

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

April 9, 2018

OXY USA INC.

Re:

17, 24S, 32E, Lea NM
32.21000 103.68800

CLIENT: OXY USA INC.
WELL: Mesa Verde ~~BS~~ Unit 1 ST1
FIELD: Wildcat Wolfcamp

RIG: H&P 639
COUNTY: Lea
API NO: 30-025-44101-0001
JOB NO: 17MLD2552

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>
Rasheed Atanda FE	Mesa Verde WC Unit 1 ST1 Side Track	7008.00 Ft to 19187.00 Ft	March 3, 2018 to March 15, 2018	TelePacer

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

Cody Nelms
Field Service Manager

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

Well Reference:
17, 24S, 32E, Lea NM
32.21000 103.68800

I, Rasheed Atanda certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of March 03, 2018 through March 15, 2018, conduct or supervise the taking of the TelePacer surveys from a depth of 7008.00 feet to a depth of 19187.00 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 INC. for the Mesa Verde BS Unit 1 ST1 Well (Side Track) API No. 30-025-44101-0001 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.

R. Atanda

By
Rasheed Atanda
FE

Subscribed and Sworn to before me this 9th day of April (month) 2018 (yr)

My Commission expires:

2-16-2022

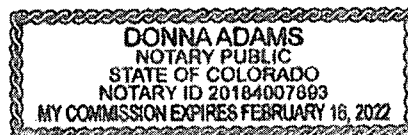
D. Adams

Notary Public

Adams County Colorado

(County State)

(signature)



Schlumberger

OXY

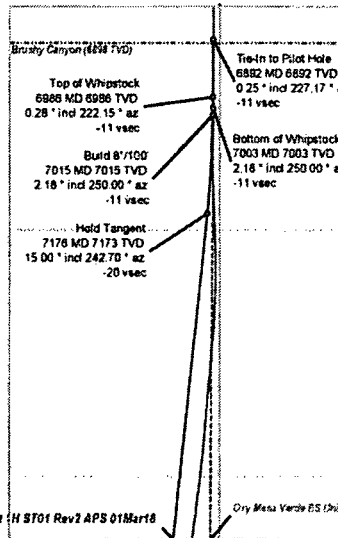
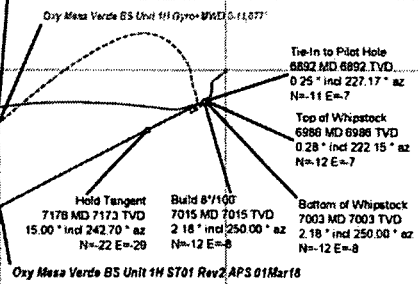
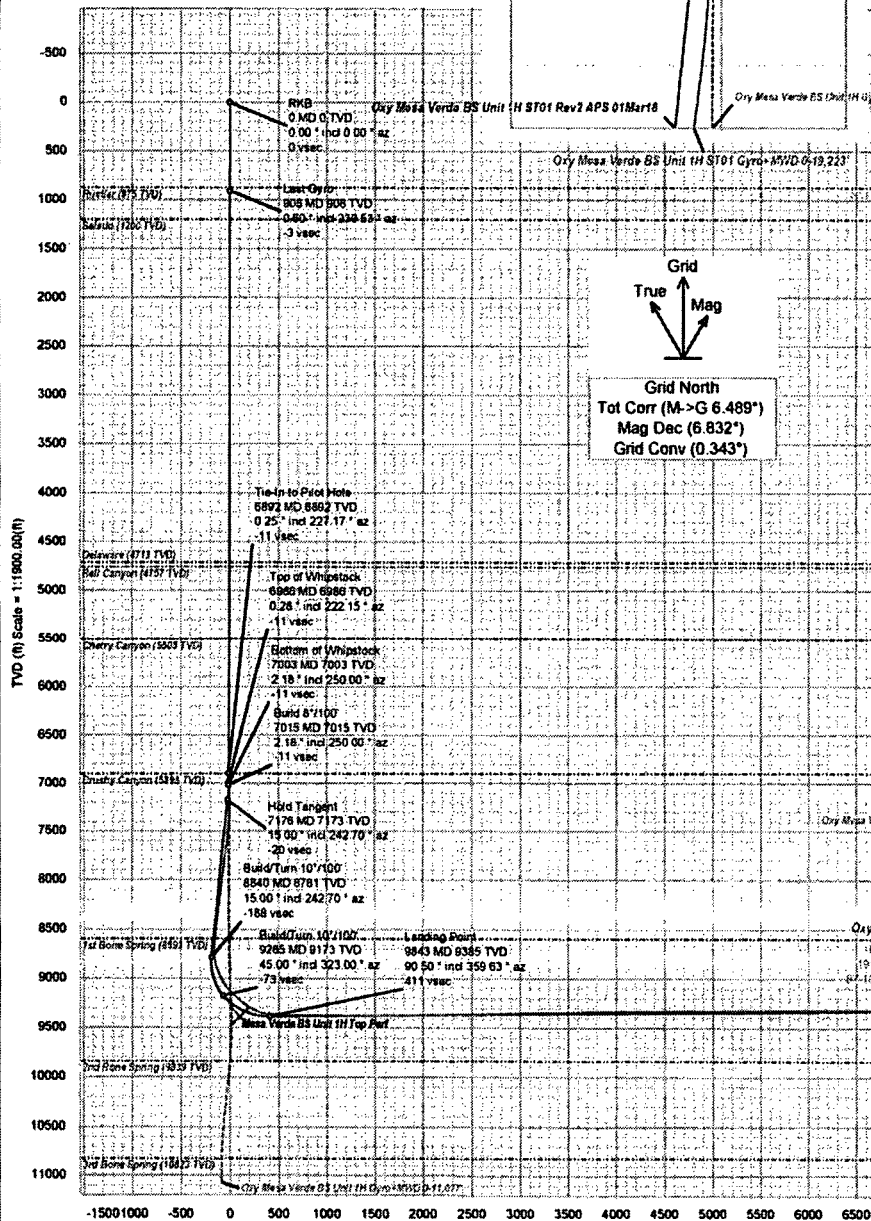
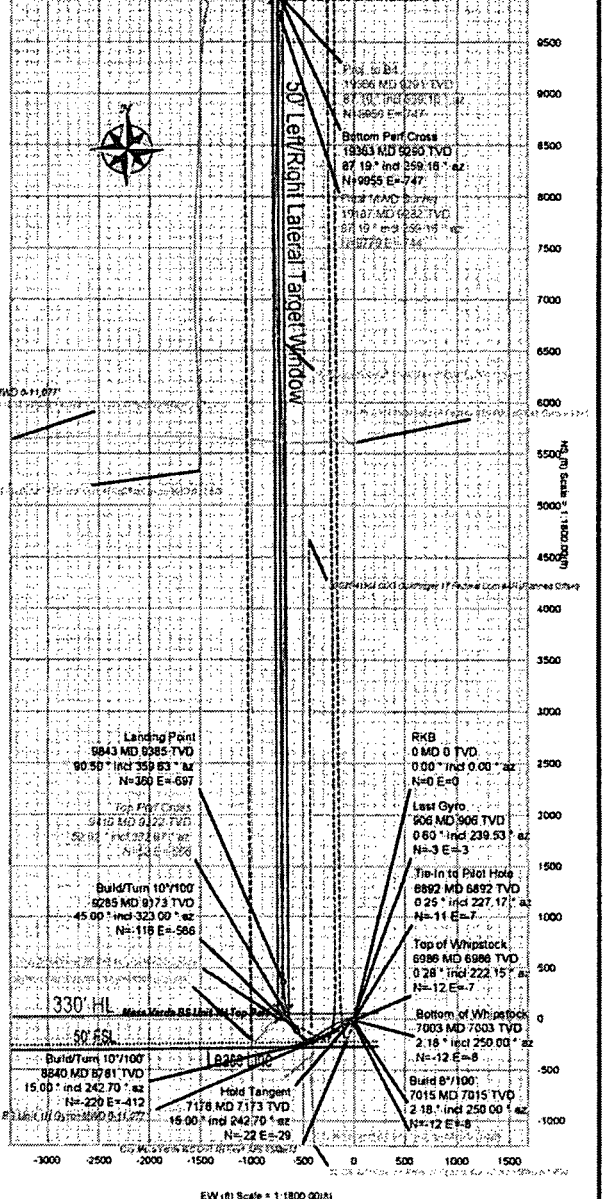


Borehole:	ST01	Well:	Oxy Mesa Verde BS Unit 1H	Field:	NM Lea County (NAD 83)	Structure:	Oxy Mesa Verde BS Unit 1H
-----------	------	-------	---------------------------	--------	------------------------	------------	---------------------------

Gravity & Magnetic Parameters		Surface Location		Miscellaneous	
Model:	100M 2018	Dip:	68.829°	Date:	10-Mar-2018
MagDec:	6.832°	FB:	40034.003m	Gravity FB:	998.432mgals (9.80665 Based)
		NAD83 New Mexico State Plane, Eastern Zone, US Feet		Oxy Mesa Verde BS Unit 1H	
		Lat: N 32 12 39.40		TVD Ref:	
		Longitude: 106 02 32.10		RKB=26.5' (3585.1ft above MSL)	
		Easting: 740622.810US		Plan:	
		Scale Fact: 0.99993458		Oxy Mesa Verde BS Unit 1H ST01 Rev2 APS 01Mar18	

Vertical Section (ft) Azim = 355.70° Scale = 1:1900.00(ft) Origin = ON-S, 0E-W

Oxy Mesa Verde BS Unit 1H ST01 Gyro-MWD 0-19,223'

Lease Line
330' HL

Vertical Section (ft) Azim = 355.70° Scale = 1:1900.00(ft) Origin = ON-S, 0E-W

Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366' Survey Geodetic Report

(Def Survey)



Report Date: March 15, 2018 - 10:49 AM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Mesa Verde BS Unit 1H / Oxy Mesa Verde BS Unit 1H
 Well: Oxy Mesa Verde BS Unit 1H
 Borehole: ST01
 UWI / API#: Unknown / Unknown
 Survey Name: Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
 Survey Date: March 10, 2018
 Tort / AHD / DDI / ERD Ratio: 277.509' / 10765.238 ft / 5.790' / 1.148
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.59716", W 103° 41' 20.32562"
 Location Grid N/E Y/X: N 441092.820 NUS, E 740622.800 NUS
 CRS Grid Convergence Angle: 0.3435°
 Grid Scale Factor: 0.99995458
 Version / Patch: 2.10.706.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 355.696° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3590.100 ft above MSL
 Seabed / Ground Elevation: 3563.600 ft above MSL
 Magnetic Declination: 6.832°
 Total Gravity Field Strength: 998.4320mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48024.802 nT
 Magnetic Dip Angle: 59.929°
 Declination Date: March 10, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3435°
 Total Corr Mag North->Grid: 6.4887°
 North: 6.4887°
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	441092.92	740622.60	N 32 12 39.60 W 103 41 20.33	
RKB	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441092.92	740622.60	N 32 12 39.60 W 103 41 20.33	
	75.09	0.07	156.87	75.09	-0.03	-0.03	0.01	0.14	441092.89	740622.61	N 32 12 39.60 W 103 41 20.33	
	161.18	0.17	107.59	161.18	-0.13	-0.11	0.05	0.16	441092.81	740622.75	N 32 12 39.60 W 103 41 20.32	
	247.24	0.16	107.24	247.24	-0.22	-0.19	0.39	0.01	441092.73	740622.99	N 32 12 39.60 W 103 41 20.32	
	341.37	0.14	104.64	341.37	-0.30	-0.26	0.63	0.02	441092.66	740623.23	N 32 12 39.59 W 103 41 20.32	
	433.50	0.06	310.04	433.50	-0.31	-0.25	0.70	0.21	441092.67	740623.30	N 32 12 39.59 W 103 41 20.32	
	527.91	0.25	258.29	527.91	-0.30	-0.26	0.46	0.23	441092.66	740623.06	N 32 12 39.59 W 103 41 20.32	
	621.49	0.56	245.21	621.49	-0.48	-0.50	-0.16	0.34	441092.42	740622.44	N 32 12 39.59 W 103 41 20.33	
	716.01	0.82	225.70	716.00	-1.08	-1.16	-1.08	0.37	441091.78	740621.54	N 32 12 39.59 W 103 41 20.34	
	810.45	1.05	229.89	810.43	-2.02	-2.19	-2.20	0.25	441090.73	740620.40	N 32 12 39.58 W 103 41 20.35	
Last Gyro	905.65	0.60	239.53	905.62	-2.75	-3.01	-3.30	0.49	441089.91	740619.30	N 32 12 39.57 W 103 41 20.36	
	959.00	0.40	225.82	958.96	-2.99	-3.28	-3.68	0.43	441089.64	740618.92	N 32 12 39.56 W 103 41 20.37	
	1142.00	0.13	241.62	1141.96	-3.49	-3.82	-4.32	0.15	441089.10	740618.28	N 32 12 39.56 W 103 41 20.38	
	1323.00	0.06	268.42	1322.96	-3.57	-3.92	-4.59	0.04	441089.00	740618.01	N 32 12 39.56 W 103 41 20.38	
	1503.00	0.08	173.49	1502.96	-3.69	-4.05	-4.67	0.06	441088.87	740617.93	N 32 12 39.56 W 103 41 20.38	
	1594.00	0.06	112.86	1593.96	-3.77	-4.13	-4.62	0.08	441088.79	740617.98	N 32 12 39.56 W 103 41 20.38	
	1783.00	0.00	318.59	1782.96	-3.82	-4.17	-4.53	0.03	441088.75	740618.07	N 32 12 39.56 W 103 41 20.38	
	1878.00	0.06	262.13	1877.96	-3.82	-4.18	-4.58	0.06	441088.74	740618.02	N 32 12 39.56 W 103 41 20.38	
	1973.00	0.06	256.28	1972.96	-3.83	-4.20	-4.68	0.01	441088.72	740617.92	N 32 12 39.56 W 103 41 20.38	
	2067.00	0.08	291.73	2066.96	-3.81	-4.18	-4.78	0.05	441088.74	740617.82	N 32 12 39.56 W 103 41 20.38	
	2162.00	0.08	205.86	2161.96	-3.84	-4.22	-4.88	0.11	441088.70	740617.73	N 32 12 39.56 W 103 41 20.38	
	2257.00	0.06	270.65	2256.96	-3.89	-4.28	-4.95	0.08	441088.64	740617.65	N 32 12 39.56 W 103 41 20.38	
	2351.00	0.00	299.69	2350.96	-3.89	-4.28	-5.00	0.06	441088.64	740617.60	N 32 12 39.56 W 103 41 20.38	
	2446.00	0.11	216.64	2445.96	-3.96	-4.35	-5.06	0.12	441088.57	740617.50	N 32 12 39.56 W 103 41 20.38	
	2541.00	0.06	173.34	2540.96	-4.08	-4.47	-5.11	0.08	441088.45	740617.49	N 32 12 39.55 W 103 41 20.39	
	2635.00	0.00	252.70	2634.96	-4.13	-4.52	-5.10	0.08	441088.40	740617.50	N 32 12 39.55 W 103 41 20.39	
	2730.00	0.06	290.94	2729.96	-4.10	-4.50	-5.15	0.06	441088.42	740617.45	N 32 12 39.55 W 103 41 20.39	
	2825.00	0.08	56.99	2824.96	-4.05	-4.45	-5.14	0.13	441088.47	740617.46	N 32 12 39.55 W 103 41 20.39	
	2919.00	0.08	4.12	2918.96	-3.96	-4.35	-5.08	0.08	441088.57	740617.52	N 32 12 39.55 W 103 41 20.39	
	3014.00	0.08	113.61	3013.96	-3.92	-4.31	-5.01	0.14	441088.61	740617.59	N 32 12 39.55 W 103 41 20.38	
	3109.00	0.00	318.82	3108.96	-3.95	-4.34	-4.96	0.08	441088.58	740617.65	N 32 12 39.55 W 103 41 20.38	
	3204.00	0.06	344.45	3203.96	-3.90	-4.29	-4.96	0.06	441088.63	740617.64	N 32 12 39.56 W 103 41 20.38	
	3298.00	0.08	170.10	3297.96	-3.92	-4.31	-4.97	0.15	441088.62	740617.63	N 32 12 39.55 W 103 41 20.38	
	3393.00	0.06	309.82	3392.96	-3.95	-4.34	-4.99	0.14	441088.58	740617.61	N 32 12 39.55 W 103 41 20.38	
	3488.00	0.08	172.55	3487.96	-3.98	-4.37	-5.02	0.14	441088.55	740617.58	N 32 12 39.55 W 103 41 20.38	
	3582.00	0.13	179.04	3581.96	-4.16	-4.54	-5.01	0.05	441088.38	740617.59	N 32 12 39.55 W 103 41 20.38	
	3677.00	0.11	201.77	3676.96	-4.34	-4.74	-5.04	0.05	441088.18	740617.58	N 32 12 39.55 W 103 41 20.38	
	3772.00	0.06	278.46	3771.96	-4.42	-4.81	-5.13	0.12	441088.11	740617.47	N 32 12 39.55 W 103 41 20.39	
	3867.00	0.13	224.65	3866.96	-4.48	-4.88	-5.25	0.11	441088.04	740617.35	N 32 12 39.55 W 103 41 20.38	
	4056.00	0.11	161.04	4055.96	-4.79	-5.21	-5.34	0.07	441087.71	740617.26	N 32 12 39.55 W 103 41 20.39	
	4151.00	0.16	146.53	4150.96	-5.00	-5.40	-5.24	0.06	441087.52	740617.36	N 32 12 39.54 W 103 41 20.39	
	4246.00	0.11	136.02	4245.96	-5.18	-5.58	-5.11	0.06	441087.34	740617.49	N 32 12 39.54 W 103 41 20.39	
	4340.00	0.16	154.41	4339.96	-5.37	-5.76	-4.99	0.07	441087.16	740617.61	N 32 12 39.54 W 103 41 20.38	
	4435.00	0.17	183.03	4434.96	-5.63	-6.02	-4.96	0.12	441086.90	740617.84	N 32 12 39.54 W 103 41 20.38	
	4524.00	0.06	194.78	4523.96	-5.99	-6.39	-5.05	0.06	441086.53	740617.55	N 32 12 39.53 W 103 41 20.38	
	4613.00	0.11	221.81	4612.96	-6.21	-6.62	-5.20	0.03	441086.30	740617.41	N 32 12 39.53 W 103 41 20.39	
	5003.00	0.08	274.17	5002.96	-6.32	-6.75	-5.45	0.05	441086.17	740617.15	N 32 12 39.53 W 103 41 20.39	
	5097.00	0.00	140.22	5096.96	-6.31	-6.74	-5.51	0.09	441086.18	740617.09	N 32 12 39.53 W 103 41 20.39	
	5191.00	0.00	153.11	5190.96	-6.31	-6.74	-5.51	0.00	441086.18	740617.09	N 32 12 39.53 W 103 41 20.39	
	5286.00	0.11	36.10	5285.96	-6.24	-6.67	-5.46	0.12	441086.25	740617.14	N 32 12 39.53 W 103 41 20.39	
	5380.00	0.00	274.11	5379.96	-6.17	-6.60	-5.41	0.12	441086.32	740617.19	N 32 12 39.53 W 103 41 20.39	
	5474.00	0.06	147.62	5473.96	-6.21	-6.64	-5.38	0.06	441086.28	740617.22	N 32 12 39.53 W 103 41 20.39	
	5569.00	0.11	177.37	5568.96	-6.35	-6.77	-5.35	0.07	441086.15	740617.25	N 32 12 39.53 W 103 41 20.39	
	5663.00	0.23	169.22	5662.96	-6.63	-7.05	-5.31	0.13	441085.87	740617.29	N 32 12 39.53 W 103 41 20.39	
	5757.00	0.20	159.13	5756.96	-6.97	-7.38	-5.22	0.05	441085.54	740617.38	N 32 12 39.52 W 103 41 20.39	
	5852.00	0.25	174.42	5851.96	-7.34	-7.75	-5.14	0.08	441085.17	740617.46	N 32 12 39.52 W 103 41 20.39	
	5946.00	0.25	210.19	5945.96	-7.71	-8.13	-5.22	0.16	441084.79	740617.38	N 32 12 39.52 W 103 41 20.39	
	6040.00	0.29	196.98	6039.95	-8.10	-8.53	-5.39	0.08	441084.39	740617.21	N 32 12 39.51 W 103 41 20.39	
	6230.00	0.20	173.61	6229.95	-8.88	-9.32	-5.50	0.07	441083.60	740617.10	N 32 12 39.51 W 103 41 20.39	
	6324.00	0.08	335.00	6323.95	-8.98	-9.42	-5.51	0.29	441083.50	740617.09	N 32 12 39.50 W 103 41 20.39	
	6419.00	0.25	218.53	6418.95	-9.07	-9.53	-5.66	0.31	441083.39	740616.94	N 32 12 39.50 W 103 41 20.39	
	6514.00	0.30	214.43	6513.95	-9.42	-9.89	-5.93	0.06	441083.03	740616.67	N 32 12 39.50 W 103 41 20.40	
	6608.00	0.29	219.58	6607.95	-9.78	-10.28	-6.22	0.03	441082.64	740616.38	N 32 12 39.50 W 103 41 20.40	
	6703.00	0.22	217.19	6702.95	-10.09	-10.61	-6.49	0.07	441082.31	740616.11	N 32 12 39.49 W 103 41 20.40	
	6798.00	0.24	210.42	6797.95	-10.39	-10.93	-6.70	0.04	441081.99	740615.90	N 32 12 39.49 W 103 41 20.40	
	6892.00	0.25	227.17	6891.95	-10.68	-11.24	-6.95	0.08	441081.68	740615.65	N 32 12 39.49 W 103 41 20.41	
	7001.00	2.71	249.50	7000.90	-11.55	-12.30	-9.54	2.28	441080.62	740613.06	N 32 12 39.48 W 103 41 20.44	
	7056.00	10.59	253.37	7055.49	-12.99	-14.21	-15.61	14.34	441078.71	740606.99	N 32 12 39.46 W 103 41 20.51	
	7088.00	13.84	277.55	7086.78	-12.84	-14.54	-22.22	18.73	441078.38	740600.38	N 32 12 39.45 W 103 41 20.59	
	7182.00	16.03	273.24	7177.60	-8.82	-12.33	-46.33	2.61	441080.59	740576.27	N 32 12 39.48 W 103 41 20.87	
	7276.00	17.05	266.18	7267.72	-7.00	-12.52	-73.04	2.40	441080.40	740549.56	N 32 12 39.48 W 103 41 21.18	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (NUS)	Easting (EUS)	Latitude (NUS ° ' '')	Longitude (E/W ° ' '')
	7371.00	17.49	252.44	7358.48	-10.16	-17.76	-100.56	4.31	441075.17	740522.04	N 32 12 39.43 W 103 41 21.50	
	7465.00	17.76	249.53	7448.07	-17.39	-27.03	-127.46	0.98	441065.89	740495.15	N 32 12 39.34 W 103 41 21.81	
	7560.00	17.53	249.17	7538.60	-25.49	-37.19	-154.41	0.27	441055.74	740468.20	N 32 12 39.24 W 103 41 22.13	
	7654.00	17.18	241.37	7628.33	-35.23	-48.87	-179.61	2.50	441044.06	740442.80	N 32 12 39.12 W 103 41 22.42	
	7749.00	16.69	240.51	7719.22	-46.81	-62.30	-203.99	0.58	441030.63	740418.62	N 32 12 38.99 W 103 41 22.70	
	7844.00	16.44	240.57	7810.28	-58.32	-75.62	-227.57	0.26	441017.31	740395.04	N 32 12 38.66 W 103 41 22.98	
	7939.00	16.19	240.07	7901.45	-69.76	-88.83	-250.76	0.30	441004.09	740371.85	N 32 12 38.73 W 103 41 23.25	
	8033.00	16.32	239.39	7991.69	-81.28	-102.09	-273.48	0.25	440990.83	740349.13	N 32 12 38.60 W 103 41 23.52	
	8128.00	16.24	238.73	8082.88	-93.22	-115.79	-296.32	0.21	440977.14	740326.29	N 32 12 38.47 W 103 41 23.78	
	8223.00	16.03	237.80	8174.14	-105.38	-129.67	-318.78	0.35	440963.26	740303.94	N 32 12 38.33 W 103 41 24.04	
	8317.00	16.07	236.68	8264.48	-117.77	-143.74	-340.63	0.34	440949.19	740281.99	N 32 12 38.20 W 103 41 24.30	
	8412.00	15.24	236.10	8355.95	-130.32	-157.93	-361.98	0.89	440935.00	740260.64	N 32 12 38.06 W 103 41 24.55	
	8507.00	13.81	235.52	8447.91	-142.18	-171.31	-381.69	1.51	440921.62	740240.93	N 32 12 37.92 W 103 41 24.78	
	8601.00	15.89	247.78	8538.79	-151.78	-182.53	-402.86	4.00	440910.40	740219.76	N 32 12 37.81 W 103 41 25.03	
	8696.00	13.99	249.65	8630.58	-158.96	-191.45	-425.66	2.06	440901.48	740196.96	N 32 12 37.73 W 103 41 25.29	
	8788.00	14.96	262.60	8719.68	-162.67	-196.84	-447.87	3.66	440896.09	740174.75	N 32 12 37.68 W 103 41 25.55	
	8882.00	17.82	291.12	8810.00	-157.14	-193.22	-473.37	8.98	440899.71	740149.25	N 32 12 37.71 W 103 41 25.85	
	8977.00	26.99	309.73	8897.84	-135.85	-174.14	-503.61	12.10	440918.79	740119.02	N 32 12 37.90 W 103 41 26.20	
	9072.00	32.13	316.98	8980.47	-101.12	-141.86	-537.46	6.58	440951.06	740085.16	N 32 12 38.23 W 103 41 26.59	
	9168.00	38.46	326.20	9057.21	-56.10	-99.23	-570.84	8.79	440993.70	740051.78	N 32 12 38.65 W 103 41 26.98	
	9261.00	46.76	326.51	9127.07	-0.08	-45.72	-606.43	8.74	441047.20	740016.20	N 32 12 39.18 W 103 41 27.39	
	9356.00	51.64	328.22	9189.12	63.21	14.84	-645.17	5.31	441107.75	739977.46	N 32 12 39.78 W 103 41 27.83	
	9451.00	53.49	336.31	9246.93	132.35	81.53	-680.16	7.03	441174.45	739942.47	N 32 12 40.44 W 103 41 28.24	
	9545.00	59.58	348.97	9298.89	208.52	156.19	-703.18	12.95	441249.10	739919.45	N 32 12 41.18 W 103 41 28.50	
	9640.00	70.59	1.21	9338.97	294.33	241.71	-710.12	18.43	441334.62	739912.52	N 32 12 42.03 W 103 41 28.57	
	9734.00	88.55	2.14	9357.54	385.66	333.51	-707.41	17.01	441426.42	739915.22	N 32 12 42.94 W 103 41 28.54	
	9778.00	87.00	1.59	9359.90	427.35	375.42	-706.05	1.69	441468.32	739916.59	N 32 12 43.35 W 103 41 28.52	
	9805.00	86.86	1.55	9361.46	456.16	404.37	-705.25	0.50	441497.27	739917.38	N 32 12 43.64 W 103 41 28.51	
	9901.00	86.69	1.48	9366.86	551.52	500.18	-702.74	0.20	441593.08	739919.90	N 32 12 44.59 W 103 41 28.47	
	9995.00	88.54	0.30	9370.77	645.04	594.09	-701.29	2.32	441686.98	739921.34	N 32 12 45.52 W 103 41 28.45	
	10090.00	90.39	0.79	9371.65	739.70	689.07	-700.39	2.01	441781.96	739922.24	N 32 12 46.46 W 103 41 28.43	
	10185.00	89.38	359.54	9371.85	834.46	784.06	-700.85	2.60	441876.95	739921.69	N 32 12 47.40 W 103 41 28.43	
	10279.00	89.61	358.59	9372.67	928.34	878.03	-703.30	0.25	441970.91	739919.33	N 32 12 48.33 W 103 41 28.45	
	10468.00	89.83	358.00	9373.60	1117.14	1066.94	-708.82	0.33	442159.81	739913.71	N 32 12 50.20 W 103 41 28.50	
	10563.00	90.06	358.67	9373.69	1212.04	1161.90	-711.68	0.75	442264.77	739910.95	N 32 12 51.14 W 103 41 28.53	
	10658.00	89.65	358.62	9374.01	1306.91	1256.91	-713.93	0.54	442349.74	739908.70	N 32 12 52.08 W 103 41 28.55	
	10752.00	90.28	359.08	9374.15	1400.77	1350.86	-715.82	0.92	442443.71	739906.82	N 32 12 53.01 W 103 41 28.56	
	10847.00	90.50	0.49	9373.50	1495.52	1445.85	-716.17	1.50	442538.70	739906.46	N 32 12 53.95 W 103 41 28.56	
	10942.00	90.28	0.68	9372.86	1590.17	1540.84	-715.20	0.31	442633.69	739907.43	N 32 12 54.89 W 103 41 28.54	
	11036.00	90.45	0.58	9372.26	1683.82	1634.84	-714.17	0.21	442727.68	739908.47	N 32 12 55.82 W 103 41 28.52	
	11131.00	90.22	1.03	9371.70	1778.45	1729.82	-712.83	0.53	442822.66	739909.80	N 32 12 56.76 W 103 41 28.50	
	11226.00	90.56	0.77	9371.06	1873.05	1824.81	-711.34	0.45	442917.64	739911.29	N 32 12 57.70 W 103 41 28.48	
	11320.00	91.07	1.45	9369.72	1968.62	1918.78	-709.52	0.90	443011.61	739913.11	N 32 12 58.63 W 103 41 28.45	
	11415.00	90.62	1.08	9368.32	2061.16	2013.75	-707.42	0.61	443106.57	739915.21	N 32 12 59.57 W 103 41 28.42	
	11509.00	90.84	1.05	9367.12	2154.74	2107.72	-705.88	0.24	443200.54	739916.96	N 32 13 0.49 W 103 41 28.39	
	11604.00	90.73	0.40	9365.82	2249.37	2202.71	-704.48	0.69	443295.52	739918.16	N 32 13 1.43 W 103 41 28.37	
	11699.00	91.01	0.09	9364.38	2344.06	2297.70	-704.07	0.44	443390.51	739918.56	N 32 13 2.37 W 103 41 28.36	
	11794.00	90.39	0.43	9363.22	2438.75	2392.69	-703.64	0.74	443485.49	739919.00	N 32 13 3.31 W 103 41 28.35	
	11888.00	91.07	0.74	9362.02	2532.40	2486.67	-702.68	0.80	443579.48	739919.96	N 32 13 4.24 W 103 41 28.33	
	11983.00	91.12	1.01	9360.20	2626.99	2581.64	-701.23	0.29	443674.44	739921.41	N 32 13 5.18 W 103 41 28.31	
	12077.00	91.18	0.54	9358.32	2720.60	2675.62	-699.96	0.50	443768.41	739922.68	N 32 13 6.11 W 103 41 28.29	
	12172.00	91.18	0.57	9356.36	2815.24	2770.59	-699.04	0.03	443863.38	739923.60	N 32 13 7.05 W 103 41 28.27	
	12267.00	91.24	0.55	9354.35	2909.88	2865.57	-698.11	0.07	443958.35	739924.52	N 32 13 7.99 W 103 41 28.25	
	12361.00	93.09	0.28	9350.80	3003.49	2959.49	-697.43	1.99	444052.27	739925.21	N 32 13 8.92 W 103 41 28.24	
	12558.00	90.79	359.04	9344.14	3199.89	3156.36	-698.60	1.33	444249.13	739924.04	N 32 13 10.87 W 103 41 28.24	
	12652.00	90.84	1.33	9342.80	3293.58	3250.34	-698.29	2.44	444343.11	739924.34	N 32 13 11.80 W 103 41 28.23	
	12747.00	90.73	1.53	9341.50	3388.10	3345.30	-695.92	0.82	444438.07	739926.71	N 32 13 12.74 W 103 41 28.19	
	12841.00	91.12	2.19	9339.98	3481.54	3439.24	-692.87	0.24	444532.00	739929.76	N 32 13 13.67 W 103 41 28.15	
	12936.00	90.62	1.53	9338.54	3575.98	3534.18	-689.79	0.87	444626.93	739932.84	N 32 13 14.61 W 103 41 28.11	
	13031.00	90.67	1.03	9337.47	3670.53	3629.15	-687.67	0.53	444721.90	739934.98	N 32 13 15.55 W 103 41 28.08	
	13126.00	90.95	0.60	9336.12	3765.14	3724.13	-686.32	0.54	444816.87	739936.32	N 32 13 16.49 W 103 41 28.05	
	13220.00	90.22	1.11	9335.16	3858.75	3818.11	-684.91	0.95	444910.85	739937.72	N 32 13 17.42 W 103 41 28.03	
	13315.00	90.34	1.00	9334.70	3953.33	3913.10	-683.17	0.17	445005.83	739939.47	N 32 13 18.36 W 103 41 28.00	
	13410.00	90.28	1.27	9334.19	4047.90	4008.08	-681.28	0.29	445100.81	739941.35	N 32 13 19.30 W 103 41 27.98	
	13504.00	90.08	359.59	9333.91	4141.58	4102.07	-680.58	1.80	445194.80	739942.05	N 32 13 20.23 W 103 41 27.96	
	13599.00	90.22	358.95	9333.67	4236.39	4197.06	-681.79	0.69	445289.78	739940.84	N 32 13 21.17 W 103 41 27.97	
	13693.00	90.51	359.95	9333.08	4330.19	4291.05	-682.69	1.11	445383.77	739939.94	N 32 13 22.10 W 103 41 27.97	
	13788.00	90.79	359.85	9332.00	4424.93	4386.05	-682.86	0.31	445478.76	739938.78	N 32 13 23.04 W 103 41 27.97	
	13883.00	91.29	358.72	9330.27	4519.72	4481.02	-684.04	1.30	445573.73	739938.59	N 32 13 23.98 W 103 41 27.98	
	13977.00	90.39	359.54	9328.90	4613.54	4575.00	-685.47	1.30	445667.70	739937.16	N 32 13 24.91 W 103 41 27.99	
	14072.00	90.45	359.47	9328.20	4708.33	4669.89	-686.29	0.10	445762.69	739936.34	N 32 13 25.85 W 103 41 27.99	
	14167.00	89.44	358.21	9328.29	4803.18	4764.97	-688.21	1.70	445857.67	739934.42	N 32 13 26.79 W 103 41 28.00	
	14261.00	88.99	359.57	9329.58	4897.03	4858.94	-690.03	1.52	445951.83	739932.60	N 32 13 27.72 W 103 41 28.02	
	14356.00	91.07	0.13	9329.53	4991.77	4953.94	-690.28	2.27	446046.82	739932.35	N 32 13 28.66 W 103 41 28.02	
	14450.00	90.56	359.10	9328.19	5085.54	5047.92	-690.91	1.22	446140.60	739931.72	N 32 13 29.59 W 103 41 28.02	
	14545.00	89.78	359.45	9327.91	5180.35	5142.92	-692.12	0.90	446235.59	739930.52	N 32 13 30.53 W 103 41 28.02	
	14639.00	90.62	358.45	9327.58	5274.20	5236.90	-693.84					

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (NUS)	Easting (EUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	17105.00	89.55	358.71	9265.37	7737.16	7699.69	-788.64	2.48	448792.24	739833.99	N 32 13 55.83	W 103 41 28.97
	17200.00	88.99	1.14	9296.58	7831.88	7794.67	-788.77	2.62	448887.22	739833.87	N 32 13 56.77	W 103 41 28.96
	17389.00	91.23	5.15	9296.22	8019.24	7983.33	-778.40	2.43	449075.88	739844.23	N 32 13 58.64	W 103 41 28.83
	17484.00	92.19	0.96	9293.38	8113.39	8078.13	-773.34	4.52	449170.67	739849.29	N 32 13 59.58	W 103 41 28.76
	17579.00	91.29	0.59	9290.50	8207.97	8173.08	-772.06	1.02	449265.61	739850.58	N 32 14 0.52	W 103 41 28.74
	17673.00	89.61	1.72	9289.76	8301.54	8287.05	-770.18	2.15	449359.58	739852.47	N 32 14 1.45	W 103 41 28.71
	17768.00	91.40	3.32	9288.92	8395.86	8361.95	-765.99	2.53	449454.48	739856.85	N 32 14 2.38	W 103 41 28.66
	17863.00	90.95	0.88	9286.97	8490.24	8456.86	-762.51	2.61	449549.38	739860.13	N 32 14 3.32	W 103 41 28.61
	17957.00	89.27	1.58	9286.79	8583.79	8550.83	-760.49	1.94	449643.35	739862.15	N 32 14 4.25	W 103 41 28.58
	18052.00	89.33	3.72	9287.95	8678.08	8645.72	-756.10	2.25	449738.23	739866.54	N 32 14 5.19	W 103 41 28.52
	18146.00	91.68	2.96	9287.13	8771.24	8739.55	-750.62	2.63	449832.06	739872.01	N 32 14 6.12	W 103 41 28.45
	18241.00	91.63	0.44	9284.38	8865.67	8834.46	-747.80	2.65	449926.98	739874.83	N 32 14 7.06	W 103 41 28.41
	18430.00	87.70	0.95	9285.49	9053.91	9023.41	-745.51	2.10	450115.90	739877.12	N 32 14 8.93	W 103 41 28.37
	18525.00	88.82	4.33	9288.37	9148.15	9118.25	-741.14	3.75	450210.73	739881.50	N 32 14 9.87	W 103 41 28.32
	18619.00	91.63	3.76	9288.00	9241.15	9212.00	-734.51	3.05	450304.48	739888.13	N 32 14 10.79	W 103 41 28.23
	18714.00	92.64	2.05	9284.46	9335.33	9306.81	-729.70	2.09	450399.29	739889.94	N 32 14 11.73	W 103 41 28.17
	18809.00	93.48	359.42	9279.39	9429.81	9401.66	-728.48	2.80	450494.13	739894.15	N 32 14 12.67	W 103 41 28.15
	18903.00	91.63	356.02	9275.20	9523.64	9495.47	-732.22	4.11	450587.94	739890.42	N 32 14 13.80	W 103 41 28.19
	18998.00	88.76	356.72	9274.88	9618.63	9590.27	-738.23	3.11	450682.73	739884.40	N 32 14 14.54	W 103 41 28.25
	19093.00	87.81	358.58	9277.72	9713.52	9685.14	-742.13	2.20	450777.60	739880.51	N 32 14 15.48	W 103 41 28.29
Final MWD Survey	19187.00	87.19	359.16	9281.82	9807.29	9779.03	-743.98	0.90	450871.49	739878.66	N 32 14 16.40	W 103 41 28.30
Proj. to Bit	19366.00	87.19	359.16	9280.60	9985.75	9957.80	-746.60	0.00	451050.25	739876.04	N 32 14 18.17	W 103 41 28.32

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 (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	28.500	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	28.500	26.500	Act Sins	30.000	30.000	NAL_NSG+MSHOT-Depth Only	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	28.500	905.650	Act Sins	30.000	30.000	NAL_NSG+MSHOT	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	905.650	6892.000	Act Sins	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	6892.000	7371.000	Act Sins	30.000	30.000	NAL_NSG+MSHOT	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	7371.000	8696.000	Act Sins	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	8696.000	9776.000	Act Sins	30.000	30.000	NAL_MWD_HDGM+MS	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	9776.000	19187.000	Act Sins	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'
	1	19187.000	19366.000	Act Sins	30.000	30.000	NAL_BLIND	ST01 / Oxy Mesa Verde BS Unit 1H ST01 Gyro+MWD 0-19,366'