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

30-015-44295

Well Reference:
18, 24S, 31E, Eddy NM
N 32.22413 W -103.81828

I, Kurt Valentine certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of September 02, 2017 through October 14, 2017, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 658.00 feet to a depth of 20243.00 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 Palladium MDP1 7-6 Fed Com 4H Well (Original Hole) API No. 30-015-44295 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 Kurt Valentine
Kurt Valentine
FS

Subscribed and Sworn to before me this 23 day of October (month) 2017 (yr)

My Commission expires:
12-20-2020

JAllemand
(signature)
Notary Public

Adams County Colorado
(County State)

JENNIFER ALLEMAND
Notary Public
State of Colorado
Notary ID # 20164047962
My Commission Expires 12-20-2020

Schlumberger

OXY

Borehole: Original Borehole | **Well:** Oxy Palladium MDP1 7-6 Federal Com 4H | **Field:** NM Eddy County (NAD 83) | **Structure:** Oxy Palladium MDP1 7-6 Federal Com 4H

Gravity & Magnetic Parameters
Model: HDGM 2017 | Dip: 59.993° | Date: 03-Oct-2017
MagDec: 6.966° | FS: 48087.008nT | Gravity FS: 998.428mgn (9.80665 Based)

Surface Location (NAD83 New Mexico State Plane, Eastern Zone, US Feet)
Lat: N 32 13 26.86 | Northing: 445653.44ftUS | Grid Conv: 0.2746°
Lon: W 103 49 5.80 | Easting: 700610.02ftUS | Scale Fact: 0.99993814

Miscellaneous
Slot: Oxy Palladium MDP1 7-6 Federal Com 4H | TVD Ref: RKB=26.5'(3560.5ft above MSL)
Plan: Oxy Palladium MDP1 7-6 Federal Com 4H REV1 LBN 03Oct17

Surface Location

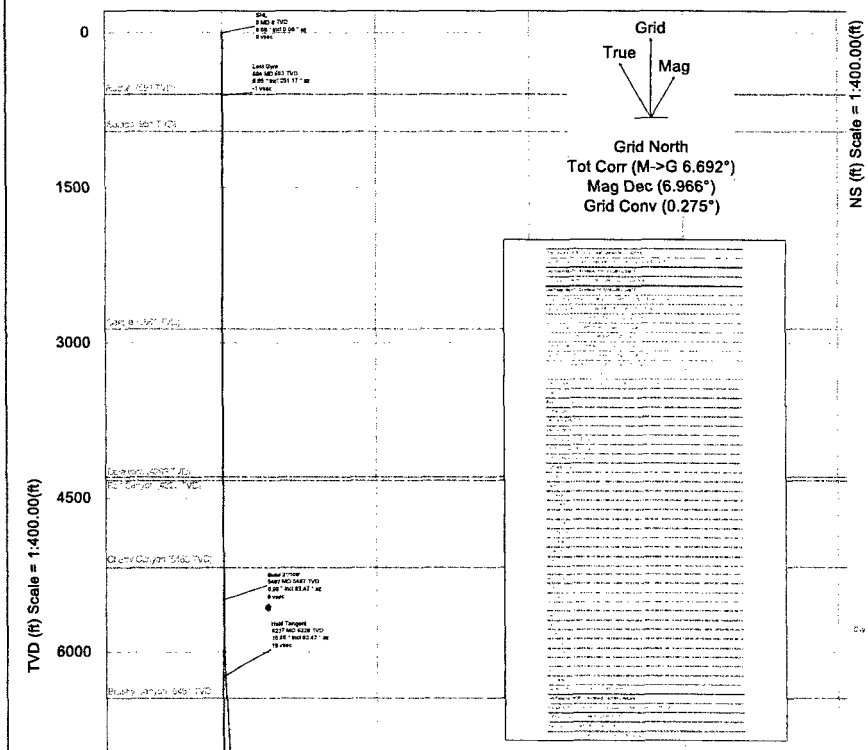
Northing	Easting	Latitude	Longitude	VSec Azimuth
445653.44	700610.02	N 32 13 26.86	W 103 49 5.80	4.44

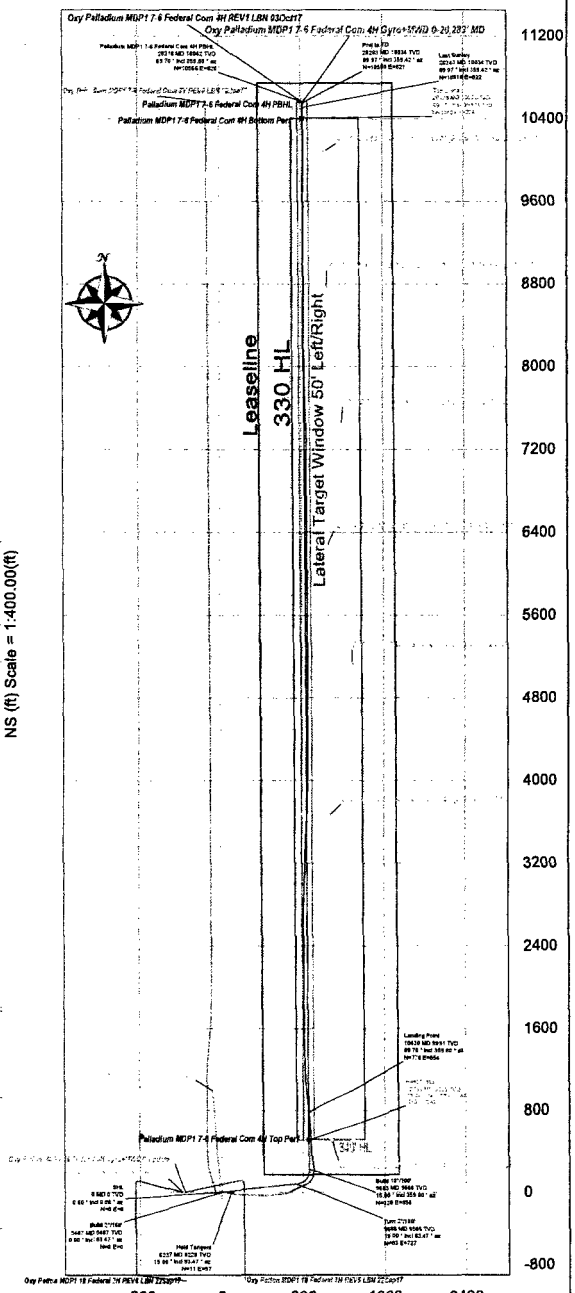
Target Description / **Grid Coord**

Target Name	Shape	Dimension	Latitude	Longitude	Northing	Easting	TVD	VSec
Palladium MDP1 7-6 Federal Com 4H Lateral Target Window 50' Left/Right	Rectangle	10053.58 x 100.00	N 32 14 21.64	W 103 48 55.74	451192.70	701447.59	-1000.00	5587.81
Oxy Palladium MDP1 7-6 Federal Com 4H Leaseline	Polyline	N/A	N 32 13 26.86	W 103 49 5.80	445653.44	700610.02	3560.50	0.00
Oxy Palladium MDP1 7-6 Federal Com 4H 330x340' HL	Polyline	N/A	N 32 13 26.86	W 103 49 5.80	445653.44	700610.02	3560.50	0.00
Palladium MDP1 7-6 Federal Com 4H Top Perf	Point	N/A	N 32 13 31.90	W 103 48 55.81	446186.26	701465.36	9991.00	577.48
Palladium MDP1 7-6 Federal Com 4H Bottom Perf	Point	N/A	N 32 15 9.79	W 103 48 55.66	456089.14	701430.36	10042.00	10438.64
Palladium MDP1 7-6 Federal Com 4H PBHL	Point	N/A	N 32 15 11.38	W 103 48 55.66	456219.14	701429.79	10042.00	10598.13

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	591.00	0.00	83.47	591.00	0.00	0.00	0.00	0.00
Salado	951.00	0.00	83.47	951.00	0.00	0.00	0.00	0.00
Castile	2861.00	0.00	83.47	2861.00	0.00	0.00	0.00	0.00
Delaware	4293.00	0.00	83.47	4293.00	0.00	0.00	0.00	0.00
Bell Canyon	4326.00	0.00	83.47	4326.00	0.00	0.00	0.00	0.00
Cherry Canyon	5163.00	0.00	83.47	5163.00	0.00	0.00	0.00	0.00
Build 2°/100'	5487.00	0.00	83.47	5487.00	0.00	0.00	0.00	0.00
Hold Tangent	6237.00	15.00	83.47	6228.46	18.57	11.10	96.98	2.00
Brushy Canyon	6467.39	15.00	83.47	6451.00	23.92	17.89	156.22	0.00
Bone Spring	8195.26	15.00	83.47	8120.00	115.00	68.75	600.53	0.00
Turn 2°/100'	8688.47	15.00	83.47	8596.40	139.29	83.27	727.35	0.00
Build 10°/100'	9682.53	15.00	359.80	9566.34	293.53	228.00	856.00	2.00
Landing Point	10429.54	89.70	359.80	9991.00	842.18	778.45	854.07	10.00
Palladium MDP1 7-6 Federal Com 4H PBHL	20217.67	89.70	359.80	10042.00	10598.13	10566.37	819.82	0.00
Wolfcamp	NaN			11472.00				





Vertical Section (ft) Azim = 4.44° Scale = 1:400.00(ft) Origin = 0N/-S, 0E/-W

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Oxy Palladium MDP1 7-6 Federal Com 4H Gyro+MWD 0-20,283' MD Survey
Geodetic Report
(Def Survey)

Report Date:	October 16, 2017 - 03:07 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	4.437 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Palladium MDP1 7-6 Federal Com 4H / Oxy Palladium MDP1 7-6 Federal Com 4H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Palladium MDP1 7-6 Federal Com 4H	**TVD Reference Elevation:**	3560.500 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3534.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.966 °
Survey Name:	Oxy Palladium MDP1 7-6 Federal Com 4H Gyro+MWD 0-20,283' MD	**Total Gravity Field Strength:**	998.4276mgn (9.80665 Based)
Survey Date:	August 30, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	229.870 ° / 11369.563 ft / 6.723 / 1.133	**Total Magnetic Field Strength:**	48087.008 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.993 °
Location Lat / Long:	N 32° 13' 26.86195", W 103° 49' 5.79862"	**Declination Date:**	October 03, 2017
Location Grid N/E Y/X:	N 445653.440 ftUS, E 700610.020 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.2746 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99993814	**Grid Convergence Used:**	0.2746 °
Version / Patch:	2.10.565.0	**Total Corr Mag North->Grid North:**	6.6916 °
		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 ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	445653.44	700610.02	N 32 13 26.86	W 103 49 5.80
	73.50	0.13	265.28	73.50	-0.01	-0.01	-0.08	0.18	445653.43	700609.94	N 32 13 26.86	W 103 49 5.80
	163.50	0.40	74.79	163.50	0.08	0.07	0.12	0.59	445653.51	700610.14	N 32 13 26.86	W 103 49 5.80
	252.50	0.19	85.34	252.50	0.20	0.16	0.57	0.24	445653.60	700610.59	N 32 13 26.86	W 103 49 5.79
	347.50	0.38	254.25	347.50	0.12	0.09	0.42	0.60	445653.53	700610.44	N 32 13 26.86	W 103 49 5.79
	441.50	0.52	191.87	441.50	-0.41	-0.41	0.03	0.51	445653.03	700610.05	N 32 13 26.86	W 103 49 5.80
	535.50	0.32	265.28	535.49	-0.88	-0.85	-0.32	0.56	445652.59	700609.70	N 32 13 26.85	W 103 49 5.80
Last Gyro	603.50	0.85	251.17	603.49	-1.10	-1.03	-0.98	0.80	445652.41	700609.04	N 32 13 26.85	W 103 49 5.81
	658.00	0.75	238.24	657.98	-1.47	-1.35	-1.67	0.38	445652.09	700608.35	N 32 13 26.85	W 103 49 5.82
	764.00	0.16	231.64	763.98	-1.99	-1.81	-2.38	0.56	445651.63	700607.64	N 32 13 26.84	W 103 49 5.83
	857.00	0.00	79.83	856.98	-2.07	-1.89	-2.48	0.17	445651.55	700607.54	N 32 13 26.84	W 103 49 5.83
	949.00	0.00	43.26	948.98	-2.07	-1.89	-2.48	0.00	445651.55	700607.54	N 32 13 26.84	W 103 49 5.83
	1042.00	0.00	288.56	1041.98	-2.07	-1.89	-2.48	0.00	445651.55	700607.54	N 32 13 26.84	W 103 49 5.83
	1134.00	0.00	130.87	1133.98	-2.07	-1.89	-2.48	0.00	445651.55	700607.54	N 32 13 26.84	W 103 49 5.83
	1227.00	0.00	91.07	1226.98	-2.07	-1.89	-2.48	0.00	445651.55	700607.54	N 32 13 26.84	W 103 49 5.83
	1319.00	0.06	277.02	1318.98	-2.07	-1.88	-2.53	0.07	445651.56	700607.49	N 32 13 26.84	W 103 49 5.83
	1506.00	0.00	34.30	1505.98	-2.07	-1.87	-2.62	0.03	445651.57	700607.40	N 32 13 26.84	W 103 49 5.83
	1600.00	0.06	291.61	1599.98	-2.05	-1.85	-2.67	0.06	445651.59	700607.35	N 32 13 26.84	W 103 49 5.83
	1694.00	0.00	48.31	1693.98	-2.04	-1.83	-2.71	0.06	445651.61	700607.31	N 32 13 26.84	W 103 49 5.83
	1789.00	0.00	321.35	1788.98	-2.04	-1.83	-2.71	0.00	445651.61	700607.31	N 32 13 26.84	W 103 49 5.83
	1883.00	0.06	260.49	1882.98	-2.05	-1.84	-2.76	0.06	445651.60	700607.26	N 32 13 26.84	W 103 49 5.83
	1978.00	0.00	304.08	1977.98	-2.06	-1.85	-2.81	0.06	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2072.00	0.00	121.16	2071.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2166.00	0.00	82.34	2165.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2261.00	0.00	273.40	2260.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2450.00	0.00	144.27	2449.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2544.00	0.00	99.26	2543.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2638.00	0.00	28.84	2637.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2732.00	0.00	196.54	2731.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2827.00	0.00	265.33	2826.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	2921.00	0.00	332.83	2920.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	3015.00	0.00	171.24	3014.98	-2.06	-1.85	-2.81	0.00	445651.59	700607.21	N 32 13 26.84	W 103 49 5.83
	3204.00	0.08	192.09	3203.98	-2.19	-1.98	-2.84	0.04	445651.46	700607.18	N 32 13 26.84	W 103 49 5.83
	3298.00	0.06	283.67	3297.98	-2.25	-2.03	-2.90	0.11	445651.41	700607.12	N 32 13 26.84	W 103 49 5.83
	3393.00	0.13	155.84	3392.98	-2.34	-2.12	-2.91	0.18	445651.32	700607.11	N 32 13 26.84	W 103 49 5.83
	3581.00	0.06	215.71	3580.98	-2.61	-2.39	-2.88	0.06	445651.05	700607.14	N 32 13 26.84	W 103 49 5.83
	3675.00	0.06	307.94	3674.98	-2.62	-2.40	-2.94	0.09	445651.04	700607.08	N 32 13 26.84	W 103 49 5.83
	3769.00	0.06	186.00	3768.98	-2.64	-2.42	-2.99	0.11	445651.02	700607.03	N 32 13 26.84	W 103 49 5.83
	3958.00	0.00	319.84	3957.98	-2.74	-2.52	-3.00	0.03	445650.92	700607.02	N 32 13 26.84	W 103 49 5.83
	4052.00	0.06	12.64	4051.98	-2.69	-2.47	-2.99	0.06	445650.97	700607.03	N 32 13 26.84	W 103 49 5.83
	4146.00	0.06	271.04	4145.98	-2.65	-2.42	-3.03	0.10	445651.02	700606.99	N 32 13 26.84	W 103 49 5.83
	4240.00	0.06	308.10	4239.98	-2.62	-2.39	-3.11	0.04	445651.05	700606.91	N 32 13 26.84	W 103 49 5.83
	4420.00	0.30	47.35	4419.98	-2.23	-2.01	-2.84	0.18	445651.43	700607.18	N 32 13 26.84	W 103 49 5.83
	4515.00	0.36	56.09	4514.98	-1.86	-1.68	-2.41	0.08	445651.76	700607.61	N 32 13 26.85	W 103 49 5.83
	4609.00	0.24	62.94	4608.98	-1.57	-1.42	-1.99	0.13	445652.02	700608.03	N 32 13 26.85	W 103 49 5.82
	4799.00	0.28	16.42	4798.97	-0.91	-0.80	-1.50	0.11	445652.64	700608.52	N 32 13 26.85	W 103 49 5.82
	4894.00	0.45	24.61	4893.97	-0.33	-0.24	-1.28	0.19	445653.20	700608.74	N 32 13 26.86	W 103 49 5.81
	5083.00	0.75	17.15	5082.96	1.57	1.62	-0.61	0.16	445655.06	700609.41	N 32 13 26.88	W 103 49 5.81
	5272.00	0.75	6.23	5271.95	4.01	4.03	-0.11	0.08	445657.47	700609.91	N 32 13 26.90	W 103 49 5.80
	5367.00	0.76	14.36	5366.94	5.25	5.26	0.11	0.11	445658.70	700610.13	N 32 13 26.91	W 103 49 5.80
	5462.00	2.27	87.12	5461.91	6.11	5.97	2.15	2.28	445659.41	700612.17	N 32 13 26.92	W 103 49 5.77
	5557.00	4.38	94.71	5556.74	6.34	5.76	7.64	2.26	445659.20	700617.66	N 32 13 26.92	W 103 49 5.71
	5652.00	6.48	98.69	5651.31	5.92	4.65	16.56	2.24	445658.09	700626.58	N 32 13 26.91	W 103 49 5.61
	5746.00	8.19	100.76	5744.54	4.79	2.60	28.38	1.84	445656.04	700638.40	N 32 13 26.89	W 103 49 5.47
	5841.00	10.29	99.85	5838.30	3.24	-0.11	43.39	2.22	445653.33	700653.41	N 32 13 26.86	W 103 49 5.29
	5936.00	11.64	99.47	5931.56	1.60	-3.14	61.20	1.42	445650.30	700671.22	N 32 13 26.83	W 103 49 5.09
	6031.00	13.67	99.57	6024.25	-0.24	-6.58	81.73	2.14	445646.86	700691.74	N 32 13 26.79	W 103 49 4.85
	6125.00	15.84	99.18	6115.15	-2.30	-10.48	105.35	2.31	445642.96	700715.36	N 32 13 26.75	W 103 49 4.57
	6220.00	18.08	98.74	6206.01	-4.48	-14.79	132.72	2.36	445638.65	700742.73	N 32 13 26.71	W 103 49 4.25
	6317.00	17.94	96.47	6298.26	-6.14	-18.76	162.44	0.74	445634.68	700772.45	N 32 13 26.67	W 103 49 3.91
	6411.00	18.18	93.35	6387.63	-6.37	-21.25	191.47	1.06	445632.20	700801.48	N 32 13 26.64	W 103 49 3.57
	6505.00	16.71	92.77	6477.30	-5.70	-22.76	219.61	1.57	445630.69	700829.61	N 32 13 26.63	W 103 49 3.24
	6599.00	16.98	93.42	6567.27	-5.06	-24.23	246.81	0.35	445629.21	700856.81	N 32 13 26.61	W 103 49 2.93
	6693.00	16.97	93.04	6657.17	-4.49	-25.77	274.21	0.12	445627.67	700884.21	N 32 13 26.59	W 103 49 2.61
	6788.00	17.27	92.84	6747.96	-3.75	-27.21	302.13	0.32	445626.23	700912.14	N 32 13 26.58	W 103 49 2.28
	6882.00	17.65	93.32	6837.63	-3.09	-28.72	330.30	0.43	445624.72	700940.30	N 32 13 26.56	W 103 49 1.96
	6977.00	17.05	91.09	6928.31	-1.99	-29.82	358.60	0.94	445623.62	700968.60	N 32 13 26.55	W 103 49 1.63
	7071.00	16.63	87.01	7018.28	0.55	-29.38	385.81	1.33	445624.06	700995.81	N 32 13 26.55	W 103 49 1.31
	7166.00	15.14	88.30	7109.65	3.63	-28.31	411.79	1.61	445625.13	701021.78	N 32 13 26.56	W 103 49 1.01
	7260.00	12.24	91.95	7200.97	5.38	-28.28	434.02	3.22	445625.16	701044.02	N 32 13 26.56	W 103 49 0.75
	7354.00	14.60	88.19	7292.40	7.10	-28.25	455.83	2.68	445625.20	701065.82	N 32 13 26.56	W 103 49 0.49
	7449.00	15.84	83.51	7384.07	10.86	-26.40	480.68	1.84	445627.04	701090.67	N 32 13 26.58	W 103 49 0.20
	7638.00	11.19	83.29	7567.79	19.30	-21.34	524.54	2.46	445632.10	701134.53	N 32 13 26.63	W 103 48 59.69
	7732.00	9.68	85.60	7660.23	22.28	-19.67	541.48	1.67	445633.77	701151.47	N 32 13 26.64	W 103 48 59.50
	7826.00	9.96	86.17	7752.85	24.66	-18.52	557.47	0.32	445634.92	701167.46	N 32 13 26.65	W 103 48 59.31
	8015.00	9.49	87.62	7939.14	28.86	-16.78	589.35	0.28	445636.66	701199.33	N 32 13 26.67	W 103 48 58.94
	8110.00	11.50	84.18	8032.55	31.47	-15.50	606.60	2.22	445637.95	701216.58	N 32 13 26.68	W 103 48 58.74

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 ° ' ")
	8204.00	13.43	75.38	8124.33	36.71	-11.79	626.49	2.88	445641.65	701236.47	N 32 13 26.72	W 103 48 58.51
	8298.00	14.24	72.01	8215.61	44.68	-5.46	648.05	1.22	445647.98	701258.02	N 32 13 26.78	W 103 48 58.26
	8393.00	13.98	66.17	8307.75	54.58	2.78	669.66	1.52	445656.22	701279.63	N 32 13 26.86	W 103 48 58.00
	8487.00	13.68	63.52	8399.02	65.66	12.33	689.99	0.75	445665.76	701299.97	N 32 13 26.95	W 103 48 57.77
	8582.00	12.65	60.81	8491.52	77.20	22.41	709.13	1.26	445675.85	701319.10	N 32 13 27.05	W 103 48 57.54
	8676.00	12.24	62.20	8583.32	88.21	32.08	726.93	0.54	445685.51	701336.90	N 32 13 27.14	W 103 48 57.33
	8770.00	12.08	63.65	8675.21	98.56	41.09	744.56	0.37	445694.53	701354.53	N 32 13 27.23	W 103 48 57.13
	8865.00	12.86	62.75	8767.96	109.20	50.34	762.86	0.85	445703.78	701372.84	N 32 13 27.32	W 103 48 56.92
	8959.00	12.88	63.46	8859.60	120.09	59.81	781.54	0.17	445713.25	701391.51	N 32 13 27.42	W 103 48 56.70
	9053.00	13.14	64.38	8951.19	130.83	69.11	800.54	0.35	445722.55	701410.51	N 32 13 27.51	W 103 48 56.48
	9148.00	16.29	65.57	9043.06	142.68	79.30	822.42	3.33	445732.73	701432.38	N 32 13 27.61	W 103 48 56.22
	9242.00	16.81	54.66	9133.19	157.74	92.61	845.51	3.35	445746.05	701455.48	N 32 13 27.74	W 103 48 55.95
	9336.00	17.54	42.69	9223.03	177.57	110.89	866.21	3.83	445764.33	701476.18	N 32 13 27.92	W 103 48 55.71
	9430.00	17.66	30.51	9312.66	201.51	133.60	883.06	3.91	445787.03	701493.02	N 32 13 28.14	W 103 48 55.51
	9524.00	16.77	19.24	9402.47	227.43	158.69	894.77	3.67	445812.12	701504.73	N 32 13 28.39	W 103 48 55.37
	9619.00	15.94	9.37	9493.64	253.68	184.51	901.41	3.05	445837.94	701511.38	N 32 13 28.64	W 103 48 55.30
	9745.00	15.49	0.18	9614.95	287.71	218.41	904.28	2.01	445871.84	701514.25	N 32 13 28.98	W 103 48 55.26
	9839.00	22.27	350.36	9703.87	317.54	248.56	901.34	7.94	445901.99	701511.30	N 32 13 29.28	W 103 48 55.29
	9919.00	27.07	347.06	9776.55	349.64	281.27	894.72	6.24	445934.69	701504.68	N 32 13 29.60	W 103 48 55.37
	10028.00	40.64	352.35	9866.87	408.31	340.92	884.39	12.73	445994.33	701494.35	N 32 13 30.19	W 103 48 55.48
	10122.00	53.42	358.65	9930.85	476.11	409.31	879.40	14.44	446062.72	701489.36	N 32 13 30.87	W 103 48 55.54
	10216.00	66.94	359.17	9977.48	557.09	490.66	877.88	14.39	446144.06	701487.84	N 32 13 31.68	W 103 48 55.55
	10310.00	82.06	356.21	10002.53	646.77	580.89	874.15	16.37	446234.29	701484.12	N 32 13 32.57	W 103 48 55.59
	10359.00	89.76	354.06	10006.03	694.96	629.55	870.01	16.31	446282.95	701479.97	N 32 13 33.05	W 103 48 55.64
	10405.00	90.76	354.21	10005.82	740.22	675.30	865.31	2.20	446328.70	701475.27	N 32 13 33.50	W 103 48 55.69
	10460.00	90.31	353.99	10005.30	794.32	730.01	859.65	0.91	446383.40	701469.62	N 32 13 34.04	W 103 48 55.75
	10554.00	90.34	355.53	10004.77	886.98	823.61	851.07	1.64	446477.00	701461.03	N 32 13 34.97	W 103 48 55.85
	10649.00	90.21	355.09	10004.32	980.78	918.29	843.30	0.48	446571.67	701453.27	N 32 13 35.91	W 103 48 55.93
	10743.00	90.72	355.64	10003.55	1073.60	1011.98	835.70	0.80	446665.36	701445.67	N 32 13 36.84	W 103 48 56.01
	10838.00	90.38	357.29	10002.64	1167.67	1106.79	829.85	1.77	446760.16	701439.81	N 32 13 37.77	W 103 48 56.08
	11026.00	90.31	358.26	10001.51	1354.40	1294.65	822.55	0.52	446948.00	701432.52	N 32 13 39.63	W 103 48 56.15
	11120.00	90.45	357.59	10000.89	1447.79	1388.58	819.15	0.73	447041.93	701429.11	N 32 13 40.56	W 103 48 56.19
	11214.00	90.31	357.47	10000.26	1541.10	1482.49	815.09	0.20	447135.84	701425.06	N 32 13 41.49	W 103 48 56.23
	11309.00	90.28	360.00	9999.77	1635.62	1577.46	813.00	2.66	447230.80	701422.97	N 32 13 42.43	W 103 48 56.25
	11403.00	90.38	359.82	9999.23	1729.33	1671.46	812.85	0.22	447324.79	701422.82	N 32 13 43.36	W 103 48 56.24
	11497.00	90.31	359.89	9998.67	1823.03	1765.46	812.61	0.11	447418.78	701422.58	N 32 13 44.29	W 103 48 56.24
	11686.00	90.45	0.47	9997.41	2011.50	1954.45	813.21	0.32	447607.77	701423.17	N 32 13 46.16	W 103 48 56.22
	11780.00	90.41	0.08	9996.71	2105.25	2048.45	813.66	0.42	447701.76	701423.62	N 32 13 47.09	W 103 48 56.21
	11874.00	90.28	359.64	9996.14	2198.95	2142.44	813.43	0.49	447795.75	701423.39	N 32 13 48.02	W 103 48 56.21
	11969.00	90.31	359.59	9995.65	2293.61	2237.44	812.79	0.06	447890.74	701422.76	N 32 13 48.96	W 103 48 56.21
	12065.00	90.31	0.49	9995.13	2389.33	2333.44	812.86	0.94	447986.73	701422.82	N 32 13 49.91	W 103 48 56.21
	12168.00	89.72	359.50	9995.10	2492.01	2436.44	812.85	1.12	448089.72	701422.81	N 32 13 50.93	W 103 48 56.20
	12254.00	89.76	359.24	9995.50	2577.68	2522.43	811.90	0.31	448175.71	701421.87	N 32 13 51.78	W 103 48 56.21
	12349.00	89.93	359.02	9995.75	2672.27	2617.42	810.46	0.29	448270.69	701420.43	N 32 13 52.72	W 103 48 56.22
	12444.00	89.93	0.57	9995.87	2766.95	2712.42	810.12	1.63	448365.68	701420.09	N 32 13 53.66	W 103 48 56.22
	12538.00	89.62	1.78	9996.24	2860.80	2806.39	812.05	1.33	448459.65	701422.01	N 32 13 54.59	W 103 48 56.19
	12633.00	89.45	1.87	9997.01	2955.70	2901.34	815.07	0.20	448554.60	701425.04	N 32 13 55.53	W 103 48 56.15
	12728.00	89.59	2.03	9997.80	3050.61	2996.28	818.30	0.22	448649.53	701428.27	N 32 13 56.47	W 103 48 56.11
	12823.00	89.55	3.09	9998.52	3145.55	3091.18	822.55	1.12	448744.43	701432.51	N 32 13 57.41	W 103 48 56.05
	12917.00	89.45	2.63	9999.34	3239.51	3185.06	827.24	0.50	448838.30	701437.20	N 32 13 58.34	W 103 48 55.99
	13105.00	89.45	2.49	10001.14	3427.40	3372.87	835.63	0.07	449026.09	701445.60	N 32 14 0.20	W 103 48 55.88
	13200.00	89.17	1.80	10002.29	3522.32	3467.79	839.19	0.78	449121.01	701449.16	N 32 14 1.14	W 103 48 55.84
	13294.00	89.35	2.35	10003.50	3616.23	3561.72	842.59	0.62	449214.94	701452.56	N 32 14 2.07	W 103 48 55.79
	13389.00	89.38	1.50	10004.55	3711.13	3656.66	845.78	0.90	449309.87	701455.75	N 32 14 3.00	W 103 48 55.75
	13483.00	89.28	2.89	10005.65	3805.05	3750.59	849.38	1.48	449403.79	701459.35	N 32 14 3.93	W 103 48 55.70
	13577.00	89.76	1.10	10006.44	3898.96	3844.52	852.66	1.97	449497.72	701462.62	N 32 14 4.86	W 103 48 55.66
	13675.00	89.35	359.45	10007.20	3996.69	3942.51	853.13	1.73	449595.70	701463.09	N 32 14 5.83	W 103 48 55.65
	13770.00	89.28	0.56	10008.34	4091.40	4037.50	853.13	1.17	449690.69	701463.10	N 32 14 6.77	W 103 48 55.64
	13865.00	89.48	0.50	10009.36	4186.17	4132.50	854.01	0.22	449785.67	701463.98	N 32 14 7.71	W 103 48 55.63
	14054.00	89.45	359.99	10011.13	4374.66	4321.48	854.82	0.27	449974.65	701464.79	N 32 14 9.58	W 103 48 55.61
	14149.00	89.38	0.66	10012.10	4469.41	4416.48	855.36	0.71	450069.64	701465.32	N 32 14 10.52	W 103 48 55.59
	14244.00	89.35	359.36	10013.15	4564.12	4511.47	855.38	1.37	450164.62	701465.34	N 32 14 11.46	W 103 48 55.59
	14338.00	89.31	359.93	10014.25	4657.78	4605.46	854.79	0.61	450258.61	701464.76	N 32 14 12.39	W 103 48 55.59
	14433.00	89.48	0.37	10015.25	4752.51	4700.46	855.04	0.50	450353.60	701465.01	N 32 14 13.33	W 103 48 55.58
	14528.00	89.38	0.21	10016.20	4847.26	4795.45	855.52	0.20	450448.58	701465.49	N 32 14 14.27	W 103 48 55.57
	14716.00	89.48	0.01	10018.07	5034.71	4983.44	855.88	0.12	450636.56	701465.85	N 32 14 16.13	W 103 48 55.56
	14811.00	89.62	0.87	10018.82	5129.48	5078.43	856.61	0.92	450731.55	701466.58	N 32 14 17.07	W 103 48 55.54
	14905.00	89.62	359.76	10019.44	5223.23	5172.43	857.13	1.18	450825.54	701467.10	N 32 14 18.00	W 103 48 55.53
	14999.00	89.90	358.97	10019.83	5316.86	5266.42	856.09	0.89	450919.52	701466.05	N 32 14 18.93	W 103 48 55.54
	15094.00	90.14	0.10	10019.80	5411.51	5361.42	855.32	1.22	451014.51	701465.28	N 32 14 19.87	W 103 48 55.54
	15188.00	89.97	359.88	10019.71	5505.23	5455.42	855.30	0.30	451108.51	701465.27	N 32 14 20.80	W 103 48 55.54
	15282.00	90.03	0.16	10019.71	5598.95	5549.42	855.33	0.30	451202.50	701465.30	N 32 14 21.73	W 103 48 55.53
	15377.00	90.31	0.38	10019.43	5693.70	5644.41	855.78	0.37	451297.49	701465.75	N 32 14 22.67	W 103 48 55.52
	15471.00	89.79	359.59	10019.35	5787.42	5738.41	855.76	1.01	451391.49	701465.72	N 32 14 23.60	W 103 48 55.52
	15565.00	90.72	359.82	10018.93	5881.09	5832.41	855.27	1.02	451485.48	701465.24	N 32 14 24.53	W 103 48 55.52
	15660.00	89.72	358.83	10018.56	5975.71	5927.40	854.15	1.48	451580.46	701464.12	N 32 14 25.47	W 103 48 55.52
	15760.00	89.97	359.25	10018.83	6075.27	6027.39	852.48	0.49	451680.44	701462.44	N 32 14 26.46	W 103 48 55.54
	15855.00	90.00	359.89	10018.86	6169.93	6122.38	851.77	0.67	451775.43	701461.73	N 32 14 27.40	W 103 48 55.54
	16048.00	90.00	359.46	10018.86	6362.26	6315.38	850.67	0.22	451968.42	701460.64	N 32 14 29.31	W 103 48 55.54
	16142.00	89.86	359.44	10018.97	6455.90	6409.37	849.77	0.15	452062.40	701459.73	N 32 14 30.24	W 103 48 55.55
	16236.00	90.00	0.14	10019.09	6549.59	6503.37	849.42	0.76	452156.40	701459.39	N 32 14 31.17	W 103 48 55.55
	16425.00	89.55	358.82	10019.83	6737.88	6692.36	847.71	0.74	452345.37	701457.67	N 32 14 33.04	W 103 48 55.56
	16520.00	89.79	0.51	10020.38	6832.55	6787.35	847.15	1.80	452440.36	701457.12	N 32 14 33.98	W 103 48 55.56
	16614.00	89.97	0.07	10020.57	6926.30	6881.35	847.63	0.51	452534.35	701457.60	N 32 14 34.91	W 103 48 55.55
	16708.00	89.86	0.09	10020.71	7020.03	6975.35	847.76	0.12	452628.34	701457.73	N 32 14 35.84	W 103 48 55.54
	16802.00	90.10	0.34	10020.75	7113.77	7069.35	848.11	0.37	452722.34	701458.08	N 32 14 36.77	W 103 48 55.53
	16897.00	90.03	0.62	10020.64	7208.55	7164.35	848.91	0.30	452817.33	701458.87	N 32 14 37.71	W 103 48 55.51
	16991.00	89.90	0.60	10020.70	7302.34	7258.34	849.91	0.14	452911.32	701459.88	N 32 14 38.64	W 103 48 55.50
	17085.00	90.10	359.31	10020.70	7396.05	7352.34	849.84	1.39	453005.31	701459.80	N 32 14 39.57	W 103 48 55.49
	17180.00	89.83	357.06	10020.75	7490.48	7447.28	846.83	2.39	453100.25	701456.79	N 32 14 40.51	W 103 48 55.52
	17274.00	90.03	358.46	10020.87	7583.84	7541.21	843.15	1.50	453194.17	701453.12	N 32 14 41.44	W 103 48 55.56
	17369.00	90.21	357.74	10020.67	7678.25	7636.16	840.00	0.78	453289.11	701449.97	N 32 14 42.38	W 103 48 55.59
	17463.00	89.72	358.11	10020.73	7771.65	7730.09	836.60	0.65	453383.04	701446.57	N 32 14 43.31	W 103 48 55.63
	17557.00	89.21	357.35	10021.61	7865.00	7824.02	832.88	0.97	453476.96	701442.84	N 32 14 44.24	W 103 48 55.66
	17745.00	89.42	357.83	10023.85	8051.65	8011.84	824.97	0.28	453664.76	701434.94	N 32 14 46.10	W 103 48 55.75
	17840.00	89.31	358.97	10024.91	8146.11	8106.79	822.32	1.21	453759.71	701432.29	N 32 14 47.04	W 103 48 55.77
	17934.00	89.52	0.30	10025.87	8239.77	8200.78	821.72	1.43	453853.70	701431.69	N 32 14 47.97	W 103 48 55.77
	18028.00	89.52	0.35	10026.65	8333.53	8294.78	822.25	0.05	453947.69	701432.22	N 32 14 48.90	W 103 48 55.76
	18123.00	89.52	0.33	10027.45	8428.28	8389.77	822.82	0.02	454042.68	701432.79	N 32 14 49.84	W 103 48 55.75
	18217.00	89.55	359.43	10028.21	8521.98	8483.77	822.62	0.96	454136.67	701432.59	N 32 14 50.77	W 103 48 55.75
	18311.00	89.38	0.28	10029.09	8615.68	8577.76	822.38	0.92	454230.66	701432.35	N 32 14 51.70	W 103 48 55.74
	18406.00	89.35	359.54	10030.14	8710.37	8672.76	822.23	0.78	454325.64	701432.20	N 32 14 52.64	W 103 48 55.74
	18500.00	89.52	0.43	10031.07	8804.08	8766.75	822.21	0.96	454419.63	701432.18	N 32 14 53.57	W 103 48 55.74
	18594.00	89.48	0.44	10031.89	8897.85	8860.74	822.92	0.04	454513.62	701432.89	N 32 14 54.50	W 103 48 55.72
	18783.00	89.79	359.67	10033.09	9086.29	9049.74	823.10	0.44	454702.60	701433.07	N 32 14 56.37	W 103 48 55.71
	18877.00	90.17	0.29	10033.13	9180.01	9143.74	823.07	0.77	454796.59	701433.04	N 32 14 57.30	W 103 48 55.70
	18972.00	90.00	0.68	10032.99	9274.78	9238.73	823.88	0.45	454891.58	701433.84	N 32 14 58.24	W 103 48 55.69
	19066.00	89.83	359.27	10033.12	9368.50	9332.73	823.83	1.51	454985.58	701433.80	N 32 14 59.17	W 103 48 55.68
	19160.00	90.07	0.16	10033.21	9462.18	9426.73	823.37	0.98	455079.57	701433.33	N 32 15 0.10	W 103 48 55.69

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 ° ' ")
	19255.00	90.52	0.37	10032.72	9556.92	9521.73	823.81	0.52	455174.56	701433.77	N 32 15 1.04	W 103 48 55.67
	19349.00	90.00	0.16	10032.29	9650.67	9615.72	824.24	0.60	455268.55	701434.21	N 32 15 1.97	W 103 48 55.66
	19443.00	89.86	0.49	10032.41	9744.43	9709.72	824.77	0.38	455362.54	701434.74	N 32 15 2.90	W 103 48 55.65
	19538.00	90.14	0.19	10032.41	9839.19	9804.72	825.34	0.43	455457.54	701435.31	N 32 15 3.84	W 103 48 55.64
	19632.00	89.93	0.01	10032.35	9932.92	9898.72	825.50	0.29	455551.53	701435.47	N 32 15 4.77	W 103 48 55.63
	19726.00	89.97	359.47	10032.43	10026.60	9992.72	825.08	0.58	455645.52	701435.04	N 32 15 5.70	W 103 48 55.63
	19821.00	89.93	0.63	10032.51	10121.32	10087.72	825.16	1.22	455740.51	701435.13	N 32 15 6.64	W 103 48 55.63
	19915.00	90.00	0.19	10032.57	10215.09	10181.72	825.83	0.47	455834.51	701435.80	N 32 15 7.57	W 103 48 55.61
	20010.00	89.69	359.16	10032.83	10309.76	10276.71	825.29	1.13	455929.50	701435.26	N 32 15 8.51	W 103 48 55.61
	20104.00	89.90	359.37	10033.16	10403.38	10370.70	824.09	0.32	456023.48	701434.05	N 32 15 9.44	W 103 48 55.62
	20198.00	89.79	358.80	10033.42	10496.97	10464.69	822.59	0.62	456117.46	701432.55	N 32 15 10.37	W 103 48 55.64
Last Survey	20243.00	89.97	359.42	10033.51	10541.77	10509.69	821.89	1.43	456162.45	701431.85	N 32 15 10.82	W 103 48 55.64
Proj to TD	20283.00	89.97	359.42	10033.53	10581.62	10549.68	821.48	0.00	456202.45	701431.45	N 32 15 11.21	W 103 48 55.64

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	26.500	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Palladium MDP1 7-6 Federal Com 4H Gyro+MWD 0-20,283' MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Palladium MDP1 7-6 Federal Com 4H Gyro+MWD 0-20,283' MD
	1	26.500	603.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Palladium MDP1 7-6 Federal Com 4H
	1	603.500	20283.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Palladium MDP1 7-6 Federal Com 4H