

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD

SEP 20 2007

OCD FORM APPROVED
OMB NO. 1004-0137
Expires: March 31, 2007

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other				5. Lease Serial No. NM-36193					
b. Type of Completion: ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr., Other _____				6. If Indian, Allottee or Tribe Name					
2. Name of Operator McKay Oil Corporation				7. Unit or CA Agreement Name and No.					
3. Address P.O. Box 2014, Roswell, NM 88202-2014				3a. Phone No. (include area code) 505-623-4735		8. Lease Name and Well No. Four Mile Draw B Federal #7Y			
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface Surface Location: 695' FSL & 660' FWL Botom Hole: 1146' FSL & 2568' FWL At top prod interval reported below At total depth MD-4611', TVD-2852'				9. AFI Well No. 30-005-63900 SL		10. Field and Pool, or Exploratory West Pecos Abo			
14. Date Spudded 02/15/2007		15. Date T.D. Reached 03/06/2007		16. Date Completed 08/07/2007 ☐ D & A ☒ Ready to Prod.		17. Elevations (DF, RKB, RT, GL)* 4358' GL			
18. Total Depth: MD 4611' TVD 2852'		19. Plug Back T.D.: MD 4550' TVD		20. Depth Bridge Plug Set: MD TVD					
21. Type Electric & Other Mechanical Logs Run (Submit copy of each) Cement, CNL (mailed directly to Schlumberger)				22. Was well cored? ☐ No ☒ Yes (Submit analysis) Was DST run? ☒ No ☐ Yes (Submit report) Directional Survey? ☐ No ☒ Yes (Submit copy)					
23. Casing and Liner Record (Report all strings set in well)									
Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol (BBL)	Cement Top*	Amount Pulled
12 1/4"	9 5/8"	32#, J55		1025'		180sk "H", 300sk 35:65: 6C, tail w/400 sk "C"		Surface	
7 7/8"	7"	23#, J55		3231'		180sk 50:50: 2 "C"			
24. Tubing Record									
Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	
2 3/8"	3909'	n/a							
25. Producing Intervals								26. Perforation Record	
Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status			
A) Abo	4000'	4310'	4000' - 4310'		2spf	Open			
B)									
C)									
D)									
27. Acid, Fracture, Treatment, Cement Squeeze, etc									
Depth Interval		Amount and Type of Material							
4000' - 4310'		348,750 lbs 12/20; 1,000 lbs 20/40; 66,955 gal C02 foam							
28. Production - Interval A									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
08/07/2007	08/07/2007	4	→	0	10	0			Flowing
Choke Size	Tbg. Press. Flwg. SI	Csg. Press. SI	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	Test Flow
20/64	SI 33	60	→	0	60	0			
28a. Production - Interval B									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press. SI	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

*(See instructions and spaces for additional data on page 2)

ACCEPTED FOR RECORD

SEP 18 2007

ALEXIS C. SWOBODA
PETROLEUM ENGINEER

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
Abo	2787'			Coring Interval (4 cores) 2859', 2862', 2868', 2875'	2845' - 2904'
				Coring Interval (3 cores) 2969', 2981', 2985'	2965' - 2994'

32. Additional remarks (include plugging procedure):

33. Indicate which items have been attached by placing a check in the appropriate boxes:

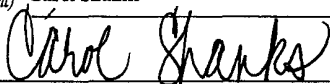
- ☐ Electrical/Mechanical Logs (1 full set req'd.)
 ☐ Geologic Report
 ☐ DST Report
 ☒ Directional Survey
☐ Sundry Notice for plugging and cement verification
☒ Core Analysis
☐ Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Carol Shanks

Title Production Analyst

Signature



Date 09/04/2007

Title 18 USC Section 1001 and Title 43 USC Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



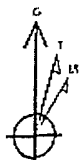
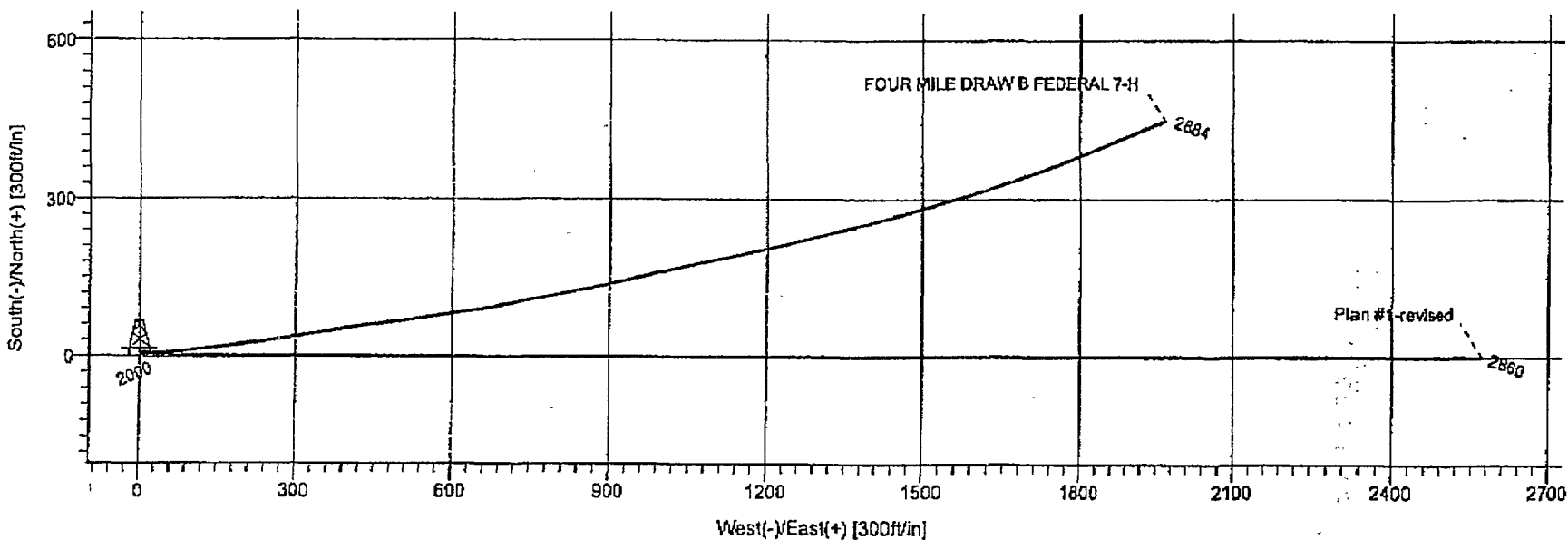
Scientific Drilling

ROCK RESOURCES

SECTION 15, T16S-R22E
FOUR MILE DRAW B FEDERAL 7-H 7Y
CHAVES COUNTY, NEW MEXICO
LATERAL

ALL DEPTHS SHOWN ARE
TRUE VERTICAL DEPTHS

4611.00' MD 89.76° INCLINATION 68.28° AZIMUTH 2883.50' TVD
451.03' NORTH 1968.00' EAST of SURFACE LOCATION
2020.00' CLOSURE DISTANCE 77.10° CLOSURE AZIMUTH



Azimuth to Grid North
True North 0.21°
Magnetic North 6.86°
Magnetic Factor
Strength 4520 InT
Dip North 61.55°
Date 2/20/2007
Model 192005

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
FOUR MILE DRAW B FEDERAL 7-H	0.0	0.0	1015342.42	383839.03	33°47'26.800N	104°42'66.400W	N/A

Plugged Back
6/11

114% FSL
2568 FWL

March 20, 2007
Scientific Drilling
281.443.4600

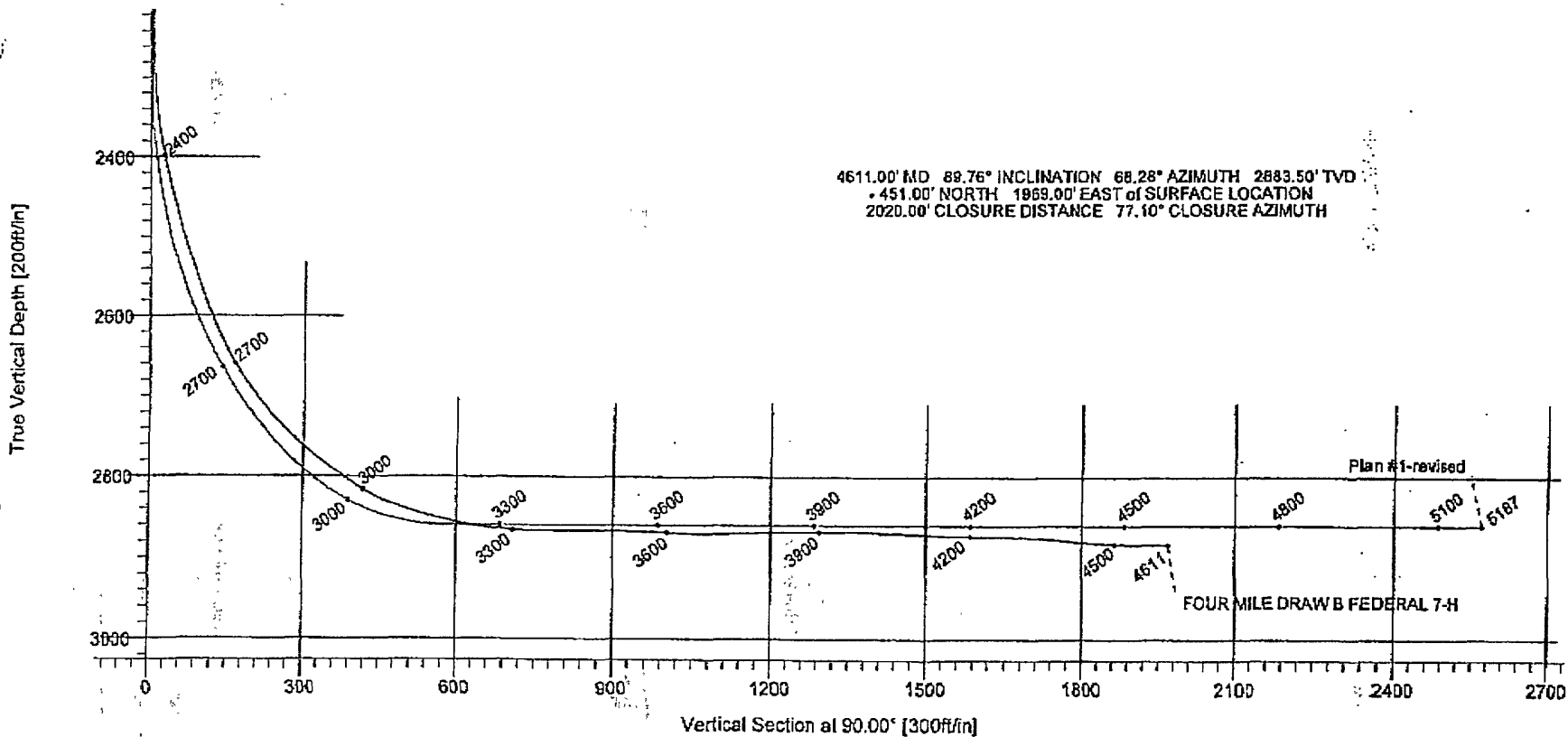


Scientific Drilling

ROCK RESOURCES

SECTION 15, T16S-R22E
FOUR MILE DRAW B FEDERAL 7-H
CHAVES COUNTY, NEW MEXICO
LATERAL

ALL DEPTHS SHOWN ARE
MEASURED DEPTHS





Scientific Drilling Houston

Final Survey Report

Company: ROCK RESOURCES		Date: 3/20/2007	Time: 09:00:08	Page: 1
Field: CHAVES COUNTY, NEW MEXICO		Co-ordinates(NE) Reference:	Well: FOUR MILE DRAW B FEDERAL 7-H	
Site: SECTION 15, T16S-R22E		Vertical (TVD) Reference:	RKB 43 0.0	
Well: FOUR MILE DRAW B FEDERAL 7-H		Section (VS) Reference:	Well (0.00N,0.00E,90.00Azi)	
Wellpath: LATERAL		Survey Calculation Method:	Minimum Curvature	Db: Sybase

Field: CHAVES COUNTY, NEW MEXICO	
Map System: US State Plane Coordinate System 1927	Map Zone: New Mexico, Eastern Zone
Geo Datum: NAD27 (Clarke 1886)	Coordinate System: Well Center
Sys Datum: Mean Sea Level	Geomagnetic Model: Igrf2005

Site: SECTION 15, T16S-R22E		
Site Position:	Northings: 1015342.42 ft	Latitude: 33 47 25.80 N
From: Geographic	Easting: 383839.03 ft	Longitude: 104 42 56.40 W
Position Uncertainty: 0.0 ft		North Reference: Grid
Ground Level: 4358.0 ft		Grid Convergence: -0.2 deg

Well: FOUR MILE DRAW B FEDERAL 7-H		Slot Name:	
Well Position:	+N-S 0.0 ft	Northings: 1015342.42 ft	Latitude: 33 47 25.80 N
	+E-W 0.0 ft	Easting: 383839.03 ft	Longitude: 104 42 56.40 W
Position Uncertainty:	0.0 ft		

Wellpath: LATERAL		Drilled From: Surface	
Current Datum: RKB	Height 4370.0 ft	Tie-on Depth: 0.0 ft	
Magnetic Data: 2/28/2007		Above System Datum: Mean Sea level	
Field Strength: 49901 nT		Declination: 8.7 deg	
Vertical Section: Depth From (TVD)	+N-S	Mag Dip Angle: 61.5 deg	
ft	ft	ft	Direction bearing
0.0	0.0	0.0	90.00

Survey										
MD ft	Incl deg	Azim bearing	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	ClsD ft	ClsA bearing	Tool
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.00	TIE LINE
1000.0	0.00	0.00	1000.0	0.0	0.0	0.0	0.00	0.0	0.00	SDI E-FIELD
1794.0	0.88	35.33	1794.0	5.0	3.5	3.5	0.11	6.1	35.33	MWD-SDI
2199.0	0.17	207.47	2199.0	7.0	5.0	5.0	0.26	8.8	35.88	MWD-SDI
2231.0	0.24	245.23	2231.0	6.9	5.0	5.0	0.46	8.5	35.70	MWD-SDI
2260.0	1.49	97.21	2260.0	6.8	5.3	5.3	5.86	8.6	37.70	MWD-SDI
2291.0	3.79	102.32	2290.9	6.8	6.7	6.7	7.45	9.4	45.51	SDI E-FIELD
2320.0	7.45	100.78	2319.8	6.0	9.5	9.5	12.63	11.2	57.60	SDI E-FIELD
2352.0	11.50	97.30	2351.3	5.2	14.7	14.7	12.78	15.6	70.43	SDI E-FIELD
2383.0	15.62	93.07	2381.5	4.6	21.9	21.9	13.66	22.4	78.14	SDI E-FIELD
2414.0	19.47	88.70	2411.0	4.5	31.2	31.2	13.12	31.6	81.82	SDI E-FIELD
2446.0	22.10	88.11	2440.9	5.0	42.6	42.6	8.70	42.9	83.27	SDI E-FIELD
2477.0	23.28	84.14	2489.5	6.0	54.5	54.5	4.53	54.8	83.67	SDI E-FIELD
2508.0	24.86	83.71	2497.8	7.4	67.1	67.1	5.13	67.5	83.72	SDI E-FIELD
2539.0	26.63	83.77	2525.8	8.9	80.5	80.5	5.71	80.9	83.72	SDI E-FIELD
2568.0	27.87	83.71	2551.5	10.3	93.7	93.7	4.28	94.2	83.72	SDI E-FIELD
2599.0	30.38	83.97	2578.6	11.9	108.7	108.7	8.11	109.3	83.74	SDI E-FIELD
2631.0	33.57	83.53	2605.8	13.8	125.5	125.5	10.00	126.2	83.74	SDI E-FIELD
2662.0	37.18	83.43	2631.0	15.8	143.3	143.3	11.65	144.2	83.71	SDI E-FIELD
2693.0	41.23	83.21	2655.0	18.1	162.8	162.8	13.07	163.8	83.66	SDI E-FIELD
2725.0	45.57	83.28	2678.3	20.7	184.6	184.6	13.56	185.8	83.61	SDI E-FIELD
2758.0	49.75	83.10	2699.2	23.4	207.4	207.4	13.49	208.7	83.57	SDI E-FIELD
2787.0	53.63	82.81	2718.4	26.4	231.5	231.5	12.54	233.0	83.50	SDI E-FIELD
2818.0	58.67	82.11	2736.1	29.7	256.7	256.7	9.98	258.4	83.40	SDI E-FIELD
2849.0	59.54	80.70	2752.5	33.6	282.7	282.7	10.03	284.7	83.21	SDI E-FIELD
2878.0	62.62	79.76	2768.5	38.0	307.7	307.7	10.99	310.1	82.97	SDI E-FIELD
2909.0	65.32	80.29	2780.1	42.8	335.2	335.2	8.84	337.9	82.73	SDI E-FIELD
2940.0	65.67	80.59	2793.0	47.5	363.0	363.0	1.43	368.1	92.55	SDI E-FIELD



Scientific Drilling Houston

Final Survey Report

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Site: SECTION 15, T16S-R22E	Vertical (TVD) Reference:	RKB 43 '0.0	
Well: FOUR MILE DRAW B FEDERAL 7-H	Section (VS) Reference:	Well (0.10N,0.00E,90.00Az)	
Wellpath: LATERAL	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey

MD ft	Incl deg	Azim bearing	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	ClsD ft	IncA bearing	Tool
2972.0	66.93	81.12	2805.8	52.1	391.9	391.9	4.22	395.4	82.42	SDI E-FIELD
3003.0	69.98	82.21	2817.2	56.3	420.4	420.4	10.37	424.2	82.37	SDI E-FIELD
3034.0	73.45	83.14	2826.9	60.0	449.6	449.6	11.55	453.6	82.39	SDI E-FIELD
3065.0	76.42	83.05	2835.0	63.6	479.3	479.3	9.58	483.6	82.44	SDI E-FIELD
3096.0	78.73	82.66	2841.6	67.4	509.4	509.4	7.55	513.8	82.46	SDI E-FIELD
3128.0	80.58	81.91	2847.4	71.6	540.6	540.6	6.22	545.3	82.45	SDI E-FIELD
3159.0	80.92	81.09	2852.4	76.2	570.8	570.8	2.83	575.9	82.40	SDI E-FIELD
3236.0	84.95	81.16	2861.6	87.9	646.3	646.3	5.23	652.3	82.25	SDI E-FIELD
3266.0	86.06	79.59	2864.2	92.9	675.8	675.8	6.40	682.2	82.17	SDI E-FIELD
3296.0	87.65	79.36	2865.8	98.4	705.3	705.3	5.35	712.1	82.06	SDI E-FIELD
3326.0	89.50	79.06	2866.6	104.0	734.7	734.7	6.25	742.0	81.94	SDI E-FIELD
3356.0	89.93	79.20	2866.7	109.7	764.2	764.2	1.51	772.0	81.83	SDI E-FIELD
3387.0	89.76	78.90	2866.8	115.6	794.6	794.6	1.11	803.0	81.72	SDI E-FIELD
3417.0	90.13	78.57	2866.9	121.4	824.0	824.0	1.65	832.9	81.62	SDI E-FIELD
3448.0	90.40	78.07	2866.7	127.7	854.4	854.4	1.83	863.9	81.50	SDI E-FIELD
3478.0	89.56	77.38	2866.7	134.1	883.7	883.7	3.62	893.8	81.37	SDI E-FIELD
3508.0	89.50	77.08	2867.0	140.7	913.0	913.0	1.02	923.7	81.24	SDI E-FIELD
3541.0	88.32	77.25	2867.6	148.1	945.1	945.1	3.61	956.7	81.10	SDI E-FIELD
3573.0	89.09	75.21	2868.3	155.7	976.2	976.2	6.81	988.5	80.94	SDI E-FIELD
3605.0	87.68	77.46	2869.2	163.2	1007.3	1007.3	8.30	1020.4	80.80	SDI E-FIELD
3637.0	88.45	77.38	2870.3	170.2	1038.5	1038.5	2.42	1052.3	80.69	SDI E-FIELD
3669.0	89.46	77.44	2870.9	177.2	1069.7	1069.7	3.16	1084.3	80.60	SDI E-FIELD
3700.0	90.87	78.09	2870.8	183.7	1100.0	1100.0	4.43	1115.3	80.52	SDI E-FIELD
3732.0	91.40	77.81	2870.3	190.4	1131.3	1131.3	2.44	1147.2	80.45	SDI E-FIELD
3764.0	91.58	77.51	2869.4	197.3	1162.6	1162.6	1.09	1179.2	80.37	SDI E-FIELD
3796.0	91.14	77.37	2868.7	204.2	1193.8	1193.8	1.44	1211.1	80.29	SDI E-FIELD
3829.0	90.84	77.36	2868.1	211.4	1226.0	1226.0	0.91	1244.1	80.22	SDI E-FIELD
3856.0	90.20	75.92	2867.9	217.7	1252.2	1252.2	5.84	1271.0	80.14	SDI E-FIELD
3889.0	89.77	75.91	2867.9	225.7	1284.3	1284.3	1.30	1303.9	80.03	SDI E-FIELD
3921.0	89.97	76.02	2867.9	233.5	1315.3	1315.3	0.71	1335.9	79.94	SDI E-FIELD
3953.0	90.57	75.89	2867.8	241.2	1346.3	1346.3	1.92	1367.8	79.84	SDI E-FIELD
3985.0	88.76	75.19	2868.0	249.2	1377.3	1377.3	6.06	1399.7	79.74	SDI E-FIELD
4017.0	87.98	75.31	2868.9	257.4	1408.3	1408.3	2.47	1431.6	79.64	SDI E-FIELD
4050.0	88.32	74.60	2870.0	265.9	1440.1	1440.1	2.38	1464.5	79.54	SDI E-FIELD
4082.0	88.66	74.34	2870.8	274.5	1470.9	1470.9	1.34	1496.3	79.43	SDI E-FIELD
4114.0	88.49	73.70	2871.6	283.3	1501.7	1501.7	2.07	1528.2	79.32	SDI E-FIELD
4146.0	88.62	73.26	2872.4	292.4	1532.4	1532.4	1.43	1560.0	79.20	SDI E-FIELD
4178.0	89.43	73.25	2872.9	301.6	1563.0	1563.0	2.53	1591.8	79.08	SDI E-FIELD
4210.0	89.83	72.70	2873.2	311.0	1593.6	1593.6	1.83	1623.6	78.96	SDI E-FIELD
4242.0	90.13	72.42	2873.3	320.6	1624.1	1624.1	1.79	1655.4	78.83	SDI E-FIELD
4274.0	88.92	70.97	2873.5	330.6	1654.5	1654.5	5.80	1687.2	78.70	SDI E-FIELD
4306.0	88.63	70.51	2874.2	341.2	1684.7	1684.7	1.70	1718.9	78.55	SDI E-FIELD
4338.0	87.08	70.15	2875.4	351.9	1714.8	1714.8	4.97	1750.5	78.40	SDI E-FIELD
4371.0	87.14	69.46	2877.1	363.3	1745.7	1745.7	2.10	1783.1	78.24	SDI E-FIELD
4403.0	87.01	69.02	2878.7	374.6	1775.6	1775.6	1.43	1814.7	78.09	SDI E-FIELD
4435.0	87.41	68.78	2880.3	386.1	1805.4	1805.4	1.46	1846.3	77.93	SDI E-FIELD
4467.0	88.22	68.42	2881.5	397.8	1835.2	1835.2	2.77	1877.8	77.77	SDI E-FIELD
4499.0	87.88	68.09	2882.6	409.7	1864.9	1864.9	1.48	1909.4	77.61	SDI E-FIELD
4532.0	89.90	68.58	2883.2	421.8	1895.6	1895.6	6.30	1941.9	77.45	SDI E-FIELD
4564.0	89.76	68.28	2883.3	433.6	1925.3	1925.3	1.03	1973.6	77.31	SDI E-FIELD
4611.0	89.76	68.28	2883.5	451.0	1969.0	1969.0	0.00	2020.0	77.10	PROJECTED DEPTH

FourMileB7H-Final1.txt

H HEADER INFORMATION

H COMPANY : ROCK RESOURCES
 H FIELD : CHAVES COUNTY, NEW MEXICO
 H SITE : SECTION 15, T16S-R22E
 H WELL : FOUR MILE DRAW B FEDERAL 7-H
 H WELLPATH: LATERAL
 H DEPTHUNT: ft
 H SURVDATE: 2007-03-20

H

H WELL INFORMATION

H WELL EW MAP : 383839.03
 H WELL NS MAP : 1015342.42
 H DATUM ELEVN : 4370.00
 H VSECT ANGLE : 90.00

H

H SURVEY TYPE INFORMATION

1000.00 - 2260.00 Survey #1 : MWD-SDI
 2291.00 - 4611.00 Survey #2 : SDI E-FIELD

H

H SURVEY LIST

MD	INC	AZI	TVD	NS	EW	VSEC	DOGLEG
TFO	SURVEYTOOL	COMMENT					
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		TIE LINE					
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00
0.00		MWD-SDI					
1794.00	0.88	35.33	1793.97	4.97	3.53	3.53	0.11
0.00		MWD-SDI					
2199.00	0.17	207.47	2198.96	6.98	5.05	5.05	0.26
178.73		MWD-SDI					
2231.00	0.24	245.23	2230.96	6.91	4.96	4.96	0.46
82.35		MWD-SDI					
2260.00	1.49	97.21	2259.95	6.84	5.28	5.28	5.86
-152.31		SDI E-FIELD					
2291.00	3.79	102.32	2290.92	6.57	6.68	6.68	7.45
8.40		SDI E-FIELD					
2320.00	7.45	100.78	2319.77	6.01	9.47	9.47	12.63
-3.13		SDI E-FIELD					
2352.00	11.50	97.30	2351.33	5.22	14.67	14.67	12.78
-9.77		SDI E-FIELD					
2383.00	15.62	93.07	2381.46	4.60	21.91	21.91	13.66
-15.60		SDI E-FIELD					
2414.00	19.47	88.70	2411.01	4.49	31.25	31.25	13.12
-20.99		SDI E-FIELD					
2446.00	22.10	86.11	2440.93	5.02	42.58	42.58	8.70
-20.48		SDI E-FIELD					
2477.00	23.28	84.14	2469.53	6.04	54.50	54.50	4.53
-33.69		SDI E-FIELD					
2508.00	24.86	83.71	2497.83	7.38	67.07	67.07	5.13
-6.53		SDI E-FIELD					
2539.00	26.63	83.77	2525.76	8.85	80.45	80.45	5.71
0.87		SDI E-FIELD					
2568.00	27.87	83.71	2551.54	10.30	93.65	93.65	4.28
-1.30		SDI E-FIELD					
2599.00	30.38	83.97	2578.61	11.92	108.65	108.65	8.11
3.00		SDI E-FIELD					
2631.00	33.57	83.53	2605.76	13.76	125.50	125.50	10.00
-4.36		SDI E-FIELD					
2662.00	37.18	83.43	2631.03	15.80	143.32	143.32	11.65
-0.96		SDI E-FIELD					
2693.00	41.23	83.21	2655.05	18.08	162.78	162.78	13.07
-2.05		SDI E-FIELD					
2725.00	45.57	83.28	2678.29	20.67	184.61	184.61	13.56

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0.66	SDI E-FIELD						
2756.00	49.75	83.10	2699.16	23.39	207.36	207.36	13.49
-1.88	SDI E-FIELD						
2787.00	53.63	82.81	2718.38	26.37	231.49	231.49	12.54
-3.45	SDI E-FIELD						
2818.00	56.67	82.11	2736.09	29.71	256.71	256.71	9.98
-10.90	SDI E-FIELD						
2849.00	59.54	80.70	2752.47	33.65	282.73	282.73	10.03
-23.02	SDI E-FIELD						
2878.00	62.62	79.76	2766.49	37.96	307.74	307.74	10.99
-15.19	SDI E-FIELD						
2909.00	65.32	80.29	2780.09	42.78	335.17	335.17	8.84
10.12	SDI E-FIELD						
2940.00	65.67	80.59	2792.95	47.47	362.99	362.99	1.43
38.01	SDI E-FIELD						
2972.00	66.93	81.12	2805.81	52.12	391.92	391.92	4.22
21.17	SDI E-FIELD						
3003.00	69.98	82.21	2817.20	56.30	420.44	420.44	10.37
18.59	SDI E-FIELD						
3034.00	73.45	83.14	2826.92	60.05	449.63	449.63	11.55
14.43	SDI E-FIELD						
3065.00	76.42	83.05	2834.98	63.65	479.35	479.35	9.58
-1.69	SDI E-FIELD						
3096.00	78.73	82.66	2841.65	67.41	509.38	509.38	7.55
-9.41	SDI E-FIELD						
3128.00	80.58	81.91	2847.39	71.64	540.58	540.58	6.22
-21.81	SDI E-FIELD						
3159.00	80.92	81.09	2852.38	76.16	570.84	570.84	2.83
-67.28	SDI E-FIELD						
3236.00	84.95	81.16	2861.85	87.95	646.32	646.32	5.23
0.99	SDI E-FIELD						
3266.00	86.06	79.59	2864.20	92.95	675.81	675.81	6.40
-54.72	SDI E-FIELD						
3296.00	87.65	79.36	2865.84	98.42	705.26	705.26	5.35
-8.23	SDI E-FIELD						
3326.00	89.50	79.06	2866.59	104.04	734.72	734.72	6.25
-9.21	SDI E-FIELD						
3356.00	89.93	79.20	2866.74	109.69	764.18	764.18	1.51
18.03	SDI E-FIELD						
3387.00	89.76	78.90	2866.82	115.58	794.61	794.61	1.11
-119.54	SDI E-FIELD						
3417.00	90.13	78.57	2866.85	121.44	824.03	824.03	1.65
-41.73	SDI E-FIELD						
3448.00	90.40	78.07	2866.71	127.72	854.39	854.39	1.83
-61.63	SDI E-FIELD						
3478.00	89.56	77.38	2866.72	134.10	883.71	883.71	3.62
-140.60	SDI E-FIELD						
3508.00	89.50	77.08	2866.96	140.73	912.96	912.96	1.02
-101.31	SDI E-FIELD						
3541.00	88.32	77.25	2867.59	148.06	945.13	945.13	3.61
171.80	SDI E-FIELD						
3573.00	89.09	75.21	2868.32	155.67	976.20	976.20	6.81
-69.34	SDI E-FIELD						
3605.00	87.68	77.46	2869.22	163.23	1007.28	1007.28	8.30
122.11	SDI E-FIELD						
3637.00	88.45	77.38	2870.30	170.19	1038.50	1038.50	2.42
-5.93	SDI E-FIELD						
3669.00	89.46	77.44	2870.88	177.17	1069.72	1069.72	3.16
3.40	SDI E-FIELD						
3700.00	90.67	78.09	2870.85	183.74	1100.02	1100.02	4.43
28.24	SDI E-FIELD						
3732.00	91.40	77.81	2870.27	190.41	1131.30	1131.30	2.44
-20.98	SDI E-FIELD						

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3764.00	91.58	77.51	2869.44	197.25	1162.55	1162.55	1.09
-59.02	SDI E-FIELD						
3796.00	91.14	77.37	2868.68	204.21	1193.78	1193.78	1.44
-162.35	SDI E-FIELD						
3829.00	90.84	77.36	2868.11	211.43	1225.98	1225.98	0.91
-178.09	SDI E-FIELD						
3856.00	90.20	75.92	2867.86	217.66	1252.24	1252.24	5.84
-113.96	SDI E-FIELD						
3889.00	89.77	75.91	2867.87	225.69	1284.25	1284.25	1.30
-178.67	SDI E-FIELD						
3921.00	89.97	76.02	2867.94	233.46	1315.30	1315.30	0.71
28.81	SDI E-FIELD						
3953.00	90.57	75.89	2867.79	241.22	1346.34	1346.34	1.92
-12.22	SDI E-FIELD						
3985.00	88.76	75.19	2867.98	249.21	1377.32	1377.32	6.06
-158.86	SDI E-FIELD						
4017.00	87.98	75.31	2868.89	257.35	1408.26	1408.26	2.47
171.26	SDI E-FIELD						
4050.00	88.32	74.60	2869.96	265.92	1440.11	1440.11	2.38
-64.41	SDI E-FIELD						
4082.00	88.66	74.34	2870.80	274.48	1470.93	1470.93	1.34
-37.40	SDI E-FIELD						
4114.00	88.49	73.70	2871.59	283.29	1501.68	1501.68	2.07
-104.89	SDI E-FIELD						
4146.00	88.62	73.26	2872.40	292.38	1532.35	1532.35	1.43
-73.54	SDI E-FIELD						
4178.00	89.43	73.25	2872.95	301.60	1562.99	1562.99	2.53
-0.71	SDI E-FIELD						
4210.00	89.63	72.70	2873.21	310.97	1593.59	1593.59	1.83
-70.02	SDI E-FIELD						
4242.00	90.13	72.42	2873.28	320.56	1624.12	1624.12	1.79
-29.25	SDI E-FIELD						
4274.00	88.92	70.97	2873.54	330.61	1654.49	1654.49	5.90
-129.85	SDI E-FIELD						
4306.00	88.63	70.51	2874.22	341.16	1684.70	1684.70	1.70
-122.24	SDI E-FIELD						
4338.00	87.08	70.15	2875.42	351.93	1714.81	1714.81	4.97
-166.94	SDI E-FIELD						
4371.00	87.14	69.46	2877.09	363.31	1745.74	1745.74	2.10
-85.04	SDI E-FIELD						
4403.00	87.01	69.02	2878.72	374.63	1775.62	1775.62	1.43
-106.49	SDI E-FIELD						
4435.00	87.41	68.78	2880.28	386.14	1805.44	1805.44	1.46
-30.94	SDI E-FIELD						
4467.00	88.22	68.42	2881.50	397.81	1835.21	1835.21	2.77
-23.95	SDI E-FIELD						
4499.00	87.88	68.09	2882.59	409.66	1864.92	1864.92	1.48
-135.88	SDI E-FIELD						
4532.00	89.90	68.58	2883.22	421.84	1895.58	1895.58	6.30
13.64	SDI E-FIELD						
4564.00	89.76	68.28	2883.32	433.60	1925.34	1925.34	1.03
-115.02	SDI E-FIELD						
4611.00	89.76	68.28	2883.52	450.99	1969.00	1969.00	0.00
180.00	SDI E-FIELD						

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TOMBALL TECHNOLOGY CENTER

Preliminary Report

PETROLOGIC ANALYSIS OF WHOLECORE SEGMENTS

McKAY OIL CORPORATION
(ROCK RESOURCES)
SOUTH 4 MILE DRAW FEDERAL #7HY
PECOS SLOPE FIELD
CHAVEZ COUNTY, NM
ABO FORMATION
API # 30-005-63766-0000

TECHNOLOGY CENTER REPORT NO. 07-03-0242

BJ SERVICES TECHNICAL REPRESENTATIVE

MR. LEA DUONG

ARTESIA, NM

MARCH 28, 2007



OBJECTIVES:

Conventional wholecore segments and coreplugs from the subject well were submitted to the Geological Services Group at the Tomball Technology Center for rock/pore properties characterization. The objectives of this analysis were to characterize framework mineralogy, cements, clays, and porosity types present in the sample, identify potential completion problems, and to make appropriate well completion recommendations. Analyses conducted were stereomicroscopy, acid solubility and soluble iron content, scanning electron microscopy/energy dispersive spectrometry (SEM/EDS), and X-ray diffraction (XRD).

SAMPLE ANALYSIS:

Wholecore representing two intervals (2845-2904', and 2965-2994') segments were shipped to Geological Services in Tomball for evaluation. Coreplugs previously analyzed by a commercial core analysis vendor were included in the shipment. A copy of the routine core analysis accompanied the core plugs.

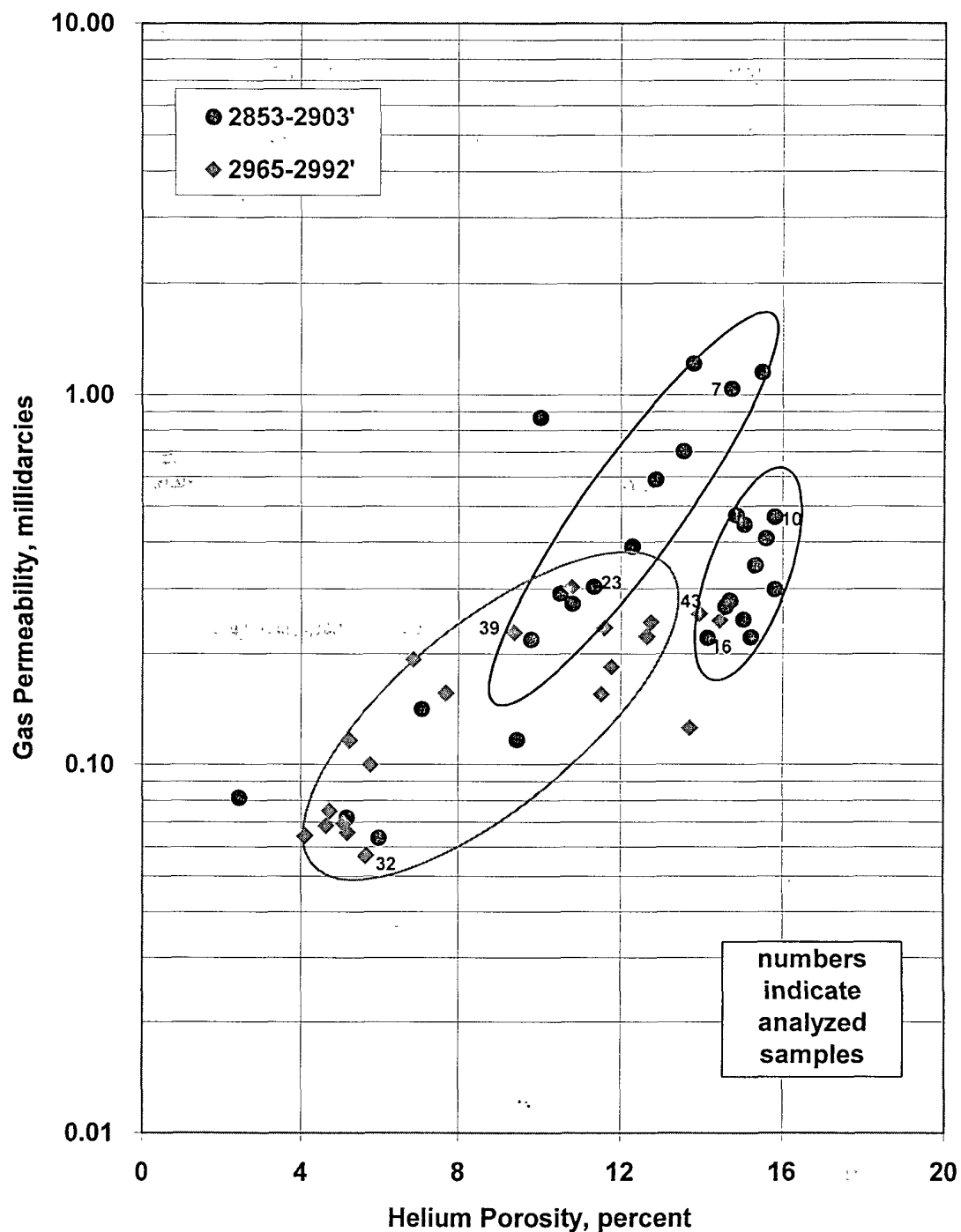
The K vs. Phi crossplot on the following page reveals three data trends. The Core 1 data (2845-2904' in blue) contains two trends, with the data points in the far-right oval being associated with the samples from 2862-2872'. The left blue oval represents the remaining Core 1 samples, excepting the tighter samples and one sample that appears to be faulty data (bedding plane fracture). The Core 2 data is generally within the red oval, representing generally lower reservoir quality than the upper zone. The numbers on the graphic indicate the samples that were reviewed in this study.

Following review of the wholecore segments and the routine core analysis data, seven samples were selected to represent the intervals: sub-samples were selected for mineralogical definition (XRD analysis) and rock/pore network characterization (SEM analysis). Since these samples were ferruginous sandstones/siltstones, sub-samples were also taken for acid solubility and soluble iron content.

Table #1 - Routine Core Analysis Data (data courtesy of CoreLab)

Zone	ID	Depth Ft	Gas Perm md.	Porosity %	Grain Density gm/cc
2845-2904'	7	2859'	1.04	14.7	2.67
	10	2862'	0.47	15.8	2.67
	16	2868'	0.22	14.1	2.66
	23	2875'	0.30	11.4	2.67
2965-2994'	32	2969'	0.06	5.6	2.68
	39	2981'	0.23	9.4	2.68
	43	2985'	0.26	13.9	2.68

Figure #1 - Permeability versus Porosity Crossplot (data courtesy of CoreLab)



The above data is supplied solely for informational purposes and BJ Services Company makes no guarantees or warranties, either expressed or implied, with respect to the accuracy or use of this data. All product warranties and guarantees shall be governed by the standard contract terms at the time of sale.

Brief lithological descriptions of the analyzed samples are presented in Table #2.

Table #2 - Lithological Descriptions

Zone	ID	Depth Ft	Descriptions
2845- 2904'	7	2859'	Sandstone, tan, very fine-grained, very well-sorted, moderately-indurated, slightly-micaceous, massive, bitumen-rich
	10	2862'	Sandstone, tan, very fine-grained, very well-sorted, moderately-indurated, massive, bitumen present
	16	2868'	Sandstone, tan, very fine-grained, very well-sorted, moderately-indurated, massive, bitumen present
	23	2875'	Sandstone, tan & black (due to bitumen), very fine-grained, very well-sorted, well-indurated, slightly-micaceous, patchy cement, massive, very bitumen-rich
2965- 2994'	32	2969'	Sandstone, laminated red & gray, lower very fine-grained, very well-sorted, very well-indurated, laminated
	39	2981'	Sandstone, laminated red & gray, lower very fine-grained, very well-sorted, very well-indurated, laminated, clay-rich laminations
	43	2985'	Sandstone, laminated red & gray, lower very fine-grained, very well-sorted, very well-indurated

Low-magnification stereomicroscopic examination revealed bitumen in several of the samples from the upper zone (2858'-2877'), with the sample from 2875' containing the highest amount of bitumen of these analyzed samples. Bitumen has numerous synonyms within the industry, including solid hydrocarbon, pyrobitumen, dead oil, and tar mats. Reservoir bitumen is a precipitate that can line and fill pore space, and is derived from petroleum through natural alteration processes occurring in reservoirs. It is generally not producible, ranging from highly viscous to solid at reservoir conditions. The three principal natural processes that form bitumen are deasphalting, thermal alteration, and bacterial degradation. Bitumen can also be precipitated in the course of CO₂ floods.

Mineralogical Analysis

Acid solubility was conducted using 15% hydrochloric acid on disaggregated material for one hour at 90°F. Soluble iron content was also measured. Data are presented in Table #3 on page 4. X-ray diffraction techniques are used to determine the crystalline material content of samples. Interpreted minerals and their relative percentages are shown in Table #3 on page 4, along with a graphical display of the mineralogical data in Figure #2.

DEAN STARK PLUG ANALYSIS

ROCK RESOURCES
4 MILE DRAW "B" FEDERAL # 7Y
CHAVES COUNTY, NEW MEXICO

API Serial No.:
FIELD:
LOCATION:

FILE NO. : 070225-1
DATE : February 26, 2007
ANALYSTS : WH, SB, PK, JR

DEAN STARK EXTRACTION

SAMPLE NO.	DEPTH ft	GRAIN DENSITY	POROSITY %	PERM mD	SATURATIONS Sw So	FLUORESCENCE %	LITHOLOGY
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Core # 1 2,845' - 2,875' 30' Cut, 30' Recovered

	2,845.0	-	2,853.0	No Analysis			0
1	2,853.0		2.67	10.8	0.27	83.7 0.0	0
2	2,854.0		2.66	7.1	0.14	57.4 0.0	0
3	2,855.0		2.66	9.8	0.22	42.4 0.0	0
4	2,856.0		2.67	9.4	0.12	87.0 0.0	0
5	2,857.0		2.66	15.2	0.22	45.7 0.0	0
6	2,858.0		2.65	15.5	1.15	43.9 0.0	0
7	2,859.0		2.67	14.7	1.04	48.0 0.0	0
8	2,860.0		2.66	12.9	0.59	39.8 0.0	0
9	2,861.0		2.67	13.8	1.21	43.6 0.0	0
10	2,862.0		2.67	15.8	0.47	38.6 0.0	0
11	2,863.0		2.66	14.8	0.47	39.1 0.0	0
12	2,864.0		2.66	15.0	0.25	49.7 0.0	0
13	2,865.0		2.66	14.7	0.28	47.4 0.0	0
14	2,866.0		2.66	15.8	0.30	44.9 0.0	0
15	2,867.0		2.66	15.3	0.35	49.2 0.0	0
16	2,868.0		2.66	14.1	0.22	51.8 0.0	0
17	2,869.0		2.66	15.6	0.41	46.4 0.0	0
18	2,870.0		2.67	15.0	0.45	46.0 0.0	0
19	2,871.0		2.67	14.6	0.27	47.2 0.0	0
20	2,872.0		2.68	13.6	0.70	44.1 0.0	0
21	2,873.0		2.69	12.3	0.39	43.7 0.0	0
22	2,874.0		2.69	10.5	0.29	41.0 0.0	0
23	2,875.0		2.67	11.4	0.30	52.6 0.0	0

Core # 2 2,875' - 2,905' 30' Cut, 29' Recovered

24	2,876.0		2.67	10.0	0.87	51.9 0.0	0
25	2,877.0		2.69	6.0	0.06	85.8 0.0	0
	2,878.0	-	2,879.0	No Analysis			0
26	2,879.0		2.69	2.5	0.08	76.4 0.0	0
	2,880.0	-	2,903.0	No Analysis			0
27	2,903.0		2.73	5.2	0.07	99.1 0.0	0
	2,904.0	-	2,905.0	Not Recovered			
	2,905.0	-	2,965.0	Drilled			