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INTRODUCTION

Geoil Technology Inc. Sucursal del Perú, started Mudlogging operations on the Development Well Z-2B-24-089-D-LO16 –26. Spud day, On July 25Th, 2002.

Z-2B-24-089-D-LO16 (LO16-26) It's directional well, was drilled in the Lobitos Offshore Area, in the Talara Basin. The main primary objective was the Sandstone of Rio Bravo Formation.

This report includes the next information : Geological Data, as Lithological Description from cuttings samples during the drilling progress and all Oil Show Evaluation specially into the Pay Zone Objective, using and high speed MTI 200 Chromatograph for Gas Show Evaluation. Also all information in real time of Drilling Parameters Control during the perforation 24 hours the rig activity from the Mud Logging Unit , our geologists use a network communication with the Company man ,Toolpusher, Driller and Wellsite Geologist for the best up to date information.

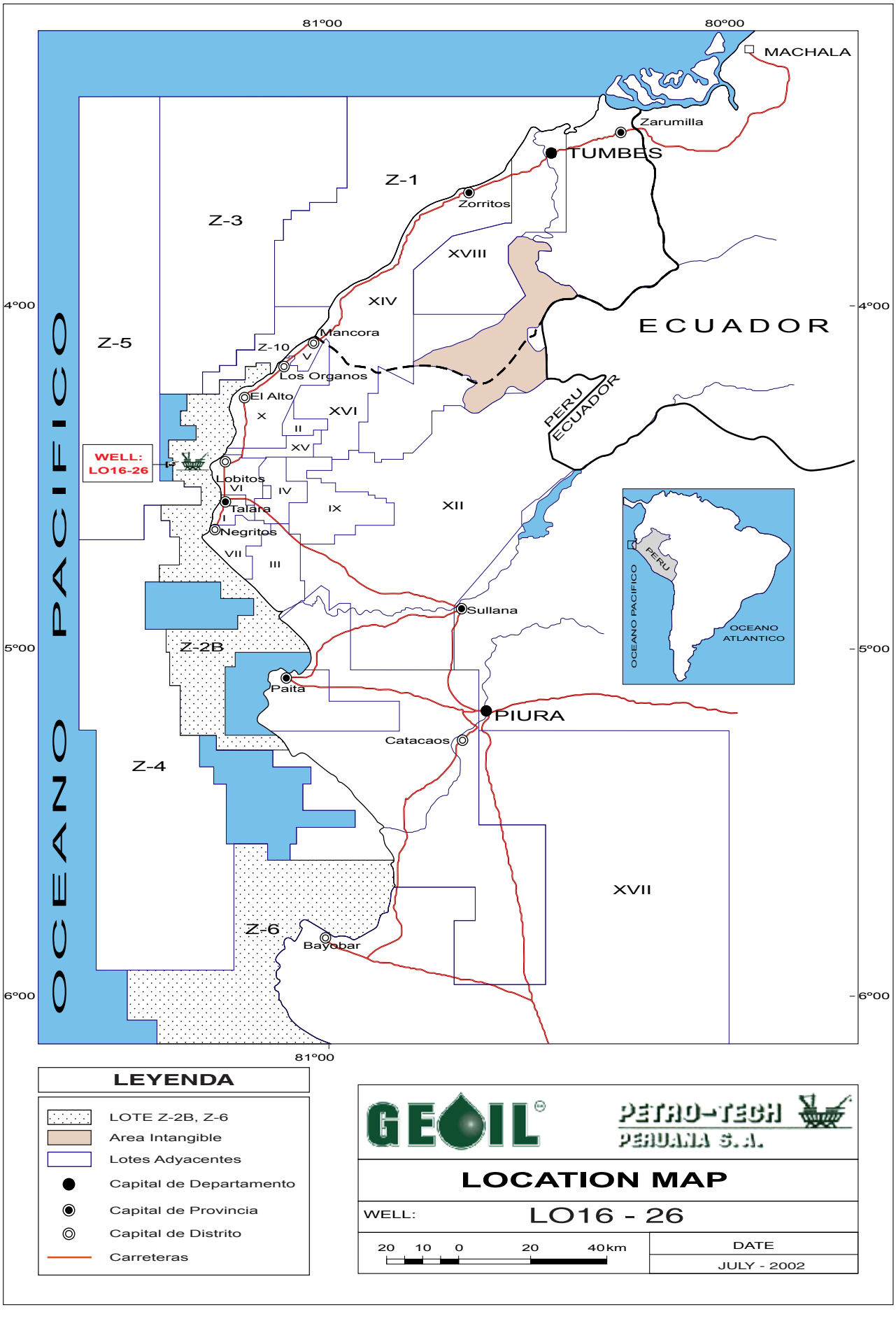
Our Mudlogging Service in this well LO16-26 started from 570 feet until a Final Total Depth at 8095' feet, in Rio Bravo formation, that reached on August, 15Th, 2002.

Complete Lithological and Hydrocarbons Gas Show, Drilling Operations, Bit Record, Fluorescence Data, Mud Data Record, Mud Properties, Bottom Hole Assemblies, Survey Data Record and Time Distribution in hours are included accordingly.

Also included a Drilling's Geological Log, generated from the Data Acquisition Unit on Real Time, for an easy correlation and interpretation for future wells likely to be drilled around.

WELL DATA

Company:	Petro - Tech Peruana S.A.	
Well:	Z-2B-24-089-D-LO16 (LO16-26)	
Well Type:	Development	
Field:	Lobitos	
Basin:	Talara	
Región:	Piura	
State/Country:	Perú	
Surface Coordinates (UTM):	**North** 9'505,990.43 m	**East** 459,452.05 m
Elevations:	WD: 355 ft	RT: 50 ft
Spud Date:	July 25Th., 2002	
End Date:	August 15Th., 2002	
Objective:	Río Bravo Formation.	
Total depth:	8095 ft	
Drilling Contractor / Rig:	PEPESA 48	
Drilling Fluids:	M-I	
Directional and Logging Contractor:	Schlumberger-Anadrill	
Mudlogging / Unit:	Geoil Technology Inc. Suc. del Perú	
Geoil Crew:	ADT: E.CANDELA-V.VARGAS	
	LOGGERS: J.ORTIZ, A.GARRO	



LEYENDA

- LOTE Z-2B, Z-6
- Area Intangible
- Lotes Adyacentes
- Capital de Departamento
- Capital de Provincia
- Capital de Distrito
- Carreteras

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LOCATION MAP

WELL: LO16 - 26

20 10 0 20 40km

DATE

JULY - 2002

STRATIGRAPHIC SEQUENCE

WELL: LO16 - 26

The stratigraphic column expected according with offset wells and seismic data consists of Tertiary formations.

TERTIARY FORMATIONS

It is constituted mainly by continental and marine sediments, product of erosion of the Amotape chains in different lifting stages.
The Tertiary sequence is formed by the Talara Group (Eocene).

HELICO FORMATION **Interval: 570' to 1680'**

The Helico formation was conformed by Sandstone and Sand interbedding with Claystone and siltstone.

Sandstone was grayish white, light white, light greenish white, very fine to fine, traces medium, quartz grains, sub angular to sub rounded, well sorted, white argillaceous matrix, calcareous cement, moderately consolidate with some glauconite and coal inclusions, poor visual porosity.
Sand was hyaline, translucent, white, fine to medium, minor coarse grains, quartzose, subangular to sub rounded, fairly sorted.
Claystone was brownish gray, light brown, medium gray to light gray, sub blocky to blocky, occasionally sub platy, moderately firm to soft, micromicaceous, microcarbonaceous, very slightly calcareous to non calcareous, silty in part.
Siltstone was light gray to medium gray, brownish gray, blocky to sub blocky, moderately firm to firm, slightly micromicaceous, moderately microcarbonaceous, non to slightly calcareous, locally sandy.
The more common accessories were calcite and dolomite.

OIL SHOWS
No present oil shows

GAS SHOW:
The background gas was 1 unit of Total Gas.

LOBITOS FORMATION **Interval: 1680 to 3420'**

Lobitos Formation present a sequence of Claystone interbedded with Sandstone layers and Siltstone.

Claystone was predominantly brownish gray minor medium gray, sub blocky to blocky, locally subplaty, moderately firm to firm, brittle in part, micromicaceous, microcarbonaceous, non calcareous, silty in part.
Sandstone was light gray, minor whitish gray, very fine to fine quartz grains, subrounded to subangular, well sorted, argillaceous matrix, calcareous cement, moderate friable, with coal and green lithics inclusion, poor visual porosity.
Siltstone was brownish gray, light gray to medium gray, blocky to sub blocky, moderately firm to moderately soft, slightly micromicaceous, moderately microcarbonaceous, slightly calcareous, locally sandy.

OIL SHOW:
No present oil shows

GAS SHOW:
The background gas was 1 unit of Total Gas.

CHACRA FORMATION **Interval: 3420' to 5850'**

Chacra Formation present a sequence of Claystone interbedded with Sandstone layers and Siltstone.

Claystone medium gray to light gray, minor brownish gray, sub blocky to blocky, locally subplaty, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous to non calcareous, locally laminar coal, silty in part.
Sandstone was white, light gray, very fine to fine quartz grains, sub rounded to sub angular, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces coal inclusion, carbonaceous and occasionally pyritic to the base, poor visual porosity.
Siltstone was light gray to medium gray, blocky to sub blocky, moderately firm to moderately soft, slightly micromicaceous, moderately microcarbonaceous, slightly calcareous, occasionally laminar coal, locally grading to sandy siltstone.

OIL SHOW:
From 4500' to 4530' the maximum fluorescence was traces.
From 4710' to 4740' the maximum fluorescence was traces.
From 4920' to 4950' the maximum fluorescence was traces.

GAS SHOW:
The maximum gas readings this formation was 771.0 units of Total Gas at 4914' containing all gas (C1-C5).

RIO BRAVO FORMATION **Interval: 5850’ to 8095’**

The Rio Bravo Formation present a sequence of Sandstone, sand with some layers of Claystone and Siltstone.

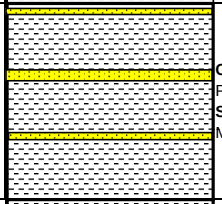
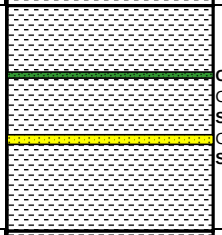
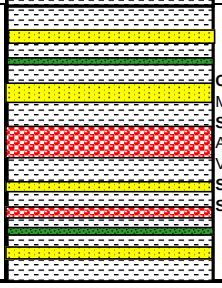
Sandstone was white, light gray, very fine to fine quartz grains, sub rounded to sub angular, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity.
Sand was white, translucent, hyaline, very fine, fine and medium grains, quartzose, sub angular to sub rounded, fairly sorted.
Claystone medium gray to light gray, brownish gray, sub blocky to blocky, locally sub platy, firm, slightly micromicaceous, slightly microcarbonaceous, non calcareous to slightly calcareous, locally laminar coal, rarely glauconite and coal inclusions, silty in part.
Siltstone was medium gray to light gray, blocky, firm, slightly micromicaceous, moderately microcarbonaceous, slightly calcareous, locally grading to sandy siltstone.

OIL SHOW:
From 5850’ to 5970’ the maximum fluorescence was 10%.
From 6000’ to 6030’ the maximum fluorescence was traces.
From 6110’ to 6120’ the maximum fluorescence was traces.
From 6180’ to 6230’ the maximum fluorescence was 10%.
From 6250’ to 6680’ the maximum fluorescence was 50%.
From 6690’ to 6730’ the maximum fluorescence was 10%.
From 6740’ to 6870’ the maximum fluorescence was 10%.
From 7070’ to 7080’ the maximum fluorescence was traces.
From 7260’ to 7310’ the maximum fluorescence was 10%.
From 7490’ to 8020’ the maximum fluorescence was 20%.

GAS SHOW:
The maximum gas readings this formation was 2263 units of Total Gas at 6244’ containing all gas (C1-C5).

STRATIGRAPHIC COLUMN

WELL : LO16-26

AGE	FORMATION	THICKNESS (ft)	LITHOLOGY	DESCRIPTION
T E R T I A R Y	**HELICO (570' - 1680')**	**1110'**		**CLAYSTONE,** LT BRN, BRN'SH GY, SBBLKY TO SBPLTY, OCC BLKY, SOFT TO MOD FRM, MICMIC, MICCARB, SL CALC, SLTY IN PT. **SANDSTONE:** LT GY, GYSH WH, 70%VF, 30%F QTZ GRS, SBRND, W SRTD, ARG MTX, CALC CMT, MOD CONSL, LOC DRTY, W/ GN GRS INCL, V P TO P VIS POR. **SAND:** WH, HYAL, TRNSL, MLKY WH, 30%F, 50%M , 20%C, TR VC GRS, SBRD, MNR SBANG, FR-W SRTD. W/ DK & GN LITH INCL.
	LOBITOS (1680' - 3420')	**1740'**		**CLAYSTONE,** LT BRN, BRN, SBBLKY TO BLKY, SOFT TO MOD FRM, MICMIC, OCC MICCARB, SL CALC, SLTY IN PT. **SANDSTONE:** GYSH WH, GRNSH WH, 90%VF, 10%F QTZ GRS, SBRND TO RND, W SRTD, ARG MTX, CALC CMT, MOD FRI, W/ GN LITH INCL, P VIS POR.
	CHACRA (3420 - 5850')	**2430'**		**CLAYSTONE**: LT GY, MD GY, MNR BRNSH GY, SBBLKY TO BLKY, SFT TO MOD FRM, MICMMIC, MICCARB, SL CALC, W/ COAL INCL, SLTY IN PT. **SANDSTONE**: WH, V LT GRY, 90%VF, 10%F, HYAL QTZ GR, SUBANG TO SBRND, FR SRT, WH ARG MTX, CALC CMT, CARB, OCC PYR, P VIS POR, NO OIL SHOW. **SILTSTONE:** LT GY TO MD GY, BLKY TO SBBLKY, MOD FRM TO SFT, MICCARB SL CALC.
	RIO BRAVO (5850' - 8095')	**2245'**		**CLAYSTONE**:MD GY, BRNSH GY, OCC LT GY, SBBLKY TO SUBPLTY, MOD FRM TO FRM, MNR BRITT, MICMMIC, MICCARB, NO CALC TO VERY SL CALC, IN PT OCC COAL INTERLAM, W/ GLAUCONITE INCL, SLTY IN PT. **SANDSTONE**: WH, DRTY WH, V LT GRY, 70%VF, 30%F, HYAL QTZ GR, SUBRND TO SUBANG, FR TO WELL SRT, ARG MTX, CALC CMT, MOD CONSOL, SL CARB, W/ DK GR AND COAL INCL, VIS POR, NO OIL SHOW. **SILTSTONE:** MD GY, MNR LT GY, BLKY, MNR SBBLKY, MOD FRM TO FRM, MICCARB, MICMIC, SL CALC. **SAND:** WH, HYAL, TRNSL, MLKY WH, 30% VF, 50% F, 20% M, QTZ GR, SUBANG TO SUBRND, FR TO WELL SRTD.

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FORMATION TOPS

WELL: LO16-26

COORDINATES	**N: 9'505,990.43 mts**
(UTM)	**E: 459,452.05 mts**
KB: 50 FT	**WATER DEPTH: 335 FT**

FORMATION		EXPECTED TOPS			MUDLOGGING TOPS			ELECTRICAL TOPS		
		MD	VD	SS	MD	VD	SS	MD	VD	SS
TALARA	HELICO	--	--	--	570'	569.86'	-234.8'			
	LOBITOS	--	--	--	1680'	1495.7'	-1160.7'	NO RUNNING E'LOG		
CHACRA		3400'	2350'	-2300'	3420'	2350.7'	-2015.7			
RIO BRAVO		6900'	4050'	-4000'	5850'	3510.2'	-3175.2'			
TOTAL DEPTH		8300'	4800'	-4750'	8095'	4712.3'	-4377.3'			

LITHOLOGICAL DESCRIPTIONS

WELL: LO16-26

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
GEOIL STARTED LITHOLOGICAL DESCRIPTION ON JULY 25th, 2002 HELICO FM. FROM 570 ft.			
570 – 600	70 20 10	**CLAYSTONE:** light brown, blocky to subblocky, soft, non calcareous, micromicaceous, microcarbonaceous, silty. **SANDSTONE:** light gray, grayish white, quartzose, 100% very fine grains, well sorted, very argillaceous matrix, slightly calcareous, slightly friable, micaceous, locally microcarbonaceous, dark and green lithics inclusions, very poor visual porosity. **SILTSTONE:** light brown, blocky, soft, calcareous, micromicaceous, locally microcarbonaceous. ACC: traces dolomite.	NF
600 – 630	60 30 10	**CLAYSTONE:** light brown, blocky to subblocky, soft, non calcareous, micromicaceous, microcarbonaceous, silty. **SANDSTONE:** light gray, grayish white, quartzose, 100% very fine grains, well sorted, very argillaceous matrix, slightly calcareous, slightly friable, micaceous, locally microcarbonaceous, dark and green lithics inclusions, very poor visual porosity. **SILTSTONE:** light brown, blocky, soft, calcareous, micromicaceous, locally microcarbonaceous. ACC: traces dolomite.	NF
630 – 660	70 20 10	**CLAYSTONE:** light brown, blocky to subblocky, soft, non calcareous, micromicaceous, microcarbonaceous, silty. **SANDSTONE:** light gray, grayish white, quartzose, 100% very fine grains, well sorted, very argillaceous matrix, slightly calcareous, slightly friable, micaceous, locally microcarbonaceous, dark and green lithics inclusions, very poor visual porosity. **SILTSTONE:** light brown, blocky, soft, calcareous, micromicaceous, locally microcarbonaceous. ACC: traces dolomite.	NF
660 – 690	60 30 10	**CLAYSTONE:** light brown, brown, blocky to subblocky, moderately firm, non calcareous, micromicaceous, microcarbonaceous, locally silty. **SANDSTONE:** light gray, grayish white, quartzose, 80% very fine, 20% fine grains, well sorted, very argillaceous matrix, slightly calcareous, slightly friable, micaceous, locally microcarbonaceous, dark and green lithics inclusions, very poor visual porosity. **SILTSTONE:** light brown, blocky, soft, calcareous, micromicaceous, locally microcarbonaceous. ACC: traces dolomite.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
690 – 720	50 30 20	**CLAYSTONE:** brownish gray, medium gray, blocky to subblocky, moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, occasionally laminar coal inclusions. **SANDSTONE:** light gray, grayish white, 50% very fine, 50% fine quartz grains, subrounded, well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate, dirty, with some glauconite, traces and coal inclusions, very poor visual porosity. **SILTSTONE:** brownish gray, blocky to subblocky, moderately firm, slightly calcareous, micromicaceous, slightly microcarbonaceous. ACC: traces dolomite and calcite.	NF
720 – 750	50 40 10	**CLAYSTONE:** brownish gray, medium gray, blocky to subblocky, moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, occasionally laminar coal inclusions. **SANDSTONE:** whitish gray, light gray, 30% very fine, 70% fine quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty in part, with some glauconite inclusions, very poor visual porosity. **SILTSTONE:** brownish gray, blocky to subblocky, moderately firm, slightly calcareous, micromicaceous, slightly microcarbonaceous. ACC: traces calcite and dolomite.	NF
750 – 780	40 30 30	**SANDSTONE:** grayish white, 40% very fine, 60% fine quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with some glauconite and coal inclusions, poor visual porosity. **CLAYSTONE:** brownish gray, medium gray, subblocky to blocky, moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, locally laminar coal inclusions. **SILTSTONE:** brownish gray, blocky to subblocky, moderately firm, slightly calcareous, micromicaceous, slightly microcarbonaceous. ACC: traces dolomite.	NF
780 – 810	50 40 10	**SANDSTONE:** grayish white, 30% very fine, 70% fine quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with some glauconite and coal inclusions, poor visual porosity. **CLAYSTONE:** brownish gray, medium gray, subblocky to blocky, moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, locally laminar coal inclusions. **SILTSTONE:** brownish gray, blocky to subblocky, moderately firm, slightly calcareous, micromicaceous, slightly microcarbonaceous. ACC: traces calcite.	NF
810 – 840	40 40 20	**SANDSTONE:** grayish white, 30% very fine, 70% fine quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty with some glauconite, few mica and coal inclusions, very poor to poor visual porosity. **CLAYSTONE:** medium gray, minor brownish gray subblocky to subplaty, moderately firm, very slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, locally silty **SILTSTONE:** gray, minor light gray, subblocky, moderately firm, slightly calcareous, moderately micromicaceous, slightly micro carbonaceous, occasionally mica and coal inclusions. ACC: traces dolomite.	NF
840 – 870	50	**SANDSTONE:** grayish white, 30% very fine, 70% fine quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement,	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		moderately consolidate, dirty with some glauconite, few mica and coal inclusions, very poor to poor visual porosity.	
	40	**CLAYSTONE:** brownish gray, minor medium gray, subblocky to subplaty, moderately firm, very slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, locally silty.	
	10	**SILTSTONE:** gray, minor light gray, subblocky, moderately firm, slightly calcareous, moderately micromicaceous, slightly micro carbonaceous, occasionally mica and coal inclusions.	
		ACC: traces dolomite.	
870 – 900	60	**CLAYSTONE:** ligth brown, minor grayish brown, subblocky to blocky, soft minor moderately firm, slightly calcareous, micromicaceous, microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 90% very fine, 10% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally microcarbonaceous, dark & green grains inclusions, very poor to poor visual porosity.	NF
	10	**SILTSTONE:** grayish brown, subblocky to blocky, soft to moderately firm, slightly calcareous, micromicaceous, microcarbonaceous, occasionally with coal inclusions.	
		ACC: traces massive calcite.	
900 – 930	70	**CLAYSTONE:** ligth brown, minor grayish brown, subblocky to blocky, soft minor moderately firm, slightly calcareous, micromicaceous, microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 90% very fine, 10% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally microcarbonaceous, dark & green grains inclusions, very poor to poor visual porosity.	NF
930 – 960	60	**CLAYSTONE:** ligth brown, minor grayish brown, subblocky to blocky, soft minor moderately firm, slightly calcareous, micromicaceous, microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 90% very fine, 10% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally microcarbonaceous, dark & green grains inclusions, very poor to poor visual porosity.	NF
	10	**SILTSTONE:** grayish brown, subblocky to blocky, soft to moderately firm, slightly calcareous, micromicaceous, microcarbonaceous, occasionally with coal inclusions.	
		ACC: traces massive calcite.	
960 – 990	70	**CLAYSTONE:** ligth brown, subblocky to blocky, soft occasionally moderately firm, non calcareous, micromicaceous, microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 80% very fine, 20% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally with laminar coal, dark & green grains inclusions, poor visual porosity	NF
		ACC: traces massive calcite	
990 – 1020	70	**CLAYSTONE:** ligth brown, subblocky to blocky, soft occasionally moderately firm, non calcareous, micromicaceous, microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 80% very fine, 20% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally with laminar coal, dark & green grains inclusions, poor visual porosity.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
1020 – 1050	70	**CLAYSTONE:** ligth brown, subblocky to blocky, soft occasionally moderately firm, non calcareous, micromicaceous, microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 80% very fine, 20% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally with laminar coal, dark & green grains inclusions, poor visual porosity ACC: traces dolomite	NF
1050 – 1080	60	**CLAYSTONE:** ligth brown, subblocky to blocky, soft minor moderately firm, slightly calcareous, micromicaceous, locally microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 80% very fine, 20% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally with laminar coal, dark & green grains inclusions, poor visual porosity	NF
	10	**SILTSTONE:** light brown, subblocky to blocky, soft, slightly calcareous, micromicaceous, microcarbonaceous, locally sandy. ACC: few dolomite, traces massive calcite	
1080 – 1110	60	**CLAYSTONE:** ligth brown, subblocky to blocky, soft minor moderately firm, slightly calcareous, micromicaceous, locally microcarbonaceous, silty	
	30	**SANDSTONE:** slightly greenish gray white, 80% very fine, 20% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, locally with laminar coal, dark & green grains inclusions, poor visual porosity	NF
	10	**SAND:** hyaline white, milky white, quartzose, 60% very fine, 40% fine, traces medium grains, subangular to subrounded, fair to well sorted, some light gray, light green lithic fragments. ACC: traces dolomite	
1110 – 1140	60	**CLAYSTONE:** ligth brown, subblocky to blocky, soft minor moderately firm, non calcareous, micromicaceous, microcarbonaceous, locally silty	
	40	**SANDSTONE:** slightly greenish gray white, 80% very fine, 20% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, with laminar coal, dark & green grains inclusions, poor visual porosity ACC: traces dolomite	NF
1140 – 1170	40	**CLAYSTONE:** light brown, subblocky to blocky, soft occasionally moderately firm, non calcareous, micromicaceous, microcarbonaceous, with occasionally laminar coal inclusions.	
	40	**SANDSTONE:** grayish white, 90% fine, 10% medium quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with few dark and green lithics, mica and coal inclusions, poor visual porosity.	NF
	20	**SAND:** white, translucent, hyaline, quarztsoze, 40%fine,40%medium 20%coarse, traces very coarse grains, fair sorted, with few green lithics. ACC: few coal and traces dolomite.	
1140 – 1170	40	**CLAYSTONE:** brownish gray, minor medium gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, locally microcarbonaceous, with occasionally laminar coal inclusions.	NF
	40	**SANDSTONE:** grayish white, 90% fine, 10% medium quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement,	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		moderately consolidate, with few dark and green lithics, mica and coal inclusions, poor visual porosity.	
	20	**SAND:** white, translucent, hyaline, quartzose, 40%fine,40%medium 20%coarse, traces very coarse grains, subrounded to subangular, fair sorted, with few green lithics.	
		ACC: few coal and traces dolomite.	
1170 – 1200	40	**SANDSTONE:** grayish white, 80% fine, 20% medium quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with few dark and green lithics, traces glauconite mica and coal inclusions, poor visual porosity.	
	30	**CLAYSTONE:** brownish gray, minor medium gray, subblocky, moderately firm, slightly calcareous, slightly micromicaceous, locally microcarbonaceous, with occasionally laminar coal inclusions.	NF
	30	**SAND:** white, hyaline, translucent, quartzose, 30%fine, 50%medium, 20%coarse grains, subrounded to subangular, fair sorted, with few green lithics.	
		ACC: few coal and traces dolomite.	
1200 – 1230	50	**SANDSTONE:** grayish white, minor whitish, 60% fine, 40% medium quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate to consolidate in part, with some green and occasionally dark lithics, mica and coal inclusions, poor visual porosity.	
	40	**SAND:** hyaline, translucent, white, quartzose, 30%medium, 60% coarse, 10% very coarse grains, subrounded to subangular, fair sorted, with few green lithics.	NF
	10	**CLAYSTONE:** brownish gray, minor medium gray, subblocky, moderately firm, slightly calcareous, slightly micromicaceous, locally microcarbonaceous, with occasionally laminar coal inclusions.	
		ACC: few coal and traces dolomite.	
1230 – 1260	40	**CLAYSTONE:** brown, minor grayish brown, subblocky to blocky, soft to moderately firm, non calcareous, micromicaceous, microcarbonaceous, silty.	
	40	**SANDSTONE:** slightly greenish gray white, 50% very fine, 50% fine, traces medium grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard occasionally friable, some with laminar coal, common dark and green grain inclusions, poor visual porosity.	NF
	20	**SAND:** hyaline white, milky white, quartzose, 10% very fine, 40%fine, 30% medium, 20% coarse grain, subrounded, fair sorted, common light green, light gray, traces reddish grain.	
		ACC: traces laminar coal.	
1260 – 1290	60	**CLAYSTONE:** brown, minor grayish brown, subblocky to blocky, soft to moderately firm, non calcareous, micromicaceous, microcarbonaceous, silty.	
	40	**SANDSTONE:** slightly greenish gray white, 50% very fine, 40% fine, 10% medium grains, subangular to subrounded, well sorted, argillaceous matrix, very calcareous, moderately hard to hard, some with laminar coal, common dark and green grain inclusions, poor visual porosity.	NF
		ACC: traces dolomite	
1290 – 1320	60	**CLAYSTONE:** brown, minor grayish brown, subblocky to blocky, soft to moderately firm, non calcareous, micromicaceous, microcarbonaceous, silty.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	40	**SANDSTONE:** slightly greenish gray white, 50% very fine, 40% fine, 10% medium grains, subangular to subrounded, well sorted, argillaceous matrix, very calcareous, moderately hard to hard, some with laminar coal, common dark and green grain inclusions, poor visual porosity.	
1320 – 1350	50	**CLAYSTONE:** brown, minor light brown, subblocky to blocky, soft to moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, silty.	
	50	**SANDSTONE:** slightly greenish gray white, 60% very fine, 40% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, some with laminar coal, common dark and green grain inclusions, poor visual porosity. ACC: traces microfossils	NF
1350 – 1380	50	**CLAYSTONE:** brown, minor light brown, subblocky to blocky, soft to moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, silty.	
	50	**SANDSTONE:** slightly greenish gray white, 60% very fine, 40% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, some with laminar coal, common dark and green grain inclusions, poor visual porosity. ACC: traces dolomite, laminar coal	NF
1380 – 1410	50	**CLAYSTONE:** brown, minor light brown, subblocky to blocky, soft to moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, silty.	
	50	**SANDSTONE:** slightly greenish gray white, 50% very fine, 50% fine grains, subangular to subrounded, well sorted, argillaceous matrix, very calcareous, moderately hard rare friable, some with laminar coal, common dark & green, traces reddish grain inclusions, poor visual porosity.	NF
1410 – 1440	40	**CLAYSTONE:** brown, minor light brown, subblocky to blocky, soft to moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, silty.	
	30	**SANDSTONE:** slightly greenish gray white, 30% very fine, 50% fine, 20% medium grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, some with laminar coal, common dark & green grain inclusions, poor visual porosity.	NF
	30	**SAND:** hyaline white, milky white, quartzose, 20% fine, 50% medium, 30% coarse, traces very coarse grain, subrounded minor subangular, fair sorted, with 40% dark, green, light green, light red grain.	
1440 – 1470	40	**CLAYSTONE:** brown, light brown, subblocky to blocky, soft & moderately firm, non calcareous, micromicaceous, microcarbonaceous, occasionally silty.	
	30	**SANDSTONE:** slightly greenish gray white, 30% very fine, 50% fine, 20% medium grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard, some with laminar coal, common dark & green grain inclusions, poor visual porosity.	NF
	30	**SAND:** hyaline white, milky white, quartzose, 20% fine, 50% medium, 30% coarse, traces very coarse grain, subrounded minor subangular, fair sorted, with 40% dark, green, light green, light red grain. ACC: traces laminar coal	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
1470 – 1500	40 40 20	**SANDSTONE:** grayish white, slightly greenish gray white, 30% very fine, 50% fine, 20% medium grains, subangular to subrounded, well sorted, argillaceous matrix, very calcareous, moderately hard minor hard, common dark & green grain inclusions, poor visual porosity. **SAND:** hyaline white, milky white, quartzose, 30% fine, 50% medium, 20% coarse, traces very coarse grain, subrounded minor subangular, fair sorted, with 50% dark, gray, green, light green, light red grain. **CLAYSTONE:** brown, light brown, subblocky to blocky, soft & moderately firm, non calcareous, micromicaceous, microcarbonaceous, occasionally silty. ACC: traces shell fragment	NF
1500 – 1530	40 40 20	**SANDSTONE:** grayish white, slightly greenish gray white, 30% very fine, 50% fine, 20% medium grains, subangular to subrounded, well sorted, argillaceous matrix, very calcareous, moderately hard minor hard, common dark & green grain inclusions, poor visual porosity. **SAND:** hyaline white, milky white, quartzose, 30% fine, 50% medium, 20% coarse, traces very coarse grain, subrounded minor subangular, fair sorted, with 50% dark, gray, green, light green, light red grain. **CLAYSTONE:** brown, light brown, subblocky to blocky, soft & moderately firm, non calcareous, micromicaceous, microcarbonaceous, occasionally silty. ACC: calcite	NF
1530 – 1560	50 40 10	**SANDSTONE:** greenish white, minor whitish gray, 70% fine, 30% medium, traces medium to coarse quartz grains, subrounded minor subangular, well sorted, argillaceous to silty matrix in part, calcareous cement, consolidate, dirty in part, with some green and few dark lithics, traces mica and coal inclusions, poor visual porosity. **SAND:** hyaline, translucent, white, quartzose, 10%fine, 40% medium, 40% coarse, 10% very coarse to granules, subrounded to subangular, fair sorted, with some green and few dark lithics. **CLAYSTONE:** brownish gray, minor medium gray, subblocky, moderately firm, slightly calcareous, slightly micromicaceous, locally microcarbonaceous, with occasionally laminar coal inclusions. ACC: few coal.	NF
1560 – 1590	50 40 10	**SANDSTONE:** greenish white, minor whitish gray, 60% fine, 40% medium, traces medium to coarse quartz grains, subrounded minor subangular, well sorted, argillaceous to silty matrix in part, calcareous cement, consolidate, dirty in part, with some green and few dark lithics, traces mica and coal inclusions, poor visual porosity. **SAND:** hyaline, translucent, white, quartzose, 40%medium, 50% coarse, 10% very coarse to granules, subrounded to subangular, fair sorted, with abundant green lithics. **CLAYSTONE:** brownish gray, minor medium gray, subblocky, moderately firm, slightly calcareous, slightly micromicaceous, locally microcarbonaceous, with occasionally laminar coal inclusions. ACC: few coal.	NF
1590 – 1620	50	**SANDSTONE:** whitish green, whitish gray, 80% fine, 20% medium quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty in part, with some green lithics, traces mica and coal inclusions, very poor to poor visual porosity.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	30	**CLAYSTONE:** brownish gray, light brown, subblocky to subplaty, moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, locally silty.	
	10	**SILTSTONE:** medium gray, brownish gray, subblocky to blocky, moderately firm to firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally carbonaceous.	
	10	**SAND:** hyaline, translucent, white, quartzose, 10%fine, 30% medium, 50% coarse, 10% very coarse grains, subrounded to subangular, poor sorted, with some green lithics. ACC: traces coal and calcite.	
1620 – 1650	50	**CLAYSTONE:** brown, subblocky to blocky, soft & moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, occasionally silty	
	50	**SANDSTONE:** slightly greenish gray white, 60% very fine, 40% fine grains, subangular to subrounded, well sorted, argillaceous matrix, very calcareous, moderately hard minor hard, common dark & green, traces light red grain inclusions, poor visual porosity.	NF
1650 – 1680	50	**CLAYSTONE:** brown, subblocky to blocky, soft & moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, occasionally silty	
	40	**SANDSTONE:** slightly greenish gray white, 60% very fine, 40% fine grains, subangular to subrounded, well sorted, argillaceous matrix, very calcareous, moderately hard minor hard, common dark & green, traces light red grain inclusions, poor visual porosity.	NF
	10	**SAND:** hyaline white, milky white, quartzose, 20% fine, 40% medium, 30% coarse, 10% very coarse grain, subrounded minor subangular, fair sorted, common dark, light green , green grain ACC: traces massive calcite	
LOBITOS FM. AT 1680 ft.			
1680 – 1710	60	**CLAYSTONE:** brown, subblocky to blocky, soft-moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, locally silty	
	40	**SANDSTONE:** slightly greenish gray white, 70% very fine, 30% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard minor hard, common dark & green grain inclusions, poor visual porosity. ACC: traces dolomite	NF
1710 – 1740	90	**CLAYSTONE:** brown, subblocky to blocky, soft-moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, locally silty	
	10	**SANDSTONE:** slightly greenish gray white, 70% very fine, 30% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard minor hard, common dark & green grain inclusions, poor visual porosity. ACC: traces microfossil	NF
1740 – 1770	90	**CLAYSTONE:** brown, subblocky to blocky, soft-moderately firm, non calcareous, micromicaceous, minor microcarbonaceous, locally silty	
	10	**SANDSTONE:** slightly greenish gray white, 70% very fine, 30% fine grains, subangular to subrounded, well sorted, argillaceous matrix, calcareous, moderately hard minor hard, common dark & green grain inclusions, poor visual porosity. ACC: traces dolomite	NF
1770 – 1800	100	**CLAYSTONE:** brown, subblocky minor blocky, soft-moderately firm, slightly calcareous, micromicaceous, minor microcarbonaceous. ACC: traces dolomite	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
1800 – 1830	100	**CLAYSTONE:** brown, subblocky minor blocky, soft-moderately firm, slightly calcareous, micromicaceous, minor microcarbonaceous. ACC: traces massive calcite.	
1830 – 1860	100	**CLAYSTONE:** brown, light brown, subblocky minor blocky, soft & moderately firm, slightly calcareous, micromicaceous, minor microcarbonaceous, silty in part. ACC: traces dolomite	
1860 – 1890	100	**CLAYSTONE:** brown, light brown, subblocky minor blocky, soft & moderately firm, slightly calcareous, micromicaceous, minor microcarbonaceous, silty in part.	
1890 – 1950	100	**CLAYSTONE:** brown, light brown, subblocky minor blocky, soft & moderately firm, slightly calcareous, micromicaceous, minor microcarbonaceous, fossiliferous. ACC: traces microfossil, dolomite	
1950 – 2010	100	**CLAYSTONE:** brown, light brown, subblocky minor blocky, soft & moderately firm, slightly calcareous, micromicaceous, minor microcarbonaceous. ACC: traces dolomite	
2010 – 2070	100	**CLAYSTONE:** brownish gray, minor brown, subblocky to subplaty, moderately soft, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, with occasionally laminar coal inclusions, slightly rough surface. ACC: traces coal and rare microfossils.	
2070 – 2100	100	**CLAYSTONE:** brownish gray, minor light brown, brown, subblocky to subplaty, soft to moderately soft, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, slightly rough to smooth surface. ACC: traces dolomite.	
2100 – 2130	100	**CLAYSTONE:** brownish gray, minor light brown, brown, subblocky to subplaty, soft to moderately soft, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, slightly rough surface. ACC: traces dolomite, coal and microfossils.	
2130 – 2160	100	**CLAYSTONE:** light brownish gray, brownish gray, subblocky to subplaty, soft to moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, slightly rough surface. ACC: traces dolomite, coal and calcite.	
2160 – 2190	100	**CLAYSTONE:** medium brown, light brown, brownish gray, subplaty to subblocky, soft, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, slightly rough surface. ACC: traces dolomite, coal and calcite.	
2190 – 2220	100	**CLAYSTONE:** brownish gray, medium brown, minor light brown, subplaty to subblocky, soft to moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, moderately rough surface, locally silty. ACC: traces coal, calcite.	
2220 – 2250	100	**CLAYSTONE:** brownish gray, brown, minor light brown, subplaty to subblocky, slightly soft, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, slightly rough surface, locally silty. ACC: traces coal and calcite.	
2250 – 2280	90	**CLAYSTONE:** brownish gray, medium brown, minor light brown, subplaty to subblocky, soft to moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous,	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		moderately rough surface, locally silty.	
	10	**SANDSTONE:** whitish gray, 100% very fine quartz grains, sub rounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable, dirty, with green lithics mica and coal inclusions, very poor visual porosity.	
		ACC: traces dolomite, calcite and rare microfossils.	
2280 – 2310	90	**CLAYSTONE:** brownish gray, medium brown, minor light brown, subplaty to subblocky, soft to moderately firm, slightly calcareous, moderately micromicaceous, slightly microcarbonaceous, moderately rough surface, locally silty.	
	10	**SANDSTONE:** whitish gray, 100% very fine quartz grains, sub rounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable, dirty, with green lithics mica and coal inclusions, very poor visual porosity.	NF
		ACC: traces dolomite, calcite and rare microfossils.	
2310 – 2340	90	**CLAYSTONE:** brownish gray, minor brown, subplaty to subblocky, soft to moderately firm, slightly calcareous, slightly Micromicaceous, slightly microcarbonaceous, locally silty.	
	10	**SANDSTONE:** whitish gray, 100% very fine quartz grains, sub rounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable, dirty, with green lithics and coal inclusions, very poor to poor visual porosity.	NF
		ACC: traces calcite and coal.	
2340 – 2370	90	**CLAYSTONE:** brownish gray, minor brown, subplaty to subblocky, soft to moderately firm, slightly calcareous, slightly Micromicaceous, slightly microcarbonaceous, occasionally laminar coal inclusions silty.	
	10	**SANDSTONE:** whitish gray, 100% very fine quartz grains, sub rounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable, dirty, with green lithics and coal inclusions, very poor to poor visual porosity.	NF
		ACC: traces calcite and dolomite.	
2370 – 2400	90	**CLAYSTONE:** brown, brownish gray, blocky, moderately soft to moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty.	
	10	**SANDSTONE:** light gray, whitish gray, 100% very fine quartz grains, sub rounded to sub angular, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, dirty, with green lithics and coal inclusions, very poor to poor visual porosity.	NF
		ACC: traces dolomite and calcite.	
2400 – 2430	90	**CLAYSTONE:** brown, brownish gray, blocky, soft, locally moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty.	
	10	**SILTSTONE:** brown, brownish gray, blocky, moderately soft to moderately firm, slightly microcarbonaceous, slightly calcareous.	
	TR	**SANDSTONE:** light gray, whitish gray, light greenish gray, 100% very fine quartz grains, sub rounded to sub angular, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, dirty, with green lithics and coal inclusions, very poor to poor visual porosity.	NF
		ACC: traces calcite and dolomite.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
2430 – 2460	90 10	**CLAYSTONE:** brown, brownish gray, blocky, moderately soft to moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SILTSTONE:** brown, brownish gray, blocky, moderately soft to moderately firm, slightly microcarbonaceous, slightly calcareous. ACC: traces calcite and dolomite.	
2460 – 2490	100 TR	**CLAYSTONE:** brown, brownish gray, blocky to sub blocky, moderately soft to moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SILTSTONE:** brown, brownish gray, blocky, moderately soft to moderately firm, slightly microcarbonaceous, slightly calcareous. ACC: traces calcite and dolomite.	
2490 – 2520	90 10 TR	**CLAYSTONE:** brown, blocky to sub blocky, moderately soft, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty, earthy. **SILTSTONE:** brownish gray, blocky, moderately firm to moderately soft, slightly microcarbonaceous, slightly calcareous. **SANDSTONE:** whitish gray, 100% very fine, hyaline quartz grain, sub rounded to sub angular, well sorted, argillaceous matrix, calcareous cement, friable to moderately consolidate, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	NF
2520 – 2550	100 TR TR	**CLAYSTONE:** brown, blocky to sub blocky, moderately soft, locally moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SILTSTONE:** brownish gray, blocky, moderately firm to moderately soft, slightly microcarbonaceous, slightly calcareous. **SANDSTONE:** whitish gray, 100% very fine, hyaline quartz grain, sub rounded to sub angular, well sorted, argillaceous matrix, calcareous cement, friable to moderately consolidate, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	NF
2550 – 2580	100 TR	**CLAYSTONE:** brown, blocky to sub blocky, moderately soft, locally moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SILTSTONE:** brownish gray, blocky, moderately firm to moderately soft, slightly microcarbonaceous, slightly calcareous. ACC: traces calcite and dolomite.	
2580 – 2610	90 10	**CLAYSTONE:** brown, brownish gray, blocky to sub blocky, soft to moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SANDSTONE:** light gray, 70% very fine, 30% fine, sub rounded to sub angular, well sorted, slightly argillaceous matrix, slightly calcareous cement, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite, pyrite and dolomite.	NF
2610 – 2640	100 TR TR	**CLAYSTONE:** brown, brownish gray, blocky to sub blocky, moderately soft to moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE:** brownish gray, blocky, moderately firm, slightly microcarbonaceous, slightly calcareous. **SANDSTONE:** light gray, 100% very fine, hyaline quartz grain, sub rounded to sub angular, well sorted, slightly argillaceous matrix,	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		slightly calcareous cement, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	
2640 – 2670	90 10	**CLAYSTONE:** brown, brownish gray, subblocky to subplaty, soft to moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE:** brownish gray, blocky, moderately firm, slightly microcarbonaceous, slightly calcareous. ACC: traces calcite and dolomite.	
2670 – 2700	100 TR	**CLAYSTONE:** brown, brownish gray, subblocky to subplaty, soft to moderately firm, slight to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE:** brownish gray, blocky, moderately firm, slightly microcarbonaceous, slightly calcareous. ACC: traces calcite and dolomite.	
2700 – 2730	100 TR	**CLAYSTONE:** brown, brownish gray, subblocky, locally subplaty, soft, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SILTSTONE:** brownish gray, blocky, moderately firm, slightly microcarbonaceous, very slightly calcareous. ACC: traces calcite and dolomite.	
2730 – 2760	100 TR	**CLAYSTONE:** brown, brownish gray, locally medium gray, subblocky, locally subplaty, soft, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SANDSTONE:** light gray, light greenish gray, 100% very fine, hyaline quartz grain, sub rounded to sub angular, well sorted, slightly argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, dirty, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	NF
2760 – 2790	100 TR	**CLAYSTONE:** brownish gray, subblocky to subplaty, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SANDSTONE:** light gray, light greenish gray, 100% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, slightly argillaceous matrix, calcareous cement, friable to moderately consolidate, dirty, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	NF
2790 – 2820	100 TR	**CLAYSTONE:** brown, brownish gray, subblocky, locally subplaty, soft, locally moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SANDSTONE:** light gray, light greenish gray, 100% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, slightly argillaceous matrix, calcareous cement, moderately consolidate, dirty, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	NF
2820 – 2850	100	**CLAYSTONE:** brown, brownish gray, subblocky, locally subplaty, soft, locally moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with coal interlaminated, silty in part.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	TR	**SANDSTONE:** light gray, light greenish gray, 100% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, slightly argillaceous matrix, calcareous cement, moderately consolidate, dirty, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	
2850 – 2880	100 TR	**CLAYSTONE:** brown, brownish gray, subblocky, locally subplaty, moderately firm to soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE:** brownish gray, blocky, moderately firm, slightly microcarbonaceous, slightly calcareous, sandy in part. ACC: traces calcite and dolomite.	
2880 – 2910	100 TR	**CLAYSTONE:** brown, brownish gray, subblocky to blocky, soft to moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SANDSTONE:** grayish white, 100% fine, hyaline quartz grain, sub rounded to rounded, well sorted, argillaceous matrix, calcareous cement, with green and dark minerals inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	NF
2910 – 2940	100 TR	**CLAYSTONE:** brown, brownish gray, subblocky to subplaty, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy. **SILTSTONE:** brownish gray, blocky, moderately firm to firm, slightly microcarbonaceous, slightly calcareous, sandy in part. ACC: traces calcite and dolomite.	
2940 – 2970	100 TR	**CLAYSTONE:** brown, brownish gray, subblocky to subplaty, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy. **SILTSTONE:** brownish gray, blocky, moderately firm to firm, slightly microcarbonaceous, slightly calcareous, sandy in part. ACC: traces calcite.	NF
2970 – 3000	100 TR TR	**CLAYSTONE:** brown, brownish gray, subblocky to subplaty, soft to moderately firm, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy. **SILTSTONE:** brownish gray, blocky, moderately firm to firm, slightly microcarbonaceous, slightly calcareous, sandy in part. **SANDSTONE:** grayish white, 100% very fine, hyaline quartz grain, subrounded to rounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with green lithics and coal inclusions, poor visual porosity, no oil show. ACC: traces calcite and dolomite.	NF
3000 – 3030	80 20	**CLAYSTONE:** brownish gray, brown, subblocky, minor subplaty, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with coal interlaminated.. **SANDSTONE:** whitish gray, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate to friable, with green lithics, few coal inclusions, poor visual porosity. ACC: traces calcite, dolomite and rare coal.	NF
3030 – 3060	80	**CLAYSTONE:** brownish gray, brown, subblocky, minor subplaty, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with coal interlaminated..	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	20	**SANDSTONE:** whitish gray, 80%very fine, 20/fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate to friable, with green lithics, few coal inclusions, poor visual porosity. ACC: traces massive calcite, dolomite and rare coal.	
3060 – 3090	70 20 10	**CLAYSTONE:** brownish gray, brown, subblocky, minor subplaty, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with laminar coal inclusions. **SANDSTONE:** whitish gray, light gray, 70%very fine, 30/fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to friable, with green lithics, few coal and traces mica inclusions, poor visual porosity. **SILTSTONE**: light gray, light brownish gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, sandy in part. ACC: traces massive calcite, dolomite and rare coal.	NF
3090 – 3120	60 30 10	**CLAYSTONE:** brownish gray, brown, subblocky, minor subplaty, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with laminar coal inclusions. **SANDSTONE:** whitish gray, light gray, 70%very fine, 30/fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to friable, with green lithics, few coal and traces mica inclusions, poor visual porosity. **SILTSTONE**: light gray, light brownish gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, sandy in part. ACC: traces massive calcite, dolomite, coal and glauconite.	NF
3120 – 3150	70 30 	**CLAYSTONE:** brown, brownish gray, subblocky to subblocky, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, locally silty. **SANDSTONE:** whitish gray, light gray, 80%very fine, 20/fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, with green lithics, few coal and traces mica inclusions, poor visual porosity. ACC: traces massive calcite, dolomite and coal.	NF
3150 – 3180	60 40 	**CLAYSTONE:** brown, brownish gray, subblocky to subplaty, moderately soft to soft, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, moderately smooth surface. **SANDSTONE:** whitish gray, light gray, 100%very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable, with green, few dark lithics, coal and traces mica inclusions, very poor to poor visual porosity. ACC: few dolomite, traces massive calcite and coal.	NF
3180 – 3210	60 40 	**CLAYSTONE:** brown, brownish gray, subblocky to subplaty, moderately soft to soft, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, moderately smooth surface. **SANDSTONE:** whitish gray, light gray, 100%very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable, with green, few dark lithics, coal and traces mica inclusions, very poor to poor visual porosity. ACC: few dolomite, traces calcite, coal and rare glauconite.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
3210 – 3240	70 20 10	**CLAYSTONE:** brown, minor brownish gray, light brown, blocky to subblocky, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with laminar coal inclusions, locally silty. **SANDSTONE:** light gray, minor whitish gray, 100%very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable to friable, locally dirty, with green, dark lithics and traces coal inclusions, poor visual porosity. **SILTSTONE**: gray, brownish gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, grading to sandy very fine grains. ACC: traces massive calcite, dolomite and rare coal.	NF
3240 – 3330	60 20 20	**CLAYSTONE:** brown, minor brownish gray, light brown, blocky to subblocky, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with laminar coal inclusions, slightly rough surface. **SILTSTONE**: gray, light gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, grading to sandy very fine grains. **SANDSTONE:** light gray, minor whitish gray, 100%very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable to friable, locally dirty, with green, dark lithics and traces coal inclusions, poor visual porosity. ACC: traces dolomite, massive calcite and coal.	NF
3300 – 3330	70 20 10	**CLAYSTONE:** brown, minor brownish gray, light brown, blocky to subblocky, moderately soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with laminar coal inclusions, slightly rough surface. **SILTSTONE**: gray, light gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, grading to sandy very fine grains. **SANDSTONE:** light gray, minor whitish gray, 100%very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately friable to friable, locally dirty, with green, dark lithics and traces coal inclusions, poor visual porosity. ACC: traces dolomite, massive calcite and coal.	NF
3330 – 3360	70 20 10	**CLAYSTONE:** brown, light brown, brownish gray, subblocky to blocky, moderately soft, slightly calcareous, slightly micromicaceous, occasionally carbonaceous, silty in part. **SILTSTONE**: light gray, minor brownish gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with few coal inclusions. **SANDSTONE:** whitish gray, light gray, 100%very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with green lithics and traces coal inclusions, poor visual porosity. ACC: traces dolomite, calcite and coal.	NF
3360 – 3390	80 10	**CLAYSTONE:** medium gray, brownish gray, subblocky to blocky, moderately soft to soft, very slightly calcareous, slightly micromicaceous, occasionally carbonaceous, silty in part. **SILTSTONE**: light gray, minor brownish gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with few coal inclusions.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SANDSTONE:** whitish gray, light gray, 100%very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with green, with few green lithics and traces coal inclusions, poor visual porosity. ACC: few dolomite, traces massive calcite and coal, rarely glauconite.	
3390 – 3420	80 10 10	**CLAYSTONE:** medium gray, brownish gray, subblocky to blocky, occasionally subplaty, moderately soft to moderately firm, very slightly calcareous, slightly micromicaceous, moderately microcarbonaceous, occasionally with coal interlaminated. **SILTSTONE**: light gray, minor brownish gray, subblocky to blocky, moderately firm, slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with few coal inclusions. **SANDSTONE:** whitish gray, light gray, 100% very fine hyaline quartz grains, subrounded, very well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with green lithics and traces coal inclusions, poor visual porosity. ACC: few dolomite, traces massive calcite and coal.	NF
CHACRA FM. AT 3420 ft.			
3420 – 3450	80 10 10	**CLAYSTONE:** medium gray, brownish gray, blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous. **SILTSTONE**: light gray, subblocky to blocky, moderately firm to moderately soft, slightly calcareous, slightly microcarbonaceous. **SANDSTONE:** whitish gray, light gray, 100% very fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with traces green lithics and coal inclusions, poor visual porosity. ACC: traces calcite.	NF
3450 – 3480	80 20 TR	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE**: light gray, subblocky to blocky, moderately firm to moderately soft, slightly calcareous, slightly microcarbonaceous, grading to sandy siltstone. **SANDSTONE:** light gray, 100% very fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with traces green lithics and coal inclusions, poor visual porosity. ACC: traces calcite.	NF
3480 – 3510	80 10 10	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE**: light gray, subblocky to blocky, moderately firm to moderately soft, slightly calcareous, slightly microcarbonaceous, grading to sandy siltstone. **SANDSTONE:** light gray, 100% very fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with traces green lithics and coal inclusions, poor visual porosity. ACC: traces calcite.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
3510 – 3540	90 10 TR	**CLAYSTONE:** medium gray, brownish gray, minor brown, sub blocky to blocky, locally sub platy, moderately firm to soft, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, slightly calcareous, slightly microcarbonaceous, grading to sandy siltstone. **SANDSTONE:** light gray, 100% very fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with traces green lithics and coal inclusions, poor visual porosity. ACC: traces calcite.	NF
3540 – 3570	80 20 TR	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky to blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty. **SILTSTONE**: light gray, blocky, moderately firm to moderately soft, very slightly calcareous, slightly microcarbonaceous, grading to sandy siltstone. **SANDSTONE:** light gray, 100% very fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with traces green lithics and coal inclusions, poor visual porosity. ACC: traces calcite.	NF
3570 – 3600	90 10 TR	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky to blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally with coal interlaminated, earthy, silty in part. **SILTSTONE**: light gray, blocky, moderately firm to moderately soft, very slightly calcareous, slightly microcarbonaceous, grading to sandy siltstone. **SANDSTONE:** light gray, 100% very fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with traces green lithics and coal inclusions, poor visual porosity. ACC: traces calcite and dolomite.	NF
3600 – 3630	90 10 TR	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky to blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty. **SILTSTONE**: light gray, blocky, moderately firm to moderately soft, very slightly calcareous, slightly microcarbonaceous, grading to sandy siltstone. **SANDSTONE:** light gray, 100% very fine hyaline quartz grains, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, dirty, with traces green lithics and coal inclusions, poor visual porosity. ACC: few dolomite and traces calcite.	NF
3630 – 3660	90 10	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, locally sub platy, moderately firm to soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, very slightly calcareous, slightly microcarbonaceous. ACC: few dolomite and traces calcite.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
3660 – 3690	90 10	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, locally sub platy, moderately firm to soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, very slightly calcareous, slightly microcarbonaceous. ACC: few dolomite and traces calcite.	NF
3690 – 3720	90 10	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, locally sub platy, moderately firm to soft, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, very slightly calcareous, slightly microcarbonaceous. ACC: few dolomite and traces calcite.	
3720 – 3750	100 TR	**CLAYSTONE:** medium gray, minor brownish gray, blocky to sub blocky, moderately soft to moderately firm, very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, very slightly calcareous, slightly microcarbonaceous, slightly calcareous. ACC: traces dolomite and calcite.	
3750 – 3780	90 10	**CLAYSTONE:** medium gray, minor brownish gray, blocky to sub blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty in part. **SILTSTONE**: light gray, blocky, moderately firm to moderately soft, very slightly calcareous, slightly microcarbonaceous, slightly calcareous. ACC: traces dolomite and calcite.	
3780 – 3810	90 10	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky to blocky, locally sub platy, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, earthy, silty in part. **SILTSTONE**: light gray, blocky, moderately firm to moderately soft, very slightly calcareous, slightly microcarbonaceous, slightly calcareous. ACC: traces dolomite and calcite.	
3810 – 3840	100 TR	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky to blocky, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE**: light gray, blocky, moderately firm to moderately soft, very slightly calcareous, slightly microcarbonaceous, slightly calcareous, grading to very fine sandstone in part. ACC: few dolomite and traces calcite.	
3840 – 3870	100 TR	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, locally sub platy, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, very slightly calcareous, slightly microcarbonaceous, slightly calcareous, grading to very fine sandstone in part. ACC: few dolomite and traces calcite.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
3870 – 3900	100 TR	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, locally sub platy, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally coal interlaminated, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, very slightly calcareous, slightly microcarbonaceous, slightly calcareous, grading to very fine sandstone in part. ACC: few dolomite and traces calcite.	
3900 – 3930	90 10	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, locally sub platy, soft to moderately firm, non to very slightly calcareous, slightly micromicaceous, slightly microcarbonaceous, occasionally coal interlaminated, silty in part. **SILTSTONE**: light gray, blocky, moderately firm, very slightly calcareous, slightly microcarbonaceous, slightly calcareous, grading to very fine sandstone in part. ACC: few dolomite and traces calcite.	
3930 – 3960	90 10	**CLAYSTONE:** gray, light gray, brownish gray, blocky to subblocky, occasionally subplaty, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, very slight calcareous, silty in part. **SILTSTONE:** gray, light gray, brownish gray, blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, non calcareous. ACC: calcite.	
3960 – 3990	90 10	**CLAYSTONE:** gray, light gray, brownish gray, blocky to subblocky, moderately soft to moderately firm, slight micromicaceous, microcarbonaceous, very slight calcareous. **SILTSTONE:** light gray, gray, blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, slight calcareous, with laminar coal inclusion. ACC: dolomite and calcite.	
3990 – 4020	90 10	**CLAYSTONE:** gray, light gray, brownish gray, blocky to subblocky, moderately soft to moderately firm, slight micromicaceous, microcarbonaceous, very slight calcareous. **SILTSTONE:** light gray, gray, blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, slight calcareous, with laminar coal inclusion. ACC: dolomite and calcite.	
4020 – 4050	90 10 TR TR	**CLAYSTONE:** gray, light gray, subblocky to blocky, soft to moderately firm, slight micromicaceous, microcarbonaceous, very slight calcareous, with laminar coal inclusion. **SILTSTONE:** gray, moderately gray, blocky, soft to moderately firm, slight micromicaceous, microcarbonaceous, non calcareous, with coal inclusion. **SANDSTONE:** grayish white, 90% very fine, 10% fine hyaline quartz grain, rounded to subrounded, very well sorted, friable, clay matrix, calcareous cement, poor visual porosity, with green mineral inclusion. **MARGA:** creamish yellow, cream, subblocky to blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, calcareous. ACC: calcite & rarely coal.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
4050 – 4080	90 10 TR	**CLAYSTONE:** light gray, brownish gray, subblocky to blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, very slight calcareous, silty in part. **SILTSTONE:** light gray, gray, blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, slight calcareous, grading to sandstone. **MARGA:** creamish yellow, cream, subblocky to blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, calcareous. ACC: calcite & rarely coal.	
4080 – 4110	90 10	**CLAYSTONE:** light gray, brownish gray, subblocky to blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, slight calcareous, silty in part. **SILTSTONE:** light gray, gray, blocky, soft to moderately firm, slight micromicaceous, microcarbonaceous, slight calcareous, grading to sandstone. ACC: calcite and marga.	
4110 – 4140	90 10	**CLAYSTONE:** light gray, brownish gray, subblocky to blocky, soft to moderately firm, slight micromicaceous, slight microcarbonaceous, slight calcareous, silty in part. **SILTSTONE:** light gray, gray, blocky, soft to moderately firm, slight micromicaceous, microcarbonaceous, slight calcareous, grading to sandstone. ACC: calcite and marga.	
4140 – 4170	90 10	**CLAYSTONE:** light gray, brownish gray, firm to moderately firm, minor soft, occasionally subplaty, micromicaceous, microcarbonaceous, slight calcareous. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, locally sandy siltstone.	
4170 – 4200	90 10 TR	**CLAYSTONE:** light gray, brownish gray, blocky, firm to moderately firm, occasionally soft, brittle, subplaty, micromicaceous, microcarbonaceous, slight calcareous. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, locally sandy siltstone. **SANDSTONE:** white, light gray, 90% very fine, 10% fine, subrounded to subangular, fair sorted, slight calcareous matrix, friable. ACC: calcite.	NF
4200 – 4230	90 10 TR	**CLAYSTONE:** light gray, medium gray, minor brownish gray, subblocky, occasionally subplaty, firm to moderately firm, occasionally soft, brittle, subplaty, micromicaceous, microcarbonaceous, slight calcareous. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, locally sandy siltstone. **SANDSTONE:** white, light gray, 90% very fine, 10% fine, subrounded to subangular, fair sorted, slight calcareous matrix, friable.	NF
4230 – 4260	80 10	**CLAYSTONE:** light gray, medium gray, minor brownish gray, subblocky, occasionally subplaty, firm to moderately firm, occasionally soft, brittle, subplaty, micromicaceous, microcarbonaceous, slight calcareous. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, locally sandy siltstone.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SANDSTONE:** white, hyaline, very light gray, 80% very fine, 20% fine, subrounded to subangular, quartz grain, fair sorted, clay matrix, calcareous cement, moderately friable, poor visual porosity, no oil show. ACC: calcite.	
4260 – 4290	90 10 TR	**CLAYSTONE:** light gray, medium gray, subblocky, occasionally subplaty, firm to moderately firm, occasionally soft, brittle, micromicaceous, microcarbonaceous, slight calcareous. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, locally sandy siltstone. **SANDSTONE:** white, light gray, 90% very fine, 10% fine, subrounded to subangular, fair sorted, slight calcareous matrix, friable. ACC: calcite.	NF
4290 – 4320	90 10	**CLAYSTONE:** light gray, medium gray, occasionally brownish gray, subblocky to subplaty, firm to moderately firm, occasionally soft, brittle, micromicaceous, microcarbonaceous, slight calcareous, with laminar coal inclusion, silty in part. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, with green mineral inclusion, grading to sandstone. ACC: calcite and dolomite.	NF
4320 – 4350	100	**CLAYSTONE:** light gray, medium gray, occasionally brownish gray, subblocky to subplaty, firm to moderately firm, occasionally soft, brittle, subplaty, micromicaceous, microcarbonaceous, slight calcareous, with laminar coal inclusion, silty in part. ACC: dolomite, calcite and glauconite.	NF
4350 – 4380	90 10 TR	**CLAYSTONE:** light gray, medium gray, brownish gray, subblocky, subplaty, firm to moderately firm, occasionally soft, brittle, micromicaceous, microcarbonaceous, slight calcareous, with laminar coal inclusion, silty in part. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, brittle, micromicaceous, microcarbonaceous, slight calcareous, with green mineral inclusion, sandy siltstone in part. **SANDSTONE:** white, very light gray, hyaline, 90% very fine, 10% fine, quartz grain, subrounded to subangular, fair sorted, slight calcareous matrix, friable. ACC: calcite and dolomite.	NF
4380 – 4410	80 10 10	**CLAYSTONE:** light gray, medium gray, brownish gray, subblocky, subplaty, firm to moderately firm, occasionally soft, brittle, micromicaceous, microcarbonaceous, slight calcareous, with laminar coal inclusion, silty in part. **SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, brittle, micromicaceous, microcarbonaceous, slight calcareous, with green mineral inclusion, sandy siltstone in part. **SANDSTONE:** white, very light gray, hyaline, 90% very fine, 10% fine, quartz grain, subrounded to subangular, fair sorted, slight calcareous matrix, friable. ACC: calcite and dolomite.	NF
4410 – 4440	90	**CLAYSTONE:** light gray, medium gray, brownish gray, subblocky, subplaty, firm to moderately firm, occasionally soft, brittle, micromicaceous, microcarbonaceous, slight calcareous, with laminar coal inclusion, silty in part.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, brittle, micromicaceous, microcarbonaceous, slight calcareous, with green mineral inclusion, sandy siltstone in part.	
	TR	**SANDSTONE:** white, very light gray, hyaline, 90% very fine, 10% fine, quartz grain, subrounded to subangular, fair sorted, slight calcareous matrix, friable.	
		ACC: calcite and dolomite.	
4440 – 4470	90	**CLAYSTONE:** gray, light gray, brownish gray, subblocky to blocky, soft to moderately firm, brittle, micromicaceous, microcarbonaceous, slight calcareous, with laminar coal inclusion, silty in part.	
	10	**SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, slight calcareous, sandy siltstone in part.	
		ACC: calcite and dolomite.	
4470 – 4500	90	**CLAYSTONE:** light gray, medium gray, brownish gray, subblocky to blocky, occasionally subplaty, soft to moderately firm, brittle, micromicaceous, microcarbonaceous, slight calcareous, with laminar coal inclusion, silty in part.	
	10	**SILTSTONE:** light gray, light brownish gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, slight calcareous, sandy siltstone in part.	NF
	TR	**SANDSTONE:** light grayish white, hyaline, 100% very fine quartz grain, rounded to subrounded, very well sorted, clay matrix, calcareous cement, poor visual porosity, with green mineral inclusion.	
		ACC: coal, calcite and dolomite.	
4500 – 4530	90	**CLAYSTONE:** medium gray, minor brownish gray, blocky, locally subplaty, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous, silty in part .	
	10	**SANDSTONE:** white, whitish gray, 100% very fine, hyaline quartz grain, subrounded to subangular, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, with coal inclusions, poor visual porosity. With traces, pale yellow natural fluorescence, strong fast streaming bright yellow cut, no visual residual ring.	TR
	TR	**SILTSTONE:** light gray, medium gray, blocky, soft to moderately firm, micromicaceous, microcarbonaceous, locally sandy siltstone.	
		ACC: calcite and dolomite.	
4530 – 4560	90	**CLAYSTONE:** medium gray, brownish gray, blocky, locally subplaty, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous, silty in part .	
	10	**SANDSTONE:** white, whitish gray, 100% very fine, hyaline quartz grain, subrounded to subangular, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, with coal inclusions, poor visual porosity, no oil show.	NF
	TR	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone.	
		ACC: calcite, dolomite and glauconite.	
4560 – 4590	90	**CLAYSTONE:** medium gray, brownish gray, blocky to subblocky, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous, occasionally coal interlaminated, silty in part .	NF
	10	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm to	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone.	
	TR	**SANDSTONE:** white, whitish gray, 100% very fine, hyaline quartz grain, subrounded to subangular, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, with coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite and glauconite.	
4590 – 4620	90	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, non calcareous, occasionally coal interlaminated, silty in part .	
	10	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone.	NF
	TR	**SANDSTONE:** white, whitish gray, 100% very fine, hyaline quartz grain, subrounded to subangular, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, with coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite.	
4620 – 4650	90	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, non calcareous, occasionally coal interlaminated, silty in part .	
	10	**SANDSTONE:** white, light gray, 100% very fine, hyaline quartz grain, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with glauconite and coal inclusions, poor visual porosity, no oil show.	NF
	TR	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone. ACC: calcite, dolomite and glauconite.	
4650 – 4680	90	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, non calcareous, occasionally coal interlaminated, silty in part .	
	10	**SANDSTONE:** white, light gray, 100% very fine, hyaline quartz grain, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces coal inclusions, poor visual porosity, no oil show.	NF
	TR	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone. ACC: calcite, dolomite.	
4680 – 4710	90	**CLAYSTONE:** medium gray, minor light gray, brownish gray, sub blocky, sub platy, firm to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous.	
	10	**SANDSTONE:** white, light gray, dirty, 90% very fine, 10% fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, poor visual porosity, no oil show.	NF
	TR	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
4710 – 4740	90 10 TR	**CLAYSTONE:** medium gray to brownish gray, sub blocky, sub platy, firm to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous. **SANDSTONE:** white, light gray, dirty, 90% very fine, 10% fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, poor visual porosity. Fluorescence: traces bright yellow natural fluorescence, slow streaming milky white cut, no visual residual ring. **SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone. ACC: calcite.	TR
4740 – 4770	80 10 10	**CLAYSTONE:** medium gray, brownish gray, sub blocky, sub platy, firm to moderately soft, micromicaceous, microcarbonaceous, non calcareous. **SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, with traces glauconite inclusions, locally sandy siltstone. **SANDSTONE:** white, very light gray, dirty, 90% very fine, 10% fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite.	NF
4770 – 4800	90 10 TR	**CLAYSTONE:** brownish gray, medium gray, sub blocky to blocky, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, non calcareous. **SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, locally sandy siltstone. **SANDSTONE:** white, very light gray, dirty, 90% very fine, 10% fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite.	NF
4800 – 4830	90 10 TR	**CLAYSTONE:** brownish gray, medium gray, sub blocky to blocky, soft to moderately firm, slightly micromicaceous, slightly microcarbonaceous, non calcareous. **SILTSTONE:** light gray, brownish gray, blocky, moderately firm to soft, slightly micromicaceous, microcarbonaceous, locally sandy siltstone. **SANDSTONE:** white, very light gray, dirty, 90% very fine, 10% fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite and glauconite.	NF
4830 – 4860	80	**CLAYSTONE:** medium gray, brownish gray, minor light gray, sub blocky to blocky, moderately firm to moderately soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm, slightly micromicaceous, slightly microcarbonaceous, locally sandy siltstone.	
	10	**SANDSTONE:** white, very light gray, dirty, 100% very fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite.	
4860 – 4890	80	**CLAYSTONE:** medium gray, brownish gray, minor light gray, sub blocky to blocky, moderately firm to moderately soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm, slightly micromicaceous, slightly microcarbonaceous, with glauconite in part, locally sandy siltstone.	NF
	TR	**SANDSTONE:** white, very light gray, dirty, 100% very fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite.	
4890 – 4920	90	**CLAYSTONE:** medium gray, brownish gray, minor light gray, sub blocky to blocky, locally sub platy, moderately firm to moderately soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part.	
	10	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm, slightly micromicaceous, slightly microcarbonaceous, with glauconite in part, locally sandy siltstone.	NF
	TR	**SANDSTONE:** light gray, dirty, 100% very fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite and glauconite.	
4920 – 4950	90	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part.	
	10	**SANDSTONE:** white, light gray, dirty, 90% very fine, 10% fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite.	NF
4950 – 4980	80	**CLAYSTONE:** medium gray, brownish gray, sub blocky to blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray, brownish gray, blocky, moderately firm, slightly micromicaceous, slightly microcarbonaceous, with glauconite in part, locally sandy siltstone.	NF
	TR	**SANDSTONE:** white, light gray, dirty, 90% very fine, 10% fine, hyaline quartz grain, sub rounded to sub angular, fair sorted, white argillaceous matrix, calcareous cement, moderately consolidate to	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		moderately friable, with traces glauconite and coal inclusions, poor visual porosity, no oil show. ACC: calcite, dolomite.	
4980 – 5010	90 10 TR	**CLAYSTONE:** medium gray, minor brownish gray, sub blocky to blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part, with laminar coal inclusion. **SILTSTONE:** light gray, medium gray, blocky, moderately firm, slightly micromicaceous, slightly microcarbonaceous, with glauconite in part and coal inclusion, locally sandy siltstone. **SANDSTONE:** white, light grayish white, 90% very fine, 10% fine hyaline quartz grain, rounded to subrounded, very well sorted, friable, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity. ACC: calcite and dolomite.	NF
5010 – 5040	90 10 TR	**CLAYSTONE:** light gray, medium gray, minor brownish gray, sub blocky to blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part, with laminar coal inclusion. **SILTSTONE:** medium gray, light gray, blocky, moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, with glauconite in part and coal inclusion, locally sandy siltstone. **SANDSTONE:** white, light grayish white, 100% very fine, hyaline quartz grain, rounded to subrounded, very well sorted, friable, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity. ACC: calcite and dolomite.	NF
5040 – 5070	90 10 TR	**CLAYSTONE:** light gray, medium gray, minor brownish gray, sub blocky to blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part, with laminar coal inclusion. **SILTSTONE:** medium gray, light gray, blocky, moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, with glauconite in part and coal inclusion, locally sandy siltstone. **SANDSTONE:** white, light grayish white, 100% very fine, hyaline quartz grain, rounded to subrounded, very well sorted, friable, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity. ACC: calcite and dolomite.	NF
5070 – 5100	90 10 TR	**CLAYSTONE:** light gray, medium gray, minor brownish gray, sub blocky to blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part, with laminar coal inclusion. **SILTSTONE:** medium gray, light gray, blocky, moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, with glauconite in part and coal inclusion, locally sandy siltstone. **SANDSTONE:** white, light grayish white, 100% very fine, hyaline quartz grain, rounded to subrounded, very well sorted, friable, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity. ACC: calcite and dolomite	NF
5100 – 5130	80	**CLAYSTONE:** medium gray, light gray, minor brownish gray, sub blocky to blocky, occasionally subplaty, moderately firm to soft,	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		micromicaceous, microcarbonaceous, slightly calcareous, silty in part, with laminar coal inclusion.	
	20	**SILTSTONE:** gray, medium gray, blocky, moderately firm to soft, micromicaceous, microcarbonaceous, non calcareous, with coal inclusion, locally sandy siltstone.	
		ACC: calcite and dolomite.	
5130 – 5160	80	**CLAYSTONE:** light gray, medium gray, light brownish gray, sub blocky to blocky, occasionally subplaty, moderately firm to soft, micromicaceous, microcarbonaceous, slightly calcareous, silty in part, with laminar coal inclusion.	
	20	**SILTSTONE:** light gray, medium gray, blocky, moderately firm to soft, micromicaceous, microcarbonaceous, non calcareous, with coal inclusion, grading to sandstone.	NF
		ACC: calcite and dolomite.	
5160 – 5190	80	**CLAYSTONE:** light gray, medium gray, light brownish gray, subblocky to blocky, soft to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous.	
	20	**SILTSTONE:** medium gray, whitish gray, blocky, moderately firm to soft, micromicaceous, microcarbonaceous, non calcareous, with coal inclusion, sandy in part.	NF
		ACC: calcite and dolomite.	
5190 – 5220	80	**CLAYSTONE:** light gray, medium gray, light brownish gray, sub blocky to blocky, moderately firm to soft, micromicaceous, microcarbonaceous, non calcareous, with laminar coal inclusion.	
	10	**SILTSTONE:** medium gray, whitish gray, blocky, moderately firm to soft, micromicaceous, microcarbonaceous, non calcareous, with coal inclusion, sandy in part.	NF
	10	**SANDSTONE:** grayish white, milky white, 90% very fine, 10% fine hyaline quartz grain, rounded to sub rounded, very well sorted, friable to moderately consolidated, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity, no oil show.	
5220 – 5250	80	**CLAYSTONE:** light gray, medium gray, sub blocky to blocky, moderately firm to soft, micromicaceous, microcarbonaceous, non calcareous, with laminar coal inclusion, silty in part.	
	10	**SILTSTONE:** medium gray, whitish gray, blocky, moderately firm to soft, micromicaceous, microcarbonaceous, very slightly calcareous, with coal inclusion, sandy in part.	NF
	10	**SANDSTONE:** grayish white, milky white, 90% very fine, 10% fine hyaline quartz grain, rounded to sub rounded, very well sorted, friable to moderately consolidated, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity, no oil show.	
5250 – 5280	80	**CLAYSTONE:** light gray, light brownish gray, sub blocky to blocky, moderately firm to soft, micromicaceous, microcarbonaceous, slightly calcareous, with laminar coal inclusion, silty in part.	
	10	**SILTSTONE:** gray, medium gray, blocky, moderately firm to soft, micromicaceous, microcarbonaceous, very slightly calcareous, with coal inclusion, sandy in part.	
	10	**SANDSTONE:** grayish white, milky white, 90% very fine, 10% fine hyaline quartz grain, rounded to sub rounded, very well sorted, friable to moderately consolidated, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity, no oil show.	NF
		ACC: calcite and dolomite.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
5280 – 5310	80 10 10	**CLAYSTONE:** light gray, light brownish gray, sub blocky to blocky, moderately firm to soft, micromicaceous, microcarbonaceous, slightly calcareous, with laminar coal inclusion, with occasionally micro pyrite inclusion, silty in part. **SILTSTONE:** gray, medium gray, blocky, moderately firm to soft, micromicaceous, microcarbonaceous, very slightly calcareous, with coal inclusion, sandy in part. **SANDSTONE:** grayish white, milky white, 90% very fine, 10% fine hyaline quartz grain, rounded to sub rounded, very well sorted, friable to moderately consolidated, clay matrix, calcareous cement, with glauconite and coal inclusion, poor visual porosity, no oil show. ACC: calcite and dolomite.	NF
5310 – 5340	90 10 TR	**CLAYSTONE:** light gray, brownish gray, minor medium gray, sub blocky, moderately firm, subplaty, micromicaceous, microcarbonaceous, locally silty, slightly calcareous, with laminar coal inclusion. **SILTSTONE:** light gray, medium gray, blocky, firm, micromicaceous, microcarbonaceous, slightly calcareous. **SANDSTONE:** white, dirty, light gray, 90% very fine, 10% fine, subrounded to subangular, hyaline quartz grain, fair to well sorted, white clay matrix, calcareous cement, moderately friable, no visual oil show. ACC: calcite and dolomite.	NF
5340 – 5370	70 20 10	**CLAYSTONE:** light gray, minor brownish gray, minor medium gray, sub blocky, moderately firm, subplaty, micromicaceous, microcarbonaceous, locally silty, slightly calcareous, with laminar coal inclusion. **SANDSTONE:** white, dirty, very light gray, 80% very fine, 20% fine, subrounded to subangular, quartz grain, well sorted, white clay matrix, calcareous cement, moderately friable, no oil show. **SILTSTONE:** light gray, medium gray, blocky, firm, micromicaceous, microcarbonaceous, slightly calcareous. ACC: calcite.	NF
5370 - 5400	90 10 TR	**CLAYSTONE:** light gray, brownish gray, subblocky, firm to moderately firm, occasionally soft, subplaty, micromicaceous, microcarbonaceous, slightly calcareous. **SANDSTONE:** white, very light gray, 80% very fine, 20% fine, subrounded to subangular, quartz grain, well sorted, white clay matrix, calcareous cement, moderately friable, no oil show. **SILTSTONE:** light gray, medium gray, blocky, firm, micromicaceous, microcarbonaceous, slightly calcareous. ACC: calcite	NF
5400 - 5430	90 10	**CLAYSTONE:** light gray, medium gray, subblocky to blocky, occasionally subplaty, soft to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, silty in part. **SILTSTONE:** light gray, medium gray, blocky, firm to moderately soft, micromicaceous, microcarbonaceous, slightly calcareous. ACC: calcite, dolomite	NF
5430 - 5460	90 10	**CLAYSTONE:** light gray, medium gray, subblocky to blocky, soft to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, with laminar coal inclusion, silty in part. **SILTSTONE:** light gray, medium gray, blocky, firm to moderately soft, micromicaceous, microcarbonaceous, slightly calcareous.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
5460 - 5490	90 10 TR	**CLAYSTONE:** light gray, medium gray, minor brownish gray, subblocky to blocky, soft to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, with laminar coal inclusion, silty in part. **SILTSTONE:** light gray, blocky, moderately firm to soft, microcarbonaceous, slightly calcareous. **SANDSTONE:** white, very light gray, 80% very fine, 20% fine, subrounded to subangular, quartz grain, well sorted, white clay matrix, calcareous cement, moderately friable, no oil show. ACC: calcite, dolomite	NF
5490 - 5520	80 20 TR	**CLAYSTONE:** light gray, medium gray, minor brownish gray, subblocky to blocky, soft to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, with laminar coal inclusion, silty in part. **SILTSTONE:** light gray, blocky, moderately firm to soft, microcarbonaceous, slightly calcareous. **SANDSTONE:** white, very light gray, 80% very fine, 20% fine, subrounded to subangular, quartz grain, well sorted, white clay matrix, calcareous cement, moderately friable, no oil show. ACC: calcite, dolomite	NF
5520 – 5550	70 20 10	**CLAYSTONE:** medium gray, subblocky to blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, earthy, silty. **SANDSTONE:** light gray, white 10% very fine, 90% fine, traces medium, subangular to subrounded, quartz grain, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with dark and green lithics inclusions, poor visual porosity. 10% patchy pale yellow natural fluorescence, slow weak streaming yellow cut, no visual residual ring. **SILTSTONE:** light gray to medium gray, blocky to subblocky, moderately firm to soft, microcarbonaceous, slightly calcareous. ACC: calcite.	10%
5550 – 5580	90 10	**CLAYSTONE:** medium gray, minor light gray, blocky, locally subplaty, moderately firm to soft, micromicaceous, slightly microcarbonaceous, non calcareous, earthy, silty. **SANDSTONE:** white, milky white, very light gray, 80% very fine, 20% fine, hyaline quartz grain, subangular to subrounded, quartz grain, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with coal inclusions, poor visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming yellow cut, no visual residual ring. ACC: calcite.	TR
5580 – 5610	90 10	**CLAYSTONE:** medium gray, minor light gray, blocky, locally subplaty, moderately firm to soft, micromicaceous, slightly microcarbonaceous, occasionally coal interlaminated, non calcareous, earthy, silty. **SANDSTONE:** white, minor very light gray, 80% very fine, 20% fine, hyaline quartz grain, subangular to subrounded, quartz grain, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with coal inclusions, poor visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming yellow cut, no visual residual ring. ACC: calcite, dolomite.	TR

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
5610 – 5640	90 10 TR	**CLAYSTONE:** medium gray, minor light gray, blocky, locally subplaty, moderately firm to soft, micromicaceous, slightly microcarbonaceous, occasionally coal interlaminated, non calcareous, earthy, silty. **SILTSTONE:** light gray to medium gray, blocky to subblocky, moderately firm to soft, microcarbonaceous, slightly calcareous. **SANDSTONE:** white, minor very light gray, 80% very fine, 20% fine, hyaline quartz grain, subangular to subrounded, quartz grain, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with coal inclusions, poor visual porosity ACC: calcite, dolomite.	NF
5640 – 5670	90 10 TR	**CLAYSTONE:** medium gray, blocky, locally subplaty, moderately firm to soft, micromicaceous, slightly microcarbonaceous, occasionally coal interlaminated, very slightly calcareous, earthy, silty. **SILTSTONE:** medium gray, minor light gray, blocky to subblocky, moderately firm, microcarbonaceous, very slightly calcareous. **SANDSTONE:** white, very light gray, 90% very fine, 10% fine, hyaline quartz grain, subangular to subrounded, quartz grain, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with coal inclusions, poor visual porosity ACC: traces calcite	NF
5670 – 5700	90 10	**CLAYSTONE:** medium gray, blocky, locally subplaty, moderately firm to soft, micromicaceous, microcarbonaceous, occasionally coal interlaminated, very slightly calcareous, silty. **SILTSTONE:** medium gray, blocky to subblocky, moderately firm, microcarbonaceous, very slightly calcareous. ACC: traces calcite	
5700 – 5730	80 20 TR	**CLAYSTONE:** medium gray, blocky, locally subplaty, moderately firm to soft, micromicaceous, slightly microcarbonaceous, occasionally coal interlaminated, very slightly calcareous, earthy, silty. **SILTSTONE:** medium gray, minor light gray, blocky to subblocky, moderately firm, microcarbonaceous, very slightly calcareous, occasionally with traces glauconite. **SANDSTONE:** white, very light gray, 90% very fine, 10% fine, hyaline quartz grain, subangular to subrounded, quartz grain, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with coal inclusions, poor visual porosity ACC: traces calcite	NF
5730 – 5760	70 20 10	**CLAYSTONE:** medium gray, blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, earthy, silty. **SILTSTONE:** medium gray, light gray, blocky, moderately firm to firm, slightly microcarbonaceous, calcareous. **SANDSTONE:** white, very light gray, 90% very fine, 10% fine, hyaline quartz grain, subangular to subrounded, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with coal inclusions, poor visual porosity ACC: traces calcite, pyrite	NF
5760 – 5790	60	**CLAYSTONE:** medium gray, blocky, moderately firm to soft, slightly micromicaceous, slightly microcarbonaceous, non calcareous, earthy, silty.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	20 20	**SILTSTONE:** medium gray, light gray, blocky, moderately firm to firm, slightly microcarbonaceous, calcareous. **SANDSTONE:** white, very light gray, 90% very fine, 10% fine, hyaline quartz grain, subangular to subrounded, fair sorted, white argillaceous matrix, calcareous cement, moderately friable, occasionally with coal inclusions, poor visual porosity ACC: traces calcite, pyrite	
5790 – 5820	70 20 10	**CLAYSTONE:** medium gray, blocky, moderately firm, slightly micromicaceous, microcarbonaceous, non calcareous, earthy, silty. **SILTSTONE:** medium gray, light gray, blocky, moderately firm, microcarbonaceous, calcareous. **SANDSTONE:** white dirty, very light gray, 90% very fine, 10% fine, hyaline quartz grain, subangular to subrounded, fair sorted, argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, carbonaceous, occasionally pyrite, poor visual porosity, no oil show. ACC: calcite.	NF
5820 – 5850	70 20 10	**CLAYSTONE:** medium gray, blocky, moderately firm, slightly micromicaceous, microcarbonaceous, non calcareous, earthy, silty. **SILTSTONE:** medium gray, light gray, blocky, moderately firm to soft, micromicaceous, slightly microcarbonaceous, slightly calcareous. **SANDSTONE:** grayish white, light gray, 90% very fine, 10% fine, hyaline quartz grain, subangular to subrounded, fair to well sorted, argillaceous matrix, calcareous cement, moderately friable, with dark grain inclusion, poor visual porosity, no oil show. ACC: calcite, traces glauconite	NF
RIO BLANCO FM. AT 5850 ft.			
5850 – 5880	60 20 20	**SANDSTONE:** dirty white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, fair sorted, clay matrix, calcareous cement, moderately consolidate, poor visual porosity, no oil show. Traces slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring. **CLAYSTONE:** medium gray, blocky, moderately firm, slightly micromicaceous, microcarbonaceous, non calcareous, earthy, silty. **SILTSTONE:** medium gray, light gray, blocky, moderately firm to soft, micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite	TR
5880 – 5910	70 20 10	**CLAYSTONE:** medium gray, light gray, subblocky to subplaty, firm to moderately firm, micromicaceous, microcarbonaceous, locally silty. **SANDSTONE:** dirty white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, fair sorted, clay matrix, calcareous cement, moderately consolidate, poor visual porosity, no oil show. 5% slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring **SILTSTONE:** medium gray, light gray, blocky, firm to soft, micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite.	5
5910 – 5920	50	**CLAYSTONE:** medium gray, light gray, subblocky to subplaty, firm to moderately firm, micromicaceous, microcarbonaceous, locally silty.	10

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	40	**SANDSTONE:** white, dirty white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. 10% slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring	
	10	**SILTSTONE:** medium gray, light gray, blocky, firm to soft, micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite	
5920 – 5940	60	**CLAYSTONE:** medium gray, minor light gray, subblocky, firm to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, locally silty.	
	30	**SANDSTONE:** white, dirty white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. Traces slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring	TR
	10	**SILTSTONE:** medium gray, light gray, blocky, firm to soft, micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite	
5940 – 5970	70	**CLAYSTONE:** medium gray, light gray, subblocky, firm to moderately firm, micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	20	**SANDSTONE:** white, dirty white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. Traces slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring	TR
	10	**SILTSTONE:** medium gray, light gray, blocky, firm to soft, micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite	
5970 – 6000	70	**CLAYSTONE:** medium gray, light gray, blocky to subblocky, moderately firm to soft, micromicaceous, microcarbonaceous, slightly calcareous, surface smooth, locally silty.	
	20	**SANDSTONE:** white, dirty white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show.	NF
	10	**SILTSTONE:** medium gray, light gray, blocky, firm to soft, micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite	
6000 – 6010	60	**CLAYSTONE:** medium gray, light gray, blocky to subblocky, moderately firm to soft, micromicaceous, microcarbonaceous, slightly calcareous, surface smooth, locally silty.	
	30	**SILTSTONE:** medium gray, blocky, firm to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, locally sandy siltstone.	TR
	10	**SANDSTONE:** white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. Traces patchy slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6010 – 6020	70 20 10	**CLAYSTONE:** medium gray, light gray, blocky to subblocky, moderately firm to soft, micromicaceous, microcarbonaceous, slightly calcareous, surface smooth, locally silty. **SILTSTONE:** medium gray, blocky, firm to moderately firm, micromicaceous, microcarbonaceous, slightly calcareous, locally sandy siltstone. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. Traces patchy slightly bright yellow natural fluorescence, with slow streaming milky white cut, no visible residual ring ACC: calcite	TR
6020 – 6030	80 10 10	**CLAYSTONE:** medium gray, light gray, blocky to subblocky, moderately firm to soft, micromicaceous, microcarbonaceous, slightly calcareous, surface smooth, locally silty. **SILTSTONE:** medium gray, subblocky to blocky, firm to moderately hard, micromicaceous, microcarbonaceous, slightly calcareous, locally sandy siltstone. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. Traces patchy slightly bright yellow natural fluorescence, with slow streaming milky white cut, no visible residual ring ACC: calcite	TR
6030 – 6040	80 10 10	**CLAYSTONE:** medium gray, minor light gray, blocky to subblocky, moderately hard to firm, micromicaceous, microcarbonaceous, slightly calcareous, surface smooth, locally silty. **SILTSTONE:** medium gray, subblocky to blocky, occasionally subplaty, firm to moderately hard, micromicaceous, microcarbonaceous, slightly calcareous. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. ACC: calcite	NF
6040 – 6050	90 10 TR	**CLAYSTONE:** medium gray, light gray, subblocky to subplaty, firm to moderately firm, brittle, micromicaceous, microcarbonaceous, very slightly calcareous, locally silty. **SILTSTONE:** medium gray, blocky, firm to moderately hard, brittle, micromicaceous, microcarbonaceous, to grading sandy siltstone, slightly calcareous. **SANDSTONE:** white, very light whitish gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. ACC: calcite	NF
6050 – 6060	90 10 TR	**CLAYSTONE:** medium gray, light gray, subblocky to subplaty, firm to moderately firm, brittle, micromicaceous, microcarbonaceous, very slightly calcareous, locally silty. **SILTSTONE:** medium gray, blocky, firm to moderately hard, brittle, micromicaceous, microcarbonaceous, to grading sandy siltstone, slightly calcareous. **SANDSTONE:** white, very light whitish gray, 70% very fine, 30%	TR

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. ACC: calcite	
6060 – 6070	90 10 TR	**CLAYSTONE:** medium gray, light gray, blocky to subblocky, firm to moderately firm, brittle, occasionally hard, micromicaceous, microcarbonaceous, very slightly calcareous to non calcareous. **SILTSTONE:** medium gray, blocky to subplaty, firm to moderately hard, brittle, micromicaceous, microcarbonaceous, locally grading sandy siltstone. **SANDSTONE:** white, very light whitish gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. ACC: calcite	NF
6070 – 6080	90 10 TR	**CLAYSTONE:** medium gray, light gray, blocky to subblocky, firm to moderately firm, brittle, occasionally hard, micromicaceous, microcarbonaceous, very slightly calcareous to non calcareous. **SILTSTONE:** medium gray, blocky to subplaty, firm to moderately hard, brittle, micromicaceous, microcarbonaceous, locally grading sandy siltstone. **SANDSTONE:** white, very light grayish white, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, fair visual porosity, no oil show. ACC: calcite	
6080 – 6090	80 10 10	**CLAYSTONE:** medium gray, light gray, subblocky to blocky, firm to moderately firm, brittle, micro pyrite, micromicaceous, microcarbonaceous, non calcareous. **SILTSTONE:** medium gray, blocky, firm, brittle, micromicaceous, microcarbonaceous, non calcareous, locally grading sandy siltstone. **SANDSTONE:** white, very light grayish white, 80% very fine, 20% fine, quartz grain, subrounded to subangular, well to fair sorted, white clay matrix, calcareous cement, friable to moderately consolidate, poor visual porosity, no oil show. ACC: calcite	NF
6090 – 6100	90 10 TR	**CLAYSTONE:** medium gray, light gray, subblocky to blocky, firm to moderately firm, brittle, micro pyrite, micromicaceous, microcarbonaceous, non calcareous. **SANDSTONE:** white, very light grayish white, 80% very fine, 20% fine, quartz grain, subrounded to subangular, well to fair sorted, white clay matrix, calcareous cement, friable to moderately consolidate, poor visual porosity, no oil show. **SILTSTONE:** medium gray, blocky, firm, brittle, micromicaceous, microcarbonaceous, non calcareous, locally grading sandy siltstone. ACC: calcite	NF
6100 – 6110	60 30	**CLAYSTONE:** medium gray, subblocky, firm to moderately firm, brittle, micro pyrite, micromicaceous, microcarbonaceous, non calcareous. **SANDSTONE:** white, very light gray, dirty, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, poor visual porosity, no oil show.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SILTSTONE:** medium gray, blocky, firm to moderately hard, brittle, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: calcite	
6110 - 6120	70	**CLAYSTONE:** medium gray, subblocky, firm to moderately firm, brittle, micro pyrite, micromicaceous, microcarbonaceous, non calcareous.	
	20	**SANDSTONE:** white, very light gray, dirty, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, with coal inter bending, poor visual porosity, no oil show. Traces patchy bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring	TR
	10	**SILTSTONE:** medium gray, blocky, firm, brittle, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: calcite	
6120 - 6130	70	**CLAYSTONE:** medium gray, subblocky, firm to moderately firm, brittle, micro pyrite, micromicaceous, microcarbonaceous, non calcareous.	
	30	**SANDSTONE:** grayish white, light gray, 60% very fine, 40% fine, quartz grain, subrounded to subangular, well sorted, abundant clay matrix, calcareous cement, friable to moderately consolidate, poor visual porosity, no oil show.	NF
	TR	**SILTSTONE:** medium gray, blocky, firm, brittle, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: abundant calcite, glauconite	
6130 - 6140	60	**SANDSTONE:** grayish white, very light gray, 70% very fine, 30% fine, quartz grain, subangular to subrounded, fair sorted, clay matrix, calcareous cement, with glauconite and coal inclusion, friable to moderately consolidate, poor visual porosity, no oil show.	
	40	**CLAYSTONE:** medium gray, subblocky, firm, brittle, micromicaceous, microcarbonaceous, occasionally very slightly calcareous.	NF
	TR	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: abundant calcite, glauconite	
6140 - 6150	60	**CLAYSTONE:** medium gray, subblocky, firm, brittle, micromicaceous, microcarbonaceous, occasionally very slightly calcareous.	
	40	**SANDSTONE:** grayish white, very light gray, 70% very fine, 30% fine, quartz grain, subangular to subrounded, fair sorted, clay matrix, calcareous cement, with glauconite and coal inclusion, friable to moderately consolidate, poor visual porosity, no oil show. ACC: calcite.	NF
6150 - 6160	50	**SANDSTONE:** grayish white, white, dirty, 70% very fine, 30% fine, quartz grain, subangular to subrounded, fair sorted, clay matrix, calcareous cement, with glauconite and coal inclusion, friable to moderately consolidate, poor visual porosity, no oil show.	NF
	40	**CLAYSTONE:** medium gray, subblocky, firm, brittle, micromicaceous, microcarbonaceous, occasionally very slightly	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		calcareous.	
	10	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6160 - 6170	60	**CLAYSTONE:** medium gray, subblocky, firm, brittle, micromicaceous, microcarbonaceous, occasionally very slightly calcareous.	
	40	**SANDSTONE:** grayish white, very light gray, 70% very fine, 30% fine, quartz grain, subangular to subrounded, fair sorted, clay matrix, calcareous cement, with glauconite and coal inclusion, friable to moderately consolidate, poor visual porosity, no oil show. ACC: calcite.	NF
6170 - 6180	50	**SANDSTONE:** grayish white, white, dirty, 70% very fine, 30% fine, quartz grain, subangular to subrounded, fair sorted, clay matrix, calcareous cement, moderately consolidate, with glauconite and coal inclusion, friable to poor visual porosity, no oil show.	
	50	**CLAYSTONE:** medium gray, subblocky, firm, brittle, micromicaceous, microcarbonaceous, occasionally very slightly calcareous.	NF
	TR	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6180 - 6190	70	**CLAYSTONE:** medium gray, blocky to subblocky, firm to moderately firm, brittle, micromicaceous, microcarbonaceous, non calcareous.	
	30	**SANDSTONE:** grayish white, white, light gray, 60% very fine, 20% fine, 10% medium, quartz grain, subrounded to subangular, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with coal inclusion, poor visual porosity, no oil show. Traces patchy bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring ACC: calcite	TR
6190 - 6200	50	**CLAYSTONE:** medium gray, blocky to subblocky, firm to moderately firm, brittle, micromicaceous, microcarbonaceous, non calcareous.	
	50	**SANDSTONE:** grayish white, white, light gray, 60% very fine, 20% fine, 10% medium, quartz grain, subrounded to subangular, well sorted, argillaceous matrix, calcareous cement, with glauconite and coal inclusion, moderately consolidate, poor visual porosity, no oil show. Traces patchy bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring ACC: calcite	TR
6200 - 6210	60	**CLAYSTONE:** medium gray, blocky to subblocky, firm to moderately firm, brittle, micromicaceous, microcarbonaceous, non calcareous.	
	40	**SANDSTONE:** grayish white, white, light gray, 60% very fine, 20% fine, 10% medium, quartz grain, subrounded to subangular, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with glauconite and coal inclusion, poor visual porosity, no oil show. 10% patchy bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring.	10
	TR	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6210 - 6220	70 30	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, friable to moderately consolidate, with coal and glauconite inclusion, fair visual porosity, no oil show. 10% patchy slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring **CLAYSTONE:** medium gray, blocky to subblocky, firm to moderately firm, brittle, micromicaceous, microcarbonaceous, non calcareous. ACC: calcite	10
6220 - 6230	50 50	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, friable to moderately consolidate, with coal and glauconite inclusion, fair visual porosity, no oil show. 10% patchy slightly bright yellow natural fluorescence, with slow blooming milky white cut, no visible residual ring **CLAYSTONE:** medium gray, blocky to subblocky, firm to moderately firm, brittle, micromicaceous, microcarbonaceous, non calcareous. ACC: calcite	10
6230 - 6240	70 20 10	**CLAYSTONE:** medium gray, minor light gray, subblocky to subplaty, moderately firm to firm, brittle, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. **SILTSTONE:** medium gray, subblocky to blocky, firm, slightly microcarbonaceous, slightly calcareous. **SANDSTONE:** grayish white, white, 80% very fine, 20% fine, quartz grain, subrounded to subangular, fair to well sorted, argillaceous matrix, calcareous cement, moderately friable, with dark grain inclusion, poor visual porosity, no oil show. ACC: calcite, traces pyrite.	NF
6240 - 6250	80 20	**CLAYSTONE:** medium gray, minor light gray, subblocky to subplaty, moderately firm to firm, brittle, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. **SANDSTONE:** grayish white, white, 70% very fine, 30% fine, quartz grain, subrounded to subangular, fair to well sorted, argillaceous matrix, calcareous cement, moderately friable, with dark grain inclusion, poor visual porosity, no oil show. ACC: calcite.	NF
6250-6270	70 30	**CLAYSTONE:** medium gray, subblocky to blocky, moderately firm to firm, brittle, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. **SANDSTONE:** white, very light gray, grayish white, 70% very fine, 30% fine, quartz grain, subrounded to subangular, clay matrix, calcareous cement, moderately consolidate, with glauconite dark inclusion, fair visual porosity. With patchy slightly bright yellow natural fluorescence, with fast blooming milky white cut, no visible residual ring ACC: calcite	TR
6270 – 6280	50 50	**CLAYSTONE:** medium gray, subblocky to blocky, moderately firm to firm, brittle, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, with glauconite dark inclusion, fair visual porosity, no oil show. Traces patchy slightly bright yellow	TR

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		natural fluorescence, with fast blooming milky white cut, no visible residual ring	
	TR	**SAND:** white, translucent, hyaline, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	
		ACC: calcite	
6280 – 6290	50	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, moderately consolidate, with glauconite dark inclusion, fair visual porosity, no oil show. Traces patchy slightly bright yellow natural fluorescence, with fast blooming milky white cut, no visible residual ring.	
	30	**CLAYSTONE:** medium gray, blocky to subblocky, moderately firm to firm, brittle, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous.	TR
	20	**SAND:** white, translucent, hyaline, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	
		ACC: calcite	
6290 – 6300	50	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, quartz grain, subrounded to subangular, fairly sorted, clay matrix, calcareous cement, moderately consolidate, with glauconite dark inclusion, fair visual porosity, no oil show. 10% patchy slightly bright yellow natural fluorescence, with fast blooming milky white cut, no visible residual ring	
	30	**CLAYSTONE:** medium gray, blocky to subblocky, moderately firm to firm, brittle, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous.	10
	20	**SAND:** white, translucent, hyaline, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	
		ACC: calcite	
6300 – 6310	50	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, quartz grain, subrounded to subangular, fairly sorted, clay matrix, calcareous cement, moderately consolidate, with glauconite dark inclusion, fair visual porosity, no oil show. 15% patchy slightly bright yellow natural fluorescence, with fast blooming milky white cut, no visible residual ring	
	30	**SAND:** white, translucent, hyaline, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	15
	20	**CLAYSTONE:** medium gray, minor light gray, blocky to subblocky, moderately firm to firm, brittle, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous.	
		ACC: calcite	
6310 – 6320	60	**SANDSTONE:** white, very light gray, grayish white, 70% very fine, 30% fine, quartz grain, subrounded to subangular, well sorted, clay matrix, calcareous cement, friable to moderately consolidate, with dark inclusion, fair visual porosity, no oil show. 20% patchy slightly bright yellow natural fluorescence, with fast blooming milky white cut, no visible residual ring	20
	30	**SAND:** white, translucent, hyaline, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		lithics in part.	
	10	**CLAYSTONE:** medium gray, blocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. ACC: calcite	
6320 – 6330	50	**SANDSTONE:** very light gray, occasionally white, 70% very fine, 30% fine, quartz grain, subrounded, minor subangular, well sorted, white clay matrix, calcareous cement, friable to moderately consolidate, with dark inclusion and glauconite, poor visual porosity, no oil show. 30% patchy slightly bright yellow natural fluorescence, with fast blooming milky white cut, no visible residual ring	30
	40	**SAND:** white, translucent, hyaline, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	
	10	**CLAYSTONE:** medium gray, blocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. ACC: calcite	
6330 – 6340	50	**SANDSTONE:** very light gray, occasionally white, 70% very fine, 30% fine, quartz grain, subrounded, minor subangular, well sorted, white clay matrix, calcareous cement, friable to moderately consolidate, with dark inclusion and glauconite, poor visual porosity, no oil show. 30% patchy slightly bright yellow natural fluorescence, with fast blooming milky white cut, no visible residual ring	30
	40	**SAND:** white, translucent, hyaline, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	
	10	**CLAYSTONE:** medium gray, blocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. ACC: calcite	
6340 – 6350	60	**SANDSTONE:** very light gray, grayish white, 60% very fine, 30% fine, 10% medium, quartz grain, subrounded, minor subangular, well sorted, white clay matrix, calcareous cement, friable to moderately consolidate, with dark inclusion and glauconite, poor visual porosity, no oil show. 40% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	40
	40	**SAND:** white, hyaline, quartz, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded to subangular, dark grain lithics in part.	
	TR	**CLAYSTONE:** medium gray, blocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. ACC: calcite	
6350 – 6360	60	**SANDSTONE:** very light gray, grayish white, 60% very fine, 30% fine, 10% medium, quartz grain, subrounded, minor subangular, well sorted, white clay matrix, calcareous cement, friable to moderately consolidate, with dark inclusion and glauconite, poor visual porosity, no oil show. 40% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	40
	40	**SAND:** white, hyaline, quartz, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded to subangular, dark grain lithics in part.	
	TR	**CLAYSTONE:** medium gray, blocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	TR	**SILTSTONE:** medium gray, blocky, firm, brittle, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone ACC: calcite	
6360 – 6370	60	**SANDSTONE:** very light gray, grayish white, 60% very fine, 30% fine, 10% medium, quartz grain, subrounded, minor subangular, well sorted, white clay matrix, calcareous cement, friable to moderately consolidate, with dark inclusion and glauconite, poor visual porosity, no oil show. 40% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	40
	40	**SAND:** white, hyaline, quartz, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, dark grain lithics in part.	
	TR	**CLAYSTONE:** medium gray, blocky to subblocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. ACC: calcite	
6370 – 6380	50	**SANDSTONE:** very light gray, white, grayish white, 70% very fine, 20% fine, 10% medium, quartz grain, subrounded, well sorted, white clay matrix, calcareous cement, friable, with dark lithics inclusion, poor visual porosity, no oil show. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	50
	40	**SAND:** white, hyaline, quartz, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, dark grain lithics in part.	
	10	**CLAYSTONE:** medium gray, blocky to subblocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. ACC: calcite	
6380 – 6390	60	**SANDSTONE:** very light gray, white, grayish white, 70% very fine, 20% fine, 10% medium, quartz grain, subrounded, well sorted, white clay matrix, calcareous cement, friable, with dark lithics inclusion, poor visual porosity, no oil show. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	50
	40	**SAND:** white, hyaline, quartz, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, dark grain lithics in part. ACC: calcite	
6390 – 6400	50	**SANDSTONE:** very light gray, white, grayish white, 70% very fine, 20% fine, 10% medium, quartz grain, subrounded, well sorted, white clay matrix, calcareous cement, friable, with dark lithics inclusion, poor visual porosity, no oil show. 40% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	40
	40	**SAND:** white, hyaline, quartz, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, dark grain lithics in part.	
	10	**CLAYSTONE:** medium gray, blocky to subblocky, firm, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous. ACC: calcite	
6400 – 6410	60	**SANDSTONE:** very light gray, white, 70% very fine, 20% fine, 10% medium, quartz grain, subrounded, minor subangular, fair to well sorted, white clay matrix, abundant calcareous cement, friable to	50

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		moderately consolidate, glauconite and dark lithics inclusion, poor to fair visual porosity. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	
	30	**SAND:** white, hyaline, translucent, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	
	10	**CLAYSTONE:** medium gray, blocky to subblocky, firm, brittle, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite, shell fragments	
6410 – 6420	50	**SAND:** white, hyaline, translucent, 70% fine, 10% very fine, 20% medium, quartz grain, subrounded, minor subangular, dark grain lithics in part.	
	40	**SANDSTONE:** very light gray, white, 70% very fine, 20% fine, 10% medium, quartz grain, subrounded, minor subangular, fair to well sorted, white clay matrix, abundant calcareous cement, friable to moderately consolidate, glauconite and dark lithics inclusion, poor to fair visual porosity. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring.	50
	10	**CLAYSTONE:** medium gray, blocky to subblocky, firm, brittle, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite, shell fragments	
6420 – 6430	50	**SAND:** white, hyaline, translucent, 60% fine, 30% medium, 10% very fine, quartz grain, subrounded to rounded, minor subangular, dark grain lithics in part.	
	40	**SANDSTONE:** very light gray, white, 70% very fine, 20% fine, 10% medium, quartz grain, subrounded, minor subangular, fair to well sorted, white clay matrix, abundant calcareous cement, friable to moderately consolidate, glauconite and dark lithics inclusion, poor to fair visual porosity. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	50
	10	**CLAYSTONE:** medium gray, blocky to subblocky, firm, brittle, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite, shell fragments	
6430 – 6440	60	**SANDSTONE:** very light gray, white, dirty white, 60% very fine, 20% fine, 20% medium, quartz grain, subrounded to subangular, fair to well sorted, white clay matrix, calcareous cement, friable to moderately consolidate, glauconite and dark lithics inclusion, poor to fair visual porosity. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring	
	30	**SAND:** white, hyaline, translucent, 60% fine, 30% medium, 10% very fine, quartz grain, subrounded to rounded, minor subangular, dark grain lithics in part.	50
	10	**CLAYSTONE:** medium gray, blocky to subblocky, firm, brittle, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite, shell fragments	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6440 – 6450	60 30 10	**SANDSTONE:** white, hyaline, 70% fine, 30% very fine, traces medium, quartz grain, subangular to subrounded, fair sorted, white argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, occasionally traces glauconite and pyrite inclusion, fair visual porosity. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring **SAND:** translucent, 70% fine, 30% medium, quartz grain, subangular to subrounded, dark grain lithics in part. **CLAYSTONE:** medium gray, blocky to subblocky, firm, brittle, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite, shell fragments	50
6450 – 6460	60 30 10	**SANDSTONE:** white, milky white, hyaline, 70% fine, 30% very fine, traces medium, quartz grain, subangular to subrounded, fair sorted, white argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, occasionally traces glauconite and pyrite inclusion, fair visual porosity. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring **SAND:** translucent, 60% fine, 40% medium, traces coarse, subangular to subrounded, dark grain lithics in part. **CLAYSTONE:** medium gray, blocky to subblocky, firm, brittle, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite.	50
6460 – 6470	60 30 10	**SANDSTONE:** white, hyaline, 70% fine, 30% very fine, traces medium, quartz grain, subangular to subrounded, fair sorted, white argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, occasionally traces glauconite and pyrite inclusion, fair visual porosity. 50% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring **SAND:** translucent, 70% fine, 30% medium, traces coarse, subangular to subrounded, dark grain lithics in part. **CLAYSTONE:** medium gray, blocky to subblocky, firm, brittle, slightly micromicaceous, slightly microcarbonaceous, slightly calcareous. ACC: calcite.	50
6470 – 6480	50 30 20	**SANDSTONE:** white in part, very light gray, whitish gray smoky, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded to rounded, fair to well sorted, white clay matrix, calcareous cement, moderately friable to moderately consolidate, occasionally traces glauconite and pyrite inclusion, fair visual porosity. 30% patchy slightly bright yellowish natural fluorescence, with fast streaming milky white cut, no visible residual ring **CLAYSTONE:** medium gray, dark gray, blocky to subblocky, firm, micromicaceous, microcarbonaceous, slightly calcareous. **SAND:** hyaline, translucent, 60% very fine, 30% fine, 10%medium, traces coarse, subrounded to rounded, dark grain lithics in part, fair to well sorted. ACC: calcite.	30

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6480 – 6490	50 30 20	**CLAYSTONE:** medium gray, minor dark gray, subblocky, in part sublaminar, firm, brittle, micromicaceous, microcarbonaceous, locally shale, slightly calcareous. **SANDSTONE:** white in part, very light gray, whitish gray smoky, 60% fine, 10% very fine, 30% medium, quartz grain, subrounded to rounded, fair to well sorted, white clay matrix, calcareous cement, moderately friable to moderately consolidate, occasionally traces glauconite and pyrite inclusion, fair visual porosity. 10% patchy pale yellow natural fluorescence, with moderately fast streaming milky white cut, no visible residual ring **SAND:** hyaline, translucent, 70% very fine, 30% fine, traces medium, subangular to subrounded, dark grain lithics in part, fair sorted. ACC: calcite.	10
6490 – 6500	50 30 20	**SAND:** hyaline, translucent, 60% fine, 20% very fine, 20% medium, subangular to subrounded, fair sorted, dark grain lithics in part. **CLAYSTONE:** medium gray, minor dark gray, subblocky, in part sublaminar, firm, brittle, micromicaceous, microcarbonaceous, locally shale, slightly calcareous. **SANDSTONE:** white, very light gray, hyaline, 70% fine, 30% very fine, quartz grain, subangular to subrounded, fair sorted, argillaceous matrix, calcareous cement, slightly carbonaceous, moderately consolidate, occasionally traces glauconite inclusion, fair visual porosity. 10% patchy pale yellow natural fluorescence, with moderately fast streaming milky white cut, no visible residual ring ACC: calcite.	10
6500 – 6510	70 20 10	**SAND:** hyaline, translucent, 70% fine, 10% very fine, 20% medium, subangular to subrounded, fair sorted, dark grain lithics in part. **CLAYSTONE:** medium gray, minor dark gray, blocky, moderately firm, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part. **SANDSTONE:** white, very light gray, hyaline quartz grain, 70% fine, 30% very fine, subangular to subrounded, fair sorted, argillaceous matrix, calcareous cement, slightly carbonaceous, moderately friable to moderately consolidate, occasionally traces glauconite inclusion, fair visual porosity. Traces patchy pale yellow natural fluorescence, with moderately fast streaming milky white cut, no visible residual ring ACC: calcite, traces pyrite	TR
6510 – 6520	70 20 10	**SAND:** hyaline, translucent, 80% fine, 20% medium, subangular to subrounded, fair sorted, dark grain lithics inclusion. **SANDSTONE:** white, milky white, very light gray, hyaline quartz grain, 80% fine, 20% medium, subangular to subrounded, fair sorted, slightly argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate, occasionally traces glauconite inclusion, fair visual porosity. Traces patchy pale yellow natural fluorescence, with slow weak streaming milky white cut, no visible residual ring **CLAYSTONE:** medium gray, minor dark gray, blocky, moderately firm, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part. ACC: calcite, traces pyrite.	TR

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6520 – 6530	50	**SANDSTONE:** white, hyaline quartz grain, 80% fine, 20% medium, traces medium, subangular to subrounded, fair sorted, slightly argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate, occasionally traces glauconite inclusion, fair visual porosity. 40% patchy pale yellow natural fluorescence, with slow weak streaming milky white cut, no visible residual ring	40
	30	**SAND:** hyaline, translucent, 80% fine, 20% medium, subangular to subrounded, fair sorted, dark grain lithics inclusion.	
	20	**CLAYSTONE:** medium gray, minor dark gray, blocky, moderately firm, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part.	
		ACC: calcite, traces pyrite	
6530 – 6540	30	**SANDSTONE:** white, hyaline quartz grain, 80% fine, 20% very fine traces medium, subangular to subrounded, fair sorted, slightly argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate, occasionally traces glauconite inclusion, fair visual porosity. 20% patchy pale yellow natural fluorescence, with slow weak streaming milky white cut, no visible residual ring	20
	30	**SAND:** hyaline, translucent, 80% fine, 20% very fine, traces medium, subangular to subrounded, fair sorted, dark grain lithics inclusion.	
	30	**CLAYSTONE:** medium gray, minor dark gray, blocky, moderately firm, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part.	
	10	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	
		ACC: calcite, traces pyrite	
6540 – 6550	40	**CLAYSTONE:** medium gray, minor dark gray, blocky, moderately firm, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part.	10
	30	**SANDSTONE:** white, hyaline quartz grain, 80% fine, 20% very fine traces medium, subangular to subrounded, fair sorted, slightly argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate, occasionally traces glauconite inclusion, fair visual porosity. 10% patchy pale yellow natural fluorescence, with slow weak streaming milky white cut, no visible residual ring	
	20	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, occasionally glauconite.	
	10	**SAND:** hyaline, translucent, 80% fine, 20% very fine, traces medium, subangular to subrounded, fair sorted, dark grain lithics inclusion.	
6550 – 6560	50	**CLAYSTONE:** medium gray, blocky, moderately firm, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part.	20
	30	**SANDSTONE:** white, light gray, hyaline quartz grain, 80% fine, 20% very fine traces medium, subangular to subrounded, fair sorted, slightly argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate,	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		occasionally traces glauconite inclusion, fair visual porosity. 20% patchy pale yellow natural fluorescence, with slow weak streaming milky white cut, no visible residual ring	
	10	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, occasionally glauconite.	
	10	**SAND:** hyaline, translucent, 80% fine, 20% very fine, traces medium, subangular to subrounded, fair sorted, dark grain lithics inclusion. ACC: calcite.	
6560 – 6570	70	**CLAYSTONE:** medium gray, blocky, moderately firm, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part.	
	20	**SANDSTONE:** white, very light gray, 20% very fine, 80% fine, traces medium, quartz grain, subangular to subrounded, fair sorted, slightly argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate, occasionally traces glauconite inclusion, fair visual porosity. 10% patchy pale yellow white natural fluorescence, slow weak streaming milky white cut, no visible residual ring.	10
	10	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, occasionally glauconite.	
6570 – 6580	60	**CLAYSTONE:** medium gray, subblocky to blocky, firm to moderately hard, brittle, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part.	
	30	**SANDSTONE:** very light gray, 70% very fine, 30% fine, quartz grain, subangular to subrounded, fair sorted, white clay matrix, calcareous cement, slightly microcarbonaceous, moderately consolidate, dark lithic with inclusion, fair visual porosity. Traces patchy pale yellow white natural fluorescence, slow weak streaming milky white cut, no visible residual ring.	TR
	10	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, occasionally glauconite.	
	TR	**SAND:** hyaline, minor white, translucent, 80% fine, 20% medium, quartz grain, subangular to subrounded, fair to well sorted, dark grain lithics inclusion.	
6580 – 6590	50	**CLAYSTONE:** medium gray, dark gray, blocky, firm to moderately hard, brittle, subplaty, slightly micromicaceous, slightly microcarbonaceous, locally shale, no calcareous, silty in part.	
	30	**SANDSTONE:** very light gray, 80% very fine, 20% fine, quartz grain, subrounded minor subangular, well sorted, clay matrix, calcareous cement, slightly microcarbonaceous, moderately consolidate, with dark lithic inclusion, fair visual porosity. Also white, grayish white, 70% fine, 30% medium, quartz grain, subrounded to subangular, fair sorted, abundant white clay matrix, calcareous cement, moderately consolidate, with dark lithic inclusion, fair visual porosity. 10% patchy pale yellow white natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	10
	20	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, occasionally glauconite.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6590 – 6600	60	**CLAYSTONE:** medium gray, dark gray, blocky, firm to moderately hard, brittle, subplaty, slightly micromicaceous, slightly microcarbonaceous, locally shale, non calcareous, silty in part.	
	30	**SANDSTONE:** very light gray, 80% very fine, 20% fine, quartz grain, subrounded minor subangular, well sorted, clay matrix, calcareous cement, slightly microcarbonaceous, moderately consolidate, with dark lithic inclusion, fair visual porosity. Also white, grayish white, 70% fine, 30% medium, quartz grain, subrounded to subangular, fair sorted, abundant white clay matrix, calcareous cement, moderately consolidate, with dark lithic inclusion, fair visual porosity. Traces patchy pale yellow white natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	TR
	10	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, occasionally glauconite.	
6600 – 6610	70	**CLAYSTONE:** medium gray, blocky, moderately firm, brittle, locally subplaty, slightly micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	20	**SANDSTONE:** very light gray, 20% very fine, 80% fine, quartz grain, subrounded minor subangular, well sorted, argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately consolidate, poor visual porosity. Also white, grayish white, 90% fine, 10% medium, quartz grain, subrounded to subangular, fairly sorted, abundant white argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, fair visual porosity. Traces patchy pale yellow white natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	TR
	10	**SAND:** hyaline, translucent, 30% fine, 70% very fine, traces medium, subangular to subrounded, fair sorted.	
6610 – 6620	60	**CLAYSTONE:** medium gray, blocky to subplaty, locally platy, moderately firm, brittle, slightly micromicaceous, micro carbonaceous, rarely glauconite, non calcareous, silty in part.	
	20	**SANDSTONE:** very light gray, 30% very fine, 70% fine, quartz grain, subrounded to subangular, well sorted, argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately consolidate, hard in part, poor visual porosity. Also white, grayish white, 90% fine, 10% medium, quartz grain, subrounded to subangular, argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, slightly carbonaceous, poor to fair visual porosity. Traces patchy pale yellow white natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	TR
	20	**SAND:** white, hyaline, translucent, 20% very fine, 80% fine, traces medium, subangular to subrounded, fair sorted, dark grain lithics inclusion. ACC: pyrite	
6620 – 6630	70	**CLAYSTONE:** medium gray, minor brownish gray, blocky, locally subplaty, moderately firm, micromicaceous, microcarbonaceous, non to very slightly calcareous.	
	20	**SANDSTONE:** white, very light gray, 20% very fine, 80% fine, traces medium, quartz grain, subrounded to subangular, well to fairly sorted, argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate,	TR

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		poor visual porosity. Also light gray, 40% very fine, 60% fine, quartz grain, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, poor visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visible residual ring.	
	10	**SAND:** white, hyaline, translucent, 20% very fine, 80% fine, traces medium, subangular to subrounded, fairly sorted. ACC: calcite and glauconite.	
6630 – 6640	60	**CLAYSTONE:** medium gray, minor brownish gray, blocky, locally subplaty, moderately firm, brittle in part, slightly micromicaceous, microcarbonaceous, non to very slightly calcareous.	
	30	**SANDSTONE:** white, very light gray, 20% very fine, 80% fine, traces medium, quartz grain, subrounded to subangular, well sorted, argillaceous matrix, calcareous cement, slightly microcarbonaceous, moderately friable to moderately consolidate, fair visual porosity. Also light gray, 40% very fine, 60% fine, quartz grain, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, slightly carbonaceous, poor visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	TR
	10	**SAND:** white, hyaline, translucent, 30% very fine, 70% fine, traces medium, subangular to subrounded, fairly sorted.	
6640 – 6650	40	**CLAYSTONE:** medium gray, minor brownish gray, blocky, locally subplaty, moderately firm, locally soft, brittle in part, micromicaceous, slightly microcarbonaceous, non calcareous, rarely glauconitic and pyritic.	
	40	**SANDSTONE:** white, very light gray, 80% very fine, 20% fine, hyaline quartz grain, subangular to subrounded, fairly sorted, abundant argillaceous matrix, calcareous cement, slightly carbonaceous, moderately friable to moderately consolidate, fair visual porosity. Also white, 90% fine, 10% medium, quartz grain, subangular to subrounded, fairly sorted, slightly argillaceous matrix, calcareous cement, moderately friable, fair visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	TR
	20	**SAND:** white, translucent, hyaline, 30% very fine, 60% fine, 10% medium, quartz grain, subangular to subrounded, fairly sorted. ACC: calcite and glauconite.	
6650 – 6660	40	**SANDSTONE:** white, light gray, 80% very fine, 20% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant argillaceous matrix, calcareous cement, slightly carbonaceous, moderately friable to moderately consolidate, poor to fair visual porosity. Also white, 90% fine, 10% medium, quartz grain, sub angular to sub rounded, fairly sorted, slightly argillaceous matrix, calcareous cement, moderately friable, fair visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	TR
	30	**CLAYSTONE:** medium gray, brownish gray, moderately firm to soft, blocky to subblocky, brittle, locally subplaty, slightly micromicaceous, microcarbonaceous, non calcareous.	
	30	**SAND:** hyaline, translucent, 90% fine, 10% medium, traces coarse, subangular to subrounded, fair sorted. ACC: calcite and pyrite.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6660 - 6670	40 30 30 TR	**SANDSTONE:** white, dirty white, 20% very fine, 80% fine, traces medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant argillaceous matrix, calcareous cement, slightly carbonaceous, moderately consolidate to moderately friable, fair visual porosity. Also light gray, 30% very fine, 70% fine, traces medium, quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, poor to fair visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring. **CLAYSTONE:** brownish gray, medium gray, moderately firm to soft, blocky to sub blocky, locally sub platy, slightly micromicaceous, microcarbonaceous, occasionally coal interlaminated, non to very slightly calcareous. **SAND:** white, hyaline, translucent, 30% very fine, 70% fine, traces medium, sub angular to sub rounded, fairly sorted. **SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, non calcareous, grading to sandy siltstone. ACC: calcite.	TR
6670 – 6680	60 30 10	**CLAYSTONE:** brownish gray, medium gray, moderately firm to soft, blocky to sub platy, slightly micromicaceous, microcarbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous. **SANDSTONE:** white, dirty white, 20% very fine, 80% fine, traces medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant argillaceous matrix, calcareous cement, slightly carbonaceous, moderately consolidate to moderately friable, fair visual porosity. Also light gray, 30% very fine, 70% fine, traces medium, quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, calcareous cement, moderately consolidate to moderately friable, poor to fair visual porosity. Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring. **SAND:** white, hyaline, translucent, 30% very fine, 70% fine, traces medium, sub angular to sub rounded, fairly sorted. ACC: calcite.	TR
6680 – 6690	60 30 10	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to firm, blocky to sub blocky, minor sub platy, slightly micromicaceous, microcarbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous. **SANDSTONE:** white, very light gray, dirty white, 10% very fine, 80% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant argillaceous matrix, calcareous cement, slightly carbonaceous, moderately consolidate to moderately friable, fair visual porosity. No oil show. **SAND:** white, hyaline, translucent, 20% very fine, 80% fine, traces medium, sub angular to sub rounded, fairly to well sorted. ACC: calcite.	NF
6690 – 6700	70 30	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to moderately hard, sub blocky, minor sub platy, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. **SANDSTONE:** dirty white, very light gray, 20% very fine, 70% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with	10

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		glauconite and dark lithic grains inclusion, friable to moderately consolidate, poor to fair visual porosity. With 10% patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	
	TR	**SAND:** white, hyaline, translucent, 20% very fine, 80% fine, traces medium, sub angular to sub rounded, fairly to well sorted. ACC: calcite.	
6700 – 6710	60	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to moderately hard, sub blocky, minor sub platy, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	30	**SANDSTONE:** dirty white, very light gray, 20% very fine, 70% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, poor to fair visual porosity. With 5% patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	10	**SAND:** white, hyaline, translucent, 20% very fine, 80% fine, traces medium, sub angular to sub rounded, fairly to well sorted. ACC: calcite.	
6710 – 6720	50	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to moderately hard, sub blocky, minor sub platy, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	30	**SANDSTONE:** dirty white, very light gray, 20% very fine, 70% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, poor to fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	20	**SAND:** white, hyaline, translucent, 20% very fine, 80% fine, traces medium, sub angular to sub rounded, fairly to well sorted. ACC: calcite.	
6720 – 6730	70	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	20	**SANDSTONE:** white, dirty white, very light gray, 70% very fine, 20% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, slightly argillaceous matrix, calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, poor to fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**SAND:** white, hyaline, translucent, 20% very fine, 60% fine, 20% medium, sub angular to sub rounded, fairly sorted. ACC: calcite.	
6730 – 6740	80	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	20	**SANDSTONE:** white, dirty white, very light gray, 70% very fine, 20% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, slightly argillaceous matrix, calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		consolidate, poor to fair visual porosity. No oil show.	
	TR	**SAND:** white, hyaline, translucent, 20% very fine, 60% fine, 20% medium, sub angular to sub rounded, fairly sorted.	
		ACC: calcite.	
6740 – 6750	50	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	30	**SANDSTONE:** white, dirty white, very light gray, 70% very fine, 20% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, slightly argillaceous matrix, calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, poor to fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**SAND:** white, hyaline, translucent, 20% very fine, 60% fine, 20% medium, sub angular to sub rounded, fairly sorted.	
	10	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, non calcareous, grading to sandy siltstone.	
		ACC: calcite.	
6750 – 6760	40	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	40	**SANDSTONE:** very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, poor visual porosity. With traces patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	20	**SAND:** white, hyaline, translucent, 10% very fine, 70% fine, 20% medium, sub angular to sub rounded, fairly sorted.	
	TR	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	
		ACC: calcite.	
6760 – 6770	50	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	40	**SANDSTONE:** very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, poor visual porosity. With traces patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**SAND:** white, hyaline, translucent, 10% very fine, 70% fine, 20% medium, sub angular to sub rounded, fairly sorted.	
		ACC: calcite.	
6770 – 6780	40	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	40	**SANDSTONE:** white, very light gray, grayish white, 10% very fine, 70% fine, 20% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, white argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to	TR

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		moderately consolidate, with dark grains inclusion, poor to fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast blooming milky white cut, no visual residual ring.	
	20	**SAND:** white, hyaline, translucent, 10% very fine, 70% fine, 20% medium, sub angular to sub rounded, fairly sorted.	
	TR	**SILTSTONE:** medium gray, blocky, firm, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	
		ACC: calcite.	
6780 – 6790	40	**SANDSTONE:** white, very light gray, grayish white, 10% very fine, 80% fine, 10% medium, occasionally coarse, hyaline quartz grain, sub angular to sub rounded, poorly sorted, white argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With 10% patchy pale yellowish white natural fluorescence, fast blooming milky white cut, no visual residual ring.	10
	30	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	30	**SAND:** white, hyaline, translucent, 10% very fine, 70% fine, 20% medium, sub angular to sub rounded, fairly sorted.	
		ACC: calcite.	
6790 – 6800	70	**SAND:** white, hyaline, translucent, milky white, 10% very fine, 60% fine, 30% medium, sub angular to sub rounded, fairly sorted.	
	20	**SANDSTONE:** white, very light gray, grayish white, 10% very fine, 80% fine, 10% medium, occasionally coarse, hyaline quartz grain, sub angular to sub rounded, poorly sorted, white argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast blooming milky white cut, no visual residual ring.	TR
	10	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
		ACC: calcite.	
6800 – 6810	50	**SAND:** white, hyaline, translucent, milky white, 10% very fine, 60% fine, 30% medium, sub angular to sub rounded, fairly sorted.	
	30	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	20	**SANDSTONE:** white, very light gray, grayish white, 10% very fine, 80% fine, 10% medium, occasionally coarse, hyaline quartz grain, sub angular to sub rounded, poorly sorted, white argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast blooming milky white cut, no visual residual ring.	TR
		ACC: calcite.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6810 – 6820	70	**SAND:** white, hyaline, translucent, milky white, 30% very fine, 50% fine, 20% medium, 10% coarse, sub angular to sub rounded, fairly to poorly sorted.	
	20	**SANDSTONE:** white, very light gray, grayish white, 10% very fine, 80% fine, 10% medium, occasionally coarse, hyaline quartz grain, sub angular to sub rounded, poorly sorted, white argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. ACC: calcite.	
6820 – 6830	80	**SAND:** white, hyaline, translucent, milky white, 30% very fine, 50% fine, 20% medium, 10% coarse, sub angular to sub rounded, fairly to poorly sorted.	
	10	**SANDSTONE:** white, very light gray, grayish white, 10% very fine, 80% fine, 10% medium, occasionally coarse, hyaline quartz grain, sub angular to sub rounded, poorly sorted, white argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With traces patchy pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. ACC: calcite.	
6830 – 6840	90	**SAND:** white, hyaline, milky white, 10% very fine, 80% fine, 10% medium, sub angular to sub rounded, fairly to poorly sorted.	
	10	**SANDSTONE:** white, very light gray, grayish white, 10% very fine, 80% fine, 10% medium, occasionally coarse, hyaline quartz grain, sub angular to sub rounded, poorly sorted, white argillaceous matrix, slightly calcareous cement, with glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With 5% spotty pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	TR	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. ACC: calcite.	
6840 – 6850	60	**SANDSTONE:** white, milky white, 10% very fine, 80% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With traces spotty pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	30	**SAND:** white, hyaline, milky white, 10% very fine, 80% fine, 10% medium, sub angular to sub rounded, fairly to poorly sorted.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. ACC: calcite.	
6850 – 6860	70	**SAND:** white, hyaline, milky white, 10% very fine, 80% fine, 10% medium, sub angular to sub rounded, fairly to poorly sorted.	
	20	**SANDSTONE:** white, milky white, 10% very fine, 80% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With 5% spotty pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	10	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. ACC: calcite.	
6860 – 6870	60	**CLAYSTONE:** medium gray, light gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. Also light gray to very brownish gray, soft, sub platy to subblocky.	
	40	**SANDSTONE:** white, milky white, 10% very fine, 80% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, fair visual porosity. With 5% spotty pale yellowish white natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	TR	**SILTSTONE:** light gray to medium gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6870 – 6880	70	**CLAYSTONE:** medium gray, light gray, minor brownish gray, firm to moderately firm, sub blocky to sub platy, brittle in part, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	30	**SANDSTONE:** white, milky white, 10% very fine, 80% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, poor to fair visual porosity. No oil show.	NF
	TR	**SILTSTONE:** light gray to medium gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6880 – 6890	60	**CLAYSTONE:** medium gray, light gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	30	**SANDSTONE:** white, milky white, 10% very fine, 80% fine, 10% medium, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, friable to moderately consolidate, with dark grains inclusion, poor to fair visual	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		porosity. No oil show.	
	10	**SILTSTONE:** medium gray to light gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6890 – 6900	70	**CLAYSTONE:** medium gray, light gray, minor brownish gray, firm to moderately firm, blocky to sub blocky, minor sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty.	
	20	**SANDSTONE:** light gray, white, 30% very fine, 70% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, moderately consolidate to friable, with dark grains inclusion, poor visual porosity. No oil show.	NF
	10	**SILTSTONE:** medium gray to light gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6900 – 6910	70	**CLAYSTONE:** very light brownish gray, light gray, minor medium gray, firm, sub blocky to sub platy, brittle, slightly micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	20	**SANDSTONE:** light gray, white, 30% very fine, 70% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, moderately consolidate to friable, with dark grains inclusion, poor visual porosity. No oil show.	NF
	10	**SILTSTONE:** medium gray to light gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6910 – 6920	60	**CLAYSTONE:** very light brownish gray, light gray, minor medium gray, firm, sub blocky to sub platy, brittle, slightly micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	20	**SANDSTONE:** light gray, white, 30% very fine, 70% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, abundant white argillaceous matrix, calcareous cement, with traces glauconite and dark lithic grains inclusion, moderately consolidate to friable, with dark grains inclusion, poor visual porosity. No oil show.	NF
	20	**SILTSTONE:** medium gray to light gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6920 – 6930	50	**CLAYSTONE:** very light gray, very light brownish gray, minor medium gray, firm, sub blocky to sub platy, brittle, slightly micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	30	**SILTSTONE:** medium gray to light gray, blocky, hard in part, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	NF
	20	**SANDSTONE:** light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, consolidate, with dark grains inclusion, poor visual porosity. No oil show.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
6930 – 6940	60 30 10	**CLAYSTONE:** very light gray, very light brownish gray, minor medium gray, firm, sub blocky to sub platy, brittle, slightly micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty. **SANDSTONE:** light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, consolidate, with dark grains inclusion, poor visual porosity. No oil show. **SILTSTONE:** medium gray to light gray, blocky, hard in part, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	NF
6940 – 6950	50 40 10	**CLAYSTONE:** medium gray, very light brownish gray, firm, sub blocky to sub platy, brittle, slightly micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty. **SANDSTONE:** light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, consolidate, with dark grains inclusion, poor visual porosity. No oil show. **SILTSTONE:** medium gray to light gray, blocky, firm to moderately hard, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	NF
6950 – 6960	50 50 TR	**CLAYSTONE:** medium gray, very light brownish gray, firm, sub blocky to sub platy, brittle, slightly micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty. **SANDSTONE:** light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, consolidate, with dark grains inclusion, poor visual porosity. No oil show. **SILTSTONE:** medium gray to light gray, blocky, firm to moderately hard, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	NF
6960 – 6970	60 40 TR	**CLAYSTONE:** very light brownish gray, medium gray, firm, sub blocky to sub platy, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. **SANDSTONE:** light gray, white, 80% very fine, 2% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, moderately consolidate, with dark grains inclusion, poor visual porosity. No oil show. **SILTSTONE:** medium gray to light gray, blocky, firm to moderately hard, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	NF
6970 – 6980	50 40	**CLAYSTONE:** light brownish gray, medium gray, firm, sub platy to sub blocky, brittle, slightly micromicaceous, microcarbonaceous, non calcareous, locally silty. **SANDSTONE:** light gray, white, 80% very fine, 2% fine, hyaline	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, moderately consolidate, with dark grains inclusion, poor visual porosity. No oil show.	
	10	**SILTSTONE:** medium gray, brownish gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6980 – 6990	60	**CLAYSTONE:** medium gray, light brownish gray, firm, light gray, sub platy to sub blocky, brittle, slightly micromicaceous, microcarbonaceous, very slightly calcareous, locally silty.	
	20	**SANDSTONE:** light gray, white, 80% very fine, 2% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, moderately consolidate, with dark grains inclusion, poor visual porosity. No oil show.	NF
	20	**SILTSTONE:** medium gray, brownish gray, blocky, firm, micromicaceous, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
6990 – 7000	70	**CLAYSTONE:** light brownish gray, medium gray, firm to moderately soft, light gray, sub platy to sub blocky, brittle, slightly micromicaceous, microcarbonaceous, very slightly calcareous, locally silty.	
	20	**SANDSTONE:** light gray, white, 80% very fine, 2% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, moderately consolidate, with dark grains inclusion, poor visual porosity. No oil show.	NF
	10	**SILTSTONE:** medium gray, brownish gray, blocky, firm to moderately hard, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
7000 – 7020	70	**CLAYSTONE:** light brownish gray, medium gray, firm to moderately soft, light gray, sub platy to sub blocky, brittle, slightly micromicaceous, microcarbonaceous, very slightly calcareous, locally silty.	
	20	**SILTSTONE:** medium gray, brownish gray, blocky, firm to moderately hard, micromicaceous, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	NF
	10	**SANDSTONE:** light gray, white, 80% very fine, 2% fine, hyaline quartz grain, sub angular to sub rounded, fairly sorted, argillaceous matrix, slightly calcareous cement, with traces dark lithic grains inclusion, moderately consolidate, with dark grains inclusion, poor visual porosity. No oil show. ACC: calcite.	
7020 – 7030	80	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to soft, sub blocky to sub platy, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, smooth surface in part, silty in part.	
	20	**SILTSTONE:** light gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	TR	**SANDSTONE:** light gray, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to consolidate, slightly carbonaceous, poor visual porosity, no oil show.	
7030 – 7040	80	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to soft, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, smooth surface in part, silty in part.	
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone.	NF
	10	**SANDSTONE:** light gray, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to moderately friable, slightly carbonaceous, poor visual porosity, no oil show.	
7040 – 7050	90	**CLAYSTONE:** medium gray, occasionally brownish gray, moderately firm to soft, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, occasionally coal interlaminated, smooth surface in part, silty in part.	
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** light gray, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to moderately friable, slightly carbonaceous, poor visual porosity, no oil show.	
7050 – 7060	90	**CLAYSTONE:** medium gray, moderately firm to soft, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, occasionally coal interlaminated, smooth surface in part.	
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** dirty white, light gray, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to moderately friable, slightly carbonaceous, poor visual porosity, no oil show. ACC: calcite.	
7060 – 7070	90	**CLAYSTONE:** medium gray, moderately firm to soft, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, occasionally coal interlaminated, smooth surface in part.	
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** dirty white, light gray, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to moderately friable, slightly carbonaceous, poor visual porosity, no oil show. ACC: calcite.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
7070 – 7080	90 10	**CLAYSTONE:** medium gray, moderately firm to soft, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, occasionally coal interlaminated, smooth surface in part. **SANDSTONE:** light gray, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, slightly carbonaceous, poor visual porosity. Traces spotty pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring. ACC: calcite.	TR
7080 – 7090	80 20 TR	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to soft, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, occasionally coal interlaminated, silty in part. **SILTSTONE:** light gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone. **SANDSTONE:** dirty white, light gray, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to moderately friable, slightly carbonaceous, poor visual porosity, no oil show. ACC: calcite.	NF
7090 – 7100	90 10 TR	**CLAYSTONE:** medium gray, occasionally brownish gray, firm to moderately firm, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, occasionally coal interlaminated, silty in part. **SILTSTONE:** light gray to medium gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone. **SANDSTONE:** dirty white, light gray, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, slightly calcareous cement, consolidate, slightly carbonaceous, poor visual porosity, tight in part, no oil show. ACC: calcite.	NF
7100 – 7110	90 10 TR	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, silty in part. **SILTSTONE:** light gray, minor medium gray, firm, blocky, slightly microcarbonaceous, non calcareous to very slightly calcareous, grading to sandy siltstone. **SANDSTONE:** dirty white, light gray, 30% very fine, 70% fine, hyaline quartz grain, sub rounded, well sorted, slightly argillaceous matrix, calcareous cement, moderately consolidate, with traces glauconite, slightly carbonaceous, poor visual porosity, no oil show. ACC: calcite.	NF
7110 – 7120	90 10	**CLAYSTONE:** medium gray, brownish gray, moderately firm to soft, sub blocky to sub platy, locally platy, brittle in part, slightly micromicaceous, slightly microcarbonaceous, non to very slightly calcareous, silty in part. **SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	TR	**SANDSTONE:** light gray, minor dirty white, 40% very fine, 60% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with traces glauconite, slightly carbonaceous, poor visual porosity, no oil show. ACC: calcite.	
7120 – 7130	90 10	**CLAYSTONE:** brownish gray, medium gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, rarely glauconite grains inclusion, non calcareous. **SILTSTONE:** light gray to medium gray, moderately firm, blocky, microcarbonaceous, very slightly calcareous, grading to sandy siltstone. ACC: calcite.	
7130 – 7140	80 20	**CLAYSTONE:** brownish gray, medium gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, rarely coal and glauconite grains inclusion, non calcareous. **SILTSTONE:** light gray to medium gray, occasionally brownish gray, moderately firm, sub blocky to blocky, microcarbonaceous, occasionally coal laminated, very slightly calcareous, grading to sandy siltstone. ACC: massive calcite.	
7140 – 7150	80 20	**CLAYSTONE:** brownish gray, medium gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, rarely coal and glauconite grains inclusion, non calcareous. **SILTSTONE:** light gray to medium gray, occasionally brownish gray, moderately firm, sub blocky to blocky, microcarbonaceous, occasionally coal laminated, very slightly calcareous, grading to sandy siltstone. ACC: massive calcite.	
7150 – 7160	80 10 10	**CLAYSTONE:** brownish gray, medium gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, rarely coal and glauconite grains inclusion, non calcareous. **SILTSTONE:** light gray to medium gray, occasionally brownish gray, moderately firm, sub blocky to blocky, microcarbonaceous, occasionally coal laminated, very slightly calcareous, grading to sandy siltstone. **SANDSTONE:** grayish white, 100% very fine, quartz grain, subangular to subrounded, well sorted, argillaceous matrix, calcareous cement, consolidate to moderately consolidate, dark grains inclusion, very poor visual porosity. ACC: massive calcite.	NF
7160 – 7170	70 20 10	**CLAYSTONE:** brownish gray, medium gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, rarely coal and glauconite grains inclusion, non calcareous. **SILTSTONE:** light gray to medium gray, occasionally brownish gray, moderately firm, sub blocky to blocky, microcarbonaceous, occasionally coal laminated, very slightly calcareous, grading to sandy siltstone. **SANDSTONE:** grayish white, occasionally brownish gray, 100% very fine, quartz grain, subrounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, with dark and green grains inclusion, very poor visual porosity. ACC: coal and massive calcite.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
7170 – 7180	80 20	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, rarely coal and glauconite grains inclusion, non calcareous. **SILTSTONE:** light gray to medium gray, occasionally brownish gray, moderately firm, sub blocky to blocky, microcarbonaceous, occasionally coal laminated, very slightly calcareous, grading to sandy siltstone. ACC: massive calcite.	
7180 – 7190	90 10 TR	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, micro carbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous, silty in part. **SILTSTONE:** light gray to medium gray, firm, blocky, slightly microcarbonaceous, non calcareous, grading to sandy siltstone. **SANDSTONE:** light gray, grayish white, 100% very fine, hyaline quartz grain, sub rounded, argillaceous matrix, moderately consolidate, poor visual porosity. No oil show. ACC: calcite, rarely pyrite.	NF
7190 – 7200	90 10	**CLAYSTONE:** brownish gray, medium gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, micro carbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, firm, blocky to sub blocky, slightly microcarbonaceous, non calcareous, grading to sandy siltstone. ACC: calcite.	
7200 – 7210	90 10	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, occasionally platy, slightly micromicaceous, micro carbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, firm, blocky to sub blocky, slightly microcarbonaceous, non calcareous, grading to sandy siltstone. ACC: calcite.	
7210 – 7220	100 TR	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, occasionally platy, slightly micromicaceous, micro carbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, minor medium gray, firm, blocky to sub blocky, slightly microcarbonaceous, non calcareous, grading to sandy siltstone. ACC: calcite.	
7220 – 7230	90 10 TR	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, micro carbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, minor medium gray, firm, blocky to sub blocky, slightly microcarbonaceous, non calcareous, grading to sandy siltstone. **SANDSTONE:** light gray, grayish white, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, consolidate, slightly carbonaceous, poor visual porosity. No oil show. ACC: calcite.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
7230 – 7240	90 10 TR	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, micro carbonaceous, occasionally coal interlaminated, rarely pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, minor medium gray, firm, blocky to sub blocky, slightly microcarbonaceous, rarely pyritic, non calcareous, grading to sandy siltstone. **SANDSTONE:** light gray, grayish white, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, consolidate, slightly carbonaceous, poor visual porosity. No oil show. ACC: calcite.	NF
7240 – 7250	80 20	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, micromicaceous, micro carbonaceous, occasionally coal interlaminated, occasionally pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone. ACC: calcite.	
7250 – 7260	80 20 TR	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, micromicaceous, micro carbonaceous, occasionally coal interlaminated, occasionally pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone. **SANDSTONE:** light gray, grayish white, 100% very fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, consolidate, slightly carbonaceous, poor visual porosity. No oil show. ACC: calcite.	NF
7260 – 7270	70 20 10	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, micromicaceous, micro carbonaceous, occasionally coal interlaminated, occasionally pyritic, non calcareous, silty in part. **SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone. **SANDSTONE:** white, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, slightly argillaceous matrix, very slightly calcareous cement, moderately friable, slightly carbonaceous, rarely glauconite, poor visual porosity. Traces patchy pale yellow natural fluorescence, slow faint streaming milky white cut, no visual residual ring. ACC: calcite, pyrite.	TR
7270 – 7280	70 20	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, micromicaceous, micro carbonaceous, occasionally coal interlaminated, occasionally pyritic, non calcareous, silty in part. **SANDSTONE:** white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, rarely glauconite, poor visual porosity. With 10% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	10

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone. ACC: calcite, pyrite.	
7280 – 7290	80	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally coal interlaminated, occasionally pyritic, non calcareous, silty in part.	
	10	**SANDSTONE:** white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, rarely glauconite, poor visual porosity. With Traces patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	TR
	10	**SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7290 – 7300	70	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally coal interlaminated, occasionally pyritic, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	TR
	10	**SANDSTONE:** white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, poor visual porosity. With Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	
7300 – 7310	80	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	10	**SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
	10	**SANDSTONE:** light gray, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, poor visual porosity. With Traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	TR
7310 – 7330	90	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	10	**SILTSTONE:** light gray, medium gray, firm, blocky to sub blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** light gray, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, slightly argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity. No oil show.	
7330 – 7340	80	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally coal interlaminated, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7340 – 7350	90	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous,	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		occasionally coal interlaminated, non calcareous, silty in part.	
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7350 – 7360	80	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally coal interlaminated, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7360 – 7380	90	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally coal interlaminated, non calcareous, silty in part.	
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7380 – 7390	80	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally pyritic, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7390 – 7400	90	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally pyritic, non calcareous, silty in part.	
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7400 – 7410	90	**CLAYSTONE:** medium gray to brownish gray, firm, sub blocky to blocky, brittle, splintery, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	10	**SILTSTONE:** light gray, medium gray, firm, blocky, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	
7410 – 7420	90	**CLAYSTONE:** medium gray to brownish gray, light gray in part, firm, sub platy to sub blocky, brittle, splintery, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	10	**SILTSTONE:** light gray, medium gray, firm, blocky, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** white, light gray, 60% very fine, 40% fine, hyaline quartz grain, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, poor visual porosity. No oil show.	
7420 – 7430	60	**CLAYSTONE:** medium gray to brownish gray, light gray in part, firm, sub platy to sub blocky, brittle, splintery, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	30	**SILTSTONE:** light gray, medium gray, firm, blocky, microcarbonaceous, very slightly calcareous, grading to sandy siltstone.	NF
	10	**SANDSTONE:** light gray, 80% very fine, 20% fine, hyaline quartz grain, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, poor visual porosity. No oil show.	
7430 – 7450	90	**CLAYSTONE:** medium gray, brownish gray, firm, sub blocky to sub platy, brittle, splintery, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	10	**SILTSTONE:** light gray, medium gray, firm, blocky, microcarbonaceous, micropyritic, non to very slightly calcareous, grading to sandy siltstone.	NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	TR	**SANDSTONE:** light gray, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, poor visual porosity. No oil show.	
7450 – 7460	80	**CLAYSTONE:** light gray, medium gray, brownish gray, firm, sub blocky, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non to very slightly calcareous, grading to sandy siltstone.	NF
	10	**SANDSTONE:** light gray, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, poor visual porosity. No oil show.	
7460 – 7490	90	**CLAYSTONE:** medium gray, light gray, brownish gray, firm, sub blocky, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** light gray, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately consolidate, poor visual porosity. No oil show.	
7490 – 7500	60	**CLAYSTONE:** medium gray, light gray, brownish gray, firm, sub blocky, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	30	**SANDSTONE:** white, dirty white, grayish white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, well to fairly sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate, with dark grains inclusion, poor visual porosity. With 5% spotty pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	
7500 – 7510	70	**CLAYSTONE:** medium gray, light gray, brownish gray, firm, sub blocky, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	20	**SANDSTONE:** white, very light gray, dirty white, grayish white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, well to fairly sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate, with dark grains inclusion, poor visual porosity. With 5% spotty pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	
7510 – 7520	50	**CLAYSTONE:** medium gray, light gray, brownish gray, firm, sub blocky, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	40	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, white argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With 5% spotty pale yellow natural fluorescence, fast	5

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		streaming milky white cut, no visual residual ring.	
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	
7520 – 7530	60	**CLAYSTONE:** medium gray, brownish gray, firm, sub blocky, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	30	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, white argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With 10% spotty pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	10
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	
7530 – 7540	50	**CLAYSTONE:** medium gray, brownish gray, firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	40	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, white argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With 10% patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	10
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	
7540 – 7550	50	**CLAYSTONE:** medium gray, brownish gray, firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	40	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, white argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With 3% patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	3
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	
7550 – 7560	60	**CLAYSTONE:** light gray, medium gray, brownish gray, firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty.	
	30	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, well sorted, white argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
7560 – 7570	60 20 20	**CLAYSTONE:** light gray, medium gray, brownish gray, firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty. **SANDSTONE:** very light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring. **SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	TR
7570 – 7580	50 40 10	**CLAYSTONE:** medium gray, brownish gray, firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty. **SANDSTONE:** very light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring. **SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	TR
7580 – 7590	50 40 10	**CLAYSTONE:** medium gray, brownish gray, firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty. **SANDSTONE:** very light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with dark grains and glauconite inclusion, poor visual porosity. With 5% patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring. **SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	5%
7590 – 7600	50 40 10	**CLAYSTONE:** medium gray, brownish gray, firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, micropyritic, non calcareous, locally silty. **SANDSTONE:** white, very light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to friable, with dark grains and glauconite inclusion, poor to fair visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring. **SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, micropyritic, non calcareous, grading to sandy siltstone.	TR
7600 – 7610	70 30	**CLAYSTONE:** medium gray, light gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part. **SANDSTONE:** white, very light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well	TR

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to friable, with dark grains and glauconite inclusion, poor to fair visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	
	TR	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	
7610 – 7620	70	**CLAYSTONE:** medium gray, light gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	30	**SANDSTONE:** white, very light gray, white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to friable, with dark grains and glauconite inclusion, poor to fair visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	TR	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	
7620 – 7630	60	**CLAYSTONE:** medium gray, light gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	30	**SANDSTONE:** white, very light gray, white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to friable, with dark grains and glauconite inclusion, poor to fair visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	
7630 – 7660	70	**CLAYSTONE:** medium gray, light gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	20	**SANDSTONE:** white, very light gray, white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to friable, with dark grains and glauconite inclusion, poor to fair visual porosity. With traces patchy pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	TR
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	
7660 – 7680	50	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	40	**SANDSTONE:** very light gray, white in part, 70% very fine, 30% fine, traces medium, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to friable, with dark grains and glauconite inclusion, poor to fair visual porosity. With 5% spotty pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	5

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	
7680 – 7700	60	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	30	**SANDSTONE:** very light gray, white in part, 60% very fine, 40% fine, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, moderately consolidate to friable, with dark grains inclusion, poor to fair visual porosity. With 5% spotty pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	
7700 – 7710	60	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	30	**SANDSTONE:** white, very light gray, 70% very fine, 30% fine, traces medium, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with traces dark grains and glauconite inclusion, fair to poor visual porosity. With 5% spotty pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	10	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone. ACC: calcite	
7710 – 7720	50	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, brittle, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	30	**SANDSTONE:** white, very light gray, 70% very fine, 30% fine, traces medium, hyaline quartz grain, sub rounded to sub angular, fairly to well sorted, argillaceous matrix, slightly calcareous cement, friable to moderately consolidate, with traces dark grains and glauconite inclusion, fair to poor visual porosity. With 5% spotty pale yellow natural fluorescence, fast streaming milky white cut, no visual residual ring.	5
	20	**SILTSTONE:** medium gray, light gray, firm, blocky, microcarbonaceous, non to very slightly calcareous, grading to sandy siltstone.	
7720 – 7730	70	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part.	
	20	**SANDSTONE:** white, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity. With traces patchy pale yellow natural fluorescence, slow streaming milky white cut, no visual residual ring.	TR
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
7730 – 7740	60	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky, slightly micromicaceous, slightly microcarbonaceous, non calcareous, silty in part.	
	20	**SANDSTONE:** white, dirty white, light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity. With traces patchy pale yellow natural fluorescence, slow streaming milky white cut, no visual residual ring.	TR
	20	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7740 – 7750	60	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	30	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
	10	**SANDSTONE:** dirty white, white, light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity. traces patchy pale yellow natural fluorescence, slow streaming milky white cut, no visual residual ring.	TR
7750 – 7760	60	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	30	**SANDSTONE:** dirty white, white, light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity. With 5% patchy pale yellow natural fluorescence, slow streaming milky white cut, no visual residual ring.	5
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7760 – 7770	70	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	20	**SANDSTONE:** dirty white, white, light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity. With 10% patchy pale yellow natural fluorescence, slow streaming milky white cut, no visual residual ring.	10
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7770 – 7780	50	**SANDSTONE:** dirty white, white, light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, fair to poor visual porosity. With 15% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	15
	40	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, non calcareous, silty in part.	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
	TR	**SAND:** white, translucent, hyaline, 30% very fine, 70% fine, quartz grain, sub angular to sub rounded, fairly sorted.	
7780 – 7790	60	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, locally micropyritic, non calcareous, silty in part.	
	30	**SANDSTONE:** white, dirty white, light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, with traces coal inclusion, fair to poor visual porosity. With 10% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	10
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7790 – 7800	60	**CLAYSTONE:** medium gray, minor brownish gray, firm to moderately firm, sub blocky, micromicaceous, microcarbonaceous, locally micropyritic, non calcareous, silty in part.	
	20	**SANDSTONE:** dirty white, light gray, white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, carbonaceous, fair to poor visual porosity. With 5% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	5
	20	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7800 – 7810	60	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, locally micropyritic, occasionally coal interlaminated, non calcareous, silty in part.	
	20	**SANDSTONE:** dirty white, light gray, white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, fair to poor visual porosity. With 5% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	5
	20	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7810 – 7820	60	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, locally micropyritic, occasionally coal interlaminated, non calcareous, silty in part.	
	30	**SANDSTONE:** dirty white, light gray, white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, fair to poor visual porosity. With 5% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	5
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7820 – 7830	70	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, locally micropyritic, occasionally coal	10

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		interlaminated, non calcareous, silty in part.	
	20	**SANDSTONE:** dirty white, light gray, white, 50% very fine, 50% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, fair to poor visual porosity. With 10% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
7830 – 7840	50	**SANDSTONE:** dirty white, white, light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, fair to poor visual porosity. With 15% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	
	40	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, locally micropyritic, occasionally coal interlaminated, non calcareous, silty in part.	15
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
	TR	**SAND:** white, translucent, hyaline, 40% very fine, 60% fine, quartz grain, sub rounded to sub angular, well sorted.	
7840 – 7850	60	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, carbonaceous, non calcareous, silty in part.	
	40	**SANDSTONE:** dirty white, white, light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, fair to poor visual porosity. With 10% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	10
7850 – 7860	40	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, carbonaceous, non calcareous, silty in part.	
	30	**SANDSTONE:** white, dirty white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, fair to poor visual porosity. With 10% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	10
	20	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
	10	**SAND:** white, translucent, hyaline, 30% very fine, 70% fine, traces medium, quartz grain, sub angular to sub rounded, fair sorted.	
7860 – 7870	60	**CLAYSTONE:** medium gray, minor brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, carbonaceous, non calcareous, silty in part.	
	20	**SANDSTONE:** dirty white, white, very light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, fair to poor visual porosity. With 10% patchy pale yellow natural fluorescence, moderately fast streaming milky white	10

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		cut, no visual residual ring.	
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, occasionally very carbonaceous, non calcareous, grading to sandy siltstone.	
	10	**SAND:** white, translucent, hyaline, 20% very fine, 80% fine, traces medium, quartz grain, sub angular to sub rounded, fair sorted.	
7870 – 7880	70	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, carbonaceous, non calcareous, silty in part.	
	20	**SANDSTONE:** dirty white, very light gray, white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, fair to poor visual porosity. With 5% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	5
	10	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, occasionally very carbonaceous, non calcareous, grading to sandy siltstone.	
	TR	**SAND:** white, translucent, hyaline, 30% very fine, 70% fine, traces medium, quartz grain, sub angular to sub rounded, fair sorted.	
7880 – 7890	70	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, carbonaceous, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, non calcareous, grading to sandy siltstone.	
	10	**SANDSTONE:** dirty white, very light gray, white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, slightly carbonaceous, fair to poor visual porosity. With traces patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	TR
	TR	**SAND:** white, translucent, hyaline, 30% very fine, 70% fine, traces medium, quartz grain, sub angular to sub rounded, fair sorted.	
7890 – 7900	70	**CLAYSTONE:** medium gray, brownish gray, moderately firm, sub blocky to sub platy, micromicaceous, carbonaceous, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray to medium gray, firm, blocky, microcarbonaceous, locally carbonaceous, non calcareous, grading to sandy siltstone.	
	10	**SANDSTONE:** dirty white, white, very light gray, 40% very fine, 60% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, fair to poor visual porosity. With traces patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring. ACC: coal pyritic.	TR
7900 – 7910	60	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally micropyritic, occasionally coal interlaminated, non calcareous, silty in part.	5
	20	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone.	
	10	**SANDSTONE:** white, very light gray, 70% very fine, 30% fine,	

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, slightly carbonaceous, poor visual porosity. With 5% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring.	
	10	**SAND:** white, translucent, 30% very fine 70% fine, quartz grain, sub angular to sub rounded, well to fair sorted. ACC: calcite.	
7910 – 7920	60	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, micromicaceous, microcarbonaceous, occasionally micropyritic, occasionally coal interlaminated, non calcareous, silty in part.	
	20	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone.	
	20	**SANDSTONE:** white, dirty white, very light gray, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, abundant argillaceous matrix, calcareous cement, moderately consolidate, very slightly carbonaceous, poor visual porosity. With 5% patchy pale yellow natural fluorescence, moderately fast streaming milky white cut, no visual residual ring. ACC: calcite.	5
7920 – 7930	50	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub platy to sub blocky, micromicaceous, microcarbonaceous, non calcareous, silty in part.	
	40	**SANDSTONE:** white, very light gray, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, abundant argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, very slightly carbonaceous, poor to fair visual porosity. With 10% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	10
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone. ACC: calcite.	
7930 – 7940	50	**SANDSTONE:** white, dirty white, milky white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, abundant argillaceous matrix, calcareous cement, moderately friable, very slightly carbonaceous, fair to poor to fair visual porosity. With 15% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	
	40	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub platy to sub blocky, micromicaceous, microcarbonaceous, non calcareous, silty in part.	15
	10	**SILTSTONE:** light gray, firm, blocky, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone. ACC: calcite.	
7940 – 7950	60	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, slightly microcarbonaceous, occasionally micropyritic, non calcareous, earthy, silty in part.	
	40	**SANDSTONE:** white, dirty white, 80% very fine, 20% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, very slightly carbonaceous, fair to poor to fair visual porosity. With 15% patchy pale yellow	15

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
		natural fluorescence, slow weak streaming milky white cut, no visual residual ring. ACC: calcite.	
7950 – 7960	50	**SANDSTONE:** white, dirty white, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable, very slightly carbonaceous, fair to poor to fair visual porosity. With 15% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	
	40	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, slightly microcarbonaceous, occasionally micropyritic, non calcareous, earthy, silty in part.	15
	10	**SAND:** white, translucent, 40% very fine, 60% fine, traces medium, quartz grain, sub angular to sub rounded, fairly sorted. ACC: calcite, coal pyritic.	
7960 – 7970	60	**SANDSTONE:** white, dirty white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to friable, very slightly carbonaceous, fair to poor to fair visual porosity. With 20% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	
	30	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, slightly microcarbonaceous, occasionally micropyritic, non calcareous, earthy, silty in part.	20
	10	**SAND:** white, translucent, 30% very fine, 70% fine, traces medium, quartz grain, sub angular to sub rounded, fairly sorted. ACC: calcite, coal pyritic.	
7970 – 7980	70	**SANDSTONE:** white, dirty white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to friable, very slightly carbonaceous, fair to poor to fair visual porosity. With 20% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring.	
	30	**CLAYSTONE:** medium gray, brownish gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, slightly microcarbonaceous, occasionally micropyritic, non calcareous, earthy, silty in part.	20
	TR	**SAND:** white, translucent, 30% very fine, 70% fine, traces medium, quartz grain, sub angular to sub rounded, fairly sorted. ACC: calcite, coal pyritic.	
7980 – 7990	70	**CLAYSTONE:** brownish gray, medium gray, moderately firm to firm, sub blocky to sub platy, slightly micromicaceous, slightly microcarbonaceous, occasionally micropyritic, non calcareous, earthy, silty in part.	
	30	**SANDSTONE:** white, dirty white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, very slightly carbonaceous, fair to poor visual porosity. With 5% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring. ACC: calcite, coal pyritic.	5

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
7990 – 8000	70 30	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to sub platy, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous to non calcareous, silty in part. **SANDSTONE:** white, dirty white, 60% very fine, 40% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. With 5% patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring. ACC: calcite.	 5
8000 – 8020	80 20	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to blocky, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous to non calcareous, silty in part. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. With traces patchy pale yellow natural fluorescence, slow weak streaming milky white cut, no visual residual ring. ACC: calcite.	 TR
8020 – 8040	90 10	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to blocky, slightly micromicaceous, slightly microcarbonaceous, very slightly calcareous to non calcareous, silty in part. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. No oil show. ACC: calcite.	 NF
8040 – 8050	100 TR	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to blocky, brittle, slightly micromicaceous, slightly microcarbonaceous, micropyritic, locally with glauconite, non to very slightly calcareous, silty in part. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. No oil show. ACC: calcite.	 NF
8050 – 8060	70 20 10	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to blocky, brittle, slightly micromicaceous, slightly microcarbonaceous, micropyritic, locally with glauconite, non to very slightly calcareous, silty in part. **SILTSTONE:** light gray, firm, blocky, brittle, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone. **SANDSTONE:** white, very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. No oil show. ACC: calcite.	 NF

INTERVAL (feet)	%	LITHOLOGICAL DESCRIPTION	FLUORESC %
8060 – 8070	80	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to blocky, brittle, slightly micromicaceous, slightly microcarbonaceous, micropyritic, locally with glauconite, non to very slightly calcareous, silty in part.	
	10	**SILTSTONE:** light gray, firm, blocky, brittle, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone.	NF
	10	**SANDSTONE:** white, very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. No oil show. ACC: calcite.	
8070 – 8080	90	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to blocky, brittle, slightly micromicaceous, slightly microcarbonaceous, micropyritic, locally with glauconite, non to very slightly calcareous, silty in part.	
	10	**SILTSTONE:** light gray, firm, blocky, brittle, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** white, very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. No oil show. ACC: calcite.	
8080 – 8095	70	**CLAYSTONE:** medium gray, brownish gray, firm to moderately firm, sub blocky to blocky, brittle, slightly micromicaceous, slightly microcarbonaceous, micropyritic, locally with glauconite, non to very slightly calcareous, silty in part.	
	30	**SILTSTONE:** light gray, firm, blocky, brittle, microcarbonaceous, micropyritic in part, non calcareous, grading to sandy siltstone.	NF
	TR	**SANDSTONE:** white, very light gray, 70% very fine, 30% fine, hyaline quartz grain, sub rounded, well sorted, argillaceous matrix, calcareous cement, moderately friable to moderately consolidate, with traces dark lithics inclusion, poor visual porosity. No oil show. ACC: calcite.	
DRILLING STOPPED ON AUGUST 15th, 2002 AT 00:20 HRS. FTD: 8095 ft.			

DITCH SAMPLE GAS

WELL : LO16-26

DEPTH (feet)		TYPE	TG (u)	C1(ppm)	C2(ppm)	C3(ppm)	C4(ppm)	C5(ppm)	FORMATION
570	688	BG	0.95	95	0	0	0	0	TALARA
688	695	BG	0.20	20	0	0	0	0	TALARA
695	840	BG	0.25	25	0	0	0	0	TALARA
840	967	BG	0.35	35	0	0	0	0	TALARA
967	969	FM	4.20	420	0	0	0	0	TALARA
969	1087	BG	0.55	55	0	0	0	0	TALARA
1087	1102	FM	1.00	100	0	0	0	0	TALARA
1102	1105	FM	8.55	820	10	5	0	0	TALARA
1105	1108	BG	0.85	85	0	0	0	0	TALARA
1108	1110	FM	4.85	445	8	5	1	1	TALARA
1110	1135	BG	1.05	105	0	0	0	0	TALARA
1135	1138	FM	11.92	1050	15	13	12	5	TALARA
1138	1158	BG	0.62	62	0	0	0	0	TALARA
1158	1175	FM	1.25	125	0	0	0	0	TALARA
1175	1353	BG	0.85	85	0	0	0	0	TALARA
1353	1471	FM	1.20	120	0	0	0	0	TALARA
1598	1680	BG	0.77	77	0	0	0	0	TALARA
1680	2000	BG	1.30	130	0	0	0	0	TALARA
2000	2506	BG	0.44	40	2	0	0	0	TALARA
2506	3120	BG	1.05	105	0	0	0	0	TALARA
3120	3350	BG	0.45	45	0	0	0	0	TALARA
3350	3480	BG	4.08	408	0	0	0	0	TALARA/CHACRA
3480	4220	BG	10.05	1005	0	0	0	0	CHACRA

DITCH SAMPLE GAS

WELL : LO16-26

DEPTH (feet)		TYPE	TG (u)	C1(ppm)	C2(ppm)	C3(ppm)	C4(ppm)	C5(ppm)	FORMATION
4220	4370	BG	11.1	1087	0	0	0	0	CHACRA
4370	4440	BG	8.3	831	0	0	0	0	CHACRA
4440	4469	BG	6.9	691	0	0	0	0	CHACRA
4469	4491	BG	9.03	879	9	0	0	0	CHACRA
4491	4514	FM	29.01	2268	112	57	52	5	CHACRA
4514	4527	BG	6.31	602	4	3	2	0	CHACRA
4527	4536	FM	14.68	1243	33	22	21	1	CHACRA
4536	4552	BG	7.73	746	629	3	1	0	CHACRA
4552	5100	BG	249.39	19209	968	431	401	179	CHACRA
5100	5129	FM	178.73	11931	1905	152	273	117	CHACRA
5129	5197	BG	84.15	6240	344	90	204	80	CHACRA
5197	5209	FM	138.34	10172	601	198	332	108	CHACRA
5209	5230	BG	75.86	5333	312	157	205	68	CHACRA
5230	5329	FM	350.81	24227	1599	725	903	374	CHACRA
5329	5528	BG	94.24	5087	317	644	285	126	CHACRA
5528	5610	BG	14.00	826	95	74	23	14	CHACRA
5610	5850	BG	21.62	1870	52	21	22	7	CHACRA
5850	6020	BG	346.00	24507	1149	525	678	710	CHACRA/RIO BRAVO
6020	6100	BG	380.00	23820	1365	714	1082	995	R. BRAVO
6100	6190	FM	461.00	30118	2884	441	1142	876	R. BRAVO
6190	6230	FM	1065.00	44670	6976	2295	5903	3477	R. BRAVO
6230	6250	FM	1750.56	44715	14949	4309	11199	8544	R. BRAVO
6250	6280	BG	97.08	2202	597	545	563	485	R. BRAVO

DITCH SAMPLE GAS

WELL : LO16-26

DEPTH (feet)		TYPE	TG (u)	C1(ppm)	C2(ppm)	C3(ppm)	C4(ppm)	C5(ppm)	FORMATION
6280	6400	FM	147.75	1030	1544	1236	901	669	R. BRAVO
6400	6530	FM	307.94	11137	2895	1011	1336	1098	R. BRAVO
6530	6590	FM	92.74	4375	984	161	272	272	R. BRAVO
6590	6740	BG	32.12	1264	421	125	94	71	R. BRAVO
6740	6860	BG	48.26	3439	172	201	75	28	R. BRAVO
6860	7020	BG	28.33	1413	133	226	79	32	R. BRAVO
7020	7260	BG	25.24	1388	285	73	63	19	R. BRAVO
7260	7310	BG	13.41	771	195	16	33	0	R. BRAVO
7310	7490	BG	14.82	666	235	43	38	13	R. BRAVO
7490	7670	BG	22.81	961	430	75	40	15	R. BRAVO
7670	7850	FM	67.41	3804	720	311	96	36	R. BRAVO
7850	7980	BG	29.63	1897	370	32	40	14	R. BRAVO
7980	8095	BG	11.8	569	194	20	31	8	R. BRAVO

GEOIL™

PETRO-TECH PERUANA S.A.

MUD DATA RECORD

WELL: LO16-26

DATE	DEPTH	M.W.	FV	PV/YP	GELS	FIL	PH	Ca	CHLR	SOL.	SAND	MBT	MUD TYPE
07/24/02	570'	8.6	47	8/16	3/6/8	10.0	9.80	160	14500	4.00	TRZ	4	FLODRILL
07/25/02	688'	8.6	42	10/14	3/5/7	9.0	9.80	120	15000	3.00	0.25	4.0	FLODRILL
07/26/02	695'	8.6	42	10/15	4/6/6	8.5	9.80	200	15000	3.00	0.25	5.0	FLODRILL
07/27/02	745'	8.7	45	12/14	4/6/7	8.0	9.00	200	15000	3.00	0.25	6.0	FLODRILL
07/28/02	1175'	9.3	44	16/21	5/10/14	7.5	9.00	260	17000	5.00	0.75	12.5	FLODRILL
07/29/02	1578'	9.5	48	17/22	6/12/19	8.2	9.20	200	17000	6.00	0.75	15.0	FLODRILL
07/30/02	2000'	9.5	60	18/28	17/25/32	9.0	9.10	300	13000	6.00	1.00	22.5	FLODRILL
07/31/02	2000'	9.3	46	13/22	9/25/27	9.5	9.80	160	11000	4.00	0.15	22.5	FLODRILL
08/01/02	2000'	9.0	50	15/16	3/4/5	8.3	10.00	80	21000	3.00	TRZ	2.5	FLODRILL
########	2010'	9.2	48	14/16	3/4/5/	7.2	9.80	100	21000	4.00	TRZ	1.3	FLODRILL
08/03/02	3120'	9.4	43	15/19	5/7/10	6.5	9.50	360	20000	6.00	0.50	10.0	FLO DRILL
08/04/02	3120'	9.4	45	14/17	4/6/7	6.5	9.70	360	19000	5.00	0.10	9.0	FLODRILL
08/05/02	3550'	9.7	45	16/19	6/9/13	6.5	9.80	320	20000	8.00	0.75	15.0	FLODRILL
08/05/02	4220'	9.9	45	17/19	5/9/14	6.6	9.70	300	21000	9.00	0.00	20.0	FLODRILL
08/06/02	4473'	10.1	46	18/19	5/10/17	6.8	9.70	300	21000	10.00	0.80	25.0	FLODRILL
08/06/02	5230'	10.3	46	19/21	6/11/18	6.8	9.70	280	21000	11.00	0.80	27.5	FLODRILL
08/07/02	5518	10.4	48	19/22	8/14/20	7.0	9.80	280	17500	12.00	0.70	30.0	FLODRILL
08/08/02	5518'	10.4	50	19/22	8/11/20	7.0	9.30	280	18000	12.00	1.00	30.0	FLODRILL
########	5518	9.0	50	13/22	5/6	7.5	9.50	80	23000	3.00	0.00	0.0	FLODRILL
########	6070	9.7	45	14/17	4/5	8.0	9.80	120	21000	6.00	0.25	8.5	FLODRILL
########	6249	10.5	46	16/19	4/5/7	8.0	9.80	100	21000	8.00	0.25	10.0	FLODRILL
########	6760	11.1	45	21/22	5/7/15	5.4	9.80	200	23500	12.50	0.50	12.0	FLODRILL
########	7505	11.1	46	22/24	5/8/15	5.8	9.50	80	23000	13.00	0.50	13.5	FLODRILL
########	8094	11.1	48	24/25	5/15/24	5.8	9.60	80	21000	14.00	0.30	15.0	FLODRILL

GEOIL™

PETRO-TECH PERUANA S.A.

MUD DATA RECORD

WELL: LO16-26

DATE	DEPTH	M.W.	FV	PV/YP	GELS	FIL	PH	Ca	CHLR	SOL.	SAND	MBT	MUD TYPE
########	8095	11.3	48	19/26	5/15/24	5.4	9.80	120	18000	14.00	0.25	15.0	FLODRILL
########	8095	11.4	48	23/27	7/18/32	5.4	9.50	120	23000	14.00	0.35	16.0	FLODRILL

FLUORESCENCE DATA RECORD

WELL: LO16-26

Depth	FLUORESCENCE					COLOR	DISTRIBUTION				INTENSITY				FORMATION
(Feet)	Traces	Poor	Fair	Good	%		Even	Motled	Patchy	Spotty	Bright	Pale	Faint	Dull	
4500 - 4530	X				TR	YELLOW				X	X				CHACRA
4710 - 4740	X				TR	YELLOW				X	X				CHACRA
4920 - 4950	X				TR	YELLOW				X	X				CHACRA
5520 - 5550		X			10	YELLOW			X			X			CHACRA
5550 - 5610	X				TR	YELLOW			X			X			CHACRA
5850 - 5880	X				TR	YELLOW			X		X				RIO BRAVO
5880 - 5910		X			5	YELLOW			X		X				RIO BRAVO
5910 - 5920		X			10	YELLOW			X		X				RIO BRAVO
5920 - 5940	X				TR	YELLOW			X		X				RIO BRAVO
5940 - 5970	X				TR	YELLOW				X	X				RIO BRAVO
6000 - 6030	X				TR	YELLOW			X		X				RIO BRAVO
6110 - 6120	X				TR	YELLOW			X		X				RIO BRAVO
6180 - 6200	X				TR	YELLOW			X		X				RIO BRAVO
6200 - 6230		X			10	YELLOW			X		X				RIO BRAVO
6250 - 6290	X				TR	YELLOW			X		X				RIO BRAVO
6290 - 6300		X			10	YELLOW			X		X				RIO BRAVO
6300 - 6310		X			15	YELLOW			X		X				RIO BRAVO
6310 - 6320		X			20	YELLOW			X		X				RIO BRAVO
6320 - 6340			X		30	YELLOW			X		X				RIO BRAVO
6340 - 6370			X		40	YELLOW			X		X				RIO BRAVO
6370 - 6390				X	50	YELLOW			X		X				RIO BRAVO
6390 - 6400				X	40	YELLOW			X		X				RIO BRAVO
6400 - 6470				X	50	YELLOW	X					X			RIO BRAVO
6470 - 6480			X		30	YELLOW			X			X			RIO BRAVO
6480 - 6500		X			10	YELLOW			X			X			RIO BRAVO
6500 - 6520	X				TR	YELLOW			X			X			RIO BRAVO
6520 - 6530			X		40	YELLOW			X			X			RIO BRAVO
6530 - 6540		X			20	YELLOW			X			X			RIO BRAVO

FLUORESCENCE DATA RECORD

WELL: LO16-26

Depth	FLUORESCENCE					COLOR	DISTRIBUTION				INTENSITY				FORMATION
(Feet)	Traces	Poor	Fair	Good	%		Even	Motled	Patchy	Spotty	Bright	Pale	Faint	Dull	
6540 - 6550		X			10	YELLOW			X			X			RIO BRAVO
6550 - 6560		X			20	YELLOW			X			X			RIO BRAVO
6560 - 6570	X				10	YELLOW			X			X			RIO BRAVO
6570 - 6580	X				5	YELLOW			X			X			RIO BRAVO
6580 - 6590		X			10	YELLOW			X			X			RIO BRAVO
6590 - 6680	X				TR	YELLOW			X			X			RIO BRAVO
6690 - 6700	X				TR	YELLOW			X			X			RIO BRAVO
6700 - 6710		X			5	YELLOW			X			X			RIO BRAVO
6710 - 6730	X				TR	YELLOW			X			X			RIO BRAVO
6740 - 6750		X			5	YELLOW			X			X			RIO BRAVO
6750 - 6780	X				TR	YELLOW			X			X			RIO BRAVO
6780 - 6790		X			10	YELLOW			X			X			RIO BRAVO
6790 - 6830	X				TR	YELLOW			X			X			RIO BRAVO
6830 - 6840		X			5	YELLOW				X		X			RIO BRAVO
6840 - 6850	X				TR	YELLOW				X		X			RIO BRAVO
6850 - 6870		X			5	YELLOW				X		X			RIO BRAVO
7070 - 7080	X				TR	YELLOW				X		X			RIO BRAVO
7260 - 7270	X				TR	YELLOW			X			X			RIO BRAVO
7270 - 7280		X			10	YELLOW			X			X			RIO BRAVO
7280 - 7310	X				TR	YELLOW			X			X			RIO BRAVO
7490 - 7520		X			5	YELLOW				X		X			RIO BRAVO
7520 - 7540		X			10	YELLOW				X		X			RIO BRAVO
7540 - 7580	X				TR	YELLOW			X			X			RIO BRAVO
7580 - 7590		X			5	YELLOW			X			X			RIO BRAVO
7590 - 7660	X				TR	YELLOW				X		X			RIO BRAVO
7660 - 7720		X			5	YELLOW				X		X			RIO BRAVO
7720 - 7750	X				TR	YELLOW			X			X			RIO BRAVO
7750 - 7760	X				5	YELLOW			X			X			RIO BRAVO

DAILY OPERATION REPORT

WELL: LO16 -26

JULY 23th, 2002

00:00	-	00:30	WELL CONDUCTOR AND CUT JOINT 5' BELOW ROTARY TABLE.
00:30	-	03:30	RIH ASSEMBLY AT 388'
03:30	-	04:30	DRILLING AND PENETRATE CONDUCTOR FROM 388' TO 415', CONDUCTOR POINT AT 406'
04:30	-	05:00	CHECK CONDUCTOR IN FIRST NIVEL
05:00	-	08:00	DRILLING FROM 415' TO 570' WITHOUT RETURN
08:00	-	08:30	PUMPING 40 BLS OF VISCOSITY MUD AND SURVEY
08:30	-	10:00	POOH, LAY DOWN 6 HW'S
10:00	-	12:00	MAKE UP UNDER REAMER, 17" RR BIT, RIH TO 415'.
12:00	-	16:30	REDRILL FROM 450' TO 570' WITHOUT RETURN
16:30	-	17:00	CIRCULATE, PUMPING VISCOSITY PILL (160 BLS)
17:00	-	18:30	POOH, RETIRE UNDER REAMER
18:30	-	21:30	RIH CONDUCTOR FROM 406' TO 570'
21:30	-	24:00	WORK ON CONDUCTOR, CUT AND WELD

JULY 24th, 2002

00:00	-	05:00	NIPPLE UP BOP's 21 1/4", PUT RAISER
05:00	-	06:00	RIH 5"DP's JOINT BY JOINT, POINT FREE AT 570'
06:00	-	07:00	CIRCULATE WITH SEA WATER 512 GPM, PARTIAL RETURN
07:00	-	08:00	B.J MAKE UP LINES, TEST WITH 2000 PSI
08:00	-	09:00	PUMPING 4 BLS SEA WATER WITH 4 GPM, PUMPING 50 BLS SLURRY CEMENT OF 15.5 PPG 1% CL2CA+GILSONITE, POOH AT 94', CLOSE BOP's, DISPLACE WITH 26 BLS SEA WATER, PRESSION=230 PSI, LAY DOWN LINES
09:00	-	23:00	WOC
23:00	-	24:00	CUT CEMENT FROM 533' TO 570'

JULY 25th, 2002

00:00	-	00:30	DISPLACE MUD (FLODRILL) FOR WATER
00:30	-	01:00	DRILING FROM 570' TO 580'
01:00	-	01:30	CIRCULATE
01:30	-	03:30	POOH, LAY DOWN BIT
03:30	-	08:00	MAKE UP 17" RR BIT GTXC1, DOWN HOLE MOTOR, MWD, RIH TO 580'
08:00	-	08:30	TEST MWD WITH 703 GPM, 1300 PSI
08:30		09:00	RIG SERVICE
09:00	-	16:30	DRILL F/ 580' TO 685', LAST 5' WITH HIGH TORQUE, TRACES OF IRON IN SAMPLES
16:30	-	20:00	POOH, LAY DOWN HOLE MOTOR, BIT, MAKE UP MAGNET+JUNK BASQUET, RIH TO 685'
20:00	-	20:30	PICK UP KELLY, WORK MAGNET
20:30	-	23:00	POOH, LAY DOWN MAGNET, RECOVERY 15 KG OF IRON, MAKE UP 17" BIT + JUNK BASQUET, RIH TO 372', PICK UP KELLY, TAKE SURVEY
23:00	-	24:00	CONTINUE RIH, TAKE SURVEY AT 462'

JULY 26th, 2002

00:00	-	01:00	RIH TO 685' AND TAKE SURVEY
01:00	-	01:30	DRILLING FROM 685' TO 688' HIGH TORQUE, IRON IN SAMPLES
01:30	-	03:00	POOH, LAY DOWN BIT, MWD
03:00	-	06:30	MAKE UP MAGNET WITH JUNK BASQUET, IN TWO RUNS RECOVERY 1.5 KG OF IRON, RETIRE MAGNET
06:30	-	10:30	MAKE UP FISH TOOL , IN TWO RUNS RECOVERY 3 KG OF IRON, LAY DOWN DRILL PIPE
10:30	-	14:30	MAKE UP 17" RR BIT GTXC1, DOWN HOLE MOTOR, RIH
14:30		15:00	TAKE SURVEY
15:00		17:00	SLIDING FROM 688' TO 695' WITH DIFFICULTY BY IRON
17:00		18:30	POOH, RETIRE BIT, DOWN HOLE MOTOR, MWD TOOL
18:30		24:00	MAKE UP MAGNET, IN THREE RUNS RECOVERY 7.5 KG OF IRON

JULY 27th, 2002

00:00	-	04:30	CONTINUE FISHING AT 695', IN THREE RUNS RECOVERY 4.5 KG OF IRON
04:30	-	06:00	RIH WITH BIT, ATTEMPT DRILL NEGATIVE HIGH TORQUE, RETIRE BIT
06:00	-	09:30	RIH WITH MAGNET, IN TWO RUNS RECOVERY 2 KG OF IRON
09:30	-	10:00	RIH WITH 17" BIT
10:00	-	10:30	DRILL FORMATION FROM 695' TO 700' WITH DIFFICULTY
10:30	-	11:30	POOH, RETIRE BIT
11:30	-	13:30	RIH WITH MAGNET, IN TWO RUNS RECOVERY 1.5 KG OF IRON
13:30	-	15:30	RIH WITH FISH TOOL, RECOVERY 1 KG OF IRON
15:30	-	16:30	RIH WITH 17" BIT
16:30	-	17:00	DRILL FROM 700' TO 705' OK
17:00	-	18:00	POOH
18:00	-	20:00	MAKE UP 17" RR BIT GTXC1, DOWN HOLE MOTOR, RIH TO 695'
20:00	-	21:00	CONTINUE RIH WITH DIFFICULTY FROM 695' TO 705', TAKE SURVEY
21:00		24:00	SLIDING FROM 705' TO 757'

JULY 28th, 2002

00:00	-	20:00	SLIDING FROM 757' TO 1175'
20:00	-	21:00	TAKE SURVEY, CIRCULATE
21:00	-	24:00	POOH, RETIRE 17" BIT, CHANGE DOWN HOLE MOTOR

JULY 29th, 2002

00:00	-	04:00	MAKE UP 17" BIT GTXC1+ 3 DC 6 1/4", RIH TO 1155'
04:00	-	04:30	PICK UP KELLY AND CLEAN FROM 1155' TO 1175'
04:30	-	22:00	SLIDING AND RATATING FROM 1175' TO 1578'
22:00	-	23:00	TAKE SURVEY, PUMP VISCOSITY PILL, CIRCULATE
23:00	-	24:00	POOH

JULY 30th, 2002

00:00	-	04:00	POOH, CHANGE NOZZLES AT BIT, ADD 3 5" HWDP, RIH
04:00	-	04:30	PICK UP KELLY AND CLEAN FROM 1535' TO 1578'
04:30	-	19:00	SLIDING AND ROTATING FROM 1578' TO 2000' (CSG. POINT)
19:00	-	20:00	CIRCULATE
20:00	-	21:00	POOH, WITH DIFFICULTY FROM 1960' TO 1900'
21:00	-	22:30	PICK UP KELLY, POOH WITH PUMP FROM 1900' TO 1504'
22:30		23:30	CIRCULATE, CONDITION MUD AND CLEAN HOLE
23:30		24:00	CONTINUE POOH WITH KELLY FROM 1504' TO 1411' AND CIRCULATE

JULY 31st, 2002

00:00	-	01:00	CONTINUE POOH WITH KELLY FROM 1411' TO 1121' AND CIRCULATE
01:00	-	04:00	POOH WITH ELEVATOR, LAY DOWN MONEL, MOTOR AND BIT
04:00	-	06:00	MAKE UP 17"R BIT GTXC1 + STB NEAR BIT, RIH TO 1439'
06:00	-	9:00	PICK UP KELLY AND RIH CLEANING @ 2000'
9:00	-	12:00	CIRCULATE, CONDITION MUD (CSG. 13 3/8)
12:00	-	14:00	POOH, OK
14:00	-	15:00	PREPARE FOR RUN 13 3/8" CSG
15:00	-	15:30	MAKE UP SHOE GUIDE + 01 PIPE + FLOAT VALVE, RIH @ 188'
15:30	-	16:00	REPAIR RIG COMPANY TOPSERV
16:00	-	17:30	RUN CASING @ 1115'
17:30	-	18:00	REPAIR RIG COMPANY TOPSERV
18:00	-	20:00	RUN CASING @ 2000'
20:00	-	20:30	PUT ON HEAD CEMENT .
20:30	-	21:30	CIRCULATE
21:30	-	22:30	BJ COMPANY MAKE UP LINE AND TEST WITH 2000PSI
22:30	-	24:00	BJ COMPANY CEMENT

AUGUST 01st, 2002

00:00	-	01:30	BJ COMPANY FINISHED OF CEMENT, DISPLACE WITH 302 BLS OF MUD
01:30	-	24:00	WAIT ON CEMENT: CUT CONDUCTOR AND 13 3/8" CSG, WELD RING, CUT FLOW OUT LINE , REMOVE 21 1/4" CONTROL, WELD 13 5/8" HEAD AND TEST WITH 1200 PSI, OK., MAKE UP EXTENSION INSTALL BOP'S 13 5/8" MAKE UP KILL LINES AND MANIFOLD, PUT RAISER, CUT FLOW OUT LINE CUT 120' LINE DRILLER.

AUGUST 02nd, 2002

00:00	-	09:00	MODIFIED RAISER, WELD PIPE + 13 3/8" FLOW OUT LINE
09:00	-	10:00	TEST BLIND RAMS + VALVE WITH 1200 PSI, OK, TEST 4" LINE OF MANIFOLD FOR 2 NEGATIVE TURN
10:00	-	12:30	MAKE UP 12 1/4 BIT WITH ASSEMBLY, RUN @ 1947 (CEMENT TOP)
12:30	-	13:30	TEST RAMS + 5" LINE WITH 1200 PSI + 4" LINE WITH 1200 PSI + GAS MANIFOLD OK, ANULAR WITH 800 PSI, OK.
13:30	-	15:00	ROTATE CEMENT FROM 1947' TO 2000'
15:00	-	15:30	DRILL FROM 2000' TO 2013'
15:30	-	16:00	CIRCULATING
16:00	-	17:30	POOH DRILL PIPE FOR CHANGE TO BHA
17:30	-	21:00	PICK UP MOTOR 8" WITH TRICONIC BIT AND RIH AT 259', TEST SLIM-1 W/ 650-700 G.P.M., AND 1500-1800 PSI, OK.
21:00	-	21:30	POOH LAY DOWN BIT TRICONIC
21:30	-	24:00	MAKE UP BIT 12 1/4", PDC TIPE S987BHPX, AND RIH AT 2013'

AUGUST 03rd, 2002

00:00	-	09:30	DRILLING WITH MUD MOTOR FROM 2013' TO 2522'
09:30	-	10:00	CIRCULATE VISCOSITY PILDORE
10:00	-	11:00	SHORT TRIP AT 2000'
11:00	-	19:30	DRILLING WITH MUD MOTOR FROM 2522' TO 3057'
19:30	-	20:00	CIRCULATE VISCOSITY PILDORE
20:00	-	21:00	SHORT TRIP AT 2453'
21:00	-	22:00	DRILLING WITH MUD MOTOR FROM 3057' TO 3120'
22:00	-	24:00	REPAIR PUMP # 1

AUGUST 04th, 2002

00:00	-	23:30	CONTINUE REPAIR PUMP # 1
23:30	-	24:00	RIH AT 2693'

AUGUST 05th, 2002

00:00	-	00:30	CONTINUE RIH FROM 2693' TO 3120'
00:30	-	10:30	DRILLING WITH MUD MOTOR FROM 3120' TO 3654'
10:30	-	11:30	CIRCULATE VISCOSITY PILDORE
11:30	-	12:30	SHORT TRIP AT 3050'
12:30	-	15:30	DRILLING WITH MUD MOTOR FROM 3654' TO 3813'
15:30	-	16:30	REPAIR PUMP # 2
16:30	-	22:30	DRILLING WITH MUD MOTOR FROM 3813' TO 4220'
22:30	-	23:00	CIRCULATE VISCOSITY PILDORE
23:00	-	24:00	SHORT TRIP AT 3616'

AUGUST 06th, 2002

00:00	-	03:00	SLIDING AND ROTATING FROM 4220' TO 4357'
03:00	-	03:30	REPAIR PUMP # 2
03:30	-	10:30	SLIDING AND ROTATING FROM 4357' TO 4756'
10:30	-	11:30	CIRCULATE VISCOSITY PILDORE
11:30	-	13:00	SHORT TRIP AT 3400'
13:00	-	14:00	DRILLING WITH MUD MOTOR FROM 4756' TO 4788'
14:00	-	14:30	REPAIR PUMP # 2
14:30	-	19:00	DRILLING WITH MUD MOTOR FROM 4788' TO 5008'
19:00	-	19:30	REPAIR PUMP # 2
19:30	-	24:00	SLIDING AND ROTATING FROM 5008' TO 5229'

AUGUST 07th, 2002

00:00	-	03:00	DRILLING WITH MUD MOTOR FROM 5229' TO 5359'
03:00	-	03:30	REPAIR PUMP #2
03:30	-	07:30	DRILLING WITH MUD MOTOR FROM 5359' TO 5518'
07:30	-	09:00	CIRCULATE AND DISPLACE BARITE PLUG
09:00	-	14:30	POOH DILL PIPE TO SURFACE
14:30	-	20:00	RIH DRILL PIPE WITH TRICONE BIT, AND REAMING FROM 5436' TO 5518'
20:00	-	21:30	CIRCULATE VISCOSITY PILDORE
21:30	-	24:00	POOH DRILL PIPE FROM 5318' TO 5312' (02 STAND) MOP: 260 KLBS, CONTINUE POOH AT 2868' MOP: 180 KLBS

AUGUST 08th, 2002

00:00	-	04:00	CONTINUE POOH, LAY DOWN BIT, STB NEAR BIT AND 7 3/4" DC
04:00	-	04:30	PREPARE FOR RUN CASING 9 5/8"
04:30	-	08:30	MAKE UP SHOE GUIDE + 02 PIPE + COLLAR FLOAT, RUN CASING @ 3365'
08:30	-	09:00	TOPSERV CHANGE RIG
09:00	-	14:00	CONTINUE RUN CASING @ 5498', THE LAST 18 PIPE RUN WITH DIFFICULTY
14:00	-	14:30	PUT ON HEAD CEMENT, CIA BJ.
14:30	-	15:00	CIRCULATE, RIH CLEANING HOLE @ 5518
15:00	-	16:30	SEND BALL, CONTINUE CIRCULATE
16:30	-	17:00	DISPLACE RED PLUG, TEST LINE WHIT 2000 PSI. PUT ON BLACK PLUG
17:00	-	20:00	CIA BJ CEMENT. PUMP 10 BBL WATER OF SEA + 292 BBL MIXTURE I OF 13.5 + 126 BBL MIXTURE II OF 15.6. DISPLACE WITH 405 BBL OF MUD. TEST WHIT PRESSURE @ 1300 PSI, VALVULE OK, RETURN 20 BBL OF MUD.
20:00	-	24:00	MAKE UP BOP, PUT IN CUÑAS CASING 9 5/8, 120MLBS, CUT CASING, PREPARE FOR MAKE UP CASING SPOOL

AUGUST 09th, 2002

00:00	-	02:00	MAKE UP EXTENSION TO SECOND LEVEL
02:00	-	07:00	CUT CASING 9 5/8 (IN COLD)
07:00	-	18:30	PUT CASING SPOOL 9 5/8" x 3000 x 11" x 3000, TIGHTEN BOLDS, PUT EXTENSION INSTALL DRILLING SPOOL AND BOPS 13 5/8 x 5000. MAKE LINE KILL AND CHOCK MANIFOLD, PUT NIPPLE, WELD FLOW LINE
18:30	-	19:30	TEST BLIND RAMS, VALVULE HCR AND CHOCK MANIFOLD W/ 1500 PSI
19:30	-	23:00	RUN PIPE WITH. BIT GTM1 USED (3x18), RUN @ 5420'
23:00	-	23:30	PICK UP KELLY, TEST BOP'S, RAMS DE 5" 800 PSI, ANNULAR 1200 PSI, OK
23:30	-	24:00	DRILLING VALVULE AND CEMENT @ 5439'

AUGUST 10th, 2002

00:00	-	01:00	CLEAN CEMENT, DRILLING SHOE @ 5518'
01:00	-	1:30	DRILLING FORMATION FROM 5518' TO 5528'
1:30	-	02:00	CIRCULATE FOR TRIP
02:00	-	05:30	POOH, LAY DOWN BIT (2-2-1/16) AND 8 PIPE
05:30	-	07:30	MAKE UP BIT 8 1/2 PDC M88PX USED (6x18) WITH MUD MOTOR, PUT MWD, RUN @ 110'
07:30	-	08:00	PICK UP KELLY TEST TOOL MWD, OK.
08:00	-	11:00	CONTINUE RIH @ 5528'
11:00	-	21:00	DRILLING FROM 5528' TO 6043', SLIDING FROM 5823' TO 5867'
21:00	-	22:00	CIRCULATE, TOTAL GAS 819 UNIT., INCREASE MUD WEIGHT @ 9.8PPG
22:00	-	23:00	SHORT TRIP TO CASING SHOE, OK, CONEXIÓN GAS 989 UNIT.
23:00	-	23:30	DRILLING FROM 6043' TO 6074'
23:30	-	24:00	DOWN PRESSURE IN SURFACE

AUGUST 11th, 2002

00:00	-	1:00	POOH TO 4653', WASH OUT (PIPE #44)
1:00	-	2:00	RIH, CIRCULATE AND DISPLACE UNITS GAS (1080)
2:00	-	6:30	DRILLING FROM 6074' TO 6249' (830 UNITS GAS), INCREASE MUD WEIGHT @ 9.8 CUT MUD BY OIL AND GAS
6:30	-	9:30	CIRCULATE, CONDITION MUD, INCREASE MUD WEIGHT @ 10.4
9:30	-	14:00	POOH, LAY DOWN BIT (WORN OUT 10%), LAY DOWN MUD MOTOR. MAKE UP BIT AGAIN (CHANGE JETS 4x16, 2x18). MAKE UP BHA
14:00	-	18:30	PICK UP LWD (GAMMA RAY), RUN @ 90'. TEST TOOL LWD, OK, CONTINUE RIH @ 5750'
18:30	-	19:30	CIRCULATE AND DISPLACE 2285 UNITS GAS
19:30	-	20:00	CIA ANADRILL TEST LWD
20:00	-	24:00	RIH WITH KELLY, CIRCULATE AND LOGGER GAMMA RAY FROM 5750' TO 6118'

AUGUST 12th, 2002

00:00	-	1:30	RIH WITH KELLY, CIRCULATE AND LOGGER GAMMA RAY FROM 6118' TO 6249'
1:30	-	5:00	DRILLING FROM 6249' TO 6400'
5:00	-	6:30	CIRCULATE BY CUT MUD, MUD WEIGHT DOWN FROM 10.5 TO 10.2, INCREASE MUD WEIGHT @ 10.8, CLOSE BOP'S (ANNULAR) AND CIRCULATE FOR CHOCK MANIFOLD, NORMALIZE CIRCULATE WITH MUD WEIGHT OF 10.9
6:30	-	14:00	DRILLING FROM 6400' TO 6620'
14:00	-	15:00	CIRCULATE FOR SHORT TRIP, INCREASE MUD WEIGHT @ 11.1
15:00	-	16:00	SHORT TRIP @ 6110' (06 STANDS), MOP 210000, OK, 1713 UNITS GAS
16:00	-	24:00	DRILLING FROM 6620' TO 6765'

AUGUST 13th, 2002

00:00	-	6:00	DRILLING FROM 6765' TO 7029'
6:00	-	7:00	CIRCULATE FOR SHORT TRIP
7:00	-	8:00	SHORT TRIP @ 6519', OK, MOP 230MLbs, 1200 UNITS GAS
8:00	-	18:00	DRILLING FROM 7029' TO 7405'
18:00	-	19:00	CIRCULATE FOR SHORT TRIP
19:00	-	20:00	SHORT TRIP @ 6608' (08 STANDS), OK, MOP 240 MLbs, 1550 UNITS TRIP GAS NOTE: SAFETY MEETING FOR KICK OFF WELL
20:00	-	24:00	DRILLING FROM 7405' TO 7530'

AUGUST 14th, 2002

00:00	-	8:00	DRILLING FROM 7530' TO 7781'
8:00	-	9:00	CIRCULATE FOR SHORT TRIP
9:00	-	10:00	SHORT TRIP (06 STANDS) @ 7209', OK, MOP 245MLbs.
10:00	-	24:00	CONTINUE DRILLING FROM 7781' TO 8090'

AUGUST 15th, 2002

00:00	-	0:30	DRILLING FROM 8090' TO 8095' TD
0:30	-	3:00	CIRCULATE FOR TRIP, INCREASE MUD WEIGHT @ 11.3 PPG
3:00	-	4:00	POOH WITH KELLY @ 7977' (06 PIPES), MOP 270 MLbs
4:00	-	8:30	DISPLACE PLUG WEIGHT, POOH @ 6175'
8:30	-	9:00	POOH CIRCULATING FROM 6175' TO 6081'
9:00	-	13:00	POOH WITH STAPLE @ 5987' AND CIRCULATING (WITH DIFFICULTY) @ 5863', MOP 230 MLbs.
13:00	-	14:00	WORK WITH JAR FOR DOWN, STUCK PIPE. CONTINUE WORK AND FREE PIPE
14:00	-	16:00	CONTINUE POOH CIRCULATING @ 5454'
16:00	-	18:30	POOH WITH STAPLE, RETIRE 04 DC 6 1/4" + TOOL ANADRILL
18:30	-	23:30	MAKE UP TRICONIC BIT, ASSEMBLY WITH WATER MELLOW 8 3/8", CHANGE JAR AND RUN TO SHOE OF CASING 9 5/8.
23:30	-	24:00	PUMPED MUD AND CIRCULATE, 1469 UNITS GAS

AUGUST 16th, 2002

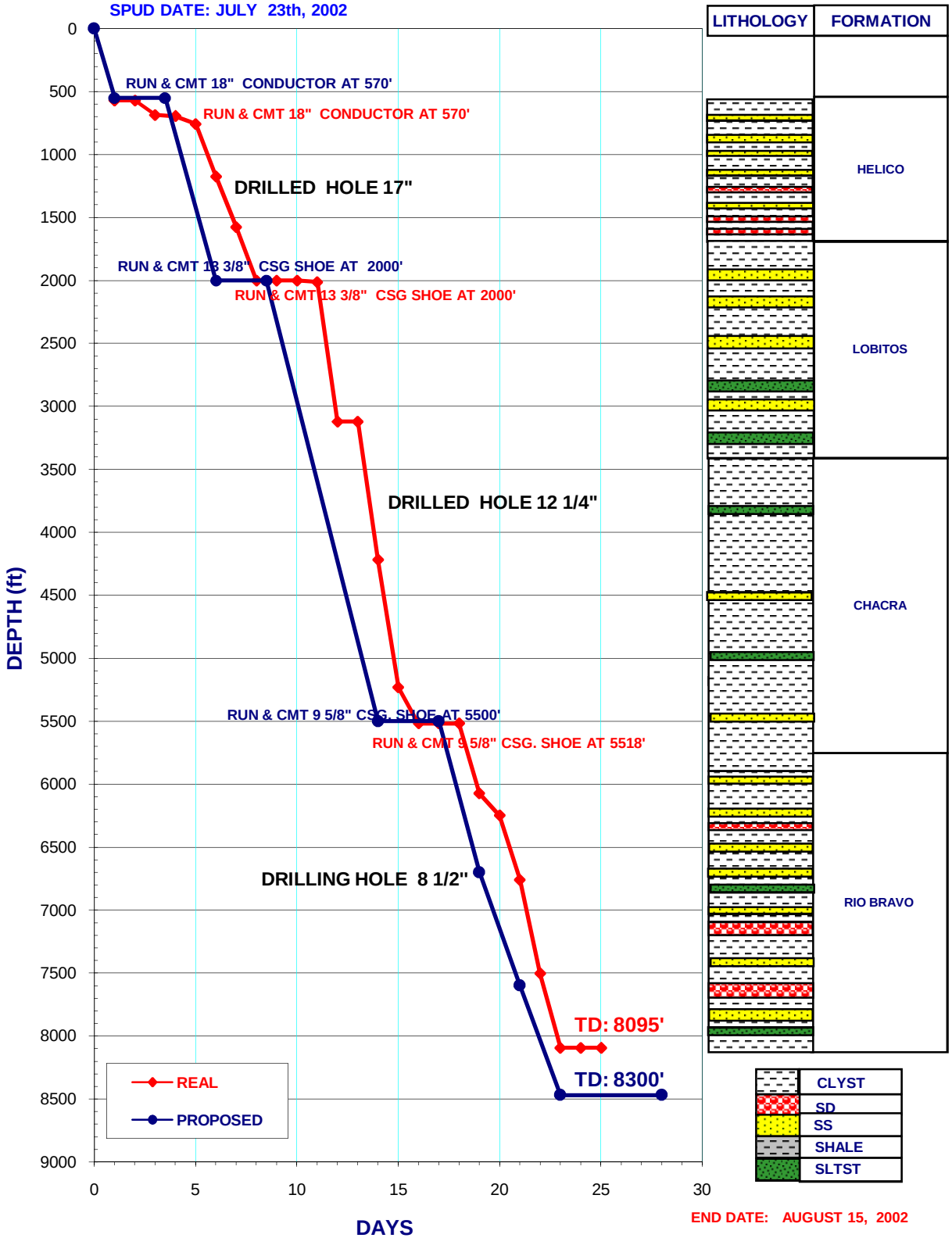
00:00	-	0:30	CIRCULATE, IN SHOE POINT CASING 9 5/8
0:30	-	2:30	RUN 375' OF LINE DRILLING AND CUT 370'.
2:30	-	4:30	CONTINUE RIH, HOLD UP AT 7895'
4:30	-	5:30	CLEAN WITH CIRCULATE FROM 7995' @ 8095'
5:30	-	7:30	CIRCULATE IN BOTTOM HOLE AT 8095', 2200 UNITS GAS, PUMP VISCOSITY PILL
7:30	-	15:00	POOH, RETIRE AT TABLE 03 DC (6 1/4') + RED
15:00	-	15:30	CIA TOPSER PREPARE FOR RUN CASING 5 1/2'
15:30	-	21:00	RUN CASING 5 1/2' @ 8053' WITH 172 PIPE
21:00	-	21:30	MAKE UP HEAD FOR CIRCULATE AND LINES
21:30	-	22:30	CIRCULATE FOR SECURITY (RIG PUMPS)
22:30	-	24:00	RUN REST OF CASING 5 1/2, CIRCULATE IN BOTTOM HOLE AT 8095', CONDITION MUD @ 11.4

DRILLING PROGRESS CURVE

WELL: LO16-26

GEOIL

PETRO-TECH PERUANA S.A.



END DATE: AUGUST 15, 2002

FLUORESCENCE DATA RECORD

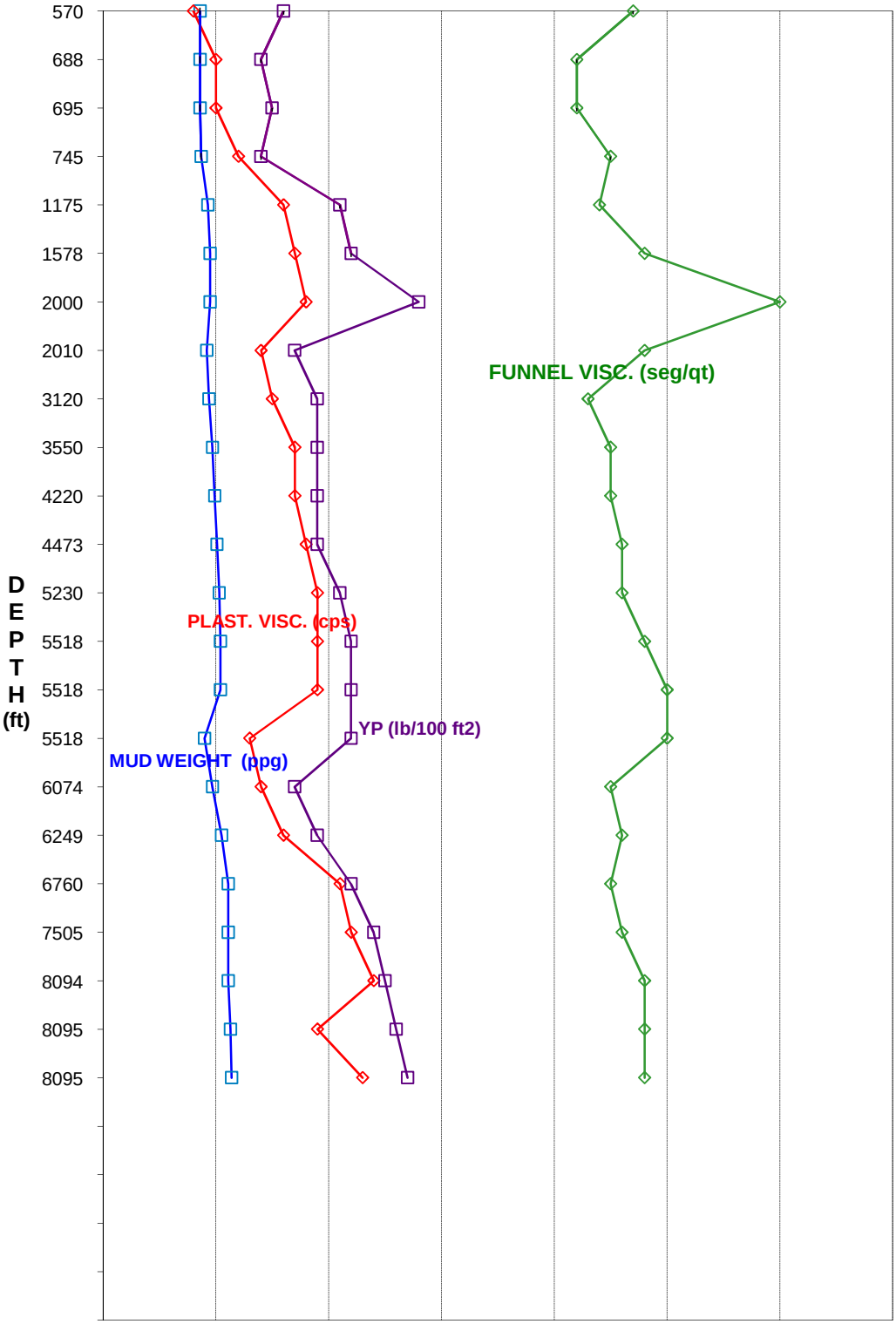
WELL: LO16-26

Depth	FLUORESCENCE					COLOR	DISTRIBUTION				INTENSITY				FORMATION
(Feet)	Traces	Poor	Fair	Good	%		Even	Motled	Patchy	Spotty	Bright	Pale	Faint	Dull	
7760 - 7770		X			10	YELLOW			X			X			RIO BRAVO
7770 - 7780		X			15	YELLOW			X			X			RIO BRAVO
7780 - 7790		X			10	YELLOW			X			X			RIO BRAVO
7790 - 7810		X			5	YELLOW			X			X			RIO BRAVO
7810 - 7830		X			10	YELLOW			X			X			RIO BRAVO
7830 - 7840		X			15	YELLOW			X			X			RIO BRAVO
7840 - 7870		X			10	YELLOW			X			X			RIO BRAVO
7870 - 7880	X				5	YELLOW			X			X			RIO BRAVO
7880 - 7900	X				TR	YELLOW			X			X			RIO BRAVO
7900 - 7920	X				5	YELLOW			X			X			RIO BRAVO
7920 - 7930		X			10	YELLOW			X			X			RIO BRAVO
7930 - 7960		X			15	YELLOW			X			X			RIO BRAVO
7960 - 7980		X			20	YELLOW			X			X			RIO BRAVO
7980 - 8000	X				5	YELLOW			X			X			RIO BRAVO
8000 - 8020	X				TR	YELLOW			X			X			RIO BRAVO

GEOIL

PETRO-TECH PERUANA S.A.

MUD PROPERTIES
WELL: LO16-26



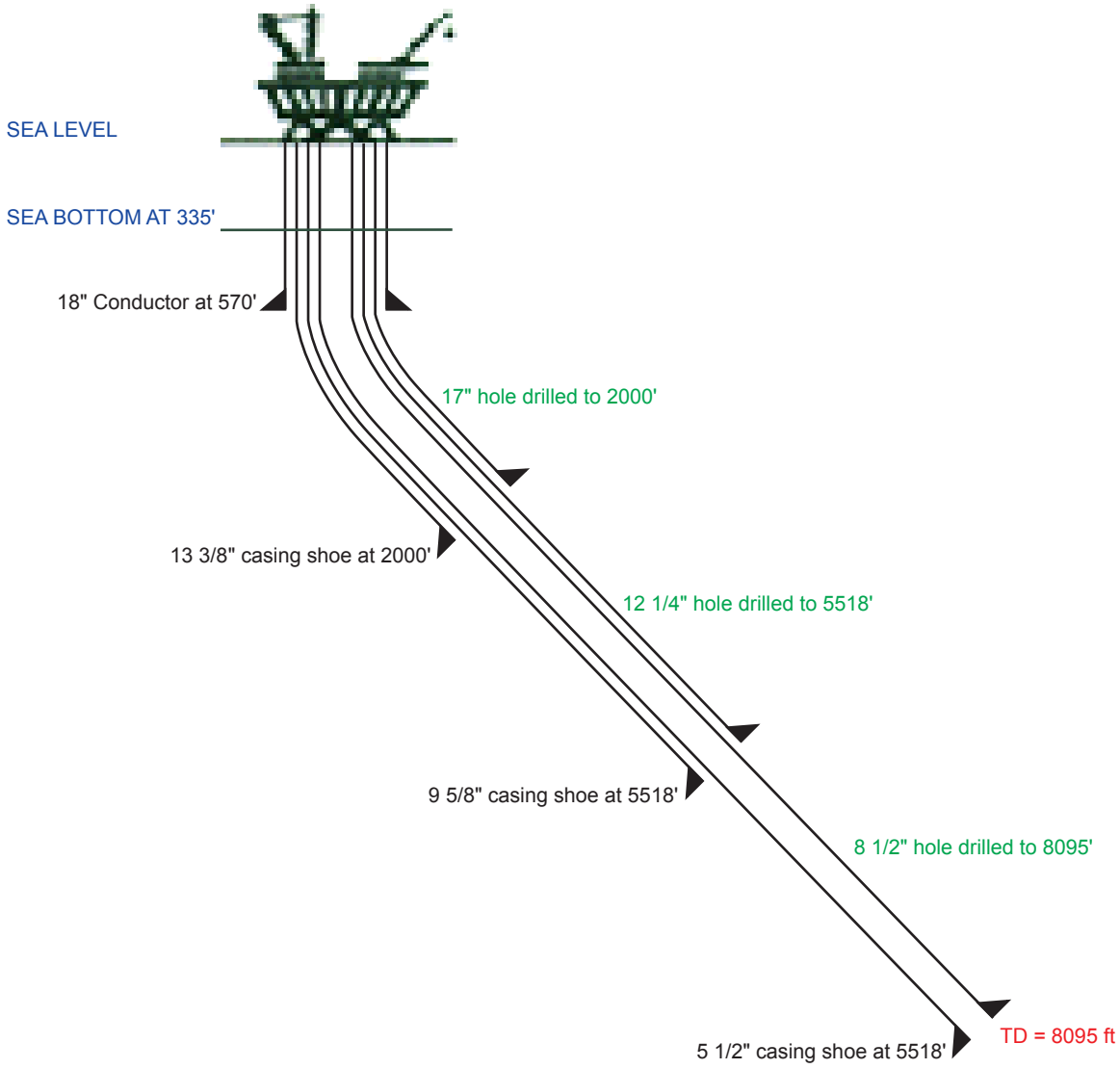
BIT RECORD TABLE

FIELD: LOBITOS OFFSHORE | **WELL: LO16 – 26** | **RIG:**

BIT IDENTIFICATION							BIT PERFORMANCE AND DRILLING PARAMETERS									
BIT #	**Run #**	**Size Inches**	**Type**	**Make**	**Serial #**	**Jets**	**Depth In**	**Depth Out**	**Ft Drill.**	**Hrs.**	**Rop Ft/Hr**	**WOB Klb**	**RPM Table**	**Flow gpm**	**SPP psi**	**IADC Dull Code**
2	RR	17	GTXC1	HTC	560DX	4x14	570	580	10	0.5	20	10	80	---	---	3-3-1/8
3	RR	17	GTXC1	HC	565DJ	3x18 1x16	580	1175	595	30	19.5	15	50	674	1450	4-3-1/16
4	N	17	GTXC1	HC	6004837	1x18 3x20	1175	2000	825	32	25.7	30	60	656	2500	1-1-1
5	R	12 1/4	GTM1		T06DA	2x16 1x15	2000	2013	13	0.5	26	15	100	671	2000	3-3-1/32
6	N	12 1/4	BHPX	SMITH	J57794	7x13 2x14	2013	5518	3505	65	53.9	12	60	645	2500	15-0-DESG
7	RR	8 1/2	GTM1		X65YP	3x18	5518	5528	10	0.5	20	15	90	511	1500	2-2-1/16
8	RR	8 1/2	M88PX	SMITH	JS1659	6x18	5528	6249	721	15	48	20	90	511	1600	10% DESG.
9	RR	8 1/2	M88PX	SMITH	JS1659	4X16 2X18	6249	8095	1846	76.5	24.1	30	90	472	1950	60% DESG.

WELLBORE SCHEME

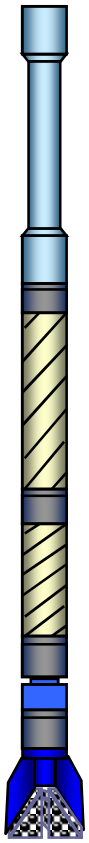
WELL: LO16 - 26



BHA No.1

WELL : LO16-26

JULY 24, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
9 HW	5"	3 8/25"	4 1/2" PIN	4 1/2" BOX	269.98	**518.84**
X/O	6 1/4"	2 7/8"	4" PIN	4 1/2" BOX	2.94	**248.86**
6 DC	6.25"	2 15/16"	4" PIN	4" BOX	175.01	**245.92**
X/O	6 1/4"	2 7/8"	4 PIN	4 1/2" BOX	2.25	**70.91**
2 DC	7 3/4"	2 15/16"	4" PIN	4" BOX	60.50	**68.66**
X/O	6 1/4"	2 7/8"	4" PIN	4 1/2" BOX	2.95	**8.16**
JUNK BASKET	9.5"	3 1/8"	4" PIN	4" BOX	2.42	**5.21**
X/O	6 1/4"	2 7/8"	4 1/2" Reg	4" BOX	1.46	**2.79**
BIT#2RR 17" GTX-C1 560DX JET: 4x14	17"			4 1/2" Reg	1.33	**1.33**

TOTAL LENGTH	**518.84**

DEPTH IN: 570 Ft.

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PETRO-TECH PERUANA S.A.

BHA No. 2

WELL : LO16-26

JULY 25, 2002

ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
14 HWDP	5"	3"	4.5" PIN	4.5" BOX	419.48	**915.57**
JAR	6 7/16"	2 3/4"	4.5" PIN	4.5" BOX	32.23	**496.09**
6 HWDP	5"	3"	4.5" PIN	4.5" BOX	179.70	**463.86**
X/O	6 1/32"	2 13/16"	4.5" PIN	4.5" BOX	2.94	**284.16**
4 DC	6 1/8"	2 13/16"	4.5" PIN	4.5" BOX	116.81	**281.22**
X/O	7 1/2"	2 13/16"	6.63" PIN	4" BOX	2.25	**164.41**
2 DC	7 11/16"	2 47/50"	6.63" PIN	6.63" BOX	60.5	**162.16**
8" NM DC	7 7/8"	2 7/8"	6.63" PIN	6.63" BOX	29.16	**101.66**
NMDC w/Slin 1	8"	4 19/50"	6.63" PIN	7.63" BOX	30.77	**72.50**
UBHO Sub	8"	2 3/4"	6.63" PIN	6.63" BOX	2.24	**41.73**
NM SDC	8 1/16"	2 7/8"	6.63" PIN	6.63" BOX	9.52	**39.49**
Float Sub	8"	2 13/16"	6.63" PIN	7.63" BOX	2.58	**29.97**
A962M5630SP	9 9/16"	7 22/25"	7.63" PIN	7.63" BOX	26.06	**27.39**
BIT#3RR 17" HC GTX-C1 S65DJ JET:1x16 3x18	17"			6 5/8" Reg	1.33	**1.33**

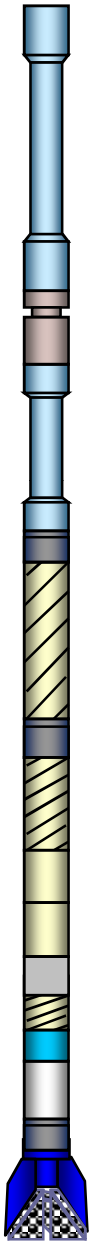
TOTAL LENGTH	**915.57**

DEPTH IN: 580 Ft.

BHA No. 3

WELL : LO16-26

JULY 28, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
14 HWDP	5"	3"	4.5" PIN	4.5" BOX	419.48	**1005.22**
JAR	6 7/16"	2 3/4"	4.5" PIN	4.5" BOX	32.23	**585.74**
6 HWDP	5"	3"	4.5" PIN	4.5" BOX	179.70	**553.51**
X/O	6 1/32"	2 13/16"	4.5" PIN	4.5" BOX	2.94	**373.81**
7 DC	6 1/8"	2 13/16"	4.5" PIN	4.5" BOX	203.94	**370.87**
X/O	7 1/2"	2 13/16"	6.63" PIN	4.5" BOX	2.25	**166.93**
2 DC	7 11/16"	2 47/50"	6.63" PIN	6.63" BOX	60.5	**164.68**
8" NM DC	7 7/8"	2 7/8"	6.63" PIN	6.63" BOX	29.16	**104.18**
NMDC w/Slim 1	8"	4 19/50"	6.63" PIN	7.63" BOX	30.77	**75.02**
UBHO Sub	8"	2 3/4"	6.63" PIN	6.63" BOX	2.24	**44.25**
NM SDC	8 1/16"	2 7/8"	6.63" PIN	6.63" BOX	9.52	**42.01**
Float Sub	8"	2 13/16"	6.63" PIN	7.63" BOX	2.58	**32.49**
A800M7840XP	8 1/4"	6 1/4"	7.63" PIN	7.63" BOX	27.12	**29.91**
X/O	9 1/2"	3 1/8"	6.63 BOX	7.63" BOX	1.46	**2.79**
BIT#4 17" HC GTX-C1 6004837 JET:1x16 3x18	17"			7 5/8" Reg	1.33	**1.33**

TOTAL LENGTH	**1005.22**

DEPTH IN: 1175 Ft.

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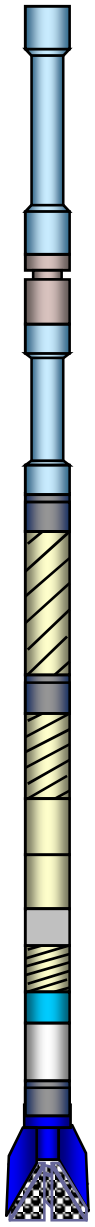
PETRO-TECH PERUANA S.A.

BHA No. 4

WELL : LO16-26

JULY 29, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
17 HWDP	5"	3"	4.5" PIN	4.5" BOX	510.31	**1096.05**
JAR	6 7/16"	2 3/4"	4.5" PIN	4.5" BOX	32.23	**585.74**
6 HWDP	5"	3"	4.5" PIN	4.5" BOX	179.70	**553.51**
X/O	6 1/32"	2 13/16"	4.5" PIN	4.5" BOX	2.94	**373.81**
7 DC	6 1/8"	2 13/16"	4.5" PIN	4.5" BOX	203.94	**370.87**
X/O	7 1/2"	2 13/16"	6.63" PIN	4" BOX	2.25	**166.93**
2 DC	7 11/16"	2 47/50"	6.63" PIN	6.63" R BOX	60.5	**164.68**
NM DC	7 7/8"	2 7/8"	6.63" PIN	6.63" BOX	29.16	**104.18**
NMDC w/Slin 1	8"	4 19/50"	6.63" PIN	7.63" BOX	30.77	**75.02**
UBHO Sub	8"	2 3/4"	6.63" PIN	6.63" BOX	2.24	**44.25**
NM SDC	8 1/16"	2 7/8"	6.63" PIN	6.63" BOX	9.52	**42.01**
Float Sub	8"	2 13/16"	6.63" PIN	7.63" BOX	2.58	**32.49**
A800M7840XP	8 1/4"	6 1/4"	7.63" PIN	7.63" BOX	27.12	**29.91**
X/O	9 1/2"	3 1/8"	6.63 BOX	7.63 PIN	1.46	**2.79**
BIT#5 17" HC GTX-C1 6004837 JET:1x18 3x20	17"			7 5/8" Reg	1.33	**1.33**

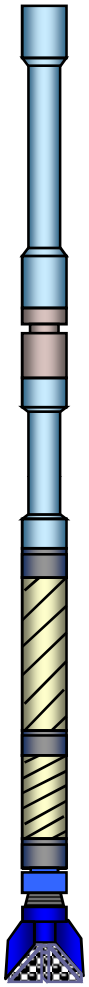
TOTAL LENGTH	**1096.05**

DEPTH IN: 1578 Ft.

BHA No.5

WELL : LO16-26

AUG 02, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
17 HWDP	5"	3"	4 1/2" PIN	4 1/2" BOX	510.31	**968.03**
JAR	6 7/16"	2 3/4"	4 1/2" PIN	4 1/2" BOX	32.23	**457.72**
6 HW	5"	3 8/25"	4 1/2" PIN	4 1/2" BOX	179.70	**425.49**
X/O	6 1/4"	2 7/8"	4" PIN	4 1/2" BOX	2.94	**245.79**
7 DC	6 1/4"	2 15/16"	4" PIN	4" BOX	203.94	**242.85**
X/O	6 1/4"	2 7/8"	4 PIN	4 1/2" BOX	2.25	**38.91**
1 DC	7 3/4"	2 15/16"	4" PIN	4" BOX	29.78	**36.66**
X/O	6 1/4"	2 7/8"	4" PIN	4 1/2" BOX	2.97	**6.88**
JUNK BASKET	9.5"	3 1/8"	4" PIN	4" BOX	2.96	**3.91**
BIT#5RR 12 1/4" GTM-1 T06-DA JET: 2x16 1x15	12 1/4"			4 1/2" Reg	0.95	**0.95**

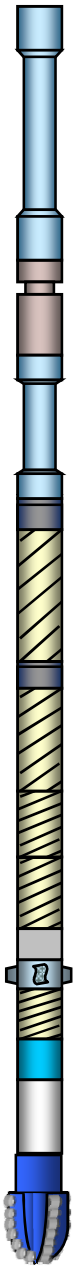
TOTAL LENGTH	**425.49**

DEPTH IN: 2000 Ft.

BHA No 6

WELL : LO16-26

Aug 02, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
17 HWDP	5"	3"	4 1/2" PIN	4 1/2" BOX	510.31	**1097.62**
JAR	6 7/16"	2 3/4"	4 1/2" PIN	4 1/2" BOX	32.23	**587.31**
6 HWDP	5"	3"	4 1/2" PIN	4 1/2" BOX	179.70	**555.08**
X/O	6 1/32"	2 13/16"	4 1/2" PIN	4 1/2" BOX	2.94	**375.38**
7 DC	6 1/8"	2 13/16"	4 1/2" PIN	4 1/2" BOX	203.94	**372.44**
X/O	7 1/2"	2 13/16"	6 5/8" PIN	6 5/8" BOX	2.25	**168.50**
2 DC	7 11/16"	2 47/50"	6 5/8" PIN	6 5/8" BOX	60.50	**166.25**
NM DC	7 7/8"	2 7/8"	6 5/8" PIN	6 5/8" BOX	29.16	**105.75**
NM DC w/Slim-1	8"	4 19/50"	6 5/8" PIN	6 5/8" BOX	30.77	**76.59**
UBHO Sub	8"	2 3/4"	6 5/8" PIN	6 5/8" BOX	2.24	**45.82**
STB	8"	2 13/16"	6 5/8" PIN	6 5/8" BOX	5.98	**43.58**
NM DC	8 1/16"	2 7/8"	6 5/8" PIN	6 5/8" BOX	9.52	**37.60**
FLOAT SUB	8"	2 13/16"	6 5/8" PIN	6 5/8" BOX	2.58	**30.66**
A800M784XP	8 1/4"	6 1/4"	6 5/8" BOX	6 5/8" BOX	27.20	**28.08**
BIT#6 12 1/4" SMITH S987BPX JS7794 JET:7x13,2x14	12 1/4"			6 5/8" PIN	0.88	**0.88**

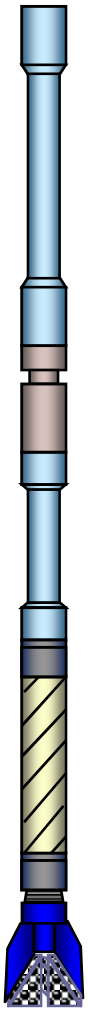
TOTAL LENGTH	**1097.62**

DEPTH IN: 2013'

BHA No.7

WELL : LO16-26

Aug. 9, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
17 HW	5"	3 8/25"	4 1/2" PIN	4 1/2" BOX	510.31	**932.97**
JAR	6 1/2"	2 3/4"	4 BOX	4 1/2" PIN	32.23	**422.66**
6 HW	5"	3 3/32"	4 1/2" PIN	4 1/2" BOX	179.70	**390.43**
X/O	6 1/4"	2 7/8"	4" PIN	4 1/2" BOX	2.94	**210.73**
7 DC	6 1/4"	2 5/16"	4" PIN	4" BOX	203.94	**207.79**
X/O	6 1/4"	2 7/8"	4" PIN	4 1/2" BOX	3.05	**3.85**
BIT #7 8 1/2" GTM1 X65YP JET: 3x18	8 1/2"			6 5/8" Reg	0.80	**0.80**

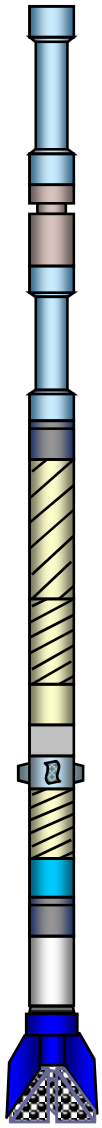
TOTAL LENGTH	**932.97**

DEPTH IN: 5518'

BHA No.8

WELL : LO16-26

Aug. 10, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
21 HW	5	3	4.5 PIN	4.5 BOX	631.19	**1159.51**
JAR	6 4/9	2 3/4"	4.5 PIN	4.5 BOX	32.23	**528.32**
5 HW	5"	3	4.5 PIN	4.5 BOX	179.70	**496.09**
X/O	6 1/32	2 13/16	4.5 PIN	4.5 BOX	2.94	**316.39**
7 DC	6 1/8	2 13/16	4.5 PIN	4.5 BOX	203.94	**313.45**
NM DC	7 7/8"	2 7/8"	4.5 PIN	4.5 BOX	30.38	**109.51**
NMDC w/Slim 1	6 11/16	3 20/23	4.5 PIN	4.5 BOX	30.54	**79.13**
UBHO Sub	6 5/8	2 13/16	4.5 PIN	4.5 BOX	2.28	**48.59**
STB	6 1/2	2 7/8	4.5 PIN	4.5 BOX	5.60	**46.31**
NM SDC	6 1/2	2 7/8	4.5 PIN	4.5 BOX	10	**40.71**
Float Sub	6 11/16	2 3/4	4.5 PIN	4.5 BOX	1.96	**30.71**
X/O	6 1/4"	2 7/8	4.5 PIN	4.5 BOX	2.56	**28.75**
A800M784XP	6 3/4	5 1/2	4.5 PIN	4.5" BOX	25.25	**26.19**
BIT#8 8 1/2" SMITH M88PX JS1659 JET: 6x18	8 1/2"			4.5 PIN	0.94	**0.94**

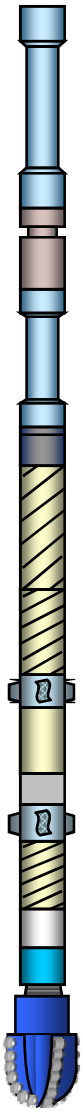
TOTAL LENGTH	**1159.51**

DEPTH IN: 5528'

BHA No.9

WELL : LO16-26

Aug. 11, 2002



ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
21 HW	5	3	4.5 PIN	4.5 BOX	631.19	**1140.76**
JAR	6 4/9	2 3/4"	4.5 PIN	4.5 BOX	32.23	**509.57**
5 HW	5"	3	4.5 PIN	4.5 BOX	179.70	**477.34**
X/O	6 1/32	2 13/16	4.5 PIN	4.5 BOX	2.94	**297.64**
7 DC	6 1/8	2 13/16	4.5 PIN	4.5 BOX	203.94	**294.70**
NM DC	6 2/3	2 7/8"	4.5 PIN	4.5 BOX	30.38	**90.76**
STB	6 2/3	2 13/16	4.5 PIN	4.5 BOX	4.92	**60.38**
NMDC w/Slim 1	6 11/16	3 20/23	4.5 PIN	4.5 BOX	30.54	**55.46**
UBHO Sub	6 5/8	2 13/16	4.5" PIN	4.5 BOX	2.28	**24.92**
STB	6 2/3	2 7/8	4.5" PIN	4.5" BOX	4.79	**22.64**
NM SDC	6 1/2	2 7/8	4.5" PIN	4.5" BOX	10	**17.85**
Float Sub	6 11/16	2 3/4	4.5" PIN	4.5" BOX	1.96	**7.85**
NB STB	6 3/4	2.0"	4.5" REG	4.5" BOX	4.95	**5.89**
BIT#9 8 1/2" SMITH M88PX JS1659 JET: 4x16 2x18	8 1/2"			4.5" Reg	0.94	**0.94**

TOTAL LENGTH	**1140.76**

DEPTH IN: 6249'

BHA No.10

WELL : LO16-26

Aug. 15, 2002

ITEM	OD	ID	BOTTOM THREAD	TOP THREAD	LENGTH	CUM. LENGTH
21 HW	5	3	4.5 PIN	4.5 BOX	631.19	**949.09**
JAR	6 4/9	2 3/4"	4.5 PIN	4.5 BOX	32.15	**317.90**
6 HW	5"	3	4.5 PIN	4.5 BOX	179.70	**285.75**
X/O	6 1/32	2 13/16	4.5 PIN	4.5 BOX	2.54	**106.05**
3 DC	6 1/4	2 13/16	4.5 PIN	4.5 BOX	86.58	**103.51**
X/O	6 1/32	2 13/16	4.5 PIN	4.5 BOX	2.53	**16.93**
WAT. MELL.	6 5/8	2 13/16	4.5" PIN	4.5 BOX	7.53	**14.40**
X/O	6 1/32	2 13/16	4.5 PIN	4.5 BOX	1.08	**6.87**
Float Sub	6 11/16	2 3/4	4.5" PIN	4.5" BOX	1.96	**5.79**
NB BIT	6 3/4	2.0"	4.5" REG	4.5" BOX	3.03	**3.83**
BIT #10 8 1/2" GTM1 X65YP JET: 3x22	8 1/2"			4.5" Reg	0.80	**0.80**

TOTAL LENGTH	**949.09**

DEPTH IN: 8095'

GEOIL™

PETRO-TECH PERUANA S.A.

SURVEY DATA

WELL: LO19-6

DEPTH (feet)	INCLINATION (degree)	AZIMUTH (degree)	TVD (feet)
0.00	0.00	0.00	0.00
346.00	1.80	90.00	345.94
436.00	1.58	90.00	435.90
516.00	1.10	90.00	515.88
527.00	1.10	90.00	526.88
558.00	1.07	90.00	557.87
588.40	1.63	55.87	588.26
608.50	2.18	23.06	608.36
627.50	2.50	339.80	627.34
648.10	3.10	329.90	647.92
687.10	3.02	328.73	686.86
747.80	5.00	284.80	747.42
828.40	8.97	342.57	827.49
858.10	10.89	344.60	856.75
889.40	13.20	351.80	887.36
952.20	17.50	351.10	947.90
983.70	19.70	348.60	977.76
1015.10	22.10	348.50	1007.09
1046.00	24.40	345.70	1035.48
1080.60	27.10	342.10	1066.64
1108.60	29.20	338.80	1091.33
1133.10	31.10	336.24	1112.51
1164.60	33.60	33.60	1139.12
1195.60	35.40	330.30	1164.67
1227.20	37.50	327.40	1190.09
1258.60	39.20	324.20	1214.72
1290.20	40.70	323.60	1238.94
1321.90	42.20	322.10	1262.70
1384.30	44.20	322.20	1308.19
1447.30	46.70	322.60	1352.38
1510.30	49.70	322.30	1394.37
1601.10	53.40	319.00	1450.83
1664.30	56.60	318.20	1487.08
1758.30	59.60	317.80	1536.74
1853.10	59.50	318.50	1584.79
1915.70	59.20	320.90	1616.70
2041.20	59.40	321.30	1680.78
2134.80	59.20	322.90	1728.57
2229.20	59.30	321.50	1776.83
2324.10	59.30	319.50	1825.29
2418.30	59.70	317.50	1873.10
2512.80	60.60	316.90	1920.14
2606.80	60.50	316.70	1966.35

GEOIL™

PETRO-TECH PERUANA S.A.

SURVEY DATA

WELL: LO19-6

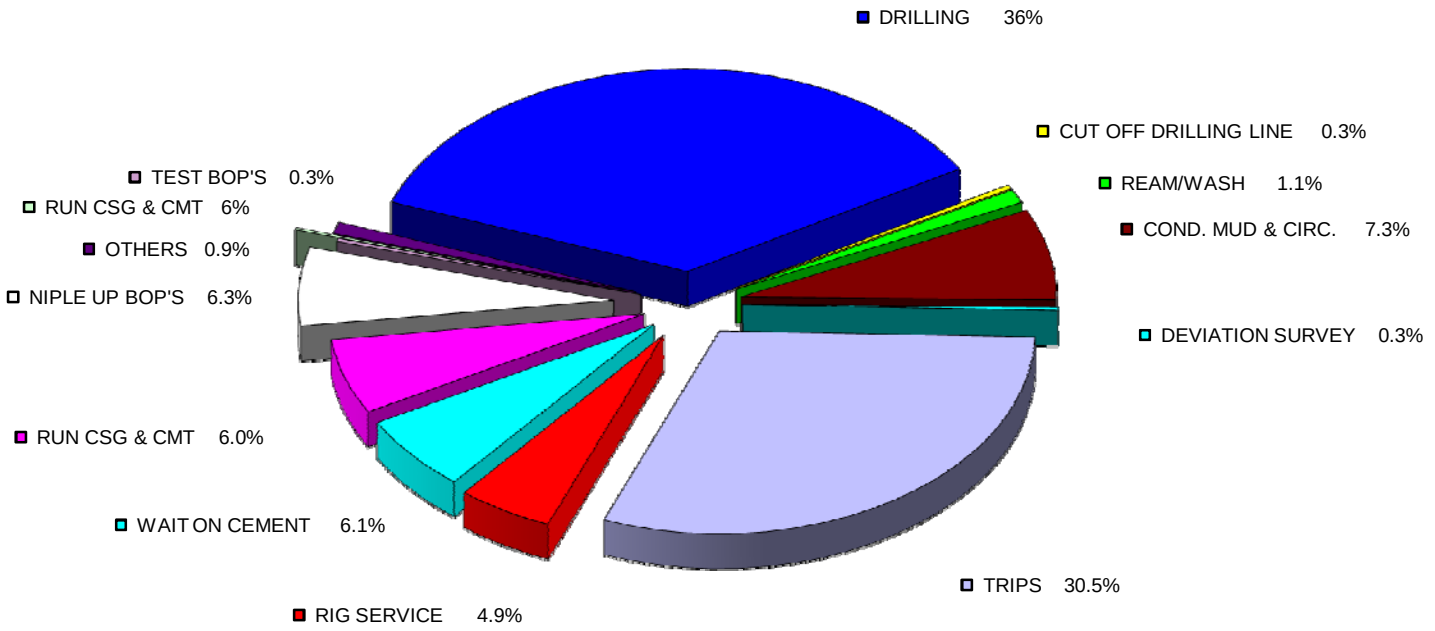
DEPTH (feet)	INCLINATION (degree)	AZIMUTH (degree)	TVD (feet)
2700.60	61.10	315.70	2012.12
2795.30	61.90	314.80	2057.30
2889.70	61.90	314.70	2101.77
2984.50	62.30	314.50	2146.13
3078.70	62.20	314.50	2189.99
3172.20	62.10	314.60	2233.67
3266.80	62.20	314.80	2277.86
3360.70	62.20	314.20	2321.65
3465.40	62.10	314.30	2370.57
3560.10	62.40	314.40	2414.66
3654.60	61.80	315.00	2458.88
3749.30	61.40	316.20	2503.92
3832.80	61.40	316.20	2543.89
3927.20	61.40	316.00	2589.08
4021.60	61.60	316.70	2634.12
4116.40	61.50	316.70	2679.29
4211.50	61.70	316.10	2724.52
4306.10	61.60	316.50	2769.44
4337.70	61.40	316.80	2784.52
4369.30	61.40	317.30	2799.65
4400.80	61.30	317.90	2814.75
4463.90	61.30	317.50	2845.05
4526.80	61.30	317.50	2875.56
4558.60	61.30	317.60	2890.53
4590.00	61.10	317.70	2905.65
4621.40	61.10	317.70	2920.83
4652.70	61.10	317.70	2935.96
4684.20	61.08	317.92	2951.18
4715.70	61.28	318.13	2966.37
4747.20	61.23	318.24	2981.52
4778.80	61.09	317.38	2996.76
4810.00	61.14	317.78	3011.83
4872.70	61.20	317.40	3042.07
4935.70	61.00	316.80	3072.51
4999.00	61.30	317.90	3103.06
5093.50	61.60	316.70	3148.22
5188.37	61.70	317.20	3193.27
5282.50	61.70	317.10	3237.90
5376.70	61.20	317.90	3282.92
5471.00	61.30	317.80	3328.28
5562.00	60.90	316.50	3372.28
5656.60	61.30	316.40	3417.95
5750.60	61.90	316.40	3462.66

SURVEY DATA

WELL: LO19-6

DEPTH (feet)	INCLINATION (degree)	AZIMUTH (degree)	TVD (feet)
5844.90	61.00	317.10	3507.73
5939.10	59.90	316.80	3554.19
6032.70	60.20	316.70	3600.92
6127.10	59.30	316.30	3648.47
6158.40	59.50	315.90	3664.41
6349.20	60.60	315.70	3759.66
6506.00	60.21	314.27	3837.35
6664.00	60.00	314.96	3916.05
6847.80	60.29	315.00	4007.35
7040.50	58.80	313.60	4105.02
7228.10	55.90	313.60	4204.84
7416.70	55.60	312.90	4309.62
7605.40	54.30	312.90	4417.99
7762.30	53.70	311.50	4510.24
7950.00	52.4	310.8	4623.07

TIME DISTRIBUTION
WELL: LO16-26



FROM JULY 23th, TO AUGUST 16th , 2002

TOTAL HOURS: 600

DRILLING 36%	CUT OFF DRILLING LINE 0.3%	REAM/WASH 1.1%	COND. MUD & CIRC. 7.3%
DEVIATION SURVEY 0.3%	TRIPS 30.5%	RIG SERVICE 4.9%	WAIT ON CEMENT 6.1%
RUN CSG & CMT 6.0%	NIPLE UP BOP'S 6.3%	TEST BOP'S 0.3%	RIG UP/DOWN CEMENT LINES 0.2%
OTHERS 0.9%			

CONCLUSION

Z-2B-24-089-D-LO16 (LO16-26), directional well was drilled in Lobitos field in Talara Basin. The sedimentary sequence drilled in Tertiary Formations and logged by Geoil was as follows: Helico (surface to 570 ft), Lobitos Fm (1680 to 3420 ft), Chacra Fm (3420 to 5850 ft), Rio Bravo (5850 to 8095 ft)

The Rio Bravo Fm was the Main objective of this well.

The Rio Bravo Fm in this well are Sandstones and Sands interbedding with claystones. Gas shows were detected in the upper part was considerated as fair, the maximum gas reading recorded was 1750 units of Total Gas into 6230 ft to 6250 ft, with C1, C2, C3, C4 and C5 of chromatography. Oil shows were observed from 5910 ft to 8020 ft, they were fair, patchy pale yellow natural fluorescence, with moderate fast streaming milky white cut, no visible residual ring. **Fair to Good oil show.**

During the drilling this well no has troubles, according with the mud prognosis started with 8.6 ppg to 9.5 ppg in the 13 3/8" open hole section with high rate of penetration, no detected cavings no significant connection gas where is determinated the casing point for 9 5/8" at 5518 ft registered here 61.30 degree. The 8 ½" open hole section was perforated in the same good condition with 10.4 to 11.4 ppg of Flodrill type mud, was observed connection gas and during trips registered 40 klbs of drag. The maximum inclination was of 61.90 degree at 2889.7 ft (MD) and final survey was 52.40 degree at 7950 ft. (MD) During the drilling was detected a wash out at 6074 stand pipe pressure drop 250 psi, drilling during 6249 to 6400 circulate by cut mud of 10.5 ppg to 10.2 ppg with 1713 gas units, close BOP's (Annular) and circulate for chocke manifold, normalize circulate wich MW of 10.9 ppg, in the final interval was observed high conecction gas. Final Total Depth at 8095 ft, condition mud to 11.4 ppg and Petrotech decided run casing 5 ½" becouse E'log no was registered.