

Hilcorp Energy Company
State of Colorado 14-9-16CH
SHL: 140' FSL 690' FWL (SW/4 SW/4)
Sec. 9 T3N R62W
BHL: ±600' FSL ±600' FWL (SW/4 SW/4)
Sec. 16 T3N R62W
Weld County, Colorado
Surface: Fee
SHL State Mineral Lease: ST-7873.3
BHL State Mineral Lease: ST-7972.4

CONFIDENTIAL

DRILLING PLAN

Please contact Mr. John McKnight with Hilcorp at 713-289-2755, if there are any questions or concerns regarding this Drilling Program.

WELL OBJECTIVES

- (1) Drill and case each wellbore with no health, safety, or environmental impact.
- (2) Optimize drilling efficiency by utilizing best drilling practices and input from entire drill team.
Communicate best practices to Hilcorp so they can be included in the design of future wellbores.

SURFACE ELEVATION – 4,631' (Un-graded ground elevation)

SURFACE FORMATION – Parkman

ESTIMATED FORMATION TOPS (PILOT HOLE)

	TVD	MD	
Parkman	0'	0'	
Sussex	3,945'	3,945'	
Niobrara	6,134'	6,216'	Water, Oil & Gas
Niobrara B	6,291'	6,683'	Water, Oil & Gas
Total Depth	6,575'	10,829'	

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and protected.

HORIZONTAL DRILLING PROGRAM

- A) Kick-Off-Point (KOP) is estimated to be at 5,575' TVD.
- B) The horizontal portion of the well will kick off at 5,575' TVD, the curve and lateral will be drilled, and production casing will run the distance of the horizontal leg +/- 10,829'.

CASING PROGRAM

Total Measured Depth (MD)	Hole Diameter	Casing Diameter	Casing Weight And Grade	Cement
0' - 40'	24"	20"	Conductor Casing	Redimix to surface
Surface 0' - 2,000'	17-1/2"	13-3/8"	K-55 54.5 lbm/ft	Lead: +/- 870 sks Swiftcem B2 Tail +/- 410 sks Swiftcem B2*
Intermediate 0' - 5,500'	12-1/4"	9-5/8"	K-55 36 lbm/ft	Lead +/- 580 sks Extendacem Tail +/- 280 sks Extendacem**
Horizontal Production 0' - 10,829'	8-1/2"	5-1/2"	HCP 110 20 lbm/ft	Lead +/- 1070 sks Expandacem**

* Cement volume calculated based on gauge hole plus 100%.

** Cement volume calculated based on gauge hole plus 35%.

Yields:	Surface:	Lead:	Swiftcem B2 =	2.42 ft ³ /sk (12.0 ppg) 14.36 gal/sk
		Tail:	Swiftcem B2 =	1.72 ft ³ /sk (13.5 ppg) 9.09 gal/sk
	Intermediate:	Lead:	Extendacem =	2.03 ft ³ /sk (11.8 ppg) 11.08 gal/sk
		Tail:	Extendacem =	1.69 ft ³ /sk (12.5 ppg) 8.54 gal/sk
	Production:	Lead:	Extendacem =	1.67 ft ³ /sk (13.8 ppg) 7.75 gal/sk

PRESSURE CONTROL

- See attached blowout preventer diagram.

BOPs and choke manifold will be installed and pressure tested before drilling out of surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOPs will be pressure tested at least once every 30 days. Ram type preventers and related pressure control equipment will be pressure tested to related working pressure of the stack assembly if a test plug is used. If a plug is not used, the stack assembly will be tested to the rated working pressure of the stack assembly or 70% of the minimum internal yield of the casing, whichever is less. Annular type preventers will be pressure tested to 50% of their working pressure. All casing strings will be pressure tested to 0.22 psi/ft or 1,500 psi, whichever is greater, not to exceed 70% of the internal yield. If a 5M system or greater is used, the casing shoe will be tested by drilling 5-20' out from under the shoe and pressure tested to a maximum expected mud weight equivalent as shown in the mud program listed below.

A manual locking device (i.e. hand wheels) or automatic locking devices shall be installed on the BOP stack. Remote controls capable of both opening and closing all preventers shall be readily accessible to the driller.

The choke manifold and accumulator will meet or exceed Onshore Order No. 2 (OSO #2) standards. The BOP equipment will be tested after any repairs to the equipment. Pipe rams, blind rams and annular preventer will be activated on each trip and weekly BOP drills will be conducted with each crew. All tests, maintenance, and BOP drills will be documented on rig "tower sheets".

Statement of Accumulator System and Location of Hydraulic Controls

The drilling rig has not been selected for this well. Selection will take place after approval of this application is granted. Manual and/or hydraulic controls will be in compliance with OSO #2 for 5,000 psi system.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at a later time.

MUD PROGRAM

0' - 2,000'	Spud Mud w/ LCM material, if necessary M.W.: <9.0 ppg
2,000' - TD	Water Based Mud w/ calcium carbonate, barium sulfate, and LCM material, if necessary M.W.: <9.0 ppg

Sufficient mud materials to maintain mud properties, control lost circulation and to contain a "kick" will be available on location.

AUXILIARY EQUIPMENT

- A. Upper Kelly cock; lower Kelly cock will be installed while drilling and tested with 5,000 psi BOP.
- B. Inside BOP or stabbing valve with handle (available on rig floor).
- C. Safety valve(s) and subs to fit all string connections in use.
- D. Mud monitoring will be with a flow sensor, pit level indicator, and visually observation.

LOGGING, CORING TESTING PROGRAM

- A. Gamma Ray, Resistivity, Neutron/Density Porosity, Quad combo, Crossed Dipole Sonic.
- B. Coring: Possible 200' core.
- C. Testing: None planned – Drill Stem tests may be run on shows of interest.

ABNORMAL CONDITIONS

- A. Pressures: No abnormal conditions are anticipated.
Anticipated BHP gradient: 0.45 psi/ft
- B. Temperatures: No abnormal conditions are anticipated.
- C. H₂S: None Anticipated.
- D. Estimated bottomhole pressure: 2,959 psi

ANTICIPATED START DATE

May 1, 2012

Hilcorp Energy Company
State of Colorado 14-9-16CH
 SHL: 140' FSL 690' FWL (SW/4 SW/4)
 Sec. 9 T3N R62W
 BHL: ±600' FSL ±600' FWL (SW/4 SW/4)
 Sec. 16 T3N R62W
 Weld County, Colorado
 Surface: Fee
 SHL State Mineral Lease: ST-7873.3
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SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 6,575 ' TVD 10,829' MD
 Proposed Depth of Surface Casing: 2,000 '
 Estimated Pressure Gradient: 0.45 psi/ft
 Bottom Hole Pressure at 6,575 ' =
 0.45 psi/ft x 6,575 ' T = 2,959 psi
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft
 0.22 psi/ft x 6,575 ' T = 1,447 psi

Maximum Design Surface Pressure

Bottom Hole Pressure – Hydrostatic Head =
 (0.45 psi/ft x 6,575 TV) – (0.22 psi/ft x 6,575 ') =
 2,959 psi – 1,447 psi = 1,512 psi

Casing Strengths 13-3/8" 54.5#

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
55 #	547,000	2,730	1,130
61 #	633,000	3,090	1,540

Safety Factors

Tension (Dry): 1.8 Burst: 1.0 Collapse: 1.125

Tension (Dry): 54.5 # / ft x 2,000 ' = 109,001 #
 Safety Factor = $\frac{547,000}{109,001}$ = 5.02 ok

Burst: Safety Factor = $\frac{2,730 \text{ psi}}{1,512 \text{ psi}}$ = 1.81 ok

Collapse: Hydrostatic = 0.052 x 9.0 ppg x 2,000 ' = 936 psi
 Safety Factor = $\frac{1,130 \text{ psi}}{936 \text{ psi}}$ = 1.21 ok

Use 2,000 ' 13-3/8" 54.5#

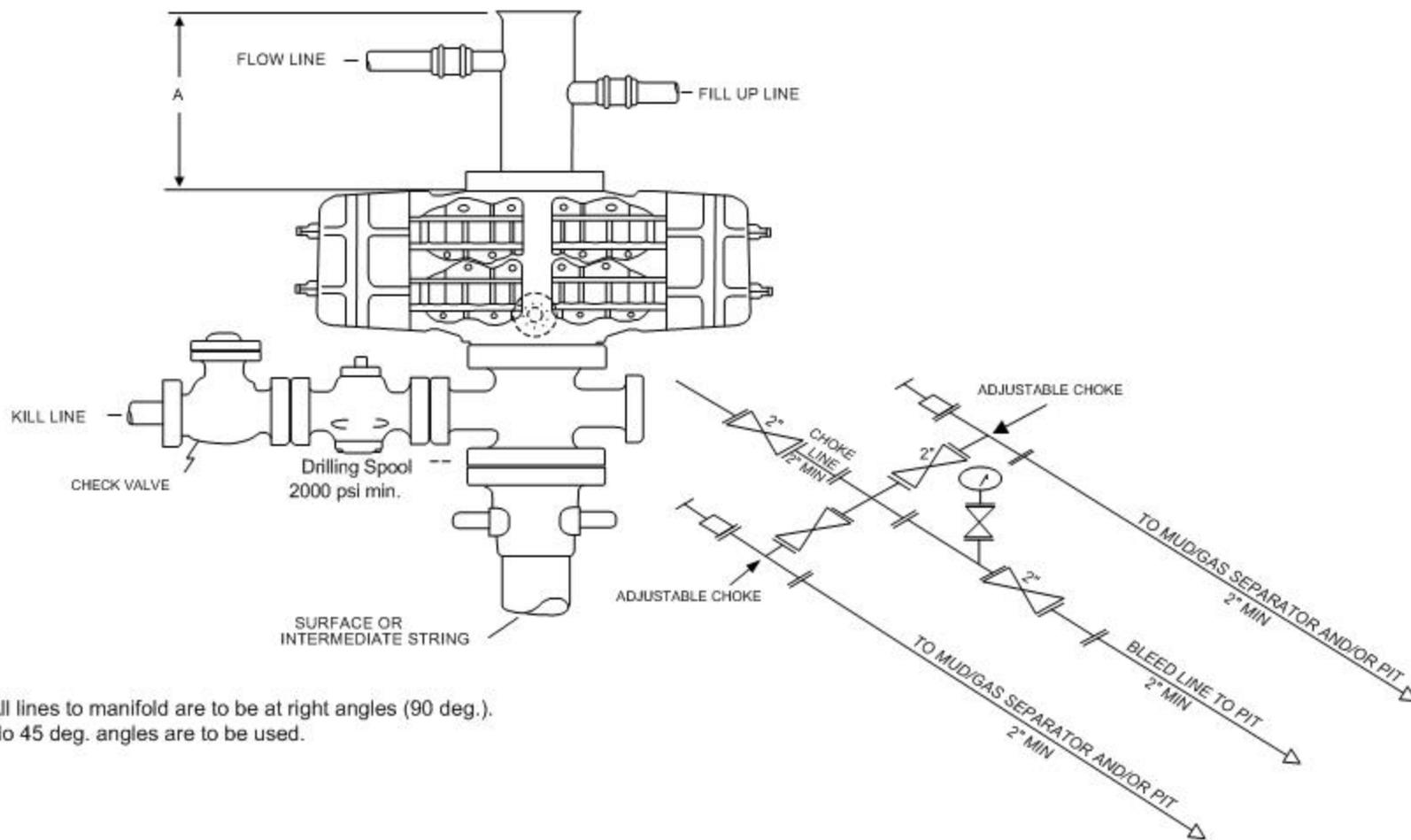
Use 2,000 psi minimum casinghead and BOP's

Centralizers

8 Total
 1 near surface at 160'
 3 -1 each at middle of bottom joint, second joint, third joint
 4 -1 each at every other joint ±80' spacing
 Total centralized ± 600 ' (1,400 ' – 2,000 ')

Note that field experience indicates that additional centralizers greatly increase the chance of "sticking" the surface casing prior to reaching surface casing total depth.

ANNULAR PREVENTER MAY BE SUBSTITUTED FOR DOUBLE GATE PREVENTERS



All lines to manifold are to be at right angles (90 deg.).
No 45 deg. angles are to be used.

2M CHOKE MANIFOLD EQUIPMENT – CONFIGURATION MAY VARY

BLOWOUT PREVENTER

2,000 psi minimum

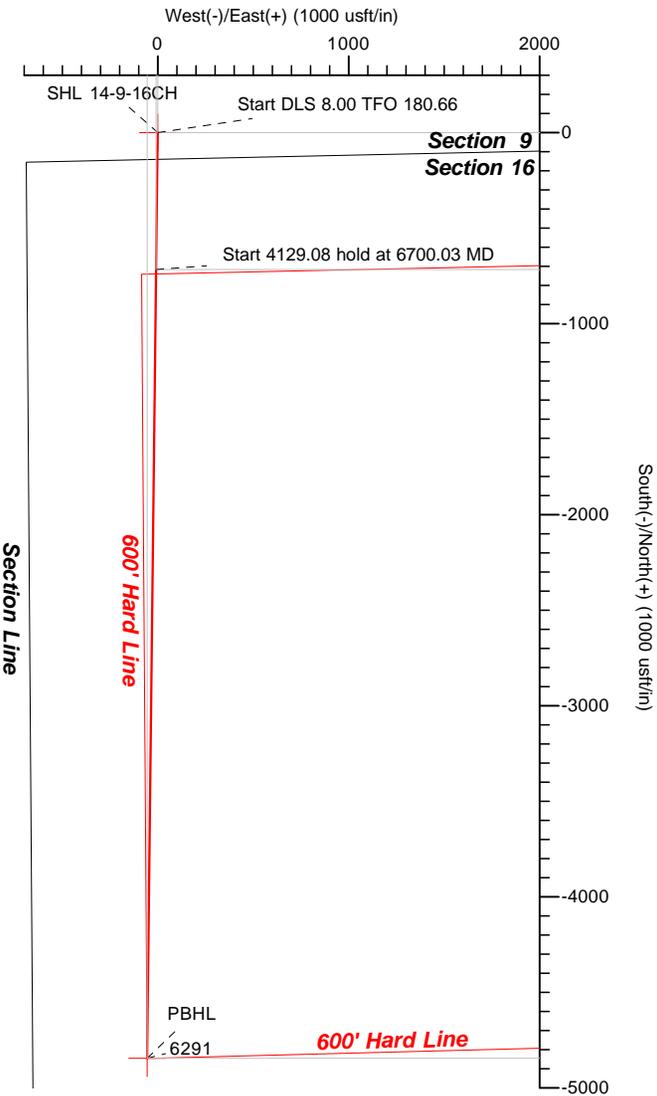
HILCORP ENERGY COMPANY

Project: Weld County, CO
 Site: State
 Well: 14-9-16CH
 Wellbore: OH
 Design: Plan #1



Azimuths to True North
 Magnetic North: 8.52°

Magnetic Field
 Strength: 53012.3snT
 Dip Angle: 66.96°
 Date: 03/14/2012
 Model: IGRF2010

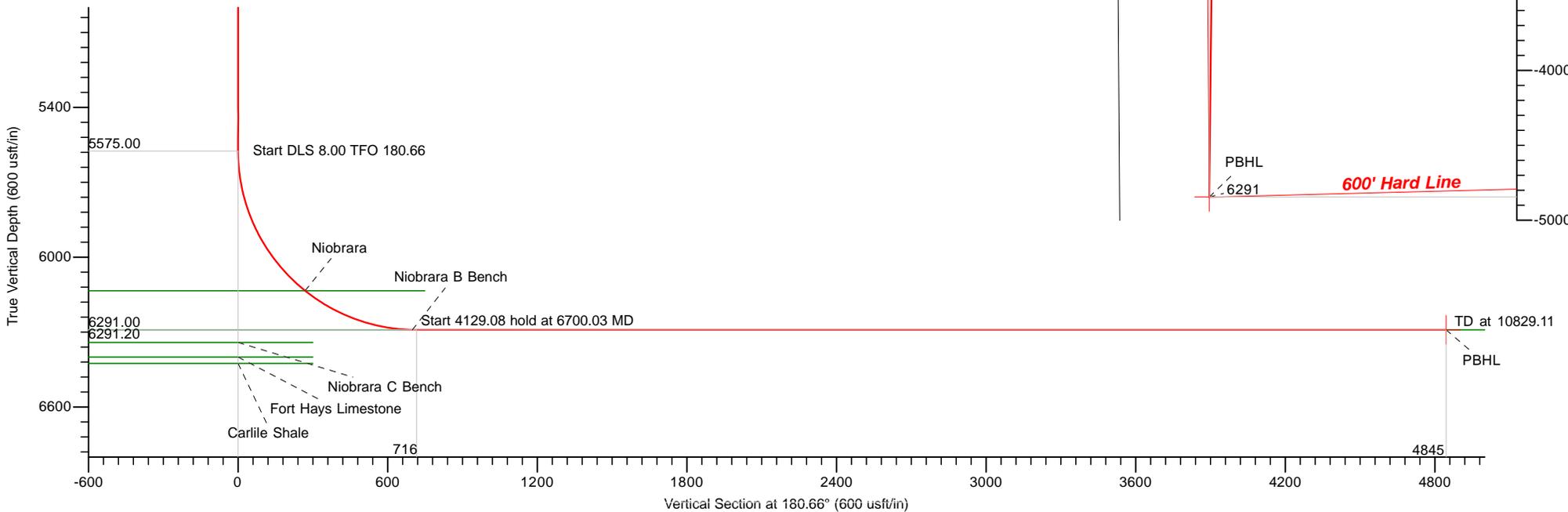


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL 14-9-16CH	0.00	0.00	0.00	1329974.18	3325037.98	40° 13' 59.95 N	104° 20' 8.77 W
PBHL	6291.00	-4844.99	-55.85	1325128.88	3325045.74	40° 13' 12.07 N	104° 20' 9.49 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.00	0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5575.00	0:00	0.00	5575.00	0.00	0.00	0.00	0.00	0.00	
3	6700.03	90:00	180.66	6291.20	-716.18	-8.26	8.00	180.66	716.23	
4	10829.11	90:00	180.66	6291.00	-4844.99	-55.85	0.00	0.00	4845.31	PBHL



LEAM DRILLING SYSTEMS, INC.
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #1 (14-9-16CH/OH)

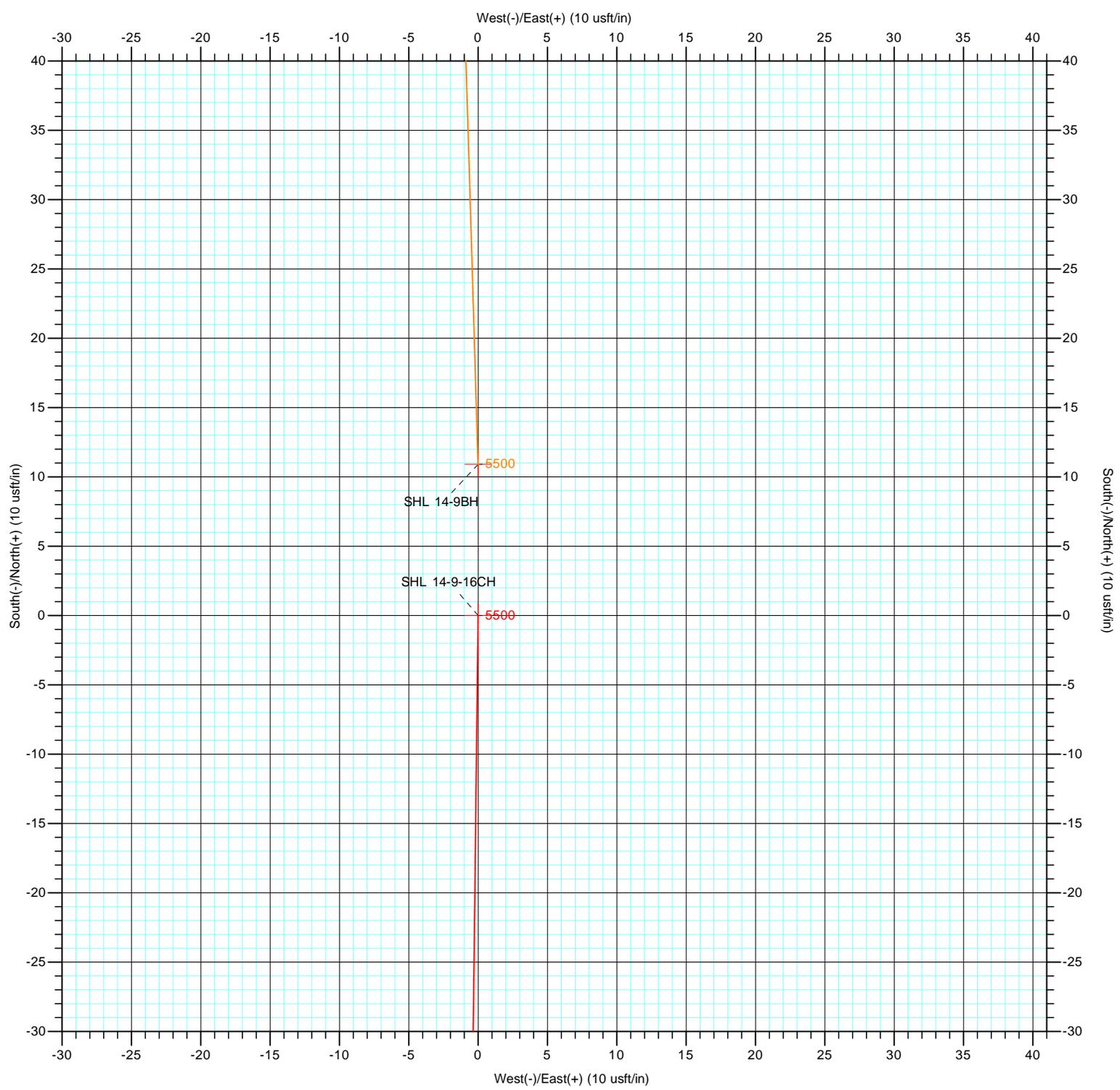
Created By: Justin Andoe State Date: 13:34, March 16 2012
 Date: _____ Date: _____
 Approved: _____ Date: _____

HILCORP ENERGY COMPANY

Project: Weld County, CO
 Site: State
 Well: 14-9-16CH
 Wellbore: OH
 Design: Plan #1



Azimuths to True North
 Magnetic North: 8.52°
 Magnetic Field
 Strength: 53012.3snT
 Dip Angle: 66.96°
 Date: 03/14/2012
 Model: IGRF2010



LEAM DRILLING SYSTEMS, INC.
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #1 (14-9-16CH/OH)
 State
 Created By: Tyler Carlson
 Date: 16:54, March 15 2012
 Approved: _____ Date: _____

Planning Report

Database:	EDM 5000.1 Multi_User Db	Local Co-ordinate Reference:	Well 14-9-16CH
Company:	HILCORP ENERGY COMPANY	TVD Reference:	GL 4629.8'+KB 12.2' @ 4642.00usft
Project:	Weld County, CO	MD Reference:	GL 4629.8'+KB 12.2' @ 4642.00usft
Site:	State	North Reference:	True
Well:	14-9-16CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	State				
Site Position:		Northing:	1,329,974.18 usft	Latitude:	40° 13' 59.95 N
From:	Lat/Long	Easting:	3,325,037.98 usft	Longitude:	104° 20' 8.77 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.75 °

Well	14-9-16CH					
Well Position	+N/-S	0.00 usft	Northing:	1,329,974.18 usft	Latitude:	40° 13' 59.95 N
	+E/-W	0.00 usft	Easting:	3,325,037.98 usft	Longitude:	104° 20' 8.77 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,629.80 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/14/12	8.52	66.96	53,012

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.66	

Plan Sections										
Measured Depth (usft)	Inclination (deg:min)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,575.00	0:00	0.00	5,575.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,700.03	90:00	180.66	6,291.20	-716.18	-8.26	8.00	8.00	-15.94	180.66	
10,829.11	90:00	180.66	6,291.00	-4,844.99	-55.85	0.00	0.00	0.00	0.00	PBHL

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Site:	State	North Reference:	True
Well:	14-9-16CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (deg:min)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL 14-9BH - SHL 14-9-16CH										
12.00	0:00	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parkman										
100.00	0:00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0:00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0:00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0:00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0:00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0:00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0:00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0:00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0:00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0:00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0:00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0:00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0:00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0:00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0:00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0:00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0:00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0:00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0:00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0:00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0:00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0:00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0:00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0:00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0:00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0:00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0:00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0:00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0:00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0:00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0:00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0:00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0:00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0:00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0:00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0:00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0:00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0:00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0:00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,945.00	0:00	0.00	3,945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sussex										
4,000.00	0:00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0:00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0:00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0:00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0:00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0:00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0:00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0:00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Site:	State	North Reference:	True
Well:	14-9-16CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (deg:min)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.00	0:00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0:00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0:00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0:00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0:00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0:00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0:00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0:00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,575.00	0:00	0.00	5,575.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	2:00	180.66	5,600.00	-0.44	-0.01	0.44	8.00	8.00	0.00
5,650.00	6:00	180.66	5,649.86	-3.92	-0.05	3.92	8.00	8.00	0.00
5,700.00	10:00	180.66	5,699.37	-10.88	-0.13	10.88	8.00	8.00	0.00
5,750.00	14:00	180.66	5,748.26	-21.27	-0.25	21.27	8.00	8.00	0.00
5,800.00	18:00	180.66	5,796.32	-35.05	-0.40	35.05	8.00	8.00	0.00
5,850.00	22:00	180.66	5,843.29	-52.15	-0.60	52.15	8.00	8.00	0.00
5,900.00	26:00	180.66	5,888.96	-72.48	-0.84	72.48	8.00	8.00	0.00
5,950.00	30:00	180.66	5,933.10	-95.95	-1.11	95.95	8.00	8.00	0.00
6,000.00	34:00	180.66	5,975.49	-122.43	-1.41	122.44	8.00	8.00	0.00
6,050.00	38:00	180.66	6,015.94	-151.82	-1.75	151.83	8.00	8.00	0.00
6,100.00	42:00	180.66	6,054.23	-183.95	-2.12	183.96	8.00	8.00	0.00
6,150.00	46:00	180.66	6,090.19	-218.67	-2.52	218.68	8.00	8.00	0.00
6,200.00	50:00	180.66	6,123.64	-255.82	-2.95	255.83	8.00	8.00	0.00
6,216.34	51:18	180.66	6,134.00	-268.45	-3.09	268.47	8.00	8.00	0.00
Niobrara									
6,250.00	54:00	180.66	6,154.42	-295.21	-3.40	295.23	8.00	8.00	0.00
6,300.00	58:00	180.66	6,182.37	-336.65	-3.88	336.67	8.00	8.00	0.00
6,350.00	62:00	180.66	6,207.36	-379.94	-4.38	379.96	8.00	8.00	0.00
6,400.00	66:00	180.66	6,229.28	-424.87	-4.90	424.89	8.00	8.00	0.00
6,450.00	70:00	180.66	6,248.01	-471.21	-5.43	471.24	8.00	8.00	0.00
6,500.00	74:00	180.66	6,263.45	-518.75	-5.98	518.79	8.00	8.00	0.00
6,550.00	78:00	180.66	6,275.55	-567.25	-6.54	567.29	8.00	8.00	0.00
6,600.00	82:00	180.66	6,284.23	-616.48	-7.11	616.52	8.00	8.00	0.00
6,650.00	86:00	180.66	6,289.45	-666.19	-7.68	666.24	8.00	8.00	0.00
6,683.19	88:39	180.66	6,291.00	-699.34	-8.06	699.39	8.00	8.00	0.00
Niobrara B Bench									
6,700.03	90:00	180.66	6,291.20	-716.18	-8.26	716.23	8.00	8.00	0.00
6,800.00	90:00	180.66	6,291.19	-816.14	-9.41	816.20	0.00	0.00	0.00
7,000.00	90:00	180.66	6,291.19	-916.14	-10.56	916.20	0.00	0.00	0.00
7,000.00	90:00	180.66	6,291.18	-1,016.13	-11.71	1,016.20	0.00	0.00	0.00
7,100.00	90:00	180.66	6,291.18	-1,116.12	-12.87	1,116.20	0.00	0.00	0.00
7,200.00	90:00	180.66	6,291.17	-1,216.12	-14.02	1,216.20	0.00	0.00	0.00
7,300.00	90:00	180.66	6,291.17	-1,316.11	-15.17	1,316.20	0.00	0.00	0.00
7,400.00	90:00	180.66	6,291.16	-1,416.10	-16.32	1,416.20	0.00	0.00	0.00
7,500.00	90:00	180.66	6,291.16	-1,516.10	-17.48	1,516.20	0.00	0.00	0.00
7,600.00	90:00	180.66	6,291.15	-1,616.09	-18.63	1,616.20	0.00	0.00	0.00
7,700.00	90:00	180.66	6,291.15	-1,716.08	-19.78	1,716.20	0.00	0.00	0.00
7,800.00	90:00	180.66	6,291.14	-1,816.08	-20.93	1,816.20	0.00	0.00	0.00
7,900.00	90:00	180.66	6,291.14	-1,916.07	-22.09	1,916.20	0.00	0.00	0.00
8,000.00	90:00	180.66	6,291.14	-2,016.06	-23.24	2,016.20	0.00	0.00	0.00
8,100.00	90:00	180.66	6,291.13	-2,116.06	-24.39	2,116.20	0.00	0.00	0.00
8,200.00	90:00	180.66	6,291.13	-2,216.05	-25.55	2,216.20	0.00	0.00	0.00
8,300.00	90:00	180.66	6,291.12	-2,316.04	-26.70	2,316.20	0.00	0.00	0.00
8,400.00	90:00	180.66	6,291.12	-2,416.04	-27.85	2,416.20	0.00	0.00	0.00
8,500.00	90:00	180.66	6,291.11	-2,516.03	-29.00	2,516.20	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Multi_User Db	Local Co-ordinate Reference:	Well 14-9-16CH
Company:	HILCORP ENERGY COMPANY	TVD Reference:	GL 4629.8'+KB 12.2' @ 4642.00usft
Project:	Weld County, CO	MD Reference:	GL 4629.8'+KB 12.2' @ 4642.00usft
Site:	State	North Reference:	True
Well:	14-9-16CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (deg:min)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,600.00	90:00	180.66	6,291.11	-2,616.02	-30.16	2,616.20	0.00	0.00	0.00	
8,700.00	90:00	180.66	6,291.10	-2,716.02	-31.31	2,716.20	0.00	0.00	0.00	
8,800.00	90:00	180.66	6,291.10	-2,816.01	-32.46	2,816.20	0.00	0.00	0.00	
8,900.00	90:00	180.66	6,291.09	-2,916.00	-33.61	2,916.20	0.00	0.00	0.00	
9,000.00	90:00	180.66	6,291.09	-3,016.00	-34.77	3,016.20	0.00	0.00	0.00	
9,100.00	90:00	180.66	6,291.08	-3,115.99	-35.92	3,116.20	0.00	0.00	0.00	
9,200.00	90:00	180.66	6,291.08	-3,215.98	-37.07	3,216.20	0.00	0.00	0.00	
9,300.00	90:00	180.66	6,291.07	-3,315.98	-38.22	3,316.20	0.00	0.00	0.00	
9,400.00	90:00	180.66	6,291.07	-3,415.97	-39.38	3,416.20	0.00	0.00	0.00	
9,500.00	90:00	180.66	6,291.06	-3,515.96	-40.53	3,516.20	0.00	0.00	0.00	
9,600.00	90:00	180.66	6,291.06	-3,615.96	-41.68	3,616.20	0.00	0.00	0.00	
9,700.00	90:00	180.66	6,291.05	-3,715.95	-42.84	3,716.20	0.00	0.00	0.00	
9,800.00	90:00	180.66	6,291.05	-3,815.94	-43.99	3,816.20	0.00	0.00	0.00	
9,900.00	90:00	180.66	6,291.04	-3,915.94	-45.14	3,916.20	0.00	0.00	0.00	
10,000.00	90:00	180.66	6,291.04	-4,015.93	-46.29	4,016.20	0.00	0.00	0.00	
10,100.00	90:00	180.66	6,291.03	-4,115.92	-47.45	4,116.20	0.00	0.00	0.00	
10,200.00	90:00	180.66	6,291.03	-4,215.92	-48.60	4,216.20	0.00	0.00	0.00	
10,300.00	90:00	180.66	6,291.03	-4,315.91	-49.75	4,316.20	0.00	0.00	0.00	
10,400.00	90:00	180.66	6,291.02	-4,415.90	-50.90	4,416.20	0.00	0.00	0.00	
10,500.00	90:00	180.66	6,291.02	-4,515.90	-52.06	4,516.20	0.00	0.00	0.00	
10,600.00	90:00	180.66	6,291.01	-4,615.89	-53.21	4,616.20	0.00	0.00	0.00	
10,700.00	90:00	180.66	6,291.01	-4,715.88	-54.36	4,716.20	0.00	0.00	0.00	
10,800.00	90:00	180.66	6,291.00	-4,815.88	-55.51	4,816.20	0.00	0.00	0.00	
10,829.11	90:00	180.66	6,291.00	-4,844.99	-55.85	4,845.31	0.00	0.00	0.00	
PBHL										

Design Targets									
Target Name	Dip Angle (deg:min)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 14-9-16CH - plan hits target center - Point	0:00	0.00	0.00	0.00	0.00	1,329,974.18	3,325,037.98	40° 13' 59.95 N	104° 20' 8.77 W
PBHL - plan hits target center - Point	0:00	0.00	6,291.00	-4,844.99	-55.85	1,325,128.88	3,325,045.75	40° 13' 12.07 N	104° 20' 9.49 W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
12.00	12.00	Parkman		0.00		
3,945.00	3,945.00	Sussex		0.00		
6,216.34	6,134.00	Niobrara		0.00		
6,683.19	6,291.00	Niobrara B Bench		0.00		