

SOFTROCK GEOLOGICAL SERVICES, INC.



San Juan Basin's Premier Mudlogging Business

591 Co. Rd. 233 Durango, CO 81301
970.247.8868 fax 970.247.5108



- HORIZONTAL LOGGING
- WELLSITE CONSULTING
- PRECISION CHROMATOGRAPHY
- PHOTO MICROSCOPY
- COAL DESCRIPTION

Scale 1:240 (5"=100') Imperial Measured Depth Log

Well Name: Argenta 34-10 #32-4A
Location: NWSW ---> SESW Sec. 32 T34N R10W La Plata Co., CO
License Number: API #: 05-067-09369 Region: Ignacio Blanco
Spud Date: Drill out of 7" csg. on 9/22/07 Drilling Completed: September 24, 2007
Surface Coordinates: 1605' FSL Lat. 37° 08.6832' North
1224' FWL Lon. 107° 57.7180' West
Bottom Hole 0770' FSL Lat. 37° 08.5491' North
Coordinates: 2091' FWL Lon. 107° 57.5016' West
Ground Elevation (ft): 6758' K.B. Elevation (ft): 6772'
Logged Interval (ft): 3232' MD To: 3677' MD Total Depth (ft): 3677' MD
Formation: Cretaceous Fruitland & Pictured Cliffs
Type of Drilling Fluid: Air / Mist

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: ConocoPhillips
Address: WL3 Suite 4040
600 N. Dairy Ashford P.O. Box 2197
Houston, TX 77252-2197

GEOLOGIST

Name: Dan McGinn, Kristopher Graham
Company: Softrock Geological Services, Inc.
Address: 591 County Rd. 233
Durango, CO 81301
(970) 247-8868 fax (970) 247-5108

Contractors

Aztec Well Services Rig #731
ConocoPhillips Co. Rep. : Mr. Teddy Rodriguez
AFE# WAN.CBM.7144
Network #: 10170909
PO #: STUARTK
Activity Code: K200 mudlogging

Instruments

i3 FID Chromatograph
CO Detector
TIF Combustable Gas Detector

Hole/Csg Data

Hole Data: 12 1/4" to sfc TD
 8 3/4" to 3244' MD
 6 1/4" to 3677' MD (UR to 9 1/2")
 Casing Data: 9 5/8" to 350' 32.3# H-40 ST+C
 7" to 3232' MD 20# J-55 ST+C
 5 1/2" to TD 15.5# J-55 ST+C tubing

ROCK TYPES

LITHOLOGY

- Bentonite
- Chert band
- Coal
- Conglom.
- Limestone
- Sandstone

- Shale
- Siltstone
- Clay
- Fracture
- Marl
- Carb shale
- Mudstone

- Metal
- Cement

STRINGER

- Argillaceous
- Bentonite
- Carby streaks

- Coal lam.
- Lime
- Sand lens
- Clay lens
- Carb shale

ACCESSORIES

FOSSIL

- Shell hash
- Crinoid
- Fish
- Fossil
- Oolite
- Plant
- Inoceramus

MINERAL

- Argillaceous
- Bentonite
- Calcareous
- Carby
- Dark chert
- Light chert
- Dolomite
- Feldspar

- Ferromag
- Glaucanite
- Heavy min.
- Kaolinite
- Marly
- Mica
- Min. xl
- Pyrite
- Sandy

- Silty
- Silica/qtz
- Water
- Fracfill
- Smkyqtz
- Inter. clay
- Chlorite
- Jasper
- Amber

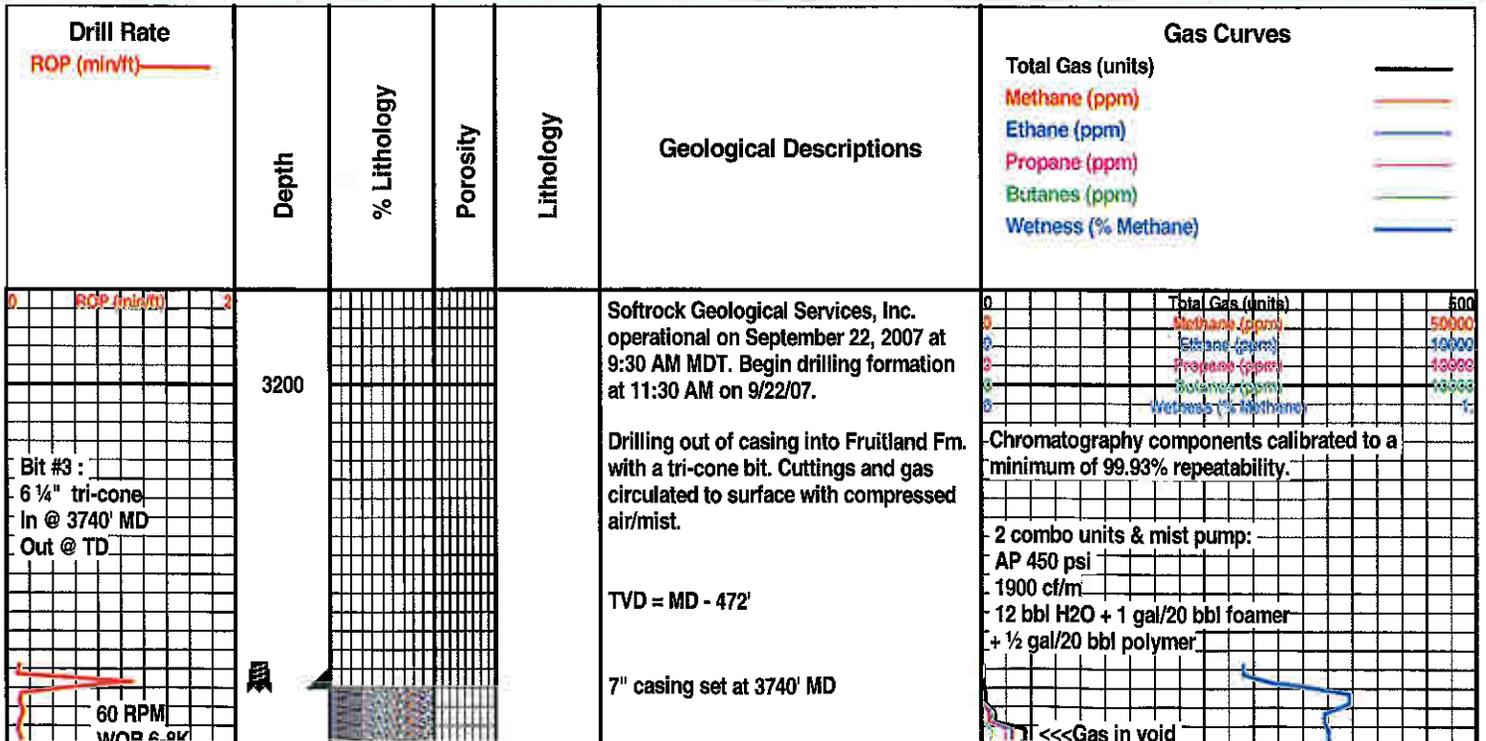
OTHER SYMBOLS

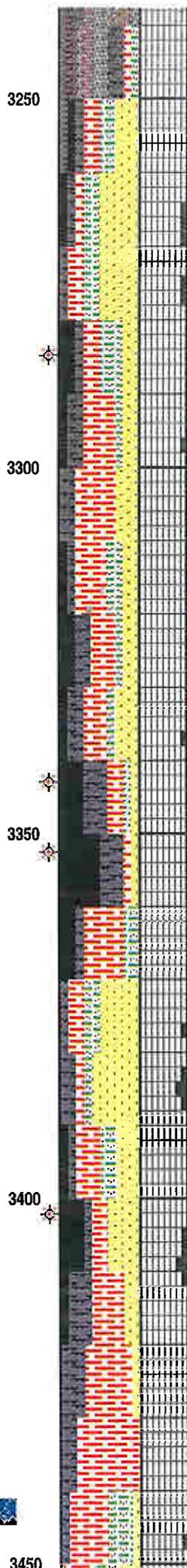
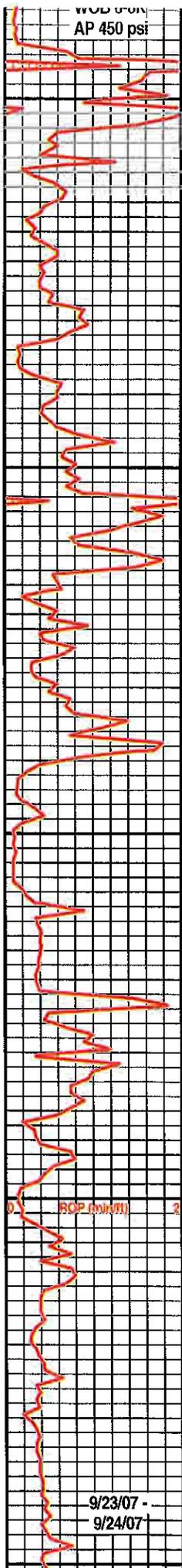
- Casing shoe
- Midnight
- Bit trip
- Fracture

- Survey
- Dz canister
- Gas show
- Td

- Tite conn
- Pitot
- Sea level
- Fm. member

- Fm. tops
- Interp. show





8 3/4" hole likely drilled to 3244' MD

10' Sample Interval.

COAL: dark gray to flat black matrix grading to carbonaceous shale. Firm to hard with some soft laminations, non to slightly brittle, irregular to sub platy. No cleating, desorption, or fracture indicators.

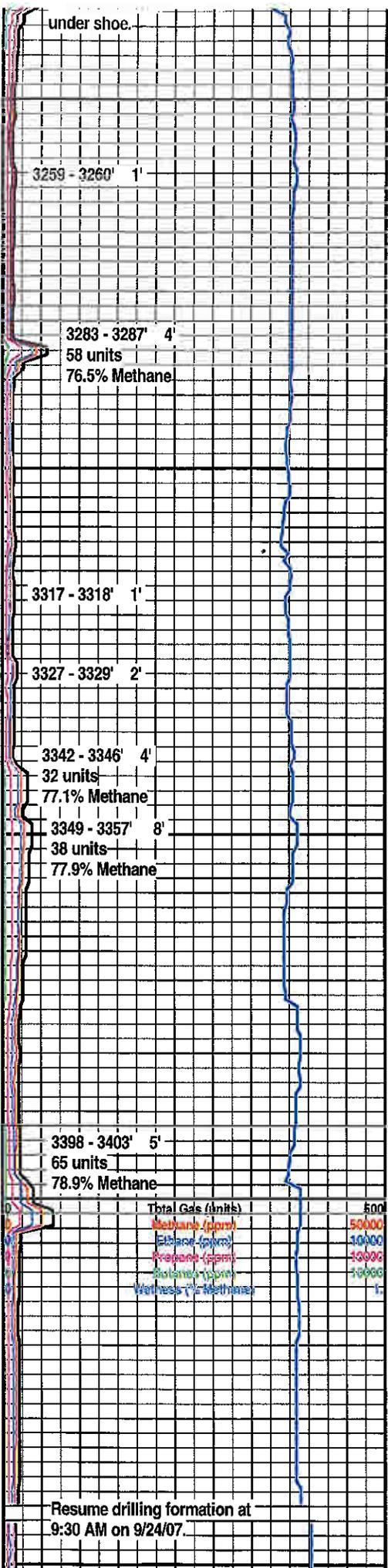
COAL: 85% dark gray to flay black dull matrix with 15% silky black intermediate chunks. Firm, sub blocky to irregular, brittle to shardy. Very poor cleating with rare cleat faces defined. Trace of popping desorption from vuggy porosity. Grades to carby shale at base.

COALS: 80% flat black to brown dull coal matrix with 20% silky black intermediate banding that has vuggy porosity. Firm to semi soft, powdery to sub brittle, sub blocky to globular, very small cuttings. Poor cleating with no visible junctions. No desorption or fracturing. Very fine sand seen suspended in matrix. Grades to brown / black carby shale.

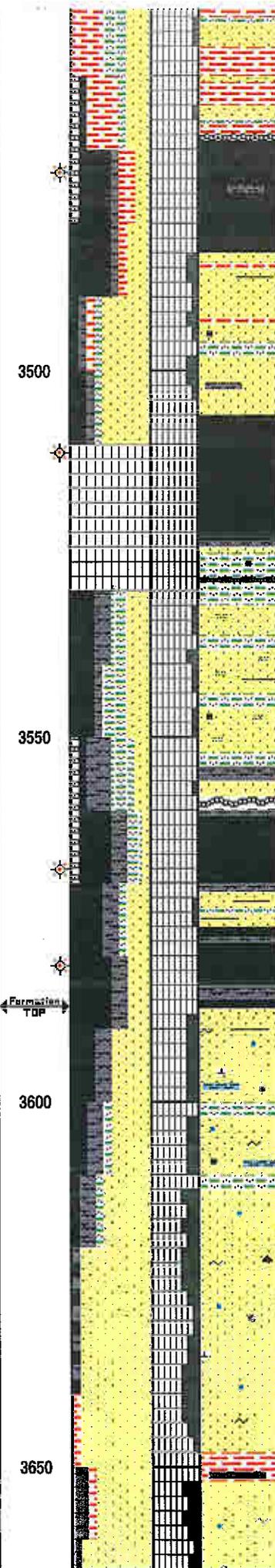
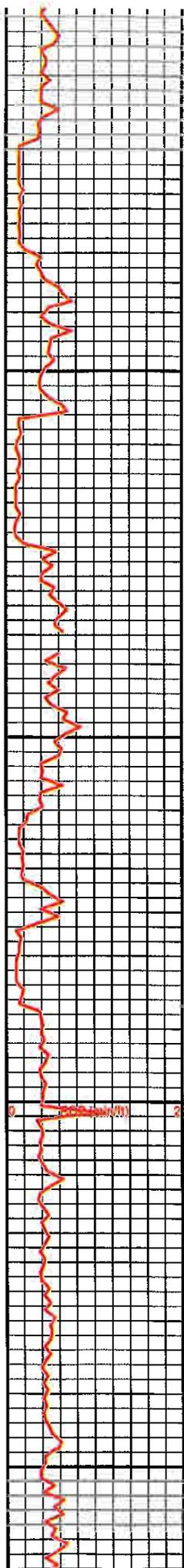
COALS: 70% flat black dull gritty matrix with 25% silky black intermediate laminations and 5% semi bright glassy micro bands and lenses. Firm, sub platy to sub blocky, brittle. Poor to fair cleating with a few rare intersecting faces. Slow desorption from conchoidal fracture surfaces that have smooth to ribbed texture. Pyrite replacement in places. Grading to and interbedded with carby shale.

COAL: 75% flat to speckled black dull matrix with 25% glasy black bright lenses. Firm to hard, blocky to sub blocky, brittle to shardy. Fair cleating in bright laminations with a few right angle junctions. Slow popping desorption from brights. Calcite fracture fill interpreted to have filled any natural fractures. Tonstein bentonite has brown to yellow matrix with cream micro laths. Adjacent lithologies include sand benches and gray shale.

SHALE: medium to dark gray with some black micro inclusions (carby material?). Firm, sub blocky to platy, shardy to brittle. Gritty texture, dull to earthy luster. Non to weakly calcareous matrix is relatively homogeneous and has abundant supported silt. Interbeds change with depth from carby shale to siltstone and sandstone. Rare



9/23/07 - 9/24/07



desorption seen as very slow growing bubbles on bedding planes.

COAL: 50% satiny to silky black intermediate matrix with 30% flat black dull laminations and 20% sub glassy black semi bright banding. Firm, brittle to powdery, globular to sub blocky. Fair cleating on intact cuttings, but mostly powdered fines. Desorption seen as actively growing gas bubbles in globs on powdered coal fines. Tonstein and carby shale logged. Fracture indicators not seen due to powder.

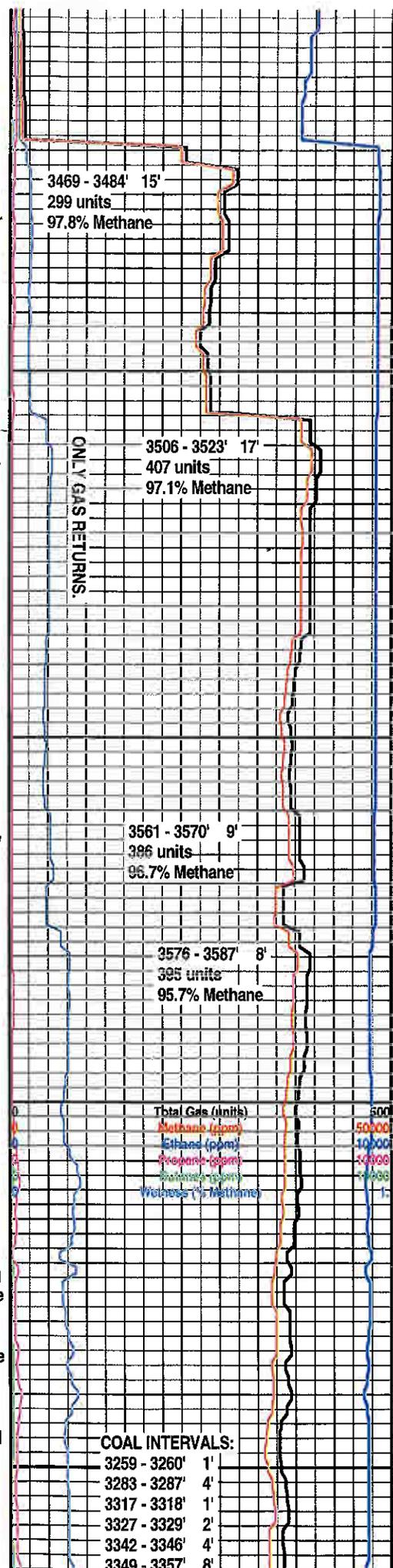
NO SAMPLE RETURNS 3510-3530'

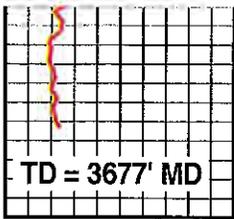
COAL: AS SEEN IN 3530' SAMPLE: 60% satiny black low-end intermediate matrix with 20% glassy black bright laminations and 20% flat black grading to carby shale. Firm to soft, powdery, globular. No cleating seen. Open natural fractures interpreted from gas show and offset logs over same coal, but no smokey quartz seen in sample. Most of the cuttings either lost into formation or washed off as powdered fines smaller than finest sample sieve available.

COALS: 75% satiny black intermediate matrix with 20% glassy black bright laminations, 5% flat black dull near carby shale margins. Firm, sub blocky, brittle to powdery. Fair cleating with a few right angle junctions seen. Active desorption from cleat faces and micro vuggy porosity. No secondary mineralization seen. Brownish orange tonstein seen at top of package.

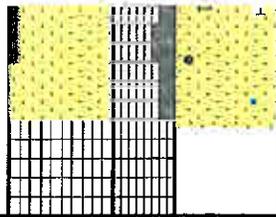
Pictured Cliffs Formation
 3587' MD = 3115' TVD
 +3657' subsea elevation

SANDSTONE: Pictured Cliffs: translucent to white to light gray, peppered heavier in top 35'. Accessories include glauconite, blue/green clay, carby specks changing to ferro-mag grains, chert, and rare rose quartz. Very fine to fine, sub angular to sub rounded, well sorted. Fairly tight cement is primarily calcite, but there are weaker zone with clay and stronger lenses with quartz overgrowths. Fair pinpoint to intergranular porosity. Mostly massive with a few siltstone and shale interbeds.





TD



Total Depth of 3677' MD (3205' TVD)
reached at 1:45 PM MDT on September
24, 2007.

