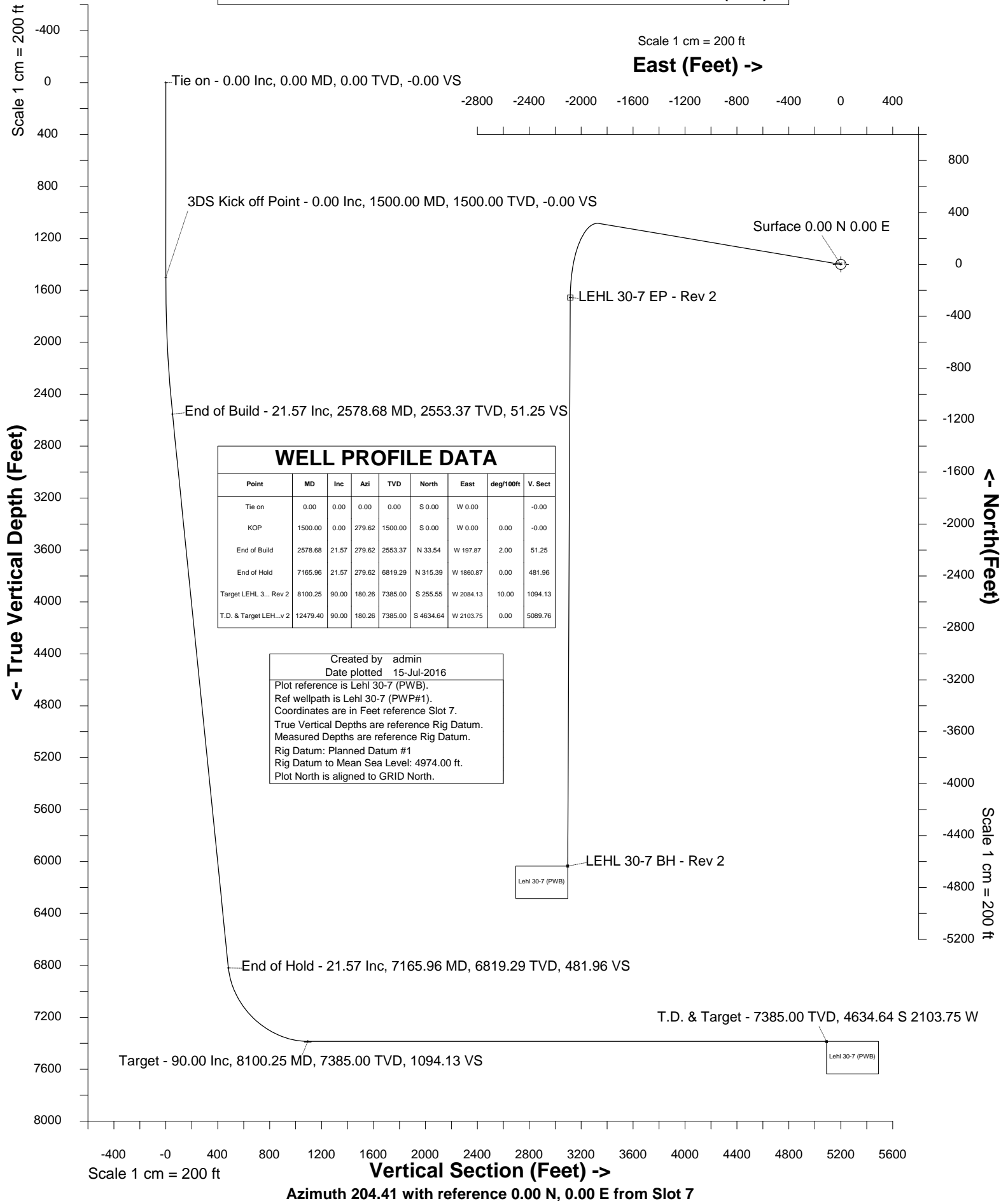


HRM Resources

Location	DJ Basin	Slot	Slot 7
Field	WATTENBERG	Well	Lehl 30-7
Installation	Lehl Pad - Rev 2 - 2016-07-15	Wellbore	Lehl 30-7 (PWB)





SYS DRILL
Well Design Combined Report
Wellbore: Lehl 30-7 (PWB)



Wellhead Details

Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
Slot 7	40.02899000	-104.69861000	1254421.2100	3224413.7935	46.79N	5651.07E	0.00

Declination

Date	Source	Time
Jun-9-2016	EMM-2015 [2000.0-2020.0]	15:46

Installation Details

Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Lehl Pad - Rev 2 - 2016-07-15	40.02900000	-104.71878983	1254374.4255	3218762.9369	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	1254421.21	3224413.79
1500.00	0.00	279.620	1500.00	0.00N	0.00E	==>	0.00	1254421.21	3224413.79
2578.68	21.57	279.620	2553.37	33.54N	197.87W	2.00	51.25	1254454.74	3224215.93
7165.96	21.57	279.620	6819.29	315.39N	1860.87W	==>	481.96	1254736.59	3222552.99
8100.25	90.00	180.260	7385.00	255.55S	2084.13W	10.00	1094.13	1254165.67	3222329.74
12479.40	90.00	180.260	7385.00	4634.64S	2103.75W	==>	5089.76	1249786.74	3222310.13

Interpolated Wellpath

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	Slot Datum
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	
700.00	0.00	0.000	700.00	0.00N	0.00E	==>	0.00	
800.00	0.00	0.000	800.00	0.00N	0.00E	==>	0.00	
900.00	0.00	0.000	900.00	0.00N	0.00E	==>	0.00	
1000.00	0.00	0.000	1000.00	0.00N	0.00E	==>	0.00	
1100.00	0.00	0.000	1100.00	0.00N	0.00E	==>	0.00	
1200.00	0.00	0.000	1200.00	0.00N	0.00E	==>	0.00	
1300.00	0.00	0.000	1300.00	0.00N	0.00E	==>	0.00	
1400.00	0.00	0.000	1400.00	0.00N	0.00E	==>	0.00	
1500.00	0.00	279.620	1500.00	0.00N	0.00E	==>	0.00	
1600.00	2.00	279.620	1599.98	0.29N	1.72W	2.00	0.45	
1700.00	4.00	279.620	1699.84	1.17N	6.88W	2.00	1.78	
1800.00	6.00	279.620	1799.45	2.62N	15.47W	2.00	4.01	
1900.00	8.00	279.620	1898.70	4.66N	27.49W	2.00	7.12	
2000.00	10.00	279.620	1997.47	7.27N	42.91W	2.00	11.11	
2100.00	12.00	279.620	2095.62	10.46N	61.72W	2.00	15.99	
2200.00	14.00	279.620	2193.06	14.22N	83.90W	2.00	21.73	
2300.00	16.00	279.620	2289.64	18.54N	109.42W	2.00	28.34	
2400.00	18.00	279.620	2385.27	23.43N	138.24W	2.00	35.80	
2500.00	20.00	279.620	2479.82	28.87N	170.34W	2.00	44.12	
2600.00	21.57	279.620	2573.20	34.85N	205.60W	==>	53.25	
2700.00	21.57	279.620	2666.19	40.99N	241.85W	==>	62.64	
2800.00	21.57	279.620	2759.19	47.13N	278.10W	==>	72.03	
2900.00	21.57	279.620	2852.18	53.28N	314.35W	==>	81.42	
3000.00	21.57	279.620	2945.18	59.42N	350.61W	==>	90.81	
3100.00	21.57	279.620	3038.17	65.57N	386.86W	==>	100.20	
3200.00	21.57	279.620	3131.17	71.71N	423.11W	==>	109.59	

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Bottom hole distance is 5089.76 Feet on azimuth 204.41 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by IPT
Date Printed: 15-Jul-2016

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
3300.00	21.57	279.620	3224.16	77.86N	459.37W	==>	118.97	
3400.00	21.57	279.620	3317.16	84.00N	495.62W	==>	128.36	
3500.00	21.57	279.620	3410.15	90.14N	531.87W	==>	137.75	
3600.00	21.57	279.620	3503.14	96.29N	568.12W	==>	147.14	
3700.00	21.57	279.620	3596.14	102.43N	604.38W	==>	156.53	
3800.00	21.57	279.620	3689.13	108.58N	640.63W	==>	165.92	
3900.00	21.57	279.620	3782.13	114.72N	676.88W	==>	175.31	
4000.00	21.57	279.620	3875.12	120.87N	713.13W	==>	184.70	
4100.00	21.57	279.620	3968.12	127.01N	749.39W	==>	194.09	
4200.00	21.57	279.620	4061.11	133.15N	785.64W	==>	203.48	
4300.00	21.57	279.620	4154.11	139.30N	821.89W	==>	212.87	
4400.00	21.57	279.620	4247.10	145.44N	858.14W	==>	222.26	
4500.00	21.57	279.620	4340.10	151.59N	894.40W	==>	231.65	
4600.00	21.57	279.620	4433.09	157.73N	930.65W	==>	241.04	
4700.00	21.57	279.620	4526.09	163.88N	966.90W	==>	250.43	
4800.00	21.57	279.620	4619.08	170.02N	1003.15W	==>	259.81	
4900.00	21.57	279.620	4712.07	176.16N	1039.41W	==>	269.20	
5000.00	21.57	279.620	4805.07	182.31N	1075.66W	==>	278.59	
5100.00	21.57	279.620	4898.06	188.45N	1111.91W	==>	287.98	
5200.00	21.57	279.620	4991.06	194.60N	1148.16W	==>	297.37	
5300.00	21.57	279.620	5084.05	200.74N	1184.42W	==>	306.76	
5400.00	21.57	279.620	5177.05	206.89N	1220.67W	==>	316.15	
5500.00	21.57	279.620	5270.04	213.03N	1256.92W	==>	325.54	
5600.00	21.57	279.620	5363.04	219.17N	1293.17W	==>	334.93	
5700.00	21.57	279.620	5456.03	225.32N	1329.43W	==>	344.32	
5800.00	21.57	279.620	5549.03	231.46N	1365.68W	==>	353.71	
5900.00	21.57	279.620	5642.02	237.61N	1401.93W	==>	363.10	
6000.00	21.57	279.620	5735.02	243.75N	1438.18W	==>	372.49	
6100.00	21.57	279.620	5828.01	249.90N	1474.44W	==>	381.88	
6200.00	21.57	279.620	5921.00	256.04N	1510.69W	==>	391.27	
6300.00	21.57	279.620	6014.00	262.19N	1546.94W	==>	400.66	
6400.00	21.57	279.620	6106.99	268.33N	1583.19W	==>	410.04	
6500.00	21.57	279.620	6199.99	274.47N	1619.45W	==>	419.43	
6600.00	21.57	279.620	6292.98	280.62N	1655.70W	==>	428.82	
6700.00	21.57	279.620	6385.98	286.76N	1691.95W	==>	438.21	
6800.00	21.57	279.620	6478.97	292.91N	1728.21W	==>	447.60	
6900.00	21.57	279.620	6571.97	299.05N	1764.46W	==>	456.99	
7000.00	21.57	279.620	6664.96	305.20N	1800.71W	==>	466.38	
7100.00	21.57	279.620	6757.96	311.34N	1836.96W	==>	475.77	
7200.00	21.31	270.330	6850.99	316.47N	1873.23W	10.00	486.09	
7300.00	23.43	244.430	6943.68	307.98N	1909.44W	10.00	508.79	
7400.00	28.89	225.250	7033.56	282.33N	1944.62W	10.00	546.69	
7500.00	36.20	212.470	7117.91	240.31N	1977.71W	10.00	598.63	
7600.00	44.45	203.690	7194.15	183.19N	2007.71W	10.00	663.03	
7700.00	53.19	197.230	7259.97	112.72N	2033.70W	10.00	737.95	
7800.00	62.21	192.120	7313.37	31.02N	2054.90W	10.00	821.10	
7900.00	71.40	187.800	7352.73	59.40S	2070.66W	10.00	909.96	
8000.00	80.67	183.930	7376.85	155.82S	2080.50W	10.00	1001.82	
8100.00	89.98	180.270	7385.00	255.29S	2084.13W	10.00	1093.90	
8200.00	90.00	180.260	7385.00	355.29S	2084.58W	==>	1185.14	
8300.00	90.00	180.260	7385.00	455.29S	2085.03W	==>	1276.38	
8400.00	90.00	180.260	7385.00	555.29S	2085.47W	==>	1367.62	
8500.00	90.00	180.260	7385.00	655.29S	2085.92W	==>	1458.87	
8600.00	90.00	180.260	7385.00	755.29S	2086.37W	==>	1550.11	
8700.00	90.00	180.260	7385.00	855.29S	2086.82W	==>	1641.35	
8800.00	90.00	180.260	7385.00	955.28S	2087.27W	==>	1732.59	
8900.00	90.00	180.260	7385.00	1055.28S	2087.71W	==>	1823.83	
9000.00	90.00	180.260	7385.00	1155.28S	2088.16W	==>	1915.08	
9100.00	90.00	180.260	7385.00	1255.28S	2088.61W	==>	2006.32	

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Bottom hole distance is 5089.76 Feet on azimuth 204.41 degrees from Wellhead
Calculation method uses Minimum Curvature method
Prepared by IPT
Date Printed: 15-Jul-2016



SYSDRILL
Well Design Combined Report
Wellbore: Lehl 30-7 (PWB)



Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
9200.00	90.00	180.260	7385.00	1355.28S	2089.06W	==>	2097.56	
9300.00	90.00	180.260	7385.00	1455.28S	2089.50W	==>	2188.80	
9400.00	90.00	180.260	7385.00	1555.28S	2089.95W	==>	2280.05	
9500.00	90.00	180.260	7385.00	1655.28S	2090.40W	==>	2371.29	
9600.00	90.00	180.260	7385.00	1755.28S	2090.85W	==>	2462.53	
9700.00	90.00	180.260	7385.00	1855.28S	2091.30W	==>	2553.77	
9800.00	90.00	180.260	7385.00	1955.27S	2091.74W	==>	2645.02	
9900.00	90.00	180.260	7385.00	2055.27S	2092.19W	==>	2736.26	
10000.00	90.00	180.260	7385.00	2155.27S	2092.64W	==>	2827.50	
10100.00	90.00	180.260	7385.00	2255.27S	2093.09W	==>	2918.74	
10200.00	90.00	180.260	7385.00	2355.27S	2093.54W	==>	3009.99	
10300.00	90.00	180.260	7385.00	2455.27S	2093.98W	==>	3101.23	
10400.00	90.00	180.260	7385.00	2555.27S	2094.43W	==>	3192.47	
10500.00	90.00	180.260	7385.00	2655.27S	2094.88W	==>	3283.71	
10600.00	90.00	180.260	7385.00	2755.27S	2095.33W	==>	3374.96	
10700.00	90.00	180.260	7385.00	2855.27S	2095.78W	==>	3466.20	
10800.00	90.00	180.260	7385.00	2955.26S	2096.22W	==>	3557.44	
10900.00	90.00	180.260	7385.00	3055.26S	2096.67W	==>	3648.68	
11000.00	90.00	180.260	7385.00	3155.26S	2097.12W	==>	3739.92	
11100.00	90.00	180.260	7385.00	3255.26S	2097.57W	==>	3831.17	
11200.00	90.00	180.260	7385.00	3355.26S	2098.01W	==>	3922.41	
11300.00	90.00	180.260	7385.00	3455.26S	2098.46W	==>	4013.65	
11400.00	90.00	180.260	7385.00	3555.26S	2098.91W	==>	4104.89	
11500.00	90.00	180.260	7385.00	3655.26S	2099.36W	==>	4196.14	
11600.00	90.00	180.260	7385.00	3755.26S	2099.81W	==>	4287.38	
11700.00	90.00	180.260	7385.00	3855.26S	2100.25W	==>	4378.62	
11800.00	90.00	180.260	7385.00	3955.25S	2100.70W	==>	4469.86	
11900.00	90.00	180.260	7385.00	4055.25S	2101.15W	==>	4561.11	
12000.00	90.00	180.260	7385.00	4155.25S	2101.60W	==>	4652.35	
12100.00	90.00	180.260	7385.00	4255.25S	2102.05W	==>	4743.59	
12200.00	90.00	180.260	7385.00	4355.25S	2102.49W	==>	4834.83	
12300.00	90.00	180.260	7385.00	4455.25S	2102.94W	==>	4926.08	
12400.00	90.00	180.260	7385.00	4555.25S	2103.39W	==>	5017.32	
12479.40	90.00	180.260	7385.00	4634.64S	2103.75W	==>	5089.76	

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Calculation method uses Minimum Curvature method
Prepared by IPT
Date Printed: 15-Jul-2016



Targets							
Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
LEHL 30-7 BH - Rev 2	4634.64S	2103.75W	7385.00	40.01632000	-104.70627000	1249786.74	3222310.13
LEHL 30-7 EP - Rev 2	255.55S	2084.13W	7385.00	40.02834000	-104.70606000	1254165.67	3222329.74

Survey Tool Program						
Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model	
505990	Planned	12479.40	7385.00	ISCWSA MWD	Rev 4 + SAG	

Notes



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: Lehl 30-7 (PWB)



Ellipse separations are reported ONLY if BOTH wells have uncertainty data
Only Depth and Magnetic Reference Field error terms are correlated across tie points
Scan limit is calculated on CENTRE to CENTRE distance
Summary data uses Closest Approach clearance calculation for all minima
Hole size/Casings ARE included
Hole size/Casings are NOT subtracted from Centre-Centre distance
Confidence limit of 95.00% / 2.80 SD.

Wellbore		
Name	Created	Last Revised
Lehl 30-7 (PWB)	Jun-13-2016	Jul-15-2016

Well		
Name	Government ID	Last Revised
Lehl 30-7		Jun-13-2016

Slot						
Name	Latitude	Longitude	Grid Northing	Grid Easting	North	East
Slot 7	40.02899000	-104.69861000	1254421.2100	3224413.7935	46.79N	5651.07E

Installation						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Easting	Northing	Coord System Name	North Alignment
Lehl Pad - Rev 2 - 2016-07-15	40.02900000	-104.71878983	3218762.9369	1254374.4255	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Clearance Summary							
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
Lehl 30-6	16.77	1689.63	2214.57	-6.36	2493.44	0.74	2477.03
Lehl 30-5	33.57	1541.99	2001.31	12.87	2312.99	1.57	2329.40
Lehl 30-4	50.37	1509.19	1804.46	31.74	2083.33	2.52	2148.95
Lehl 30-3	64.48	1509.19	1607.61	47.77	1837.27	3.45	2034.12
Lehl 30-2	81.27	1509.19	1509.19	65.49	1640.42	4.63	1886.48
Lehl 30-1	98.07	1509.19	1509.19	82.77	1558.40	5.95	1771.65
Lehl 30-8	112.08	1500.00	1500.00				
M B LEHL A #1	458.34	9610.03	9610.03	368.89	9596.46	5.05	9530.84
MARGUERITE B LEHL #A-1	496.97	9504.23	9504.23	415.35	9481.63	5.99	9416.01
W Lochbuie 2H-31H D165	607.82	12479.40	12479.40	553.09	12479.40	11.11	12479.40
W Lochbuie 2G-31H D165	849.29	12479.40	12479.40	787.95	12479.40	13.84	12479.40
W Lochbuie 2F-31H D165	935.50	12479.40	12479.40	854.67	12479.40	11.57	12479.40
GILMORE #1-30	983.97	8806.03	8806.03	913.51	8841.86	12.38	9284.78
ELLS #XX 19-4D	1110.75	4248.69	4248.69	1062.29	4347.11	19.58	5725.07
W Lochbuie 21-31	1248.77	12479.40	12479.40	1179.27	12479.40	17.97	12479.40
W Lutz 1	1332.76	12479.40	12479.40	1230.21	12479.40	13.00	12479.40
W Lochbuie 2E-31H D165	1339.57	12479.40	12479.40	1247.14	12479.40	14.49	12479.40

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Date Printed: 15-Jul-2016



SYSDRILL
Closest Approach + Clearance Factor Summary Report
Wellbore: Lehl 30-7 (PWB)



Clearance Summary							
Offset WellName	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
DECHANT #1-19	1635.14	7480.31	7480.31	1567.45	7496.72	22.64	7874.02
LEHL #1	1776.77	11308.59	11308.59	1656.11	11384.51	13.46	11925.85
CHARLES M BROWN GAS UNIT #1	1940.37	1500.00	1500.00	1921.89	1541.99	54.37	7200.00
W Lutz 1A	2564.56	12479.40	12479.40	2509.81	12479.40	46.84	12479.40
W Sack-Dreyer 1	2791.68	12479.40	12479.40	2690.28	12479.40	27.53	12479.40
W Highland 01N-65W-29-1N	2950.49	11176.30	11176.30	2839.76	12479.40	24.42	12479.40
KILKER #1	3446.94	11883.10	11883.10	3314.27	11925.85	25.14	12479.40
W Dreyer 1	3842.89	12479.40	12479.40	3764.56	12479.40	49.06	12479.40
W Dreyer 32-1	4231.47	12479.40	12479.40	4107.35	12479.40	34.09	12479.40
W Eppinger 1	4902.47	12479.40	12479.40	4846.77	12479.40	88.01	12479.40
W Sawyer/Powell 32-4	4967.43	12479.40	12479.40	4851.90	12479.40	43.00	12479.40
W Adam Ten 1-A	5456.92	12479.40	12479.40	5364.29	12479.40	58.91	12479.40
W Sack-Hiett 1	5888.66	12479.40	12479.40	5778.22	12479.40	53.32	12479.40
W Adam Ten Ltd 1	6888.41	12479.40	12479.40	6805.66	12479.40	83.25	12479.40

