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NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 20 2017

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NORTHERN DELAWARE BASIN

EDDY COUNTY, NM

ATLAS

MYOX 20 FED COM #5H

30-015-44296

OWB

Design: ACTUAL WELLPATH

Survey Report - Geographic

27 November, 2017



COG Operating LLC
Survey Report - Geographic

Company: NORTHERN DELAWARE BASIN
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 20 FED COM #5H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well MYOX 20 FED COM #5H
TVD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
MD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Project EDDY COUNTY, NM

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site ATLAS

Site Position: Northing: 371,480.80 usft Latitude: 32° 1' 15.933 N
From: Map Easting: 573,599.60 usft Longitude: 104° 5' 45.086 W
Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence: 0.13 °

Well MYOX 20 FED COM #5H

Well Position +N/-S 0.0 usft Northing: 407,998.20 usft Latitude: 32° 7' 17.405 N
+E/-W 0.0 usft Easting: 570,034.90 usft Longitude: 104° 6' 25.603 W
Position Uncertainty 3.0 usft Wellhead Elevation: usft Ground Level: 3,026.1 usft

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	6/28/2017	7.21	59.87	47,807.63898808

Design ACTUAL WELLPATH

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	179.75

Survey Program Date 9/27/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	7,321.0	GYRO (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
7,405.0	17,853.0	MWD (OWB)	MWD	OWSG MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	407,998.20	570,034.90	32° 7' 17.405 N	104° 6' 25.603 W
100.0	0.59	253.66	100.0	-0.1	-0.5	407,998.05	570,034.41	32° 7' 17.404 N	104° 6' 25.608 W
125.0	0.76	245.42	125.0	-0.3	-0.8	407,997.95	570,034.13	32° 7' 17.403 N	104° 6' 25.612 W
150.0	0.77	240.08	150.0	-0.4	-1.1	407,997.80	570,033.84	32° 7' 17.401 N	104° 6' 25.615 W
175.0	0.75	240.11	175.0	-0.6	-1.4	407,997.63	570,033.55	32° 7' 17.399 N	104° 6' 25.618 W
200.0	0.80	239.38	200.0	-0.7	-1.6	407,997.46	570,033.26	32° 7' 17.398 N	104° 6' 25.622 W
225.0	0.74	238.80	225.0	-0.9	-1.9	407,997.29	570,032.97	32° 7' 17.396 N	104° 6' 25.625 W
250.0	0.68	232.66	250.0	-1.1	-2.2	407,997.11	570,032.71	32° 7' 17.394 N	104° 6' 25.628 W
275.0	0.83	243.98	275.0	-1.3	-2.5	407,996.95	570,032.43	32° 7' 17.393 N	104° 6' 25.631 W
300.0	0.56	234.95	300.0	-1.4	-2.7	407,996.80	570,032.17	32° 7' 17.391 N	104° 6' 25.635 W
325.0	0.33	213.96	325.0	-1.5	-2.9	407,996.67	570,032.03	32° 7' 17.390 N	104° 6' 25.636 W



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
350.0	0.08	171.94	350.0	-1.6	-2.9	407,996.59	570,031.99	32° 7' 17.389 N	104° 6' 25.637 W
375.0	0.27	73.34	375.0	-1.6	-2.9	407,996.59	570,032.05	32° 7' 17.389 N	104° 6' 25.636 W
400.0	0.52	64.70	400.0	-1.5	-2.7	407,996.65	570,032.21	32° 7' 17.390 N	104° 6' 25.634 W
425.0	0.65	49.77	425.0	-1.4	-2.5	407,996.79	570,032.42	32° 7' 17.391 N	104° 6' 25.632 W
450.0	0.78	53.39	450.0	-1.2	-2.2	407,996.99	570,032.67	32° 7' 17.393 N	104° 6' 25.629 W
475.0	0.87	38.86	475.0	-1.0	-2.0	407,997.24	570,032.92	32° 7' 17.395 N	104° 6' 25.626 W
500.0	1.15	23.48	500.0	-0.6	-1.8	407,997.61	570,033.14	32° 7' 17.399 N	104° 6' 25.623 W
525.0	1.52	11.41	525.0	0.0	-1.6	407,998.17	570,033.31	32° 7' 17.405 N	104° 6' 25.621 W
550.0	1.80	8.21	550.0	0.7	-1.5	407,998.88	570,033.43	32° 7' 17.412 N	104° 6' 25.620 W
575.0	2.01	3.36	574.9	1.5	-1.4	407,999.71	570,033.51	32° 7' 17.420 N	104° 6' 25.619 W
600.0	2.15	4.99	599.9	2.4	-1.3	408,000.61	570,033.58	32° 7' 17.429 N	104° 6' 25.618 W
625.0	2.21	7.39	624.9	3.4	-1.2	408,001.56	570,033.68	32° 7' 17.438 N	104° 6' 25.617 W
650.0	2.30	7.22	649.9	4.3	-1.1	408,002.53	570,033.80	32° 7' 17.448 N	104° 6' 25.615 W
675.0	2.29	8.75	674.9	5.3	-1.0	408,003.53	570,033.94	32° 7' 17.458 N	104° 6' 25.614 W
700.0	2.36	6.47	699.8	6.3	-0.8	408,004.53	570,034.08	32° 7' 17.468 N	104° 6' 25.612 W
725.0	2.32	6.62	724.8	7.3	-0.7	408,005.55	570,034.19	32° 7' 17.478 N	104° 6' 25.611 W
750.0	2.37	6.51	749.8	8.4	-0.6	408,006.56	570,034.31	32° 7' 17.488 N	104° 6' 25.609 W
775.0	2.34	8.01	774.8	9.4	-0.5	408,007.58	570,034.44	32° 7' 17.498 N	104° 6' 25.608 W
800.0	2.32	7.32	799.8	10.4	-0.3	408,008.59	570,034.58	32° 7' 17.508 N	104° 6' 25.606 W
825.0	2.29	7.06	824.7	11.4	-0.2	408,009.59	570,034.70	32° 7' 17.518 N	104° 6' 25.605 W
850.0	2.28	7.13	849.7	12.4	-0.1	408,010.57	570,034.82	32° 7' 17.527 N	104° 6' 25.603 W
875.0	2.37	7.31	874.7	13.4	0.0	408,011.58	570,034.95	32° 7' 17.537 N	104° 6' 25.602 W
900.0	2.27	5.83	899.7	14.4	0.2	408,012.59	570,035.07	32° 7' 17.547 N	104° 6' 25.600 W
925.0	1.94	1.51	924.7	15.3	0.2	408,013.50	570,035.13	32° 7' 17.556 N	104° 6' 25.600 W
950.0	1.58	346.61	949.7	16.1	0.2	408,014.26	570,035.06	32° 7' 17.564 N	104° 6' 25.600 W
975.0	1.32	328.11	974.6	16.6	-0.1	408,014.84	570,034.83	32° 7' 17.570 N	104° 6' 25.603 W
1,000.0	1.30	315.70	999.6	17.1	-0.4	408,015.29	570,034.48	32° 7' 17.574 N	104° 6' 25.607 W
1,025.0	1.29	316.15	1,024.6	17.5	-0.8	408,015.69	570,034.09	32° 7' 17.578 N	104° 6' 25.612 W
1,050.0	1.34	315.53	1,049.6	17.9	-1.2	408,016.10	570,033.69	32° 7' 17.582 N	104° 6' 25.616 W
1,075.0	1.29	319.03	1,074.6	18.3	-1.6	408,016.53	570,033.30	32° 7' 17.586 N	104° 6' 25.621 W
1,100.0	1.18	318.24	1,099.6	18.7	-2.0	408,016.93	570,032.94	32° 7' 17.590 N	104° 6' 25.625 W
1,125.0	1.02	310.54	1,124.6	19.1	-2.3	408,017.27	570,032.60	32° 7' 17.594 N	104° 6' 25.629 W
1,150.0	0.78	281.73	1,149.6	19.2	-2.6	408,017.45	570,032.26	32° 7' 17.595 N	104° 6' 25.633 W
1,175.0	0.69	275.90	1,174.6	19.3	-3.0	408,017.50	570,031.95	32° 7' 17.596 N	104° 6' 25.637 W
1,200.0	0.80	275.19	1,199.6	19.3	-3.3	408,017.53	570,031.62	32° 7' 17.596 N	104° 6' 25.640 W
1,225.0	0.64	278.50	1,224.6	19.4	-3.6	408,017.56	570,031.31	32° 7' 17.597 N	104° 6' 25.644 W
1,250.0	0.73	274.63	1,249.6	19.4	-3.9	408,017.60	570,031.02	32° 7' 17.597 N	104° 6' 25.647 W
1,275.0	0.74	279.91	1,274.6	19.4	-4.2	408,017.64	570,030.70	32° 7' 17.597 N	104° 6' 25.651 W
1,300.0	0.88	275.57	1,299.6	19.5	-4.6	408,017.68	570,030.35	32° 7' 17.598 N	104° 6' 25.655 W
1,325.0	1.01	275.94	1,324.6	19.5	-5.0	408,017.73	570,029.94	32° 7' 17.598 N	104° 6' 25.660 W
1,350.0	1.07	280.94	1,349.6	19.6	-5.4	408,017.79	570,029.49	32° 7' 17.599 N	104° 6' 25.665 W
1,375.0	1.14	274.88	1,374.6	19.7	-5.9	408,017.86	570,029.01	32° 7' 17.600 N	104° 6' 25.671 W
1,400.0	1.11	279.84	1,399.6	19.7	-6.4	408,017.92	570,028.53	32° 7' 17.600 N	104° 6' 25.676 W
1,425.0	1.03	282.01	1,424.6	19.8	-6.8	408,018.01	570,028.07	32° 7' 17.601 N	104° 6' 25.682 W
1,450.0	0.99	285.72	1,449.6	19.9	-7.3	408,018.11	570,027.64	32° 7' 17.602 N	104° 6' 25.687 W
1,475.0	0.88	296.78	1,474.6	20.1	-7.6	408,018.26	570,027.26	32° 7' 17.604 N	104° 6' 25.691 W
1,500.0	0.84	299.20	1,499.6	20.2	-8.0	408,018.43	570,026.93	32° 7' 17.605 N	104° 6' 25.695 W
1,525.0	0.87	309.38	1,524.6	20.4	-8.3	408,018.64	570,026.62	32° 7' 17.607 N	104° 6' 25.699 W
1,550.0	0.86	322.01	1,549.6	20.7	-8.5	408,018.91	570,026.36	32° 7' 17.610 N	104° 6' 25.702 W
1,575.0	0.87	314.52	1,574.6	21.0	-8.8	408,019.19	570,026.11	32° 7' 17.613 N	104° 6' 25.704 W
1,600.0	0.83	324.35	1,599.5	21.3	-9.0	408,019.47	570,025.87	32° 7' 17.616 N	104° 6' 25.707 W
1,625.0	0.85	328.11	1,624.5	21.6	-9.2	408,019.78	570,025.67	32° 7' 17.619 N	104° 6' 25.710 W
1,650.0	0.88	329.46	1,649.5	21.9	-9.4	408,020.10	570,025.47	32° 7' 17.622 N	104° 6' 25.712 W
1,675.0	0.88	356.02	1,674.5	22.3	-9.5	408,020.46	570,025.36	32° 7' 17.625 N	104° 6' 25.713 W
1,700.0	0.99	18.92	1,699.5	22.7	-9.5	408,020.85	570,025.42	32° 7' 17.629 N	104° 6' 25.712 W



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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,725.0	1.29	44.41	1,724.5	23.1	-9.2	408,021.26	570,025.68	32° 7' 17.633 N	104° 6' 25.709 W	
1,750.0	1.55	50.30	1,749.5	23.5	-8.8	408,021.68	570,026.14	32° 7' 17.637 N	104° 6' 25.704 W	
1,775.0	1.99	60.56	1,774.5	23.9	-8.1	408,022.11	570,026.78	32° 7' 17.642 N	104° 6' 25.697 W	
1,800.0	2.28	67.34	1,799.5	24.3	-7.3	408,022.51	570,027.62	32° 7' 17.646 N	104° 6' 25.687 W	
1,825.0	2.66	71.48	1,824.5	24.7	-6.3	408,022.89	570,028.62	32° 7' 17.649 N	104° 6' 25.675 W	
1,850.0	2.73	72.98	1,849.4	25.0	-5.2	408,023.25	570,029.74	32° 7' 17.653 N	104° 6' 25.662 W	
1,875.0	2.46	73.05	1,874.4	25.4	-4.1	408,023.58	570,030.83	32° 7' 17.656 N	104° 6' 25.650 W	
1,900.0	1.82	68.77	1,899.4	25.7	-3.2	408,023.88	570,031.71	32° 7' 17.659 N	104° 6' 25.639 W	
1,925.0	1.41	66.40	1,924.4	25.9	-2.5	408,024.14	570,032.36	32° 7' 17.662 N	104° 6' 25.632 W	
1,950.0	1.40	63.35	1,949.4	26.2	-2.0	408,024.40	570,032.92	32° 7' 17.664 N	104° 6' 25.625 W	
1,975.0	2.00	72.33	1,974.4	26.5	-1.3	408,024.67	570,033.60	32° 7' 17.667 N	104° 6' 25.617 W	
2,000.0	2.28	74.59	1,999.4	26.7	-0.4	408,024.94	570,034.50	32° 7' 17.670 N	104° 6' 25.607 W	
2,025.0	2.61	78.61	2,024.3	27.0	0.6	408,025.18	570,035.54	32° 7' 17.672 N	104° 6' 25.595 W	
2,050.0	2.84	83.11	2,049.3	27.2	1.8	408,025.37	570,036.71	32° 7' 17.674 N	104° 6' 25.581 W	
2,075.0	2.99	87.29	2,074.3	27.3	3.1	408,025.47	570,037.98	32° 7' 17.675 N	104° 6' 25.566 W	
2,100.0	2.86	93.26	2,099.2	27.3	4.3	408,025.47	570,039.25	32° 7' 17.675 N	104° 6' 25.552 W	
2,125.0	2.89	93.53	2,124.2	27.2	5.6	408,025.39	570,040.50	32° 7' 17.674 N	104° 6' 25.537 W	
2,150.0	2.92	94.98	2,149.2	27.1	6.9	408,025.30	570,041.77	32° 7' 17.673 N	104° 6' 25.522 W	
2,175.0	2.71	96.19	2,174.1	27.0	8.1	408,025.18	570,042.99	32° 7' 17.672 N	104° 6' 25.508 W	
2,200.0	2.22	102.42	2,199.1	26.8	9.1	408,025.01	570,044.05	32° 7' 17.670 N	104° 6' 25.496 W	
2,225.0	2.07	103.27	2,224.1	26.6	10.1	408,024.81	570,044.96	32° 7' 17.668 N	104° 6' 25.485 W	
2,250.0	1.78	97.42	2,249.1	26.5	10.9	408,024.65	570,045.78	32° 7' 17.667 N	104° 6' 25.476 W	
2,275.0	1.49	91.64	2,274.1	26.4	11.6	408,024.59	570,046.49	32° 7' 17.666 N	104° 6' 25.467 W	
2,300.0	1.13	82.78	2,299.1	26.4	12.2	408,024.61	570,047.06	32° 7' 17.666 N	104° 6' 25.461 W	
2,325.0	0.90	76.96	2,324.1	26.5	12.6	408,024.69	570,047.50	32° 7' 17.667 N	104° 6' 25.456 W	
2,350.0	0.52	46.13	2,349.1	26.6	12.9	408,024.81	570,047.77	32° 7' 17.668 N	104° 6' 25.452 W	
2,375.0	0.95	322.42	2,374.1	26.9	12.8	408,025.06	570,047.73	32° 7' 17.670 N	104° 6' 25.453 W	
2,400.0	1.36	313.13	2,399.1	27.2	12.5	408,025.42	570,047.39	32° 7' 17.674 N	104° 6' 25.457 W	
2,425.0	1.38	311.94	2,424.1	27.6	12.0	408,025.83	570,046.94	32° 7' 17.678 N	104° 6' 25.462 W	
2,450.0	1.29	311.91	2,449.0	28.0	11.6	408,026.22	570,046.51	32° 7' 17.682 N	104° 6' 25.467 W	
2,475.0	1.32	310.59	2,474.0	28.4	11.2	408,026.59	570,046.08	32° 7' 17.686 N	104° 6' 25.472 W	
2,500.0	1.32	309.08	2,499.0	28.8	10.7	408,026.96	570,045.64	32° 7' 17.689 N	104° 6' 25.477 W	
2,525.0	1.38	305.93	2,524.0	29.1	10.3	408,027.32	570,045.17	32° 7' 17.693 N	104° 6' 25.483 W	
2,550.0	1.32	306.06	2,549.0	29.5	9.8	408,027.66	570,044.70	32° 7' 17.696 N	104° 6' 25.488 W	
2,575.0	1.31	304.67	2,574.0	29.8	9.3	408,028.00	570,044.23	32° 7' 17.700 N	104° 6' 25.494 W	
2,600.0	1.22	300.33	2,599.0	30.1	8.9	408,028.29	570,043.76	32° 7' 17.703 N	104° 6' 25.499 W	
2,625.0	1.15	288.37	2,624.0	30.3	8.4	408,028.51	570,043.30	32° 7' 17.705 N	104° 6' 25.504 W	
2,650.0	1.14	252.78	2,649.0	30.3	7.9	408,028.51	570,042.82	32° 7' 17.705 N	104° 6' 25.510 W	
2,675.0	1.98	213.47	2,674.0	29.9	7.4	408,028.08	570,042.35	32° 7' 17.701 N	104° 6' 25.515 W	
2,700.0	2.10	211.85	2,699.0	29.1	7.0	408,027.33	570,041.87	32° 7' 17.693 N	104° 6' 25.521 W	
2,725.0	2.14	209.32	2,724.0	28.3	6.5	408,026.53	570,041.40	32° 7' 17.685 N	104° 6' 25.527 W	
2,750.0	2.06	208.02	2,748.9	27.5	6.1	408,025.73	570,040.96	32° 7' 17.677 N	104° 6' 25.532 W	
2,775.0	1.70	201.89	2,773.9	26.8	5.7	408,024.99	570,040.61	32° 7' 17.670 N	104° 6' 25.536 W	
2,800.0	0.94	174.69	2,798.9	26.2	5.6	408,024.44	570,040.49	32° 7' 17.665 N	104° 6' 25.537 W	
2,825.0	0.88	176.41	2,823.9	25.8	5.6	408,024.04	570,040.52	32° 7' 17.661 N	104° 6' 25.537 W	
2,850.0	0.84	178.76	2,848.9	25.5	5.6	408,023.67	570,040.53	32° 7' 17.657 N	104° 6' 25.537 W	
2,875.0	0.85	177.91	2,873.9	25.1	5.6	408,023.30	570,040.54	32° 7' 17.653 N	104° 6' 25.537 W	
2,900.0	0.86	172.77	2,898.9	24.7	5.7	408,022.93	570,040.58	32° 7' 17.650 N	104° 6' 25.536 W	
2,925.0	0.87	170.59	2,923.9	24.4	5.7	408,022.56	570,040.63	32° 7' 17.646 N	104° 6' 25.536 W	
2,950.0	0.85	173.76	2,948.9	24.0	5.8	408,022.18	570,040.68	32° 7' 17.642 N	104° 6' 25.535 W	
2,975.0	0.91	174.96	2,973.9	23.6	5.8	408,021.80	570,040.72	32° 7' 17.638 N	104° 6' 25.535 W	
3,000.0	0.89	177.92	2,998.9	23.2	5.8	408,021.41	570,040.74	32° 7' 17.635 N	104° 6' 25.534 W	
3,025.0	0.85	170.35	3,023.9	22.8	5.9	408,021.03	570,040.78	32° 7' 17.631 N	104° 6' 25.534 W	
3,050.0	0.94	172.35	3,048.9	22.4	5.9	408,020.65	570,040.84	32° 7' 17.627 N	104° 6' 25.533 W	
3,075.0	1.12	170.84	3,073.9	22.0	6.0	408,020.20	570,040.91	32° 7' 17.623 N	104° 6' 25.532 W	



COG Operating LLC
Survey Report - Geographic

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Well: MYOX 20 FED COM #5H
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Local Co-ordinate Reference: Well MYOX 20 FED COM #5H
TVD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
MD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,100.0	1.29	161.09	3,098.9	21.5	6.1	408,019.70	570,041.04	32° 7' 17.618 N	104° 6' 25.531 W
3,125.0	1.41	165.63	3,123.9	20.9	6.3	408,019.13	570,041.20	32° 7' 17.612 N	104° 6' 25.529 W
3,150.0	1.53	163.75	3,148.9	20.3	6.5	408,018.51	570,041.37	32° 7' 17.606 N	104° 6' 25.527 W
3,175.0	1.51	161.94	3,173.9	19.7	6.7	408,017.88	570,041.57	32° 7' 17.600 N	104° 6' 25.525 W
3,200.0	1.49	163.36	3,198.8	19.1	6.9	408,017.26	570,041.76	32° 7' 17.593 N	104° 6' 25.522 W
3,225.0	1.51	161.61	3,223.8	18.4	7.1	408,016.63	570,041.96	32° 7' 17.587 N	104° 6' 25.520 W
3,250.0	1.50	163.05	3,248.8	17.8	7.3	408,016.01	570,042.16	32° 7' 17.581 N	104° 6' 25.518 W
3,275.0	1.41	172.05	3,273.8	17.2	7.4	408,015.39	570,042.30	32° 7' 17.575 N	104° 6' 25.516 W
3,300.0	1.30	172.24	3,298.8	16.6	7.5	408,014.80	570,042.38	32° 7' 17.569 N	104° 6' 25.515 W
3,325.0	1.30	174.21	3,323.8	16.0	7.5	408,014.24	570,042.45	32° 7' 17.564 N	104° 6' 25.515 W
3,350.0	1.34	179.50	3,348.8	15.5	7.6	408,013.66	570,042.48	32° 7' 17.558 N	104° 6' 25.514 W
3,375.0	1.18	175.96	3,373.8	14.9	7.6	408,013.12	570,042.50	32° 7' 17.552 N	104° 6' 25.514 W
3,400.0	1.23	178.02	3,398.8	14.4	7.6	408,012.59	570,042.53	32° 7' 17.547 N	104° 6' 25.514 W
3,425.0	1.24	182.16	3,423.8	13.9	7.6	408,012.05	570,042.52	32° 7' 17.542 N	104° 6' 25.514 W
3,450.0	1.19	177.24	3,448.8	13.3	7.6	408,011.52	570,042.53	32° 7' 17.537 N	104° 6' 25.514 W
3,475.0	1.17	183.52	3,473.8	12.8	7.6	408,011.01	570,042.52	32° 7' 17.532 N	104° 6' 25.514 W
3,500.0	1.11	184.78	3,498.8	12.3	7.6	408,010.51	570,042.49	32° 7' 17.527 N	104° 6' 25.514 W
3,525.0	1.11	175.62	3,523.8	11.8	7.6	408,010.03	570,042.49	32° 7' 17.522 N	104° 6' 25.514 W
3,550.0	1.13	183.34	3,548.8	11.3	7.6	408,009.54	570,042.49	32° 7' 17.517 N	104° 6' 25.514 W
3,575.0	1.16	181.52	3,573.8	10.8	7.6	408,009.04	570,042.47	32° 7' 17.512 N	104° 6' 25.514 W
3,600.0	1.14	183.39	3,598.8	10.3	7.5	408,008.54	570,042.45	32° 7' 17.507 N	104° 6' 25.515 W
3,625.0	1.16	184.43	3,623.7	9.8	7.5	408,008.04	570,042.41	32° 7' 17.502 N	104° 6' 25.515 W
3,650.0	1.07	180.78	3,648.7	9.4	7.5	408,007.56	570,042.39	32° 7' 17.497 N	104° 6' 25.515 W
3,675.0	1.10	183.82	3,673.7	8.9	7.5	408,007.08	570,042.37	32° 7' 17.493 N	104° 6' 25.516 W
3,700.0	1.14	191.92	3,698.7	8.4	7.4	408,006.60	570,042.30	32° 7' 17.488 N	104° 6' 25.516 W
3,725.0	1.10	195.31	3,723.7	7.9	7.3	408,006.13	570,042.19	32° 7' 17.483 N	104° 6' 25.518 W
3,750.0	1.15	196.23	3,748.7	7.5	7.2	408,005.65	570,042.06	32° 7' 17.479 N	104° 6' 25.519 W
3,775.0	1.04	192.81	3,773.7	7.0	7.0	408,005.19	570,041.94	32° 7' 17.474 N	104° 6' 25.521 W
3,800.0	1.09	198.99	3,798.7	6.5	6.9	408,004.74	570,041.81	32° 7' 17.470 N	104° 6' 25.522 W
3,825.0	1.17	203.66	3,823.7	6.1	6.7	408,004.29	570,041.63	32° 7' 17.465 N	104° 6' 25.524 W
3,850.0	1.13	205.32	3,848.7	5.6	6.5	408,003.83	570,041.42	32° 7' 17.461 N	104° 6' 25.527 W
3,875.0	1.16	208.18	3,873.7	5.2	6.3	408,003.38	570,041.20	32° 7' 17.456 N	104° 6' 25.529 W
3,900.0	1.23	206.11	3,898.7	4.7	6.1	408,002.92	570,040.96	32° 7' 17.452 N	104° 6' 25.532 W
3,925.0	1.23	206.06	3,923.7	4.2	5.8	408,002.44	570,040.72	32° 7' 17.447 N	104° 6' 25.535 W
3,950.0	1.27	205.97	3,948.7	3.7	5.6	408,001.95	570,040.48	32° 7' 17.442 N	104° 6' 25.538 W
3,975.0	1.08	194.46	3,973.7	3.3	5.4	408,001.47	570,040.30	32° 7' 17.437 N	104° 6' 25.540 W
4,000.0	1.04	186.46	3,998.7	2.8	5.3	408,001.02	570,040.22	32° 7' 17.433 N	104° 6' 25.541 W
4,025.0	1.26	215.79	4,023.7	2.4	5.1	408,000.57	570,040.03	32° 7' 17.428 N	104° 6' 25.543 W
4,050.0	1.22	206.84	4,048.7	1.9	4.8	408,000.11	570,039.75	32° 7' 17.424 N	104° 6' 25.546 W
4,075.0	1.25	205.74	4,073.7	1.4	4.6	407,999.62	570,039.51	32° 7' 17.419 N	104° 6' 25.549 W
4,100.0	1.32	212.19	4,098.6	0.9	4.3	407,999.14	570,039.24	32° 7' 17.414 N	104° 6' 25.552 W
4,125.0	1.33	201.85	4,123.6	0.4	4.1	407,998.62	570,038.98	32° 7' 17.409 N	104° 6' 25.555 W
4,150.0	1.30	204.36	4,148.6	-0.1	3.9	407,998.09	570,038.75	32° 7' 17.404 N	104° 6' 25.558 W
4,175.0	1.31	202.37	4,173.6	-0.6	3.6	407,997.57	570,038.53	32° 7' 17.399 N	104° 6' 25.561 W
4,200.0	1.29	205.54	4,198.6	-1.1	3.4	407,997.05	570,038.30	32° 7' 17.394 N	104° 6' 25.563 W
4,225.0	1.26	200.93	4,223.6	-1.7	3.2	407,996.54	570,038.08	32° 7' 17.389 N	104° 6' 25.566 W
4,250.0	1.30	204.17	4,248.6	-2.2	3.0	407,996.03	570,037.86	32° 7' 17.383 N	104° 6' 25.568 W
4,275.0	1.25	199.87	4,273.6	-2.7	2.8	407,995.51	570,037.66	32° 7' 17.378 N	104° 6' 25.571 W
4,300.0	1.34	212.50	4,298.6	-3.2	2.5	407,995.01	570,037.41	32° 7' 17.373 N	104° 6' 25.574 W
4,325.0	1.34	199.13	4,323.6	-3.7	2.3	407,994.49	570,037.15	32° 7' 17.368 N	104° 6' 25.577 W
4,350.0	1.33	206.25	4,348.6	-4.2	2.0	407,993.95	570,036.93	32° 7' 17.363 N	104° 6' 25.579 W
4,375.0	1.26	198.17	4,373.6	-4.8	1.8	407,993.43	570,036.71	32° 7' 17.358 N	104° 6' 25.582 W
4,400.0	1.40	197.66	4,398.6	-5.3	1.6	407,992.88	570,036.54	32° 7' 17.352 N	104° 6' 25.584 W
4,425.0	1.40	201.13	4,423.6	-5.9	1.4	407,992.30	570,036.33	32° 7' 17.347 N	104° 6' 25.586 W
4,450.0	1.39	200.86	4,448.6	-6.5	1.2	407,991.73	570,036.12	32° 7' 17.341 N	104° 6' 25.589 W



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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,475.0	1.27	198.73	4,473.5	-7.0	1.0	407,991.19	570,035.92	32° 7' 17.336 N	104° 6' 25.591 W
4,500.0	1.23	200.63	4,498.5	-7.5	0.8	407,990.67	570,035.74	32° 7' 17.330 N	104° 6' 25.593 W
4,525.0	1.28	198.37	4,523.5	-8.0	0.6	407,990.16	570,035.55	32° 7' 17.325 N	104° 6' 25.595 W
4,550.0	1.29	203.26	4,548.5	-8.6	0.5	407,989.63	570,035.35	32° 7' 17.320 N	104° 6' 25.598 W
4,575.0	1.34	197.36	4,573.5	-9.1	0.3	407,989.10	570,035.16	32° 7' 17.315 N	104° 6' 25.600 W
4,600.0	1.38	200.78	4,598.5	-9.7	0.1	407,988.54	570,034.96	32° 7' 17.309 N	104° 6' 25.602 W
4,625.0	1.44	202.67	4,623.5	-10.2	-0.2	407,987.96	570,034.73	32° 7' 17.304 N	104° 6' 25.605 W
4,650.0	1.44	198.36	4,648.5	-10.8	-0.4	407,987.38	570,034.51	32° 7' 17.298 N	104° 6' 25.608 W
4,675.0	1.41	201.12	4,673.5	-11.4	-0.6	407,986.79	570,034.30	32° 7' 17.292 N	104° 6' 25.610 W
4,700.0	1.54	201.86	4,698.5	-12.0	-0.8	407,986.19	570,034.07	32° 7' 17.286 N	104° 6' 25.613 W
4,725.0	1.59	201.87	4,723.5	-12.6	-1.1	407,985.56	570,033.81	32° 7' 17.280 N	104° 6' 25.616 W
4,750.0	1.53	203.21	4,748.5	-13.3	-1.4	407,984.93	570,033.55	32° 7' 17.274 N	104° 6' 25.619 W
4,775.0	1.53	201.23	4,773.5	-13.9	-1.6	407,984.31	570,033.30	32° 7' 17.268 N	104° 6' 25.622 W
4,800.0	1.57	204.00	4,798.4	-14.5	-1.9	407,983.69	570,033.04	32° 7' 17.261 N	104° 6' 25.625 W
4,825.0	1.55	204.48	4,823.4	-15.1	-2.1	407,983.07	570,032.76	32° 7' 17.255 N	104° 6' 25.628 W
4,850.0	1.56	203.22	4,848.4	-15.8	-2.4	407,982.45	570,032.49	32° 7' 17.249 N	104° 6' 25.631 W
4,875.0	1.48	210.29	4,873.4	-16.3	-2.7	407,981.86	570,032.19	32° 7' 17.243 N	104° 6' 25.635 W
4,900.0	1.33	211.38	4,898.4	-16.9	-3.0	407,981.33	570,031.88	32° 7' 17.238 N	104° 6' 25.638 W
4,925.0	1.21	216.97	4,923.4	-17.3	-3.3	407,980.87	570,031.57	32° 7' 17.234 N	104° 6' 25.642 W
4,950.0	1.27	224.92	4,948.4	-17.7	-3.7	407,980.46	570,031.21	32° 7' 17.230 N	104° 6' 25.646 W
4,975.0	1.17	223.86	4,973.4	-18.1	-4.1	407,980.08	570,030.84	32° 7' 17.226 N	104° 6' 25.650 W
5,000.0	1.14	218.27	4,998.4	-18.5	-4.4	407,979.70	570,030.51	32° 7' 17.222 N	104° 6' 25.654 W
5,025.0	1.13	221.41	5,023.4	-18.9	-4.7	407,979.32	570,030.19	32° 7' 17.218 N	104° 6' 25.658 W
5,050.0	1.15	217.24	5,048.4	-19.3	-5.0	407,978.94	570,029.88	32° 7' 17.214 N	104° 6' 25.662 W
5,075.0	1.24	223.38	5,073.4	-19.7	-5.4	407,978.54	570,029.54	32° 7' 17.211 N	104° 6' 25.666 W
5,100.0	1.19	220.71	5,098.4	-20.0	-5.7	407,978.15	570,029.18	32° 7' 17.207 N	104° 6' 25.670 W
5,125.0	1.22	210.91	5,123.4	-20.5	-6.0	407,977.73	570,028.88	32° 7' 17.202 N	104° 6' 25.673 W
5,150.0	1.36	212.75	5,148.4	-21.0	-6.3	407,977.25	570,028.58	32° 7' 17.198 N	104° 6' 25.677 W
5,175.0	1.15	215.00	5,173.4	-21.4	-6.6	407,976.79	570,028.28	32° 7' 17.193 N	104° 6' 25.680 W
5,200.0	0.69	210.62	5,198.3	-21.7	-6.8	407,976.46	570,028.05	32° 7' 17.190 N	104° 6' 25.683 W
5,225.0	0.14	243.00	5,223.3	-21.9	-7.0	407,976.31	570,027.95	32° 7' 17.189 N	104° 6' 25.684 W
5,250.0	0.12	19.54	5,248.3	-21.9	-7.0	407,976.32	570,027.93	32° 7' 17.189 N	104° 6' 25.684 W
5,275.0	0.16	47.08	5,273.3	-21.8	-6.9	407,976.37	570,027.97	32° 7' 17.189 N	104° 6' 25.684 W
5,300.0	0.19	7.72	5,298.3	-21.8	-6.9	407,976.44	570,028.00	32° 7' 17.190 N	104° 6' 25.684 W
5,325.0	0.15	6.14	5,323.3	-21.7	-6.9	407,976.51	570,028.01	32° 7' 17.190 N	104° 6' 25.683 W
5,350.0	0.17	356.55	5,348.3	-21.6	-6.9	407,976.58	570,028.01	32° 7' 17.191 N	104° 6' 25.683 W
5,375.0	0.16	22.65	5,373.3	-21.5	-6.9	407,976.65	570,028.02	32° 7' 17.192 N	104° 6' 25.683 W
5,400.0	0.37	42.48	5,398.3	-21.5	-6.8	407,976.74	570,028.09	32° 7' 17.193 N	104° 6' 25.682 W
5,425.0	0.70	36.29	5,423.3	-21.3	-6.7	407,976.92	570,028.23	32° 7' 17.195 N	104° 6' 25.681 W
5,450.0	0.70	40.16	5,448.3	-21.0	-6.5	407,977.16	570,028.42	32° 7' 17.197 N	104° 6' 25.679 W
5,475.0	0.89	46.92	5,473.3	-20.8	-6.2	407,977.41	570,028.66	32° 7' 17.199 N	104° 6' 25.676 W
5,500.0	1.07	52.75	5,498.3	-20.5	-5.9	407,977.69	570,028.99	32° 7' 17.202 N	104° 6' 25.672 W
5,525.0	1.29	55.51	5,523.3	-20.2	-5.5	407,977.99	570,029.41	32° 7' 17.205 N	104° 6' 25.667 W
5,550.0	1.30	57.57	5,548.3	-19.9	-5.0	407,978.30	570,029.88	32° 7' 17.208 N	104° 6' 25.662 W
5,575.0	1.30	58.35	5,573.3	-19.6	-4.5	407,978.60	570,030.36	32° 7' 17.211 N	104° 6' 25.656 W
5,600.0	1.38	64.62	5,598.3	-19.3	-4.0	407,978.88	570,030.87	32° 7' 17.214 N	104° 6' 25.650 W
5,625.0	1.26	59.47	5,623.3	-19.1	-3.5	407,979.15	570,031.38	32° 7' 17.216 N	104° 6' 25.644 W
5,650.0	1.26	60.15	5,648.3	-18.8	-3.0	407,979.42	570,031.86	32° 7' 17.219 N	104° 6' 25.639 W
5,675.0	0.98	58.88	5,673.3	-18.5	-2.6	407,979.67	570,032.28	32° 7' 17.222 N	104° 6' 25.634 W
5,700.0	0.85	65.35	5,698.3	-18.3	-2.3	407,979.86	570,032.63	32° 7' 17.224 N	104° 6' 25.630 W
5,725.0	0.79	66.26	5,723.3	-18.2	-1.9	407,980.01	570,032.96	32° 7' 17.225 N	104° 6' 25.626 W
5,750.0	0.60	55.11	5,748.3	-18.0	-1.7	407,980.15	570,033.22	32° 7' 17.226 N	104° 6' 25.623 W
5,775.0	0.77	78.78	5,773.3	-17.9	-1.4	407,980.26	570,033.49	32° 7' 17.227 N	104° 6' 25.620 W
5,800.0	0.72	84.53	5,798.3	-17.9	-1.1	407,980.31	570,033.81	32° 7' 17.228 N	104° 6' 25.616 W
5,825.0	0.73	88.65	5,823.3	-17.9	-0.8	407,980.32	570,034.13	32° 7' 17.228 N	104° 6' 25.612 W



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5,850.0	0.78	94.81	5,848.3	-17.9	-0.4	407,980.31	570,034.46	32° 7' 17.228 N	104° 6' 25.608 W
5,875.0	0.97	87.17	5,873.3	-17.9	-0.1	407,980.31	570,034.84	32° 7' 17.228 N	104° 6' 25.604 W
5,900.0	1.80	90.25	5,898.3	-17.9	0.5	407,980.32	570,035.44	32° 7' 17.228 N	104° 6' 25.597 W
5,925.0	1.13	69.84	5,923.3	-17.8	1.2	407,980.40	570,036.07	32° 7' 17.229 N	104° 6' 25.590 W
5,950.0	1.12	73.92	5,948.3	-17.6	1.6	407,980.55	570,036.53	32° 7' 17.230 N	104° 6' 25.584 W
5,975.0	1.13	75.75	5,973.3	-17.5	2.1	407,980.68	570,037.01	32° 7' 17.232 N	104° 6' 25.579 W
6,000.0	1.11	75.99	5,998.2	-17.4	2.6	407,980.80	570,037.48	32° 7' 17.233 N	104° 6' 25.573 W
6,025.0	1.14	81.10	6,023.2	-17.3	3.1	407,980.90	570,037.96	32° 7' 17.234 N	104° 6' 25.568 W
6,050.0	1.22	88.74	6,048.2	-17.3	3.6	407,980.94	570,038.47	32° 7' 17.234 N	104° 6' 25.562 W
6,075.0	1.29	96.32	6,073.2	-17.3	4.1	407,980.92	570,039.02	32° 7' 17.234 N	104° 6' 25.555 W
6,100.0	1.11	96.26	6,098.2	-17.3	4.6	407,980.86	570,039.54	32° 7' 17.233 N	104° 6' 25.549 W
6,125.0	0.51	96.22	6,123.2	-17.4	5.0	407,980.82	570,039.89	32° 7' 17.233 N	104° 6' 25.545 W
6,150.0	0.30	8.98	6,148.2	-17.3	5.1	407,980.87	570,040.01	32° 7' 17.233 N	104° 6' 25.544 W
6,175.0	0.60	312.49	6,173.2	-17.2	5.0	407,981.03	570,039.93	32° 7' 17.235 N	104° 6' 25.545 W
6,200.0	0.83	303.70	6,198.2	-17.0	4.8	407,981.22	570,039.68	32° 7' 17.237 N	104° 6' 25.548 W
6,225.0	1.16	289.38	6,223.2	-16.8	4.4	407,981.40	570,039.29	32° 7' 17.239 N	104° 6' 25.552 W
6,250.0	1.38	279.12	6,248.2	-16.7	3.9	407,981.53	570,038.75	32° 7' 17.240 N	104° 6' 25.558 W
6,275.0	1.67	274.32	6,273.2	-16.6	3.2	407,981.61	570,038.09	32° 7' 17.241 N	104° 6' 25.566 W
6,300.0	1.98	272.10	6,298.2	-16.5	2.4	407,981.65	570,037.30	32° 7' 17.241 N	104° 6' 25.575 W
6,325.0	2.09	272.02	6,323.2	-16.5	1.5	407,981.68	570,036.41	32° 7' 17.241 N	104° 6' 25.586 W
6,350.0	2.11	272.32	6,348.2	-16.5	0.6	407,981.72	570,035.50	32° 7' 17.242 N	104° 6' 25.596 W
6,375.0	2.21	272.73	6,373.1	-16.4	-0.3	407,981.76	570,034.55	32° 7' 17.242 N	104° 6' 25.607 W
6,400.0	2.11	274.25	6,398.1	-16.4	-1.3	407,981.82	570,033.61	32° 7' 17.243 N	104° 6' 25.618 W
6,425.0	2.07	282.44	6,423.1	-16.3	-2.2	407,981.95	570,032.71	32° 7' 17.244 N	104° 6' 25.629 W
6,450.0	1.92	289.34	6,448.1	-16.0	-3.0	407,982.18	570,031.88	32° 7' 17.247 N	104° 6' 25.638 W
6,475.0	2.01	289.80	6,473.1	-15.7	-3.8	407,982.47	570,031.07	32° 7' 17.249 N	104° 6' 25.648 W
6,500.0	2.15	288.30	6,498.1	-15.4	-4.7	407,982.77	570,030.21	32° 7' 17.252 N	104° 6' 25.658 W
6,525.0	2.49	287.45	6,523.0	-15.1	-5.7	407,983.08	570,029.25	32° 7' 17.255 N	104° 6' 25.669 W
6,550.0	2.66	287.53	6,548.0	-14.8	-6.7	407,983.41	570,028.18	32° 7' 17.259 N	104° 6' 25.681 W
6,575.0	2.58	287.87	6,573.0	-14.4	-7.8	407,983.76	570,027.09	32° 7' 17.262 N	104° 6' 25.694 W
6,600.0	2.30	285.53	6,598.0	-14.1	-8.8	407,984.07	570,026.07	32° 7' 17.265 N	104° 6' 25.706 W
6,625.0	1.62	285.37	6,622.9	-13.9	-9.7	407,984.30	570,025.25	32° 7' 17.268 N	104° 6' 25.715 W
6,650.0	0.86	294.21	6,647.9	-13.7	-10.2	407,984.47	570,024.73	32° 7' 17.269 N	104° 6' 25.721 W
6,675.0	0.44	279.39	6,672.9	-13.6	-10.4	407,984.56	570,024.47	32° 7' 17.270 N	104° 6' 25.724 W
6,700.0	0.38	262.82	6,697.9	-13.6	-10.6	407,984.57	570,024.29	32° 7' 17.270 N	104° 6' 25.726 W
6,725.0	1.06	276.64	6,722.9	-13.6	-10.9	407,984.58	570,023.98	32° 7' 17.270 N	104° 6' 25.730 W
6,750.0	0.61	185.89	6,747.9	-13.7	-11.2	407,984.48	570,023.74	32° 7' 17.269 N	104° 6' 25.733 W
6,775.0	1.12	177.24	6,772.9	-14.1	-11.2	407,984.10	570,023.73	32° 7' 17.266 N	104° 6' 25.733 W
6,800.0	1.20	179.83	6,797.9	-14.6	-11.2	407,983.59	570,023.75	32° 7' 17.261 N	104° 6' 25.733 W
6,825.0	1.26	186.66	6,822.9	-15.1	-11.2	407,983.06	570,023.72	32° 7' 17.255 N	104° 6' 25.733 W
6,850.0	1.10	206.59	6,847.9	-15.6	-11.3	407,982.57	570,023.58	32° 7' 17.251 N	104° 6' 25.735 W
6,875.0	1.17	212.24	6,872.9	-16.1	-11.6	407,982.14	570,023.33	32° 7' 17.246 N	104° 6' 25.738 W
6,900.0	1.18	210.57	6,897.9	-16.5	-11.8	407,981.70	570,023.07	32° 7' 17.242 N	104° 6' 25.741 W
6,925.0	1.36	211.80	6,922.9	-17.0	-12.1	407,981.23	570,022.78	32° 7' 17.237 N	104° 6' 25.744 W
6,950.0	1.41	209.67	6,947.9	-17.5	-12.4	407,980.71	570,022.47	32° 7' 17.232 N	104° 6' 25.748 W
6,975.0	1.31	213.35	6,972.9	-18.0	-12.7	407,980.20	570,022.16	32° 7' 17.227 N	104° 6' 25.751 W
7,000.0	1.02	214.74	6,997.9	-18.4	-13.0	407,979.78	570,021.88	32° 7' 17.223 N	104° 6' 25.755 W
7,025.0	0.69	219.19	7,022.9	-18.7	-13.2	407,979.48	570,021.65	32° 7' 17.220 N	104° 6' 25.757 W
7,050.0	0.49	211.61	7,047.9	-18.9	-13.4	407,979.28	570,021.50	32° 7' 17.218 N	104° 6' 25.759 W
7,075.0	0.35	191.62	7,072.9	-19.1	-13.5	407,979.11	570,021.43	32° 7' 17.216 N	104° 6' 25.760 W
7,100.0	0.08	168.35	7,097.9	-19.2	-13.5	407,979.02	570,021.42	32° 7' 17.215 N	104° 6' 25.760 W
7,125.0	0.16	126.42	7,122.9	-19.2	-13.5	407,978.98	570,021.45	32° 7' 17.215 N	104° 6' 25.760 W
7,150.0	0.13	206.13	7,147.9	-19.3	-13.4	407,978.93	570,021.47	32° 7' 17.215 N	104° 6' 25.759 W
7,175.0	1.06	289.14	7,172.9	-19.2	-13.7	407,978.98	570,021.24	32° 7' 17.215 N	104° 6' 25.762 W
7,200.0	0.14	285.82	7,197.9	-19.1	-13.9	407,979.07	570,020.99	32° 7' 17.216 N	104° 6' 25.765 W



COG Operating LLC
Survey Report - Geographic

Company: NORTHERN DELAWARE BASIN
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 20 FED COM #5H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well MYOX 20 FED COM #5H
TVD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
MD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
7,225.0	0.29	277.03	7,222.9	-19.1	-14.0	407,979.08	570,020.90	32° 7' 17.216 N	104° 6' 25.766 W
7,250.0	0.40	309.47	7,247.9	-19.1	-14.1	407,979.15	570,020.77	32° 7' 17.217 N	104° 6' 25.768 W
7,275.0	0.52	307.51	7,272.9	-18.9	-14.3	407,979.27	570,020.61	32° 7' 17.218 N	104° 6' 25.769 W
7,300.0	0.94	300.70	7,297.9	-18.8	-14.6	407,979.45	570,020.34	32° 7' 17.220 N	104° 6' 25.772 W
7,321.0	1.00	297.74	7,318.9	-18.6	-14.9	407,979.62	570,020.03	32° 7' 17.221 N	104° 6' 25.776 W
7,405.0	1.27	256.51	7,402.9	-18.5	-16.4	407,979.74	570,018.48	32° 7' 17.223 N	104° 6' 25.794 W
7,436.0	2.51	213.32	7,433.8	-19.1	-17.1	407,979.10	570,017.77	32° 7' 17.216 N	104° 6' 25.802 W
7,468.0	5.47	188.79	7,465.8	-21.2	-17.7	407,977.00	570,017.15	32° 7' 17.196 N	104° 6' 25.810 W
7,500.0	9.14	182.23	7,497.5	-25.2	-18.1	407,972.95	570,016.82	32° 7' 17.155 N	104° 6' 25.814 W
7,531.0	12.88	181.24	7,527.9	-31.2	-18.3	407,967.04	570,016.65	32° 7' 17.097 N	104° 6' 25.816 W
7,562.0	16.31	181.07	7,557.9	-39.0	-18.4	407,959.23	570,016.49	32° 7' 17.020 N	104° 6' 25.818 W
7,594.0	18.76	179.48	7,588.4	-48.6	-18.4	407,949.59	570,016.46	32° 7' 16.924 N	104° 6' 25.818 W
7,626.0	21.38	178.66	7,618.5	-59.6	-18.3	407,938.61	570,016.64	32° 7' 16.816 N	104° 6' 25.817 W
7,657.0	24.44	178.11	7,647.0	-71.7	-17.9	407,926.55	570,016.98	32° 7' 16.696 N	104° 6' 25.813 W
7,689.0	27.31	177.91	7,675.8	-85.6	-17.4	407,912.59	570,017.47	32° 7' 16.558 N	104° 6' 25.808 W
7,721.0	29.98	177.86	7,703.9	-100.9	-16.9	407,897.27	570,018.04	32° 7' 16.406 N	104° 6' 25.801 W
7,752.0	32.73	177.98	7,730.4	-117.1	-16.3	407,881.15	570,018.62	32° 7' 16.247 N	104° 6' 25.795 W
7,784.0	34.46	178.27	7,757.0	-134.7	-15.7	407,863.45	570,019.20	32° 7' 16.072 N	104° 6' 25.789 W
7,815.0	37.85	177.69	7,782.0	-153.0	-15.1	407,845.18	570,019.85	32° 7' 15.891 N	104° 6' 25.782 W
7,847.0	41.19	177.19	7,806.7	-173.4	-14.1	407,824.84	570,020.76	32° 7' 15.690 N	104° 6' 25.771 W
7,879.0	44.19	176.30	7,830.2	-195.0	-12.9	407,803.18	570,022.00	32° 7' 15.475 N	104° 6' 25.758 W
7,910.0	47.92	175.66	7,851.8	-217.3	-11.3	407,780.92	570,023.57	32° 7' 15.255 N	104° 6' 25.740 W
7,942.0	49.05	177.49	7,873.0	-241.2	-9.9	407,757.00	570,024.99	32° 7' 15.018 N	104° 6' 25.724 W
7,974.0	51.30	178.66	7,893.5	-265.8	-9.1	407,732.44	570,025.81	32° 7' 14.775 N	104° 6' 25.715 W
8,005.0	55.15	179.11	7,912.0	-290.6	-8.6	407,707.62	570,026.30	32° 7' 14.529 N	104° 6' 25.710 W
8,037.0	57.80	180.00	7,929.7	-317.3	-8.4	407,680.95	570,026.50	32° 7' 14.265 N	104° 6' 25.708 W
8,068.0	61.06	180.14	7,945.5	-343.9	-8.4	407,654.26	570,026.47	32° 7' 14.001 N	104° 6' 25.709 W
8,100.0	65.06	180.29	7,959.9	-372.5	-8.5	407,625.74	570,026.36	32° 7' 13.719 N	104° 6' 25.711 W
8,132.0	68.66	179.71	7,972.5	-401.9	-8.5	407,596.32	570,026.36	32° 7' 13.428 N	104° 6' 25.712 W
8,163.0	72.27	178.73	7,982.9	-431.1	-8.1	407,567.11	570,026.76	32° 7' 13.139 N	104° 6' 25.708 W
8,195.0	75.66	178.68	7,991.7	-461.8	-7.4	407,536.37	570,027.46	32° 7' 12.835 N	104° 6' 25.701 W
8,226.0	79.31	179.11	7,998.4	-492.1	-6.9	407,506.11	570,028.04	32° 7' 12.535 N	104° 6' 25.695 W
8,258.0	81.29	180.66	8,003.8	-523.6	-6.8	407,474.57	570,028.10	32° 7' 12.223 N	104° 6' 25.695 W
8,290.0	85.29	181.19	8,007.6	-555.4	-7.3	407,442.80	570,027.59	32° 7' 11.909 N	104° 6' 25.701 W
8,321.0	89.05	181.27	8,009.1	-586.3	-8.0	407,411.85	570,026.92	32° 7' 11.602 N	104° 6' 25.710 W
8,353.0	89.70	181.32	8,009.4	-618.3	-8.7	407,379.86	570,026.20	32° 7' 11.286 N	104° 6' 25.719 W
8,410.0	90.05	180.95	8,009.6	-675.3	-9.8	407,322.88	570,025.07	32° 7' 10.722 N	104° 6' 25.734 W
8,499.0	90.84	180.30	8,008.9	-764.3	-10.8	407,233.89	570,024.10	32° 7' 9.841 N	104° 6' 25.747 W
8,589.0	91.52	179.96	8,007.0	-854.3	-11.0	407,143.91	570,023.90	32° 7' 8.951 N	104° 6' 25.752 W
8,680.0	90.59	180.65	8,005.4	-945.3	-11.5	407,052.92	570,023.41	32° 7' 8.050 N	104° 6' 25.759 W
8,770.0	89.23	180.16	8,005.5	-1,035.3	-12.1	406,962.93	570,022.77	32° 7' 7.160 N	104° 6' 25.769 W
8,861.0	88.66	179.78	8,007.2	-1,126.3	-12.1	406,871.94	570,022.82	32° 7' 6.259 N	104° 6' 25.771 W
8,955.0	89.66	179.28	8,008.5	-1,220.2	-11.3	406,777.96	570,023.59	32° 7' 5.329 N	104° 6' 25.764 W
9,050.0	89.93	178.23	8,008.9	-1,315.2	-9.2	406,682.98	570,025.66	32° 7' 4.389 N	104° 6' 25.742 W
9,145.0	89.93	178.06	8,009.0	-1,410.2	-6.2	406,588.03	570,028.73	32° 7' 3.449 N	104° 6' 25.709 W
9,239.0	89.46	178.04	8,009.5	-1,504.1	-3.0	406,494.09	570,031.93	32° 7' 2.520 N	104° 6' 25.674 W
9,332.0	89.22	177.35	8,010.6	-1,597.0	0.8	406,401.17	570,035.67	32° 7' 1.600 N	104° 6' 25.633 W
9,426.0	89.33	178.33	8,011.8	-1,691.0	4.3	406,307.25	570,039.21	32° 7' 0.670 N	104° 6' 25.594 W
9,520.0	89.63	179.11	8,012.6	-1,784.9	6.4	406,213.28	570,041.31	32° 6' 59.740 N	104° 6' 25.572 W
9,613.0	89.66	178.93	8,013.2	-1,877.9	8.0	406,120.29	570,042.90	32° 6' 58.820 N	104° 6' 25.556 W
9,708.0	91.45	179.26	8,012.3	-1,972.9	9.5	406,025.31	570,044.40	32° 6' 57.880 N	104° 6' 25.540 W
9,802.0	91.63	180.11	8,009.7	-2,066.9	10.0	405,931.35	570,044.92	32° 6' 56.950 N	104° 6' 25.537 W
9,897.0	89.66	180.70	8,008.7	-2,161.8	9.3	405,836.36	570,044.25	32° 6' 56.010 N	104° 6' 25.547 W
9,992.0	89.95	180.78	8,009.0	-2,256.8	8.1	405,741.37	570,043.02	32° 6' 55.070 N	104° 6' 25.563 W
10,087.0	90.84	181.06	8,008.3	-2,351.8	6.6	405,646.38	570,041.50	32° 6' 54.130 N	104° 6' 25.583 W

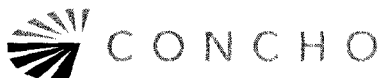


COG Operating LLC
Survey Report - Geographic

Company: NORTHERN DELAWARE BASIN
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 20 FED COM #5H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well MYOX 20 FED COM #5H
TVD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
MD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,182.0	90.14	180.22	8,007.5	-2,446.8	5.5	405,551.40	570,040.44	32° 6' 53.190 N	104° 6' 25.598 W
10,276.0	90.87	180.21	8,006.7	-2,540.8	5.2	405,457.40	570,040.08	32° 6' 52.260 N	104° 6' 25.605 W
10,371.0	89.32	179.87	8,006.5	-2,635.8	5.1	405,362.40	570,040.02	32° 6' 51.320 N	104° 6' 25.608 W
10,466.0	89.30	179.68	8,007.7	-2,730.8	5.5	405,267.41	570,040.39	32° 6' 50.380 N	104° 6' 25.606 W
10,561.0	92.38	180.45	8,006.3	-2,825.8	5.4	405,172.43	570,040.28	32° 6' 49.440 N	104° 6' 25.609 W
10,656.0	91.29	180.56	8,003.3	-2,920.7	4.5	405,077.49	570,039.45	32° 6' 48.500 N	104° 6' 25.621 W
10,750.0	89.16	181.00	8,002.9	-3,014.7	3.3	404,983.50	570,038.17	32° 6' 47.570 N	104° 6' 25.638 W
10,845.0	89.50	181.25	8,004.0	-3,109.7	1.4	404,888.53	570,036.30	32° 6' 46.630 N	104° 6' 25.662 W
10,940.0	89.88	181.98	8,004.5	-3,204.6	-1.3	404,793.57	570,033.62	32° 6' 45.690 N	104° 6' 25.696 W
11,035.0	89.30	181.81	8,005.2	-3,299.6	-4.4	404,698.62	570,030.48	32° 6' 44.751 N	104° 6' 25.735 W
11,130.0	90.10	181.24	8,005.7	-3,394.5	-6.9	404,603.66	570,027.95	32° 6' 43.811 N	104° 6' 25.766 W
11,225.0	89.62	181.59	8,005.9	-3,489.5	-9.3	404,508.69	570,025.61	32° 6' 42.871 N	104° 6' 25.796 W
11,320.0	90.13	180.51	8,006.1	-3,584.5	-11.0	404,413.71	570,023.87	32° 6' 41.931 N	104° 6' 25.819 W
11,415.0	91.42	178.20	8,004.8	-3,679.5	-10.0	404,318.73	570,024.94	32° 6' 40.991 N	104° 6' 25.808 W
11,510.0	89.51	176.86	8,004.1	-3,774.4	-5.9	404,223.83	570,029.03	32° 6' 40.052 N	104° 6' 25.763 W
11,605.0	91.06	178.16	8,003.6	-3,869.3	-1.7	404,128.92	570,033.16	32° 6' 39.113 N	104° 6' 25.717 W
11,700.0	89.84	178.72	8,002.9	-3,964.2	0.8	404,033.96	570,035.74	32° 6' 38.173 N	104° 6' 25.690 W
11,794.0	90.46	179.03	8,002.6	-4,058.2	2.7	403,939.98	570,037.59	32° 6' 37.243 N	104° 6' 25.671 W
11,889.0	91.21	179.35	8,001.2	-4,153.2	4.0	403,845.00	570,038.93	32° 6' 36.303 N	104° 6' 25.657 W
11,984.0	90.82	179.75	7,999.5	-4,248.2	4.8	403,750.02	570,039.68	32° 6' 35.363 N	104° 6' 25.651 W
12,079.0	90.62	178.78	7,998.3	-4,343.2	6.0	403,655.04	570,040.90	32° 6' 34.423 N	104° 6' 25.639 W
12,174.0	89.22	177.58	7,998.5	-4,438.1	9.0	403,560.09	570,043.91	32° 6' 33.483 N	104° 6' 25.606 W
12,268.0	89.01	177.10	7,999.9	-4,532.0	13.4	403,466.20	570,048.28	32° 6' 32.554 N	104° 6' 25.558 W
12,363.0	90.23	177.63	8,000.6	-4,626.9	17.7	403,371.31	570,052.64	32° 6' 31.615 N	104° 6' 25.509 W
12,458.0	90.25	177.66	8,000.2	-4,721.8	21.6	403,276.39	570,056.55	32° 6' 30.675 N	104° 6' 25.466 W
12,553.0	90.60	177.74	7,999.5	-4,816.7	25.5	403,181.47	570,060.36	32° 6' 29.736 N	104° 6' 25.424 W
12,648.0	91.35	177.82	7,997.8	-4,911.6	29.1	403,086.55	570,064.04	32° 6' 28.796 N	104° 6' 25.384 W
12,743.0	91.02	178.41	7,995.9	-5,006.6	32.3	402,991.63	570,067.16	32° 6' 27.857 N	104° 6' 25.350 W
12,837.0	90.89	179.93	7,994.3	-5,100.5	33.6	402,897.65	570,068.52	32° 6' 26.927 N	104° 6' 25.336 W
12,932.0	90.09	180.74	7,993.5	-5,195.5	33.1	402,802.66	570,067.97	32° 6' 25.987 N	104° 6' 25.345 W
13,027.0	89.28	180.41	7,994.0	-5,290.5	32.1	402,707.67	570,067.01	32° 6' 25.047 N	104° 6' 25.358 W
13,122.0	90.86	181.24	7,993.9	-5,385.5	30.7	402,612.68	570,065.65	32° 6' 24.107 N	104° 6' 25.377 W
13,217.0	87.85	180.00	7,995.0	-5,480.5	29.7	402,517.70	570,064.62	32° 6' 23.167 N	104° 6' 25.391 W
13,312.0	88.13	178.59	7,998.3	-5,575.4	30.9	402,422.77	570,065.79	32° 6' 22.227 N	104° 6' 25.380 W
13,407.0	90.26	178.55	7,999.6	-5,670.4	33.3	402,327.82	570,068.16	32° 6' 21.287 N	104° 6' 25.354 W
13,501.0	92.69	179.76	7,997.2	-5,764.3	34.6	402,233.87	570,069.54	32° 6' 20.358 N	104° 6' 25.341 W
13,596.0	91.90	179.68	7,993.4	-5,859.3	35.1	402,138.94	570,070.01	32° 6' 19.418 N	104° 6' 25.338 W
13,691.0	90.22	179.93	7,991.7	-5,954.2	35.4	402,043.96	570,070.33	32° 6' 18.478 N	104° 6' 25.336 W
13,786.0	91.26	179.95	7,990.4	-6,049.2	35.5	401,948.97	570,070.43	32° 6' 17.538 N	104° 6' 25.337 W
13,881.0	88.05	179.15	7,991.0	-6,144.2	36.3	401,853.99	570,071.18	32° 6' 16.598 N	104° 6' 25.331 W
13,976.0	89.06	179.56	7,993.4	-6,239.2	37.3	401,759.03	570,072.25	32° 6' 15.658 N	104° 6' 25.321 W
14,071.0	90.51	180.18	7,993.8	-6,334.2	37.6	401,664.03	570,072.46	32° 6' 14.718 N	104° 6' 25.321 W
14,165.0	91.80	180.73	7,991.9	-6,428.1	36.8	401,570.06	570,071.71	32° 6' 13.788 N	104° 6' 25.332 W
14,260.0	88.13	179.56	7,991.9	-6,523.1	36.6	401,475.08	570,071.47	32° 6' 12.848 N	104° 6' 25.337 W
14,355.0	88.50	179.28	7,994.7	-6,618.1	37.5	401,380.12	570,072.44	32° 6' 11.908 N	104° 6' 25.328 W
14,450.0	88.46	178.87	7,997.2	-6,713.0	39.1	401,285.17	570,073.97	32° 6' 10.969 N	104° 6' 25.312 W
14,545.0	89.96	180.02	7,998.5	-6,808.0	40.0	401,190.19	570,074.89	32° 6' 10.029 N	104° 6' 25.304 W
14,639.0	89.58	179.29	7,998.9	-6,902.0	40.6	401,096.19	570,075.45	32° 6' 9.098 N	104° 6' 25.300 W
14,734.0	90.54	179.81	7,998.8	-6,997.0	41.3	401,001.19	570,076.20	32° 6' 8.158 N	104° 6' 25.293 W
14,828.0	92.73	180.25	7,996.1	-7,091.0	41.2	400,907.24	570,076.15	32° 6' 7.229 N	104° 6' 25.296 W
14,923.0	91.37	181.08	7,992.7	-7,185.9	40.1	400,812.31	570,075.05	32° 6' 6.289 N	104° 6' 25.311 W
15,018.0	89.64	180.15	7,991.9	-7,280.9	39.1	400,717.32	570,074.03	32° 6' 5.349 N	104° 6' 25.325 W
15,113.0	90.85	180.11	7,991.5	-7,375.9	38.9	400,622.32	570,073.81	32° 6' 4.409 N	104° 6' 25.330 W
15,208.0	91.72	180.33	7,989.4	-7,470.8	38.5	400,527.35	570,073.45	32° 6' 3.469 N	104° 6' 25.337 W
15,302.0	91.25	179.42	7,986.9	-7,564.8	38.8	400,433.38	570,073.65	32° 6' 2.539 N	104° 6' 25.337 W



COG Operating LLC
Survey Report - Geographic

Company: NORTHERN DELAWARE BASIN
Project: EDDY COUNTY, NM
Site: ATLAS
Well: MYOX 20 FED COM #5H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well MYOX 20 FED COM #5H
TVD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
MD Reference: RKB=3026.1+24 @ 3050.1usft (ENSIGN 156)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,397.0	89.39	178.27	7,986.4	-7,659.8	40.7	400,338.41	570,075.57	32° 6' 1.599 N	104° 6' 25.317 W
15,492.0	91.72	178.98	7,985.5	-7,754.8	42.9	400,243.45	570,077.85	32° 6' 0.659 N	104° 6' 25.293 W
15,587.0	91.53	179.14	7,982.8	-7,849.7	44.5	400,148.50	570,079.41	32° 5' 59.720 N	104° 6' 25.277 W
15,682.0	91.73	178.72	7,980.1	-7,944.6	46.3	400,053.55	570,081.18	32° 5' 58.780 N	104° 6' 25.259 W
15,776.0	88.00	178.35	7,980.3	-8,038.6	48.7	399,959.60	570,083.58	32° 5' 57.850 N	104° 6' 25.233 W
15,871.0	88.71	178.41	7,983.0	-8,133.5	51.4	399,864.68	570,086.27	32° 5' 56.911 N	104° 6' 25.204 W
15,966.0	89.04	178.57	7,984.9	-8,228.5	53.9	399,769.73	570,088.77	32° 5' 55.971 N	104° 6' 25.177 W
16,061.0	92.86	179.56	7,983.3	-8,323.4	55.4	399,674.78	570,090.32	32° 5' 55.031 N	104° 6' 25.162 W
16,155.0	91.02	179.28	7,980.1	-8,417.4	56.4	399,580.84	570,091.27	32° 5' 54.101 N	104° 6' 25.153 W
16,250.0	89.71	179.12	7,979.5	-8,512.3	57.7	399,485.85	570,092.60	32° 5' 53.161 N	104° 6' 25.140 W
16,345.0	92.83	180.19	7,977.4	-8,607.3	58.3	399,390.89	570,093.17	32° 5' 52.222 N	104° 6' 25.135 W
16,440.0	91.53	180.07	7,973.8	-8,702.2	58.1	399,295.96	570,092.96	32° 5' 51.282 N	104° 6' 25.140 W
16,534.0	88.72	179.47	7,973.6	-8,796.2	58.4	399,201.97	570,093.33	32° 5' 50.352 N	104° 6' 25.138 W
16,629.0	90.62	179.88	7,974.2	-8,891.2	59.0	399,106.98	570,093.87	32° 5' 49.412 N	104° 6' 25.134 W
16,723.0	91.60	180.72	7,972.3	-8,985.2	58.5	399,013.00	570,093.38	32° 5' 48.482 N	104° 6' 25.142 W
16,818.0	89.66	179.81	7,971.3	-9,080.2	58.0	398,918.01	570,092.94	32° 5' 47.542 N	104° 6' 25.150 W
16,913.0	89.07	180.63	7,972.3	-9,175.2	57.7	398,823.02	570,092.58	32° 5' 46.602 N	104° 6' 25.156 W
17,007.0	90.20	181.43	7,972.9	-9,269.2	56.0	398,729.04	570,090.89	32° 5' 45.672 N	104° 6' 25.178 W
17,102.0	88.80	181.62	7,973.8	-9,364.1	53.5	398,634.08	570,088.36	32° 5' 44.732 N	104° 6' 25.210 W
17,197.0	88.56	181.64	7,976.0	-9,459.1	50.8	398,539.14	570,085.66	32° 5' 43.792 N	104° 6' 25.243 W
17,292.0	88.24	180.73	7,978.6	-9,554.0	48.8	398,444.20	570,083.69	32° 5' 42.853 N	104° 6' 25.269 W
17,387.0	89.33	180.71	7,980.6	-9,649.0	47.6	398,349.23	570,082.50	32° 5' 41.913 N	104° 6' 25.285 W
17,481.0	89.76	180.10	7,981.4	-9,743.0	46.9	398,255.24	570,081.83	32° 5' 40.983 N	104° 6' 25.295 W
17,577.0	90.71	180.64	7,981.0	-9,839.0	46.3	398,159.24	570,081.21	32° 5' 40.033 N	104° 6' 25.304 W
17,671.0	90.54	180.16	7,980.0	-9,932.9	45.7	398,065.25	570,080.56	32° 5' 39.103 N	104° 6' 25.314 W
17,766.0	91.29	180.47	7,978.4	-10,027.9	45.1	397,970.27	570,080.04	32° 5' 38.163 N	104° 6' 25.323 W
17,789.0	91.56	180.61	7,977.9	-10,050.9	44.9	397,947.27	570,079.82	32° 5' 37.935 N	104° 6' 25.326 W
17,853.0	91.56	180.61	7,976.1	-10,114.9	44.2	397,883.30	570,079.14	32° 5' 37.302 N	104° 6' 25.335 W

Checked By: _____ Approved By: _____ Date: _____