

LEAM Drilling Systems, Inc.

Planning Report

Company: Continental Resources Field: Weld County, Co. (NAD 83) Site: Allenby Well: 1-8H Wellpath: OH	Date: 4/11/2011 Co-ordinate(NE) Reference: Well: 1-8H, Grid North Vertical (TVD) Reference: GL 4926'+KB 16' 4942.0 Section (VS) Reference: Well (0.00N,0.00E,179.12Azi) Survey Calculation Method: Minimum Curvature	Time: 14:48:34 Page: 1 Db: Adapti
--	---	--

Field: Weld County, Co. (NAD 83)

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: Colorado, Northern Zone
Coordinate System: Well Centre
Geomagnetic Model: IGRF2010

Site: Allenby
 Sec. 8 & T9N-R61W
 250' FNL & 600' FEL

Site Position:	Northing: 1525870.76 ft	Latitude: 40 46 11.629 N
From: Geographic	Easting: 3353830.93 ft	Longitude: 104 13 21.248 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 4926.00 ft		Grid Convergence: 0.83 deg

Well: 1-8H

Slot Name:

Well Position: +N/-S 0.01 ft	Northing: 1525870.76 ft	Latitude: 40 46 11.629 N
+E/-W 0.00 ft	Easting: 3353830.93 ft	Longitude: 104 13 21.248 W
Position Uncertainty: 0.00 ft		

Wellpath: OH

Current Datum: GL 4926'+KB 16'	Height 4942.00 ft	Drilled From: Surface
Magnetic Data: 4/11/2011		Tie-on Depth: 0.00 ft
Field Strength: 53440 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)		Declination: 8.63 deg
ft	+N/-S ft	Mag Dip Angle: 67.44 deg
		+E/-W ft
		Direction deg
0.00	0.00	0.00 179.12

Plan: Plan #1

Date Composed: 4/11/2011
Version: 1
Tied-to: From Surface

Principal: No

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6085.62	0.00	0.00	6085.62	0.00	0.00	0.00	0.00	0.00	0.00	
6844.63	91.08	179.12	6563.00	-486.42	7.49	12.00	12.00	23.60	179.12	
10817.21	91.08	179.12	6488.00	-4457.82	68.63	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	Build deg/100ft	Turn deg/100ft	Tool/Comment
6085.62	0.00	0.00	6085.62	0.00	0.00	0.00	0.00	0.00	0.00	
6100.00	1.73	179.12	6100.00	-0.22	0.00	0.22	12.00	12.00	0.00	
6125.00	4.73	179.12	6124.96	-1.62	0.02	1.62	12.00	12.00	0.00	
6150.00	7.73	179.12	6149.81	-4.33	0.07	4.33	12.00	12.00	0.00	
6175.00	10.73	179.12	6174.48	-8.34	0.13	8.34	12.00	12.00	0.00	
6200.00	13.73	179.12	6198.91	-13.63	0.21	13.63	12.00	12.00	0.00	
6225.00	16.73	179.12	6223.03	-20.20	0.31	20.20	12.00	12.00	0.00	
6250.00	19.73	179.12	6246.77	-28.01	0.43	28.02	12.00	12.00	0.00	
6275.00	22.73	179.12	6270.07	-37.06	0.57	37.07	12.00	12.00	0.00	
6300.00	25.73	179.12	6292.87	-47.32	0.73	47.32	12.00	12.00	0.00	
6325.00	28.73	179.12	6315.10	-58.75	0.90	58.76	12.00	12.00	0.00	
6350.00	31.73	179.12	6336.70	-71.34	1.10	71.34	12.00	12.00	0.00	
6375.00	34.73	179.12	6357.61	-85.03	1.31	85.04	12.00	12.00	0.00	
6378.36	35.13	179.12	6360.36	-86.95	1.34	86.96	12.00	12.00	0.00	Sharon Springs
6400.00	37.73	179.12	6377.77	-99.80	1.54	99.81	12.00	12.00	0.00	
6425.00	40.73	179.12	6397.14	-115.61	1.78	115.62	12.00	12.00	0.00	
6449.81	43.70	179.12	6415.51	-132.27	2.04	132.29	12.00	12.00	0.00	Niobrara

LEAM Drilling Systems, Inc.

Planning Report

Company: Continental Resources Field: Weld County, Co. (NAD 83) Site: Allenby Well: 1-8H Wellpath: OH	Date: 4/11/2011 Co-ordinate(NE) Reference: Well: 1-8H, Grid North Vertical (TVD) Reference: GL 4926'+KB 16' 4942.0 Section (VS) Reference: Well (0.00N,0.00E,179.12Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
--	---

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6450.00	43.73	179.12	6415.65	-132.41	2.04	132.42	12.00	12.00	0.00	
6475.00	46.73	179.12	6433.25	-150.15	2.31	150.17	12.00	12.00	0.00	
6500.00	49.73	179.12	6449.91	-168.79	2.60	168.81	12.00	12.00	0.00	
6525.00	52.73	179.12	6465.56	-188.27	2.90	188.30	12.00	12.00	0.00	
6550.00	55.73	179.12	6480.17	-208.55	3.21	208.58	12.00	12.00	0.00	
6569.39	58.05	179.12	6490.76	-224.79	3.46	224.81	12.00	12.00	0.00	Niobrara "B"
6575.00	58.73	179.12	6493.70	-229.57	3.53	229.60	12.00	12.00	0.00	
6600.00	61.73	179.12	6506.12	-251.26	3.87	251.29	12.00	12.00	0.00	
6625.00	64.73	179.12	6517.38	-273.58	4.21	273.61	12.00	12.00	0.00	
6649.89	67.71	179.12	6527.41	-296.34	4.56	296.38	12.00	12.00	0.00	Lower "B"
6650.00	67.73	179.12	6527.46	-296.45	4.56	296.49	12.00	12.00	0.00	
6675.00	70.73	179.12	6536.32	-319.82	4.92	319.86	12.00	12.00	0.00	
6700.00	73.73	179.12	6543.95	-343.62	5.29	343.66	12.00	12.00	0.00	
6725.00	76.73	179.12	6550.33	-367.79	5.66	367.83	12.00	12.00	0.00	
6750.00	79.73	179.12	6555.43	-392.26	6.04	392.30	12.00	12.00	0.00	
6750.90	79.83	179.12	6555.59	-393.14	6.05	393.19	12.00	12.00	0.00	Target
6775.00	82.73	179.12	6559.24	-416.96	6.42	417.01	12.00	12.00	0.00	
6800.00	85.73	179.12	6561.76	-441.83	6.80	441.88	12.00	12.00	0.00	
6825.00	88.73	179.12	6562.97	-466.79	7.19	466.85	12.00	12.00	0.00	
6844.63	91.08	179.12	6563.00	-486.42	7.49	486.48	12.00	12.00	0.00	Int Casing
6900.00	91.08	179.12	6561.95	-541.77	8.34	541.83	0.00	0.00	0.00	
7000.00	91.08	179.12	6560.07	-641.74	9.88	641.82	0.00	0.00	0.00	
7100.00	91.08	179.12	6558.18	-741.71	11.42	741.80	0.00	0.00	0.00	
7200.00	91.08	179.12	6556.29	-841.68	12.96	841.78	0.00	0.00	0.00	
7300.00	91.08	179.12	6554.40	-941.65	14.50	941.76	0.00	0.00	0.00	
7400.00	91.08	179.12	6552.51	-1041.62	16.04	1041.75	0.00	0.00	0.00	
7500.00	91.08	179.12	6550.63	-1141.59	17.57	1141.73	0.00	0.00	0.00	
7600.00	91.08	179.12	6548.74	-1241.56	19.11	1241.71	0.00	0.00	0.00	
7700.00	91.08	179.12	6546.85	-1341.53	20.65	1341.69	0.00	0.00	0.00	
7800.00	91.08	179.12	6544.96	-1441.50	22.19	1441.67	0.00	0.00	0.00	
7900.00	91.08	179.12	6543.08	-1541.47	23.73	1541.66	0.00	0.00	0.00	
8000.00	91.08	179.12	6541.19	-1641.44	25.27	1641.64	0.00	0.00	0.00	
8100.00	91.08	179.12	6539.30	-1741.41	26.81	1741.62	0.00	0.00	0.00	
8200.00	91.08	179.12	6537.41	-1841.38	28.35	1841.60	0.00	0.00	0.00	
8300.00	91.08	179.12	6535.52	-1941.35	29.89	1941.58	0.00	0.00	0.00	
8400.00	91.08	179.12	6533.64	-2041.33	31.43	2041.57	0.00	0.00	0.00	
8500.00	91.08	179.12	6531.75	-2141.30	32.96	2141.55	0.00	0.00	0.00	
8600.00	91.08	179.12	6529.86	-2241.27	34.50	2241.53	0.00	0.00	0.00	
8700.00	91.08	179.12	6527.97	-2341.24	36.04	2341.51	0.00	0.00	0.00	
8800.00	91.08	179.12	6526.08	-2441.21	37.58	2441.50	0.00	0.00	0.00	
8900.00	91.08	179.12	6524.20	-2541.18	39.12	2541.48	0.00	0.00	0.00	
9000.00	91.08	179.12	6522.31	-2641.15	40.66	2641.46	0.00	0.00	0.00	
9100.00	91.08	179.12	6520.42	-2741.12	42.20	2741.44	0.00	0.00	0.00	
9200.00	91.08	179.12	6518.53	-2841.09	43.74	2841.42	0.00	0.00	0.00	
9300.00	91.08	179.12	6516.64	-2941.06	45.28	2941.41	0.00	0.00	0.00	
9400.00	91.08	179.12	6514.76	-3041.03	46.81	3041.39	0.00	0.00	0.00	
9500.00	91.08	179.12	6512.87	-3141.00	48.35	3141.37	0.00	0.00	0.00	
9600.00	91.08	179.12	6510.98	-3240.97	49.89	3241.35	0.00	0.00	0.00	
9700.00	91.08	179.12	6509.09	-3340.94	51.43	3341.34	0.00	0.00	0.00	
9800.00	91.08	179.12	6507.20	-3440.91	52.97	3441.32	0.00	0.00	0.00	
9900.00	91.08	179.12	6505.32	-3540.88	54.51	3541.30	0.00	0.00	0.00	
10000.00	91.08	179.12	6503.43	-3640.85	56.05	3641.28	0.00	0.00	0.00	
10100.00	91.08	179.12	6501.54	-3740.82	57.59	3741.26	0.00	0.00	0.00	

LEAM Drilling Systems, Inc.

Planning Report

Company: Continental Resources Field: Weld County, Co. (NAD 83) Site: Allenby Well: 1-8H Wellpath: OH	Date: 4/11/2011 Co-ordinate(NE) Reference: Well: 1-8H, Grid North Vertical (TVD) Reference: GL 4926'+KB 16' 4942.0 Section (VS) Reference: Well (0.00N,0.00E,179.12Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
--	---

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
10200.00	91.08	179.12	6499.65	-3840.79	59.13	3841.25	0.00	0.00	0.00	
10300.00	91.08	179.12	6497.76	-3940.76	60.67	3941.23	0.00	0.00	0.00	
10400.00	91.08	179.12	6495.88	-4040.73	62.20	4041.21	0.00	0.00	0.00	
10500.00	91.08	179.12	6493.99	-4140.70	63.74	4141.19	0.00	0.00	0.00	
10600.00	91.08	179.12	6492.10	-4240.67	65.28	4241.17	0.00	0.00	0.00	
10700.00	91.08	179.12	6490.21	-4340.64	66.82	4341.16	0.00	0.00	0.00	
10800.00	91.08	179.12	6488.32	-4440.61	68.36	4441.14	0.00	0.00	0.00	
10817.21	91.08	179.12	6488.00	-4457.82	68.63	4458.34	0.00	0.00	0.00	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		
SHL			0.00	0.00	0.00	1525870.763353830.93		40	46	11.629 N	104	13	21.248 W
PBHL			6488.00	-4457.82	68.63	1521412.953353899.55		40	45	27.576 N	104	13	21.191 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
6844.63	6563.00	0.000	0.000	Int Casing

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
572.00	572.00	Pierre		-1.08	179.12
3613.00	3613.00	Laramie		-1.08	179.12
6378.36	6360.36	Sharon Springs		-1.08	179.12
6449.81	6415.51	Niobrara		-1.08	179.12
6569.39	6490.76	Niobrara "B"		-1.08	179.12
6649.89	6527.41	Lower "B"		-1.08	179.12
6750.90	6555.59	Target		-1.08	179.12

Continental Resources

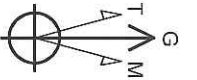
Field: Weld County, Co. (NAD 83)
 Site: Albany
 Well: 1-8H
 Wellpath: OH
 Plan: Plan #1

SITE DETAILS

Albany
 Sec. 8 & T9N-R61W
 250' FNL & 600' FEL

Latitude: 40°46'11.629N
 Longitude: 104°13'21.248W

Ground Level: 4926.00
 KB: 16.00



Azinuths to Grid North
 True North: -0.83°
 Magnetic North: 7.80°
 Magnetic Field
 Strength: 53440nT
 Dip Angle: 67.44°
 Date: 4/11/2011
 Model: IGRF2010



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6085.62	0.00	0.00	6085.62	0.00	0.00	0.00	0.00	0.00	
3	6844.63	91.08	179.12	6563.00	-486.42	7.49	12.00	179.12	486.48	
4	10817.20	91.08	179.12	6488.00	-4457.81	68.63	0.00	0.00	4458.34	PBHL

TARGET DETAILS

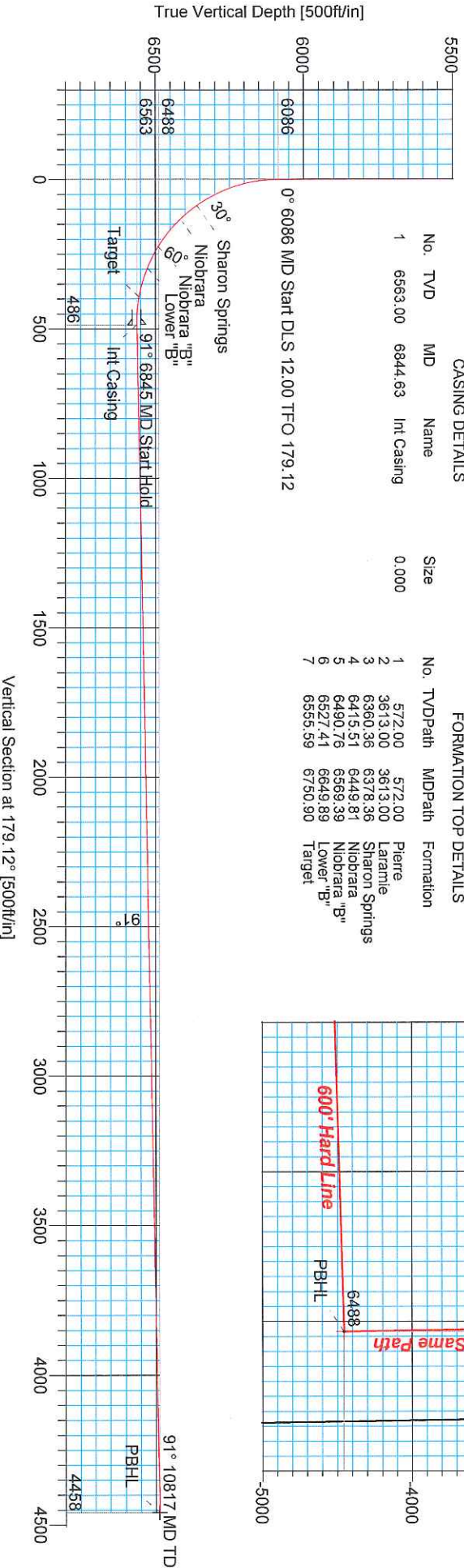
Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape
SHL	0.00	0.00	0.00	1525670.76	3353630.93	40°46'11.629N	104°13'21.248W	Point
PBHL	6488.00	-4457.82	68.63	1521412.95	3353899.55	40°45'27.576N	104°13'21.191W	Point

CASING DETAILS

No.	TVD	MD	Name	Size
1	6563.00	6844.63	Int Casing	0.000

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	572.00	572.00	Pierre
2	3613.00	3613.00	Laramie
3	6380.36	6378.86	Sharon Springs
4	6415.51	6449.81	Niobrara
5	6490.76	6569.39	Niobrara "B"
6	6527.41	6649.89	Lower "B"
7	6565.59	6750.90	Target



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

Plan: Plan #1 (1-8H/OH)
 Created By: Justin Andree
 Date: 4/11/2011
 Reviewed: _____
 Date: _____
 Approved: _____
 Date: _____

4/18/2011

DRILLING PROGNOSIS

Prospect: Allenby 1-8H

Location: Sec. 8-9N-61W
Weld Co., CO

☒ Staked

☐ Pre-Staked

Surface Location: 250' FNL & 600' FEL
Sec. 8-9N-61W
Weld Co., CO

GL (ft): 4,926
RKB (ft) : 16
KB est (ft): 4,942

BHL Lateral: 600' FSL & 600' FEL
Sec. 8-9N-61W
Weld Co., CO

FORMATION	SUBSEA DEPTH	TVD
Pierre	4370	572
Laramie	1329	3,613
Sharon Springs	-1420	6,362
Niobrara	-1476	6,418
Niobrara "B"	-1553	6,495
Lower "B"	-1591	6,533
Target	-1621	6,563
Target @ TD	-1546	6,488

PRELIMINARY DRILLING PROGRAM

4/18/2011

Lease and Well No. Allenby 1-8H

MUD PROGRAM

Depth	Type	Weight	Remarks
0 - 801	Fresh Water	8.4-8.8	26-27 sec
801 - 6095	Fresh water, Polymer	8.4-8.7	26-27 sec, PHPA
6095 - 6845	Fresh water, Polymer	8.8-10.0	26-48 sec, Polymer Sweeps
6845 - 10817	Fresh water	9.6-10.0	28-36 sec

TUBULAR PROGRAM

String Type	Hole Size	Depth	Feet	Casing Diameter	Weight, Grade, Connection	ERW/Seamless	Critical Inspection
Surface	13 1/2 "	801 '	801 '	9 5/8 "	9 5/8" 36 ppf J-55 STC	ERW	ERW
Intermediate	8 3/4 "	6845 '	6845 '	7 "	7", 26 ppf P110 LTC	SMLS	BCI & Drift
Liner	6 "	10817 '	4720 '	4 1/2 "	4-1/2" 11.6 ppf P110 Butt	SMLS	BCI & Drift
Tubing	2 7/8 "	6095 '	8558 '	2 7/8 "	2-7/8" 6.5# L-80 EUE		

Notes: Pipe to end up in hole from top to bottom as shown.

CEMENT PROGRAM

String Type	SHOB/DV Depth	Stage Lead/Tail	Cement Bottom	Cement Top	No Sacks	Cement System	Cement Yield	Cement Weight
Surf	801 '	Lead '	450 '	0 '	181		2.13	11.5
		Tail '	801 '	450 '	199	Type 1, 3% CaCl ₂ , 2% gyp, SMS, 1/4 lb/sk cel	1.51	14.2
	75% excess							
Int	6845 '	Lead '	5595 '	0 '	422	Premium G 35/65 Pozz	2.49	12.2
	25% excess	Tail '	6845 '	5,595 '	732		1.46	15.6
	(Basis: Gauge hole +25% excess, Tail to 500 ft above KOP)					Class G, 50/50 Pozz		

BOP PROGRAM

Hole Size	Configuration	Pressure Rating	BOP Test Press	Casing Test Press
13 1/2 "	Circulate Conductor			
8 3/4 "	RRA	3M	3000	
6 1/4 "	RRA	3M	3000	
	Utilize commercial testers every 30 days.			

LOGGING PROGRAM

FROM	TO	TOOLS
KOP	TD	2 man mud logger trailer, 30 ft samples
Surf csg	TD	MWD Surveys, 90 ft & 30 ft thru curve
KOP	TD	MWD Gamma Ray
Surface	DDO	CBL, CCL, GR

Remarks: 4 1/2" Liner to be run. Liner Top above KOP, pre-perfed toe, swell packers (23 ea.) to be run with liner.

Prepared By: _____ Date: 3/24/2011