State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division

Notice of C-104 Denial and Request for Information

OCD denies your C-104 – *Request for Allowable and Authorization to Transport* because it is incomplete or conflicts with other information provided to OCD.

The sale or transport of product without a C-104 approved by OCD violates the Oil and Gas Act and the implementing rules, including 19.15.7.15 and 19.15.16.19 NMAC.

To avoid an enforcement action, you must submit the indicated information no later than 30 days after receipt of this notice.

Test Allowable, New Well and Recompleted Well Amend C-104

- ☐ C-103 (or BLM equivalent) for all casing strings
  - ☐ Spud Notice
  - ☐ Surface Casing
  - ☐ Intermediate Casing (if applicable)
  - ☐ Additional Intermediate Casing (if applicable)
  - ☐ Production Casing or Liner
- ☐ Applicable Order (NSL, NSP, Other _____)
- ☐ Deviation Survey for Vertical Wells
- ☐ Directional Survey
  - ☑ C-102 (As-Drilled Plat for Horizontal Well) missing

New Well and Recompleted Well Only

- ☑ C-103 Completion Sundry (or BLM equivalent) approved copy
- ☑ C-105 Completion Report (or BLM equivalent) approved copy
- ☑ All Logs Run on Well

If you have any questions please contact the local OCD District Office

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED
SEP 06 2019
DISTRICT II-ARTESIA O.C.D.

Form C-104
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

[1] Operator name and Address	[2] OGRID Number
OXY USA INC P.O. BOX 4294 HOUSTON, TX 77210	16696 [3] Reason for Filing Code/ Effective Date - NW

[4] API Number	[5] Pool Name	[6] Pool Code
30-015-45242	INGLE WELLS BONE SPRING	33740
[7] Property Code: 321632	[8] Property Name: IRIDIUM MDP1 28-21 FEDERAL COM	[9] Well Number: 1H

II. [10] Surface Location

Ul or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
M	28	23S	31E		270	NORTH	834	WEST	EDDY

[11] Bottom Hole Location

FTP: 245' FSL 874' FWL LTP: 131' FNL 833' FWL

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	21	23S	31E		20	NORTH	833	WEST	EDDY

[12] Lse Code	[13] Producing Method Code :	[14] Gas Connection Date:	[15] C-129 Permit Number	[16] C-129 Effective Date	[17] C-129 Expiration Date
F	F	05/01/2019			

III. Oil and Gas Transporters

[18] Transporter OGRID	[19] Transporter Name and Address	[20] O/G/W
237722	CENTURION PIPELINE L.P.	O
151618	ENTERPRISE FIELD SERVICES LLC	G

IV. Well Completion Data

[21] Spud Date	[22] Ready Date	[23] TD	[24] PBTD	[25] Perforations	[26] DHC, MC
11/27/2018	04/30/2019	10118'V/20591'M	10118'V/20547'M	10297'-20495'	

[27] Hole Size	[28] Casing & Tubing Size *	[29] Depth Set	[30] Sacks Cement
17-1/2"	13-3/8"	692'	915
12-1/4"	9-5/8"	4305'	1374
8-1/2"	7-5/8"	9530'	532
6-3/4"	5-1/2"	20591'	848

V. Well Test Data

[31] Date New Oil	[32] Gas Delivery Date	[33] Test Date	[34] Test Length	[35] Tbg. Pressure	[36] Csg. Pressure
05/02/2019	05/01/2019	05/12/2019	24 hours		807
[37] Choke Size	[38] Oil	[39] Water	[40] Gas		[41] Test Method
77/128	4193	4991	4398		FLOWING

[42] I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Leslie Reeves

Printed name: LESLIE REEVES

Title: REGULATORY ADVISOR

E-mail Address: LESLIE_REEVES@OXY.COM

Date: 08/29/2019

Phone: 713-497-2492

OIL CONSERVATION DIVISION

Approved by: **DENIED**

Title: **See Attached Cover Sheet**

Approval Date:

* Tbg. Size & Class Missing

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 8, 2019

RECEIVED
SEP 06 2019
DISTRICT II-ARTESIA O.C.D.

OXY USA Inc.
P.O. BOX 2289
Houston, TX 77252

Re:

33, 23S, 31E, Eddy NM
N 32.26744 W -103.78859

CLIENT: OXY USA Inc.
WELL: Iridium MDP1 28-21 Federal Com 1H
FIELD: Ingle Wells Bone Springs

RIG: H&P 556
COUNTY: Eddy
API NO: 30-015-45242
JOB NO: 18MLD4278

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). **Final Surveys are corrected by Superior, a third party company.** Other information required by your office is as follows.

Name & Title of Surveyor	Drainhole Number	Surveyed Depths	Dates Performed	Type of Survey
Jude Omokwale FS	Iridium MDP1 28-21 Federal Com 1H Original Hole	857.00 Ft to 20562.00 Ft	March 2, 2019 to April 4, 2019	TelePacer SlimPulse

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

Justin Miles / Jason Rajab
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:
33, 23S, 31E, Eddy NM
N 32.26744 W -103.78859

I, Jude Omokwale 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 04, 2019, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 857.00 feet to a depth of 20562.00 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 1H Well (Original Hole) API No. 30-015-45242 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.

Final Surveys are corrected by Superior QC, a third party company.

By
Jude Omokwale
FS

Subscribed and Sworn to before me this 8th day of April (month) 2019 (yr)

My Commission expires:

2-11e-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 Iridium MDP1 28-21 Federal Com 1H	NM Eddy County (NAD 83)	Oxy Iridium MDP1 28-21 Federal Com 1H

Gravity & Magnetic Parameters

Model: IFR1 Dip: 59.991° Date: 13-Mar-2019
MagDec: 6.847° FS: 47992.7nT Gravity FS: 998.46mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet

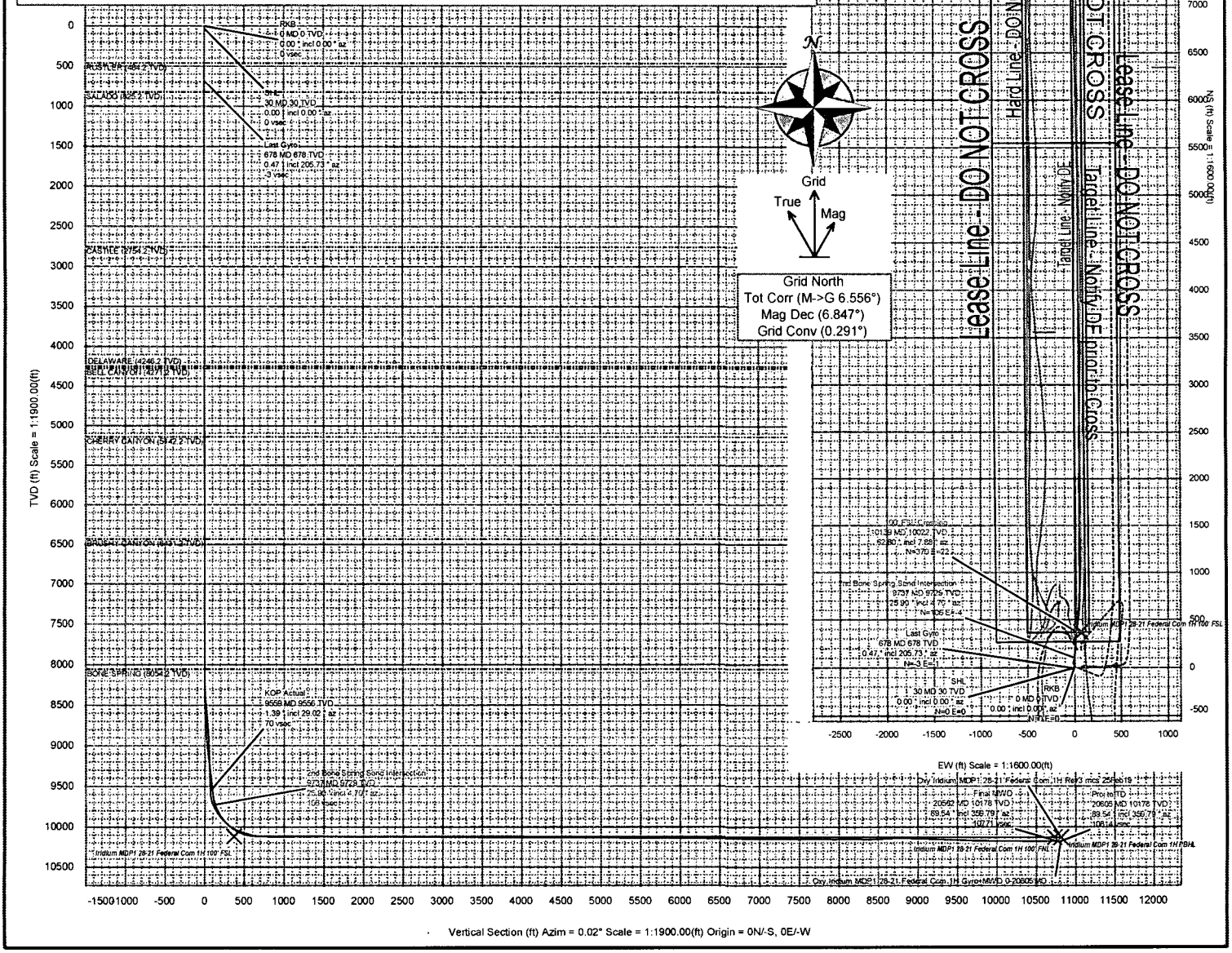
Lat: N 32 16 2.78 Northing: 461454.3ftUS Grid Conv: 0.2908°
Lon: W 103 47 18.93 Easting: 709710.15ftUS Scale Fact: 0.99994156

Miscellaneous

Slot: Oxy Iridium MDP1 28-21 Federal Com 1H TVD Ref: RKB=30'(3405.3ft above MSL)
Plan: Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD

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	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00
Last Gyro	678.00	0.47	205.73	677.99	-3.10	-3.10	-0.74	0.12
KOP Actual	9559.00	1.39	29.02	9556.41	69.55	69.55	-9.90	1.16
2nd Bone Spring Sand Intersection	9737.00	25.90	4.70	9729.17	105.88	105.88	-4.27	17.75
100' FSL Crossing	10139.00	62.80	7.88	10021.72	369.69	369.69	21.83	8.09
100' FNL Crossing	20522.00	89.59	359.53	10177.78	10730.60	10730.60	-1.00	0.16
Final MWD Surveys	20562.00	89.54	359.79	10178.08	10770.60	10770.60	-1.31	1.89
Proj to Bit	20605.00	89.54	359.79	10178.42	10813.60	10813.60	-1.46	0.00



Schlumberger

Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD Survey
Geodetic Report
(Def Survey)

Report Date:	April 08, 2019 - 02:47 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	0.019 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Iridium MDP1 28-21 Federal Com 1H / Oxy Iridium MDP1 28-21 Federal Com 1H	**TVD Reference Datum:**	RKB=30'
Well:	Oxy Iridium MDP1 28-21 Federal Com 1H	**TVD Reference Elevation:**	3405.300 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3375.300 ft above MSL
UWI / API#:	Unknown / 30-015-45242	**Magnetic Declination:**	6.847 °
Survey Name:	Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD	**Total Gravity Field Strength:**	998.4502mgn (9.80665 Based)
Survey Date:	February 11, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	216.554 ° / 10853.229 ft / 6.677 / 1.066	**Total Magnetic Field Strength:**	47992.700 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.991 °
Location Lat / Long:	N 32° 16' 2.77666", W 103° 47' 18.92860"	**Declination Date:**	March 13, 2019
Location Grid N/E Y/X:	N 461454.300 ftUS, E 709710.150 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.2908 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994156	**Grid Convergence Used:**	0.2908 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.5562 °
		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	0.00	0.00	0.00	0.00	0.00	N/A	461454.30	709710.15	N 32 16 2.78	W 103 47 18.93
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	461454.30	709710.15	N 32 16 2.78	W 103 47 18.93
	102.00	0.10	59.07	102.00	0.03	0.03	0.05	0.14	461454.33	709710.20	N 32 16 2.78	W 103 47 18.93
	134.00	0.11	103.80	134.00	0.04	0.04	0.11	0.25	461454.34	709710.26	N 32 16 2.78	W 103 47 18.93
	218.00	0.21	178.83	218.00	-0.13	-0.13	0.19	0.25	461454.17	709710.34	N 32 16 2.78	W 103 47 18.93
	307.00	0.36	191.76	307.00	-0.57	-0.57	0.14	0.18	461453.73	709710.29	N 32 16 2.77	W 103 47 18.93
	401.00	0.41	190.15	401.00	-1.19	-1.19	0.02	0.05	461453.11	709710.17	N 32 16 2.76	W 103 47 18.93
	496.00	0.41	214.78	495.99	-1.80	-1.80	-0.24	0.18	461452.50	709709.91	N 32 16 2.76	W 103 47 18.93
	590.00	0.45	192.66	589.99	-2.44	-2.44	-0.51	0.18	461451.86	709709.64	N 32 16 2.75	W 103 47 18.93
Last Gyro	678.00	0.47	205.73	677.99	-3.10	-3.10	-0.74	0.12	461451.20	709709.41	N 32 16 2.75	W 103 47 18.94
	857.00	0.11	71.11	856.99	-3.71	-3.71	-0.90	0.31	461450.59	709709.25	N 32 16 2.74	W 103 47 18.94
	1039.00	0.16	213.26	1038.99	-3.87	-3.86	-0.87	0.14	461450.44	709709.28	N 32 16 2.74	W 103 47 18.94
	1221.00	1.48	355.80	1220.97	-1.73	-1.73	-1.18	0.88	461452.57	709708.97	N 32 16 2.76	W 103 47 18.94
	1402.00	0.11	11.39	1401.95	0.77	0.77	-1.32	0.76	461455.07	709708.83	N 32 16 2.78	W 103 47 18.94
	1591.00	0.16	215.07	1590.95	0.73	0.73	-1.44	0.14	461455.03	709708.71	N 32 16 2.78	W 103 47 18.95
	1780.00	0.16	20.78	1779.95	0.76	0.76	-1.50	0.17	461455.06	709708.65	N 32 16 2.78	W 103 47 18.95
	1875.00	0.11	190.18	1874.95	0.79	0.80	-1.46	0.28	461455.10	709708.69	N 32 16 2.78	W 103 47 18.95
	1969.00	0.16	300.00	1968.95	0.77	0.77	-1.59	0.24	461455.07	709708.56	N 32 16 2.78	W 103 47 18.95
	2158.00	0.16	214.58	2157.95	0.69	0.69	-1.97	0.11	461454.99	709708.18	N 32 16 2.78	W 103 47 18.95
	2253.00	0.11	349.22	2252.94	0.67	0.67	-2.06	0.26	461454.97	709708.09	N 32 16 2.78	W 103 47 18.95
	2347.00	0.16	165.60	2346.94	0.63	0.63	-2.05	0.29	461454.93	709708.10	N 32 16 2.78	W 103 47 18.95
	2441.00	0.16	180.37	2440.94	0.37	0.37	-2.02	0.04	461454.67	709708.13	N 32 16 2.78	W 103 47 18.95
	2535.00	0.11	8.06	2534.94	0.33	0.33	-2.01	0.29	461454.63	709708.14	N 32 16 2.78	W 103 47 18.95
	2630.00	0.11	94.77	2629.94	0.41	0.41	-1.90	0.16	461454.71	709708.25	N 32 16 2.78	W 103 47 18.95
	2724.00	0.16	319.49	2723.94	0.50	0.50	-1.90	0.27	461454.80	709708.25	N 32 16 2.78	W 103 47 18.95
	2819.00	0.16	185.33	2818.94	0.47	0.47	-2.00	0.31	461454.77	709708.15	N 32 16 2.78	W 103 47 18.95
	2913.00	0.16	349.63	2912.94	0.47	0.47	-2.03	0.34	461454.77	709708.12	N 32 16 2.78	W 103 47 18.95
	3008.00	0.14	14.46	3007.94	0.71	0.71	-2.03	0.07	461455.01	709708.12	N 32 16 2.78	W 103 47 18.95
	3102.00	0.16	16.09	3101.94	0.95	0.95	-1.96	0.02	461455.25	709708.19	N 32 16 2.79	W 103 47 18.95
	3197.00	0.14	234.03	3196.94	1.01	1.01	-2.02	0.30	461455.31	709708.13	N 32 16 2.79	W 103 47 18.95
	3291.00	0.06	186.30	3290.94	0.89	0.89	-2.12	0.12	461455.19	709708.03	N 32 16 2.79	W 103 47 18.95
	3386.00	0.11	236.50	3385.94	0.79	0.79	-2.20	0.09	461455.09	709707.95	N 32 16 2.78	W 103 47 18.95
	3480.00	0.19	152.43	3479.94	0.61	0.61	-2.20	0.22	461454.91	709707.95	N 32 16 2.78	W 103 47 18.95
	3575.00	0.16	151.56	3574.94	0.35	0.35	-2.07	0.03	461454.65	709708.08	N 32 16 2.78	W 103 47 18.95
	3669.00	0.11	19.85	3668.94	0.32	0.32	-1.97	0.26	461454.62	709708.18	N 32 16 2.78	W 103 47 18.95
	3857.00	0.06	37.65	3856.94	0.57	0.57	-1.85	0.03	461454.87	709708.30	N 32 16 2.78	W 103 47 18.95
	3952.00	0.16	184.00	3951.94	0.47	0.47	-1.83	0.22	461454.77	709708.32	N 32 16 2.78	W 103 47 18.95
	4046.00	0.11	184.27	4045.94	0.25	0.25	-1.85	0.05	461454.55	709708.30	N 32 16 2.78	W 103 47 18.95
	4204.00	0.16	349.36	4203.94	0.32	0.32	-1.90	0.17	461454.62	709708.25	N 32 16 2.78	W 103 47 18.95
	4319.00	0.07	347.18	4318.94	0.54	0.54	-1.94	0.08	461454.84	709708.21	N 32 16 2.78	W 103 47 18.95
	4414.00	0.06	22.39	4413.94	0.65	0.65	-1.94	0.04	461454.95	709708.21	N 32 16 2.78	W 103 47 18.95
	4603.00	0.14	281.55	4602.94	0.78	0.79	-2.13	0.09	461455.09	709708.02	N 32 16 2.78	W 103 47 18.95
	4697.00	0.09	265.78	4696.94	0.80	0.80	-2.31	0.06	461455.10	709707.84	N 32 16 2.78	W 103 47 18.96
	4792.00	0.07	327.01	4791.94	0.85	0.85	-2.42	0.09	461455.15	709707.73	N 32 16 2.79	W 103 47 18.96
	4886.00	0.01	190.24	4885.94	0.89	0.89	-2.45	0.08	461455.19	709707.70	N 32 16 2.79	W 103 47 18.96
	4981.00	0.07	115.81	4980.94	0.85	0.85	-2.40	0.07	461455.15	709707.75	N 32 16 2.79	W 103 47 18.96
	5075.00	0.09	340.63	5074.94	0.90	0.90	-2.37	0.16	461455.20	709707.78	N 32 16 2.79	W 103 47 18.96
	5169.00	0.07	352.32	5168.94	1.02	1.02	-2.40	0.03	461455.32	709707.75	N 32 16 2.79	W 103 47 18.96
	5263.00	0.09	253.04	5262.94	1.06	1.06	-2.48	0.13	461455.36	709707.67	N 32 16 2.79	W 103 47 18.96
	5358.00	0.09	235.07	5357.94	0.99	0.99	-2.62	0.03	461455.29	709707.54	N 32 16 2.79	W 103 47 18.96
	5452.00	0.01	23.30	5451.94	0.96	0.96	-2.67	0.10	461455.26	709707.48	N 32 16 2.79	W 103 47 18.96
	5641.00	0.13	168.15	5640.94	0.76	0.77	-2.62	0.07	461455.07	709707.53	N 32 16 2.78	W 103 47 18.96
	5735.00	0.13	254.49	5734.94	0.63	0.63	-2.70	0.19	461454.93	709707.45	N 32 16 2.78	W 103 47 18.96
	5830.00	0.09	176.60	5829.94	0.53	0.53	-2.80	0.15	461454.83	709707.35	N 32 16 2.78	W 103 47 18.96
	5925.00	0.07	8.60	5924.94	0.51	0.51	-2.79	0.17	461454.81	709707.36	N 32 16 2.78	W 103 47 18.96
	6114.00	0.05	222.32	6113.94	0.56	0.57	-2.83	0.06	461454.87	709707.32	N 32 16 2.78	W 103 47 18.96
	6208.00	0.25	201.80	6207.94	0.34	0.34	-2.93	0.22	461454.64	709707.22	N 32 16 2.78	W 103 47 18.96
	6303.00	0.14	208.79	6302.94	0.05	0.05	-3.06	0.12	461454.35	709707.09	N 32 16 2.78	W 103 47 18.96
	6397.00	0.08	262.74	6396.94	-0.06	-0.06	-3.18	0.12	461454.24	709706.97	N 32 16 2.78	W 103 47 18.97
	6492.00	0.07	144.85	6491.94	-0.12	-0.11	-3.22	0.14	461454.19	709706.93	N 32 16 2.78	W 103 47 18.97
	6587.00	0.20	152.29	6586.94	-0.31	-0.31	-3.11	0.14	461453.99	709707.04	N 32 16 2.77	W 103 47 18.96
	6681.00	0.40	163.07	6680.94	-0.77	-0.77	-2.93	0.22	461453.53	709707.22	N 32 16 2.77	W 103 47 18.96
	6776.00	0.35	171.77	6775.93	-1.37	-1.37	-2.80	0.08	461452.93	709707.35	N 32 16 2.76	W 103 47 18.96
	6870.00	0.23	163.52	6869.93	-1.84	-1.84	-2.70	0.13	461452.46	709707.45	N 32 16 2.76	W 103 47 18.96
	7059.00	0.27	106.44	7058.93	-2.33	-2.33	-2.17	0.13	461451.97	709707.98	N 32 16 2.75	W 103 47 18.95
	7248.00	0.27	96.14	7247.93	-2.50	-2.50	-1.30	0.03	461451.80	709708.85	N 32 16 2.75	W 103 47 18.94
	7438.00	0.29	72.66	7437.93	-2.41	-2.41	-0.39	0.06	461451.89	709709.76	N 32 16 2.75	W 103 47 18.93
	7532.00	0.32	322.29	7531.93	-2.13	-2.13	-0.33	0.53	461452.17	709709.82	N 32 16 2.76	W 103 47 18.93
	7627.00	0.07	145.93	7626.93	-1.97	-1.97	-0.46	0.41	461452.33	709709.69	N 32 16 2.76	W 103 47 18.93
	7816.00	0.35	327.83	7815.93	-1.57	-1.57	-0.70	0.22	461452.73	709709.45	N 32 16 2.76	W 103 47 18.94
	8005.00	0.32	192.97	8004.92	-1.60	-1.60	-1.12	0.33	461452.70	709709.03	N 32 16 2.76	W 103 47 18.94
	8194.00	0.70	4.31	8193.92	-0.96	-0.96	-1.16	0.54	461453.34	709708.99	N 32 16 2.77	W 103 47 18.94
	8289.00	2.26	25.76	8288.89	1.30	1.30	-0.30	1.71	461455.60	709709.85	N 32 16 2.79	W 103 47 18.93
	8383.00	3.42	11.35	8382.77	5.72	5.72	1.06	1.44	461460.02	709711.21	N 32 16 2.83	W 103 47 18.92
	8478.00	4.51	353.75	8477.55	12.22	12.21	1.21	1.71	461466.51	709711.36	N 32 16 2.90	W 103 47 18.91
	8572.00	5.34	339.21	8571.20	19.98	19.98	-0.75	1.59	461474.28	709709.40	N 32 16 2.97	W 103 47 18.94
	8667.00	5.22	335.28	8665.80	28.04	28.04	-4.12	0.40	461482.33	709706.03	N 32 16 3.05	W 103 47 18.97

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 ° ' ")
	8761.00	4.58	332.42	8759.45	35.24	35.25	-7.65	0.73	461489.55	709702.50	N 32 16 3.13	W 103 47 19.02
	8855.00	3.80	332.08	8853.20	41.32	41.33	-10.84	0.83	461495.62	709699.31	N 32 16 3.19	W 103 47 19.05
	8950.00	3.71	328.08	8948.00	46.71	46.72	-13.94	0.29	461501.01	709696.21	N 32 16 3.24	W 103 47 19.09
	9044.00	2.75	322.97	9041.85	51.09	51.10	-16.91	1.07	461505.40	709693.24	N 32 16 3.28	W 103 47 19.12
	9138.00	2.35	3.54	9135.76	54.82	54.82	-18.15	1.92	461509.12	709692.00	N 32 16 3.32	W 103 47 19.14
	9233.00	2.49	27.38	9230.68	58.59	58.60	-17.08	1.06	461512.90	709693.07	N 32 16 3.36	W 103 47 19.12
	9327.00	2.05	39.09	9324.61	61.71	61.72	-15.08	0.68	461516.01	709695.07	N 32 16 3.39	W 103 47 19.10
	9421.00	2.99	33.11	9418.51	65.07	65.08	-12.68	1.04	461519.37	709697.47	N 32 16 3.42	W 103 47 19.07
KOP Actual	9559.00	1.39	29.02	9556.41	69.55	69.55	-9.90	1.16	461523.85	709700.25	N 32 16 3.47	W 103 47 19.04
	9654.00	11.31	11.77	9650.71	79.70	79.71	-7.44	10.52	461534.00	709702.71	N 32 16 3.57	W 103 47 19.01
	9748.00	27.84	4.30	9738.98	110.84	110.84	-3.89	17.75	461565.13	709706.27	N 32 16 3.87	W 103 47 18.97
	9837.00	30.27	6.28	9816.78	153.87	153.87	0.13	2.94	461608.16	709710.28	N 32 16 4.30	W 103 47 18.92
	9932.00	42.87	2.88	9892.93	210.18	210.17	4.39	13.43	461664.46	709714.54	N 32 16 4.86	W 103 47 18.87
	10027.00	48.42	6.31	9959.33	277.83	277.83	9.92	6.39	461732.11	709720.07	N 32 16 5.53	W 103 47 18.80
	10121.00	61.35	8.08	10013.29	353.94	353.94	19.62	13.84	461808.22	709729.77	N 32 16 6.28	W 103 47 18.68
	10215.00	68.90	7.09	10052.80	438.42	438.41	30.85	8.09	461892.68	709741.00	N 32 16 7.11	W 103 47 18.54
	10310.00	73.48	5.98	10083.43	527.74	527.73	41.07	4.95	461982.00	709751.22	N 32 16 8.00	W 103 47 18.42
	10404.00	77.35	3.79	10107.09	618.36	618.35	48.80	4.69	462072.61	709758.95	N 32 16 8.89	W 103 47 18.32
	10499.00	88.39	1.15	10118.87	712.39	712.37	52.83	11.94	462166.63	709762.98	N 32 16 9.82	W 103 47 18.27
	10593.00	87.91	0.53	10121.90	806.33	806.31	54.21	0.83	462260.56	709764.35	N 32 16 10.75	W 103 47 18.25
	10617.00	87.99	0.38	10122.76	830.31	830.30	54.40	0.71	462284.54	709764.54	N 32 16 10.99	W 103 47 18.25
	10711.00	89.10	359.97	10125.15	924.28	924.26	54.68	1.26	462378.51	709764.83	N 32 16 11.92	W 103 47 18.24
	10804.00	91.40	358.79	10124.74	1017.27	1017.25	53.68	2.78	462471.49	709763.83	N 32 16 12.84	W 103 47 18.24
	10898.00	91.92	358.69	10122.02	1111.20	1111.19	51.61	0.56	462565.42	709761.76	N 32 16 13.77	W 103 47 18.26
	10993.00	89.99	359.71	10120.44	1206.17	1206.16	50.29	2.30	462660.38	709760.43	N 32 16 14.71	W 103 47 18.27
	11087.00	89.75	0.69	10120.65	1300.17	1300.16	50.61	1.07	462754.38	709760.76	N 32 16 15.64	W 103 47 18.26
	11182.00	89.44	0.66	10121.32	1395.16	1395.15	51.73	0.33	462849.36	709761.88	N 32 16 16.58	W 103 47 18.24
	11276.00	90.09	0.80	10121.71	1489.16	1489.14	52.93	0.71	462943.35	709763.08	N 32 16 17.51	W 103 47 18.22
	11371.00	89.72	359.85	10121.87	1584.15	1584.13	53.47	1.07	463038.34	709763.62	N 32 16 18.45	W 103 47 18.21
	11466.00	90.58	0.24	10121.62	1679.15	1679.13	53.54	0.99	463133.33	709763.69	N 32 16 19.39	W 103 47 18.21
	11560.00	89.68	359.33	10121.40	1773.15	1773.13	53.19	1.36	463227.32	709763.34	N 32 16 20.32	W 103 47 18.20
	11655.00	89.41	359.67	10122.16	1868.14	1868.12	52.36	0.46	463322.31	709762.51	N 32 16 21.26	W 103 47 18.21
	11750.00	89.58	359.67	10122.99	1963.14	1963.12	51.82	0.18	463417.30	709761.96	N 32 16 22.20	W 103 47 18.21
	11845.00	90.58	0.84	10122.86	2058.13	2058.11	52.24	1.62	463512.29	709762.39	N 32 16 23.14	W 103 47 18.20
	11939.00	90.68	0.01	10121.83	2152.12	2152.11	52.94	0.89	463606.28	709763.08	N 32 16 24.07	W 103 47 18.18
	12034.00	90.20	359.91	10121.10	2247.12	2247.10	52.87	0.52	463701.27	709763.02	N 32 16 25.01	W 103 47 18.18
	12128.00	89.75	359.28	10121.14	2341.12	2341.10	52.21	0.82	463795.26	709762.35	N 32 16 25.94	W 103 47 18.18
	12222.00	88.96	359.77	10122.20	2435.11	2435.09	51.43	0.99	463889.24	709761.57	N 32 16 26.87	W 103 47 18.19
	12317.00	90.06	0.62	10123.01	2530.10	2530.08	51.75	1.46	463984.23	709761.90	N 32 16 27.81	W 103 47 18.18
	12412.00	89.44	1.13	10123.43	2625.09	2625.07	53.20	0.85	464079.21	709763.35	N 32 16 28.75	W 103 47 18.15
	12507.00	89.27	1.36	10124.49	2720.06	2720.04	55.26	0.30	464174.18	709765.41	N 32 16 29.69	W 103 47 18.12
	12601.00	89.92	0.48	10125.16	2814.04	2814.03	56.77	1.16	464268.16	709766.92	N 32 16 30.62	W 103 47 18.10
	12790.00	89.41	0.55	10126.26	3003.03	3003.01	58.47	0.27	464457.13	709768.62	N 32 16 32.49	W 103 47 18.07
	12885.00	89.72	0.97	10126.99	3098.02	3098.00	59.73	0.55	464552.12	709769.88	N 32 16 33.43	W 103 47 18.05
	12979.00	89.78	0.88	10127.40	3192.01	3191.99	61.25	0.12	464646.10	709771.40	N 32 16 34.36	W 103 47 18.03
	13074.00	89.54	0.86	10127.96	3287.00	3286.98	62.69	0.25	464741.08	709772.84	N 32 16 35.30	W 103 47 18.00
	13168.00	89.54	0.84	10128.71	3380.98	3380.96	64.09	0.02	464835.06	709774.23	N 32 16 36.23	W 103 47 17.98
	13357.00	89.72	359.19	10129.93	3569.97	3569.95	64.14	0.88	465024.04	709774.28	N 32 16 38.10	W 103 47 17.97
	13452.00	89.68	0.11	10130.43	3664.97	3664.95	63.56	0.97	465119.03	709773.70	N 32 16 39.04	W 103 47 17.97
	13547.00	90.03	0.97	10130.67	3759.96	3759.94	64.45	0.98	465214.02	709774.60	N 32 16 39.98	W 103 47 17.96
	13641.00	89.54	0.28	10131.03	3853.96	3853.94	65.48	0.90	465308.00	709775.62	N 32 16 40.91	W 103 47 17.94
	13736.00	89.85	1.11	10131.53	3948.95	3948.93	66.63	0.93	465402.99	709776.77	N 32 16 41.85	W 103 47 17.92
	13831.00	89.61	0.86	10131.98	4043.93	4043.91	68.26	0.36	465497.97	709778.41	N 32 16 42.79	W 103 47 17.89
	13926.00	90.99	0.03	10131.48	4138.93	4138.90	69.00	1.70	465592.95	709779.15	N 32 16 43.73	W 103 47 17.88
	14114.00	89.65	357.62	10130.43	4326.86	4326.84	65.14	1.47	465780.88	709775.29	N 32 16 45.59	W 103 47 17.91
	14209.00	89.65	358.80	10131.01	4421.81	4421.79	62.18	1.24	465875.83	709772.32	N 32 16 46.53	W 103 47 17.94
	14304.00	90.06	359.29	10131.25	4516.80	4516.78	60.59	0.67	465970.81	709770.74	N 32 16 47.47	W 103 47 17.96
	14399.00	89.68	358.65	10131.47	4611.78	4611.76	58.89	0.78	466065.78	709769.03	N 32 16 48.41	W 103 47 17.97
	14493.00	89.61	358.25	10132.05	4705.75	4705.73	56.34	0.43	466159.74	709766.49	N 32 16 49.34	W 103 47 17.99
	14588.00	89.48	358.45	10132.80	4800.70	4800.68	53.61	0.25	466254.69	709763.75	N 32 16 50.28	W 103 47 18.02
	14682.00	89.58	358.43	10133.58	4894.66	4894.65	51.05	0.11	466348.65	709761.20	N 32 16 51.21	W 103 47 18.04
	14777.00	90.03	357.63	10133.90	4989.60	4989.59	47.78	0.97	466443.59	709757.93	N 32 16 52.15	W 103 47 18.08
	14872.00	90.03	358.26	10133.85	5084.54	5084.53	44.38	0.66	466538.52	709754.52	N 32 16 53.09	W 103 47 18.11
	14966.00	89.17	358.10	10134.50	5178.49	5178.48	41.39	0.93	466632.46	709751.54	N 32 16 54.02	W 103 47 18.14
	15061.00	88.79	357.88	10136.20	5273.42	5273.40	38.06	0.46	466727.38	709748.21	N 32 16 54.95	W 103 47 18.17
	15155.00	89.61	358.60	10137.51	5367.36	5367.35	35.17	1.16	466821.32	709745.32	N 32 16 55.88	W 103 47 18.20
	15250.00	89.65	358.36	10138.12	5462.32	5462.31	32.65	0.26	466916.28	709742.80	N 32 16 56.82	W 103 47 18.23
	15439.00	90.16	359.33	10138.44	5651.28	5651.27	28.84	0.58	467105.23	709738.99	N 32 16 58.69	W 103 47 18.26
	15534.00	89.96	358.66	10138.34	5746.26	5746.26	27.18	0.74	467200.21	709737.33	N 32 16 59.63	W 103 47 18.27
	15629.00	89.75	359.29	10138.58	5841.25	5841.24	25.48	0.70	467295.19	709735.63	N 32 17 0.57	W 103 47 18.29
	15723.00	89.48	358.68	10139.21	5935.23	5935.22	23.81	0.71	467389.16	709733.96	N 32 17 1.50	W 103 47 18.30
	15913.00	89.65	357.95	10140.65	6125.14	6125.13	18.23	0.39	467579.06	709728.38	N 32 17 3.38	W 103 47 18.35
	16007.00	89.65	358.72	10141.22	6219.10	6219.09	15.50	0.82	467673.02	709725.64	N 32 17 4.31	W 103 47 18.38
	16196.00	89.78	358.25	10142.16	6408.03	6408.02	10.50	0.26	467861.93	709720.65	N 32 17 6.18	W 103 47 18.43
	16291.00	89.75	358.59	10142.55	6502.99	6502.99	7.88	0.36	467956.89	709718.03	N 32 17 7.12	W 103 47 18.45
	16479.00	89.30	356.67	10144.11	6690.81	6690.81	0.11	1.05	468144.70	709710.26	N 32 17 8.98	W 103 47 18.53
	16574.00	89.54	358.10	10145.07	6785.70	6785.70	-4.23	1.53	468239.59	709705.92	N 32 17 9.92	W 103 47 18.58
	16763.00	89.68	0.58	10146.36	6974.67	6974.67	-6.41	1.31	468428.55	709703.75	N 32 17 11.79	W 103 47 18.59
	16858.00	89.58	0.85	10146.98	7069.66	7069.66	-5.22	0.30	468523.53	709704.93	N 32 17 12.73	W 103 47 18.57
	16952.00	89.20	1.81	10147.98	7163.63	7163.63	-3.04	1.10	468617.50	709707.11	N 32 17 13.66	W 103 47 18.54
	17047.00	89.96	0.99	10148.67	7258.60	7258.60	-0.72	1.18	468712.46	709709.43	N 32 17 14.60	W 103 47 18.51
	17142.00	90.06	0.70	10148.66	7353.59	7353.59	0.68	0.32	468807.44	709710.83	N 32 17 15.54	W 103 47 18.49
	17236.00	89.68	1.01	10148.87	7447.58	7447.58	2.09	0.52	468901.43	709712.24	N 32 17 16.47	W 103 47 18.46
	17331.00	89.51	0.84	10149.54	7542.56	7542.56	3.62	0.25	468996.40	709713.77	N 32 17 17.41	W 103 47 18.44
	17425.00	89.58	0.93	10150.29	7636.55	7636.55	5.07	0.12	469090.38	709715.22	N 32 17 18.34	W 103 47 18.42
	17520.00	89.61	1.00	10150.96	7731.53	7731.53	6.67	0.08	469185.36	709716.82	N 32 17 19.28	W 103 47 18.39
	17614.00	90.09	2.06	10151.20	7825.50	7825.49	9.18	1.24	469279.32	709719.33	N 32 17 20.21	W 103 47 18.36
	17709.00	89.65	0.90	10151.42	7920.46	7920.46	11.64	1.31	469374.28	709721.78	N 32 17 21.15	W 103 47 18.32
	17803.00	90.89	2.43	10150.98	8014.42	8014.42	14.37	2.10	469468.23	709724.52	N 32 17 22.08	W 103 47 18.29
	17898.00	89.48	1.39	10150.67	8109.36	8109.36	17.53	1.84	469563.17	709727.68	N 32 17 23.02	W 103 47 18.24
	17993.00	89.89	1.36	10151.19	8204.34	8204.33	19.81	0.43	469658.13	709729.96	N 32 17 23.96	W 103 47 18.21
	18087.00	89.96	1.94	10151.32	8298.30	8298.29	22.52	0.62	469752.09	709732.67	N 32 17 24.89	W 103 47 18.18
	18181.00	89.89	2.37	10151.44	8392.23	8392.22	26.05	0.46	469846.02	709736.20	N 32 17 25.82	W 103 47 18.13
	18276.00	91.37	3.23	10150.39	8487.11	8487.10	30.69	1.80	469940.89	709740.84	N 32 17 26.75	W 103 47 18.07
	18371.00	92.40	3.27	10147.27	8581.91	8581.90	36.08	1.09	470035.68	709746.22	N 32 17 27.69	W 103 47 18.00
	18465.00	93.30	3.26	10142.60	8675.64	8675.63	41.42	0.96	470129.40	709751.57	N 32 17 28.62	W 103 47 17.93
	18559.00	89.85	357.85	10140.01	8769.55	8769.54	42.33	6.82	470223.31	709752.48	N 32 17 29.55	W 103 47 17.92
	18749.00	88.62	355.57	10142.55	8959.20	8959.19	31.43	1.36	470412.95	709741.58	N 32 17 31.43	W 103 47 18.03
	18843.00	88.10	354.91	10145.24	9052.83	9052.83	23.63	0.89	470506.58	709733.78	N 32 17 32.35	W 103 47 18.12
	18938.00	88.00	355.21	10148.47	9147.42	9147.42	15.45	0.33	470601.17	709725.60	N 32 17 33.29	W 103 47 18.21
	19033.00	88.03	358.31	10151.76	9242.20	9242.20	10.09	3.26	470695.94	709720.24	N 32 17 34.23	W 103 47 18.26
	19127.00	88.06	359.89	10154.97	9336.13	9336.13	8.61	1.68	470789.87	709718.76	N 32 17 35.16	W 103 47 18.28
	19221.00	87.96	0.26	10158.23	9430.08	9430.07	8.74	0.41	470883.80	709718.89	N 32 17 36.09	W 103 47 18.27
	19316.00	88.17	0.09	10161.44	9525.02	9525.02	9.03	0.28	470978.74	709719.18	N 32 17 37.03	W 103 47 18.26
	19411.00	88.20	0.07	10164.45	9619.97	9619.97	9.16	0.04	471073.69	709719.31	N 32 17 37.97	W 103 47 18.25
	19505.00	87.96	0.15	10167.60	9713.92	9713.92	9.34	0.27	471167.63	709719.49	N 32 17 38.89	W 103 47 18.25
	19600.00	87.99	359.60	10170.96	9808.86	9808.86	9.13	0.58	471262.56	709719.28	N 32 17 39.83	W 103 47 18.24
	19694.00	88.72	359.24	10173.65	9902.82	9902.81	8.18	0.87	471356.51	709718.33	N 32 17 40.76	W 103 47 18.25
	19789.00	89.06	359.69	10175.49	9997.79	9997.79	7.29	0.59	471451.49	709717.44	N 32 17 41.70	W 103 47 18.25

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 ° ' ")
	19883.00	91.57	1.27	10174.98	10091.78	10091.78	8.08	3.16	471545.47	709718.23	N 32 17 42.63	W 103 47 18.24
	19978.00	89.03	357.81	10174.48	10186.75	10186.75	7.32	4.52	471640.43	709717.47	N 32 17 43.57	W 103 47 18.24
	20167.00	89.44	358.31	10177.00	10375.62	10375.62	0.92	0.34	471829.30	709711.07	N 32 17 45.44	W 103 47 18.30
	20262.00	90.54	0.46	10177.02	10470.61	10470.61	-0.10	2.54	471924.28	709710.05	N 32 17 46.38	W 103 47 18.31
	20356.00	89.65	359.87	10176.86	10564.61	10564.61	0.17	1.14	472018.27	709710.32	N 32 17 47.31	W 103 47 18.30
	20451.00	89.61	359.64	10177.48	10659.60	10659.61	-0.23	0.25	472113.26	709709.92	N 32 17 48.25	W 103 47 18.30
	20546.00	89.58	359.49	10178.15	10754.60	10754.60	-0.95	0.16	472208.25	709709.20	N 32 17 49.19	W 103 47 18.30
Final MWD Surveys	20562.00	89.54	359.79	10178.27	10770.60	10770.60	-1.06	1.89	472224.25	709709.09	N 32 17 49.35	W 103 47 18.30
Proj to Bit	20605.00	89.54	359.79	10178.62	10813.60	10813.60	-1.21	0.00	472267.24	709708.94	N 32 17 49.78	W 103 47 18.30

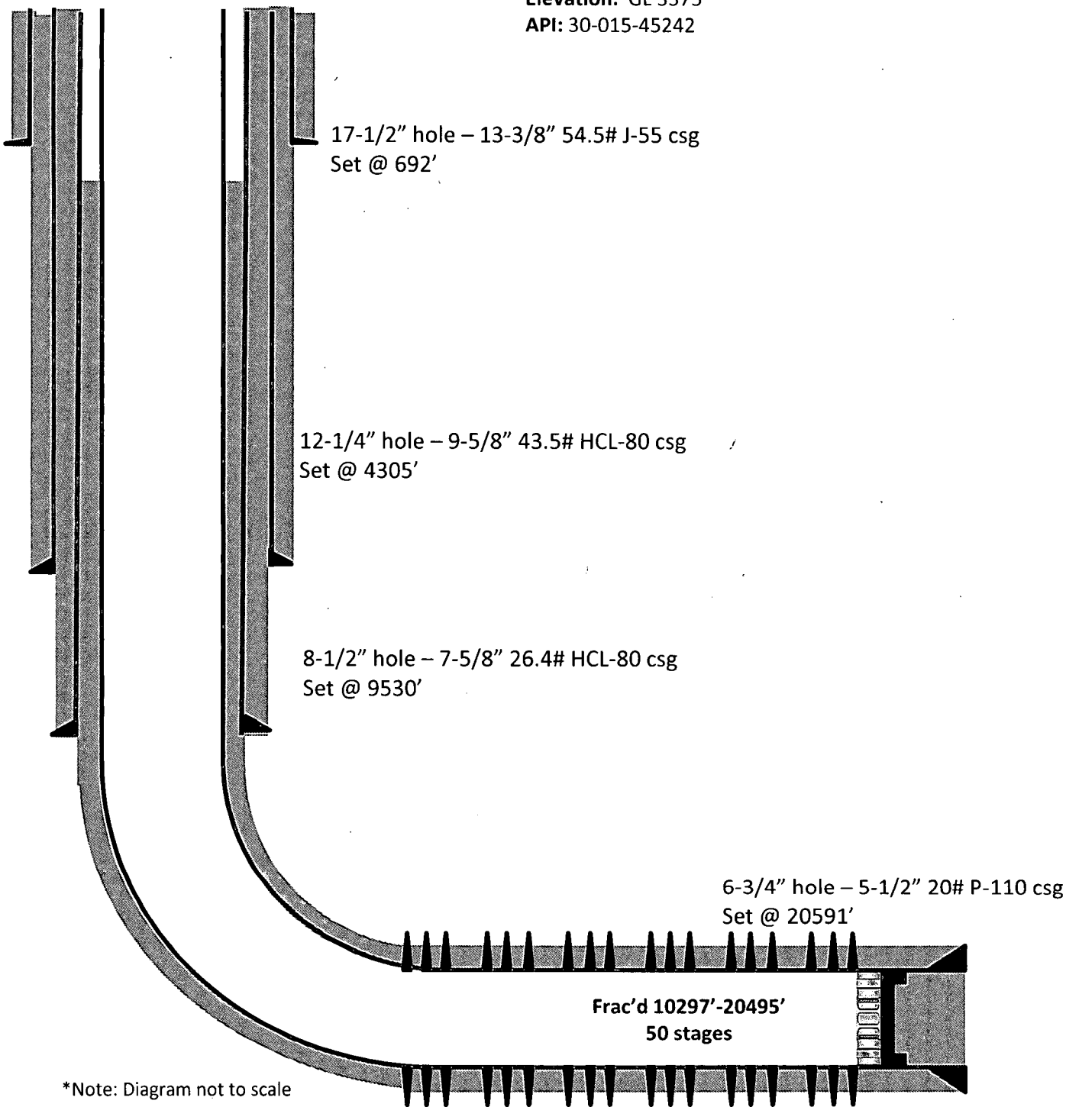
Survey Type: Def Survey

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 Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD
	1	30.000	30.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD
	1	30.000	678.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 1H
	1	678.000	20605.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 1H

Iridium MDP1 28-21 Federal Com 1H Wellbore Diagram

Elevation: GL 3375'
API: 30-015-45242



*Note: Diagram not to scale

PBTD – 20547' MD
TD – 20591' MD/10118' TVD