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Mudlog MD

COMPANY	EXXONMOBIL
WELL	PCU 296-6B2
FIELD	PICEANCE CREEK UNIT
REGION	ROCKY MOUNTIANS
COORDINATES	LAT 39.905269000 LON 108.205030000
ELEVATION	GL 7363.9 KB 7390.9
COUNTY, STATE	RIO BLANCO CO
API INDEX	051031154500
SPUD DATE	01-24-2011
CONTRACTOR	HELMRICH AND PAYNE
CO. REP.	SCOTT ARENBURG
RIG/TYPE	215 / FLEX 3
LOGGING UNIT	MLU 51
GEOLOGISTS	G.BAKER, D.CLAAR B.MARSH, B.JOHANNING
ADD. PERSONS	I.FAROOQUI K.WALLANDER
CO. GEOLOGIST	WILLIAM HOFFMAN

LOG INTERVAL

DEPTHS: 145' **TO** 10,275'
DATES: 01-24-2011 **TO** 02-17-2011
SCALE: 1" = 100'

CASING DATA

17" **AT** 145'
10.75" **AT** 4,627'
AT
AT

MUD TYPES

LSDN **TO** 10,275'
TO
TO
TO

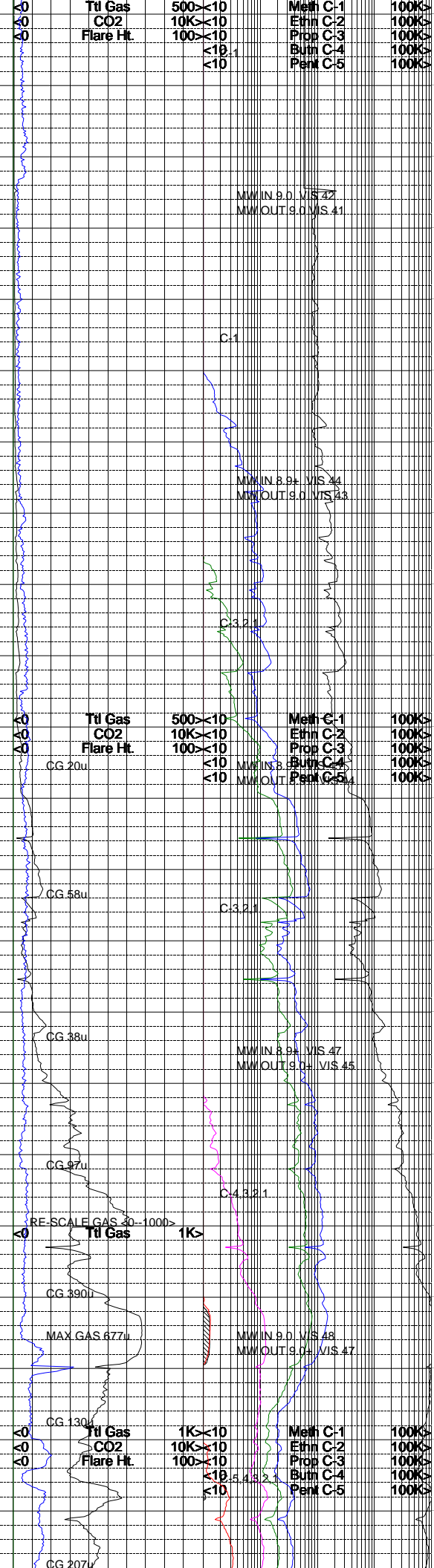
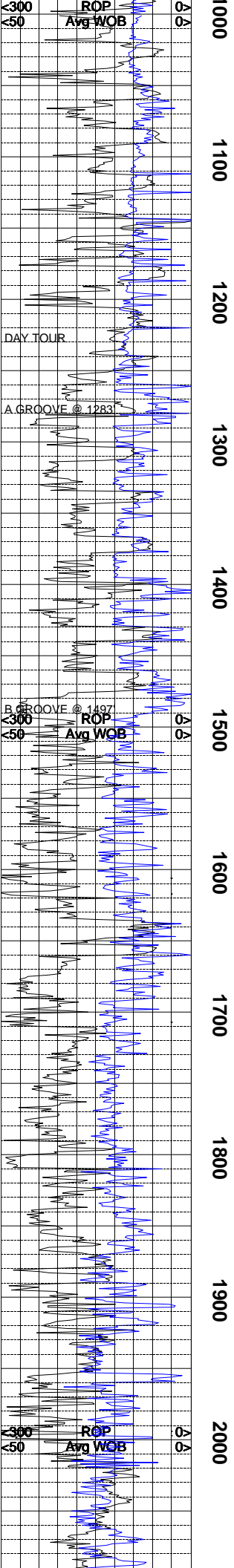
HOLE SIZE

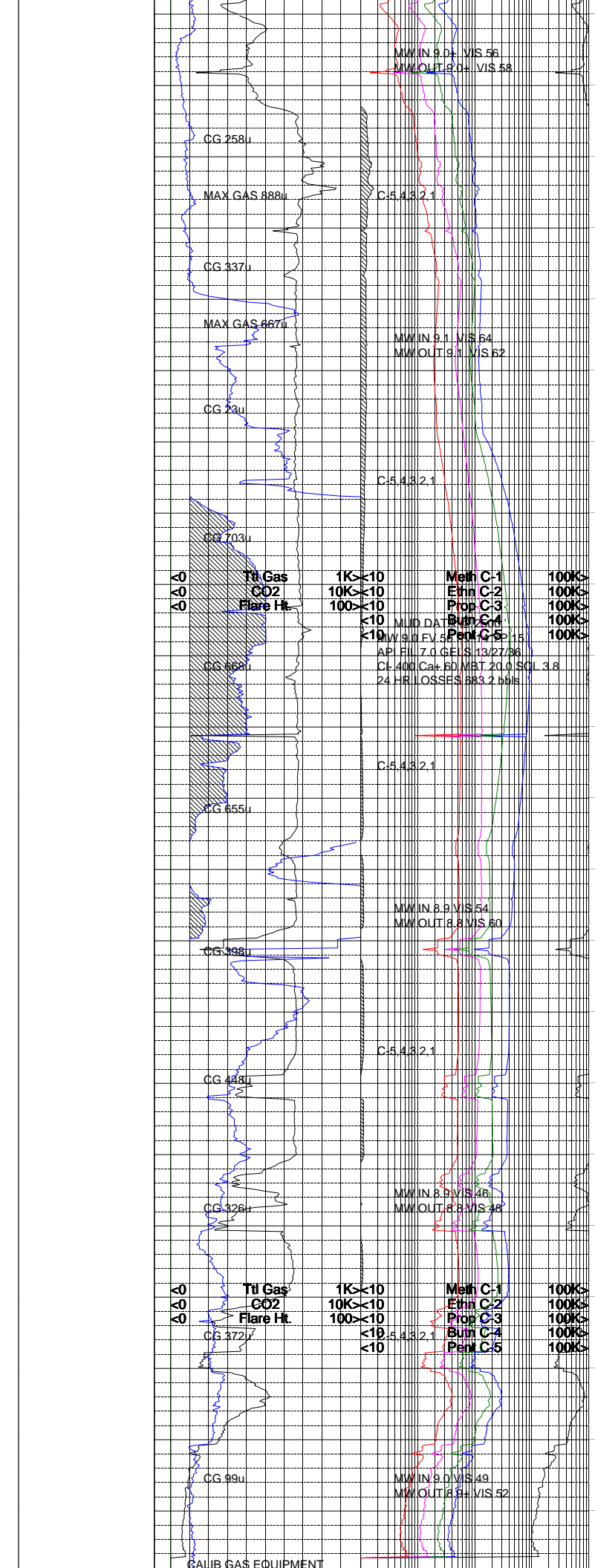
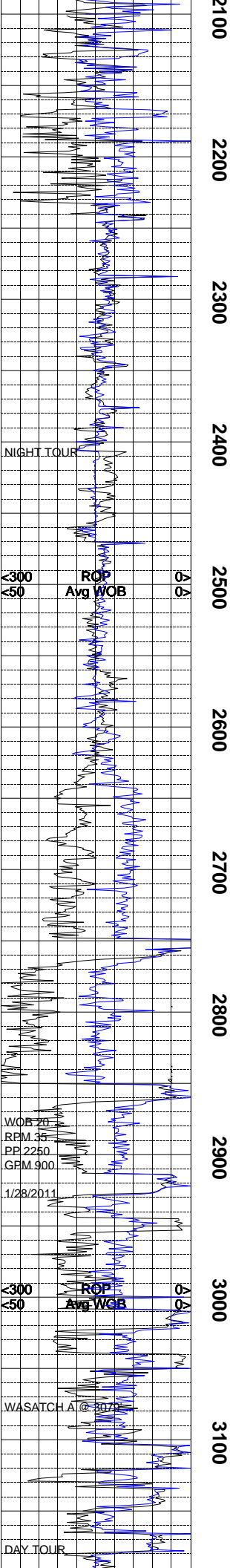
20" **TO** 145'
14.75" **TO** 4,627'
9.875" **TO** 10,275'
TO

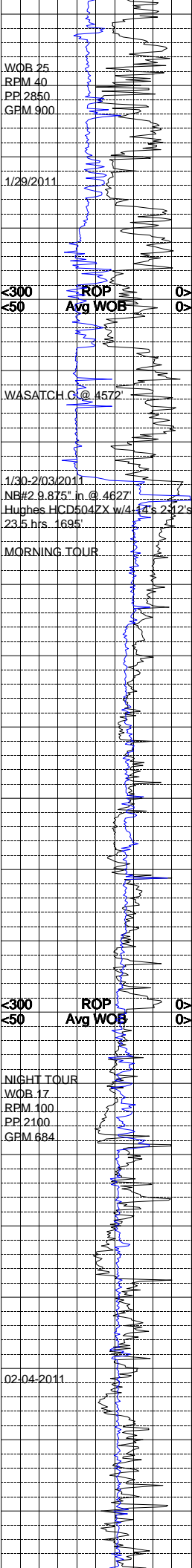
ABBREVIATIONS

<i>NB</i> NEWBIT	<i>PV</i> PLASTIC VISCOSITY	<i>LC</i> LOST CIRCULATION
<i>RRB</i> RERUN BIT	<i>YP</i> YIELD POINT	<i>CO</i> CIRCULATE OUT
<i>CB</i> CORE BIT	<i>FL</i> FLUID LOSS	<i>NR</i> NO RETURNS
<i>WOB</i> WEIGHT ON BIT	<i>CL</i> PPM CLORIDE ION	<i>TG</i> TRIP GAS
<i>RPM</i> ROTARY REV/MIN	<i>Rm</i> MUD RESISTIVITY	<i>SG</i> SURVEY GAS
<i>PP</i> PUMP PRESSURE	<i>Rmf</i> FILTRATE RESISTIVITY	<i>WG</i> WIPER GAS
<i>SPM</i> STROKES/MIN	<i>PR</i> POOR RETURNS	<i>CG</i> CONNECTION GAS
<i>MW</i> MUD WEIGHT	<i>LAT</i> LOGGED AFTER TRIP	
<i>VIS</i> FUNNEL VISCOSITY	<i>LAS</i> LOGGED AFTER SURVEY	

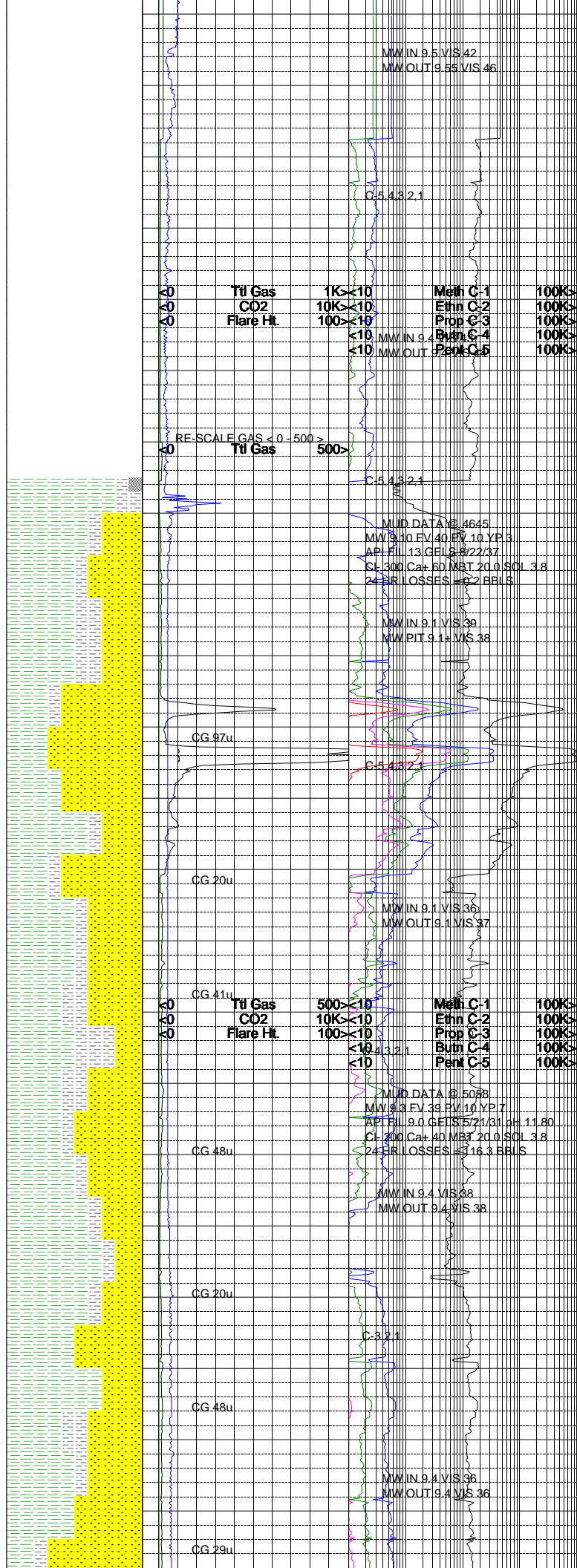
ALTERED ZONE	CHERT - GLASSY	FELSIC SILIC DIKE	MARL - CALC	SANDSTONE
ANDESITE	CHERT - PORCEL	FOSSIL	METAMORPHICS	SANDSTONE-TUFFACEOUS
ANHYDRITE	CHERT - TIGER STRIPE	GABBRO	MUDSTONE	SERICITIZATION
BASALT	CHERT - UNDIFF	GLASSY TUFF	OBSIDIAN	SERPENTINE
BENTONITE	CLAY	GRANITE	PALEOSOL	SHALE
BIOTITIZATION	CLAY-MUDSTONE	GRANITE WASH	PHOSPHATE	SHALE TUFFACEOUS
BRECCIA	CLYST-TUFFACEOUS	GRANODIORITE	PORCELANITE	SHELL FRAGMENTS
CALCARENITE	CHLORITIZATION	GYPSUM	PORCELANEOUS CLYST	SIDERITE
CALCAREOUS TUFF	COAL	HALITE	PYRITE	SILICIFICATION
CALCILUTITE	CONGLOMERATE	HORNBL-QTZ-DIO	PYROCLASTICS	SILTSTONE
CARBONATES	CONGL. SAND	IGNEOUS (ACIDIC)	QUARTZ DIORITE	SILTST-TUFFACEOUS
CARBONACEOUS MAT	CONGL. SANDSTONE	IGNEOUS (BASIC)	QUARTZ LATITE	TUFF
CARBONACEOUS SH	COQUINA	INTRUSIVES	QUARTZ MONZONITE	VOLCANICLASTICS SEDS
CEMENT CONTAM.	DACITE	KAOLINITIC	RECRYSTALLIZED CALCITE	VOLCANICS
CHALK	DIATOMITE	LIMESTONE	RHYOLITE	
CRYSTALLINE TUFF	DIORITE	LITHIC TUFF	SALT	
CHERT - ARGILL	DOLOSTONE	MARL - DOLO	SAND	







4300
4400
4500
4600
4700
4800
4900
5000
5100
5200
5300



N- BUTANE = 1000 PPM
I- PENTANE = 1000 PPM
N- PENTANE = 1000 PPM

CO2 IS CALIBRATED TO A TEST GAS COMPOSED OF 100000 PPM

CONNECTION GAS, TRIP GAS, AND WIPER GAS ARE NOTED ON THE MUDLOG, FLARE HEIGHTS AND DEPTHS OF GAS BUSTER USAGE ARE ALSO NOTED.

EARLY CONNECTION GASES REPRESENTING UP HOLE GAS INTERVALS BLEEDING INTO THE BOREHOLE ARE COMMON IN THE PRODUCTION INTERVAL.

EVIDENCE OF FRACTURE FILL IS NOTED ON THE LOG USING THE LITHOLOGY SYMBOL FOR METAMORPHICS. THE 10% DOES NOT REPRESENT 10% FRACTURE FILL IN SAMPLE. IT ONLY INDICATES THAT FRACTURE FILL HAS BEEN OBSERVED OVER THE INTERVAL.

SURVEY DATA AT 6323' MD
INCL: 0.04
AZIM: 13.79
TVD: 6013.15

NOTE: TD SURFACE SECTION @ 4627' ON 1-29-2011 AT 03:10 AM

DRILL OUT SHOE AND PERFORM FIT @ 4637' ON 02/03/2011

SHALE = VARICOLORED; MOTTLED IN PART; DOM TAN TO LIGHT GRAY; SME REDBROWN, PURPLE; FIRM TO SOFT; SLI PLATY; IRREG FRACTURE; DULL EARTHY LUSTER; ROUGH TO SILTY TEXTURE; SILTY IN PART; TRACE PURPLE SILTSTONE; CALCAREOUS; MINOR AMOUNTS OF LT GRAY TO TAN TO REDDISH BROWN SANDSTONE.

SANDSTONE = VARICOLORED; LT GRAY TO LT BROWN TO TAN; PURPLE; MOTTLED IN PART LOWER MEDIUM TO FINE GRAINED; ANGULAR TO SUBROUNDED; HARD PRESERVED SPECIMENS; DOM CALCITE CEMENT; SME LOOSE WHITE KAOL CLAY IN SAMPLES; MOD WELL SORTED; BCMG TAN @ 4800' WITH MICA, LITHIC FRAGS WITH 309 UNIT GAS SHOW @ 4788'.

SANDSTONE = LIGHT GRAY; LOWER MEDIUM GRAINED; ANGULAR TO SUBROUNDED; CALCITE CEMENT; CONGLOMERATIC IN PART W/ COARSE LITHIC FRAGMENTS AND MINERAL GRAINS; TR CHERT; MICA; SCATTERED CARBONACEOUS MAT; POORLY SORTED; SME REDDISH GRAINS; TR PYRITE; ASSOCIATED WITH 541 UNIT GAS SHOW.

SHALE = TAN; LT YELLOW BROWN TO YELLOW; MOTTLED IN PART; PLATY TO FLAKY CTGS; FIRM TO SOFT; IRREGULAR FRACTURE; DULL EARTHY LUSTER; ROUGH TO SILTY TEXTURE; SL TO MOD CALCAREOUS; SME THIN SANDSTONE LAMINATIONS; SILTY TO SANDY IN PART; SOME THIN CARBONACEOUS LAMINATIONS; ISOLATED QUARTZ GRAINS TO VERY SANDY; GRADING TO SILTSTONE.

SANDSTONE = VERY DIRTY LOOKING CLUSTERS OF VARICOLORED GRAINS FROM LIGHT GRAY TO WHITE TO OFF WHITE; HAS DARK BLACK LITHICS THROUGHOUT; FINE TO VERY FINE GRAINED; FRIABLE TO CRUNCHY CLUSTERS; FAIR SORTING; SUB ROUND TO ROUND; HIGH SPHERICITY; SLIGHT ELEVATION IN GAS; HIGH REACTION TO DILUTE HCL; CALCAREOUS CEMENT.

SHALE = LIGHT BROWN TO YELLOW BROWN TO VERY LIGHT GRAY; BRITTLE TO CRUNCHY TENACITY; IRREGULAR TO MAINLY PLANAR FRACTURE; PLATY TO FLAKY CUTTINGS HABIT; DULL TO EARTHY LUSTER; SMOOTH TO CLAYEY TEXTURE; THIN STRUCTURE.

SANDSTONE = ABUNDANT LOOSE GRAINS AND SMALL FRIABLE CLUSTERS TOGETHER; LIGHT YELLOW TO OFF WHITE TO TRANSPARENT GRAINS; FINE TO UPPER VERY FINE GRAINED; WELL SORTED; SUB ANGULAR TO ROUND; MODERATE SPHERICITY; MODERATE REACTION TO DILUTE HCL; CALCAREOUS CEMENT TO GRAIN SUPPORTED; TRACE AMT OF DARK LITHICS THROUGHOUT; THINLY BEDDED.

SHALE = LIGHT BROWN TO YELLOWISH BROWN WITH LIGHT ORANGE HUES; BRITTLE TO CRUNCHY TENACITY; IRREGULAR TO PLANAR FRACTURE; PLATY TO ELONGATED CUTTINGS HABIT; DULL TO EARTHY LUSTER; SMOOTH TO CLAYEY TEXTURE; THIN ALTERNATING BEDS.

SILTSTONE = LIGHT BROWN TO BROWN; DENSE TENACITY; IRREGULAR TO BLOCKY FRACTURE; TABULAR TO MASSIVE CUTTINGS HABIT; DULL TO SLIGHTLY SPARKLING LUSTER

