

Results of Directional Survey

API number:	30-025-41436		
OGRID:		Operator:	MURCHISON OIL & GAS INC
		Property:	BETTIS 20 STATE COM # 2H

surface	ULSTR:	P	20	T 24S	R 33E
				200 FSL	940 FEL

BH Loc	ULSTR:	A	20	T 24S	R 33E
15725 MD		11145.7	TVD	254 FNL	889 FEL
5026 FSL					

Top Perf/OH	ULSTR:	P	20	T 24S	R 33E
11280 MD		11067.6	TVD	592 FSL	856 FEL

Bot Perf/OH	ULSTR:	A	20	T 24S	R 33E
15600 MD		11145.1	TVD	379 FNL	888 FEL
				4901 FSL	

	MD	N/S	E/W	VD
	11278.00	389.90	84.10	11066.90
TOP PERFS/OH	11280	391.76	84.03	11067.63
	11310.00	419.70	82.90	11078.60
	15571.00	4672.20	51.90	11144.70
BOT PERFS/OH	15600	4701.20	51.90	11145.05
	15645.00	4746.20	51.90	11145.60

NEXT TO LAST	15715	4816.20	51.00	11145.70
LAST READING	15725	4826.20	50.90	11145.70
TD	15725	4826.20	50.90	11145.70

Surface Location	200	FS	940	FE
Projected BHL	5026	FS	889	FE
Location of				
Top Perfs/OH	592	FS	856	FE
Bottom Perfs/OH	4901	FS	888	FE

SUMMARY of Subsurface Locations

Surface Location	P-20-24S-33E	200	FS	940	FE	Vert. Depth
Top Perfs/OH	P-20-24S-33E	592	FS	856	FE	11067.63
Bottom Perfs/OH	A-20-24S-33E	4901	FS	888	FE	11145.05
Projected TD	A-20-24S-33E	5026	FS	889	FE	11145.70

OCT 28 2014

Murchison Oil and Gas

Jackson Unit Section 20

Bettis 20 State Com 2H

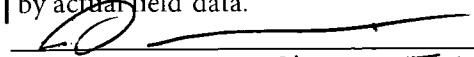
Bettis 20 State Com 2H ST

Survey: Bettis 20 State Com 2H ST

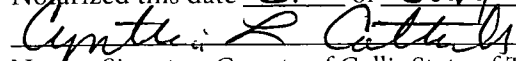
MOJO Standard Survey

21 July, 2014

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

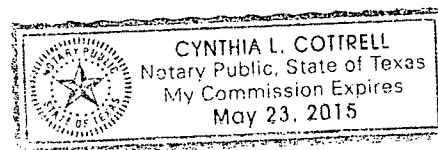
 (Signature)

Notarized this date 21 of July, 2014


Notary Signature County of Collin State of Texas



MOJO
DIRECTIONAL CORPORATION



Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Bettis 20 State Com 2H
Project:	Jackson Unit Section 20	TVD Reference:	WELL @ 3553.1usft (Original Well Elev)
Site:	Bettis 20 State Com 2H	MD Reference:	WELL @ 3553.1usft (Original Well Elev)
Well:	Bettis 20 State Com 2H	North Reference:	Grid
Wellbore:	Bettis 20 State Com 2H ST	Survey Calculation Method:	Minimum Curvature
Design:	Bettis 20 State Com 2H ST	Database:	EDM 5000.1 Single User Db

Project	Jackson Unit Section 20		
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	Bettis 20 State Com 2H		
Site Position:	Lat/Long	Northing:	435,997.64 usft
From:		Easting:	771,638.87 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 47.195 N
		Longitude:	103° 35' 19.732 W
		Grid Convergence:	0.40 °

Well	Bettis 20 State Com 2H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft		Wellhead Elevation:
			usft
			Latitude:
			Longitude:
			Ground Level:
			3,531.1 usft

Wellbore	Bettis 20 State Com 2H ST		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	07/07/2014	7.21
			Dip Angle
			(°)
			60.08
			Field Strength
			(nT)
			48,291

Design	Bettis 20 State Com 2H ST		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	9,835.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			0.63

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Design:	Bettis 20 State Com 2H ST	Database:	EDM 5000.1 Single User Db

Survey Program	Date 21/07/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	9,835.0	Bettis 20 State Com 2H (Bettis 20 State C	MWD	MWD - Standard	
10,015.0	15,725.0	Bettis 20 State Com 2H ST (Bettis 20 Stat	MWD	MWD - Standard	

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)	
9,835.0	7.30	204.30	9,830.3	6,277.2	-78.3	-17.8	-78.5	0.00	435,919.33	771,621.08	
9,914.0	8.23	184.01	9,908.6	6,355.5	-88.5	-20.3	-88.8	3.64	435,909.11	771,618.62	
7"											
10,015.0	10.50	166.00	10,008.2	6,455.1	-104.7	-18.5	-104.9	3.64	435,892.96	771,620.34	
10,078.0	12.60	149.50	10,070.0	6,516.9	-116.2	-13.7	-116.3	6.18	435,881.47	771,625.22	
10,100.0	11.93	138.93	10,091.5	6,538.4	-120.0	-10.9	-120.1	10.64	435,877.69	771,627.93	
1st Bone SpringSand											
10,172.0	12.80	102.80	10,161.9	6,608.8	-127.3	1.7	-127.3	10.64	435,870.30	771,640.61	
10,267.0	13.00	59.10	10,254.7	6,701.6	-124.2	21.2	-123.9	10.04	435,873.46	771,660.09	
10,362.0	12.90	59.00	10,347.3	6,794.2	-113.2	39.5	-112.8	0.11	435,884.41	771,678.35	
10,457.0	14.70	42.70	10,439.6	6,886.5	-98.9	56.7	-98.3	4.49	435,898.74	771,695.62	
10,489.0	19.00	28.00	10,470.2	6,917.1	-91.3	62.0	-90.6	18.82	435,906.33	771,700.82	
10,521.0	23.60	21.50	10,500.0	6,946.9	-80.8	66.7	-80.0	16.14	435,916.89	771,705.62	
10,552.0	24.90	18.70	10,528.3	6,975.2	-68.8	71.1	-68.0	5.60	435,928.85	771,709.98	
10,584.0	25.30	12.00	10,557.3	7,004.2	-55.7	74.7	-54.9	8.96	435,941.92	771,713.57	
10,615.0	26.90	6.40	10,585.1	7,032.0	-42.3	76.9	-41.4	9.47	435,955.37	771,715.73	
10,647.0	26.30	4.50	10,613.8	7,060.7	-28.0	78.2	-27.2	3.25	435,969.63	771,717.09	
10,678.0	26.00	4.00	10,641.6	7,088.5	-14.4	79.2	-13.5	1.20	435,983.26	771,718.10	
10,710.0	25.70	4.30	10,670.4	7,117.3	-0.5	80.2	0.4	1.02	435,997.17	771,719.11	
10,741.0	28.30	3.40	10,698.0	7,144.9	13.6	81.2	14.5	8.49	436,011.21	771,720.05	
10,772.0	30.50	3.30	10,725.0	7,171.9	28.8	82.1	29.7	7.10	436,026.40	771,720.94	

Company: Murchison Oil and Gas		Local Co-ordinate Reference:				Well Bettis 20 State Com 2H				
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Site: Bettis 20 State Com 2H		MD Reference:				WELL @ 3553.1usft (Original Well Elev)				
Well: Bettis 20 State Com 2H		North Reference:				Grid				
Wellbore: Bettis 20 State Com 2H ST		Survey Calculation Method:				Minimum Curvature				
Design: Bettis 20 State Com 2H ST		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)
10,804.0	31.70	3.00	10,752.4	7,199.3	45.3	83.0	46.2	3.78	436,042.91	771,721.85
2nd Bone SpringSand										
10,836.0	32.40	2.80	10,779.5	7,226.4	62.2	83.8	63.1	2.21	436,059.86	771,722.71
10,867.0	35.70	3.30	10,805.2	7,252.1	79.6	84.8	80.5	10.68	436,077.19	771,723.63
10,899.0	38.30	0.20	10,830.8	7,277.7	98.8	85.3	99.7	10.00	436,096.44	771,724.21
10,931.0	40.80	359.80	10,855.4	7,302.3	119.2	85.3	120.1	7.85	436,116.81	771,724.20
10,950.0	41.63	0.16	10,869.7	7,316.6	131.7	85.3	132.6	4.55	436,129.33	771,724.20
Cross South Hard Boundary@10950ftMD										
10,963.0	42.20	0.40	10,879.4	7,326.3	140.4	85.4	141.3	4.55	436,138.01	771,724.24
10,994.0	42.90	0.60	10,902.2	7,349.1	161.3	85.6	162.3	2.30	436,158.97	771,724.43
11,026.0	44.40	1.10	10,925.4	7,372.3	183.4	85.9	184.4	4.81	436,181.06	771,724.75
11,057.0	46.50	0.90	10,947.1	7,394.0	205.5	86.3	206.4	6.79	436,203.14	771,725.14
11,089.0	50.10	0.70	10,968.4	7,415.3	229.4	86.6	230.3	11.26	436,227.03	771,725.47
11,120.0	53.20	0.80	10,987.7	7,434.6	253.7	86.9	254.6	10.00	436,251.34	771,725.79
11,152.0	55.80	359.90	11,006.2	7,453.1	279.7	87.1	280.7	8.44	436,277.38	771,725.95
11,183.0	58.30	358.30	11,023.1	7,470.0	305.8	86.7	306.7	9.15	436,303.39	771,725.53
11,215.0	61.20	358.50	11,039.2	7,486.1	333.4	85.9	334.3	9.08	436,331.02	771,724.76
11,246.0	63.60	358.20	11,053.6	7,500.5	360.8	85.1	361.8	7.79	436,358.48	771,723.97
11,278.0	67.30	357.90	11,066.9	7,513.8	389.9	84.1	390.8	11.59	436,387.56	771,722.98
11,310.0	69.50	357.50	11,078.6	7,525.5	419.7	82.9	420.5	6.97	436,417.29	771,721.78
11,342.0	70.90	357.20	11,089.5	7,536.4	449.7	81.5	450.6	4.46	436,447.36	771,720.39
11,373.0	72.20	357.20	11,099.3	7,546.2	479.1	80.1	480.0	4.19	436,476.73	771,718.95
11,405.0	73.80	356.00	11,108.7	7,555.6	509.6	78.3	510.5	6.15	436,507.28	771,717.14
11,436.0	77.00	356.00	11,116.5	7,563.4	539.6	76.2	540.4	10.32	436,537.20	771,715.05
11,468.0	79.10	356.80	11,123.1	7,570.0	570.8	74.2	571.6	7.00	436,568.44	771,713.08
11,500.0	81.50	358.10	11,128.5	7,575.4	602.3	72.8	603.1	8.50	436,599.95	771,711.68
11,531.0	84.60	359.10	11,132.2	7,579.1	633.1	72.1	633.8	10.50	436,630.70	771,710.93

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Design:	Bettis 20 State Com 2H ST	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)
11,563.0	88.20	0.00	11,134.2	7,581.1	665.0	71.8	665.8	11.59	436,662.63	771,710.68
11,594.0	89.10	0.50	11,135.0	7,581.9	696.0	71.9	696.7	3.32	436,693.62	771,710.81
11,690.0	89.40	0.40	11,136.2	7,583.1	792.0	72.7	792.7	0.33	436,789.61	771,711.57
11,785.0	88.00	0.40	11,138.4	7,585.3	887.0	73.4	887.7	1.47	436,884.58	771,712.23
11,879.0	89.10	359.50	11,140.8	7,587.7	980.9	73.3	981.7	1.51	436,978.54	771,712.15
11,974.0	90.10	359.30	11,141.4	7,588.3	1,075.9	72.3	1,076.6	1.07	437,073.53	771,711.15
12,069.0	90.40	359.50	11,141.0	7,587.9	1,170.9	71.3	1,171.6	0.38	437,168.52	771,710.16
12,164.0	91.10	358.70	11,139.8	7,586.7	1,265.9	69.8	1,266.6	1.12	437,263.50	771,708.67
12,258.0	92.30	359.20	11,137.0	7,583.9	1,359.8	68.1	1,360.5	1.38	437,357.43	771,706.95
12,352.0	91.10	358.80	11,134.2	7,581.1	1,453.8	66.4	1,454.4	1.35	437,451.37	771,705.31
12,447.0	89.10	359.60	11,134.0	7,580.9	1,548.8	65.1	1,549.4	2.27	437,546.36	771,703.98
12,541.0	89.20	358.60	11,135.4	7,582.3	1,642.7	63.6	1,643.3	1.07	437,640.33	771,702.50
12,636.0	89.50	358.20	11,136.5	7,583.4	1,737.7	61.0	1,738.3	0.53	437,735.28	771,699.85
12,730.0	90.10	358.30	11,136.8	7,583.7	1,831.6	58.1	1,832.2	0.65	437,829.24	771,696.98
12,825.0	89.20	0.20	11,137.4	7,584.3	1,926.6	56.9	1,927.1	2.21	437,924.22	771,695.74
12,919.0	89.60	0.40	11,138.4	7,585.3	2,020.6	57.4	2,021.1	0.48	438,018.21	771,696.23
13,014.0	89.80	0.70	11,138.9	7,585.8	2,115.6	58.3	2,116.1	0.38	438,113.20	771,697.14
13,108.0	89.90	0.30	11,139.1	7,586.0	2,209.6	59.1	2,210.1	0.44	438,207.19	771,697.96
13,203.0	90.70	0.10	11,138.6	7,585.5	2,304.6	59.4	2,305.1	0.87	438,302.19	771,698.29
13,298.0	88.90	0.60	11,139.0	7,585.9	2,399.6	60.0	2,400.1	1.97	438,397.18	771,698.87
13,393.0	89.10	0.80	11,140.6	7,587.5	2,494.6	61.2	2,495.1	0.30	438,492.15	771,700.03
13,488.0	89.40	359.60	11,141.9	7,588.8	2,589.6	61.5	2,590.1	1.30	438,587.14	771,700.36
13,582.0	89.40	359.00	11,142.9	7,589.8	2,683.6	60.3	2,684.1	0.64	438,681.12	771,699.22
13,677.0	89.80	359.20	11,143.5	7,590.4	2,778.5	58.9	2,779.0	0.47	438,776.11	771,697.72
13,772.0	90.50	359.50	11,143.3	7,590.2	2,873.5	57.8	2,874.0	0.80	438,871.10	771,696.65
13,866.0	90.80	359.20	11,142.2	7,589.1	2,967.5	56.7	2,968.0	0.45	438,965.08	771,695.58
13,961.0	91.20	359.30	11,140.5	7,587.4	3,062.5	55.5	3,062.9	0.43	439,060.06	771,694.34

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14,056.0	90.90	359.70	11,138.8	7,585.7	3,157.5	54.6	3,157.9	0.53	439,155.03	771,693.51
14,151.0	89.30	0.40	11,138.6	7,585.5	3,252.5	54.7	3,252.9	1.84	439,250.03	771,693.59
14,245.0	89.90	1.00	11,139.3	7,586.2	3,346.5	55.9	3,346.9	0.90	439,344.01	771,694.74
14,340.0	90.50	0.20	11,139.0	7,585.9	3,441.5	56.9	3,441.9	1.05	439,439.00	771,695.73
14,435.0	90.80	0.60	11,137.9	7,584.8	3,536.5	57.5	3,536.9	0.53	439,533.99	771,696.40
14,530.0	91.30	359.90	11,136.1	7,583.0	3,631.4	57.9	3,631.9	0.91	439,628.97	771,696.81
14,624.0	88.90	0.20	11,136.0	7,582.9	3,725.4	58.0	3,725.8	2.57	439,722.96	771,696.89
14,719.0	89.40	0.20	11,137.4	7,584.3	3,820.4	58.4	3,820.8	0.53	439,817.95	771,697.23
14,813.0	89.30	0.10	11,138.5	7,585.4	3,914.4	58.6	3,914.8	0.15	439,911.94	771,697.47
14,908.0	90.00	359.50	11,139.0	7,585.9	4,009.4	58.3	4,009.8	0.97	440,006.93	771,697.14
15,003.0	90.60	359.00	11,138.5	7,585.4	4,104.4	57.0	4,104.8	0.82	440,101.92	771,695.90
15,098.0	91.30	358.50	11,137.0	7,583.9	4,199.4	55.0	4,199.7	0.91	440,196.88	771,693.82
15,193.0	89.40	359.40	11,136.4	7,583.3	4,294.3	53.2	4,294.7	2.21	440,291.85	771,692.08
15,287.0	89.70	358.80	11,137.1	7,584.0	4,388.3	51.7	4,388.6	0.71	440,385.84	771,690.61
15,382.0	87.90	0.00	11,139.1	7,586.0	4,483.3	50.7	4,483.6	2.28	440,480.80	771,689.61
15,477.0	88.20	0.60	11,142.3	7,589.2	4,578.2	51.2	4,578.5	0.71	440,575.74	771,690.11
15,571.0	88.90	0.20	11,144.7	7,591.6	4,672.2	51.9	4,672.5	0.86	440,669.71	771,690.77
15,645.0	89.67	359.74	11,145.6	7,592.5	4,746.2	51.9	4,746.5	1.21	440,743.70	771,690.73
Cross North Hard Bondary @15645ftMD										
15,667.0	89.90	359.60	11,145.7	7,592.6	4,768.2	51.7	4,768.5	1.21	440,765.70	771,690.60
15,680.0	90.00	359.10	11,145.7	7,592.6	4,781.2	51.6	4,781.5	3.92	440,778.69	771,690.45
15,715.0	90.00	359.10	11,145.7	7,592.6	4,816.2	51.0	4,816.5	0.00	440,813.69	771,689.90
4 1/2"										
15,725.0	90.00	359.10	11,145.7	7,592.6	4,826.2	50.9	4,826.5	0.00	440,823.69	771,689.74

Company:	Murchison Oil and Gas	Local Co-ordinate Reference:	Well Bettis 20 State Com 2H
Project:	Jackson Unit Section 20	TVD Reference:	WELL @ 3553.1usft (Original Well Elev)
Site:	Bettis 20 State Com 2H	MD Reference:	WELL @ 3553.1usft (Original Well Elev)
Well:	Bettis 20 State Com 2H	North Reference:	Grid
Wellbore:	Bettis 20 State Com 2H ST	Survey Calculation Method:	Minimum Curvature
Design:	Bettis 20 State Com 2H ST	Database:	EDM 5000.1 Single User Db

15,715.0	11,145.7	4 1/2"	4-1/2	6-1/8
5,078.0	5,077.6	9 5/8"	9-5/8	12-1/4
1,275.0	1,274.9	13 3/8"	13-3/8	16
9,914.0	9,908.6	7"	7	8-1/2

Formations				
Measured Depth (usft)	Vertical Depth (usft)	Name	Dip (°)	
9,052.0	9,050.6	Bone Spring	0.00	
5,070.0	5,069.6	Delaware	0.00	
9,187.0	9,185.3	Avalon Shale	0.00	
7,526.0	7,525.1	Brushy Canyon	0.00	
10,100.0	10,091.5	1st Bone SpringSand	0.00	
1,168.0	1,167.9	Rustler	0.00	
6,052.0	6,051.4	Cherry Canyon	0.00	
10,804.0	10,752.4	2nd Bone SpringSand	0.00	

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,950.0	10,869.7	131.7	85.3	Cross South Hard Boundary@10950ftMD
15,645.0	11,145.6	4,746.2	51.9	Cross North Hard Bondary @15645ftMD

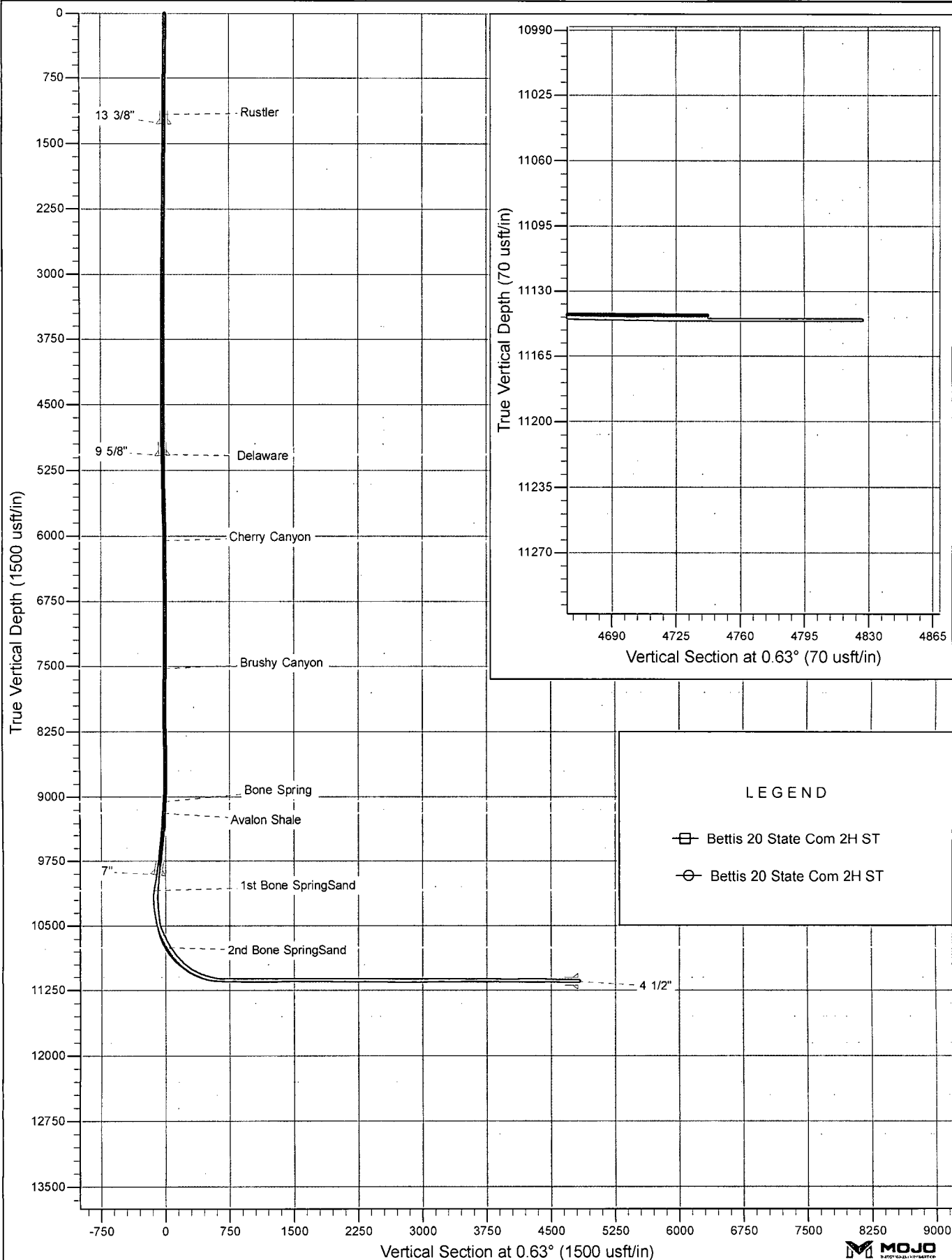
Checked By: _____	Approved By: _____	Date: _____
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Project: Jackson Unit Section 20
 Site: Bettis 20 State Com 2H
 Well: Bettis 20 State Com 2H
 Wellbore: Bettis 20 State Com 2H ST
 Design: Bettis 20 State Com 2H ST

 **MURCHISON OIL & GAS, INC.**



Azimuths to Grid North
 True North: -0.40°
 Magnetic North: 6.82°
 Magnetic Field
 Strength: 48290.8nT
 Dip Angle: 60.08°
 Date: 07/07/2014
 Model: IGRF2010



Project: Jackson Unit Section 20
 Site: Bettis 20 State Com 2H
 Well: Bettis 20 State Com 2H
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