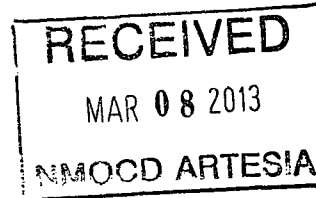


 MURCHISON OIL & GAS, INC.



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Murchison Oil and Gas

Ogden North

Ogden 7

Ogden 7

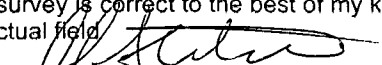
Ogden 7H

Survey: Ogden 7H

MOJO End of Well Survey

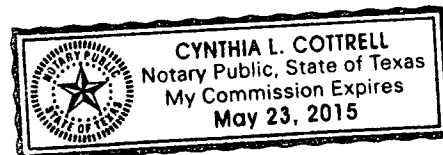
19 October, 2012

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

 (Signature)
Notarized this date 8th of November,
2012. Cynthia L. Cottrell Notary
Signature County of Collin State of Texas



MOJO
DIRECTIONAL CORPORATION



Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden 7
Project:	Ogden North	TVD Reference:	WELL @ 3394.8usft (4)
Site:	Ogden 7	MD Reference:	WELL @ 3394.8usft (4)
Well:	Ogden 7	North Reference:	Grid
Wellbore:	Ogden 7H	Survey Calculation Method:	Minimum Curvature
Design:	Ogden 7H	Database:	EDM 5000.1 Single User Db

Project	Ogden North, Pinnate Appraisal Well		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Ogden 7		
Site Position:	From:	Lat/Long	1.0 usft
Position Uncertainty:	1.0 usft	Northing:	423,934.82 usft
		Easting:	565,363.12 usft
		Slot Radius:	15 "
		Latitude:	32° 9' 55.624 N
		Longitude:	104° 15' 20.479 W
		Grid Convergence:	0.04 °

Well	Ogden 7					
Well Position	+N/-S	0.0 usft	Northing:	423,934.82 usft	Latitude:	32° 9' 55.624 N
	+E/-W	0.0 usft	Easting:	565,363.12 usft	Longitude:	104° 15' 20.479 W
Position Uncertainty	1.0 usft	Wellhead Elevation:	usft	Ground Level:	3,382.8 usft	

Wellbore	Ogden 7H				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	13/09/2012	7.73	60.01	48,424

Design	Ogden 7H			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	
		Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	269.84

Survey Program	Date 19/10/2012			
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
442.0	4,977.0	Ogden 7H (Ogden 7H)	MWD	MWD - Standard

Company: Murchison Oil and Gas		Local Co-ordinate Reference: Well Ogden 7	
Project: Ogden North		TVD Reference: WELL @ 3394.8usft (4)	
Site: Ogden 7		MD Reference: WELL @ 3394.8usft (4)	
Well: Ogden 7		North Reference: Grid	
Wellbore: Ogden 7H		Survey Calculation Method: Minimum Curvature	
Design: Ogden 7H		Database: EDM 5000.1 Single User Db	

Survey											
MD (usft)	Inc. (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	Closure Azimuth (°)	
0.0	0.00	0.00	0.0	3,394.8	0.0	0.0	423,934.82	565,363.12	0.00	0.00	
377.0	1.62	226.80	376.9	3,017.9	-3.6	-3.9	423,931.17	565,359.23	0.43	226.80	
9 5/8"											
385.0	1.65	226.80	384.9	3,009.9	-3.8	-4.1	423,931.01	565,359.07	0.43	226.80	
Salado											
442.0	1.90	226.80	441.9	2,952.9	-5.0	-5.3	423,929.80	565,357.78	0.43	226.80	
473.0	2.00	221.60	472.9	2,921.9	-5.8	-6.1	423,929.04	565,357.04	0.66	226.46	
503.0	1.90	230.30	502.9	2,891.9	-6.5	-6.8	423,928.33	565,356.31	1.04	226.40	
536.0	1.80	218.80	535.9	2,858.9	-7.2	-7.6	423,927.58	565,355.57	1.16	226.23	
659.0	0.80	190.20	658.8	2,736.0	-9.6	-8.9	423,925.23	565,354.21	0.95	222.92	
886.0	0.50	90.00	885.8	2,509.0	-11.1	-8.2	423,923.67	565,354.92	0.45	216.36	
1,111.0	1.50	134.10	1,110.8	2,284.0	-13.2	-5.1	423,921.62	565,358.01	0.53	201.16	
1,156.0	1.40	153.50	1,155.8	2,239.0	-14.1	-4.4	423,920.72	565,358.68	1.11	197.48	
1,201.0	1.70	203.40	1,200.8	2,194.0	-15.2	-4.5	423,919.61	565,358.66	2.97	196.35	
1,246.0	3.10	240.10	1,245.7	2,149.1	-16.4	-5.8	423,918.39	565,357.34	4.47	199.39	
1,290.0	5.70	253.80	1,289.6	2,105.2	-17.6	-8.9	423,917.19	565,354.21	6.33	206.82	
1,335.0	8.60	259.50	1,334.2	2,060.6	-18.9	-14.4	423,915.95	565,348.75	6.63	217.29	
1,381.0	11.80	266.00	1,379.5	2,015.3	-19.8	-22.4	423,915.00	565,340.68	7.38	228.55	
1,426.0	14.90	270.50	1,423.3	1,971.5	-20.1	-32.8	423,914.73	565,330.30	7.26	238.53	
1,470.0	17.60	274.70	1,465.5	1,929.3	-19.5	-45.1	423,915.32	565,318.01	6.69	246.63	
1,515.0	19.90	275.60	1,508.1	1,886.7	-18.2	-59.5	423,916.63	565,303.61	5.15	253.01	
1,560.0	22.60	274.60	1,550.1	1,844.7	-16.7	-75.8	423,918.07	565,287.36	6.05	257.54	
1,605.0	26.00	275.90	1,591.1	1,803.7	-15.0	-94.2	423,919.78	565,268.93	7.65	260.93	
1,650.0	28.80	277.50	1,631.0	1,763.8	-12.6	-114.8	423,922.21	565,248.37	6.43	263.73	
1,695.0	31.90	276.60	1,669.9	1,724.9	-9.8	-137.3	423,924.99	565,225.80	6.96	265.91	
1,740.0	34.60	274.60	1,707.5	1,687.3	-7.4	-161.9	423,927.38	565,201.25	6.48	267.37	
1,785.0	36.90	273.90	1,744.0	1,650.8	-5.5	-188.1	423,929.32	565,175.03	5.19	268.33	

Company:	Murchison Oil and Gas						Local Co-ordinate Reference:		Well Ogden 7		
Project:	Ogden North						TVD Reference:		WELL @ 3394.8usft (4)		
Site:	Ogden 7						MD Reference:		WELL @ 3394.8usft (4)		
Well:	Ogden 7						North Reference:		Grid		
Wellbore:	Ogden 7H						Survey Calculation Method:		Minimum Curvature		
Design:	Ogden 7H						Database:		EDM 5000.1 Single User Db		

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	Closure Azimuth (°)	
1,830.0	39.30	271.50	1,779.4	1,615.4	-4.2	-215.8	423,930.62	565,147.30	6.27	268.89	
1,875.0	41.80	270.80	1,813.6	1,581.2	-3.6	-245.1	423,931.20	565,118.06	5.65	269.15	
1,920.0	44.30	270.50	1,846.5	1,548.3	-3.3	-275.8	423,931.55	565,087.34	5.57	269.32	
1,965.0	46.50	269.80	1,878.1	1,516.7	-3.2	-307.8	423,931.63	565,055.30	5.01	269.41	
2,009.0	48.90	270.10	1,907.7	1,487.1	-3.2	-340.4	423,931.60	565,022.76	5.48	269.46	
2,054.0	51.00	270.90	1,936.6	1,458.2	-2.9	-374.8	423,931.90	564,988.32	4.86	269.55	
2,100.0	54.60	270.40	1,964.5	1,430.3	-2.5	-411.4	423,932.32	564,951.69	7.87	269.65	
2,144.0	59.30	271.00	1,988.4	1,406.4	-2.0	-448.3	423,932.77	564,914.82	10.74	269.74	
2,158.0	60.86	271.00	1,995.4	1,399.4	-1.8	-460.4	423,932.98	564,902.69	11.11	269.77	
Delaware											
2,189.0	64.30	271.00	2,009.7	1,385.1	-1.4	-487.9	423,933.46	564,875.18	11.11	269.84	
2,234.0	68.70	270.80	2,027.6	1,367.2	-0.7	-529.2	423,934.11	564,833.93	9.79	269.92	
Lamar Lime											
2,280.0	74.23	268.01	2,042.3	1,352.5	-1.2	-572.8	423,933.64	564,790.34	13.31	269.88	
7"											
2,322.0	79.30	265.60	2,051.9	1,342.9	-3.5	-613.6	423,931.36	564,749.54	13.31	269.68	
2,367.0	83.90	264.20	2,058.5	1,336.3	-7.4	-657.9	423,927.40	564,705.21	10.68	269.35	
2,411.0	88.98	265.28	2,061.2	1,333.6	-11.4	-701.6	423,923.37	564,661.49	11.81	269.07	
Ramsey Sand											
2,412.0	89.10	265.30	2,061.2	1,333.6	-11.5	-702.6	423,923.29	564,660.50	11.81	269.06	
2,457.0	91.40	268.10	2,061.0	1,333.8	-14.1	-747.5	423,920.70	564,615.58	8.05	268.92	
2,502.0	90.40	268.10	2,060.3	1,334.5	-15.6	-792.5	423,919.21	564,570.61	2.22	268.87	
2,547.0	90.20	267.00	2,060.1	1,334.7	-17.5	-837.5	423,917.28	564,525.65	2.48	268.80	
2,592.0	91.70	267.90	2,059.3	1,335.5	-19.5	-882.4	423,915.28	564,480.70	3.89	268.73	
2,637.0	92.80	269.70	2,057.5	1,337.3	-20.5	-927.4	423,914.34	564,435.75	4.69	268.74	
2,682.0	92.10	269.60	2,055.6	1,339.2	-20.8	-972.3	423,914.07	564,390.79	1.57	268.78	
2,727.0	91.20	270.30	2,054.3	1,340.5	-20.8	-1,017.3	423,914.03	564,345.81	2.53	268.83	
2,772.0	90.80	271.10	2,053.5	1,341.3	-20.2	-1,062.3	423,914.58	564,300.82	1.99	268.91	

Company:	Murchison Oil and Gas					Local Co-ordinate Reference:		Well Ogden 7			
Project:	Ogden North					TVD Reference:		WELL @ 3394.8usft (4)			
Site:	Ogden 7					MD Reference:		WELL @ 3394.8usft (4)			
Well:	Ogden 7					North Reference:		Grid			
Wellbore:	Ogden 7H					Survey Calculation Method:		Minimum Curvature			
Design:	Ogden 7H					Database:		EDM 5000.1 Single User Db			
Survey											
MD (usft)	Inc. (°)	Azi.(azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	Closure Azimuth (°)	
2,817.0	89.40	271.80	2,053.5	1,341.3	-19.1	-1,107.3	423,915.71	564,255.84	3.48	269.01	
2,862.0	89.10	271.40	2,054.1	1,340.7	-17.8	-1,152.3	423,916.97	564,210.86	1.11	269.11	
2,907.0	89.50	271.90	2,054.6	1,340.2	-16.5	-1,197.2	423,918.27	564,165.88	1.42	269.21	
2,952.0	89.20	271.30	2,055.1	1,339.7	-15.3	-1,242.2	423,919.52	564,120.90	1.49	269.29	
2,997.0	88.60	270.40	2,056.0	1,338.8	-14.6	-1,287.2	423,920.19	564,075.92	2.40	269.35	
3,042.0	89.10	270.40	2,056.9	1,337.9	-14.3	-1,332.2	423,920.50	564,030.93	1.11	269.38	
3,087.0	89.90	270.70	2,057.3	1,337.5	-13.9	-1,377.2	423,920.94	563,985.93	1.90	269.42	
3,132.0	91.50	271.20	2,056.7	1,338.1	-13.1	-1,422.2	423,921.68	563,940.94	3.73	269.47	
3,177.0	92.40	271.60	2,055.2	1,339.6	-12.0	-1,467.1	423,922.78	563,895.98	2.19	269.53	
3,222.0	92.20	271.40	2,053.4	1,341.4	-10.9	-1,512.1	423,923.96	563,851.04	0.63	269.59	
3,267.0	91.30	271.40	2,052.0	1,342.8	-9.8	-1,557.0	423,925.06	563,806.07	2.00	269.64	
3,312.0	91.70	271.70	2,050.8	1,344.0	-8.5	-1,602.0	423,926.27	563,761.10	1.11	269.69	
3,357.0	91.70	271.10	2,049.5	1,345.3	-7.4	-1,647.0	423,927.37	563,716.14	1.33	269.74	
3,402.0	91.60	270.70	2,048.2	1,346.6	-6.7	-1,692.0	423,928.08	563,671.16	0.92	269.77	
3,447.0	90.80	270.70	2,047.3	1,347.5	-6.2	-1,736.9	423,928.63	563,626.17	1.78	269.80	
3,493.0	89.80	268.90	2,047.0	1,347.8	-6.3	-1,782.9	423,928.47	563,580.18	4.48	269.80	
3,537.0	90.20	268.10	2,047.0	1,347.8	-7.5	-1,826.9	423,927.32	563,536.19	2.03	269.76	
3,583.0	90.20	267.10	2,046.9	1,347.9	-9.4	-1,872.9	423,925.39	563,490.23	2.17	269.71	
3,627.0	90.60	268.40	2,046.5	1,348.3	-11.2	-1,916.8	423,923.66	563,446.27	3.09	269.67	
3,672.0	88.30	267.90	2,047.0	1,347.8	-12.6	-1,961.8	423,922.21	563,401.30	5.23	269.63	
3,717.0	88.60	267.50	2,048.2	1,346.6	-14.4	-2,006.8	423,920.41	563,356.35	1.11	269.59	
3,762.0	88.80	267.20	2,049.2	1,345.6	-16.5	-2,051.7	423,918.32	563,311.41	0.80	269.54	
3,852.0	90.20	266.60	2,050.0	1,344.8	-21.4	-2,141.6	423,913.46	563,221.55	1.69	269.43	
3,942.0	91.40	268.80	2,048.7	1,346.1	-25.0	-2,231.5	423,909.85	563,131.64	2.78	269.36	
4,032.0	90.80	268.50	2,047.0	1,347.8	-27.1	-2,321.4	423,907.73	563,041.68	0.75	269.33	
4,077.0	90.60	269.90	2,046.5	1,348.3	-27.7	-2,366.4	423,907.10	562,996.69	3.14	269.33	
4,122.0	89.60	269.60	2,046.4	1,348.4	-27.9	-2,411.4	423,906.90	562,951.69	2.32	269.34	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden 7
Project:	Ogden North	TVD Reference:	WELL @ 3394.8usft (4)
Site:	Ogden 7	MD Reference:	WELL @ 3394.8usft (4)
Well:	Ogden 7	North Reference:	Grid
Wellbore:	Ogden 7H	Survey Calculation Method:	Minimum Curvature
Design:	Ogden 7H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	DLeg (°/100usft)	Closure Azimuth (°)	
4,167.0	90.10	269.60	2,046.5	1,348.3	-28.2	-2,456.4	423,906.59	562,906.69	1.11	269.34	
4,212.0	90.30	269.10	2,046.4	1,348.4	-28.7	-2,501.4	423,906.08	562,861.69	1.20	269.34	
4,258.0	90.60	268.30	2,046.0	1,348.8	-29.8	-2,547.4	423,905.03	562,815.71	1.86	269.33	
4,303.0	90.80	268.20	2,045.4	1,349.4	-31.2	-2,592.4	423,903.66	562,770.73	0.50	269.31	
4,347.0	80.90	268.00	2,044.8	1,350.0	-32.6	-2,636.4	423,902.20	562,726.76	0.51	269.29	
4,392.0	90.80	268.10	2,044.1	1,350.7	-34.1	-2,681.3	423,900.67	562,681.79	0.31	269.27	
4,438.0	91.10	268.00	2,043.4	1,351.4	-35.7	-2,727.3	423,899.11	562,635.83	0.69	269.25	
4,483.0	91.60	268.20	2,042.3	1,352.5	-37.2	-2,772.3	423,897.61	562,590.86	1.20	269.23	
4,527.0	90.50	268.80	2,041.5	1,353.3	-38.4	-2,816.2	423,896.46	562,546.89	2.85	269.22	
4,573.0	90.70	268.40	2,041.0	1,353.8	-39.5	-2,862.2	423,895.34	562,500.90	0.97	269.21	
4,618.0	91.20	268.60	2,040.3	1,354.5	-40.7	-2,907.2	423,894.16	562,455.92	1.20	269.20	
4,663.0	91.10	268.10	2,039.4	1,355.4	-42.0	-2,952.2	423,892.86	562,410.95	1.13	269.19	
4,708.0	91.20	267.50	2,038.5	1,356.3	-43.7	-2,997.1	423,891.14	562,365.99	1.35	269.17	
4,752.0	91.50	267.40	2,037.4	1,357.4	-45.6	-3,041.1	423,889.18	562,322.05	0.72	269.14	
4,797.0	91.70	268.90	2,036.2	1,358.6	-47.1	-3,086.0	423,887.73	562,277.09	3.36	269.13	
4,842.0	92.00	268.90	2,034.7	1,360.1	-48.0	-3,131.0	423,886.87	562,232.12	0.67	269.12	
4,887.0	92.30	268.30	2,033.0	1,361.8	-49.0	-3,175.9	423,885.77	562,187.17	1.49	269.12	
4,932.0	92.40	267.80	2,031.2	1,363.6	-50.6	-3,220.9	423,884.24	562,142.23	1.13	269.10	
4,977.0	92.60	267.80	2,029.2	1,365.6	-52.3	-3,265.8	423,882.51	562,097.31	0.44	269.08	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
377.0	376.9	9 5/8"	9-5/8	12-1/4	
2,280.0	2,042.3	7"	7	7-1/2	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden 7
Project:	Ogden North	TVD Reference:	WELL @ 3394.8usft (4)
Site:	Ogden 7	MD Reference:	WELL @ 3394.8usft (4)
Well:	Ogden 7	North Reference:	Grid
Wellbore:	Ogden 7H	Survey Calculation Method:	Minimum Curvature
Design:	Ogden 7H	Database:	EDM 5000.1 Single User Db

Formations				
Measured Depth (usft)	Vertical Depth (usft)	Name	Dip (°)	
385.0	384.9	Salado	0.00	
2,158.0	1,995.4	Delaware	0.00	
2,234.0	2,027.6	Lamar Lime	0.00	
2,411.0	2,061.2	Ramsey Sand	0.00	

Checked By: _____	Approved By: _____	Date: _____
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Project: Ogden North
 Site: Ogden 7
 Well: Ogden 7
 Wellbore: Ogden 7H
 Design: Ogden 7H



MURCHISON OIL & GAS, INC.



Azimuths to Grid North
 True North: -0.04°
 Magnetic North: 7.69°

Magnetic Field
 Strength: 48423.7nT
 Dip Angle: 60.01°
 Date: 13/09/2012
 Model: IGRF200510

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Ogden 7, Grid North
 Vertical (TVD) Reference: WELL @ 3394.8usft (4)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: WELL @ 3394.8usft (4)
 Calculation Method: Minimum Curvature

FORMATION TOP DETAILS

CASING DETAILS

TVD	MD	Name	Size
376.9	377.0	9 5/8"	9-5/8
2042.3	2280.0	7"	7

TVDPPath	MDPath	Formation
384.9	385.0	Salado
1995.4	2158.0	Delaware
2027.6	2234.0	Lamar Lime
2061.2	2411.0	Ramsey Sand

