to 5 inc liners,fill mud tanks with invert
11:00	15:00	4.00	14A	Nipple up upper bowl mandril hanger and BOP's
15:00	16:00	1.00	15A	Pressure test all manifold valves and chokes, low of 1400kpa and a high of 21,000kpa, with peregrine pressure testing ltd .

Remarks
Level 1 inspection on overhead equipment D.S
Blew down boilers 2 times each 100L

SAFETY

Safety Topic	MEHL	MACP
reviewed isa#111 nipple up bop		

TOUR 3 — SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	3
Size	222
IADC Code	
Manufacturer	ulterra
Type	u513
Serial No	17071
Jets	11.1 11.1 11.1 11.1 11.1 11.1
Depth Out (m)	
Depth In (m)	602.00
Total Drilled (m)	
Hrs Run Today	0.00
Cumulative Hrs Run	0.00
Entry Date	06-Feb-2014

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG / Gauge / ODC / Reason Pulled / Total Run (m/hr)

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	16:15	0.25	7	Rig service, check crown saver and brake linkage
16:15	23:30	7.25	15A	Pressure test with Peregrine, BOP stack, HCR valves, kill line, inside BOP, stabbing valve, pipe rams blind rams at a low 1,400kpa, high 21,000kpa., Annular low 1,400kpa., high 17,000kpa. All ok. HCR, pipe rams and annular,starting pressure 20,000kpa, final pressure 9,750kpa., recharge pump time 3min, 36sec.
23:30	24:00	0.50	25	Pick up and install wear bushing, clean prepare floor to pick up directional tools

Remarks
Lvel one overhead inspection MH
blow down boilers 100L 2 times

SAFETY

Safety Topic	MEHL	MACP
Pressure test		

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140205_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	05
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Re-Entry	☐
Operator's AFE	10351612
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

- (1.) Daily Walk Around Inspection — RT RY
- (2.) Detailed Inspection - Weekly (Using Check List) — RT RY
- (3.) H2S Signs Posted If Required — RT RY
- (4.) Well Licence & Sick Diagram Posted — RT RY
- (5.) Flare Lines Staked — RT RY
- (6.) BOP Drills Performed — RT RY
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT RY
- (1.) Rig Site Health & Safety Meeting (weekly meeting) — RY
- (2.) CAODC Rig Safety Inspection Checklist (emu/lightwell) — RY
- (3.) Mast Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked — RY
- (5.) Motor Kills Checked — RY

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	0.50					4.50									0.50					8.00
Tour 2					1.25		0.25					6.00	0.25								0.25					8.00
Tour 3							0.25						2.00	5.75												8.00
TOTAL					1.25	2.50	1.00					10.50	2.25	5.75							0.75					24.00

Kelly Bushing | Op Fuel

FUEL @ 08.00 HRS: Rig 150 | Drill 180 | Time 06:15 | Temp -25

WEATHER: Current Conditions OVERCAST | Wind Direction NE | Wind Strength UP TO 19 KM/H | Road Condition GOOD

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: II | TO | MDC | LDC | BRG | Gauge | ODC | Reason Pulled | Total Run (m)

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	01:45	03:45
Density	1085	1085
Funnel Viscosity	80	90
Fluid Loss		
pH	9	9
Location Of Sample		
Depth	602.00	602.00
PVT	44	44

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
Bentonite	144	sx
Sawdust	16	sx

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 Sequence & Remarks
0:00	0:45	0.75	6B	Trip out of hole from 254m till 119m
0:45	2:30	1.75	6D	Lay down 12 x 6-1/2" drill collars
2:30	3:00	0.50	7	Rig service function test rig smart anti-collision system, function test crown saver, grease all moving parts, check oil in floor motor, pumps and HPU. Clean floor and prepare to rig up power tongs
3:00	4:15	1.25	12A	Rig up Hallmark power tongs
4:15	4:30	0.25	21D	Safety meeting with Hallmark power tong hands
4:30	7:45	3.25	12B	Make up 1-244.5mm float shoe, 1-joint of 244.5mm, 53.57kg/m, J-55, LTC surface casing and 1-244.5mm float collar and then run 46-joints of 244.5mm, 53.57kg/m, J-55, LTC surface from 602m to 5.20m.
7:45	8:00	0.25	21D	Crew handover meeting Conoco reps. and toolpush present

Remarks
level one overhead inspection MH
blow down boilers 100l 2 times

SAFETY

	Safety Topic	MEHL	MACP
	Rig up and run casing		

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: II | TO | MDC | LDC | BRG | Gauge | ODC | Reason Pulled | Total Run (m)

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	Rig service f.t crown saver
8:15	9:45	1.50	12B	Run 12 x centralizers and 1 x cement basket from 602m to surface, fill every 10 joints. Total length of 244.5mm surface casing: 602.94m. Landed at 602m, tagged bottom at 602m, float at 587.97m. Circulate hole clean (2 bottoms up+).
9:45	10:15	0.50	5D	Wash 12m to bottom
10:15	11:00	0.75	5D	Circ casing
11:00	11:15	0.25	21	Safety meeting
11:15	14:00	2.75	12	Rig up Schlumberger cementers, pump 5.0m3 of 1000kg/m3 of fresh water, stop pressure test line to 21,000kPA (held OK), bleed off pressure, then 5.0m3 of 1300kg/m3 MUDPUSH II pre-flush spacer.
14:00	15:15	1.25	12	Then pump 40 tonnes/37m3 (100% excess) of RFC 1740 cement with 0.2% Anti Foam + 1.0% CaCl2 + 1.1% Low Temp Fluid Loss + 0.6% Dispersant from 602m to 5.2m, Drop plug and displace 23.8m3 of fresh water.
15:15	15:45	0.50	12	Bump plug 3,500kPA over final circulating pressure of 6,500kPA at 13:57hrs on February 5th, 2014. Bleed pressure and check floats (holding OK). Pressure test casing to 11,500kPA for 10 minutes (holding OK). Bleed pressure, flush diverter and rig out cementers. Good cement returns: 10.0m3
15:45	16:00	0.25	13	Wait on cement & clean mud tanks

Remarks
blow down boilers 200 l

SAFETY

	Safety Topic	MEHL	MACP
	cementing casing		

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: II | TO | MDC | LDC | BRG | Gauge | ODC | Reason Pulled | Total Run (m)

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	18:00	2.00	13	Wait on cement & clean tanks
18:00	18:15	0.25	7	Rig service function test crown saver
18:15	24:00	5.75	14C	Nipple down diverter,cut casing and clean tanks

Remarks
Level one inspection on overhead mh
Blew down boilers 2 times @ 50L

SAFETY

	Safety Topic	MEHL	MACP
	Nipple down diverter system		

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140204_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	04
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Field	NT
Lic Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

	OP	RM
(1.) Daily Walk Around Inspection	RY	RY
(2.) Detailed Inspection - Weekly (Using Check List)	RY	RY
(3.) H2S Signs Posted If Required		
(4.) Well Licence & Sick Diagram Posted	RY	RY
(5.) Flare Lines Staked	RY	RY
(6.) BOP Drills Performed	RY	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	RY	RY
(1.) Rig Site Health & Safety Meeting (one/a month)	RY	
(2.) CAODC Rig Safety Inspection Checklist (one/fortnight)		
(3.) Hand Inspection before Raising or Lowering		
(4.) Crown Saver Checked	RY	
(5.) Motor Kills Checked	RY	

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			3.50			3.75	0.25								0.25						0.25					8.00
Tour 2					6.00	1.50	0.25														0.25					8.00
Tour 3			0.75		4.75	2.25	0.25																			8.00
TOTAL			4.25		10.75	7.50	0.75								0.25						0.50					24.00

FUEL @ 08:00 HRS

Kelly Bushing		Up Fuel	
Fuel	120	Water	180
Time	06:15	Temp	-18
WEATHER Current Conditions	SNOW		
Wind Direction	NE	Wind Strength	CALM
Road Condition	GOOD		

TOUR 1 — SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME 0:00 — END TIME 8:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	152.00
Hrs Run Today	
Cumulative Hrs Run	21.00
Entry Date	

CUTTING STRUCTURE: I, O, DC, MDC, LOC, BRG; Gauge, OBC, Pressure Pulse, Total Revs per Inch 7.24

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
1	Bell sub	232	69	0.66
5	6" D.C	160	60	46.62
1	6 1/4 x/o	160	58	0.48
1	6 1/4 jars	159	59	4.45
1	6 1/4 X/O	159	58	0.46
7	6" D.C	160	60	65.22
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.73
6	Drill Pipe Stands			114.15
0	Drill Pipe Singles			0.00

Kelly Down	-4.87
Total	602.00
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			
Density			
Funnel Viscosity			
Fluid Loss			
pH			
Location Of Sample			
Depth			
PVT			

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	110	3800	3.00
2	PARALLEL	152	110	3800	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
1	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	3:30	3.50	3	Back ream out of the hole and build volume
3:30	4:15	0.75	6D	Lay down 9" DCS
4:15	4:30	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, grease all moving parts, and check oil levels in floor motor, pump and HPU
4:30	4:45	0.25	15C	Rotating diverter drill, function test motor kills
4:45	7:45	3.00	6A	Make up bit to 6-1/2" drill collar, trip into the hole
7:45	8:00	0.25	21D	Crew handover meeting, Conoco reps. and tool push present

Remarks
Level one overhead inspection MH
blow down boilers 100l 2 times

SAFETY

Safety Topic	MEHL	MACP
Run in hole with top drive		

TOUR 2 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	152.00
Hrs Run Today	
Cumulative Hrs Run	21.00
Entry Date	

CUTTING STRUCTURE: I, O, DC, MDC, LOC, BRG; Gauge, OBC, Pressure Pulse, Total Revs per Inch 7.24

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
1	Bell sub	232	69	0.66
5	6" D.C	160	60	46.62
1	6 1/4 x/o	160	58	0.48
1	6 1/4 jars	159	59	4.45
1	6 1/4 X/O	159	58	0.46
7	6" D.C	160	60	65.22
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.73
6	Drill Pipe Stands			114.15
0	Drill Pipe Singles			0.00

Kelly Down	0.00
Total	606.87
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	152	1	0	0.00
2	PARALLEL	152	1	0	0.00

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, grease all moving parts, and check oil levels in floor motor, pump and HPU
8:15	8:30	0.25	21A	Held diverter drill with day crew
8:30	9:15	0.75	6B	Pull out of hole from 345 m to 251 m
9:15	11:15	2.00	5A	Build volume and viscosity up to 65 / 70
11:15	11:45	0.50	5	Displace hole to mud and l.c.m due to loss circulation at 251 m
11:45	15:15	3.50	5A	Build volume and viscosity up to 70+
15:15	16:00	0.75	6A	Trip in the hole from 251m 520 m

Remarks
level 1 inspection on tongs and overhead equipment D.S
Blew down boilers 2 times 100L

SAFETY

Safety Topic	MEHL	MACP
mixing mud & l.c.m		

TOUR 3 — SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	152.00
Hrs Run Today	
Cumulative Hrs Run	21.00
Entry Date	

CUTTING STRUCTURE: I, O, DC, MDC, LOC, BRG; Gauge, OBC, Pressure Pulse, Total Revs per Inch 7.24

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
1	Bell sub	232	69	0.66
5	6" D.C	160	60	46.62
1	6 1/4 x/o	160	58	0.48
1	6 1/4 jars	159	59	4.45
1	6 1/4 X/O	159	58	0.46
7	6" D.C	160	60	65.22
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.73
6	Drill Pipe Stands			114.15
0	Drill Pipe Singles			0.00

Kelly Down	0.00
Total	606.87
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	21:45
Density	1070	1085
Funnel Viscosity	53	75
Fluid Loss		
pH	9	9
Location Of Sample		
Depth	602.00	602.00
PVT	46	47

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	13500	5.00
2	PARALLEL	152	105	13500	5.00

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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	16:45	0.75	6A	Run in hole from 520 m to 585 m
16:45	17:00	0.25	7	Rig service function test rig smart anti-collision system, function test crown saver, grease all moving parts, and check oil levels in floor motor, pump and HPU
17:00	17:45	0.75	3A	Ream and clean to bottom from 585 m to 602 m
17:45	22:30	4.75	5	Circulate and condition hole at 602 m build volume and get viscosity to 80+
22:30	24:00	1.50	6B	Pull out of hole to 254m, to lay down 6-1/2" drill collars and run 244.5mm surface casing

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50 L

SAFETY

Safety Topic	MEHL	MACP
Tripping out of hole		

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140203_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	03
License No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique WellId	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — RT / RY
- (2.) Detailed Inspection - Weekly (Using Check List)
- (3.) H2S Signs Posted If Required
- (4.) Well Licence & Sfd. Diagram Posted — RT / RY
- (5.) Flare Lines Staked — RT / RY
- (6.) BOP Drills Performed — RT / RY
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT / RY
- (1.) Rig Site Health & Safety Meeting (one/week/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (one/sign/month)
- (3.) Mast Inspection before Raising or Lowering — RY
- (4.) Crown Saver Checked
- (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			4.75		1.25	1.75															0.25					8.00
Tour 2							0.25												2.25		0.25				5.25	8.00
Tour 3			1.75		2.50	1.00	0.25												2.00		0.50					8.00
TOTAL			6.50		3.75	2.75	0.50												4.25		1.00				5.25	24.00

Kelly Bushing / Op Floor

FUEL @ 08:00 HRS

Rig	85	Total	60
Time	05:45	Tank	-15

WEATHER

Surface Conditions	OVERCAST
Wind Direction	NE
Wind Strength	CALM
Road Condition	GOOD

TOUR 1 — SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME 0:00 — END TIME 8:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	152.00
Hrs Run Today	
Cumulative Hrs Run	21.00
Entry Date	

CUTTING STRUCTURE: I, O, D, L, B; Grade, OBC, Pressure Drop, Total Run in Hrs 7.24

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.30
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.84
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.73
5	Drill Pipe Stands			95.12
1	Drill Pipe Singles			9.50

Kelly Down	0.00
Total	610.44
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		
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	1:45	1.75	6B	Trip out of hole Back ream fom 245m to 189m
1:45	3:00	1.25	5A	Build volume due to losses mud clobbered up water back and treat
3:00	7:45	4.75	3B	Back ream from 189m to 161m work tight pipe @ 151m
7:45	8:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
Working tight pipe		

TOUR 2 — SIGNATURE OF DRILLER: BRADY YAVIS — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	152.00
Hrs Run Today	
Cumulative Hrs Run	21.00
Entry Date	

CUTTING STRUCTURE: I, O, D, L, B; Grade, OBC, Pressure Drop, Total Run in Hrs 7.24

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.30
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.84
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.73
5	Drill Pipe Stands			95.12
1	Drill Pipe Singles			9.50

Kelly Down	-8.44
Total	602.00
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	08:00	11:30
Density	1010	1090
Funnel Viscosity	30	75
Fluid Loss		
pH	11	
Location Of Sample	suction tank	suction
Depth	602.00	602.00
PVT	53	55

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
fed seal	4	sx
Sawdust	14	sx
Fedzan	1	sx
Gel	127	sx

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 fuction test rig smart anti-collision system, fuction test crown saver, grease all moving parts and check oil levels in the floor motor, pumps and HPU
8:15	13:30	5.25	25	Work tight hole 133m
13:30	14:45	1.25	19	Mechanically back off and rack 1 std of HWDP and 2.5 stds of DCS
14:45	15:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.
15:00	16:00	1.00	19B	Handle fishing tools

Remarks
Level one overhead inspection BY
Blew down boilers 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
Blowing down boilers		

TOUR 3 — SIGNATURE OF DRILLER: BRIAN BERGSETH — START TIME 16:00 — END TIME 24:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	152.00
Hrs Run Today	
Cumulative Hrs Run	21.00
Entry Date	

CUTTING STRUCTURE: I, O, D, L, B; Grade, OBC, Pressure Drop, Total Run in Hrs 7.24

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.30
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.84
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.73
5	Drill Pipe Stands			95.12
1	Drill Pipe Singles			9.50

Kelly Down	-8.44
Total	602.00
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		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	108	8900	3.00
2	PARALLEL	152	108	8900	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
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 function test crown saver
16:15	16:30	0.25	21	Safety meeting
16:30	17:15	0.75	19B	Handle fishing tools with schlumberger
17:15	17:45	0.50	6A	Run in hole with fishing tools
17:45	18:15	0.50	19B	Screw into fish with schlumberger fishing tools
18:15	19:00	0.75	19A	Bump fish down 1.3m to free point, with schlumberger bumper sub
19:00	19:30	0.50	6A	Run in 8 stands of HWDP to 295m
19:30	22:00	2.50	5D	Break circulation and work pipe to clean up hole with water, at 295 m
22:00	23:45	1.75	3B	Back ream out of hole from 295m to 135m
23:45	24:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.

Remarks
blow down boilers 200 l

SAFETY

Safety Topic	MEHL	MACP
picking up fishing tools & jarring		

FRONT PAGE SUMMARY

Licence No	1211
Well Name	COPRC MIRROR LAKE P-20 65-00 126-45
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Contractor	Beaver Drilling Ltd.
Contractor's Job No	152
Signature Of Contractor's Rig Manager	RICK YAVIS
Tour Sheet Serial Number	BEAV2_20140202_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	02
Surface Location	P-20-65-00-126-45
Prov	NT
Lat Type	CLSS
Unique WellId	
Rig No	2
Well Type	
Re-Entry	☐
Spud Date Time	29-Jan-2014 00:00
Rig Release Date Time	

DAILY CHECKS — OP RM

	OP	RM
(1.) Daily Walk Around Inspection	RT	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted If Required		
(4.) Well License & Stick Diagram Posted	RT	RY
(5.) Flare Lines Staked	RT	RY
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	RT	RY
(1.) Rig Site Health & Safety Meeting (weekly/monthly)		RY
(2.) CAODC Rig Safety Inspection Checklist (weekly/monthly)		
(3.) Hand 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		7.50					0.25														0.25					8.00
Tour 2		7.75					0.25																			8.00
Tour 3		3.75			0.50	3.25	0.25														0.25					8.00
TOTAL		19.00			0.50	3.25	0.75														0.50					24.00

Daily Bushing | Up Fuel: FUEL @ 08:00 HRS

WEATHER: Air 150 | Barom 120 | Time 06:00 | Temp -20 | Current Conditions OVERCAST | Wind Direction NE | Wind Strength UP TO 15 KM/H | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	93.00
Hrs Run Today	7.50
Cumulative Hrs Run	9.50
Entry Date	

CUTTING STRUCTURE: I | Gauge | TO | ODC | MDC | Reason Pulled | LOC | Total Rot Hrs | BRG | 9.78

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.24
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.37
2	Drill Pipe Stands			38.05
0	Drill Pipe Singles			0.00

Kelly Down 0.00
Total 543.87
Weight of DC
Weight of String 46000.00

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	02:30	03:30
Density	1090	1090
Funnel Viscosity	55	65
Fluid Loss		
pH	10.5	10.5
Location Of Sample	shaker	shaker
Depth	487.00	505.00
PVT	46	43

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	12500	8.00
2	PARALLEL	152	105	12500	8.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:15	467.00	0.40	0	WIRELINE
02:30	487.00	1.30	0	WIRELINE
06:30	514.00	1.50	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	2:45	2.75	2	Drill 311mm surface hole with Read m4685 rotary 100 from 468m to 487m
2:45	3:00	0.25	7	Rig service function test rig smart anti collision system function test crown saver grease all moving parts check fluid levels in floor motor and HPU
3:00	7:45	4.75	2	Drill 311mm surface hole with Read m4685 rotary 100 from 487m to 543m
7:45	8:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

METRES DRILLED

From	To	D-R-C	RPM	WOB
468.00	543.00	DRILL	120	11

HOLE CONDITION

Hole Drag Up 0 Down 0
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	450

SAFETY

No	Safety Topic	MEHL	MACP
	Making connections with top drive		

TOUR 2 | SIGNATURE OF DRILLER: BRADY YAVIS | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	93.00
Hrs Run Today	7.75
Cumulative Hrs Run	17.25
Entry Date	

CUTTING STRUCTURE: I | Gauge | TO | ODC | MDC | Reason Pulled | LOC | Total Rot Hrs | BRG | 5.39

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.24
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.37
4	Drill Pipe Stands			76.10
0	Drill Pipe Singles			0.00

Kelly Down 0.00
Total 581.92
Weight of DC
Weight of String

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	08:00	12:45
Density	1095	1095
Funnel Viscosity	60	60
Fluid Loss		
pH		
Location Of Sample		
Depth	540.00	562.00
PVT	44.4	45

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	12800	8.00
2	PARALLEL	152	105	12800	8.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
10:00	544.00	1.90	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density
Centrifuge #1	8.00	1095	1070	1600
Centrifuge #2	8.00	1095	1070	1600

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	14	sx
Fedzan	5	sx

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	13:00	5.00	2	Drill 311mm surface hole with Read m4685 rotary 100 from 543m to 562m
13:00	13:15	0.25	7	Rig service function test rig smart anti collision system function test crown saver grease all moving parts check fluid levels in floor motor and HPU
13:15	16:00	2.75	2	Drill 311mm surface hole with Read m4685 rotary 100 from 562m to 581m

Remarks
Level one overhead inspection BY
blown down boilers 100L 2 times

METRES DRILLED

From	To	D-R-C	RPM	WOB
543.00	581.00	DRILL	120	11

HOLE CONDITION

Hole Drag Up 0 Down 0
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	450

SAFETY

No	Safety Topic	MEHL	MACP
	Working at heights		

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	152.00
Hrs Run Today	3.75
Cumulative Hrs Run	21.00
Entry Date	

CUTTING STRUCTURE: I | Gauge | TO | ODC | MDC | Reason Pulled | LOC | Total Rot Hrs | BRG | 7.24

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.24
1	X/O 4" H-90	162	62	0.80
40	4" H.W	101	65	372.37
5	Drill Pipe Stands			95.12
0	Drill Pipe Singles			9.50

Kelly Down -8.44
Total 602.00
Weight of DC
Weight of String

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	19:45	
Density	1120	
Funnel Viscosity	70	
Fluid Loss		
pH		
Location Of Sample	shaker	
Depth	610.00	
PVT	45	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	13000	
2	PARALLEL	152	105	13000	

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
18:30	600.00	1.40	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	18:45	2.75	2	Drill 311mm surface hole with Read m4685 rotary 100 from 581m to 600m
18:45	19:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.
19:00	20:00	1.00	2	Drill 311mm surface hole with Read m4685 rotary 100 from 600m to 602m lay out 1 d.p
20:00	20:15	0.25	7	Rig service function test rig smart anti collision system function test crown saver grease all moving parts check fluid levels in floor motor and HPU
20:15	20:45	0.50	5	Circulate 2 bottoms up prepair to trip to out of hole to 133m
20:45	24:00	3.25	6B	Trip out of hole till 224m Ream tight spots from 514m ,435m ,429m

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

METRES DRILLED

From	To	D-R-C	RPM	WOB
581.00	602.00	DRILL	120	11

HOLE CONDITION

Hole Drag Up 0 Down 0
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	450

SAFETY

No	Safety Topic	MEHL	MACP
	Tripping out of hole with top drive		

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Tour Sheet Serial Number	BEAV2_20140201_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	02
Day	01
Surface Location	P-20-65-00-126-45
Prov	NT
Lsd Type	CLSS
Unique Well Id	
Contractor	Beaver Drilling Ltd.
Rig No	2
Re-Entry	☐
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS (OP / RM)
(1.) Daily Walk Around Inspection — RY / RY
(2.) Detailed Inspection - Weekly (Using Check List) — RY / RY
(3.) H2S Signs Posted If Required — RT / RY
(4.) Well Licence & Site Diagram Posted — RT / RY
(5.) Flare Lines Staked — RT / RY
(6.) BOP Drills Performed — RT / RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RY
(1.) Rig Site Health & Safety Meeting (make/remarks) — RY
(2.) CAODC Rig Safety Inspection Checklist (crew/foreman) — RY
(3.) Mast Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

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						0.50	0.25		0.75			2.25	4.00								0.25					8.00
Tour 2		6.25			1.00	0.50	0.25																			8.00
Tour 3		2.00			4.75	0.75	0.25														0.25					8.00
TOTAL		8.25			5.75	1.75	0.75		0.75			2.25	4.00								0.50					24.00

Kelly Bushing | Ground Level

FUEL @ 08.00 HRS: Rig 195 | Solar 180

WEATHER: Time 06:30 | Temp -9 | Current Conditions OVERCAST | Wind Direction NE | Wind Strength UP TO 19 KMH | Road Condition GOOD

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	0.00
Entry Date	

CUTTING STRUCTURE: II | Gauge | TO | DOC | MDC | Reason Pulled | LOC | Test Run to hr | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.24
1	X/O 4" H-90	162	62	0.80
34	4" H.W	101	65	317.01

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00
Kelly Down 0.00
Total 0.00
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	
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 Sequence & Remarks
0:00	2:00	2.00	12G	Cement 10m3 of cement with schlumberger
2:00	2:30	0.50	6B	Pull out 8 stands of drill pipe
2:30	2:45	0.25	12G	Flush out pipe with 5m3 of fresh water
2:45	3:30	0.75	9A	Slip and cut 25m of drilling line
3:30	3:45	0.25	13	Wait on cement
3:45	4:00	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
4:00	7:45	3.75	13	Wait on cement Make up B.H.A
7:45	8:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
Cementing plugs		

TOUR 2 | SIGNATURE OF DRILLER: BRADY YAVIS | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	0.00
Entry Date	

CUTTING STRUCTURE: II | Gauge | TO | DOC | MDC | Reason Pulled | LOC | Test Run to hr | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00
Kelly Down 0.00
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	PARALLEL	152	95	600	6.00
2	PARALLEL	152	95	600	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
1	8.00	11	450
2	8.00	11	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:30	0.50	6A	Trip in to the hole to 95m
8:30	8:45	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
8:45	15:00	6.25	2C	Wash to cement and drill out cement plug, tag cement 161m, drilled out cement @258m
15:00	16:00	1.00	5C	Displace to surface mud

Remarks
Level one overhead inspection BY
blow down boilers 100L 2 times

SAFETY

Safety Topic	MEHL	MACP
Run in hole with Top Drive		

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	2
Size	311
IADC Code	
Manufacturer	Reed
Type	m4685
Serial No	b159531
Jets	19.05 19.05 19.05 12.7
Depth Out (m)	
Depth In (m)	450.00
Total Drilled (m)	18.00
Hrs Run Today	2.00
Cumulative Hrs Run	2.00
Entry Date	

CUTTING STRUCTURE: II | Gauge | TO | DOC | MDC | Reason Pulled | LOC | Test Run to hr 9.00 | BRG

METRES DRILLED

From	To	D-R-C	RPM	WOB
450.00	468.00	DRILL	120	9

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	311mm BIT	311	72	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.24
1	X/O 4" H-90	162	62	0.80
36	4" H.W	101	65	122.25

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00
Kelly Down 0.00
Total 468.29
Weight of DC
Weight of String 43000.00

HOLE CONDITION: Hole Drag Up 0 / Down 0 | 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	450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	18:45	2.75	5C	Displace to surface mud and clean suction tank
18:45	19:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.
19:00	20:15	1.25	5	Treat out calcium in mud system
20:15	20:30	0.25	6A	Trip in the hole till 350m
20:30	20:45	0.25	5	Circulate bottoms up
20:45	21:15	0.50	6A	Trip in the hole till 450m
21:15	21:45	0.50	5	Circulate bottoms up
21:45	22:00	0.25	7	Rig service change out hose on top drive grease all moving parts function test rig smart anti collision system
22:00	24:00	2.00	2	Drill 311mm hole from 450m to 468m

Remarks
Level one overhead inspection mh
Blew down boilers 2 time @ 50l

SAFETY

Safety Topic	MEHL	MACP
Tripping with top drive		

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	RICHARD TURGEON
Tour Sheet Serial Number	BEAV2_20140131_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	01
Day	31
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique WellId	
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection — RT RY
(2.) Detailed Inspection - Weekly (Using Check List) — RT RY
(3.) 1023 Signs Posted If Required — RT RY
(4.) Well Licence & Sick Diagram Posted — RT RY
(5.) Flare Lines Tested — RT RY
(6.) BOP Drills Performed — RT RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT RY
(1.) Rig Site Health & Safety Meeting (crew involvement) — RY
(2.) CAODC Rig Safety Inspection Checklist (weekly/monthly) — RY
(3.) Mast Inspection before Raising or Lowering — RY
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked — RY

CAODC

NOV

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		6.50			1.00		0.25														0.25					8.00
Tour 2		3.25			4.50		0.25																			8.00
Tour 3					0.50	6.50	0.25					0.25									0.50					8.00
TOTAL		9.75			6.00	6.50	0.75					0.25									0.75					24.00

Daily Bit Using | Up Feet

FUEL @ 08.00 HRS

WEATHER: Alt 115 | Baro 70 | Time 05:45 | Temp -10 | Cloud Cover OVERCAST | Wind Direction NE | Wind Strength UP TO 18 KMH | Road Condition GOOD

TOUR 1 — SIGNATURE OF DRILLER: MARCUS HALLOWES — START TIME 0:00 — END TIME 8:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14,29 14,29 14,29 / 14,29 14,29 14,29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	300.00
Hrs Run Today	6.50
Cumulative Hrs Run	25.75
Entry Date	

CUTTING STRUCTURE: II | TO | MDC | LDC | BRG | Grade | OOD | Reason Pulled | Total Rotating Hrs 11.65

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.65
12	6" D.C	160	60	111.24
1	X/O 4" H-90	162	62	0.80
31	4" H.W	101	65	215.30

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00

Kelly Down 0.00
Total 422.39
Weight of DC
Weight of String 44000.00

MUD RECORD

Mud Type Water ☑ Oil ☐ Other

Time	01:30	03:15
Density	1035	1035
Funnel Viscosity	80	80
Fluid Loss		
pH	8.5	11
Location Of Sample	shaker	shaker
Depth	330.00	390.00
PVT	44	44

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	100	10000	8.00
2	PARALLEL	152	100	10000	8.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:30	328.00	0.90	0	WIRELINE
02:00	355.00	1.30	0	WIRELINE
04:30	388.00	1.60	0	WIRELINE
06:30	412.00	2.00	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Gel	185	SX
Cellophane	8	SX
fed seal	9	SX
Sawdust	26	SX
Caustic	1	SX

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	1:30	1.50	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 319m to 356m
1:30	1:45	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
1:45	3:45	2.00	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 356m to 394m
3:45	4:45	1.00	5E	Build volume back up to 50m3 with a viscosity of 120 and L.C.M
4:45	7:45	3.00	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 394m to 422m
7:45	8:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50l

METRES DRILLED

From	To	D-R-C	RPM	WOB
319.00	422.00	DRILL	85	10

HOLE CONDITION

Hole Drag Up 0 Down 0
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	450

SAFETY

Safety Topic	MEHL	MACP
Making connections with top drive		

TOUR 2 — SIGNATURE OF DRILLER: BRADY YAVIS — START TIME 8:00 — END TIME 16:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14,29 14,29 14,29 / 14,29 14,29 14,29
Depth Out (m)	450.00
Depth In (m)	18.00
Total Drilled (m)	432.00
Hrs Run Today	3.25
Cumulative Hrs Run	29.00
Entry Date	

CUTTING STRUCTURE: II 1 | TO 1 | MDC WT | LDC G | BRG X | Grade 0 | OOD NO | Reason Pulled HP | Total Rotating Hrs 14.90

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.65
12	6" D.C	160	60	111.24
1	X/O 4" H-90	162	62	0.80
34	4" H.W	101	65	217.27

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00

Kelly Down 0.00
Total 450.16
Weight of DC
Weight of String 44000.00

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
1	PARALLEL	152	100	12000	4.00
2	PARALLEL	152	100	12000	4.00

Remarks

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
14:30	450.00	2.30	0	

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	122	SX
Fedzan	6	SX
Sawdust	10	SX

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	10:45	2.75	5A	Build volume back up to 50m3 with a viscosity of 100+ and L.C.M
10:45	11:00	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
11:00	14:15	3.25	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 422m to 450m
14:15	16:00	1.75	5	Build volume back up to 50m3 with a viscosity of 100+ and L.C.M

Remarks
Level one overhead inspection BY
blow down boilers 100L 2 times

METRES DRILLED

From	To	D-R-C	RPM	WOB
422.00	450.00	DRILL	85	5.5

HOLE CONDITION

Hole Drag Up 0 Down 0
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	450

SAFETY

Time	Safety Topic	MEHL	MACP
	Mixing Mud Products		

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: II | TO | MDC | LDC | BRG | Grade | OOD | Reason Pulled | Total Rotating Hrs

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	16:15	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
16:15	18:45	2.50	6B	Trip out of the hole to run plugs
18:45	19:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.
19:00	21:00	2.00	6B	Rack back stand of drill collars break bit and rack back 9inch
21:00	23:00	2.00	6E	Pick up 27 drill pipe and 4 H.W
23:00	23:30	0.50	5	Circulate 4m3 high viscosity high weight slug Chase with 3m3 of mud
23:30	23:45	0.25	21	Safety meeting with schlumberger on cementing plugs
23:45	24:00	0.25	12G	Cement 10m3 of cement with schumberger

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

SAFETY

Time	Safety Topic	MEHL	MACP
	Pick up drill pipe with top drive		

FRONT PAGE SUMMARY

Tour Sheet Serial Number	BEAV2_20140130_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	01
Day	30
License No	1211
Well Name	COPRC MIRROR LAKE P-20
Surface Location	P-20-65-00-126-45
Prov	NT
Lic Type	CLSS
Unique Well Id	
Operator	Conoco Canada
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Operator's AFE	10351812
Contractor's Job No	152
Spud Date Time	29-Jan-2014 00:00
Signature Of Operator's Representative	RICHARD TURGEON
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS (OP / RM)

- (1.) Daily Walk Around Inspection — RT / RY
- (2.) Detailed Inspection - Weekly (Using Check List) —
- (3.) H2S Signs Posted If Required —
- (4.) Well Licence & Stick Diagram Posted — RT / RY
- (5.) Flare Lines Staked — RT / RY
- (6.) BOP Drills Performed — RT / RY
- (7.) Visually Inspected BOPs-Flare Lines & Degasser Lines — RT / RY
- (1.) Rig Site Health & Safety Meeting (one/month) — RY
- (2.) CAODC Rig Safety Inspection Checklist (one/month) —
- (3.) Mast Inspection before Raising or Lowering — RY
- (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 Welding On	24 Rig Wash	25 Other	TOTAL
HOURS Tour 1		1.50			3.75	2.25	0.25														0.25					8.00
Tour 2					5.00	2.75	0.25																			8.00
Tour 3		1.50			5.50	0.50	0.25														0.25					8.00
TOTAL		3.00			14.25	5.50	0.75														0.50					24.00

Kelly Bushing | Up Field

FUEL @ 08.00 HRS

Rig	200
Store	200
Time	06:00
Temp	-26

WEATHER

Cloud Condition	CLEAR
Wind Direction	NW
Wind Strength	CALM
Road Condition	GOOD

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14,29 14,29 14,29
	14,29 14,29 14,29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	283.00
Hrs Run Today	1.50
Cumulative Hrs Run	17.75
Entry Date	

CUTTING STRUCTURE

I		Gauge	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/h)	15.94
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
263.00	301.00	DRILL	85	6

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.84
1	X/O 4" H-90	162	62	0.80
18	4" H.W	101	65	153.05
0	Drill Pipe Stands			0.00
0	Drill Pipe Singles			0.00

Kelly Down	0.00
Total	301.15
Weight of DC	
Weight of String	44000.00

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	00:30	01:30
Density	1030	1030
Funnel Viscosity	45	95
Fluid Loss		
pH	8	8.5
Location Of Sample	shaker	shaker
Depth	248.00	300.00
PVT		

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	10000	3.00
2	PARALLEL	152	105	10000	3.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
00:45	281.00	0.20	0	WIRELINE
01:45	300.00	0.20	0	WIRELINE

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Sawdust	74	sx
fed seal	21	sx
Gel	140	sx
Cellophane	17	sx
Fedzan	3	sx
Soda Ash	2	sx
Gel	67	sx

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	0:45	0.75	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 245m to 263m
0:45	1:00	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
1:00	1:45	0.75	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 263m to 301m
1:45	2:15	0.50	5	Circulate bottoms take bottom hole survey up prepair to trip out of hole
2:15	4:30	2.25	6B	Trip out of hole till 105m pulled tight
4:30	7:45	3.25	5	Build volume and get a viscosity of 80 and L.C.M additives
7:45	8:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.

Remarks
Level one overhead inspection mh
Blew down boiler 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
Tripping out of hole with top drive		

TOUR 2 | SIGNATURE OF DRILLER: BRADY YAVIS | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14,29 14,29 14,29
	14,29 14,29 14,29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	283.00
Hrs Run Today	
Cumulative Hrs Run	17.75
Entry Date	

CUTTING STRUCTURE

I		Gauge	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/h)	15.94
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.84
1	X/O 4" H-90	162	62	0.80
18	4" H.W	101	65	153.05
0	Drill Pipe Stands			0.00
0	Drill Pipe Singles			0.00

Kelly Down	0.00
Total	301.15
Weight of DC	
Weight of String	43000.00

HOLE CONDITION

Hole Drag	Up	Down
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	06:45	13:30
Density	1035	1035
Funnel Viscosity	95	95
Fluid Loss		
pH		
Location Of Sample	shaker	shaker
Depth	105.00	95.00
PVT	56	53

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	SINGLE	152	100	600	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
Gel	144	sxs

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	13:00	5.00	5	Build volume and get a viscosity of 100
13:00	14:30	1.50	6B	Trip out, back reamed tight at 97m
14:30	14:45	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
14:45	16:00	1.25	6A	Trip into the hole slowly

Remarks
Level one overhead inspection BY
blow down boilers 100L two times

SAFETY

Safety Topic	MEHL	MACP
Back reaming with a top drive		

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14,29 14,29 14,29
	14,29 14,29 14,29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	300.00
Hrs Run Today	1.50
Cumulative Hrs Run	19.25
Entry Date	

CUTTING STRUCTURE

I		Gauge	
TO		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/h)	15.58
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
301.00	319.00	DRILL	69	7

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.84
1	X/O 4" H-90	162	62	0.80
20	4" H.W	101	65	186.71
0	Drill Pipe Stands			0.00
0	Drill Pipe Singles			0.00

Kelly Down	0.00
Total	319.82
Weight of DC	
Weight of String	43000.00

HOLE CONDITION

Hole Drag	Up 0	Down 0
Torque At Bottom		
Fill On Bottom		

MUD RECORD

Mud Type: Water ☑ Oil ☐ Other

Time	19:30	22:30
Density	1035	1035
Funnel Viscosity	70	95
Fluid Loss		
pH		
Location Of Sample	suction 1	shaker
Depth	301.00	301.00
PVT	54.8	51.6

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	9000	2.00
2	PARALLEL	152	105	9000	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
Gel	86	sx
Caustic	1	sx
Sawdust	10	sx
Cellophane	5	sx

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	16:30	0.50	6A	Trip into the hole slowly
16:30	16:45	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
16:45	18:45	2.00	5	Build volume and get a viscosity of 100 and L.C.M additives
18:45	19:00	0.25	21D	Crew handover meeting with both crews, tool push and conoco rep present.
19:00	20:45	1.75	5	Build volume and get a viscosity of 100
20:45	21:00	0.25	5	Circulate 110 viscosity mud seen returns after 13m3
21:00	22:30	1.50	5E	Build volume back to 50m3, mix gel to bring mud up to 100+ viscosity
22:30	24:00	1.50	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 301m to 319m

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 100L

SAFETY

Safety Topic	MEHL	MACP
Mixing mud products		

FRONT PAGE SUMMARY

License No	Well Name	Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
1211	COPRC MIRROR LAKE P-20	BEAV2_20140129_1A	RMS 2013.8.14.27104	2014	01	29

Surface Location	Prov	Lsd	Lsd Type	Unique Well Id
P-20-65-00-126-45	NT	CLSS		

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2		☐

Operator's AFE	Contractor's Job No	Spud Date Time	
10351812	152	29-Jan-2014	00:00

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE OPPER	RICK YAVIS	

DAILY CHECKS

	DO	RY
(1.) Daily Walk Around Inspection	DO	RY
(2.) Detailed Inspection - Weekly (Using Check List)	DO	RY
(3.) H2S Signs Posted if required		
(4.) Well Licence & Sub Diagram Posted	DO	RY
(5.) Flare Lines Staked	DO	RY
(6.) BOP Drills Performed	DO	RY
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines	DO	RY
(1.) Rig Site Health & Safety Meeting (crew/contractors)		RY
(2.) CAODC Rig Safety Inspection Checklist (crew/contractors)		
(3.) Hoist Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		RY

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	Tour Dmnt	Waiting On	Rig Watch	Other	TOTAL
Tour 1		7.50					0.25														0.25					8.00
Tour 2		6.50			1.00		0.25														0.25					8.00
Tour 3		3.50			4.00		0.25														0.25					8.00
TOTAL		17.50			5.00		0.75														0.75					24.00

Daily Drilling | Up Fuel: FUEL @ 08.00 HRS

WEATHER: Hrs 120 | Wind 70 | Time 06:00 | Temp -32 | Current Conditions CLEAR | Wind Direction W | Wind Strength UP TO 19 KM/H | Road Conditions GOOD

TOUR 1 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 0:00 | END TIME 8:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14.29 14.29 14.29 14.29 14.29 14.29 14.29 14.29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	58.00
Hrs Run Today	6.00
Cumulative Hrs Run	6.25
Entry Date	

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.30
1	Bell sub	232	69	0.66
5	6" D.C	160	60	55.83

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00
Kelly Down 0.00
Total 76.38
Weight of DC
Weight of String 28.00

MUD RECORD

Mud Type Water ☑ Oil ☐ Other

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
01:45	28.00	0.50	0	
06:15	56.00	0.60	0	

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	1:30	1.50	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 20m to 29m
1:30	1:45	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
1:45	7:45	6.00	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 29m to 76m
7:45	8:00	0.25	21	Crew handover meeting with both crews, tool push and conoco rep present.

CUTTING STRUCTURE

I		Gauge	
TO		OOC	
MDC		Reason Pulled	
LOC		Total Run (m/h)	9.28
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
20.00	76.00	DRILL	120	4

HOLE CONDITION

Hole Drag Up / Down
Torque At Bottom
Fill On Bottom

CIRCULATION

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	1800	8.00
2	PARALLEL	152	105	1800	2.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Sawdust	10	SX

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 100L

SAFETY

Safety Topic	MEHL	MACP
Making connections with top drive		

TOUR 2 | SIGNATURE OF DRILLER: BRADY YAVIS | START TIME 8:00 | END TIME 16:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14.29 14.29 14.29 14.29 14.29 14.29 14.29 14.29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	58.00
Hrs Run Today	6.50
Cumulative Hrs Run	12.75
Entry Date	

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.30
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.64
1	X/O 4" H-90	162	62	0.80
6	4" H.W	101	65	53.88

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00
Kelly Down 0.00
Total 188.95
Weight of DC
Weight of String 42000.00

MUD RECORD

Mud Type Water ☑ Oil ☐ Other

Time	08:30	14:00
Density	1035	1035
Funnel Viscosity	38	46
Fluid Loss		
pH		
Location Of Sample		
Depth	94.00	160.00
PVT	36.4	32

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
08:15	84.98	0.40	0	
13:30	131.00	0.30	0	
14:45	151.00	0.30	0	

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	9:00	1.00	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 76m to 94m
9:00	10:00	1.00	5A	Float stuck on mud tank, lost suction and build volume
10:00	11:00	1.00	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 94m to 104m
11:00	11:15	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
11:15	11:30	0.25	21A	Rotating head diverter drill with crew
11:30	16:00	4.50	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 104m to 188m

CUTTING STRUCTURE

I		Gauge	
TO		OOC	
MDC		Reason Pulled	
LOC		Total Run (m/h)	4.55
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
76.00	188.00	DRILL	85	4

HOLE CONDITION

Hole Drag Up / Down
Torque At Bottom
Fill On Bottom

CIRCULATION

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	120	7500	8.00
2	PARALLEL	152	120	7500	8.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density	Over Flow Density	Under Flow Density

MUD MATERIALS ADDED

Product	Amount	Type
Bentonite	115	SX
Fedzan	8	SX
Soap Sticks	1	SX
fed seal	7	SX
Cellophane	2	SX
Sawdust	120	SX

BOILER

BoilerNo	HoursRun	pH	StackTemp
1	8.00	11	450
2	8.00	11	450

Remarks
Level one overhead inspection BY
Blow down boilers 100l two times

SAFETY

Safety Topic	MEHL	MACP
Rotating Head Diverter Drill		

TOUR 3 | SIGNATURE OF DRILLER: MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14.29 14.29 14.29 14.29 14.29 14.29 14.29 14.29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	245.00
Hrs Run Today	3.50
Cumulative Hrs Run	16.25
Entry Date	

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.30
1	Bell sub	232	69	0.66
12	6" D.C	160	60	111.64
1	X/O 4" H-90	162	62	0.80
14	4" H.W	101	65	130.88

0 Drill Pipe Stands 0.00
0 Drill Pipe Singles 0.00
Kelly Down 0.00
Total 263.74
Weight of DC
Weight of String 43000.00

MUD RECORD

Mud Type Water ☑ Oil ☐ Other

Time		
Density		
Funnel Viscosity		
Fluid Loss		
pH		
Location Of Sample		
Depth		
PVT		

DEVIATION SURVEYS

Time	Depth	Deviation	Direction	Type
16:15	188.00	0.20	0	WIRELINE
18:15	208.00	0.20	0	WIRELINE
19:45	244.00	0.20	0	WIRELINE

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	17:15	1.25	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 188m to 207m
17:15	17:30	0.25	7	Rig service function test rig smart anti collision system function test crown saver, function test flair stack ignitor, grease all moving parts check fluid levels in floor motor and HPU
17:30	18:45	1.25	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 207m to 245m
18:45	19:00	0.25	21D	Crew change safety meeting Conoco Reps. present
19:00	20:30	1.50	5E	Circulate and condition mud additions of gel to 80 viscosity and L.C.M
20:30	23:00	2.50	5E	Build volume with pumps off add L.C.M mud viscosity to 80
23:00	24:00	1.00	2	Drill 311mm hole with Mi616 Smith PDC bit drill from 245m to 263m

CUTTING STRUCTURE

I		Gauge	
TO		OOC	
MDC		Reason Pulled	
LOC		Total Run (m/h)	15.06
BRG			

METRES DRILLED

From	To	D-R-C	RPM	WOB
188.00	263.00	DRILL	85	4

HOLE CONDITION

Hole Drag Up 0 / Down 0
Torque At Bottom
Fill On Bottom

CIRCULATION

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
1	PARALLEL	152	105	8700	4.00
2	PARALLEL	152	105	8700	4.00

Remarks

REDUCED PUMP SPEED

Pump #	Pressure	Strokes/min	Depth
	@	@	
	@	@	
	@	@	

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

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 50L

SAFETY

Safety Topic	MEHL	MACP
Mixing mud products		

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
BEAV2_20140128_1A	RMS 2013.8.14.27104	2014	01	28

License No	Well Name	Surface Location	Prov	Lsd Type	Unique Well Id
1211	COPRC MIRROR LAKE P-20	P-20-65-00-126-45	NT	CLSS	

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2		☐

Operator's AFE	Contractor's Job No	Spud Date Time
10351812	152	

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager	Rig Release Date Time
DAVE OPPER	RICK YAVIS	

DAILY CHECKS — OP RM

	DO	RY
(1.) Daily Walk Around Inspection		
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Stick Diagram Posted		
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (sets/breakdowns)		RY
(2.) CADDC Rig Safety Inspection Checklist (sets/breakdowns)		RY
(3.) Mast Inspection before Raising or Lowering		RY
(4.) Crown Saver Checked		RY
(5.) Motor Kills Checked		RY

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	Casing	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	
HOURS Tour 1	7.75						0.25																			8.00
Tour 2	7.75						0.25																			8.00
Tour 3	2.50	2.00				2.50	0.25														0.75					8.00
TOTAL	18.00	2.00				2.50	0.75														0.75					24.00

Kelly Bushing | Op Field

FUEL @ 08.00 HRS

WEATHER: Rig 190 | Motor 200 | Time 06:15 | Temp -20 | Cloud Conditions PARTLY CLOUDY | Wind Direction N | Wind Strength UP TO 15 KM/H | Hole Condition GOOD

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 | Gauge | TO | OC | MDC | Reason Pulled | LOC | Total Run (m/hr) | 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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service function test rig smart function test crown saver
0:15	8:00	7.75	1	Cut conductor and prepare diverter system weld on flange and nipple up diverter system, fill mud tanks hook up flair lines.

Remarks
Level one overhead inspection mh
Blew down boilers 2 times @ 100L

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	445

SAFETY

Safety Topic	MEHL	MACP
Nipple up diverter		

TOUR 2 | SIGNATURE OF DRILLER BRADY YAVIS | 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 | Gauge | TO | OC | MDC | Reason Pulled | LOC | Total Run (m/hr) | 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

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	34	sx
Fedzan	3	sx
Soda Ash	2	sx

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	8:15	0.25	7	Rig service function test rig smart function test crown saver
8:15	16:00	7.75	1	Weld and nipple up diverter system, hook up flare lines

Remarks
Level one overhead inspection BY
Blow down boilers 100L 2 times

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

SAFETY

Safety Topic	MEHL	MACP
Nipple up Rotating Diverter System		

TOUR 3 | SIGNATURE OF DRILLER MARCUS HALLOWES | START TIME 16:00 | END TIME 24:00

BITS

Bit Number	1
Size	311
IADC Code	
Manufacturer	Smith
Type	mi616
Serial No	JD3509
Jets	14.29 14.29 14.29 14.29 14.29 14.29
Depth Out (m)	
Depth In (m)	18.00
Total Drilled (m)	2.00
Hrs Run Today	0.25
Cumulative Hrs Run	0.25
Entry Date	

CUTTING STRUCTURE: TI | Gauge | TO | OC | MDC | Reason Pulled | LOC | Total Run (m/hr) 6.00 | BRG

DRILLING ASSEMBLY

No	Component	OD	ID	Length
1	PDC 311mm bit	311	67	0.35
1	Bit sub	235	70	0.94
2	9" D.C	233	71	18.50
1	Bell sub	232	69	0.66

0	Drill Pipe Stands	0.00
0	Drill Pipe Singles	0.00
	Kelly Down	0.00
	Total	20.45
	Weight of DC	
	Weight of String	26.00

MUD RECORD

Mud Type Water ☑ Oil ☐ Other

Time	23:15
Density	
Funnel Viscosity	
Fluid Loss	
pH	
Location Of Sample	
Depth	
PVT	

Circulation

Pump #	Type	Liner Size	SPM	Pressure	Hrs Run
2	SINGLE	152	100	1200	1.00

Remarks

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	18:00	2.00	1	Weld and nipple up diverter system, hook up air lines to diverter valves and function test
18:00	18:15	0.25	7	Rig service, function tested rig smart anti-collision system, funtion tested crown saver, checked oil and greased all moving parts
18:15	18:45	0.50	1	Pick up and prepare 311mm Mi616 Smith PDC bit
18:45	19:00	0.25	21	Crew handover meeting with rig crews, rig manger and Conoco rep. present
19:00	21:30	2.50	6C	Make up 311mm Mi616 Smith PDC bit, 8inch drill collar and bit sub, Finish flair stack
21:30	23:00	1.50	2C	Ran 311mm Mi616 Smith PDC bit in, tagged ice in conductor, make 9" collar conection with drill sub, drill out ice in conductor barrel, ran in and tagged conductor cement
23:00	23:15	0.25	21F	Pre-spud safety inspection with rig crew
23:15	23:30	0.25	21A	Diverter drill with crews review task and positions
23:30	24:00	0.50	2	Drill out ice & cement in bottom of conductor

Remarks
Level one overhead inspection mh

METRES DRILLED

From	To	D-R-C	RPM	WOB
16.00	20.00	DRILL	120	3

HOLE CONDITION: Hole Drag Up 0 | Down 0 | 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	450

SAFETY

Safety Topic	MEHL	MACP
Pre spud inspection diverter drill		

FRONT PAGE SUMMARY

License No	1211
Well Name	COPRC MIRROR LAKE P-20
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	DAVE OPPER
Tour Sheet Serial Number	BEAV2_20140127_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	01
Day	27
Surface Location	P-20-65-00-126-45
Prov	NT
Lsd Type	CLSS
Unique Well Id	
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Contractor's Job No	152
Spud Date Time	
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS — OP RM

(1.) Daily Walk Around Inspection — DO RY
(2.) Detailed Inspection - Weekly (Using Check List)
(3.) H2S Signs Posted if Required — DO RY
(4.) Well Licence & Stick Diagram Posted
(5.) Flare Lines Secured
(6.) BOP Drills Performed
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines
(1.) Rig Site Health & Safety Meeting (once/month) — RY
(2.) CAODC Rig Safety Inspection Checklist (mid/fortnightly)
(3.) Meet Inspection before Raising or Lowering
(4.) Crown Saver Checked — RY
(5.) Motor Kills Checked

CAODC

NOV

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 Welds	25 Other	TOTAL
HOURS Tour 1	0.75						0.25														0.25				6.75	8.00
Tour 2	7.00																				1.00					8.00
Tour 3	7.75						0.25																			8.00
TOTAL	15.50						0.50														1.25				6.75	24.00

Kelly Spacing — Up Fuel

FUEL @ 08 00 HRS

WEATHER: Air 170 — Wind 170; Time 06:15 — Temp -27; Sample Conditions CLEAR; Wind Direction SW — Wind Strength CALM; Road Conditions GOOD

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 / TO / MDC / LDC / BRG / Gauge / OOC / Reason Pulled / Total Run (km)

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 | 450

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	0:15	0.25	7	Rig service
0:15	7:00	6.75	25	Boiler watch, rig in hoses and cords
7:00	7:15	0.25	21D	Crew change and safety meeting with crews, rig manager and Conoco reps
7:15	8:00	0.75	1	Rig up and dress derrick prior to raise

Remarks

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 Sequence & Remarks
8:00	8:45	0.75	21F	Safety inspection of derrick before raising RY,BB,DS,ER,SM
8:45	9:00	0.25	21D	Prejob safety meeting on raising derrick
9:00	9:15	0.25	1	Raise derrick & pin same
9:15	16:00	6.75	1C	Spot 400 barrel tanks & rental mud trailers and casing

Remarks

TOUR 3 — SIGNATURE OF DRILLER BRADY YAVIS — START TIME 16:00 — END TIME 24:00

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	16:15	0.25	7	Rig service, grease moving parts, check oil in floor motor and HPU
16:15	24:00	7.75	1B	Rig up torque tube and Top drive

Remarks
Blow down boiler 100L 2 times

SAFETY: Safety Topic | MEHL | MACP; Rig up Top Drive

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
BEAV2_20140126_1A	RMS 2013.6.14.27104	2014	01	26

License No	Well Name	Surface Location	Prov	Lsd Type	Unique Well Id
1211	COPRC MIRROR LAKE P-20	P-20-65-00-126-45	NT	CLSS	

Operator	Contractor	Rig No	Well Type	Re-Entry
Conoco Canada	Beaver Drilling Ltd.	2		☐

Operator's AFE	Contractor's Job No	Spud Date Time	Rig Release Date Time
10351812	152		

Signature Of Operator's Representative	Signature Of Contractor's Rig Manager
DAVE OPPER	RICK YAVIS

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DO	RY
(2.) Detailed Inspection - Weekly (Ramp Check List)		
(3.) H2S Signs Posted If Required	DO	RY
(4.) Well Licence & Site Diagram Posted		
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (start-mid-end)		RY
(2.) CAODC Rig Safety Inspection Checklist (end/fortnight)		
(3.) Mast Inspection before Raising or Lowering		
(4.) Crown Saver Checked		
(5.) Mast Ville 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																									8.00	8.00
Tour 2	6.75																				0.25		1.00			8.00
Tour 3	3.00																								5.00	8.00
TOTAL	9.75																				0.25		1.00		13.00	24.00

Kelly Bushing / Up Field

FUEL @ 08:00 HRS

WEATHER: Rig 90 | Intake 50 | Time 05:00 | Temp -25 | Cloud Condition OVERCAST | Wind Direction N | Wind Strength UP TO 19 KM/H | Road Condition GOOD

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 / O / DC / LOC / BRG / Gage / OOC / Reason Pulled / Total Revs in Pr

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
0:00	8:00	8.00	25	Boiler watch w/2 men

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

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 / O / DC / LOC / BRG / Gage / OOC / Reason Pulled / Total Revs in Pr

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
8:00	9:00	1.00	23I	Wait on canol trucks
9:00	9:15	0.25	21D	Safety meeting with rig crews, rig manager, SimOps, safety hands and Conoco reps
9:15	16:00	6.75	1C	Spot matting, sub, inspect and pin derrick, spot buildings and cat-walk

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

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 / O / DC / LOC / BRG / Gage / OOC / Reason Pulled / Total Revs in Pr

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequence & Remarks
16:00	19:00	3.00	1C	Spot rig & buildings
19:00	24:00	5.00	25	Boiler watch and rig up steam lines

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

SAFETY

Safety Topic	MEHL	MACP

FRONT PAGE SUMMARY

Licence No	1211
Well Name	COPRC MIRROR LAKE P-20
Operator	Conoco Canada
Operator's AFE	10351812
Signature Of Operator's Representative	DAVE OPPER
Tour Sheet Serial Number	BEAV2_20140125_1A
Vendor Software Version	RMS 2013.8.14.27104
Year	2014
Month	01
Day	25
Surface Location	P-20-65-00-126-45
Prov	NT
Loc Type	CLSS
Unique Well Id	
Contractor	Beaver Drilling Ltd.
Rig No	2
Well Type	
Re-Entry	☐
Contractor's Job No	152
Spud Date Time	
Signature Of Contractor's Rig Manager	RICK YAVIS
Rig Release Date Time	

DAILY CHECKS

	OP	RM
(1.) Daily Walk Around Inspection	DO	RY
(2.) Detailed Inspection - Weekly (Using Check List)		
(3.) H2S Signs Posted if Required		
(4.) Well Licence & Sfd. Diagram Posted	DO	RY
(5.) Flare Lines Staked		
(6.) BOP Drills Performed		
(7.) Visually Inspected BOPs-Flare Lines & Degasser Lines		
(1.) Rig Site Health & Safety Meeting (area/monthly)		RY
(2.) CAODC Rig Safety Inspection Checklist (area/quarterly)		
(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																					0.25	7.00	0.75			8.00
Tour 2	6.25																				0.25		1.50			8.00
Tour 3																									8.00	8.00
TOTAL	6.25																				0.50	7.00	2.25		8.00	24.00

FUEL @ 08.00 HRS

Kelly Bushing	
Op Fuel	
Rig	100
Boiler	60
Time	06:15
Temp	-15
Current Conditions	OVERCAST
Wind Direction	N
Wind Strength	UP TO 15 KM/H
Road Condition	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: TI, TO, MDC, LOC, BRG, Gauge, ODC, Reason Pulled, Total Run in hrs

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
0:00	7:00	7.00	22	Tear out rig to move off location, prepare derrick, clean and cover well head, fold up dog house wings and walk ways on buildings
7:00	7:15	0.25	21D	Crew change safety meeting with rig crews, rig manager and Conoco reps
7:15	8:00	0.75	23I	Wait on CANOL trucks

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

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: TI, TO, MDC, LOC, BRG, Gauge, ODC, Reason Pulled, Total Run in hrs

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
8:00	9:30	1.50	23I	Wait on CANOL trucks
9:30	9:45	0.25	21D	Pre-move safety meeting with rig crew, rig manager, Conoco safety and SimOps, well site supervisor and CANOL truckers
9:45	16:00	6.25	1A	Load out rig buildings and rentals, lift derrick off sub, load sub and move off location E-76

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

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: TI, TO, MDC, LOC, BRG, Gauge, ODC, Reason Pulled, Total Run in hrs

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

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

TIME LOG

From	To	Elapsed	Code	Details Of Operations In Sequance & Remarks
16:00	19:00	3.00	25	Lift matting, move off E-76
19:00	24:00	5.00	25	Boiler watch w/ 2 men

Remarks

METRES DRILLED

From	To	D-R-C	RPM	WOB

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	450

SAFETY

Safety Topic	MEHL	MACP