Company	COLT ENERGY, INC
Well	NORTH RHODEN
Field	
County	JACKSON
State	MISSOURI
Country	USA
API No.	095-21405

Tucker
WIRELINE SERVICES

11/2/12

COMPENSATED NEUTRON
PEL DENSITY LOG

RECEIVED
DEC 05 2011
MO Oil & Gas Council

File No :	TUL-55983
Company :	COLT ENERGY, INC
Well :	NORTH RHODEN #9
Field :	
County :	JACKSON
State :	MISSOURI
Country :	USA
API No :	095-21405

Location :
1160' FSL & 2190' FEL
NE NW SW SE

LSD : **Sect :** 28 **Twp :** 47N **Rge :** 33W

		Elevations:	**Services:**
Permanent Datum:	GL		CNT
Drilling Measured From:	GL	**KB** 0.00 Ft	LDT
Log Measured From:	GL	**DF** 0.00 Ft	PIT
Above Permanent Datum:	0.00 Ft	**GL** 1036.00 Ft	

Date	2011-10-12		
Run Number	1		
Depth--Driller	700.0 Ft		
Depth--Logger	690.0 Ft		
First Reading	667.0 Ft		
Last Reading	20.0 Ft		
Casing--Driller	20.0 Ft		
Casing--Logger	20.0 Ft		
Bit Size	6.750 In		
Casing Size	8.625 In		
Hole Fluid Type	FRESH		
Density	0.0 LBS/GAL		
Fluid Loss	0.0 CC		
PH/Viscosity	0.0 | 0.0 SEC		
Sample Source			
RM@Measured Temp.	0.000 @ 0 F		
RMF@Measured Temp	0.000 @ 0 F		
RMC@Measured Temp.	0.000 @ 0 F		
Source RMF/RMC			
RM@BHT	0.000 @ 79 F		
Time Circulation Stopped			
Max Recorded Temp.	79 F		
Equipment/Base	TRK 127 | TULSA		
Recorded By	B.BAILEY		
Witnessed By	R.ASHLOCK		

The customer is hereby warned that by providing the log data herein, T. W. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. W. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. W. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. W. S. for its services. Any user of the log data is warned that said user is not entitled to rely on intepretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings		
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)
6.750	700.00	8.625	32.00	20.00

Run Number	1		
Date	2011-10-12		
Date/Time On Bottom			
Depth to Fluid	0.0 Ft		
Salinity	0.000 PPM		
RMF@BHT	0.000 @ 79 F		
RMC@BHT	0.000 @ 79 F		

Run Number 1

Comments

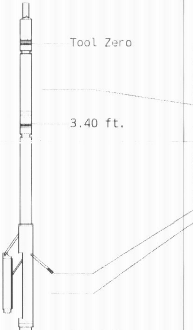
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION.
CALIPERS ORIENTED ON X-Y AXIS.
2.71 G/CC USED TO CALCULATED POROSITY.
ANNULAR HOLE VOLUME CALCULATED UISING 4.500" PRODUCTION CASING.

GRT: GRP.
CNT: PHIN, CLCNIN
LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN.
MLT: NOR_R, INV_R, MSCLPIN.
PIT: ILD, ILM, SPU, SFLAEC

OPERATORS:
JT
M.BURKE

Tool String Schematic

Total Tool Length	-	43.49 **ft.**
Maximum Outside diameter	-	4.80 **in.**
Net Weight in Air	-	743.00 **lbs.**

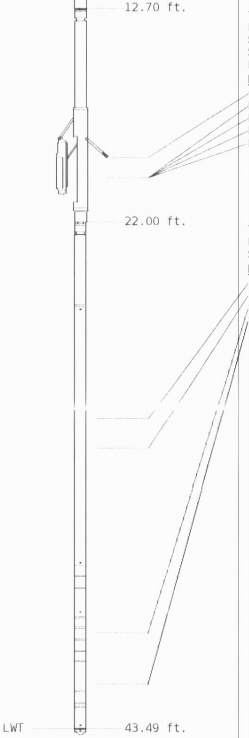


Tool: GRT-B **Length:** 3.40 **ft.** **O.D.** 3.60 **in.**
Gamma Ray Controller
Sonde ID :GRT-BA-14

Measure Point	**Tool Offset**	**Stack Offset**	**Bottom Offset**
GRP	2.00	2.00	41.49

Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-AB-400
Source ID :N-1044
Pad ID :CNP-AA-116

Measure Point	**Tool Offset**	**Stack Offset**	**Bottom Offset**
CLCN	6.00	9.40	34.09
PHIN	6.80	10.20	33.29



Tool: LDT-DA **Length:** 9.30 **ft.** **O.D.** 4.80 **in.**
Litho Density D Pad on NDT-A
Sonde ID :PDT-GA-465
Source ID :CSV-587
Pad ID :LDP-DA-01

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	24.79
PEL	7.00	19.70	23.79
PES	7.40	20.10	23.39
LDEN	7.20	19.90	23.59
LCOR	7.20	19.90	23.59

Tool: PIT-CA **Length:** 21.49 **ft.** **O.D.** 3.62 **in.**
Phased Dual Induction w/ RM & D
Sonde ID :PIT-AB-18

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	30.92	12.56
ILM	10.10	32.10	11.39
SFLU	17.49	39.49	4.00
SP	20.60	42.60	0.88

Well File: colt_energy_north_rhoden_69wd_oct12_st
Segment: V1.D1.S4 MAIN
Reference: 0

Scale: 1:240
Acquired: 2011-10/12 16:08 3.2.0-10220
Processed: 2011-10/12 16:08 3.2.0-10220

TENSION
LBS
10000 **0**

BIT SIZE
INCHES (IN)
4 **14**

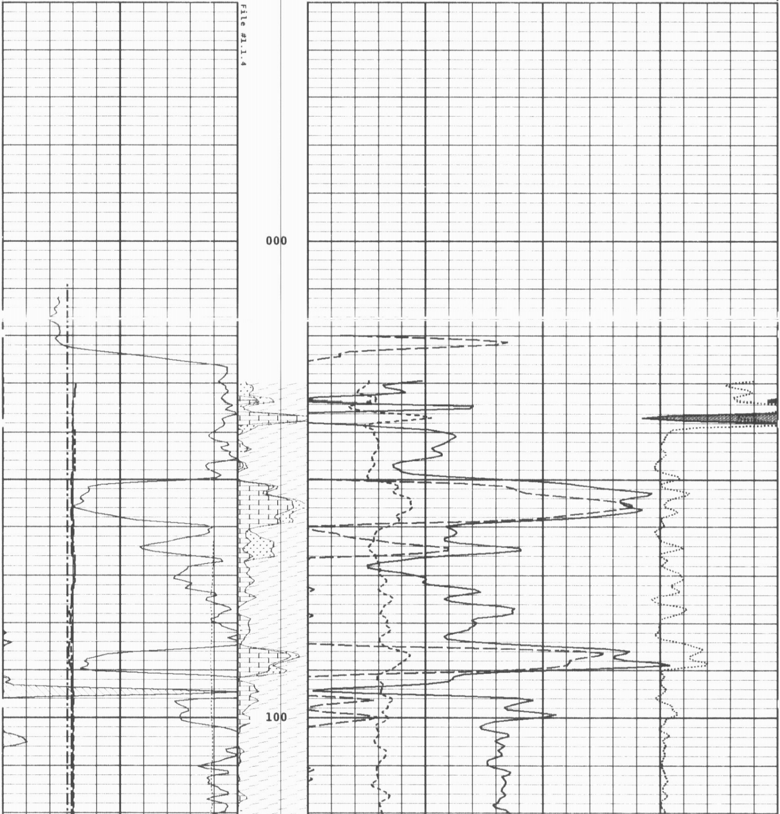
Volume
Dolo/Shale

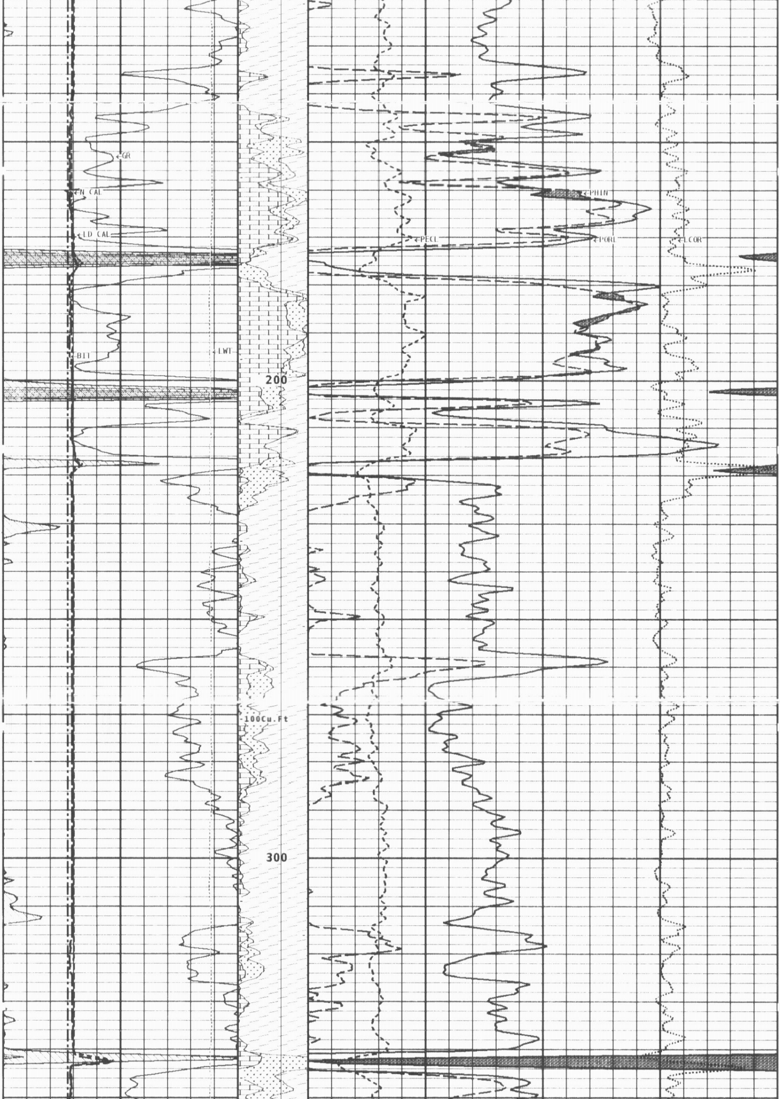
DENSITY (X) CALIPER INCHES (IN)	Volume Quartz	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
14 — 24	▨		
4 — 14		0 — 10	-0.25 — 0.25

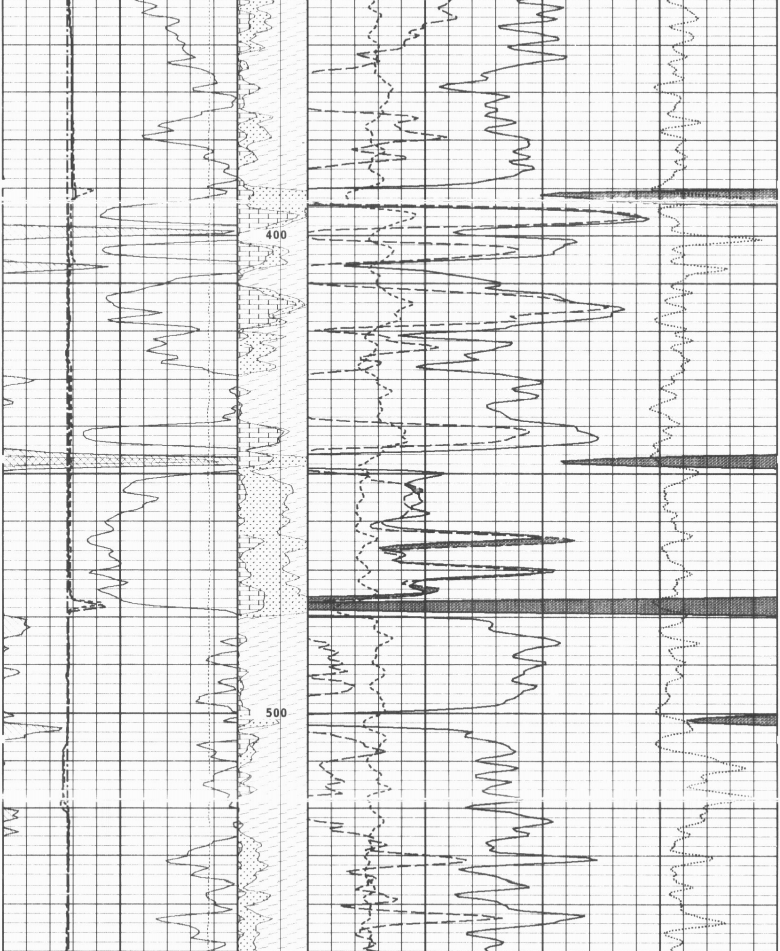
NEUTRON (Y) CALIPER INCHES (IN)	Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)
14 — 24	▦	
4 — 14		30 — -10

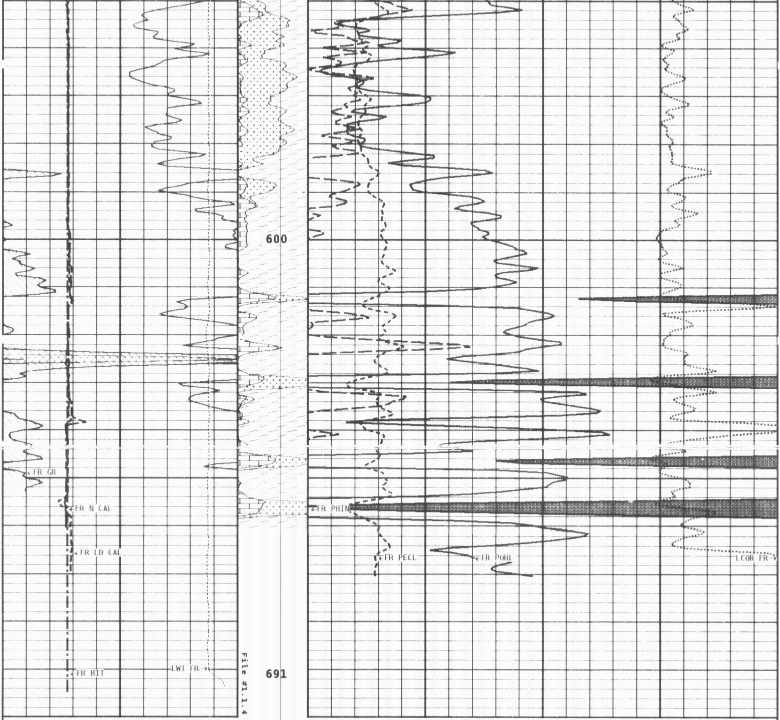
GAMMA RAY API UNITS	-BHV AHV- CU.FT	DENSITY POROSITY PERCENT (2.71 g/cc)
150 ▨ 300		70 — 30
0 — 150		30 — -10
		-10 — -50

1:240 MAIN SECTION









1:240 MAIN SECTION

GAMMA RAY **API UNITS** 150 ▨ 300 0 150	-BHV AHV- CU.FT	**DENSITY POROSITY** **PERCENT (2.71 g/cc)** 70 30 30 -10 -10 -50	
NEUTRON (Y) CALIPER **INCHES (IN)** 14 24 4 14	Volume Calcite	**NEUTRON POROSITY** **PERCENT (LIMESTONE MATRIX)** 30 -10	
DENSITY (X) CALIPER **INCHES (IN)** 14 24 4 14	Volume Quartz	**PE CROSS-SECTION** **BARNS/ELECTRON** 0 10	**DENSITY CORRECTION** **G/CC** -0.25 0.25
BIT SIZE **INCHES (IN)** 4 14	Volume Dolo/Shale		
TENSION **LBS**			

10000 0

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	6.750	in
Casing Diameter	4.500	in
Casing Correction (PHI N)	Disable	

Well File: colt_energy_north_rhoden_69wd_oct12_st
Segment: V1.D1.S3 Reprocess REPEAT
Reference: 0

Scale: 1:240
Acquired: 2011-10/12 16:00 3.2.0-10220
Processed: 2011-10/12 16:05 3.2.0-10220

TENSION
LBS
10000 0

BIT SIZE
INCHES (IN)
4 14

Volume
Dolo/Shale

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

Volume
Quartz

PE CROSS-SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
-0.25 0.25

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

Volume
Calcite

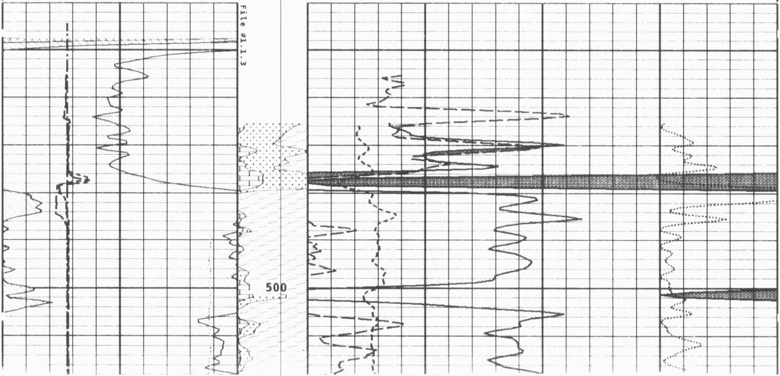
NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)
30 -10

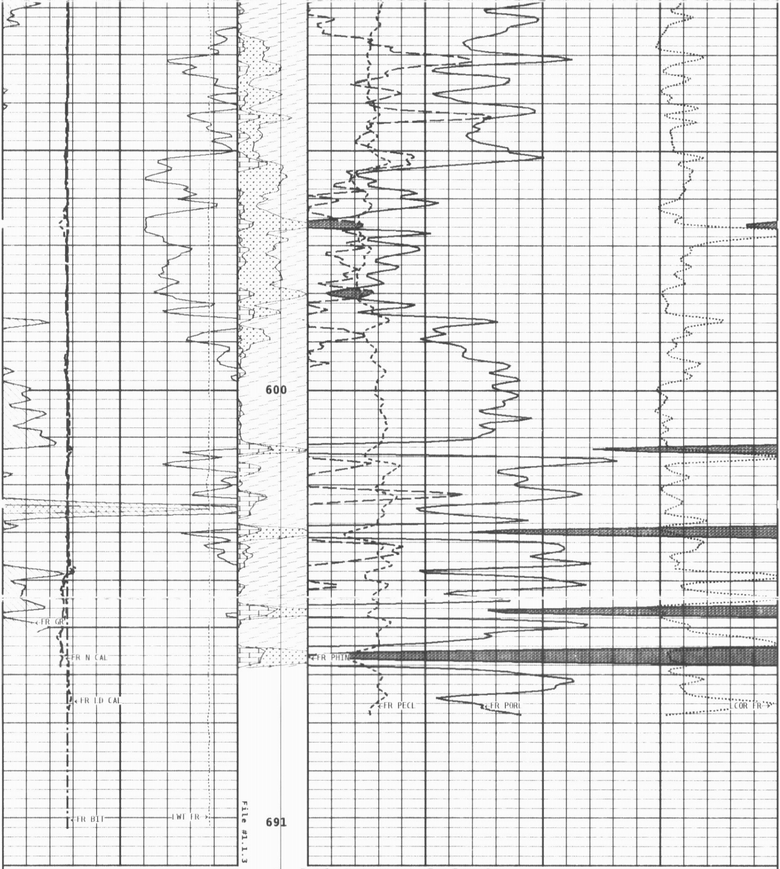
GAMMA RAY
API UNITS
150 300
0 150

-BHV AHV-
CU.FT

DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 -10
-10 -50

1:240 REPEAT SECTION





1:240 REPEAT SECTION

GAMMA RAY
API UNITS
150 ▨ 300
0 150

-BHV AHV-
CU.FT

DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 -10
-10 -50

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

Volume
Calcite

NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)
30 -10

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

Volume
Quartz

PE CROSS-SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
-0.25 0.25

BIT SIZE
INCHES (IN)
4 14

Volume
Dolo/Shale

TENSION
LBS
10000 0

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	6.750	in
Casing Diameter	4.500	in
Casing Correction (PHI N)	Disable	

Well File: colt_energy_north_rhoden_69wd_oct12_st
Segment: V1.D1.S4 MAIN
Reference: 0
Scale: 1:240
Acquired: 2011-10/12 16:08 3.2.0-10220
Processed: 2011-10/12 16:08 3.2.0-10220

TENSION
LBS
10000 0

BIT SIZE
INCHES (IN)
4 14

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

PE CROSS-SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
-0.25 0.25

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

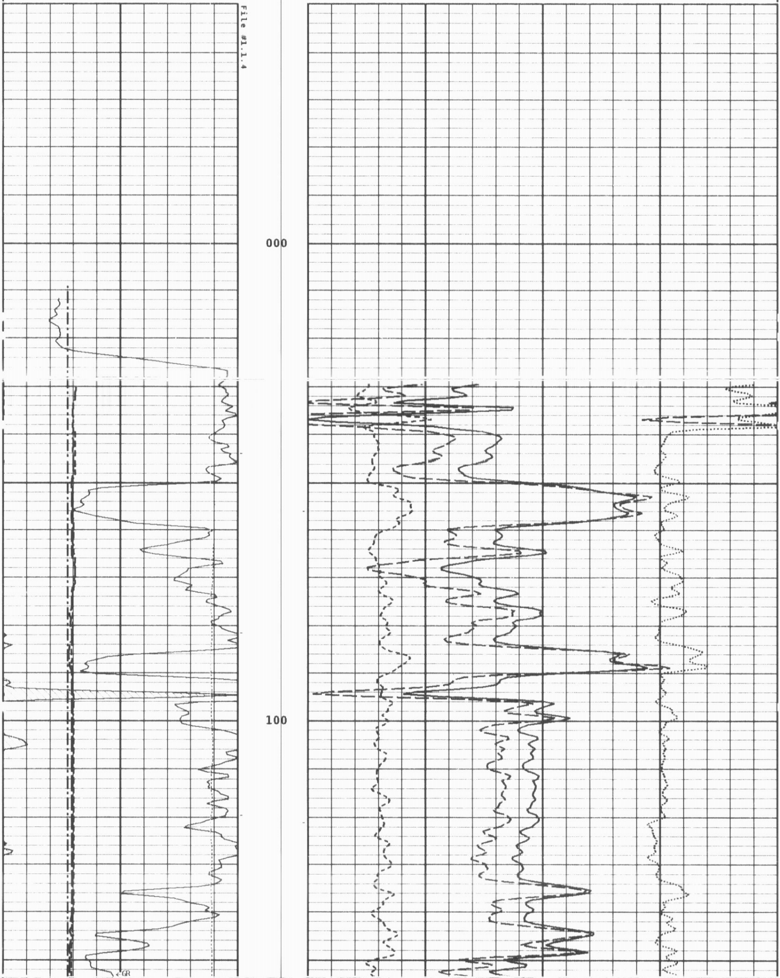
DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 -10
-10 -50

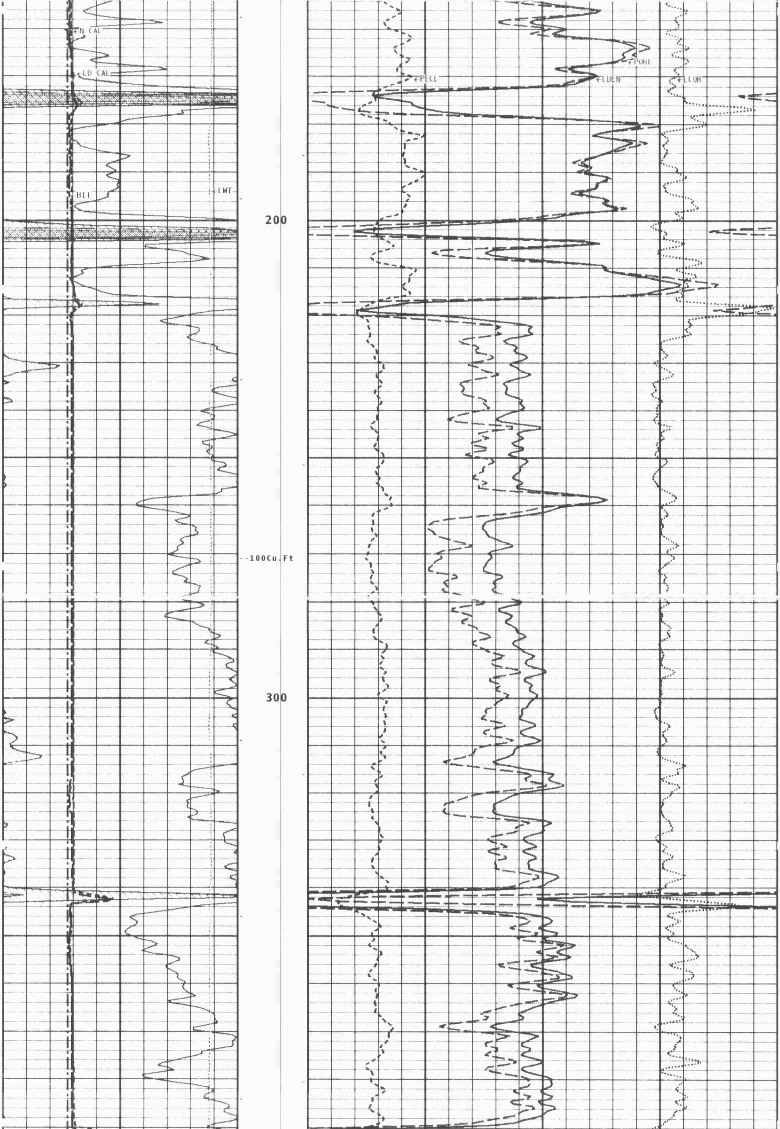
GAMMA RAY
API UNITS
150 ▨ 300
0 150

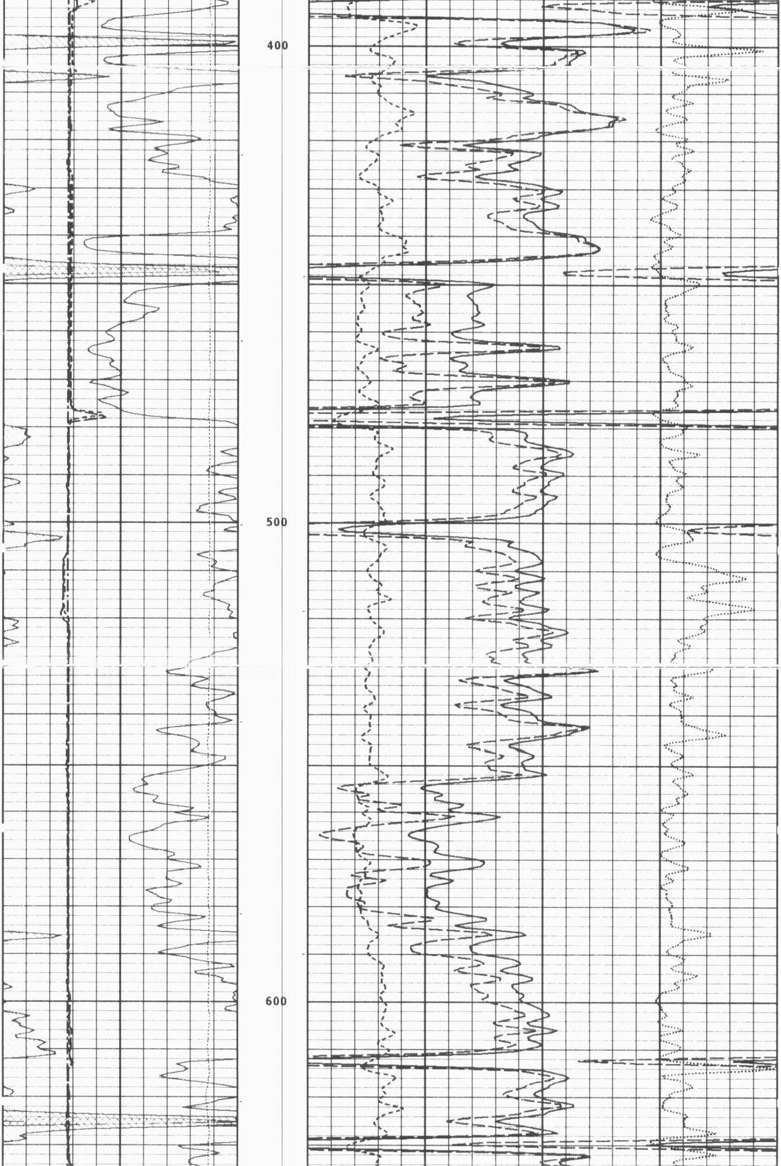
-BHV AHV-
CU.FT

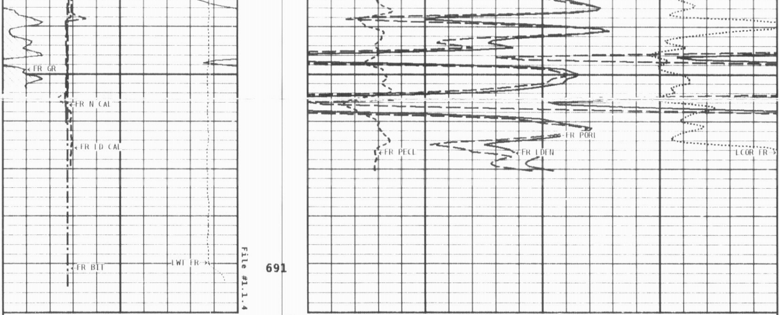
COMPENSATED BULK DENSITY
G/CC
3.0 4.0
2.0 3.0
1.0 2.0

1:240 MAIN SECTION
BULK DENSITY









1:240 MAIN SECTION
BULK DENSITY

GAMMA RAY API UNITS		-BHV AHV- CU.FT	COMPENSATED BULK DENSITY G/CC	
150	300		3.0	4.0
0	150		2.0	3.0
			1.0	2.0

NEUTRON (Y) CALIPER INCHES (IN)		DENSITY POROSITY PERCENT (2.71 g/cc)	
14	24	70	30
4	14	30	-10
		-10	-50

DENSITY (X) CALIPER INCHES (IN)		PE CROSS-SECTION BARNS/ELECTRON		DENSITY CORRECTION G/CC	
14	24				
4	14	0	10	-0.25	0.25

BIT SIZE INCHES (IN)	
4	14

TENSION LBS	
10000	0

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	6.750	in
Casing Diameter	4.500	in
Casing Correction (PHI N)	Disable	

*** Calibration Summary ***

```
                          Shop Calibration
                               GRT-B
    Performed : 16-MAY-2011               Time : 09:49
 Sensor Suite : GR-GR5                      ID : GRT-BA-14

                  Measured       Units       Calibrated      Units
      Background      Jig                       Jig
GR            50      361         CPS           175          GRAPI
```

```
                          Shop Calibration
                               CNT-AA
    Performed : 21-MAR-2011               Time : 11:09
 Sensor Suite : CALI-BCN                    ID : NDT-AB-400

                Jig - Measured           Jig - Calibrated    Units
              Ring#1  Ring#2           Ring#1  Ring#2
CL # 1           8.3    14.3              6.0    12.0          IN.

    Performed : 13-Jul-2011               Time : 11:29
 Sensor Suite : BHC NEUT                    ID : CNP-AA-116
    Source ID : N-1044

                    Tank                 Verification        Units
           Measured      Calibrated          Jig
N/F          3.8805        3.6893           3.7029
Porosity       23.5          20.5             20.7              %
```

```
                          Shop Calibration
                               LDT-DA
    Performed : 15-MAY-2011               Time : 08:26
 Sensor Suite : CALI-LTH                    ID : PDT-GA-465

                Jig - Measured           Jig - Calibrated    Units
              Ring#1  Ring#2           Ring#1  Ring#2
CL # 1           6.0    12.0              6.0    12.0          IN.

    Performed : 13-Jul-2011               Time : 12:09
 Sensor Suite : BHCPELNG                    ID : LDP-DA-01
    Source ID : CSV-587

                                 Short Space
                 BKGD          Al            Mg          Al+Fe      Units
LSW1               64         489           798            327        CPS
LSW2               69         564           908            409        CPS
LSW3              259        1341          2112           1147        CPS
LSW4              310        1227          1704           1093        CPS
LSW5               31          39            42             38        CPS
LSW6               79          79            78             79        CPS
LSW7               48          52            52             51        CPS
LSW8                3           4             4              4        CPS
QS              0.240       0.209         0.202          0.221
PES                                       2.778          5.967
SSDN                        2.600         1.680                      G/CC

                                  Long Space
                 BKGD          Al            Mg          Al+Fe      Units
LLW1              109         613          2504            393        CPS
LLW2              123        1058          4276            772        CPS
LLW3              469        2037          7352           1776        CPS
LLW4              607        1182          2992           1113        CPS
LLW5               69          73            90             72        CPS
LLW6              197         190           183            191        CPS
LLW7              120         121           118            122        CPS
LLW8                8           9            14              8        CPS
QL              0.243       0.222         0.217          0.220
PEL                                       2.697          5.458
LSDN                        2.600         1.680                      G/CC
```