

Synergy Resources

Well Name: **SRC Cannon K-16CHZ**

Surface Location: SRC Cannon Pad Sec.16-T4N-R68W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4933.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1355929.00	3139483.04	40.309346	-104.999848	

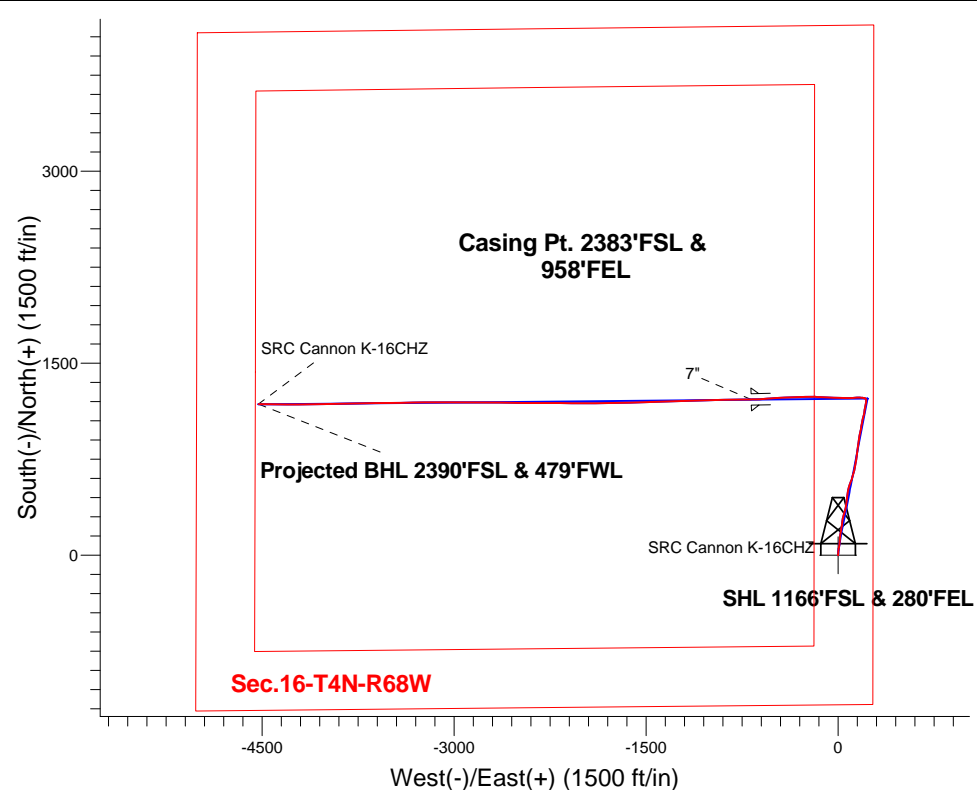
Ensign Rig #131 - RKB - 13.5' WELL @ 4946.5ft (Ensign Rig #131 - RKB - 13.5')

FINAL SURVEY

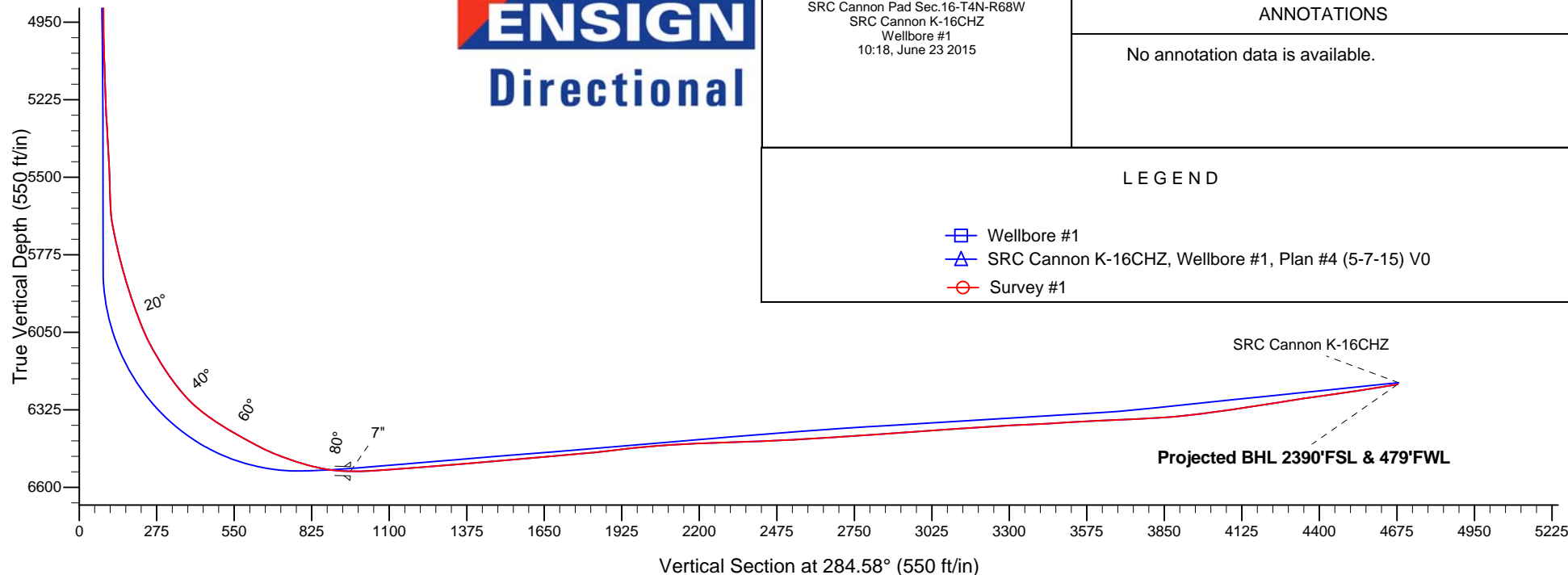
Projected Bottom Hole Location

11047'MD 6235'TVD 1180'N & 4526'W of SHL

99 degree Incl @ 207.9 degree AZM



ENSIGN
Directional



SRC Cannon Pad Sec.16-T4N-R68W
SRC Cannon K-16CHZ
Wellbore #1
10:18, June 23 2015

ANNOTATIONS

No annotation data is available.

LEGEND

- Wellbore #1
- SRC Cannon K-16CHZ, Wellbore #1, Plan #4 (5-7-15) V0
- Survey #1



Synergy Resources

SEC.16-T4N-R68W

SRC Cannon Pad Sec.16-T4N-R68W

SRC Cannon K-16CHZ

Wellbore #1

Survey: Survey #1

Standard Survey Report

23 June, 2015

Company:	Synergy Resources	Local Co-ordinate Reference:	Well SRC Cannon K-16CHZ
Project:	SEC.16-T4N-R68W	TVD Reference:	WELL @ 4946.5ft (Ensign Rig #131 - RKB - 13.5')
Site:	SRC Cannon Pad Sec.16-T4N-R68W	MD Reference:	WELL @ 4946.5ft (Ensign Rig #131 - RKB - 13.5')
Well:	SRC Cannon K-16CHZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Project	SEC.16-T4N-R68W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	SRC Cannon Pad Sec.16-T4N-R68W				
Site Position:		Northing:	1,355,779.01 ft	Latitude:	40.308934
From:	Lat/Long	Easting:	3,139,483.89 ft	Longitude:	-104.999848
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well	SRC Cannon K-16CHZ					
Well Position	+N-S	0.0 ft	Northing:	1,355,929.00 ft	Latitude:	40.309346
	+E-W	0.0 ft	Easting:	3,139,483.04 ft	Longitude:	-104.999848
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,933.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/7/2015	8.46	66.80	52,648

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)	
	0.0	0.0	0.0	284.58	

Survey Program	Date	6/23/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
106.0	11,047.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	228.80	1.0	0.0	0.0	0.0	0.28	0.28	0.00	
SHL 1166'FSL & 280'FEL										
106.0	0.30	228.80	106.0	-0.2	-0.2	0.2	0.28	0.28	0.00	
201.0	1.30	10.10	201.0	0.7	-0.2	0.4	1.63	1.05	148.74	
295.0	3.30	12.00	294.9	4.4	0.5	0.6	2.13	2.13	2.02	
388.0	5.20	7.40	387.7	11.2	1.6	1.2	2.07	2.04	-4.95	
482.0	6.40	2.00	481.2	20.7	2.4	2.9	1.40	1.28	-5.74	
550.0	6.40	4.80	548.7	28.2	2.8	4.4	0.46	0.00	4.12	
635.0	6.50	7.20	633.2	37.7	3.8	5.8	0.34	0.12	2.82	
727.0	7.70	6.00	724.5	49.0	5.1	7.4	1.31	1.30	-1.30	

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Well:	SRC Cannon K-16CHZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 2003.21 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
819.0	9.90	13.60	815.4	62.8	7.6	8.4	2.70	2.39	8.26
911.0	11.80	6.70	905.8	79.9	10.6	9.9	2.50	2.07	-7.50
1,003.0	12.90	5.50	995.6	99.4	12.7	12.8	1.23	1.20	-1.30
1,095.0	13.60	3.00	1,085.2	120.5	14.2	16.6	0.98	0.76	-2.72
1,187.0	12.80	3.50	1,174.8	141.4	15.4	20.7	0.88	-0.87	0.54
1,279.0	14.90	11.10	1,264.1	163.2	18.3	23.4	3.02	2.28	8.26
1,371.0	14.70	9.00	1,353.0	186.4	22.4	25.2	0.62	-0.22	-2.28
1,464.0	16.00	10.40	1,442.7	210.6	26.6	27.3	1.45	1.40	1.51
1,556.0	16.40	7.60	1,531.1	236.0	30.6	29.8	0.95	0.43	-3.04
1,649.0	16.90	7.20	1,620.2	262.4	34.0	33.1	0.55	0.54	-0.43
1,741.0	17.30	11.40	1,708.1	289.1	38.4	35.6	1.41	0.43	4.57
1,833.0	16.80	15.10	1,796.1	315.3	44.5	36.3	1.30	-0.54	4.02
1,926.0	17.60	18.00	1,884.9	341.7	52.4	35.3	1.26	0.86	3.12
2,019.0	16.40	9.20	1,973.9	368.0	58.8	35.7	3.05	-1.29	-9.46
2,110.0	15.70	9.70	2,061.3	392.8	63.0	37.9	0.78	-0.77	0.55
2,202.0	15.80	7.40	2,149.9	417.5	66.7	40.6	0.69	0.11	-2.50
2,294.0	15.40	7.40	2,238.5	442.0	69.9	43.7	0.43	-0.43	0.00
2,386.0	14.50	5.30	2,327.3	465.6	72.5	47.0	1.14	-0.98	-2.28
2,472.0	16.00	9.30	2,410.3	488.0	75.4	49.9	2.13	1.74	4.65
2,561.0	15.80	13.00	2,495.9	512.0	80.1	51.3	1.16	-0.22	4.16
2,650.0	15.70	17.80	2,581.6	535.2	86.5	51.0	1.47	-0.11	5.39
2,739.0	15.80	19.90	2,667.2	558.1	94.3	49.2	0.65	0.11	2.36
2,829.0	15.00	20.90	2,754.0	580.5	102.7	46.8	0.94	-0.89	1.11
2,918.0	15.10	16.20	2,840.0	602.4	110.0	45.2	1.38	0.11	-5.28
3,007.0	14.80	16.40	2,925.9	624.4	116.4	44.5	0.34	-0.34	0.22
3,096.0	17.70	16.40	3,011.4	648.3	123.5	43.7	3.26	3.26	0.00
3,186.0	18.50	13.00	3,096.9	675.3	130.6	43.7	1.47	0.89	-3.78
3,274.0	18.50	10.00	3,180.4	702.7	136.1	45.2	1.08	0.00	-3.41
3,367.0	17.80	7.10	3,268.8	731.3	140.4	48.2	1.23	-0.75	-3.12
3,456.0	17.40	4.80	3,353.6	758.1	143.2	52.2	0.90	-0.45	-2.58
3,546.0	16.40	7.10	3,439.7	784.1	145.9	56.2	1.34	-1.11	2.56
3,635.0	15.60	11.40	3,525.3	808.3	149.8	58.5	1.61	-0.90	4.83
3,724.0	17.70	9.90	3,610.5	833.4	154.5	60.2	2.41	2.36	-1.69
3,813.0	17.30	5.50	3,695.4	859.9	158.1	63.4	1.55	-0.45	-4.94
3,902.0	15.80	5.80	3,780.7	885.1	160.6	67.4	1.69	-1.69	0.34
3,991.0	16.40	8.10	3,866.2	909.6	163.6	70.6	0.98	0.67	2.58
4,080.0	16.40	11.30	3,951.6	934.4	167.9	72.8	1.02	0.00	3.60
4,169.0	17.30	13.40	4,036.8	959.6	173.4	73.8	1.22	1.01	2.36
4,258.0	16.40	9.50	4,122.0	984.8	178.5	75.1	1.62	-1.01	-4.38
4,347.0	15.90	10.60	4,207.5	1,009.2	182.8	77.1	0.66	-0.56	1.24
4,436.0	15.00	9.90	4,293.2	1,032.5	187.1	78.9	1.03	-1.01	-0.79
4,525.0	14.30	12.30	4,379.3	1,054.6	191.4	80.3	1.04	-0.79	2.70
4,614.0	13.70	13.40	4,465.7	1,075.6	196.2	80.9	0.74	-0.67	1.24
4,704.0	13.50	12.90	4,553.2	1,096.2	201.0	81.4	0.26	-0.22	-0.56
4,793.0	13.50	12.00	4,639.7	1,116.5	205.5	82.2	0.24	0.00	-1.01
4,882.0	10.80	5.10	4,726.7	1,135.0	208.4	84.1	3.44	-3.03	-7.75
4,972.0	9.10	12.30	4,815.4	1,150.3	210.6	85.7	2.34	-1.89	8.00
5,061.0	10.20	14.30	4,903.1	1,164.8	214.1	86.0	1.29	1.24	2.25
5,150.0	9.80	10.00	4,990.8	1,179.9	217.3	86.7	0.95	-0.45	-4.83
5,240.0	9.60	2.80	5,079.5	1,195.0	219.0	88.8	1.37	-0.22	-8.00
5,329.0	6.90	0.70	5,167.5	1,207.7	219.5	91.6	3.05	-3.03	-2.36
5,418.0	5.50	343.50	5,256.0	1,217.2	218.3	95.1	2.60	-1.57	-19.33
5,507.0	3.30	308.90	5,344.8	1,222.9	215.1	99.7	3.77	-2.47	-38.88

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Survey									
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5,596.0	3.30	290.10	5,433.6	1,225.4	210.7	104.5	1.21	0.00	-21.12
5,685.0	1.60	288.50	5,522.5	1,226.6	207.1	108.3	1.91	-1.91	-1.80
5,729.0	2.00	278.80	5,566.5	1,226.9	205.8	109.7	1.14	0.91	-22.05
5,774.0	2.80	277.60	5,611.5	1,227.2	203.9	111.6	1.78	1.78	-2.67
5,818.0	8.10	279.70	5,655.3	1,227.9	199.8	115.7	12.05	12.05	4.77
5,863.0	12.20	280.60	5,699.6	1,229.3	192.0	123.6	9.12	9.11	2.00
5,952.0	14.80	269.10	5,786.1	1,230.8	171.4	144.0	4.19	2.92	-12.92
6,041.0	17.10	269.50	5,871.7	1,230.5	146.9	167.6	2.59	2.58	0.45
6,130.0	19.90	266.20	5,956.1	1,229.4	118.7	194.6	3.36	3.15	-3.71
6,219.0	23.70	268.10	6,038.7	1,227.8	85.7	226.1	4.34	4.27	2.13
6,308.0	30.20	272.00	6,118.0	1,228.0	45.4	265.2	7.56	7.30	4.38
6,397.0	34.90	272.30	6,193.0	1,229.8	-2.4	311.9	5.28	5.28	0.34
6,487.0	40.40	272.30	6,264.2	1,232.0	-57.3	365.6	6.11	6.11	0.00
6,575.0	51.80	272.70	6,325.1	1,234.8	-120.6	427.5	12.96	12.95	0.45
6,665.0	58.70	270.70	6,376.4	1,236.9	-194.4	499.6	7.88	7.67	-2.22
6,754.0	61.50	268.60	6,420.8	1,236.5	-271.6	574.1	3.75	3.15	-2.36
6,843.0	64.60	267.90	6,461.1	1,234.0	-350.9	650.2	3.55	3.48	-0.79
6,932.0	71.00	267.40	6,494.7	1,230.6	-433.1	729.0	7.21	7.19	-0.56
6,977.0	72.90	266.90	6,508.7	1,228.5	-475.9	769.8	4.35	4.22	-1.11
7,007.9	74.62	266.14	6,517.3	1,226.7	-505.5	798.0	6.03	5.55	-2.45
Landing Pt.									
7,022.0	75.40	265.80	6,520.9	1,225.8	-519.1	810.9	6.03	5.56	-2.42
7,066.0	78.40	265.10	6,530.9	1,222.4	-561.8	851.4	6.99	6.82	-1.59
7,111.0	83.30	267.00	6,538.1	1,219.3	-606.1	893.5	11.66	10.89	4.22
7,148.0	86.40	268.40	6,541.4	1,217.8	-642.9	928.8	9.19	8.38	3.78
7,183.0	88.79	268.83	6,542.9	1,217.0	-677.9	962.4	6.93	6.82	1.22
7"									
7,255.0	93.70	269.70	6,541.3	1,216.0	-749.8	1,031.8	6.93	6.82	1.21
7,344.0	93.90	269.70	6,535.4	1,215.6	-838.6	1,117.6	0.22	0.22	0.00
7,433.0	93.90	268.10	6,529.3	1,213.9	-927.4	1,203.1	1.79	0.00	-1.80
7,523.0	94.40	268.80	6,522.8	1,211.5	-1,017.1	1,289.3	0.95	0.56	0.78
7,611.0	95.20	268.60	6,515.5	1,209.5	-1,104.8	1,373.7	0.94	0.91	-0.23
7,701.0	94.30	267.60	6,508.0	1,206.5	-1,194.4	1,459.7	1.49	-1.00	-1.11
7,790.0	94.60	267.40	6,501.1	1,202.6	-1,283.1	1,544.5	0.40	0.34	-0.22
7,879.0	95.10	267.90	6,493.6	1,199.0	-1,371.7	1,629.3	0.79	0.56	0.56
7,969.0	94.80	268.80	6,485.8	1,196.4	-1,461.3	1,715.4	1.05	-0.33	1.00
8,058.0	94.70	267.70	6,478.5	1,193.7	-1,550.0	1,800.5	1.24	-0.11	-1.24
8,147.0	96.90	268.60	6,469.5	1,190.8	-1,638.5	1,885.5	2.67	2.47	1.01
8,236.0	95.80	270.00	6,459.6	1,189.8	-1,726.9	1,970.8	1.99	-1.24	1.57
8,325.0	94.00	269.30	6,452.0	1,189.2	-1,815.6	2,056.5	2.17	-2.02	-0.79
8,415.0	92.60	270.40	6,446.8	1,189.0	-1,905.4	2,143.4	1.98	-1.56	1.22
8,504.0	92.50	270.20	6,442.9	1,189.4	-1,994.3	2,229.5	0.25	-0.11	-0.22
8,593.0	91.90	269.30	6,439.5	1,189.1	-2,083.3	2,315.5	1.21	-0.67	-1.01
8,682.0	92.20	270.50	6,436.3	1,188.9	-2,172.2	2,401.5	1.39	0.34	1.35
8,771.0	92.20	270.00	6,432.9	1,189.3	-2,261.1	2,487.7	0.56	0.00	-0.56
8,860.0	93.50	270.20	6,428.4	1,189.4	-2,350.0	2,573.8	1.48	1.46	0.22
8,950.0	93.30	269.70	6,423.1	1,189.4	-2,439.9	2,660.7	0.60	-0.22	-0.56
8,960.1	93.37	269.88	6,422.5	1,189.3	-2,450.0	2,670.5	1.92	0.68	1.80
WP#1 (K-16CHZ)									
9,039.0	93.90	271.30	6,417.5	1,190.1	-2,528.7	2,746.8	1.92	0.67	1.80
9,128.0	93.80	270.90	6,411.5	1,191.8	-2,617.5	2,833.2	0.46	-0.11	-0.45
9,217.0	93.90	270.50	6,405.6	1,192.9	-2,706.3	2,919.4	0.46	0.11	-0.45

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Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,306.0	93.70	270.40	6,399.7	1,193.6	-2,795.1	3,005.5	0.25	-0.22	-0.11	
9,395.0	93.60	270.00	6,394.0	1,193.9	-2,883.9	3,091.6	0.46	-0.11	-0.45	
9,485.0	93.90	269.80	6,388.1	1,193.8	-2,973.7	3,178.4	0.40	0.33	-0.22	
9,574.0	93.50	269.80	6,382.4	1,193.5	-3,062.5	3,264.3	0.45	-0.45	0.00	
9,663.0	92.30	270.00	6,377.9	1,193.3	-3,151.4	3,350.3	1.37	-1.35	0.22	
9,752.0	93.10	269.70	6,373.7	1,193.1	-3,240.3	3,436.3	0.96	0.90	-0.34	
9,841.0	93.60	269.10	6,368.5	1,192.1	-3,329.1	3,522.0	0.88	0.56	-0.67	
9,930.0	92.40	268.60	6,363.8	1,190.4	-3,418.0	3,607.6	1.46	-1.35	-0.56	
9,966.2	92.32	268.76	6,362.3	1,189.5	-3,454.2	3,642.4	0.50	-0.22	0.45	
WP#2 (K-16CHZ)										
10,019.0	92.20	269.00	6,360.2	1,188.5	-3,506.9	3,693.1	0.50	-0.22	0.45	
10,109.0	93.30	269.70	6,355.9	1,187.5	-3,596.8	3,779.9	1.45	1.22	0.78	
10,198.0	93.60	270.00	6,350.6	1,187.2	-3,685.6	3,865.8	0.48	0.34	0.34	
10,287.0	97.30	269.10	6,342.1	1,186.6	-3,774.2	3,951.4	4.28	4.16	-1.01	
10,375.0	96.80	268.10	6,331.3	1,184.4	-3,861.5	4,035.3	1.26	-0.57	-1.14	
10,465.0	98.20	268.40	6,319.6	1,181.7	-3,950.7	4,120.9	1.59	1.56	0.33	
10,554.0	98.70	269.00	6,306.5	1,179.7	-4,038.7	4,205.6	0.87	0.56	0.67	
10,643.0	99.00	268.40	6,292.8	1,177.7	-4,126.6	4,290.2	0.75	0.34	-0.67	
10,732.0	97.30	270.50	6,280.2	1,176.9	-4,214.7	4,375.2	3.02	-1.91	2.36	
10,822.0	98.10	270.40	6,268.1	1,177.6	-4,303.9	4,461.7	0.90	0.89	-0.11	
10,911.0	98.30	270.70	6,255.4	1,178.4	-4,392.0	4,547.2	0.40	0.22	0.34	
10,997.0	99.00	270.90	6,242.5	1,179.6	-4,477.0	4,629.8	0.85	0.81	0.23	
11,047.0	99.00	270.90	6,234.7	1,180.4	-4,526.4	4,677.7	0.00	0.00	0.00	
BHL 2388'FSL & 475'FWL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude		
SHL 1166'FSL & 280'I	0.00	0.00	1.0	0.0	0.0	1,355,929.00	3,139,483.04	40.309346		
- hit/miss target										
- Shape										
- survey hits target										
- Point										

Casing Points										
Measured Depth (ft)	Vertical Depth (ft)	Name					Casing Diameter (")	Hole Diameter (")		
7,183.0	6,542.9	7"					7	7-1/2		

Checked By: _____	Approved By: _____	Date: _____
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