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 13, 2019

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

29, 23S, 31E, Eddy NM
N 32.26936 W 103.80027

Re:

CLIENT: OXY USA INC.
WELL: Pure Gold MDP1 29-17 Federal Com 3H
FIELD: Ingle Wells Bone Spring

RIG: H&P 556
COUNTY: Eddy
API NO: 30-015-45647
JOB NO: 19MLH0003

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 3H Original Hole	766.00 Ft to 23017.00 Ft	April 10, 2019 to May 6, 2019	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:
29, 23S, 31E, Eddy NM
N 32.26936 W 103.80027

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 10, 2019 through May 06, 2019, conduct or supervise the taking of the TelePacer/SlimPulse & Third Party corrected surveys from a depth of 766.00 feet to a depth of 23017.00 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 3H Rev3 Well (Original Hole) API No. 30-015-45647 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 13th day of May (month) 2019 (yr)

My Commission expires:

2-16-2022

D. Adams (signature)

Notary Public

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 Borehole	Oxy Pure Gold MDP1 29-17 Federal Com 3H	NM Eddy County (NAD 83)	Oxy Pure Gold MDP1 29-17 Federal Com 3H

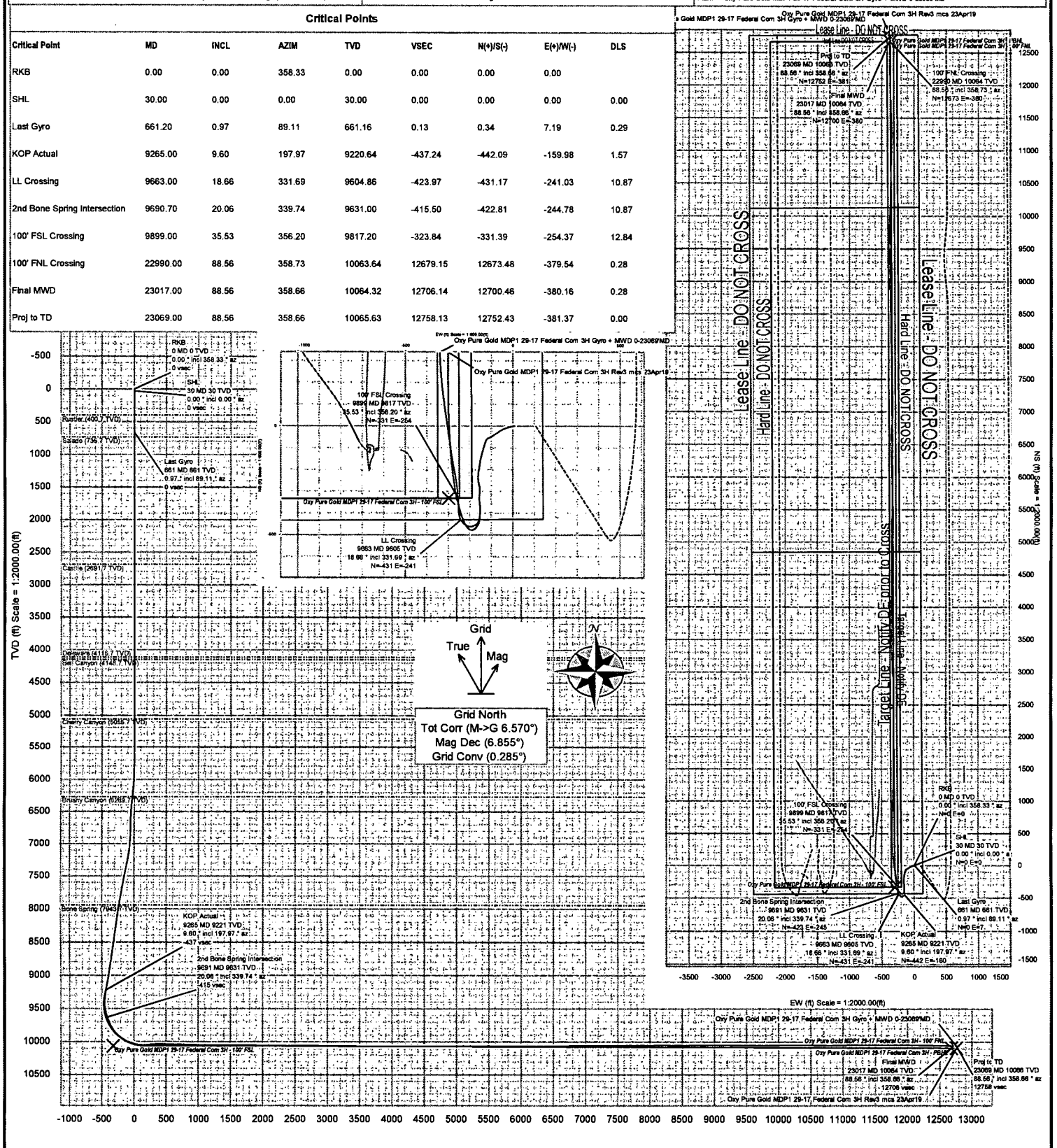
Gravity & Magnetic Parameters
Model: IFR1 Dip: 59.992° Date: 23-Apr-2019
MagDec: 6.855° FS: 47977.1nT Gravity FS: 998.452mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet
Lat: N 32 16 9.70 Northing: 462135.35ftUS Grid Conv: 0.2846°
Lon: W 103 48 0.97 Easting: 706097.26ftUS Scale Fact: 0.99994018

Miscellaneous
Slot: Oxy Pure Gold MDP1 29-17 Federal Com 3H TVD Ref: RKB=30'(3386.7ft above MSL)
Plan: Oxy Pure Gold MDP1 29-17 Federal Com 3H Gyro + MWD 0-23069'MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	358.33	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	661.20	0.97	89.11	661.16	0.13	0.34	7.19	0.29
KOP Actual	9265.00	9.60	197.97	9220.64	-437.24	-442.09	-159.98	1.57
LL Crossing	9663.00	18.66	331.69	9604.86	-423.97	-431.17	-241.03	10.87
2nd Bone Spring Intersection	9690.70	20.06	339.74	9631.00	-415.50	-422.81	-244.78	10.87
100' FSL Crossing	9899.00	35.53	356.20	9817.20	-323.84	-331.39	-254.37	12.84
100' FNL Crossing	22990.00	88.56	358.73	10063.64	12679.15	12673.48	-379.54	0.28
Final MWD	23017.00	88.56	358.66	10064.32	12706.14	12700.46	-380.16	0.28
Proj to TD	23069.00	88.56	358.66	10065.63	12758.13	12752.43	-381.37	0.00



Schlumberger

Oxy Pure Gold MDP1 29-17 Federal Com 3H Gyro + MWD 0-23069'MD
Survey Geodetic Report
(Def Survey)

Report Date:	May 09, 2019 - 03:26 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	358.330 ° (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 3H / Oxy Pure Gold MDP1 29-17 Federal Com 3H	**TVD Reference Datum:**	RKB=30'
Well:	Oxy Pure Gold MDP1 29-17 Federal Com 3H	**TVD Reference Elevation:**	3386.700 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3356.700 ft above MSL
UWI / API#:	H&P556 / 30-015-45647	**Magnetic Declination:**	6.855 °
Survey Name:	Oxy Pure Gold MDP1 29-17 Federal Com 3H Gyro + MWD 0-23069'MD	**Total Gravity Field Strength:**	998.4519mgn (9.80665 Based)
Survey Date:	March 25, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	342.136 ° / 13847.027 ft / 7.036 / 1.375	**Total Magnetic Field Strength:**	47977.100 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.992 °
Location Lat / Long:	N 32° 16' 9.69556", W 103° 48' 0.96771"	**Declination Date:**	April 23, 2019
Location Grid N/E Y/X:	N 462135.350 ftUS, E 706097.260 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.2846 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994018	**Grid Convergence Used:**	0.2846 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.5704 °
		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	358.33	0.00	0.00	0.00	0.00	N/A	462135.35	706097.26	N 32 16 9.70	W 103 48 0.97
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	462135.35	706097.26	N 32 16 9.70	W 103 48 0.97
	95.90	0.50	99.38	95.90	-0.06	-0.05	0.28	0.76	462135.30	706097.54	N 32 16 9.70	W 103 48 0.96
	127.20	0.46	96.84	127.20	-0.10	-0.08	0.54	0.14	462135.27	706097.80	N 32 16 9.69	W 103 48 0.96
	215.00	0.53	81.07	214.99	-0.10	-0.06	1.29	0.17	462135.29	706098.55	N 32 16 9.69	W 103 48 0.95
	305.40	0.77	87.89	305.39	-0.04	0.02	2.31	0.28	462135.37	706099.57	N 32 16 9.70	W 103 48 0.94
	400.30	0.79	91.00	400.28	-0.07	0.04	3.61	0.05	462135.39	706100.87	N 32 16 9.70	W 103 48 0.93
	495.00	0.70	85.35	494.97	-0.07	0.07	4.84	0.12	462135.42	706102.09	N 32 16 9.70	W 103 48 0.91
	588.70	0.82	79.79	588.66	0.06	0.24	6.07	0.15	462135.59	706103.32	N 32 16 9.70	W 103 48 0.90
Last Gyro	661.20	0.97	89.11	661.16	0.13	0.34	7.19	0.29	462135.69	706104.45	N 32 16 9.70	W 103 48 0.88
	766.00	0.41	122.34	765.95	-0.09	0.15	8.39	0.64	462135.50	706105.65	N 32 16 9.70	W 103 48 0.87
	857.00	0.14	13.54	856.95	-0.17	0.09	8.69	0.52	462135.44	706105.95	N 32 16 9.70	W 103 48 0.87
	1037.00	0.19	34.88	1036.95	0.28	0.54	8.92	0.04	462135.89	706106.18	N 32 16 9.70	W 103 48 0.86
	1218.00	0.09	93.19	1217.95	0.51	0.78	9.23	0.09	462136.13	706106.49	N 32 16 9.70	W 103 48 0.86
	1310.00	0.21	12.93	1309.95	0.67	0.94	9.34	0.23	462136.29	706106.60	N 32 16 9.70	W 103 48 0.86
	1401.00	0.09	101.86	1400.94	0.82	1.09	9.45	0.25	462136.44	706106.71	N 32 16 9.71	W 103 48 0.86
	1496.00	0.19	143.28	1495.94	0.67	0.95	9.61	0.14	462136.30	706106.87	N 32 16 9.70	W 103 48 0.86
	1590.00	0.19	305.60	1589.94	0.64	0.91	9.58	0.40	462136.26	706106.84	N 32 16 9.70	W 103 48 0.86
	1685.00	0.09	308.31	1684.94	0.78	1.05	9.39	0.11	462136.40	706106.65	N 32 16 9.71	W 103 48 0.86
	1874.00	0.09	25.20	1873.94	1.01	1.28	9.34	0.06	462136.63	706106.60	N 32 16 9.71	W 103 48 0.86
	1969.00	0.09	281.35	1968.94	1.09	1.36	9.30	0.15	462136.71	706106.56	N 32 16 9.71	W 103 48 0.86
	2064.00	0.14	12.65	2063.94	1.22	1.49	9.25	0.18	462136.84	706106.51	N 32 16 9.71	W 103 48 0.86
	2159.00	0.14	246.73	2158.94	1.29	1.56	9.17	0.26	462136.91	706106.43	N 32 16 9.71	W 103 48 0.86
	2253.00	0.16	290.91	2252.94	1.30	1.56	8.94	0.12	462136.91	706106.20	N 32 16 9.71	W 103 48 0.86
	2348.00	0.14	14.38	2347.94	1.46	1.72	8.85	0.21	462137.07	706106.11	N 32 16 9.71	W 103 48 0.86
	2443.00	0.14	83.75	2442.94	1.58	1.84	8.99	0.17	462137.19	706106.25	N 32 16 9.71	W 103 48 0.86
	2537.00	0.14	245.10	2536.94	1.54	1.81	9.00	0.29	462137.16	706106.26	N 32 16 9.71	W 103 48 0.86
	2632.00	0.09	83.24	2631.94	1.50	1.77	8.97	0.24	462137.12	706106.23	N 32 16 9.71	W 103 48 0.86
	2726.00	0.14	245.45	2725.94	1.47	1.73	8.94	0.24	462137.08	706106.20	N 32 16 9.71	W 103 48 0.86
	2821.00	0.16	55.25	2820.94	1.49	1.76	8.94	0.31	462137.11	706106.20	N 32 16 9.71	W 103 48 0.86
	2915.00	0.21	198.59	2914.94	1.40	1.67	9.00	0.37	462137.02	706106.26	N 32 16 9.71	W 103 48 0.86
	3010.00	0.19	177.39	3009.94	1.08	1.34	8.95	0.08	462136.69	706106.21	N 32 16 9.71	W 103 48 0.86
	3104.00	0.09	321.48	3103.94	0.99	1.25	8.91	0.29	462136.60	706106.17	N 32 16 9.71	W 103 48 0.86
	3199.00	0.09	237.55	3198.94	1.01	1.27	8.80	0.13	462136.61	706106.06	N 32 16 9.71	W 103 48 0.87
	3388.00	0.14	7.64	3387.94	1.16	1.41	8.70	0.11	462136.76	706105.96	N 32 16 9.71	W 103 48 0.87
	3483.00	0.14	77.77	3482.94	1.30	1.55	8.83	0.17	462136.90	706106.09	N 32 16 9.71	W 103 48 0.86
	3577.00	0.09	44.83	3576.94	1.37	1.63	9.00	0.09	462136.98	706106.26	N 32 16 9.71	W 103 48 0.86
	3672.00	0.16	280.01	3671.94	1.45	1.71	8.92	0.24	462137.06	706106.18	N 32 16 9.71	W 103 48 0.86
	3766.00	0.09	36.78	3765.94	1.53	1.79	8.83	0.23	462137.14	706106.09	N 32 16 9.71	W 103 48 0.86
	3861.00	0.16	253.40	3860.94	1.55	1.81	8.75	0.25	462137.16	706106.01	N 32 16 9.71	W 103 48 0.87
	4050.00	0.25	261.67	4049.94	1.44	1.68	8.09	0.05	462137.03	706105.35	N 32 16 9.71	W 103 48 0.87
	4108.00	0.14	228.03	4107.94	1.38	1.61	7.91	0.27	462136.96	706105.17	N 32 16 9.71	W 103 48 0.88
	4231.00	0.13	144.65	4230.94	1.16	1.40	7.88	0.15	462136.75	706105.14	N 32 16 9.71	W 103 48 0.88
	4326.00	0.03	30.04	4325.94	1.10	1.33	7.96	0.15	462136.68	706105.22	N 32 16 9.71	W 103 48 0.87
	4515.00	0.09	213.18	4514.94	1.02	1.25	7.90	0.06	462136.60	706105.16	N 32 16 9.71	W 103 48 0.88
	4705.00	0.03	245.88	4704.94	0.88	1.10	7.77	0.04	462136.45	706105.03	N 32 16 9.71	W 103 48 0.88
	4894.00	0.03	145.41	4893.94	0.81	1.04	7.76	0.02	462136.39	706105.02	N 32 16 9.71	W 103 48 0.88
	4989.00	0.09	119.58	4988.94	0.76	0.98	7.84	0.07	462136.33	706105.10	N 32 16 9.70	W 103 48 0.88
	5084.00	0.03	274.15	5083.94	0.72	0.95	7.88	0.12	462136.30	706105.14	N 32 16 9.70	W 103 48 0.88
	5178.00	0.09	305.61	5177.94	0.77	0.99	7.79	0.07	462136.34	706105.05	N 32 16 9.71	W 103 48 0.88
	5367.00	0.03	187.68	5366.94	0.81	1.03	7.66	0.06	462136.38	706104.92	N 32 16 9.71	W 103 48 0.88
	5462.00	0.09	274.83	5461.94	0.79	1.01	7.59	0.10	462136.36	706104.85	N 32 16 9.71	W 103 48 0.88
	5557.00	0.05	252.18	5556.94	0.79	1.01	7.47	0.05	462136.36	706104.73	N 32 16 9.71	W 103 48 0.88
	5651.00	0.05	287.42	5650.94	0.79	1.01	7.39	0.03	462136.36	706104.65	N 32 16 9.71	W 103 48 0.88
	5745.00	1.49	249.03	5744.93	0.40	0.58	6.21	1.54	462135.93	706103.47	N 32 16 9.70	W 103 48 0.90
	5840.00	4.99	254.95	5839.76	-0.97	-0.93	1.07	3.70	462134.42	706098.33	N 32 16 9.69	W 103 48 0.96
	5935.00	8.18	256.68	5934.12	-3.29	-3.57	-9.50	3.36	462131.79	706087.76	N 32 16 9.66	W 103 48 1.08
	6029.00	10.54	254.25	6026.86	-6.73	-7.44	-24.28	2.55	462127.91	706072.98	N 32 16 9.62	W 103 48 1.25
	6124.00	11.01	245.99	6120.19	-12.29	-13.49	-40.93	1.70	462121.86	706056.33	N 32 16 9.56	W 103 48 1.45
	6218.00	11.59	239.88	6212.38	-20.20	-21.88	-57.30	1.41	462113.47	706039.96	N 32 16 9.48	W 103 48 1.64
	6313.00	11.21	235.26	6305.50	-29.79	-31.93	-73.15	1.04	462103.42	706024.12	N 32 16 9.38	W 103 48 1.82
	6407.00	10.61	236.85	6397.80	-39.29	-41.87	-87.90	0.71	462093.48	706009.37	N 32 16 9.29	W 103 48 1.99
	6502.00	7.44	239.12	6491.62	-46.86	-49.81	-100.50	3.36	462085.54	705996.76	N 32 16 9.21	W 103 48 2.14
	6596.00	5.30	244.68	6585.03	-51.58	-54.79	-109.65	2.37	462080.56	705987.61	N 32 16 9.16	W 103 48 2.25
	6640.00	4.35	245.51	6628.87	-53.04	-56.35	-113.01	2.16	462079.00	705984.26	N 32 16 9.14	W 103 48 2.29
	6691.00	3.28	249.90	6679.76	-54.25	-57.66	-116.14	2.17	462077.70	705981.13	N 32 16 9.13	W 103 48 2.32
	6786.00	1.48	259.99	6774.68	-55.29	-58.81	-119.90	1.94	462076.55	705977.37	N 32 16 9.12	W 103 48 2.37
	6835.00	2.06	219.73	6823.65	-56.04	-59.59	-121.09	2.72	462075.76	705976.18	N 32 16 9.11	W 103 48 2.38
	6880.00	3.05	209.29	6868.61	-57.67	-61.26	-122.19	2.42	462074.10	705975.08	N 32 16 9.10	W 103 48 2.39
	6975.00	4.55	205.40	6963.40	-63.20	-66.87	-125.04	1.60	462068.49	705972.23	N 32 16 9.04	W 103 48 2.43
	7070.00	6.49	198.85	7057.95	-71.58	-75.35	-128.39	2.14	462060.00	705968.88	N 32 16 8.96	W 103 48 2.47
	7164.00	9.14	196.88	7151.07	-83.64	-87.53	-132.28	2.83	462047.83	705964.99	N 32 16 8.84	W 103 48 2.51
	7259.00	11.32	196.12	7244.56	-99.67	-103.71	-137.06	2.30	462031.65	705960.21	N 32 16 8.68	W 103 48 2.57
	7353.00	12.43	194.99	7336.54	-118.15	-122.34	-142.24	1.21	462013.02	705955.03	N 32 16 8.49	W 103 48 2.63
	7448.00	11.81	193.26	7429.43	-137.33	-141.68	-147.11	0.76	461993.68	705950.16	N 32 16 8.30	W 103 48 2.69
	7543.00	11.35	191.46	7522.49	-155.83	-160.31	-151.20	0.62	461975.05	705946.07	N 32 16 8.12	W 103 48 2.74
	7637.00	11.31	189.43	7614.66	-173.88	-178.46	-154.55	0.43	461956.90	705942.72	N 32 16 7.94	W 103 48 2.78

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 ° ' ")	
	7732.00	10.87	188.37	7707.89	-191.85	-196.52	-157.38	0.51	461938.85	705939.89	N 32 16 7.76	W 103 48	2.81
	7826.00	10.38	186.82	7800.27	-208.95	-213.69	-159.67	0.60	461921.67	705937.60	N 32 16 7.59	W 103 48	2.84
	7921.00	10.04	184.34	7893.77	-225.65	-230.45	-161.31	0.58	461904.92	705935.96	N 32 16 7.42	W 103 48	2.86
	8016.00	9.34	174.59	7987.42	-241.58	-246.38	-161.21	1.88	461888.98	705936.06	N 32 16 7.27	W 103 48	2.86
	8110.00	8.61	167.94	8080.27	-256.11	-260.86	-159.02	1.35	461874.51	705938.24	N 32 16 7.12	W 103 48	2.83
	8205.00	7.70	167.71	8174.31	-269.36	-274.03	-156.18	0.96	461861.34	705941.09	N 32 16 6.99	W 103 48	2.80
	8299.00	9.17	176.12	8267.29	-283.04	-287.66	-154.34	2.04	461847.71	705942.93	N 32 16 6.86	W 103 48	2.78
	8393.00	9.18	183.31	8360.09	-297.99	-302.62	-154.26	1.22	461832.75	705943.01	N 32 16 6.71	W 103 48	2.78
	8488.00	8.71	183.39	8453.94	-312.71	-317.36	-155.13	0.49	461818.01	705942.14	N 32 16 6.56	W 103 48	2.79
	8583.00	8.67	180.76	8547.85	-327.03	-331.70	-155.65	0.42	461803.67	705941.62	N 32 16 6.42	W 103 48	2.80
	8677.00	8.47	175.24	8640.80	-341.02	-345.69	-155.17	0.90	461789.69	705942.10	N 32 16 6.28	W 103 48	2.79
	8771.00	8.73	174.44	8733.74	-355.05	-359.68	-153.90	0.30	461775.69	705943.37	N 32 16 6.14	W 103 48	2.78
	8866.00	9.16	174.49	8827.59	-369.79	-374.39	-152.48	0.45	461760.99	705944.79	N 32 16 6.00	W 103 48	2.77
	8960.00	9.13	181.67	8920.40	-384.70	-389.29	-151.97	1.21	461746.09	705945.30	N 32 15 5.85	W 103 48	2.76
	9055.00	10.03	185.91	9014.07	-400.42	-405.05	-153.05	1.20	461730.32	705944.22	N 32 15 5.70	W 103 48	2.77
	9110.00	11.05	187.00	9068.14	-410.38	-415.05	-154.18	1.89	461720.33	705943.09	N 32 15 5.60	W 103 48	2.79
KOP Actual	9265.00	9.60	197.97	9220.64	-437.24	-442.09	-159.98	1.57	461693.29	705937.29	N 32 15 5.33	W 103 48	2.86
	9360.00	13.29	241.42	9313.90	-449.67	-454.88	-172.04	9.58	461680.50	705925.23	N 32 15 5.20	W 103 48	3.00
	9458.00	13.14	255.85	9409.33	-457.18	-462.99	-192.74	3.36	461672.39	705904.54	N 32 15 5.12	W 103 48	3.24
	9552.00	20.05	303.28	9499.75	-450.22	-456.72	-216.70	15.58	461678.65	705880.57	N 32 15 5.19	W 103 48	3.52
	9647.00	18.03	326.54	9589.68	-428.36	-435.49	-238.45	8.21	461699.89	705858.82	N 32 15 5.40	W 103 48	3.77
LL Crossing	*9663.00*	*18.66*	*331.69*	*9604.86*	*-423.97*	*-431.17*	*-241.03*	*10.87*	*461704.21*	*705856.24*	*N 32 15 5.44*	*W 103 48*	*3.80*
2nd Bone Spring Intersection	*9690.70*	*20.06*	*339.74*	*9631.00*	*-415.50*	*-422.81*	*-244.78*	*10.87*	*461712.57*	*705852.50*	*N 32 15 5.52*	*W 103 48*	*3.84*
	9741.00	23.36	351.58	9677.75	-397.40	-404.84	-249.23	10.87	461730.54	705848.05	N 32 15 5.70	W 103 48	3.89
	9836.00	27.51	358.18	9763.54	-356.74	-364.25	-252.69	5.28	461771.12	705844.59	N 32 16 6.10	W 103 48	3.93
100' FSL Crossing	*9899.00*	*35.53*	*356.20*	*9817.20*	*-323.84*	*-331.39*	*-254.37*	*12.84*	*461803.98*	*705842.91*	*N 32 16 6.43*	*W 103 48*	*3.95*
	9930.00	39.49	355.49	9841.79	-304.98	-312.57	-255.74	12.84	461822.80	705841.54	N 32 16 6.62	W 103 48	3.96
	10024.00	50.49	350.18	9908.19	-239.01	-246.81	-264.30	12.36	461888.55	705832.97	N 32 16 7.27	W 103 48	4.06
	10118.00	58.88	350.16	9962.48	-163.15	-171.30	-277.39	8.93	461964.06	705819.89	N 32 16 8.01	W 103 48	4.21
	10213.00	67.14	351.66	10005.56	-79.28	-87.78	-290.71	8.81	462047.57	705806.57	N 32 16 8.84	W 103 48	4.36
	10308.00	75.96	351.64	10035.59	10.14	1.29	-303.78	9.28	462136.64	705793.50	N 32 16 9.72	W 103 48	4.51
	10402.00	85.55	351.88	10050.68	102.20	93.00	-317.06	10.21	462228.35	705780.22	N 32 16 10.63	W 103 48	4.65
	10496.00	93.30	353.99	10051.62	195.70	186.21	-328.61	8.54	462321.55	705768.67	N 32 16 11.55	W 103 48	4.78
	10559.00	95.61	356.00	10046.72	258.40	248.77	-334.09	4.85	462384.11	705763.19	N 32 16 12.17	W 103 48	4.84
	10652.00	91.79	357.78	10040.72	351.16	341.42	-339.12	4.53	462476.75	705758.16	N 32 16 13.09	W 103 48	4.90
	10746.00	88.45	359.02	10040.53	445.14	435.37	-341.75	3.79	462570.69	705755.53	N 32 16 14.02	W 103 48	4.92
	10839.00	88.21	0.43	10043.24	538.07	528.33	-342.19	1.54	462663.64	705755.09	N 32 16 14.94	W 103 48	4.92
	10932.00	88.79	1.73	10045.67	630.93	621.28	-340.44	1.53	462756.59	705756.84	N 32 16 15.86	W 103 48	4.90
	11025.00	89.07	3.95	10047.41	723.62	714.14	-335.83	2.41	462849.44	705761.45	N 32 16 16.78	W 103 48	4.84
	11118.00	89.00	2.42	10048.98	816.27	806.98	-330.67	1.65	462942.28	705766.61	N 32 16 17.70	W 103 48	4.77
	11211.00	89.10	1.82	10050.52	909.05	899.90	-327.23	0.65	463035.20	705770.05	N 32 16 18.62	W 103 48	4.73
	11304.00	88.93	1.31	10052.12	1001.89	992.85	-324.69	0.58	463128.14	705772.59	N 32 16 19.54	W 103 48	4.69
	11397.00	88.76	1.77	10053.99	1094.73	1085.80	-322.19	0.53	463221.08	705775.09	N 32 16 20.46	W 103 48	4.66
	11490.00	88.83	2.36	10055.95	1187.51	1178.72	-318.84	0.64	463314.00	705778.44	N 32 16 21.37	W 103 48	4.61
	11583.00	89.48	1.17	10057.32	1280.33	1271.66	-315.98	1.46	463406.93	705781.30	N 32 16 22.29	W 103 48	4.57
	11676.00	89.55	0.19	10058.11	1373.25	1364.65	-314.87	1.06	463499.92	705782.41	N 32 16 23.21	W 103 48	4.56
	11770.00	91.27	1.64	10057.43	1467.14	1458.63	-313.37	2.39	463593.89	705783.91	N 32 16 24.14	W 103 48	4.53
	11863.00	90.31	359.50	10056.15	1560.06	1551.61	-312.45	2.52	463686.87	705784.83	N 32 16 25.06	W 103 48	4.52
	11956.00	89.58	359.87	10056.24	1653.03	1644.61	-312.96	0.88	463779.86	705784.32	N 32 16 25.98	W 103 48	4.52
	12050.00	89.69	359.99	10056.84	1746.99	1738.61	-313.07	0.17	463873.85	705784.21	N 32 16 26.91	W 103 48	4.51
	12143.00	89.31	359.98	10057.65	1839.95	1831.60	-313.10	0.41	463966.84	705784.18	N 32 16 27.83	W 103 48	4.51
	12236.00	89.45	359.99	10058.66	1932.90	1924.60	-313.12	0.15	464059.83	705784.16	N 32 16 28.75	W 103 48	4.50
	12330.00	89.48	359.71	10059.53	2026.87	2018.59	-313.37	0.30	464153.82	705783.91	N 32 16 29.68	W 103 48	4.50
	12423.00	89.45	0.43	10060.40	2119.82	2111.59	-313.25	0.77	464246.81	705784.03	N 32 16 30.61	W 103 48	4.49
	12516.00	89.69	0.31	10061.10	2212.76	2204.58	-312.65	0.29	464339.80	705784.63	N 32 16 31.53	W 103 48	4.48
	12703.00	89.17	0.08	10062.96	2399.65	2391.57	-312.02	0.30	464526.78	705785.26	N 32 16 33.38	W 103 48	4.46
	12796.00	91.78	359.86	10062.19	2492.60	2484.56	-312.07	2.82	464619.76	705785.21	N 32 16 34.30	W 103 48	4.46
	12983.00	90.10	0.47	10059.12	2679.47	2671.53	-311.53	0.96	464806.71	705785.75	N 32 16 36.15	W 103 48	4.44
	13076.00	88.90	359.32	10059.93	2772.43	2764.52	-311.70	1.79	464899.70	705785.58	N 32 16 37.07	W 103 48	4.44
	13263.00	88.52	355.27	10064.14	2959.31	2951.23	-320.52	2.17	465086.39	705776.76	N 32 16 38.91	W 103 48	4.53
	13356.00	88.69	356.51	10066.41	3052.20	3043.96	-327.18	1.35	465179.12	705770.10	N 32 16 39.83	W 103 48	4.60
	13450.00	89.03	358.55	10068.28	3146.17	3137.85	-331.23	2.20	465273.00	705766.05	N 32 16 40.76	W 103 48	4.64
	13543.00	89.55	358.34	10069.43	3239.16	3230.81	-333.75	0.60	465365.96	705763.53	N 32 16 41.68	W 103 48	4.67
	13636.00	89.62	357.07	10070.11	3332.15	3323.73	-337.48	1.37	465458.87	705759.80	N 32 16 42.60	W 103 48	4.71
	13730.00	89.76	358.33	10070.61	3426.14	3417.65	-341.25	1.35	465552.79	705756.03	N 32 16 43.53	W 103 48	4.74
	13825.00	90.31	0.34	10070.56	3521.12	3512.64	-342.35	2.19	465647.77	705754.93	N 32 16 44.47	W 103 48	4.75
	13920.00	90.24	0.10	10070.10	3616.07	3607.63	-341.99	0.26	465742.76	705755.29	N 32 16 45.41	W 103 48	4.74
	14014.00	90.10	359.54	10069.82	3710.03	3701.63	-342.28	0.61	465836.75	705755.00	N 32 16 46.34	W 103 48	4.74
	14109.00	90.27	0.99	10069.51	3804.98	3796.63	-341.84	1.54	465931.74	705755.44	N 32 16 47.28	W 103 48	4.73
	14204.00	89.79	359.99	10069.46	3899.91	3891.62	-341.03	1.17	466026.73	705756.25	N 32 16 48.22	W 103 48	4.71
	14299.00	90.31	0.55	10069.38	3994.85	3986.62	-340.58	0.80	466121.73	705756.70	N 32 16 49.16	W 103 48	4.70
	14393.00	90.10	0.76	10069.05	4088.77	4080.62	-339.51	0.32	466215.71	705757.77	N 32 16 50.09	W 103 48	4.69
	14488.00	90.24	0.39	10068.76	4183.70	4175.61	-338.56	0.42	466310.70	705758.72	N 32 16 51.03	W 103 48	4.67
	14583.00	89.55	0.73	10068.94	4278.63	4270.60	-337.63	0.81	466405.69	705759.65	N 32 16 51.97	W 103 48	4.65
	14678.00	89.38	358.04	10069.82	4373.60	4365.59	-338.65	2.84	466500.67	705758.63	N 32 16 52.91	W 103 48	4.66
	14773.00	89.93	359.44	10070.40	4468.59	4460.56	-340.74	1.58	466595.63	705756.55	N 32 16 53.85	W 103 48	4.68
	14867.00	90.03	0.47	10070.43	4562.55	4554.56	-340.81	1.10	466689.63	705756.47	N 32 16 54.78	W 103 48	4.67
	14962.00	90.24	359.40	10070.21	4657.51	4649.56	-340.92	1.15	466784.62	705756.36	N 32 16 55.72	W 103 48	4.67
	15057.00	90.34	0.19	10069.73	4752.48	4744.55	-341.26	0.84	466879.61	705756.02	N 32 16 56.66	W 103 48	4.67
	15152.00	89.96	0.64	10069.48	4847.42	4839.55	-340.57	0.62	466974.60	705756.71	N 32 16 57.60	W 103 48	4.65
	15247.00	90.55	0.76	10069.05	4942.33	4934.54	-339.41	0.63	467069.59	705757.87	N 32 16 58.54	W 103 48	4.64
	15342.00	90.24	0.68	10068.40	5037.25	5029.53	-338.22	0.34	467164.57	705759.07	N 32 16 59.48	W 103 48	4.62
	15437.00	90.27	0.20	10067.98	5132.18	5124.53	-337.49	0.51	467259.56	705759.80	N 32 17 0.42	W 103 48	4.60
	15532.00	90.17	0.16	10067.61	5227.13	5219.53	-337.19	0.11	467354.55	705760.09	N 32 17 1.36	W 103 48	4.59
	15627.00	90.13	0.68	10067.36	5322.07	5314.52	-336.49	0.55	467449.54	705760.79	N 32 17 2.30	W 103 48	4.58
	15722.00	89.86	0.95	10067.37	5416.98	5409.51	-335.14	0.40	467544.53	705762.14	N 32 17 3.24	W 103 48	4.56
	15816.00	90.13	0.09	10067.38	5510.91	5503.51	-334.29	0.96	467638.52	705762.99	N 32 17 4.17	W 103 48	4.54
	15911.00	90.31	0.50	10067.01	5605.85	5598.51	-333.80	0.47	467733.51	705763.48	N 32 17 5.11	W 103 48	4.53
	16006.00	89.69	0.74	10067.01	5700.78	5693.50	-332.77	0.70	467828.50	705764.51	N 32 17 6.05	W 103 48	4.51
	16101.00	89.58	358.97	10067.62	5795.74	5788.49	-333.01	1.87	467923.49	705764.27	N 32 17 6.99	W 103 48	4.51
	16196.00	89.65	357.92	10068.26	5890.74	5883.46	-335.59	1.11	468018.44	705761.69	N 32 17 7.93	W 103 48	4.54
	16290.00	89.65	359.25	10068.83	5984.73	5977.42	-337.91	1.41	468112.40	705759.37	N 32 17 8.86	W 103 48	4.56
	16385.00	89.62	358.52	10069.44	6079.72	6072.40	-339.76	0.77	468207.38	705757.52	N 32 17 9.80	W 103 48	4.57
	16480.00	89.96	357.65	10069.79	6174.72	6167.35	-342.93	0.98	468302.32	705754.35	N 32 17 10.74	W 103 48	4.61
	16575.00	90.41	357.66	10069.48	6269.71	6262.27	-346.82	0.47	468397.23	705750.46	N 32 17 11.68	W 103 48	4.65
	16670.00	89.72	357.83	10069.37	6364.71	6357.19	-350.56	0.75	468492.15	705746.72	N 32 17 12.62	W 103 48	4.68
	16765.00	90.03	358.49	10069.58	6459.71	6452.14	-353.61	0.77	468587.09	705743.67	N 32 17 13.56	W 103 48	4.71
	16860.00	90.58	359.91	10069.07	6554.69	6547.13	-354.93	1.60	468682.08	705742.35	N 32 17 14.50	W 103 48	4.72
	16954.00	91.17	2.60	10067.64	6648.55	6641.09	-352.88	2.93	468776.03	705744.41	N 32 17 15.43	W 103 48	4.69
	17049.00	91.89	6.18	10065.10	6742.97	6735.76	-345.61	3.84	468870.69	705751.67	N 32 17 16.36	W 103 48	4.60
	17144.00	90.62	3.16	10063.02	6837.35	6830.41	-337.88	3.45	468965.34	705759.40	N 32 17 17.30	W 103 48	4.51
	17239.00	89.93	0.25	10062.56	6932.18	6925.35	-335.05	3.15	469060.28	705762.23	N 32 17 18.24	W 103 48	4.47
	17334.00	90.58	1.14	10062.14	7027.09	7020.34	-333.90	1.16	469155.26	705763.38	N 32 17 19.18	W 103 48	4.45
	17429.00	90.14	0.24	10061.54	7122.01	7115.33	-332.75	1.05	469250.24	705764.53	N 32 17 20.12	W 103 48	4.43
	17524.00	90.55	1.11	10060.97	7216.93	7210.33	-331.64	1.01	469345.23	705765.65	N 32 17 21.06	W 103 48	4.41
	17619.00	90.48	359.61	10060.12	7311.86	7305.32	-331.04	1.58	469440.22	705766.24	N 32 17 22.00	W 103 48	4.40

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 ° ' ")	
	17714.00	90.21	0.81	10059.54	7406.81	7400.31	-330.69	1.29	469535.20	705766.59	N 32 17 22.94	W 103 48	4.39
	17808.00	90.31	0.44	10059.12	7500.73	7494.31	-329.66	0.41	469629.19	705767.62	N 32 17 23.87	W 103 48	4.37
	17903.00	90.24	356.87	10058.66	7595.71	7589.26	-331.89	3.76	469724.14	705765.39	N 32 17 24.81	W 103 48	4.39
	17998.00	90.24	358.48	10058.26	7690.70	7684.18	-335.75	1.69	469819.06	705761.53	N 32 17 25.75	W 103 48	4.43
	18093.00	90.48	357.13	10057.67	7785.69	7779.11	-339.39	1.44	469913.98	705757.89	N 32 17 26.69	W 103 48	4.47
	18188.00	90.41	357.99	10056.93	7880.68	7874.02	-343.43	0.91	470008.88	705753.85	N 32 17 27.63	W 103 48	4.51
	18283.00	90.55	357.98	10056.13	7975.68	7968.96	-346.77	0.15	470103.81	705750.51	N 32 17 28.56	W 103 48	4.55
	18378.00	90.52	358.38	10055.25	8070.67	8063.90	-349.79	0.42	470198.75	705747.49	N 32 17 29.50	W 103 48	4.58
	18473.00	90.41	358.32	10054.47	8165.67	8158.86	-352.52	0.13	470293.71	705744.76	N 32 17 30.44	W 103 48	4.60
	18568.00	89.21	358.36	10054.79	8260.67	8253.82	-355.28	1.26	470388.66	705742.01	N 32 17 31.38	W 103 48	4.63
	18662.00	89.21	358.97	10056.09	8354.65	8347.78	-357.46	0.65	470482.62	705739.82	N 32 17 32.31	W 103 48	4.65
	18757.00	89.76	0.07	10056.94	8449.63	8442.77	-358.26	1.29	470577.60	705739.02	N 32 17 33.25	W 103 48	4.65
	18852.00	90.45	357.95	10056.77	8544.62	8537.75	-359.90	2.35	470672.58	705737.38	N 32 17 34.19	W 103 48	4.67
	18947.00	92.41	0.14	10054.39	8639.57	8632.70	-361.49	3.09	470767.52	705735.80	N 32 17 35.13	W 103 48	4.68
	19042.00	89.52	358.39	10052.79	8734.53	8727.67	-362.70	3.56	470862.48	705734.58	N 32 17 36.07	W 103 48	4.69
	19137.00	89.86	358.66	10053.31	8829.53	8822.63	-365.15	0.46	470957.44	705732.13	N 32 17 37.01	W 103 48	4.71
	19232.00	89.90	359.54	10053.51	8924.52	8917.62	-366.64	0.93	471052.42	705730.64	N 32 17 37.95	W 103 48	4.72
	19327.00	90.41	359.31	10053.25	9019.50	9012.61	-367.60	0.59	471147.41	705729.69	N 32 17 38.89	W 103 48	4.73
	19422.00	90.41	359.07	10052.57	9114.48	9107.60	-368.94	0.25	471242.39	705728.34	N 32 17 39.83	W 103 48	4.74
	19517.00	88.25	358.56	10053.68	9209.47	9202.57	-370.90	2.34	471337.35	705726.38	N 32 17 40.77	W 103 48	4.76
	19612.00	89.66	358.17	10055.41	9304.45	9297.51	-373.61	1.54	471432.29	705723.67	N 32 17 41.71	W 103 48	4.78
	19707.00	89.55	359.15	10056.07	9399.45	9392.48	-375.83	1.04	471527.25	705721.45	N 32 17 42.65	W 103 48	4.80
	19896.00	90.00	359.45	10056.81	9588.42	9581.47	-378.14	0.29	471716.22	705719.14	N 32 17 44.52	W 103 48	4.82
	19991.00	90.72	359.54	10056.21	9683.39	9676.46	-378.98	0.76	471811.21	705718.30	N 32 17 45.46	W 103 48	4.82
	20085.00	89.76	0.87	10055.82	9777.34	9770.46	-378.64	1.74	471905.20	705718.64	N 32 17 46.39	W 103 48	4.81
	20179.00	89.93	1.85	10056.08	9871.21	9864.43	-376.41	1.06	471999.17	705720.87	N 32 17 47.32	W 103 48	4.78
	20274.00	90.82	2.85	10055.45	9965.97	9959.34	-372.52	1.41	472094.08	705724.77	N 32 17 48.26	W 103 48	4.73
	20369.00	90.03	1.79	10054.75	10060.73	10054.26	-368.67	1.39	472188.99	705728.61	N 32 17 49.20	W 103 48	4.68
	20463.00	90.48	1.79	10054.33	10154.56	10148.21	-365.74	0.48	472282.94	705731.55	N 32 17 50.13	W 103 48	4.64
	20558.00	89.69	0.34	10054.19	10249.45	10243.19	-363.97	1.74	472377.91	705733.31	N 32 17 51.07	W 103 48	4.61
	20652.00	89.76	0.39	10054.64	10343.39	10337.19	-363.37	0.09	472471.90	705733.91	N 32 17 52.00	W 103 48	4.60
	20746.00	90.69	2.94	10054.27	10437.22	10431.14	-360.64	2.89	472565.85	705736.64	N 32 17 52.93	W 103 48	4.57
	20841.00	88.45	0.73	10054.98	10532.03	10526.08	-357.60	3.31	472660.78	705739.68	N 32 17 53.87	W 103 48	4.52
	20936.00	89.31	0.42	10056.84	10626.94	10621.05	-356.65	0.96	472755.75	705740.64	N 32 17 54.81	W 103 48	4.51
	21031.00	89.11	359.77	10058.15	10721.88	10716.05	-356.49	0.72	472850.73	705740.79	N 32 17 55.75	W 103 48	4.50
	21125.00	90.21	2.12	10058.71	10815.77	10810.02	-354.94	2.76	472944.70	705742.34	N 32 17 56.68	W 103 48	4.48
	21220.00	91.17	3.86	10057.57	10910.45	10904.88	-349.98	2.09	473039.56	705747.30	N 32 17 57.62	W 103 48	4.41
	21315.00	93.06	3.62	10054.06	11004.96	10999.61	-343.79	2.01	473134.28	705753.49	N 32 17 58.55	W 103 48	4.34
	21410.00	89.97	2.31	10051.55	11099.60	11094.44	-338.88	3.53	473229.10	705758.40	N 32 17 59.49	W 103 48	4.27
	21504.00	90.14	359.83	10051.46	11193.49	11188.41	-337.13	2.64	473323.07	705760.16	N 32 18 0.42	W 103 48	4.25
	21694.00	90.21	356.89	10050.88	11383.46	11378.31	-342.56	1.55	473512.96	705754.72	N 32 18 2.30	W 103 48	4.30
	21788.00	89.97	356.96	10050.73	11477.44	11472.18	-347.60	0.27	473606.82	705749.68	N 32 18 3.23	W 103 48	4.35
	21883.00	89.52	357.17	10051.15	11572.41	11567.05	-352.47	0.52	473701.69	705744.81	N 32 18 4.17	W 103 48	4.40
	21977.00	89.83	356.89	10051.69	11666.38	11660.92	-357.34	0.44	473795.55	705739.94	N 32 18 5.10	W 103 48	4.46
	22072.00	90.24	357.62	10051.63	11761.37	11755.81	-361.89	0.88	473890.44	705735.39	N 32 18 6.04	W 103 48	4.50
	22262.00	89.93	358.26	10051.35	11951.36	11945.69	-368.72	0.37	474080.30	705728.56	N 32 18 7.92	W 103 48	4.57
	22356.00	89.42	359.25	10051.88	12045.36	12039.66	-370.76	1.18	474174.27	705726.52	N 32 18 8.85	W 103 48	4.59
	22450.00	88.97	358.83	10053.20	12139.34	12133.64	-372.34	0.65	474268.24	705724.95	N 32 18 9.78	W 103 48	4.60
	22545.00	88.69	359.26	10055.14	12234.31	12228.61	-373.92	0.54	474363.20	705723.36	N 32 18 10.72	W 103 48	4.62
	22640.00	88.93	359.33	10057.11	12329.28	12323.58	-375.09	0.26	474458.17	705722.20	N 32 18 11.65	W 103 48	4.62
	22734.00	89.14	0.24	10058.70	12423.23	12417.57	-375.44	0.99	474552.15	705721.84	N 32 18 12.58	W 103 48	4.62
	22829.00	89.17	358.76	10060.10	12518.20	12512.55	-376.27	1.56	474647.13	705721.01	N 32 18 13.52	W 103 48	4.63
	22923.00	88.56	358.92	10061.96	12612.18	12606.51	-378.17	0.67	474741.08	705719.11	N 32 18 14.45	W 103 48	4.64
100' FNL Crossing	*22990.00*	*88.56*	*358.73*	*10063.64*	*12679.15*	*12673.48*	*-379.54*	*0.28*	*474808.04*	*705717.74*	*N 32 18 15.12*	*W 103 48*	*4.66*
Final MWD	23017.00	88.56	358.66	10064.32	12706.14	12700.46	-380.16	0.28	474835.03	705717.13	N 32 18 15.38	W 103 48	4.66
Proj to TD	23069.00	88.56	358.66	10065.63	12758.13	12752.43	-381.37	0.00	474886.99	705715.91	N 32 18 15.90	W 103 48	4.67

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)	(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 3H Gyro + MWD 0-23069'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 3H Gyro + MWD 0-23069'MD
	1	30.000	661.200	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 3H
	1	661.200	9110.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 3H
	1	9110.000	9360.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 3H
	1	9360.000	23069.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Pure Gold MDP1 29-17 Federal Com 3H