**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**



June 20, 2018

30-015-44528

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

Re:

12, 24S, 30E, Eddy NM
N 32.22618 W 103.82810

CLIENT: OXY USA Inc.
WELL: Nimitz MDP1 12 Federal Com 6H
FIELD: Cotton Draw Bone Spring

RIG: H&P 656
COUNTY: Eddy
API NO: 30-015-44528
JOB NO: 18MLD2960

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 |
|---|---|---|---|---|---|---|
| Robert Hargrave FE | Nimitz MDP1 12 Federal Com 6H Original Hole | 10169.00 Ft | to 19738.00 Ft | May 13, 2018 | to June 1, 2018 | TelePacer SlimPulse |

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

Mike Stephens
Field Service Manager

**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:
12, 24S, 30E, Eddy NM
N 32.22618 W 103.82810

I, Robert Hargrave certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of May 13, 2018 through June 01, 2018, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 10169.00 feet to a depth of 19738.00 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 Nimitz MDP1 12 Federal Com 6H Well (Original Hole) API No. 30-015-44528 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
Robert Hargrave
FE

Subscribed and Sworn to before me this 20th day of June (month) 2018 (yr)

My Commission expires:

2-16-2022

D. Adams
Notary Public

Adams County Colorado
(County State)

(Signature)
DONNA ADAMS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20164007893
MY COMMISSION EXPIRES FEBRUARY 16, 2022

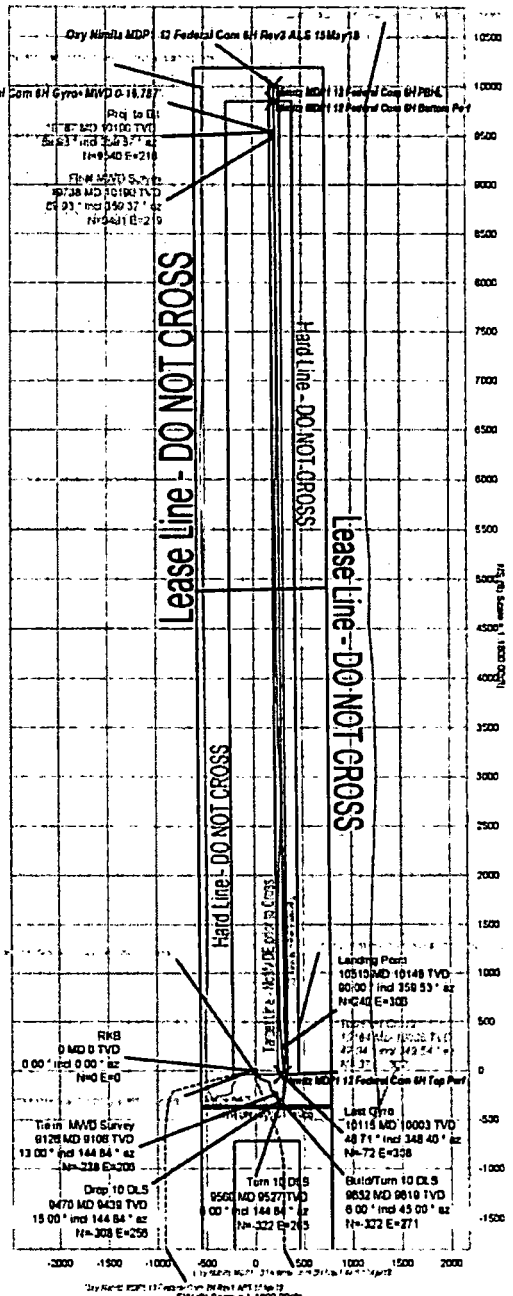
**Schlumberger** OXY

| Borehole: | Well: | Field: | Structure: |
|---|---|---|---|
| Original Borehole | Oxy Nimitz MDP1 12 Federal Com 6H | NM Eddy County (NAD 83) | Oxy Nimitz MDP1 12 Federal Com 6H |

| Gravity & Magnetic Parameters | Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet | Miscellaneous |
|---|---|---|
| Model: HDGM 2018 Dip: 59.978° Date: 09-May-2018 | Lat: N 32 13 34.27 Northing: 446387.42USft Grid Conv: 0.2686° | Oxy Nimitz MDP1 12 Federal Com 6H Slot: TVD Ref: RKB=26.5ft@3582.5ft above MSL |
| MagDec: 6.917° FS: 48316.9854nT Gravity FS: 998.429mgn (9.80665 Based) | Lon: W 103 49 41.66 Easting: 697543.81USft Scale Fact: 0.99993784 | Plan: Oxy Nimitz MDP1 12 Federal Com 6H Rev2 ALS 15May18 |

Grid
True
Mag

Grid North
Tot Corr (M->G 6.648°)
Mag Dec (6.917°)
Grid Conv (0.269°)





Vertical Section (ft) Azim = 1.30° Scale = 1:1900.00(ft) Origin = 0N/-S, 0E/-W

Schlumberger

# Oxy Nimitz MDP1 12 Federal Com 6H Gyro+MWD 0-19,787' Survey
## Geodetic Report
(Def Survey)

| | | | |
|---|---|---|---|
| **Report Date:** | June 08, 2018 - 05:19 PM | **Survey / DLS Computation:** | Minimum Curvature / Lubinski |
| **Client:** | OXY | **Vertical Section Azimuth:** | 1.299 ° (Grid North) |
| **Field:** | NM Eddy County (NAD 83) | **Vertical Section Origin:** | 0.000 ft, 0.000 ft |
| **Structure / Slot:** | Oxy Nimitz MDP1 12 Federal Com 6H / Oxy Nimitz MDP1 12 Federal Com 6H | **TVD Reference Datum:** | RKB=26.5' |
| **Well:** | Oxy Nimitz MDP1 12 Federal Com 6H | **TVD Reference Elevation:** | 3552.500 ft above MSL |
| **Borehole:** | Original Borehole | **Seabed / Ground Elevation:** | 3526.000 ft above MSL |
| **UWI / API#:** | Unknown / 30-015-44526 | **Magnetic Declination:** | 6.917 ° |
| **Survey Name:** | Oxy Nimitz MDP1 12 Federal Com 6H Gyro+MWD 0-19,787' | **Total Gravity Field Strength:** | 998.4284mgn (9.80665 Based) |
| **Survey Date:** | May 09, 2018 | **Gravity Model:** | GARM |
| **Tort / AHD / DDI / ERD Ratio:** | 271.347 ° / 10346.816 ft / 6.736 / 1.015 | **Total Magnetic Field Strength:** | 48019.955 nT |
| **Coordinate Reference System:** | NAD83 New Mexico State Plane, Eastern Zone, US Feet | **Magnetic Dip Angle:** | 59.976 ° |
| **Location Lat / Long:** | N 32° 13' 34.26932", W 103° 49' 41.45207" | **Declination Date:** | May 09, 2018 |
| **Location Grid N/E Y/X:** | N 446387.430 RUS, E 697543.900 RUS | **Magnetic Declination Model:** | HDGM 2018 |
| **CRS Grid Convergence Angle:** | 0.2694 ° | **North Reference:** | Grid North |
| **Grid Scale Factor:** | 0.99993704 | **Grid Convergence Used:** | 0.2694 ° |
| **Version / Patch:** | 2.10.720.0 | **Total Corr Mag North->Grid North:** | 6.6476 ° |
| | | **Local Coord Referenced To:** | Well Head |

| Comments | MD (ft) | Incl (°) | Azim 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | N/A | 446387.43 | 697543.90 | N 32 13 34.27 | W 103 49 41.45 |
| SHL | 26.50 | 0.00 | 0.00 | 26.50 | 0.00 | 0.00 | 0.00 | 0.00 | 446387.43 | 697543.90 | N 32 13 34.27 | W 103 49 41.45 |
| | 63.60 | 0.75 | 173.63 | 63.60 | -0.24 | -0.24 | 0.03 | 2.02 | 446387.19 | 697543.93 | N 32 13 34.27 | W 103 49 41.45 |
| | 126.20 | 0.10 | 283.11 | 126.20 | -0.84 | -0.84 | 0.02 | 1.26 | 446386.79 | 697543.92 | N 32 13 34.26 | W 103 49 41.45 |
| | 220.20 | 0.25 | 238.09 | 220.20 | -0.74 | -0.73 | -0.23 | 0.21 | 446386.70 | 697543.67 | N 32 13 34.26 | W 103 49 41.45 |
| | 314.30 | 0.46 | 240.31 | 314.29 | -1.05 | -1.03 | -0.73 | 0.22 | 446386.40 | 697543.17 | N 32 13 34.26 | W 103 49 41.46 |
| | 408.30 | 0.51 | 249.54 | 408.29 | -1.40 | -1.37 | -1.45 | 0.10 | 446386.06 | 697542.45 | N 32 13 34.26 | W 103 49 41.47 |
| | 502.30 | 0.49 | 256.03 | 502.29 | -1.66 | -1.61 | -2.23 | 0.06 | 446385.82 | 697541.67 | N 32 13 34.25 | W 103 49 41.48 |
| | 596.40 | 0.52 | 270.50 | 596.38 | -1.77 | -1.70 | -3.05 | 0.14 | 446385.73 | 697540.85 | N 32 13 34.25 | W 103 49 41.49 |
| | 690.40 | 0.44 | 252.32 | 690.38 | -1.90 | -1.81 | -3.82 | 0.18 | 446385.62 | 697540.08 | N 32 13 34.25 | W 103 49 41.50 |
| | 784.40 | 0.39 | 247.65 | 784.38 | -2.14 | -2.04 | -4.46 | 0.06 | 446385.39 | 697539.44 | N 32 13 34.25 | W 103 49 41.50 |
| | 878.60 | 0.30 | 246.13 | 878.58 | -2.37 | -2.26 | -4.98 | 0.10 | 446385.17 | 697538.92 | N 32 13 34.25 | W 103 49 41.51 |
| | 947.20 | 0.06 | 253.21 | 947.18 | -2.48 | -2.35 | -5.18 | 0.35 | 446385.08 | 697538.72 | N 32 13 34.25 | W 103 49 41.51 |
| | 1041.70 | 0.08 | 241.51 | 1041.68 | -2.51 | -2.39 | -5.28 | 0.03 | 446385.04 | 697538.62 | N 32 13 34.25 | W 103 49 41.51 |
| | 1136.10 | 0.07 | 251.52 | 1136.08 | -2.56 | -2.44 | -5.40 | 0.02 | 446384.99 | 697538.50 | N 32 13 34.25 | W 103 49 41.52 |
| | 1230.50 | 0.09 | 243.02 | 1230.48 | -2.62 | -2.49 | -5.52 | 0.02 | 446384.94 | 697538.38 | N 32 13 34.24 | W 103 49 41.52 |
| | 1325.00 | 0.11 | 237.81 | 1324.98 | -2.70 | -2.57 | -5.66 | 0.02 | 446384.86 | 697538.24 | N 32 13 34.24 | W 103 49 41.52 |
| | 1419.40 | 0.11 | 234.40 | 1419.38 | -2.81 | -2.68 | -5.81 | 0.01 | 446384.75 | 697538.09 | N 32 13 34.24 | W 103 49 41.52 |
| | 1513.80 | 0.10 | 232.31 | 1513.78 | -2.91 | -2.78 | -5.95 | 0.01 | 446384.65 | 697537.95 | N 32 13 34.24 | W 103 49 41.52 |
| | 1608.20 | 0.10 | 229.64 | 1608.18 | -3.02 | -2.88 | -6.08 | 0.00 | 446384.55 | 697537.82 | N 32 13 34.24 | W 103 49 41.52 |
| | 1702.50 | 0.10 | 219.64 | 1702.48 | -3.14 | -3.00 | -6.19 | 0.02 | 446384.43 | 697537.71 | N 32 13 34.24 | W 103 49 41.53 |
| | 1796.90 | 0.09 | 227.34 | 1796.88 | -3.26 | -3.11 | -6.30 | 0.02 | 446384.32 | 697537.60 | N 32 13 34.24 | W 103 49 41.53 |
| | 1891.20 | 0.10 | 220.76 | 1891.18 | -3.37 | -3.23 | -6.41 | 0.02 | 446384.20 | 697537.49 | N 32 13 34.24 | W 103 49 41.53 |
| | 1987.00 | 0.10 | 210.32 | 1986.98 | -3.51 | -3.36 | -6.50 | 0.02 | 446384.07 | 697537.40 | N 32 13 34.24 | W 103 49 41.53 |
| | 2079.90 | 0.10 | 209.98 | 2079.87 | -3.65 | -3.50 | -6.59 | 0.00 | 446383.93 | 697537.31 | N 32 13 34.23 | W 103 49 41.53 |
| | 2174.30 | 0.09 | 205.34 | 2174.27 | -3.79 | -3.64 | -6.66 | 0.01 | 446383.79 | 697537.24 | N 32 13 34.23 | W 103 49 41.53 |
| | 2268.60 | 0.10 | 204.51 | 2268.57 | -3.93 | -3.78 | -6.72 | 0.01 | 446383.65 | 697537.18 | N 32 13 34.23 | W 103 49 41.53 |
| | 2363.00 | 0.10 | 201.42 | 2362.97 | -4.09 | -3.93 | -6.79 | 0.01 | 446383.50 | 697537.11 | N 32 13 34.23 | W 103 49 41.53 |
| | 2457.40 | 0.07 | 228.72 | 2457.37 | -4.20 | -4.05 | -6.88 | 0.05 | 446383.38 | 697537.04 | N 32 13 34.23 | W 103 49 41.53 |
| | 2551.80 | 0.09 | 207.94 | 2551.77 | -4.31 | -4.15 | -6.94 | 0.04 | 446383.28 | 697536.98 | N 32 13 34.23 | W 103 49 41.53 |
| | 2646.30 | 0.10 | 190.13 | 2646.27 | -4.46 | -4.30 | -6.99 | 0.03 | 446383.13 | 697536.91 | N 32 13 34.23 | W 103 49 41.53 |
| | 2740.70 | 0.09 | 195.17 | 2740.67 | -4.61 | -4.45 | -7.02 | 0.01 | 446382.98 | 697536.88 | N 32 13 34.23 | W 103 49 41.53 |
| | 2835.10 | 0.10 | 208.54 | 2835.07 | -4.75 | -4.60 | -7.08 | 0.03 | 446382.83 | 697536.82 | N 32 13 34.22 | W 103 49 41.53 |
| | 2929.40 | 0.10 | 207.03 | 2929.37 | -4.90 | -4.74 | -7.16 | 0.00 | 446382.69 | 697536.74 | N 32 13 34.22 | W 103 49 41.54 |
| | 3023.80 | 0.05 | 212.14 | 3023.77 | -5.01 | -4.85 | -7.22 | 0.05 | 446382.58 | 697536.68 | N 32 13 34.22 | W 103 49 41.54 |
| | 3118.20 | 0.15 | 276.95 | 3118.17 | -5.03 | -4.87 | -7.30 | 0.14 | 446382.56 | 697536.54 | N 32 13 34.22 | W 103 49 41.54 |
| | 3212.50 | 0.32 | 261.50 | 3212.47 | -5.07 | -4.89 | -7.75 | 0.19 | 446382.54 | 697536.15 | N 32 13 34.22 | W 103 49 41.54 |
| | 3306.90 | 0.36 | 258.13 | 3306.87 | -5.16 | -4.99 | -8.30 | 0.05 | 446382.44 | 697535.60 | N 32 13 34.22 | W 103 49 41.55 |
| | 3401.30 | 0.40 | 254.50 | 3401.27 | -5.34 | -5.14 | -8.90 | 0.05 | 446382.29 | 697535.00 | N 32 13 34.22 | W 103 49 41.56 |
| | 3495.70 | 0.36 | 233.85 | 3495.67 | -5.62 | -5.41 | -9.46 | 0.15 | 446382.02 | 697534.44 | N 32 13 34.22 | W 103 49 41.56 |
| | 3590.30 | 0.24 | 222.49 | 3590.27 | -5.95 | -5.73 | -9.84 | 0.14 | 446381.70 | 697534.07 | N 32 13 34.21 | W 103 49 41.57 |
| | 3684.60 | 0.09 | 144.93 | 3684.57 | -6.16 | -5.93 | -9.93 | 0.25 | 446381.50 | 697533.97 | N 32 13 34.21 | W 103 49 41.57 |
| | 3779.00 | 0.08 | 81.18 | 3778.97 | -6.20 | -5.98 | -9.82 | 0.10 | 446381.45 | 697534.08 | N 32 13 34.21 | W 103 49 41.57 |
| | 3873.40 | 0.09 | 94.25 | 3873.37 | -6.20 | -5.98 | -9.68 | 0.02 | 446381.45 | 697534.22 | N 32 13 34.21 | W 103 49 41.57 |
| | 3967.80 | 0.09 | 83.93 | 3967.77 | -6.19 | -5.98 | -9.53 | 0.02 | 446381.45 | 697534.37 | N 32 13 34.21 | W 103 49 41.56 |
| | 4062.20 | 0.14 | 94.80 | 4062.18 | -6.19 | -5.98 | -9.34 | 0.08 | 446381.45 | 697534.56 | N 32 13 34.21 | W 103 49 41.56 |
| | 4184.90 | 0.12 | 80.32 | 4184.88 | -6.17 | -5.97 | -9.11 | 0.04 | 446381.46 | 697534.79 | N 32 13 34.21 | W 103 49 41.56 |
| | 4259.30 | 0.17 | 263.27 | 4259.26 | -6.17 | -5.97 | -9.15 | 0.31 | 446381.46 | 697534.75 | N 32 13 34.21 | W 103 49 41.56 |
| | 4353.60 | 0.41 | 117.71 | 4353.56 | -6.34 | -6.14 | -8.99 | 0.59 | 446381.29 | 697534.91 | N 32 13 34.21 | W 103 49 41.56 |
| | 4448.10 | 1.47 | 97.94 | 4448.05 | -6.63 | -6.47 | -7.49 | 1.18 | 446380.96 | 697536.41 | N 32 13 34.21 | W 103 49 41.54 |
| | 4542.50 | 2.18 | 97.02 | 4542.40 | -6.95 | -6.85 | -4.91 | 0.75 | 446380.58 | 697539.39 | N 32 13 34.20 | W 103 49 41.50 |
| | 4636.90 | 2.82 | 96.83 | 4636.71 | -7.36 | -7.35 | -0.42 | 0.68 | 446380.08 | 697543.48 | N 32 13 34.20 | W 103 49 41.46 |
| | 4731.00 | 2.44 | 96.89 | 4730.71 | -7.78 | -7.80 | 3.86 | 0.40 | 446379.57 | 697547.76 | N 32 13 34.19 | W 103 49 41.41 |
| | 4825.30 | 0.15 | 297.97 | 4824.99 | -7.92 | -8.05 | 5.75 | 2.74 | 446379.38 | 697549.65 | N 32 13 34.19 | W 103 49 41.39 |
| | 4919.60 | 0.13 | 263.71 | 4919.28 | -7.87 | -8.00 | 5.53 | 0.09 | 446379.43 | 697549.43 | N 32 13 34.19 | W 103 49 41.39 |
| | 5013.90 | 0.08 | 268.00 | 5013.58 | -7.89 | -8.02 | 5.36 | 0.05 | 446379.42 | 697549.26 | N 32 13 34.19 | W 103 49 41.39 |
| | 5108.20 | 0.11 | 129.99 | 5107.88 | -7.95 | -8.08 | 5.36 | 0.19 | 446379.35 | 697549.26 | N 32 13 34.18 | W 103 49 41.39 |
| | 5202.60 | 0.11 | 150.84 | 5202.28 | -8.09 | -8.21 | 5.48 | 0.04 | 446379.22 | 697549.38 | N 32 13 34.18 | W 103 49 41.39 |
| | 5297.00 | 0.11 | 144.81 | 5296.68 | -8.24 | -8.37 | 5.57 | 0.01 | 446379.06 | 697549.47 | N 32 13 34.18 | W 103 49 41.39 |
| | 5391.40 | 0.09 | 148.29 | 5391.08 | -8.37 | -8.50 | 5.66 | 0.02 | 446378.93 | 697549.56 | N 32 13 34.18 | W 103 49 41.39 |
| | 5485.70 | 0.13 | 141.77 | 5485.38 | -8.52 | -8.65 | 5.77 | 0.04 | 446378.78 | 697549.67 | N 32 13 34.18 | W 103 49 41.39 |
| | 5580.00 | 0.11 | 141.57 | 5579.68 | -8.67 | -8.81 | 5.89 | 0.02 | 446378.62 | 697549.79 | N 32 13 34.18 | W 103 49 41.38 |
| | 5674.30 | 0.11 | 162.78 | 5673.98 | -8.83 | -8.96 | 5.97 | 0.04 | 446378.47 | 697549.87 | N 32 13 34.18 | W 103 49 41.38 |
| | 5768.70 | 0.13 | 135.61 | 5768.38 | -8.99 | -9.13 | 6.08 | 0.06 | 446378.30 | 697549.98 | N 32 13 34.18 | W 103 49 41.38 |
| | 5863.20 | 0.11 | 126.04 | 5862.88 | -9.11 | -9.26 | 6.22 | 0.03 | 446378.17 | 697550.12 | N 32 13 34.18 | W 103 49 41.38 |
| | 5957.60 | 0.10 | 129.23 | 5957.28 | -9.21 | -9.36 | 6.36 | 0.01 | 446378.07 | 697550.26 | N 32 13 34.18 | W 103 49 41.38 |
| | 6052.00 | 0.10 | 128.71 | 6051.68 | -9.32 | -9.47 | 6.49 | 0.00 | 446377.97 | 697550.39 | N 32 13 34.18 | W 103 49 41.38 |
| | 6146.30 | 1.02 | 161.66 | 6145.98 | -10.16 | -10.31 | 6.82 | 0.99 | 446377.12 | 697550.72 | N 32 13 34.17 | W 103 49 41.37 |
| | 6240.50 | 2.62 | 159.80 | 6240.13 | -12.05 | -13.13 | 7.82 | 1.70 | 446374.30 | 697551.72 | N 32 13 34.14 | W 103 49 41.36 |
| | 6334.90 | 4.37 | 158.63 | 6334.35 | -16.28 | -18.50 | 9.88 | 1.86 | 446368.93 | 697553.78 | N 32 13 34.09 | W 103 49 41.34 |
| | 6429.40 | 5.88 | 159.85 | 6428.47 | -26.10 | -26.40 | 12.86 | 1.60 | 446361.03 | 697556.76 | N 32 13 34.01 | W 103 49 41.30 |
| | 6523.90 | 7.63 | 161.04 | 6522.31 | -38.50 | -36.68 | 16.57 | 1.86 | 446350.55 | 697560.47 | N 32 13 33.90 | W 103 49 41.26 |
| | 6618.20 | 7.24 | 153.22 | 6615.82 | -47.81 | -48.11 | 21.28 | 1.15 | 446339.33 | 697565.18 | N 32 13 33.79 | W 103 49 41.21 |
| | 6712.50 | 7.33 | 144.43 | 6709.36 | -57.87 | -58.30 | 27.45 | 1.18 | 446329.13 | 697571.35 | N 32 13 33.69 | W 103 49 41.14 |
| | 6806.90 | 7.28 | 129.59 | 6803.00 | -68.19 | -67.02 | 35.57 | 1.99 | 446320.42 | 697579.47 | N 32 13 33.60 | W 103 49 41.04 |
| | 6901.40 | 7.28 | 129.81 | 6896.74 | -73.63 | -74.66 | 44.78 | 0.03 | 446312.77 | 697588.68 | N 32 13 33.53 | W 103 49 40.93 |
| | 6995.80 | 7.40 | 122.38 | 6990.37 | -80.49 | -81.75 | 54.51 | 1.02 | 446305.69 | 697598.41 | N 32 13 33.46 | W 103 49 40.82 |
| | 7090.20 | 7.23 | 116.57 | 7084.00 | -86.16 | -87.66 | 64.96 | 0.80 | 446299.78 | 697608.85 | N 32 13 33.40 | W 103 49 40.70 |

| Comments | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | DLS (°/100ft) | Northing (nUS) | Easting (nUS) | Latitude (N/S ° ' ") | Longitude (E/W ° ' ") |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 7184.50 | 7.43 | 111.67 | 7177.93 | -90.62 | -92.56 | 75.93 | 0.70 | 446294.87 | 697819.83 | N 32 13 33.35 | W 103 49 40.57 |
| | 7278.90 | 7.26 | 112.10 | 7271.10 | -95.06 | -97.06 | 87.13 | 0.19 | 446290.37 | 697831.03 | N 32 13 33.30 | W 103 49 40.44 |
| | 7373.20 | 7.41 | 113.38 | 7364.68 | -99.46 | -101.72 | 98.23 | 0.24 | 446285.72 | 697842.13 | N 32 13 33.26 | W 103 49 40.31 |
| | 7467.60 | 7.40 | 113.34 | 7458.30 | -104.03 | -106.54 | 109.40 | 0.01 | 446280.90 | 697853.30 | N 32 13 33.21 | W 103 49 40.18 |
| | 7561.90 | 7.36 | 113.86 | 7551.82 | -108.63 | -111.39 | 120.50 | 0.08 | 446276.05 | 697864.39 | N 32 13 33.16 | W 103 49 40.06 |
| | 7656.20 | 7.22 | 114.19 | 7645.35 | -113.28 | -116.28 | 131.42 | 0.16 | 446271.15 | 697875.31 | N 32 13 33.11 | W 103 49 39.93 |
| | 7750.70 | 5.13 | 110.92 | 7739.30 | -117.02 | -120.25 | 140.78 | 2.25 | 446267.19 | 697884.67 | N 32 13 33.07 | W 103 49 39.82 |
| | 7845.10 | 2.63 | 104.55 | 7833.48 | -118.94 | -122.30 | 146.62 | 2.68 | 446265.14 | 697890.71 | N 32 13 33.05 | W 103 49 39.75 |
| | 7939.50 | 0.58 | 87.91 | 7927.84 | -119.41 | -122.82 | 149.39 | 2.20 | 446264.61 | 697893.28 | N 32 13 33.05 | W 103 49 39.72 |
| | 8033.80 | 1.84 | 191.44 | 8022.12 | -120.71 | -124.13 | 149.60 | 1.98 | 446263.31 | 697893.49 | N 32 13 33.03 | W 103 49 39.72 |
| | 8128.20 | 3.60 | 194.02 | 8116.42 | -124.93 | -128.33 | 148.81 | 2.08 | 446259.11 | 697892.50 | N 32 13 32.99 | W 103 49 39.73 |
| | 8222.60 | 5.42 | 179.73 | 8210.53 | -132.28 | -135.56 | 147.92 | 2.25 | 446251.76 | 697891.61 | N 32 13 32.92 | W 103 49 39.74 |
| | 8316.80 | 6.47 | 175.34 | 8304.22 | -142.00 | -145.40 | 148.37 | 1.21 | 446242.04 | 697892.26 | N 32 13 32.82 | W 103 49 39.73 |
| | 8411.10 | 6.89 | 187.77 | 8397.88 | -152.79 | -156.23 | 150.00 | 1.03 | 446231.21 | 697893.89 | N 32 13 32.72 | W 103 49 39.71 |
| | 8505.40 | 7.08 | 157.77 | 8491.46 | -163.61 | -167.13 | 153.40 | 1.30 | 446220.31 | 697897.29 | N 32 13 32.61 | W 103 49 39.66 |
| | 8599.90 | 6.91 | 160.39 | 8585.28 | -174.26 | -177.88 | 157.51 | 0.38 | 446209.56 | 697901.40 | N 32 13 32.50 | W 103 49 39.63 |
| | 8694.20 | 7.12 | 152.63 | 8678.88 | -184.69 | -188.41 | 162.10 | 1.03 | 446199.03 | 697905.99 | N 32 13 32.40 | W 103 49 39.58 |
| | 8788.60 | 8.14 | 143.30 | 8772.64 | -195.11 | -198.99 | 168.80 | 1.69 | 446188.45 | 697712.69 | N 32 13 32.29 | W 103 49 39.50 |
| | 8883.20 | 8.38 | 141.95 | 8866.06 | -205.70 | -209.77 | 177.03 | 0.33 | 446177.68 | 697720.92 | N 32 13 32.19 | W 103 49 39.40 |
| | 8977.50 | 9.55 | 143.48 | 8959.21 | -217.19 | -221.46 | 185.92 | 1.27 | 446165.98 | 697729.81 | N 32 13 32.07 | W 103 49 39.30 |
| | 9072.00 | 11.73 | 144.65 | 9052.08 | -231.09 | -235.60 | 196.15 | 2.32 | 446151.84 | 697740.03 | N 32 13 31.93 | W 103 49 39.18 |
| | 9166.40 | 14.62 | 144.38 | 9143.94 | -248.45 | -253.24 | 208.73 | 3.27 | 446134.20 | 697752.62 | N 32 13 31.75 | W 103 49 39.04 |
| | 9260.90 | 17.17 | 150.85 | 9234.79 | -270.11 | -275.23 | 222.62 | 3.09 | 446112.22 | 697766.50 | N 32 13 31.54 | W 103 49 38.88 |
| | 9355.40 | 16.07 | 148.50 | 9325.34 | -293.11 | -298.54 | 236.29 | 1.33 | 446088.91 | 697780.17 | N 32 13 31.30 | W 103 49 38.72 |
| | 9449.70 | 14.48 | 143.38 | 9416.31 | -313.37 | -319.12 | 250.13 | 2.23 | 446068.33 | 697794.02 | N 32 13 31.10 | W 103 49 38.56 |
| | 9544.10 | 3.31 | 87.70 | 9509.60 | -321.62 | -327.59 | 259.73 | 14.84 | 446059.86 | 697803.61 | N 32 13 31.02 | W 103 49 38.45 |
| | 9638.30 | 12.89 | 24.11 | 9602.81 | -310.81 | -316.93 | 268.56 | 11.39 | 446070.52 | 697810.44 | N 32 13 31.12 | W 103 49 38.37 |
| | 9733.00 | 27.31 | 19.33 | 9691.51 | -280.25 | -286.63 | 278.13 | 15.31 | 446100.82 | 697822.01 | N 32 13 31.42 | W 103 49 38.23 |
| | 9827.60 | 30.65 | 14.77 | 9774.27 | -236.15 | -242.82 | 291.46 | 4.23 | 446144.63 | 697835.34 | N 32 13 31.85 | W 103 49 38.07 |
| | 9922.00 | 34.98 | 11.90 | 9853.59 | -186.13 | -193.05 | 303.18 | 4.87 | 446194.40 | 697847.06 | N 32 13 32.35 | W 103 49 37.93 |
| | 10018.30 | 37.72 | 6.87 | 9929.95 | -130.81 | -137.92 | 312.11 | 4.30 | 446249.52 | 697855.99 | N 32 13 32.89 | W 103 49 37.83 |
| Last Gyro | 10114.80 | 46.71 | 348.43 | 10002.70 | -65.49 | -72.50 | 308.38 | 15.38 | 446314.94 | 697852.26 | N 32 13 33.54 | W 103 49 37.87 |
| | 10169.00 | 47.07 | 349.85 | 10039.75 | -26.83 | -33.85 | 300.85 | 1.81 | 446353.76 | 697844.73 | N 32 13 33.92 | W 103 49 37.95 |
| | 10263.00 | 53.22 | 353.38 | 10099.97 | 44.25 | 37.88 | 290.32 | 7.21 | 446425.10 | 697834.20 | N 32 13 34.63 | W 103 49 38.07 |
| | 10357.00 | 67.33 | 354.87 | 10146.40 | 125.02 | 118.66 | 281.90 | 15.06 | 446506.09 | 697825.79 | N 32 13 35.43 | W 103 49 38.16 |
| | 10452.00 | 88.07 | 355.78 | 10168.59 | 216.82 | 210.66 | 274.24 | 21.86 | 446598.07 | 697818.12 | N 32 13 36.34 | W 103 49 38.25 |
| | 10483.00 | 89.42 | 356.28 | 10167.27 | 247.68 | 241.57 | 272.08 | 4.64 | 446628.99 | 697815.97 | N 32 13 36.65 | W 103 49 38.27 |
| | 10568.00 | 90.14 | 355.50 | 10167.59 | 332.30 | 326.35 | 265.98 | 1.23 | 446713.76 | 697809.86 | N 32 13 37.49 | W 103 49 38.34 |
| | 10662.00 | 91.31 | 357.17 | 10166.41 | 425.93 | 420.15 | 259.97 | 2.17 | 446807.55 | 697803.85 | N 32 13 38.41 | W 103 49 38.40 |
| | 10757.00 | 90.45 | 357.07 | 10164.95 | 520.87 | 515.01 | 255.20 | 0.91 | 446902.41 | 697799.08 | N 32 13 39.35 | W 103 49 38.45 |
| | 10851.00 | 90.48 | 358.47 | 10164.18 | 614.48 | 608.84 | 251.54 | 1.49 | 446996.33 | 697795.42 | N 32 13 40.28 | W 103 49 38.49 |
| | 10946.00 | 90.41 | 359.21 | 10163.45 | 709.39 | 703.82 | 249.61 | 0.78 | 447091.30 | 697793.50 | N 32 13 41.22 | W 103 49 38.51 |
| | 11040.00 | 90.72 | 358.47 | 10162.52 | 803.30 | 797.69 | 247.71 | 0.85 | 447185.27 | 697791.60 | N 32 13 42.15 | W 103 49 38.52 |
| | 11134.00 | 90.86 | 357.54 | 10161.22 | 897.13 | 891.82 | 244.44 | 1.00 | 447279.20 | 697788.32 | N 32 13 43.08 | W 103 49 38.56 |
| | 11229.00 | 88.35 | 355.85 | 10161.88 | 991.81 | 986.85 | 238.08 | 3.19 | 447374.02 | 697782.65 | N 32 13 44.02 | W 103 49 38.62 |
| | 11323.00 | 90.93 | 0.44 | 10162.47 | 1085.64 | 1080.57 | 235.92 | 5.60 | 447467.93 | 697779.81 | N 32 13 44.95 | W 103 49 38.65 |
| | 11417.00 | 89.17 | 356.83 | 10162.39 | 1179.59 | 1174.56 | 235.32 | 2.54 | 447561.91 | 697779.21 | N 32 13 45.88 | W 103 49 38.65 |
| | 11512.00 | 89.69 | 359.96 | 10163.33 | 1274.53 | 1269.55 | 234.32 | 1.31 | 447656.90 | 697778.21 | N 32 13 46.82 | W 103 49 38.65 |
| | 11606.00 | 90.00 | 359.74 | 10163.59 | 1368.50 | 1363.55 | 234.07 | 0.40 | 447750.89 | 697777.96 | N 32 13 47.75 | W 103 49 38.65 |
| | 11701.00 | 89.66 | 0.01 | 10163.87 | 1463.47 | 1458.55 | 233.87 | 0.46 | 447845.88 | 697777.75 | N 32 13 48.69 | W 103 49 38.65 |
| | 11795.00 | 88.18 | 359.20 | 10165.84 | 1557.41 | 1552.52 | 233.22 | 1.79 | 447939.85 | 697777.10 | N 32 13 49.62 | W 103 49 38.65 |
| | 11984.00 | 91.03 | 3.06 | 10166.94 | 1746.35 | 1741.43 | 236.95 | 2.54 | 448128.74 | 697780.83 | N 32 13 51.49 | W 103 49 38.60 |
| | 12078.00 | 90.52 | 2.81 | 10165.67 | 1840.30 | 1835.29 | 241.84 | 0.57 | 448222.60 | 697785.73 | N 32 13 52.42 | W 103 49 38.54 |
| | 12172.00 | 90.58 | 2.26 | 10164.77 | 1934.27 | 1929.19 | 246.08 | 0.69 | 448318.49 | 697789.96 | N 32 13 53.35 | W 103 49 38.48 |
| | 12361.00 | 89.48 | 2.58 | 10164.67 | 2123.23 | 2118.02 | 254.06 | 0.61 | 448505.31 | 697797.94 | N 32 13 55.22 | W 103 49 38.38 |
| | 12456.00 | 90.28 | 3.31 | 10164.87 | 2218.19 | 2212.89 | 256.84 | 1.14 | 448600.18 | 697802.83 | N 32 13 56.15 | W 103 49 38.32 |
| | 12550.00 | 91.14 | 3.43 | 10163.70 | 2312.12 | 2306.72 | 264.47 | 0.92 | 448694.00 | 697808.35 | N 32 13 57.08 | W 103 49 38.25 |
| | 12739.00 | 90.45 | 2.62 | 10161.08 | 2501.02 | 2495.44 | 274.44 | 0.58 | 448882.70 | 697818.32 | N 32 13 58.95 | W 103 49 38.12 |
| | 12938.00 | 91.10 | 0.55 | 10158.39 | 2699.96 | 2694.33 | 278.94 | 1.09 | 449081.59 | 697823.83 | N 32 14 0.92 | W 103 49 38.05 |
| | 13033.00 | 89.17 | 0.05 | 10158.17 | 2794.96 | 2789.32 | 280.44 | 2.10 | 449176.57 | 697824.32 | N 32 14 1.86 | W 103 49 38.03 |
| | 13127.00 | 90.48 | 357.87 | 10158.45 | 2888.88 | 2883.30 | 278.73 | 2.71 | 449270.54 | 697822.62 | N 32 14 2.79 | W 103 49 38.05 |
| | 13221.00 | 89.38 | 358.08 | 10158.57 | 2982.72 | 2977.24 | 275.41 | 1.19 | 449364.48 | 697819.30 | N 32 14 3.72 | W 103 49 38.08 |
| | 13316.00 | 89.35 | 358.55 | 10159.62 | 3077.58 | 3072.19 | 272.62 | 0.50 | 449459.42 | 697818.50 | N 32 14 4.66 | W 103 49 38.11 |
| | 13410.00 | 89.93 | 355.50 | 10160.21 | 3171.31 | 3166.05 | 267.74 | 3.30 | 449553.26 | 697811.62 | N 32 14 5.59 | W 103 49 38.16 |
| | 13505.00 | 89.07 | 354.51 | 10161.04 | 3265.73 | 3260.69 | 259.47 | 1.38 | 449647.90 | 697803.35 | N 32 14 6.52 | W 103 49 38.25 |
| | 13599.00 | 91.44 | 357.11 | 10160.62 | 3359.28 | 3354.42 | 252.60 | 3.74 | 449741.63 | 697796.49 | N 32 14 7.45 | W 103 49 38.33 |
| | 13694.00 | 92.48 | 357.33 | 10157.37 | 3453.99 | 3449.25 | 248.00 | 1.12 | 449836.46 | 697791.88 | N 32 14 8.39 | W 103 49 38.38 |
| | 13788.00 | 90.17 | 359.49 | 10155.20 | 3547.83 | 3543.18 | 245.39 | 3.36 | 449930.38 | 697789.28 | N 32 14 9.32 | W 103 49 38.40 |
| | 13882.00 | 89.52 | 358.91 | 10155.45 | 3641.76 | 3637.17 | 244.08 | 0.93 | 450024.36 | 697787.98 | N 32 14 10.25 | W 103 49 38.41 |
| | 13977.00 | 89.66 | 359.21 | 10156.13 | 3736.69 | 3732.15 | 242.52 | 0.35 | 450119.34 | 697786.41 | N 32 14 11.19 | W 103 49 38.42 |
| | 14166.00 | 88.97 | 359.81 | 10158.39 | 3925.57 | 3921.13 | 240.58 | 0.42 | 450308.30 | 697784.46 | N 32 14 13.06 | W 103 49 38.44 |
| | 14260.00 | 88.04 | 359.33 | 10160.85 | 4019.49 | 4015.09 | 239.71 | 1.03 | 450402.26 | 697783.59 | N 32 14 13.99 | W 103 49 38.44 |
| | 14355.00 | 88.31 | 358.68 | 10163.87 | 4114.37 | 4110.03 | 238.06 | 0.74 | 450497.19 | 697781.94 | N 32 14 14.93 | W 103 49 38.46 |
| | 14449.00 | 87.76 | 359.22 | 10167.09 | 4208.23 | 4203.95 | 236.34 | 0.82 | 450591.11 | 697780.22 | N 32 14 15.86 | W 103 49 38.47 |
| | 14638.00 | 88.35 | 359.69 | 10173.51 | 4397.02 | 4392.84 | 234.54 | 0.40 | 450779.98 | 697778.42 | N 32 14 17.73 | W 103 49 38.48 |
| | 14732.00 | 89.07 | 359.84 | 10175.62 | 4490.96 | 4486.81 | 233.99 | 0.77 | 450873.95 | 697777.87 | N 32 14 18.66 | W 103 49 38.48 |
| | 14826.00 | 89.28 | 359.80 | 10176.96 | 4584.91 | 4580.80 | 233.53 | 0.28 | 450967.93 | 697777.42 | N 32 14 19.59 | W 103 49 38.48 |
| | 15015.00 | 89.83 | 359.37 | 10178.45 | 4773.82 | 4769.79 | 232.18 | 0.37 | 451156.91 | 697776.05 | N 32 14 21.46 | W 103 49 38.49 |
| | 15110.00 | 89.04 | 359.53 | 10178.38 | 4868.77 | 4864.78 | 231.25 | 0.85 | 451251.89 | 697775.14 | N 32 14 22.40 | W 103 49 38.49 |
| | 15204.00 | 90.10 | 359.67 | 10180.09 | 4962.73 | 4958.77 | 230.76 | 1.18 | 451345.88 | 697774.64 | N 32 14 23.33 | W 103 49 38.49 |
| | 15298.00 | 89.38 | 359.97 | 10180.51 | 5056.70 | 5052.77 | 230.63 | 0.77 | 451439.87 | 697774.51 | N 32 14 24.26 | W 103 49 38.49 |
| | 15393.00 | 89.86 | 0.18 | 10181.14 | 5151.67 | 5147.77 | 230.75 | 0.55 | 451534.86 | 697774.64 | N 32 14 25.20 | W 103 49 38.48 |
| | 15487.00 | 89.83 | 358.93 | 10181.40 | 5245.63 | 5241.76 | 230.02 | 1.33 | 451628.85 | 697773.91 | N 32 14 26.13 | W 103 49 38.49 |
| | 15582.00 | 89.79 | 359.60 | 10181.71 | 5340.57 | 5336.75 | 228.60 | 0.71 | 451723.84 | 697772.69 | N 32 14 27.07 | W 103 49 38.50 |
| | 15676.00 | 89.93 | 359.95 | 10181.94 | 5434.53 | 5430.75 | 228.43 | 0.40 | 451817.83 | 697772.32 | N 32 14 28.00 | W 103 49 38.50 |
| | 15770.00 | 89.69 | 358.55 | 10182.26 | 5528.47 | 5524.74 | 227.20 | 1.51 | 451911.81 | 697771.09 | N 32 14 28.93 | W 103 49 38.50 |
| | 15865.00 | 89.76 | 359.25 | 10182.71 | 5623.39 | 5619.72 | 225.38 | 0.74 | 452006.79 | 697769.26 | N 32 14 29.87 | W 103 49 38.52 |
| | 15959.00 | 90.48 | 359.57 | 10182.51 | 5717.33 | 5713.72 | 224.41 | 0.84 | 452100.78 | 697768.30 | N 32 14 30.80 | W 103 49 38.53 |
| | 16053.00 | 89.97 | 359.54 | 10182.15 | 5811.29 | 5807.71 | 223.68 | 0.54 | 452194.77 | 697767.57 | N 32 14 31.73 | W 103 49 38.53 |
| | 16148.00 | 89.76 | 0.63 | 10182.37 | 5906.27 | 5902.71 | 223.82 | 1.17 | 452289.76 | 697767.71 | N 32 14 32.67 | W 103 49 38.52 |
| | 16242.00 | 89.66 | 2.49 | 10182.85 | 6000.26 | 5996.67 | 228.38 | 1.98 | 452383.71 | 697770.27 | N 32 14 33.60 | W 103 49 38.46 |
| | 16336.00 | 89.97 | 2.83 | 10183.15 | 6094.24 | 6090.58 | 235.58 | 0.36 | 452477.61 | 697774.46 | N 32 14 34.52 | W 103 49 38.43 |
| | 16525.00 | 90.58 | 2.88 | 10182.24 | 6283.17 | 6279.35 | 239.68 | 0.35 | 452666.38 | 697783.55 | N 32 14 36.39 | W 103 49 38.32 |
| | 16620.00 | 90.52 | 1.31 | 10181.33 | 6378.16 | 6374.28 | 243.14 | 1.65 | 452761.30 | 697787.02 | N 32 14 37.33 | W 103 49 38.27 |
| | 16714.00 | 90.93 | 1.37 | 10180.14 | 6472.15 | 6468.25 | 245.33 | 0.44 | 452855.26 | 697789.22 | N 32 14 38.26 | W 103 49 38.24 |
| | 16809.00 | 90.66 | 359.69 | 10178.68 | 6567.13 | 6563.23 | 246.21 | 1.77 | 452950.23 | 697790.10 | N 32 14 39.20 | W 103 49 38.23 |
| | 16903.00 | 90.21 | 0.11 | 10177.78 | 6661.09 | 6657.23 | 246.05 | 0.82 | 453044.22 | 697789.93 | N 32 14 40.13 | W 103 49 38.22 |
| | 16997.00 | 90.21 | 359.25 | 10177.43 | 6755.05 | 6751.22 | 245.52 | 0.91 | 453138.21 | 697789.41 | N 32 14 41.06 | W 103 49 38.22 |
| | 17092.00 | 90.48 | 359.56 | 10176.86 | 6850.00 | 6846.22 | 244.84 | 0.43 | 453233.20 | 697788.42 | N 32 14 42.00 | W 103 49 38.23 |
| | 17186.00 | 90.55 | 359.64 | 10176.02 | 6943.95 | 6940.21 | 243.68 | 0.11 | 453327.19 | 697787.77 | N 32 14 42.93 | W 103 49 38.23 |
| | 17281.00 | 89.76 | 359.66 | 10175.76 | 7038.91 | 7035.21 | 243.30 | 0.83 | 453422.18 | 697787.19 | N 32 14 43.87 | W 103 49 38.23 |
| | 17375.00 | 90.56 | 359.80 | 10175.48 | 7132.88 | 7129.20 | 242.86 | 0.88 | 453516.17 | 697786.74 | N 32 14 44.80 | W 103 49 38.23 |
| | 17469.00 | 90.34 | 359.30 | 10174.73 | 7226.83 | 7223.20 | 242.12 | 0.59 | 453610.16 | 697786.00 | N 32 14 45.73 | W 103 49 38.24 |
| | 17564.00 | 89.63 | 359.53 | 10174.59 | 7321.78 | 7318.19 | 241.15 | 0.59 | 453705.15 | 697785.03 | N 32 14 46.67 | W 103 49 38.24 |
| | 17658.00 | 90.17 | 0.01 | 10174.59 | 7415.74 | 7412.19 | 240.77 | 0.63 | 453799.14 | 697784.66 | N 32 14 47.60 | W 103 49 38.24 |
| | 17752.00 | 91.03 | 359.31 | 10173.60 | 7509.70 | 7506.18 | 240.21 | 1.18 | 453893.13 | 697784.10 | N 32 14 48.53 | W 103 49 38.24 |
| | 17847.00 | 91.10 | 359.40 | 10171.84 | 7604.63 | 7601.16 | 239.15 | 0.12 | 453988.10 | 697783.03 | N 32 14 49.47 | W 103 49 38.25 |
| | 17941.00 | 90.03 | 0.13 | 10170.91 | 7698.59 | 7695.15 | 238.78 | 1.38 | 454082.08 | 697782.64 | N 32 14 50.40 | W 103 49 38.25 |
| | 18036.00 | 89.90 | 359.89 | 10170.97 | 7793.56 | 7790.15 | 238.78 | 0.29 | 454177.08 | 697782.66 | N 32 14 51.34 | W 103 49 38.25 |

| Comments | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | DLS (°/100ft) | Northing (mUS) | Easting (mUS) | Latitude (N/S ° ' ") | Longitude (E/W ° ' ") |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 18130.00 | 90.62 | 359.20 | 10170.54 | 7887.52 | 7884.15 | 238.03 | 1.06 | 454271.07 | 697781.91 | N 32 14 52.27 | W 103 49 38.25 |
| | 18225.00 | 89.83 | 0.11 | 10170.17 | 7982.48 | 7979.14 | 237.46 | 1.27 | 454366.06 | 697781.34 | N 32 14 53.21 | W 103 49 38.25 |
| | 18320.00 | 90.86 | 0.83 | 10169.58 | 8077.46 | 8074.14 | 238.24 | 1.32 | 454461.04 | 697782.12 | N 32 14 54.15 | W 103 49 38.24 |
| | 18414.00 | 90.10 | 359.90 | 10168.81 | 8171.45 | 8168.13 | 238.84 | 1.28 | 454555.03 | 697782.72 | N 32 14 55.08 | W 103 49 38.22 |
| | 18509.00 | 89.00 | 359.85 | 10169.55 | 8266.41 | 8263.13 | 238.83 | 1.16 | 454650.02 | 697782.51 | N 32 14 56.02 | W 103 49 38.22 |
| | 18603.00 | 88.45 | 0.08 | 10171.65 | 8360.36 | 8357.10 | 238.97 | 0.83 | 454743.99 | 697782.46 | N 32 14 56.95 | W 103 49 38.22 |
| | 18698.00 | 88.56 | 0.07 | 10174.12 | 8455.31 | 8452.07 | 238.70 | 0.12 | 454838.95 | 697782.56 | N 32 14 57.89 | W 103 49 38.21 |
| | 18792.00 | 88.69 | 357.17 | 10176.38 | 8549.17 | 8546.01 | 236.43 | 3.09 | 454932.88 | 697780.32 | N 32 14 58.82 | W 103 49 38.23 |
| | 18887.00 | 88.21 | 357.81 | 10178.95 | 8643.92 | 8640.88 | 232.27 | 0.84 | 455027.75 | 697776.16 | N 32 14 59.76 | W 103 49 38.27 |
| | 19076.00 | 88.87 | 357.15 | 10183.76 | 8832.44 | 8829.63 | 223.97 | 0.49 | 455218.49 | 697767.85 | N 32 15 1.63 | W 103 49 38.36 |
| | 19170.00 | 88.56 | 358.11 | 10185.67 | 8926.22 | 8923.53 | 220.08 | 1.07 | 455310.38 | 697763.97 | N 32 15 2.56 | W 103 49 38.40 |
| | 19265.00 | 88.42 | 0.26 | 10188.38 | 9021.12 | 9018.48 | 218.73 | 2.27 | 455405.32 | 697762.62 | N 32 15 3.50 | W 103 49 38.41 |
| | 19454.00 | 89.97 | 359.92 | 10191.03 | 9210.05 | 9207.45 | 219.03 | 0.84 | 455594.29 | 697762.91 | N 32 15 5.37 | W 103 49 38.40 |
| | 19549.00 | 90.48 | 0.33 | 10190.68 | 9305.03 | 9302.45 | 219.23 | 0.69 | 455689.28 | 697763.12 | N 32 15 6.31 | W 103 49 38.39 |
| | 19643.00 | 90.10 | 360.00 | 10190.18 | 9399.01 | 9396.45 | 219.50 | 0.54 | 455783.27 | 697763.39 | N 32 15 7.24 | W 103 49 38.38 |
| Final MWD Survey | 19738.00 | 89.93 | 359.37 | 10190.18 | 9493.97 | 9491.45 | 218.98 | 0.69 | 455878.26 | 697762.87 | N 32 15 8.18 | W 103 49 38.38 |
| Proj. to Bit | 19787.00 | 89.93 | 359.37 | 10190.22 | 9542.95 | 9540.45 | 218.44 | 0.00 | 455927.26 | 697762.33 | N 32 15 8.66 | W 103 49 38.39 |

**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 | 26.500 | 1/98.425 | 30.000 | 30.000 | NAL_NSG+MSHOT-Depth Only | Original Borehole / Oxy Nimitz MDP1 12 Federal Com 6H Gyro+MWD 0-19,787' |
| | 1 | 26.500 | 26.500 | Act Stns | 30.000 | 30.000 | NAL_NSG+MSHOT-Depth Only | Original Borehole / Oxy Nimitz MDP1 12 Federal Com 6H Gyro+MWD 0-19,787' |
| | 1 | 26.500 | 10114.600 | Act Stns | 30.000 | 30.000 | NAL_NSG+MSHOT | Original Borehole / Oxy Nimitz MDP1 12 Federal Com 6H |
| | 1 | 10114.600 | 19787.000 | Act Stns | 30.000 | 30.000 | NAL_MWD_PLUS_0.5_DEG | Original Borehole / Oxy Nimitz MDP1 12 Federal Com 6H |