



**WELL COMPLETION FORM**  
**WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Conv. to GSW
- Plug Back: \_\_\_\_\_ Plug Back Total Depth \_\_\_\_\_
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date      Date Reached TD      Completion Date or Recompletion Date

API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_-\_\_\_\_\_-\_\_\_\_\_- Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

**Drilling Fluid Management Plan**

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite: \_\_\_\_\_

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

**KCC Office Use ONLY**

- Letter of Confidentiality Received  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1092601

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
_____ Perforate _____ Protect Casing _____ Plug Back TD _____ Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR. \_\_\_\_\_ Producing Method:  Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
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DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	American Warrior, Inc.
Well Name	Berland 1-12
Doc ID	1092601

Tops

Name	Top	Datum
Anhy	1572'	+466
B/Anhy	1606	+432
Heebner	3238'	-1200
Toronto	3262'	-1224
Lansing	3277'	-1739
B/KC	3482'	-1444
Marmaton	3516'	-1478
Arbuckle	3578'	-1540





**CONSOLIDATED**  
Oil Well Services, LLC

TICKET NUMBER 37065  
LOCATION Oakley, KS  
FOREMAN Kelly Gabe

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
8-15-12	1087	Berkland 1-12 ✓	12	8	21	Goaham <sup>KS</sup>
CUSTOMER American Warrior			Bogue E on Highway 18 to 400 Ave 2 1/2 N WIND			
MAILING ADDRESS 3118 Cummings Rd Po Box 309			TRUCK #	DRIVER	TRUCK #	DRIVER
CITY Garden City			STATE KS	ZIP CODE 67246	399	Demon M
					566	Cody R
JOB TYPE	DTA	HOLE SIZE	7 7/8	HOLE DEPTH	3650'	CASING SIZE & WEIGHT
CASING DEPTH		DRILL PIPE		TUBING		OTHER
SLURRY WEIGHT	14 <sup>2</sup>	SLURRY VOL		WATER gal/sk		CEMENT LEFT in CASING
DISPLACEMENT		DISPLACEMENT PSI		MIX PSI		RATE

REMARKS: safety meeting, rigged up on Val drilling rig #3, mixed cement plugs & displaced.  
25 sks @ 3560  
25 sks @ 1600  
100 sks @ 803  
40 sks @ 272  
10.5 sks @ 40  
30 sks RH  
15 MH

*Thank you  
Robley & crew*

ACCOUNT # CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5405N	1	PUMP CHARGE	1325 <sup>00</sup>	1325 <sup>00</sup>
5406	50	MILEAGE	5 <sup>00</sup>	250 <sup>00</sup>
1131	245 sks	60/40 Poz	15 <sup>10</sup>	3699 <sup>50</sup>
1118B	843#	Bentonite	.25	210 <sup>75</sup>
1107	61#	Flo-seal	2 <sup>83</sup>	172 <sup>03</sup>
5407A	10.35	Ten Mileage delivery	1 <sup>07</sup>	864 <sup>50</sup>
4432	1	8 5/8 Wooden Plug	96 <sup>00</sup>	96 <sup>00</sup>
				6617 <sup>77</sup>
				661 <sup>78</sup>
				5955 <sup>99</sup>
			SALES TAX	283.91
			ESTIMATED TOTAL	6239.90

Flavin 3737

6-15-12  
AUTHORIZATION Wendy Anderson TITLE TP DATE 8-15-12

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form

252113



Well Name: BERLAND #1-12  
 Surface Location: NE SE SW SE 12-8S-21W  
 Bottom Location:  
 API: 15-065-23848-0000  
 License Number: 4058  
 Spud Date: 8/9/2012 Time: 11:00 PM  
 Region: GRAHAM COUNTY  
 Drilling Completed: 8/15/2012 Time: 12:30 AM  
 Surface Coordinates: 339' FSL & 1400' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2028.00ft  
 K.B. Elevation: 2038.00ft  
 Logged Interval: 2900.00ft To: 3651.00ft  
 Total Depth: 3650.00ft  
 Formation: LANSING-KANSAS CITY, ARBUCKLE  
 Drilling Fluid Type: Chemical/Fresh Water Gel

**OPERATOR**

Company: AMERICAN WARRIOR INC.  
 Address: 3118 CUMMINGS ROAD  
 GARDEN CITY, KS 67846  
 Contact Geologist: CECIL O'BRATE  
 Contact Phone Nbr: (620) 275-2963  
 Well Name: BERLAND #1-12  
 Location: NE SE SW SE 12-8S-21W API: 15-065-23848-0000  
 Pool: UNNAMED  
 State: KANSAS Country: USA

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.6076835 Latitude: 39.3661472  
 N/S Co-ord: 339' FSL  
 E/W Co-ord: 1400' FEL

**LOGGED BY**



Company: SOLUTIONS CONSULTING  
 Address: 108 W 35TH  
 HAYS, KS 67601  
 Phone Nbr: (785)259-3737  
 Logged By: Geologist Name: JEFF LAWLER

**CONTRACTOR**

Contractor: VAL ENERGY, INC.  
 Rig #: 3  
 Rig Type: MUD ROTARY  
 Spud Date: 8/9/2012 Time: 11:00 PM  
 TD Date: 8/15/2012 Time: 12:30 AM  
 Rig Release: 8/15/2012 Time: 12:00 PM

**ELEVATIONS**

K.B. Elevation: 2038.00ft Ground Elevation: 2028.00ft  
 K.B. to Ground: 10.00ft

**NOTES**

DUE TO STRUCTURAL POSITION, LACK OF ECONOMICAL RECOVERY ON DRILL STEM TEST, AND LOG ANALYSIS, DECISION WAS MADE TO PLUG AND ABANDON THE WELL.

RESPECTFULLY SUBMITTED,  
 JEFF LAWLER

**WELL COMPARISON SHEET**

	BERLAND #1-12				HAMEL 7C				BETHEL #2				BETHEL #12-1					
	2038		2018		1974		1973		1977		1977		1977					
	LOG TOPS	SAMPLE TOPS	COMP. CARD	LOG CORR.	SAMPL. CORR.	LOGS	LOG CORR.	SAMPL. CORR.	COMP. CARD	LOG CORR.	SAMPL. CORR.	COMP. CARD	LOG CORR.	SAMPL. CORR.				
FORMATION	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM
ANHYDRITE TOP	1572	466	1579	459	1545	473	1532	442	1537	436	1570	403	1580	397	1547	430	1547	430
BASE	1606	432	1606	432			1565	409	1570	403	1570	403	1580	397	1547	430	1547	430
HOWARD													2920	-943				
TOPEKA	3026	-988	3026	-988	2980	-962	2960	-986	2956	-983	2966	-989	2966	-989	2966	-989	2966	-989
HEEBNER SHALE	3238	-1200	3239	-1201	3220	-1202	3170	-1196	3163	-1190	3174	-1197	3174	-1197	3174	-1197	3174	-1197
TORONTO	3262	-1224	3263	-1225			3193	-1219	3187	-1214	3198	-1221	3198	-1221	3198	-1221	3198	-1221
LKC	3277	-1239	3281	-1243	3257	-1239	3208	-1234	3202	-1229	3214	-1237	3214	-1237	3214	-1237	3214	-1237
BKC	3482	-1444	3487	-1449			3410	-1436	3402	-1429	3414	-1437	3414	-1437	3414	-1437	3414	-1437
MARMATON	3516	-1478	3516	-1478							3447	-1470	3447	-1470	3447	-1470	3447	-1470
CONGLOMERATE																		
CONGLOMERATE SAND	3536	-1498					3456	-1482	3448	-1475	3468	-1491	3468	-1491	3468	-1491	3468	-1491
ARBUCKLE	3578	-1540	3581	-1543	3554	-1536					3490	-1513	3490	-1513	3490	-1513	3490	-1513
RTD			3650	-1612			3484	-1510	3588	-1615	3516	-1539	3516	-1539	3516	-1539	3516	-1539
LTD	3651	-1613					3483	-1509	3587	-1614	3514	-1537	3514	-1537	3514	-1537	3514	-1537

**DST #1 MARMATON CONGLOMERATE SAND 3478' - 3548'**

	<b>DRILL STEM TEST REPORT</b>	
	American Warrior Inc. PO Box 399 Garden City KS 67846 ATTN: Jeff Lawler	12-8-21 Graham, KS Berland #1-12 Job Ticket: 47092 Test Start: 2012.08.14 @ 08:35:00

**GENERAL INFORMATION:**

Formation: **Marmaton-Cong. Sd.**  
 Deviated: No Whipstock ft (KB)  
 Time Tool Opened: 11:21:00  
 Time Test Ended: 15:38:30  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Brett Dickinson  
 Unit No: 59

Interval: 3478.00 ft (KB) To 3548.00 ft (KB) (TVD)

Reference Elevations: 2038.00 ft (KB)

Total Depth: 3548.00 ft (KB) (TVD)

2028.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8319

Outside

Press@RunDepth: 1008.03 psig @ 3479.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2012.08.14

End Date:

2012.08.14

Last Calib.:

2012.08.14

Start Time: 08:35:05

End Time:

15:38:29

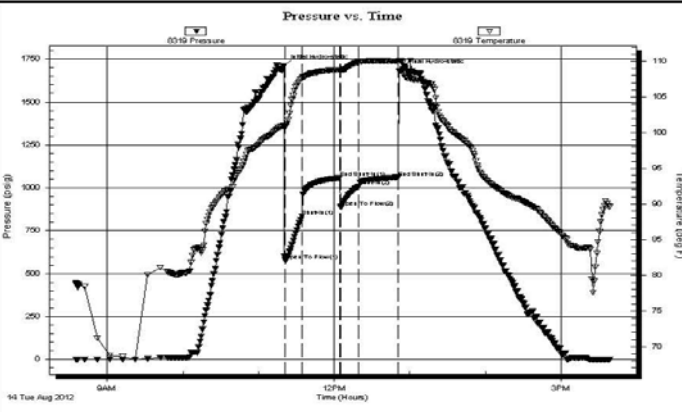
Time On Btm:

2012.08.14 @ 11:20:00

Time Off Btm:

2012.08.14 @ 12:53:00

TEST COMMENT: IF-BOB in 1/2 min  
 IS- No blow  
 FF-BOB in 1/2 min  
 FS- No blow

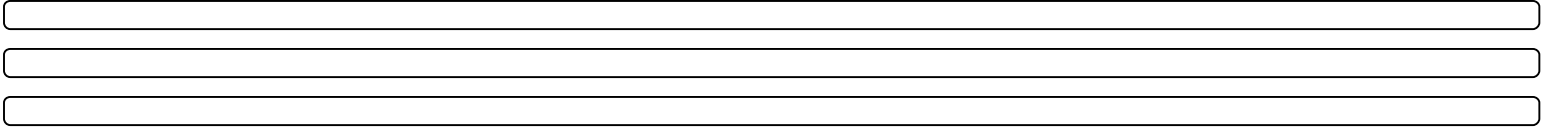


Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1709.88	100.98	Initial Hydro-static
1	577.08	100.83	Open To Flow (1)
15	833.02	107.73	Shut-In(1)
45	1058.20	108.81	End Shut-In(1)
45	886.52	108.78	Open To Flow (2)
60	1008.03	109.87	Shut-In(2)
91	1061.46	109.96	End Shut-In(2)
93	1683.83	110.06	Final Hydro-static

Length (ft)	Description	Volume (bbl)
1810.00	Water	25.39
560.00	WCM 25%W 75%M	7.86

	Choke (inches)	Pressure (psig)	Gas Rate (Mcfd)

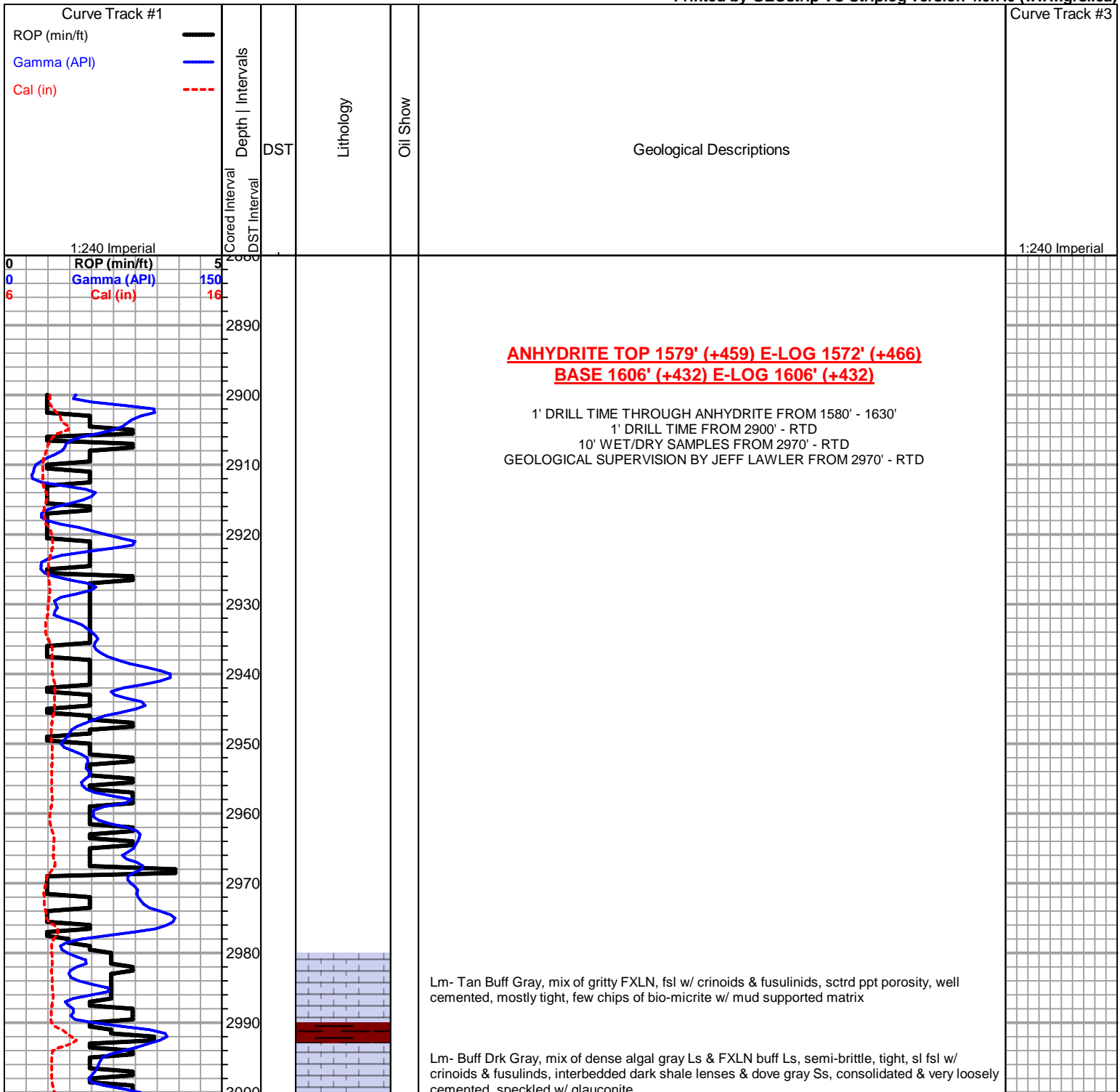
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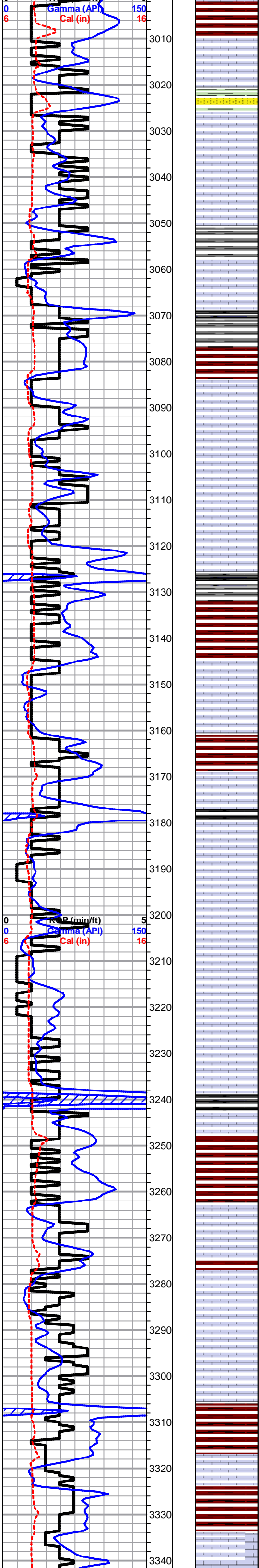


	Cht		Lmst fw7>		Carbon Sh		Ss
	Cht vari		shale, grn		shale, red		
	Dolprim		shale, gry		Shcol		

	DST Int
	DST alt

Printed by GEOstrip VC Striplog version 4.0.7.0 (www.grsi.ca)





Sh- Maroon, soft

Lm- Cream Gray, mix of FXLN, sl granular & massive, tight & well cemented, dense matrix, sctrd clear crystal inclusions, sctrd vry fn ppt porosity, FXLN trash gray Ls, brittle

Sh/Ss- Lm Green, sl waxy, soft & blocky, Dove Gray Ss, Fn grn, consolidated & well sorted, **TOPEKA 3026' (-988) E-LOG 3026' (-988)** Lm- Tan Yellowish tint Gray, VF-FXLN, dense, densely packed fusulinids in sparry cement, very well cemented, minimal visible porosity

Lm- Tan, FXLN, mottled, sl trashy, few chips of sl unconsolidated & fsl, some mud supported matrix, interbedded shales, chalky in part

Lm- Gray Tan, mostly trashy high energy mix w/ few loose crinoid fragments, fsl FXLN w/ fsl fragments, 1-2 pcs cream fsl & sl oolitic, tight w/ minimal visible porosity, more interbedded maroon shale & sctrd white chalk

A/A w/ more cream fsl & oolitic, sctrd ppt porosity, poor intraoolite porosity, chalky in part

Sh- Lt Gray Drk Gray, some soft & smooth, some dense & compacted, few sl unconsolidated & fsl, sctrd chalk & calcareous sl sandy lime

Lm- Cream, FXLN, fsl, some chalky in part, sl granular, poorly developed, sctrd ppt porosity, some tight & gritty

Sh- Black, soft carbonaceous

Lm- Cream, some w/ Yellow tint, FXLN & mostly fn grn., mix of fsl & densely packed small oolites in sparry cement w/o vis. porosity with some calcareous chalky matrix & sl granular w/ pearl shaped oolite inclusions

Lm- Cream Tan Gray, mix of some argillaceous Ls w/ few crystal interclasts, tight VF-FXLN w/ minimal visible porosity, & FXLN, fsl, tight & well cemented, vry sctrd fn ppt porosity, all clean & barren

Lm- Cream Lt Gray, mix of FXLN, sl. developed, densely packed w/ small oolites, sp. w/ glauconite w/ sctrd fn ppt porosity, and FXLN, sl. trashy, tight & well cemented sl. oolitic & fsl Lt gray Ls, vry minimal visible porosity, no shows noted

Lm- Lt Gray, mix of FXLN, semi-brittle, mottled & fsl w/ fn grn, mud supported matrix, chalky & calcareous in part

Lm- Cream White Tan, F-Med XLN, FR development, mix of massive, sl. granular, fsl, w/ mostly consistent fn ppt por., NS, Fn grn, gritty & calcareous siltstone, FXLN, fsl, semi-brittle & tight, and few chps of sharp angular bedded chert

Sh- Black Gray, sl fissile, dense & well compacted, semi-lithified, carbonaceous

Sh- Maroon Gray White, gritty & earthy, soft, white chalk

Lm- Cream Tan, FXLN, poorly developed, gritty & sl. granular, tight, heavily mottled, sl. fsl, chalky

Lm- Cream, Med XLN, mod. development, sl. granular, sl. fsl, loosely cemented, some w/ sctrd fn ppt por., few sctrd recrystallization interclasts, NS, chalky in part, some gritty sl. cherty Ls

Sh- Maroon Gray Lm Green, soft, gritty & earthy, blocky & dense, sl. waxy

Lm- Cream Tan, F-Med XLN, gritty & sl. cherty, some semi-brittle & dense, some w/ sctrd fn ppt por, mottled, clean & barren

Sh- Black Maroon Gray, thin fissile chips, carbonaceous, soft & earthy

Lm-Cream Off White, F-Med XLN, mod. developed, granular, sl. dolomitic, vry fn ppt por, loosely cemented, heavily chalky

Lm- Cream Tan, Med XLN, mod. developed, granular & gritty, mix of dolomitic Ls, cherty dolomite & Med XLN Ls, mostly w/ fn ppt por., all clean & barren, chps of fsl sharp angular bedded chert w/ conchoidal fracturing

Lm- Cream, Med XLN, oolitic, oolitic, partial skeletal dissolution, poor intracastic connectivity w/ sctrd vuggy porosity, loosely cemented, all clean & barren

Lm- Cream Lt Gray, FXLN, oolitic & fsl, sl cherty Ls, tight, minimal vis. porosity, well to loosely cemented

Lm- Cream Tan, FXLN, gritty & sl granular, dolomitic Ls & dolomitic fsl chert w/ fusulinids, most well cemented, consistent to sctrd vry fn ppt por., clean & barren, chalky

**HEEBNER 3239' (-1201) E-LOG 3238' (-1200)** Sh- Black Maroon Gray, fissile, carbonaceous, thin gritty & earthy chps

Sh- Maroon Gray Lm Green, gritty & earthy, soft thin slivers, few striated, lm grn & brown wash

**TORONTO 3263' (-1225) E-LOG 3262' (-1224)** Lm- Cream Lt Gray, VF-FXLN, well cemented & tight, minimal visible porosity, some w/ sl chalky matrix, dense & sl crumbly, clean & barren

**LKC 3281' (-1243) E-LOG 3277' (-1239)** Cream Off White, F-Med XLN, loosely cemented, fsl, sctrd crystal interclasts, mod. developed w/ mostly consistent ppt porosity, clean & barren, chips of white sharp angular bedded chert

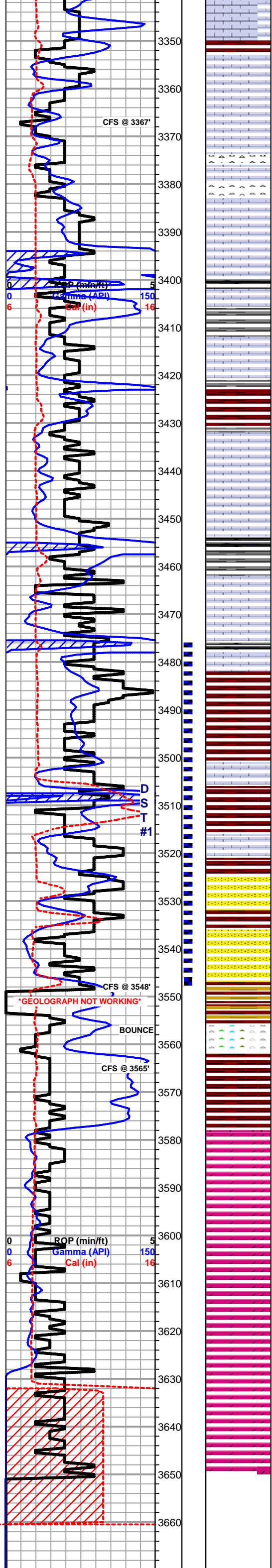
Lm- Cream Buff, FXLN, mix of gritty, sl dolomitic Ls, tight w/ limited visible porosity, and tight, sub-crypto XLN, semi-brittle, vry sctrd XLN porosity, few pcs of white and tan bedded chert, sctrd dense chalk

Sh- Maroon, Gray, soft, thin, gritty & earthy

Lm- Cream Tan, VF-FXLN, tight, some crypto XLN, all with minimal visible porosity, several chps w/ BLK TARRY STN, sctrd white chalk

Lm- Cream Tan, FXLN, sl fsl, mostly tight & poorly developed, some sl cherty Ls, minimal





visible porosity, chips of salmon colored bedded chert

Lm- Cream, FXLN, dense, semi-brittle, poor porosity, sl. fsl, 2-3 chps w/ DRK EDGE STN, VSSFO UPON CRUSH, NO ODR, DULL FLOR.

Lm- Cream Tan, FXLN, gritty, moderately developed w/ sctrd fn ppt porosity, loosely cemented, chalky in part, lime cementation, sctrd crystal inclusions, 3-4 chps w/ VRY FNT DRK STN, NSFO, NO ODR, NO FLOR OR WET CUT

Chert- White Tan Semi-Translucent Salmon, mix of sharp angular bedded & white oolitic, sl massive bedded chert

Lm- Cream Off White, VFXLN, dense, brittle, mix of crypto XLN & sub crypto XLN, mostly w/o vis. grains, tight, minimal to no vis. porosity

**MUNCIE CREEK SHALE 3402' (-1364) E-LOG 3399' (-1361)** Sh- Black Gray, slaty & carbonaceous, well compacted, soft & crumbley

Lm- Cream Off White, F-Med XLN, fsl, sctrd development, FR interstitial porosity, ppt porosity, SCTRD LT GSY STN, LT GSY SHEEN, VSLSFO GSY FO UPON CRUSH, FNT ODR

Lm- Cream Off White, Fn Grn, dense algal Ls, chalky in part

Lm- Cream Tan, FXLN, sl fsl, few loose fusulinds, dense, semi-brittle, well cemented, tight w/ sctrd XLN porosity, clean & barren

Lm- Cream Off White, FXLN, sl. fsl, loosely cemented, chalky, sctrd fn ppt por., SCTRD LT GSY STN, FLAKEY, NSFO, FNT GSY ODR, DULL HALO FLOR., SL STRM WET CUT

**STARK SHALE 3458' (-1420) E-LOG 3454' (-1416)** Sh- Black Gray, fissile, carbonaceous, soft, gritty & earthy, sl. argillaceous

Lm- Cream Off White, FXLN, fsl w/ small fusulinids, sl oolitic, poorly developed, XLN & sctrd ppt por., SCTRD DRK STN, NSFO, FNT ODR, chalky in part

Lm- Off White, VF-FXLN, dense, well cemented to chalky in part, tight w/ sctrd XLN porosity, very clean

**BKC 3487' (-1449) E-LOG 3482' (-1444)** Sh- Maroon Gray Lm Green, gritty, semi-lithofied, dense, soft gray chps sp. w/ dark minerals

Sh- Red Brown Gray, soft, sl. sandy lime, red wash

Lm- Cream Off White, FXLN, sl fsl, dense, well cemented, very clean

**MARMATON 3516' (-1478) E-LOG 3516' (-1478)** Lm- Cream Off White, F-Med XLN, fsl & oolitic, loosely cemented, some w/ dense XLN porosity, sctrd fn ppt porosity, clean & barren

Sh- Red White, abundant sticky argillaceous clumps

Ss- White, VF gr, sorted & consolidated, vry friable, dolomitic cementation, near complete dissolution w/ HCL, SAT DRK STN, VSLSFO, INSTANT BRIGHT STRM WET CUT & FLOR.

**CONGLOMERATE SAND 3536' (-1499)** Conglomerate Snd- Clear to Frosted, white Ca cementation, mix of sandy sticky lime, well cemented matrix w/ fn grn inclusions, & friable sub-rnd sl unconsolidated clusters, SOME W/ DRK GILSONITE STN, MOSTLY W/ DRK SCTRD - MOSTLY SAT DRK STN, VSLSFO, GD ODR, DULL FLOR W/ STRM WET CUT

Chert- Mix of various colored chert, some fsl, all sharp angular bedded chert

Sh- Gray Maroon Lm Green, abundant waxy shale, some sandy, soft

**ARBUCKLE 3581' (-1543) E-LOG 3578' (-1540)** Dolomite- Snow White, mix of FXLN, well cemented, tight, w/ fn ppt porosity and Med XLN, loosely cemented, sl sucrosic w/ visible euhedral rhombs, all w/ SCTRD BLK DO STN, 2-3 CHPS W/ VSLSFO UPON CRUSH, NO ODR, much barren porosity, white gummy chalk

Dolomite- Tan Buff, FXLN, gritty, very well cemented, tight w/ vry fn ppt porosity, clean & barren

Dolomite- White Off White, mix of FXLN, well cemented & tight, and Coarse XLN, sucrosic w/ good visible euhedral rhombs, sl cherty w/ sctrd silieous cementation, SCTRD BLK DO STN, NSFO, NO ODR, much barren porosity

A/A w/ few pcs of pink and yellow oolitic chert

A/A, Med XLN, well cemented, sucrosic w/ vry sctrd vuggy porosity, clean & barren

Dolomite- Tan, M-Crs XLN, sucrosic, moderately well developed, some sl cherty dolomite, good ppt porosity w/ sctrd small vuggy porosity, clean & barren

**RTD 3650' (-1612) LTD 3651' (-1613) @ 12:30 AM 8/15/2012**

SHORT TRIP SLOPE 1 dgr. STRAP +4.90 (BREEZY)

DST #1 MARMATON & CONGLOM. SND 3478 - 3548

ABUNDANT AMOUNT OF CARRYOVER IN SAMPLES