

Murchison Oil and Gas

Ramsey
Ogden 5B
Ogden 5B
Ogden 5B

Survey: Ogden ^H5B Main bore

MOJO Standard Survey

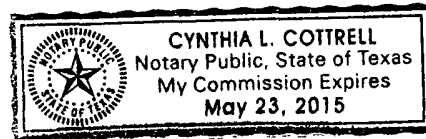
17 May, 2012

This survey is correct to the best of my knowledge and is supported by actual field data.

Notarized this date 17 of may, 2012.


Notary Signature

County of Collin
State of Texas



MOJO
DIRECTIONAL CORPORATION

Company: Murchison Oil and Gas
Project: Ramsey
Site: Ogden 5B
Well: Ogden 5B
Wellbore: Ogden 5B
Design: Ogden 5B

Local Co-ordinate Reference: Well Ogden 5B
TVD Reference: Well @ 3390.0usft (HWD 4)
MD Reference: Well @ 3390.0usft (HWD 4)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project Ramsey, Pinnate Appraisal Well

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Ogden 5B

Site Position:
From: Lat/Long
Position Uncertainty: 1.0 usft

Northing: 419,069.17 usft
Easting: 563,741.80 usft
Slot Radius: 15 "

Latitude: 32° 9' 7.484 N
Longitude: 104° 15' 39.380 W
Grid Convergence: 0.04 °

Well Ogden 5B, Multi-Lateral Horizontal Intersection

Well Position +N/-S 0.0 usft
+E/-W 0.0 usft
Position Uncertainty 1.0 usft

Northing: 419,069.17 usft
Easting: 563,741.80 usft
Wellhead Elevation: usft

Latitude: 32° 9' 7.484 N
Longitude: 104° 15' 39.380 W
Ground Level: 3,378.0 usft

Wellbore Ogden 5B

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	04/11/2011	7.84	60.01	48,497

Design Ogden 5B

Audit Notes:

Version: Phase: ACTUAL Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	8.53

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Survey Program Date 19/04/2012

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
360.0	2,255.0	Ogden 5B Main bore (Ogden 5B)		
2,278.0	2,569.0	Ogden 5B Leg 2 (Ogden 5B)		
2,590.0	6,718.0	Ogden 5B Leg 3 (Ogden 5B)		

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	Closure Azimuth (°)	Closure Distance (usft)
2,255.0	82.00	1.10	2,075.4	398.7	55.3	0.00	419,467.91	563,797.12	7.90	402.56
2,278.0	81.90	5.90	2,078.6	421.5	56.7	20.67	419,490.64	563,798.51	7.66	425.26
2,302.0	86.80	12.50	2,081.0	445.0	60.5	34.14	419,514.19	563,802.33	7.75	449.12
2,324.0	88.80	13.80	2,081.8	466.4	65.5	10.84	419,535.60	563,807.33	8.00	471.01
2,354.0	90.20	15.00	2,082.1	495.5	73.0	6.15	419,564.65	563,814.79	8.38	500.83
2,369.0	92.60	16.40	2,081.7	509.9	77.1	18.52	419,579.09	563,818.85	8.59	515.70
2,392.0	95.40	16.70	2,080.1	531.9	83.6	12.24	419,601.08	563,825.39	8.93	538.43
2,414.0	96.20	18.60	2,077.9	552.8	90.2	9.33	419,621.93	563,832.02	9.27	560.08
2,430.0	96.30	19.50	2,076.2	567.8	95.4	5.63	419,636.97	563,837.21	9.54	575.76
2,459.0	96.80	20.10	2,072.9	594.9	105.2	2.68	419,664.07	563,846.97	10.03	604.13
2,479.0	95.30	18.40	2,070.8	613.7	111.7	11.30	419,682.85	563,853.53	10.32	623.77
2,504.0	92.70	15.10	2,069.0	637.6	118.9	16.78	419,706.73	563,860.71	10.57	648.55
2,531.0	90.80	11.70	2,068.2	663.8	125.2	14.42	419,732.97	563,866.97	10.68	675.50
2,569.0	91.60	10.00	2,067.4	701.1	132.3	4.94	419,770.28	563,874.12	10.69	713.49
2,614.0	92.40	9.60	2,065.8	745.4	140.0	1.99	419,814.60	563,881.77	10.64	758.46
2,658.0	91.10	10.90	2,064.5	788.7	147.8	4.18	419,857.88	563,889.60	10.61	802.43
2,703.0	89.80	13.40	2,064.1	832.7	157.3	6.26	419,901.86	563,899.07	10.70	847.41
2,748.0	90.10	13.30	2,064.2	876.5	167.7	0.70	419,945.65	563,909.46	10.83	892.37
2,793.0	89.90	14.80	2,064.2	920.1	178.6	3.36	419,989.30	563,920.38	10.98	937.30
2,838.0	89.50	13.40	2,064.4	963.8	189.5	3.24	420,032.94	563,931.34	11.13	982.23

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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	Closure Azimuth (°)	Closure Distance (usft)
2,883.0	90.20	14.20	2,064.5	1,007.5	200.3	2.36	420,076.64	563,942.08	11.24	1,027.18
2,928.0	90.20	13.00	2,064.4	1,051.2	210.9	2.67	420,120.38	563,952.66	11.34	1,072.15
2,973.0	88.80	9.70	2,064.7	1,095.3	219.7	7.97	420,164.49	563,961.51	11.34	1,117.14
3,018.0	89.10	10.10	2,065.6	1,139.6	227.5	1.11	420,208.81	563,969.25	11.29	1,162.12
3,063.0	90.40	11.90	2,065.8	1,183.8	236.0	4.93	420,252.98	563,977.84	11.28	1,207.11
3,108.0	91.40	14.50	2,065.1	1,227.6	246.3	6.19	420,296.78	563,988.11	11.35	1,252.08
3,193.0	92.10	14.50	2,062.5	1,309.9	267.6	0.82	420,379.04	564,009.38	11.55	1,336.92
3,236.0	92.00	15.70	2,060.9	1,351.4	278.8	2.80	420,420.53	564,020.58	11.66	1,379.81
3,279.0	90.80	15.50	2,059.9	1,392.8	290.3	2.83	420,461.93	564,032.14	11.78	1,422.70
3,322.0	91.80	13.80	2,058.9	1,434.3	301.2	4.59	420,503.52	564,043.01	11.86	1,465.63
3,365.0	91.40	11.90	2,057.7	1,476.3	310.8	4.51	420,545.42	564,052.57	11.89	1,508.61
3,408.0	89.60	10.40	2,057.3	1,518.4	319.1	5.45	420,587.61	564,060.88	11.87	1,551.60
3,451.0	90.40	10.40	2,057.3	1,560.7	326.8	1.86	420,629.90	564,068.64	11.83	1,594.58
3,494.0	89.80	9.90	2,057.3	1,603.1	334.4	1.82	420,672.23	564,076.22	11.78	1,637.57
3,537.0	89.10	11.20	2,057.7	1,645.3	342.3	3.43	420,714.50	564,084.09	11.75	1,680.55
3,580.0	89.40	11.40	2,058.2	1,687.5	350.7	0.84	420,756.66	564,092.52	11.74	1,723.55
3,623.0	90.80	12.30	2,058.2	1,729.6	359.6	3.87	420,798.74	564,101.35	11.74	1,766.55
3,665.0	90.00	10.20	2,057.9	1,770.8	367.7	5.35	420,839.93	564,109.54	11.73	1,808.54
3,709.0	90.90	10.30	2,057.5	1,814.1	375.6	2.06	420,883.23	564,117.37	11.70	1,852.52
3,752.0	91.80	10.70	2,056.5	1,856.3	383.4	2.29	420,925.49	564,125.20	11.67	1,895.50
3,794.0	89.80	11.60	2,055.9	1,897.5	391.5	5.22	420,966.69	564,133.32	11.66	1,937.49
3,838.0	89.70	13.30	2,056.1	1,940.5	401.0	3.87	421,009.66	564,142.81	11.68	1,981.49
3,881.0	89.40	12.50	2,056.4	1,982.4	410.6	1.99	421,051.57	564,152.41	11.70	2,024.48
3,924.0	90.50	12.40	2,056.5	2,024.4	419.9	2.57	421,093.56	564,161.68	11.72	2,067.47
3,967.0	91.80	12.20	2,055.6	2,066.4	429.0	3.06	421,135.56	564,170.84	11.73	2,110.46
4,010.0	91.20	11.90	2,054.5	2,108.4	438.0	1.56	421,177.60	564,179.81	11.74	2,153.45
4,053.0	91.00	11.00	2,053.7	2,150.6	446.5	2.14	421,219.74	564,188.35	11.73	2,196.44

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4,095.0	92.40	11.00	2,052.4	2,191.8	454.6	3.33	421,260.95	564,196.36	11.72	2,238.41

334.0	334.0	9 5/8"				12-1/4	12-1/4			
2,075.0	2,009.7	7"				7	8-3/4			

Checked By: Steve Morris Approved By: Joel Stockford Date: 17/05/2012