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MUDLOG MD

COMPANY	ExxonMobil Production
WELL	FRU 197-33A7
FIELD	PICEANCE CREEK
REGION	ROCKIES
COORDINATES	39.915575000 108.28575000
ELEVATION	GL 6386 KB 6359
COUNTY, STATE	RIO BLANCO, CO
API INDEX	05-103-1139-900
SPUD DATE	02/16/2010
CONTRACTOR	HP
CO. REP.	R.T. OWENS
RIG/TYPE	215/FLEX 3
LOGGING UNIT	MLU051
GEOLOGISTS	G.BAKER B.MARSH
ADD. PERSONS	D.CLAAR B.JOHANNING
CO. GEOLOGIST	MELANIE BIGGS

LOG INTERVAL

DEPTHS:	3,790'	TO	12,375'
DATES:	02/16/2010	TO	02/26/2010
SCALE:	1"=100'		

CASING DATA

10.75"	AT	3,808'
7.00"	AT	8,609'
	AT	
	AT	

MUD TYPES

LSND	TO	12,375"
	TO	
	TO	
	TO	

HOLE SIZE

9.875"	TO	8,619'
6.125"	TO	12,375'
	TO	
	TO	

ABBREVIATIONS

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

	ALTERED ZONE
	ANDESITE
	ANHYDRITE
	BASALT
	BENTONITE
	BIOTITIZATION
	BRECCIA
	CALCARENITE
	CALCAREOUS TUFF
	CALCILUTITE
	CARBONATES
	CARBONACEOUS MAT
	CARBONACEOUS SH
	CEMENT CONTAM.
	CHALK
	CRYSTALLINE TUFF
	CHERT - ARGILL

	CHERT - GLASSY
	CHERT - PORCEL
	CHERT - TIGER STRIPE
	CHERT - UNDIFF
	CLAY
	CLAY-MUDSTONE
	CLYST-TUFFACEOUS
	CHLORITIZATION
	COAL
	CONGLOMERATE
	CONGL. SAND
	CONGL. SANDSTONE
	COQUINA
	DACITE
	DIATOMITE
	DIORITE
	DOLOSTONE

	FELSIC SILIC DIKE
	FOSSIL
	GABBRO
	GLASSY TUFF
	GRANITE
	GRANITE WASH
	GRANODIORITE
	GYPSUM
	HALITE
	HORNBL-QTZ-DIO
	IGNEOUS (ACIDIC)
	IGNEOUS (BASIC)
	INTRUSIVES
	KAOLINITIC
	LIMESTONE
	LITHIC TUFF
	MARL - DOLO

	MARL - CALC
	METAMORPHICS
	MUDSTONE
	OBSIDIAN
	PALEOSOL
	PHOSPHATE
	PORCELANITE
	PORCELANEOUS CLYST
	PYRITE
	PYROCLASTICS
	QUARTZ DIORITE
	QUARTZ LATITE
	QUARTZ MONZONITE
	RECRYSTALLIZED CALCITE
	RHYOLITE
	SALT
	SAND

	SANDSTONE
	SANDSTONE-TUFFACEOUS
	SERICITIZATION
	SERPENTINE
	SHALE
	SHALE TUFFACEOUS
	SHELL FRAGMENTS
	SIDERITE
	SILICIFICATION
	SILTSTONE
	SILTST-TUFFACEOUS
	TUFF
	VOLCANICLASTICS SEDS
	VOLCANICS

ROP		Depth	Lithology	MGS		Interp. Lith		Remarks
<200	>0			Ttl Gas	500	Meth C-1	100K	Survey Data, Mud Reports, Other Info.
ft/hr				units		Ethn C-2	100K	
Avg WOB	>0			CO2	10K	Prop C-3	100K	
klbs				ppm		Butn C-4	100K	
				Flare Ht.	100	Pent C-5	100K	
				ft				
NB #1-9.875' IN @ 3821'		3800						ALL ROCK COLORS ARE REFERENCED TO THE GSA ROCK COLOR CHART. ROCK CONSTITUENTS ARE DESCRIBED WET AND LISTED IN ORDER OF MOST ABUNDANT TO LEAST ABUNDANT. ALL SAMPLE DEPTHS ARE REFERENCED TO RKB
HUGHES w/ 6-13's, 2-12's								
20.75 HRS, 1177								
		3900						CONNECTION GASES AS WELL AS TRIP AND DOWNTIME GASES ARE NOTED ON THE LOG. LARGE CONNECTION GASES WHICH APPEAR ON THE MUD LOG USUALLY REFLECT UPHOLE GAS INTERVALS BLEEDING GAS INTO THE BOREHOLE DURING CONNECTIONS.
		4000						GAS CHROMATOGRAPHY EQUIPMENT IS CALIBRATED TO A TEST GAS COMPOSED OF METHANE = 10000 PPM ETHANE = 1000 PPM PROPANE = 1000 PPM I-BUTANE = 1000 PPM N-BUTANE = 1000 PPM I-PENTANE = 1000 PPM N-PENTANE = 1000 PPM
		4100						WHEN THE MUD IS RUN THROUGH THE GAS BUSTER THE INTERVAL IS MARKED ON THE MGS COLUMN AND SIZE OF FLARES NOTED.
		4200						EVIDENCE OF FRACTURE FILL IS NOTED ON THE MUD LOG AS METAMORPHICS, KAOLIN PERCENTAGE IN SS INTERVALS IS ALSO NOTED
		4300						1 UNIT OF GAS = 200 PPM METHANE
		4400						EPOCH WELL SERVICES COMMENCED FULL LOGGING OPERATIONS ON 02/16/2010 @ 3890' MD
		4500						SHALE = PALE YELLOWISH BROWN, LIGHT BROWN, LIGHT GRAY; FIRM TO MODERATELY HARD; SUB BLOCKY, BLOCKY SLIGHT IRREGULAR FRACTURE; WEDGELIKE TABULAR SLIGHT PLATY CUTTINGS HABIT; EARTHY DULL SLIGHT WAXY LUSTER; SILTY TO CLAYEY TEXTURE; SOME GRADING TO SILTSTONE, TRACE CALCAREOUS.
		4600						SANDSTONE = LIGHT YELLOWISH BROWN, SOME OFF WHITE/TAN, TRACE LIGHT GRAYISH BROWN; UPPER TO LOWER VERY FINE GRAIN; SUB ANGULAR IN PART SOME SUB ROUND; CLAY TO SILICA MATRIX CEMENT; WEAK HCL REACTION; TRACE SPECKLED BLACK LITHIC/ CARBONACEOUS SHALE IMBEDDED; POOR TO FAIR INTERGRANULAR POROSITY.
		4700						SILTSTONE = VARIED COLORS, LIGHT YELLOWISH BROWN, GRAYISH BROWN; CRUMBLY TO CRUNCHY TENACITY; PLATY TO SEMI MASSIVE CUTTINGS HABIT; SUB BLOCKY TO SLIGHT IRREGULAR FRACTURE; DULL RESINOUS LUSTER; GRITTY TO SILTY TEXTURE; TRACE CALCAREOUS; TRACE THINLY IMBEDDED GRAYISH SHALE.
								SILTSTONE = YLWISH GRY, REDDISH BRWN, MED GRY; OCC MOTTLED; FIRM TO DENSE TENACITY WITH MASSIVE TO OCC SUB TABULAR CUTTINGS HABIT; IRREGULAR TO HACKLY FRACTURE; EARTHY TO SUB SPARKLY LUSTER WITH GRITTY TO EARTHY TEXTURE; SLIGHTLY CALC IN PLACES; COMMONLY GRADING TO AND INTERBEDDED WITH SHALES AND SANDSTONES.
								SHALE = PALE YELLOWISH BROWN, LIGHT GRYISH BRWN, GRY MOTTLED APPEARANCE; FIRM TO DENSE TENACITY WITH SUB TABULAR TO SUB WEDGELIKE CUTTINGS HABIT; IRREGULAR TO HACKLY FRACTURE; EARTHY TO SMOOTH TEXTURE WITH DULL EARTHY TO WAXY LUSTER; GRADES TO SILTSTONE IN PLACES; COMMONLY INTERBEDDED WITH SILTS AND SANDSTONE. SLIGHT REACTION TO DILUTE HCL IN PLACES.
								SANDSTONE = LT GRY, GRYISH GRN, GRY WITH HUES OF YLW; INDIVIDUAL GRAINS ARE TRANSP TO OPAQUE; SUB ANGULAR TO SUB ROUND WITH LOW TO OCC MODERATE SPHERICTY MODERATELY SORTED; GRADES TO AND INTERBEDDED WITH SILTSTONES AND SHALES; DOMINANTLY CONSOLIDATED WITH CLAY OCC CALCAREOUS MATRIX; SLIGHT TO NO INCREASE IN DITCH GAS.
								SHALE = PALE YLWISH GRY; LIGHT GRYISH PURP, GRY MOTTLED APPEARANCE; FIRM TO DENSE TENACITY WITH SUB TABULAR















