



Weatherford[®]

Drilling Services

Proposal



HB 6

MONTEZUMA CO., CO

WELL FILE: **PLAN 1**

NOVEMBER 22, 2011

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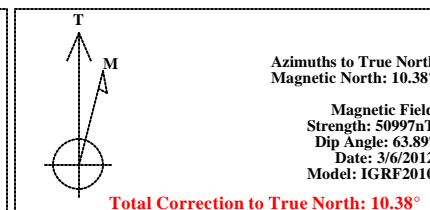
HB 6 Montezuma Co., Colorado

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	359.99	0.00	0.00	0.00	0.00	0.00	0.00	
2	8200.00	0.00	359.99	8200.00	0.00	0.00	0.00	0.00	0.00	
3	8396.35	90.00	359.99	8325.00	125.00	-0.02	45.84	359.99	125.00	
4	10270.35	90.00	359.99	8325.00	1999.00	-0.24	0.00	0.00	1999.00	Pbhl

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
HB 6	0.00	0.00	1325779.55	2015766.78	37°30'44.111N	108°53'38.681W	N/A

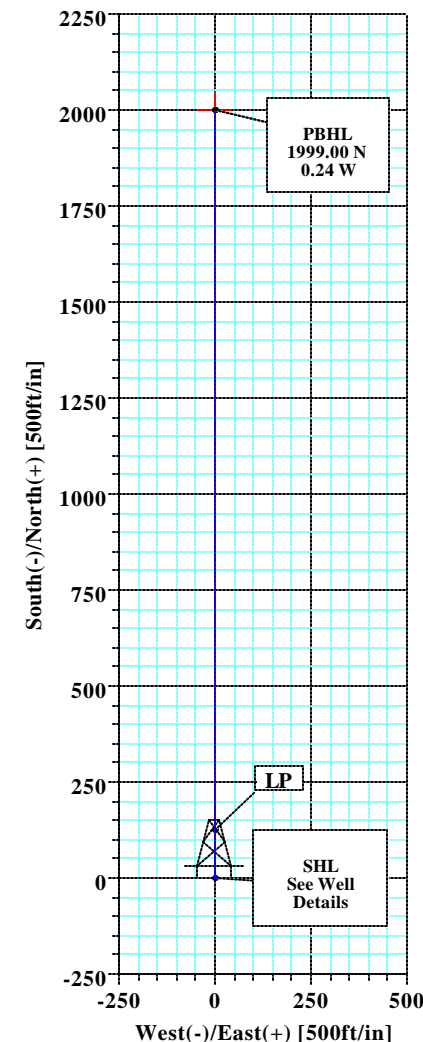
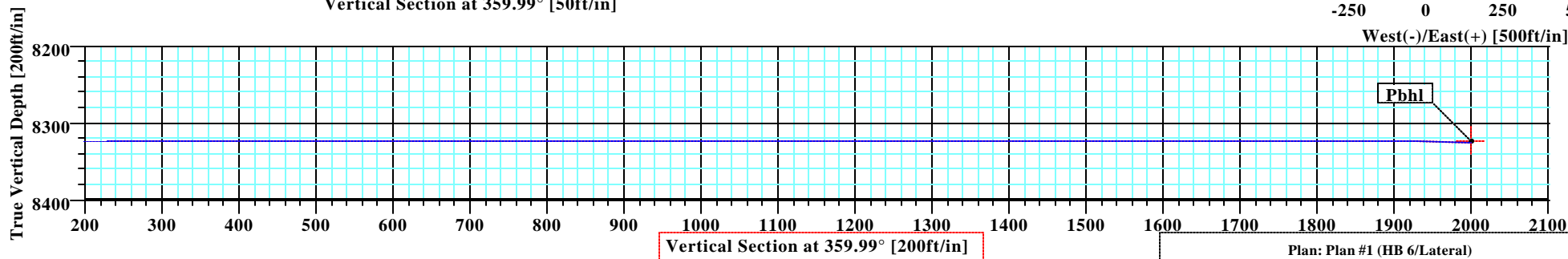
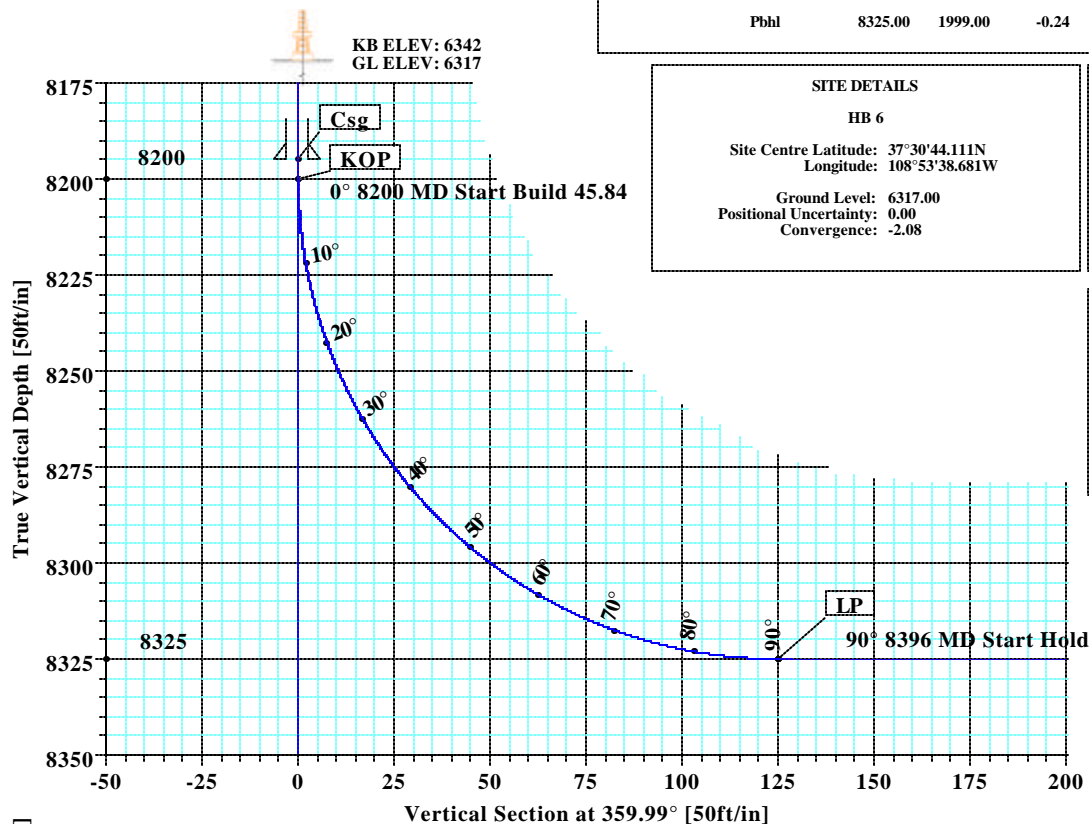
TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape	
Pbhl	8325.00	1999.00	-0.24	1327777.24	2015839.16	Point	

SITE DETAILS	
HB 6	
Site Centre Latitude:	37°30'44.111N
Longitude:	108°53'38.681W
Ground Level:	6317.00
Positional Uncertainty:	0.00
Convergence:	-2.08



FIELD DETAILS	
Montezuma Co., CO (NAD83) Colorado	
Geodetic System:	US State Plane Coordinate System 1983
Ellipsoid:	GRS 1980
Zone:	Colorado, Southern Zone
Magnetic Model:	IGRF2010
System Datum:	Mean Sea Level
Local North:	True North

LEGEND	
—	HB 6 (Pilot)
—	Lateral
—	Plan #1





Company: Kinder Morgan	Date: 11/22/2011	Time: 08:52:28	Page: 1
Field: Montezuma Co., CO (NAD83)	Co-ordinate(NE) Reference: Well: HB 6, True North		
Site: HB 6	Vertical (TVD) Reference: SITE 6342.0		
Well: HB 6	Section (VS) Reference: Well (0.00N,0.00E,359.99Azi)		
Wellpath: Lateral	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Plan: Plan #1	Date Composed: 11/21/2011
	Version: 1
Principal: Yes	Tied-to: From Surface

Field: Montezuma Co., CO (NAD83)
Colorado

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: HB 6

Site Position:	Northing: 1325779.55 ft	Latitude: 37 30 44.111 N
From: Geographic	Easting: 2015766.78 ft	Longitude: 108 53 38.681 W
Position Uncertainty: 0.00 ft		North Reference: True
Ground Level: 6317.00 ft		Grid Convergence: -2.08 deg

Well: HB 6	Slot Name:
Well Position: +N/-S 0.00 ft	Latitude: 37 30 44.111 N
+E/-W 0.00 ft	Longitude: 108 53 38.681 W
Position Uncertainty: 0.00 ft	

Wellpath: Lateral	Drilled From: Pilot
	Tie-on Depth: 0.00 ft
Current Datum: SITE	Above System Datum: Mean Sea Level
Magnetic Data: 3/6/2012	Declination: 10.38 deg
Field Strength: 50997 nT	Mag Dip Angle: 63.89 deg
Vertical Section: Depth From (TVD)	Direction
ft	deg
0.00	359.99

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	359.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8200.00	0.00	359.99	8200.00	0.00	0.00	0.00	0.00	0.00	0.00	
8396.35	90.00	359.99	8325.00	125.00	-0.02	45.84	45.84	0.00	359.99	
10270.35	90.00	359.99	8325.00	1999.00	-0.24	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
8200.00	0.00	359.99	8200.00	0.00	0.00	0.00	0.00	37	30	44.111	108	53	38.681	KOP
8210.00	4.58	359.99	8209.99	0.40	0.00	0.40	45.84	37	30	44.115	108	53	38.681	
8220.00	9.17	359.99	8219.91	1.60	0.00	1.60	45.84	37	30	44.127	108	53	38.681	
8230.00	13.75	359.99	8229.71	3.58	0.00	3.58	45.84	37	30	44.146	108	53	38.681	
8240.00	18.33	359.99	8239.32	6.35	0.00	6.35	45.84	37	30	44.174	108	53	38.681	
8250.00	22.92	359.99	8248.68	9.87	0.00	9.87	45.84	37	30	44.209	108	53	38.681	
8260.00	27.50	359.99	8257.72	14.13	0.00	14.13	45.84	37	30	44.251	108	53	38.681	
8270.00	32.09	359.99	8266.40	19.09	0.00	19.09	45.84	37	30	44.300	108	53	38.681	
8280.00	36.67	359.99	8274.65	24.74	0.00	24.74	45.84	37	30	44.356	108	53	38.681	
8290.00	41.25	359.99	8282.42	31.02	0.00	31.02	45.84	37	30	44.418	108	53	38.681	
8300.00	45.84	359.99	8289.67	37.91	0.00	37.91	45.84	37	30	44.486	108	53	38.681	
8310.00	50.42	359.99	8296.34	45.36	-0.01	45.36	45.84	37	30	44.559	108	53	38.681	
8320.00	55.00	359.99	8302.40	53.31	-0.01	53.31	45.84	37	30	44.638	108	53	38.681	
8330.00	59.59	359.99	8307.80	61.72	-0.01	61.72	45.84	37	30	44.721	108	53	38.681	
8340.00	64.17	359.99	8312.51	70.54	-0.01	70.54	45.84	37	30	44.808	108	53	38.681	
8350.00	68.75	359.99	8316.50	79.71	-0.01	79.71	45.84	37	30	44.899	108	53	38.681	
8360.00	73.34	359.99	8319.75	89.16	-0.01	89.16	45.84	37	30	44.992	108	53	38.681	



Company: Kinder Morgan	Date: 11/22/2011	Time: 08:52:28	Page: 2
Field: Montezuma Co., CO (NAD83)	Co-ordinate(NE) Reference: Well: HB 6, True North		
Site: HB 6	Vertical (TVD) Reference: SITE 6342.0		
Well: HB 6	Section (VS) Reference: Well (0.00N,0.00E,359.99Azi)		
Wellpath: Lateral	Survey Calculation Method: Minimum Curvature	Db: Sybase	

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
8370.00	77.92	359.99	8322.23	98.85	-0.01	98.85	45.84	37	30	45.088	108	53	38.681	
8380.00	82.51	359.99	8323.93	108.70	-0.01	108.70	45.84	37	30	45.186	108	53	38.681	
8390.00	87.09	359.99	8324.84	118.65	-0.01	118.65	45.84	37	30	45.284	108	53	38.681	
8396.35	90.00	359.99	8325.00	125.00	-0.02	125.00	45.84	37	30	45.347	108	53	38.681	LP
8400.00	90.00	359.99	8325.00	128.65	-0.02	128.65	0.00	37	30	45.383	108	53	38.681	
8500.00	90.00	359.99	8325.00	228.65	-0.03	228.65	0.00	37	30	46.372	108	53	38.681	
8600.00	90.00	359.99	8325.00	328.65	-0.04	328.65	0.00	37	30	47.360	108	53	38.681	
8700.00	90.00	359.99	8325.00	428.65	-0.05	428.65	0.00	37	30	48.349	108	53	38.682	
8800.00	90.00	359.99	8325.00	528.65	-0.06	528.65	0.00	37	30	49.338	108	53	38.682	
8900.00	90.00	359.99	8325.00	628.65	-0.08	628.65	0.00	37	30	50.326	108	53	38.682	
9000.00	90.00	359.99	8325.00	728.65	-0.09	728.65	0.00	37	30	51.315	108	53	38.682	
9100.00	90.00	359.99	8325.00	828.65	-0.10	828.65	0.00	37	30	52.304	108	53	38.682	
9200.00	90.00	359.99	8325.00	928.65	-0.11	928.65	0.00	37	30	53.292	108	53	38.682	
9300.00	90.00	359.99	8325.00	1028.65	-0.12	1028.65	0.00	37	30	54.281	108	53	38.683	
9400.00	90.00	359.99	8325.00	1128.65	-0.14	1128.65	0.00	37	30	55.270	108	53	38.683	
9500.00	90.00	359.99	8325.00	1228.65	-0.15	1228.65	0.00	37	30	56.259	108	53	38.683	
9600.00	90.00	359.99	8325.00	1328.65	-0.16	1328.65	0.00	37	30	57.247	108	53	38.683	
9700.00	90.00	359.99	8325.00	1428.65	-0.17	1428.65	0.00	37	30	58.236	108	53	38.683	
9800.00	90.00	359.99	8325.00	1528.65	-0.18	1528.65	0.00	37	30	59.225	108	53	38.683	
9900.00	90.00	359.99	8325.00	1628.65	-0.20	1628.65	0.00	37	31	0.213	108	53	38.683	
10000.00	90.00	359.99	8325.00	1728.65	-0.21	1728.65	0.00	37	31	1.202	108	53	38.684	
10100.00	90.00	359.99	8325.00	1828.65	-0.22	1828.65	0.00	37	31	2.191	108	53	38.684	
10200.00	90.00	359.99	8325.00	1928.65	-0.23	1928.65	0.00	37	31	3.179	108	53	38.684	
10270.35	90.00	359.99	8325.00	1999.00	-0.24	1999.00	0.00	37	31	3.875	108	53	38.684	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			8325.00	1999.00	-0.24	1327777.24	2015839.16	37	31	3.875 N	108	53	38.684 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
3486.00	3486.00	9.625	9.625	Csg
8195.00	8195.00	7.000	7.000	Csg

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

Annotation

MD ft	TVD ft	
8200.00	8200.00	KOP
8396.35	8325.00	LP
10270.35	8325.00	Pbhl

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

GeoDec v5.03

Report Date: November 21, 2011

Job Number: _____

Customer: Kinder Morgan

Well Name: HB 6

API Number: _____

Rig Name: _____

Location: Montezuma Co., CO

Block: _____

Engineer: Patrick Rudolph

Geodetic Latitude / Longitude

System: Latitude / Longitude

Projection: Geodetic Latitude and Longitude

Datum: North American Datum 1983

Ellipsoid: GRS 1980

Latitude 37.5122530 DEG

Longitude -108.8940780 DEG

Geodetic Latitude / Longitude

System: Latitude / Longitude

Projection: Geodetic Latitude and Longitude

Datum: North American Datum 1983

Ellipsoid: GRS 1980

Latitude 37 30 44.1108000 DMS

Longitude -108 53 38.6808000 DMS

Geodetic Location WGS84

Elevation = 0.0 Meters

Latitude = 37.51225° N 37° 30 min 44.111 sec

Longitude = 108.89408° W 108° 53 min 38.681 sec

Magnetic Declination = 10.38° [True North Offset]

Local Gravity = .9993 g CheckSum = 7617

Local Field Strength = 50993 nT Magnetic Vector X = 22076 nT

Magnetic Dip = 63.89° Magnetic Vector Y = 4045 nT

Magnetic Model = IGRF-2010g11 Magnetic Vector Z = 45788 nT

Spud Date = Mar 06, 2012 Magnetic Vector H = 22443 nT

Signed: _____

Date: _____