

Chisholm Aztec 14-23 Fed Com 3BS 3H MWD Surveys 0ft to 22260ft MD

Survey Geodetic Report

(Def Survey)



HOBBS OCD
JAN 07 2020
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Report Date: November 27, 2019 - 09:03 AM
Client: Chisholm
Field: NM Lea County (NAD 83)
Structure / Slot: Chisholm Aztec 14-23 Fed Com 3BS Pad / 3BS 3H
Well: Chisholm Aztec 14-23 Fed Com 3BS 3H
Borehole: Chisholm Aztec 14-23 Fed Com 3BS 3H
UWI / API#: Unknown / Unknown
Survey Name: Chisholm Aztec 14-23 Fed Com 3BS 3H MWD Surveys 0ft to 22260ft MD
Survey Date: October 22, 2019
Tort / AHD / DDI / ERD Ratio: 314.518 * / 11754.733 ft / 6.840 / 0.988
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 29' 12.53886", W 103° 38' 57.85464"
Location Grid N/E Y/X: N 541510.640 RUS, E 752221.720 RUS
CRS Grid Convergence Angle: 0.3674 *
Grid Scale Factor: 0.99996002
Version / Patch: 2.10.782.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.650 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB=31'
TVD Reference Elevation: 3875.500 ft above MSL
Seabed / Ground Elevation: 3844.500 ft above MSL
Magnetic Declination: 6.684 *
Total Gravity Field Strength: 998.4616mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48081.938 nT
Magnetic Dip Angle: 60.291 *
Declination Date: October 22, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.3674 *
Total Corr Mag North->Grid North: 6.3264 *
Local Coord Referenced To: Well Head

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 ° ' ")
SHL	0.00	0.00	270.00	0.00	0.00	0.00	0.00	N/A	541510.64	752221.72	N 32 29 12.54	W 103 38 57.85
First SLB MWD Survey	169.00	0.52	148.74	169.00	0.66	-0.66	0.40	0.31	541509.98	752222.12	N 32 29 12.53	W 103 38 57.85
	182.00	0.68	165.84	182.00	0.78	-0.78	0.45	1.83	541509.86	752222.17	N 32 29 12.53	W 103 38 57.85
	278.00	0.64	179.59	277.99	1.87	-1.87	0.59	0.17	541508.77	752222.31	N 32 29 12.52	W 103 38 57.85
	390.00	0.59	222.61	389.98	2.92	-2.92	0.20	0.40	541507.72	752221.92	N 32 29 12.51	W 103 38 57.85
	542.00	0.85	252.27	541.97	3.83	-3.84	-1.40	0.29	541506.80	752220.32	N 32 29 12.50	W 103 38 57.87
	655.00	0.75	260.51	654.96	4.20	-4.22	-2.93	0.13	541506.42	752218.79	N 32 29 12.50	W 103 38 57.89
	747.00	0.56	254.85	746.96	4.41	-4.43	-3.95	0.22	541506.21	752217.77	N 32 29 12.50	W 103 38 57.90
	807.00	0.56	245.83	806.95	4.60	-4.63	-4.51	0.15	541506.01	752217.22	N 32 29 12.49	W 103 38 57.91
	901.00	0.66	231.32	900.95	5.12	-5.16	-5.35	0.19	541505.48	752216.37	N 32 29 12.49	W 103 38 57.92
	995.00	0.38	227.93	994.94	5.67	-5.70	-6.00	0.30	541504.94	752215.72	N 32 29 12.48	W 103 38 57.93
	1090.00	0.40	214.54	1089.94	6.15	-6.19	-6.42	0.10	541504.45	752215.30	N 32 29 12.48	W 103 38 57.93
	1184.00	0.63	198.65	1183.94	6.91	-6.95	-6.77	0.29	541503.69	752214.95	N 32 29 12.47	W 103 38 57.93
	1278.00	0.79	201.53	1277.93	8.00	-8.04	-7.18	0.17	541502.60	752214.54	N 32 29 12.46	W 103 38 57.94
	1335.00	0.94	209.72	1334.92	8.78	-8.81	-7.55	0.34	541501.83	752214.17	N 32 29 12.45	W 103 38 57.94
	1428.00	1.25	243.72	1428.91	9.88	-9.93	-8.85	0.75	541500.71	752212.87	N 32 29 12.44	W 103 38 57.96
	1496.00	1.00	316.00	1495.90	9.78	-9.84	-9.92	2.00	541500.80	752211.80	N 32 29 12.44	W 103 38 57.97
	1629.00	1.78	323.70	1628.88	7.26	-7.34	-11.95	0.80	541503.30	752209.78	N 32 29 12.47	W 103 38 57.99
	1724.00	3.96	295.81	1723.74	4.62	-4.72	-15.77	2.86	541505.92	752205.95	N 32 29 12.49	W 103 38 58.04
	1818.00	6.31	284.62	1817.36	1.86	-2.00	-23.69	2.71	541508.84	752198.03	N 32 29 12.52	W 103 38 58.13
	1913.00	4.40	284.18	1911.94	-0.41	0.21	-32.28	2.01	541510.85	752189.44	N 32 29 12.54	W 103 38 58.23
	2007.00	5.36	281.64	2005.59	-2.22	1.98	-40.08	1.05	541512.62	752181.65	N 32 29 12.56	W 103 38 58.32
	2101.00	6.73	281.07	2099.07	-4.22	3.92	-49.78	1.48	541514.56	752171.94	N 32 29 12.58	W 103 38 58.44
	2196.00	6.13	280.00	2193.47	-6.24	5.87	-60.24	0.84	541516.51	752161.48	N 32 29 12.60	W 103 38 58.56
	2290.00	5.97	280.24	2288.95	-8.04	7.61	-69.99	0.17	541518.25	752151.73	N 32 29 12.62	W 103 38 58.67
	2384.00	5.82	279.74	2380.45	-9.77	9.29	-79.50	0.17	541519.93	752142.22	N 32 29 12.64	W 103 38 58.78
	2479.00	5.68	278.61	2474.97	-11.19	10.84	-89.92	0.38	541521.28	752132.81	N 32 29 12.65	W 103 38 58.89
	2573.00	5.67	280.04	2568.51	-12.59	11.99	-98.11	0.38	541522.63	752123.61	N 32 29 12.66	W 103 38 59.00
	2668.00	5.23	283.48	2663.08	-14.47	13.81	-106.94	0.58	541524.45	752114.78	N 32 29 12.68	W 103 38 59.10
	2762.00	4.82	284.82	2756.72	-16.52	15.82	-114.93	0.45	541526.46	752106.80	N 32 29 12.70	W 103 38 59.20
	2857.00	4.50	286.86	2851.41	-18.67	17.92	-122.35	0.38	541528.56	752099.37	N 32 29 12.72	W 103 38 59.28
	2952.00	4.13	292.07	2946.14	-21.08	20.29	-129.09	0.57	541530.93	752092.84	N 32 29 12.75	W 103 38 59.36
	3046.00	4.05	292.72	3039.90	-23.67	22.84	-135.29	0.10	541533.48	752086.44	N 32 29 12.77	W 103 38 59.43
	3141.00	4.15	273.23	3134.66	-25.20	24.33	-141.82	1.46	541534.78	752079.91	N 32 29 12.79	W 103 38 59.51
	3235.00	4.38	266.95	3228.40	-25.05	24.15	-148.78	0.77	541534.78	752072.94	N 32 29 12.79	W 103 38 59.59
	3330.00	4.34	266.80	3323.13	-24.51	23.56	-155.98	0.23	541534.20	752065.75	N 32 29 12.78	W 103 38 59.67
	3424.00	4.64	256.96	3418.84	-23.50	22.51	-163.23	0.88	541533.14	752058.49	N 32 29 12.77	W 103 38 59.76
	3518.00	4.98	252.93	3510.51	-21.49	20.45	-170.84	0.51	541531.09	752050.89	N 32 29 12.75	W 103 38 59.85
	3580.00	4.78	255.03	3572.28	-20.07	19.00	-175.89	0.46	541529.84	752045.83	N 32 29 12.74	W 103 38 59.91
	3708.00	4.82	257.08	3699.84	-17.56	16.42	-186.29	0.14	541527.06	752035.46	N 32 29 12.71	W 103 39 0.03
	3802.00	4.68	258.13	3793.52	-15.93	14.75	-193.87	0.18	541525.39	752027.88	N 32 29 12.70	W 103 39 0.12
	3897.00	4.12	260.44	3888.23	-14.81	13.39	-201.03	0.62	541524.03	752020.70	N 32 29 12.68	W 103 39 0.20
	3991.00	3.97	257.35	3982.00	-13.38	12.11	-207.53	0.28	541522.75	752014.20	N 32 29 12.67	W 103 39 0.28
	4086.00	5.56	264.23	4076.67	-12.24	10.93	-215.32	1.78	541521.57	752006.41	N 32 29 12.66	W 103 39 0.37
	4180.00	6.04	264.41	4170.19	-11.38	9.99	-224.77	0.51	541520.83	751998.96	N 32 29 12.65	W 103 39 0.48
	4274.00	5.45	260.73	4263.72	-10.22	8.79	-234.10	0.74	541519.43	751987.63	N 32 29 12.64	W 103 39 0.59
	4369.00	5.18	259.66	4358.31	-8.78	7.29	-242.77	0.30	541517.93	751978.96	N 32 29 12.63	W 103 39 0.69
	4464.00	4.90	260.54	4452.94	-7.39	5.88	-250.99	0.31	541516.50	751970.74	N 32 29 12.61	W 103 39 0.78
	4558.00	6.07	278.51	4548.51	-7.35	5.78	-259.89	2.03	541516.40	751961.84	N 32 29 12.61	W 103 39 0.89
	4653.00	7.56	278.38	4640.84	-9.00	7.35	-271.05	1.81	541517.99	751950.68	N 32 29 12.63	W 103 39 1.02
	4748.00	7.76	277.09	4734.99	-10.89	9.16	-283.58	0.38	541519.80	751938.15	N 32 29 12.65	W 103 39 1.16
	4842.00	7.84	275.30	4828.15	-12.33	10.52	-296.10	0.29	541521.16	751925.63	N 32 29 12.66	W 103 39 1.31
	4936.00	7.30	275.90	4921.35	-13.59	11.71	-308.26	0.37	541522.35	751913.47	N 32 29 12.67	W 103 39 1.45
	5031.00	7.12	274.90	5015.60	-14.79	12.83	-320.13	0.23	541523.47	751901.60	N 32 29 12.69	W 103 39 1.59
	5125.00	6.70	273.68	5108.91	-15.71	13.68	-331.41	0.47	541524.32	751890.33	N 32 29 12.70	W 103 39 1.72
	5220.00	6.36	273.65	5203.30	-16.46	14.37	-342.19	0.36	541525.01	751879.55	N 32 29 12.70	W 103 39 1.85
	5315.00	6.11	273.68	5297.73	-17.19	15.03	-352.48	0.26	541525.67	751869.25	N 32 29 12.71	W 103 39 1.97
	5409.00	5.67	275.70	5391.24	-18.03	15.81	-362.10	0.52	541526.45	751859.84	N 32 29 12.72	W 103 39 2.08
	5504.00	5.50	271.41	5485.79	-18.66	16.39	-371.32	0.47	541527.03	751850.42	N 32 29 12.72	W 103 39 2.19
	5598.00	5.17	270.15	5579.38	-18.84	16.51	-380.06	0.37	541527.15	751841.68	N 32 29 12.73	W 103 39 2.29
	5693.00	5.18	269.83	5673.99	-18.89	16.51	-388.83	0.03	541527.15	751833.11	N 32 29 12.73	W 103 39 2.39
	5787.00	5.12	272.31	5767.81	-19.09	16.67	-397.06	0.25	541527.31	751824.68	N 32 29 12.73	W 103 39 2.49
	5882.00	5.07	268.44	5862.24	-19.20	16.73	-405.49	0.37	541527.37	751816.24	N 32 29 12.73	W 103 39 2.59
	5921.00	4.84	267.73	5901.09	-19.11	16.61	-408.86	0.81	541527.25	751812.88	N 32 29 12.73	W 103 39 2.63
	6063.00	5.45	270.65	6042.52	-19.03	16.45	-421.59	0.47	541527.09	751800.15	N 32 29 12.73	W 103 39 2.78
	6158.00	5.59	267.70	6137.08	-18.95	16.32	-430.72	0.33	541526.96	751791.02	N 32 29 12.73	W 103 39 2.88
	6252.00	5.51	266.93	6230.64	-18.58	15.89	-439.80	0.12	541526.53	751781.94	N 32 29 12.72	W 103 39 2.99
	6347.00	5.12	263.33	6325.23	-17.90	15.16	-448.57	0.54	541525.80	751773.17	N 32 29 12.72	W 103 39 3.09
	6441.00	5.38	277.12	6418.84	-18.01	15.22	-457.11	1.37	541525.86	751764.63	N 32 29 12.72	W 103 39 3.19
	6535.00	5.13	262.09	6512.45	-18.03	15.18	-465.64	1.48	541525.82	751756.10	N 32 29 12.72	W 103 39 3.29
	6630.00	4.61	260.81	6607.11	-18.88	13.99	-473.62	0.58	541524.63	751748.12	N 32 29 12.71	W 103 39 3.38
	6724.00	4.57	261.47	6700.81	-15.77	12.83	-481.05	0.07	541523.47	751740.69	N 32 29 12.70	W 103 39 3.47
	6819.00	4.72	263.24	6795.49	-14.79	11.81	-488.68	0.22	541522.45	751733.07	N 32 29 12.69	W 103 39 3.56
	6913.00	4.61	260.43	6889.18	-13.76	10.73	-496.24	0.27				

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (m)	NS (ft)	EW (ft)	DLS C/(100m)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	7291.00	5.30	267.65	7265.08	-7.43	4.23	-525.66	1.73	541514.87	751686.58	N 32 29 12.61 W 103 39	3.98
	7386.00	5.99	270.71	7360.52	-7.40	4.13	-534.90	0.78	541514.77	751686.84	N 32 29 12.61 W 103 39	4.10
	7480.00	5.42	267.76	7454.05	-7.34	4.02	-544.24	0.68	541514.66	751687.50	N 32 29 12.61 W 103 39	4.21
	7575.00	4.89	267.29	7548.66	-7.02	3.65	-552.85	0.45	541514.29	751688.89	N 32 29 12.61 W 103 39	4.31
	7669.00	4.89	266.77	7642.30	-6.85	3.22	-561.02	0.05	541513.86	751690.73	N 32 29 12.61 W 103 39	4.40
	7764.00	4.70	261.57	7738.97	-5.90	2.42	-568.89	0.55	541513.06	751692.75	N 32 29 12.60 W 103 39	4.50
	7859.00	3.96	260.96	7831.69	-4.85	1.33	-576.08	0.78	541511.97	751645.66	N 32 29 12.59 W 103 39	4.58
	7952.00	5.40	272.23	7924.38	-4.57	1.00	-583.83	1.83	541511.64	751638.12	N 32 29 12.59 W 103 39	4.67
	8047.00	5.74	274.31	8018.93	-5.15	1.53	-592.83	0.42	541512.17	751628.91	N 32 29 12.59 W 103 39	4.78
	8141.00	5.39	276.18	8112.49	-6.04	2.36	-601.91	0.42	541513.00	751619.84	N 32 29 12.60 W 103 39	4.88
	8236.00	5.32	274.37	8207.08	-6.91	3.18	-610.74	0.19	541513.82	751611.01	N 32 29 12.61 W 103 39	4.98
	8330.00	5.12	272.55	8300.69	-7.48	3.69	-619.27	0.28	541514.33	751602.48	N 32 29 12.61 W 103 39	5.08
	8425.00	4.69	271.37	8395.34	-7.81	3.98	-627.39	0.46	541514.62	751594.36	N 32 29 12.62 W 103 39	5.18
	8519.00	4.72	271.05	8489.02	-8.02	4.14	-635.10	0.04	541514.78	751586.65	N 32 29 12.62 W 103 39	5.27
	8614.00	4.23	269.92	8583.73	-8.13	4.21	-642.51	0.52	541514.85	751579.24	N 32 29 12.62 W 103 39	5.36
	8708.00	4.70	275.90	8677.45	-8.57	4.60	-649.81	0.70	541515.24	751571.94	N 32 29 12.63 W 103 39	5.44
	8803.00	4.60	276.26	8772.13	-9.43	5.41	-657.46	0.11	541516.05	751564.28	N 32 29 12.63 W 103 39	5.53
	8898.00	4.77	281.78	8866.82	-10.70	6.63	-665.12	0.51	541517.27	751556.63	N 32 29 12.65 W 103 39	5.62
	8992.00	4.13	283.33	8960.53	-12.32	8.21	-672.24	0.69	541518.85	751549.51	N 32 29 12.66 W 103 39	5.70
	9087.00	5.18	280.70	9055.22	-13.95	9.80	-679.78	1.13	541520.44	751541.97	N 32 29 12.68 W 103 39	5.79
	9181.00	3.73	274.86	9148.93	-15.04	10.84	-687.00	1.61	541521.48	751534.75	N 32 29 12.69 W 103 39	5.87
	9276.00	4.55	295.25	9243.69	-16.95	12.71	-693.48	1.76	541523.35	751528.26	N 32 29 12.71 W 103 39	5.95
	9370.00	3.55	300.33	9337.45	-20.05	15.77	-699.37	1.13	541526.41	751522.38	N 32 29 12.74 W 103 39	6.02
	9465.00	4.93	281.11	9432.20	-22.36	18.05	-705.91	2.07	541528.68	751515.84	N 32 29 12.76 W 103 39	6.09
	9560.00	5.18	278.72	9526.83	-23.84	19.48	-714.16	0.34	541530.12	751507.59	N 32 29 12.78 W 103 39	6.19
	9655.00	7.20	275.88	9621.27	-25.17	20.74	-724.32	2.15	541531.38	751497.43	N 32 29 12.79 W 103 39	6.31
	9749.00	6.49	275.44	9714.60	-26.34	21.85	-735.47	0.78	541532.49	751486.28	N 32 29 12.80 W 103 39	6.44
	9844.00	7.19	272.53	9808.92	-27.18	22.62	-746.75	0.82	541533.26	751475.00	N 32 29 12.81 W 103 39	6.57
	9938.00	8.08	273.28	9902.09	-27.90	23.26	-759.23	0.95	541533.90	751462.53	N 32 29 12.82 W 103 39	6.72
	10033.00	8.05	275.20	9996.15	-28.98	24.24	-772.51	0.29	541534.88	751449.24	N 32 29 12.83 W 103 39	6.87
	10127.00	7.10	274.05	10089.33	-30.04	25.25	-784.86	1.02	541535.89	751436.89	N 32 29 12.84 W 103 39	7.02
	10222.00	5.49	273.02	10183.75	-30.76	25.90	-795.26	1.70	541536.54	751426.49	N 32 29 12.85 W 103 39	7.14
	10316.00	4.45	273.44	10277.40	-31.27	26.36	-803.39	1.11	541537.00	751418.36	N 32 29 12.85 W 103 39	7.23
	10411.00	6.30	254.48	10371.98	-30.15	25.19	-812.09	2.67	541535.83	751409.66	N 32 29 12.84 W 103 39	7.33
	10505.00	7.54	261.66	10465.30	-27.94	22.91	-823.17	1.61	541533.55	751398.59	N 32 29 12.82 W 103 39	7.46
	10600.00	6.76	264.01	10559.58	-26.52	21.42	-834.89	0.88	541532.06	751386.86	N 32 29 12.80 W 103 39	7.60
	10694.00	7.40	261.86	10652.84	-25.16	19.89	-846.39	0.74	541530.63	751375.37	N 32 29 12.79 W 103 39	7.73
	10789.00	9.80	254.81	10746.77	-22.26	17.00	-860.25	2.75	541527.64	751361.51	N 32 29 12.76 W 103 39	7.90
	10883.00	10.05	256.69	10839.36	-18.37	13.02	-875.95	0.44	541523.66	751345.81	N 32 29 12.72 W 103 39	8.08
	10978.00	8.13	254.38	10933.16	-14.74	9.30	-890.49	2.06	541519.94	751331.27	N 32 29 12.69 W 103 39	8.25
	10995.00	7.61	256.48	10950.00	-14.17	8.72	-892.74	3.49	541519.36	751329.02	N 32 29 12.68 W 103 39	8.28
	11039.00	7.05	256.67	10993.84	-12.90	7.41	-898.20	1.27	541518.05	751323.56	N 32 29 12.67 W 103 39	8.34
	11134.00	9.19	223.34	11087.74	-6.10	0.55	-909.09	5.34	541511.19	751312.67	N 32 29 12.60 W 103 39	8.47
	11181.00	15.63	205.28	11133.63	2.33	-7.92	-914.37	15.84	541502.72	751307.38	N 32 29 12.52 W 103 39	8.53
	11229.00	19.79	202.39	11179.35	15.87	-21.29	-920.23	8.86	541489.35	751301.53	N 32 29 12.39 W 103 39	8.60
	11276.00	22.10	196.01	11223.24	31.49	-37.15	-925.70	6.90	541473.50	751296.05	N 32 29 12.23 W 103 39	8.66
	11323.00	24.30	193.13	11266.44	49.38	-55.07	-930.34	5.27	541455.58	751291.42	N 32 29 12.05 W 103 39	8.72
	11370.00	28.19	192.37	11308.59	69.82	-75.33	-934.92	8.31	541435.31	751286.84	N 32 29 11.85 W 103 39	8.77
	11418.00	33.52	192.59	11349.78	93.62	-99.36	-940.24	11.11	541411.28	751281.52	N 32 29 11.62 W 103 39	8.84
	11512.00	40.09	195.87	11425.01	148.04	-153.87	-954.19	7.29	541356.78	751267.57	N 32 29 11.08 W 103 39	9.01
	11607.00	45.48	192.76	11494.71	210.45	-216.38	-970.05	6.09	541294.27	751251.71	N 32 29 10.46 W 103 39	9.20
LL Crossing	11664.00	50.86	192.28	11532.72	251.84	-257.83	-976.24	9.46	541252.82	751242.52	N 32 29 10.05 W 103 39	9.31
HL Crossing	11701.00	54.35	192.01	11555.18	280.53	-286.56	-985.43	9.46	541224.09	751236.33	N 32 29 9.77 W 103 39	9.38
	11787.55	60.02	190.26	11602.07	351.79	-357.90	-999.43	8.78	541152.78	751222.33	N 32 29 9.06 W 103 39	9.55
	11796.00	60.57	180.10	11606.26	359.00	-365.12	-1000.73	6.76	541145.53	751221.03	N 32 29 8.99 W 103 39	9.56
	11880.00	69.43	184.49	11645.97	443.33	-449.52	-1011.38	10.86	541061.14	751210.38	N 32 29 8.16 W 103 39	9.70
	11984.00	75.92	182.24	11673.95	532.82	-539.04	-1016.61	7.27	540971.62	751205.15	N 32 29 7.27 W 103 39	9.76
	12079.00	80.21	183.29	11693.60	625.81	-631.86	-1021.10	4.64	540878.81	751200.66	N 32 29 6.35 W 103 39	9.82
	12174.00	88.82	182.18	11702.67	719.95	-726.23	-1025.61	9.14	540784.44	751196.16	N 32 29 5.42 W 103 39	9.88
	12243.00	91.74	183.11	11702.33	788.84	-795.14	-1028.79	4.44	540715.53	751192.97	N 32 29 4.74 W 103 39	9.92
	12351.00	90.45	181.83	11700.27	896.69	-903.02	-1033.44	1.68	540607.66	751188.32	N 32 29 3.67 W 103 39	9.99
	12445.00	87.65	179.82	11701.83	990.64	-996.98	-1034.80	3.67	540513.70	751186.97	N 32 29 2.74 W 103 39	10.01
	12539.00	87.70	179.05	11705.64	1084.58	-1080.90	-1033.87	0.82	540419.79	751187.89	N 32 29 1.81 W 103 39	10.01
	12633.00	87.31	178.85	11709.73	1178.47	-1184.79	-1032.15	0.47	540325.90	751189.61	N 32 29 0.88 W 103 39	9.99
	12728.00	87.59	178.84	11713.96	1273.36	-1279.68	-1030.24	0.29	540231.01	751191.53	N 32 28 59.94 W 103 39	9.98
	12822.00	87.59	179.07	11717.91	1367.27	-1373.58	-1028.52	0.24	540137.12	751193.24	N 32 28 59.01 W 103 39	9.96
	12917.00	87.70	179.28	11721.81	1462.19	-1468.49	-1027.16	0.25	540042.21	751194.61	N 32 28 58.07 W 103 39	9.96
	13011.00	88.15	179.74	11725.22	1556.13	-1562.43	-1026.35	0.68	539948.28	751195.41	N 32 28 57.14 W 103 39	9.95
	13105.00	88.66	180.47	11727.83	1650.09	-1656.39	-1026.52	0.95	539854.32	751195.24	N 32 28 56.21 W 103 39	9.96
	13200.00	88.77	180.86	11729.96	1745.05	-1751.36	-1027.63	0.43	539759.36	751194.14	N 32 28 55.28 W 103 39	9.98
	13295.00	88.71	181.55	11732.05	1839.99	-1846.31	-1029.62	0.73	539664.40	751192.14	N 32 28 54.34 W 103 39	10.01
	13389.00	88.77	181.50	11734.12	1933.92	-1940.26	-1032.13	0.08	539570.46	751189.64	N 32 28 53.41 W 103 39	10.05
	13484.00	88.71	181.07	11736.21	2028.85	-2035.21	-1034.26	0.46	539475.51	751187.51	N 32 28 52.47 W 103 39	10.08
	13578.00	88.66	181.03	11738.37	2122.80	-2129.17	-1035.88	0.07	539381.56	751185.79	N 32 28 51.54 W 103 39	10.11
	13673.00	88.71	180.22	11740.55	2217.76	-2224.14	-1037.01	0.85	539286.59	751184.75	N 32 28 50.60 W 103 39	10.13
	13767.00	88.60	179.29	11742.75	2311.74	-2318.11	-1036.81	1.00	539192.63	751185.15	N 32 28 49.67 W 103 39	10.13
	13862.00	88.82	178.58	11744.89	2406.70	-2413.07	-1034.85	0.78	539097.67	751186.92	N 32 28 48.73 W 103 39	10.12
	13956.00	88.66	178.55	11746.96	2500.66	-2507.02						

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 ° ' ")
	16979.00	87.87	178.81	11805.50	5521.82	-5527.97	-888.84	1.40	535682.90	751232.92	N 32 28 17.90	W 103 39 9.81
	17074.00	89.16	178.81	11807.97	5616.79	-5622.93	-889.52	1.36	535687.94	751233.24	N 32 28 16.97	W 103 39 9.81
	17168.00	87.76	178.09	11810.49	5710.75	-5716.89	-887.62	1.67	535793.99	751234.14	N 32 28 16.04	W 103 39 9.81
	17263.00	88.38	178.42	11813.69	5805.70	-5811.83	-886.39	0.74	535699.05	751235.37	N 32 28 15.10	W 103 39 9.80
	17357.00	88.26	179.57	11816.45	5899.65	-5905.79	-885.56	0.20	535605.10	751236.20	N 32 28 14.17	W 103 39 9.80
	17452.00	88.21	179.77	11819.37	5994.61	-6000.74	-885.01	0.22	535510.15	751236.75	N 32 28 13.23	W 103 39 9.80
	17546.00	88.77	180.17	11821.85	6088.57	-6094.71	-884.96	0.73	535416.19	751236.80	N 32 28 12.30	W 103 39 9.81
	17640.00	88.77	180.35	11823.87	6182.55	-6188.68	-885.39	0.19	535322.22	751236.37	N 32 28 11.37	W 103 39 9.82
	17735.00	89.33	180.56	11825.44	6277.52	-6283.67	-886.14	0.63	535227.24	751235.62	N 32 28 10.43	W 103 39 9.83
	17829.00	89.44	181.88	11826.45	6371.48	-6377.64	-888.15	1.41	535133.27	751233.62	N 32 28 9.50	W 103 39 9.87
	17924.00	89.72	179.53	11827.15	6466.46	-6472.62	-889.31	2.49	535038.29	751232.45	N 32 28 8.56	W 103 39 9.89
	18019.00	90.00	178.62	11827.38	6561.45	-6567.61	-887.78	1.00	534943.31	751233.98	N 32 28 7.62	W 103 39 9.88
	18114.00	89.27	177.05	11827.99	6656.40	-6662.53	-884.19	1.82	534848.39	751237.57	N 32 28 6.68	W 103 39 9.84
	18208.00	88.66	176.45	11829.68	6750.26	-6756.37	-878.86	0.91	534754.56	751242.90	N 32 28 5.75	W 103 39 9.79
	18303.00	89.22	176.36	11831.44	6845.09	-6851.16	-872.91	0.60	534659.76	751248.85	N 32 28 4.81	W 103 39 9.72
	18397.00	88.43	175.82	11833.37	6938.89	-6944.92	-866.50	1.02	534566.01	751255.26	N 32 28 3.88	W 103 39 9.65
	18492.00	85.97	177.00	11838.01	7033.62	-7039.61	-860.56	2.87	534471.32	751261.20	N 32 28 2.95	W 103 39 9.59
	18586.00	85.12	181.33	11845.31	7127.30	-7133.30	-859.19	4.68	534377.64	751262.57	N 32 28 2.02	W 103 39 9.58
	18680.00	87.20	185.62	11851.61	7220.86	-7226.89	-864.88	5.06	534284.06	751256.88	N 32 28 1.09	W 103 39 9.66
	18775.00	91.29	187.54	11852.86	7315.13	-7321.23	-875.76	4.76	534189.72	751246.00	N 32 28 0.16	W 103 39 9.79
	18869.00	93.81	183.55	11848.68	7408.51	-7414.67	-884.84	5.02	534096.28	751236.93	N 32 27 59.24	W 103 39 9.90
	18964.00	92.97	178.34	11843.06	7503.29	-7509.46	-886.40	5.55	534001.50	751235.36	N 32 27 58.30	W 103 39 9.93
	19058.00	90.67	174.46	11840.07	7597.07	-7603.20	-880.50	4.80	533907.76	751241.26	N 32 27 57.37	W 103 39 9.87
	19152.00	88.49	173.19	11840.76	7690.57	-7696.64	-870.39	2.68	533814.32	751251.37	N 32 27 56.45	W 103 39 9.76
	19247.00	88.15	176.09	11843.55	7785.16	-7791.18	-861.52	3.07	533719.79	751260.24	N 32 27 55.51	W 103 39 9.66
	19341.00	88.15	180.25	11846.58	7879.06	-7885.06	-858.52	4.42	533625.91	751263.24	N 32 27 54.58	W 103 39 9.63
	19436.00	88.88	182.07	11849.05	7973.99	-7980.00	-860.44	2.06	533530.97	751261.32	N 32 27 53.64	W 103 39 9.66
	19530.00	88.99	181.36	11850.79	8067.91	-8073.94	-863.25	0.76	533437.03	751258.51	N 32 27 52.71	W 103 39 9.70
	19625.00	88.94	180.42	11852.51	8162.87	-8168.92	-864.73	0.99	533342.07	751257.03	N 32 27 51.77	W 103 39 9.73
	19719.00	88.60	179.29	11854.53	8256.85	-8262.89	-864.49	1.26	533248.09	751257.27	N 32 27 50.84	W 103 39 9.73
	19814.00	88.49	178.94	11856.94	8351.81	-8357.85	-863.02	0.39	533153.14	751258.74	N 32 27 49.90	W 103 39 9.72
	19908.00	88.27	180.87	11859.60	8445.77	-8451.81	-862.87	2.07	533059.19	751258.89	N 32 27 48.97	W 103 39 9.72
	20003.00	88.26	179.73	11862.47	8540.72	-8546.76	-863.37	1.20	532964.24	751258.40	N 32 27 48.03	W 103 39 9.74
	20098.00	88.32	179.89	11865.31	8635.67	-8641.72	-863.05	0.18	532869.28	751258.71	N 32 27 47.09	W 103 39 9.74
	20192.00	88.49	180.41	11867.92	8729.63	-8735.68	-863.30	0.58	532775.33	751258.46	N 32 27 46.16	W 103 39 9.75
	20286.00	89.10	182.04	11869.90	8823.57	-8829.64	-863.31	1.85	532681.37	751256.45	N 32 27 45.23	W 103 39 9.78
	20381.00	89.50	181.89	11871.06	8918.49	-8924.57	-868.56	0.45	532586.44	751253.20	N 32 27 44.30	W 103 39 9.83
	20476.00	90.00	179.29	11871.48	9013.47	-9019.56	-869.54	2.79	532491.46	751252.22	N 32 27 43.36	W 103 39 9.84
	20570.00	89.72	177.22	11871.71	9107.43	-9113.51	-866.68	2.22	532397.51	751255.08	N 32 27 42.43	W 103 39 9.82
	20664.00	89.55	175.81	11872.31	9201.29	-9207.33	-860.96	1.51	532303.70	751260.80	N 32 27 41.50	W 103 39 9.76
	20759.00	88.99	176.34	11873.52	9296.10	-9302.10	-854.46	0.81	532208.93	751267.30	N 32 27 40.56	W 103 39 9.69
	20853.00	89.10	181.09	11875.08	9390.04	-9396.04	-852.36	5.05	532115.00	751269.40	N 32 27 39.63	W 103 39 9.67
	20948.00	89.27	180.37	11876.43	9485.02	-9491.02	-853.57	0.78	532020.02	751268.19	N 32 27 38.69	W 103 39 9.69
	21042.00	89.05	181.10	11877.81	9578.99	-9585.00	-854.77	0.81	531926.04	751266.99	N 32 27 37.76	W 103 39 9.71
	21137.00	89.05	184.25	11879.39	9673.83	-9679.87	-859.20	3.32	531831.18	751262.56	N 32 27 36.82	W 103 39 9.77
	21231.00	89.44	182.77	11880.63	9767.61	-9773.68	-864.96	1.63	531737.37	751256.80	N 32 27 35.89	W 103 39 9.85
	21326.00	89.78	181.63	11881.27	9862.51	-9868.61	-868.60	1.25	531642.44	751253.16	N 32 27 34.95	W 103 39 9.90
	21420.00	89.78	179.91	11881.63	9956.49	-9962.60	-869.87	1.83	531548.46	751251.89	N 32 27 34.02	W 103 39 9.92
	21515.00	89.55	178.71	11882.19	10051.48	-10057.59	-868.72	1.29	531453.48	751253.04	N 32 27 33.08	W 103 39 9.91
	21609.00	89.38	176.33	11883.07	10145.46	-10151.55	-866.30	0.44	531359.51	751255.46	N 32 27 32.15	W 103 39 9.89
	21704.00	89.72	178.25	11883.81	10240.43	-10246.51	-863.46	0.37	531264.56	751258.30	N 32 27 31.22	W 103 39 9.87
	21798.00	89.22	176.25	11884.68	10334.40	-10340.46	-860.59	0.53	531170.62	751261.17	N 32 27 30.29	W 103 39 9.84
	21893.00	88.77	181.17	11886.35	10429.37	-10435.43	-860.11	3.11	531075.65	751261.65	N 32 27 29.35	W 103 39 9.84
	21987.00	88.77	182.89	11888.37	10523.27	-10529.35	-863.44	1.83	530981.73	751258.32	N 32 27 28.42	W 103 39 9.89
	22082.00	88.82	186.58	11890.37	10617.85	-10623.99	-871.28	3.88	530887.10	751250.48	N 32 27 27.48	W 103 39 9.98
HL Crossing	22182.59	89.65	187.56	11891.55	10716.58	-10724.79	-883.78	1.40	530786.30	751237.98	N 32 27 26.48	W 103 39 10.14
Final Survey	22226.00	90.28	187.97	11891.50	10760.57	-10766.81	-889.51	1.40	530744.28	751232.25	N 32 27 25.07	W 103 39 10.21
Projection To Bit	22260.00	90.28	187.97	11891.33	10794.21	-10800.49	-894.23	0.00	530710.61	751227.54	N 32 27 25.74	W 103 39 10.27

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	31.000	1/98.425	26.000	13.375	NAL_MWD_1.0_DEG-Depth Only	Chisholm Aztec 14-23 Fed Com 3BS 3H / Chisholm Aztec 14-23 Fed Com 3BS 3H MWD Surveys Chisholm Aztec 14-23 Fed Com
	1	31.000	31.000	Act Stns	26.000	13.375	NAL_MWD_1.0_DEG-Depth Only	3BS 3H / Chisholm Aztec 14-23 Fed Com 3BS 3H MWD Surveys Chisholm Aztec 14-23 Fed Com
	1	31.000	1551.000	Act Stns	26.000	13.375	NAL_MWD_1.0_DEG	Chisholm Aztec 14-23 Fed Com 3BS 3H / Chisholm Aztec 14-23 Chisholm Aztec 14-23 Fed Com
	1	1551.000	5980.000	Act Stns	12.250	9.625	NAL_MWD_1.0_DEG	3BS 3H / Chisholm Aztec 14-23 Chisholm Aztec 14-23 Fed Com 3BS 3H / Chisholm Aztec 14-23
	1	5980.000	12294.000	Act Stns	8.750	0.000	NAL_MWD_1.0_DEG	Chisholm Aztec 14-23 Fed Com 3BS 3H / Chisholm Aztec 14-23 Chisholm Aztec 14-23 Fed Com
	1	12294.000	22260.000	Act Stns	8.500	0.000	NAL_MWD_1.0_DEG	3BS 3H / Chisholm Aztec 14-23 3BS 3H / Chisholm Aztec 14-23

...Chisholm Aztec 14-23 Fed Com 3BS 3H MWD Surveys 0ft to 22260ft MD