



Job Number: SVMO-130257
 Company: Murchison Oil & Gas
 Lease/Well: Brininstool 4 State 3
 Location: Lea County, NM
 Rig Name: Nabors #M51
 RKB: 22'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 6.99°
 Grid: East To Grid North
 File name: F:\SURVEY\2013SU~1\MURCHI~1\MO\BRININ~1\4ST3.SVY
 Date/Time: 29-Apr-13 / 14:32
 Curve Name: Surface - 5015' M.D. (SRG)

HOBBS OCD

MAY 23 2013

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

RECEIVED

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.	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.66	168.83	100.00	-.57	.11	-.57	.58	168.83	.66
200.00	.67	159.84	199.99	-1.68	.42	-1.68	1.73	165.81	.10
300.00	.71	158.92	299.98	-2.81	.85	-2.81	2.93	163.17	.04
400.00	.45	158.81	399.98	-3.75	1.21	-3.75	3.94	162.06	.26
500.00	.19	189.55	499.98	-4.28	1.33	-4.28	4.48	162.76	.30
600.00	.27	215.24	599.98	-4.64	1.16	-4.64	4.78	165.90	.13
700.00	.19	195.14	699.98	-4.99	.99	-4.99	5.08	168.82	.11
800.00	.10	309.99	799.98	-5.09	.88	-5.09	5.17	170.25	.25
900.00	.31	305.56	899.97	-4.88	.59	-4.88	4.91	173.12	.21

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	
1000.00	.48	285.03	999.97	-4.61	-.04	-4.61	4.61	180.45	.22
1100.00	.49	270.96	1099.97	-4.50	-.87	-4.50	4.58	190.93	.12
1200.00	.43	258.01	1199.97	-4.57	-1.66	-4.57	4.86	200.00	.12
1300.00	.24	257.06	1299.96	-4.69	-2.23	-4.69	5.20	205.46	.19
1400.00	.51	336.76	1399.96	-4.33	-2.61	-4.33	5.06	211.11	.52
1500.00	1.11	327.39	1499.95	-3.11	-3.31	-3.11	4.54	226.84	.61
1600.00	.87	322.21	1599.94	-1.69	-4.30	-1.69	4.62	248.54	.26
1700.00	.43	313.45	1699.93	-.83	-5.04	-.83	5.10	260.62	.45
1800.00	.43	304.61	1799.93	-.36	-5.62	-.36	5.63	266.33	.07
1900.00	.63	300.60	1899.92	.13	-6.40	.13	6.40	271.18	.20
2000.00	.73	292.87	1999.92	.66	-7.46	.66	7.49	275.05	.14
2100.00	.62	277.83	2099.91	.98	-8.58	.98	8.64	276.52	.21
2200.00	.41	302.86	2199.90	1.25	-9.42	1.25	9.50	277.55	.30
2300.00	.47	315.72	2299.90	1.74	-10.01	1.74	10.16	279.85	.12
2400.00	.54	302.78	2399.90	2.29	-10.69	2.29	10.93	282.07	.13
2500.00	.37	286.52	2499.89	2.63	-11.39	2.63	11.69	283.01	.21
2600.00	.21	353.16	2599.89	2.91	-11.73	2.91	12.08	283.92	.35
2700.00	.51	.71	2699.89	3.53	-11.74	3.53	12.26	286.75	.30
2800.00	.62	337.04	2799.89	4.48	-11.95	4.48	12.76	290.54	.26
2900.00	.39	347.42	2899.88	5.31	-12.23	5.31	13.33	293.45	.25
3000.00	.51	25.27	2999.88	6.04	-12.12	6.04	13.54	296.50	.31
3100.00	.81	13.11	3099.87	7.13	-11.77	7.13	13.76	301.22	.33
3200.00	.98	3.41	3199.86	8.67	-11.56	8.67	14.45	306.89	.23
3300.00	.75	12.09	3299.85	10.17	-11.37	10.17	15.25	311.81	.26
3400.00	1.09	23.11	3399.84	11.68	-10.86	11.68	15.95	317.10	.38
3500.00	1.30	18.09	3499.82	13.64	-10.13	13.64	16.99	323.39	.23
3600.00	1.27	6.28	3599.79	15.82	-9.66	15.82	18.53	328.59	.27
3700.00	.96	11.62	3699.77	17.74	-9.37	17.74	20.06	332.16	.33
3800.00	.89	8.51	3799.76	19.33	-9.08	19.33	21.35	334.82	.09

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	
3900.00	.31	102.67	3899.75	20.04	-8.71	20.04	21.84	336.51	.96
4000.00	.76	156.67	3999.75	19.37	-8.18	19.37	21.02	337.10	.63
4100.00	.89	146.14	4099.74	18.11	-7.48	18.11	19.60	337.55	.20
4200.00	.92	138.31	4199.73	16.87	-6.52	16.87	18.08	338.88	.13
4300.00	.96	95.49	4299.71	16.19	-5.15	16.19	16.99	342.36	.69
4400.00	2.11	94.14	4399.68	15.98	-2.48	15.98	16.17	351.18	1.15
4500.00	2.96	103.89	4499.58	15.22	1.86	15.22	15.34	6.98	.95
4600.00	2.65	105.17	4599.46	14.00	6.60	14.00	15.48	25.25	.32
4700.00	3.18	102.54	4699.33	12.79	11.54	12.79	17.23	42.06	.55
4800.00	3.49	103.27	4799.16	11.49	17.21	11.49	20.69	56.27	.31
4900.00	3.05	101.96	4899.00	10.24	22.77	10.24	24.97	65.79	.45
5000.00	1.75	103.11	4998.91	9.34	26.86	9.34	28.44	70.82	1.30
Last Survey Depth Recorded									
5015.00	1.72	102.64	5013.90	9.24	27.31	9.24	28.83	71.30	.22



3335 Pollok Drive
Conroe, Texas 77303

936.442.2500 (office)
936.442.2599 (fax)
www.msenergyservices.com

Surveyor Certification Form

Survey Company: MS ENERGY SERVICES
Surveyors Name: DANIEL WEST
Survey Job Type: SRG
Customer: MURCHISON OIL & GAS
Well: BRININSTOOL 4 STATE 3
API: 30-025-41030
Surveyed from: SURFACE TO A DEPTH OF 5015' MD
Survey Run Date: 4-26-13 to 4-27-13
Surface Location: LEA COUNTY, NM

I certify that the data is true, correct, and complete and within the limitations of the tool set forth by MS Energy Services; that I am authorized and qualified to make this report; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by MS Energy Services.

Daniel West

Digitally signed by Daniel West
DN: cn=Daniel West, o=MS Energy Services,
ou=MS Survey, email=dwest@msenergyservices.
com, c=US
Date: 2013.01.02 15:39:40 -06'00'

 MURCHISON OIL & GAS, INC.

HOBBS OCD

MAY 23 2013

RECEIVED

Murchison Oil and Gas

Jackson Unit Section 4

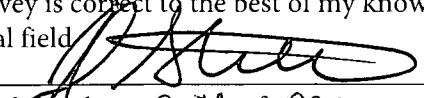
Brininstool 4 State #3

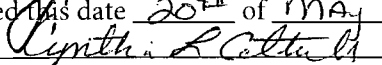
FINAL Survey: Brininstool 4 State #3

MOJO Standard Survey

16 May, 2013

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

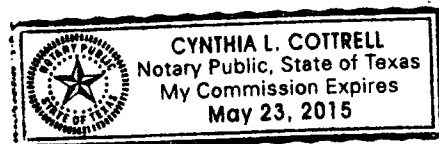
data.  (Signature)

Notarized this date 20th of MAY,
2013.  Notary

Signature County of Collin State of Texas



MOJO
DIRECTIONAL CORPORATION



Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Site Brininstool 4 State #3
Project:	Jackson Unit Section 4	TVD Reference:	RKB @ 3658.3usft
Site:	Brininstool 4 State #3	MD Reference:	RKB @ 3658.3usft
Well:	Brininstool 4 State #3	North Reference:	Grid
Wellbore:	Brininstool 4 State #3	Survey Calculation Method:	Minimum Curvature
Design:	Brininstool 4 State #3	Database:	EDM 5000.1 Single User Db

Project	Jackson Unit Section 4		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Brininstool 4 State #3				
Site Position:		Northing:	451,842.84 usft	Latitude:	32° 14' 23.920 N
From:	Lat/Long	Easting:	772,612.34 usft	Longitude:	103° 35' 7.120 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	Brininstool 4 State #3					
Well Position	+N/-S	0.0 usft	Northing:	451,842.84 usft	Latitude:	32° 14' 23.920 N
	+E/-W	0.0 usft	Easting:	772,612.34 usft	Longitude:	103° 35' 7.120 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,636.3 usft

Wellbore	Brininstool 4 State #3				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	29/01/2013	7.39	60.16	48,460

Design	Brininstool 4 State #3				
Audit Notes:					
Version:	1.0	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	2.00	

Survey Program	Date 16/05/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	15,670.0	Brininstool 4 State #3	MWD	MWD - Standard

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Site Brininstool 4 State #3
Project:	Jackson Unit Section 4	TVD Reference:	RKB @ 3658.3usft
Site:	Brininstool 4 State #3	MD Reference:	RKB @ 3658.3usft
Well:	Brininstool 4 State #3	North Reference:	Grid
Wellbore:	Brininstool 4 State #3	Survey Calculation Method:	Minimum Curvature
Design:	Brininstool 4 State #3	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)	
0.0	0.00	0.00	0.0	-3,658.3	0.0	0.0	0.0	0.00	451,842.84	772,612.34	
100.0	0.66	168.83	100.0	-3,558.3	-0.6	0.1	-0.6	0.66	451,842.28	772,612.45	
200.0	0.67	159.84	200.0	-3,458.3	-1.7	0.4	-1.7	0.10	451,841.16	772,612.76	
300.0	0.71	158.92	300.0	-3,358.3	-2.8	0.8	-2.8	0.04	451,840.04	772,613.19	
400.0	0.45	158.81	400.0	-3,258.3	-3.8	1.2	-3.7	0.26	451,839.09	772,613.55	
500.0	0.19	189.55	500.0	-3,158.3	-4.3	1.3	-4.2	0.30	451,838.56	772,613.66	
600.0	0.27	215.24	600.0	-3,058.3	-4.6	1.2	-4.6	0.13	451,838.21	772,613.50	
700.0	0.19	195.14	700.0	-2,958.3	-5.0	1.0	-5.0	0.11	451,837.85	772,613.32	
800.0	0.10	309.99	800.0	-2,858.3	-5.1	0.9	-5.1	0.25	451,837.75	772,613.21	
900.0	0.31	305.56	900.0	-2,758.3	-4.9	0.6	-4.9	0.21	451,837.96	772,612.93	
1,000.0	0.48	285.03	1,000.0	-2,658.3	-4.6	0.0	-4.6	0.22	451,838.23	772,612.30	
1,100.0	0.49	270.96	1,100.0	-2,558.3	-4.5	-0.9	-4.5	0.12	451,838.34	772,611.47	
1,200.0	0.43	258.01	1,200.0	-2,458.3	-4.6	-1.7	-4.6	0.12	451,838.27	772,610.67	
1,300.0	0.24	257.06	1,300.0	-2,358.3	-4.7	-2.2	-4.8	0.19	451,838.15	772,610.10	
1,337.0	0.26	302.17	1,337.0	-2,321.3	-4.7	-2.4	-4.7	0.52	451,838.18	772,609.96	
13 3/8"											
1,400.0	0.51	336.76	1,400.0	-2,258.3	-4.3	-2.6	-4.4	0.52	451,838.51	772,609.72	
1,500.0	1.11	327.39	1,500.0	-2,158.3	-3.1	-3.3	-3.2	0.61	451,839.74	772,609.03	
1,600.0	0.87	322.21	1,599.9	-2,058.4	-1.7	-4.3	-1.8	0.26	451,841.15	772,608.04	
1,700.0	0.43	313.45	1,699.9	-1,958.4	-0.8	-5.0	-1.0	0.45	451,842.01	772,607.30	
1,800.0	0.43	304.61	1,799.9	-1,858.4	-0.4	-5.6	-0.6	0.07	451,842.48	772,606.72	
1,900.0	0.63	300.60	1,899.9	-1,758.4	0.1	-6.4	-0.1	0.20	451,842.97	772,605.94	
2,000.0	0.73	292.87	1,999.9	-1,658.4	0.7	-7.5	0.4	0.14	451,843.50	772,604.88	
2,100.0	0.62	277.83	2,099.9	-1,558.4	1.0	-8.6	0.7	0.21	451,843.82	772,603.75	
2,200.0	0.41	302.86	2,199.9	-1,458.4	1.2	-9.4	0.9	0.30	451,844.09	772,602.92	
2,300.0	0.47	315.72	2,299.9	-1,358.4	1.7	-10.0	1.4	0.12	451,844.58	772,602.33	
2,400.0	0.54	302.78	2,399.9	-1,258.4	2.3	-10.7	1.9	0.13	451,845.13	772,601.65	

Company: Murchison Oil and Gas		Local Co-ordinate Reference: Site Brininstool 4 State #3	
Project: Jackson Unit Section 4		TVD Reference: RKB @ 3658.3usft	
Site: Brininstool 4 State #3		MD Reference: RKB @ 3658.3usft	
Well: Brininstool 4 State #3		North Reference: Grid	
Wellbore: Brininstool 4 State #3		Survey Calculation Method: Minimum Curvature	
Design: Brininstool 4 State #3		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)	
2,500.0	0.37	286.52	2,499.9	-1,158.4	2.6	-11.4	2.2	0.21	451,845.47	772,600.94	
2,600.0	0.21	353.16	2,599.9	-1,058.4	2.9	-11.7	2.5	0.35	451,845.75	772,600.61	
2,700.0	0.51	0.71	2,699.9	-958.4	3.5	-11.7	3.1	0.30	451,846.37	772,600.59	
2,800.0	0.62	337.04	2,799.9	-858.4	4.5	-11.9	4.1	0.26	451,847.32	772,600.39	
2,900.0	0.39	347.52	2,899.9	-758.4	5.3	-12.2	4.9	0.25	451,848.15	772,600.10	
3,000.0	0.51	25.27	2,999.9	-658.4	6.0	-12.1	5.6	0.31	451,848.88	772,600.22	
3,100.0	0.81	13.11	3,099.9	-558.4	7.1	-11.8	6.7	0.33	451,849.97	772,600.57	
3,200.0	0.98	3.41	3,199.9	-458.4	8.7	-11.6	8.3	0.23	451,851.52	772,600.78	
3,300.0	0.75	12.09	3,299.8	-358.5	10.2	-11.4	9.8	0.26	451,853.01	772,600.97	
3,400.0	1.09	23.11	3,399.8	-258.5	11.7	-10.9	11.3	0.38	451,854.52	772,601.48	
3,500.0	1.30	18.09	3,499.8	-158.5	13.6	-10.1	13.3	0.23	451,856.48	772,602.21	
3,600.0	1.27	6.28	3,599.8	-58.5	15.8	-9.7	15.5	0.27	451,858.66	772,602.68	
3,700.0	0.96	11.62	3,699.8	41.5	17.7	-9.4	17.4	0.33	451,860.58	772,602.97	
3,800.0	0.89	8.51	3,799.8	141.5	19.3	-9.1	19.0	0.09	451,862.17	772,603.25	
3,900.0	0.31	102.67	3,899.8	241.5	20.0	-8.7	19.7	0.96	451,862.88	772,603.63	
4,000.0	0.76	156.67	3,999.7	341.4	19.4	-8.2	19.1	0.63	451,862.21	772,604.16	
4,100.0	0.89	146.14	4,099.7	441.4	18.1	-7.5	17.8	0.20	451,860.95	772,604.85	
4,200.0	0.92	138.31	4,199.7	541.4	16.9	-6.5	16.6	0.13	451,859.71	772,605.82	
4,300.0	0.96	95.49	4,299.7	641.4	16.2	-5.1	16.0	0.69	451,859.03	772,607.19	
4,400.0	2.11	94.14	4,399.7	741.4	16.0	-2.5	15.9	1.15	451,858.82	772,609.86	
4,500.0	2.96	103.89	4,499.6	841.3	15.2	1.9	15.3	0.95	451,858.06	772,614.20	
4,600.0	2.65	105.17	4,599.5	941.2	14.0	6.6	14.2	0.32	451,856.84	772,618.94	
4,700.0	3.18	102.54	4,699.3	1,041.0	12.8	11.5	13.2	0.55	451,855.63	772,623.88	
4,800.0	3.49	103.27	4,799.2	1,140.9	11.5	17.2	12.1	0.31	451,854.33	772,629.55	
4,900.0	3.05	101.96	4,899.0	1,240.7	10.2	22.8	11.0	0.45	451,853.08	772,635.11	
5,000.0	1.75	103.11	4,998.9	1,340.6	9.3	26.9	10.3	1.30	451,852.18	772,639.20	
5,015.0	1.72	102.64	5,013.9	1,355.6	9.2	27.3	10.2	0.22	451,852.08	772,639.65	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Site Brininstool 4 State #3
Project:	Jackson Unit Section 4	TVD Reference:	RKB @ 3658.3usft
Site:	Brininstool 4 State #3	MD Reference:	RKB @ 3658.3usft
Well:	Brininstool 4 State #3	North Reference:	Grid
Wellbore:	Brininstool 4 State #3	Survey Calculation Method:	Minimum Curvature
Design:	Brininstool 4 State #3	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)	
5,173.0	1.19	97.64	5,171.8	1,513.5	8.5	31.2	9.6	0.35	451,851.35	772,643.58	
9 5/8"											
5,291.0	0.80	89.60	5,289.8	1,631.5	8.3	33.3	9.5	0.35	451,851.19	772,645.61	
5,483.0	1.00	82.50	5,481.8	1,823.5	8.6	36.3	9.8	0.12	451,851.42	772,648.62	
5,675.0	1.30	87.80	5,673.8	2,015.5	8.9	40.1	10.3	0.17	451,851.72	772,652.45	
5,867.0	1.10	84.00	5,865.7	2,207.4	9.2	44.1	10.7	0.11	451,852.00	772,656.46	
6,060.0	1.10	99.30	6,058.7	2,400.4	9.0	47.8	10.7	0.15	451,851.89	772,660.13	
6,253.0	0.90	94.90	6,251.7	2,593.4	8.6	51.1	10.4	0.11	451,851.46	772,663.47	
6,443.0	0.90	91.80	6,441.6	2,783.3	8.4	54.1	10.3	0.03	451,851.29	772,666.45	
6,635.0	1.00	89.80	6,633.6	2,975.3	8.4	57.3	10.4	0.05	451,851.25	772,669.63	
6,827.0	0.40	324.40	6,825.6	3,167.3	9.0	58.6	11.0	0.66	451,851.80	772,670.92	
7,019.0	0.50	304.80	7,017.6	3,359.3	10.0	57.5	12.0	0.09	451,852.82	772,669.84	
7,212.0	0.40	279.50	7,210.6	3,552.3	10.6	56.1	12.5	0.11	451,853.41	772,668.48	
7,404.0	0.50	241.70	7,402.6	3,744.3	10.3	54.7	12.2	0.16	451,853.12	772,667.08	
7,500.0	0.60	237.30	7,498.6	3,840.3	9.8	54.0	11.7	0.11	451,852.65	772,666.29	
7,596.0	0.60	233.70	7,594.6	3,936.3	9.2	53.1	11.1	0.04	451,852.09	772,665.46	
7,789.0	0.30	305.30	7,787.6	4,129.3	8.9	51.9	10.7	0.30	451,851.78	772,664.24	
7,981.0	0.30	219.70	7,979.6	4,321.3	8.8	51.2	10.6	0.21	451,851.68	772,663.51	
8,173.0	0.70	195.80	8,171.6	4,513.3	7.3	50.5	9.1	0.23	451,850.17	772,662.87	
8,365.0	0.50	197.60	8,363.6	4,705.3	5.4	50.0	7.1	0.10	451,848.24	772,662.29	
8,556.0	1.00	174.90	8,554.5	4,896.2	2.9	49.9	4.7	0.30	451,845.79	772,662.19	
8,940.0	1.10	186.20	8,938.5	5,280.2	-4.1	49.8	-2.3	0.06	451,838.78	772,662.09	
9,004.0	1.20	169.40	9,002.5	5,344.2	-5.3	49.8	-3.6	0.55	451,837.51	772,662.15	
9,036.0	1.60	158.60	9,034.4	5,376.1	-6.1	50.0	-4.3	1.49	451,836.77	772,662.37	
9,068.0	2.30	154.10	9,066.4	5,408.1	-7.1	50.5	-5.3	2.24	451,835.78	772,662.81	
9,100.0	3.40	146.90	9,098.4	5,440.1	-8.4	51.3	-6.6	3.61	451,834.40	772,663.61	
9,132.0	4.00	140.10	9,130.3	5,472.0	-10.1	52.5	-8.3	2.32	451,832.75	772,664.85	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Site Brininstool 4 State #3
Project:	Jackson Unit Section 4	TVD Reference:	RKB @ 3658.3usft
Site:	Brininstool 4 State #3	MD Reference:	RKB @ 3658.3usft
Well:	Brininstool 4 State #3	North Reference:	Grid
Wellbore:	Brininstool 4 State #3	Survey Calculation Method:	Minimum Curvature
Design:	Brininstool 4 State #3	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)	
9,163.0	3.90	140.80	9,161.2	5,502.9	-11.7	53.9	-9.8	0.36	451,831.11	772,666.21	
9,196.0	4.10	147.60	9,194.2	5,535.9	-13.6	55.2	-11.7	1.56	451,829.24	772,667.55	
9,228.0	4.60	142.70	9,226.1	5,567.8	-15.6	56.6	-13.6	1.95	451,827.25	772,668.94	
9,260.0	5.10	136.40	9,258.0	5,599.7	-17.6	58.4	-15.6	2.28	451,825.20	772,670.70	
9,292.0	5.40	141.80	9,289.8	5,631.5	-19.9	60.3	-17.7	1.81	451,822.99	772,672.61	
9,324.0	5.80	142.70	9,321.7	5,663.4	-22.3	62.2	-20.1	1.28	451,820.52	772,674.52	
9,356.0	6.20	133.50	9,353.5	5,695.2	-24.8	64.4	-22.5	3.25	451,818.04	772,676.75	
9,388.0	6.40	120.60	9,385.3	5,727.0	-26.9	67.2	-24.5	4.46	451,815.95	772,679.54	
9,420.0	6.60	112.50	9,417.1	5,758.8	-28.5	70.4	-26.0	2.93	451,814.34	772,682.78	
9,452.0	6.60	111.10	9,448.9	5,790.6	-29.9	73.9	-27.3	0.50	451,812.97	772,686.19	
9,485.0	6.90	111.50	9,481.7	5,823.4	-31.3	77.5	-28.6	0.92	451,811.56	772,689.81	
9,517.0	6.50	111.90	9,513.4	5,855.1	-32.7	80.9	-29.8	1.26	451,810.18	772,693.27	
9,550.0	6.00	114.60	9,546.2	5,887.9	-34.1	84.2	-31.1	1.76	451,808.77	772,696.58	
9,582.0	5.90	116.80	9,578.1	5,919.8	-35.5	87.2	-32.4	0.78	451,807.33	772,699.56	
9,614.0	6.20	113.90	9,609.9	5,951.6	-37.0	90.3	-33.8	1.34	451,805.89	772,702.61	
9,646.0	6.30	115.40	9,641.7	5,983.4	-38.4	93.4	-35.1	0.60	451,804.43	772,705.78	
9,678.0	6.20	111.10	9,673.5	6,015.2	-39.8	96.6	-36.4	1.50	451,803.06	772,708.98	
9,710.0	6.80	103.40	9,705.3	6,047.0	-40.8	100.1	-37.3	3.30	451,802.00	772,712.43	
9,742.0	6.80	101.10	9,737.1	6,078.8	-41.6	103.8	-38.0	0.85	451,801.19	772,716.13	
9,774.0	6.20	100.20	9,768.9	6,110.6	-42.3	107.4	-38.5	1.90	451,800.52	772,719.69	
9,806.0	5.60	100.90	9,800.7	6,142.4	-42.9	110.6	-39.0	1.89	451,799.92	772,722.93	
9,839.0	5.70	104.90	9,833.6	6,175.3	-43.6	113.8	-39.6	1.23	451,799.19	772,726.09	
9,865.0	6.10	106.90	9,859.4	6,201.1	-44.4	116.3	-40.3	1.73	451,798.46	772,728.66	
9,897.0	6.30	110.00	9,891.2	6,232.9	-45.5	119.6	-41.3	1.22	451,797.37	772,731.94	
9,929.0	6.30	110.70	9,923.0	6,264.7	-46.7	122.9	-42.4	0.24	451,796.15	772,735.23	
9,962.0	7.30	109.70	9,955.8	6,297.5	-48.0	126.6	-43.6	3.05	451,794.80	772,738.90	
9,994.0	8.40	108.00	9,987.5	6,329.2	-49.5	130.7	-44.9	3.51	451,793.39	772,743.03	

Company: Murchison Oil and Gas		Local Co-ordinate Reference: Site Brininstool 4 State #3	
Project: Jackson Unit Section 4		TVD Reference: RKB @ 3658.3usft	
Site: Brininstool 4 State #3		MD Reference: RKB @ 3658.3usft	
Well: Brininstool 4 State #3		North Reference: Grid	
Wellbore: Brininstool 4 State #3		Survey Calculation Method: Minimum Curvature	
Design: Brininstool 4 State #3		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)	
10,026.0	9.00	102.10	10,019.1	6,360.8	-50.7	135.4	-45.9	3.36	451,792.14	772,747.71	
10,057.0	8.90	101.10	10,049.8	6,391.5	-51.7	140.1	-46.7	0.60	451,791.17	772,752.43	
10,089.0	8.60	100.90	10,081.4	6,423.1	-52.6	144.9	-47.5	0.94	451,790.24	772,757.21	
10,121.0	9.10	100.50	10,113.0	6,454.7	-53.5	149.7	-48.3	1.57	451,789.33	772,762.05	
10,153.0	9.80	94.50	10,144.6	6,486.3	-54.2	154.9	-48.7	3.77	451,788.66	772,767.25	
10,186.0	9.60	90.20	10,177.1	6,518.8	-54.4	160.5	-48.8	2.28	451,788.43	772,772.80	
10,217.0	9.60	83.50	10,207.7	6,549.4	-54.1	165.6	-48.3	3.60	451,788.71	772,777.95	
10,249.0	10.50	73.20	10,239.2	6,580.9	-53.0	171.1	-47.0	6.27	451,789.86	772,783.40	
10,282.0	12.00	65.90	10,271.5	6,613.2	-50.7	177.1	-44.5	6.26	451,792.13	772,789.41	
10,313.0	12.90	61.00	10,301.8	6,643.5	-47.7	183.0	-41.3	4.47	451,795.12	772,795.38	
10,346.0	13.10	52.80	10,334.0	6,675.7	-43.7	189.2	-37.0	5.62	451,799.17	772,801.58	
10,378.0	13.50	42.60	10,365.1	6,706.8	-38.7	194.7	-31.9	7.43	451,804.11	772,806.99	
10,410.0	14.10	32.60	10,396.2	6,737.9	-32.7	199.3	-25.7	7.68	451,810.14	772,811.62	
10,442.0	14.80	25.70	10,427.2	6,768.9	-25.7	203.2	-18.6	5.80	451,817.11	772,815.50	
10,474.0	15.60	17.60	10,458.1	6,799.8	-17.9	206.2	-10.7	7.09	451,824.90	772,818.57	
10,506.0	15.80	10.10	10,488.9	6,830.6	-9.6	208.3	-2.3	6.37	451,833.29	772,820.64	
10,538.0	16.50	4.30	10,519.6	6,861.3	-0.7	209.4	6.6	5.49	451,842.11	772,821.74	
10,570.0	17.50	3.00	10,550.2	6,891.9	8.6	210.0	15.9	3.34	451,851.44	772,822.33	
10,603.0	18.40	0.50	10,581.6	6,923.3	18.8	210.3	26.1	3.59	451,861.61	772,822.64	
10,635.0	19.90	359.60	10,611.8	6,953.5	29.3	210.3	36.6	4.78	451,872.10	772,822.64	
10,667.0	21.60	357.90	10,641.8	6,983.5	40.6	210.1	47.9	5.64	451,883.44	772,822.39	
10,699.0	22.50	357.10	10,671.4	7,013.1	52.6	209.5	59.9	2.96	451,895.44	772,821.86	
10,731.0	23.80	357.60	10,700.8	7,042.5	65.2	208.9	72.4	4.11	451,908.00	772,821.28	
10,762.0	26.00	357.10	10,729.0	7,070.7	78.2	208.3	85.4	7.13	451,921.04	772,820.68	
10,795.0	27.80	355.80	10,758.4	7,100.1	93.1	207.4	100.3	5.74	451,935.94	772,819.75	
10,826.0	27.70	356.80	10,785.8	7,127.5	107.5	206.5	114.6	1.54	451,950.35	772,818.82	
10,859.0	27.50	358.50	10,815.1	7,156.8	122.8	205.9	129.9	2.46	451,965.62	772,818.19	

Company:		Murchison Oil and Gas				Local Co-ordinate Reference:			Site Brininstool 4 State #3	
Project:		Jackson Unit Section 4				TVD Reference:			RKB @ 3658.3usft	
Site:		Brininstool 4 State #3				MD Reference:			RKB @ 3658.3usft	
Well:		Brininstool 4 State #3				North Reference:			Grid	
Wellbore:		Brininstool 4 State #3				Survey Calculation Method:			Minimum Curvature	
Design:		Brininstool 4 State #3				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)
10,890.0	27.60	358.50	10,842.6	7,184.3	137.1	205.5	144.2	0.32	451,979.95	772,817.81
10,923.0	27.80	356.80	10,871.8	7,213.5	152.4	204.8	159.5	2.47	451,995.28	772,817.18
10,964.0	27.30	357.00	10,908.1	7,249.8	171.4	203.8	178.4	1.24	452,014.21	772,816.16
10,994.0	27.49	356.87	10,934.8	7,276.5	185.2	203.1	192.1	0.67	452,028.00	772,815.42
7"										
11,011.0	27.60	356.80	10,949.8	7,291.5	193.0	202.7	200.0	0.67	452,035.85	772,814.99
11,041.0	31.70	357.00	10,975.9	7,317.6	207.8	201.8	214.7	13.67	452,050.66	772,814.19
11,075.0	33.70	356.50	11,004.5	7,346.2	226.2	200.8	233.0	5.94	452,069.00	772,813.14
11,139.0	37.70	357.30	11,056.5	7,398.2	263.4	198.8	270.2	6.29	452,106.29	772,811.14
11,203.0	45.20	357.10	11,104.4	7,446.1	305.7	196.7	312.4	11.72	452,148.57	772,809.06
11,236.0	49.80	356.60	11,126.7	7,468.4	330.0	195.4	336.6	13.98	452,172.86	772,807.72
11,300.0	58.10	356.20	11,164.3	7,506.0	381.6	192.1	388.1	12.98	452,224.45	772,804.47
11,331.0	62.50	356.40	11,179.7	7,521.4	408.5	190.4	414.9	14.20	452,251.32	772,802.73
11,363.0	67.00	358.20	11,193.3	7,535.0	437.4	189.0	443.7	14.95	452,280.22	772,801.38
11,395.0	71.30	0.10	11,204.7	7,546.4	467.3	188.6	473.6	14.54	452,310.11	772,800.94
11,427.0	75.50	1.00	11,213.9	7,555.6	497.9	188.9	504.2	13.40	452,340.77	772,801.24
11,460.0	80.60	2.00	11,220.7	7,562.4	530.2	189.7	536.5	15.74	452,373.03	772,802.08
11,492.0	84.70	0.10	11,224.8	7,566.5	561.9	190.3	568.2	14.10	452,404.76	772,802.66
11,524.0	86.20	359.90	11,227.3	7,569.0	593.8	190.3	600.1	4.73	452,436.65	772,802.66
11,588.0	92.40	359.50	11,228.1	7,569.8	657.8	190.0	664.0	9.71	452,500.62	772,802.33
11,619.0	92.70	359.50	11,226.7	7,568.4	688.7	189.7	694.9	0.97	452,531.59	772,802.06
11,651.0	92.00	1.30	11,225.4	7,567.1	720.7	189.9	726.9	6.03	452,563.56	772,802.28
11,717.0	91.10	1.40	11,223.6	7,565.3	786.7	191.5	792.9	1.37	452,629.51	772,803.84
11,813.0	92.00	0.80	11,221.0	7,562.7	882.6	193.3	888.8	1.13	452,725.46	772,805.68
11,910.0	90.20	0.90	11,219.2	7,560.9	979.6	194.8	985.8	1.86	452,822.43	772,807.12
12,006.0	90.20	0.80	11,218.8	7,560.5	1,075.6	196.2	1,081.8	0.10	452,918.42	772,808.54
12,102.0	90.20	0.60	11,218.5	7,560.2	1,171.6	197.4	1,177.7	0.21	453,014.41	772,809.71

Company: Murchison Oil and Gas		Local Co-ordinate Reference:		Site Brininstool 4 State #3	
Project: Jackson Unit Section 4		TVD Reference:		RKB @ 3658.3usft	
Site: Brininstool 4 State #3		MD Reference:		RKB @ 3658.3usft	
Well: Brininstool 4 State #3		North Reference:		Grid	
Wellbore: Brininstool 4 State #3		Survey Calculation Method:		Minimum Curvature	
Design: Brininstool 4 State #3		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)	
12,199.0	90.60	0.80	11,217.8	7,559.5	1,268.6	198.6	1,274.7	0.46	453,111.40	772,810.90	
12,263.0	89.80	1.30	11,217.6	7,559.3	1,332.5	199.7	1,338.7	1.47	453,175.39	772,812.07	
12,327.0	89.40	0.50	11,218.0	7,559.7	1,396.5	200.7	1,402.7	1.40	453,239.38	772,813.08	
12,391.0	88.80	359.90	11,219.1	7,560.8	1,460.5	201.0	1,466.6	1.33	453,303.37	772,813.30	
12,455.0	89.40	359.80	11,220.1	7,561.8	1,524.5	200.8	1,530.6	0.95	453,367.36	772,813.13	
12,519.0	89.70	358.60	11,220.6	7,562.3	1,588.5	199.9	1,594.5	1.93	453,431.35	772,812.24	
12,583.0	90.60	358.30	11,220.4	7,562.1	1,652.5	198.2	1,658.4	1.48	453,495.33	772,810.51	
12,647.0	91.70	358.70	11,219.1	7,560.8	1,716.4	196.5	1,722.3	1.83	453,559.29	772,808.83	
12,711.0	92.10	358.40	11,217.0	7,558.7	1,780.4	194.9	1,786.1	0.78	453,623.23	772,807.21	
12,774.0	91.90	358.40	11,214.8	7,556.5	1,843.3	193.1	1,848.9	0.32	453,686.17	772,805.46	
12,807.0	92.70	359.20	11,213.5	7,555.2	1,876.3	192.4	1,881.9	3.43	453,719.14	772,804.77	
12,839.0	92.80	358.30	11,211.9	7,553.6	1,908.2	191.7	1,913.8	2.83	453,751.09	772,804.07	
12,872.0	92.30	359.30	11,210.5	7,552.2	1,941.2	191.0	1,946.7	3.39	453,784.05	772,803.38	
12,904.0	91.20	0.30	11,209.5	7,551.2	1,973.2	190.9	1,978.7	4.64	453,816.03	772,803.27	
12,936.0	90.00	0.80	11,209.1	7,550.8	2,005.2	191.2	2,010.6	4.06	453,848.03	772,803.57	
12,968.0	90.30	0.80	11,209.1	7,550.8	2,037.2	191.7	2,042.6	0.94	453,880.03	772,804.02	
13,000.0	90.80	0.70	11,208.8	7,550.5	2,069.2	192.1	2,074.6	1.59	453,912.02	772,804.44	
13,064.0	89.80	0.90	11,208.4	7,550.1	2,133.2	193.0	2,138.6	1.59	453,976.02	772,805.33	
13,096.0	90.30	1.00	11,208.4	7,550.1	2,165.2	193.5	2,170.6	1.59	454,008.01	772,805.86	
13,159.0	89.70	0.80	11,208.4	7,550.1	2,228.2	194.5	2,233.6	1.00	454,071.00	772,806.85	
13,191.0	89.70	0.30	11,208.6	7,550.3	2,260.2	194.8	2,265.6	1.56	454,103.00	772,807.16	
13,223.0	89.40	0.00	11,208.8	7,550.5	2,292.2	194.9	2,297.6	1.33	454,135.00	772,807.24	
13,255.0	89.70	359.60	11,209.1	7,550.8	2,324.2	194.8	2,329.5	1.56	454,167.00	772,807.13	
13,287.0	90.20	359.40	11,209.1	7,550.8	2,356.2	194.5	2,361.5	1.68	454,199.00	772,806.85	
13,351.0	89.70	0.10	11,209.1	7,550.8	2,420.2	194.2	2,425.5	1.34	454,263.00	772,806.57	
13,383.0	89.70	359.70	11,209.3	7,551.0	2,452.2	194.2	2,457.4	1.25	454,295.00	772,806.52	
13,415.0	89.70	359.90	11,209.5	7,551.2	2,484.2	194.1	2,489.4	0.62	454,326.99	772,806.41	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Site Brininstool 4 State #3
Project:	Jackson Unit Section 4	TVD Reference:	RKB @ 3658.3usft
Site:	Brininstool 4 State #3	MD Reference:	RKB @ 3658.3usft
Well:	Brininstool 4 State #3	North Reference:	Grid
Wellbore:	Brininstool 4 State #3	Survey Calculation Method:	Minimum Curvature
Design:	Brininstool 4 State #3	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)	
13,448.0	90.30	0.20	11,209.5	7,551.2	2,517.2	194.1	2,522.4	2.03	454,359.99	772,806.43	
13,543.0	90.00	0.10	11,209.2	7,550.9	2,612.2	194.3	2,617.3	0.33	454,454.99	772,806.68	
13,575.0	90.30	0.30	11,209.1	7,550.8	2,644.2	194.5	2,649.3	1.13	454,486.99	772,806.79	
13,639.0	89.40	359.70	11,209.3	7,551.0	2,708.2	194.5	2,713.3	1.69	454,550.99	772,806.79	
13,703.0	89.40	0.00	11,210.0	7,551.7	2,772.1	194.3	2,777.2	0.47	454,614.99	772,806.63	
13,735.0	90.00	359.60	11,210.2	7,551.9	2,804.1	194.2	2,809.2	2.25	454,646.99	772,806.52	
13,767.0	90.40	359.30	11,210.0	7,551.7	2,836.1	193.9	2,841.2	1.56	454,678.99	772,806.21	
13,831.0	90.00	0.10	11,209.8	7,551.5	2,900.1	193.5	2,905.1	1.40	454,742.98	772,805.87	
13,863.0	89.90	0.10	11,209.8	7,551.5	2,932.1	193.6	2,937.1	0.31	454,774.98	772,805.93	
13,927.0	90.00	359.70	11,209.9	7,551.6	2,996.1	193.5	3,001.1	0.64	454,838.98	772,805.82	
14,023.0	90.20	359.40	11,209.7	7,551.4	3,092.1	192.7	3,097.0	0.38	454,934.98	772,805.06	
14,119.0	91.10	358.80	11,208.6	7,550.3	3,188.1	191.2	3,192.9	1.13	455,030.96	772,803.56	
14,183.0	90.40	358.60	11,207.8	7,549.5	3,252.1	189.8	3,256.7	1.14	455,094.94	772,802.10	
14,215.0	90.30	358.20	11,207.6	7,549.3	3,284.1	188.9	3,288.7	1.29	455,126.92	772,801.21	
14,311.0	89.70	358.40	11,207.6	7,549.3	3,380.0	186.0	3,384.5	0.66	455,222.88	772,798.36	
14,406.0	90.40	358.30	11,207.5	7,549.2	3,475.0	183.3	3,479.3	0.74	455,317.84	772,795.63	
14,502.0	88.50	358.80	11,208.5	7,550.2	3,571.0	180.9	3,575.1	2.05	455,413.80	772,793.20	
14,598.0	88.80	359.70	11,210.7	7,552.4	3,666.9	179.6	3,671.0	0.99	455,509.77	772,791.94	
14,694.0	89.10	0.20	11,212.5	7,554.2	3,762.9	179.5	3,766.9	0.61	455,605.75	772,791.86	
14,790.0	88.40	359.30	11,214.6	7,556.3	3,858.9	179.1	3,862.8	1.19	455,701.72	772,791.44	
14,854.0	89.20	359.40	11,215.9	7,557.6	3,922.9	178.4	3,926.7	1.26	455,765.71	772,790.71	
14,886.0	88.90	359.10	11,216.4	7,558.1	3,954.9	178.0	3,958.7	1.33	455,797.70	772,790.29	
14,980.0	89.30	359.00	11,217.9	7,559.6	4,048.8	176.4	4,052.5	0.44	455,891.67	772,788.74	
15,044.0	89.60	359.30	11,218.5	7,560.2	4,112.8	175.5	4,116.4	0.66	455,955.66	772,787.79	
15,075.0	89.50	358.70	11,218.8	7,560.5	4,143.8	174.9	4,147.4	1.96	455,986.66	772,787.25	
15,172.0	90.60	358.50	11,218.7	7,560.4	4,240.8	172.5	4,244.2	1.15	456,083.63	772,784.88	
15,267.0	91.70	358.70	11,216.8	7,558.5	4,335.7	170.2	4,339.0	1.18	456,178.58	772,782.56	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Site Brininstool 4 State #3
Project:	Jackson Unit Section 4	TVD Reference:	RKB @ 3658.3usft
Site:	Brininstool 4 State #3	MD Reference:	RKB @ 3658.3usft
Well:	Brininstool 4 State #3	North Reference:	Grid
Wellbore:	Brininstool 4 State #3	Survey Calculation Method:	Minimum Curvature
Design:	Brininstool 4 State #3	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)
15,363.0	91.20	359.30		11,214.4	7,556.1	4,431.7	168.5	4,434.9	0.81	456,274.53	772,780.88
15,395.0	91.00	359.10		11,213.7	7,555.4	4,463.7	168.1	4,466.8	0.88	456,306.52	772,780.43
15,460.0	89.80	359.40		11,213.3	7,555.0	4,528.7	167.2	4,531.8	1.90	456,371.51	772,779.58
15,556.0	90.40	359.50		11,213.1	7,554.8	4,624.7	166.3	4,627.7	0.63	456,467.51	772,778.66
15,624.0	91.80	359.40		11,211.8	7,553.5	4,692.7	165.7	4,695.6	2.06	456,535.49	772,778.01
15,670.0	91.80	359.40		11,210.4	7,552.1	4,738.6	165.2	4,741.5	0.00	456,581.47	772,777.53

Casing Points			
Measured Depth (usft)	Vertical Depth (usft)	Name	
1,337.0	1,337.0	13 3/8"	
5,173.0	5,171.8	9 5/8"	
10,994.0	10,934.8	7"	

Checked By: _____	Approved By: _____	Date: _____
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