

Oilfield Services, Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

August 20, 2018

OXY USA Incorporated
P.O. BOX 2289
Houston, TX 77252

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 26 2019

RECEIVED

Re:

13, 24S, 31E, Eddy NM
N 32.21058 W -103.72584

CLIENT: OXY USA Incorporated
WELL: Mesa Verde BS Unit 17
FIELD: Mesa Verde Bone Spring

RIG: H&P 556
COUNTY: Eddy
API NO: 30-015-44550
JOB NO: 18MLD3888

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Kamonporn Rimkheeree FE	Mesa Verde BS Unit 17 Original Hole	1111.00 Ft to 15278.00 Ft	July 19, 2018 to July 31, 2018	TelePacer/SlimPulse Third Party Corrected

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Mike Stephens
Field Service Manager

Oilfield Services, Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
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Schlumberger

Well Reference:
13, 24S, 31E, Eddy NM
N 32.21058 W -103.72584

I, Kamonporn Rimkheeree certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of July 19, 2018 through July 31, 2018, conduct or supervise the taking of the TelePacer/SlimPulse & Third Party Corrected surveys from a depth of 1111.00 feet to a depth of 15278.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA Incorporated for the Mesa Verde BS Unit 17 Well (Original Hole) API No. 30-015-44550 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Kamonporn Rimkheeree
FE

Subscribed and Sworn to before me this 20th day of August (month) 2018 (yr)

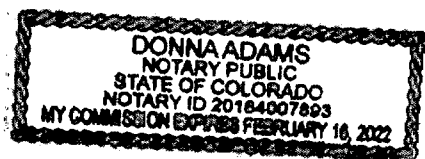
My Commission expires:

2-16-2022

D. Adams
Notary Public

(signature)

Adams County Colorado
(County State)





OXY



Borehole:	Well:	Field:	Structure:
Original Borehole	Mesa Verde BS Unit 17H	NM Eddy County (NAD 83)	Oxy Mesa Verde BS Unit 17H

Gravity & Magnetic Parameters

Model:	HDGM 2018	Dip:	59.921°	Date:	10-Jul-2018
MagDec:	6.819°	FS:	47986.154nT	Gravity FS:	998.427mgn

Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet
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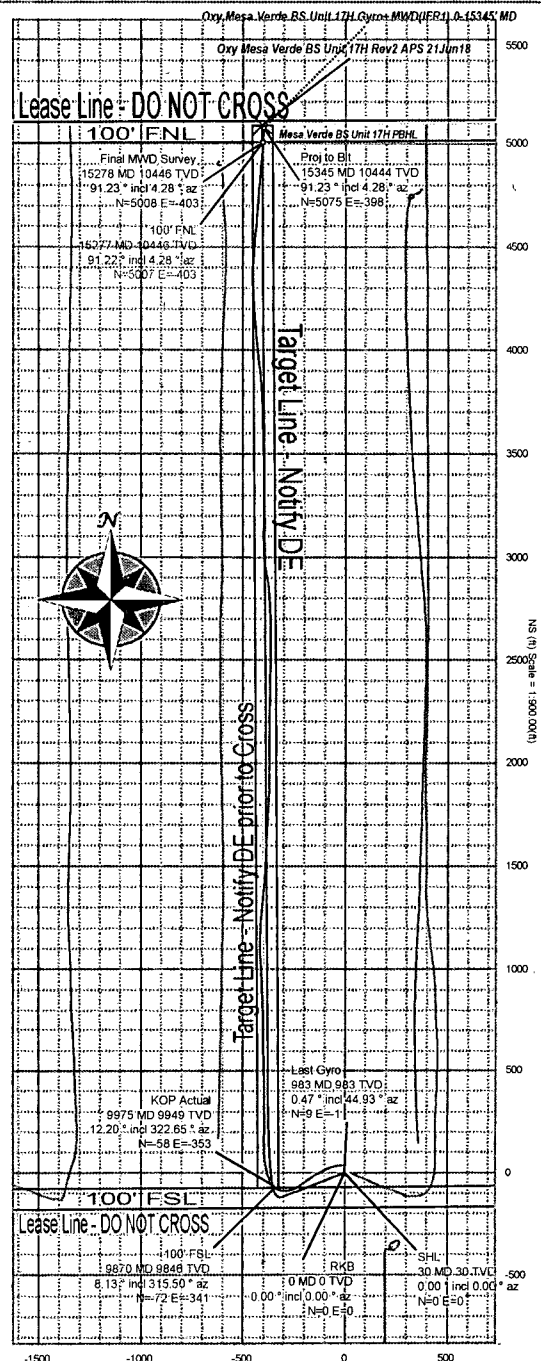
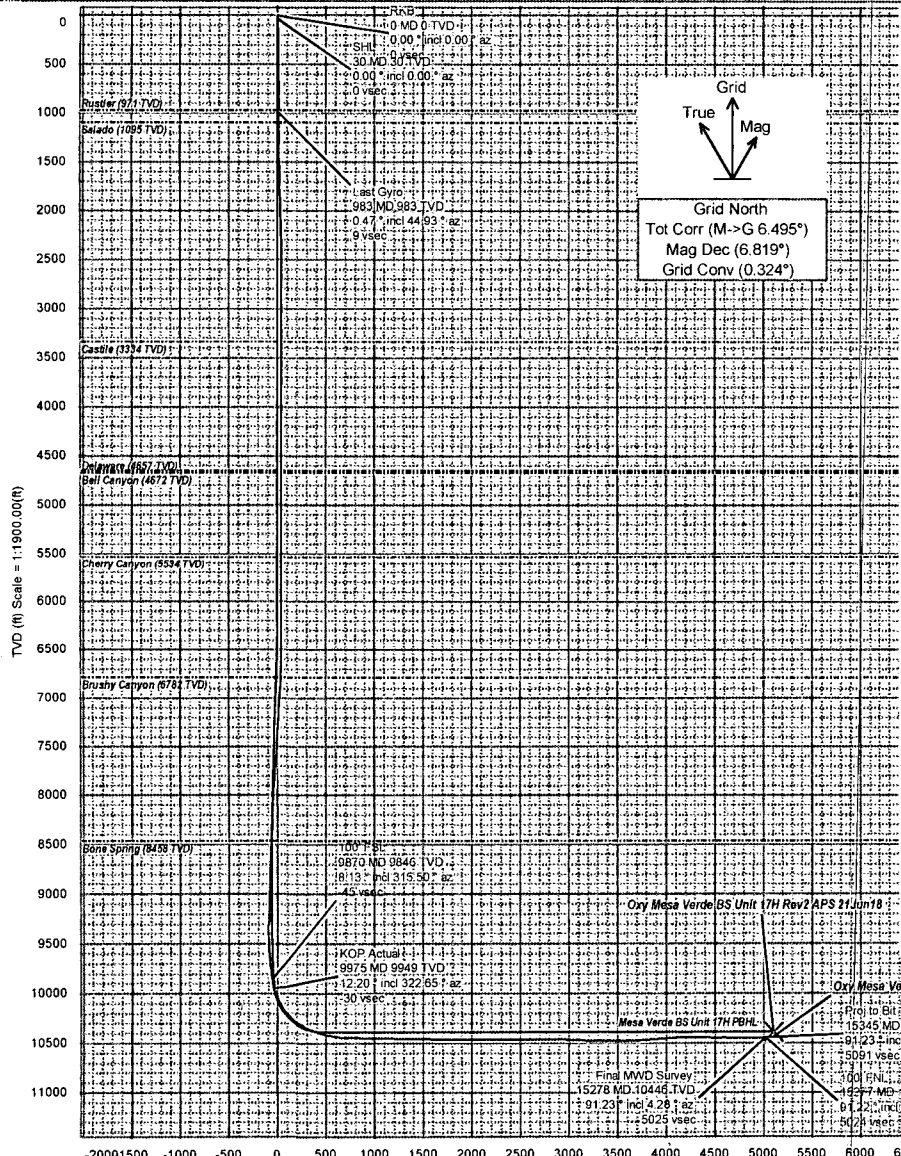
Lat:	N 32 12 38.10	Northing:	440874.95ftUS	Grid Conv:	0.3238*
Lon:	W 103 43 33.03	Easting:	729222.88ftUS	Scale Fact:	0.99994952

Miscellaneous

Slot: Mesa Verde BS TVD Ref: RKB=30'(3607.8ft above MSL)
Unit 17H
Plan: Oxy Mesa Verde BS Unit 17H Rev2 APS 21Jun18

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	971.00	0.00	248.77	971.00	0.00	0.00	0.00	0.00
Salado	1095.00	0.00	248.77	1095.00	0.00	0.00	0.00	0.00
Castile	3334.00	0.00	248.77	3334.00	0.00	0.00	0.00	0.00
Delaware	4657.00	0.00	248.77	4657.00	0.00	0.00	0.00	0.00
Bell Canyon	4672.00	0.00	248.77	4672.00	0.00	0.00	0.00	0.00
Cherry Canyon	5534.00	0.00	248.77	5534.00	0.00	0.00	0.00	0.00
Build 2"/100'	6025.00	0.00	248.77	6025.00	0.00	0.00	0.00	0.00
Hold Tangent	6324.89	6.00	248.77	6324.34	-4.50	-5.68	-14.62	2.00
Brushy Canyon	6785.07	6.00	248.77	6782.00	-18.28	-23.09	-59.44	0.00
Bone Spring	8470.29	6.00	248.77	8458.00	-68.77	-86.86	-223.57	0.00
Build/Turn 2"/100'	9303.12	6.00	248.77	9286.27	-93.72	-118.38	-304.68	0.00
Hold to KOP	9931.33	10.50	344.25	9910.00	-46.79	-75.00	-351.00	2.00
ICP	9931.33	10.50	344.25	9910.00	-46.79	-75.00	-351.00	2.00
Build/Turn 11"/100'	9981.33	10.50	344.25	9959.16	-37.85	-66.23	-353.47	0.00
Landing Point	10707.52	90.00	359.64	10388.00	475.08	446.40	-377.77	11.00
Mesa Verde BS Unit 17H gravel	15349.18	90.00	359.64	10388.00	5104.21	5087.97	-406.73	0.00



EW (ft) Scale = 1:900.00(ft)

Oxy Mesa Verde BS Unit 17H Gyro+MWD (FR1) 0-15345' MD

Pre to Bit

15345 MD 10444 TVD

81.23° incl 4.28° az

100 ENL

1937-7-MD-10440-TVE

01:22:10 inc(4) 28 az

[illegible]

Vertical Section (ft) Azim = 355.43° Scale = 1:1900.00(ft) Origin = 0N-S, 0E-W

Oxy Mesa Verde BS Unit 17H Gyro+MWD(IFR1) 0-15345' MD Survey

Geodetic Report

(Def Survey)



Report Date: August 11, 2018 - 02:54 PM
 Client: OXY
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Oxy Mesa Verde BS Unit 17H / Mesa Verde BS Unit 17H
 Well: Mesa Verde BS Unit 17H
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-015-44550
 Survey Name: Oxy Mesa Verde BS Unit 17H Gyro+MWD(IFR1) 0-15345' MD
 Survey Date: July 10, 2018
 Tort / AHD / ODI / ERD Ratio: 226.083 ° / 5595.846 ft / 6.268 / 0.534
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 38.09715", W 103° 43' 33.02587"
 Location Grid N/E Y/X: N 440874.950 ftUS, E 729222.880 ftUS
 CRS Grid Convergence Angle: 0.3238 °
 Grid Scale Factor: 0.99994952
 Version / Patch: 2.10.720.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 355.430 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=30'
 TVD Reference Elevation: 3607.800 ft above MSL
 Seabed / Ground Elevation: 3577.800 ft above MSL
 Magnetic Declination: 6.819 °
 Total Gravity Field Strength: 998.4270mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47986.154 nT
 Magnetic Dip Angle: 59.921 °
 Declination Date: July 10, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3238 °
 Total Cor Mag North-Grid North: 6.4950 °
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	440874.95	729222.88	N 32 12 38.10	W 103 43 33.03
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	440874.95	729222.88	N 32 12 38.10	W 103 43 33.03
	71.80	0.92	333.52	71.80	0.31	0.30	-0.15	2.20	440875.25	729222.73	N 32 12 38.10	W 103 43 33.03
	134.20	0.84	339.98	134.19	1.22	1.18	-0.53	0.20	440876.13	729222.35	N 32 12 38.11	W 103 43 33.03
	223.00	0.88	338.75	222.98	2.50	2.43	-1.00	0.05	440877.38	729221.88	N 32 12 38.12	W 103 43 33.04
	315.50	0.83	338.83	315.47	3.82	3.71	-1.50	0.05	440878.66	729221.38	N 32 12 38.16	W 103 43 33.04
	409.80	0.73	335.91	409.76	5.04	4.90	-1.99	0.11	440879.85	729220.89	N 32 12 38.15	W 103 43 33.05
	504.00	0.61	334.11	503.96	6.07	5.90	-2.45	0.13	440880.85	729220.43	N 32 12 38.16	W 103 43 33.05
	598.40	0.43	0.73	598.35	6.89	6.70	-2.67	0.31	440881.65	729220.21	N 32 12 38.16	W 103 43 33.06
	692.70	0.36	18.16	692.65	7.52	7.34	-2.57	0.15	440882.29	729220.31	N 32 12 38.18	W 103 43 33.06
	787.10	0.40	-33.93	787.05	8.05	7.89	-2.30	0.12	440882.84	729220.58	N 32 12 38.18	W 103 43 33.05
	882.30	0.51	47.57	882.24	8.57	8.46	-1.80	0.16	440883.40	729221.08	N 32 12 38.19	W 103 43 33.05
Last Gyro	983.20	0.47	44.93	983.14	9.12	9.05	-1.17	0.05	440884.00	729221.71	N 32 12 38.19	W 103 43 33.04
	1111.00	0.35	338.30	1110.94	9.83	9.78	-0.95	0.36	440884.73	729221.93	N 32 12 38.19	W 103 43 33.04
	1202.00	0.51	339.06	1201.94	10.48	10.42	-1.20	0.18	440885.37	729221.68	N 32 12 38.20	W 103 43 33.04
	1293.00	0.53	342.71	1292.93	11.28	11.20	-1.47	0.04	440886.15	729221.41	N 32 12 38.21	W 103 43 33.04
	1478.00	0.64	358.40	1477.92	13.15	13.05	-1.75	0.10	440888.00	729221.13	N 32 12 38.23	W 103 43 33.05
	1668.00	1.11	352.89	1667.90	16.05	15.94	-2.01	0.25	440890.89	729220.87	N 32 12 38.25	W 103 43 33.05
	1762.00	1.29	355.01	1761.88	18.01	17.90	-2.21	0.20	440892.84	729220.67	N 32 12 38.27	W 103 43 33.05
	1857.00	1.50	6.44	1856.85	20.30	20.20	-2.16	0.37	440895.15	729220.72	N 32 12 38.30	W 103 43 33.05
	1952.00	1.61	10.90	1951.82	22.81	22.74	-1.77	0.17	440897.69	729221.11	N 32 12 38.32	W 103 43 33.05
	2046.00	1.84	17.54	2045.77	25.48	25.48	-1.07	0.32	440900.43	729221.81	N 32 12 38.35	W 103 43 33.04
	2235.00	2.30	16.87	2234.65	31.82	32.00	0.95	0.24	440906.95	729223.83	N 32 12 38.41	W 103 43 33.01
	2349.00	2.32	19.95	2348.56	36.05	36.36	2.40	0.11	440911.31	729225.28	N 32 12 38.49	W 103 43 33.00
	2444.00	0.25	34.09	2443.53	37.96	38.34	3.17	2.19	440913.29	729226.05	N 32 12 38.48	W 103 43 32.99
	2538.00	0.08	177.96	2537.53	38.06	38.44	3.29	0.34	440913.39	729226.17	N 32 12 38.49	W 103 43 32.99
	2728.00	0.08	82.41	2727.53	37.93	38.33	3.42	0.06	440913.28	729226.30	N 32 12 38.48	W 103 43 32.98
	2822.00	0.06	284.05	2821.53	37.95	38.35	3.44	0.15	440913.30	729226.32	N 32 12 38.48	W 103 43 32.98
	3012.00	0.06	322.31	3011.53	38.07	38.45	3.28	0.02	440913.40	729226.16	N 32 12 38.48	W 103 43 32.99
	3201.00	0.00	113.16	3200.53	38.15	38.53	3.22	0.03	440913.48	729226.10	N 32 12 38.48	W 103 43 32.99
	3296.00	0.06	60.79	3295.53	38.17	38.55	3.27	0.06	440913.50	729226.15	N 32 12 38.48	W 103 43 32.99
	3390.00	0.00	69.78	3389.53	38.19	38.58	3.31	0.06	440913.53	729226.19	N 32 12 38.48	W 103 43 32.98
	3485.00	0.06	352.15	3484.53	38.24	38.63	3.30	0.06	440913.57	729226.18	N 32 12 38.48	W 103 43 32.98
	3579.00	0.00	55.84	3578.53	38.29	38.68	3.30	0.06	440913.62	729226.18	N 32 12 38.48	W 103 43 32.98
	3674.00	0.00	116.65	3673.53	38.29	38.68	3.30	0.00	440913.62	729226.18	N 32 12 38.48	W 103 43 32.98
	3769.00	0.00	302.65	3768.53	38.29	38.68	3.30	0.00	440913.62	729226.18	N 32 12 38.48	W 103 43 32.98
	3863.00	0.00	300.94	3862.53	38.29	38.68	3.30	0.00	440913.62	729226.18	N 32 12 38.48	W 103 43 32.98
	4053.00	0.06	157.71	4052.53	38.20	38.58	3.33	0.03	440913.53	729226.21	N 32 12 38.48	W 103 43 32.98
	4242.00	0.00	306.65	4241.53	38.10	38.49	3.37	0.03	440913.44	729226.25	N 32 12 38.48	W 103 43 32.98
	4432.00	0.11	175.54	4431.53	37.92	38.31	3.39	0.06	440913.26	729226.27	N 32 12 38.48	W 103 43 32.98
	4621.00	0.20	264.58	4620.53	37.75	38.10	3.07	0.12	440913.05	729225.95	N 32 12 38.47	W 103 43 32.99
	4811.00	0.18	322.09	4810.53	37.63	38.18	2.87	0.24	440913.13	729225.75	N 32 12 38.47	W 103 43 32.99
	4992.00	0.17	296.91	4991.53	38.03	38.36	2.65	0.08	440913.31	729225.53	N 32 12 38.48	W 103 43 32.99
	4986.00	0.14	14.32	4985.53	38.21	38.54	2.55	0.21	440913.48	729225.43	N 32 12 38.48	W 103 43 32.99
	4981.00	0.14	142.64	4980.53	38.22	38.56	2.65	0.27	440913.50	729225.53	N 32 12 38.48	W 103 43 32.99
	5076.00	0.14	33.99	5075.53	38.21	38.56	2.79	0.24	440913.51	729225.67	N 32 12 38.48	W 103 43 32.99
	5170.00	0.15	5.50	5169.52	38.43	38.78	2.86	0.08	440913.73	729225.74	N 32 12 38.48	W 103 43 32.99
	5360.00	0.16	211.53	5359.52	38.46	38.80	2.75	0.16	440913.75	729225.63	N 32 12 38.48	W 103 43 32.99
	5455.00	0.12	264.95	5454.52	38.35	38.68	2.58	0.14	440913.62	729225.46	N 32 12 38.48	W 103 43 32.99
	5549.00	0.15	90.23	5548.52	38.34	38.67	2.60	0.29	440913.62	729225.48	N 32 12 38.48	W 103 43 32.99
	5739.00	0.09	126.03	5738.52	38.22	38.58	2.97	0.05	440913.53	729225.85	N 32 12 38.48	W 103 43 32.99
	5834.00	0.12	64.86	5833.52	38.21	38.58	3.12	0.12	440913.53	729226.00	N 32 12 38.48	W 103 43 32.99
	5928.00	0.14	256.34	5927.52	38.22	38.59	3.10	0.28	440913.54	729225.98	N 32 12 38.48	W 103 43 32.99
	6023.00	0.64	280.52	6022.52	38.34	38.66	2.47	0.54	440913.61	729225.35	N 32 12 38.48	W 103 43 32.99
	6117.00	2.41	267.38	6116.48	38.55	38.67	-0.02	1.91	440913.62	729222.86	N 32 12 38.48	W 103 43 33.02
	6212.00	3.88	267.04	6211.34	38.70	38.41	-5.23	1.55	440913.36	729217.65	N 32 12 38.47	W 103 43 33.08
	6307.00	5.21	264.39	6306.04	38.72	37.82	-12.73	1.42	440912.77	729210.15	N 32 12 38.47	W 103 43 33.17
	6402.00	6.51	260.38	6400.54	38.16	36.50	-22.33	1.43	440911.45	729200.55	N 32 12 38.46	W 103 43 33.28
	6496.00	8.01	259.83	6493.78	37.06	34.45	-34.04	1.60	440909.40	729188.85	N 32 12 38.44	W 103 43 33.42
	6591.00	8.67	258.85	6587.78	35.59	31.90	-47.58	0.71	440906.85	729175.31	N 32 12 38.42	W 103 43 33.58
	6685.00	8.66	255.80	6680.71	33.59	28.79	-61.39	0.49	440903.74	729161.50	N 32 12 38.39	W 103 43 33.74
	6780.00	7.82	250.70	6774.73	30.75	24.80	-74.42	1.17	440899.85	729148.46	N 32 12 38.35	W 103 43 33.89
	6874.00	8.45	244.98	6867.78	26.71	19.87	-86.72	1.09	440894.82	729136.17	N 32 12 38.30	W 103 43 34.03
	6969.00	7.87	238.93	6961.82	21.37	13.56	-98.61	1.09	440888.51	729124.27	N 32 12 38.24	W 103 43 34.17
	7064.00	8.04	241.07	7055.91	15.73	6.99	-110.00	0.36	440881.94	729112.89	N 32 12 38.17	W 103 43 34.31
	7159.00	8.15	239.76	7149.96	10.07	0.38	-121.63	0.23	440875.33	729101.26	N 32 12 38.11	W 103 43 34.44
	7253.00	8.25	239.96	7243.00	4.29	-6.35	-133.22	0.11	440868.60	729089.66	N 32 12 38.04	W 103 43 34.58
	7442.00	8.22	239.43	7430.05	-7.47	-20.01	-156.60	0.04	440854.94	729066.29	N 32 12 37.91	W 103 43 34.85
	7537.00	7.95	240.95	7524.11	-13.17	-26.65	-168.19	0.36	440848.30	729054.70	N 32 12 37.84	W 103 43 34.99
	7631.00	8.40	237.01	7617.15	-19.13	-33.55	-179.63	0.76	440841.41	729043.26	N 32 12 37.78	W 103 43 35.12
	7726.00	8.45	235.51	7711.13	-25.91	-41.28	-191.20	0.24	440833.68	729031.69	N 32 12 37.70	W 103 43 35.25
	7821.00	7.98	233.65	7805.15	-32.87	-49.14	-202.27	0.57	440825.81	729020.63	N 32 12 37.62	W 103 43 35.38
	7915.00	8.29	233.09	7898.21	-39.93	-57.08	-212.94	0.34	440817.88	729009.95	N 32 12 37.54	W 103 43 35.51
	8010.00											

Comments	MD (ft)	Incl (°)	Azim Grd (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	8576.00	0.54	230.78	8555.10	-63.68	-85.74	-273.46	2.20	440789.22	728949.43	N 32 12 37.26	W 103 43 36.21
	8671.00	0.75	263.64	8650.09	-63.95	-86.09	-274.43	0.44	440788.87	728948.47	N 32 12 37.26	W 103 43 36.23
	8860.00	0.63	138.36	8839.08	-64.82	-87.00	-274.97	0.65	440787.95	728947.93	N 32 12 37.25	W 103 43 36.23
	8954.00	0.51	173.58	8933.08	-65.65	-87.80	-274.58	0.39	440787.15	728948.32	N 32 12 37.24	W 103 43 36.23
	9049.00	0.47	153.62	9028.08	-66.43	-88.57	-274.36	0.18	440786.38	728948.54	N 32 12 37.24	W 103 43 36.22
	9162.00	3.26	272.81	9141.02	-66.45	-88.83	-277.36	3.11	440786.12	728945.53	N 32 12 37.23	W 103 43 36.26
	9257.00	5.92	269.95	9235.71	-65.72	-88.70	-284.96	2.81	440786.25	728937.94	N 32 12 37.24	W 103 43 36.35
	9351.00	6.60	273.17	9329.15	-64.61	-88.41	-295.20	0.81	440786.55	728927.69	N 32 12 37.24	W 103 43 36.47
	9445.00	6.00	279.91	9422.58	-62.65	-87.26	-305.44	1.01	440789.27	728917.46	N 32 12 37.25	W 103 43 36.59
	9540.00	4.81	280.55	9517.15	-60.37	-85.68	-314.24	1.25	440789.27	728908.65	N 32 12 37.27	W 103 43 36.69
	9634.00	5.04	288.52	9610.81	-57.72	-83.65	-322.03	0.77	440791.31	728900.87	N 32 12 37.29	W 103 43 36.78
	9728.00	4.99	295.06	9704.45	-54.08	-80.60	-329.65	0.61	440794.35	728893.25	N 32 12 37.32	W 103 43 36.87
	9785.00	5.06	301.53	9761.23	-51.38	-78.24	-334.04	1.00	440796.71	728886.86	N 32 12 37.34	W 103 43 36.92
100' FSL	9870.00	8.13	315.50	9845.66	-44.56	-71.99	-341.45	4.05	440802.96	728881.45	N 32 12 37.40	W 103 43 37.00
KOP Actual	9975.00	12.20	322.65	9949.00	-29.53	-57.87	-353.39	4.05	440817.09	728869.51	N 32 12 37.54	W 103 43 37.14
	10070.00	22.58	332.68	10039.55	-4.19	-33.61	-367.89	11.33	440841.34	728855.01	N 32 12 37.79	W 103 43 37.31
	10164.00	30.69	346.16	10123.58	36.23	5.81	-381.95	10.71	440860.76	728840.95	N 32 12 38.18	W 103 43 37.47
	10259.00	41.81	351.92	10200.10	91.95	60.90	-392.24	12.23	440935.84	728830.67	N 32 12 38.72	W 103 43 37.59
	10354.00	53.75	359.33	10263.87	162.09	130.86	-397.16	13.82	441005.80	728825.75	N 32 12 39.41	W 103 43 37.64
	10449.00	60.35	0.97	10315.51	241.48	210.53	-396.90	7.10	441085.47	728826.00	N 32 12 40.20	W 103 43 37.63
	10544.00	66.12	0.93	10358.27	325.88	295.30	-395.50	6.07	441170.24	728827.40	N 32 12 41.04	W 103 43 37.61
	10639.00	74.10	359.55	10390.57	414.82	384.56	-395.15	8.51	441259.49	728827.75	N 32 12 41.92	W 103 43 37.60
	10734.00	76.55	358.26	10414.64	506.54	476.43	-396.91	2.89	441351.36	728825.99	N 32 12 42.83	W 103 43 37.61
	10829.00	80.06	357.99	10433.89	599.45	569.40	-399.96	3.71	441444.32	728822.94	N 32 12 43.75	W 103 43 37.64
	10924.00	88.23	359.90	10443.57	693.70	663.80	-401.69	8.83	441538.72	728821.21	N 32 12 44.69	W 103 43 37.66
	10979.00	89.43	0.10	10444.70	748.51	718.79	-401.69	2.21	441593.70	728821.21	N 32 12 45.23	W 103 43 37.65
	11100.00	89.13	357.40	10446.22	869.29	839.74	-404.33	2.24	441714.65	728818.58	N 32 12 46.43	W 103 43 37.68
	11195.00	88.93	357.26	10447.83	964.22	934.62	-408.75	0.26	441809.52	728814.15	N 32 12 47.37	W 103 43 37.72
	11290.00	89.06	356.74	10449.49	1059.17	1029.48	-413.72	0.56	441904.37	728809.18	N 32 12 48.31	W 103 43 37.77
	11385.00	88.82	0.07	10451.25	1154.01	1124.41	-416.36	3.51	441999.30	728806.54	N 32 12 49.25	W 103 43 37.80
	11480.00	89.65	4.53	10452.52	1248.30	1219.30	-412.55	4.77	442094.19	728810.35	N 32 12 50.19	W 103 43 37.75
	11575.00	89.00	5.23	10453.64	1342.00	1313.95	-404.47	1.01	442188.83	728818.43	N 32 12 51.12	W 103 43 37.65
	11670.00	88.51	5.50	10455.70	1435.55	1408.51	-395.59	0.59	442283.39	728827.31	N 32 12 52.06	W 103 43 37.54
	11765.00	89.31	2.20	10457.51	1529.50	1503.26	-389.22	3.57	442378.14	728833.68	N 32 12 52.99	W 103 43 37.46
	11860.00	88.82	2.53	10459.06	1623.79	1598.17	-385.30	0.62	442473.04	728837.60	N 32 12 53.93	W 103 43 37.41
	11955.00	89.96	2.91	10460.07	1718.01	1693.06	-380.79	1.26	442567.92	728842.11	N 32 12 54.87	W 103 43 37.35
	12050.00	89.51	3.15	10460.51	1812.18	1787.92	-375.77	0.54	442662.78	728847.13	N 32 12 55.81	W 103 43 37.28
	12145.00	89.79	1.30	10461.09	1906.51	1882.85	-372.08	1.97	442757.70	728850.82	N 32 12 56.75	W 103 43 37.23
	12240.00	89.20	0.03	10461.93	2001.10	1977.83	-370.98	1.47	442852.68	728851.92	N 32 12 57.69	W 103 43 37.21
	12335.00	89.68	359.71	10462.86	2095.81	2072.83	-371.19	0.61	442947.67	728851.71	N 32 12 58.63	W 103 43 37.21
	12430.00	90.23	0.09	10462.93	2190.52	2167.83	-371.36	0.70	443042.66	728851.54	N 32 12 59.57	W 103 43 37.21
	12525.00	90.68	1.13	10462.18	2285.13	2262.82	-370.35	1.19	443137.65	728852.55	N 32 13 0.51	W 103 43 37.19
	12620.00	90.20	0.95	10461.45	2379.67	2357.80	-368.62	0.54	443232.62	728854.28	N 32 13 1.45	W 103 43 37.16
	12810.00	90.37	0.81	10460.50	2568.81	2547.77	-365.70	0.12	443422.59	728857.20	N 32 13 3.33	W 103 43 37.11
	12999.00	89.48	358.05	10460.75	2757.33	2736.74	-367.58	1.53	443611.55	728855.32	N 32 13 5.20	W 103 43 37.12
	13094.00	88.31	354.57	10462.58	2852.29	2831.51	-373.69	3.86	443706.31	728849.20	N 32 13 6.14	W 103 43 37.19
	13189.00	89.44	349.95	10464.45	2947.09	2925.60	-386.48	5.01	443800.40	728836.42	N 32 13 7.07	W 103 43 37.33
	13284.00	87.79	356.35	10466.75	3041.94	3019.84	-397.81	6.95	443894.64	728825.09	N 32 13 8.00	W 103 43 37.46
	13379.00	87.96	0.46	10470.27	3136.73	3114.72	-400.45	4.33	443989.51	728822.45	N 32 13 8.94	W 103 43 37.48
	13474.00	88.79	0.43	10472.97	3231.32	3209.68	-399.71	0.87	444084.46	728823.19	N 32 13 9.88	W 103 43 37.47
	13664.00	90.16	359.81	10474.71	3420.67	3399.67	-399.31	0.79	444274.44	728823.59	N 32 13 11.76	W 103 43 37.45
	13759.00	90.10	359.27	10474.49	3515.43	3494.66	-400.08	0.57	444369.43	728822.83	N 32 13 12.70	W 103 43 37.45
	13854.00	89.37	357.86	10474.93	3610.28	3589.63	-402.45	1.67	444464.39	728820.45	N 32 13 13.64	W 103 43 37.47
	13949.00	92.44	359.15	10473.43	3705.12	3684.57	-404.93	3.51	444559.33	728817.97	N 32 13 14.58	W 103 43 37.50
	14044.00	94.71	357.81	10467.51	3799.79	3779.34	-407.45	2.77	444654.10	728815.45	N 32 13 15.52	W 103 43 37.52
	14139.00	94.16	353.45	10460.16	3894.48	3873.76	-414.66	4.61	444748.51	728808.24	N 32 13 16.45	W 103 43 37.60
	14234.00	93.71	353.97	10453.64	3989.22	3967.97	-425.05	0.72	444842.71	728797.86	N 32 13 17.38	W 103 43 37.71
	14329.00	94.02	354.42	10447.23	4083.98	4062.26	-434.63	0.57	444937.00	728788.27	N 32 13 18.32	W 103 43 37.82
	14424.00	92.16	355.84	10442.11	4178.83	4156.78	-442.69	2.46	445031.51	728780.22	N 32 13 19.25	W 103 43 37.91
	14519.00	89.06	356.40	10441.10	4273.81	4251.54	-449.11	3.32	445126.27	728773.79	N 32 13 20.19	W 103 43 37.97
	14614.00	88.03	359.44	10443.51	4368.68	4346.44	-452.56	3.38	445221.16	728770.34	N 32 13 21.13	W 103 43 38.01
	14709.00	89.17	3.78	10445.84	4463.07	4441.34	-449.89	4.72	445316.06	728773.01	N 32 13 22.07	W 103 43 37.97
	14804.00	90.75	5.40	10445.90	4556.85	4536.03	-442.29	2.38	445410.75	728780.61	N 32 13 23.01	W 103 43 37.88
	14899.00	89.17	4.49	10445.97	4650.54	4630.68	-434.10	1.92	445505.38	728788.80	N 32 13 23.94	W 103 43 37.77
	14993.00	88.10	4.98	10448.21	4743.28	4724.33	-426.34	1.25	445599.03	728796.56	N 32 13 24.87	W 103 43 37.68
	15088.00	91.68	4.74	10448.39	4836.98	4818.97	-418.30	3.78	445693.67	728804.61	N 32 13 25.80	W 103 43 37.58
	15183.00	90.20	4.60	10446.83	4930.73	4913.64	-410.56	1.56	445788.33	728812.34	N 32 13 26.74	W 103 43 37.48
	15277.00	91.22	4.28	10445.67	5023.56	5007.35	-403.28	1.14	445882.04	728819.62	N 32 13 27.67	W 103 43 37.39
100' FNL												
Final MWD	15278.00	91.23	4.28	10445.65	5024.55	5008.35	-403.21	1.14	445883.03	728819.69	N 32 13 27.68	W 103 43 37.39
Survey												
Proj to Bit	15345.00	91.23	4.28	10444.21	5090.74	5075.14	-398.21	0.00	445949.83	728824.69	N 32 13 28.34	W 103 43 37.33

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size	Casing Diameter (In)	Survey Tool Type	Borehole / Survey
	1	0.000	30.000	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 17H Gyro+MWD(IFR1) 0-15345' MD
	1	30.000	30.000	Act Sins	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 17H Gyro+MWD(IFR1) 0-15345' MD
	1	30.000	983.200	Act Sins	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde BS Unit 17H Gyro+MWD(IFR1) 0-15345' MD
	1	983.200	9785.000	Act Sins	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde BS Unit 17H Gyro+MWD(IFR1) 0-15345' MD
	1	9785.000	15345.000	Act Sins	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde BS Unit 17H Gyro+MWD(IFR1) 0-15345' MD