

Geological Report

on

COPRC Loon Creek O-6
Unit O, Section 6, Grid 65-10 127-00

**Well Reached Total Depth on
Feb 14, 2013 @ 06:35**

for

ConocoPhillips Canada Resources Corp.

Well License # : 470

Prepared For: Dave Oakley
ConocoPhillips Canada Resources Co

Prepared By: Dave Lawrence
Black Gold Geotechnical Services Ltd.

Dave Lawrence

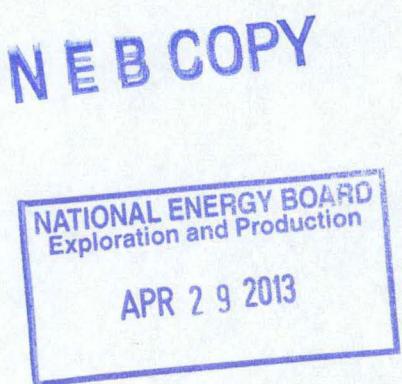


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The COPRC Loon Creek O-6 well is a strat well that is being drilled to thoroughly investigate and evaluate the Canol & Hare Indian & Bluefish formations for potential hydrocarbon production from a future horizontal well drilling program. The entire section from just above the top of the Canol Shales to 50 meters into the Hume limestone platform was cored with wireline retrieveable cores. The well was also logged completely with a very extensive logging program by Schlumberger. Also the well was logged from surface to total depth with full gas chromatography and a total gas analyzer. Mud samples were taken from various points while the well was drilled and will also be fully analyzed. While we were coring desorption tests were performed on site by corelab technicians. Full analysis of the fluid from the desorption tests and also a full analysis of the cores will also be completed at a later date by corelabs.

Well Summary

Storage Units: Metric

Well Information

Operator: ConocoPhillips Canada Resources Corp.
Well Name: COPRC Loon Creek O-6
Location: Unit O, Section 6, Grid 65-10 127-00
UWI: 3000066510127000
Pool: Undefined
Field: Loon Creek
State / Province: Northwest Territories
Country: Canada
License Number: 470
Well Status: Cased

Surface Co-ordinates	Hole Type: Vertical	Fault Indicator:
	Latitude: 65 05 51.5 N	Longitude: 127 00 30.7 W
	UTM Northing: 7220618.30	UTM Easting: 593560.14

N / S :

E / W :

Int. Casing Co-ordinates	Latitude:	Longitude:
N / S :		
E / W :		

Bottom Hole Co-ordinates	Latitude:	Longitude:
N / S :	9.69 Meters North	
E / W :	28.17 Meters East of the surface location.	

Elevations	Ground Elevation:	252.40	Reference: Kelly Bushing to Ground:	Ground 5.20
	Kelly Bushing Elevation:	257.60	Cut (-):	
	Casing Flange Elevation:	252.73	Fill (+):	

Total Depth	Measured Depth	True Vertical Depth
Total Depth Driller (Tally) :	1,856.00	1,855.94
Total Depth Driller (Strap or SLM):		
Total Depth Logger:	1,857.60	1,857.54

Miscellaneous Depths	Plugback Depth:	Water Depth Reference:
	Sidetrack Depth:	Water Depth:

Well Summary	Drilling Contractor:	Beaver Drilling Ltd.	Spud Date:	Jan 26, 2013	@ 12:00
	Rig Release Date:		Total Depth Date:	Feb 14, 2013	@ 06:35

Cores	#	Formation	Interval	Cut	Recovered	%	
	1	Canol	1,622.00	1,649.00	27.00	27.00	100.00
	2	Canol	1,649.00	1,676.00	27.00	27.00	100.00
	3	Canol	1,676.00	1,703.00	27.00	27.00	100.00

Well Summary

					Storage Units:	Metric
4	Canol		1,703.00	1,730.00	27.00	27.00
5	Canol		1,730.00	1,757.00	27.00	27.00
6	Canol		1,757.00	1,784.00	27.00	27.00
7	Canol		1,784.00	1,811.00	27.00	27.00
8	Hume		1,811.00	1,838.00	27.00	27.00
9	Hume		1,838.00	1,856.00	18.00	17.70

Casing Summary

Casing Type	Casing Size	Landed Depth	Hole Size
Surface	244.5	596.78	311.0

Logging Summary

Company	Engineer	Total Depth (MD)	Logging tools
Schlumberger	Jeffery Tatlock	600.00	AIT, DSI, PPC, TLD, HGNS, TLD2, GPIT
	Jeffrey Tatlock	1,856.00	USIT / CBL
			RST-GR
			ADT / HNGS / PPC / CMR+ / GR
			UBI / dual OBMI / GPIT /PPC / SSCAN / PPC / GR
			AIT- Lithoscanner-TLD-HGNS-GR-TLD2

Daily Drilling Summary

Storage Units: Metric

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Costs	Formation	Operational Status @ Report Time
Jan 27, 13	191.00		14.00			Quaternay	Drilling
Jan 28, 13	431.00	240.00	17.50	13.71		Quaternary	Drilling 311mm hole
Jan 29, 13	587.00	156.00	14.00	11.14		Slater River	Tripping (POOH)
Jan 30, 13	600.00	13.00	1.25	10.40		Slater River	POOH to log
Jan 31, 13	600.00	0.00	0.00	0.00		Slater River	Circ csg @ TD
Feb 01, 13	600.00	0.00	0.00	0.00		Slater River	Nipple up BOPs
Feb 02, 13	600.00	0.00	0.00	0.00		Slater River	Pressure test
Feb 03, 13	660.00	60.00	5.50	10.91		Slater River	Drilling 222mm main hole
Feb 04, 13	1,066.00	406.00	20.50	19.80		Imperial	Drilling 222mm hole
Feb 05, 13	1,440.00	374.00	19.75	18.94		Imperial	Drilling 222mm hole
Feb 06, 13	1,622.00	182.00	8.25	22.06		Imperial Base	Lay down dir tools
Feb 07, 13	1,622.00	0.00	0.00	0.00		Imperial	Cut core#1
Feb 08, 13	1,659.00	37.00	6.25	5.92		Canol	Cut Core#2
Feb 09, 13	1,703.00	44.00	5.50	8.00		Canol	Wireline out Core#3
Feb 10, 13	1,730.00	27.00	3.75	7.20		Canol	Wireline Core#4
Feb 11, 13	1,757.00	27.00	3.00	9.00		Canol	Wireline Core#5
Feb 12, 13	1,784.00	27.00	3.50	7.71		Canol	Recover Core#6
Feb 13, 13	1,816.00	32.00	4.75	6.74		Hume	Cut Core#8
Feb 14, 13	1,853.00	37.00	9.00	4.11		Hume	Cut Core#9
Feb 15, 13	1,856.00	3.00	0.75	4.00		Hume	Circ btms up after wiper trip @ TD
Feb 16, 13	1,856.00	0.00	0.00	0.00		Hume	Logging Run#2
Feb 17, 13	1,856.00	0.00	0.00	0.00		Hume	Logging Run#3
Feb 18, 13	1,856.00	0.00	0.00	0.00		Hume	Logging Run#4
Feb 19, 13	1,856.00	0.00	0.00	0.00		Hume	POOH Sideways

Accumulated Daily Costs:

ConocoPhillips Canada Resources Corp.
UWI 300O066510127000

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Casing Data Summary

Storage Units: Metric

Casing Type:	Surface		
Casing Size:	244.5	Hole Size:	311.0
Casing Landed @:	596.78	Total Joints:	46
Casing Date:	Jan 31, 2013 @ 05:00	Plug Down Date:	Jan 31, 2013 @ 14:30
# of Joints / Length / O.D. / Weight:	244.5mm guide shoe 1 jt 244.5mm 53.57kg csg 1 244.5mm float collar 44 jts 244.5mm, 53.57 kg/m, J-55 casing 1 244.5mm, 53.57 kg/m J55 landing jt, total 598.78m		
Cementing Details:	Cemented casing with 26.1m3 (26T) Thixotropic D804A-P + 2% CaCL2 + 0.2% Antifoam, dispaced with drill mud, bumped plug, pressure tested casing to 11,500 kpa for 10 min, test good. Recieved 6.5m3 good cement slurry returns @ surface. Annulus remained static.		
Remarks:	<hr/>		

Bit Record Table (IADC Grading System)

Storage Units: Metric

***** For more detailed Bit Information refer to Bit Record *****

Bit #	Make	Type	Size	Depth In	Depth Out	Made	Hours	Avg. P.R.	I.A.D.C. Bit Condition								
									I	O	MDC	Loc	B	G	ODC	RP1	RP2
1A	Reed	S11G	311.0	0.0	600.0	600.0	46.75	12.83	2	2	WT	A	E	1	FC	TD	
1	Reed	MSR616N	222.0	600.0	1,622.0	1,022.0	49.00	20.86	2	2	CC	H	X	I	WT	CP	
1C	NOV	PR513	222.0	1,622.0	1,856.0	234.0	36.50	6.41	1	1	CT	N	X	I	BT	TD	

Total Rotating Hours: 132.25

Core Report

Storage Units: Metric

Date: February 7, 2013
Core #: 1
Formations Cored: Canol

Cored Interval

From: 1,622.00 To: 1,649.00
Cut: 27.00 Recovered: 27.00 100.00 %
Core Diameter: 89.0

Coring Company: Corion
Service Representative: Rhys Nichol, Dusty Zbitnoff, Ernie Chouckalis

Core Bit Information Bit Make: NOV Bit Type: PR513
Bit Size (OD): 222.0 Serial #: E140308
Original Hole Size: 222.0

Remarks: Cut 27.0 m in 4 hours.

Detailed Core Descriptions

1,623.50 to 1,623.60 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, firm to hard, siliceous? no dry fluorescence, slow pale yellow cut with solvent.

1,625.00 to 1,625.10 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, firm to hard, siliceous? no dry fluorescence, pale light yellow streaming cut with solvent.

1,626.50 to 1,626.60 **Shale**
(0.10) as above.

1,628.00 to 1,628.10 **Shale**
(0.10) as above.

1,629.50 to 1,629.60 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, firm to hard, siliceous?
fluorescence as above.

1,631.00 to 1,631.10 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, trace slightly silty, firm to hard,
siliceous? fluorescence as above.

1,632.50 to 1,632.60 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, firm to hard, siliceous?
fluorescence as above.

1,634.00 to 1,634.10 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, firm to hard, moderately brittle,
siliceous? trace minor fossil debris (spicules), fluorescence as above.

1,635.50 to 1,635.60 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, firm to hard, moderately brittle,
siliceous? fluorescence as above.

1,637.00 to 1,637.10 **Shale**
(0.10) dark gray, subfissile, slightly micromicaceous, firm to hard, moderately brittle,
siliceous? trace pyrite, fluorescence as above.

Core Report

Storage Units: Metric

1,638.50 to 1,638.60 (0.10)	Shale dark gray, subfissile, slightly micromicaceous, firm to hard, moderately brittle, slightly siliceous? fluorescence as above.
1,640.00 to 1,640.10 (0.10)	Shale dark gray, subfissile, slightly micromicaceous, firm to hard, moderately brittle, slightly bituminous, slightly siliceous? fluorescence as above.
1,641.50 to 1,641.60 (0.10)	Shale dark gray, subfissile, slightly micromicaceous, firm to hard, moderately brittle, slightly bituminous, slightly siliceous? trace small pyrite nodules, abundant sponge spicules, fluorescence as above.
1,643.00 to 1,643.10 (0.10)	Shale as above occasionally abundant disseminated pyrite infilling fossil casts (sponge spicules) with a fracture infilled with frosted medium crystalline calcite.
1,644.50 to 1,644.60 (0.10)	Shale dark gray, dark gray brown, brittle, slightly calcareous, slightly bituminous, occasional sponge spicules, show as above increasing fluorescence, hydrocarbon odor from core.
1,646.00 to 1,646.10 (0.10)	Shale dark gray, dark gray brown, slightly calcareous, slightly bituminous, occasional spicules as above, show as above, hydrocarbon odor as above.
1,647.50 to 1,647.60 (0.10)	Shale dark gray to dark gray brown, slightly bituminous, trace sponge spicules as above, slightly calcareous, shows as above.
1,648.90 to 1,649.00 (0.10)	Shale as above.

Core Report

Storage Units: Metric

Date: February 8, 2013

Core #: 2

Formations Cored: Canol

Cored Interval

From:	1,649.00	To:	1,676.00
Cut:	27.00	Recovered:	27.00 100.00 %
Core Diameter:	89.0		

Coring Company: Corion

Service Representative: Rhys Nichol, Dusty Zbitnoff, Ernie Chouckalis

Core Bit Information

Bit Make:	NOV	Bit Type:	PR513
Bit Size (OD):	222.0	Serial #:	E140308
Original Hole Size:	222.0		

Remarks: Cut 27m in 4.25 hours

Detailed Core Descriptions

1,650.50 to 1,650.60

(0.10)

Shale

dark gray, grades to dark gray brown in part, subfissile, slightly micromicaceous, very slightly calcareous, poor trace pyrite, trace minor carbonaceous matter, no dry fluorescence, pale slow yellow cut.

1,652.00 to 1,652.10

(0.10)

Shale

dark gray, grades to dark gray brown in part, subfissile, slightly micromicaceous, very slightly calcareous, poor trace pyrite, increasing organic carbonaceous matter, no dry fluorescence, pale slow yellow cut.

1,653.50 to 1,653.60

(0.10)

Shale

dark gray, grades to dark gray brown in part, subfissile, slightly micromicaceous, poor trace pyrite, minor carbonaceous matter, no dry fluorescence, very faint pale slow yellow cut.

1,655.00 to 1,655.10

(0.10)

Shale

medium gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor carbonaceous matter, no dry fluorescence, very faint pale slow yellow cut.

1,656.50 to 1,656.60

(0.10)

Shale

medium to dark gray, gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor carbonaceous matter, no dry fluorescence, very faint pale slow yellow cut.

1,658.00 to 1,658.10

(0.10)

Shale

medium to dark gray, gray brown, subfissile, slightly micromicaceous, minor organic carbonaceous matter, frequent disseminated pyrite, no dry fluorescence, very faint pale slow yellow cut.

1,659.50 to 1,659.60

(0.10)

Shale

gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor carbonaceous matter, no dry fluorescence, very faint pale slow yellow cut.

Core Report

Storage Units: Metric

1,661.00 to 1,661.10 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, no dry fluorescence, very faint pale slow yellow cut.
1,662.50 to 1,662.60 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, no dry fluorescence, very faint pale slow yellow cut.
1,664.00 to 1,664.10 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, trace disseminated pyrite, no dry fluorescence, very faint pale slow yellow cut.
1,665.50 to 1,665.60 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, trace disseminated pyrite, no dry fluorescence, very faint pale slow yellow cut.
1,667.00 to 1,667.10 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, no dry fluorescence, very faint pale slow yellow cut.
1,668.50 to 1,668.60 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, trace disseminated pyrite, no dry fluorescence, very faint pale slow yellow cut.
1,670.00 to 1,670.10 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, trace disseminated pyrite, no dry fluorescence, very faint pale slow yellow cut.
1,671.50 to 1,671.60 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, trace disseminated pyrite, no dry fluorescence, very faint pale slow yellow cut.
1,673.00 to 1,673.10 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, trace disseminated pyrite, no dry fluorescence, very faint pale slow yellow cut.
1,674.50 to 1,674.60 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, no dry fluorescence, very faint pale slow yellow cut.
1,675.90 to 1,676.00 (0.10)	Shale gray brown, subfissile, slightly micromicaceous, slightly bituminous, minor organic carbonaceous matter, trace slightly silty, no dry fluorescence, very faint pale slow yellow cut.

Core Report

Storage Units: Metric

Date: February 8, 2013

Core #: 3

Formations Cored: Canol

Cored Interval

From:	1,676.00	To:	1,703.00
Cut:	27.00	Recovered:	27.00 100.00 %
Core Diameter:	89.0		

Coring Company: Corion

Service Representative: Rhys Nichol, Dusty Zbitnoff, Ernie Chouckalis

Core Bit Information

Bit Make:	NOV	Bit Type:	PR513
Bit Size (OD):	222.0	Serial #:	E140308
Original Hole Size:	222.0		

Remarks: Cut 27 meters in 4.25 hrs.

Detailed Core Descriptions

1,677.50 to 1,677.60 **Shale**
(0.10) gray brown, fissile, slightly micromicaceous, firm to hard, becoming siliceous?
 slightly bituminous, minor organic carbonaceous matter, trace slightly silty, no
 dry fluorescence, very faint pale slow yellow cut.

Lower Canol: 1,679.00 MD, 1,678.94 TVD, -1,421.34 SSL

1,679.00 to 1,679.10 **Shale**
(0.10) gray brown, fissile, slightly micromicaceous, firm to hard, becoming siliceous?
 becoming brittle, carbonaceous organic matter, faint shows as above.

1,680.50 to 1,680.60 **Shale**
(0.10) dark gray brown, fissile, slightly micromicaceous, firm to hard, becoming
 siliceous? becoming brittle, carbonaceous organic matter, faint shows as
 above.

1,682.00 to 1,682.10 **Shale**
(0.10) dark gray brown, fissile, slightly micromicaceous, firm to hard, siliceous? brittle,
 slightly fractured, carbonaceous organic matter, trace worm burrows infilled
 with pyrite, faint shows as above.

1,683.50 to 1,683.60 **Shale**
(0.10) as above, increasing disseminated pyrite, micro fractures infilled with pyrite.

1,685.00 to 1,685.10 **Shale**
(0.10) gray brown, fissile, slightly micromicaceous, firm to hard, slightly siliceous?
 occasionally brittle, shale laminated with pyrite, trace laminated with sandy
 shale in part, faint shows as above.

1,687.50 to 1,687.60 **Shale**
(0.10) as above, abundant disseminated pyrite, abundant unidentifiable fossil (plant
 remains) casts lined with carbonaceous matter, trace spicules?

Core Report

Storage Units: Metric

1,688.00 to 1,688.10 (0.10)	Shale medium to dark gray brown, fissile, brittle, slightly micromicaceous, abundant disseminated pyrite, abundant carbonaceous fossil remains, trace fossil casts infilled with pyrite, faint show as above.
1,689.50 to 1,689.60 (0.10)	Shale gray brown, fissile, slightly micromicaceous, firm to hard, siliceous? brittle, carbonaceous organic matter, trace pyrite as above, faint shows as above.
1,691.00 to 1,691.10 (0.10)	Shale gray brown, fissile, slightly micromicaceous, firm to hard, siliceous? brittle, carbonaceous organic matter, appears slightly fractured with some micro fractures infilled with pyrite.
1,692.50 to 1,692.60 (0.10)	Shale dark gray brown to black, siliceous, brittle, hard, trace unidentifiable fossil casts? minor pyrite as above, faint show as above.
1,694.00 to 1,694.10 (0.10)	Shale dark gray brown, as above, siliceous? , occasionally speckled with light & dark colored chert, shows as above.
1,695.50 to 1,695.60 (0.10)	Shale dark gray brown, siliceous, hard, brittle, slightly micromicaceous, trace disseminated pyrite, very faint slow pale yellow cut.
1,697.00 to 1,697.10 (0.10)	Shale dark gray brown, siliceous, hard, brittle, slightly micromicaceous, trace disseminated pyrite, very faint slow pale yellow cut.
1,698.50 to 1,698.60 (0.10)	Shale dark gray brown, siliceous, hard, brittle, slightly micromicaceous, disseminated pyrite, very faint slow pale yellow cut.
1,700.00 to 1,700.10 (0.10)	Shale dark gray to dark gray brown, fissile, splintery, micromicaceous increasing slightly, siliceous? disseminated pyrite, abundant black organic matter, no dry fluorescence, slow pale yellow streaming cut.
1,701.50 to 1,701.60 (0.10)	Shale increasing gray brown, as above, increasing disseminated pyrite, decreasing organic matter. No visible oil bleeding from core throughout.

Core Report

Storage Units: Metric

Date: February 9, 2013

Core #: 4

Formations Cored: Canol

Cored Interval

From: 1,703.00 To: 1,730.00
Cut: 27.00 Recovered: 27.00 100.00 %
Core Diameter: 89.0

Coring Company: Corion

Service Representative: R. Nichol, D. Zbitnoff, E. Chouckalis S. Gilburton

Core Bit Information

Bit Make: NOV Bit Type: PR513
Bit Size (OD): 222.0 Serial #: E140308
Original Hole Size: 222.0

Remarks: Cut 27m in 4 hours, full recovery.

Detailed Core Descriptions

1,704.50 to 1,704.60 (0.10)	Shale dark gray brown, hard, subfissile, slightly micromicaceous, minor disseminated pyrite, minor carbonaceous organic matter, faint fluorescence as above.
1,706.00 to 1,706.10 (0.10)	Shale as above, occasionally laminated with Shale dark gray brown to black, fissile, splintery, slightly micromicaceous, trace disseminated pyrite.
1,707.50 to 1,707.60 (0.10)	Shale dark gray brown, hard, siliceous?, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, faint fluorescence as above.
1,709.00 to 1,709.10 (0.10)	Shale dark gray brown, hard, siliceous?, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, unidentifiable fossil casts, (brachiopod?) faint fluorescence as above.
1,710.50 to 1,710.60 (0.10)	Shale dark gray brown, hard, siliceous?, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, faint fluorescence as above.
1,712.00 to 1,712.10 (0.10)	Shale dark gray brown, hard, siliceous?, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, faint fluorescence as above.
1,713.50 to 1,713.60 (0.10)	Shale dark gray brown, hard, siliceous?, very slightly calcareous, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, faint fluorescence as above.
1,715.00 to 1,715.10 (0.10)	Shale dark gray brown, hard, siliceous?, very slightly calcareous, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, minor thin bioturbated layers, faint fluorescence as above.

Core Report

Storage Units: Metric

1,716.50 to 1,716.60 (0.10)	Shale dark gray brown, hard, siliceous?, very slightly calcareous, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, poss hydrocarbon odor, faint fluorescence as above.
1,718.00 to 1,718.10 (0.10)	Shale dark gray brown, hard, siliceous?, slightly calcareous, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, faint fluorescence as above.
1,719.50 to 1,719.60 (0.10)	Shale dark gray brown, hard, siliceous?, slightly calcareous, slightly micromicaceous, disseminated pyrite, minor carbonaceous organic matter, faint fluorescence as above.
1,721.00 to 1,721.10 (0.10)	Shale as above, hard, brittle, laminated with brown chert stringers?
1,722.50 to 1,722.60 (0.10)	Shale dark gray brown to occasionally black as above, laminated with brown chert stringers?
1,724.00 to 1,724.10 (0.10)	Shale dark gray brown, very hard, brittle, siliceous, trace disseminated pyrite, trace carbonaceous organic matter, slightly micromicaceous, fluorescence as above.
1,725.50 to 1,725.60 (0.10)	Shale gray brown, hard, brittle, siliceous, increasing calcareous, slightly micromicaceous, disseminated pyrite, carbonaceous organic matter, fluorescence as above.
1,727.00 to 1,727.10 (0.10)	Shale gray brown, hard, brittle, siliceous, increasing calcareous, slightly micromicaceous, disseminated pyrite, carbonaceous organic matter, fluorescence as above.
1,728.50 to 1,728.60 (0.10)	Shale dark gray brown, hard, brittle, subfissile, siliceous, slightly calcareous, slightly micromicaceous, trace disseminated pyrite, trace organic matter as above, trace very slow fluorescence as above.
1,729.90 to 1,730.00 (0.10)	Shale dark gray brown, hard, brittle, subfissile, siliceous, slightly calcareous, slightly micromicaceous, trace disseminated pyrite, trace organic matter as above, trace very slow fluorescence as above. No visible oil bleeding from core throughout.

Core Report

Storage Units: Metric

Date: February 10, 2013
Core #: 5
Formations Cored: Canol

Cored Interval

From: 1,730.00 **To:** 1,757.00
Cut: 27.00 **Recovered:** 27.00 100.00 %
Core Diameter: 89.0

Coring Company: Corion
Service Representative: R. Nichol, D. Zbitnoff, E. Chouckalis S.Gilburton

Core Bit Information	Bit Make: NOV	Bit Type: PR513
	Bit Size (OD): 222.0	Serial #: E140308
	Original Hole Size: 222.0	

Remarks:

Detailed Core Descriptions

1,731.50 to 1,731.60 (0.10)	Shale gray brown, subfissile, slightly siliceous, slightly calcareous, micromicaceous, trace disseminated pyrite, trace organic matter as above, trace very slow fluorescence as above.
1,733.00 to 1,733.10 (0.10)	Shale dark gray brown, subfissile, slightly siliceous, slightly calcareous, micromicaceous, no visible pyrite, trace organic matter as above, slow pale yellow streaming cut fluorescence.
1,734.50 to 1,734.60 (0.10)	Shale dark gray brown, subfissile, slightly siliceous, slightly calcareous, micromicaceous, no visible pyrite, trace organic matter as above, slow pale yellow streaming cut fluorescence.
1,736.00 to 1,736.10 (0.10)	Shale dark gray brown, hard, brittle, slightly siliceous? increasing calcareous, slightly micromicaceous, trace disseminated pyrite, slightly calcareous, shows as above.
1,737.50 to 1,737.60 (0.10)	Shale dark gray brown, as above, increasing calcareous, slightly micromicaceous, increasing carbonaceous organic matter, thin fractures infilled with frosted very fine crystalline calcite, shows as above.
1,739.00 to 1,739.10 (0.10)	Shale as above, no visible fractures.
1,740.50 to 1,740.60 (0.10)	Shale dark gray brown, slightly calcareous, slightly micromicaceous, minor carbonaceous organic matter, very pale slow light yellow cloudy cut.
1,742.00 to 1,742.10 (0.10)	Shale dark gray brown, calcareous, firm, less brittle, subfissile, slightly micromicaceous, trace disseminated pyrite, minor carbonaceous organic matter, fluorescence as above.

Core Report

Storage Units: Metric

1,743.50 to 1,743.60 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, slightly micromicaceous, trace disseminated pyrite, minor carbonaceous organic matter, fluorescence as above.
1,745.00 to 1,745.10 (0.10)	Shale dark gray brown, increasing calcareous, firm, subfissile, slightly micromicaceous, trace disseminated pyrite, minor carbonaceous organic matter, fluorescence as above. Core appeared fractured at end of sleeve.
1,746.50 to 1,746.60 (0.10)	Shale as above with stringers bioturbated shale, dark gray, brittle, trace very small fractures?
1,748.00 to 1,748.10 (0.10)	Shale very dark gray brown to black, carbonaceous, occasionally very calcareous, trace small fractures, occasional brittle, strong hydrocarbon odor, waxy lustre with scour, good fast yellow streaming cut fluorescence.
1,749.50 to 1,749.60 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, slightly micromicaceous, trace disseminated pyrite, carbonaceous organic matter, slow very faint pale yellow fluorescence.
1,751.00 to 1,751.10 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, slightly micromicaceous, brittle in part, trace disseminated pyrite, minor carbonaceous organic matter, fluorescence as above.
1,752.50 to 1,752.60 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, slightly micromicaceous, minor carbonaceous organic matter, trace calcite veining, fluorescence as above.
1,754.00 to 1,754.10 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, slightly micromicaceous, disseminated pyrite with pyrite laminated within shale, abundant carbonaceous organic matter, fluorescence as above.
1,755.50 to 1,755.60 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, splintery, slightly micromicaceous, trace disseminated pyrite, minor carbonaceous organic matter, fluorescence as above.
1,756.90 to 1,757.00 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, splintery, slightly micromicaceous, trace disseminated pyrite, minor carbonaceous organic matter, fluorescence as above.

Core Report

Storage Units: Metric

Date: February 11, 2013

Core #: 6

Formations Cored: Canol

Cored Interval

From:	1,757.00	To:	1,784.00
Cut:	27.00	Recovered:	27.00 100.00 %
Core Diameter:	89.0		

Coring Company: Corion

Service Representative: R. Nichol, D. Zbitnoff, E. Chouckalis S. Gilburton

Core Bit Information

Bit Make:	NOV	Bit Type:	PR513
Bit Size (OD):	222.0	Serial #:	E140308
Original Hole Size:	222.0		

Remarks:

Detailed Core Descriptions

1,758.50 to 1,758.60 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, slightly micromicaceous, thin laminated pyrite with shale, minor carbonaceous organic matter, fluorescence as above.
1,760.00 to 1,760.10 (0.10)	Shale dark gray brown, calcareous, firm, subfissile, slightly micromicaceous, no visible pyrite, minor carbonaceous organic matter, fluorescence as above.
1,761.50 to 1,761.60 (0.10)	Shale dark gray brown, slightly calcareous, firm, subfissile, slightly micromicaceous, no visible pyrite, minor carbonaceous organic matter, fluorescence as above.
1,763.00 to 1,763.10 (0.10)	Shale dark gray brown to occasionally black, slightly calcareous, hard, brittle, fissile, carbonaceous with carbonaceous organic matter, slightly micromicaceous, minor disseminated pyrite, fluorescence as above.
1,764.50 to 1,764.60 (0.10)	Shale dark gray brown, slightly calcareous, hard, brittle, fissile, siliceous? slightly micromicaceous, trace pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,766.00 to 1,766.10 (0.10)	Shale dark gray brown, slightly calcareous, hard, brittle, fissile, siliceous? slightly micromicaceous, trace pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,767.50 to 1,767.60 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, subfissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above.

Core Report

Storage Units: Metric

1,769.00 to 1,769.10 (0.10)	Shale very dark gray brown, slightly calcareous, firm to hard, brittle, fissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,770.50 to 1,770.60 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, subfissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,772.00 to 1,772.10 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, subfissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,773.50 to 1,773.60 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, platy, fissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above. No visible oil bleeding from core throughout.
1,775.00 to 1,775.10 (0.10)	Shale as above, increasing micromicaceous.
1,776.50 to 1,776.60 (0.10)	Shale dark gray brown to black, slightly calcareous, firm, subfissile, slightly micromicaceous, trace disseminated pyrite, trace micro fractures? occasional carbonaceous organic matter, fluorescence as above.
1,778.00 to 1,778.10 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, subfissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,779.50 to 1,779.60 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, platy, fissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,781.00 to 1,781.10 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, platy, fissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,782.50 to 1,782.60 (0.10)	Shale dark gray brown, slightly calcareous, firm to hard, platy, subfissile, slightly micromicaceous, trace pyrite, occasional carbonaceous organic matter, fluorescence as above.
1,783.90 to 1,784.00 (0.10)	Shale dark gray brown, slightly calcareous, firm, platy, subfissile, slightly micromicaceous, no visible pyrite, occasional carbonaceous organic matter, fluorescence as above. No visible oil bleeding from core throughout.

Core Report

Storage Units: Metric

Date: February 12, 2013

Core #: 7

Formations Cored: Canol

Cored Interval

From: 1,784.00 To: 1,811.00
Cut: 27.00 Recovered: 27.00 100.00 %
Core Diameter: 89.0

Coring Company: Corion

Service Representative: R. Nichol, D. Zbitnoff, E. Chouckalis S. Gilburton

Core Bit Information	Bit Make:	NOV	Bit Type:	PR513
	Bit Size (OD):	222.0	Serial #:	E140308
	Original Hole Size:	222.0		

Remarks:

Detailed Core Descriptions

1,785.50 to 1,785.60 (0.10)	Shale dark gray brown to very dark gray, platy, fissile, slightly micromicaceous, slightly calcareous, abundant carbonaceous organic matter, slightly micromicaceous, abundant disseminated pyrite, fluorescence as above.
1,787.00 to 1,787.10 (0.10)	Shale very dark gray to black as above.
1,788.50 to 1,788.60 (0.10)	Shale dark gray brown to very dark gray, platy, fissile, slightly micromicaceous, non calcareous, carbonaceous organic matter, slightly micromicaceous, disseminated pyrite laminated with shale, fluorescence as above.
1,790.00 to 1,790.10 (0.10)	Shale very dark gray, platy, fissile, slightly micromicaceous, abundant carbonaceous organic matter, slightly micromicaceous, disseminated pyrite, fluorescence as above.
1,793.00 to 1,793.10 (0.10)	Shale dark gray brown to very dark gray, platy, fissile, slightly micromicaceous, abundant carbonaceous organic matter, slightly micromicaceous, no visible pyrite, fluorescence as above.
1,794.50 to 1,794.60 (0.10)	Shale very dark gray to black, platy, fissile, slightly micromicaceous, abundant carbonaceous organic matter, slightly micromicaceous, trace pyrite.
1,796.00 to 1,796.10 (0.10)	Shale dark gray to dark gray brown, platy, fissile, slightly micromicaceous, mottled with abundant carbonaceous organic matter, slightly micromicaceous, poor trace calcareous, no visible pyrite, fluorescence as above.
1,797.50 to 1,797.60 (0.10)	Shale dark gray brown, calcareous, slightly micromicaceous, becoming silty, carbonaceous matter as above, no dry fluorescence, pale light yellow cloudy cut.

Core Report

Storage Units: Metric

1,799.00 to 1,799.10 (0.10)	Shale dark gray brown, calcareous, micromicaceous, abundant unidentifiable fossil casts, carbonaceous matter as above, no dry fluorescence, pale light yellow cloudy cut.
1,800.50 to 1,800.60 (0.10)	Shale dark gray brown, calcareous, slightly micromicaceous, abundant unidentifiable fossil casts, brachiopods, pelecypod, carbonaceous matter as above, no dry fluorescence, pale light yellow cloudy cut.
1,802.00 to 1,802.10 (0.10)	Shale dark gray brown, calcareous, slightly micromicaceous, sbifs, firm, abundant unidnt fossil casts, some infilled with pyrite, carbonaceous matter as above, no dry fluorescence, pale light yellow cloudy cut.
1,803.50 to 1,803.60 (0.10)	Shale as above, trace pelecypod.
1,805.00 to 1,805.10 (0.10)	Limestone light brown, wackestone, micrite matrix, unidentifiable fossil casts & fragments, no visible porosity, no shows.
1,806.50 to 1,806.60 (0.10)	Limestone dark gray brown as above, argillaceous, shaly, dark carbonaceous matter, spotty oil stain?
1,808.00 to 1,808.10 (0.10)	Limestone brown to dark brown, wackestone with micrite matrix, slightly argillaceous, unidentifiable fossil shadow, no visible porosity, no show
1,809.50 to 1,809.60 (0.10)	Limestone as above
1,810.90 to 1,811.00 (0.10)	Limestone light brown, fragmental packstone? recrystallized fine to medium crystalline, abundant unidentifiable fossil shadow, no visible porosity, no show

Core Report

Storage Units: Metric

Date: February 13, 2013

Core #: 8

Formations Cored: Hume

Cored Interval

From:	1,811.00	To:	1,838.00
Cut:	27.00	Recovered:	27.00 100.00 %
Core Diameter:	89.0		

Coring Company: Corion

Service Representative: R. Nichol, D. Zbitnoff, E. Chouckalis S. Gilburton

Core Bit Information

Bit Make:	NOV	Bit Type:	PR513
Bit Size (OD):	222.0	Serial #:	E140308
Original Hole Size:	222.0		

Remarks:

Detailed Core Descriptions

1,812.50 to 1,812.60 (0.10)	Limestone light brown, fragmental wackestone, micrite matrix, unidentifiable fossil casts infilled with calcite, coral?, ostracods, brachiopods? no visible porosity, no show.
1,814.00 to 1,814.10 (0.10)	Limestone as above, grades to mudstone in part, occlt recrystallized fine to medium crystalline in part.
1,815.50 to 1,815.60 (0.10)	Limestone light brown, fragmental wackestone, micrite matrix, unidentifiable fossil casts infilled with calcite, no visible porosity, no show.
1,817.00 to 1,817.10 (0.10)	Limestone medium brown, fragmental wackestone, micrite matrix, slightly argillaceous, unidentifiable fossil casts infilled with calcite, no visible porosity, no show.
1,818.50 to 1,818.60 (0.10)	Limestone light brown, fragmental wackestone, micrite matrix, unidentifiable fossil casts infilled with calcite, ostracods, no visible porosity, no show.
1,820.00 to 1,820.10 (0.10)	Limestone brown, fragmental wackestone, micrite matrix, unidentifiable fossil casts infilled with calcite, ostracods, no visible porosity, no show.
1,821.00 to 1,821.10 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, recrystallized very fine crystalline, ostracods, unidentifiable fossil shadow, no visible porosity or shows.
1,822.50 to 1,822.60 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, recrystallized very fine crystalline, ostracods, unidentifiable fossil infilled with frosted calcite (coral?) no visible porosity or shows.

Core Report

Storage Units: Metric

1,824.00 to 1,824.10 (0.10)	Limestone dark brown, mudstone to wackestone, recrystallized micro to very fine crystalline, becoming argillaceous, unidentifiable fossil shadow, ostracods, pellets? no visible porosity or shows.
1,825.50 to 1,825.60 (0.10)	Limestone brown, mudstone, trace fossil as above, dense, no show
1,827.00 to 1,827.10 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, recrystallized very fine crystalline in part, ostracods, unidentifiable fossil casts infilled with frosted calcite, no visible porosity or shows.
1,828.50 to 1,828.60 (0.10)	Limestone as above
1,830.00 to 1,830.10 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, recrystallized micro to very fine crystalline, ostracods, unidentifiable fossil shadow, no visible porosity or shows.
1,831.50 to 1,831.60 (0.10)	Limestone as above.
1,833.00 to 1,833.10 (0.10)	Limestone medium brown, mudstone, pellets, oolites, trace unidentifiable fossil shadow, dense, no shows.
1,834.50 to 1,834.60 (0.10)	Limestone brown, wackestone, micrite matrix, recrystallized fine -m crystalline, ostracods, unidentifiable fossil casts infilled with frosted calcite, no visible porosity or shows.
1,836.00 to 1,836.10 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, recrystallized very fine crystalline, ostracods, unidentifiable fossil shadow & casts infilled with fossil calcite, no visible porosity or shows.
1,837.50 to 1,837.60 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, recrystallized very fine crystalline, coral?, unidentifiable fossil shadow, no visible porosity or shows.

Core Report

Storage Units: Metric

Date: February 14, 2013

Core #: 9

Formations Cored: Hume

Cored Interval

From:	1,838.00	To:	1,856.00
Cut:	18.00	Recovered:	17.70 98.33 %
Core Diameter:	89.0		

Coring Company: Corion

Service Representative: R. Nichol, D. Zbitnoff, E. Chouckalis S. Gilburton

Core Bit Information

Bit Make:	NOV	Bit Type:	PR513
Bit Size (OD):	222.0	Serial #:	E140308
Original Hole Size:	222.0		

Remarks:

Detailed Core Descriptions

1,839.50 to 1,839.60 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, slightly argillaceous, recrystallized micro to very fine crystalline, unidentifiable fossil shadow, no visible porosity or shows.
1,841.00 to 1,841.10 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, slightly argillaceous, recrystallized micro to very fine crystalline, unidentifiable coral, amphipora? unidentifiable fossil shadow, no visible porosity or shows.
1,842.50 to 1,842.60 (0.10)	Limestone brown, mudstone, slightly argillaceous, no visible fossil, no visible porosity or shows.
1,844.00 to 1,844.10 (0.10)	Limestone dark brown mudstone as above, slightly argillaceous.
1,845.50 to 1,845.60 (0.10)	Limestone as above, trace pyritic, trace ostracods, dense, no shows with minor dark gray to black, shale laminations, platy, fissile, carbonaceous.
1,847.90 to 1,848.00 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, slightly argillaceous, recrystallized micro to very fine crystalline in part, unidentifiable fossil shadow, no visible porosity or shows.
1,849.40 to 1,849.50 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, slightly argillaceous, unidentifiable fossil shadow, pellets, ostracods, no visible porosity or shows.
1,850.90 to 1,851.00 (0.10)	Limestone dark brown, floatstone with nodule stromatoporoids, lime mud matrix, recrystallized micro to very fine crystalline, argillaceous, shaly in part, unidentifiable fossil casts, no visible porosity, no shows.

Core Report

Storage Units: Metric

1,852.40 to 1,852.50 (0.10)	Limestone as above
1,853.90 to 1,854.00 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, slightly argillaceous, unidentifiable fossil shadow, no visible porosity or shows.
1,855.90 to 1,856.00 (0.10)	Limestone brown, mudstone to wackestone, micrite matrix, slightly argillaceous, recrystallized micro to very fine crystalline, unidentifiable fossil shadow, no visible porosity or shows.

Wireline Logging Summary

Storage Units: Metric

Logging Suite Number:	1	Engineer:	Jeffery Tatlock
Wireline Logging Company:	Schlumberger	Unit Number:	2187
District:	Grande Prairie		
Witness:	Dave Lawrence		
Was Pressure Control Equipment Utilized:	No	Maximum Deviation:	1.300 °
Was the Logging Job Mechanically Assisted:	No	Hole Size:	311.0
Total Lost Time:	2.50		
Loggers' Total Down Time:	0.50		
Total Job Time (From Rig up to Rig down):			

	Measured Depth	True Vertical Depth
Casing Depth Driller	20.00	20.00
Casing Depth Logger	20.00	20.00
Total Depth Driller (Tally)	600.00	599.94
Total Depth Driller (Strap or SLM)		

General Remarks: Loggers arrived at base camp on the night of Jan 29, prior to final call out. Called to location from camp @ 05:00 hrs.

Logging Run #: 1
Date: Jan 30, 2012

Drilling Fluid Data

Drilling Fluid Type:	Gel Chem				
Fluid Density:	1150.0	Viscosity:	88	pH:	8.0
Fluid Loss:					7.0
Mud Resistivity (Rm):	@	°			
Mud Resistivity (Rm) @ BHT:	@	°	Maximum Temperature:	30.9 °	
Mud Filtrate Resistivity (Rmf):	@	°	Source (Rmf):		
Mud Cake Resistivity (Rmc):	@	°	Source (Rmc):		

Logging Run Information

Date on Bottom: Jan 30, 2013
Total Depth Logger: 600.00 (MD) 600.00 (TVD)

Logging Tools: AIT, DSI, PPC, TLD, HGNS, TLD2, GPIT

Remarks: Wiper tripped twice before logging, trip out to log was good.

Hole Conditions: Good

Wireline Logging Summary

Storage Units: Metric

Logging Suite Number: 2
Wireline Logging Company: Schlumberger
District: Grande Prairie
Witness: Dave Lawrence

Engineer: Jeffrey Tatlock
Unit Number: 2187

Was Pressure Control Equipment Utilized: No **Maximum Deviation:** 2.500 °
Was the Logging Job Mechanically Assisted: No **Hole Size:** 222.0

Total Lost Time:

Loggers' Total Down Time:

Total Job Time (From Rig up to Rig down):

	Measured Depth	True Vertical Depth
Casing Depth Driller	596.78	596.72
Casing Depth Logger	597.00	596.94
Total Depth Driller (Tally)	1,856.00	1,855.94
Total Depth Driller (Strap or SLM)		

General Remarks: There were 5 logging runs for logging job#2.

Logging Run #: 1
Date: Feb 15, 2013

Drilling Fluid Data

Drilling Fluid Type: Invert (versaclean)

Fluid Density: 945.0 **Viscosity:** 84 **pH:** **Fluid Loss:**

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ ° **Maximum Temperature:** 66.2 °
Mud Filtrate Resistivity (Rmf): @ ° **Source (Rmf):**
Mud Cake Resistivity (Rmc): @ ° **Source (Rmc):**

Logging Run Information

Date on Bottom: Feb 15, 2013

Total Depth Logger: 1,858.00 (MD) **1,857.94 (TVD)**

Logging Tools: AIT- Lithoscanner-TLD-HGNS-GR-TLD2

Remarks: Wiper tripped to surface casing.

Hole Conditions: Good

Wireline Logging Summary

Storage Units: Metric

Logging Run #: 2
Date: Feb 16, 2013

Drilling Fluid Data

Drilling Fluid Type:	Invert	Fluid Density:	945.0	Viscosity:	84	pH:		Fluid Loss:	
Mud Resistivity (Rm):	@	°							
Mud Resistivity (Rm) @ BHT:	@	°						Maximum Temperature:	66.2 °
Mud Filtrate Resistivity (Rmf):	@	°						Source (Rmf):	
Mud Cake Resistivity (Rmc):	@	°						Source (Rmc):	

Logging Run Information

Date on Bottom:	Feb 16, 2013	
Total Depth Logger:	1,857.60 (MD)	1,857.54 (TVD)
Logging Tools:	UBI / dual OBMI / GPIT /PPC / SSCAN / PPC / GR	
Remarks:	UBI failed after 60 meters, got working again, lost approx 2 hours.	
Hole Conditions:	Good	

Wireline Logging Summary

Storage Units: Metric

Logging Run #: 3
Date: Feb 16, 2013

Drilling Fluid Data

Drilling Fluid Type:	Invert	Viscosity:	77	pH:	Fluid Loss:
Fluid Density:	945.0				
Mud Resistivity (Rm):	@	°			
Mud Resistivity (Rm) @ BHT:	@	°	Maximum Temperature:	66.2 °	
Mud Filtrate Resistivity (Rmf):	@	°	Source (Rmf):		
Mud Cake Resistivity (Rmc):	@	°	Source (Rmc):		

Logging Run Information

Date on Bottom: Feb 17, 2013
Total Depth Logger: 1,857.60 (MD) 1,857.54 (TVD)

Logging Tools: ADT / HNGS / PPC / CMR+ / GR

Remarks:

Hole Conditions: Good

Wireline Logging Summary

Storage Units: Metric

Logging Run #: 4
Date: Feb 17, 2013

Drilling Fluid Data

Drilling Fluid Type: Invert
Fluid Density: 945.0 **Viscosity:** 77 **pH:** **Fluid Loss:**

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ ° **Maximum Temperature:** 66.2 °
Mud Filtrate Resistivity (Rmf): @ ° **Source (Rmf):**
Mud Cake Resistivity (Rmc): @ ° **Source (Rmc):**

Logging Run Information

Date on Bottom: Feb 17, 2013
Total Depth Logger: 1,857.60 (MD) 1,857.54 (TVD)

Logging Tools: RST-GR

Remarks:

Hole Conditions: Good

Wireline Logging Summary

Storage Units: Metric

Logging Run #: 5
Date: Feb 18, 2013

Drilling Fluid Data

Drilling Fluid Type: Invert
Fluid Density: 945.0 **Viscosity:** 77 **pH:** **Fluid Loss:**

Mud Resistivity (Rm): @ °
Mud Resistivity (Rm) @ BHT: @ ° **Maximum Temperature:** 66.2 °
Mud Filtrate Resistivity (Rmf): @ ° **Source (Rmf):**
Mud Cake Resistivity (Rmc): @ ° **Source (Rmc):**

Logging Run Information

Date on Bottom: Feb 18, 2013
Total Depth Logger: 1,857.60 (MD) 1,857.54 (TVD)

Logging Tools: USIT / CBL

Remarks:

Hole Conditions: Good

Deviation / Directional Survey Report

Directional Drilling Company: Beaver
Directional Drillers:
Measured While Drilling (MWD) Hands:
Survey Type: drift
Survey Mode: wireline
Survey Date: Jan 24, 2013
Survey Calculation Method: minimum curvature
Target Azimuth: 360.00 °
Dog Leg Severity Characteristic: 30.00

Survey Tie-In Information

Tie-In Co-ordinates

Latitude:

Longitude:

N / S:

E / W:

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity

Kick-Off (Whipstock) Information

Kick-Off Co-ordinates

Latitude:

Longitude:

N / S:

E / W:

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00

Remarks:

Survey Points

Storage Units:

Metric

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
29.00		0.500					
58.00		0.500					
86.00		0.200					
114.00		0.800					
142.00		0.100					
171.00		0.600					
199.00		0.700					
228.00		1.200					
257.00		0.900					
287.00		0.200					
314.00		1.000					
354.00		0.900					
390.00		1.100					
439.00		1.100					
478.00		1.300					
516.00		0.300					
555.00		1.300					
592.00		0.600					

Deviation / Directional Survey Report

Directional Drilling Company:	Schlumberger
Directional Drillers:	Yong Zhao
Measured While Drilling (MWD) Hands:	Reg Shipley
Survey Type:	magnetic
Survey Mode:	MWD
Survey Date:	Feb 3, 2013
Survey Calculation Method:	minimum curvature
Target Azimuth:	0.00 °
Dog Leg Severity Characteristic:	30.00

Survey Tie-In Information

Tie-In Co-ordinates

Latitude:

Longitude:

N / S:

E / W:

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
570.00	569.95	0.420	82.75	1.61	5.36		

Kick-Off (Whipstock) Information

Kick-Off Co-ordinates

Latitude:

Longitude:

N / S:

E / W:

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00

Remarks: Surveys from 0 - 570 meters were done with Schlumberger GPIT.

Survey Points

Storage Units:

Metric

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
10.00	10.00	0.800	69.05	0.02	0.07	0.02	2.40
20.00	20.00	0.850	78.21	0.07	0.20	0.07	0.42
30.00	30.00	0.740	91.01	0.08	0.34	0.08	0.62
40.00	40.00	0.710	90.42	0.08	0.47	0.08	0.09
50.00	50.00	0.650	50.91	0.11	0.57	0.11	1.39
60.00	60.00	0.360	18.18	0.18	0.63	0.18	1.19
70.00	70.00	0.270	245.58	0.20	0.61	0.20	1.73
80.00	80.00	0.270	213.47	0.17	0.58	0.17	0.45
90.00	90.00	0.360	176.36	0.12	0.57	0.12	0.65
100.00	100.00	0.520	166.45	0.04	0.58	0.04	0.53
110.00	109.99	0.630	132.87	-0.04	0.63	-0.04	1.05
120.00	119.99	0.790	99.41	-0.09	0.74	-0.09	1.31
130.00	129.99	0.630	76.99	-0.09	0.86	-0.09	0.95
140.00	139.99	0.380	31.01	-0.05	0.93	-0.05	1.37
150.00	149.99	0.300	351.04	0.01	0.95	0.01	0.73
160.00	159.99	0.260	226.91	0.02	0.93	0.02	1.49
170.00	169.99	0.130	239.42	0.00	0.90	0.00	0.41
180.00	179.99	0.320	189.47	-0.04	0.89	-0.04	0.77
190.00	189.99	0.320	189.13	-0.09	0.88	-0.09	0.01
200.00	199.99	0.480	160.01	-0.16	0.89	-0.16	0.76
210.00	209.99	0.670	135.59	-0.24	0.94	-0.24	0.92
220.00	219.99	0.740	120.62	-0.31	1.04	-0.31	0.59
230.00	229.99	0.950	86.91	-0.34	1.18	-0.34	1.59
240.00	239.99	0.950	67.80	-0.31	1.34	-0.31	0.95
250.00	249.99	0.550	27.39	-0.23	1.43	-0.23	1.92
260.00	259.99	0.550	34.26	-0.15	1.48	-0.15	0.20
270.00	269.99	0.570	30.24	-0.07	1.54	-0.07	0.13
280.00	279.99	0.520	25.80	0.02	1.58	0.02	0.20
290.00	289.99	0.610	29.79	0.10	1.63	0.10	0.29
300.00	299.99	0.560	27.49	0.19	1.68	0.19	0.17
310.00	309.98	0.500	21.63	0.28	1.71	0.28	0.24
320.00	319.98	0.270	32.75	0.34	1.74	0.34	0.72

330.00	329.98	0.270	81.96	0.36	1.78	0.36	0.67
340.00	339.98	0.900	98.56	0.35	1.88	0.35	1.94
350.00	349.98	1.200	70.84	0.37	2.06	0.37	1.74
360.00	359.98	1.130	65.32	0.45	2.25	0.45	0.40
370.00	369.98	1.050	61.59	0.54	2.42	0.54	0.32
380.00	379.98	1.050	62.29	0.62	2.58	0.62	0.04
390.00	389.98	0.970	58.73	0.71	2.73	0.71	0.30
400.00	399.97	1.070	65.17	0.79	2.89	0.79	0.46
410.00	409.97	0.990	65.67	0.87	3.05	0.87	0.24
420.00	419.97	1.100	70.31	0.93	3.22	0.93	0.42
430.00	429.97	0.970	66.96	1.00	3.39	1.00	0.43
440.00	439.97	0.840	59.75	1.07	3.53	1.07	0.52
450.00	449.97	0.930	68.17	1.14	3.67	1.14	0.47
460.00	459.96	1.020	70.07	1.20	3.83	1.20	0.29
470.00	469.96	0.890	72.26	1.25	3.99	1.25	0.41
480.00	479.96	0.760	70.61	1.30	4.12	1.30	0.40
490.00	489.96	0.880	67.97	1.35	4.26	1.35	0.38
500.00	499.96	1.000	73.44	1.40	4.41	1.40	0.45
510.00	509.96	1.040	74.27	1.45	4.58	1.45	0.13
520.00	519.96	1.010	68.89	1.51	4.75	1.51	0.30
530.00	529.96	0.990	76.06	1.56	4.92	1.56	0.38
540.00	539.95	0.940	74.58	1.60	5.08	1.60	0.17
550.00	549.95	0.460	90.85	1.62	5.20	1.62	1.54
560.00	559.95	0.460	100.96	1.62	5.28	1.62	0.24
570.00	569.95	0.420	82.75	1.61	5.35	1.61	0.43
600.59	600.54	1.010	110.09	1.53	5.72	1.53	0.65
619.94	619.89	1.010	122.48	1.38	6.02	1.38	0.34
639.09	639.03	1.100	125.10	1.19	6.32	1.19	0.16
651.96	651.90	1.100	125.12	1.05	6.52	1.05	0.00
670.96	670.90	1.490	123.41	0.80	6.87	0.80	0.62
715.36	715.28	1.710	126.48	0.09	7.89	0.09	0.16
726.00	725.92	1.410	120.59	-0.07	8.13	-0.07	0.96
735.65	735.56	1.010	128.42	-0.18	8.30	-0.18	1.34
754.85	754.76	1.320	119.50	-0.40	8.62	-0.40	0.56
764.71	764.62	1.100	112.99	-0.49	8.81	-0.49	0.79

784.15	784.05	1.320	111.59	-0.64	9.19	-0.64	0.34
793.85	793.75	1.190	81.31	-0.67	9.39	-0.67	2.06
812.06	811.96	1.410	51.12	-0.50	9.75	-0.50	1.17
830.96	830.85	1.580	49.01	-0.18	10.13	-0.18	0.28
860.24	860.12	2.020	64.70	0.30	10.90	0.30	0.67
879.60	879.46	1.890	62.98	0.59	11.49	0.59	0.22
898.73	898.59	1.190	23.61	0.92	11.85	0.92	1.93
926.60	926.45	1.320	19.08	1.49	12.08	1.49	0.18
955.60	955.44	1.710	32.88	2.17	12.42	2.17	0.55
985.10	984.93	1.580	42.42	2.84	12.93	2.84	0.31
1,014.95	1,014.76	1.890	51.51	3.45	13.60	3.45	0.42
1,043.60	1,043.40	2.110	57.62	4.02	14.41	4.02	0.32
1,071.58	1,071.36	2.420	62.41	4.57	15.37	4.57	0.39
1,090.66	1,090.42	2.110	51.60	4.98	16.00	4.98	0.83
1,101.16	1,100.91	2.290	55.20	5.22	16.33	5.22	0.65
1,119.52	1,119.26	1.190	24.40	5.60	16.71	5.60	2.30
1,138.74	1,138.48	1.320	299.98	5.89	16.60	5.89	2.64
1,177.53	1,177.26	1.190	321.29	6.43	15.96	6.43	0.37
1,196.83	1,196.56	1.010	337.60	6.74	15.77	6.74	0.56
1,216.03	1,215.75	1.580	351.22	7.16	15.66	7.16	1.01
1,235.60	1,235.32	1.010	6.29	7.60	15.64	7.60	1.01
1,264.35	1,264.06	1.580	321.29	8.16	15.42	8.16	1.17
1,274.14	1,273.85	1.890	325.50	8.40	15.24	8.40	1.03
1,301.38	1,301.08	0.700	320.72	8.90	14.88	8.90	1.31
1,321.64	1,321.34	0.620	328.98	9.09	14.75	9.09	0.18
1,349.45	1,349.15	0.480	352.80	9.33	14.66	9.33	0.29
1,368.89	1,368.59	0.480	345.11	9.49	14.63	9.49	0.10
1,388.05	1,387.75	0.790	33.41	9.68	14.68	9.68	0.93
1,407.23	1,406.92	1.010	41.48	9.92	14.86	9.92	0.40
1,426.40	1,426.09	1.320	63.11	10.14	15.17	10.14	0.83
1,445.99	1,445.67	1.800	65.49	10.37	15.65	10.37	0.74
1,465.03	1,464.70	2.590	65.18	10.68	16.32	10.68	1.24
1,484.30	1,483.96	1.410	68.39	10.95	16.93	10.95	1.84
1,503.96	1,503.61	0.220	67.29	11.05	17.19	11.05	1.82
1,522.79	1,522.44	0.700	78.01	11.09	17.34	11.09	0.77

1,541.84	1,541.49	2.020	72.61	11.21	17.77	11.21	2.09
1,580.88	1,580.52	0.790	107.28	11.34	18.68	11.34	1.11
1,599.91	1,599.54	1.100	93.61	11.29	18.99	11.29	0.60
1,607.85	1,607.48	1.100	88.69	11.28	19.14	11.28	0.36

Deviation / Directional Survey Report

Directional Drilling Company: Schlumberger Logging
Directional Drillers:
Measured While Drilling (MWD) Hands:
Survey Type: magnetic
Survey Mode: wireline
Survey Date: Feb 18, 2013
Survey Calculation Method: minimum curvature
Target Azimuth: 0.00 °
Dog Leg Severity Characteristic: 30.00

Survey Tie-In Information

Tie-In Co-ordinates

Latitude:

Longitude:

N / S:

E / W:

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
1,607.85	1,607.48	1.100	88.69	11.28	19.14	11.28	0.36

Kick-Off (Whipstock) Information

Kick-Off Co-ordinates

Latitude:

Longitude:

N / S:

E / W:

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity

Remarks:

Survey Points

Storage Units:

Metric

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
1,610.00	1,609.63	0.983	93.28	11.28	19.18	11.28	2.01
1,620.00	1,619.63	1.080	93.28	11.27	19.36	11.27	0.29
1,630.00	1,629.63	1.217	91.77	11.26	19.56	11.26	0.42
1,640.00	1,639.62	1.327	90.51	11.26	19.78	11.26	0.34
1,650.00	1,649.62	1.397	90.34	11.25	20.02	11.25	0.21
1,660.00	1,659.62	1.472	90.97	11.25	20.27	11.25	0.23
1,670.00	1,669.61	1.569	93.21	11.24	20.53	11.24	0.34
1,680.00	1,679.61	1.694	94.80	11.22	20.82	11.22	0.40
1,690.00	1,689.61	1.828	95.90	11.19	21.12	11.19	0.42
1,700.00	1,699.60	1.957	97.37	11.15	21.45	11.15	0.41
1,710.00	1,709.59	2.105	97.79	11.11	21.80	11.11	0.45
1,720.00	1,719.59	2.265	98.97	11.05	22.18	11.05	0.50
1,730.00	1,729.58	2.424	99.66	10.99	22.58	10.99	0.48
1,740.00	1,739.57	2.583	100.61	10.91	23.01	10.91	0.49
1,750.00	1,749.56	2.768	101.43	10.82	23.47	10.82	0.57
1,760.00	1,759.54	2.951	102.44	10.72	23.96	10.72	0.57
1,770.00	1,769.53	3.120	103.02	10.60	24.48	10.60	0.52
1,780.00	1,779.52	3.290	103.61	10.47	25.02	10.47	0.52
1,790.00	1,789.50	3.444	103.92	10.33	25.59	10.33	0.46
1,800.00	1,799.48	3.623	103.54	10.18	26.19	10.18	0.54
1,810.00	1,809.46	3.817	103.90	10.03	26.82	10.03	0.59
1,820.00	1,819.43	3.993	103.96	9.87	27.48	9.87	0.53
1,830.00	1,829.41	4.148	104.10	9.69	28.17	9.69	0.46

Drilling Fluid Summary

Storage Units: Metric

Drilling Fluid Type:	Spud Mud & Gel Chem	From:	0	To:	600
Drilling Fluid Type:	Invert (Versaclean)	From:	600	To:	1,856

Work Schedule

Storage Units: Metric

Company:	Black Gold Geotechnical			
Geologist:	Dave Lawrence			
Work Performed	From:	Jan 24, 2013	To:	Feb 14, 2013
Depths Logged	From:	0.0	To:	1,856.0
Remarks:	Stayed on location until Feb 19 to supervise wireline logging.			

Formation Top Summary

Storage Units:

Metric

Kelly Bushing Elevation: 257.60
Ground Elevation: 252.40

Casing Flange Elevation:

252.73

**** All Depths measured from Kelly Bushing Elevation ****

Group Formation Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
<i>Little Bear</i>	29.00	31.00	31.00			226.60	
<i>Slater River</i>	48.00	36.00	36.00			221.60	
<i>Arctic Red</i>	578.00	570.00	569.94	570.00	569.94	-312.34	
<i>Sans Sault</i>	813.00	787.00	786.94	785.80	785.74	-528.14	
<i>Martin House</i>	888.00	882.50	882.44	881.30	881.24	-623.64	
<i>Imperial</i>	958.00	962.50	962.44	961.50	961.44	-703.84	
<i>Upper Canol</i>	1648.00	1642.50	1642.44	1647.00	1646.94	-1389.34	
<i>Lower Canol</i>	1673.00	1679.00	1678.94	1679.00	1678.94	-1421.34	
<i>Hare Indian</i>	1768.00			1788.00	1787.94	-1530.34	
<i>Bluefish</i>	1783.00			1796.00	1795.94	-1538.34	
<i>Hume</i>	1798.00	1804.00	1803.94	1805.30	1805.24	-1547.64	

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 257.60
Ground Elevation: 252.40

Casing Flange Elevation:

252.73

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Little Bear
Member:
Boundary Type: conformable
Fault Type:

Era: mesozoic
Series:
Period: Cretaceous
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	31.00	31.00	226.60	
Log Top				

Evaluation:

The Little Bear consisted of Sandstone stringers light gray, very fine grained, sub angular, well sorted, clay cement, minor dark lithic grains, poor trace glauconitic, occasionally silty, no visible porosity, no shows.

Conclusion:

Zone of little interest.

Group:
Formation: Slater River
Member:
Boundary Type: conformable
Fault Type:

Era: mesozoic
Series:
Period: Cretaceous
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	36.00	36.00	221.60	
Log Top				

Evaluation:

The Slater River consisted of interbedded Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace pyritic, slightly silty in part, trace sideritic with trace brown siderite fragments with trace minor Siltstone stringers, medium gray, clay cement, tight, no shows. With some interbedded Sandstone salt and pepper, fine grained, sub angular, moderately well sorted, siliceous & slightly calcareous cement, kaolin matrix in part, occasional dark lithic grains, poor trace pyritic, poor to fair intergranular porosity 8%, no visible shows.

Conclusion:

The sand at 310 meters had some fair intergranular porosity, but the lack of shows indicate that this sand is wet.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 257.60
Ground Elevation: 252.40

Casing Flange Elevation:

252.73

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Arctic Red
Member:
Boundary Type: disconformable
Fault Type:

Era: mesozoic
Series:
Period: Cretaceous
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	570.00	569.94	-312.34	
Log Top	570.00	569.94	-312.34	

Evaluation:

The Artic Red consisted of predominately Shale: medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus., trace Siltstone stringers light to medium gray, calcareous & clay cement, tight, no show.

Conclusion:

Zone of little interest.

Group:
Formation: Sans Sault
Member:
Boundary Type: conformable
Fault Type:

Era: mesozoic
Series:
Period: Cretaceous
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	787.00	786.94	-529.34	
Log Top	785.80	785.74	-528.14	

Evaluation:

The Sans Sault consisted of predominately Shale: medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments with trace minor light gray claystone laminations as above.

Conclusion:

Zone of little interest.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 257.60
Ground Elevation: 252.40

Casing Flange Elevation:

252.73

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Martin House
Member:
Boundary Type: conformable
Fault Type:

Era: mesozoic
Series:
Period: Cretaceous
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	882.50	882.44	-624.84	
Log Top	881.30	881.24	-623.64	

Evaluation:

The Martin House consisted of interbedded Sandstone: cream to very light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, trace dark lithic grains, calcareous & kaolin cement, silty, grades to sandy siltstone in part, poor trace pyritic, occasionally glauconitic, no visible porosity, no shows and Shale: medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, trace sandy, sandy in part, trace brown siderite fragments.

Conclusion:

The sands appear too tite for hydrocarbon production.

Group:
Formation: Imperial
Member:
Boundary Type: disconformable
Fault Type:

Era: paleozoic
Series:
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	962.50	962.44	-704.84	
Log Top	961.50	961.44	-703.84	

Evaluation:

The Imperial consisted of predominately Shale: medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part. There was a sandy section in the formation from 1085-1290 meters with interbedded Sandstone: very light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, silty, shaly in part, trace dark lithic grains, poor trace glauconitic, grades to siltstone, tight, no shows.

Conclusion:

Zone of little interest.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 257.60
Ground Elevation: 252.40

Casing Flange Elevation:

252.73

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: Upper Canol
Member:
Boundary Type: conformable
Fault Type:

Era: paleozoic
Series:
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1642.50	1642.44	-1384.84	
Log Top	1647.00	1646.94	-1389.34	

Evaluation:

The Upper Canol was cored with sleeve cores and only the ends of the sleeves were described, so evaluation will have to be determined at a later date.

Conclusion:

Group:
Formation: Hare Indian
Member:
Boundary Type: conformable
Fault Type:

Era: paleozoic
Series:
Period: Devonian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top				
Log Top	1788.00	1787.94	-1530.34	

Evaluation:

Conclusion:

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 257.60
Ground Elevation: 252.40

Casing Flange Elevation:

252.73

All Depths Measured from Kelly Bushing Elevation

Group: Era: paleozoic
Formation: Bluefish Series:
Member: Period: Devonian
Boundary Type: conformable Stage:
Fault Type: Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top				
Log Top	1796.00	1795.94	-1538.34	

Evaluation:

Conclusion:

Group: Era: paleozoic
Formation: Hume Series:
Member: Period: Devonian
Boundary Type: conformable Stage:
Fault Type: Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	1804.00	1803.94	-1546.34	
Log Top	1805.30	1805.24	-1547.64	

Evaluation:

Conclusion:

Sample Descriptions

Storage Units:

Metric

0.00 to 5.00 (5.00)	100% Sandstone rust brown, vitreous & light colored quartz & varicolored chert, medium grained, sub rounded, poor sorting, unconsolidated, abundant varicolored sub rounded chert & quartz pebbles, no visible shows, trace minor gray shale & light gray siltstone.
5.00 to 10.00 (5.00)	100% Shale light to medium gray, blocky, soft, occasionally silty, occasional carbonaceous specks with 10% Siltstone stringers, light gray, clay matrix, very slightly calcareous, occasionally sandy, no visible porosity, no shows.
10.00 to 15.00 (5.00)	100% Shale light to medium gray, blocky, soft, occasionally silty, occasional carbonaceous specks with 10% Siltstone stringers, light gray, clay matrix, very slightly calcareous, occasionally sandy, carbonaceous grains, no visible porosity, no shows.
15.00 to 20.00 (5.00)	100% Shale as above, trace glauconitic, trace pyrite nodules.
20.00 to 25.00 (5.00)	100% Cement
25.00 to 30.00 (5.00)	100% Cement
30.00 to 35.00 (5.00)	70% Shale light to medium gray, blocky, soft, occasionally sandy & silty, trace carbonaceous specks with minor Siltstone stringers as above. 30% Sandstone light gray, very fine grained, sub angular, well sorted, clay cement, minor dark lithic grains, poor trace glauconitic, occasionally silty, no visible porosity, no shows.
35.00 to 40.00 (5.00)	80% Shale as above 20% SANDSTONE light gray, very fine grained, sub angular, well sorted, clay cement, dark lithic grains, poor trace glauconitic, occasionally silty, no visible porosity, no shows.
40.00 to 45.00 (5.00)	100% Shale light to medium gray, blocky, slightly micromicaceous, trace silty in part, trace carbonaceous specks with minor Siltstone stringers as above with 10% Sandstone stringers & laminations, light gray, very fine grained, sub angular, well sorted, clay cement, dark lithic grains, poor trace glauconitic, occasionally silty, no visible porosity, no shows.
45.00 to 50.00 (5.00)	100% Shale light to medium gray, blocky, slightly micromicaceous, trace silty in part, trace carbonaceous specks.

Sample Descriptions

Storage Units:

Metric

50.00 to 55.00 (5.00)	100% Shale light to medium gray, blocky, slightly micromicaceous, trace silty in part, trace carbonaceous specks with minor Sandstone stringers as above.
55.00 to 60.00 (5.00)	100% Shale light to medium gray, blocky, slightly micromicaceous, trace silty in part, trace carbonaceous specks with 10% Siltstone stringers as above in part with Siltstone light gray brown, sandy, sideritic, shaly, tight, no shows.
60.00 to 65.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, slightly micromicaceous, trace silty in part, trace carbonaceous specks, sideritic in part with trace brown siderite fragments with minor Siltstone stringers as above.
65.00 to 70.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, slightly micromicaceous, trace silty in part, trace carbonaceous specks, sideritic in part with trace brown siderite fragments with minor Siltstone stringers as above.
70.00 to 75.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, slightly micromicaceous, trace silty in part, trace carbonaceous specks, sideritic in part with trace brown siderite fragments with minor Siltstone stringers as above.
75.00 to 80.00 (5.00)	100% Shale predominately medium gray, blocky, platy in part, slightly micromicaceous, trace silty, soft to firm, minor disseminated pyrite & trace pyrite nodules, minor Siltstone stringers, light gray, clay matrix, trace calcareous, trace dark lithic grains, tight, no visible show.
80.00 to 85.00 (5.00)	100% Shale as above
85.00 to 90.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, trace platy, slightly micromicaceous, trace silty in part, trace carbonaceous specks, pyrite nodules, minor sideritic in part with trace brown siderite fragments with minor Siltstone stringers as above.
90.00 to 95.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, platy in part, slightly micromicaceous, trace silty in part, occasionally sandy, trace carbonaceous specks, pyritic with occasional pyrite nodules, minor sideritic in part with trace brown siderite fragments with minor Siltstone stringers, light to medium gray, clay matrix, slightly sandy, trace dark lithic grains, tight, no shows.
95.00 to 100.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, platy in part, slightly micromicaceous, trace silty in part, occasionally sandy, trace carbonaceous specks, pyritic with occasional pyrite nodules, minor sideritic in part with trace brown siderite fragments.

Sample Descriptions

Storage Units:

Metric

100.00 to 105.00 (5.00)	100% Shale as above
105.00 to 110.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, platy in part, soft to slightly firm, slightly micromicaceous, trace silty in part, trace sandy, trace carbonaceous specks, pyritic with trace pyrite nodules, minor sideritic in part with trace brown siderite fragments.
110.00 to 115.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, platy in part, moderately firm, slightly micromicaceous, trace silty in part, trace sandy, trace carbonaceous specks, pyritic with trace pyrite nodules, minor sideritic in part with minor Siltstone laminations as above.
115.00 to 120.00 (5.00)	100% Shale light to medium gray, trace gray brown in part, blocky, platy in part, moderately firm, slightly micromicaceous, trace silty in part, trace sandy, trace carbonaceous specks, pyritic with trace pyrite nodules, minor sideritic in part with minor Siltstone laminations as above.
120.00 to 125.00 (5.00)	100% Shale predominately light to medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, trace silty in part, trace carbonaceous specks, trace pyritic, minor sideritic in part with minor Siltstone laminations as above.
125.00 to 130.00 (5.00)	100% Shale predominately light to medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, trace silty in part, trace carbonaceous specks, trace pyritic with poor trace pyrite nodules, minor sideritic in part with minor Siltstone laminations as above.
130.00 to 135.00 (5.00)	100% Shale predominately light to medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, trace pyritic with poor trace pyrite nodules.
135.00 to 140.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, trace pyritic with poor trace pyrite nodules.
140.00 to 145.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, increasing silty, trace pyritic with poor trace pyrite nodules with minor Siltstone laminations light to medium gray, clay cement, grades to silty shale in part, tight, no shows.
145.00 to 150.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, occasionally silty, pyritic with trace pyrite nodules with minor Siltstone laminations light to medium gray, clay cement, grades to silty shale in part, tight, no shows.

Sample Descriptions

Storage Units: Metric

150.00 to 155.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, occasionally silty, sandy in part, pyritic with trace pyrite nodules with minor Siltstone laminations as above.
155.00 to 160.00 (5.00)	100% Shale as above, increasing sideritic with Sandstone stringers 10%, light gray, very fine grained, sub angular, well sorted, clay cement, slightly calcareous, pyritic, grades to sandy siltstone in part, tight, no shows.
160.00 to 165.00 (5.00)	100% Shale as above, Sandstone stringers increasing to 15%.
165.00 to 170.00 (5.00)	100% Shale light to medium gray, blocky, trace platy in part, moderately firm, slightly micromicaceous, occasionally silty, sandy in part, sideritic in part with trace brown siderite fragments, trace pyritic with trace pyrite nodules with minor Sandstone laminations as above.
170.00 to 175.00 (5.00)	100% Shale light to medium gray, blocky, platy in part, moderately firm, slightly micromicaceous, occasionally silty, trace sandy in part, slightly sideritic in part, trace pyritic with trace pyrite nodules with minor Sandstone laminations light gray, salt and pepper, lower fine grained, sub angular, moderately well sorted, calcareous, slightly carbonaceous, trace glauconitic, shaly in part, tight, no show.
175.00 to 180.00 (5.00)	100% Shale light to medium gray, blocky, platy in part, moderately firm, slightly micromicaceous, occasionally silty, trace sandy in part, slightly sideritic in part, trace pyritic with trace pyrite nodules with minor Sandstone laminations light gray, salt and pepper, lower fine grained, sub angular, moderately well sorted, calcareous, slightly carbonaceous, trace glauconitic, shaly in part, tight, no show.
180.00 to 185.00 (5.00)	100% Shale light to medium gray, blocky, platy in part, moderately firm, slightly micromicaceous, occasionally silty, trace sandy in part, slightly sideritic in part, trace pyritic with trace pyrite nodules with 10% Sandstone laminations light gray, salt and pepper, lower fine grained, sub angular, moderately well sorted, calcareous, slightly carbonaceous, trace glauconitic, shaly in part, tight, no show.
185.00 to 190.00 (5.00)	100% Shale light to medium gray, blocky, platy in part, moderately firm, slightly micromicaceous, occasionally silty, trace sandy in part, slightly sideritic in part, trace pyritic with trace pyrite nodules with minor Sandstone laminations light gray, salt and pepper, lower fine grained, sub angular, moderately well sorted, calcareous, slightly carbonaceous, trace glauconitic, shaly in part, tight, no show.
190.00 to 195.00 (5.00)	100% Shale predominately Shale as above.

Sample Descriptions

Storage Units:

Metric

195.00 to 200.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace minor Siltstone stringers as above.
200.00 to 205.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite, minor Siltstone stringers as above.
205.00 to 210.00 (5.00)	100% Shale as above, increasing silty, trace minor shell fragments (brachiopods?), trace sideritic with 5% Siltstone stringers, medium gray, clay matrix, pyritic, shaly, sandy in part, occasionally grades to very fine grained sandstone in part, tight, no shows.
210.00 to 215.00 (5.00)	80% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace sandy in part, trace pyrite, minor Siltstone stringers as above.
	20% Sandstone light to medium gray, very fine grained, sub angular, moderately well sorted, calcareous & clay cement, carbonaceous grains, slightly pyritic, silty, shaly, tight, no shows.
215.00 to 220.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite with 5% Sandstone stringers as above.
220.00 to 225.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite, minor Siltstone stringers, light to medium gray, clay & calcareous cement, carbonaceous grains, shaly, trace pyritic, tight, no shows.
225.00 to 230.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite, minor Siltstone stringers, light to medium gray, clay & calcareous cement, carbonaceous grains, shaly, trace pyritic, tight, no shows.
230.00 to 235.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite, minor Siltstone stringers, light to medium gray, clay & calcareous cement, carbonaceous grains, shaly, trace pyritic, tight, no shows.
235.00 to 240.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite, minor Siltstone stringers, light to medium gray, clay & calcareous cement, carbonaceous grains, shaly, trace pyritic, tight, no shows.

Sample Descriptions

Storage Units: Metric

240.00 to 245.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite, slightly sideritic with trace brown siderite fragments with minor Siltstone stringers, light to medium gray, clay & calcareous cement, carbonaceous grains, shaly, trace pyritic, tight, no shows.
245.00 to 250.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace inoceramus, trace pyrite, trace sideritic with minor Siltstone stringers, light to medium gray, clay & calcareous cement, carbonaceous grains, shaly, trace pyritic, tight, no shows.
250.00 to 255.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, slightly silty, moderately firm, trace minor carbonaceous specks, trace pyritic, trace sideritic.
255.00 to 260.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, slightly silty, moderately firm, trace minor carbonaceous specks, trace pyritic, trace sideritic with trace brown siderite fragments, trace inoceramus.
260.00 to 265.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, slightly silty, moderately firm, trace minor carbonaceous specks, trace pyritic, trace sideritic with trace brown siderite fragments.
265.00 to 270.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, slightly silty, moderately firm, trace minor carbonaceous specks, trace pyritic, trace sideritic with trace brown siderite fragments.
270.00 to 275.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace pyritic, trace sideritic with trace brown siderite fragments.
275.00 to 280.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace pyritic, slightly silty in part, trace sideritic with trace brown siderite fragments with trace minor Siltstone stringers, medium gray, clay cement, tight, no shows.
280.00 to 285.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace pyritic, slightly silty in part, trace sideritic with trace brown siderite fragments with minor Siltstone stringers, medium gray, clay cement, tight, no shows.

Sample Descriptions

Storage Units: Metric

285.00 to 290.00 (5.00)	100% Shale predominately medium gray, blocky, trace platy, slightly micromicaceous, moderately firm, trace minor carbonaceous specks, trace pyritic, slightly silty in part, trace sideritic with trace brown siderite fragments with 5% Siltstone stringers, medium gray, clay cement, sandy, grades to very fine grained sandstone in part, carbonaceous specks, tight, no shows.
290.00 to 295.00 (5.00)	100% Shale predominately medium gray, minor sub fissile, slightly micromicaceous, slightly arenaceous, trace disseminated pyrite with <5% Sandstone laminations, light gray, very fine grained, sub angular, well sorted, clay & calcareous cement, slightly silty, no visible porosity, no shows.
295.00 to 300.00 (5.00)	100% Shale predominately medium gray, minor sub fissile, slightly micromicaceous, slightly arenaceous, trace disseminated pyrite, trace siderite fragments with 5% Sandstone laminations, light gray, very fine grained, sub angular, well sorted, clay & calcareous cement, slightly silty, no visible porosity, no shows
300.00 to 305.00 (5.00)	100% Shale predominately medium gray, minor sub fissile, slightly micromicaceous, slightly arenaceous, moderately firm, trace disseminated pyrite with 5% Sandstone laminations as above.
305.00 to 310.00 (5.00)	70% Shale as above 30% Sandstone salt and pepper, fine grained, sub angular, moderately well sorted, siliceous & slightly calcareous cement, kaolin matrix in part, occasional dark lithic grains, poor trace pyritic, poor to fine intergranular porosity 8%, no visible shows.
310.00 to 315.00 (5.00)	60% Sandstone light gray, salt and pepper, fine grained, sub angular, moderately well sorted, siliceous & slightly calcareous cement, kaolin cement in part, dark lithic grains, trace glauconitic, trace pyritic, slightly sideritic, tight to poor intergranular porosity 4%, no visible shows with occasional brown siderite fragments (nodules?) 40% Shale as above
315.00 to 320.00 (5.00)	70% Shale predominately medium gray, minor sub fissile, slightly micromicaceous, slightly arenaceous, trace pyrite, occasionally sideritic with brown siderite fragments in sample. 30% SANDSTONE light to medium gray, light gray brown, lower fine grained, sub angular, moderately well sorted, siliceous & slightly calcareous, kaolin matrix in part, sideritic, trace glauconitic, pyrite, dark lithic grains, increasing shaly, no visible porosity or show.

Sample Descriptions

Storage Units: Metric

320.00 to 325.00 (5.00)	90% Shale light to medium gray, moderately firm, minor sub fissile, trace carbonaceous matter, occasionally colored brown (sideritic) with trace brown siderite fragments, silty & slightly arenaceous in part. 10% Sandstone as above
325.00 to 330.00 (5.00)	100% Shale light to medium gray, moderately firm, minor sub fissile, trace carbonaceous matter, trace inoceramus, occasionally colored brown (sideritic) with trace bnr siderite fragments, silty & slightly arenaceous in part with 5% Sandstone stringers as above.
330.00 to 335.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally colored brown (sideritic) with trace brown siderite fragments, silty & slightly arenaceous in part with 5% Sandstone laminations & stringers as above.
335.00 to 340.00 (5.00)	100% Shale as above, increasing arenaceous with 5% sandstone stringers & laminations as above.
340.00 to 345.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally colored brown (sideritic) with trace bnr siderite fragments, silty & slightly arenaceous in part with 5% Sandstone laminations & stringers as above.
345.00 to 350.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally light gray brown (sideritic), minor silty & slightly sandy in part, trace pyrite nodules with trace Sandstone laminations & lenses as above.
350.00 to 355.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally light gray brown (sideritic), trace brown siderite fragments (nodules), minor silty & slightly sandy in part, trace pyrite nodules with trace Siltstone laminations & lenses, light gray, clay & slightly calcareous cement, no visible porosity, or show.
355.00 to 360.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally light gray brown (sideritic), trace brown siderite fragments (nodules), minor silty & slightly sandy in part, trace pyrite nodules with trace Siltstone laminations as above.
360.00 to 365.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally light gray brown (sideritic), trace brown siderite fragments (nodules), occasionally slightly silty & slightly sandy in part, trace pyrite nodules with trace Siltstone laminations as above.

Sample Descriptions

Storage Units:

Metric

365.00 to 370.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally light gray brown (sideritic), trace brown siderite fragments (nodules), occasionally slightly silty & slightly sandy in part, trace disseminated pyrite with trace Siltstone laminations as above.
370.00 to 375.00 (5.00)	100% Shale light to medium gray, moderately firm, trace carbonaceous specks, trace inoceramus, occasionally light gray brown (sideritic), trace brown siderite fragments (nodules), occasionally slightly silty & slightly sandy in part, trace pyrite nodules with trace Siltstone laminations as above.
375.00 to 380.00 (5.00)	100% Shale as above with trace minor coal lenses.
380.00 to 385.00 (5.00)	100% Shale light to medium gray, minor sub fissile, moderately firm, slightly micromicaceous, trace inoceramus, occasionally light gray brown (sideritic), trace brown siderite fragments (nodules), occasionally slightly silty & slightly sandy in part, trace pyrite nodules with trace Siltstone laminations as above.
385.00 to 390.00 (5.00)	100% Shale as above with 20% Sandstone light to medium gray, salt and pepper, upper fine grained, sub angular, medium sorting, quartz & chert, clay matrix, slightly calcareous, trace siliceous cement, occasional dark lithic grains, trace glauconitic grains, pyirc, occasionally shaly with occasional medium gray shale lenses, no visible porosity, no shows.
390.00 to 395.00 (5.00)	Missed Sample
395.00 to 400.00 (5.00)	100% Shale light to medium gray, minor sub fissile, moderately firm, slightly micromicaceous, trace inoceramus, occasionally light gray brown (sideritic), trace brown siderite fragments (nodules), occasionally slightly silty & slightly sandy in part, trace pyrite nodules with 5% Sandstone stringers as above.
400.00 to 405.00 (5.00)	100% Shale light to medium gray, minor sub fissile, moderately firm, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic with minor Sandstone laminations as above.
405.00 to 410.00 (5.00)	100% Shale light to medium gray, minor sub fissile, moderately firm, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic with minor Sandstone laminations as above.
410.00 to 415.00 (5.00)	100% Shale light to medium gray, minor sub fissile, moderately firm, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic with minor Sandstone laminations as above.

Sample Descriptions

Storage Units:

Metric

415.00 to 420.00 (5.00)	100% Shale light to medium gray, minor sub fissile, moderately firm, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic with minor Sandstone laminations as above.
420.00 to 425.00 (5.00)	100% Shale predominately medium gray, moderately firm, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic with trace minor Sandstone laminations as above.
425.00 to 430.00 (5.00)	80% Shale as above, increasing arenaceous, becoming glauconitic. 20% Sandstone salt and pepper, upper fine grained, sub angular, moderately well sorted, kaolin matrix, slightly siliceous, dark lithic grains, poor trace glauconitic, trace pyritic, no visible porosity or shows.
430.00 to 435.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic. with 5% Sandstone stringers as above.
435.00 to 440.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic, trace pyrite nodules with trace Sandstone laminations as above.
440.00 to 445.00 (5.00)	70% Shale as above 30% Sandstone light gray, salt and pepper, upper fine grained, sub angular, moderately well sorted, kaolin matrix, slightly siliceous, dark lithic grains, poor trace glauconitic, trace pyritic, no visible porosity or shows.
445.00 to 450.00 (5.00)	80% Shale as above 20% Sandstone as above
450.00 to 455.00 (5.00)	80% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic. 20% Sandstone as above

Sample Descriptions

Storage Units: Metric

455.00 to 460.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic with 5% Sandstone stringers as above.
460.00 to 465.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & slightly sandy in part, trace pyritic with abundant pyrite nodules with 5% Sandstone stringers as above.
465.00 to 470.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & trace sandy in part, trace pyritic, trace pyrite nodules.
470.00 to 475.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & trace sandy in part, trace pyritic with minor Sandstone stringers as above with Sandstone medium gray, very fine grained, sub angular, well sorted, clay cement, silty, shaly, tight, no shows.
475.00 to 480.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & trace sandy in part, trace pyritic, trace pyrite nodules with 5% Sandstone as above.
480.00 to 485.00 (5.00)	100% Shale as above
485.00 to 490.00 (5.00)	100% Shale predominately medium gray, moderately firm, subfissile in part, slightly micromicaceous, minor light gray brown shale (sideritic), trace silty & trace sandy in part, trace pyritic, trace pyrite nodules.
490.00 to 495.00 (5.00)	100% Shale predominately medium gray, minor subfissile, slightly micromicaceous, slightly silty, pyrite nodules, minor gray brown sideritic shale with trace Sandstone laminations as above.
495.00 to 500.00 (5.00)	100% Shale predominately medium gray, minor subfissile, slightly micromicaceous, slightly silty, pyrite nodules, minor gray brown sideritic shale with trace Sandstone laminations as above, trace amber.
500.00 to 505.00 (5.00)	100% Shale predominately medium gray, minor subfissile, slightly micromicaceous, slightly silty, pyrite nodules, minor light gray brown sideritic shale with trace Sandstone laminations as above.

Sample Descriptions

Storage Units: Metric

505.00 to 510.00 (5.00)	100% Shale predominately medium gray, minor subfissile, slightly micromicaceous, slightly silty, pyrite nodules, minor light gray brown sideritic shale with trace Sandstone laminations as above.
510.00 to 515.00 (5.00)	100% Shale predominately medium gray, minor subfissile, slightly micromicaceous, slightly silty, pyrite nodules, minor light gray brown sideritic shale with minor Sandstone laminations as above.
515.00 to 520.00 (5.00)	100% Shale predominately medium gray, subfissile in part, slightly micromicaceous, trace silty, trace pyrite nodules, minor light gray brown sideritic shale.
520.00 to 525.00 (5.00)	100% Shale predominately medium gray, subfissile in part, silty in part, slightly micromicaceous, trace pyrite nodules, trace minor light gray brown sideritic shale, trace minor Sandstone lenses as above.
525.00 to 530.00 (5.00)	100% Shale predominately medium gray, subfissile in part, silty in part, slightly micromicaceous, moderately firm, trace pyrite nodules, trace minor light gray brown sideritic shale, trace minor Sandstone lenses as above.
530.00 to 535.00 (5.00)	100% Shale predominately medium gray, subfissile in part, silty in part, slightly micromicaceous, moderately firm, trace pyrite nodules, trace minor light gray brown sideritic shale, trace minor Sandstone lenses as above.
535.00 to 540.00 (5.00)	100% Shale predominately medium gray, subfissile in part, silty in part, slightly micromicaceous, moderately firm, trace pyrite nodules, trace minor Sandstone lenses as above.
540.00 to 545.00 (5.00)	100% Shale predominately medium gray, subfissile in part, silty in part, slightly micromicaceous, moderately firm, trace pyrite nodules, trace minor Sandstone lenses as above.
545.00 to 550.00 (5.00)	100% Shale predominately medium gray, subfissile in part, silty in part, slightly micromicaceous, moderately firm, trace pyrite nodules, trace minor Sandstone lenses as above.
550.00 to 555.00 (5.00)	100% Shale medium gray, minor dark gray, increasing subfissile in part, slightly carbonaceous, slightly micromicaceous, trace pyrite, trace unidentifiable fossil fragments.
555.00 to 560.00 (5.00)	100% Shale medium gray, minor dark gray, increasing subfissile in part, slightly carbonaceous, slightly micromicaceous, trace pyrite, trace inoceramus.

Sample Descriptions

Storage Units: Metric

560.00 to 565.00 (5.00)	100% Shale medium gray, minor dark gray, increasing subfissile in part, slightly carbonaceous, slightly micromicaceous, trace pyrite nodules, trace inoceramus.
565.00 to 570.00 (5.00)	100% Shale medium gray, minor dark gray, increasing subfissile, increasing carbonaceous, slightly micromicaceous, trace pyrite nodules, inoceramus.
570.00 to 575.00 (5.00)	100% Shale medium gray, minor dark gray, occasionally subfissile, carbonaceous in part, slightly micromicaceous, trace pyrite nodules, inoceramus.
575.00 to 580.00 (5.00)	100% Shale medium gray, occasionally dark gray, occasionally subfissile, carbonaceous in part, micromicaceous, trace pyrite nodules, inoceramus.
580.00 to 585.00 (5.00)	100% Shale medium gray, occasionally dark gray, occasionally subfissile, carbonaceous in part, micromicaceous, trace pyrite nodules, inoceramus.
585.00 to 590.00 (5.00)	100% Shale medium gray, occasionally dark gray, occasionally subfissile, carbonaceous in part, micromicaceous, trace pyrite nodules, inoceramus.
590.00 to 595.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile in part, slightly carbonaceous in part, occasionally micromicaceous, slightly silty in part, pyrite nodules, inoceramus with trace minor Siltstone laminations, light to medium gray, calcareous & clay cement, trace carbonaceous specks, sandy in part, no visible porosity, no shows.
595.00 to 600.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile in part, slightly carbonaceous in part, occasionally micromicaceous, slightly silty in part, pyrite nodules, inoceramus with trace minor Siltstone laminations, light to medium gray, calcareous & clay cement, trace carbonaceous specks, sandy in part, no visible porosity, no shows.
600.00 to 605.00 (5.00)	100% Shale medium to dark gray, subfissile in part, slightly carbonaceous in part, occasionally micromicaceous, slightly silty in part with minor Siltstone laminations, light to medium gray, calcareous & clay cement, trace carbonaceous specks, no visible porosity, no shows.
605.00 to 610.00 (5.00)	100% Shale medium to dark gray, subfissile in part, slightly carbonaceous in part, occasionally micromicaceous, slightly silty in part with minor Siltstone laminations, light to medium gray, calcareous & clay cement, trace carbonaceous specks, no visible porosity, no shows.
610.00 to 615.00 (5.00)	100% Shale medium to dark gray, subfissile in part, slightly carbonaceous in part, occasionally micromicaceous, slightly silty in part, trace pyrite with minor Siltstone laminations, light to medium gray, calcareous & clay cement, trace carbonaceous specks, no visible porosity, no shows. Minor 5% cement in sample.

Sample Descriptions

Storage Units: Metric

615.00 to 620.00 (5.00)	100% Shale medium to dark gray, subfissile in part, slightly carbonaceous in part, occasionally micromicaceous, slightly silty in part with minor Siltstone stringers & laminations as above.
620.00 to 625.00 (5.00)	100% Shale medium to dark gray, subfissile in part, slightly carbonaceous in part, occasionally micromicaceous, slightly silty in part.
625.00 to 630.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace pyrite, trace inoceramus., poor trace siltstone laminations as above.
630.00 to 635.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace pyrite, trace inoceramus., poor trace siltstone laminations as above.
635.00 to 640.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace pyrite, trace inoceramus., poor trace siltstone laminations as above.
640.00 to 645.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace pyrite, trace inoceramus., poor trace siltstone laminations as above.
645.00 to 650.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace pyrite, trace inoceramus., poor trace siltstone laminations as above.
650.00 to 655.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus., poor trace siltstone laminations as above.
655.00 to 660.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus., trace Siltstone stringers light to medium gray, calcareous & clay cement, tight, no show.
660.00 to 665.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus., poor trace siltstone laminations as above.
665.00 to 670.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus., poor trace siltstone laminations as above.

Sample Descriptions

Storage Units:

Metric

670.00 to 675.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus, poor trace siltstone laminations as above.
675.00 to 680.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus, poor trace siltstone laminations as above.
680.00 to 685.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, inoceramus.
685.00 to 690.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace slightly sideritic in part, inoceramus.
690.00 to 695.00 (5.00)	100% Shale as above with trace minor Limestone laminations, mottled crn white, soft, chly, (fractures?) dense.
695.00 to 700.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, good trace inoceramus.
700.00 to 705.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, good trace inoceramus, trace small fractures infilled with white calcite & cream chalky limestone in part.
705.00 to 710.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, good trace inoceramus, trace small fractures infilled with white calcite.
710.00 to 715.00 (5.00)	100% Shale as above, poor trace pyrite with trace minor light gray claystone laminations, soft, waxy.
715.00 to 720.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite, inoceramus, trace minor fractures as above.
720.00 to 725.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, good trace inoceramus, trace small fractures as above
725.00 to 730.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, inoceramus, trace minor micro fractures infilled with calcite as above.
730.00 to 735.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, inoceramus, trace minor micro fractures infilled with calcite as above.

Sample Descriptions

Storage Units: Metric

735.00 to 740.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, inoceramus, trace minor micro fractures infilled with calcite as above.
740.00 to 745.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, inoceramus, trace minor micro fractures infilled with calcite as above.
745.00 to 750.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, inoceramus, trace minor micro fractures infilled with calcite as above.
750.00 to 755.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace inoceramus.
755.00 to 760.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace inoceramus, poor trace fractures as above.
760.00 to 765.00 (5.00)	100% Shale as above, minor Claystone laminations, light gray, sandy, slightly calcareous, occasional abundant mics flakes, grades to clayey sandstone in part.
765.00 to 770.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace inoceramus with minor Claystone as above.
770.00 to 775.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace inoceramus with poor trace Claystone laminations, light gray, soft, waxy, trace sandy as above.
775.00 to 780.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly carbonaceous, occasionally slightly micromicaceous, trace inoceramus, trace pyrite nodules with trace minor Claystone laminations or lenses as above.
780.00 to 785.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly waxy texture in part, slightly micromicaceous in part, slightly carbonaceous, occasionally slightly sideritic with trace minor claystone stringers as above, sandy as above. Poor trace light green shale, waxy texture.
785.00 to 790.00 (5.00)	100% Shale predominately medium gray, subfissile, slightly waxy texture in part, slightly micromicaceous in part, slightly carbonaceous, becoming slightly silty in part, trace pyrite nodules, occasionally slightly sideritic with trace minor claystone stringers as above, sandy as above.

Sample Descriptions

Storage Units: Metric

790.00 to 795.00 (5.00)	100% Shale predominately medium gray, subfissile, slightly waxy texture in part, slightly micromicaceous in part, slightly carbonaceous, slightly silty in part, trace pyrite nodules, occasionally slightly sideritic with occasional brown siderite fragments with trace light gray brown sideritic claystone laminations.
795.00 to 800.00 (5.00)	100% Shale predominately medium gray, subfissile in part, slightly micromicaceous in part, slightly carbonaceous, poor trace silty in part, trace pyrite nodules, occasionally slightly sideritic with occasional brown siderite fragments.
800.00 to 805.00 (5.00)	100% Shale medium with minor dark gray, subfissile in part, slightly micromicaceous in part, slightly carbonaceous, slightly silty in part, trace pyrite nodules & disseminated pyrite, occasionally slightly sideritic with occasional brown siderite fragments.
805.00 to 810.00 (5.00)	100% Shale medium with minor dark gray, subfissile in part, slightly micromicaceous in part, slightly carbonaceous, slightly silty in part, trace pyrite, occasionally slightly sideritic with occasional brown siderite fragments.
810.00 to 815.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments (nodules?), trace minor light gray claystone laminations.
815.00 to 820.00 (5.00)	100% Shale medium to dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments (nodules?) trace minor light gray claystone laminations as above.
820.00 to 825.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments (nodules?)
825.00 to 830.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments.
830.00 to 835.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments with trace minor light gray claystone laminations as above.
835.00 to 840.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile in part, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments.

Sample Descriptions

Storage Units: Metric

840.00 to 845.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments.
845.00 to 850.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments.
850.00 to 855.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, occasionally sideritic with trace brown siderite fragments with trace minor light green shale laminations, soft, waxy texture.
855.00 to 860.00 (5.00)	100% Shale as above with trace Limestone stringers buff, mudstone to wackestone, occasionally chalky, no visible porosity or show
860.00 to 865.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, poor trace sideritic.
865.00 to 870.00 (5.00)	100% Shale as above with trace Limestone stringers as above.
870.00 to 875.00 (5.00)	100% Shale medium gray, minor dark gray, subfissile, slightly micromicaceous, slightly sideritic in part, trace pyrite nodules, poor trace minor limestone lenses as above.
875.00 to 880.00 (5.00)	100% Shale as above, trace inoceramus.
880.00 to 885.00 (5.00)	70% Shale as above, becoming sandy in part. 30% Sandstone cream to very light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, trace dark lithic grains, calcareous & kaolin cement, silty, grades to sandy siltstone in part, poor trace pyritic, occasionally glauconitic, no visible porosity, no shows.
885.00 to 890.00 (5.00)	70% Shale as above 30% Sandstone cream to very light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, trace dark lithic grains, calcareous & kaolin cement, silty, grades to sandy siltstone in part, poor trace pyritic, occasionally glauconitic, no visible porosity, no shows.

Sample Descriptions

Storage Units: Metric

890.00 to 895.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, trace sandy, sandy in part with 5% Sandstone stringers as above.
895.00 to 900.00 (5.00)	100% Shale medium gray, minor dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, trace sandy, sandy in part, trace sideritic with minor Sandstone stringers as above.
900.00 to 905.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, trace sandy, sandy in part, trace brown siderite fragments.
905.00 to 910.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace pyrite nodules, trace sandy, sandy in part
910.00 to 915.00 (5.00)	100% Shale as above
915.00 to 920.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, trace white coarse crystalline calcite (fractures)
920.00 to 925.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile, slightly micromicaceous, slightly carbonaceous, poor trace sideritic, slightly waxy texture in part.
925.00 to 930.00 (5.00)	100% Shale as above with minor Sandstone light gray, very fine grained, sub angular, well sorted, calcareous & clay cement, glauconitic, silty, shaly in part, slightly sideritic in part, no visible porosity, no shows.
930.00 to 935.00 (5.00)	80% Sandstone light gray, very fine grained, sub angular, well sorted, calcareous & clay cement, glauconitic, silty, shaly in part, slightly sideritic in part, no visible porosity, no shows, minor frosted calcite in sample from fractures
	20% Shale as above
935.00 to 940.00 (5.00)	70% Sandstone light gray, very fine grained, sub angular, well sorted, calcareous & clay cement, glauconitic, silty, shaly in part, slightly sideritic in part, no visible porosity, no shows. trace minor calcite as above.
	30% Shale as above

Sample Descriptions

Storage Units:

Metric

940.00 to 945.00 (5.00)	70% Sandstone light gray, very fine grained, sub angular, well sorted, calcareous & clay cement, glauconitic, silty, shaly in part, slightly sideritic in part, no visible porosity, no shows.
	30% Shale medium to occasionally dark gray, carbonaceous in part, slightly micromicaceous, occasionally silty, trace sandy, trace glauconitic.
945.00 to 950.00 (5.00)	80% Shale medium to occasionally dark gray, subfissile in part, carbonaceous in part, slightly micromicaceous, trace silty in part.
	20% Sandstone as above, grades to siltstone in part.
950.00 to 955.00 (5.00)	100% Shale medium to occasionally dark gray, subfissile in part, carbonaceous in part, slightly micromicaceous, trace silty in part with minor Sandstone as above.
955.00 to 960.00 (5.00)	60% Sandstone light to medium gray, very fine grained, sub angular, moderately well sorted, calcareous & clay cement, silty, shaly in part, grades to sandy siltstone in part, glauconitic, trace sideritic, no visible porosity, no shows.
	40% Shale medium to occasionally dark gray, subfissile in part, carbonaceous in part, slightly micromicaceous, silty in part, sandy in part.
960.00 to 965.00 (5.00)	50% Sandstone light to medium gray, very fine grained, sub angular, moderately well sorted, calcareous & clay cement, silty, shaly in part, grades to sandy siltstone in part, glauconitic, trace sideritic, no visible porosity, no shows.
	50% Shale as above, trace pyrite nodules.
965.00 to 970.00 (5.00)	100% Shale medium gray, gray green, subfissile, slightly micromicaceous, slightly waxy texture.
970.00 to 975.00 (5.00)	100% Shale medium gray, gray green, subfissile, slightly micromicaceous, slightly waxy texture with minor Sandstone stringers as above.
975.00 to 980.00 (5.00)	100% Shale medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part.
980.00 to 985.00 (5.00)	100% Shale medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part.

Sample Descriptions

Storage Units:

Metric

985.00 to 990.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part.	
990.00 to 995.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part.	
995.00 to 1,000.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part.	
1,000.00 to 1,005.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part with occasional interbedded Sandstone stringers, light to medium gray, gray green, very fine grained, sub angular, well sorted, calcareous & clay cement, shaly, tight, no shows.	
1,005.00 to 1,010.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part with occasional interbedded Sandstone stringers, light to medium gray, gray green, very fine grained, sub angular, well sorted, calcareous & clay cement, shaly, tight, no shows.	
1,010.00 to 1,015.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part with occasional interbedded Sandstone stringers, light to medium gray, gray green, very fine grained, sub angular, well sorted, calcareous & clay cement, shaly, tight, no shows.	
1,015.00 to 1,020.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part with occasional interbedded Sandstone stringers, light to medium gray, gray green, very fine grained, sub angular, well sorted, calcareous & clay cement; shaly, tight, no shows.	
1,020.00 to 1,025.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part with occasional interbedded Sandstone stringers, light to medium gray, gray green, very fine grained, sub angular, well sorted, calcareous & clay cement, shaly, tight, no shows.	
1,025.00 to 1,030.00	100% Shale	
(5.00)	medium gray, gray green in part, trace red brown, platy, subfissile, slightly micromicaceous, trace silty in part with occasional 5% interbedded Sandstone stringers, light to medium gray, gray green, very fine grained, sub angular, well sorted, calcareous & clay cement, shaly, tight, no shows.	
1,030.00 to 1,035.00	100% Shale	
(5.00)	light to medium gray, subfissile in part, slightly micromicaceous, occasionally silty, slightly calcareous in part, grades to shaly silty in part, trace frosted calcite (minor fractures) trace minor light gray claystone stringers, trace minor Sandstone stringers as above.	

Sample Descriptions

Storage Units: Metric

1,035.00 to 1,040.00	100%	Shale (5.00)	light to medium gray, subfissile in part, slightly micromicaceous, occasionally silty, slightly calcareous in part, grades to shaly silty in part, trace frosted calcite (minor fractures) trace minor light gray claystone stringers, trace minor Sandstone stringers as above.
1,040.00 to 1,045.00	70%	Shale (5.00)	light to medium gray, subfissile in part, slightly micromicaceous, occasionally silty, slightly calcareous in part, grades to shaly silty in part, trace minor light gray claystone stringers.
	30%	Sandstone	light gray, very fine grained, sub angular, well sorted, calcareous & clay cement, trace dark lithic grains, grades to sandy siltstone in part, silty, shaly, tight, no shows.
1,045.00 to 1,050.00	100%	Shale (5.00)	predominately medium gray, subfissile in part, slightly micromicaceous, occasionally silty, slightly calcareous in part, grades to shaly silty in part, trace minor Sandstone stringers as above.
1,050.00 to 1,055.00	100%	Shale (5.00)	predominately medium gray, subfissile in part, slightly micromicaceous, occasional slightly waxy texture, occasionally silty with occasional interbedded claystone light gray, soft, slightly calcareous.
1,055.00 to 1,060.00	100%	Shale (5.00)	predominately medium gray, subfissile in part, slightly micromicaceous, occasional slightly waxy texture, occasionally silty, slightly sandy in part with occasional interbedded claystone light gray, soft, slightly calcareous.
1,060.00 to 1,065.00	70%	Shale (5.00)	as above, trace frosted calcite (minor fractures)
	30%	Sandstone	light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, silty, shaly, poor trace glauconitic, trace dark lithic grains, occasionally grades to sandy siltstone, no visible porosity, no shows.
1,065.00 to 1,070.00	80%	Shale (5.00)	predominately medium gray, subfissile in part, slightly micromicaceous, occasional slightly waxy texture, occasionally silty, trace sandy with occasional interbedded claystone light gray, soft, slightly calcareous.
	20%	Sandstone as above	
1,070.00 to 1,075.00	100%	Shale (5.00)	light to medium gray, subfissile in part, slightly micromicaceous, occasional slightly waxy texture, occasionally silty, trace sandy with occasional interbedded claystone light gray, soft, slightly calcareous.

Sample Descriptions

Storage Units: Metric

1,075.00 to 1,080.00	100%	Shale (5.00)	light to medium gray, subfissile in part, slightly micromicaceous, occasional slightly waxy texture, occasionally silty, trace sandy with occasional interbedded claystone light gray, soft, slightly calcareous, grades to marlstone in part.
1,080.00 to 1,085.00	100%	Shale (5.00)	light to medium gray, subfissile in part, slightly micromicaceous, occasional slightly waxy texture, occasionally silty, trace sandy with occasional interbedded claystone light gray, soft, slightly calcareous, grades to marlstone in part.
1,085.00 to 1,090.00	90%	Shale (5.00)	light to medium gray, subfissile in part, slightly micromicaceous, occasional slightly waxy texture, occasionally silty, trace sandy with occasional interbedded claystone light gray, soft, slightly calcareous, grades to marlstone in part.
	10%	Sandstone	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, trace minor dark lithic grains, silty, occasionally shaly, no visible porosity or shows.
1,090.00 to 1,095.00	60%	Sandstone (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, trace minor dark lithic grains, silty, occasionally shaly, no visible porosity or shows.
	40%	Shale as above	
1,095.00 to 1,100.00	80%	Shale (5.00)	as above with abundant cream claystone, soft, calcareous, grades to marlstone in part, occasionally sandy & slightly silty.
	20%	Sandstone	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, trace minor dark lithic grains, silty, occasionally shaly, no visible porosity or shows.
1,100.00 to 1,105.00	50%	Sandstone (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, trace minor dark lithic grains, silty, grades to sandy siltstone in part, occasionally shaly, no visible porosity or shows.
	50%	Shale as above	
1,105.00 to 1,110.00	80%	Sandstone (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, trace minor dark lithic grains, silty, occasionally grades to sandy siltstone in part, occasionally shaly, no visible porosity or shows.
	20%	Shale as above	

Sample Descriptions

Storage Units: Metric

1,110.00 to 1,115.00	70%	Sandstone (5.00) as above, occasional red brown sandstone, ferruginous, trace frosted calcite in sample indicating fractures.
	30%	Shale as above with minor red brown shale, ferruginous, occasionally very silty & sandy.
1,115.00 to 1,120.00	50%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, trace minor dark lithic grains, silty, occasionally shaly, no visible porosity or shows.
	50%	Shale light to medium gray, subfissile in part, slightly micromicaceous, occasionally silty & sandy, grades to shaly siltstone & sandstone in part, good trace frosted calcite from small fractures closed @ depth? or vugs in sandstone.
1,120.00 to 1,125.00	50%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, trace minor dark lithic grains, silty, occasionally shaly, slightly sideritic in part, no visible porosity or shows.
	50%	Shale as above
1,125.00 to 1,130.00	80%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, occasional interbedded light gray & rust gray claystone, very soft, occasionally grades to marlstone in part, frosted calcite in sample as before.
	20%	Sandstone as above
1,130.00 to 1,135.00	80%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, occasional interbedded light gray & rust gray claystone, very soft, occasionally grades to marlstone in part, trace frosted calcite in sample as before.
	20%	Sandstone as above with minor rust colored sandstone as above.
1,135.00 to 1,140.00	90%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, occasional interbedded light gray claystone, very soft, occasionally grades to marlstone in part.
	10%	Sandstone as above

Sample Descriptions

Storage Units: Metric

1,140.00 to 1,145.00	90%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, occasional interbedded light gray claystone, very soft, occasionally grades to marlstone in part.
	10%	Sandstone as above
1,145.00 to 1,150.00	100%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, occasional interbedded light gray claystone, very soft, occasionally grades to marlstone in part with minor Sandstone stringers as above.
1,150.00 to 1,155.00	100%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, trace claystone as above with minor interbedded Sandstone stringers as above.
1,155.00 to 1,160.00	100%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, trace claystone as above with 10% interbedded Sandstone stringers as above.
1,160.00 to 1,165.00	100%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, grades to shaly siltstone in part, slightly micromicaceous, trace claystone as above with minor interbedded Sandstone stringers as above.
1,165.00 to 1,170.00	100%	Shale (5.00) as above, trace minor red gray ferruginous shale stringers.
1,170.00 to 1,175.00	100%	Shale (5.00) medium gray with minor light & darker gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous, trace claystone as above with minor interbedded Sandstone stringers as above.
1,175.00 to 1,180.00	100%	Shale (5.00) as above with 10-15% Sandstone stringers cream to light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, trace dark lithic grains, silty, shaly, tight, no shows.
1,180.00 to 1,185.00	100%	Shale (5.00) medium to dark gray, subfissile in part, occasionally silty & sandy, slightly micromicaceous with 15% Sandstone cream to light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, trace dark lithic grains, silty, shaly, tight, no shows.
1,185.00 to 1,190.00	100%	Shale (5.00) light to medium gray, minor dark gray as above.
1,190.00 to 1,195.00	100%	Shale (5.00) as above, abundant light gray claystone.

Sample Descriptions

Storage Units: Metric

1,195.00 to 1,200.00	100%	Shale	
(5.00)		medium to dark gray, subfissile in part, slightly carbonaceous, slightly micromicaceous, silty & trace sandy in part, occasionally grades to shaly siltstone in part with 5% Sandstone stringers as above.	
1,200.00 to 1,205.00	90%	Sandstone	
(5.00)		cream, very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, silty, poor trace dark lithic grains, poor trace arkosic, no visible porosity or shows.	
10%	Shale		
		as above	
1,205.00 to 1,210.00	40%	Siltstone	
(5.00)		light to medium gray, slightly calcareous & clay cement, occasionally sandy, grades to very fine grained sandstone in part, shaly, trace dark lithic grains, tight, no shows.	
30%	Sandstone		
		as above	
30%	Shale		
		medium gray, blocky, silty, slightly micromicaceous, grades to siltstone in part.	
1,210.00 to 1,215.00	40%	Shale	
(5.00)		as above	
40%	Siltstone		
		as above	
20%	Sandstone		
		as above	
1,215.00 to 1,220.00	50%	Siltstone	
(5.00)		light to medium gray, clay cement, calcareous in part, shaly, sandy, grades to very fine grained sandstone in part, trace dark lithic grains, tight, no shows.	
30%	Shale		
		medium gray, subfissile in part, slightly micromicaceous, slightly carbonaceous in part, occasionally very silty, trace sandy.	
20%	Sandstone		
		as above	
1,220.00 to 1,225.00	40%	Sandstone	
(5.00)		light to medium gray, very fine grained, sub angular, moderately well sorted, quartz & light colored chert, calcareous & clay cement, silty, shaly, trace dark lithic grains, grades to sandy shale in part, tight, no shows.	
40%	Shale		
		as above, trace red brown shale	

Sample Descriptions

Storage Units: Metric

1,220.00 to 1,225.00	20%	Siltstone (5.00) as above
1,225.00 to 1,230.00	50%	Shale (5.00) medium to occasionally dark gray, subfissile in part, slightly carbonaceous in part, occasionally very silty, trace sandy, slightly micromicaceous, slightly waxy texture in part.
	30%	Sandstone as above
	20%	Siltstone as above
1,230.00 to 1,235.00	50%	Sandstone (5.00) light gray, very fine grained, sub angular as above, grades to siltstone in part
	50%	Shale medium to occasionally dark gray, subfissile in part, slightly carbonaceous in part, occasionally very silty, trace sandy, slightly micromicaceous, slightly waxy texture in part.
1,235.00 to 1,240.00	100%	Sandstone (5.00) very light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, silty, shaly in part, trace dark lithic grains, poor trace glauconitic, grades to siltstone, tight, no shows.
1,240.00 to 1,245.00	90%	Sandstone (5.00) as above
	10%	Shale as above
1,245.00 to 1,250.00	80%	Sandstone (5.00) very light gray, very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, silty, shaly in part, trace dark lithic grains, poor trace glauconitic, grades to siltstone, tight, no shows.
	20%	Shale as above
1,250.00 to 1,255.00	90%	Shale (5.00) medium to occasionally dark gray, subfissile in part, slightly carbonaceous in part, occasionally very silty, trace sandy, slightly micromicaceous, slightly waxy texture in part.
	10%	Sandstone as above
1,255.00 to 1,260.00	90%	Shale (5.00) medium to occasionally dark gray, subfissile in part, slightly carbonaceous in part, occasionally very silty, trace sandy, slightly micromicaceous, slightly waxy texture in part.

Sample Descriptions

Storage Units: Metric

1,255.00 to 1,260.00	10%	Sandstone as above	
1,260.00 to 1,265.00	60%	Sandstone (5.00) very light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly, trace dark lithic grains, tight, no shows.	
	40%	Shale light to medium gray, occasionally dark gray, subfissile in part, slightly carbonaceous in part, occasionally very silty, trace sandy, slightly micromicaceous, slightly waxy texture in part, trace sideritic.	
1,265.00 to 1,270.00	90%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows.	
	10%	Shale as above	
1,270.00 to 1,275.00	90%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows.	
	10%	Shale as above	
1,275.00 to 1,280.00	100%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows with Shale laminations as above.	
1,280.00 to 1,285.00	70%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows. Occasionally grades to sandy Siltstone in part.	
	30%	Shale light to medium gray, blocky, very silty, sandy in part, slightly micromicaceous,	
1,285.00 to 1,290.00	80%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows.	
	20%	Shale as above	

Sample Descriptions

Storage Units: Metric

1,290.00 to 1,295.00	80%	Sandstone (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows.
	20%	Shale as above	
1,295.00 to 1,300.00	70%	Sandstone (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows.
	30%	Shale as above	light gray, very fine grained, sub angular, moderately well sorted, sub angular, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows.
1,300.00 to 1,305.00	80%	SANDSTONE (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows.
	20%	Shale as above	
1,305.00 to 1,310.00	80%	Sandstone (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows. Grades to sandy Siltstone in part.
	20%	Shale as above	
1,310.00 to 1,315.00	60%	Sandstone (5.00)	light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows. Grades to sandy Siltstone in part.
	40%	Shale as above	medium gray, blocky, silty, sandy, slightly micromicaceous in part, occasionally grades to shaly siltstone in part.
1,315.00 to 1,320.00	70%	Shale (5.00)	
	30%	Sandstone as above	light to medium gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, tight, no shows. Grades to sandy Siltstone in part.
1,320.00 to 1,325.00	70%	Shale (5.00)	
	30%	Sandstone as above	

Sample Descriptions

Storage Units: Metric

1,320.00 to 1,325.00	30%	Sandstone (5.00) light to medium gray as above.
1,325.00 to 1,330.00	100%	Shale (5.00) medium gray, blocky, silty, sandy in part, slightly micromicaceous, grades to shaly siltstone in part.
1,330.00 to 1,335.00	100%	Shale (5.00) medium gray, blocky, silty, sandy in part, slightly micromicaceous, grades to shaly siltstone in part.
1,335.00 to 1,340.00	100%	Shale (5.00) medium gray, blocky, silty, sandy in part, slightly micromicaceous, grades to shaly siltstone in part.
1,340.00 to 1,345.00	100%	Shale (5.00) medium gray, blocky, silty, sandy in part, slightly micromicaceous, grades to shaly siltstone in part with 10% Sandstone as above.
1,345.00 to 1,350.00	80%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, trace frosted calcite (fractures) no visible porosity, no shows.
	20%	Shale medium gray, blocky, silty, sandy in part, slightly micromicaceous, grades to shaly siltstone in part.
1,350.00 to 1,355.00	60%	Sandstone (5.00) light gray, very fine grained, sub angular, moderately well sorted, quartz & light colored, calcareous & clay cement, trace glauconitic, silty, shaly in part, trace dark lithic grains, trace frosted calcite (fractures) no visible porosity, no shows.
	40%	Shale as above
1,355.00 to 1,360.00	80%	Shale (5.00) medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part.
	20%	Sandstone as above
1,360.00 to 1,365.00	100%	Shale (5.00) medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 10% Sandstone as above.
1,365.00 to 1,370.00	100%	Shale (5.00) medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part.

Sample Descriptions

Storage Units:

Metric

1,370.00 to 1,375.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part.
1,375.00 to 1,380.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 5% Sandstone stringers as above.
1,380.00 to 1,385.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 5% Sandstone stringers as above.
1,385.00 to 1,390.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 5% Sandstone stringers as above.
1,390.00 to 1,395.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 5% Sandstone stringers as above.
1,395.00 to 1,400.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 5% Sandstone stringers as above.
1,400.00 to 1,405.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 5% Sandstone stringers as above.
1,405.00 to 1,410.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with 5% Sandstone stringers as above.
1,410.00 to 1,415.00	100% Shale	
(5.00)		medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with occasional light gray Claystone, soft, occasionally silty, slightly calcareous in part, grades to marlstone in part with 5% Sandstone stringers as above.
1,415.00 to 1,420.00	80% Shale	
(5.00)	as above	
	20% Sandstone	
		light gray, lower very fine grained, sub angular, well sorted, quartz & light colored chert, calcareous & clay cement, silty, shaly in part, trace dark lithic grains, grades to sandy siltstone in part, tight, no shows

Sample Descriptions

Storage Units:

Metric

1,420.00 to 1,425.00	100% Shale	
(5.00)	medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with occasional light gray Claystone, soft, occasionally silty, slightly calcareous in part, grades to marlstone in part with 10% Sandstone stringers as above.	
1,425.00 to 1,430.00	100% Shale	
(5.00)	medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with occasional light gray Claystone, soft, occasionally silty, slightly calcareous in part, grades to marlstone in part with 10% Sandstone stringers as above.	
1,430.00 to 1,435.00	100% Shale	
(5.00)	medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part with occasional light gray Claystone, soft, occasionally silty, slightly calcareous in part, grades to marlstone in part with 5% Sandstone stringers as above.	
1,435.00 to 1,440.00	100% Shale	
(5.00)	medium gray, dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part, trace minor SANDSTONE laminations as above.	
1,440.00 to 1,445.00	100% Shale	
(5.00)	medium gray, minor dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part, trace minor SANDSTONE laminations as above.	
1,445.00 to 1,450.00	100% Shale	
(5.00)	medium gray, minor dark gray in part, subfissile in part, slightly micromicaceous, occasionally silty, trace sandy, slightly carbonaceous in part, trace minor SANDSTONE laminations as above.	
1,450.00 to 1,455.00	100% Shale	
(5.00)	medium gray, minor dark gray, subfissile in part, slightly micromicaceous, trace silty in part with trace frosted calcite in sample (minor fractures?)	
1,455.00 to 1,460.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,460.00 to 1,465.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,465.00 to 1,470.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,470.00 to 1,475.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	

Sample Descriptions

Storage Units:

Metric

1,475.00 to 1,480.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part, trace frosted calcite in sample	
1,480.00 to 1,485.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,485.00 to 1,490.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,490.00 to 1,495.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,495.00 to 1,500.00	100% Shale	
(5.00)	medium to occasionally dark gray, platy, fissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,500.00 to 1,505.00	100% Shale	
(5.00)	medium to dark gray, subfissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,505.00 to 1,510.00	100% Shale	
(5.00)	medium to dark gray, subfissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,510.00 to 1,515.00	100% Shale	
(5.00)	medium to dark gray, subfissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,515.00 to 1,520.00	100% Shale	
(5.00)	medium to dark gray, subfissile, slightly micromicaceous, slightly waxy texture, trace silty in part.	
1,520.00 to 1,525.00	100% Shale	
(5.00)	as above with minor light gray Claystone stringers.	
1,525.00 to 1,530.00	100% Shale	
(5.00)	medium to dark gray, subfissile, slightly micromicaceous, slightly waxy texture, trace silty in part with minor Claystone stringers as above with trace frosted calcite in sample from possible fractures.	
1,530.00 to 1,535.00	100% Shale	
(5.00)	medium gray with minor dark gray, subfissile, slightly micromicaceous, slightly waxy texture, trace silty in part with minor claystone as above.	
1,535.00 to 1,540.00	100% Shale	
(5.00)	predominately medium gray, platy, subfissile, slightly micromicaceous, poor trace silty in part, trace claystone as above, trace frosted calcite as above.	

Sample Descriptions

Storage Units:

Metric

1,540.00 to 1,545.00	100% Shale	
(5.00)		predominately medium gray, platy, subfissile, slightly micromicaceous, poor trace silty in part.
1,545.00 to 1,550.00	100% Shale	
(5.00)		as above.
1,550.00 to 1,555.00	100% Shale	
(5.00)		predominately medium gray, platy, subfissile, slightly micromicaceous, poor trace silty in part, trace claystone as above, good trace frosted calcite as above.
1,555.00 to 1,560.00	100% Shale	
(5.00)		predominately medium gray, platy, subfissile, slightly micromicaceous, poor trace silty in part, trace claystone as above, trace frosted calcite as above.
1,560.00 to 1,565.00	100% Shale	
(5.00)		predominately medium gray, platy, subfissile, slightly micromicaceous, poor trace silty in part, trace claystone as above, trace frosted calcite as above.
1,565.00 to 1,570.00	100% Shale	
(5.00)		predominately medium gray, subfissile, slightly micromicaceous, poor trace silty in part, trace claystone as above, trace frosted calcite as above.
1,570.00 to 1,575.00	100% Shale	
(5.00)		predominately medium gray, minor dark gray, predominately subfissile, slightly micromicaceous, trace silty in part.
1,575.00 to 1,580.00	100% Shale	
(5.00)		predominately medium gray, minor dark gray, predominately subfissile, slightly micromicaceous, trace silty in part.
1,580.00 to 1,585.00	100% Shale	
(5.00)		predominately medium gray, minor dark gray, predominately subfissile, slightly micromicaceous, trace silty in part.
1,585.00 to 1,590.00	100% Shale	
(5.00)		predominately medium gray, increasing dark gray, predominately subfissile, slightly micromicaceous, trace silty in part, trace minor frosted cxln calcite (fractures?)
1,590.00 to 1,595.00	100% Shale	
(5.00)		medium gray, increasing dark gray, predominately subfissile, slightly micromicaceous, trace silty in part.
1,595.00 to 1,600.00	100% Shale	
(5.00)		medium to dark gray, predominately subfissile, slightly micromicaceous, trace silty in part.
1,600.00 to 1,605.00	100% Shale	
(5.00)		medium gray, occasional dark gray, predominately subfissile, slightly micromicaceous, trace silty in part.

Sample Descriptions

Storage Units: Metric

1,605.00 to 1,610.00	100% Shale	
(5.00)	as above	
1,610.00 to 1,615.00	100% Shale	
(5.00)	as above with trace calcite as above with trace minor Siltstone stringers, light gray, sandy, clay cement, trace calcareous, grades to very fine grained sandstone in part, tight, no shows.	
1,615.00 to 1,620.00	100% Shale	
(5.00)	as above with Shale medium to dark gray brown, blocky, bituminous, soft, calcareous, fluorescence yellow in solvent.	
1,620.00 to 1,622.00	100% Shale	
(2.00)	as above, trace pyrite.	

