

Final Survey - Cimarex Lea 7 Federal Com 29H MWD 0ft to 16090ft (Surcon Corrected) (Def Survey)

Report Date: January 22, 2019 - 04:30 PM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Lea 7 Federal Com 29H / Cimarex Lea 7 Federal Com 29H
 Well: Cimarex Lea 7 Federal Com 29H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Final Survey - Cimarex Lea 7 Federal Com 29H MWD 0ft to 16090ft (Surcon Corrected)
 Survey Date: December 21, 2018
 Tort / AHD / DDI / ERD Ratio: 207.585' / 5835.326 ft / 6.238 / 0.518
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 34' 51.37975", W 103° 29' 30.49453"
 Location Grid N/E Y/X: N 578101.340 RUS, E 800547.300 RUS
 CRS Grid Convergence Angle: 0.4532°
 Grid Scale Factor: 0.99998804
 Version / Patch: 2.10.753.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 359.534° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3702.400 ft above MSL
 Seabed / Ground Elevation: 3678.400 ft above MSL
 Magnetic Declination: 6.570°
 Total Gravity Field Strength: 988.5083mgn (9.80685 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48114.232 nT
 Magnetic Dip Angle: 80.492°
 Declination Date: January 15, 2019
 Magnetic Declination Model: HDGM 2019
 North Reference: Grid North
 Grid Convergence Used: 0.4532°
 Total Corr Mag North->Grid: 6.1172°
 North:
 Local Coord Referenced To: Structure Reference Point

HOBBS OCD
 MAY 06 2019
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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL (191' FSL, 1160' FEL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	578101.34	800547.30	N 32 34 51.38	W 103 29 30.49
181.00	0.19	184.56	181.00	-0.30	-0.30	-0.02	0.10	578101.04	800547.28	N 32 34 51.38	W 103 29 30.49	
211.00	0.18	175.12	211.00	-0.40	-0.40	-0.02	0.11	578100.94	800547.28	N 32 34 51.38	W 103 29 30.49	
299.00	0.53	320.00	299.00	-0.22	-0.22	-0.27	0.78	578101.12	800547.03	N 32 34 51.38	W 103 29 30.50	
388.00	1.23	309.64	387.99	0.71	0.70	-1.27	0.80	578102.04	800546.03	N 32 34 51.39	W 103 29 30.51	
478.00	1.80	303.99	477.96	2.14	2.11	-3.19	0.85	578103.45	800544.11	N 32 34 51.40	W 103 29 30.53	
568.00	1.83	304.36	567.91	3.76	3.71	-5.55	0.04	578105.05	800541.75	N 32 34 51.42	W 103 29 30.56	
659.00	1.88	301.18	658.88	5.38	5.30	-8.01	0.12	578106.84	800539.29	N 32 34 51.43	W 103 29 30.59	
750.00	1.87	301.83	749.82	6.93	6.84	-10.54	0.03	578108.18	800536.78	N 32 34 51.45	W 103 29 30.62	
840.00	1.93	299.48	839.77	8.47	8.38	-13.10	0.11	578109.70	800534.20	N 32 34 51.46	W 103 29 30.65	
934.00	1.88	301.95	933.71	10.09	9.96	-15.79	0.10	578111.30	800531.51	N 32 34 51.48	W 103 29 30.68	
1028.00	1.91	302.58	1027.86	11.77	11.62	-18.42	0.04	578112.96	800528.88	N 32 34 51.50	W 103 29 30.71	
1123.00	1.93	298.06	1122.61	13.39	13.22	-21.16	0.16	578114.56	800526.14	N 32 34 51.51	W 103 29 30.74	
1217.00	1.83	301.92	1216.56	14.95	14.78	-23.83	0.17	578116.10	800523.47	N 32 34 51.53	W 103 29 30.77	
1311.00	1.87	301.94	1310.51	16.58	16.37	-26.41	0.04	578117.71	800520.89	N 32 34 51.54	W 103 29 30.80	
1405.00	2.03	305.42	1404.46	18.38	18.14	-29.07	0.21	578119.48	800518.23	N 32 34 51.56	W 103 29 30.83	
1499.00	1.99	303.55	1498.40	20.27	20.01	-31.78	0.08	578121.35	800515.52	N 32 34 51.58	W 103 29 30.86	
1593.00	1.89	300.86	1592.34	21.99	21.71	-34.48	0.14	578123.05	800512.83	N 32 34 51.60	W 103 29 30.90	
1678.00	2.01	296.74	1677.29	23.40	23.10	-37.01	0.22	578124.44	800510.29	N 32 34 51.61	W 103 29 30.92	
1764.00	2.14	294.03	1763.22	25.07	24.74	-40.48	0.15	578126.08	800508.82	N 32 34 51.63	W 103 29 30.97	
1878.00	2.13	292.45	1877.16	26.47	26.12	-43.69	0.06	578127.46	800506.81	N 32 34 51.64	W 103 29 31.00	
1972.00	1.90	292.82	1971.10	27.77	27.39	-46.75	0.25	578128.73	800505.56	N 32 34 51.65	W 103 29 31.04	
2067.00	1.63	296.91	2066.06	29.01	28.61	-49.40	0.31	578129.95	800497.90	N 32 34 51.67	W 103 29 31.07	
2161.00	1.78	294.68	2160.01	30.25	29.83	-51.92	0.17	578131.17	800495.38	N 32 34 51.68	W 103 29 31.10	
2255.00	1.79	291.16	2253.97	31.41	30.97	-54.82	0.12	578132.31	800492.68	N 32 34 51.69	W 103 29 31.13	
2350.00	1.90	287.07	2348.92	32.43	31.97	-57.51	0.18	578133.31	800489.80	N 32 34 51.70	W 103 29 31.16	
2444.00	1.92	287.21	2442.87	33.38	32.89	-60.50	0.02	578134.23	800488.80	N 32 34 51.71	W 103 29 31.20	
2538.00	1.85	288.61	2536.82	34.35	33.84	-63.44	0.09	578135.18	800483.86	N 32 34 51.72	W 103 29 31.23	
2632.00	1.80	289.82	2630.77	35.36	34.82	-66.27	0.06	578136.16	800481.03	N 32 34 51.73	W 103 29 31.27	
2727.00	1.77	291.02	2725.72	36.41	35.85	-69.05	0.06	578137.19	800478.26	N 32 34 51.74	W 103 29 31.30	
2820.00	1.69	290.27	2818.68	37.42	36.84	-71.87	0.09	578138.18	800475.63	N 32 34 51.75	W 103 29 31.33	
2914.00	1.86	292.93	2912.64	38.45	37.85	-74.23	0.09	578139.19	800473.07	N 32 34 51.76	W 103 29 31.36	
3009.00	1.33	306.00	3007.61	39.65	39.03	-76.39	0.50	578140.37	800470.82	N 32 34 51.77	W 103 29 31.38	
3103.00	1.28	319.57	3101.58	41.10	40.47	-77.95	0.33	578141.81	800469.35	N 32 34 51.79	W 103 29 31.40	
3197.00	1.36	342.89	3195.56	42.98	42.34	-78.96	0.57	578143.68	800468.34	N 32 34 51.80	W 103 29 31.41	
3292.00	1.70	3.84	3290.53	45.46	44.82	-79.20	0.68	578146.16	800468.11	N 32 34 51.83	W 103 29 31.42	
3388.00	2.17	9.24	3384.47	48.81	47.97	-78.82	0.54	578149.31	800468.48	N 32 34 51.88	W 103 29 31.41	
3481.00	1.23	347.80	3479.43	51.38	50.74	-78.74	1.18	578152.08	800468.58	N 32 34 51.89	W 103 29 31.41	
3575.00	1.00	290.31	3573.42	52.66	52.01	-79.73	1.18	578153.35	800467.58	N 32 34 51.90	W 103 29 31.42	
3669.00	1.18	275.22	3667.40	53.04	52.38	-81.46	0.36	578153.72	800465.84	N 32 34 51.90	W 103 29 31.44	
3764.00	1.38	251.55	3762.38	52.79	52.11	-83.52	0.59	578153.45	800463.78	N 32 34 51.90	W 103 29 31.47	
3858.00	1.81	244.45	3856.34	51.81	51.11	-85.93	0.50	578152.45	800461.37	N 32 34 51.89	W 103 29 31.49	
3952.00	2.21	235.74	3950.28	50.17	49.45	-88.77	0.53	578150.79	800458.53	N 32 34 51.88	W 103 29 31.53	
4046.00	2.52	231.85	4044.20	47.90	47.18	-91.89	0.37	578148.49	800455.41	N 32 34 51.85	W 103 29 31.56	
4141.00	2.76	231.68	4139.10	45.22	44.45	-95.33	0.25	578145.79	800451.97	N 32 34 51.83	W 103 29 31.60	
4235.00	2.65	229.72	4233.00	42.44	41.64	-98.76	0.15	578142.98	800448.54	N 32 34 51.80	W 103 29 31.64	
4329.00	2.90	220.43	4321.77	38.03	35.17	-105.20	0.27	578138.51	800442.11	N 32 34 51.74	W 103 29 31.72	
4517.00	3.05	227.04	4514.65	32.58	31.70	-108.53	0.40	578133.04	800438.77	N 32 34 51.70	W 103 29 31.76	
4612.00	3.10	225.91	4609.51	29.10	28.19	-112.23	0.08	578129.53	800435.08	N 32 34 51.67	W 103 29 31.80	
4706.00	3.15	229.70	4703.37	25.69	24.75	-116.02	0.23	578126.09	800431.28	N 32 34 51.63	W 103 29 31.85	
4801.00	3.55	225.28	4798.21	21.97	20.99	-120.10	0.50	578122.33	800427.20	N 32 34 51.60	W 103 29 31.90	
4900.00	2.80	226.64	4896.62	14.74	13.70	-127.62	0.40	578115.04	800419.89	N 32 34 51.53	W 103 29 31.98	
5084.00	2.67	219.81	5080.81	11.51	10.45	-130.69	0.37	578111.79	800416.81	N 32 34 51.49	W 103 29 32.02	
5178.00	2.45	220.36	5174.72	8.32	7.23	-133.39	0.24	578108.57	800413.91	N 32 34 51.46	W 103 29 32.05	
5273.00	2.67	220.23	5269.62	5.10	4.00	-136.13	0.23	578105.34	800411.17	N 32 34 51.43	W 103 29 32.09	
5367.00	2.77	224.34	5363.52	1.83	0.70	-139.14	0.23	578102.04	800408.17	N 32 34 51.40	W 103 29 32.12	
5461.00	2.66	219.77	5457.41	-1.44	-2.60	-142.12	0.26	578098.74	800405.18	N 32 34 51.37	W 103 29 32.16	
5555.00	2.63	219.93	5551.31	-4.75	-5.93	-144.90	0.03	578095.41	800402.40	N 32 34 51.33	W 103 29 32.19	
5619.00	2.56	220.04	5615.25	-6.96	-8.15	-146.78	0.11	578093.19	800400.54	N 32 34 51.31	W 103 29 32.21	
5742.00	2.82	217.02	5738.12	-11.28	-12.50	-150.22	0.12	578088.84	800397.08	N 32 34 51.27	W 103 29 32.25	
5836.00	3.01	243.83	5832.01	-14.05	-15.30	-153.73	1.45	578086.04	800393.57	N 32 34 51.24	W 103 29 32.29	
5930.00	3.58	267.88	5925.88	-15.21	-16.50	-158.88	1.57	578084.84	800388.43	N 32 34 51.23	W 103 29 32.35	
6024.00	3.69	273.89	6018.67	-15.06	-16.40	-164.83	0.42	578084.94	800382.48	N 32 34 51.23	W 103 29 32.42	
6119.00	5.38	283.03	6114.37	-13.79	-15.19	-172.22	1.93	578086.15	800375.09	N 32 34 51.24	W 103 29 32.51	
6213.00	7.15	281.13	6207.81	-11.59	-13.07	-182.25	1.90	578088.27	800365.05	N 32 34 51.26	W 103 29 32.63	
6307.00	9.07	284.23	6300.88	-8.53	-10.12	-195.17	2.09	578091.22	800352.13	N 32 34 51.29	W 103 29 32.78	
6402.00	10.83	282.06	6394.43	-4.70	-6.41	-211.18	1.89	578094.93	800336.14	N 32 34 51.33	W 103 29 32.96	
6496.00	12.96	280.21	6486.41	-0.83	-2.70	-230.17	2.30	578098.84	800317.13	N 32 34 51.37	W 103 29 33.18	
6590.00	14.72	280.44	6577.67	3.38	1.33	-252.29	1.87	578102.67	800295.01	N 32 34 51.41	W 103 29 33.44	
6684.00	16.13	277.55	6668.29	7.47	5.21	-276.98	1.71	578106.55	800270.32	N 32 34 51.45	W 103 29 33.73	
6779.00	17.44	274.20	6759.24	10.46	7.99	-304.27	1.71	578109.33	800243.04	N 32 34 51.48	W 103 29 34.05	
6873.00	18.76	272.02	6848.58	12.27	9.55	-333.44	1.60	578110.89	800213.87	N 32 34 51.50	W 103 29 34.39	
6967.00	19.09	272.88	6937.50	13.82	10.88	-363.91	0.44	578112.20	800183.39	N 32 34 51.52	W 103 29 34.75	
7061.00	19.17	271.91	7026.31	15.36	12.15	-394.69	0.35	578113.49	800152.82	N 32 34 51.53	W 103 29 35.11	
7155.00												

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7250.00	19.21	272.71	7204.85	18.54	14.83	-456.63	0.11	576116.17	800090.68	N 32 34 51.56	W 103 29 35.83
	7344.00	18.74	272.61	7293.74	20.21	16.24	-487.16	0.50	576117.58	800080.15	N 32 34 51.58	W 103 29 38.19
First Legal Take Point	7354.50	18.75	272.62	7303.68	20.39	16.40	-490.53	0.07	576117.74	800056.78	N 32 34 51.58	W 103 29 36.23
	7438.00	18.80	272.67	7382.74	21.84	17.64	-517.38	0.07	576118.98	800029.93	N 32 34 51.59	W 103 29 36.54
	7532.00	18.28	272.88	7471.88	23.53	19.08	-547.23	0.58	576120.42	800000.08	N 32 34 51.61	W 103 29 36.89
	7627.00	18.85	271.20	7562.43	24.79	20.11	-575.88	1.59	576121.45	799971.43	N 32 34 51.62	W 103 29 37.22
	7721.00	18.52	269.38	7652.47	25.15	20.25	-602.88	0.68	576121.59	799944.45	N 32 34 51.63	W 103 29 37.54
	7815.00	18.03	264.34	7742.71	23.94	18.83	-629.14	1.59	576120.17	799918.17	N 32 34 51.62	W 103 29 37.85
	7910.00	14.31	264.24	7834.40	21.67	18.35	-653.88	1.81	576117.69	799893.43	N 32 34 51.62	W 103 29 38.13
	8004.00	12.63	266.70	7925.81	20.09	14.80	-675.70	1.89	576115.94	799871.81	N 32 34 51.58	W 103 29 38.39
	8098.00	11.07	268.40	8017.80	19.40	13.75	-694.88	1.70	576115.09	799852.33	N 32 34 51.57	W 103 29 38.61
	8192.00	10.20	268.05	8110.19	19.01	13.22	-712.32	0.93	576114.58	799834.99	N 32 34 51.57	W 103 29 38.82
	8287.00	8.54	274.05	8203.82	19.35	13.43	-727.78	2.03	576114.77	799819.55	N 32 34 51.57	W 103 29 39.00
	8381.00	8.21	274.04	8296.92	20.43	14.40	-741.42	0.35	576115.74	799805.89	N 32 34 51.58	W 103 29 39.18
	8475.00	7.79	273.65	8390.00	21.41	15.27	-754.47	0.45	576116.61	799792.84	N 32 34 51.59	W 103 29 39.31
	8569.00	5.45	275.77	8483.37	22.35	16.13	-765.27	2.50	576117.47	799782.04	N 32 34 51.60	W 103 29 39.44
	8664.00	4.91	272.37	8577.98	23.04	16.75	-773.82	0.85	576118.09	799773.49	N 32 34 51.61	W 103 29 39.54
	8758.00	4.39	277.63	8671.67	23.76	17.41	-781.41	0.73	576118.75	799765.90	N 32 34 51.61	W 103 29 39.62
	8852.00	2.52	276.43	8765.49	24.53	18.13	-787.03	1.99	576119.47	799760.29	N 32 34 51.62	W 103 29 39.69
	8946.00	2.37	269.49	8859.41	24.78	18.34	-791.02	0.35	576119.88	799758.29	N 32 34 51.62	W 103 29 39.74
	9040.00	2.64	301.94	8953.32	25.93	19.47	-794.80	1.51	576120.81	799752.51	N 32 34 51.63	W 103 29 39.78
	9135.00	2.44	311.00	9048.23	28.45	21.95	-798.19	0.47	576123.29	799749.13	N 32 34 51.68	W 103 29 39.82
	9229.00	1.96	311.42	9142.18	30.84	24.33	-800.90	0.51	576125.67	799746.41	N 32 34 51.68	W 103 29 39.85
	9323.00	2.18	310.64	9236.10	33.09	26.58	-803.48	0.24	576127.90	799743.85	N 32 34 51.71	W 103 29 39.88
	9418.00	2.27	312.28	9331.03	35.58	29.00	-806.23	0.12	576130.34	799741.09	N 32 34 51.73	W 103 29 39.91
	9512.00	2.27	305.10	9424.96	37.80	31.32	-809.13	0.30	576132.68	799738.18	N 32 34 51.75	W 103 29 39.95
	9606.00	2.27	303.00	9518.88	40.01	33.41	-812.21	0.09	576134.75	799735.10	N 32 34 51.77	W 103 29 39.98
	9700.00	2.36	296.40	9612.80	41.91	35.28	-815.51	0.30	576136.62	799731.81	N 32 34 51.79	W 103 29 40.02
	9795.00	2.22	289.88	9707.73	43.44	36.78	-818.99	0.31	576138.12	799728.32	N 32 34 51.81	W 103 29 40.06
	9889.00	1.45	285.42	9801.68	44.40	37.71	-821.85	0.83	576139.05	799725.46	N 32 34 51.82	W 103 29 40.10
	9983.00	0.27	119.60	9895.67	44.61	37.92	-822.80	1.82	576139.28	799724.51	N 32 34 51.82	W 103 29 40.11
	10077.00	0.46	108.23	9989.67	44.38	37.69	-822.25	0.22	576139.03	799725.06	N 32 34 51.82	W 103 29 40.10
	10172.00	0.16	132.97	10084.67	44.17	37.48	-821.79	0.34	576138.82	799725.52	N 32 34 51.81	W 103 29 40.09
	10266.00	0.51	147.32	10178.67	43.72	37.04	-821.47	0.38	576138.38	799725.84	N 32 34 51.81	W 103 29 40.09
	10360.00	0.28	145.83	10272.66	43.18	36.50	-821.12	0.24	576137.84	799726.20	N 32 34 51.81	W 103 29 40.09
	10455.00	0.43	115.77	10367.66	42.83	36.15	-820.66	0.25	576137.49	799726.65	N 32 34 51.80	W 103 29 40.08
	10549.00	0.38	180.23	10461.66	42.36	35.69	-820.35	0.46	576137.03	799726.97	N 32 34 51.80	W 103 29 40.08
	10643.00	0.37	244.44	10555.66	41.82	35.24	-820.62	0.42	576136.58	799726.69	N 32 34 51.79	W 103 29 40.08
	10737.00	0.50	231.64	10649.66	41.54	34.86	-821.22	0.17	576136.20	799726.10	N 32 34 51.79	W 103 29 40.09
	10831.00	0.84	211.56	10743.66	41.20	34.52	-821.51	0.53	576135.88	799725.80	N 32 34 51.79	W 103 29 40.09
	10925.00	0.79	353.22	10837.66	41.34	34.66	-821.77	1.96	576136.00	799725.55	N 32 34 51.79	W 103 29 40.09
	11019.00	4.72	358.21	10931.66	42.83	36.15	-821.83	12.89	576137.49	799725.48	N 32 34 51.80	W 103 29 40.10
	11113.00	7.84	10.05	11025.66	46.24	39.58	-821.50	9.91	576140.90	799725.81	N 32 34 51.84	W 103 29 40.09
	11207.00	10.48	4.82	11119.66	51.07	44.40	-820.92	9.56	576145.74	799726.40	N 32 34 51.88	W 103 29 40.08
	11301.00	13.95	359.97	11213.66	57.83	51.16	-820.68	11.26	576152.50	799726.63	N 32 34 51.95	W 103 29 40.08
	11395.00	18.06	355.44	11307.66	68.37	59.69	-821.07	13.85	576161.03	799726.25	N 32 34 52.03	W 103 29 40.08
	11489.00	20.40	356.35	11401.66	78.23	69.54	-821.77	7.86	576170.88	799725.54	N 32 34 52.13	W 103 29 40.09
	11583.00	23.41	358.18	11495.66	88.15	81.47	-822.33	9.64	576182.81	799724.98	N 32 34 52.25	W 103 29 40.10
	11677.00	25.83	0.88	11589.66	101.51	94.82	-822.45	8.52	576196.16	799724.86	N 32 34 52.38	W 103 29 40.10
	11771.00	29.25	1.48	11683.66	116.32	109.83	-822.17	10.44	576210.97	799725.14	N 32 34 52.53	W 103 29 40.09
	11865.00	33.68	0.47	11777.66	132.49	125.81	-821.90	14.39	576227.15	799725.41	N 32 34 52.69	W 103 29 40.09
	11959.00	38.75	2.45	11871.66	150.35	143.67	-821.44	10.58	576245.01	799725.88	N 32 34 52.87	W 103 29 40.08
	12053.00	40.54	3.08	11965.66	170.30	163.63	-820.47	11.91	576262.97	799726.84	N 32 34 53.06	W 103 29 40.07
	12147.00	45.02	1.68	12059.66	191.32	184.66	-819.61	14.77	576280.80	799727.71	N 32 34 53.27	W 103 29 40.06
	12241.00	50.25	359.95	12153.66	214.21	207.58	-818.29	17.37	576308.69	799728.02	N 32 34 53.50	W 103 29 40.05
	12335.00	55.67	357.99	12247.66	239.77	233.11	-816.77	18.23	576336.45	799727.54	N 32 34 53.75	W 103 29 40.05
	12429.00	60.75	356.35	12341.66	266.12	259.45	-821.08	16.37	576364.29	799726.23	N 32 34 54.01	W 103 29 40.07
	12523.00	63.88	355.18	12435.66	293.50	286.82	-823.12	10.59	576392.15	799724.20	N 32 34 54.28	W 103 29 40.09
	12617.00	68.58	354.78	12529.66	322.46	315.76	-825.87	8.58	576420.09	799721.64	N 32 34 54.57	W 103 29 40.11
	12711.00	70.82	355.99	12623.66	351.24	344.52	-827.99	13.55	576448.85	799719.32	N 32 34 54.85	W 103 29 40.14
	12805.00	75.78	357.94	12717.66	381.83	375.10	-829.61	17.15	576476.73	799717.17	N 32 34 55.16	W 103 29 40.15
	12899.00	79.96	0.04	12811.66	412.13	405.39	-830.14	15.02	576504.67	799717.18	N 32 34 55.48	W 103 29 40.16
	12993.00	82.29	1.55	12905.66	442.75	438.02	-829.71	8.92	576532.55	799717.60	N 32 34 55.78	W 103 29 40.15
	13087.00	83.08	1.80	13000.66	473.51	468.78	-828.55	7.53	576560.42	799717.92	N 32 34 56.07	W 103 29 40.15
	13181.00	84.78	2.60	13094.66	504.28	499.54	-827.98	8.53	576588.29	799718.76	N 32 34 56.38	W 103 29 40.13
	13275.00	89.22	4.21	13188.66	535.04	530.30	-827.98	5.02	576616.15	799724.34	N 32 34 57.01	W 103 29 40.06
	13369.00	88.99	3.51	13282.66	565.82	566.24	-816.65	0.78	576644.01	799730.67	N 32 34 57.94	W 103 29 39.98
	13463.00	88.38	1.98	13376.66	596.60	597.06	-812.10	1.73	576671.87	799735.21	N 32 34 58.87	W 103 29 39.92
	13557.00	89.16	0.40	13470.66	627.38	627.84	-810.15	1.87	576699.73	799737.18	N 32 34 59.80	W 103 29 39.88
	13651.00	90.22	359.67	13564.66	658.16	658.62	-810.09	1.37	576727.59	799737.22	N 32 35 0.73	W 103 29 39.87
	13745.00	90.45	359.15	13658.66	688.94	689.40	-811.08	0.80	576755.45	799738.25	N 32 35 1.66	W 103 29 39.88
	13839.00	89.50	0.10	13752.66	719.72	720.18	-811.67	1.43	576783.31	799739.64	N 32 35 2.59	W 103 29 39.88
	13933.00	89.72	359.75	13846.66	750.50	750.96	-811.80	0.44	576811.17	799740.67	N 32 35 3.52	W 103 29 39.87
	14027.00	90.06	358.81	13940.66	781.28	781.74	-812.99	1.05	576839.03	799741.75	N 32 35 4.46	W 103 29 39.87
	14121.00	89.44	358.68	14034.66	812.06	812.52	-813.07	0.88	576866.89	799742.82	N 32 35 5.39	W 103 29 39.89
	14215.00	90.06	359.94	14128.66	842.84	843.30	-813.21	1.51	576894.75	799743.90	N 32 35 6.32	W 103 29 39.89
	14309.00	89.33	358.71	14222.66	873.62	874.08	-813.32	1.52	576922.61</			

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15723.00	92.41	359.48	11228.31	4621.46	4614.70	-850.13	1.38	580715.98	799697.18	N 32 35 37.11	W 103 29 40.00
	15817.00	92.69	359.29	11224.13	4715.36	4708.60	-851.14	0.38	580809.88	799696.17	N 32 35 38.03	W 103 29 40.01
	15911.00	93.82	358.88	11218.71	4809.20	4802.42	-852.80	1.48	580903.89	799694.51	N 32 35 38.96	W 103 29 40.02
	16005.00	94.65	358.98	11211.89	4902.93	4896.14	-854.72	0.84	580997.40	799692.60	N 32 35 39.89	W 103 29 40.03
	16035.00	94.71	358.79	11209.24	4932.83	4928.04	-855.30	0.88	581027.30	799692.02	N 32 35 40.19	W 103 29 40.04
TD, Projection to Bit	16090.00	94.71	358.79	11204.73	4987.64	4980.84	-856.46	0.00	581082.10	799690.86	N 32 35 40.73	W 103 29 40.04

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	26.000	1/98.425	17.500	13.375	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Survey - Cimarex Lea 7 Federal Com 29H MWD 0ft to 16090ft (Surcon
	1	26.000	26.000	Act Stns	17.500	13.375	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Survey - Cimarex Lea 7 Federal Com 29H MWD 0ft to 16090ft (Surcon
	1	26.000	1764.000	Act Stns	17.500	13.375	NAL_MWD_IFR1+MS	Original Borehole / Final Survey - Cimarex Lea 7 Federal Com 29H
	1	1764.000	5700.000	Act Stns	12.250	9.625	NAL_MWD_IFR1+MS	Original Borehole / Final Survey - Cimarex Lea 7 Federal Com 29H
	1	5700.000	16090.000	Act Stns	8.750	5.500	NAL_MWD_IFR1+MS	Original Borehole / Final Survey - Cimarex Lea 7 Federal Com 29H

