

District I

1625 N French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax (575) 393-0720

District II

811 S First St., Artesia, NM 88210
Phone (575) 748-1283 Fax (575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170

District IV

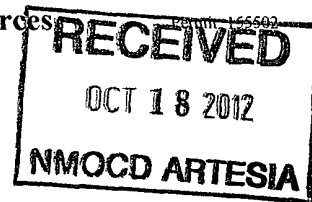
1220 S St Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3470 Fax (505) 476-3462

State of New Mexico**Energy, Minerals and Natural Resources****Oil Conservation Division**

1220 S. St Francis Dr.

Santa Fe, NM 87505

Form C-101
August 1, 2011

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

1 Operator Name and Address MURCHISON OIL & GAS INC 1100 Mira Vista Blvd Plano, TX 75093		2 OGRID Number 15363
		3 API Number 30-015-40798
4 Property Code 8132	5 Property Name OGDEN STATE	6 Well No 010H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
B	2	25S	26E	2	1175	N	2290	E	EDDY

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
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9. Pool Information

BLACK RIVER, DELAWARE, SOUTH	96451
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Additional Well Information

11 Work Type New Well	12 Well Type OIL	13 Cable/Rotary	14 Lease Type State	15 Ground Level Elevation 3368
16 Multiple N	17 Proposed Depth 2060	18 Formation Delaware	19 Contractor	20 Spud Date 10/20/2012
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Type	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	12 25	9 625	36	350	300	0
Prod	8 75	7	26	2000	380	0

Casing/Cement Program: Additional Comments

Cement 100% excess and circulate to surface on all sections

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
DoubleRam	3000	3000	Shaffer
Annular	3000	3000	Shaffer

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief

I further certify I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐ if applicable.

Signature *Jack Rankin*

Printed Name Jack Rankin

Title V P Operations

Email Address jrankin@jdmii.com

Date 10/17/2012

Phone 972-931-0700

OIL CONSERVATION DIVISION

Approved By *T.C. Shepard*

Title *06060615*

Approved Date *10/17/2012*

Expiration Date *10/19/2014*

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30015-40798		² Pool Code 96451	³ Pool Name BLACK RIVER; DELAWARE, SOUTH
⁴ Property Code 8132	⁵ Property Name OGDEN STATE		⁶ Well Number 10HML
⁷ OGRID No. 15363	⁸ Operator Name MURCHISON OIL & GAS, INC.		⁹ Elevation 3368.2

¹⁰ Surface Location

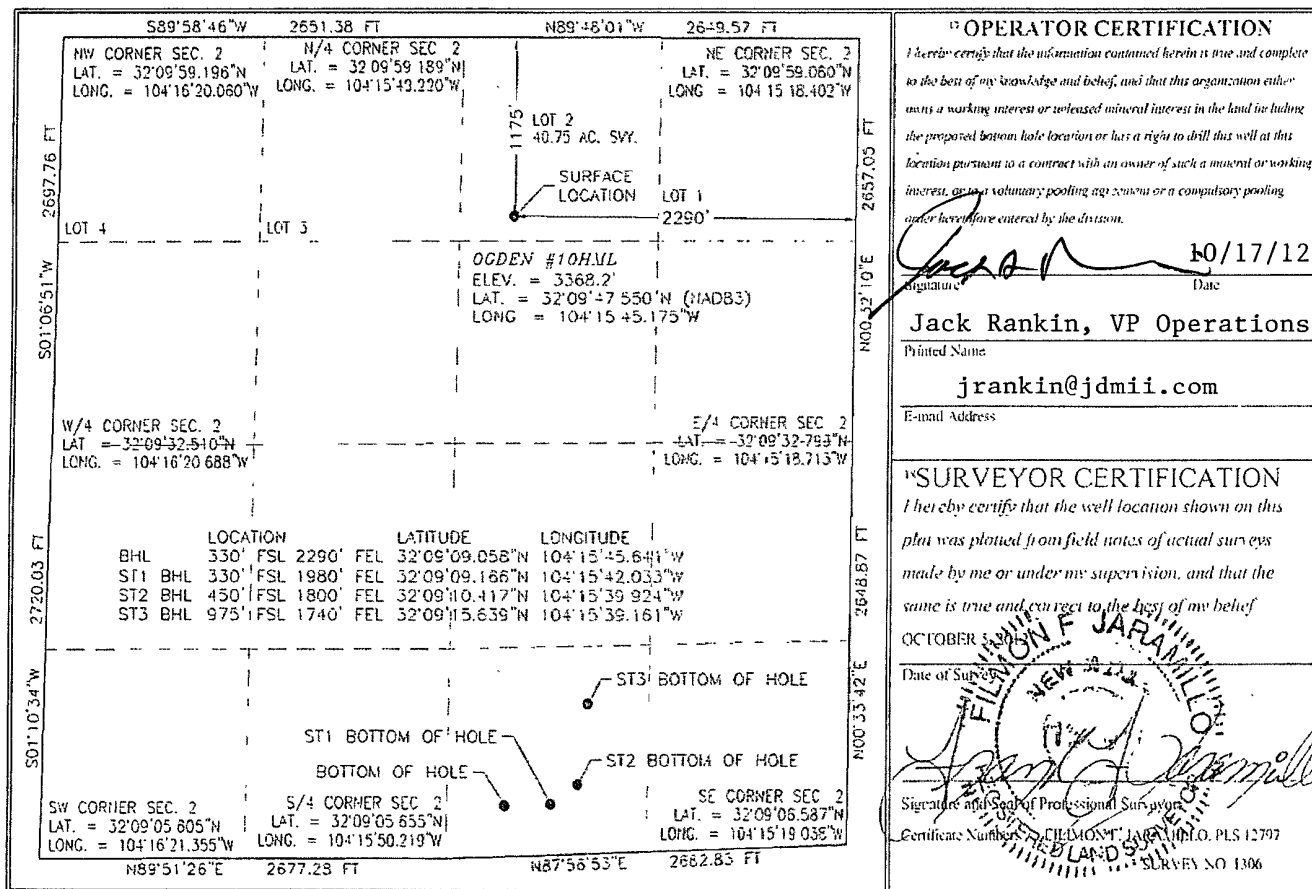
U.I. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	2	25 S	26 E		1175	NORTH	2290	EAST	EDDY

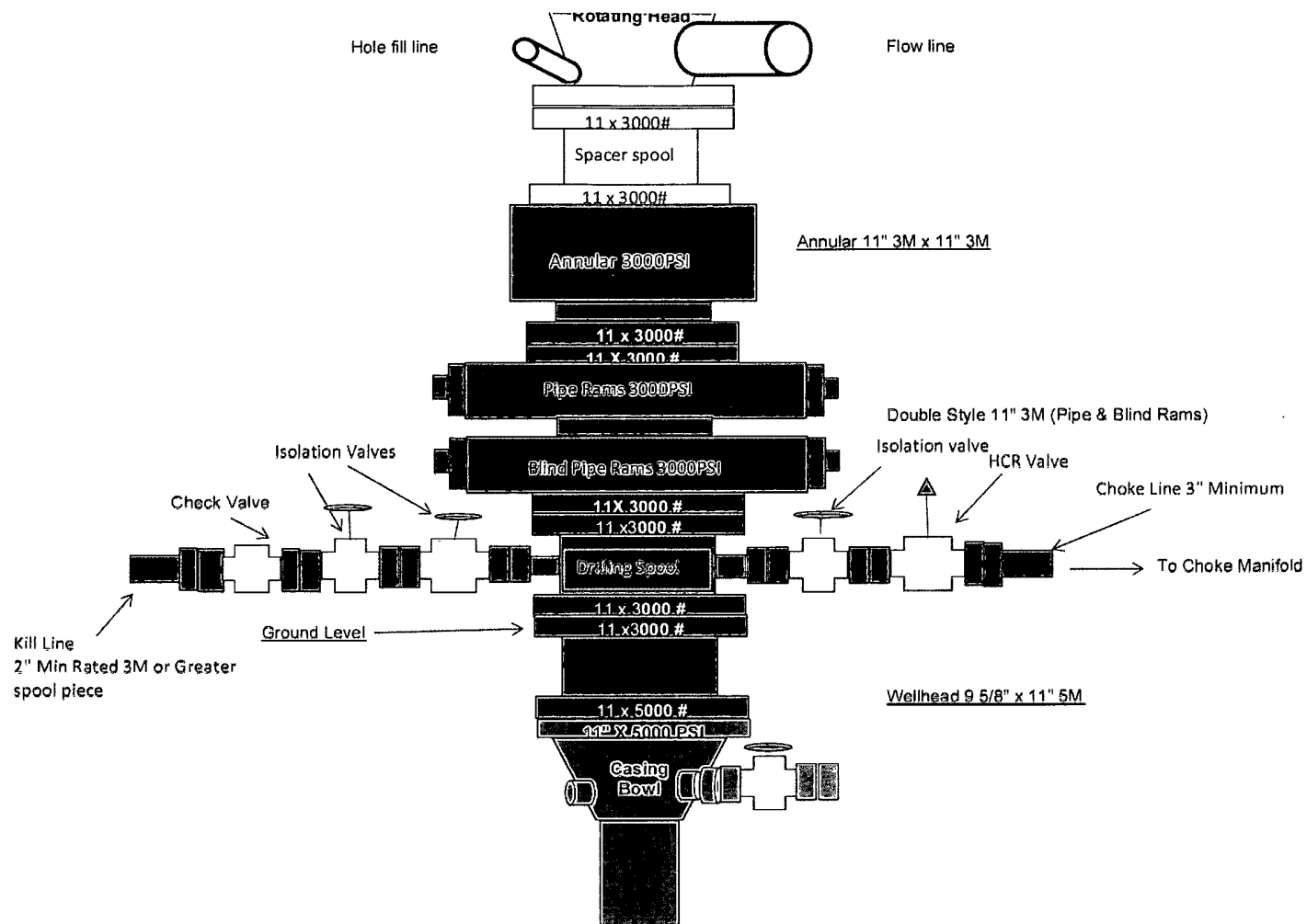
¹¹ Bottom Hole Location If Different From Surface

U.I. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	2	25 S	26 E		330	SOUTH	2290	EAST	EDDY

¹² Dedicated Acres 160.12	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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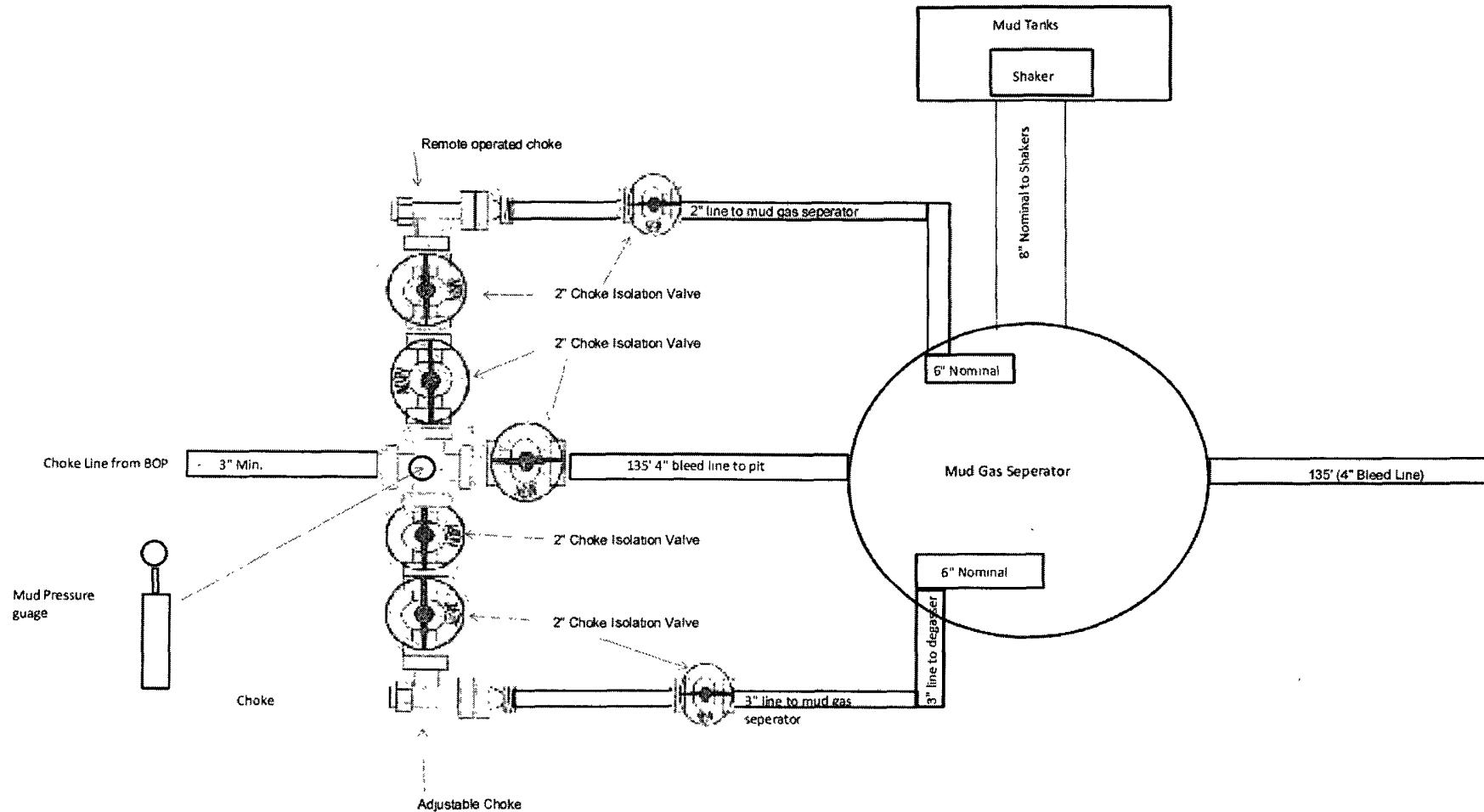
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.





Ogden State #10H
BOP Schematic

Ogden State #10H Choke Manifold



Murchison Oil and Gas

Ogden North

Ogden #10

Ogden #10HML

Ogden #10HML

Plan: 121004 Ogden #10HML

MOJO Standard Well Plan

17 October, 2012



MOJO
DIRECTIONAL CORPORATION

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML	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 #10				
Site Position:	Northing:	423,109.00 usft	Latitude:	32° 9' 47.466 N	
From: Map	Easting:	563,250.00 usft	Longitude:	104° 15' 45.070 W	
Position Uncertainty:	1.0 usft	Slot Radius:	15 "	Grid Convergence:	0.04 °

Well	Ogden #10HML					
Well Position	+N/-S	0.0 usft	Northing:	423,109.00 usft	Latitude:	32° 9' 47.466 N
	+E/-W	0.0 usft	Easting:	563,250.00 usft	Longitude:	104° 15' 45.070 W
Position Uncertainty	1.0 usft	Wellhead Elevation:	usft	Ground Level:	3,383.0 usft	

Wellbore	Ogden #10HML				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	04/10/2012	(°)	(°)	(nT)
			7.73	60.01	48,416

Design	121004 Ogden #10HML			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	180.82

Survey Tool Program	Date	17/10/2012		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
0.0	5,550.0	121004 Ogden #10HML (Ogden #10HML)	MWD	MWD - Standard

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
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Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML	Database:	EDM 5000 1 Single User Db

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)		
0.0	0.00	0.00	0.0	-3,395.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
100.0	0.00	0.00	100.0	-3,295.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
120.0	0.00	0.00	120.0	-3,275.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
14" Conductor												
200.0	0.00	0.00	200.0	-3,195.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
300.0	0.00	0.00	300.0	-3,095.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
360.0	0.00	0.00	360.0	-3,035.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
9 5/8" Surface Casing												
400.0	0.00	0.00	400.0	-2,995.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
500.0	0.00	0.00	500.0	-2,895.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
600.0	0.00	0.00	600.0	-2,795.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
700.0	0.00	0.00	700.0	-2,695.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
800.0	0.00	0.00	800.0	-2,595.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
850.0	0.00	0.00	850.0	-2,545.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00		
900.0	1.50	180.00	900.0	-2,495.0	-0.7	0.0	3.00	0.7	423,108.35	563,250.00		
950.0	3.00	180.00	950.0	-2,445.0	-2.6	0.0	3.00	2.6	423,106.38	563,250.00		
1,000.0	4.50	180.00	999.8	-2,395.2	-5.9	0.0	3.00	5.9	423,103.11	563,250.00		
1,050.0	6.00	180.00	1,049.6	-2,345.4	-10.5	0.0	3.00	10.5	423,098.54	563,250.00		
1,100.0	7.50	180.00	1,099.3	-2,295.7	-16.3	0.0	3.00	16.3	423,092.66	563,250.00		
1,200.0	10.50	180.00	1,198.0	-2,197.0	-32.0	0.0	3.00	32.0	423,077.02	563,250.00		
1,250.0	12.00	180.00	1,247.1	-2,147.9	-41.7	0.0	3.00	41.7	423,067.26	563,250.00		
1,300.0	13.50	180.00	1,295.8	-2,099.2	-52.8	0.0	3.00	52.8	423,056.23	563,250.00		
1,400.0	16.50	180.00	1,392.4	-2,002.6	-78.6	0.0	3.00	78.6	423,030.35	563,250.00		
1,450.0	18.00	180.00	1,440.2	-1,954.8	-93.5	0.0	3.00	93.5	423,015.52	563,250.00		
1,500.0	19.50	180.00	1,487.5	-1,907.5	-109.5	0.0	3.00	109.5	422,999.45	563,250.00		
1,600.0	22.50	180.00	1,580.9	-1,814.1	-145.4	0.0	3.00	145.4	422,963.62	563,250.00		
1,650.0	24.00	180.00	1,626.8	-1,768.2	-165.1	0.0	3.00	165.1	422,943.88	563,250.00		

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
1,700.0	25.50	180.00	1,672.2	-1,722.8	-186.0	0.0	3.00	186.0	422,922.95	563,250.00	
1,800.0	28.50	180.00	1,761.3	-1,633.7	-231.4	0.0	3.00	231.4	422,877.56	563,250.00	
1,850.0	30.00	180.00	1,804.9	-1,590.1	-255.9	0.0	3.00	255.8	422,853.13	563,250.00	
1,900.0	34.50	180.00	1,847.2	-1,547.8	-282.5	0.0	9.00	282.5	422,826.45	563,250.00	
1,950.0	39.00	180.00	1,887.3	-1,507.7	-312.5	0.0	9.00	312.4	422,796.54	563,250.00	
2,000.0	44.50	180.00	1,924.5	-1,470.5	-345.7	0.0	11.00	345.7	422,763.26	563,250.00	
2,050.0	50.00	180.00	1,958.5	-1,436.5	-382.4	0.0	11.00	382.4	422,726.56	563,250.00	
2,100.0	55.50	180.00	1,988.7	-1,406.3	-422.2	0.0	11.00	422.2	422,686.78	563,250.00	
2,118.6	57.55	180.00	1,999.0	-1,396.0	-437.8	0.0	11.00	437.7	422,671.24	563,250.00	
7" Production Casing											
2,150.0	61.00	180.00	2,015.0	-1,380.0	-464.7	0.0	11.00	464.7	422,644.28	563,250.00	
2,200.0	66.50	180.00	2,037.1	-1,357.9	-509.6	0.0	11.00	509.5	422,599.45	563,250.00	
2,250.0	72.00	180.00	2,054.8	-1,340.2	-556.3	0.0	11.00	556.2	422,552.71	563,250.00	
2,300.0	77.50	180.00	2,068.0	-1,327.0	-604.5	0.0	11.00	604.4	422,504.49	563,250.00	
2,350.0	83.00	180.00	2,076.5	-1,318.5	-653.8	0.0	11.00	653.7	422,455.23	563,250.00	
2,400.0	88.00	180.72	2,080.4	-1,314.6	-703.6	-0.3	10.10	703.5	422,405.40	563,249.69	
2,420.0	90.00	181.00	2,080.7	-1,314.3	-723.6	-0.6	10.10	723.5	422,385.41	563,249.39	
2,500.0	90.00	181.00	2,080.7	-1,314.3	-803.6	-2.0	0.00	803.5	422,305.42	563,247.99	
2,600.0	90.00	181.00	2,080.7	-1,314.3	-903.6	-3.8	0.00	903.5	422,205.44	563,246.25	
2,700.0	90.00	181.00	2,080.7	-1,314.3	-1,003.5	-5.5	0.00	1,003.5	422,105.45	563,244.50	
2,800.0	90.00	181.00	2,080.7	-1,314.3	-1,103.5	-7.2	0.00	1,103.5	422,005.47	563,242.76	
2,900.0	90.00	181.00	2,080.7	-1,314.3	-1,203.5	-9.0	0.00	1,203.5	421,905.48	563,241.01	
3,000.0	90.00	181.00	2,080.7	-1,314.3	-1,303.5	-10.7	0.00	1,303.5	421,805.50	563,239.27	
3,100.0	90.00	181.00	2,080.7	-1,314.3	-1,403.5	-12.5	0.00	1,403.5	421,705.51	563,237.52	
3,200.0	90.00	181.00	2,080.7	-1,314.3	-1,503.5	-14.2	0.00	1,503.5	421,605.53	563,235.78	
3,300.0	90.00	181.00	2,080.7	-1,314.3	-1,603.5	-16.0	0.00	1,603.5	421,505.54	563,234.03	
3,400.0	90.00	181.00	2,080.7	-1,314.3	-1,703.4	-17.7	0.00	1,703.5	421,405.56	563,232.29	

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Wellbore:	Ogden #10HML	Survey Calculation Method:	Minimum Curvature
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Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
3,500.0	90.00	181.00	2,080.7	-1,314.3	-1,803.4	-19.5	0.00	1,803.5	421,305.57	563,230.54	
3,600.0	90.00	181.00	2,080.7	-1,314.3	-1,903.4	-21.2	0.00	1,903.5	421,205.59	563,228.79	
3,700.0	90.00	181.00	2,080.7	-1,314.3	-2,003.4	-23.0	0.00	2,003.5	421,105.60	563,227.05	
3,800.0	90.00	181.00	2,080.7	-1,314.3	-2,103.4	-24.7	0.00	2,103.5	421,005.62	563,225.30	
3,900.0	90.00	181.00	2,080.7	-1,314.3	-2,203.4	-26.4	0.00	2,203.5	420,905.63	563,223.56	
4,000.0	90.00	181.00	2,080.7	-1,314.3	-2,303.4	-28.2	0.00	2,303.5	420,805.65	563,221.81	
4,100.0	90.00	181.00	2,080.7	-1,314.3	-2,403.3	-29.9	0.00	2,403.5	420,705.66	563,220.07	
4,200.0	90.00	181.00	2,080.7	-1,314.3	-2,503.3	-31.7	0.00	2,503.5	420,605.68	563,218.32	
4,300.0	90.00	181.00	2,080.7	-1,314.3	-2,603.3	-33.4	0.00	2,603.5	420,505.69	563,216.58	
4,400.0	90.00	181.00	2,080.7	-1,314.3	-2,703.3	-35.2	0.00	2,703.5	420,405.71	563,214.83	
4,500.0	90.00	181.00	2,080.7	-1,314.3	-2,803.3	-36.9	0.00	2,803.5	420,305.72	563,213.09	
4,600.0	90.00	181.00	2,080.7	-1,314.3	-2,903.3	-38.7	0.00	2,903.5	420,205.74	563,211.34	
4,700.0	90.00	181.00	2,080.7	-1,314.3	-3,003.2	-40.4	0.00	3,003.5	420,105.76	563,209.60	
4,800.0	90.00	181.00	2,080.7	-1,314.3	-3,103.2	-42.1	0.00	3,103.5	420,005.77	563,207.85	
4,900.0	90.00	181.00	2,080.7	-1,314.3	-3,203.2	-43.9	0.00	3,203.5	419,905.79	563,206.11	
5,000.0	90.00	181.00	2,080.7	-1,314.3	-3,303.2	-45.6	0.00	3,303.5	419,805.80	563,204.36	
5,100.0	90.00	181.00	2,080.7	-1,314.3	-3,403.2	-47.4	0.00	3,403.5	419,705.82	563,202.62	
5,200.0	90.00	181.00	2,080.7	-1,314.3	-3,503.2	-49.1	0.00	3,503.5	419,605.83	563,200.87	
5,300.0	90.00	181.00	2,080.7	-1,314.3	-3,603.2	-50.9	0.00	3,603.5	419,505.85	563,199.13	
5,400.0	90.00	181.00	2,080.7	-1,314.3	-3,703.1	-52.6	0.00	3,703.5	419,405.86	563,197.38	
5,500.0	90.00	181.00	2,080.7	-1,314.3	-3,803.1	-54.4	0.00	3,803.5	419,305.88	563,195.63	
5,550.0	90.00	181.00	2,080.7	-1,314.3	-3,853.1	-55.2	0.00	3,853.5	419,255.88	563,194.76	

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Design:	121004 Ogden #10HML	Database:	EDM 5000 1 Single User Db

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
120.0	120.0	14" Conductor	14	16	
360.0	360.0	9 5/8" Surface Casing	9-5/8	12-1/4	
2,118.6	1,999.0	7" Production Casing	7	7	

Checked By: _____	Approved By: _____	Date: _____
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Murchison Oil and Gas

Ogden North

Ogden #10

Ogden #10HML

Ogden #10HML ST1

Plan: 121004 Ogden #10HML ST1

MOJO Standard Well Plan

17 October, 2012



MOJO

DIRECTIONAL CORPORATION

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST1	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST1	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 #10				
Site Position:	Northing:	423,109.00 usft	Latitude:	32° 9' 47.466 N	
From: Map	Easting:	563,250.00 usft	Longitude:	104° 15' 45.070 W	
Position Uncertainty:	1.0 usft	Slot Radius:	15 "	Grid Convergence:	0.04 °

Well	Ogden #10HML					
Well Position	+N/-S	0.0 usft	Northing:	423,109.00 usft	Latitude:	32° 9' 47.466 N
	+E/-W	0.0 usft	Easting:	563,250.00 usft	Longitude:	104° 15' 45.070 W
Position Uncertainty	1.0 usft		Wellhead Elevation:	usft	Ground Level:	3,383.0 usft

Wellbore	Ogden #10HML ST1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	04/10/2012	7.73	60.01	48,416

Design	121004 Ogden #10HML ST1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	4,200.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	175.91	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST1	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST1	Database:	EDM 5000.1 Single User Db

Survey Tool Program		Date 17/10/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	4,200.0	121004 Ogden #10HML (Ogden #10HML)	MWD	MWD - Standard
4,200.0	5,600.0	121004 Ogden #10HML ST1 (Ogden #10H		

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-3,395.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
100.0	0.00	0.00	100.0	-3,295.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
120.0	0.00	0.00	120.0	-3,275.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
14" Conductor										
200.0	0.00	0.00	200.0	-3,195.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
300.0	0.00	0.00	300.0	-3,095.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
360.0	0.00	0.00	360.0	-3,035.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
9 5/8" Surface Casing										
400.0	0.00	0.00	400.0	-2,995.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
500.0	0.00	0.00	500.0	-2,895.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
600.0	0.00	0.00	600.0	-2,795.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
700.0	0.00	0.00	700.0	-2,695.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
800.0	0.00	0.00	800.0	-2,595.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
850.0	0.00	0.00	850.0	-2,545.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
900.0	1.50	180.00	900.0	-2,495.0	-0.7	0.0	3.00	0.7	423,108.35	563,250.00
950.0	3.00	180.00	950.0	-2,445.0	-2.6	0.0	3.00	2.6	423,106.38	563,250.00
1,000.0	4.50	180.00	999.8	-2,395.2	-5.9	0.0	3.00	5.9	423,103.11	563,250.00
1,050.0	6.00	180.00	1,049.6	-2,345.4	-10.5	0.0	3.00	10.4	423,098.54	563,250.00
1,100.0	7.50	180.00	1,099.3	-2,295.7	-16.3	0.0	3.00	16.3	423,092.66	563,250.00
1,200.0	10.50	180.00	1,198.0	-2,197.0	-32.0	0.0	3.00	31.9	423,077.02	563,250.00
1,250.0	12.00	180.00	1,247.1	-2,147.9	-41.7	0.0	3.00	41.6	423,067.26	563,250.00
1,300.0	13.50	180.00	1,295.8	-2,099.2	-52.8	0.0	3.00	52.6	423,056.23	563,250.00

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Gnd
Wellbore:	Ogden #10HML ST1	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
1,400.0	16.50	180.00	1,392.4	-2,002.6	-78.6	0.0	3.00	78.4	423,030.35	563,250.00	
1,450.0	18.00	180.00	1,440.2	-1,954.8	-93.5	0.0	3.00	93.2	423,015.52	563,250.00	
1,500.0	19.50	180.00	1,487.5	-1,907.5	-109.5	0.0	3.00	109.3	422,999.45	563,250.00	
1,600.0	22.50	180.00	1,580.9	-1,814.1	-145.4	0.0	3.00	145.0	422,963.62	563,250.00	
1,650.0	24.00	180.00	1,626.8	-1,768.2	-165.1	0.0	3.00	164.7	422,943.88	563,250.00	
1,700.0	25.50	180.00	1,672.2	-1,722.8	-186.0	0.0	3.00	185.6	422,922.95	563,250.00	
1,800.0	28.50	180.00	1,761.3	-1,633.7	-231.4	0.0	3.00	230.9	422,877.56	563,250.00	
1,850.0	30.00	180.00	1,804.9	-1,590.1	-255.9	0.0	3.00	255.2	422,853.13	563,250.00	
1,900.0	34.50	180.00	1,847.2	-1,547.8	-282.5	0.0	9.00	281.8	422,826.45	563,250.00	
1,950.0	39.00	180.00	1,887.3	-1,507.7	-312.5	0.0	9.00	311.7	422,796.54	563,250.00	
2,000.0	44.50	180.00	1,924.5	-1,470.5	-345.7	0.0	11.00	344.9	422,763.26	563,250.00	
2,050.0	50.00	180.00	1,958.5	-1,436.5	-382.4	0.0	11.00	381.5	422,726.56	563,250.00	
2,100.0	55.50	180.00	1,988.7	-1,406.3	-422.2	0.0	11.00	421.1	422,686.78	563,250.00	
2,118.6	57.55	180.00	1,999.0	-1,396.0	-437.8	0.0	11.00	436.6	422,671.24	563,250.00	
7" Production Casing											
2,150.0	61.00	180.00	2,015.0	-1,380.0	-464.7	0.0	11.00	463.5	422,644.28	563,250.00	
2,200.0	66.50	180.00	2,037.1	-1,357.9	-509.6	0.0	11.00	508.3	422,599.45	563,250.00	
2,250.0	72.00	180.00	2,054.8	-1,340.2	-556.3	0.0	11.00	554.9	422,552.71	563,250.00	
2,300.0	77.50	180.00	2,068.0	-1,327.0	-604.5	0.0	11.00	603.0	422,504.49	563,250.00	
2,350.0	83.00	180.00	2,076.5	-1,318.5	-653.8	0.0	11.00	652.1	422,455.23	563,250.00	
2,400.0	88.00	180.72	2,080.4	-1,314.6	-703.6	-0.3	10.10	701.8	422,405.40	563,249.69	
2,420.0	90.00	181.00	2,080.7	-1,314.3	-723.6	-0.6	10.10	721.7	422,385.41	563,249.39	
2,500.0	90.00	181.00	2,080.7	-1,314.3	-803.6	-2.0	0.00	801.4	422,305.42	563,247.99	
2,600.0	90.00	181.00	2,080.7	-1,314.3	-903.6	-3.8	0.00	901.0	422,205.44	563,246.25	
2,700.0	90.00	181.00	2,080.7	-1,314.3	-1,003.5	-5.5	0.00	1,000.6	422,105.45	563,244.50	
2,800.0	90.00	181.00	2,080.7	-1,314.3	-1,103.5	-7.2	0.00	1,100.2	422,005.47	563,242.76	
2,900.0	90.00	181.00	2,080.7	-1,314.3	-1,203.5	-9.0	0.00	1,199.8	421,905.48	563,241.01	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395 0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395 0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Gnd
Wellbore:	Ogden #10HML ST1	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST1	Database:	EDM 5000 1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
3,000.0	90.00	181.00	2,080.7	-1,314.3	-1,303.5	-10.7	0.00	1,299.4	421,805.50	563,239.27	
3,100.0	90.00	181.00	2,080.7	-1,314.3	-1,403.5	-12.5	0.00	1,399.0	421,705.51	563,237.52	
3,200.0	90.00	181.00	2,080.7	-1,314.3	-1,503.5	-14.2	0.00	1,498.6	421,605.53	563,235.78	
3,300.0	90.00	181.00	2,080.7	-1,314.3	-1,603.5	-16.0	0.00	1,598.2	421,505.54	563,234.03	
3,400.0	90.00	181.00	2,080.7	-1,314.3	-1,703.4	-17.7	0.00	1,697.8	421,405.56	563,232.29	
3,500.0	90.00	181.00	2,080.7	-1,314.3	-1,803.4	-19.5	0.00	1,797.4	421,305.57	563,230.54	
3,600.0	90.00	181.00	2,080.7	-1,314.3	-1,903.4	-21.2	0.00	1,897.1	421,205.59	563,228.79	
3,700.0	90.00	181.00	2,080.7	-1,314.3	-2,003.4	-23.0	0.00	1,996.7	421,105.60	563,227.05	
3,800.0	90.00	181.00	2,080.7	-1,314.3	-2,103.4	-24.7	0.00	2,096.3	421,005.62	563,225.30	
3,900.0	90.00	181.00	2,080.7	-1,314.3	-2,203.4	-26.4	0.00	2,195.9	420,905.63	563,223.56	
4,000.0	90.00	181.00	2,080.7	-1,314.3	-2,303.4	-28.2	0.00	2,295.5	420,805.65	563,221.81	
4,100.0	90.00	181.00	2,080.7	-1,314.3	-2,403.3	-29.9	0.00	2,395.1	420,705.66	563,220.07	
4,200.0	90.00	181.00	2,080.7	-1,314.3	-2,503.3	-31.7	0.00	2,494.7	420,605.68	563,218.32	
4,300.0	90.00	178.00	2,080.7	-1,314.3	-2,603.3	-30.8	3.00	2,594.5	420,505.69	563,219.20	
4,400.0	90.00	175.00	2,080.7	-1,314.3	-2,703.1	-24.7	3.00	2,694.5	420,405.89	563,225.30	
4,500.0	90.00	172.00	2,080.7	-1,314.3	-2,802.5	-13.4	3.00	2,794.4	420,306.55	563,236.62	
4,600.0	90.00	168.00	2,080.7	-1,314.3	-2,900.9	4.0	4.00	2,893.8	420,208.09	563,253.98	
4,700.0	90.00	164.00	2,080.7	-1,314.3	-2,997.9	28.2	4.00	2,992.3	420,111.08	563,278.17	
4,800.0	90.00	164.00	2,080.7	-1,314.3	-3,094.1	55.7	0.00	3,090.1	420,014.95	563,305.73	
4,900.0	90.00	164.00	2,080.7	-1,314.3	-3,190.2	83.3	0.00	3,188.0	419,918.82	563,333.29	
5,000.0	90.00	164.00	2,080.7	-1,314.3	-3,286.3	110.9	0.00	3,285.8	419,822.70	563,360.86	
5,100.0	90.00	164.00	2,080.7	-1,314.3	-3,382.4	138.4	0.00	3,383.7	419,726.57	563,388.42	
5,200.0	90.00	164.00	2,080.7	-1,314.3	-3,478.6	166.0	0.00	3,481.5	419,630.45	563,415.99	
5,300.0	90.00	164.00	2,080.7	-1,314.3	-3,574.7	193.5	0.00	3,579.4	419,534.32	563,443.55	
5,400.0	90.00	164.00	2,080.7	-1,314.3	-3,670.8	221.1	0.00	3,677.2	419,438.19	563,471.11	
5,500.0	90.00	164.00	2,080.7	-1,314.3	-3,766.9	248.7	0.00	3,775.1	419,342.07	563,498.68	
5,600.0	90.00	164.00	2,080.7	-1,314.3	-3,863.1	276.2	0.00	3,872.9	419,245.94	563,526.24	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST1	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST1	Database:	EDM 5000 1 Single User Db

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
120.0	120.0	14" Conductor	14	16	
360.0	360.0	9 5/8" Surface Casing	9-5/8	12-1/4	
2,118.6	1,999.0	7" Production Casing	7	7	

Checked By: _____	Approved By: _____	Date: _____
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Murchison Oil and Gas

Ogden North

Ogden #10

Ogden #10HML

Ogden #10HML ST2

Plan: 121004 Ogden #10HML ST2

MOJO Standard Well Plan

17 October, 2012



MOJO
DIRECTIONAL CORPORATION

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395 0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395 0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST2	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST2	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 #10		
Site Position:		Northing:	423,109.00 usft
From:	Map	Easting:	563,250.00 usft
Position Uncertainty:	1.0 usft	Slot Radius:	15 "
		Latitude:	32° 9' 47.466 N
		Longitude:	104° 15' 45.070 W
		Grid Convergence:	0.04 °

Well	Ogden #10HML		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty		1.0 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Ogden #10HML ST2		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	04/10/2012	(°)
			Dip Angle
			(°)
			Field Strength
			(nT)

Design	121004 Ogden #10HML ST2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			3,550.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			173.11

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grd
Wellbore:	Ogden #10HML ST2	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST2	Database:	EDM 5000.1 Single User Db

Survey Tool Program		Date 17/10/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	3,550.0	121004 Ogden #10HML (Ogden #10HML)	MWD	MWD - Standard
3,550.0	5,500.0	121004 Ogden #10HML ST2 (Ogden #10H)		

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (#/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.00	-3,395.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
100.0	0.00	0.00	100.0	-3,295.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
120.0	0.00	0.00	120.0	-3,275.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
14" Conductor											
200.0	0.00	0.00	200.0	-3,195.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
300.0	0.00	0.00	300.0	-3,095.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
360.0	0.00	0.00	360.0	-3,035.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
9 5/8" Surface Casing											
400.0	0.00	0.00	400.0	-2,995.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
500.0	0.00	0.00	500.0	-2,895.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
600.0	0.00	0.00	600.0	-2,795.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
700.0	0.00	0.00	700.0	-2,695.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
800.0	0.00	0.00	800.0	-2,595.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
850.0	0.00	0.00	850.0	-2,545.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
900.0	1.50	180.00	900.0	-2,495.0	-0.7	0.0	3.00	0.6	423,108.35	563,250.00	
950.0	3.00	180.00	950.0	-2,445.0	-2.6	0.0	3.00	2.6	423,106.38	563,250.00	
1,000.0	4.50	180.00	999.8	-2,395.2	-5.9	0.0	3.00	5.8	423,103.11	563,250.00	
1,050.0	6.00	180.00	1,049.6	-2,345.4	-10.5	0.0	3.00	10.4	423,098.54	563,250.00	
1,100.0	7.50	180.00	1,099.3	-2,295.7	-16.3	0.0	3.00	16.2	423,092.66	563,250.00	
1,200.0	10.50	180.00	1,198.0	-2,197.0	-32.0	0.0	3.00	31.7	423,077.02	563,250.00	
1,250.0	12.00	180.00	1,247.1	-2,147.9	-41.7	0.0	3.00	41.4	423,067.26	563,250.00	
1,300.0	13.50	180.00	1,295.8	-2,099.2	-52.8	0.0	3.00	52.4	423,056.23	563,250.00	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Gnd
Wellbore:	Ogden #10HML ST2	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST2	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
1,400.0	16.50	180.00	1,392.4	-2,002.6	-78.6	0.0	3.00	78.1	423,030.35	563,250.00	
1,450.0	18.00	180.00	1,440.2	-1,954.8	-93.5	0.0	3.00	92.8	423,015.52	563,250.00	
1,500.0	19.50	180.00	1,487.5	-1,907.5	-109.5	0.0	3.00	108.8	422,999.45	563,250.00	
1,600.0	22.50	180.00	1,580.9	-1,814.1	-145.4	0.0	3.00	144.3	422,963.62	563,250.00	
1,650.0	24.00	180.00	1,626.8	-1,768.2	-165.1	0.0	3.00	163.9	422,943.88	563,250.00	
1,700.0	25.50	180.00	1,672.2	-1,722.8	-186.0	0.0	3.00	184.7	422,922.95	563,250.00	
1,800.0	28.50	180.00	1,761.3	-1,633.7	-231.4	0.0	3.00	229.8	422,877.56	563,250.00	
1,850.0	30.00	180.00	1,804.9	-1,590.1	-255.9	0.0	3.00	254.0	422,853.13	563,250.00	
1,900.0	34.50	180.00	1,847.2	-1,547.8	-282.5	0.0	9.00	280.5	422,826.45	563,250.00	
1,950.0	39.00	180.00	1,887.3	-1,507.7	-312.5	0.0	9.00	310.2	422,796.54	563,250.00	
2,000.0	44.50	180.00	1,924.5	-1,470.5	-345.7	0.0	11.00	343.2	422,763.26	563,250.00	
2,050.0	50.00	180.00	1,958.5	-1,436.5	-382.4	0.0	11.00	379.7	422,726.56	563,250.00	
2,100.0	55.50	180.00	1,988.7	-1,406.3	-422.2	0.0	11.00	419.2	422,686.78	563,250.00	
2,118.6	57.55	180.00	1,999.0	-1,396.0	-437.8	0.0	11.00	434.6	422,671.24	563,250.00	
7" Production Casing											
2,150.0	61.00	180.00	2,015.0	-1,380.0	-464.7	0.0	11.00	461.4	422,644.28	563,250.00	
2,200.0	66.50	180.00	2,037.1	-1,357.9	-509.6	0.0	11.00	505.9	422,599.45	563,250.00	
2,250.0	72.00	180.00	2,054.8	-1,340.2	-556.3	0.0	11.00	552.3	422,552.71	563,250.00	
2,300.0	77.50	180.00	2,068.0	-1,327.0	-604.5	0.0	11.00	600.1	422,504.49	563,250.00	
2,350.0	83.00	180.00	2,076.5	-1,318.5	-653.8	0.0	11.00	649.0	422,455.23	563,250.00	
2,400.0	88.00	180.72	2,080.4	-1,314.6	-703.6	-0.3	10.10	698.5	422,405.40	563,249.69	
2,420.0	90.00	181.00	2,080.7	-1,314.3	-723.6	-0.6	10.10	718.3	422,385.41	563,249.39	
2,500.0	90.00	181.00	2,080.7	-1,314.3	-803.6	-2.0	0.00	797.5	422,305.42	563,247.99	
2,600.0	90.00	181.00	2,080.7	-1,314.3	-903.6	-3.8	0.00	896.6	422,205.44	563,246.25	
2,700.0	90.00	181.00	2,080.7	-1,314.3	-1,003.5	-5.5	0.00	995.6	422,105.45	563,244.50	
2,800.0	90.00	181.00	2,080.7	-1,314.3	-1,103.5	-7.2	0.00	1,094.7	422,005.47	563,242.76	
2,900.0	90.00	181.00	2,080.7	-1,314.3	-1,203.5	-9.0	0.00	1,193.7	421,905.48	563,241.01	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395 0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395 0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Gnd
Wellbore:	Ogden #10HML ST2	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST2	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
3,000.0	90.00	181.00	2,080.7	-1,314.3	-1,303.5	-10.7	0.00	1,292.8	421,805.50	563,239.27	
3,100.0	90.00	181.00	2,080.7	-1,314.3	-1,403.5	-12.5	0.00	1,391.8	421,705.51	563,237.52	
3,200.0	90.00	181.00	2,080.7	-1,314.3	-1,503.5	-14.2	0.00	1,490.9	421,605.53	563,235.78	
3,300.0	90.00	181.00	2,080.7	-1,314.3	-1,603.5	-16.0	0.00	1,590.0	421,505.54	563,234.03	
3,400.0	90.00	181.00	2,080.7	-1,314.3	-1,703.4	-17.7	0.00	1,689.0	421,405.56	563,232.29	
3,500.0	90.00	181.00	2,080.7	-1,314.3	-1,803.4	-19.5	0.00	1,788.1	421,305.57	563,230.54	
3,550.0	90.00	181.00	2,080.7	-1,314.3	-1,853.4	-20.3	0.00	1,837.6	421,255.58	563,229.67	
3,600.0	90.00	179.00	2,080.7	-1,314.3	-1,903.4	-20.3	4.00	1,887.2	421,205.58	563,229.67	
3,650.0	90.00	177.00	2,080.7	-1,314.3	-1,953.4	-18.6	4.00	1,937.0	421,155.62	563,231.41	
3,700.0	90.00	175.00	2,080.7	-1,314.3	-2,003.3	-15.1	4.00	1,987.0	421,105.74	563,234.90	
3,800.0	90.00	171.00	2,080.7	-1,314.3	-2,102.5	-2.9	4.00	2,086.9	421,006.51	563,247.08	
3,850.0	90.00	169.00	2,080.7	-1,314.3	-2,151.7	5.8	4.00	2,136.9	420,957.27	563,255.77	
3,900.0	90.00	167.75	2,080.7	-1,314.3	-2,200.7	15.8	2.50	2,186.7	420,908.29	563,265.84	
4,000.0	90.00	165.25	2,080.7	-1,314.3	-2,297.9	39.2	2.50	2,286.0	420,811.07	563,289.18	
4,050.0	90.00	164.00	2,080.7	-1,314.3	-2,346.1	52.4	2.50	2,335.5	420,762.86	563,302.44	
4,100.0	90.00	164.00	2,080.7	-1,314.3	-2,394.2	66.2	0.00	2,384.9	420,714.79	563,316.22	
4,200.0	90.00	164.00	2,080.7	-1,314.3	-2,490.3	93.8	0.00	2,483.6	420,618.67	563,343.79	
4,300.0	90.00	164.00	2,080.7	-1,314.3	-2,586.5	121.3	0.00	2,582.3	420,522.54	563,371.35	
4,400.0	90.00	164.00	2,080.7	-1,314.3	-2,682.6	148.9	0.00	2,681.1	420,426.41	563,398.91	
4,500.0	90.00	164.00	2,080.7	-1,314.3	-2,778.7	176.5	0.00	2,779.8	420,330.29	563,426.48	
4,600.0	90.00	164.00	2,080.7	-1,314.3	-2,874.8	204.0	0.00	2,878.5	420,234.16	563,454.04	
4,700.0	90.00	164.00	2,080.7	-1,314.3	-2,971.0	231.6	0.00	2,977.3	420,138.04	563,481.60	
4,800.0	90.00	164.00	2,080.7	-1,314.3	-3,067.1	259.2	0.00	3,076.0	420,041.91	563,509.17	
4,900.0	90.00	164.00	2,080.7	-1,314.3	-3,163.2	286.7	0.00	3,174.8	419,945.78	563,536.73	
5,000.0	90.00	164.00	2,080.7	-1,314.3	-3,259.3	314.3	0.00	3,273.5	419,849.66	563,564.30	
5,100.0	90.00	164.00	2,080.7	-1,314.3	-3,355.5	341.9	0.00	3,372.2	419,753.53	563,591.86	
5,200.0	90.00	164.00	2,080.7	-1,314.3	-3,451.6	369.4	0.00	3,471.0	419,657.40	563,619.42	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST2	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST2	Database:	EDM 5000 1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
5,300.0	90.00	164.00	2,080.7	-1,314.3	-3,547.7	397.0	0.00	3,569.7	419,561.28	563,646.99	
5,400.0	90.00	164.00	2,080.7	-1,314.3	-3,643.8	424.6	0.00	3,668.5	419,465.15	563,674.55	
5,500.0	90.00	164.00	2,080.7	-1,314.3	-3,740.0	452.1	0.00	3,767.2	419,369.03	563,702.11	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
120.0	120.0	14" Conductor	14	16	
360.0	360.0	9 5/8" Surface Casing	9-5/8	12-1/4	
2,118.6	1,999.0	7" Production Casing	7	7	

Checked By: _____	Approved By: _____	Date: _____
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Murchison Oil and Gas

Ogden North

Ogden #10

Ogden #10HML

Ogden #10HML ST3

Plan: 121004 Ogden #10HML ST3

MOJO Standard Well Plan

17 October, 2012



MOJO
DIRECTIONAL CORPORATION

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST3	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST3	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 #10									
Site Position.		Northing:		. 423,109.00 usft		Latitude:		32° 9' 47.466 N			
From:		Map		Easting:		563,250.00 usft		Longitude:		104° 15' 45.070 W	
Position Uncertainty:		1.0 usft		Slot Radius:		15 "		Grid Convergence.		0.04 °	

Well		Ogden #10HML				
Well Position	+N/-S	0.0 usft	Northing:	423,109.00 usft	Latitude:	32° 9' 47.466 N
	+E/-W	0.0 usft	Easting:	563,250.00 usft	Longitude:	104° 15' 45.070 W
Position Uncertainty		1.0 usft	Wellhead Elevation:	usft	Ground Level:	3,383.0 usft

Wellbore	Ogden #10HML ST3				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	04/10/2012	7.73	60.01	48,416

Design	121004 Ogden #10HML ST3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	2,800.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	170.90

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Gnd
Wellbore:	Ogden #10HML ST3	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST3	Database:	EDM 5000 1 Single User Db

Survey Tool Program		Date 17/10/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	2,800.0	121004 Ogden #10HML (Ogden #10HML)	MWD	MWD - Standard
2,800.0	5,000.0	121004 Ogden #10HML ST3 (Ogden #10H		

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	V-Sec (usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.00	0.0	-3,395.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00
100.0	0.00	0.00	100.0	-3,295.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
120.0	0.00	0.00	120.0	-3,275.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
14" Conductor											
200.0	0.00	0.00	200.0	-3,195.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
300.0	0.00	0.00	300.0	-3,095.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
360.0	0.00	0.00	360.0	-3,035.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
9 5/8" Surface Casing											
400.0	0.00	0.00	400.0	-2,995.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
500.0	0.00	0.00	500.0	-2,895.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
600.0	0.00	0.00	600.0	-2,795.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
700.0	0.00	0.00	700.0	-2,695.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
800.0	0.00	0.00	800.0	-2,595.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
850.0	0.00	0.00	850.0	-2,545.0	0.0	0.0	0.00	0.0	423,109.00	563,250.00	
900.0	1.50	180.00	900.0	-2,495.0	-0.7	0.0	3.00	0.6	423,108.35	563,250.00	
950.0	3.00	180.00	950.0	-2,445.0	-2.6	0.0	3.00	2.6	423,106.38	563,250.00	
1,000.0	4.50	180.00	999.8	-2,395.2	-5.9	0.0	3.00	5.8	423,103.11	563,250.00	
1,050.0	6.00	180.00	1,049.6	-2,345.4	-10.5	0.0	3.00	10.3	423,098.54	563,250.00	
1,100.0	7.50	180.00	1,099.3	-2,295.7	-16.3	0.0	3.00	16.1	423,092.66	563,250.00	
1,200.0	10.50	180.00	1,198.0	-2,197.0	-32.0	0.0	3.00	31.6	423,077.02	563,250.00	
1,250.0	12.00	180.00	1,247.1	-2,147.9	-41.7	0.0	3.00	41.2	423,067.26	563,250.00	
1,300.0	13.50	180.00	1,295.8	-2,099.2	-52.8	0.0	3.00	52.1	423,056.23	563,250.00	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395 0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395 0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST3	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST3	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
1,400.0	16.50	180.00	1,392.4	-2,002.6	-78.6	0.0	3.00	77.7	423,030.35	563,250.00	
1,450.0	18.00	180.00	1,440.2	-1,954.8	-93.5	0.0	3.00	92.3	423,015.52	563,250.00	
1,500.0	19.50	180.00	1,487.5	-1,907.5	-109.5	0.0	3.00	108.2	422,999.45	563,250.00	
1,600.0	22.50	180.00	1,580.9	-1,814.1	-145.4	0.0	3.00	143.5	422,963.62	563,250.00	
1,650.0	24.00	180.00	1,626.8	-1,768.2	-165.1	0.0	3.00	163.0	422,943.88	563,250.00	
1,700.0	25.50	180.00	1,672.2	-1,722.8	-186.0	0.0	3.00	183.7	422,922.95	563,250.00	
1,800.0	28.50	180.00	1,761.3	-1,633.7	-231.4	0.0	3.00	228.5	422,877.56	563,250.00	
1,850.0	30.00	180.00	1,804.9	-1,590.1	-255.9	0.0	3.00	252.7	422,853.13	563,250.00	
1,900.0	34.50	180.00	1,847.2	-1,547.8	-282.5	0.0	9.00	279.0	422,826.45	563,250.00	
1,950.0	39.00	180.00	1,887.3	-1,507.7	-312.5	0.0	9.00	308.5	422,796.54	563,250.00	
2,000.0	44.50	180.00	1,924.5	-1,470.5	-345.7	0.0	11.00	341.4	422,763.26	563,250.00	
2,050.0	50.00	180.00	1,958.5	-1,436.5	-382.4	0.0	11.00	377.6	422,726.56	563,250.00	
2,100.0	55.50	180.00	1,988.7	-1,406.3	-422.2	0.0	11.00	416.9	422,686.78	563,250.00	
2,118.6	57.55	180.00	1,999.0	-1,396.0	-437.8	0.0	11.00	432.3	422,671.24	563,250.00	
7" Production Casing											
2,150.0	61.00	180.00	2,015.0	-1,380.0	-464.7	0.0	11.00	458.9	422,644.28	563,250.00	
2,200.0	66.50	180.00	2,037.1	-1,357.9	-509.6	0.0	11.00	503.1	422,599.45	563,250.00	
2,250.0	72.00	180.00	2,054.8	-1,340.2	-556.3	0.0	11.00	549.3	422,552.71	563,250.00	
2,300.0	77.50	180.00	2,068.0	-1,327.0	-604.5	0.0	11.00	596.9	422,504.49	563,250.00	
2,350.0	83.00	180.00	2,076.5	-1,318.5	-653.8	0.0	11.00	645.5	422,455.23	563,250.00	
2,400.0	88.00	180.72	2,080.4	-1,314.6	-703.6	-0.3	10.10	694.7	422,405.40	563,249.69	
2,420.0	90.00	181.00	2,080.7	-1,314.3	-723.6	-0.6	10.10	714.4	422,385.41	563,249.39	
2,500.0	90.00	181.00	2,080.7	-1,314.3	-803.6	-2.0	0.00	793.1	422,305.42	563,247.99	
2,600.0	90.00	181.00	2,080.7	-1,314.3	-903.6	-3.8	0.00	891.6	422,205.44	563,246.25	
2,700.0	90.00	181.00	2,080.7	-1,314.3	-1,003.5	-5.5	0.00	990.0	422,105.45	563,244.50	
2,800.0	90.00	181.00	2,080.7	-1,314.3	-1,103.5	-7.2	0.00	1,088.5	422,005.47	563,242.76	
2,900.0	90.00	177.00	2,080.7	-1,314.3	-1,203.5	-5.5	4.00	1,187.5	421,905.50	563,244.50	

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Ogden #10HML
Project:	Ogden North	TVD Reference:	WELL @ 3395.0usft (Original Well Elev)
Site:	Ogden #10	MD Reference:	WELL @ 3395.0usft (Original Well Elev)
Well:	Ogden #10HML	North Reference:	Grid
Wellbore:	Ogden #10HML ST3	Survey Calculation Method:	Minimum Curvature
Design:	121004 Ogden #10HML ST3	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	EW (usft)	DLeg (°/100usft)	V. Sec (usft)	Northing (usft)	Easting (usft)	
3,000.0	90.00	173.00	2,080.7	-1,314.3	-1,303.1	3.2	4.00	1,287.2	421,805.90	563,253.22	
3,100.0	90.00	169.00	2,080.7	-1,314.3	-1,401.8	18.9	4.00	1,387.2	421,707.15	563,268.86	
3,200.0	90.00	168.00	2,080.7	-1,314.3	-1,499.8	38.8	1.00	1,487.1	421,609.16	563,288.79	
3,300.0	90.00	167.00	2,080.7	-1,314.3	-1,597.5	60.4	1.00	1,586.9	421,511.53	563,310.44	
3,400.0	90.00	166.00	2,080.7	-1,314.3	-1,694.7	83.8	1.00	1,686.6	421,414.30	563,333.78	
3,500.0	90.00	165.00	2,080.7	-1,314.3	-1,791.5	108.8	1.00	1,786.2	421,317.48	563,358.82	
3,600.0	90.00	164.80	2,080.7	-1,314.3	-1,888.1	134.9	0.20	1,885.6	421,220.94	563,384.87	
3,700.0	90.00	164.60	2,080.7	-1,314.3	-1,984.5	161.3	0.20	1,985.0	421,124.48	563,411.26	
3,800.0	90.00	164.40	2,080.7	-1,314.3	-2,080.9	188.0	0.20	2,084.4	421,028.12	563,437.98	
3,900.0	90.00	164.20	2,080.7	-1,314.3	-2,177.2	215.0	0.20	2,183.8	420,931.85	563,465.04	
4,000.0	90.00	164.00	2,080.7	-1,314.3	-2,273.3	242.4	0.20	2,283.1	420,835.68	563,492.44	
4,100.0	90.00	164.00	2,080.7	-1,314.3	-2,369.5	270.0	0.00	2,382.3	420,739.55	563,520.00	
4,200.0	90.00	164.00	2,080.7	-1,314.3	-2,465.6	297.6	0.00	2,481.6	420,643.42	563,547.56	
4,300.0	90.00	164.00	2,080.7	-1,314.3	-2,561.7	325.1	0.00	2,580.9	420,547.30	563,575.13	
4,400.0	90.00	164.00	2,080.7	-1,314.3	-2,657.8	352.7	0.00	2,680.2	420,451.17	563,602.69	
4,500.0	90.00	164.00	2,080.7	-1,314.3	-2,754.0	380.3	0.00	2,779.4	420,355.04	563,630.25	
4,600.0	90.00	164.00	2,080.7	-1,314.3	-2,850.1	407.8	0.00	2,878.7	420,258.92	563,657.82	
4,700.0	90.00	164.00	2,080.7	-1,314.3	-2,946.2	435.4	0.00	2,978.0	420,162.79	563,685.38	
4,800.0	90.00	164.00	2,080.7	-1,314.3	-3,042.3	462.9	0.00	3,077.3	420,066.67	563,712.94	
4,900.0	90.00	164.00	2,080.7	-1,314.3	-3,138.5	490.5	0.00	3,176.5	419,970.54	563,740.51	
5,000.0	90.00	164.00	2,080.7	-1,314.3	-3,234.6	518.1	0.00	3,275.8	419,874.41	563,768.07	

Company: Murchison Oil and Gas Project: Ogden North Site: Ogden #10 Well: Ogden #10HML Wellbore: Ogden #10HML ST3 Design: 121004 Ogden #10HML ST3	Local Co-ordinate Reference: Well Ogden #10HML TVD Reference: WELL @ 3395 0usft (Original Well Elev) MD Reference: WELL @ 3395 0usft (Original Well Elev) North Reference: Grd Survey Calculation Method: Minimum Curvature Database: EDM 5000.1 Single User Db
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Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
120.0	120.0	14" Conductor	14	16	
360.0	360.0	9 5/8" Surface Casing	9-5/8	12-1/4	
2,118.6	1,999.0	7" Production Casing	7	7	

Checked By: _____	Approved By: _____	Date: _____
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Project: Ogden North
Site: Ogden #10
Well: Ogden #10HML
Wellbore: Ogden #10HML
Design: 121004 Ogden #10HML



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

Magnetic Field
Strength: 48416.2snT
Dip Angle: 60.01°
Date: 04/10/2012
Model: IGRF200510

