

Results of Directional Survey

API number:	30-025-41086		
OGRID:		Operator:	MURCHISON OIL & GAS INC
		Property:	JACKSON UNIT # 15H

surface	ULSTR:	C	15	T	24S	R	33E
				200	FNL	2000	FWL

BH Loc	ULSTR:	N	15	T	24S	R	33E
15853	MD	11183.8	TVD	285	FSL	1716	FWL
				4995	FNL		

Top Perf/OH	ULSTR:	C	15	T	24S	R	33E
11387	MD	11165.5	TVD	556	FNL	1829	FWL

Bot Perf/OH	ULSTR:	N	15	T	24S	R	33E
15790	MD	11184.4	TVD	348	FSL	1719	FWL
				4932	FNL		

	MD	N/S	E/W	VD
	11369	-338.80	-165.20	11166.3
TOP PERFS/OH	11387	-355.68	-171.42	11165.52
	11461	-425.10	-197.00	11162.30
	15723	-4664.80	-277.20	11184.90
BOT PERFS/OH	15790	-4731.72	-280.55	11184.41
	15805	-4746.70	-281.30	11184.30

NEXT TO LAST	15850	-4791.70	-283.50	11183.80
LAST READING	15853	-4794.70	-283.70	11183.80
TD	15853	-4794.70	-283.70	11183.80

Surface Location	200	FN	2000	FW
Projected BHL	4995	FN	1716	FW
Location of				
Top Perfs/OH	556	FN	1829	FW
Bottom Perfs/OH	4932	FN	1719	FW

SUMMARY of Subsurface Locations

Surface Location	C-15-24S-33E	200	FN	2000	FW	Vert. Depth
Top Perfs/OH	C-15-24S-33E	556	FN	1829	FW	11165.52
Bottom Perfs/OH	N-15-24S-33E	4932	FN	1719	FW	11184.41
Projected TD	N-15-24S-33E	4995	FN	1716	FW	11183.80

APR 14 2014

 MURCHISON OIL & GAS, INC.

Murchison Oil and Gas

Jackson Unit Section 15

Jackson Unit 15H

HOBBS OCD

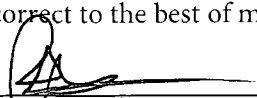
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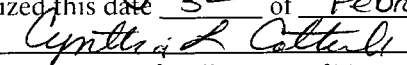
Survey: Jackson Unit 15H

MOJO Standard Survey

23 January, 2014

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

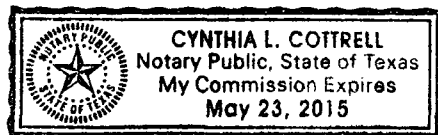
Notarized this date 3rd of February,

2014  Notary

Signature County of Collin State of Texas



MOJO
DIRECTIONAL CORPORATION



Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 15H
Project:	Jackson Unit Section 15	TVD Reference:	RKB @ 3634.4usft
Site:	Jackson Unit 15H	MD Reference:	RKB @ 3634.4usft
Well:	Jackson Unit 15H	North Reference:	Grid
Wellbore:	Jackson Unit 15H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 15H	Database:	EDM 5000.1 Single User Db

Project	Jackson Unit Section 15		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	Jackson Unit 15H		
Site Position:		Northing:	446,195.69 usft
From:	Lat/Long	Easting:	779,454.48 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 27.562 N
		Longitude:	103° 33' 47.930 W
		Grid Convergence:	0.41 °

Well	Jackson Unit 15H		
Well Position	+N/-S	0.0 usft	Northing: 446,197.55 usft
	+E/-W	0.0 usft	Easting: 779,784.34 usft
Position Uncertainty		0.0 usft	Wellhead Elevation: usft
			Latitude: 32° 13' 27.557 N
			Longitude: 103° 33' 44.090 W
			Ground Level: 3,612.4 usft

Wellbore	Jackson Unit 15H		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	10/05/2013	7.35
			Dip Angle (°)
			60.14
			Field Strength (nT)
			48,426

Design	Jackson Unit 15H		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction (°)
			183.29

Survey Program	Date 23/01/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	15,853.0	Jackson Unit 15H (Jackson Unit 15H)	MWD
			Description
			MWD - Standard

Company: Murchison Oil and Gas		Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:					Well Jackson Unit 15H RKB @ 3634.4usft RKB @ 3634.4usft Grid Minimum Curvature EDM 5000.1 Single User Db				
Project:	Jackson Unit Section 15										
Site:	Jackson Unit 15H										
Well:	Jackson Unit 15H										
Wellbore:	Jackson Unit 15H										
Design:	Jackson Unit 15H										
Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,634.4	0.0	0.0	0.0	0.00	446,197.55	779,784.34	
100.0	0.19	159.48	100.0	-3,534.4	-0.2	0.1	0.2	0.19	446,197.39	779,784.40	
200.0	0.45	263.80	200.0	-3,434.4	-0.4	-0.3	0.4	0.53	446,197.20	779,784.07	
300.0	0.58	277.26	300.0	-3,334.4	-0.3	-1.2	0.4	0.18	446,197.22	779,783.17	
400.0	0.66	284.40	400.0	-3,234.4	-0.1	-2.2	0.3	0.11	446,197.42	779,782.11	
500.0	0.69	277.44	500.0	-3,134.4	0.1	-3.4	0.1	0.09	446,197.64	779,780.96	
600.0	0.70	249.30	600.0	-3,034.4	0.0	-4.5	0.3	0.34	446,197.51	779,779.79	
700.0	0.66	239.25	700.0	-2,934.4	-0.6	-5.6	0.9	0.13	446,197.00	779,778.72	
800.0	0.61	238.14	800.0	-2,834.4	-1.1	-6.6	1.5	0.05	446,196.42	779,777.78	
900.0	0.50	241.28	900.0	-2,734.4	-1.6	-7.4	2.0	0.11	446,195.93	779,776.94	
1,000.0	0.61	228.17	1,000.0	-2,634.4	-2.2	-8.2	2.6	0.17	446,195.37	779,776.16	
1,100.0	1.07	235.56	1,099.9	-2,534.5	-3.1	-9.3	3.6	0.47	446,194.48	779,775.00	
1,200.0	1.15	242.49	1,199.9	-2,434.5	-4.1	-11.0	4.7	0.16	446,193.49	779,773.34	
1,288.0	0.95	240.41	1,287.9	-2,346.5	-4.8	-12.4	5.5	0.23	446,192.72	779,771.92	
Rustler											
1,300.0	0.92	240.06	1,299.9	-2,334.5	-4.9	-12.6	5.6	0.23	446,192.63	779,771.75	
1,304.0	0.91	240.04	1,303.9	-2,330.5	-5.0	-12.6	5.7	0.31	446,192.60	779,771.70	
13 3/8"											
1,400.0	0.61	239.18	1,399.9	-2,234.5	-5.6	-13.7	6.4	0.31	446,191.95	779,770.60	
1,500.0	0.62	308.34	1,499.9	-2,134.5	-5.5	-14.6	6.4	0.70	446,192.02	779,769.72	
1,600.0	0.67	324.83	1,599.9	-2,034.5	-4.7	-15.4	5.6	0.19	446,192.83	779,768.96	
1,700.0	0.59	338.94	1,699.9	-1,934.5	-3.8	-15.9	4.7	0.17	446,193.79	779,768.43	
1,800.0	0.58	316.32	1,799.9	-1,834.5	-2.9	-16.4	3.9	0.23	446,194.64	779,767.90	
1,900.0	2.67	318.45	1,899.8	-1,734.6	-0.8	-18.3	1.9	2.09	446,196.74	779,766.00	
2,000.0	0.51	327.68	1,999.8	-1,634.6	1.3	-20.1	-0.2	2.17	446,198.86	779,764.22	
2,100.0	0.64	318.73	2,099.8	-1,534.6	2.1	-20.7	-0.9	0.16	446,199.66	779,763.62	
2,200.0	0.78	324.18	2,199.8	-1,434.6	3.1	-21.5	-1.8	0.16	446,200.63	779,762.85	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 15H
Project:	Jackson Unit Section 15	TVD Reference:	RKB @ 3634.4usft
Site:	Jackson Unit 15H	MD Reference:	RKB @ 3634.4usft
Well:	Jackson Unit 15H	North Reference:	Grid
Wellbore:	Jackson Unit 15H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 15H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
2,300.0	0.94	322.44	2,299.8	-1,334.6	4.3	-22.4	-3.0	0.16	446,201.83	779,761.95	
2,400.0	1.01	325.64	2,399.7	-1,234.7	5.7	-23.4	-4.3	0.09	446,203.21	779,760.95	
2,500.0	1.08	325.04	2,499.7	-1,134.7	7.2	-24.4	-5.7	0.07	446,204.71	779,759.92	
2,600.0	1.01	333.92	2,599.7	-1,034.7	8.7	-25.4	-7.3	0.18	446,206.27	779,758.99	
2,700.0	0.97	329.36	2,699.7	-934.7	10.2	-26.2	-8.7	0.09	446,207.79	779,758.17	
2,800.0	0.90	333.25	2,799.7	-834.7	11.7	-27.0	-10.1	0.09	446,209.22	779,757.38	
2,900.0	0.90	344.15	2,899.7	-734.7	13.1	-27.5	-11.5	0.17	446,210.68	779,756.82	
3,000.0	1.01	354.48	2,999.7	-634.7	14.8	-27.8	-13.1	0.20	446,212.31	779,756.52	
3,100.0	1.14	8.11	3,099.6	-534.8	16.6	-27.8	-15.0	0.29	446,214.18	779,756.57	
3,200.0	1.18	11.31	3,199.6	-434.8	18.6	-27.4	-17.0	0.08	446,216.17	779,756.91	
3,300.0	1.23	12.11	3,299.6	-334.8	20.7	-27.0	-19.1	0.05	446,218.23	779,757.34	
3,400.0	1.48	22.13	3,399.6	-234.8	22.9	-26.3	-21.4	0.34	446,220.48	779,758.05	
3,500.0	1.71	31.68	3,499.5	-134.9	25.4	-25.0	-23.9	0.35	446,222.94	779,759.32	
3,600.0	1.93	31.24	3,599.5	-34.9	28.1	-23.4	-26.7	0.22	446,225.65	779,760.98	
3,700.0	1.98	30.00	3,699.4	65.0	31.0	-21.6	-29.7	0.07	446,228.59	779,762.72	
3,800.0	1.68	32.99	3,799.4	165.0	33.8	-20.0	-32.6	0.31	446,231.31	779,764.38	
3,900.0	1.53	34.71	3,899.3	264.9	36.1	-18.4	-35.0	0.16	446,233.64	779,765.94	
4,000.0	1.17	32.38	3,999.3	364.9	38.1	-17.1	-37.0	0.36	446,235.60	779,767.24	
4,100.0	1.09	25.22	4,099.3	464.9	39.8	-16.1	-38.8	0.16	446,237.32	779,768.20	
4,200.0	0.98	32.82	4,199.3	564.9	41.4	-15.3	-40.4	0.18	446,238.90	779,769.07	
4,300.0	1.03	38.35	4,299.3	664.9	42.8	-14.3	-41.9	0.11	446,240.32	779,770.09	
4,400.0	1.54	78.29	4,399.2	764.8	43.8	-12.4	-43.0	1.00	446,241.30	779,771.96	
4,500.0	2.20	93.96	4,499.2	864.8	43.9	-9.2	-43.3	0.83	446,241.44	779,775.19	
4,600.0	2.65	98.47	4,599.1	964.7	43.4	-4.9	-43.1	0.49	446,240.97	779,779.39	
4,700.0	2.51	103.15	4,699.0	1,064.6	42.6	-0.5	-42.5	0.25	446,240.13	779,783.81	
4,800.0	3.07	106.81	4,798.9	1,164.5	41.3	4.2	-41.5	0.59	446,238.86	779,788.51	
4,900.0	3.68	107.56	4,898.7	1,264.3	39.6	9.8	-40.1	0.61	446,237.11	779,794.13	

Company:		Murchison Oil and Gas				Local Co-ordinate Reference:			Well Jackson Unit 15H		
Project:		Jackson Unit Section 15				TVD Reference:			RKB @ 3634.4usft		
Site:		Jackson Unit 15H				MD Reference:			RKB @ 3634.4usft		
Well:		Jackson Unit 15H				North Reference:			Grid		
Wellbore:		Jackson Unit 15H				Survey Calculation Method:			Minimum Curvature		
Design:		Jackson Unit 15H				Database:			EDM 5000.1 Single User Db		

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
5,000.0	3.75	105.79	4,998.5	1,364.1	37.7	16.0	-38.6	0.13	446,235.26	779,800.33	
5,100.0	2.92	91.90	5,098.3	1,463.9	36.7	21.7	-37.9	1.15	446,234.28	779,806.03	
5,179.0	2.72	91.47	5,177.2	1,542.8	36.6	25.6	-38.0	0.25	446,234.17	779,809.91	
5,240.0	2.23	86.60	5,238.2	1,603.8	36.7	28.2	-38.2	0.88	446,234.20	779,812.54	
Delaware											
5,265.0	2.03	83.93	5,263.1	1,628.7	36.7	29.1	-38.3	0.88	446,234.28	779,813.47	
9 5/8"											
5,282.0	1.90	81.80	5,280.1	1,645.7	36.8	29.7	-38.4	0.88	446,234.35	779,814.05	
5,376.0	1.30	115.10	5,374.1	1,739.7	36.6	32.2	-38.4	1.15	446,234.12	779,816.55	
5,471.0	0.70	202.50	5,469.1	1,834.7	35.6	33.0	-37.4	1.52	446,233.12	779,817.31	
5,567.0	1.10	238.40	5,565.1	1,930.7	34.6	32.0	-36.3	0.70	446,232.10	779,816.30	
5,662.0	1.40	249.60	5,660.1	2,025.7	33.7	30.1	-35.3	0.41	446,231.22	779,814.43	
5,756.0	2.00	242.90	5,754.0	2,119.6	32.5	27.6	-34.1	0.67	446,230.07	779,811.90	
5,851.0	2.20	246.40	5,849.0	2,214.6	31.0	24.4	-32.4	0.25	446,228.59	779,808.75	
5,946.0	2.30	249.30	5,943.9	2,309.5	29.6	21.0	-30.8	0.16	446,227.18	779,805.30	
6,040.0	2.30	249.60	6,037.8	2,403.4	28.3	17.4	-29.3	0.01	446,225.86	779,801.76	
6,135.0	2.20	249.90	6,132.7	2,498.3	27.0	13.9	-27.8	0.11	446,224.57	779,798.27	
6,230.0	2.10	251.20	6,227.7	2,593.3	25.8	10.6	-26.4	0.12	446,223.38	779,794.91	
6,236.0	2.11	251.31	6,233.7	2,599.3	25.8	10.4	-26.3	0.12	446,223.31	779,794.70	
Cherry Canyon											
6,325.0	2.20	252.80	6,322.6	2,688.2	24.7	7.2	-25.1	0.12	446,222.28	779,791.52	
6,419.0	2.20	255.10	6,416.5	2,782.1	23.7	3.7	-23.9	0.09	446,221.28	779,788.05	
6,514.0	2.00	239.50	6,511.5	2,877.1	22.4	0.5	-22.4	0.64	446,219.97	779,784.86	
6,609.0	2.10	201.70	6,606.4	2,972.0	20.0	-1.6	-19.8	1.40	446,217.51	779,782.79	
6,703.0	2.30	178.40	6,700.3	3,065.9	16.5	-2.1	-16.3	0.97	446,214.03	779,782.20	
6,798.0	1.30	168.90	6,795.3	3,160.9	13.5	-1.9	-13.4	1.09	446,211.06	779,782.46	
6,893.0	1.00	174.80	6,890.3	3,255.9	11.6	-1.6	-11.5	0.34	446,209.18	779,782.75	

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Well:	Jackson Unit 15H					North Reference:			Grid		
Wellbore:	Jackson Unit 15H					Survey Calculation Method:			Minimum Curvature		
Design:	Jackson Unit 15H					Database:			EDM 5000.1 Single User Db		

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
6,987.0	1.00	170.90	6,984.3	3,349.9	10.0	-1.4	-9.9	0.07	446,207.55	779,782.95	
7,083.0	0.80	178.70	7,080.2	3,445.8	8.5	-1.2	-8.4	0.24	446,206.06	779,783.10	
7,177.0	1.10	177.80	7,174.2	3,539.8	7.0	-1.2	-6.9	0.32	446,204.50	779,783.15	
7,272.0	1.10	177.40	7,269.2	3,634.8	5.1	-1.1	-5.1	0.01	446,202.68	779,783.22	
7,367.0	1.40	187.90	7,364.2	3,729.8	3.1	-1.2	-3.0	0.40	446,200.62	779,783.11	
7,462.0	0.60	194.90	7,459.2	3,824.8	1.4	-1.5	-1.3	0.85	446,198.99	779,782.82	
7,556.0	0.30	199.20	7,553.2	3,918.8	0.7	-1.7	-0.6	0.32	446,198.28	779,782.61	
7,588.0	0.30	200.14	7,585.2	3,950.8	0.6	-1.8	-0.5	0.02	446,198.12	779,782.55	
Brushy Canyon											
7,651.0	0.30	202.00	7,648.2	4,013.8	0.3	-1.9	-0.2	0.02	446,197.81	779,782.44	
7,746.0	0.70	176.70	7,743.2	4,108.8	-0.5	-2.0	0.7	0.47	446,197.00	779,782.38	
7,840.0	0.70	184.90	7,837.2	4,202.8	-1.7	-2.0	1.8	0.11	446,195.86	779,782.36	
7,935.0	0.60	177.60	7,932.2	4,297.8	-2.8	-2.0	2.9	0.14	446,194.78	779,782.33	
8,030.0	0.80	183.60	8,027.1	4,392.7	-3.9	-2.0	4.0	0.22	446,193.62	779,782.31	
8,124.0	0.70	174.30	8,121.1	4,486.7	-5.2	-2.0	5.3	0.17	446,192.40	779,782.33	
8,219.0	0.80	197.20	8,216.1	4,581.7	-6.4	-2.2	6.5	0.33	446,191.19	779,782.19	
8,314.0	0.70	178.60	8,311.1	4,676.7	-7.6	-2.3	7.7	0.28	446,189.97	779,782.01	
8,408.0	0.70	171.00	8,405.1	4,770.7	-8.7	-2.2	8.8	0.10	446,188.83	779,782.11	
8,503.0	0.40	2.50	8,500.1	4,865.7	-9.0	-2.1	9.1	1.15	446,188.59	779,782.21	
8,598.0	0.70	345.70	8,595.1	4,960.7	-8.1	-2.3	8.2	0.36	446,189.48	779,782.09	
8,692.0	0.70	316.30	8,689.1	5,054.7	-7.1	-2.8	7.2	0.38	446,190.45	779,781.55	
8,788.0	0.70	322.80	8,785.1	5,150.7	-6.2	-3.6	6.4	0.08	446,191.35	779,780.79	
8,882.0	0.90	310.20	8,879.1	5,244.7	-5.3	-4.5	5.5	0.28	446,192.28	779,779.88	
8,977.0	1.00	301.00	8,974.1	5,339.7	-4.4	-5.7	4.7	0.19	446,193.19	779,778.60	
9,072.0	1.00	285.20	9,069.1	5,434.7	-3.7	-7.3	4.1	0.29	446,193.83	779,777.09	
9,108.0	0.80	305.47	9,105.1	5,470.7	-3.5	-7.8	3.9	1.04	446,194.06	779,776.58	
Bone Spring											

Company: Murchison Oil and Gas		Local Co-ordinate Reference: Well Jackson Unit 15H	
Project: Jackson Unit Section 15		TVD Reference: RKB @ 3634.4usft	
Site: Jackson Unit 15H		MD Reference: RKB @ 3634.4usft	
Well: Jackson Unit 15H		North Reference: Grid	
Wellbore: Jackson Unit 15H		Survey Calculation Method: Minimum Curvature	
Design: Jackson Unit 15H		Database: EDM 5000.1 Single User Db	

Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
9,166.0	0.80	349.70	9,163.1	5,528.7	/	-2.9	-8.2	3.3	1.04	446,194.69	779,776.18	
9,222.0	0.80	357.23	9,219.0	5,584.6		-2.1	-8.3	2.6	0.19	446,195.47	779,776.09	
Avalon Shale												
9,262.0	0.80	2.60	9,259.0	5,624.6		-1.5	-8.3	2.0	0.19	446,196.02	779,776.09	
9,356.0	0.70	347.50	9,353.0	5,718.6		-0.3	-8.3	0.8	0.23	446,197.24	779,775.99	
9,452.0	0.80	342.10	9,449.0	5,814.6		0.9	-8.7	-0.4	0.13	446,198.45	779,775.66	
9,547.0	1.50	316.90	9,544.0	5,909.6		2.4	-9.7	-1.9	0.89	446,199.99	779,774.61	
9,641.0	1.70	317.70	9,638.0	6,003.6		4.4	-11.5	-3.7	0.21	446,201.92	779,772.83	
9,700.0	1.50	324.80	9,696.9	6,062.5		5.6	-12.5	-4.9	0.48	446,203.20	779,771.79	
9,800.0	1.90	320.80	9,796.9	6,162.5		8.0	-14.3	-7.2	0.42	446,205.55	779,769.99	
9,900.0	1.80	318.20	9,896.9	6,262.5		10.5	-16.4	-9.5	0.13	446,208.00	779,767.90	
10,000.0	1.40	304.90	9,996.8	6,362.4		12.3	-18.5	-11.2	0.54	446,209.87	779,765.85	
10,100.0	1.60	297.30	10,096.8	6,462.4		13.7	-20.7	-12.5	0.28	446,211.21	779,763.61	
10,182.0	1.11	297.82	10,178.8	6,544.4		14.6	-22.5	-13.2	0.60	446,212.11	779,761.89	
1st Bone SpringmSand												
10,200.0	1.00	298.00	10,196.8	6,562.4		14.7	-22.7	-13.4	0.60	446,212.26	779,761.59	
10,300.0	1.30	278.10	10,296.7	6,662.3		15.3	-24.6	-13.8	0.50	446,212.83	779,759.70	
10,400.0	1.10	285.10	10,396.7	6,762.3		15.7	-26.7	-14.1	0.25	446,213.24	779,757.65	
10,500.0	0.90	252.10	10,496.7	6,862.3		15.7	-28.4	-14.1	0.60	446,213.25	779,755.98	
10,600.0	1.40	260.40	10,596.7	6,962.3		15.3	-30.3	-13.5	0.53	446,212.81	779,754.03	
10,626.0	1.90	268.30	10,622.7	6,988.3		15.2	-31.1	-13.4	2.11	446,212.74	779,753.28	
10,648.0	1.87	268.22	10,644.7	7,010.3		15.2	-31.8	-13.3	0.13	446,212.72	779,752.56	
7"												
10,703.0	1.80	268.00	10,699.6	7,065.2		15.1	-33.5	-13.2	0.13	446,212.66	779,750.80	
10,735.0	1.80	259.00	10,731.6	7,097.2		15.0	-34.5	-13.0	0.88	446,212.55	779,749.80	
10,767.0	4.40	202.00	10,763.6	7,129.2		13.8	-35.5	-11.7	11.68	446,211.31	779,748.85	
10,799.0	10.50	194.10	10,795.3	7,160.9		9.8	-36.7	-7.7	19.28	446,207.34	779,747.68	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 15H
Project:	Jackson Unit Section 15	TVD Reference:	RKB @ 3634.4usft
Site:	Jackson Unit 15H	MD Reference:	RKB @ 3634.4usft
Well:	Jackson Unit 15H	North Reference:	Grid
Wellbore:	Jackson Unit 15H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 15H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
10,830.0	13.60	196.50	10,825.6	7,191.2	3.6	-38.4	-1.4	10.13	446,201.11	779,745.95	
10,862.0	16.80	194.70	10,856.5	7,222.1	-4.5	-40.6	6.8	10.11	446,193.03	779,743.71	
10,894.0	20.30	191.70	10,886.8	7,252.4	-14.4	-42.9	16.9	11.33	446,183.11	779,741.41	
10,921.0	23.09	193.65	10,911.9	7,277.5	-24.2	-45.1	26.7	10.65	446,173.38	779,739.21	
2nd Bone Spring Sand											
10,925.0	23.50	193.90	10,915.6	7,281.2	-25.7	-45.5	28.3	10.65	446,171.85	779,738.83	
10,957.0	26.90	196.30	10,944.5	7,310.1	-38.8	-49.1	41.6	11.09	446,158.70	779,735.27	
10,989.0	30.80	198.70	10,972.5	7,338.1	-53.6	-53.7	56.6	12.71	446,143.99	779,730.61	
11,020.0	35.10	199.20	10,998.5	7,364.1	-69.5	-59.2	72.8	13.90	446,128.04	779,725.13	
11,052.0	37.50	200.70	11,024.3	7,389.9	-87.3	-65.7	90.9	8.00	446,110.24	779,718.66	
11,083.0	41.80	200.90	11,048.2	7,413.8	-105.8	-72.7	109.8	13.88	446,091.76	779,711.64	
11,115.0	47.70	202.60	11,070.9	7,436.5	-126.7	-81.1	131.1	18.81	446,070.85	779,703.28	
11,146.0	51.70	203.20	11,091.0	7,456.6	-148.5	-90.3	153.4	12.99	446,049.08	779,694.08	
11,178.0	55.10	204.00	11,110.0	7,475.6	-172.0	-100.6	177.5	10.81	446,025.54	779,683.79	
11,209.0	59.40	203.20	11,126.8	7,492.4	-195.9	-111.0	201.9	14.04	446,001.65	779,673.36	
11,240.0	65.90	202.00	11,141.0	7,506.6	-221.3	-121.6	227.9	21.25	445,976.25	779,662.79	
11,272.0	72.30	200.50	11,152.4	7,518.0	-249.2	-132.4	256.3	20.47	445,948.40	779,651.97	
11,303.0	78.00	200.10	11,160.4	7,526.0	-277.3	-142.8	285.0	18.43	445,920.30	779,641.58	
11,335.0	84.30	199.70	11,165.3	7,530.9	-307.0	-153.5	315.3	19.73	445,890.59	779,630.82	
11,369.0	92.30	200.70	11,166.3	7,531.9	-338.8	-165.2	347.8	23.71	445,858.72	779,619.10	
11,461.0	92.70	199.70	11,162.3	7,527.9	-425.1	-197.0	435.7	1.17	445,772.47	779,587.36	
11,556.0	89.60	201.40	11,160.4	7,526.0	-514.0	-230.3	526.4	3.72	445,683.55	779,554.03	
11,650.0	88.30	199.30	11,162.1	7,527.7	-602.1	-263.0	616.2	2.63	445,595.44	779,521.35	
11,713.0	87.40	195.40	11,164.5	7,530.1	-662.2	-281.8	677.3	6.35	445,535.36	779,502.58	
11,745.0	87.30	195.60	11,166.0	7,531.6	-693.0	-290.3	708.5	0.70	445,504.56	779,494.04	
11,776.0	88.00	192.50	11,167.2	7,532.8	-723.1	-297.8	739.0	10.24	445,474.51	779,486.52	
11,808.0	89.00	190.50	11,168.1	7,533.7	-754.4	-304.2	770.6	6.99	445,443.17	779,480.14	

Company: Murchison Oil and Gas		Local Co-ordinate Reference: Well Jackson Unit 15H	
Project: Jackson Unit Section 15		TVD Reference: RKB @ 3634.4usft	
Site: Jackson Unit 15H		MD Reference: RKB @ 3634.4usft	
Well: Jackson Unit 15H		North Reference: Grid	
Wellbore: Jackson Unit 15H		Survey Calculation Method: Minimum Curvature	
Design: Jackson Unit 15H		Database: EDM 5000.1 Single User Db	

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
11,839.0	88.60	189.10	11,168.7	7,534.3	-784.9	-309.5	801.4	4.70	445,412.63	779,474.87	
11,871.0	88.80	189.10	11,169.4	7,535.0	-816.5	-314.5	833.2	0.62	445,381.04	779,469.81	
11,903.0	88.80	188.60	11,170.1	7,535.7	-848.1	-319.5	865.1	1.56	445,349.43	779,464.88	
11,936.0	89.90	186.00	11,170.5	7,536.1	-880.9	-323.7	898.0	8.55	445,316.71	779,460.69	
11,968.0	90.20	184.60	11,170.5	7,536.1	-912.7	-326.6	930.0	4.47	445,284.84	779,457.74	
11,999.0	90.30	183.30	11,170.3	7,535.9	-943.7	-328.7	961.0	4.21	445,253.92	779,455.60	
12,030.0	90.20	182.60	11,170.2	7,535.8	-974.6	-330.3	992.0	2.28	445,222.96	779,454.00	
12,062.0	90.60	181.10	11,170.0	7,535.6	-1,006.6	-331.4	1,024.0	4.85	445,190.98	779,452.97	
12,093.0	90.90	180.00	11,169.6	7,535.2	-1,037.6	-331.7	1,054.9	3.68	445,159.99	779,452.67	
12,124.0	91.40	180.40	11,168.9	7,534.5	-1,068.6	-331.8	1,085.9	2.07	445,128.99	779,452.57	
12,155.0	91.70	179.40	11,168.1	7,533.7	-1,099.6	-331.7	1,116.8	3.37	445,098.01	779,452.62	
12,187.0	90.20	178.60	11,167.6	7,533.2	-1,131.6	-331.2	1,148.7	5.31	445,066.02	779,453.18	
12,219.0	89.70	178.00	11,167.6	7,533.2	-1,163.5	-330.2	1,180.6	2.44	445,034.03	779,454.13	
12,251.0	89.60	178.30	11,167.8	7,533.4	-1,195.5	-329.2	1,212.4	0.99	445,002.05	779,455.16	
12,282.0	89.80	178.50	11,168.0	7,533.6	-1,226.5	-328.3	1,243.3	0.91	444,971.06	779,456.03	
12,314.0	89.80	178.40	11,168.1	7,533.7	-1,258.5	-327.5	1,275.2	0.31	444,939.08	779,456.89	
12,345.0	89.80	178.60	11,168.2	7,533.8	-1,289.5	-326.6	1,306.1	0.65	444,908.09	779,457.70	
12,377.0	89.80	176.90	11,168.3	7,533.9	-1,321.5	-325.4	1,338.0	5.31	444,876.12	779,458.96	
12,410.0	89.80	177.00	11,168.4	7,534.0	-1,354.4	-323.6	1,370.8	0.30	444,843.16	779,460.72	
12,441.0	89.30	177.50	11,168.7	7,534.3	-1,385.4	-322.1	1,401.6	2.28	444,812.20	779,462.20	
12,473.0	89.40	176.80	11,169.0	7,534.6	-1,417.3	-320.6	1,433.4	2.21	444,780.24	779,463.79	
12,505.0	89.80	176.90	11,169.2	7,534.8	-1,449.3	-318.8	1,465.2	1.29	444,748.29	779,465.55	
12,536.0	89.80	177.30	11,169.3	7,534.9	-1,480.3	-317.2	1,496.0	1.29	444,717.33	779,467.12	
12,568.0	89.70	176.60	11,169.5	7,535.1	-1,512.2	-315.5	1,527.8	2.21	444,685.38	779,468.82	
12,599.0	89.50	176.90	11,169.7	7,535.3	-1,543.2	-313.8	1,558.6	1.16	444,654.43	779,470.58	
12,630.0	89.40	176.40	11,170.0	7,535.6	-1,574.1	-312.0	1,589.4	1.64	444,623.49	779,472.39	
12,662.0	89.30	176.30	11,170.4	7,536.0	-1,606.0	-309.9	1,621.2	0.44	444,591.56	779,474.43	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 15H
Project:	Jackson Unit Section 15	TVD Reference:	RKB @ 3634.4usft
Site:	Jackson Unit 15H	MD Reference:	RKB @ 3634.4usft
Well:	Jackson Unit 15H	North Reference:	Grid
Wellbore:	Jackson Unit 15H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 15H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
12,694.0	89.30	176.00	11,170.8	7,536.4	-1,638.0	-307.8	1,652.9	0.94	444,559.63	779,476.58	
12,789.0	89.60	176.70	11,171.7	7,537.3	-1,732.8	-301.7	1,747.2	0.80	444,464.83	779,482.62	
12,884.0	89.70	176.10	11,172.2	7,537.8	-1,827.6	-295.8	1,841.5	0.64	444,370.02	779,488.59	
12,979.0	89.80	177.90	11,172.7	7,538.3	-1,922.4	-290.8	1,936.0	1.90	444,275.16	779,493.56	
13,074.0	90.00	179.20	11,172.8	7,538.4	-2,017.4	-288.4	2,030.6	1.38	444,180.20	779,495.96	
13,169.0	90.60	178.90	11,172.3	7,537.9	-2,112.4	-286.8	2,125.4	0.71	444,085.21	779,497.54	
13,264.0	90.20	179.30	11,171.7	7,537.3	-2,207.4	-285.3	2,220.1	0.60	443,990.23	779,499.03	
13,359.0	90.00	180.40	11,171.5	7,537.1	-2,302.4	-285.1	2,314.9	1.18	443,895.23	779,499.28	
13,454.0	90.10	179.30	11,171.4	7,537.0	-2,397.4	-284.8	2,409.8	1.16	443,800.24	779,499.53	
13,549.0	89.10	180.20	11,172.1	7,537.7	-2,492.4	-284.4	2,504.6	1.42	443,705.25	779,499.94	
13,643.0	89.40	180.90	11,173.3	7,538.9	-2,586.4	-285.3	2,598.5	0.81	443,611.26	779,499.04	
13,738.0	88.30	180.40	11,175.2	7,540.8	-2,681.3	-286.4	2,693.3	1.27	443,516.29	779,497.96	
13,832.0	88.60	180.20	11,177.8	7,543.4	-2,775.3	-286.9	2,787.2	0.38	443,422.33	779,497.47	
13,927.0	89.20	180.70	11,179.6	7,545.2	-2,870.3	-287.6	2,882.0	0.82	443,327.35	779,496.73	
14,021.0	90.20	179.70	11,180.1	7,545.7	-2,964.3	-288.0	2,975.9	1.50	443,233.36	779,496.40	
14,115.0	89.80	179.50	11,180.1	7,545.7	-3,058.3	-287.3	3,069.7	0.48	443,139.37	779,497.05	
14,210.0	90.70	178.90	11,179.7	7,545.3	-3,153.2	-286.0	3,164.5	1.14	443,044.38	779,498.38	
14,304.0	91.20	178.00	11,178.1	7,543.7	-3,247.2	-283.4	3,258.1	1.10	442,950.43	779,500.92	
14,400.0	88.90	177.60	11,178.0	7,543.6	-3,343.1	-279.7	3,353.7	2.43	442,854.51	779,504.61	
14,494.0	89.20	177.10	11,179.6	7,545.2	-3,437.0	-275.4	3,447.2	0.62	442,760.63	779,508.95	
14,589.0	89.10	176.70	11,181.0	7,546.6	-3,531.9	-270.3	3,541.5	0.43	442,665.78	779,514.09	
14,684.0	89.60	176.50	11,182.1	7,547.7	-3,626.7	-264.6	3,635.9	0.57	442,570.95	779,519.72	
14,778.0	90.30	177.30	11,182.1	7,547.7	-3,720.5	-259.5	3,729.3	1.13	442,477.10	779,524.81	
14,873.0	90.20	178.60	11,181.7	7,547.3	-3,815.5	-256.1	3,823.9	1.37	442,382.16	779,528.20	
14,968.0	90.20	178.60	11,181.4	7,547.0	-3,910.5	-253.8	3,918.6	0.00	442,287.19	779,530.53	
15,062.0	89.70	180.30	11,181.5	7,547.1	-4,004.4	-252.9	4,012.4	1.89	442,193.20	779,531.43	
15,157.0	89.00	181.90	11,182.6	7,548.2	-4,099.4	-254.7	4,107.3	1.84	442,098.23	779,529.60	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 15H
Project:	Jackson Unit Section 15	TVD Reference:	RKB @ 3634.4usft
Site:	Jackson Unit 15H	MD Reference:	RKB @ 3634.4usft
Well:	Jackson Unit 15H	North Reference:	Grid
Wellbore:	Jackson Unit 15H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 15H	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
15,251.0	88.40	181.60	11,184.7	7,550.3	-4,193.4	-257.6	4,201.2	0.71	442,004.31	779,526.73
15,346.0	89.20	181.70	11,186.7	7,552.3	-4,288.3	-260.3	4,296.2	0.85	441,909.37	779,524.00
15,441.0	89.20	181.20	11,188.0	7,553.6	-4,383.3	-262.8	4,391.1	0.53	441,814.41	779,521.60
15,535.0	91.70	182.90	11,187.3	7,552.9	-4,477.2	-266.1	4,485.1	3.22	441,720.49	779,518.23
15,629.0	90.50	183.80	11,185.5	7,551.1	-4,571.0	-271.6	4,579.0	1.60	441,626.67	779,512.74
15,723.0	90.20	183.00	11,184.9	7,550.5	-4,664.8	-277.2	4,673.0	0.91	441,532.84	779,507.17
15,805.0	90.60	182.80	11,184.3	7,549.9	-4,746.7	-281.3	4,755.0	0.55	441,450.95	779,503.02
15,850.0	90.60	182.80	11,183.8	7,549.4	-4,791.7	-283.5	4,800.0	0.00	441,406.01	779,500.82
5 1/2"										
15,853.0	90.60	182.80	11,183.8	7,549.4	-4,794.7	-283.7	4,803.0	0.00	441,403.01	779,500.68

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,304.0	1,303.9	13 3/8"	13-3/8	16	
10,648.0	10,644.7	7"	7	8-1/2	
5,265.0	5,263.1	9 5/8"	9-5/8	12-1/4	
15,850.0	11,183.8	5 1/2"	5-1/2	6-1/8	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Jackson Unit 15H
Project:	Jackson Unit Section 15	TVD Reference:	RKB @ 3634.4usft
Site:	Jackson Unit 15H	MD Reference:	RKB @ 3634.4usft
Well:	Jackson Unit 15H	North Reference:	Grid
Wellbore:	Jackson Unit 15H	Survey Calculation Method:	Minimum Curvature
Design:	Jackson Unit 15H	Database:	EDM 5000.1 Single User Db

Formations				
Measured Depth (usft)	Vertical Depth (usft)	Name		Dip (°)
1,288.0	1,287.9	Rustler		0.00
7,588.0	7,585.2	Brushy Canyon		0.00
10,921.0	10,911.9	2nd Bone Spring Sand		0.00
5,240.0	5,238.2	Delaware		0.00
10,182.0	10,178.8	1st Bone SpringmSand		0.00
9,222.0	9,219.0	Avalon Shale		0.00
6,236.0	6,233.7	Cherry Canyon		0.00
9,108.0	9,105.1	Bone Spring		0.00

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,118.0	11,072.9	-128.8	-81.9	Cross North Hard Boundary @11118 ft MD
15,812.0	11,184.2	-4,753.7	-281.7	Cross South Hard Boundary @15812ft MD

Checked By: _____	Approved By: _____	Date: _____
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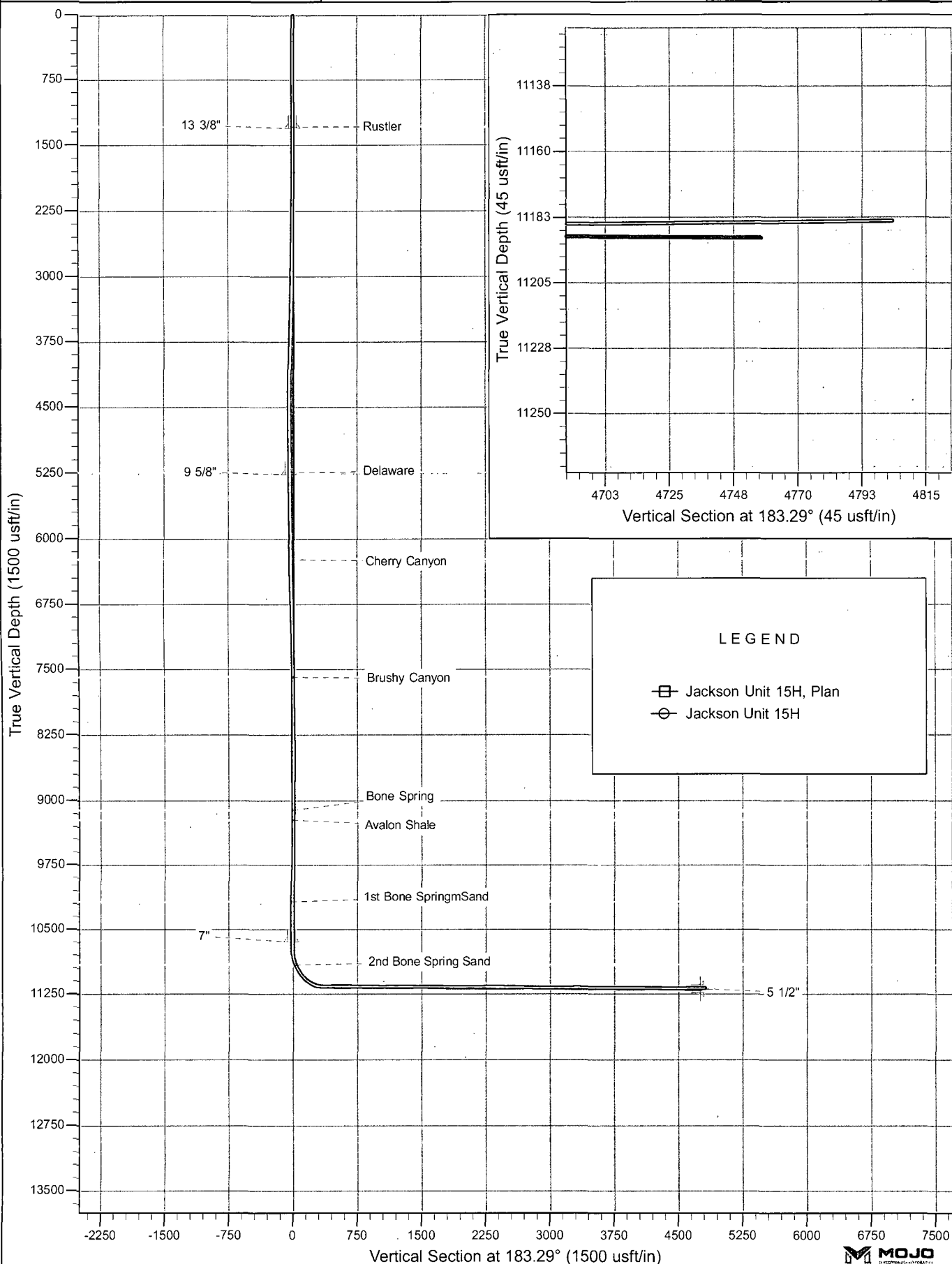
Project: Jackson Unit Section 15
 Site: Jackson Unit 15H
 Well: Jackson Unit 15H
 Wellbore: Jackson Unit 15H
 Design: Jackson Unit 15H

 **MURCHISON OIL & GAS, INC.**



Azimuths to Grid North
 True North: -0.41°
 Magnetic North: 6.94°

Magnetic Field
 Strength: 48425.9nT
 Dip Angle: 60.14°
 Date: 10/05/2013
 Model: IGRF2010



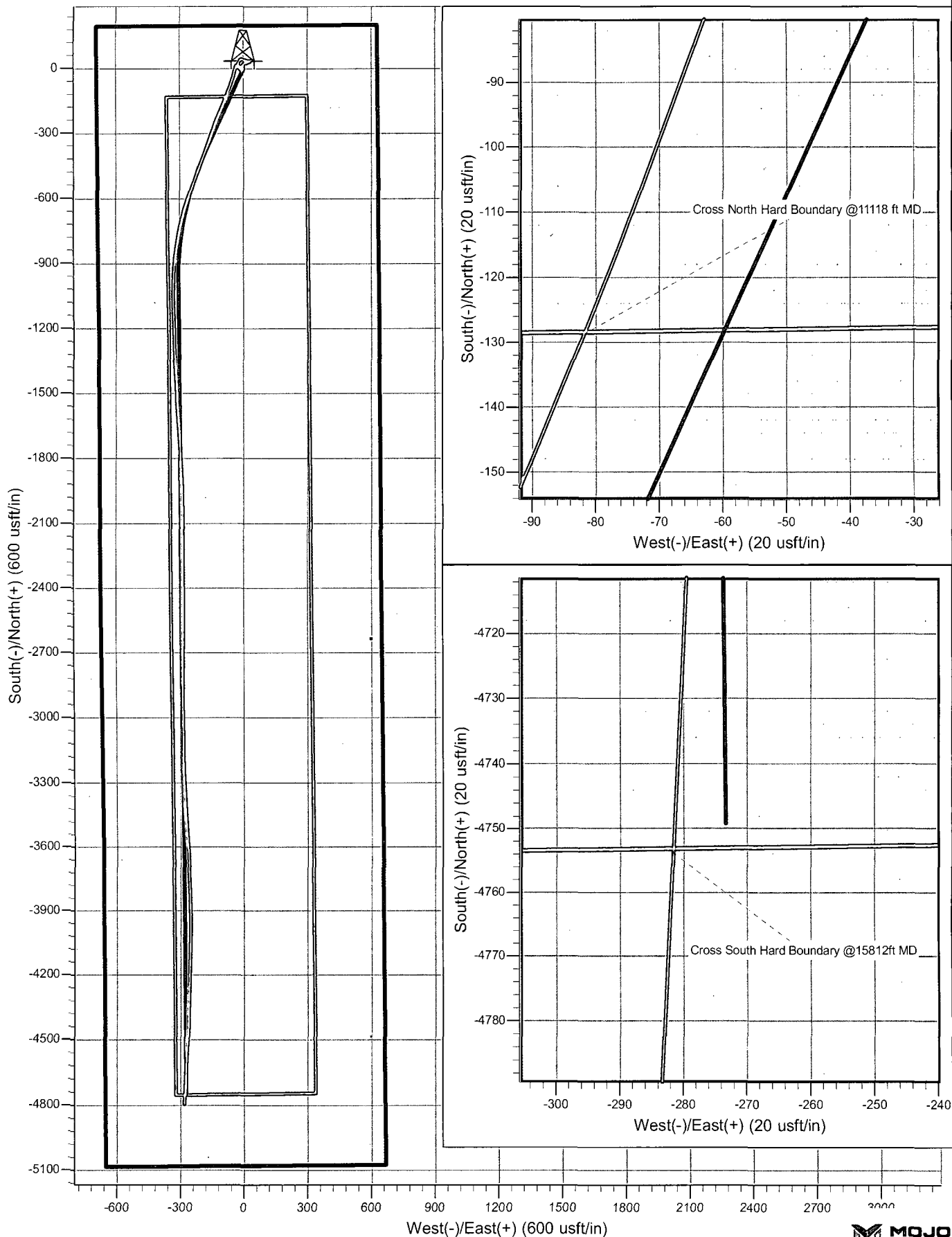
Project: Jackson Unit Section 15
 Site: Jackson Unit 15H
 Well: Jackson Unit 15H
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 Date: 10/05/2013
 Model: IGRF2010





Job Number: SVMO-140024
 Company: Murchison Oil & Gas
 Lease/Well: Jackson 15H
 Location: Lea County, NM
 Rig Name: Nabors #M51
 RKB: 22.5'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.94°
 Grid: East To Grid North
 File name: S:\2014SU-1\MURCHI-1\MOJACKSON\15H.SVY
 Date/Time: 08-Jan-14 / 16:30
 Curve Name: 9400' - 10626' M.D. (SRG)

HOBBS OCD

MAR 17 2014

RECEIVED

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 183.29
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 9400' MD to 10626' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore.
 Shawn Freeman 1-8-14
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
9356.00	.70	347.50	9353.03	-.33	-8.36	.81	8.37	267.74	.00
Tied SRG Surveys Into Mojo Directional Surveys - Information Provided By Operator									
9400.00	.78	345.13	9397.03	.22	-8.50	.27	8.50	271.50	.19
9500.00	.83	341.78	9497.02	1.57	-8.90	-1.05	9.03	279.99	.07
9600.00	.77	323.66	9597.01	2.80	-9.52	-2.25	9.92	286.37	.26
9700.00	1.47	324.84	9696.99	4.39	-10.66	-3.77	11.53	292.37	.70
9800.00	1.86	320.78	9796.94	6.69	-12.42	-5.97	14.11	298.31	.41
9900.00	1.77	318.17	9896.89	9.10	-14.48	-8.25	17.10	302.15	.12
10000.00	1.41	304.86	9996.86	10.95	-16.52	-9.99	19.82	303.55	.51

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
10100.00	1.64	297.28	10096.82	12.31	-18.80	-11.21	22.47	303.23	.31
10200.00	1.02	298.03	10196.79	13.39	-20.86	-12.17	24.78	302.70	.62
10300.00	1.30	278.09	10296.77	13.97	-22.77	-12.64	26.71	301.53	.49
10400.00	1.07	285.15	10396.75	14.37	-24.79	-12.92	28.65	300.10	.27
10500.00	.86	252.06	10496.74	14.38	-26.41	-12.84	30.07	298.58	.59
10600.00	1.38	260.37	10596.72	13.95	-28.31	-12.30	31.56	296.23	.54
Last Survey Depth Recorded									
10626.00	1.86	268.29	10622.71	13.88	-29.04	-12.20	32.19	295.56	2.03