



**Weatherford®**

## **Drilling Services**

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## **Proposal**

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DOE CANYON #18

DOLORES CO., COLORADO

WELL FILE: **PLAN 2**

MAY 15, 2013

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**Weatherford International, Ltd.**

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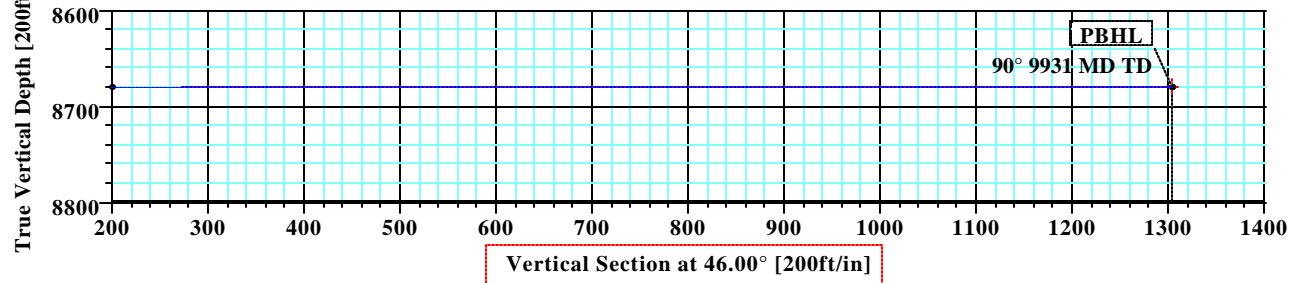
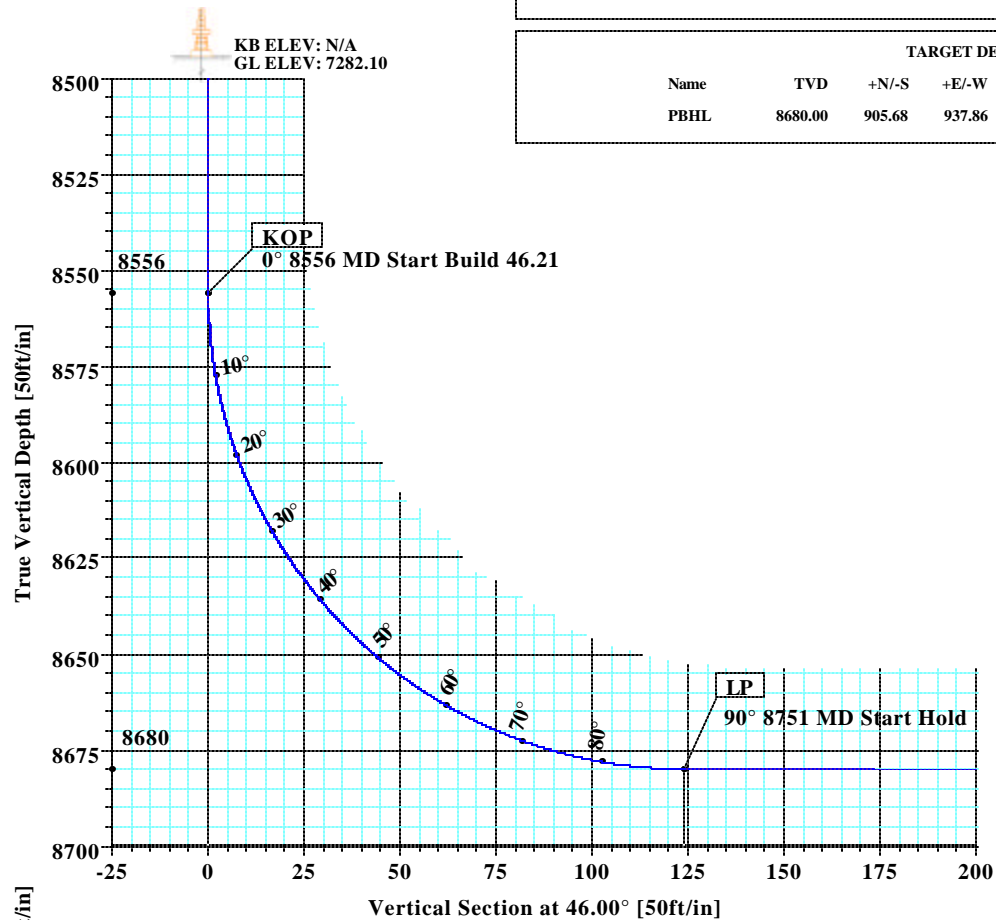
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## Doe Canyon #18 Dolores Co., Colorado



### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	46.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8556.00	0.00	46.00	8556.00	0.00	0.00	0.00	0.00	0.00	
3	8750.78	90.00	46.00	8680.00	86.14	89.20	46.21	46.00	124.00	
4	9930.55	90.00	46.00	8680.00	905.68	937.86	0.00	0.00	1303.77	PBHL

### WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
DC #18	0.00	0.00	1406791.68	2045367.31	37°44'15.036N	108°48'07.056W	N/A

### TARGET DETAILS

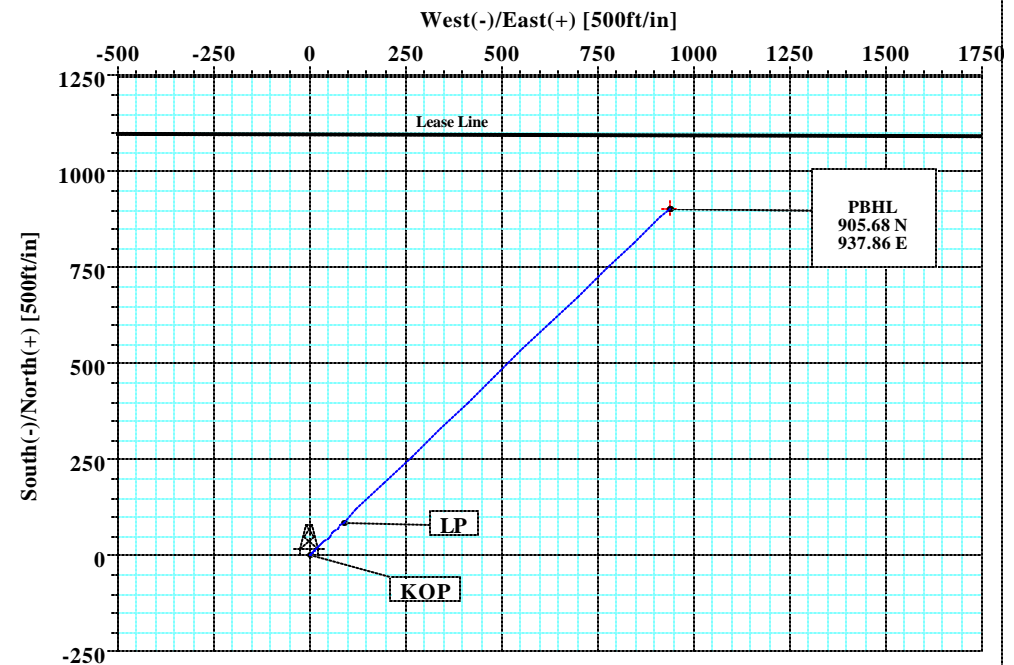
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	8680.00	905.68	937.86	1407663.64	2046336.59	Point

### SITE DETAILS

#### Doe Canyon #18

Site Centre Latitude: 37°44'15.036N  
Longitude: 108°48'07.056W

Ground Level: 7282.10  
Positional Uncertainty: 0.00  
Convergence: -2.03



Plan: Plan #2 (DC #18/1)

Created By: Patrick Rudolph

Date: 5/15/2013



<b>Company:</b> Kinder Morgan	<b>Date:</b> 5/15/2013	<b>Time:</b> 14:30:18	<b>Page:</b> 1
<b>Field:</b> Dolores County, CO (NAD 83)	<b>Co-ordinate(NE) Reference:</b> Well: DC #18, True North		
<b>Site:</b> Doe Canyon #18	<b>Vertical (TVD) Reference:</b> SITE 7282.1		
<b>Well:</b> DC #18	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,46.00Azi)		
<b>Wellpath:</b> 1	<b>Survey Calculation Method:</b> Minimum Curvature	<b>Db:</b> Sybase	

<b>Plan:</b> Plan #2	<b>Date Composed:</b> 5/15/2013
<b>Principal:</b> Yes	<b>Version:</b> 1
	<b>Tied-to:</b> From Surface

**Field:** Dolores County, CO (NAD 83)

USA

**Map System:** US State Plane Coordinate System 1983**Geo Datum:** GRS 1980**Sys Datum:** Mean Sea Level**Map Zone:** Colorado, Southern Zone**Coordinate System:** Well Centre**Geomagnetic Model:** IGRF2010**Site:** Doe Canyon #18

<b>Site Position:</b>	<b>Northing:</b> 1406791.68 ft	<b>Latitude:</b> 37 44 15.036 N
<b>From:</b> Geographic	<b>Easting:</b> 2045367.31 ft	<b>Longitude:</b> 108 48 7.056 W
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> True
<b>Ground Level:</b> 7282.10 ft		<b>Grid Convergence:</b> -2.03 deg

**Well:** DC #18**Slot Name:**

<b>Well Position:</b> +N/-S 0.00 ft	<b>Northing:</b> 1406791.68 ft	<b>Latitude:</b> 37 44 15.036 N
+E/-W 0.00 ft	<b>Easting:</b> 2045367.31 ft	<b>Longitude:</b> 108 48 7.056 W
<b>Position Uncertainty:</b> 0.00 ft		

**Wellpath:** 1

<b>Current Datum:</b> SITE	<b>Height</b> 7282.10 ft	<b>Drilled From:</b> Surface
<b>Magnetic Data:</b> 9/1/2013		<b>Tie-on Depth:</b> 0.00 ft
<b>Field Strength:</b> 50991 nT		<b>Above System Datum:</b> Mean Sea Level
<b>Vertical Section:</b> Depth From (TVD)	+N/-S	<b>Declination:</b> 10.19 deg
ft	ft	<b>Mag Dip Angle:</b> 64.06 deg
		<b>+E/-W</b> <b>Direction</b>
		deg
0.00	0.00	0.00 46.00

**Plan Section Information**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	46.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8556.00	0.00	46.00	8556.00	0.00	0.00	0.00	0.00	0.00	0.00	
8750.78	90.00	46.00	8680.00	86.14	89.20	46.21	46.21	0.00	46.00	
9930.55	90.00	46.00	8680.00	905.68	937.86	0.00	0.00	0.00	0.00	PBHL

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Lat	Min	Sec	Long	Min	Sec	Comment
8500.00	0.00	46.00	8500.00	0.00	0.00	0.00	0.00	37	44	15.036	108	48	7.056	
8551.00	0.00	46.00	8551.00	0.00	0.00	0.00	0.00	37	44	15.036	108	48	7.056	
8556.00	0.00	46.00	8556.00	0.00	0.00	0.00	0.00	37	44	15.036	108	48	7.056	
8560.00	1.85	46.00	8560.00	0.04	0.05	0.06	46.21	37	44	15.036	108	48	7.055	
8570.00	6.47	46.00	8569.97	0.55	0.57	0.79	46.21	37	44	15.041	108	48	7.049	
8580.00	11.09	46.00	8579.85	1.61	1.67	2.32	46.21	37	44	15.052	108	48	7.035	
8590.00	15.71	46.00	8589.58	3.22	3.33	4.63	46.21	37	44	15.068	108	48	7.015	
8600.00	20.33	46.00	8599.08	5.37	5.56	7.72	46.21	37	44	15.089	108	48	6.987	
8610.00	24.95	46.00	8608.31	8.04	8.33	11.57	46.21	37	44	15.115	108	48	6.952	
8620.00	29.57	46.00	8617.20	11.22	11.62	16.15	46.21	37	44	15.147	108	48	6.911	
8630.00	34.19	46.00	8625.69	14.89	15.42	21.43	46.21	37	44	15.183	108	48	6.864	
8640.00	38.81	46.00	8633.72	19.02	19.70	27.38	46.21	37	44	15.224	108	48	6.811	
8650.00	43.43	46.00	8641.25	23.59	24.43	33.96	46.21	37	44	15.269	108	48	6.752	
8660.00	48.05	46.00	8648.23	28.56	29.58	41.12	46.21	37	44	15.318	108	48	6.688	
8670.00	52.68	46.00	8654.61	33.91	35.11	48.81	46.21	37	44	15.371	108	48	6.619	
8680.00	57.30	46.00	8660.34	39.60	41.00	57.00	46.21	37	44	15.427	108	48	6.546	
8690.00	61.92	46.00	8665.40	45.59	47.21	65.63	46.21	37	44	15.487	108	48	6.468	



<b>Company:</b> Kinder Morgan <b>Field:</b> Dolores County, CO (NAD 83) <b>Site:</b> Doe Canyon #18 <b>Well:</b> DC #18 <b>Wellpath:</b> 1	<b>Date:</b> 5/15/2013 <b>Co-ordinate(NE) Reference:</b> Well: DC #18, True North <b>Vertical (TVD) Reference:</b> SITE 7282.1 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,46.00Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> Sybase
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## Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Lat	Min	Sec	Long	Min	Sec	Comment
8700.00	66.54	46.00	8669.75	51.84	53.68	74.63	46.21	37	44	15.548	108	48	6.388	
8710.00	71.16	46.00	8673.35	58.32	60.39	83.95	46.21	37	44	15.613	108	48	6.304	
8720.00	75.78	46.00	8676.20	64.98	67.28	93.54	46.21	37	44	15.678	108	48	6.218	
8730.00	80.40	46.00	8678.26	71.77	74.32	103.32	46.21	37	44	15.746	108	48	6.131	
8740.00	85.02	46.00	8679.53	78.66	81.45	113.23	46.21	37	44	15.814	108	48	6.042	
8750.78	90.00	46.00	8680.00	86.14	89.20	124.00	46.21	37	44	15.888	108	48	5.946	LP
8800.00	90.00	46.00	8680.00	120.33	124.60	173.22	0.00	37	44	16.226	108	48	5.505	
8900.00	90.00	46.00	8680.00	189.80	196.54	273.22	0.00	37	44	16.912	108	48	4.609	
9000.00	90.00	46.00	8680.00	259.26	268.47	373.22	0.00	37	44	17.599	108	48	3.714	
9100.00	90.00	46.00	8680.00	328.73	340.41	473.22	0.00	37	44	18.286	108	48	2.818	
9200.00	90.00	46.00	8680.00	398.19	412.34	573.22	0.00	37	44	18.973	108	48	1.923	
9300.00	90.00	46.00	8680.00	467.66	484.27	673.22	0.00	37	44	19.660	108	48	1.027	
9400.00	90.00	46.00	8680.00	537.12	556.21	773.22	0.00	37	44	20.346	108	48	0.131	
9500.00	90.00	46.00	8680.00	606.59	628.14	873.22	0.00	37	44	21.033	108	47	59.236	
9600.00	90.00	46.00	8680.00	676.06	700.08	973.22	0.00	37	44	21.720	108	47	58.340	
9700.00	90.00	46.00	8680.00	745.52	772.01	1073.22	0.00	37	44	22.407	108	47	57.445	
9800.00	90.00	46.00	8680.00	814.99	843.94	1173.22	0.00	37	44	23.093	108	47	56.549	
9900.00	90.00	46.00	8680.00	884.45	915.88	1273.22	0.00	37	44	23.780	108	47	55.654	
9930.55	90.00	46.00	8680.00	905.68	937.86	1303.77	0.00	37	44	23.990	108	47	55.380	PBHL

## Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec			<--- Longitude ---> Deg Min Sec		
PBHL			8680.00	905.68	937.86	1407663.64	2046336.59	37	44	23.990 N	108	47	55.380 W

## Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
8551.00	8551.00	0.000	0.000	Csg

## Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

## Annotation

MD ft	TVD ft	
8556.00	8556.00	KOP
8750.78	8680.00	LP
9930.55	8680.00	PBHL

Field: Dolores County, CO (NAD 83)

USA

Map System: US State Plane Coordinate System 1983

Geo Datum: GRS 1980

Sys Datum: Mean Sea Level

Map Zone:

Coordinate System:

Geomagnetic Model:

Colorado, Southern Zone

Well Centre

IGRF2010

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

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Report Date: May 15, 2013  
Job Number: \_\_\_\_\_  
Customer: Kinder Morgan  
Well Name: Doe Canyon 18  
API Number: \_\_\_\_\_  
Rig Name: \_\_\_\_\_  
Location: Dolores Co., CO (Nad 83)  
Block: \_\_\_\_\_  
Engineer: Patrick Rudolph

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Geodetic Latitude / Longitude	Geodetic Latitude / Longitude
System: Latitude / Longitude	System: Latitude / Longitude
Projection: Geodetic Latitude and Longitude	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
Latitude 37.7375100 DEG	Latitude 37 44 15.0360000 DMS
Longitude -108.8019600 DEG	Longitude -108 48 7.0560000 DMS

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Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	37.73751° N	37° 44 min 15.036 sec
Longitude =	108.80196° W	108° 48 min 7.056 sec

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Magnetic Declination =	10.24°	[True North Offset]	
Local Gravity =	.9993 g	Checksum =	7424
Local Field Strength =	50927 nT	Magnetic Vector X =	21908 nT
Magnetic Dip =	64.08°	Magnetic Vector Y =	3958 nT
Magnetic Model =	bggm2013	Magnetic Vector Z =	45803 nT
Spud Date =	Sep 01, 2013	Magnetic Vector H =	22263 nT

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Signed: \_\_\_\_\_

Date: \_\_\_\_\_