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

May 28, 2019

OXY USA INC.
5 Greenway Plaza Suite 110
Houston, TX, 77046-0521

Re:

S29, T23S, R31E Eddy NM
N 32.26936 W -103.79993

CLIENT: OXY USA INC.
WELL: Pure Gold MDP1 29-17 Federal Com 4H
FIELD: Ingle Wells Bone Spring

RIG: H&P 556
COUNTY: Eddy
API NO: 30-015-45648
JOB NO: 19MLH0001

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
Sara Almohsen FE	Pure Gold MDP1 29-17 Federal Com 4H Original Hole	766.00 Ft to 22959.00 Ft	April 13, 2019 to May 19, 2019	TelePacer SlimPulse

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:
S29, T23S, R31E Eddy NM
N 32.26936 W -103.79993

I, Sara Almohsen certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of April 13, 2019 through May 19, 2019, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 766.00 feet to a depth of 22959.00 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 Pure Gold MDP1 29-17 Federal Com 4H Well (Original Hole) API No. 30-015-45648 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
Sara Almohsen
FE

Subscribed and Sworn to before me this 31 day of May (month) 2019 (yr)

My Commission expires:

22 May 2023

(signature)
Notary Public

Grady County, Oklahoma
(County State)

JODY LEON BARE
Notary Public, State of Oklahoma
Commission # 19005260
My Commission Expires 05-22-2023

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Pure Gold MDP1 29-17 Federal Com 4H	NM Eddy County (NAD 83)	Oxy Pure Gold MDP1 29-17 Federal Com 4H

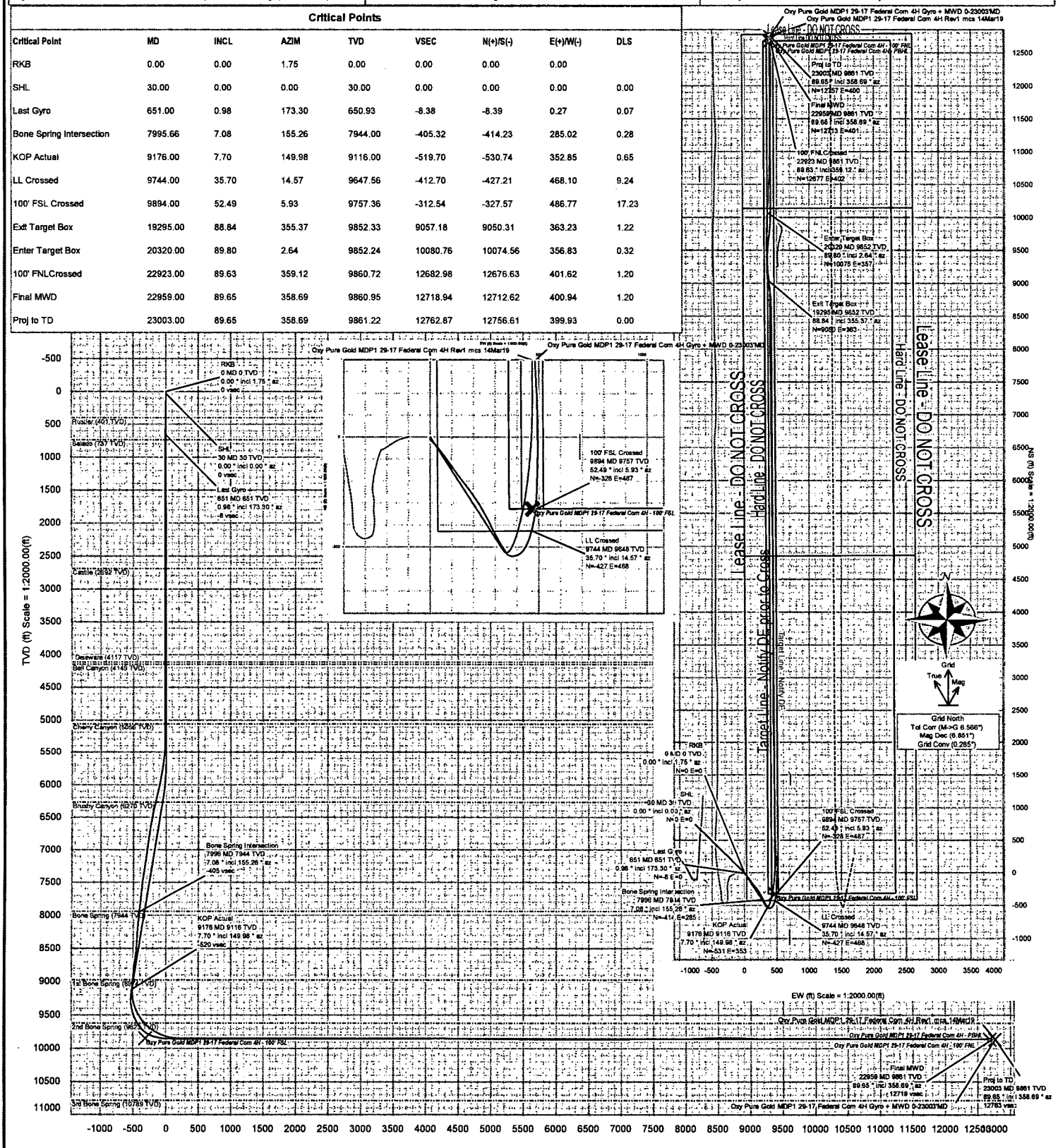
Gravity & Magnetic Parameters
Model: IFR1 Dip: 59.991° Date: 07-May-2019
MagDec: 6.851° FS: 47973nT Gravity FS: 998.452mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet
Lat: N 32 16 9.70 Northing: 462135.9ftUS Grid Conv: 0.2848°
Lon: W 103 47 59.74 Easting: 706202.25ftUS Scale Fact: 0.99994022

Miscellaneous
Slot: Oxy Pure Gold MDP1 29-17 Federal Com 4H TVD Ref: RKB=30'(3387ft above MSL)
Plan: Oxy Pure Gold MDP1 29-17 Federal Com 4H Gyro + MWD 0-23003'MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	1.75	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	651.00	0.98	173.30	650.93	-8.38	-8.39	0.27	0.07
Bone Spring Intersection	7995.66	7.08	155.26	7944.00	-405.32	-414.23	285.02	0.28
KOP Actual	9176.00	7.70	149.98	9116.00	-519.70	-530.74	352.85	0.65
LL Crossed	9744.00	35.70	14.57	9647.56	-412.70	-427.21	468.10	9.24
100' FSL Crossed	9894.00	52.49	5.93	9757.36	-312.54	-327.57	486.77	17.23
Exit Target Box	19295.00	88.84	355.37	9852.33	9057.18	9050.31	363.23	1.22
Enter Target Box	20320.00	89.80	2.64	9852.24	10080.76	10074.56	356.83	0.32
100' FNLCrossed	22923.00	89.63	359.12	9860.72	12682.98	12676.63	401.62	1.20
Final MWD	22959.00	89.65	358.69	9860.95	12718.94	12712.62	400.94	1.20
Proj to TD	23003.00	89.65	358.69	9861.22	12762.87	12756.61	399.93	0.00



Vertical Section (ft) Azim = 1.75° Scale = 1:2000.00(ft) Origin = 0N/-S, 0E/-W

Schlumberger

Oxy Pure Gold MDP1 29-17 Federal Com 4H Gyro + MWD 0-23003'MD
Survey Geodetic Report
(Def Survey)

Report Date:	May 20, 2019 - 04:12 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	1.751 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Pure Gold MDP1 29-17 Federal Com 4H / Oxy Pure Gold MDP1 29-17 Federal Com 4H	**TVD Reference Datum:**	RKB=30'
Well:	Oxy Pure Gold MDP1 29-17 Federal Com 4H	**TVD Reference Elevation:**	3387.000 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3357.000 ft above MSL
UWI / API#:	H&P556 / 30-015-45648	**Magnetic Declination:**	6.851 °
Survey Name:	Oxy Pure Gold MDP1 29-17 Federal Com 4H Gyro + MWD 0-23003'MD	**Total Gravity Field Strength:**	998.4516mgn (9.80665 Based)
Survey Date:	April 08, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	262.666 ° / 14025.885 ft / 6.934 / 1.421	**Total Magnetic Field Strength:**	47973.000 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.991 °
Location Lat / Long:	N 32° 16' 9.69584", W 103° 47' 59.74474"	**Declination Date:**	May 07, 2019
Location Grid N/E Y/X:	N 462135.900 ftUS, E 706202.260 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.2848 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994022	**Grid Convergence Used:**	0.2848 °
Version / Patch:	2.10.760.0	**Total Corr Mag North->Grid North:**	6.5662 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
RKB	0.00	0.00	1.75	0.00	0.00	0.00	0.00	N/A	462135.90	706202.26	N 32 16 9.70	W 103 47 59.74
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	462135.90	706202.26	N 32 16 9.70	W 103 47 59.74
	185.90	0.47	173.78	185.90	-0.63	-0.64	0.07	0.30	462135.26	706202.33	N 32 16 9.69	W 103 47 59.74
	275.30	0.88	179.37	275.29	-1.68	-1.69	0.12	0.46	462134.21	706202.38	N 32 16 9.68	W 103 47 59.74
	370.10	1.00	185.35	370.08	-3.24	-3.24	0.05	0.16	462132.66	706202.31	N 32 16 9.66	W 103 47 59.74
	464.60	1.17	176.69	464.56	-5.02	-5.02	0.03	0.25	462130.88	706202.29	N 32 16 9.65	W 103 47 59.74
	559.20	1.00	176.75	559.15	-6.80	-6.81	0.13	0.18	462129.09	706202.39	N 32 16 9.63	W 103 47 59.74
Last Gyro	651.00	0.98	173.30	650.93	-8.38	-8.39	0.27	0.07	462127.51	706202.53	N 32 16 9.61	W 103 47 59.74
	766.00	0.27	162.26	765.92	-9.61	-9.63	0.46	0.62	462126.28	706202.72	N 32 16 9.60	W 103 47 59.74
	947.00	0.09	289.87	946.92	-9.96	-9.98	0.46	0.18	462125.92	706202.72	N 32 16 9.60	W 103 47 59.74
	1037.00	0.09	228.65	1036.92	-9.99	-10.01	0.34	0.10	462125.89	706202.60	N 32 16 9.60	W 103 47 59.74
	1128.00	0.09	160.70	1127.92	-10.11	-10.12	0.31	0.11	462125.78	706202.57	N 32 16 9.60	W 103 47 59.74
	1219.00	0.16	258.34	1218.92	-10.20	-10.21	0.21	0.21	462125.69	706202.47	N 32 16 9.59	W 103 47 59.74
	1401.00	0.14	170.65	1400.92	-10.48	-10.48	0.00	0.11	462125.42	706202.26	N 32 16 9.59	W 103 47 59.75
	1496.00	0.14	266.95	1495.92	-10.60	-10.60	-0.10	0.22	462125.30	706202.16	N 32 16 9.59	W 103 47 59.75
	1590.00	0.14	231.96	1589.92	-10.69	-10.68	-0.31	0.09	462125.22	706201.95	N 32 16 9.59	W 103 47 59.75
	1684.00	0.09	186.51	1683.92	-10.83	-10.83	-0.40	0.11	462125.07	706201.86	N 32 16 9.59	W 103 47 59.75
	1779.00	0.14	199.13	1778.92	-11.02	-11.01	-0.45	0.06	462124.89	706201.81	N 32 16 9.59	W 103 47 59.75
	1874.00	0.14	313.96	1873.92	-11.05	-11.04	-0.57	0.25	462124.86	706201.69	N 32 16 9.59	W 103 47 59.75
	1969.00	0.09	85.46	1968.92	-10.96	-10.95	-0.58	0.22	462124.95	706201.68	N 32 16 9.59	W 103 47 59.75
	2063.00	0.14	170.65	2062.92	-11.07	-11.06	-0.49	0.17	462124.84	706201.77	N 32 16 9.59	W 103 47 59.75
	2253.00	0.14	274.34	2252.92	-11.29	-11.27	-0.68	0.12	462124.63	706201.58	N 32 16 9.58	W 103 47 59.75
	2347.00	0.14	15.63	2346.92	-11.17	-11.15	-0.77	0.23	462124.75	706201.49	N 32 16 9.59	W 103 47 59.75
	2441.00	0.09	332.71	2440.92	-10.99	-10.98	-0.77	0.10	462124.92	706201.49	N 32 16 9.59	W 103 47 59.75
	2536.00	0.09	255.54	2535.92	-10.95	-10.93	-0.88	0.12	462124.97	706201.38	N 32 16 9.59	W 103 47 59.76
	2631.00	0.14	359.03	2630.92	-10.85	-10.83	-0.95	0.19	462125.07	706201.31	N 32 16 9.59	W 103 47 59.76
	2726.00	0.14	259.36	2725.92	-10.76	-10.74	-1.07	0.23	462125.16	706201.19	N 32 16 9.59	W 103 47 59.76
	2820.00	0.14	117.29	2819.92	-10.84	-10.81	-1.08	0.28	462125.09	706201.18	N 32 16 9.59	W 103 47 59.76
	2914.00	0.21	201.44	2913.92	-11.05	-11.02	-1.04	0.26	462124.88	706201.22	N 32 16 9.59	W 103 47 59.76
	3009.00	0.16	243.20	3008.92	-11.28	-11.24	-1.22	0.15	462124.66	706201.04	N 32 16 9.58	W 103 47 59.76
	3104.00	0.12	230.08	3103.92	-11.41	-11.37	-1.42	0.05	462124.53	706200.84	N 32 16 9.58	W 103 47 59.76
	3199.00	0.20	352.12	3198.92	-11.31	-11.27	-1.51	0.30	462124.63	706200.75	N 32 16 9.58	W 103 47 59.76
	3388.00	0.14	121.20	3387.92	-11.10	-11.06	-1.36	0.16	462124.84	706200.90	N 32 16 9.59	W 103 47 59.76
	3482.00	0.14	126.08	3481.92	-11.22	-11.19	-1.17	0.01	462124.71	706201.09	N 32 16 9.59	W 103 47 59.76
	3577.00	0.14	87.57	3576.92	-11.28	-11.25	-0.96	0.10	462124.65	706201.30	N 32 16 9.58	W 103 47 59.76
	3671.00	0.20	238.63	3670.92	-11.36	-11.33	-0.99	0.35	462124.57	706201.27	N 32 16 9.58	W 103 47 59.76
	3766.00	0.20	209.23	3765.92	-11.59	-11.56	-1.21	0.11	462124.34	706201.05	N 32 16 9.58	W 103 47 59.76
	3861.00	0.14	31.68	3860.92	-11.64	-11.61	-1.23	0.36	462124.29	706201.03	N 32 16 9.58	W 103 47 59.76
	3956.00	0.25	252.82	3955.92	-11.61	-11.57	-1.37	0.39	462124.33	706200.89	N 32 16 9.58	W 103 47 59.76
	4050.00	0.24	226.44	4049.92	-11.81	-11.77	-1.70	0.12	462124.13	706200.56	N 32 16 9.58	W 103 47 59.77
	4104.00	0.25	264.32	4103.92	-11.91	-11.86	-1.90	0.30	462124.04	706200.36	N 32 16 9.58	W 103 47 59.77
	4261.00	0.09	34.58	4260.92	-11.85	-11.79	-2.17	0.20	462124.11	706200.09	N 32 16 9.58	W 103 47 59.77
	4419.00	0.07	208.36	4418.92	-11.83	-11.77	-2.15	0.10	462124.13	706200.11	N 32 16 9.58	W 103 47 59.77
	4514.00	0.02	86.45	4513.92	-11.88	-11.82	-2.16	0.09	462124.08	706200.10	N 32 16 9.58	W 103 47 59.77
	4609.00	0.02	236.29	4608.92	-11.89	-11.83	-2.16	0.04	462124.07	706200.10	N 32 16 9.58	W 103 47 59.77
	4798.00	0.06	256.09	4797.92	-11.94	-11.87	-2.28	0.02	462124.03	706199.98	N 32 16 9.58	W 103 47 59.77
	4893.00	0.02	83.53	4892.92	-11.95	-11.88	-2.31	0.08	462124.02	706199.95	N 32 16 9.58	W 103 47 59.77
	5082.00	0.06	70.76	5081.91	-11.91	-11.85	-2.19	0.02	462124.05	706200.07	N 32 16 9.58	W 103 47 59.77
	5177.00	0.13	346.64	5176.91	-11.79	-11.73	-2.17	0.14	462124.18	706200.09	N 32 16 9.58	W 103 47 59.77
	5366.00	1.44	123.08	5365.90	-12.81	-12.81	-0.22	0.81	462123.09	706202.04	N 32 16 9.57	W 103 47 59.75
	5460.00	5.01	131.95	5459.73	-16.08	-16.20	3.82	3.82	462119.70	706206.08	N 32 16 9.54	W 103 47 59.70
	5555.00	8.29	135.04	5554.08	-23.45	-23.82	11.75	3.47	462112.08	706214.00	N 32 16 9.46	W 103 47 59.61
	5649.00	10.51	136.71	5646.81	-34.16	-34.86	22.41	2.38	462101.04	706224.67	N 32 16 9.35	W 103 47 59.49
	5744.00	12.07	139.79	5739.97	-47.67	-48.75	34.77	1.76	462087.15	706237.03	N 32 16 9.21	W 103 47 59.34
	5838.00	13.10	141.43	5831.71	-63.10	-64.59	47.75	1.16	462071.32	706250.01	N 32 16 9.05	W 103 47 59.19
	5933.00	14.12	142.73	5924.04	-80.31	-82.23	61.48	1.12	462053.68	706263.74	N 32 16 8.88	W 103 47 59.03
	6027.00	14.97	144.23	6015.03	-98.85	-101.20	75.53	0.99	462034.70	706277.78	N 32 16 8.69	W 103 47 58.87
	6122.00	15.87	144.72	6106.61	-118.95	-121.76	90.20	0.96	462014.15	706292.45	N 32 16 8.49	W 103 47 58.70
	6217.00	16.74	144.03	6197.79	-140.14	-143.44	105.74	0.94	461992.47	706307.99	N 32 16 8.27	W 103 47 58.52
	6311.00	16.39	143.72	6287.89	-161.29	-165.09	121.54	0.38	461970.82	706323.79	N 32 16 8.06	W 103 47 58.34
	6406.00	15.94	141.55	6379.13	-181.82	-186.11	137.58	0.79	461949.80	706339.83	N 32 16 7.85	W 103 47 58.15
	6595.00	13.12	142.16	6562.07	-218.18	-223.38	166.88	1.49	461912.53	706369.13	N 32 16 7.48	W 103 47 57.81
	6784.00	10.90	144.05	6746.92	-248.85	-254.79	190.54	1.19	461881.13	706392.78	N 32 16 7.17	W 103 47 57.54
	6879.00	10.00	144.78	6840.34	-262.54	-268.80	200.57	0.96	461867.12	706402.81	N 32 16 7.03	W 103 47 57.42
	7068.00	9.51	145.94	7026.61	-288.32	-295.14	218.78	0.28	461840.78	706421.02	N 32 16 6.76	W 103 47 57.21
	7162.00	9.73	148.36	7119.29	-301.25	-308.34	227.29	0.49	461827.58	706429.54	N 32 16 6.63	W 103 47 57.12
	7257.00	10.15	149.85	7212.86	-315.06	-322.41	235.71	0.52	461813.51	706437.95	N 32 16 6.49	W 103 47 57.02
	7352.00	9.90	149.98	7306.41	-329.10	-336.72	244.00	0.26	461799.20	706446.24	N 32 16 6.35	W 103 47 56.92
	7446.00	9.06	150.30	7399.13	-342.29	-350.14	251.71	0.90	461785.78	706453.95	N 32 16 6.22	W 103 47 56.83
	7541.00	8.10	150.71	7493.06	-354.40	-362.48	258.69	1.01	461773.44	706460.93	N 32 16 6.10	W 103 47 56.75
	7636.00	7.19	151.61	7587.22	-365.28	-373.55	264.79	0.97	461762.38	706467.03	N 32 16 5.99	W 103 47 56.68
	7730.00	7.32	153.05	7680.47	-375.62	-384.06	270.30	0.24	461751.86	706472.54	N 32 16 5.88	W 103 47 56.62
	7825.00	7.29	153.61	7774.70	-386.24	-394.85	275.72	0.08	461741.07	706477.96	N 32 16 5.78	W 103 47 56.56
	7919.00	7.27	154.38	7867.94	-396.78	-405.56	280.94	0.11	461730.37	706483.19	N 32 16 5.67	W 103 47 56.50
Bone Spring Intersection	*7995.66*	*7.08*	*155.26*	*7944.00*	*-405.32*	*-414.23*	*285.02*	*0.28*	*461721.70*	*706487.26*	*N 32 16 5.58*	*W 103 47 56.45*
	8014.00	7.04	155.48	7962.20	-407.34	-416.28	285.96	0.28	461719.65	706488.20	N 32 16 5.56	W 103 47 56.44

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 ° ' ")
	8108.00	5.88	152.03	8055.60	-416.69	-425.77	290.61	1.30	461710.16	706492.85	N 32 16 5.47	W 103 47 56.38
	8203.00	4.88	149.43	8150.18	-424.33	-433.55	294.95	1.08	461702.38	706497.19	N 32 16 5.39	W 103 47 56.33
	8297.00	4.65	149.09	8243.86	-430.92	-440.26	298.94	0.25	461695.67	706501.18	N 32 16 5.32	W 103 47 56.29
	8392.00	4.36	151.04	8338.56	-437.26	-446.72	302.66	0.35	461689.21	706504.90	N 32 16 5.26	W 103 47 56.25
	8513.00	3.60	150.32	8459.27	-444.46	-454.05	306.77	0.63	461681.88	706509.01	N 32 16 5.19	W 103 47 56.20
	8580.00	5.14	153.39	8526.07	-448.89	-458.56	309.16	2.32	461677.37	706511.40	N 32 16 5.14	W 103 47 56.17
	8675.00	8.23	153.66	8620.42	-458.64	-468.46	314.08	3.25	461667.47	706516.32	N 32 16 5.05	W 103 47 56.11
	8769.00	9.24	148.38	8713.33	-470.88	-480.91	321.02	1.37	461655.01	706523.26	N 32 16 4.92	W 103 47 56.03
	8863.00	8.47	146.45	8806.20	-482.83	-493.11	328.81	0.88	461642.82	706531.05	N 32 16 4.80	W 103 47 55.94
	8958.00	8.18	145.34	8900.20	-493.98	-504.50	336.52	0.35	461631.43	706538.76	N 32 16 4.69	W 103 47 55.85
	8974.00	8.29	146.34	8916.04	-495.84	-506.40	337.80	1.13	461629.53	706540.04	N 32 16 4.67	W 103 47 55.84
	9081.00	8.28	148.55	9021.92	-508.57	-519.39	346.10	0.30	461616.54	706548.34	N 32 16 4.54	W 103 47 55.74
KOP Actual	9176.00	7.70	149.98	9116.00	-519.70	-530.74	352.85	0.65	461605.20	706555.09	N 32 16 4.43	W 103 47 55.67
	9271.00	12.75	111.29	9209.56	-528.64	-540.07	365.83	8.69	461595.86	706568.06	N 32 16 4.33	W 103 47 55.52
	9366.00	16.63	80.97	9301.57	-529.60	-541.75	389.06	8.93	461594.19	706591.30	N 32 16 4.32	W 103 47 55.25
	9461.00	17.08	55.67	9392.61	-518.83	-531.73	414.04	7.68	461604.20	706616.28	N 32 16 4.41	W 103 47 54.95
	9555.00	21.27	32.55	9481.51	-496.01	-509.53	434.65	9.14	461626.40	706636.89	N 32 16 4.63	W 103 47 54.71
	9650.00	28.14	22.73	9567.79	-460.23	-474.29	452.61	8.40	461661.64	706654.84	N 32 16 4.98	W 103 47 54.50
LL Crossed	*9744.00*	*35.70*	*14.57*	*9647.56*	*-412.70*	*-427.21*	*468.10*	*9.24*	*461708.72*	*706670.33*	*N 32 16 5.45*	*W 103 47 54.32*
	9745.00	35.78	14.50	9648.37	-412.13	-426.64	468.25	9.24	461709.28	706670.48	N 32 16 5.45	W 103 47 54.32
	9820.00	42.10	11.35	9706.68	-365.91	-380.72	478.70	8.83	461755.21	706680.93	N 32 16 5.91	W 103 47 54.19
	9840.00	43.74	10.19	9721.33	-352.46	-367.34	481.24	9.10	461768.58	706683.47	N 32 16 6.04	W 103 47 54.16
100' FSL Crossed	*9894.00*	*52.49*	*5.93*	*9757.36*	*-312.54*	*-327.57*	*486.77*	*17.23*	*461808.35*	*706689.00*	*N 32 16 6.43*	*W 103 47 54.09*
	9935.00	59.22	3.33	9780.36	-278.68	-293.77	489.48	17.23	461842.14	706691.71	N 32 16 6.76	W 103 47 54.06
	10029.00	71.25	1.45	9819.67	-193.49	-208.65	492.96	12.93	461927.26	706695.19	N 32 16 7.61	W 103 47 54.02
	10124.00	80.13	1.26	9843.12	-101.53	-116.72	495.13	9.35	462019.19	706697.36	N 32 16 8.52	W 103 47 53.99
	10219.00	88.88	359.36	9852.21	-7.09	-22.25	495.63	9.42	462113.65	706697.86	N 32 16 9.45	W 103 47 53.97
	10251.00	88.85	359.53	9852.85	24.87	9.74	495.32	0.54	462145.64	706697.55	N 32 16 9.77	W 103 47 53.98
	10289.00	87.59	359.41	9854.03	62.83	47.72	494.97	3.33	462183.62	706697.20	N 32 16 10.14	W 103 47 53.98
	10383.00	88.24	358.45	9857.45	156.65	141.64	493.22	1.23	462277.53	706695.45	N 32 16 11.07	W 103 47 53.99
	10476.00	90.17	356.79	9858.74	249.39	234.54	489.36	2.74	462370.43	706691.59	N 32 16 11.99	W 103 47 54.03
	10662.00	88.90	356.93	9860.25	434.70	420.25	479.17	0.69	462556.13	706681.40	N 32 16 13.83	W 103 47 54.14
	10756.00	90.31	356.42	9860.89	528.33	514.09	473.72	1.60	462649.96	706675.95	N 32 16 14.76	W 103 47 54.20
	10849.00	90.24	358.72	9860.45	621.07	607.00	469.77	2.47	462742.86	706672.01	N 32 16 15.68	W 103 47 54.24
	10942.00	90.10	359.08	9860.17	713.96	699.98	467.99	0.42	462835.84	706670.22	N 32 16 16.60	W 103 47 54.25
	11035.00	89.89	359.28	9860.18	806.86	792.97	466.66	0.31	462928.82	706668.89	N 32 16 17.52	W 103 47 54.26
	11128.00	90.10	358.43	9860.19	899.74	885.95	464.80	0.94	463021.80	706667.03	N 32 16 18.44	W 103 47 54.28
	11221.00	90.17	359.29	9859.97	992.62	978.93	462.95	0.93	463114.77	706665.18	N 32 16 19.36	W 103 47 54.30
	11314.00	90.17	359.88	9859.69	1085.56	1071.93	462.28	0.63	463207.76	706664.51	N 32 16 20.28	W 103 47 54.30
	11407.00	90.20	359.46	9859.39	1178.50	1164.93	461.74	0.45	463300.76	706663.97	N 32 16 21.20	W 103 47 54.30
	11500.00	90.17	359.53	9859.09	1271.42	1257.92	460.92	0.08	463393.75	706663.15	N 32 16 22.12	W 103 47 54.30
	11593.00	90.03	359.35	9858.93	1364.35	1350.92	460.01	0.25	463486.74	706662.24	N 32 16 23.04	W 103 47 54.31
	11687.00	90.07	359.53	9858.85	1458.27	1444.91	459.09	0.20	463580.72	706661.32	N 32 16 23.97	W 103 47 54.31
	11780.00	89.27	358.01	9859.38	1551.14	1537.89	457.10	1.85	463673.69	706659.33	N 32 16 24.89	W 103 47 54.33
	11873.00	90.13	359.27	9859.87	1644.00	1630.86	454.89	1.64	463766.66	706657.12	N 32 16 25.81	W 103 47 54.35
	11967.00	90.44	359.92	9859.40	1737.93	1724.85	454.22	0.77	463860.65	706656.46	N 32 16 26.74	W 103 47 54.35
	12060.00	89.89	359.98	9859.14	1830.88	1817.85	454.14	0.59	463953.64	706656.38	N 32 16 27.66	W 103 47 54.35
	12153.00	90.51	359.49	9858.81	1923.82	1910.85	453.71	0.85	464046.63	706655.95	N 32 16 28.58	W 103 47 54.35
	12247.00	90.17	359.13	9858.25	2017.74	2004.84	452.58	0.53	464140.62	706654.81	N 32 16 29.51	W 103 47 54.36
	12340.00	90.31	358.72	9857.86	2110.62	2097.82	450.84	0.47	464233.59	706653.07	N 32 16 30.43	W 103 47 54.37
	12433.00	90.31	358.75	9857.36	2203.49	2190.80	448.78	0.03	464326.56	706651.02	N 32 16 31.35	W 103 47 54.39
	12526.00	90.31	358.85	9856.86	2296.37	2283.78	446.84	0.11	464419.54	706649.07	N 32 16 32.27	W 103 47 54.41
	12620.00	90.20	358.46	9856.44	2390.23	2377.75	444.63	0.43	464513.50	706646.86	N 32 16 33.20	W 103 47 54.43
	12713.00	89.79	358.96	9856.45	2483.10	2470.73	442.54	0.70	464606.47	706644.77	N 32 16 34.12	W 103 47 54.45
	12806.00	90.07	359.23	9856.56	2576.00	2563.72	441.07	0.42	464699.46	706643.30	N 32 16 35.04	W 103 47 54.46
	12900.00	90.20	0.51	9856.34	2669.95	2657.71	440.85	1.37	464793.45	706643.09	N 32 16 35.97	W 103 47 54.46
	12993.00	90.31	1.36	9855.92	2762.93	2750.70	442.37	0.92	464886.43	706644.60	N 32 16 36.89	W 103 47 54.43
	13086.00	90.07	0.37	9855.62	2855.92	2843.69	443.78	1.10	464979.41	706646.01	N 32 16 37.81	W 103 47 54.41
	13180.00	90.20	359.77	9855.39	2949.88	2937.69	443.89	0.65	465073.40	706646.12	N 32 16 38.74	W 103 47 54.40
	13273.00	90.27	359.78	9855.01	3042.82	3030.68	443.53	0.08	465166.40	706645.76	N 32 16 39.66	W 103 47 54.40
	13366.00	90.34	0.17	9854.52	3135.78	3123.68	443.48	0.43	465259.39	706645.72	N 32 16 40.58	W 103 47 54.40
	13460.00	90.27	359.28	9854.02	3229.72	3217.68	443.03	0.95	465353.38	706645.27	N 32 16 41.51	W 103 47 54.40
	13553.00	90.07	359.76	9853.74	3322.65	3310.68	442.25	0.56	465446.37	706644.49	N 32 16 42.43	W 103 47 54.40
	13646.00	90.27	0.35	9853.47	3415.60	3403.67	442.34	0.67	465539.36	706644.58	N 32 16 43.35	W 103 47 54.40
	13740.00	90.13	0.04	9853.14	3509.57	3497.67	442.66	0.36	465633.36	706644.90	N 32 16 44.28	W 103 47 54.39
	13834.00	89.96	0.41	9853.06	3603.53	3591.67	443.03	0.43	465727.35	706645.27	N 32 16 45.21	W 103 47 54.38
	13929.00	89.93	0.24	9853.16	3698.51	3686.67	443.57	0.18	465822.34	706645.80	N 32 16 46.15	W 103 47 54.36
	14024.00	90.10	0.25	9853.13	3793.47	3781.67	443.98	0.18	465917.34	706646.21	N 32 16 47.09	W 103 47 54.35
	14119.00	90.24	0.47	9852.85	3888.44	3876.67	444.57	0.27	466012.33	706646.81	N 32 16 48.03	W 103 47 54.34
	14214.00	90.38	0.62	9852.33	3983.42	3971.66	445.48	0.22	466107.32	706647.71	N 32 16 48.97	W 103 47 54.33
	14309.00	90.20	0.06	9851.85	4078.39	4066.66	446.04	0.62	466202.31	706648.27	N 32 16 49.91	W 103 47 54.31
	14403.00	90.00	0.08	9851.69	4172.35	4160.66	446.16	0.21	466296.30	706648.39	N 32 16 50.84	W 103 47 54.31
	14498.00	90.07	0.29	9851.63	4267.31	4255.66	446.46	0.23	466391.29	706648.70	N 32 16 51.78	W 103 47 54.30
	14592.00	89.58	359.99	9851.92	4361.28	4349.66	446.69	0.61	466485.29	706648.93	N 32 16 52.71	W 103 47 54.29
	14687.00	89.17	359.57	9852.95	4456.21	4444.65	446.33	0.62	466580.27	706648.56	N 32 16 53.65	W 103 47 54.29
	14782.00	89.27	359.74	9854.25	4551.14	4539.64	445.76	0.21	466675.26	706647.99	N 32 16 54.59	W 103 47 54.29
	14877.00	89.27	359.75	9855.46	4646.08	4634.63	445.33	0.01	466770.24	706647.57	N 32 16 55.53	W 103 47 54.29
	15067.00	89.45	359.16	9857.58	4835.91	4824.61	443.53	0.32	466960.21	706645.76	N 32 16 57.41	W 103 47 54.30
	15162.00	89.24	358.86	9858.67	4930.80	4919.59	441.89	0.39	467055.18	706644.12	N 32 16 58.35	W 103 47 54.31
	15257.00	89.31	359.18	9859.87	5025.68	5014.57	440.26	0.34	467150.16	706642.49	N 32 16 59.29	W 103 47 54.33
	15352.00	89.65	357.99	9860.73	5120.53	5109.53	437.91	1.30	467245.12	706640.15	N 32 17 0.23	W 103 47 54.35
	15447.00	89.17	358.65	9861.71	5215.35	5204.49	435.13	0.86	467340.06	706637.36	N 32 17 1.17	W 103 47 54.37
	15636.00	89.24	358.76	9864.33	5404.07	5393.42	430.86	0.07	467528.99	706633.09	N 32 17 3.04	W 103 47 54.41
	15731.00	89.21	359.56	9865.62	5498.96	5488.40	429.47	0.84	467623.96	706631.70	N 32 17 3.98	W 103 47 54.42
	15826.00	89.41	359.94	9866.76	5593.90	5583.39	429.05	0.45	467718.95	706631.29	N 32 17 4.92	W 103 47 54.42
	15921.00	89.79	359.81	9867.42	5688.84	5678.39	428.84	0.42	467813.94	706631.08	N 32 17 5.86	W 103 47 54.42
	16016.00	89.79	359.56	9867.77	5783.78	5773.39	428.32	0.26	467908.93	706630.56	N 32 17 6.80	W 103 47 54.42
	16110.00	89.69	359.76	9868.20	5877.72	5867.38	427.76	0.24	468002.92	706630.00	N 32 17 7.73	W 103 47 54.42
	16205.00	89.52	359.35	9868.85	5972.64	5962.38	427.03	0.47	468097.91	706629.26	N 32 17 8.67	W 103 47 54.43
	16300.00	89.21	359.85	9869.91	6067.57	6057.37	426.36	0.62	468192.90	706628.60	N 32 17 9.61	W 103 47 54.43
	16395.00	89.34	359.52	9871.11	6162.50	6152.36	425.84	0.37	468287.88	706628.07	N 32 17 10.55	W 103 47 54.43
	16490.00	89.93	358.91	9871.71	6257.41	6247.35	424.54	0.89	468382.86	706626.77	N 32 17 11.49	W 103 47 54.44
	16680.00	90.38	358.89	9871.20	6447.17	6437.31	420.89	0.24	468572.81	706623.13	N 32 17 13.37	W 103 47 54.47
	16774.00	90.41	359.22	9870.55	6541.06	6531.30	419.34	0.35	468666.78	706621.58	N 32 17 14.30	W 103 47 54.48
	16869.00	90.13	358.79	9870.10	6635.95	6626.28	417.69	0.54	468761.77	706619.93	N 32 17 15.24	W 103 47 54.50
	16964.00	90.38	359.23	9869.68	6730.84	6721.27	416.05	0.53	468856.75	706618.29	N 32 17 16.18	W 103 47 54.51
	17059.00	90.48	359.15	9868.97	6825.74	6816.25	414.71	0.13	468951.73	706616.94	N 32 17 17.12	W 103 47 54.52
	17154.00	90.79	359.68	9867.92	6920.66	6911.24	413.74	0.65	469046.72	706615.97	N 32 17 18.06	W 103 47 54.52
	17249.00	90.65	359.56	9866.72	7015.59	7006.23	413.11	0.19	469141.70	706615.34	N 32 17 19.00	W 103 47 54.53
	17344.00	91.20	359.23	9865.19	7110.49	7101.21	412.10	0.68	469236.68	706614.34	N 32 17 19.94	W 103 47 54.53
	17439.00	90.86	359.66	9863.48	7205.40	7196.19	411.18	0.58	469331.65	706613.42	N 32 17 20.88	W 103 47 54.54
	17534.00	91.23	359.37	9861.75	7300.31	7291.18	410.38	0.49	469426.62	706612.62	N 32 17 21.82	W 103 47 54.54
	17628.00	90.72	359.45	9860.15	7394.22	7385.16	409.41	0.55	469520.60	706611.65	N 32 17 22.75	W 103 47 54.55
	17723.00	90.13	359.60	9859.44	7489.14	7480.15	408.63	0.64	469615.59	706610.86	N 32 17 23.69	W 103 47 54.55
	17913.00	89.96	358.04	9859.29	7678.89	7670.10	404.71	0.83	469805.53	706606.95	N 32 17 25.57	W 103 47 54.59
	18008.00	90.51	357.93	9858.90	7773.68	7765.04	401.37	0.59	469900.46	706603.61	N 32 17 26.51	W 103 47 54.62
	18103.00	91.34	358.43	9857.37	7868.49	7859.98	398.36	1.02	469995.40	706600.59	N 32 17 27.45	W 103 47 54.65
	18198.00	90.68	358.75	9855.70	7963.33	7954.94	396.02	0.77	470090.35	706598.25	N 32 17 28.39	W 103 47 54.67

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 ° ' ")
	18293.00	91.30	359.07	9854.06	8058.19	8049.91	394.21	0.73	470185.31	706596.45	N 32 17 29.33	W 103 47 54.69
	18387.00	92.09	0.05	9851.27	8152.08	8143.86	393.49	1.34	470279.26	706595.73	N 32 17 30.26	W 103 47 54.69
	18482.00	92.37	0.63	9847.58	8246.98	8238.79	394.05	0.68	470374.18	706596.29	N 32 17 31.20	W 103 47 54.68
	18533.00	91.72	0.76	9845.76	8297.94	8289.75	394.67	1.30	470425.14	706596.91	N 32 17 31.70	W 103 47 54.67
	18563.00	91.65	1.03	9844.88	8327.92	8319.73	395.14	0.93	470455.12	706597.38	N 32 17 32.00	W 103 47 54.66
	18672.00	90.79	0.19	9842.56	8436.87	8428.70	396.30	1.10	470564.08	706598.54	N 32 17 33.08	W 103 47 54.64
	18767.00	90.58	359.58	9841.42	8531.82	8523.69	396.11	0.68	470659.07	706598.34	N 32 17 34.02	W 103 47 54.64
	18862.00	89.89	358.26	9841.03	8626.70	8618.67	394.32	1.57	470754.04	706596.55	N 32 17 34.96	W 103 47 54.65
	18957.00	88.96	356.85	9841.98	8721.43	8713.58	390.27	1.78	470848.94	706592.50	N 32 17 35.90	W 103 47 54.69
	19052.00	87.83	355.68	9844.64	8815.96	8808.34	384.08	1.71	470943.69	706586.32	N 32 17 36.83	W 103 47 54.76
	19147.00	87.66	354.97	9848.38	8910.29	8902.95	376.34	0.77	471038.30	706578.58	N 32 17 37.77	W 103 47 54.84
	19242.00	88.86	354.72	9851.27	9004.55	8997.52	367.81	1.29	471132.86	706570.05	N 32 17 38.71	W 103 47 54.94
Exit Target Box	*19295.00*	*88.84*	*355.37*	*9852.33*	*9057.18*	*9050.31*	*363.23*	*1.22*	*471185.65*	*706565.47*	*N 32 17 39.23*	*W 103 47 54.99*
	19337.00	88.83	355.88	9853.18	9098.93	9092.18	360.03	1.22	471227.51	706562.27	N 32 17 39.64	W 103 47 55.02
	19432.00	90.41	358.11	9853.81	9193.59	9187.03	355.05	2.88	471322.37	706557.29	N 32 17 40.58	W 103 47 55.08
	19527.00	90.82	358.61	9852.79	9288.42	9281.99	352.33	0.68	471417.32	706554.57	N 32 17 41.52	W 103 47 55.10
	19622.00	90.51	358.02	9851.69	9383.24	9376.94	349.54	0.70	471512.26	706551.78	N 32 17 42.46	W 103 47 55.13
	19717.00	90.03	358.77	9851.24	9478.08	9471.90	346.88	0.94	471607.22	706549.12	N 32 17 43.40	W 103 47 55.16
	19811.00	90.48	358.03	9850.82	9571.92	9565.86	344.25	0.92	471701.17	706546.49	N 32 17 44.33	W 103 47 55.18
	19906.00	89.51	0.60	9850.83	9666.82	9660.85	343.12	2.89	471796.15	706545.36	N 32 17 45.27	W 103 47 55.19
	20000.00	89.93	0.39	9851.29	9760.80	9754.84	343.93	0.50	471890.14	706546.17	N 32 17 46.20	W 103 47 55.17
	20095.00	89.93	3.32	9851.41	9855.79	9849.78	347.00	3.08	471985.07	706549.24	N 32 17 47.14	W 103 47 55.13
	20189.00	89.69	1.90	9851.72	9949.77	9943.68	351.28	1.53	472078.97	706553.52	N 32 17 48.07	W 103 47 55.08
	20284.00	89.82	2.75	9852.13	10044.77	10038.60	355.14	0.91	472173.88	706557.38	N 32 17 49.01	W 103 47 55.03
Enter Target Box	*20320.00*	*89.80*	*2.64*	*9852.24*	*10080.76*	*10074.56*	*356.83*	*0.32*	*472209.84*	*706559.07*	*N 32 17 49.37*	*W 103 47 55.00*
	20473.00	89.72	2.15	9852.88	10233.75	10227.43	363.22	0.32	472362.69	706565.46	N 32 17 50.88	W 103 47 54.92
	20567.00	89.48	2.25	9853.54	10327.74	10321.35	366.83	0.28	472456.62	706569.06	N 32 17 51.81	W 103 47 54.87
	20662.00	91.10	2.32	9853.06	10422.74	10416.27	370.61	1.71	472551.53	706572.85	N 32 17 52.75	W 103 47 54.82
	20851.00	89.45	3.09	9852.15	10611.70	10605.05	379.53	0.96	472740.30	706581.77	N 32 17 54.61	W 103 47 54.71
	20946.00	89.96	2.27	9852.64	10706.68	10699.95	383.97	1.02	472835.19	706586.21	N 32 17 55.55	W 103 47 54.65
	21041.00	89.72	1.76	9852.91	10801.68	10794.89	387.32	0.59	472930.12	706589.55	N 32 17 56.49	W 103 47 54.61
	21136.00	90.10	0.76	9853.06	10896.68	10889.86	389.40	1.13	473025.09	706591.64	N 32 17 57.43	W 103 47 54.58
	21231.00	89.55	0.88	9853.35	10991.66	10984.85	390.76	0.59	473120.07	706593.00	N 32 17 58.37	W 103 47 54.56
	21325.00	90.03	0.12	9853.69	11085.64	11078.85	391.58	0.96	473214.06	706593.82	N 32 17 59.30	W 103 47 54.54
	21420.00	90.27	1.92	9853.44	11180.63	11173.83	393.27	1.91	473309.04	706595.51	N 32 18 0.24	W 103 47 54.52
	21514.00	89.34	359.81	9853.76	11274.61	11267.81	394.69	2.45	473403.02	706596.93	N 32 18 1.17	W 103 47 54.49
	21609.00	89.79	1.79	9854.48	11369.59	11362.79	396.02	2.14	473497.99	706598.26	N 32 18 2.11	W 103 47 54.47
	21703.00	89.72	0.22	9854.89	11463.58	11456.78	397.67	1.67	473591.97	706599.90	N 32 18 3.04	W 103 47 54.45
	21798.00	90.27	0.88	9854.89	11558.56	11551.77	398.58	0.90	473686.96	706600.82	N 32 18 3.98	W 103 47 54.43
	21893.00	89.82	2.30	9854.82	11653.55	11646.73	401.22	1.57	473781.91	706603.45	N 32 18 4.92	W 103 47 54.40
	21987.00	89.48	359.34	9855.39	11747.53	11740.71	402.56	3.17	473875.88	706604.80	N 32 18 5.85	W 103 47 54.37
	22082.00	89.31	0.82	9856.40	11842.48	11835.70	402.69	1.57	473970.87	706604.93	N 32 18 6.79	W 103 47 54.37
	22272.00	89.79	0.78	9857.89	12032.45	12025.68	405.35	0.25	474160.83	706607.58	N 32 18 8.67	W 103 47 54.33
	22366.00	89.62	359.90	9858.37	12126.42	12119.67	405.91	0.95	474254.82	706608.14	N 32 18 9.60	W 103 47 54.31
	22460.00	89.82	358.21	9858.83	12220.31	12213.66	404.35	1.81	474348.80	706606.59	N 32 18 10.53	W 103 47 54.33
	22555.00	89.72	0.09	9859.21	12315.20	12308.64	402.95	1.98	474443.78	706605.18	N 32 18 11.47	W 103 47 54.34
	22650.00	89.93	0.18	9859.50	12410.17	12403.64	403.17	0.24	474538.77	706605.40	N 32 18 12.41	W 103 47 54.33
	22744.00	89.86	359.24	9859.68	12504.11	12497.64	402.69	1.00	474632.76	706604.93	N 32 18 13.34	W 103 47 54.33
	22839.00	89.58	0.13	9860.14	12599.04	12592.63	402.17	0.98	474727.76	706604.41	N 32 18 14.28	W 103 47 54.33
100' FNLCrossed	*22923.00*	*89.63*	*359.12*	*9860.72*	*12682.98*	*12676.63*	*401.62*	*1.20*	*474811.74*	*706603.86*	*N 32 18 15.11*	*W 103 47 54.33*
Final MWD	22959.00	89.65	358.69	9860.95	12718.94	12712.62	400.94	1.20	474847.74	706603.17	N 32 18 15.47	W 103 47 54.34
Proj to TD	23003.00	89.65	358.69	9861.22	12762.87	12756.61	399.93	0.00	474891.72	706602.17	N 32 18 15.90	W 103 47 54.35

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 Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 4H Gyro + MWD 0-23003'MD
	1	30.000	30.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 4H Gyro + MWD 0-23003'MD
	1	30.000	651.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 4H
	1	651.000	8392.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 4H
	1	8392.000	8974.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 4H
	1	8974.000	23003.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 4H