

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

April 29, 2019

RECEIVED

Oxy USA Inc.
S. Greenway Plaza Suite 110
Houston, TX 77046

NOV 26 2019

DISTRICT II-ARTESIA O.C.D.

Re:

CLIENT: Oxy USA Inc.
WELL: Iridium MDP1 28-21 Federal Com 3H
FIELD: Ingle Wells Bone Spring

RIG: H&P 656
COUNTY: Eddy
API NO: 30-015-45244
JOB NO: 19MLD4329

33, 23 South, 31 EAST, Eddy NM
N 32.26750 W -103.78363

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.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Ahmed AlTammar FE	Iridium MDP1 28-21 Federal Com 3H Original Hole	755.00 Ft to 20196.00 Ft	March 2, 2019 to April 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)
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Schlumberger

Well Reference:

33, 23 South, 31 EAST, Eddy NM
N 32.26750 W -103.78363

I, Ahmed AITammar certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of March 02, 2019 through April 06, 2019, conduct or supervise the taking of the TelePacer/SlimPulse & Third Party Corrected surveys from a depth of 755.00 feet to a depth of 20196.00 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 Iridium MDP1 28-21 Federal Com 3H Well (Original Hole) API No. 30-015-45244 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
Ahmed AITammar
FE



Subscribed and Sworn to before me this 29th day of April (month) 2019 (yr)

My Commission expires:

2-16-2022

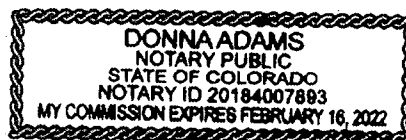
Donna Adams

Notary Public

(signature)

Adams County Colorado

(County State)



Schlumberger

OXY

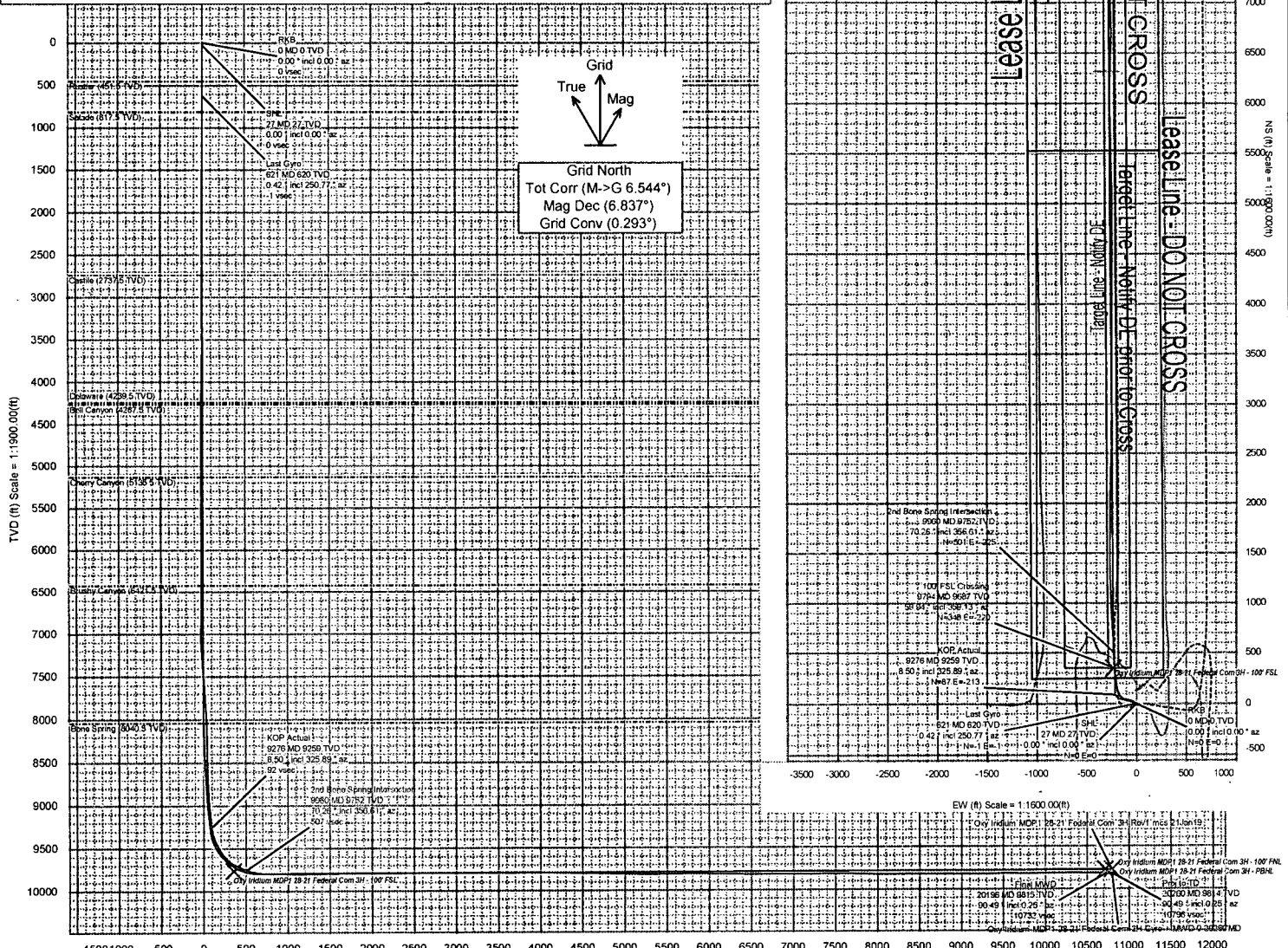


Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Iridium MDP1 28-21 Federal Com 3H	NM Eddy County (NAD 83)	Oxy Iridium MDP1 28-21 Federal Com 3H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model: IFR1	Dip: 59.99°	Date: 23-Mar-2019		Lat: N 32 16 2.99	Northing: 461483.89RUS	Grid Conv: 0.2935°		Slot: Oxy Iridium MDP1 28-21 Federal Com 3H	TVD Ref: RKB=26.5' (3412.5 ft above MSL)		
MagDec: 6.837°	FS: 47991.8nT	Gravity FS: 998.45mgm (9.80665 Based)		Lon: W 103 47 1.05	Easting: 711245RUS	Scale Fact: 0.99994215		Plan: Oxy Iridium MDP1 28-21 Federal Com 3H Gyro + MWD 0-20260 MD			

Oxy Iridium MDP1 28-21 Federal Com 3H Rev1 mcs 21Jan19

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)S(-)	E(+)W(-)	DLS
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	
Last Gyro	620.50	0.42	250.77	620.50	-1.32	-1.35	-1.03	0.64
KOP Actual	9276.00	8.50	325.89	9258.79	92.42	86.61	-213.00	0.75
100' FSL Crossing	9794.00	59.94	359.13	9687.26	353.78	347.87	-220.03	15.33
2nd Bone Spring Intersection	9960.22	70.26	356.61	9752.00	506.68	500.70	-224.83	6.79
100' FNL Crossing	20179.00	90.45	0.25	9814.89	10714.65	10710.64	-293.10	0.22
Final MWD	20196.00	90.49	0.25	9814.75	10731.64	10727.64	-293.03	0.22
Proj to TD	20260.00	90.49	0.25	9814.21	10795.61	10791.64	-292.75	0.00



Vertical Section (ft) Azim = 358.43° Scale = 1:1900.00 (ft) Origin = 0N-S, 0E-W

Oxy Iridium MDP1 28-21 Federal Com 3H Gyro + MWD 0-20260' MD Survey

Geodetic Report

(Def Survey)



Report Date: April 08, 2019 - 10:07 AM
 Client: OXY
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Oxy Iridium MDP1 28-21 Federal Com 3H / Oxy Iridium MDP1 28-21 Federal Com 3H
 Well: Oxy Iridium MDP1 28-21 Federal Com 3H
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-015-45244
 Survey Name: Oxy Iridium MDP1 28-21 Federal Com 3H Gyro + MWD 0-20260' MD
 Survey Date: February 20, 2019
 Tort / AHD / DDI / ERD Ratio: 219.322' / 11022.223 ft / 6.698' / 1.122
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 16' 2.99203", W 103° 47' 1.05082"
 Location Grid N/E Y/X: N 461483.890 RUS, E 711245.000 RUS
 CRS Grid Convergence Angle: 0.2935°
 Grid Scale Factor: 0.99994215
 Version / Patch: 2.10.753.0
 Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 358.427° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3412.500 ft above MSL
 Seabed / Ground Elevation: 3386.000 ft above MSL
 Magnetic Declination: 6.837°
 Total Gravity Field Strength: 998.4499mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47991.600 nT
 Magnetic Dip Angle: 59.990°
 Declination Date: March 23, 2019
 Magnetic Declination Model: IFR1
 North Reference: Grid North
 Grid Convergence Used: 0.2935°
 Total Corr Mag North->Grid: 6.5435°
 North: 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	0.00	0.00	0.00	0.00	0.00	N/A	461483.89	711245.00	N 32 16 2.99 W 103 47 1.05	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99 W 103 47 1.05	
	80.50	0.18	228.67	80.50	-0.05	-0.06	-0.06	0.33	461483.83	711244.94	N 32 16 2.99 W 103 47 1.05	
	140.50	0.13	209.60	140.50	-0.17	-0.18	-0.17	0.12	461483.71	711244.83	N 32 16 2.99 W 103 47 1.05	
	200.50	0.17	195.44	200.50	-0.32	-0.32	-0.23	0.09	461483.57	711244.77	N 32 16 2.99 W 103 47 1.05	
	260.50	0.13	218.42	260.50	-0.45	-0.46	-0.29	0.12	461483.43	711244.71	N 32 16 2.99 W 103 47 1.05	
	320.50	0.20	221.88	320.50	-0.58	-0.59	-0.40	0.12	461483.30	711244.60	N 32 16 2.99 W 103 47 1.05	
	380.50	0.23	201.24	380.50	-0.77	-0.78	-0.52	0.14	461483.11	711244.48	N 32 16 2.98 W 103 47 1.06	
	440.50	0.21	219.30	440.50	-0.96	-0.98	-0.63	0.12	461482.91	711244.37	N 32 16 2.98 W 103 47 1.06	
	500.50	0.13	231.83	500.50	-1.09	-1.11	-0.75	0.15	461482.78	711244.25	N 32 16 2.98 W 103 47 1.06	
	560.50	0.12	187.48	560.50	-1.19	-1.21	-0.82	0.16	461482.68	711244.18	N 32 16 2.98 W 103 47 1.06	
Last Gyro	620.50	0.42	250.77	620.50	-1.32	-1.35	-1.03	0.64	461482.54	711243.97	N 32 16 2.98 W 103 47 1.06	
	755.00	0.39	231.68	754.99	-1.74	-1.79	-1.86	0.10	461482.10	711243.14	N 32 16 2.97 W 103 47 1.07	
	867.00	0.58	226.66	866.99	-2.35	-2.42	-2.57	0.17	461481.47	711242.43	N 32 16 2.97 W 103 47 1.08	
	957.00	0.58	255.22	956.99	-2.75	-2.85	-3.34	0.32	461481.04	711241.66	N 32 16 2.96 W 103 47 1.09	
	1047.00	0.46	217.90	1046.98	-3.14	-3.25	-4.00	0.39	461480.64	711241.00	N 32 16 2.96 W 103 47 1.10	
	1139.00	0.46	218.31	1138.98	-3.71	-3.83	-4.46	0.00	461480.06	711240.54	N 32 16 2.95 W 103 47 1.10	
	1230.00	0.44	218.52	1229.98	-4.25	-4.39	-4.90	0.02	461479.50	711240.10	N 32 16 2.95 W 103 47 1.11	
	1415.00	0.56	226.88	1414.97	-5.40	-5.56	-6.00	0.08	461478.33	711239.00	N 32 16 2.94 W 103 47 1.12	
	1506.00	0.56	214.75	1505.96	-6.05	-6.23	-6.58	0.13	461477.66	711238.42	N 32 16 2.93 W 103 47 1.13	
	1596.00	0.44	193.33	1595.96	-6.74	-6.93	-6.91	0.24	461476.96	711238.09	N 32 16 2.92 W 103 47 1.13	
1785.00	0.16	161.14	1784.96	-7.69	-7.89	-6.99	0.17	461476.00	711238.01	N 32 16 2.91 W 103 47 1.13		
1974.00	0.20	223.86	1973.96	-8.17	-8.37	-7.14	0.10	461475.52	711237.86	N 32 16 2.91 W 103 47 1.13		
2163.00	0.18	138.93	2162.96	-8.64	-8.84	-7.17	0.14	461475.06	711237.83	N 32 16 2.90 W 103 47 1.13		
2351.00	0.18	254.34	2350.96	-8.94	-9.14	-7.26	0.16	461474.75	711237.74	N 32 16 2.90 W 103 47 1.14		
2446.00	0.07	1.56	2445.96	-8.91	-9.12	-7.40	0.22	461474.77	711237.60	N 32 16 2.90 W 103 47 1.14		
2540.00	0.23	256.33	2539.96	-8.90	-9.11	-7.58	0.27	461474.78	711237.42	N 32 16 2.90 W 103 47 1.14		
2635.00	0.25	356.35	2634.96	-8.73	-8.95	-7.78	0.39	461474.95	711237.22	N 32 16 2.90 W 103 47 1.14		
2729.00	0.39	322.59	2728.95	-8.26	-8.49	-7.99	0.24	461475.40	711237.01	N 32 16 2.91 W 103 47 1.14		
2823.00	0.21	294.09	2822.95	-7.93	-8.16	-8.34	0.24	461475.73	711236.66	N 32 16 2.91 W 103 47 1.15		
2917.00	0.44	280.51	2916.95	-7.78	-8.03	-8.85	0.26	461475.86	711236.15	N 32 16 2.91 W 103 47 1.15		
3012.00	0.35	250.10	3011.95	-7.79	-8.06	-9.49	0.24	461475.83	711235.51	N 32 16 2.91 W 103 47 1.16		
3106.00	0.12	266.29	3105.95	-7.89	-8.16	-9.85	0.25	461475.73	711235.15	N 32 16 2.91 W 103 47 1.17		
3200.00	0.31	4.55	3199.95	-7.64	-7.92	-9.93	0.37	461475.98	711235.07	N 32 16 2.91 W 103 47 1.17		
3389.00	0.23	40.88	3388.95	-6.85	-7.12	-9.64	0.10	461476.77	711235.36	N 32 16 2.92 W 103 47 1.16		
3483.00	0.91	127.87	3482.94	-7.19	-7.43	-8.93	0.99	461476.46	711236.07	N 32 16 2.92 W 103 47 1.16		
3578.00	1.33	112.99	3577.92	-8.12	-8.33	-7.32	0.53	461475.56	711237.68	N 32 16 2.91 W 103 47 1.14		
3672.00	1.18	126.65	3671.90	-9.18	-9.33	-5.54	0.35	461474.56	711239.46	N 32 16 2.90 W 103 47 1.12		
3766.00	1.84	123.27	3765.87	-10.64	-10.74	-3.50	0.71	461473.15	711241.50	N 32 16 2.89 W 103 47 1.09		
3861.00	1.87	125.33	3860.82	-12.44	-12.47	-0.96	0.08	461471.42	711244.04	N 32 16 2.87 W 103 47 1.06		
3955.00	2.29	125.65	3954.76	-14.50	-14.45	1.82	0.45	461469.44	711246.82	N 32 16 2.85 W 103 47 1.03		
3973.00	2.38	128.38	3972.74	-14.95	-14.89	2.40	0.79	461469.00	711247.40	N 32 16 2.84 W 103 47 1.02		
4050.00	2.43	132.27	4049.67	-17.11	-16.98	4.86	0.22	461466.91	711249.86	N 32 16 2.82 W 103 47 1.00		
4144.00	1.01	123.51	4143.63	-18.97	-18.78	7.03	1.53	461465.11	711252.03	N 32 16 2.81 W 103 47 0.97		
4238.00	0.17	15.56	4237.62	-19.31	-19.11	7.76	1.14	461464.79	711252.76	N 32 16 2.80 W 103 47 0.96		
4400.00	0.08	85.38	4399.62	-19.08	-18.86	7.93	0.10	461465.03	711252.93	N 32 16 2.80 W 103 47 0.96		
4464.00	0.03	170.04	4463.62	-19.09	-18.88	7.98	0.13	461465.01	711252.98	N 32 16 2.80 W 103 47 0.96		
4559.00	0.07	185.50	4558.62	-19.17	-18.96	7.98	0.04	461464.93	711252.98	N 32 16 2.80 W 103 47 0.96		
4653.00	0.03	237.31	4652.62	-19.24	-19.03	7.95	0.06	461464.86	711252.95	N 32 16 2.80 W 103 47 0.96		
4842.00	0.03	306.49	4841.62	-19.24	-19.03	7.87	0.02	461464.86	711252.87	N 32 16 2.80 W 103 47 0.96		
4936.00	0.03	8.21	4935.62	-19.20	-18.99	7.86	0.03	461464.90	711252.86	N 32 16 2.80 W 103 47 0.96		
5125.00	0.03	104.40	5124.62	-19.16	-18.95	7.91	0.02	461464.94	711252.91	N 32 16 2.80 W 103 47 0.96		
5314.00	0.03	179.03	5313.62	-19.22	-19.01	7.96	0.02	461464.88	711252.96	N 32 16 2.80 W 103 47 0.96		
5408.00	0.03	8.46	5407.62	-19.23	-19.01	7.96	0.06	461464.88	711252.96	N 32 16 2.80 W 103 47 0.96		
5502.00	0.03	131.26	5501.62	-19.22	-19.01	7.99	0.06	461464.89	711252.99	N 32 16 2.80 W 103 47 0.96		
5597.00	0.03	147.07	5596.62	-19.26	-19.04	8.02	0.01	461464.85	711253.02	N 32 16 2.80 W 103 47 0.96		
5691.00	0.03	84.34	5690.62	-19.28	-19.06	8.06	0.03	461464.83	711253.06	N 32 16 2.80 W 103 47 0.96		
5785.00	0.03	354.32	5784.62	-19.25	-19.03	8.08	0.05	461464.86	711253.08	N 32 16 2.80 W 103 47 0.96		
5974.00	0.07	235.48	5973.62	-19.26	-19.05	7.98	0.05	461464.84	711252.98	N 32 16 2.80 W 103 47 0.96		
6069.00	0.03	210.93	6068.62	-19.31	-19.10	7.92	0.05	461464.79	711252.92	N 32 16 2.80 W 103 47 0.96		
6163.00	0.08	223.90	6162.62	-19.38	-19.17	7.86	0.05	461464.72	711252.86	N 32 16 2.80 W 103 47 0.96		
6257.00	0.22	337.09	6256.62	-19.26	-19.05	7.74	0.28	461464.84	711252.74	N 32 16 2.80 W 103 47 0.96		
6352.00	0.28	239.62	6351.62	-19.20	-19.00	7.47	0.40	461464.89	711252.47	N 32 16 2.80 W 103 47 0.96		
6446.00	0.15	159.92	6445.62	-19.43	-19.24	7.32	0.31	461464.66	711252.32	N 32 16 2.80 W 103 47 0.97		
6540.00	0.05	157.53	6539.62	-19.58	-19.39	7.37	0.11	461464.50	711252.37	N 32 16 2.80 W 103 47 0.97		
6729.00	1.20	165.24	6728.61	-21.59	-21.38	7.91	0.61	461462.51	711252.91	N 32 16 2.78 W 103 47 0.96		
6824.00	1.59	164.53	6823.58	-23.84	-23.61	8.51	0.41	461460.28	711253.51	N 32 16 2.76 W 103 47 0.95		
6918.00	1.40	165.03	6917.55	-26.22	-25.98	9.16	0.20	461457.91	711254.16	N 32 16 2.73 W 103 47 0.95		
7012.00	0.05	357.79	7011.54	-27.29	-27.05	9.45	1.54	461456.85	711254.45	N 32 16 2.72 W 103 47 0.94		
7107.00	1.86	344.19	7106.52	-25.76	-25.52	9.03	1.91	461458.37	711254.03	N 32 16 2.74 W 103 47 0.95		
7201.00	3.62	340.85	7200.41	-21.45	-21.25	7.64	1.88	461462.64	711252.64	N 32 16 2.78 W 103 47 0.96		
7296.00	4.85	332.94	7295.15	-14.97	-14.84	4.83	1.43	461469.05	711249.83	N 32 16 2.84 W 103 47 1.00		
7390.00	5.71	322.19	7388.75	-7.61	-7.61	0.16	1.39	461476.28	711245.16	N 32 16 2.92 W 103 47 1.05		
7484.00	6.17	312.51	7482.25	-0.32	-0.50	-6.43	1.17	461483.39	711238.57	N 32 16 2.99 W 103 47 1.13		
7673.00	7.32	300.98	7669.95	13.22	12.56	-24.24	0.94	461496.45	711220.76	N 32 16 3.12 W 103 47 1.33		
7768.00	7.75	294.95	7764.13	19.34	18.38	-35.24	0.95	461500.27	711209.76	N 32 16 3.18 W 103 47 1.46		
7862.00	8.14	291.59	7857.23	24.79	23.50	-47.18	0.65	461507.39	711197.83	N 32 16 3.23 W 103 47 1.68		

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 ° ' ")
	7957.00	8.44	287.54	7951.23	29.72	28.08	-60.08	0.59	461511.97	711184.93	N 32 16 3.27 W 103 47 1.75	
	8051.00	8.20	285.01	8044.24	33.89	31.89	-73.13	0.47	461515.78	711171.87	N 32 16 3.31 W 103 47 1.90	
	8145.00	7.44	280.74	8137.37	37.10	34.76	-85.58	1.02	461518.65	711159.42	N 32 16 3.34 W 103 47 2.05	
	8240.00	6.63	275.87	8231.66	39.12	36.47	-97.08	1.06	461520.36	711147.92	N 32 16 3.36 W 103 47 2.18	
	8334.00	7.03	272.09	8324.99	40.19	37.24	-108.23	0.64	461521.12	711136.78	N 32 16 3.37 W 103 47 2.31	
	8429.00	9.09	269.67	8419.05	40.73	37.41	-121.54	2.20	461521.29	711123.46	N 32 16 3.37 W 103 47 2.46	
	8523.00	8.77	276.35	8511.91	41.88	38.16	-136.09	1.15	461522.04	711108.92	N 32 16 3.38 W 103 47 2.63	
	8618.00	7.82	279.30	8605.91	44.09	40.00	-149.67	1.10	461523.89	711095.34	N 32 16 3.40 W 103 47 2.79	
	8806.00	6.31	293.25	8792.49	50.84	46.15	-171.79	1.21	461530.03	711073.23	N 32 16 3.46 W 103 47 3.05	
	8901.00	6.16	303.06	8886.94	55.93	50.99	-180.85	1.13	461534.88	711064.16	N 32 16 3.51 W 103 47 3.15	
	8995.00	6.55	314.92	8980.36	62.69	57.53	-188.88	1.45	461541.41	711056.13	N 32 16 3.57 W 103 47 3.25	
	9114.00	7.82	318.76	9098.43	73.84	68.41	-199.02	1.14	461552.29	711045.99	N 32 16 3.68 W 103 47 3.36	
	9276.00	8.50	325.89	9258.79	92.42	86.61	-213.00	0.75	461570.49	711032.01	N 32 16 3.86 W 103 47 3.53	
	9370.00	16.66	354.92	9350.54	111.78	105.83	-218.10	10.73	461589.71	711026.91	N 32 16 4.05 W 103 47 3.58	
	9465.00	25.50	2.42	9439.11	145.84	139.90	-218.45	9.71	461623.78	711026.57	N 32 16 4.39 W 103 47 3.59	
	9560.00	30.90	359.40	9522.80	190.67	184.76	-217.84	5.88	461668.64	711027.18	N 32 16 4.83 W 103 47 3.58	
	9655.00	42.05	359.34	9599.07	247.05	241.14	-218.46	11.74	461725.02	711026.55	N 32 16 5.39 W 103 47 3.58	
	9749.00	53.04	359.07	9682.43	316.29	310.38	-219.44	11.69	461794.25	711025.58	N 32 16 6.07 W 103 47 3.59	
100' FSL Crossing	9794.00	59.94	359.13	9687.26	353.78	347.87	-220.03	15.33	461831.74	711024.99	N 32 16 6.45 W 103 47 3.59	
	9844.00	67.60	359.18	9709.34	398.60	392.69	-220.69	15.33	461876.55	711024.33	N 32 16 6.89 W 103 47 3.60	
	9939.00	68.85	356.91	9744.59	486.81	480.85	-223.70	2.58	461964.71	711021.31	N 32 16 7.76 W 103 47 3.63	
2nd Bone Spring Intersection	9960.22	70.26	356.61	9752.00	506.68	500.70	-224.83	6.79	461984.56	711020.18	N 32 16 7.96 W 103 47 3.64	
	10033.00	75.11	355.60	9773.65	576.08	570.00	-229.56	6.79	462053.85	711015.46	N 32 16 8.64 W 103 47 3.69	
	10128.00	85.11	356.92	9789.95	669.48	663.27	-235.64	10.61	462147.12	711009.38	N 32 16 9.57 W 103 47 3.76	
	10223.00	89.69	356.26	9794.26	764.31	757.97	-241.28	4.87	462241.82	711003.73	N 32 16 10.50 W 103 47 3.82	
	10260.00	90.20	356.19	9794.29	801.28	794.89	-243.72	1.39	462278.74	711001.30	N 32 16 10.87 W 103 47 3.84	
	10458.00	87.80	358.18	9797.75	999.18	992.60	-253.44	1.57	462476.43	710991.57	N 32 16 12.83 W 103 47 3.94	
	10551.00	89.38	358.32	9800.04	1092.15	1085.53	-256.28	1.71	462569.35	710988.74	N 32 16 13.75 W 103 47 3.97	
	10645.00	90.66	358.67	9800.00	1186.15	1179.49	-258.75	1.41	462663.31	710986.27	N 32 16 14.68 W 103 47 3.99	
	10738.00	90.38	358.13	9799.16	1279.15	1272.45	-261.35	0.65	462756.26	710983.67	N 32 16 15.60 W 103 47 4.02	
	10825.00	91.59	0.57	9795.95	1466.08	1459.39	-263.47	1.46	462943.20	710981.55	N 32 16 17.45 W 103 47 4.03	
	11113.00	90.93	0.07	9791.81	1653.93	1647.34	-262.42	0.44	463131.13	710982.60	N 32 16 19.31 W 103 47 4.01	
	11303.00	90.21	0.32	9789.92	1843.83	1837.33	-261.77	0.40	463321.11	710983.24	N 32 16 21.19 W 103 47 3.99	
	11492.00	90.38	0.35	9788.95	2032.72	2026.33	-260.67	0.09	463510.09	710984.35	N 32 16 23.06 W 103 47 3.97	
	11682.00	91.45	1.19	9785.91	2222.53	2216.28	-258.11	0.72	463700.04	710986.90	N 32 16 24.94 W 103 47 3.92	
	11777.00	89.53	1.20	9785.10	2317.41	2311.25	-256.13	2.02	463795.00	710988.88	N 32 16 25.87 W 103 47 3.90	
	11872.00	89.05	1.65	9786.28	2412.27	2406.21	-253.77	0.69	463889.96	710991.25	N 32 16 26.81 W 103 47 3.86	
	11967.00	90.42	2.59	9786.72	2507.07	2501.14	-250.26	1.75	463984.89	710994.76	N 32 16 27.75 W 103 47 3.82	
	12061.00	90.52	0.69	9785.95	2600.92	2595.10	-247.57	2.02	464078.83	710997.45	N 32 16 28.68 W 103 47 3.78	
	12156.00	90.08	0.23	9785.45	2695.86	2690.09	-246.80	0.67	464173.82	710998.21	N 32 16 29.62 W 103 47 3.76	
	12345.00	90.52	0.06	9784.46	2884.77	2879.09	-246.32	0.25	464362.81	710998.69	N 32 16 31.49 W 103 47 3.75	
	12535.00	89.42	359.81	9784.56	3074.70	3069.09	-246.54	0.59	464552.79	710998.47	N 32 16 33.37 W 103 47 3.74	
	12630.00	89.49	359.36	9785.46	3169.67	3164.08	-247.23	0.48	464647.78	710997.79	N 32 16 34.31 W 103 47 3.74	
	12724.00	90.35	0.05	9785.59	3263.65	3258.08	-247.71	1.17	464741.77	710997.30	N 32 16 35.24 W 103 47 3.74	
	12914.00	90.56	359.99	9784.09	3453.57	3448.07	-247.65	0.11	464931.75	710997.37	N 32 16 37.12 W 103 47 3.73	
	13103.00	90.83	0.63	9782.12	3642.46	3637.06	-246.62	0.34	465120.73	710998.39	N 32 16 38.99 W 103 47 3.71	
	13198.00	89.32	0.26	9782.16	3737.40	3732.05	-245.89	1.43	465215.72	710999.13	N 32 16 39.93 W 103 47 3.69	
	13292.00	90.08	0.10	9782.66	3831.35	3826.05	-245.59	0.83	465309.71	710999.42	N 32 16 40.86 W 103 47 3.68	
	13481.00	88.87	1.14	9784.39	4020.20	4015.02	-243.55	0.84	465496.67	711001.47	N 32 16 42.73 W 103 47 3.65	
	13576.00	88.98	0.56	9786.17	4115.09	4110.00	-242.14	0.62	465683.64	711002.88	N 32 16 43.67 W 103 47 3.63	
	13670.00	88.19	359.97	9786.19	4208.02	4203.97	-241.70	1.05	465867.60	711003.31	N 32 16 44.60 W 103 47 3.62	
	13765.00	88.74	0.18	9791.04	4303.94	4298.93	-241.58	0.62	465952.56	711003.44	N 32 16 45.54 W 103 47 3.61	
	13855.00	88.67	0.60	9795.33	4493.78	4488.88	-240.28	0.22	465972.50	711004.73	N 32 16 47.42 W 103 47 3.58	
	14144.00	88.70	0.30	9799.67	4682.61	4677.82	-238.80	0.16	466161.43	711006.21	N 32 16 49.29 W 103 47 3.55	
	14239.00	88.67	359.42	9801.85	4777.56	4772.80	-239.03	0.93	466256.40	711005.98	N 32 16 50.23 W 103 47 3.55	
	14333.00	89.25	359.59	9803.55	4871.53	4866.78	-239.84	0.64	466350.38	711005.17	N 32 16 51.16 W 103 47 3.55	
	14428.00	88.77	359.64	9805.20	4966.49	4961.76	-240.48	0.51	466445.35	711004.53	N 32 16 52.10 W 103 47 3.56	
	14523.00	88.74	359.15	9807.26	5061.46	5056.73	-241.49	0.52	466540.32	711003.53	N 32 16 53.04 W 103 47 3.56	
	14618.00	88.87	358.79	9809.24	5156.43	5151.70	-243.19	0.40	466635.28	711001.82	N 32 16 53.98 W 103 47 3.58	
	14712.00	90.18	358.02	9810.02	5250.42	5245.65	-245.81	1.62	466729.23	710999.21	N 32 16 54.91 W 103 47 3.60	
	14807.00	90.28	357.96	9809.64	5345.42	5340.59	-248.14	0.12	466824.16	710995.87	N 32 16 55.85 W 103 47 3.63	
	14901.00	90.08	358.42	9809.34	5439.42	5434.55	-252.11	0.53	466918.11	710992.90	N 32 16 56.78 W 103 47 3.66	
	14996.00	90.32	357.82	9809.01	5534.42	5529.49	-255.23	0.68	467013.05	710989.79	N 32 16 57.72 W 103 47 3.69	
	15091.00	91.59	0.34	9807.43	5629.39	5624.46	-256.75	2.97	467108.01	710988.26	N 32 16 58.66 W 103 47 3.71	
	15185.00	90.39	358.87	9805.80	5723.35	5718.44	-257.40	2.02	467201.99	710987.62	N 32 16 59.59 W 103 47 3.71	
	15375.00	89.66	357.99	9805.72	5913.35	5908.36	-262.61	0.60	467391.90	710982.41	N 32 17 1.47 W 103 47 3.76	
	15469.00	89.25	358.52	9806.62	6007.34	6002.32	-265.47	0.71	467485.85	710979.55	N 32 17 2.40 W 103 47 3.78	
	15564.00	89.36	0.54	9807.77	6102.31	6097.30	-266.25	2.13	467580.83	710978.77	N 32 17 3.34 W 103 47 3.79	
	15658.00	89.11	1.86	9809.02	6196.19	6191.27	-264.28	1.43	467674.79	710980.74	N 32 17 4.27 W 103 47 3.76	
	15753.00	88.94	1.97	9810.64	6291.00	6286.20	-261.10	0.21	467769.72	710983.91	N 32 17 5.21 W 103 47 3.72	
	15842.00	88.98	2.07	9814.07	6479.60	6475.05	-254.44	0.06	467958.56	710990.57	N 32 17 7.08 W 103 47 3.63	
	16037.00	89.46	1.68	9815.36	6574.42	6569.99	-251.34	0.65	468053.49	710993.68	N 32 17 8.01 W 103 47 3.59	
	16132.00	90.35	1.09	9815.52	6669.29	6664.96	-249.04	1.12	468148.46	710995.97	N 32 17 8.95 W 103 47 3.55	
	16226.00	90.39	358.44	9814.91	6763.25	6758.95	-249.43	2.82	468242.44	710995.59	N 32 17 9.88 W 103 47 3.55	
	16415.00	90.32	357.96	9813.74	6952.25	6947.86	-255.36	0.26	468431.33	710989.65	N 32 17 11.75 W 103 47 3.61	
	16509.00	90.25	358.19	9813.27	7046.24	7041.80	-258.52	0.26	468525.27	710986.50	N 32 17 12.68 W 103 47 3.64	
	16604.00	90.15	357.84	9812.94	7141.24	7136.74	-261.81	0.38	468620.21	710983.21	N 32 17 13.62 W 103 47 3.67</	

Comments	MD (ft)	Incl (°)	Azin Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	19628.00	91.14	1.80	9813.80	10164.10	10159.73	-298.90	1.56	471643.01	710946.12	N 32 17 43.54	W 103 47 3.93
	19723.00	90.66	0.43	9812.31	10258.98	10254.69	-297.05	1.53	471737.97	710947.97	N 32 17 44.48	W 103 47 3.90
	19818.00	89.53	0.56	9812.15	10353.92	10349.69	-296.23	1.20	471832.96	710948.79	N 32 17 45.42	W 103 47 3.88
	19912.00	89.91	0.67	9812.61	10447.85	10443.68	-295.22	0.42	471926.95	710949.80	N 32 17 46.35	W 103 47 3.87
	20007.00	88.22	0.63	9814.16	10542.76	10538.66	-294.15	1.78	472021.92	710950.87	N 32 17 47.29	W 103 47 3.85
	20101.00	90.28	0.24	9815.39	10636.69	10632.64	-293.43	2.23	472115.90	710951.59	N 32 17 48.22	W 103 47 3.83
100' FNL Crossing	20179.00	90.45	0.25	9814.89	10714.65	10710.64	-293.10	0.22	472193.89	710951.92	N 32 17 48.99	W 103 47 3.83
Final MWD	20196.00	90.49	0.25	9814.75	10731.64	10727.64	-293.03	0.22	472210.89	710951.99	N 32 17 49.16	W 103 47 3.82
Proj to TD	20260.00	90.49	0.25	9814.21	10795.61	10791.64	-292.75	0.00	472274.88	710952.27	N 32 17 49.79	W 103 47 3.82

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	30.000 NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H Gyro + MWD 0-20260'MD
	1	26.500	26.500	Act Stns	30.000	30.000 NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H Gyro + MWD 0-20260'MD
	1	26.500	620.500	Act Stns	30.000	30.000 NAL_NSG+MSHOT	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H
	1	620.500	3973.000	Act Stns	30.000	30.000 NAL_MWD_IFR1+MS	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H
	1	3973.000	4238.000	Act Stns	30.000	30.000 NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H
	1	4238.000	20260.000	Act Stns	30.000	30.000 NAL_MWD_IFR1+MS	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H