

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

November 10, 2019

OXY USA Inc
P.O. BOX 4294
Houston, TX 77210-4294

HOBBS OCD
JAN 03 2020
RECEIVED

Re:

S30, T22S, R33E, LEA, NM
N 32.36943 W -103.61531

CLIENT: OXY USA Inc
WELL: AVOGATO 30-31 STATE COM 032H
FIELD: Red Tank; Bone Spring

RIG: Pioneer 82
COUNTY: LEA
API NO: 30-025-45927
JOB NO: 19MLH0352

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>
J. Sousa FE	AVOGATO 30-31 STATE COM 32H Original Hole	1109.00 Ft to 22083.00 Ft	September 3, 2019 to October 26, 2019	TelePacer, SlimPulse Third Party Corrected

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Well Reference:
S30, T22S, R33E, LEA, NM
N 32.36943 W -103.61531

I, J. Sousa certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I didon the day(s) of September 03, 2019 through October 26, 2019, conduct or supervise the taking of the TelePacer, SlimPulse and Third Party Corrected surveys from a depth of 1109.00 feet to a depth of 22083.00 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 Incorporated for the AVOGATO 30-31 STATE COM 32 H Well (Original Hole) API No. 30-025-45927 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
J. Sousa
FE

Subscribed and Sworn to before me this 10 day of November (month) 2019 (yr)

My Commission expires:

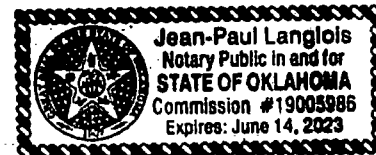
6/14/2023

Jean-Paul Langlois

Notary Public

Comanche Oklahoma
(County State)

(signature)



Schlumberger

OXY



Borehole: Original Borehole Well: Oxy Avogato 30-31 State Com 32H Field: NM Lea County (NAD 83) Structure: Oxy Avogato 30-31 State Com 32H

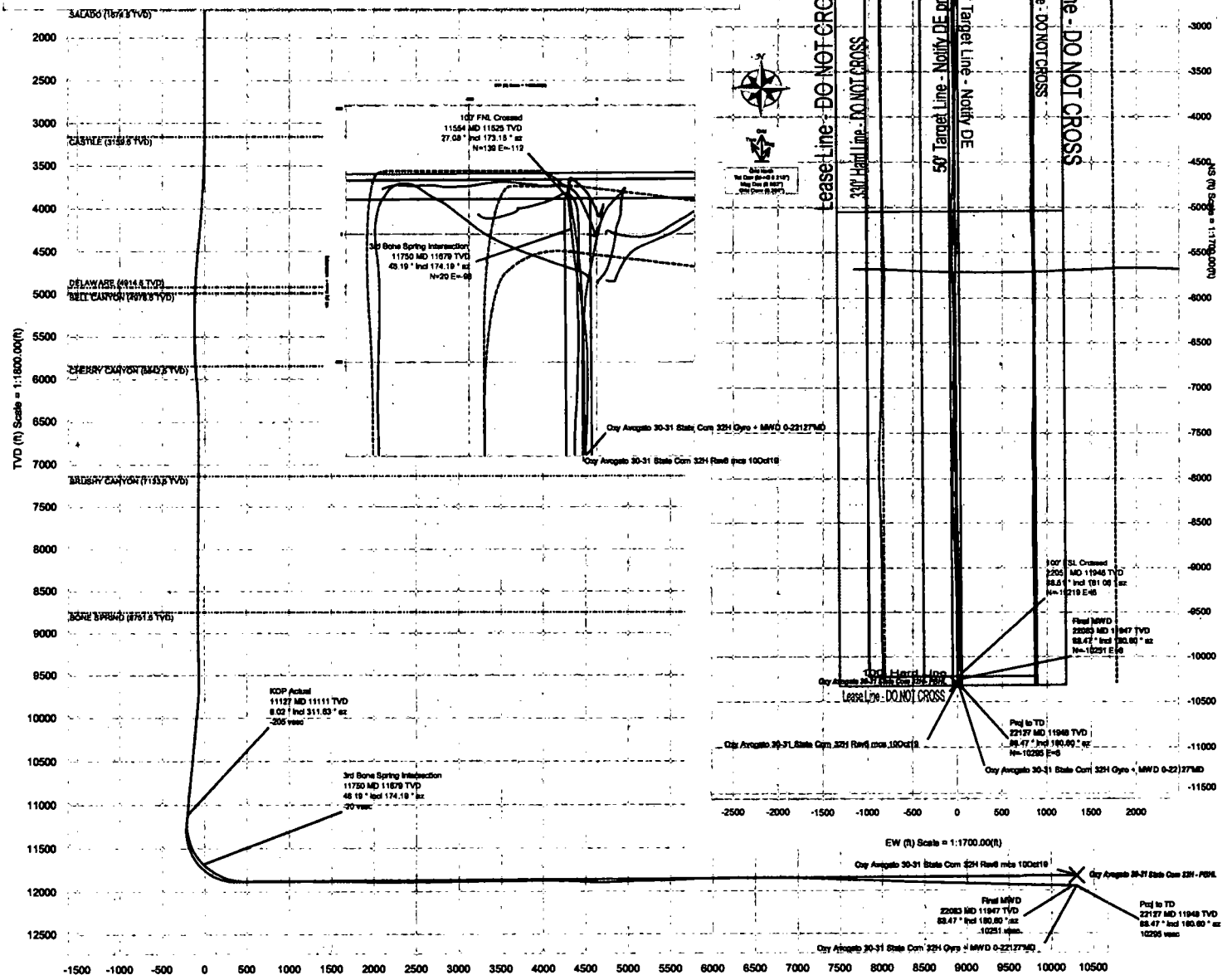
Gravity & Magnetic Parameters Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet Miscellaneous

Model: IPR1 Dip: 60.889° Date: 14-Oct-2019 Lat: N 32 32 8.86 Northing: 49874.4018 Grid Conn: 0.3844° Stat: Oxy Avogato 30-31 State Com 32H TVD Ref: R02(3727.18 above MSL)

MagDec: 6.82° FB: 48045.1eT Gravity FB: 988.448mg (9.80665 Based) Lon: W 103 35 53.11 Easting: 763022.1015 Scale Fact: 0.89986337 Plan: Oxy Avogato 30-31 State Com 32H Gyro + MWD 0-22127MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	180.01	0.00	0.00	0.00	0.00	
SHL	25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00
Last Gyro	1023.00	1.13	329.99	1022.95	-4.20	4.20	-6.44	0.35
KOP Actual	11127.00	8.02	311.63	11111.39	-204.78	204.79	-82.41	0.14
100' FNL Crossed	11554.00	27.08	173.15	11524.73	-139.28	139.29	-111.78	13.74
3rd Bone Spring Intersection	11749.93	46.18	174.19	11679.00	-20.49	20.49	-88.42	12.73
100' FSL Crossed	22051.00	68.51	181.06	11945.97	10218.73	-10218.73	6.39	1.43
Final MWD	22083.00	68.47	180.60	11946.81	10250.72	-10250.72	5.83	1.43
Proj to TD	22127.00	68.47	180.60	11947.99	10294.70	-10294.70	5.47	0.00



Oxy Avogato 30-31 State Com 32H Gyro + MWD 0-22127MD Survey

Geodetic Report

(Def Survey)



Report Date: October 28, 2019 - 10:48 AM Client: OXY Field: NM Lea County (NAD 83) Structure / Slot: Oxy Avogato 30-31 State Com 32H / Oxy Avogato 30-31 State Com 32H Well: Oxy Avogato 30-31 State Com 32H Borehole: Original Borehole UWI / API#: Unknown / 30-025-45927 Survey Name: Oxy Avogato 30-31 State Com 32H Gyro + MWD 0-22127MD Survey Date: August 28, 2019 Tort / AHD / DDI / ERD Ratio: 278.544' / 10888.993 R / 6.750 / 0.912 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet Location Lat / Long: N 32° 22' 9.95205", W 103° 36' 55.11001" Location Grid N/E Y/X: N 498874.400 RUS, E 763022.100 RUS CRS Grid Convergence Angle: 0.3844° Grid Scale Factor: 0.99996537 Version / Patch: 2.10.782.0	Survey / DLS Computation: Minimum Curvature / Lubinski Vertical Section Azimuth: 180.006° (Grid North) Vertical Section Origin: 0.000 ft, 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 3727.100 ft above MSL Seabed / Ground Elevation: 3702.100 ft above MSL Magnetic Declination: 6.602° Total Gravity Field Strength: 988.4486mgn (9.80665 Based) Gravity Model: GARM Total Magnetic Field Strength: 48045.100 nT Magnetic Dip Angle: 80.085° Declination Date: October 14, 2019 Magnetic Declination Model: IFR1 North Reference: Grid North Grid Convergence Used: 0.3844° Total Corr Mag North-Grid North: 6.2178° Local Coord Referenced To: Well Head	
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Comments	MD (ft)	Incl (°)	Azthm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
RKB	0.00	0.00	180.01	0.00	0.00	0.00	0.00	N/A	498874.40	763022.10	N 32 22 9.95 W	103 36 55.11
SHL	25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	498874.40	763022.10	N 32 22 9.95 W	103 36 55.11
	102.50	0.07	257.78	102.50	0.01	-0.01	-0.05	0.09	498874.39	763022.05	N 32 22 9.95 W	103 36 55.11
	129.70	0.11	245.38	129.70	0.02	-0.02	-0.09	0.13	498874.38	763022.01	N 32 22 9.95 W	103 36 55.11
	158.70	0.14	253.74	158.70	0.04	-0.04	-0.14	0.13	498874.36	763021.98	N 32 22 9.95 W	103 36 55.11
	184.90	0.19	249.27	184.90	0.07	-0.07	-0.22	0.18	498874.33	763021.88	N 32 22 9.95 W	103 36 55.11
	213.10	0.18	248.74	213.10	0.10	-0.10	-0.30	0.11	498874.30	763021.80	N 32 22 9.95 W	103 36 55.11
	242.50	0.17	238.09	242.50	0.14	-0.14	-0.37	0.13	498874.26	763021.73	N 32 22 9.95 W	103 36 55.11
	269.80	0.18	237.26	269.80	0.19	-0.19	-0.44	0.04	498874.21	763021.66	N 32 22 9.95 W	103 36 55.12
	301.20	0.28	233.46	301.20	0.28	-0.28	-0.54	0.26	498874.14	763021.56	N 32 22 9.95 W	103 36 55.12
	332.80	0.38	238.68	332.80	0.35	-0.35	-0.69	0.39	498874.05	763021.41	N 32 22 9.95 W	103 36 55.12
	364.30	0.37	247.88	364.30	0.45	-0.45	-0.87	0.19	498873.95	763021.23	N 32 22 9.95 W	103 36 55.12
	395.80	0.42	251.80	395.80	0.52	-0.52	-1.08	0.18	498873.88	763021.02	N 32 22 9.95 W	103 36 55.12
	427.30	0.38	257.99	427.30	0.58	-0.58	-1.29	0.19	498873.82	763020.81	N 32 22 9.95 W	103 36 55.13
	458.90	0.38	266.53	458.90	0.81	-0.81	-1.49	0.18	498873.79	763020.61	N 32 22 9.95 W	103 36 55.13
	490.40	0.41	269.19	490.40	0.81	-0.81	-1.71	0.11	498873.79	763020.39	N 32 22 9.95 W	103 36 55.13
	521.90	0.43	274.87	521.89	0.81	-0.81	-1.94	0.15	498873.79	763020.16	N 32 22 9.95 W	103 36 55.13
	553.40	0.48	282.38	553.39	0.57	-0.57	-2.19	0.25	498873.83	763019.91	N 32 22 9.95 W	103 36 55.14
	584.90	0.52	288.69	584.89	0.49	-0.49	-2.45	0.22	498873.91	763019.65	N 32 22 9.95 W	103 36 55.14
	616.40	0.56	295.41	616.38	0.38	-0.38	-2.73	0.23	498874.02	763019.37	N 32 22 9.95 W	103 36 55.14
	648.00	0.61	302.35	647.99	0.22	-0.22	-3.01	0.27	498874.18	763019.09	N 32 22 9.95 W	103 36 55.15
	679.50	0.72	306.36	679.49	0.02	-0.02	-3.31	0.38	498874.38	763018.79	N 32 22 9.95 W	103 36 55.15
	711.00	0.78	309.42	710.98	-0.24	0.24	-3.64	0.23	498874.64	763018.47	N 32 22 9.96 W	103 36 55.15
	742.50	0.79	314.15	742.48	-0.52	0.52	-3.98	0.21	498874.92	763018.14	N 32 22 9.96 W	103 36 55.16
	774.00	0.81	318.74	773.98	-0.84	0.84	-4.28	0.21	498875.24	763017.84	N 32 22 9.96 W	103 36 55.16
	805.60	0.87	322.83	805.57	-1.20	1.20	-4.55	0.27	498875.60	763017.55	N 32 22 9.96 W	103 36 55.16
	837.10	0.88	324.29	837.07	-1.58	1.58	-4.83	0.08	498875.98	763017.27	N 32 22 9.97 W	103 36 55.17
	868.60	0.87	324.34	868.57	-1.97	1.97	-5.11	0.03	498876.37	763016.99	N 32 22 9.97 W	103 36 55.17
	900.10	0.91	327.84	900.06	-2.38	2.38	-5.38	0.21	498876.78	763016.72	N 32 22 9.98 W	103 36 55.17
	931.60	0.94	329.82	931.56	-2.81	2.81	-5.65	0.14	498877.21	763016.45	N 32 22 9.98 W	103 36 55.18
	963.10	0.95	330.86	963.06	-3.26	3.26	-5.90	0.06	498877.66	763016.20	N 32 22 9.98 W	103 36 55.18
	994.60	1.03	329.49	994.55	-3.73	3.74	-6.17	0.26	498878.14	763015.93	N 32 22 9.99 W	103 36 55.18
Leat Gyro	1023.00	1.13	329.99	1022.95	-4.20	4.20	-6.44	0.35	498878.60	763015.66	N 32 22 9.99 W	103 36 55.18
	1109.00	0.84	325.54	1108.93	-5.45	5.45	-7.23	0.35	498879.65	763014.87	N 32 22 10.01 W	103 36 55.19
	1201.00	0.22	328.40	1200.93	-6.16	6.16	-7.70	0.67	498880.58	763014.40	N 32 22 10.01 W	103 36 55.20
	1385.00	0.07	48.74	1384.93	-6.54	6.54	-7.80	0.12	498880.94	763014.30	N 32 22 10.02 W	103 36 55.20
	1480.00	0.06	159.96	1479.93	-6.53	6.53	-7.74	0.11	498880.93	763014.36	N 32 22 10.02 W	103 36 55.20
	1670.00	0.07	266.61	1669.93	-6.43	6.43	-7.83	0.05	498880.83	763014.28	N 32 22 10.02 W	103 36 55.20
	1785.00	0.09	309.02	1784.93	-6.47	6.47	-7.94	0.06	498880.87	763014.16	N 32 22 10.02 W	103 36 55.20
	1860.00	0.06	308.09	1859.93	-6.55	6.55	-8.04	0.03	498880.95	763014.06	N 32 22 10.02 W	103 36 55.20
	1955.00	0.02	305.19	1954.93	-6.59	6.59	-8.09	0.04	498880.99	763014.01	N 32 22 10.02 W	103 36 55.20
	2050.00	0.06	136.44	2049.93	-6.56	6.56	-8.07	0.08	498880.96	763014.03	N 32 22 10.02 W	103 36 55.20
	2145.00	0.06	171.52	2144.93	-6.48	6.48	-8.03	0.04	498880.88	763014.07	N 32 22 10.02 W	103 36 55.20
	2235.00	0.06	163.34	2234.93	-6.28	6.28	-7.99	0.00	498880.68	763014.11	N 32 22 10.01 W	103 36 55.20
	2430.00	0.09	106.28	2429.93	-6.22	6.22	-7.90	0.08	498880.62	763014.20	N 32 22 10.01 W	103 36 55.20
	2525.00	0.07	116.26	2524.93	-6.17	6.17	-7.78	0.03	498880.57	763014.32	N 32 22 10.01 W	103 36 55.20
	2620.00	0.13	103.08	2619.93	-6.12	6.12	-7.62	0.07	498880.52	763014.48	N 32 22 10.01 W	103 36 55.20
	2811.00	0.07	48.22	2810.93	-6.15	6.15	-7.32	0.06	498880.55	763014.78	N 32 22 10.01 W	103 36 55.19
	2905.00	0.04	127.94	2904.93	-6.17	6.17	-7.26	0.08	498880.57	763014.84	N 32 22 10.01 W	103 36 55.19
	3000.00	0.07	88.38	2999.93	-6.15	6.15	-7.17	0.05	498880.55	763014.93	N 32 22 10.01 W	103 36 55.19
	3096.00	0.25	74.63	3095.93	-6.21	6.21	-6.91	0.19	498880.61	763015.19	N 32 22 10.01 W	103 36 55.19
	3191.00	0.48	77.55	3190.92	-6.35	6.35	-6.32	0.24	498880.75	763015.78	N 32 22 10.02 W	103 36 55.18
	3288.00	1.25	54.00	3285.91	-7.04	7.04	-5.10	0.88	498881.44	763017.00	N 32 22 10.02 W	103 36 55.17
	3381.00	2.08	42.30	3380.87	-8.93	8.93	-3.10	0.94	498883.33	763019.00	N 32 22 10.04 W	103 36 55.15
	3478.00	2.31	37.45	3475.80	-11.72	11.72	-0.77	0.31	498886.12	763021.33	N 32 22 10.07 W	103 36 55.12
	3571.00	2.82	32.49	3570.71	-15.22	15.22	1.85	0.58	498889.81	763023.75	N 32 22 10.10 W	103 36 55.09
	3668.00	3.15	28.90	3665.98	-19.51	19.51	4.08	0.48	498893.91	763026.18	N 32 22 10.14 W	103 36 55.06
	3761.00	3.83	26.48	3760.41	-24.53	24.53	6.80	0.51	498898.93	763028.70	N 32 22 10.19 W	103 36 55.03
	3858.00	3.98	24.41	3855.20	-30.21	30.21	9.30	0.38	498904.61	763031.40	N 32 22 10.25 W	103 36 55.00
	3952.00	4.18	23.15	3950.98	-36.43	36.43	12.04	0.23	498910.83	763034.14	N 32 22 10.31 W	103 36 54.97
	4046.00	4.20	18.83	4044.71	-42.83	42.83	14.49	0.34	498917.22	763036.82	N 32 22 10.37 W	103 36 54.94
	4141.00	4.55	13.86	4139.44	-49.78	49.78	16.52	0.54	498924.18	763039.62	N 32 22 10.44 W	103 36 54.91
	4237.00	4.88	9.89	4235.11	-57.50	57.50	18.13	0.68	498931.89	763042.23	N 32 22 10.52 W	103 36 54.89
	4362.00	5.34	1.71	4359.62	-66.55	66.55	19.22	0.89	498942.95	763044.32	N 32 22 10.63 W	103 36 54.88
	4427.00	5.07	1.83	4424.35	-74.44	74.44	19.40	0.42	498948.84	763046.18	N 32 22 10.69 W	103 36 54.87
	4522.00	4.88	7.74	4518.99	-82.64	82.64	20.08	0.58	498957.04	763048.18	N 32 22 10.77 W	103 36 54.87
	4617.00	4.38	10.28	4613.98	-90.22	90.22	21.27	0.57	498964.81	763049.37	N 32 22 10.84 W	103 36 54.85
	4713.00	4.04	11.16	4709.42	-97.14	97.14	22.58	0.38	498971.54	763049.68	N 32 22 10.81 W	103 36 54.84
	4808.00	4.02	12.14	4804.19	-103.68	103.68	23.93	0.08	498978.08	763049.02	N 32 22 10.88 W	103 36 54.82
	4902.00	3.57	13.07	4897.88	-109.75	109.75	25.28	0.48	498984.15	763047.38	N 32 22 11.04 W	103 36 54.81
	4996.00	2.47	11.28	4891.85	-114.59	114.59	26.34	1.17	498988.98	763046.44	N 32 22 11.08 W	103 36 54.79
	5091.00	1.19	4.00	5088.60	-117.58	117.58	26.81	1.37	498991.98	763046.91	N 32 22 11.11 W	103 36 54.79
	5185.00	0.25	28.73	5180.79	-118.74	118.73	26.97	1.03	498993.13	763048.07	N 32 22 11.13 W	103 36 54.79
	5280.00	0.07	285.19	5275.70	-118.94	118.94	27.02	0.28	498993.34	763049.12	N 32 22 11.13 W	103 36 54.79
	5375.00	0.10	313.75	5370.79	-119.02	119.02	26.91	0.04	498993.42	763049.01	N 32 22 11.13 W	103 36 54.79
	5469.00	0.21	198.03	5464.79	-118.92	118.92	26.80	0.29	498993.31	763048.90	N 32 22 11.13 W	103 36 54.79
	5564.00	0.88	185.19	5559.78	-118.04							

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	5754.00	2.76	193.49	5749.69	-112.34	112.34	25.47	1.11	488888.73	763047.57	N 32 22 11.06 W	103 38 54.80
	5849.00	3.65	195.95	5844.54	-107.21	107.20	24.11	0.95	488981.60	763046.21	N 32 22 11.01 W	103 38 54.82
	5944.00	4.64	197.82	5939.29	-100.64	100.64	22.11	1.05	488975.03	763044.21	N 32 22 10.95 W	103 38 54.84
	6039.00	5.01	201.72	6033.95	-93.12	93.12	19.41	0.53	488967.52	763041.51	N 32 22 10.87 W	103 38 54.88
	6135.00	3.95	199.31	6129.66	-86.11	86.10	16.77	1.12	488960.50	763038.87	N 32 22 10.80 W	103 38 54.91
	6256.00	2.47	193.40	6250.46	-79.64	79.63	14.79	1.25	488954.03	763036.89	N 32 22 10.74 W	103 38 54.93
	6356.00	1.02	184.52	6350.41	-76.85	76.85	14.22	1.47	488951.05	763036.32	N 32 22 10.71 W	103 38 54.94
	6420.00	0.37	181.78	6414.41	-75.88	75.88	14.17	1.02	488950.27	763036.27	N 32 22 10.70 W	103 38 54.94
	6583.00	0.05	286.27	6577.41	-75.37	75.37	14.08	0.24	488949.77	763036.18	N 32 22 10.70 W	103 38 54.94
	6678.00	0.12	158.93	6672.41	-75.29	75.29	14.08	0.16	488949.69	763036.18	N 32 22 10.70 W	103 38 54.94
	6774.00	0.07	152.99	6768.41	-75.14	75.14	14.14	0.05	488949.54	763036.24	N 32 22 10.69 W	103 38 54.94
	6869.00	0.07	97.05	6863.41	-75.09	75.08	14.22	0.07	488949.48	763036.32	N 32 22 10.69 W	103 38 54.94
	6965.00	0.07	114.64	6959.41	-75.05	75.05	14.34	0.02	488949.45	763036.44	N 32 22 10.69 W	103 38 54.94
	7060.00	0.02	228.59	7054.41	-75.02	75.02	14.38	0.08	488949.41	763036.48	N 32 22 10.69 W	103 38 54.94
	7156.00	0.13	220.58	7150.41	-74.92	74.92	14.29	0.11	488949.32	763036.39	N 32 22 10.69 W	103 38 54.94
	7251.00	0.05	207.88	7245.41	-74.81	74.80	14.20	0.09	488949.20	763036.30	N 32 22 10.69 W	103 38 54.94
	7346.00	0.07	98.37	7340.41	-74.76	74.76	14.24	0.10	488949.16	763036.34	N 32 22 10.69 W	103 38 54.94
	7442.00	0.07	225.60	7436.41	-74.71	74.71	14.26	0.13	488949.11	763036.38	N 32 22 10.69 W	103 38 54.94
	7537.00	0.10	47.20	7531.41	-74.73	74.73	14.28	0.18	488949.12	763036.38	N 32 22 10.69 W	103 38 54.94
	7632.00	0.05	159.75	7626.41	-74.74	74.74	14.35	0.13	488949.14	763036.45	N 32 22 10.69 W	103 38 54.94
	7727.00	0.07	12.20	7721.41	-74.78	74.78	14.38	0.12	488949.16	763036.48	N 32 22 10.69 W	103 38 54.94
	7823.00	0.07	96.26	7817.41	-74.81	74.81	14.45	0.10	488949.21	763036.55	N 32 22 10.69 W	103 38 54.94
	8014.00	0.02	287.33	8008.41	-74.81	74.81	14.53	0.05	488949.21	763036.63	N 32 22 10.69 W	103 38 54.93
	8108.00	0.05	34.44	8102.41	-74.85	74.85	14.54	0.08	488949.25	763036.64	N 32 22 10.69 W	103 38 54.93
	8204.00	0.05	254.00	8198.41	-74.87	74.87	14.62	0.10	488949.27	763036.62	N 32 22 10.69 W	103 38 54.93
	8299.00	0.09	356.36	8293.41	-74.94	74.93	14.48	0.12	488949.33	763036.58	N 32 22 10.69 W	103 38 54.94
	8394.00	0.05	111.12	8388.41	-75.00	74.99	14.51	0.13	488949.39	763036.61	N 32 22 10.69 W	103 38 54.93
	8584.00	0.07	297.63	8578.41	-75.02	75.02	14.49	0.08	488949.41	763036.59	N 32 22 10.69 W	103 38 54.94
	8680.00	0.08	357.68	8674.41	-75.11	75.11	14.43	0.08	488949.51	763036.53	N 32 22 10.69 W	103 38 54.94
	8775.00	0.15	263.33	8769.41	-75.16	75.16	14.31	0.18	488949.56	763036.41	N 32 22 10.69 W	103 38 54.94
	8870.00	0.27	157.90	8864.41	-74.94	74.94	14.27	0.36	488949.34	763036.37	N 32 22 10.69 W	103 38 54.94
	8966.00	0.32	224.72	8960.40	-74.54	74.54	14.17	0.34	488948.94	763036.27	N 32 22 10.69 W	103 38 54.94
	9061.00	0.66	209.33	9055.40	-73.88	73.88	13.71	0.38	488948.27	763035.81	N 32 22 10.69 W	103 38 54.94
	9157.00	1.13	187.50	9151.39	-72.49	72.49	13.16	0.52	488948.69	763035.26	N 32 22 10.67 W	103 38 54.95
	9247.00	0.79	215.07	9241.36	-69.63	69.63	11.84	0.23	488944.03	763033.43	N 32 22 10.64 W	103 38 54.97
	9442.00	0.68	228.45	9436.36	-68.72	68.72	11.04	0.21	488943.12	763033.14	N 32 22 10.63 W	103 38 54.98
	9537.00	0.44	279.25	9531.35	-68.41	68.41	10.26	0.55	488942.81	763032.36	N 32 22 10.63 W	103 38 54.99
	9632.00	1.53	288.03	9626.34	-68.82	68.82	8.68	1.15	488943.21	763030.78	N 32 22 10.63 W	103 38 55.00
	9728.00	3.03	332.47	9722.26	-71.42	71.42	6.28	2.38	488945.62	763028.38	N 32 22 10.66 W	103 38 55.03
	9823.00	4.78	340.69	9817.04	-77.37	77.37	3.81	1.91	488951.76	763025.81	N 32 22 10.72 W	103 38 55.06
	9918.00	6.14	339.39	9911.61	-85.84	85.84	0.72	1.48	488960.24	763022.82	N 32 22 10.80 W	103 38 55.09
	10013.00	6.28	339.56	10006.05	-95.47	95.47	-2.88	0.15	488969.88	763019.22	N 32 22 10.90 W	103 38 55.14
	10108.00	6.17	333.31	10100.49	-104.90	104.90	-6.99	0.72	488979.29	763015.11	N 32 22 10.99 W	103 38 55.18
	10203.00	5.65	334.46	10194.99	-113.68	113.68	-11.30	0.56	488988.07	763010.80	N 32 22 11.08 W	103 38 55.23
	10299.00	5.81	337.46	10290.51	-122.43	122.43	-15.20	0.35	488996.83	763006.90	N 32 22 11.18 W	103 38 55.28
	10394.00	5.59	332.71	10385.04	-130.98	130.98	-19.16	0.55	489005.38	763002.94	N 32 22 11.25 W	103 38 55.32
	10489.00	6.51	328.79	10479.51	-139.60	139.60	-24.24	1.17	489014.00	762997.88	N 32 22 11.33 W	103 38 55.38
	10584.00	7.84	330.46	10573.76	-149.74	149.74	-30.38	1.48	489024.14	762991.72	N 32 22 11.44 W	103 38 55.45
	10679.00	7.79	322.13	10667.89	-160.46	160.46	-37.53	1.19	489034.86	762984.57	N 32 22 11.54 W	103 38 55.53
	10775.00	7.95	319.75	10762.98	-170.66	170.67	-45.81	0.38	489045.06	762978.29	N 32 22 11.64 W	103 38 55.63
	10870.00	8.33	316.63	10857.02	-180.68	180.68	-54.78	0.61	489055.08	762970.32	N 32 22 11.74 W	103 38 55.73
	10965.00	8.40	308.30	10951.02	-189.98	189.99	-64.95	1.28	489064.38	762961.15	N 32 22 11.84 W	103 38 55.85
	11061.00	8.00	310.99	11046.04	-198.71	198.72	-75.50	0.58	489073.11	762946.60	N 32 22 11.92 W	103 38 55.97
	11127.00	8.02	311.63	11111.39	-204.78	204.78	-82.41	0.14	489078.18	762938.70	N 32 22 11.98 W	103 38 56.05
	11254.00	7.35	289.13	11237.28	-213.33	213.34	-96.71	2.41	489087.73	762925.40	N 32 22 12.07 W	103 38 56.22
	11348.00	13.58	196.18	11330.16	-204.64	204.65	-105.52	16.74	489079.05	762916.59	N 32 22 11.98 W	103 38 56.32
	11443.00	17.78	193.22	11421.61	-179.81	179.83	-111.94	4.48	489054.22	762910.16	N 32 22 11.74 W	103 38 56.40
	11511.00	22.07	176.79	11485.58	-156.93	156.95	-113.60	10.33	489031.34	762906.50	N 32 22 11.51 W	103 38 56.42
	11537.00	24.75	173.07	11508.44	-146.65	146.68	-112.67	11.77	489021.06	762909.43	N 32 22 11.41 W	103 38 56.41
100' FNL Crossed	11554.00	27.08	173.15	11524.73	-139.28	139.29	-111.78	13.74	489013.68	762910.32	N 32 22 11.34 W	103 38 56.40
	11631.00	37.66	173.39	11589.67	-98.39	98.40	-106.97	13.74	488972.80	762915.14	N 32 22 10.93 W	103 38 56.35
	11726.00	43.15	173.90	11681.99	-37.21	37.22	-100.17	5.79	488911.62	762921.94	N 32 22 10.33 W	103 38 56.27
3rd Bone Spring Intersection	11749.93	48.19	174.19	11679.00	-20.49	20.49	-98.42	12.73	488894.89	762923.68	N 32 22 10.16 W	103 38 56.26
	11820.00	55.09	174.90	11723.40	33.39	-33.38	-93.30	12.73	488841.02	762928.80	N 32 22 9.63 W	103 38 56.20
	11914.00	58.38	171.67	11774.97	111.43	-111.42	-84.21	4.40	488762.98	762937.89	N 32 22 8.88 W	103 38 56.10
	12009.00	65.10	169.46	11819.94	193.92	-193.92	-70.60	7.44	488680.49	762951.51	N 32 22 8.04 W	103 38 55.95
	12103.00	76.82	172.18	11850.72	281.44	-281.44	-56.53	12.56	488592.97	762965.58	N 32 22 7.17 W	103 38 55.79
	12198.00	81.07	173.06	11869.09	373.85	-373.85	-44.56	4.77	488500.57	762977.54	N 32 22 6.26 W	103 38 55.68
	12293.00	90.59	178.34	11876.00	468.19	-468.19	-37.50	11.45	488406.23	762984.61	N 32 22 5.32 W	103 38 55.58
	12323.00	90.93	178.66	11875.60	486.18	-486.18	-36.71	1.56	488378.24	762985.39	N 32 22 5.03 W	103 38 55.58
	12350.00	90.89	179.48	11875.17	525.17	-525.17	-36.27	2.97	488349.25	762985.83	N 32 22 4.76 W	103 38 55.57
	12444.00	90.27	179.94	11874.22	619.16	-619.16	-35.78	0.83	488255.26	762988.33	N 32 22 3.83 W	103 38 55.58
	12539.00	89.54	182.69	11874.38	714.13	-714.13	-37.96	2.99	488180.30	762994.18	N 32 22 2.89 W	103 38 55.61
	12634.00	89.61	182.73	11875.08	809.02	-809.02	-42.45	0.48	488065.41	762979.65	N 32 22 1.95 W	103 38 55.67
	12728.00	89.68	182.28	11876.68	902.93	-902.93	-46.56	0.48	487971.51	762975.55	N 32 22 1.02 W	103 38 55.72
	12823.00	89.48	182.71	11876.38	997.84	-997.84	-50.69	0.50	487876.60	762971.41	N 32 22 0.08 W	103 38 55.78
	12917.00	89.85	181.95	11877.24	1091.76	-1091.76	-54.51	0.90	487782.69	762967.59	N 32 21 59.15 W	103 38 55.83
	13011.00	89.75	181.47	11877.57	1185.69	-1185.69	-58.14	0.56	4			

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15846.00	89.97	181.00	11870.04	4019.74	-4019.73	-34.93	0.50	494654.81	762967.18	N 32 21 30.16 W	103 38 55.83
	15941.00	88.91	181.27	11870.97	4114.71	-4114.71	-36.81	1.15	494759.84	762965.29	N 32 21 29.24 W	103 38 55.86
	16035.00	89.32	180.71	11872.42	4208.69	-4208.68	-38.43	0.74	494665.87	762963.67	N 32 21 28.31 W	103 38 55.89
	16130.00	88.60	179.97	11874.14	4303.67	-4303.66	-39.00	1.09	494570.89	762963.11	N 32 21 27.37 W	103 38 55.90
	16225.00	87.29	179.90	11877.55	4388.60	-4388.60	-38.69	1.38	494475.96	762963.21	N 32 21 26.43 W	103 38 55.91
	16320.00	87.63	178.12	11881.78	4483.49	-4483.49	-37.25	1.91	494381.07	762964.85	N 32 21 25.49 W	103 38 55.90
	16414.00	87.92	175.99	11885.41	4587.29	-4587.29	-32.42	2.29	494287.28	762969.68	N 32 21 24.56 W	103 38 55.85
	16509.00	88.64	177.72	11888.28	4682.10	-4682.10	-27.21	1.97	494192.47	762994.89	N 32 21 23.63 W	103 38 55.79
	16604.00	92.74	179.92	11887.12	4777.05	-4777.05	-25.26	4.90	494097.53	762996.84	N 32 21 22.69 W	103 38 55.78
	16699.00	92.05	184.61	11883.15	4871.88	-4871.88	-29.01	4.99	494002.72	762993.09	N 32 21 21.75 W	103 38 55.83
	16793.00	92.53	183.24	11879.39	4965.57	-4965.56	-35.44	1.54	493908.02	762988.66	N 32 21 20.82 W	103 38 55.91
	16887.00	92.67	182.46	11875.13	5059.35	-5059.35	-40.11	0.84	493815.24	762982.00	N 32 21 19.89 W	103 38 55.97
	16982.00	89.54	181.69	11873.29	5154.26	-5154.26	-43.54	3.39	493720.33	762978.56	N 32 21 18.96 W	103 38 56.02
	17076.00	91.39	182.09	11872.53	5248.20	-5248.20	-46.84	2.01	493626.39	762975.46	N 32 21 18.03 W	103 38 56.08
	17172.00	91.09	182.98	11870.45	5344.09	-5344.08	-50.89	0.98	493530.51	762971.21	N 32 21 17.08 W	103 38 56.12
	17266.00	90.85	183.91	11868.78	5437.90	-5437.90	-56.54	1.00	493436.70	762965.57	N 32 21 16.15 W	103 38 56.19
	17361.00	92.29	181.11	11866.09	5532.78	-5532.78	-60.70	3.27	493341.85	762961.41	N 32 21 15.21 W	103 38 56.25
	17455.00	92.38	177.58	11862.28	5626.66	-5626.66	-59.62	3.75	493247.95	762962.48	N 32 21 14.28 W	103 38 56.25
	17550.00	92.50	175.08	11858.25	5721.37	-5721.37	-53.55	2.63	493153.24	762968.55	N 32 21 13.34 W	103 38 56.18
	17644.00	92.15	174.42	11854.44	5814.90	-5814.90	-44.95	0.79	493059.72	762971.95	N 32 21 12.42 W	103 38 56.09
	17739.00	91.40	178.09	11851.50	5909.53	-5909.52	-37.10	1.93	492965.09	762985.00	N 32 21 11.48 W	103 38 56.00
	17833.00	90.98	178.48	11849.54	6003.39	-6003.39	-32.63	2.56	492871.23	762989.47	N 32 21 10.55 W	103 38 55.98
	17927.00	90.54	179.74	11848.30	6097.37	-6097.37	-31.18	1.44	492777.26	762990.95	N 32 21 9.62 W	103 38 55.95
	18022.00	90.09	181.67	11847.77	6192.36	-6192.35	-32.32	2.09	492682.72	762998.78	N 32 21 8.68 W	103 38 55.97
	18116.00	90.26	181.25	11847.49	6286.33	-6286.32	-34.72	0.48	492588.31	762987.38	N 32 21 7.75 W	103 38 56.01
	18211.00	90.30	180.71	11847.02	6381.31	-6381.31	-38.34	0.57	492493.33	762985.78	N 32 21 6.81 W	103 38 56.03
	18305.00	90.33	180.21	11846.51	6475.31	-6475.30	-37.10	0.53	492399.34	762985.00	N 32 21 5.88 W	103 38 56.05
	18399.00	90.33	181.89	11845.96	6569.28	-6569.28	-38.82	1.79	492305.36	762983.28	N 32 21 4.95 W	103 38 56.08
	18494.00	89.74	180.75	11845.91	6664.25	-6664.25	-41.01	1.35	492210.39	762981.09	N 32 21 4.01 W	103 38 56.11
	18589.00	89.30	182.68	11846.70	6759.21	-6759.20	-43.85	2.08	492115.44	762978.25	N 32 21 3.07 W	103 38 56.15
	18683.00	89.50	181.19	11847.69	6853.15	-6853.14	-47.03	1.60	492021.51	762975.08	N 32 21 2.15 W	103 38 56.19
	18778.00	89.09	179.51	11849.00	6950.13	-6950.13	-47.68	1.62	491914.53	762974.42	N 32 21 1.09 W	103 38 56.21
	18872.00	88.65	177.97	11850.48	7042.10	-7042.09	-45.88	1.90	491832.57	762978.22	N 32 21 0.28 W	103 38 56.20
	18966.00	88.30	179.36	11852.81	7138.04	-7138.03	-43.69	1.59	491738.63	762978.41	N 32 20 59.35 W	103 38 56.18
	19061.00	88.75	178.63	11855.28	7230.99	-7230.99	-42.02	0.80	491643.66	762980.08	N 32 20 58.41 W	103 38 56.17
	19156.00	87.96	178.22	11857.99	7325.91	-7325.91	-39.41	0.84	491548.76	762982.69	N 32 20 57.47 W	103 38 56.14
	19250.00	87.75	178.91	11861.51	7419.82	-7419.82	-37.06	0.77	491454.86	762985.04	N 32 20 56.54 W	103 38 56.12
	19345.00	87.72	178.94	11865.26	7514.73	-7514.73	-35.28	0.04	491359.95	762986.82	N 32 20 55.60 W	103 38 56.11
	19439.00	87.23	178.17	11873.59	7603.48	-7603.48	-30.52	0.48	491171.20	762991.58	N 32 20 53.73 W	103 38 56.07
	19533.00	87.82	180.00	11877.69	7698.38	-7698.37	-29.00	2.02	491076.31	762993.10	N 32 20 52.79 W	103 38 56.06
	19627.00	88.20	178.18	11880.95	7792.30	-7792.30	-27.51	1.98	490982.39	762994.59	N 32 20 51.88 W	103 38 56.05
	19721.00	88.33	178.84	11883.80	7886.23	-7886.23	-25.07	0.72	490888.47	762997.03	N 32 20 50.93 W	103 38 56.03
	19815.00	88.37	179.17	11888.15	7980.11	-7980.11	-23.44	2.11	490794.59	762998.66	N 32 20 50.00 W	103 38 56.01
	19909.00	87.65	178.67	11893.05	8073.96	-8073.96	-21.67	1.48	490700.74	763000.43	N 32 20 49.07 W	103 38 56.00
	20003.00	87.96	178.61	11896.69	8167.82	-8167.82	-19.41	0.33	490605.84	763002.69	N 32 20 48.14 W	103 38 55.98
	20097.00	87.58	179.13	11900.38	8261.77	-8261.77	-17.54	0.68	490510.93	763004.56	N 32 20 47.20 W	103 38 55.97
	20191.00	88.89	178.82	11903.28	8355.71	-8355.71	-15.86	1.43	490417.00	763006.24	N 32 20 46.27 W	103 38 55.96
	20285.00	88.92	178.77	11905.09	8449.66	-8449.66	-13.86	0.06	490322.04	763008.24	N 32 20 45.33 W	103 38 55.94
	20379.00	87.78	178.91	11907.80	8543.61	-8543.61	-11.86	1.22	490228.10	763010.14	N 32 20 44.40 W	103 38 55.93
	20473.00	87.96	178.89	11911.33	8637.53	-8637.53	-10.14	0.19	490133.19	763011.96	N 32 20 43.46 W	103 38 55.91
	20567.00	88.82	178.73	11913.97	8731.47	-8731.47	-8.19	0.93	490039.25	763013.91	N 32 20 42.53 W	103 38 55.90
	20661.00	88.47	178.35	11916.20	8825.41	-8825.41	-5.79	0.55	489945.31	763016.31	N 32 20 41.60 W	103 38 55.88
	20755.00	88.64	178.47	11918.59	8919.35	-8919.35	-3.16	0.22	489850.38	763018.94	N 32 20 40.66 W	103 38 55.85
	20849.00	88.40	178.49	11921.02	9013.28	-9013.28	-0.66	0.28	489756.45	763021.44	N 32 20 39.73 W	103 38 55.83
	20943.00	88.68	179.13	11923.44	9107.22	-9107.22	1.31	0.74	489661.51	763023.41	N 32 20 38.79 W	103 38 55.82
	21037.00	87.89	179.47	11925.86	9201.16	-9201.16	2.47	0.91	489566.56	763025.47	N 32 20 37.85 W	103 38 55.81
	21131.00	88.71	179.41	11928.27	9295.10	-9295.10	3.39	0.87	489472.61	763027.49	N 32 20 36.92 W	103 38 55.81
	21225.00	88.03	181.63	11931.77	9389.04	-9389.04	2.36	2.65	489377.67	763029.46	N 32 20 35.98 W	103 38 55.82
	21319.00	88.68	180.93	11934.47	9482.98	-9482.98	0.10	1.18	489283.74	763031.84	N 32 20 35.05 W	103 38 55.86
	21413.00	89.13	177.23	11937.28	9576.92	-9576.92	1.62	3.92	489188.79	763034.22	N 32 20 34.11 W	103 38 55.85
	21507.00	89.30	180.02	11940.40	9670.86	-9670.86	3.88	2.97	489094.84	763036.60	N 32 20 33.18 W	103 38 55.83
	21601.00	88.89	177.84	11943.49	9764.77	-9764.77	7.40	1.16	489000.91	763038.97	N 32 20 32.25 W	103 38 55.80
	21695.00	88.57	181.88	11946.49	9858.68	-9858.68	7.87	2.12	488914.00	763041.34	N 32 20 31.31 W	103 38 55.81
	21789.00	88.51	181.06	11949.49	9952.59	-9952.59	6.39	1.43	488827.09	763043.71	N 32 20 30.38 W	103 38 55.83
	21883.00	88.47	180.80	11952.49	10046.50	-10046.50	5.93	1.43	488740.18	763046.08	N 32 20 29.45 W	103 38 55.84
	21977.00	88.47	180.60	11955.49	10140.41	-10140.41	5.47	0.00	488653.27	763048.45	N 32 20 28.52 W	103 38 55.85

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% Confidence 2.7855 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	25.000	1/88.425	30.000	30.000 GYD_GC+DROP+OH-Depth Only	Original Borehole / Oxy Avogato 30-31 State Com 32H Gyro + MWD 0-22127MD
	1	25.000	25.000	Act Strs	30.000	30.000 GYD_GC+DROP+OH-Depth Only	Original Borehole / Oxy Avogato 30-31 State Com 32H Gyro + MWD 0-22127MD
	1	25.000	1023.000	Act Strs	30.000	GYD_GC+DROP+OH	Original Borehole / Oxy Avogato 30-31 State Com 32H Gyro + Original Borehole / Oxy Avogato
	1	1023.000	8870.000	Act Strs	30.000	A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 32H Gyro + MWD 0-22127MD
	1	8870.000	9632.000	Act Strs	30.000	B001Mb_MWD+HRGM	Original Borehole / Oxy Avogato 30-31 State Com 32H Gyro + Original Borehole / Oxy Avogato
	1	9632.000	22127.000	Act Strs	30.000	A010Mb_MWD+IFR1+SAG+MS	30-31 State Com 32H Gyro + MWD 0-22127MD

...Original Borehole/Oxy Avogato 30-31 State Com 32H Gyro + MWD 0-22127MD