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

December 3, 2018

OXY USA INC.

Re:

34, 23S, 31E, Eddy NM
32.23960 -103.75850

CLIENT: OXY USA INC.
WELL: Platinum MDP1 34-3 Fed Com 6H
FIELD: Cotton Draw; Bone Spring

RIG: H&P 556
COUNTY: Eddy
API NO: 3001545172
JOB NO: 18MLD3525

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:

Name & Title of Surveyor	Drainhole Number	Surveyed Depths	Dates Performed	Type of Survey
A. Alshuker FE	Platinum MDP1 34-3 Fed Com 6H Original Hole	740.00 Ft to 20251.00 Ft	October 17, 2018 to November 21, 2018	TelePacer/SlimPulse Third Party Corrected

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

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)
Fax : (432) 742-5606 (Shared)

Schlumberger

Well Reference:
34, 23S, 31E, Eddy NM
32.23960 -103.75850

I, A. Alshuker certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 17, 2018 through November 21, 2018, conduct or supervise the taking of the TelePacer/SlimPulse & Third Party Corrected surveys from a depth of 740.00 feet to a depth of 20251.00 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 Platinum MDP1 34-3 Fed Com 6H Well (Original Hole) API No. 3001545172 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
A. Alshuker
FE

Subscribed and Sworn to before me this 3rd day of December (month) 2018 (yr)

My Commission expires:

2-16-2022

D. Adams
Notary Public (signature)

Adams County Colorado
(County State)

DONNA ADAMS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184007893
MY COMMISSION EXPIRES FEBRUARY 16, 2022

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
Original Hole	Oxy Platinum MDP1 34-3 FED COM 6H	NM Eddy County (NAD 83)	Oxy Platinum MDP1 34-3 Federal Com 6H

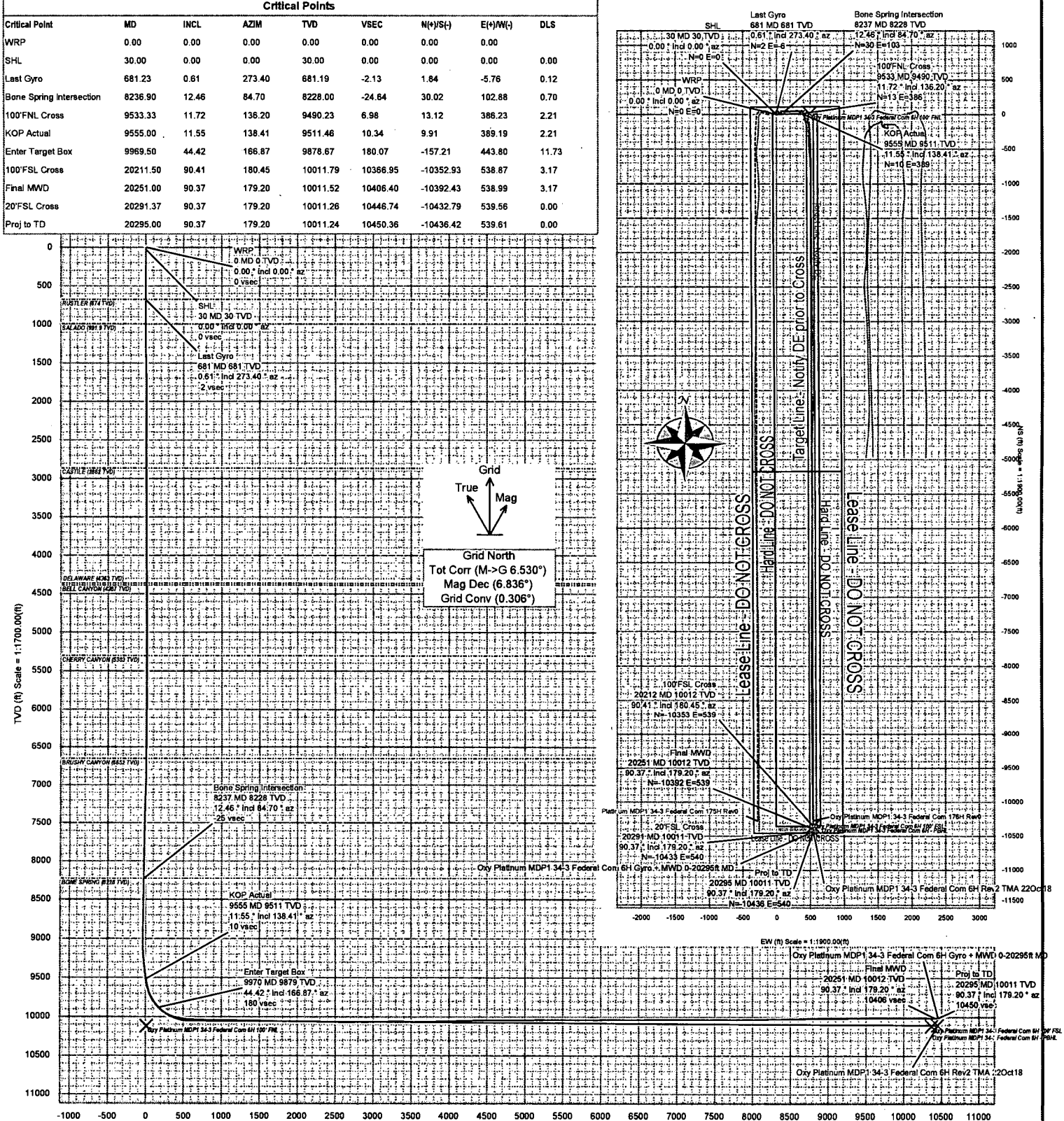
Gravity & Magnetic Parameters
Model: IFR1 Dip: 59.997° Date: 09-Nov-2018
MagDec: 6.836° FS: 48035.2nT Gravity FS: 998.446mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet
Lat: N 32 16 4.39 Northing: 461563.16ftUS Grid Conv: 0.306°
Lon: W 103 45 36.61 Easting: 718502.85ftUS Scale Fact: 0.99994504

Miscellaneous
Oxy Platinum
Slot: MDP1 34-3 Federal Com 6H TVD Ref: RKB(3474.9ft above MSL)
Plan: Oxy Platinum MDP1 34-3 Federal Com 6H Gyro + MWD 0-20295ft MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
WRP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00
Last Gyro	681.23	0.61	273.40	681.19	-2.13	1.84	-5.76	0.12
Bone Spring Intersection	8236.90	12.46	84.70	8228.00	-24.64	30.02	102.88	0.70
100'FNL Cross	9533.33	11.72	136.20	9490.23	6.98	13.12	386.23	2.21
KOP Actual	9555.00	11.55	138.41	9511.46	10.34	9.91	389.19	2.21
Enter Target Box	9969.50	44.42	166.87	9878.67	180.07	-157.21	443.80	11.73
100'FSL Cross	20211.50	90.41	180.45	10011.79	10366.95	-10352.93	538.87	3.17
Final MWD	20251.00	90.37	179.20	10011.52	10406.40	-10392.43	538.99	3.17
20'FSL Cross	20291.37	90.37	179.20	10011.26	10446.74	-10432.79	539.56	0.00
Proj to TD	20295.00	90.37	179.20	10011.24	10450.36	-10436.42	539.61	0.00



Schlumberger

Oxy Platinum MDP1 34-3 Federal Com 6H Gyro + MWD 0-20295ft MD
Survey Geodetic Report
(Def Survey)

Report Date:	November 26, 2018 - 10:12 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	177.020 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Platinum MDP1 34-3 Federal Com 6H / Oxy Platinum MDP1 34-3 Federal Com 6H	**TVD Reference Datum:**	RKB
Well:	Oxy Platinum MDP1 34-3 FED COM 6H	**TVD Reference Elevation:**	3474.900 ft above MSL
Borehole:	Original Hole	**Seabed / Ground Elevation:**	3444.900 ft above MSL
UWI / API#:	H&P 556 / 30-015-45172	**Magnetic Declination:**	6.836 °
Survey Name:	Oxy Platinum MDP1 34-3 Federal Com 6H Gyro + MWD 0-20295ft MD	**Total Gravity Field Strength:**	998.4460mgn (9.80665 Based)
Survey Date:	October 03, 2018	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	237.270 ° / 10915.333 ft / 6.718 / 1.084	**Total Magnetic Field Strength:**	48035.200 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.997 °
Location Lat / Long:	N 32° 16' 4.39025", W 103° 45' 36.50949"	**Declination Date:**	November 09, 2018
Location Grid N/E Y/X:	N 461663.160 ftUS, E 718502.850 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.3060 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994504	**Grid Convergence Used:**	0.3060 °
Version / Patch:	2.10.740.0	**Total Corr Mag North->Grid North:**	6.5300 °
		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 ° ' ")
WRP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	461663.16	718502.85	N 32 16 4.39	W 103 45 36.51
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	461663.16	718502.85	N 32 16 4.39	W 103 45 36.51
	122.53	0.50	1.93	122.53	-0.40	0.40	0.01	0.54	461663.56	718502.86	N 32 16 4.39	W 103 45 36.51
	212.48	0.59	314.82	212.48	-1.14	1.12	-0.30	0.49	461664.28	718502.55	N 32 16 4.40	W 103 45 36.51
	303.89	0.76	293.19	303.88	-1.75	1.69	-1.19	0.33	461664.85	718501.66	N 32 16 4.41	W 103 45 36.52
	398.37	0.85	273.58	398.35	-2.11	1.98	-2.47	0.30	461665.14	718500.38	N 32 16 4.41	W 103 45 36.54
	492.78	0.71	264.69	492.75	-2.17	1.97	-3.75	0.20	461665.13	718499.10	N 32 16 4.41	W 103 45 36.55
	587.30	0.57	263.22	587.27	-2.11	1.86	-4.80	0.15	461665.02	718498.05	N 32 16 4.41	W 103 45 36.57
Last Gyro	681.23	0.61	273.40	681.19	-2.13	1.84	-5.76	0.12	461665.00	718497.09	N 32 16 4.41	W 103 45 36.58
	740.00	0.27	278.79	739.96	-2.20	1.88	-6.21	0.58	461665.04	718496.64	N 32 16 4.41	W 103 45 36.58
	831.00	0.13	311.85	830.96	-2.31	1.98	-6.50	0.19	461665.14	718496.35	N 32 16 4.41	W 103 45 36.59
	922.00	0.17	251.25	921.96	-2.35	2.00	-6.71	0.17	461665.16	718496.15	N 32 16 4.41	W 103 45 36.59
	1014.00	0.09	181.69	1013.96	-2.24	1.89	-6.84	0.18	461665.05	718496.01	N 32 16 4.41	W 103 45 36.59
	1105.00	0.19	197.04	1104.96	-2.03	1.67	-6.88	0.12	461664.83	718495.97	N 32 16 4.41	W 103 45 36.59
	1195.00	0.09	286.66	1194.96	-1.91	1.55	-6.99	0.23	461664.71	718495.86	N 32 16 4.41	W 103 45 36.59
	1287.00	0.92	124.32	1286.95	-1.49	1.15	-6.45	1.09	461664.31	718496.40	N 32 16 4.40	W 103 45 36.58
	1377.00	2.02	132.12	1376.92	0.07	-0.32	-4.68	1.24	461662.84	718498.17	N 32 16 4.39	W 103 45 36.56
	1472.00	2.80	130.37	1471.84	2.85	-2.94	-1.67	0.82	461660.22	718501.18	N 32 16 4.36	W 103 45 36.53
	1661.00	1.50	119.87	1660.70	7.36	-7.16	3.99	0.72	461656.00	718506.84	N 32 16 4.32	W 103 45 36.46
	1755.00	0.35	147.22	1754.69	8.28	-8.02	5.21	1.28	461655.14	718508.06	N 32 16 4.31	W 103 45 36.45
	1850.00	0.09	88.48	1849.69	8.53	-8.26	5.45	0.33	461654.90	718508.30	N 32 16 4.31	W 103 45 36.45
	1944.00	0.14	132.30	1943.69	8.62	-8.34	5.60	0.10	461654.82	718508.45	N 32 16 4.31	W 103 45 36.44
	2039.00	0.13	58.62	2038.69	8.65	-8.36	5.78	0.17	461654.80	718508.63	N 32 16 4.31	W 103 45 36.44
	2133.00	0.08	247.17	2132.69	8.62	-8.33	5.81	0.22	461654.83	718508.66	N 32 16 4.31	W 103 45 36.44
	2228.00	0.09	71.25	2227.69	8.62	-8.33	5.82	0.18	461654.83	718508.67	N 32 16 4.31	W 103 45 36.44
	2322.00	0.08	115.23	2321.69	8.63	-8.33	5.95	0.07	461654.83	718508.80	N 32 16 4.31	W 103 45 36.44
	2417.00	0.02	258.79	2416.69	8.67	-8.37	6.00	0.10	461654.79	718508.85	N 32 16 4.31	W 103 45 36.44
	2511.00	0.20	74.28	2510.69	8.63	-8.32	6.14	0.23	461654.84	718508.99	N 32 16 4.31	W 103 45 36.44
	2605.00	0.14	86.08	2604.69	8.59	-8.27	6.41	0.07	461654.89	718509.26	N 32 16 4.31	W 103 45 36.44
	2700.00	0.02	247.73	2699.69	8.60	-8.27	6.51	0.17	461654.89	718509.36	N 32 16 4.31	W 103 45 36.43
	2794.00	0.10	164.84	2793.69	8.68	-8.36	6.52	0.11	461654.80	718509.37	N 32 16 4.31	W 103 45 36.43
	2889.00	0.09	183.67	2888.69	8.84	-8.51	6.53	0.03	461654.65	718509.38	N 32 16 4.31	W 103 45 36.43
	2983.00	0.08	286.90	2982.69	8.89	-8.57	6.47	0.14	461654.60	718509.32	N 32 16 4.31	W 103 45 36.43
	3078.00	0.09	247.79	3077.69	8.89	-8.57	6.33	0.06	461654.59	718509.18	N 32 16 4.31	W 103 45 36.44
	3172.00	0.02	56.54	3171.69	8.91	-8.59	6.28	0.12	461654.57	718509.13	N 32 16 4.30	W 103 45 36.44
	3266.00	0.14	72.66	3265.69	8.87	-8.55	6.40	0.13	461654.61	718509.25	N 32 16 4.31	W 103 45 36.44
	3361.00	0.14	74.20	3360.68	8.82	-8.48	6.62	0.00	461654.68	718509.47	N 32 16 4.31	W 103 45 36.43
	3456.00	0.13	153.81	3455.68	8.89	-8.55	6.78	0.18	461654.61	718509.63	N 32 16 4.31	W 103 45 36.43
	3550.00	0.09	154.42	3549.68	9.06	-8.71	6.86	0.04	461654.45	718509.71	N 32 16 4.30	W 103 45 36.43
	3644.00	0.19	213.62	3643.68	9.25	-8.91	6.81	0.17	461654.25	718509.66	N 32 16 4.30	W 103 45 36.43
	3739.00	0.07	277.89	3738.68	9.36	-9.03	6.66	0.18	461654.13	718509.51	N 32 16 4.30	W 103 45 36.43
	3834.00	0.22	187.45	3833.68	9.53	-9.20	6.58	0.24	461653.96	718509.43	N 32 16 4.30	W 103 45 36.43
	3929.00	0.12	250.17	3928.68	9.74	-9.42	6.47	0.21	461653.74	718509.32	N 32 16 4.30	W 103 45 36.43
	4023.00	0.19	272.03	4022.68	9.76	-9.45	6.22	0.10	461653.71	718509.07	N 32 16 4.30	W 103 45 36.44
	4118.00	0.09	118.94	4117.68	9.78	-9.48	6.12	0.29	461653.68	718508.97	N 32 16 4.30	W 103 45 36.44
	4213.00	0.13	142.89	4212.68	9.91	-9.60	6.26	0.06	461653.56	718509.10	N 32 16 4.29	W 103 45 36.44
	4307.00	0.09	159.84	4306.68	10.07	-9.75	6.35	0.05	461653.41	718509.19	N 32 16 4.29	W 103 45 36.44
	4377.00	0.08	94.44	4376.68	10.13	-9.81	6.41	0.13	461653.35	718509.26	N 32 16 4.29	W 103 45 36.44
	4535.00	0.00	348.98	4534.68	10.14	-9.82	6.52	0.05	461653.34	718509.37	N 32 16 4.29	W 103 45 36.43
	4724.00	0.00	183.07	4723.68	10.14	-9.82	6.52	0.00	461653.34	718509.37	N 32 16 4.29	W 103 45 36.43
	4818.00	0.11	180.89	4817.68	10.23	-9.91	6.52	0.12	461653.25	718509.37	N 32 16 4.29	W 103 45 36.43
	4912.00	0.16	190.63	4911.68	10.45	-10.13	6.50	0.06	461653.03	718509.35	N 32 16 4.29	W 103 45 36.43
	5088.00	0.23	198.55	5087.68	11.02	-10.70	6.34	0.04	461652.46	718509.19	N 32 16 4.28	W 103 45 36.44
	5182.00	0.20	202.16	5181.68	11.34	-11.03	6.22	0.04	461652.13	718509.07	N 32 16 4.28	W 103 45 36.44
	5277.00	0.15	138.20	5276.68	11.59	-11.28	6.24	0.20	461651.88	718509.09	N 32 16 4.28	W 103 45 36.44
	5371.00	0.12	113.55	5370.68	11.73	-11.41	6.41	0.07	461651.75	718509.26	N 32 16 4.28	W 103 45 36.44
	5466.00	0.08	26.72	5465.68	11.72	-11.39	6.53	0.15	461651.77	718509.38	N 32 16 4.28	W 103 45 36.43
	5560.00	0.06	294.32	5559.68	11.64	-11.31	6.51	0.11	461651.85	718509.36	N 32 16 4.28	W 103 45 36.43
	5749.00	0.15	9.07	5748.68	11.35	-11.03	6.46	0.08	461652.13	718509.31	N 32 16 4.28	W 103 45 36.43
	5843.00	0.34	21.46	5842.68	10.97	-10.65	6.58	0.21	461652.51	718509.43	N 32 16 4.28	W 103 45 36.43
	5937.00	0.40	24.33	5936.68	10.43	-10.09	6.82	0.07	461653.07	718509.67	N 32 16 4.29	W 103 45 36.43
	6032.00	0.38	19.30	6031.67	9.84	-9.49	7.06	0.04	461653.67	718509.91	N 32 16 4.30	W 103 45 36.43
	6126.00	0.31	21.63	6125.67	9.32	-8.96	7.26	0.08	461654.20	718510.11	N 32 16 4.30	W 103 45 36.43
	6315.00	0.43	44.26	6314.67	8.38	-7.97	7.94	0.10	461655.19	718510.79	N 32 16 4.31	W 103 45 36.42
	6409.00	0.62	51.62	6408.66	7.84	-7.41	8.59	0.21	461655.75	718511.44	N 32 16 4.32	W 103 45 36.41
	6504.00	0.53	40.25	6503.66	7.22	-6.75	9.27	0.15	461656.41	718512.12	N 32 16 4.32	W 103 45 36.40
	6598.00	0.46	55.95	6597.66	6.71	-6.21	9.87	0.16	461656.95	718512.72	N 32 16 4.33	W 103 45 36.39
	6787.00	0.47	345.89	6786.65	5.56	-5.03	10.31	0.28	461658.13	718513.16	N 32 16 4.34	W 103 45 36.39
	6975.00	1.76	355.90	6974.61	1.92	-1.40	9.91	0.69	461661.76	718512.76	N 32 16 4.38	W 103 45 36.39
	7070.00	1.95	0.17	7069.56	-1.15	1.67	9.81	0.25	461664.83	718512.66	N 32 16 4.41	W 103 45 36.40
	7164.00	2.07	2.69	7163.50	-4.44	4.96	9.90	0.16	461668.12	718512.75	N 32 16 4.44	W 103 45 36.39
	7258.00	1.88	1.08	7257.45	-7.67	8.20	10.01	0.21	461671.36	718512.86	N 32 16 4.47	W 103 45 36.39
	7353.00	1.43	355.23	7352.41	-10.41	10.94	9.94	0.51	461674.10	718512.79	N 32 16 4.50	W 103 45 36.39
	7447.00	1.23	354.23	7446.38	-12.59	13.11	9.74	0.21	461676.27	718512.59	N 32 16 4.52	W 103 45 36.40
	7578.00	1.05	353.95	7577.36	-15.19	15.70	9.47	0.14	461678.86	718512.32	N 32 16 4.55	W 103 45 36.40
	7672.00	3.72	71.43	7671.28	-16.87	17.53	12.27	3.87	461680.69	718515.12	N 32 16 4.56	W 103 45 36.37
	7766.00	6.22	71.68	7764.92	-19.04	20.10	20.00	2.66	461683.26	718522.85	N 32 16 4.59	W 103 45 36.28
	7860.00	7.82	76.92	7858.21	-21.51	23.15	31.06	1.83	461686.31	718533.91	N 32 16 4.62	W 103 45 36.15
	7955.00	10.04	80.73	7952.06	-23.55	25.95	45.53	2.42	461689.11	718548.38	N 32 16 4.64	W 103 45 35.98
	8049.00	11.52	86.96	8044.40	-24.46	27.77	62.99	2.00	461690.93	718565.84	N 32 16 4.66	W 103 45 35.77
	8143.00	12.57	87.69	8136.33	-24.35	28.68	82.59	1.13	461691.84	718585.43	N 32 16 4.67	W 103 45 35.55

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 ° ' ")
Bone Spring Intersection	*8236.90*	*12.46*	*84.70*	*8228.00*	*-24.64*	*30.02*	*102.88*	*0.70*	*461693.18*	*718605.73*	*N 32 16 4.68*	*W 103 45 35.31*
	8237.00	12.46	84.70	8228.10	-24.64	30.03	102.91	0.70	461693.18	718605.75	N 32 16 4.68	W 103 45 35.31
	8331.00	11.79	86.41	8320.00	-25.15	31.56	122.59	0.81	461694.72	718625.43	N 32 16 4.70	W 103 45 35.08
	8426.00	10.73	82.85	8413.17	-25.90	33.27	141.05	1.33	461696.43	718643.89	N 32 16 4.71	W 103 45 34.86
	8520.00	12.80	82.17	8505.19	-27.41	35.78	160.05	2.21	461698.94	718662.89	N 32 16 4.74	W 103 45 34.64
	8614.00	13.11	81.46	8596.80	-29.33	38.78	180.91	0.37	461701.94	718683.75	N 32 16 4.76	W 103 45 34.40
	8708.00	13.39	82.62	8688.30	-31.19	41.76	202.24	0.41	461704.92	718705.08	N 32 16 4.79	W 103 45 34.15
	8803.00	14.19	82.63	8780.56	-32.93	44.67	224.70	0.84	461707.83	718727.54	N 32 16 4.82	W 103 45 33.89
	8897.00	14.84	87.11	8871.56	-33.79	46.76	248.15	1.38	461709.91	718750.99	N 32 16 4.84	W 103 45 33.62
	8991.00	16.03	86.23	8962.17	-33.95	48.22	273.12	1.29	461711.37	718775.96	N 32 16 4.85	W 103 45 33.33
	9085.00	14.43	90.56	9052.87	-33.41	48.95	297.79	2.09	461712.11	718800.62	N 32 16 4.86	W 103 45 33.04
	9179.00	13.35	97.36	9144.12	-30.74	47.45	320.27	2.08	461710.61	718823.10	N 32 16 4.84	W 103 45 32.78
	9273.00	12.27	108.81	9235.80	-25.08	42.84	340.49	2.93	461706.00	718843.32	N 32 16 4.80	W 103 45 32.54
	9367.00	12.26	119.59	9327.66	-16.00	34.69	358.62	2.43	461697.85	718861.45	N 32 16 4.71	W 103 45 32.33
	9461.00	12.42	129.32	9419.50	-3.82	23.35	375.12	2.22	461686.51	718877.95	N 32 16 4.60	W 103 45 32.14
100'FNL Cross	*9533.33*	*11.72*	*136.20*	*9490.23*	*6.98*	*13.12*	*386.23*	*2.21*	*461676.28*	*718889.06*	*N 32 16 4.50*	*W 103 45 32.01*
KOP Actual	9555.00	11.55	138.41	9511.46	10.34	9.91	389.19	2.21	461673.07	718892.02	N 32 16 4.47	W 103 45 31.98
	9676.00	15.55	152.10	9629.10	34.53	-13.50	404.83	4.22	461649.66	718907.66	N 32 16 4.24	W 103 45 31.80
	9770.00	27.34	164.86	9716.48	67.19	-45.60	416.41	13.42	461617.56	718919.24	N 32 16 3.92	W 103 45 31.66
	9865.00	34.48	166.27	9797.94	115.00	-92.84	428.51	7.55	461570.32	718931.34	N 32 16 3.45	W 103 45 31.52
	9959.00	43.19	166.88	9871.09	172.91	-150.13	442.15	9.27	461513.04	718944.98	N 32 16 2.88	W 103 45 31.37
	10054.00	54.33	166.81	9933.61	243.11	-219.58	458.39	11.73	461443.59	718961.21	N 32 16 2.19	W 103 45 31.18
	10148.00	67.13	173.45	9979.52	324.32	-300.18	472.11	14.94	461363.00	718974.93	N 32 16 1.39	W 103 45 31.03
	10243.00	76.03	178.51	10009.52	414.31	-389.97	478.32	10.64	461273.21	718981.14	N 32 16 0.51	W 103 45 30.96
	10337.00	83.86	175.37	10025.93	506.79	-482.31	483.28	8.95	461180.87	718986.11	N 32 15 59.59	W 103 45 30.91
	10391.00	86.25	175.64	10030.58	560.56	-535.94	487.50	4.45	461127.25	718990.32	N 32 15 59.06	W 103 45 30.87
	10480.00	86.48	175.21	10036.22	649.35	-624.48	494.58	0.55	461038.72	718997.41	N 32 15 58.18	W 103 45 30.79
	10574.00	88.38	177.36	10040.44	743.24	-718.18	500.67	3.05	460945.02	719003.49	N 32 15 57.26	W 103 45 30.72
	10667.00	88.93	177.46	10042.62	836.21	-811.06	504.87	0.60	460852.15	719007.69	N 32 15 56.34	W 103 45 30.68
	10760.00	88.90	178.34	10044.38	929.18	-903.98	508.28	0.95	460759.23	719011.10	N 32 15 55.42	W 103 45 30.65
	10854.00	90.24	181.41	10045.09	1023.05	-997.96	508.48	3.56	460665.26	719011.30	N 32 15 54.49	W 103 45 30.65
	10947.00	89.14	180.24	10045.59	1115.84	-1090.95	507.14	1.73	460572.27	719009.96	N 32 15 53.57	W 103 45 30.67
	11041.00	88.90	179.55	10047.20	1209.70	-1184.93	507.31	0.78	460478.29	719010.13	N 32 15 52.64	W 103 45 30.68
	11134.00	88.69	178.25	10049.15	1302.63	-1277.89	509.10	1.42	460385.34	719011.92	N 32 15 51.72	W 103 45 30.66
	11228.00	89.38	179.23	10050.74	1396.57	-1371.86	511.16	1.27	460291.38	719013.99	N 32 15 50.79	W 103 45 30.64
	11414.00	89.00	179.18	10053.37	1582.42	-1557.82	513.75	0.21	460105.43	719016.57	N 32 15 48.95	W 103 45 30.62
	11601.00	88.21	180.17	10057.92	1769.16	-1744.76	514.81	0.68	459918.50	719017.63	N 32 15 47.10	W 103 45 30.62
	11695.00	91.30	180.23	10058.32	1863.00	-1838.74	514.48	3.29	459824.52	719017.30	N 32 15 46.17	W 103 45 30.63
	11789.00	89.72	178.57	10057.48	1956.91	-1932.73	515.46	2.44	459730.54	719018.28	N 32 15 45.24	W 103 45 30.63
	11978.00	89.38	178.31	10058.97	2145.85	-2121.65	520.61	0.23	459541.63	719023.43	N 32 15 43.37	W 103 45 30.58
	12072.00	87.80	177.77	10061.28	2239.80	-2215.57	523.82	1.78	459447.72	719026.64	N 32 15 42.44	W 103 45 30.55
	12166.00	89.38	179.67	10063.60	2333.72	-2309.51	525.92	2.63	459353.79	719028.74	N 32 15 41.51	W 103 45 30.53
	12260.00	89.00	178.59	10064.92	2427.65	-2403.48	527.35	1.22	459259.81	719030.17	N 32 15 40.58	W 103 45 30.52
	12355.00	88.65	179.81	10066.87	2522.56	-2498.45	528.67	1.34	459164.85	719031.49	N 32 15 39.64	W 103 45 30.51
	12449.00	90.48	178.64	10067.59	2616.48	-2592.44	529.94	2.31	459070.87	719032.76	N 32 15 38.71	W 103 45 30.50
	12544.00	89.96	181.60	10067.22	2711.33	-2687.42	529.75	3.16	458975.89	719032.57	N 32 15 37.77	W 103 45 30.51
	12732.00	90.86	179.11	10065.88	2898.99	-2875.40	528.58	1.41	458787.92	719031.40	N 32 15 35.91	W 103 45 30.53
	12921.00	91.85	178.43	10061.41	3087.85	-3064.30	532.64	0.64	458599.04	719035.46	N 32 15 34.04	W 103 45 30.50
	13015.00	91.51	178.76	10058.65	3181.77	-3158.23	534.94	0.50	458505.11	719037.76	N 32 15 33.11	W 103 45 30.48
	13110.00	91.82	178.98	10055.89	3276.68	-3253.17	536.81	0.40	458410.17	719039.63	N 32 15 32.17	W 103 45 30.46
	13205.00	86.66	176.39	10057.15	3371.62	-3348.05	540.65	6.08	458315.31	719043.47	N 32 15 31.23	W 103 45 30.42
	13299.00	87.00	178.08	10062.35	3465.48	-3441.79	545.17	1.83	458221.57	719047.99	N 32 15 30.31	W 103 45 30.38
	13394.00	90.68	181.49	10064.27	3560.32	-3536.74	545.53	5.28	458126.62	719048.35	N 32 15 29.37	W 103 45 30.38
	13488.00	91.44	180.04	10062.53	3654.10	-3630.71	544.27	1.74	458032.66	719047.09	N 32 15 28.44	W 103 45 30.40
	13583.00	91.34	179.17	10060.23	3748.97	-3725.68	544.93	0.92	457937.69	719047.75	N 32 15 27.50	W 103 45 30.40
	13677.00	91.06	179.75	10058.26	3842.86	-3819.65	545.81	0.69	457843.72	719048.63	N 32 15 26.57	W 103 45 30.39
	13866.00	91.41	180.26	10054.19	4031.56	-4008.61	545.80	0.33	457654.78	719048.62	N 32 15 24.70	W 103 45 30.40
	14056.00	91.58	182.09	10049.23	4220.99	-4198.50	541.90	0.97	457464.90	719044.72	N 32 15 22.82	W 103 45 30.46
	14150.00	90.99	182.28	10047.12	4314.59	-4292.40	538.32	0.66	457371.00	719041.14	N 32 15 21.89	W 103 45 30.51
	14245.00	90.00	181.61	10046.30	4409.23	-4387.34	535.10	1.26	457276.07	719037.92	N 32 15 20.95	W 103 45 30.55
	14340.00	90.51	181.90	10045.68	4503.90	-4482.30	532.19	0.62	457181.12	719035.01	N 32 15 20.01	W 103 45 30.59
	14434.00	88.96	182.05	10046.31	4597.55	-4576.24	528.95	1.66	457087.18	719031.77	N 32 15 19.08	W 103 45 30.63
	14529.00	90.17	182.16	10047.03	4692.17	-4671.17	525.46	1.28	456992.26	719028.28	N 32 15 18.14	W 103 45 30.68
	14624.00	90.38	181.40	10046.58	4786.84	-4766.12	522.51	0.83	456897.31	719025.33	N 32 15 17.20	W 103 45 30.72
	14719.00	91.17	179.56	10045.29	4881.65	-4861.11	521.71	2.11	456802.33	719024.53	N 32 15 16.26	W 103 45 30.74
	14813.00	90.72	179.42	10043.74	4975.55	-4955.09	522.55	0.50	456708.35	719025.37	N 32 15 15.33	W 103 45 30.73
	14907.00	91.27	179.65	10042.11	5069.45	-5049.07	523.31	0.63	456614.38	719026.13	N 32 15 14.40	W 103 45 30.73
	15096.00	91.30	179.27	10037.87	5258.23	-5238.01	525.09	0.20	456425.44	719027.91	N 32 15 12.53	W 103 45 30.72
	15191.00	90.07	179.57	10036.74	5353.14	-5333.00	526.05	1.33	456330.46	719028.87	N 32 15 11.59	W 103 45 30.72
	15285.00	89.86	180.28	10036.79	5447.02	-5427.00	526.18	0.79	456236.47	719029.00	N 32 15 10.66	W 103 45 30.72
	15380.00	89.93	179.77	10036.97	5541.89	-5522.00	526.13	0.54	456141.47	719028.95	N 32 15 9.72	W 103 45 30.73
	15569.00	89.62	179.68	10037.71	5730.67	-5711.00	527.04	0.17	455952.49	719029.86	N 32 15 7.85	W 103 45 30.73
	15757.00	90.75	180.42	10037.10	5918.40	-5898.99	526.88	0.72	455764.51	719029.70	N 32 15 5.99	W 103 45 30.74
	15947.00	90.23	180.34	10035.48	6108.07	-6088.98	525.62	0.28	455574.53	719028.44	N 32 15 4.11	W 103 45 30.77
	16136.00	90.23	179.59	10034.72	6296.82	-6277.98	525.73	0.40	455385.54	719028.55	N 32 15 2.24	W 103 45 30.78
	16325.00	90.44	180.29	10033.61	6485.57	-6466.97	525.93	0.39	455196.56	719028.75	N 32 15 0.37	W 103 45 30.79
	16419.00	90.16	180.73	10033.12	6579.39	-6560.97	525.09	0.55	455102.57	719027.91	N 32 14 59.44	W 103 45 30.80
	16608.00	89.96	180.82	10032.92	6767.99	-6749.95	522.54	0.12	454913.60	719025.36	N 32 14 57.57	W 103 45 30.84
	16703.00	90.27	180.86	10032.73	6862.77	-6844.94	521.14	0.33	454818.61	719023.97	N 32 14 56.63	W 103 45 30.87
	16797.00	90.37	181.82	10032.21	6956.51	-6938.91	518.95	1.03	454724.65	719021.77	N 32 14 55.70	W 103 45 30.90
	16986.00	90.13	179.51	10031.38	7145.11	-7127.88	516.75	1.23	454535.68	719019.57	N 32 14 53.83	W 103 45 30.94
	17082.00	90.27	180.09	10031.05	7240.99	-7223.88	517.09	0.62	454439.69	719019.91	N 32 14 52.88	W 103 45 30.94
	17176.00	89.92	179.96	10030.89	7334.86	-7317.88	517.05	0.40	454345.70	719019.87	N 32 14 51.95	W 103 45 30.94
	17270.00	89.99	179.52	10030.97	7428.76	-7411.88	517.47	0.47	454251.70	719020.29	N 32 14 51.02	W 103 45 30.95
	17365.00	90.13	180.74	10030.87	7523.62	-7506.88	517.26	1.29	454156.71	719020.08	N 32 14 50.08	W 103 45 30.95
	17459.00	89.96	180.26	10030.79	7617.44	-7600.87	516.44	0.54	454062.72	719019.26	N 32 14 49.15	W 103 45 30.97
	17554.00	90.10	180.15	10030.74	7712.30	-7695.87	516.10	0.19	453967.73	719018.92	N 32 14 48.21	W 103 45 30.98
	17649.00	89.82	180.07	10030.81	7807.16	-7790.87	515.92	0.31	453872.73	719018.74	N 32 14 47.27	W 103 45 30.99
	17744.00	90.06	180.47	10030.91	7902.00	-7885.87	515.47	0.49	453777.74	719018.29	N 32 14 46.33	W 103 45 31.00
	17839.00	90.23	179.20	10030.67	7996.89	-7980.87	515.74	1.35	453682.75	719018.56	N 32 14 45.39	W 103 45 31.00
	17934.00	91.26	179.46	10029.43	8091.80	-8075.85	516.85	1.12	453587.77	719019.67	N 32 14 44.45	W 103 45 30.99
	18029.00	90.82	179.95	10027.71	8186.68	-8170.83	517.34	0.69	453492.79	719020.16	N 32 14 43.51	W 103 45 30.99
	18124.00	90.72	179.05	10026.43	8281.58	-8265.82	518.17	0.95	453397.81	719020.99	N 32 14 42.57	W 103 45 30.99
	18219.00	90.89	179.01	10025.10	8376.51	-8360.80	519.78	0.18	453302.84	719022.60	N 32 14 41.63	W 103 45 30.98
	18314.00	90.75	179.26	10023.74	8471.44	-8455.78	521.21	0.30	453207.86	719024.03	N 32 14 40.69	W 103 45 30.97
	18409.00	90.61	179.37	10022.61	8566.36	-8550.76	522.35	0.19	453112.88	719025.17	N 32 14 39.75	W 103 45 30.96
	18504.00	91.88	180.50	10020.55	8661.21	-8645.74	522.46	1.79	453017.91	719025.28	N 32 14 38.81	W 103 45 30.96
	18599.00	91.02	179.28	10018.14	8756.06	-8740.71	522.64	1.57	452922.95	719025.46	N 32 14 37.87	W 103 45 30.97
	18694.00	90.75	179.17	10016.67	8850.97	-8835.68	523.92	0.31	452827.98	719026.74	N 32 14 36.93	W 103 45 30.96
	18789.00	90.92	179.24	10015.29	8945.89	-8930.67	525.24	0.19	452733.00	719028.06	N 32 14 35.99	W 103 45 30.95
	18885.00	88.99	180.90	10015.37	9041.75	-9026.66	525.12	2.65	452637.02	719027.94	N 32 14 35.04	W 103 45 30.96
	18979.00	90.89	178.76	10015.46	9135.63	-9120.65	525.40	3.04	452543.03	719028.22	N 32 14 34.11	W 103 45 30.96
	19169.00	90.85	178.58	10012.58	9325.53	-9310.57	529.81	0.10	452353.12	719032.63	N 32 14 32.23	W 103 45 30.92
	19264.00	90.13	180.21	10011.77	9420.44	-9405.56	530.82	1.88	452258.13	719033.64	N 32 14 31.29	W 103 45 30.91
	19359.00	90.89	179.19	10010.92	9515.33	-9500.55	531.31	1.34	452163.15	719034.13	N 32 14 30.35	W 103 45 30.91
	19454.00	90.30	178.97	10009.93	9610.26	-9595.54	532.84	0.66	452068.17	719035.66	N 32 14 29.41	W 103 45 30.90
	19548.00	90.06	178.90	10009.64	9704.21	-9689.52	534.59	0.27	451974.19	719037.41	N 32 14 28.48	W 103 45 30.89
	19643.00	87.96	179.12	10011.28	9799.13	-9784.49	536.23	2.22	451879.23	719039.05	N 32 14 27.54	W 103 45 30.87
	19737.00	89.82	179.60	10013.10	9893.03	-9878.46	537.28	2.04	451785.26	719040.10	N 32 14 26.61	W 103 45 30.87
	19832.00	90.37	179.24	10012.94	9987.95	-9973.45	538.24	0.69	451690.28	719041.06	N 32 14 25.67	W 103 45 30.86
	19926.00	90.37	179.05	10012.34	10081.88	-10067.44	539.64	0.20	451596.29	719042.46	N 32 14 24.74	W 103 45 30.85
	20021.00	89.82	180.29	10012.18	10176.78	-10162.44	540.19	1.43	451501.30	719043.01	N 32 14 23.80	W 103 45 30.85
	20210.00	90.41	180.50	10011.80	10365.45	-10351.43	538.88	0.33	451312.32	719041.70	N 32 14 21.93	W 103 45 30.88
100'FSL Cross	*20211.50*	*90.41*	*180.45*	*10011.79*	*10366.95*	*-10352.93*	*538.87*	*3.17*	*451310.82*	*719041.69*	*N 32 14 21.92*	*W 103 45 30.88*

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 ° ' ")
Final MWD	20251.00	90.37	179.20	10011.52	10406.40	-10392.43	538.99	3.17	451271.32	719041.81	N 32 14 21.53	W 103 45 30.88
20'FSL Cross	*20291.37*	*90.37*	*179.20*	*10011.26*	*10446.74*	*-10432.79*	*539.56*	*0.00*	*451230.96*	*719042.37*	*N 32 14 21.13*	*W 103 45 30.88*
Proj to TD	20295.00	90.37	179.20	10011.24	10450.36	-10436.42	539.61	0.00	451227.33	719042.43	N 32 14 21.09	W 103 45 30.88

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	30.000	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Hole / Oxy Platinum MDP1 34-3 Federal Com 6H Gyro + MWD 0-20295ft MD
	1	30.000	30.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Hole / Oxy Platinum MDP1 34-3 Federal Com 6H Gyro + MWD 0-20295ft MD
	1	30.000	681.230	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Hole / Oxy Platinum MDP1 34-3 Federal Com 6H Gyro +
	1	681.230	7258.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Hole / Oxy Platinum MDP1 34-3 Federal Com 6H Gyro +
	1	7258.000	7578.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Hole / Oxy Platinum MDP1 34-3 Federal Com 6H Gyro +
	1	7578.000	20295.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Hole / Oxy Platinum MDP1 34-3 Federal Com 6H Gyro +