

OXY

SEP 13 2019

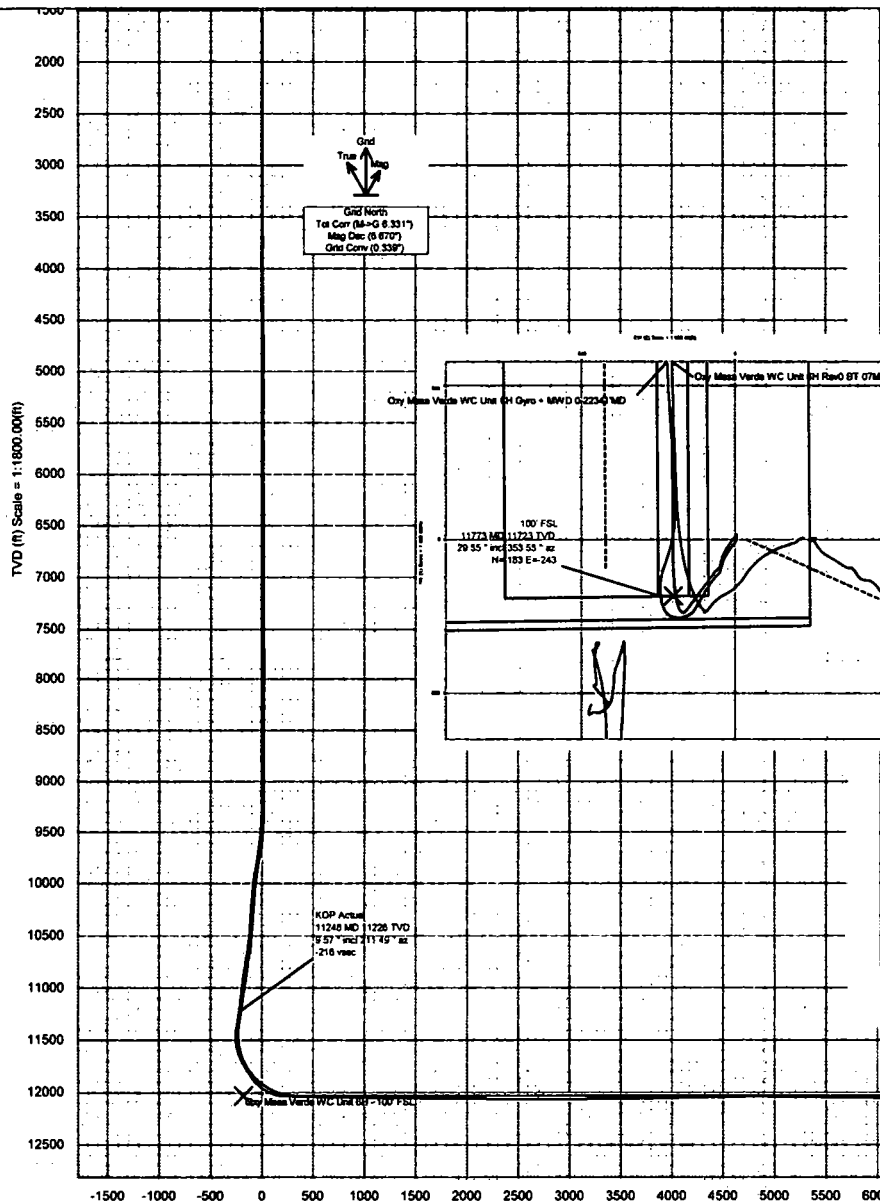
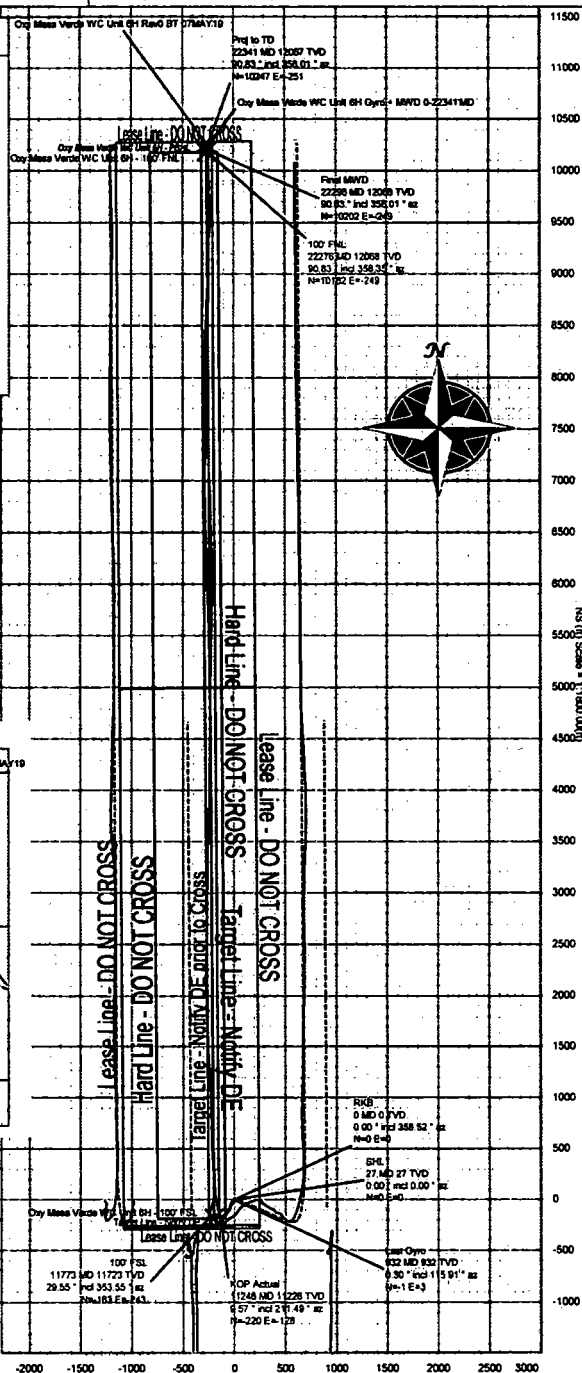
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Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Mesa Verde WC Unit 6H	NM Lea County (NAD 83)	Oxy Mesa Verde WC Unit 6H

Gravity & Magnetic Parameters			Surface Location			NAD83 New Mexico State Plane, Eastern Zone, US Feet			Miscellaneous					
Model:	IFR1	Dip: 59.864°	Date:	04-Jan-2019	Lat:	N 32 12 39.54	Northing:	441071.478US	Grid Conv:	0.3389°	Site:	Old Mesa Verde WC Unit GH	TYD Ref:	R003558.70 above MSL
MagDec:	6.67°	FB: 47898.5nT	Gravity FB:	889.432mgm (9.80665 Based)	Lon:	W 103 41 51.10	Easting:	737679US	Scale Fact:	0.88995338	Plan:	Old Mesa Verde WC Unit GH Oyro	NADP 0-2234110	

Critical Points								
Critical Point	MD	DNCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	358.52	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00
Last Gyro	932.00	0.30	115.91	931.99	-1.51	-1.44	2.82	0.38
KOP Actual	11246.00	9.57	211.49	11226.47	-216.36	-219.74	-128.11	0.89
100' FSL	11773.00	29.55	353.55	11723.31	-176.50	-182.81	-242.61	8.00
100' FNL	22276.00	90.83	358.35	12068.23	10184.71	10181.69	-248.51	1.72
Final MWD	22296.00	90.83	358.01	12067.94	10204.71	10201.68	-249.15	1.72
Proj to TD	22341.00	90.83	358.01	12067.29	10249.71	10248.65	-250.71	0.00



Vertical Section (ft) Azim = 358.52° Scale = 1:1800.00(ft) Origin = 0N/-S, 0E/-W

Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341'MD Survey Geodetic

Report
(Def Survey)

Report Date: July 09, 2019 - 08:21 PM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Mesa Verde WC Unit 6H / Oxy Mesa Verde WC Unit 6H
 Well: Oxy Mesa Verde WC Unit 6H
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-025-45863
 Survey Name: Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341'MD
 Survey Date: June 04, 2019
 Tort / AHD / DDI / ERD Ratio: 298.063' / 10889.560 ft / 6.779 / 0.902
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.54068", W 103° 41' 51.09691"
 Location Grid N/E Y/X: N 441071.470 RUS, E 737979.000 RUS
 CRS Grid Convergence Angle: 0.3389°
 Grid Scale Factor: 0.99995338
 Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 358.523° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3586.700 ft above MSL
 Seabed / Ground Elevation: 3560.200 ft above MSL
 Magnetic Declination: 6.670°
 Total Magnetic Field Strength: 998.4318mgn (9.80685 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47898.900 nT
 Magnetic Dip Angle: 59.864°
 Declination Date: June 04, 2019
 Magnetic Declination Model: IFR1
 North Reference: Grid North
 Grid Convergence Used: 0.3389°
 Total Corr Mag North->Grid: 6.3311°
 North: Well Head
 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 ° ' ")
RKB	0.00	0.00	358.52	0.00	0.00	0.00	0.00	0.00	441071.47	737979.00	N 32 12 39.54	W 103 41 51.10
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441071.47	737979.00	N 32 12 39.54	W 103 41 51.10
	99.00	0.25	66.82	99.00	0.06	0.08	0.15	0.34	441071.53	737979.15	N 32 12 39.54	W 103 41 51.10
	127.00	0.34	67.91	127.00	0.11	0.12	0.28	0.32	441071.59	737979.28	N 32 12 39.54	W 103 41 51.09
	158.00	0.33	72.45	158.00	0.16	0.18	0.44	0.10	441071.65	737979.44	N 32 12 39.54	W 103 41 51.09
	185.00	0.31	80.70	185.00	0.20	0.21	0.59	0.17	441071.68	737979.59	N 32 12 39.54	W 103 41 51.09
	212.00	0.29	78.55	212.00	0.22	0.24	0.73	0.08	441071.71	737979.73	N 32 12 39.54	W 103 41 51.09
	237.00	0.28	81.37	237.00	0.24	0.26	0.86	0.07	441071.73	737979.86	N 32 12 39.54	W 103 41 51.09
	267.00	0.23	77.83	267.00	0.26	0.28	0.99	0.17	441071.75	737979.99	N 32 12 39.54	W 103 41 51.09
	298.00	0.21	81.89	298.00	0.28	0.30	1.10	0.08	441071.77	737980.10	N 32 12 39.54	W 103 41 51.08
	330.00	0.20	94.14	330.00	0.28	0.31	1.22	0.14	441071.78	737980.22	N 32 12 39.54	W 103 41 51.08
Last Gyro	361.00	0.15	115.30	361.00	0.25	0.29	1.31	0.26	441071.78	737980.31	N 32 12 39.54	W 103 41 51.08
	393.00	0.17	142.05	393.00	0.20	0.23	1.38	0.24	441071.70	737980.38	N 32 12 39.54	W 103 41 51.08
	424.00	0.18	149.92	424.00	0.12	0.15	1.43	0.08	441071.62	737980.43	N 32 12 39.54	W 103 41 51.08
	456.00	0.21	165.03	456.00	0.02	0.05	1.47	0.19	441071.52	737980.47	N 32 12 39.54	W 103 41 51.08
	488.00	0.26	176.17	488.00	-0.11	-0.07	1.49	0.19	441071.40	737980.49	N 32 12 39.54	W 103 41 51.08
	519.00	0.28	176.99	519.00	-0.25	-0.22	1.50	0.10	441071.25	737980.50	N 32 12 39.54	W 103 41 51.08
	551.00	0.32	172.81	551.00	-0.42	-0.38	1.51	0.14	441071.09	737980.51	N 32 12 39.54	W 103 41 51.08
	583.00	0.31	162.25	582.99	-0.59	-0.55	1.55	0.18	441070.92	737980.55	N 32 12 39.54	W 103 41 51.08
	614.00	0.34	145.18	613.99	-0.75	-0.71	1.63	0.33	441070.76	737980.63	N 32 12 39.53	W 103 41 51.08
	646.00	0.36	132.96	645.99	-0.90	-0.86	1.76	0.24	441070.61	737980.76	N 32 12 39.53	W 103 41 51.08
	677.00	0.33	124.24	676.99	-1.02	-0.97	1.90	0.19	441070.50	737980.90	N 32 12 39.53	W 103 41 51.07
	709.00	0.31	120.76	708.99	-1.12	-1.07	2.05	0.09	441070.40	737981.05	N 32 12 39.53	W 103 41 51.07
	740.00	0.26	150.60	739.99	-1.23	-1.17	2.16	0.50	441070.30	737981.18	N 32 12 39.53	W 103 41 51.07
	772.00	0.23	112.40	771.99	-1.32	-1.26	2.25	0.51	441070.21	737981.25	N 32 12 39.53	W 103 41 51.07
	803.00	0.22	127.56	802.99	-1.38	-1.32	2.36	0.19	441070.15	737981.36	N 32 12 39.53	W 103 41 51.07
	835.00	0.19	101.84	834.99	-1.43	-1.37	2.48	0.30	441070.10	737981.46	N 32 12 39.53	W 103 41 51.07
	866.00	0.21	92.24	865.99	-1.45	-1.38	2.57	0.13	441070.09	737981.57	N 32 12 39.53	W 103 41 51.07
	898.00	0.21	97.16	897.99	-1.48	-1.39	2.68	0.06	441070.08	737981.68	N 32 12 39.53	W 103 41 51.07
	932.00	0.30	115.91	931.99	-1.51	-1.44	2.82	0.36	441070.03	737981.82	N 32 12 39.53	W 103 41 51.06
	1040.00	0.51	94.73	1039.99	-1.69	-1.60	3.56	0.24	441069.87	737982.56	N 32 12 39.52	W 103 41 51.06
	1132.00	0.09	252.98	1131.99	-1.76	-1.66	3.90	0.65	441069.81	737982.60	N 32 12 39.52	W 103 41 51.05
	1317.00	0.17	16.77	1316.99	-1.53	-1.43	3.84	0.13	441070.04	737982.64	N 32 12 39.53	W 103 41 51.05
	1410.00	0.07	157.96	1409.99	-1.46	-1.36	3.90	0.25	441070.11	737982.90	N 32 12 39.53	W 103 41 51.05
	1502.00	0.07	95.25	1501.99	-1.51	-1.41	3.98	0.08	441070.06	737982.98	N 32 12 39.53	W 103 41 51.05
	1594.00	0.10	78.51	1593.99	-1.51	-1.40	4.11	0.04	441070.07	737983.11	N 32 12 39.53	W 103 41 51.05
	1656.00	0.03	100.68	1655.99	-1.50	-1.39	4.16	0.12	441070.08	737983.18	N 32 12 39.53	W 103 41 51.05
	1750.00	0.12	93.15	1749.99	-1.51	-1.40	4.30	0.10	441070.07	737983.30	N 32 12 39.53	W 103 41 51.05
	1844.00	0.03	291.39	1843.99	-1.51	-1.40	4.38	0.16	441070.07	737983.38	N 32 12 39.53	W 103 41 51.05
	2033.00	0.13	277.46	2032.99	-1.46	-1.35	4.12	0.05	441070.12	737983.12	N 32 12 39.53	W 103 41 51.05
	2127.00	0.06	44.94	2126.99	-1.41	-1.31	4.05	0.18	441070.16	737983.05	N 32 12 39.53	W 103 41 51.05
	2316.00	0.06	217.73	2315.99	-1.42	-1.31	4.06	0.06	441070.16	737983.06	N 32 12 39.53	W 103 41 51.05
	2505.00	0.01	276.50	2504.99	-1.49	-1.39	3.98	0.03	441070.08	737982.98	N 32 12 39.53	W 103 41 51.05
	2694.00	0.05	270.67	2693.99	-1.49	-1.39	3.88	0.02	441070.08	737982.88	N 32 12 39.53	W 103 41 51.05
	2883.00	0.11	107.10	2882.99	-1.54	-1.44	3.97	0.08	441070.03	737982.87	N 32 12 39.53	W 103 41 51.05
	2977.00	0.10	109.89	2976.99	-1.60	-1.49	4.14	0.01	441069.98	737983.13	N 32 12 39.53	W 103 41 51.05
	3072.00	0.10	343.91	3071.99	-1.55	-1.44	4.19	0.19	441070.03	737983.19	N 32 12 39.53	W 103 41 51.05
	3166.00	0.05	4.42	3165.99	-1.43	-1.32	4.17	0.06	441070.15	737983.17	N 32 12 39.53	W 103 41 51.05
	3260.00	0.07	14.48	3259.99	-1.33	-1.23	4.19	0.02	441070.24	737983.19	N 32 12 39.53	W 103 41 51.05
	3325.00	0.05	166.98	3324.99	-1.32	-1.22	4.20	0.16	441070.25	737983.20	N 32 12 39.53	W 103 41 51.05
	3513.00	0.15	7.95	3512.99	-1.16	-1.05	4.26	0.11	441070.42	737983.26	N 32 12 39.53	W 103 41 51.05
3702.00	0.37	2.98	3701.98	-0.31	-0.20	4.32	0.12	441071.27	737983.32	N 32 12 39.54	W 103 41 51.05	
3797.00	0.26	339.28	3796.98	0.20	0.31	4.26	0.18	441071.78	737983.26	N 32 12 39.54	W 103 41 51.05	
3885.00	0.12	174.59	3884.98	0.41	0.51	4.13	0.20	441071.98	737983.13	N 32 12 39.55	W 103 41 51.05	
4079.00	0.27	225.76	4078.98	0.16	0.26	3.98	0.23	441071.73	737982.98	N 32 12 39.54	W 103 41 51.05	
4268.00	0.10	153.21	4267.98	-0.29	-0.20	3.74	0.14	441071.27	737982.74	N 32 12 39.54	W 103 41 51.05	
4457.00	0.99	6.32	4456.97	1.17	1.28	3.99	0.57	441072.75	737982.99	N 32 12 39.55	W 103 41 51.05	
4646.00	0.13	108.09	4645.96	2.72	2.83	4.37	0.54	441074.30	737983.37	N 32 12 39.57	W 103 41 51.05	
4740.00	0.05	281.32	4739.96	2.68	2.80	4.43	0.19	441074.27	737983.43	N 32 12 39.57	W 103 41 51.05	
4834.00	0.03	9.77	4833.96	2.70	2.81	4.40	0.07	441074.28	737983.40	N 32 12 39.57	W 103 41 51.05	
4928.00	0.06	322.74	4927.96	2.76	2.88	4.37	0.05	441074.35	737983.37	N 32 12 39.57	W 103 41 51.05	
5023.00	0.08	186.54	5022.96	2.74	2.85	4.33	0.14	441074.32	737983.33	N 32 12 39.57	W 103 41 51.05	
5117.00	0.03	334.18	5116.96	2.70	2.81	4.32	0.11	441074.28	737983.32	N 32 12 39.57	W 103 41 51.05	
5212.00	0.10	262.21	5211.96	2.71	2.82	4.22	0.10	441074.29	737983.22	N 32 12 39.57	W 103 41 51.05	
5306.00	0.10	6.07	5305.96	2.78	2.89	4.15	0.17	441074.36	737983.15	N 32 12 39.57	W 103 41 51.05	
5495.00	0.02	65.43	5494.96	2.96	3.07	4.20	0.05	441074.54	737983.20	N 32 12 39.57	W 103 41 51.05	
5589.00	0.02	324.52	5588.96	2.98	3.09	4.20	0.03	441074.56	737983.20	N 32 12 39.57	W 103 41 51.05	
5683.00	0.09	14.52	5682.96	3.08	3.17	4.21	0.08	441074.64	737983.21	N 32 12 39.57	W 103 41 51.05	
5777.00	0.05	345.22	5776.96	3.17	3.28	4.22	0.06	441074.75	737983.22	N 32 12 39.57	W 103 41 51.05	
5871.00	0.05	82.54	5870.96	3.23	3.34	4.25	0.05	441074.81	737983.25	N 32 12 39.57	W 103 41 51.05	
5965.00	0.10	27.33	5964.96	3.32	3.43	4.32	0.07	441074.90	737983.32	N 32 12 39.57	W 103 41 51.05	
6060.00	0.09	313.68	6059.96	3.45	3.56	4.31	0.12	441075.03	737983.30	N 32 12 39.58	W 103 41 51.05	
6154.00	0.05	350.87	6153.96	3.54	3.65	4.25	0.06	441075.12	737983.24	N 32 12 39.58	W 103 41 51.05	
6249.00	0.02	212.74	6248.96	3.57	3.68	4.23	0.07	441075.15	737983.23	N 32 12 39.58	W 103 41 51.05	
6343.00	0.02	215.07	6342.96	3.54	3.65	4.21	0.00	441075.12	737983.21	N 32 12 39.58	W 103 41 51.05	
6437.00	0.05	181.69	6436.96	3.49	3.60	4.20	0.04	441075.06	737983.20	N 32 12 39.58	W 103 41 51.05	
6531.00	0.05	131.53	6530.96	3.42	3.53	4.23	0.05	441075.00	73			

Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	YSEC (ft)	NS (ft)	EW (ft)	DL3 (ft/100ft)	Northing (ft)	Eastings (ft)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	6908.00	0.05	308.24	6908.96	3.38	3.49	4.37	0.15	441074.96	737983.37	N 32 12 39.57 W	103 41 51.05
	7004.00	0.09	159.48	7003.96	3.33	3.45	4.37	0.14	441074.92	737983.37	N 32 12 39.57 W	103 41 51.05
	7098.00	0.05	94.25	7097.96	3.26	3.37	4.43	0.09	441074.84	737983.43	N 32 12 39.57 W	103 41 51.05
	7286.00	0.05	207.88	7285.96	3.18	3.30	4.46	0.04	441074.77	737983.46	N 32 12 39.57 W	103 41 51.04
	7475.00	0.05	91.80	7474.96	3.10	3.22	4.52	0.04	441074.69	737983.52	N 32 12 39.57 W	103 41 51.04
	7663.00	0.05	33.81	7662.96	3.16	3.29	4.65	0.03	441074.78	737983.65	N 32 12 39.57 W	103 41 51.04
	7851.00	0.12	117.20	7850.96	3.14	3.26	4.67	0.07	441074.73	737983.87	N 32 12 39.57 W	103 41 51.04
	8040.00	0.09	201.56	8039.96	2.91	3.04	4.99	0.08	441074.50	737983.99	N 32 12 39.57 W	103 41 51.04
	8229.00	0.09	132.25	8228.96	2.87	2.80	5.05	0.05	441074.27	737984.05	N 32 12 39.57 W	103 41 51.04
	8323.00	0.15	292.74	8322.96	2.67	2.60	4.99	0.25	441074.26	737983.99	N 32 12 39.57 W	103 41 51.04
	8417.00	0.12	202.88	8416.96	2.63	2.75	4.84	0.20	441074.22	737983.84	N 32 12 39.57 W	103 41 51.04
	8511.00	0.22	82.06	8510.96	2.56	2.69	4.88	0.32	441074.16	737983.98	N 32 12 39.57 W	103 41 51.04
	8606.00	0.20	39.65	8605.96	2.70	2.84	5.26	0.16	441074.31	737984.26	N 32 12 39.57 W	103 41 51.04
	8795.00	0.27	194.12	8794.96	2.52	2.66	5.36	0.24	441074.13	737984.36	N 32 12 39.57 W	103 41 51.03
	8889.00	0.37	78.73	8888.96	2.36	2.51	5.61	0.58	441073.98	737984.61	N 32 12 39.57 W	103 41 51.03
	8983.00	0.63	256.69	8982.96	2.31	2.45	5.40	1.06	441073.92	737984.40	N 32 12 39.56 W	103 41 51.03
	9078.00	0.24	357.37	9077.95	2.40	2.53	4.89	0.75	441074.00	737983.88	N 32 12 39.57 W	103 41 51.04
	9172.00	0.18	259.87	9171.95	2.58	2.70	4.73	0.34	441074.17	737983.73	N 32 12 39.57 W	103 41 51.04
	9361.00	1.56	196.30	9360.93	0.13	0.22	3.59	0.78	441071.69	737982.59	N 32 12 39.54 W	103 41 51.08
	9455.00	4.91	212.42	9454.77	-4.41	-4.39	1.01	3.63	441067.08	737980.01	N 32 12 39.50 W	103 41 51.09
	9550.00	7.31	216.83	9549.22	-12.53	-12.66	-4.80	2.57	441058.81	737974.20	N 32 12 39.42 W	103 41 51.15
	9644.00	9.42	215.60	9642.22	-23.36	-23.70	-12.86	2.25	441047.77	737968.14	N 32 12 39.31 W	103 41 51.25
	9738.00	11.50	213.64	9734.65	-37.16	-37.78	-22.53	2.24	441033.71	737956.47	N 32 12 39.17 W	103 41 51.36
	9833.00	10.23	207.79	9827.95	-52.27	-53.11	-31.71	1.77	441018.37	737947.29	N 32 12 38.02 W	103 41 51.47
	9927.00	9.53	200.75	9920.56	-66.76	-67.77	-38.38	1.48	441003.71	737940.64	N 32 12 38.02 W	103 41 51.55
	10115.00	4.22	191.51	10107.14	-87.92	-89.11	-45.26	2.88	440982.36	737933.74	N 32 12 38.66 W	103 41 51.63
	10209.00	4.19	189.98	10200.89	-94.65	-95.89	-46.54	0.12	440975.59	737932.48	N 32 12 38.59 W	103 41 51.65
	10304.00	4.78	201.31	10295.80	-101.70	-102.99	-48.58	1.12	440968.48	737930.42	N 32 12 38.52 W	103 41 51.67
	10398.00	5.74	228.07	10389.22	-108.37	-109.78	-53.50	2.77	440961.69	737925.50	N 32 12 38.46 W	103 41 51.73
	10492.00	7.68	224.98	10482.57	-115.73	-117.38	-61.43	2.08	440954.12	737917.57	N 32 12 38.38 W	103 41 51.82
	10587.00	10.18	216.85	10576.42	-126.68	-128.55	-70.94	2.96	440942.92	737908.06	N 32 12 38.27 W	103 41 51.93
	10681.00	10.39	216.68	10668.81	-139.86	-142.00	-80.99	0.23	440929.48	737898.02	N 32 12 38.14 W	103 41 52.05
	10779.00	10.87	214.68	10765.28	-154.14	-156.55	-91.43	0.47	440914.93	737887.58	N 32 12 38.00 W	103 41 52.17
	10873.00	9.52	206.78	10857.80	-168.01	-170.74	-99.88	0.91	440900.83	737879.12	N 32 12 37.86 W	103 41 52.27
	11062.00	7.93	210.84	11044.61	-192.80	-195.69	-113.61	1.80	440875.69	737865.40	N 32 12 37.61 W	103 41 52.43
	11246.00	9.57	211.49	11226.47	-216.36	-218.74	-128.11	0.89	440851.74	737850.90	N 32 12 37.37 W	103 41 52.60
	11295.00	11.35	208.47	11274.65	-223.96	-227.45	-132.53	3.80	440844.03	737846.47	N 32 12 37.30 W	103 41 52.68
	11390.00	17.57	239.28	11368.72	-239.10	-243.03	-149.35	10.20	440828.45	737829.65	N 32 12 37.14 W	103 41 52.85
	11485.00	19.78	263.73	11456.88	-247.47	-252.13	-177.70	8.50	440819.35	737801.31	N 32 12 37.06 W	103 41 53.18
	11580.00	19.54	293.19	11548.54	-242.17	-247.82	-208.36	10.33	440823.86	737770.65	N 32 12 37.10 W	103 41 53.54
	11674.00	23.14	333.55	11634.54	-218.73	-224.77	-231.16	15.78	440846.71	737747.85	N 32 12 37.33 W	103 41 53.80
	11769.00	29.44	352.94	11719.83	-178.48	-184.77	-242.38	11.13	440886.71	737736.63	N 32 12 37.73 W	103 41 53.93
	11773.00	29.55	353.55	11723.31	-178.50	-182.81	-242.61	8.00	440888.66	737736.47	N 32 12 37.75 W	103 41 53.93
	11863.00	32.76	6.05	11860.40	-130.19	-136.48	-242.54	8.00	440834.99	737736.47	N 32 12 38.20 W	103 41 53.93
	11957.00	40.49	20.20	11875.92	-76.44	-82.37	-229.28	12.13	440899.10	737749.73	N 32 12 38.74 W	103 41 53.77
	12052.00	52.67	15.45	11841.11	-11.38	-16.76	-208.48	13.32	441054.71	737705.53	N 32 12 39.39 W	103 41 53.52
	12147.00	64.66	3.31	11890.56	68.04	63.01	-185.89	16.65	441134.48	737783.15	N 32 12 40.18 W	103 41 53.37
	12241.00	76.49	357.02	12021.78	156.45	151.45	-185.78	14.07	441222.92	737763.23	N 32 12 41.05 W	103 41 53.37
	12336.00	91.06	357.16	12032.07	250.61	245.52	-200.56	15.34	441316.97	737778.45	N 32 12 41.98 W	103 41 53.41
	12430.00	87.38	355.43	12033.35	344.61	339.29	-206.63	4.33	441410.75	737772.38	N 32 12 42.61 W	103 41 53.48
	12523.00	89.04	356.40	12037.19	467.31	461.91	-215.39	1.56	441533.36	737763.62	N 32 12 44.12 W	103 41 53.57
	12649.00	89.41	358.67	12038.47	562.28	556.81	-219.48	2.42	441628.25	737769.63	N 32 12 45.06 W	103 41 53.61
	12837.00	89.28	359.21	12040.63	751.27	745.77	-222.97	0.26	441817.20	737766.04	N 32 12 46.93 W	103 41 53.64
	12932.00	89.14	358.41	12041.94	846.25	840.74	-224.95	0.85	441812.18	737754.07	N 32 12 47.87 W	103 41 53.66
	13026.00	89.28	1.22	12043.24	940.21	934.72	-225.25	2.90	442008.14	737753.76	N 32 12 48.80 W	103 41 53.65
	13121.00	89.17	1.06	12044.52	1035.10	1029.69	-223.38	0.20	442101.11	737755.65	N 32 12 49.74 W	103 41 53.63
	13310.00	89.62	2.36	12048.52	1223.80	1216.59	-217.72	0.73	442290.00	737761.29	N 32 12 51.61 W	103 41 53.55
	13499.00	89.07	0.43	12048.68	1412.54	1407.51	-213.12	1.06	442478.91	737765.89	N 32 12 53.48 W	103 41 53.48
	13594.00	89.28	359.20	12050.05	1507.50	1502.50	-213.43	1.31	442573.80	737765.59	N 32 12 54.42 W	103 41 53.48
	13689.00	89.00	0.47	12051.47	1602.46	1597.49	-213.70	1.37	442688.88	737765.31	N 32 12 55.36 W	103 41 53.47
	13787.00	89.31	0.14	12052.61	1791.37	1786.48	-212.69	0.71	442857.88	737766.32	N 32 12 57.23 W	103 41 53.45
	14067.00	89.28	0.49	12053.29	1980.27	1975.47	-211.65	0.58	443048.84	737767.38	N 32 12 59.10 W	103 41 53.42
	14256.00	88.87	358.93	12056.18	2169.20	2164.44	-212.61	0.84	443235.80	737766.40	N 32 13 0.87 W	103 41 53.42
	14445.00	90.17	359.20	12057.59	2358.18	2353.40	-215.69	0.65	443424.78	737763.32	N 32 13 2.84 W	103 41 53.45
	14540.00	90.72	359.31	12058.88	2453.17	2448.39	-216.83	0.59	443519.74	737762.08	N 32 13 3.78 W	103 41 53.45
	14635.00	89.24	357.87	12056.89	2548.17	2543.38	-219.27	2.17	443614.71	737759.74	N 32 13 4.72 W	103 41 53.47
	14729.00	88.73	358.59	12058.55	2642.15	2637.30	-222.17	0.94	443708.64	737756.84	N 32 13 5.65 W	103 41 53.50
	14919.00	90.03	0.35	12060.61	2832.10	2827.27	-223.93	1.15	443898.60	737755.08	N 32 13 7.53 W	103 41 53.51
	15014.00	90.72	359.44	12059.99	2927.07	2922.26	-224.10	1.20	443993.59	737754.91	N 32 13 8.47 W	103 41 53.50
	15203.00	90.89	0.68	12057.33	3115.88	3111.24	-223.90	0.68	444182.56	737755.11	N 32 13 10.34 W	103 41 53.49
	15298.00	90.62	359.06	12058.08	3210.94	3206.23	-224.12	1.73	444277.54	737754.89	N 32 13 11.28 W	103 41 53.48
	15393.00	91.27	0.33	12054.51	3305.91	3301.21	-224.62	1.50	444372.52	737754.39	N 32 13 12.22 W	103 41 53.48
	15487.00	88.11	2.63	12055.02	3399.76	3395.16	-222.20	4.18	444466.47	737756.81	N 32 13 13.15 W	103 41 53.45
	15581.00	91.28	0.23	12055.52	3493.62	3489.11	-219.85	4.23	444580.41	737759.16	N 32 13 14.08 W	103 41 53.42
	15676.00	91.14	0.18	12053.52	3588.56	3584.09	-219.51	0.16	444655.39	737759.50	N 32 13 15.02 W	103 41 53.41
	15771.00	90.90	359.59	12051.83	3683.52	3679.07	-219.70	0.87	444750.37	737759.31	N 32 13 15.96 W	103 41 53.40
	15865.00	90.00	359.14	12051.09	3777.50	3773.07	-220.74	1.07	444844.35	737758.27	N 32 13 16.89 W	103 41 53.41
	15960.00	92.69	359.17									

Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ° ' '')	Longitude (E/W ° ° ' '')
	19276.00	90.52	0.59	12052.49	7187.76	7182.90	-280.88	0.51	448254.02	737698.13	N 32 13 50.63	W 103 41 53.87
	19371.00	88.78	0.14	12053.09	7282.70	7277.90	-280.28	1.91	448349.01	737698.73	N 32 13 51.57	W 103 41 53.86
	19468.00	88.18	0.19	12055.63	7377.63	7372.88	-280.01	0.81	448443.97	737699.01	N 32 13 52.51	W 103 41 53.85
	19561.00	88.63	0.37	12058.27	7472.55	7467.82	-279.54	0.51	448538.93	737699.47	N 32 13 53.45	W 103 41 53.84
	19655.00	88.15	0.85	12060.91	7566.45	7561.78	-278.54	0.72	448632.88	737700.27	N 32 13 54.38	W 103 41 53.82
	19750.00	90.31	1.32	12062.19	7661.34	7656.75	-278.74	2.33	448727.85	737702.27	N 32 13 55.32	W 103 41 53.79
	19844.00	90.35	1.22	12061.65	7755.23	7750.72	-274.66	0.11	448821.82	737704.35	N 32 13 56.25	W 103 41 53.78
	19938.00	89.28	0.85	12061.95	7849.14	7844.71	-272.96	1.20	448915.79	737706.05	N 32 13 57.18	W 103 41 53.73
	20033.00	91.10	0.92	12061.64	7944.05	7939.69	-271.49	1.92	449010.77	737707.52	N 32 13 58.12	W 103 41 53.71
	20127.00	88.25	359.77	12062.17	8037.99	8033.68	-270.93	3.27	449104.76	737708.09	N 32 13 59.05	W 103 41 53.70
	20222.00	89.11	0.43	12064.36	8132.93	8128.65	-270.76	1.14	449199.72	737708.25	N 32 13 59.99	W 103 41 53.69
	20316.00	87.58	0.82	12067.09	8226.83	8222.60	-269.90	1.66	449293.67	737709.11	N 32 14 0.92	W 103 41 53.67
	20410.00	90.86	1.52	12068.39	8320.71	8316.56	-268.15	3.84	449387.63	737710.87	N 32 14 1.85	W 103 41 53.65
	20600.00	90.21	3.16	12068.61	8510.27	8506.39	-260.39	0.93	449577.45	737718.82	N 32 14 3.73	W 103 41 53.54
	20694.00	90.11	2.52	12068.35	8604.01	8600.27	-255.73	0.69	449671.32	737723.28	N 32 14 4.66	W 103 41 53.48
	20789.00	89.73	2.01	12068.48	8698.80	8695.20	-251.88	0.67	449768.24	737727.04	N 32 14 5.59	W 103 41 53.43
	20884.00	87.66	0.87	12068.65	8793.65	8790.14	-249.59	2.49	449861.18	737729.42	N 32 14 6.53	W 103 41 53.40
	20978.00	88.80	0.56	12071.55	8887.53	8884.08	-248.42	1.26	449955.12	737730.59	N 32 14 7.46	W 103 41 53.38
	21167.00	88.90	0.78	12075.34	9076.36	9073.03	-246.21	0.13	450144.06	737732.80	N 32 14 9.33	W 103 41 53.34
	21356.00	91.17	1.72	12075.23	9265.13	9261.97	-242.09	1.30	450332.99	737736.93	N 32 14 11.20	W 103 41 53.28
	21545.00	89.56	0.91	12074.02	9453.90	9450.91	-237.75	0.95	450521.92	737741.26	N 32 14 13.07	W 103 41 53.21
	21734.00	90.55	359.30	12073.84	9642.82	9639.90	-237.40	1.00	450710.90	737741.81	N 32 14 14.94	W 103 41 53.20
	21828.00	91.55	358.89	12072.12	9736.80	9733.87	-238.89	1.15	450804.87	737740.13	N 32 14 15.87	W 103 41 53.21
	21923.00	91.62	359.19	12069.49	9831.76	9828.82	-240.48	0.32	450899.81	737738.53	N 32 14 16.81	W 103 41 53.22
	22018.00	90.07	358.53	12068.09	9926.78	9923.79	-242.37	1.77	450994.78	737736.84	N 32 14 17.75	W 103 41 53.23
	22113.00	88.87	358.03	12068.97	10021.73	10018.74	-245.22	1.37	451089.72	737733.79	N 32 14 18.69	W 103 41 53.26
	22208.00	90.83	359.52	12069.22	10118.72	10113.71	-247.25	2.59	451184.69	737731.76	N 32 14 19.63	W 103 41 53.28
	22276.00	90.83	358.35	12068.23	10184.71	10181.69	-248.51	1.72	451252.67	737730.50	N 32 14 20.30	W 103 41 53.29
	22296.00	90.83	358.01	12067.94	10204.71	10201.68	-249.15	1.72	451272.65	737729.87	N 32 14 20.50	W 103 41 53.29
	22341.00	90.83	358.01	12067.29	10249.71	10248.65	-250.71	0.00	451317.62	737728.30	N 32 14 20.95	W 103 41 53.31

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	28.500	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	28.500	28.500	Act Strs	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	28.500	932.000	Act Strs	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	932.000	1132.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	1132.000	1317.000	Act Strs	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	1317.000	2316.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	2316.000	2505.000	Act Strs	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	2505.000	2694.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	2694.000	2883.000	Act Strs	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	2883.000	4268.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	4268.000	4457.000	Act Strs	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	4457.000	9078.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	9078.000	9172.000	Act Strs	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	9172.000	9927.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	9927.000	11246.000	Act Strs	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD
	1	11246.000	22341.000	Act Strs	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 6H Gyro + MWD 0-22341MD