

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 3

AMENDED REPORT

<b>APPLICATION FOR PERMIT TO DRILL</b>						1. WELL NAME and NUMBER LC Fee 16-21D-47					
2. TYPE OF WORK DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						3. FIELD OR WILDCAT WILDCAT					
4. TYPE OF WELL Oil Well Coalbed Methane Well: NO						5. UNIT or COMMUNITIZATION AGREEMENT NAME					
6. NAME OF OPERATOR BILL BARRETT CORP						7. OPERATOR PHONE 303 312-8164					
8. ADDRESS OF OPERATOR 1099 18th Street Ste 2300, Denver, CO, 80202						9. OPERATOR E-MAIL BHilgers@billbarrettcorp.com					
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) Fee			11. MINERAL OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>			12. SURFACE OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>					
13. NAME OF SURFACE OWNER (if box 12 = 'fee')						14. SURFACE OWNER PHONE (if box 12 = 'fee')					
15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')						16. SURFACE OWNER E-MAIL (if box 12 = 'fee')					
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN') Uintah and Ouray			18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS YES <input type="checkbox"/> (Submit Commingling Application) NO <input checked="" type="checkbox"/>			19. SLANT VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>					
20. LOCATION OF WELL		FOOTAGES		QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN			
LOCATION AT SURFACE		179 FSL 833 FEL		SESE	21	4.0 S	7.0 W	U			
Top of Uppermost Producing Zone		810 FSL 807 FEL		SESE	21	4.0 S	7.0 W	U			
At Total Depth		810 FSL 810 FEL		SESE	21	4.0 S	7.0 W	U			
21. COUNTY DUCHESNE			22. DISTANCE TO NEAREST LEASE LINE (Feet) 810			23. NUMBER OF ACRES IN DRILLING UNIT 640					
27. ELEVATION - GROUND LEVEL 6283			25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed) 6543			26. PROPOSED DEPTH MD: 6250 TVD: 6167					
28. BOND NUMBER LPM4138148			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE 43-180								
<b>Hole, Casing, and Cement Information</b>											
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement		Sacks	Yield	Weight
COND	26	16	0 - 80	65.0	Unknown	8.8	No Used		0	0.0	0.0
SURF	12.25	9.625	0 - 800	36.0	J-55 ST&C	8.8	Halliburton Light , Type Unknown		70	3.16	11.0
							Halliburton Premium , Type Unknown		210	1.36	14.8
PROD	8.75	9.625	0 - 6250	17.0	P-110 LT&C	9.6	Unknown		590	2.31	11.0
							Unknown		650	1.42	13.5
<b>ATTACHMENTS</b>											
<b>VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES</b>											
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER					<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN						
<input type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)					<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER						
<input checked="" type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)					<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP						
NAME Venessa Langmacher			TITLE Senior Permit Analyst			PHONE 303 312-8172					
SIGNATURE			DATE 10/19/2012			EMAIL vlangmacher@billbarrettcorp.com					
API NUMBER ASSIGNED 43013517960000			APPROVAL			 Permit Manager					

**BILL BARRETT CORPORATION**  
**DRILLING PLAN**

**LC Fee 16-21D-47**

SE SE, 179' FSL and 833' FEL, Section 21, T4S-R7W, USB&M (surface hole)  
SE SE, 810' FSL and 810' FEL, Section 21, T4S-R7W, USB&M (bottom hole)  
Duchesne County, Utah

**1 - 2. Estimated Tops of Geological Markers and Formations Expected to Contain Water, Oil and Gas and Other Minerals**

<u>Formation</u>	<u>Depth – MD</u>	<u>Depth - TVD</u>
Green River	567'	567'
Mahogany	1,122'	1,122'
Lower Green River*	2,624'	2,572'
Douglas Creek	3,402'	3,322'
Black Shale	4,345'	4,262'
Castle Peak	4,535'	4,452'
Uteland Butte	4,900'	4,817'
Wasatch*	5,130'	5,047'
TD	6,250'	6,167'

\*PROSPECTIVE PAY

The Wasatch and the Lower Green River are primary objectives for oil/gas.

**3. BOP and Pressure Containment Data**

<u>Depth Intervals</u>	<u>BOP Equipment</u>
0 – 800'	NU Diverter or Rotating Head
800' – TD	11" 5000# Ram Type BOP 11" 5000# Annular BOP
- Drilling spool to accommodate choke and kill lines;	
- Ancillary equipment and choke manifold rated at 5,000 psi. All BOP and BOPE tests will be in accordance with the requirements of onshore Order No. 2;	
- The BLM and the State of Utah Division of Oil, Gas and Mining will be notified 24 hours in advance of all BOP pressure tests.	
- BOP hand wheels may be underneath the sub-structure of the rig if the drilling rig used is set up To operate most efficiently in this manner.	

**4. Casing Program**

<u>Hole Size</u>	<u>SETTING DEPTH</u>		<u>Casing Size</u>	<u>Casing Weight</u>	<u>Casing Grade</u>	<u>Thread</u>	<u>Condition</u>
	<u>(FROM)</u>	<u>(TO)</u>					
26"	Surface	80'	16"	65#			
12 1/4"	Surface	800'	9 5/8"	36#	J or K 55	ST&C	New
8 3/4"	Surface	TD	5 1/2"	17#	P-110	LT&C	New

Bill Barrett Corporation  
 Drilling Program  
 LC Fee 16-21D-47  
 Duchesne County, Utah

5. **Cementing Program**

16" Conductor Casing	Grout
9 5/8" Surface Casing	Lead: 70 sx Halliburton Light Premium with additives mixed at 11.0 ppg (yield = 3.16 ft <sup>3</sup> /sx) circulated to surface with 75% excess. TOC @ Surface Tail: 210 sx Halliburton Premium Plus cement with additives mixed at 14.8 ppg (yield = 1.36 ft <sup>3</sup> /sx), calculated hole volume with 75% excess. TOC @ 300'
5 1/2" Production Casing	Lead: 590 sx Tuned Light cement with additives mixed at 11.0 ppg (yield = 2.31 ft <sup>3</sup> /sx). TOC @ 300' Tail: 650 sx Halliburton Econocem cement with additives mixed at 13.5 ppg (yield = 1.42 ft <sup>3</sup> /sx). Top of cement to be determined by log and sample evaluation; estimated TOC @ 3,845'

6. **Mud Program**

<u>Interval</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u> <u>(API filtrate)</u>	<u>Remarks</u>
0' – 80'	8.3 – 8.8	26 – 36	NC	Freshwater Spud Mud Fluid System
80' – 800'	8.3 – 8.8	26 – 36	NC	Freshwater Spud Mud Fluid System
800' – TD	8.6 – 9.6	42-52	20 cc or less	DAP Polymer Fluid System
Note: Sufficient mud materials to maintain mud properties, control lost circulation and to contain "kicks" will be available at wellsite. BBC may require minor amounts of diesel to be added to its fluid system in order to reduce torque and drag.				

7. **Testing, Logging and Core Programs**

Cores	None anticipated;
Testing	None anticipated; drill stem tests may be run on shows of interest;
Sampling	30' to 50' samples; surface casing to TD. Preserve samples all show intervals;
Surveys	MWD as needed to land wellbore;
Logging	DIL-GR-SP, FDC-CNL-GR-CALIPER-Pe-Microlog, Sonic-GR (all TD to surface). FMI & Sonic Scanner to be run at geologist's discretion.

8. **Anticipated Abnormal Pressures or Temperatures**

No abnormal pressures or temperatures or other hazards are anticipated.

Maximum anticipated bottom hole pressure equals approximately 3078 psi\* and maximum anticipated surface pressure equals approximately 1721 psi\*\* (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

\*Max Mud Wt x 0.052 x TD = A (bottom hole pressure)

\*\*Maximum surface pressure = A – (0.22 x TD)

Bill Barrett Corporation  
Drilling Program  
LC Fee 16-21D-47  
Duchesne County, Utah

**9. Auxiliary Equipment**

- a) Upper kelly cock; lower Kelly cock will be installed while drilling
- b) Inside BOP or stab-in valve (available on rig floor)
- c) Safety valve(s) and subs to fit all string connections in use  
Mud monitoring will be visually observed

**10. Location and Type of Water Supply**

Water for the drilling and completion will be trucked from the Duchesne City Culinary Water Dock located in Sec. 1, T4S, R5W water right number 43-180.

**11. Drilling Schedule**

Location Construction:	June 2013
Spud:	June 2013
Duration:	15 days drilling time 45 days completion time



# Bill Barrett Corporation

## LAKE CANYON & BLACK TAIL RIDGE CEMENT VOLUMES

**Well Name:** LC Fee 16-21D-47

### Surface Hole Data:

Total Depth:	800'
Top of Cement:	0'
OD of Hole:	12.250"
OD of Casing:	9.625"

### Calculated Data:

Lead Volume:	164.4	ft <sup>3</sup>
Lead Fill:	300'	
Tail Volume:	274.0	ft <sup>3</sup>
Tail Fill:	500'	

### Cement Data:

Lead Yield:	3.16	ft <sup>3</sup> /sk
% Excess:	75%	
Top of Lead:	0'	

### Calculated # of Sacks:

# SK's Lead:	70
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Tail Yield:	1.36	ft <sup>3</sup> /sk
% Excess:	75%	
Top of Tail:	300'	

# SK's Tail:	210
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### Production Hole Data:

Total Depth:	6,250'
Top of Cement:	300'
Top of Tail:	3,845'
OD of Hole:	8.750"
OD of Casing:	5.500"

### Calculated Data:

Lead Volume:	1343.2	ft <sup>3</sup>
Lead Fill:	3,545'	
Tail Volume:	911.3	ft <sup>3</sup>
Tail Fill:	2,405'	

### Cement Data:

Lead Yield:	2.31	ft <sup>3</sup> /sk
Tail Yield:	1.42	ft <sup>3</sup> /sk
% Excess:	50%	

### Calculated # of Sacks:

# SK's Lead:	590
# SK's Tail:	650

<b>LC Fee 16-21D-47 Proposed Cementing Program</b>
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<u>Job Recommendation</u>	<u>Surface Casing</u>
<b>Lead Cement - (300' - 0')</b>	
Halliburton Light Premium	Fluid Weight: 11.0 lbm/gal
5.0 lbm/sk Silicalite Compacted	Slurry Yield: 3.16 ft <sup>3</sup> /sk
0.25 lbm/sk Kwik Seal	Total Mixing Fluid: 19.48 Gal/sk
0.125 lbm/sk Poly-E-Flake	Top of Fluid: 0'
2.0% Bentonite	Calculated Fill: 300'
	Volume: 29.28 bbl
	<b>Proposed Sacks: 70 sks</b>
<b>Tail Cement - (TD - 300')</b>	
Premium Cement	Fluid Weight: 14.8 lbm/gal
2.0% Calcium Chloride	Slurry Yield: 1.36 ft <sup>3</sup> /sk
	Total Mixing Fluid: 6.37 Gal/sk
	Top of Fluid: 300'
	Calculated Fill: 500'
	Volume: 48.80 bbl
	<b>Proposed Sacks: 210 sks</b>

<u>Job Recommendation</u>	<u>Production Casing</u>
<b>Lead Cement - (3845' - 300')</b>	
Tuned Light™ System	Fluid Weight: 11.0 lbm/gal
	Slurry Yield: 2.31 ft <sup>3</sup> /sk
	Total Mixing Fluid: 10.65 Gal/sk
	Top of Fluid: 300'
	Calculated Fill: 3,545'
	Volume: 239.21 bbl
	<b>Proposed Sacks: 590 sks</b>
<b>Tail Cement - (6250' - 3845')</b>	
Econocem™ System	Fluid Weight: 13.5 lbm/gal
0.125 lbm/sk Poly-E-Flake	Slurry Yield: 1.42 ft <sup>3</sup> /sk
1.0 lbm/sk Granulite TR 1/4	Total Mixing Fluid: 6.61 Gal/sk
	Top of Fluid: 3,845'
	Calculated Fill: 2,405'
	Volume: 162.30 bbl
	<b>Proposed Sacks: 650 sks</b>

**T4S, R7W, U.S.B.&M.**

**BILL BARRETT CORPORATION**

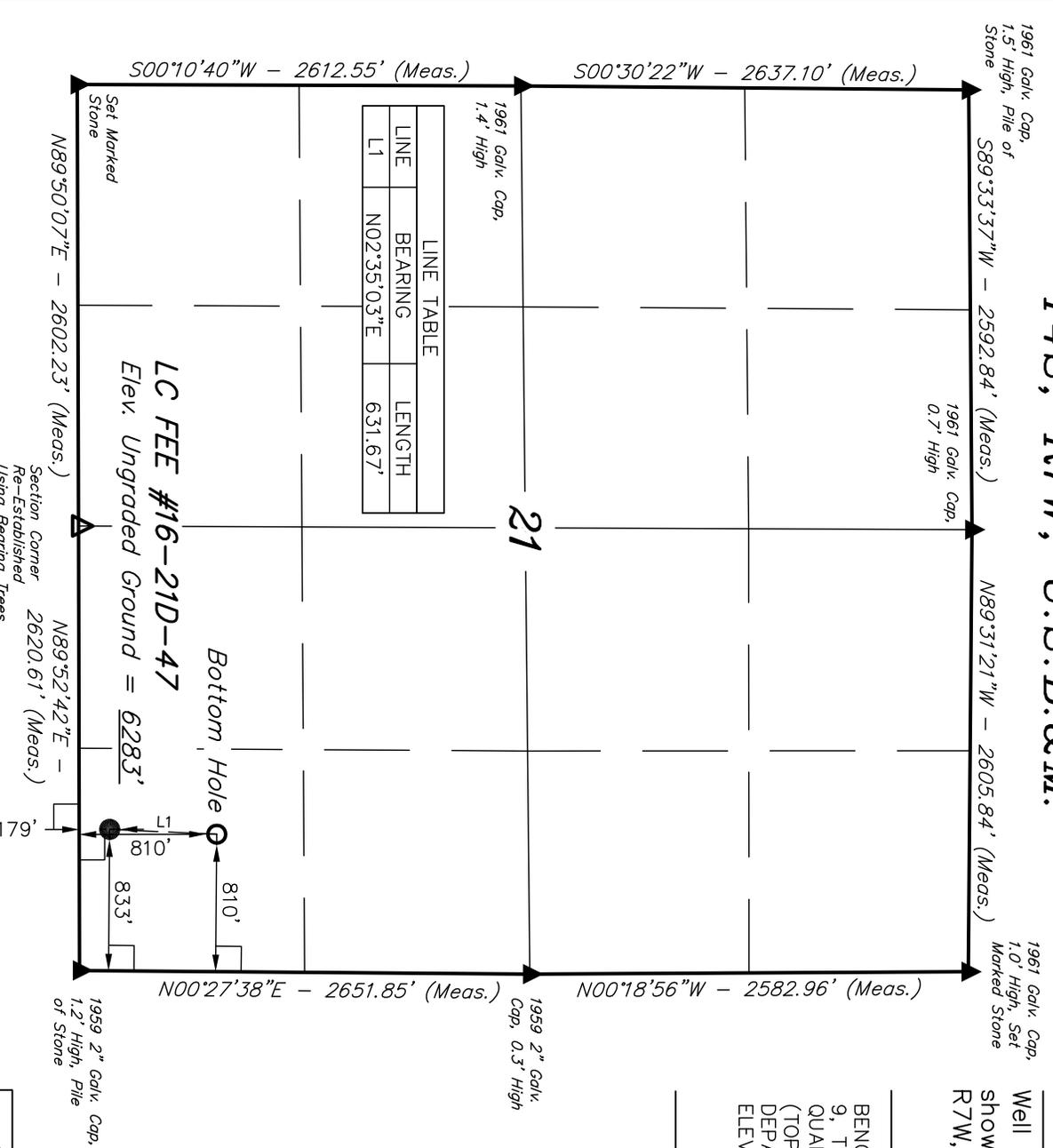
Well location, LC FEE #16-21D-47, located as shown in the SE 1/4 SE 1/4 of Section 21, T4S, R7W, U.S.B.&M., Duchesne County, Utah.

**BASIS OF ELEVATION**

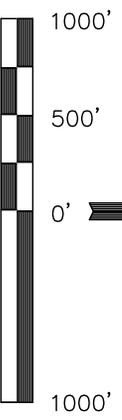
BENCH MARK (M67) LOCATED IN THE SW 1/4 OF SECTION 9, T5S, RAW, U.S.B.&M., TAKEN FROM THE DUCHESNE SE, QUADRANGLE, UTAH, DUCHESNE COUNTY, 7.5 MINUTE QUAD. (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED ON CAP AS BEING 6097 FEET.

**BASIS OF BEARINGS**

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



LINE	BEARING	LENGTH
L1	N02°35'03"E	631.67'



SCALE

**CERTIFICATE**

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

**Bill Barrett**  
 REGISTERED LAND SURVEYOR  
 REGISTRATION NO. 161319  
 STATE OF UTAH

**LEGEND:**

- = 90° SYMBOL
- = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.
- △ = SECTION CORNERS RE-ESTABLISHED. (Not Set on Ground.)

NAD 83 (SURFACE LOCATION)
LATITUDE = 40°06'42.36" (40.111767)
LONGITUDE = 110°40'25.32" (110.673700)
NAD 27 (SURFACE LOCATION)
LATITUDE = 40°06'42.51" (40.111808)
LONGITUDE = 110°40'22.76" (110.672989)
NAD 83 (TARGET BOTTOM HOLE)
LATITUDE = 40°06'48.60" (40.113500)
LONGITUDE = 110°40'24.98" (110.673606)
NAD 27 (TARGET BOTTOM HOLE)
LATITUDE = 40°06'48.75" (40.113542)
LONGITUDE = 110°40'22.42" (110.672894)

**UTAH ENGINEERING & LAND SURVEYING**  
 85 SOUTH 200 EAST - VERNAL, UTAH 84078  
 (435) 789-1017

SCALE 1" = 1000'

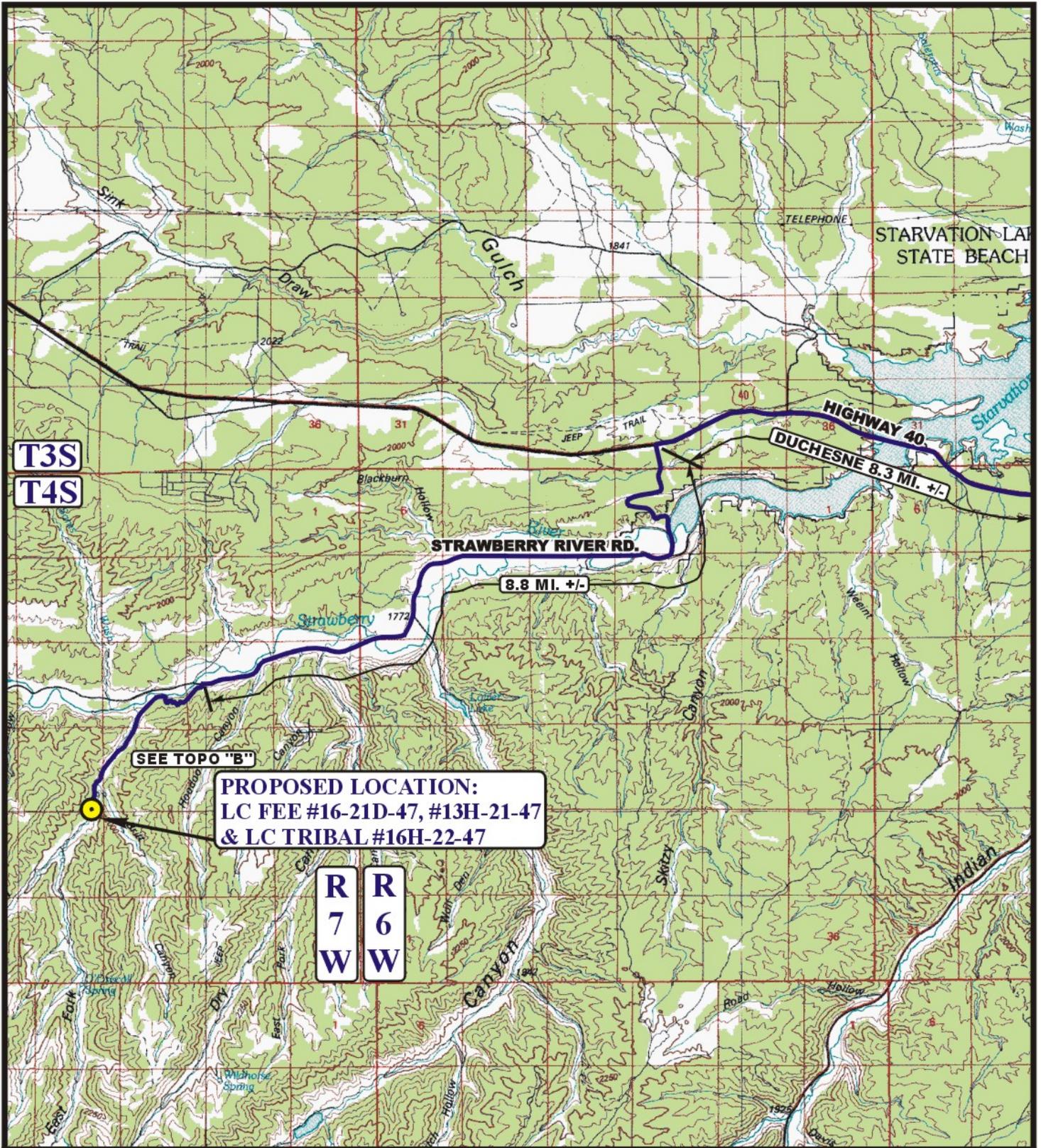
PARTY T.A. C.N. Z.L.

WEATHER HOT

DATE SURVEYED: 08-31-11 DATE DRAWN: 10-07-11

REFERENCES G.I.O. PLAT

FILE BILL BARRETT CORPORATION



**LEGEND:**

PROPOSED LOCATION



**BILL BARRETT CORPORATION**

LC FEE #16-21D-47, #13H-21-47  
 & LC TRIBAL #16H-22-47  
 SECTION 21, T4S, R7W, U.S.B.&M.  
 SE 1/4 SE 1/4



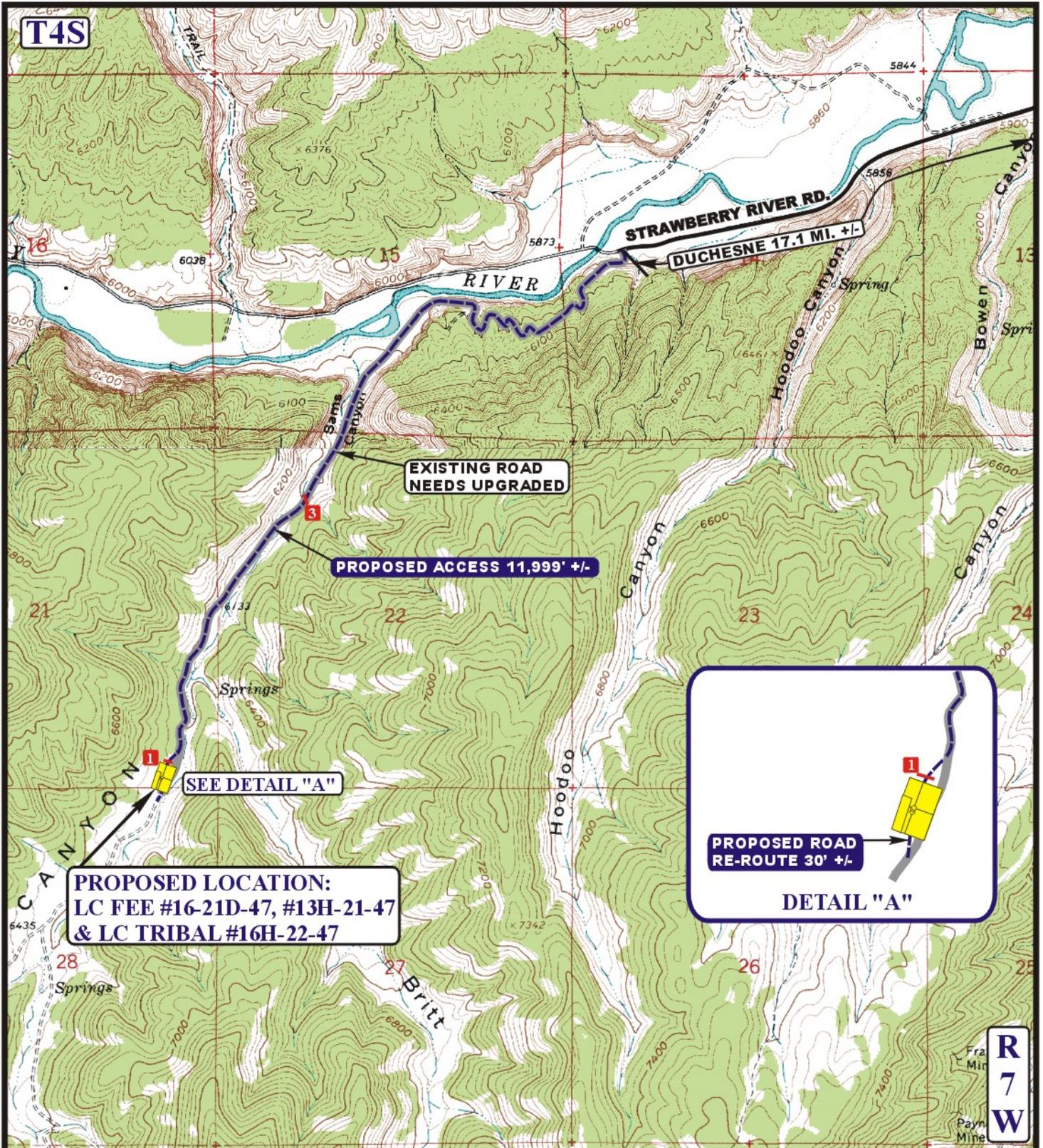
Utah Engineering & Land Surveying  
 85 South 200 East Vernal, Utah 84078  
 (435) 789-1017 \* FAX (435) 789-1813

**ACCESS ROAD  
 MAP**

<b>09</b>	<b>14</b>	<b>11</b>
MONTH	DAY	YEAR

SCALE: 1:100,000    DRAWN BY: C.I.    REVISED: 00-00-00





**LEGEND:**

- EXISTING ROAD
- PROPOSED ACCESS ROAD
- EXISTING ROAD NEEDS UPGRADED
- 18" CMP REQUIRED
- LOW WATER CROSSING REQUIRED

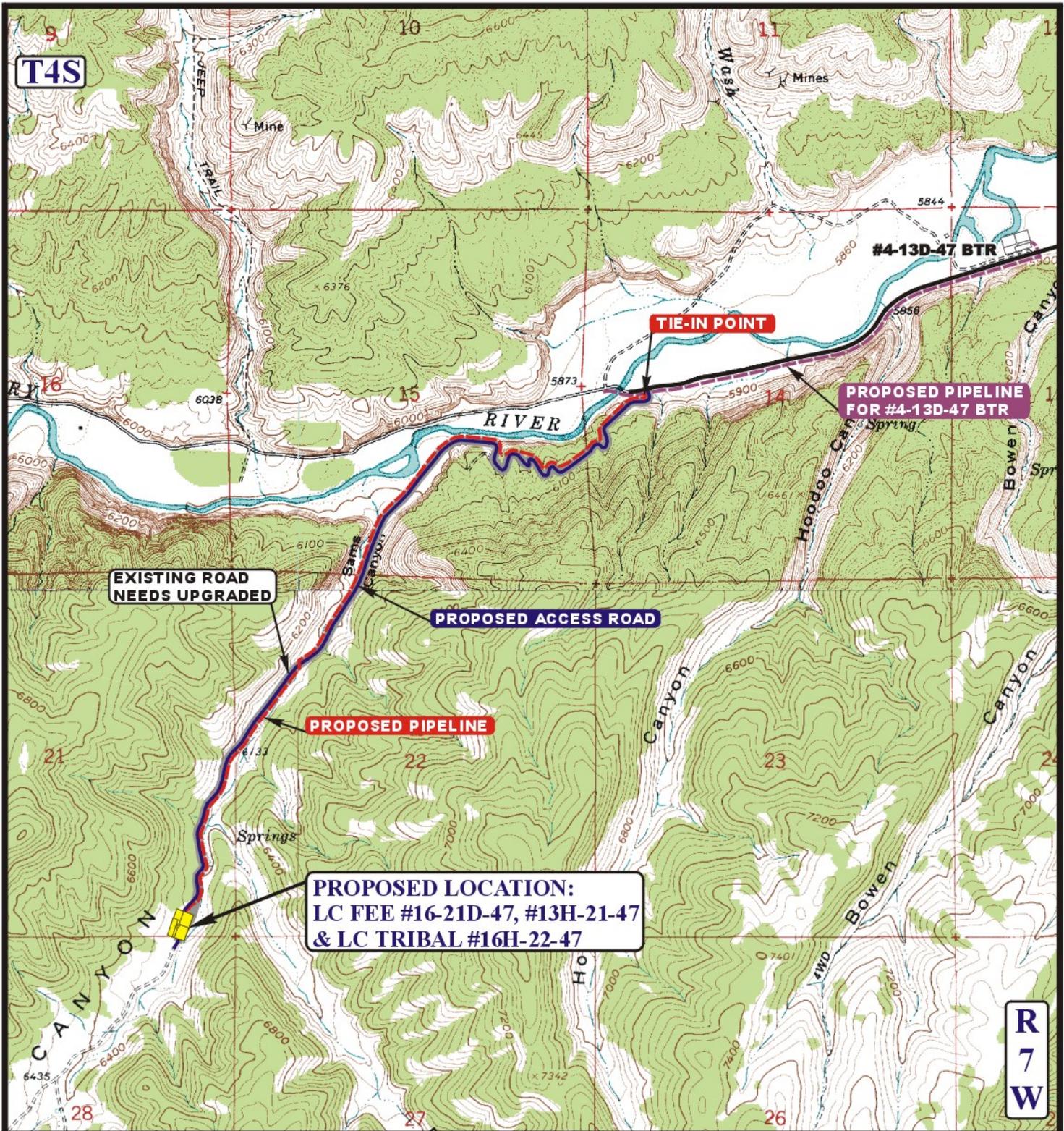
**BILL BARRETT CORPORATION**

LC FEE #16-21D-47, #13H-21-47  
& LC TRIBAL #16H-22-47  
SECTION 21, T4S, R7W, U.S.B.&M.  
SE 1/4 SE 1/4

**U E I S** Uintah Engineering & Land Surveying  
85 South 200 East Vernal, Utah 84078  
(435) 789-1017 \* FAX (435) 789-1813

**ACCESS ROAD MAP** **09 14 11**  
MONTH DAY YEAR **B**  
SCALE: 1" = 2000' DRAWN BY: C.I. REVISED: 12-06-11 **TOPO**





**APPROXIMATE TOTAL PIPELINE DISTANCE = 11,867' +/-**

**LEGEND:**

-  PROPOSED ACCESS ROAD
-  EXISTING ROAD NEEDS UPGRADED
-  PROPOSED PIPELINE
-  PROPOSED PIPELINE (SERVICING OTHER WELLS)

**BILL BARRETT CORPORATION**

LC FEE #16-21D-47, #13H-21-47  
& LC TRIBAL #16H-22-47  
SECTION 21, T4S, R7W, U.S.B.&M.  
SE 1/4 SE 1/4



Utah Engineering & Land Surveying  
85 South 200 East Vernal, Utah 84078  
(435) 789-1017 \* FAX (435) 789-1813



**TOPOGRAPHIC  
MAP**

**09 14 11**  
MONTH DAY YEAR

SCALE: 1" = 2000' DRAWN BY: C.I. REVISED: 00-00-00





**Bill Barrett Corporation**

**SITE DETAILS:** 16-21D-47 LC Fee  
Lake Canyon

Site Latitude: 40° 6' 42.509 N  
Site Longitude: 110° 40' 22.760 W

**COMPANY DETAILS: BILL BARRETT CORP**

Calculation Method: Minimum Curvature  
Error System: ISCWSA  
Scan Method: Closest Approach 3D  
Error Surface: Elliptical Conic  
Warning Method: Error Ratio

Positional Uncertainty: 0.0  
Convergence: 0.53  
Local North: True

**WELL DETAILS:** 16-21D-47 LC Fee

Ground Level: 6282.0

+N/-S    +E/-W    Northing    Easting    Latitude    Longitude    Slot  
0.0    0.0    648840.55    2231301.64    40° 6' 42.509 N    110° 40' 22.760 W

**WELLBORE TARGET DETAILS (LAT/LONG)**

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
BTV 16-21D-47 LC Fee	3797.0	631.6	26.6	40° 6' 48.751 N	110° 40' 22.418 W	Rectangle (Sides: L200.0 W200.0)
16-21D-47 LC Fee PBHL	6167.0	631.6	26.6	40° 6' 48.751 N	110° 40' 22.418 W	Rectangle (Sides: L200.0 W200.0)

**SECTION DETAILS**

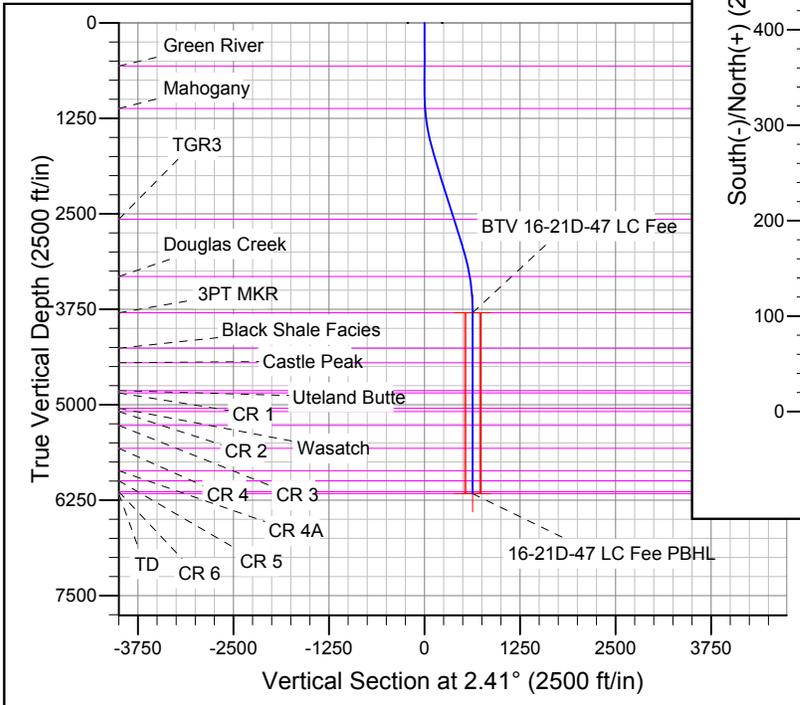
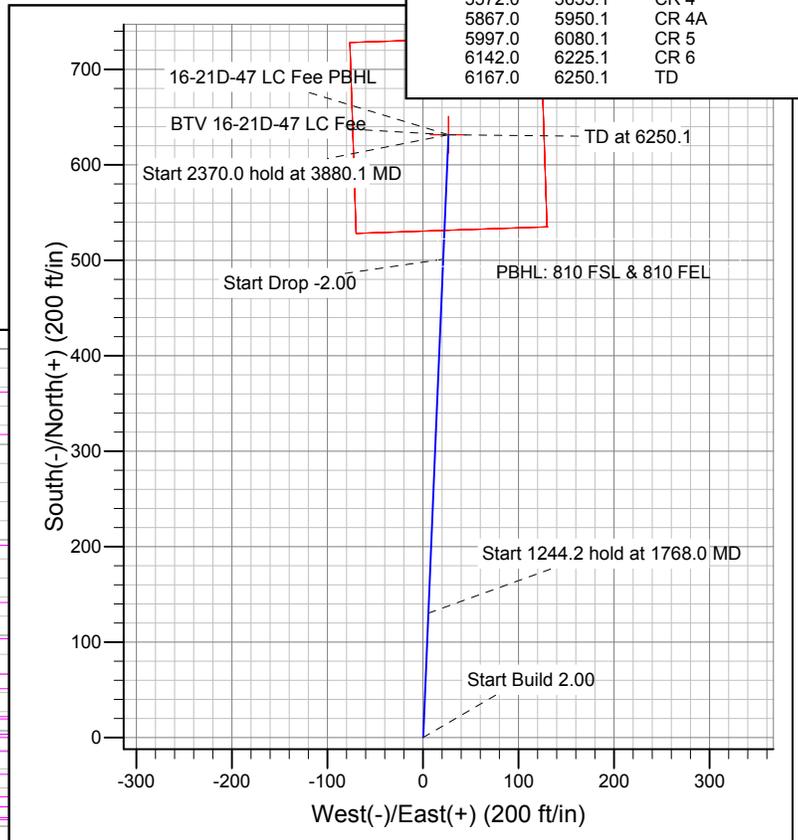
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	1768.0	17.36	2.41	1754.7	130.4	5.5	2.00	2.41	130.5	
4	3012.1	17.36	2.41	2942.3	501.3	21.1	0.00	0.00	501.7	
5	3880.1	0.00	0.00	3797.0	631.6	26.6	2.00	180.00	632.2	BTV 16-21D-47 LC Fee
6	6250.1	0.00	0.00	6167.0	631.6	26.6	0.00	0.00	632.2	16-21D-47 LC Fee PBHL

**FORMATION TOP DETAILS**

TVDPath	MDPath	Formation
567.0	567.0	Green River
1122.0	1122.2	Mahogany
2572.0	2624.2	TGR3
3322.0	3402.9	Douglas Creek
3797.0	3880.1	3PT MKR
4262.0	4345.1	Black Shale Facies
4452.0	4535.1	Castle Peak
4817.0	4900.1	Uteland Butte
4847.0	4930.1	CR 1
5047.0	5130.1	Wasatch
5092.0	5175.1	CR 2
5272.0	5355.1	CR 3
5572.0	5655.1	CR 4
5867.0	5950.1	CR 4A
5997.0	6080.1	CR 5
6142.0	6225.1	CR 6
6167.0	6250.1	TD

**CASING DETAILS**

No casing data is available



Azimuths to True North  
Magnetic North: 11.43°

Magnetic Field  
Strength: 52110.0snT  
Dip Angle: 65.70°  
Date: 6/29/2012  
Model: IGRF2010

# **BILL BARRETT CORP**

**DUCHESNE COUNTY, UT (NAD 27)**

**16-21D-47 LC Fee**

**16-21D-47 LC Fee**

**16-21D-47 LC Fee**

**Plan: Design #1**

## **Standard Planning Report**

**13 July, 2012**

**Bill Barrett Corp**

Planning Report

<b>Database:</b>	Compass	<b>Local Co-ordinate Reference:</b>	Well 16-21D-47 LC Fee
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Project:</b>	DUCHESNE COUNTY, UT (NAD 27)	<b>MD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Site:</b>	16-21D-47 LC Fee	<b>North Reference:</b>	True
<b>Well:</b>	16-21D-47 LC Fee	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	16-21D-47 LC Fee		
<b>Design:</b>	Design #1		

<b>Project</b>	DUCHESNE COUNTY, UT (NAD 27)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Ground Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Utah Central 4302		

<b>Site</b>	16-21D-47 LC Fee				
<b>Site Position:</b>		<b>Northing:</b>	648,840.56 ft	<b>Latitude:</b>	40° 6' 42.509 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,231,301.64 ft	<b>Longitude:</b>	110° 40' 22.760 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.53 °

<b>Well</b>	16-21D-47 LC Fee					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	648,840.55 ft	<b>Latitude:</b>	40° 6' 42.509 N
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,231,301.64 ft	<b>Longitude:</b>	110° 40' 22.760 W
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	6,282.0 ft

<b>Wellbore</b>	16-21D-47 LC Fee				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/29/2012	11.43	65.70	52,110

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	2.41

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,768.0	17.36	2.41	1,754.7	130.4	5.5	2.00	2.00	0.00	2.41	
3,012.1	17.36	2.41	2,942.3	501.3	21.1	0.00	0.00	0.00	0.00	
3,880.1	0.00	0.00	3,797.0	631.6	26.6	2.00	-2.00	0.00	180.00	BTV 16-21D-47 LC Fee
6,250.1	0.00	0.00	6,167.0	631.6	26.6	0.00	0.00	0.00	0.00	16-21D-47 LC Fee PE

**Bill Barrett Corp**

Planning Report

<b>Database:</b>	Compass	<b>Local Co-ordinate Reference:</b>	Well 16-21D-47 LC Fee
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Project:</b>	DUCHESNE COUNTY, UT (NAD 27)	<b>MD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Site:</b>	16-21D-47 LC Fee	<b>North Reference:</b>	True
<b>Well:</b>	16-21D-47 LC Fee	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	16-21D-47 LC Fee		
<b>Design:</b>	Design #1		

Planned 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	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
567.0	0.00	0.00	567.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>Green River</b>										
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	2.00	2.41	1,000.0	1.7	0.1	1.7	2.00	2.00	0.00	
1,100.0	4.00	2.41	1,099.8	7.0	0.3	7.0	2.00	2.00	0.00	
1,122.2	4.44	2.41	1,122.0	8.6	0.4	8.6	2.00	2.00	0.00	
<b>Mahogany</b>										
1,200.0	6.00	2.41	1,199.5	15.7	0.7	15.7	2.00	2.00	0.00	
1,300.0	8.00	2.41	1,298.7	27.9	1.2	27.9	2.00	2.00	0.00	
1,400.0	10.00	2.41	1,397.5	43.5	1.8	43.5	2.00	2.00	0.00	
1,500.0	12.00	2.41	1,495.6	62.5	2.6	62.6	2.00	2.00	0.00	
1,600.0	14.00	2.41	1,593.1	85.0	3.6	85.1	2.00	2.00	0.00	
1,700.0	16.00	2.41	1,689.6	110.9	4.7	111.0	2.00	2.00	0.00	
1,768.0	17.36	2.41	1,754.7	130.4	5.5	130.5	2.00	2.00	0.00	
1,800.0	17.36	2.41	1,785.3	139.9	5.9	140.0	0.00	0.00	0.00	
1,900.0	17.36	2.41	1,880.8	169.7	7.1	169.9	0.00	0.00	0.00	
2,000.0	17.36	2.41	1,976.2	199.5	8.4	199.7	0.00	0.00	0.00	
2,100.0	17.36	2.41	2,071.7	229.3	9.6	229.6	0.00	0.00	0.00	
2,200.0	17.36	2.41	2,167.1	259.2	10.9	259.4	0.00	0.00	0.00	
2,300.0	17.36	2.41	2,262.5	289.0	12.2	289.2	0.00	0.00	0.00	
2,400.0	17.36	2.41	2,358.0	318.8	13.4	319.1	0.00	0.00	0.00	
2,500.0	17.36	2.41	2,453.4	348.6	14.7	348.9	0.00	0.00	0.00	
2,600.0	17.36	2.41	2,548.9	378.4	15.9	378.7	0.00	0.00	0.00	
2,624.2	17.36	2.41	2,572.0	385.6	16.2	386.0	0.00	0.00	0.00	
<b>TGR3</b>										
2,700.0	17.36	2.41	2,644.3	408.2	17.2	408.6	0.00	0.00	0.00	
2,800.0	17.36	2.41	2,739.8	438.0	18.4	438.4	0.00	0.00	0.00	
2,900.0	17.36	2.41	2,835.2	467.8	19.7	468.2	0.00	0.00	0.00	
3,000.0	17.36	2.41	2,930.7	497.6	20.9	498.1	0.00	0.00	0.00	
3,012.1	17.36	2.41	2,942.3	501.3	21.1	501.7	0.00	0.00	0.00	
3,100.0	15.60	2.41	3,026.5	526.2	22.1	526.6	2.00	-2.00	0.00	
3,200.0	13.60	2.41	3,123.3	551.3	23.2	551.8	2.00	-2.00	0.00	
3,300.0	11.60	2.41	3,220.9	573.1	24.1	573.6	2.00	-2.00	0.00	
3,400.0	9.60	2.41	3,319.1	591.5	24.9	592.0	2.00	-2.00	0.00	
3,402.9	9.54	2.41	3,322.0	592.0	24.9	592.5	2.00	-2.00	0.00	
<b>Douglas Creek</b>										
3,500.0	7.60	2.41	3,418.0	606.5	25.5	607.0	2.00	-2.00	0.00	
3,600.0	5.60	2.41	3,517.3	618.0	26.0	618.5	2.00	-2.00	0.00	
3,700.0	3.60	2.41	3,617.0	626.0	26.3	626.5	2.00	-2.00	0.00	
3,800.0	1.60	2.41	3,716.9	630.5	26.5	631.1	2.00	-2.00	0.00	
3,880.1	0.00	0.00	3,797.0	631.6	26.6	632.2	2.00	-2.00	0.00	
<b>3PT MKR - BTV 16-21D-47 LC Fee</b>										
3,900.0	0.00	0.00	3,816.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,000.0	0.00	0.00	3,916.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,016.9	631.6	26.6	632.2	0.00	0.00	0.00	

**Bill Barrett Corp**

Planning Report

<b>Database:</b>	Compass	<b>Local Co-ordinate Reference:</b>	Well 16-21D-47 LC Fee
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Project:</b>	DUCHESNE COUNTY, UT (NAD 27)	<b>MD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Site:</b>	16-21D-47 LC Fee	<b>North Reference:</b>	True
<b>Well:</b>	16-21D-47 LC Fee	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	16-21D-47 LC Fee		
<b>Design:</b>	Design #1		

Planned 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)	
4,200.0	0.00	0.00	4,116.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,216.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,345.1	0.00	0.00	4,262.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>Black Shale Facies</b>										
4,400.0	0.00	0.00	4,316.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,416.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,535.1	0.00	0.00	4,452.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>Castle Peak</b>										
4,600.0	0.00	0.00	4,516.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,700.0	0.00	0.00	4,616.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,800.0	0.00	0.00	4,716.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,816.9	631.6	26.6	632.2	0.00	0.00	0.00	
4,900.1	0.00	0.00	4,817.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>Uteland Butte</b>										
4,930.1	0.00	0.00	4,847.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>CR 1</b>										
5,000.0	0.00	0.00	4,916.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,100.0	0.00	0.00	5,016.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,130.1	0.00	0.00	5,047.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>Wasatch</b>										
5,175.1	0.00	0.00	5,092.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>CR 2</b>										
5,200.0	0.00	0.00	5,116.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,216.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,355.1	0.00	0.00	5,272.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>CR 3</b>										
5,400.0	0.00	0.00	5,316.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,416.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,516.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,655.1	0.00	0.00	5,572.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>CR 4</b>										
5,700.0	0.00	0.00	5,616.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,716.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,816.9	631.6	26.6	632.2	0.00	0.00	0.00	
5,950.1	0.00	0.00	5,867.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>CR 4A</b>										
6,000.0	0.00	0.00	5,916.9	631.6	26.6	632.2	0.00	0.00	0.00	
6,080.1	0.00	0.00	5,997.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>CR 5</b>										
6,100.0	0.00	0.00	6,016.9	631.6	26.6	632.2	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,116.9	631.6	26.6	632.2	0.00	0.00	0.00	
6,225.1	0.00	0.00	6,142.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>CR 6</b>										
6,250.1	0.00	0.00	6,167.0	631.6	26.6	632.2	0.00	0.00	0.00	
<b>TD - 16-21D-47 LC Fee PBHL</b>										

**Bill Barrett Corp**

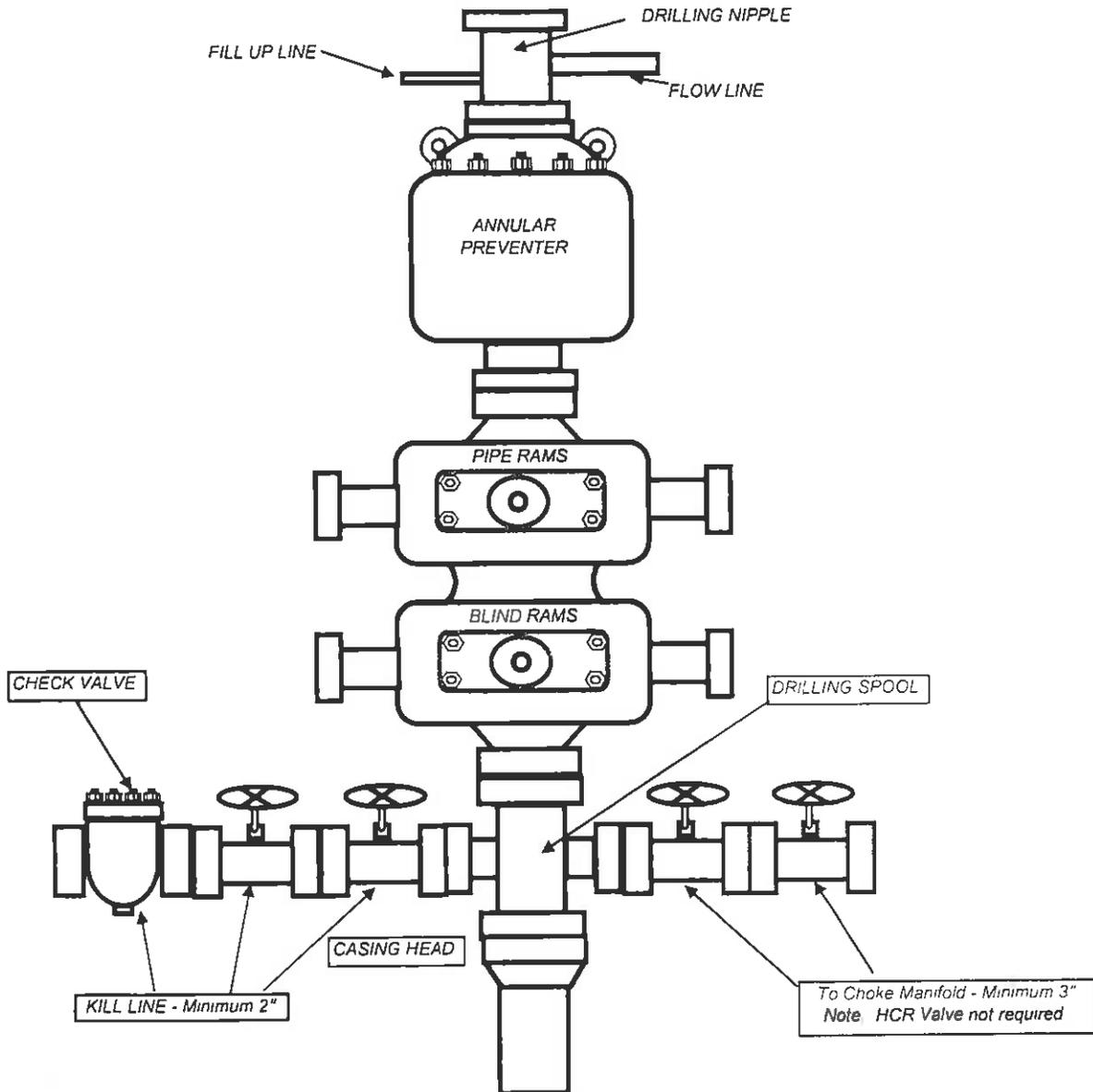
## Planning Report

<b>Database:</b>	Compass	<b>Local Co-ordinate Reference:</b>	Well 16-21D-47 LC Fee
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Project:</b>	DUCHESNE COUNTY, UT (NAD 27)	<b>MD Reference:</b>	KB @ 6297.0ft (Original Well Elev)
<b>Site:</b>	16-21D-47 LC Fee	<b>North Reference:</b>	True
<b>Well:</b>	16-21D-47 LC Fee	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	16-21D-47 LC Fee		
<b>Design:</b>	Design #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
567.0	567.0	Green River		0.00		
1,122.2	1,122.0	Mahogany		0.00		
2,624.2	2,572.0	TGR3		0.00		
3,402.9	3,322.0	Douglas Creek		0.00		
3,880.1	3,797.0	3PT MKR		0.00		
4,345.1	4,262.0	Black Shale Facies		0.00		
4,535.1	4,452.0	Castle Peak		0.00		
4,900.1	4,817.0	Uteland Butte		0.00		
4,930.1	4,847.0	CR 1		0.00		
5,130.1	5,047.0	Wasatch		0.00		
5,175.1	5,092.0	CR 2		0.00		
5,355.1	5,272.0	CR 3		0.00		
5,655.1	5,572.0	CR 4		0.00		
5,950.1	5,867.0	CR 4A		0.00		
6,080.1	5,997.0	CR 5		0.00		
6,225.1	6,142.0	CR 6		0.00		
6,250.1	6,167.0	TD		0.00		

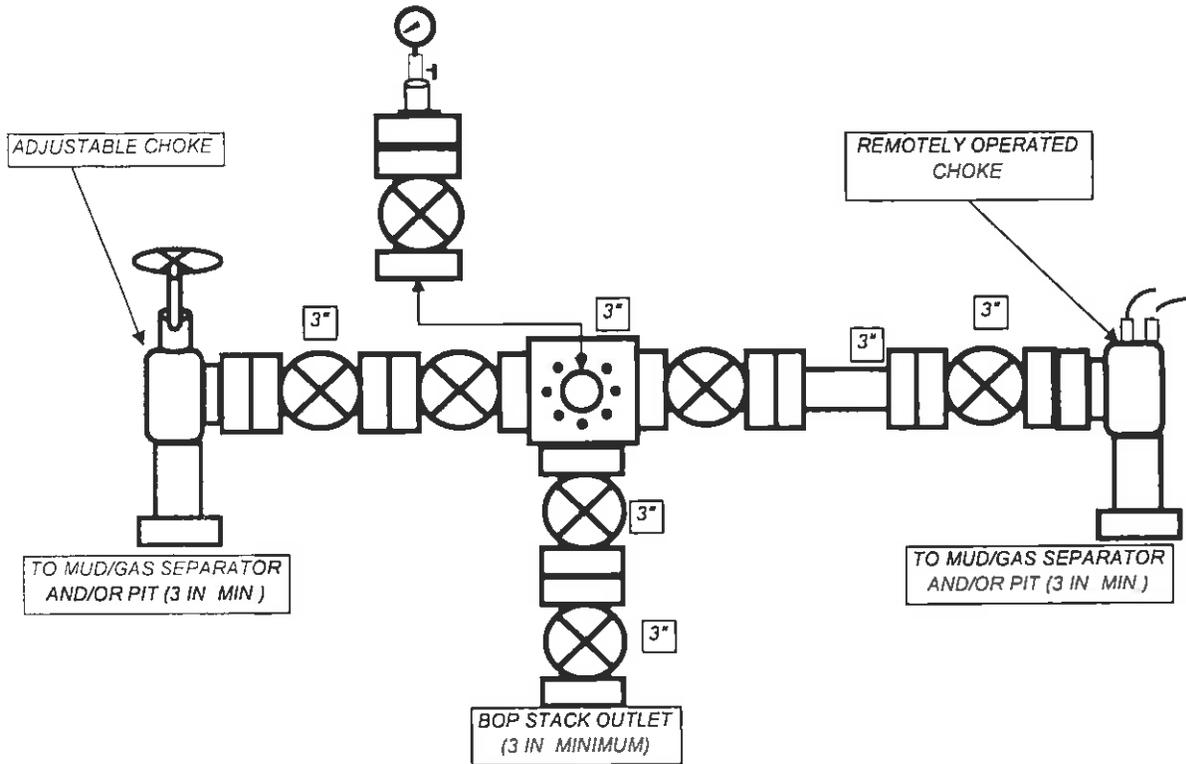
# BILL BARRETT CORPORATION

## TYPICAL 5,000 p.s.i. BLOWOUT PREVENTER



# BILL BARRETT CORPORATION

## TYPICAL 5,000 p.s.i. CHOKE MANIFOLD





February 25, 2013

Ms. Diana Mason – Petroleum Technician  
**STATE OF UTAH DIVISION OF OIL, GAS AND MINING**  
1594 West North Temple, Suite 1210  
P. O. Box 145801  
Salt Lake City, Utah 84114-5801

Re: **Exception Location –LC Fee #16-21D-47 – Lake Canyon Area**  
Surface Location: 179' FSL & 833' FEL, SESE, 21-T4S-R7W, USB&M  
Bottom Location: 810' FSL & 810' FEL, SESE, 21-T4S-R7W, USB&M  
Duchesne County, Utah

Dear Ms. Mason,

Bill Barrett Corporation (“BBC”) hereby submits an exception location letter in accordance with Oil & Gas Conservation Order #139-87, requesting an exception well location, supported by the following information:

- The location is within our Lake Canyon Area.
- BBC is requesting an exception to Spacing Order #139-87 by drilling multiple well bores from a single well pad where the horizontal wellbore will strictly produce hydrocarbons from the Uteland Butte formation and the other vertical wellbore will produce from formations excluding the Uteland Butte. This well configuration results in the wellbores being closer than the 1,320 feet allowed by spacing order.
- This will allow for a more efficient drainage of the reservoir formation being targeted.
- The exception location is due to topography requirements and to minimize surface disturbance.
- BBC certifies that it is the working interest owner along with Ute Energy Upstream Holding, LLC and Berry Petroleum Company (who also consent to this exception location request), and together we own 100% of the working interest within 460 feet of the proposed well location.
- Our rights are owned under an Exploration and Development Agreement with the Ute Indian Tribe and Ute Distribution Corporation which provides for the drilling of exploratory wells. This agreement provides that we consult with these owners regarding the drilling of this well.

Based on the information provided, BBC requests the Division grant this exception to the locating, siting and spacing requirements of Order #139-87. Should you have any questions or need further information, please contact me at 303-312-8544.

Sincerely,

A handwritten signature in blue ink that reads 'David Watts'.

David Watts  
Landman  
[dwatts@billbarrettcorp.com](mailto:dwatts@billbarrettcorp.com)

BILL BARRETT CORPORATION

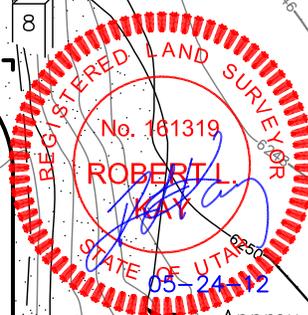
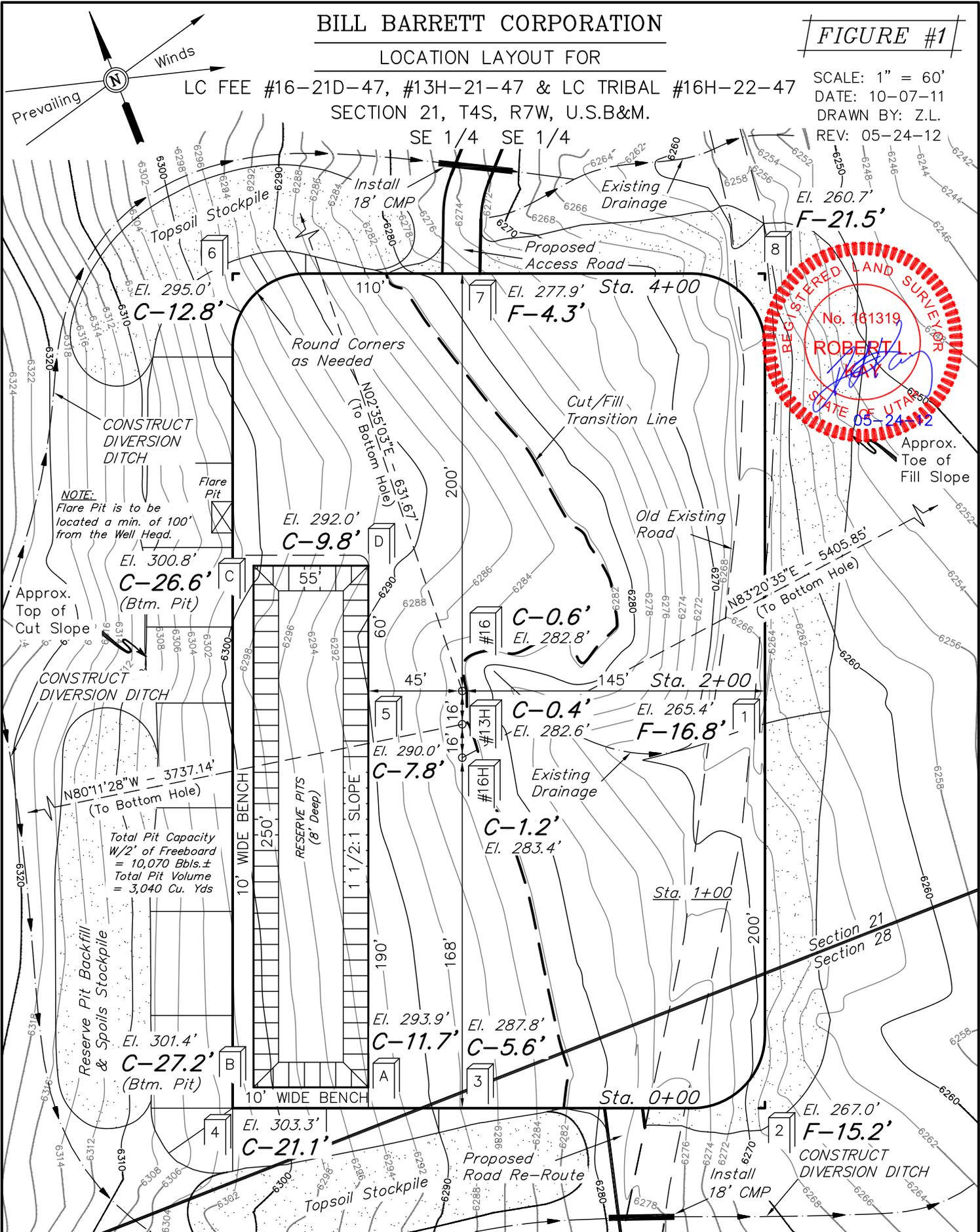
LOCATION LAYOUT FOR

LC FEE #16-21D-47, #13H-21-47 & LC TRIBAL #16H-22-47  
SECTION 21, T4S, R7W, U.S.B&M.

SE 1/4 SE 1/4

FIGURE #1

SCALE: 1" = 60'  
DATE: 10-07-11  
DRAWN BY: Z.L.  
REV: 05-24-12



Elev. Ungraded Ground At #16-21D-47 Loc. Stake = **6282.8'**, UINTEAH ENGINEERING & LAND SURVEYING  
 FINISHED GRADE ELEV. AT #16-21D-47 LOC. STAKE = **6282.2'** 85 So. 200 East \* Vernal, Utah 84078 \* (435) 789-1017

RECEIVED: October 19, 2012

**BILL BARRETT CORPORATION**

**FIGURE #2**

**TYPICAL CROSS SECTIONS FOR**

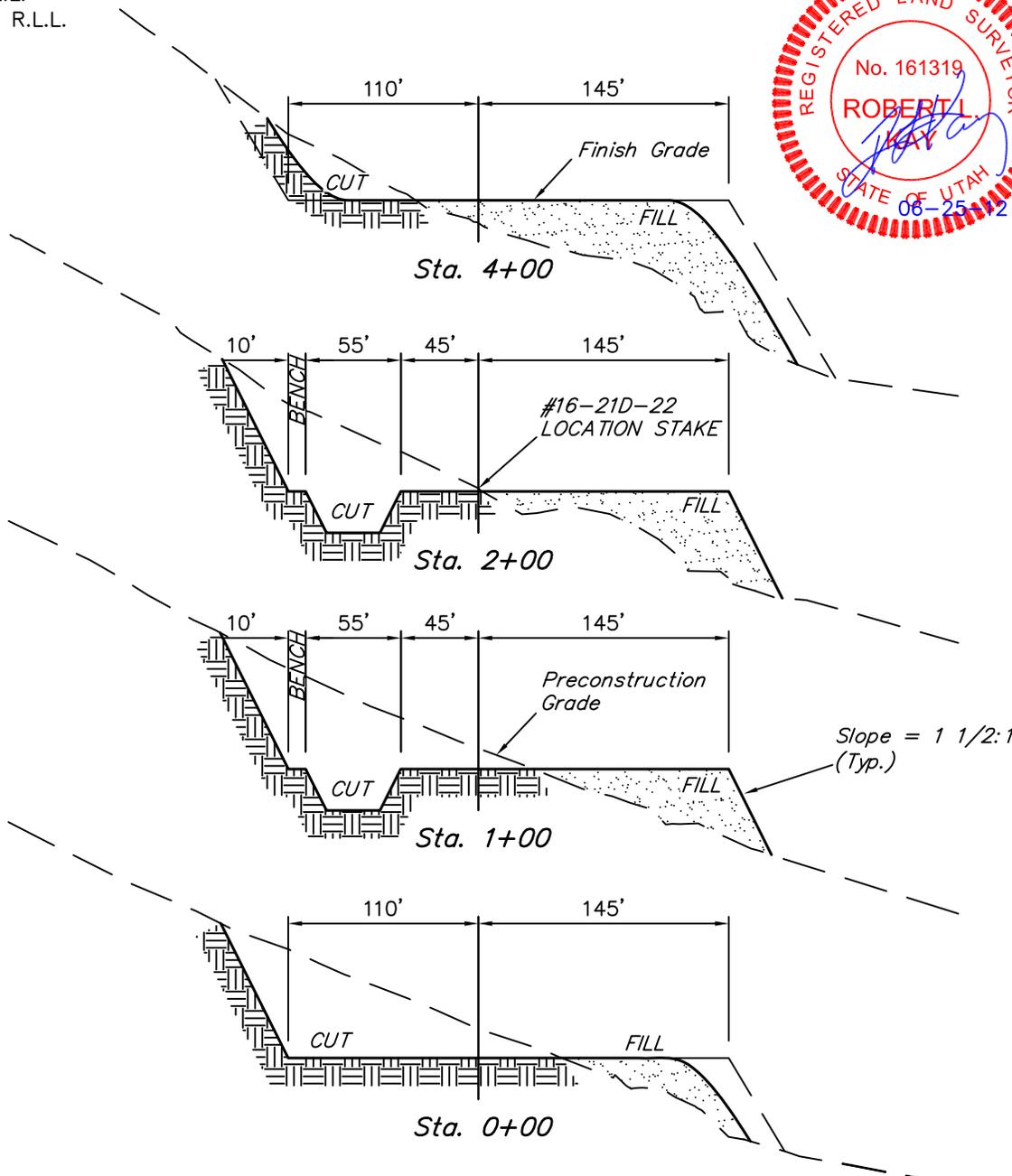
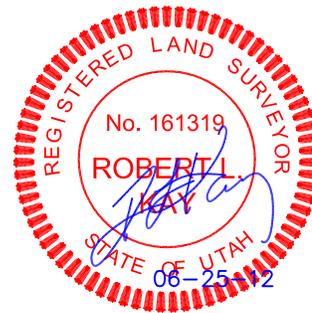
LC FEE #16-21D-47, #13H-21-47 & LC TRIBAL #16H-22-47

SECTION 21, T4S, R7W, U.S.B&M.

SE 1/4 SE 1/4

1" = 40'  
X-Section Scale  
1" = 100'

DATE: 10-07-11  
DRAWN BY: Z.L.  
REV: 06-25-12 R.L.L.



**NOTE:**

Topsoil should not be Stripped Below Finished Grade on Substructure Area.

**APPROXIMATE ACREAGES**

WELL SITE DISTURBANCE = ± 3.151 ACRES  
ACCESS ROAD DISTURBANCE = ± 8.247 ACRES  
PIPELINE DISTURBANCE = ± 8.190 ACRES  
TOTAL = ± 19.588 ACRES

\* NOTE: FILL QUANTITY INCLUDES 5% FOR COMPACTION

**APPROXIMATE YARDAGES**

(12") Topsoil Stripping = 5,520 Cu. Yds.  
Remaining Location = 24,380 Cu. Yds.  
TOTAL CUT = 29,900 CU.YDS.  
FILL = 22,860 CU.YDS.

EXCESS MATERIAL = 7,040 Cu. Yds.  
Topsoil & Pit Backfill (1/2 Pit Vol.) = 7,040 Cu. Yds.  
EXCESS UNBALANCE (After Interim Rehabilitation) = 0 Cu. Yds.

UINTAH ENGINEERING & LAND SURVEYING  
85 So. 200 East \* Vernal, Utah 84078 \* (435) 789-1017

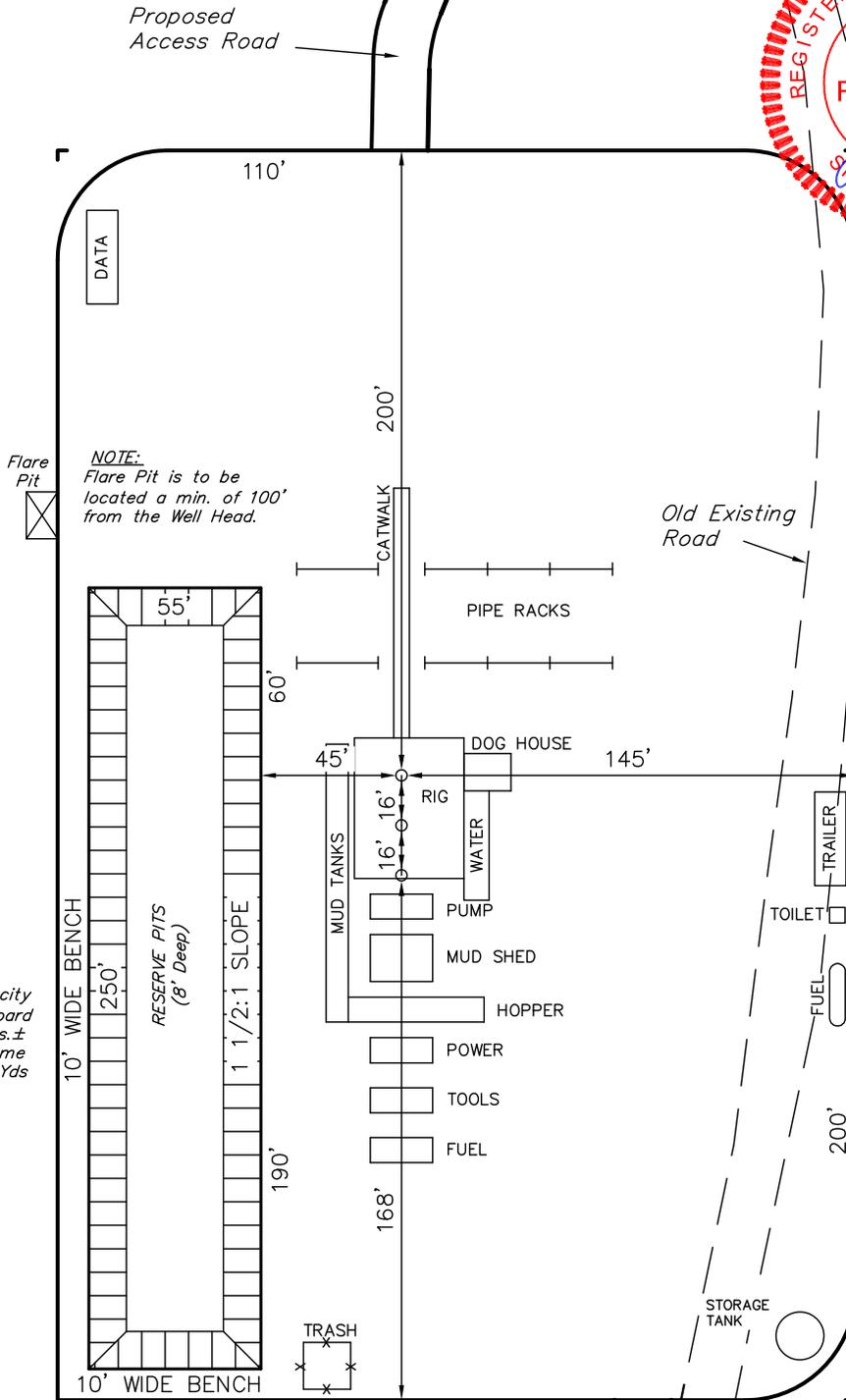
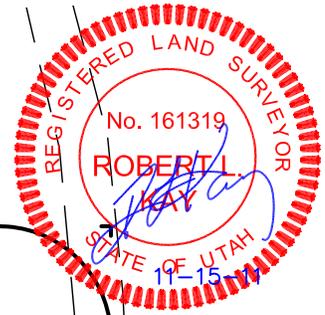
# BILL BARRETT CORPORATION

## TYPICAL RIG LAYOUT FOR

LC FEE #16-21D-47, #13H-21-47 & LC TRIBAL #16H-22-47  
SECTION 21, T4S, R7W, U.S.B&M.  
SE 1/4 SE 1/4

FIGURE #3

SCALE: 1" = 60'  
DATE: 10-07-11  
DRAWN BY: Z.L.



**NOTE:**  
Flare Pit is to be located a min. of 100' from the Well Head.

Total Pit Capacity  
W/2' of Freeboard  
= 10,070 Bbls. ±  
Total Pit Volume  
= 3,040 Cu. Yds

Proposed Road Re-Route

UINTAH ENGINEERING & LAND SURVEYING  
85 So. 200 East \* Vernal, Utah 84078 \* (435) 789-1017

RECEIVED: October 19, 2012

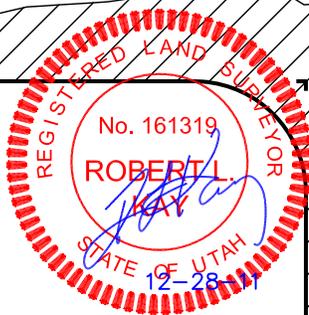
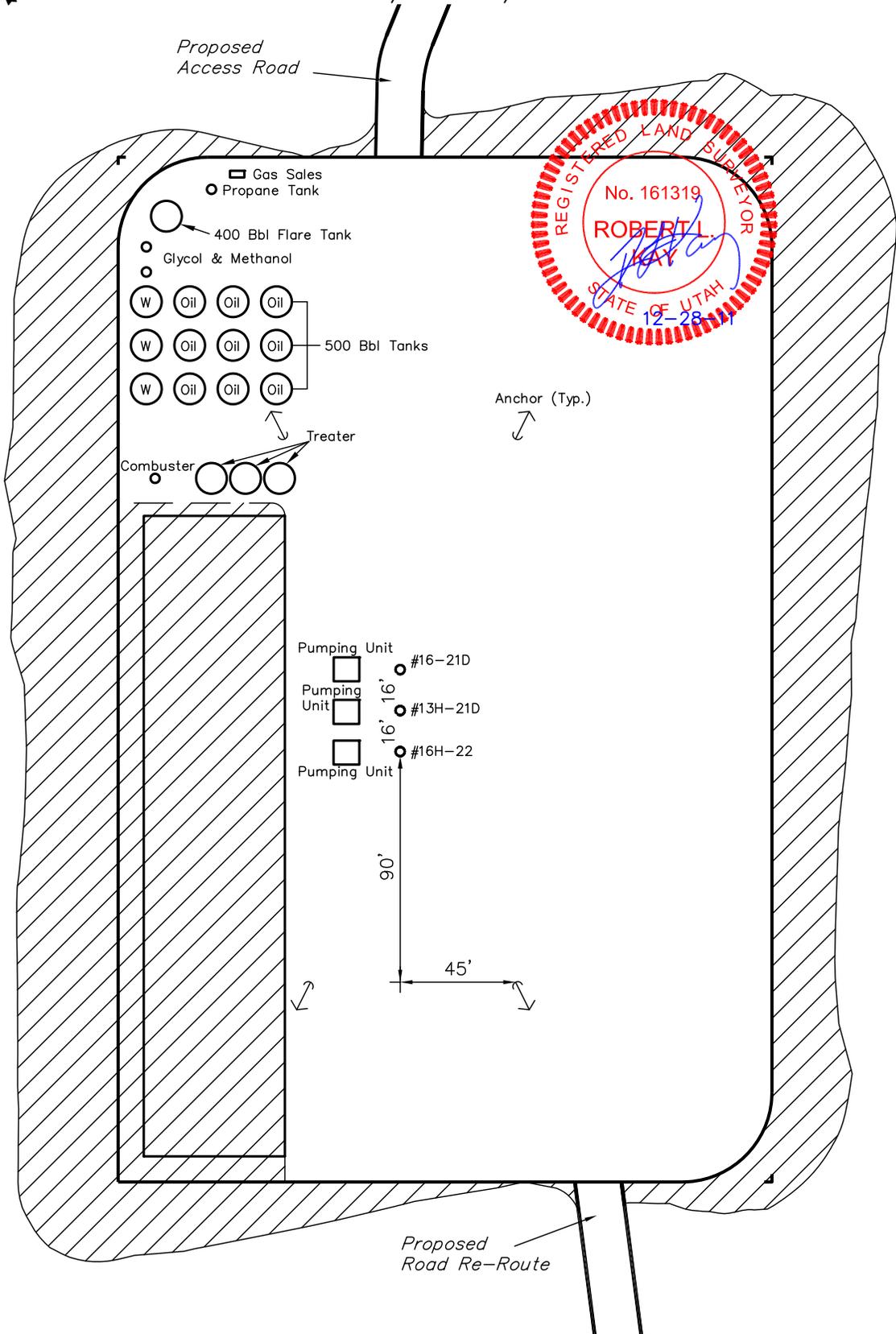
# BILL BARRETT CORPORATION

## INTERIM RECLAMATION PLAN FOR

LC FEE #16-21D-47, #13H-21-47 & LC TRIBAL #16H-22-47  
SECTION 21, T4S, R7W, U.S.B&M.  
SE 1/4 SE 1/4

FIGURE #4

SCALE: 1" = 60'  
DATE: 10-07-11  
DRAWN BY: Z.L.  
REV: 12-27-11 A.W.

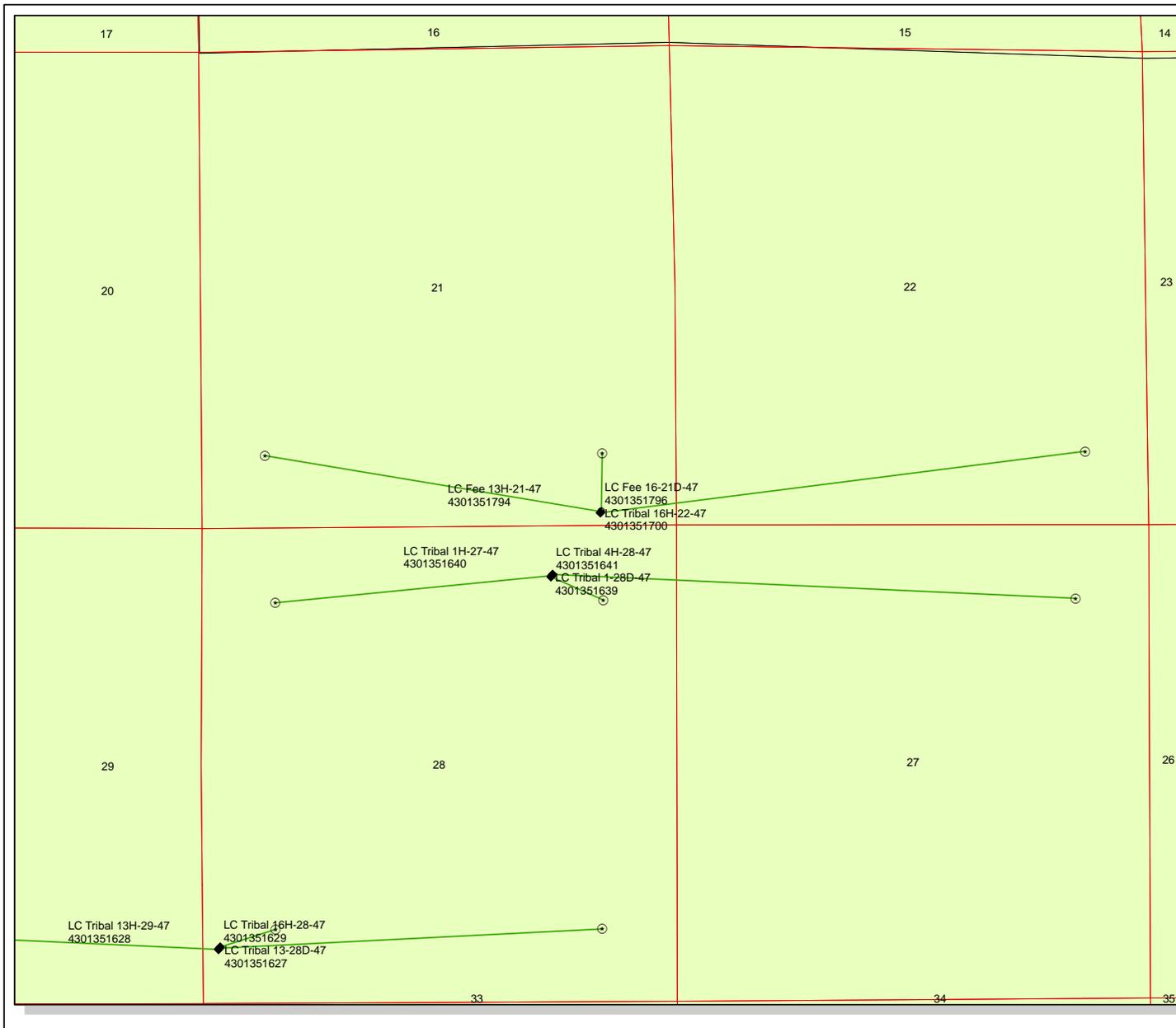


 INTERIM RECLAMATION AREA

APPROXIMATE ACREAGES  
UN-RECLAIMED = ± 1.928 ACRES

UINTAH ENGINEERING & LAND SURVEYING  
85 So. 200 East \* Vernal, Utah 84078 \* (435) 789-1017

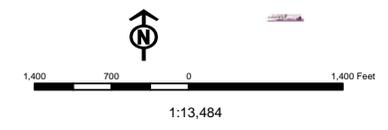
RECEIVED: October 19, 2012



**API Number: 4301351796**  
**Well Name: LC Fee 16-21D-47**  
**Township T04.0S Range R07.0W Section 21**  
**Meridian: UBM**  
**Operator: BILL BARRETT CORP**

Map Prepared:  
 Map Produced by Diana Mason

- |               |                                    |
|---------------|------------------------------------|
| <b>Units</b>  | <b>Wells Query</b>                 |
| <b>STATUS</b> | <b>STATUS</b>                      |
| ACTIVE        | APD - Approved Permit              |
| EXPLORATORY   | DRL - Spudded (Drilling Commenced) |
| GAS STORAGE   | GIW - Gas Injection                |
| NF PP OIL     | GS - Gas Storage                   |
| NF SECONDARY  | LOC - New Location                 |
| P1 OIL        | OPS - Operation Suspended          |
| PP GAS        | PA - Plugged Abandoned             |
| PP GEOTHERML  | PGW - Producing Gas Well           |
| PP OIL        | POW - Producing Oil Well           |
| SECONDARY     | SGW - Shut-in Gas Well             |
| TERMINATED    | SOW - Shut-in Oil Well             |
| <b>Fields</b> | TA - Temp. Abandoned               |
| <b>STATUS</b> | TW - Test Well                     |
| ABANDONED     | WDW - Water Disposal               |
| ACTIVE        | WW - Water Injection Well          |
| COMBINED      | WSW - Water Supply Well            |
| INACTIVE      | Bottom Hole Location - Oil/Gas/Dls |
| STORAGE       |                                    |
| TERMINATED    |                                    |



Well Name	BILL BARRETT CORP LC Fee 16-21D-47 43013517960000			
String	Cond	Surf	Prod	
Casing Size(")	16.000	9.625	9.625	
Setting Depth (TVD)	80	800	6167	
Previous Shoe Setting Depth (TVD)	0	80	800	
Max Mud Weight (ppg)	8.8	8.8	9.6	
BOPE Proposed (psi)	0	500	5000	
Casing Internal Yield (psi)	1000	3520	10640	
Operators Max Anticipated Pressure (psi)	3078		9.6	

Calculations	Cond String	16.000	"
Max BHP (psi)	.052*Setting Depth*MW=	37	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	27	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	19	NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	19	NO
Required Casing/BOPE Test Pressure=		80	psi
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi *Assumes 1psi/ft frac gradient

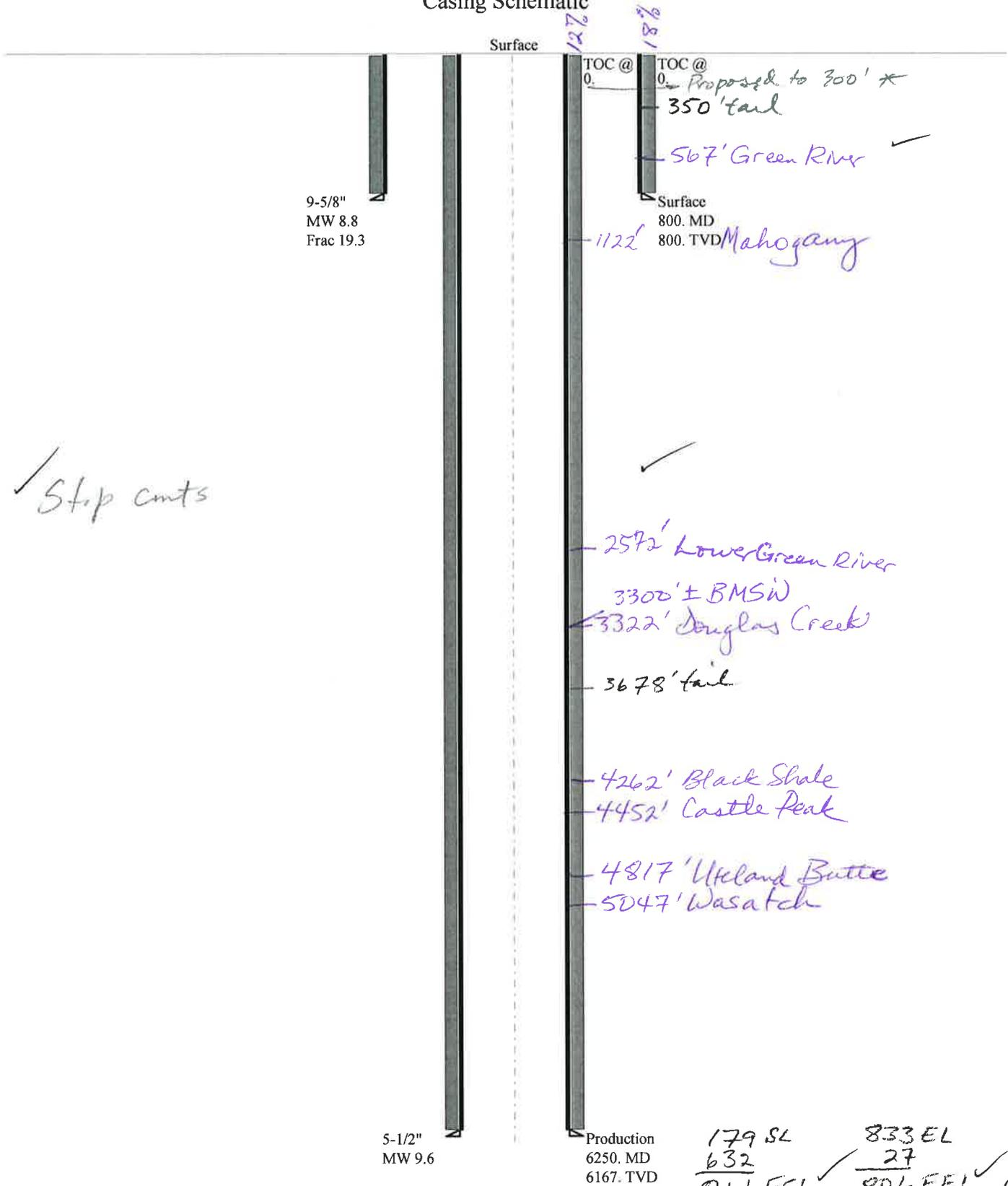
Calculations	Surf String	9.625	"
Max BHP (psi)	.052*Setting Depth*MW=	366	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	270	YES diverter or rotating head
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	190	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	208	NO OK
Required Casing/BOPE Test Pressure=		800	psi
*Max Pressure Allowed @ Previous Casing Shoe=		80	psi *Assumes 1psi/ft frac gradient

Calculations	Prod String	9.625	"
Max BHP (psi)	.052*Setting Depth*MW=	3079	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	2339	YES
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	1722	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	1898	NO Reasonable
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		800	psi *Assumes 1psi/ft frac gradient

Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO
Required Casing/BOPE Test Pressure=			psi
*Max Pressure Allowed @ Previous Casing Shoe=			psi *Assumes 1psi/ft frac gradient

# 43013517960000 LC Fee 16-21D-47

## Casing Schematic



9-5/8"  
MW 8.8  
Frac 19.3

5-1/2"  
MW 9.6

Production  
6250. MD  
6167. TVD

179 SL      833 EL  
 632      27  
 811 FSL ✓      806 FEL ✓ OK  
 SE Sec 21-45-7W

✓ Stop cmts

12 1/2"  
18"  
TOC @ 0  
Proposed to 300' \*  
350' tail  
567' Green River ✓  
Surface  
800. MD  
1122' 800. TVD Mahogany

✓  
2572' Lower Green River  
3300' ± BMSW  
3322' Douglas Creek  
3678' tail  
4262' Black Shale  
4452' Castle Peak  
4817' Uteland Butte  
5047' Wasatch

Well name:	<b>43013517960000 LC Fee 16-21D-47</b>	
Operator:	<b>BILL BARRETT CORP</b>	Project ID:
String type:	Surface	43-013-51796
Location:	DUCHESNE COUNTY	

**Design parameters:**

**Collapse**

Mud weight: 8.800 ppg  
 Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 85 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft

Cement top: Surface

**Burst**

Max anticipated surface pressure: 704 psi  
 Internal gradient: 0.120 psi/ft  
 Calculated BHP 800 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
 8 Round LTC: 1.70 (J)  
 Buttress: 1.60 (J)  
 Premium: 1.50 (J)  
 Body yield: 1.50 (B)

Tension is based on air weight.  
 Neutral point: 696 ft

Completion type is subs  
**Non-directional string.**

**Re subsequent strings:**

Next setting depth: 6,167 ft  
 Next mud weight: 9.200 ppg  
 Next setting BHP: 2,947 psi  
 Fracture mud wt: 19.250 ppg  
 Fracture depth: 800 ft  
 Injection pressure: 800 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	800	9.625	36.00	J-55	ST&C	800	800	8.796	6953
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	366	2020	5.524	800	3520	4.40	28.8	394	13.68 J

Prepared by: Helen Sadik-Macdonald  
 Div of Oil, Gas & Mining

Phone: 801 538-5357  
 FAX: 801-359-3940

Date: January 8, 2013  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 800 ft, a mud weight of 8.8 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	<b>43013517960000 LC Fee 16-21D-47</b>		
Operator:	<b>BILL BARRETT CORP</b>		
String type:	Production	Project ID:	43-013-51796
Location:	DUCHESNE COUNTY		

**Design parameters:****Collapse**

Mud weight: 9.600 ppg  
Design is based on evacuated pipe.

**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 160 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,000 ft

Cement top: Surface

**Burst**

Max anticipated surface pressure: 1,719 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 3,075 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.60 (B)

Tension is based on air weight.  
Neutral point: 5,352 ft

Completion type is subs

**Directional Info - Build & Drop**

Kick-off point 900 ft  
Departure at shoe: 632 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	6250	5.5	17.00	P-110	LT&C	6167	6250	4.767	41168
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	3075	7480	2.432	3075	10640	3.46	104.8	445	4.24 J

Prepared Helen Sadik-Macdonald  
by: Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: January 8, 2013  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 6167 ft, a mud weight of 9.6 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

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**Application for Permit to Drill  
Statement of Basis  
Utah Division of Oil, Gas and Mining**

---

<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
7016	43013517960000	LOCKED	OW	I	No
<b>Operator</b>	BILL BARRETT CORP		<b>Surface Owner-APD</b>		
<b>Well Name</b>	LC Fee 16-21D-47		<b>Unit</b>		
<b>Field</b>	WILDCAT		<b>Type of Work</b>	DRILL	
<b>Location</b>	SESE 21 4S 7W U 179 FSL 833 FEL GPS Coord (UTM) 527819E 4440202N				

**Geologic Statement of Basis**

Bill Barrett proposes to set 80' of conductor and 800' of surface casing at this location. Conductor and surface casing holes will be drilled with a fresh water mud system. The base of the moderately saline water is at approximately 3,300 feet in this area. This location lies on alluvium derived from the Green River Formation. Good aquifers can be found in the Green River Formation and associated alluvium. A search of Division of Water Rights records indicates 6 water wells within a 10,000 foot radius of the proposed location. All wells are located over a mile from the proposed location. These wells produce from depths ranging from 35-200 feet and probably produce from alluvium associated with the Strawberry River. Depth is not listed for 1 well. Listed uses are domestic, irrigation and stock watering. Production casing cement should be brought up above the base of the moderately saline ground water to isolate it from fresher waters uphole.

Brad Hill  
**APD Evaluator**

12/24/2012  
**Date / Time**

**Surface Statement of Basis**

The surface rights at the proposed location are owned by the Ute Tribe. The operator is responsible for obtaining all necessary surface permits and rights-of-way.

Brad Hill  
**Onsite Evaluator**

12/24/2012  
**Date / Time**

**Conditions of Approval / Application for Permit to Drill**

<b>Category</b>	<b>Condition</b>
Surface	None

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 10/19/2012

API NO. ASSIGNED: 43013517960000

WELL NAME: LC Fee 16-21D-47

OPERATOR: BILL BARRETT CORP (N2165)

PHONE NUMBER: 303 312-8172

CONTACT: Venessa Langmacher

PROPOSED LOCATION: SESE 21 040S 070W

Permit Tech Review: 

SURFACE: 0179 FSL 0833 FEL

Engineering Review: 

BOTTOM: 0810 FSL 0810 FEL

Geology Review: 

COUNTY: DUCHESNE

LATITUDE: 40.11166

LONGITUDE: -110.67357

UTM SURF EASTINGS: 527819.00

NORTHINGS: 4440202.00

FIELD NAME: WILDCAT

LEASE TYPE: 4 - Fee

LEASE NUMBER: Fee

PROPOSED PRODUCING FORMATION(S): GREEN RIVER-WASATCH

SURFACE OWNER: 2 - Indian

COALBED METHANE: NO

## RECEIVED AND/OR REVIEWED:

- PLAT
- Bond: STATE - LPM4138148
- Potash
- Oil Shale 190-5
- Oil Shale 190-3
- Oil Shale 190-13
- Water Permit: 43-180
- RDCC Review:
- Fee Surface Agreement
- Intent to Commingle

Commingle Approved

## LOCATION AND SITING:

- R649-2-3.
- Unit:
- R649-3-2. General
- R649-3-3. Exception
- Drilling Unit
- Board Cause No: Cause 139-87
- Effective Date: 12/6/2011
- Siting: 4 Producing Grrv-Wstc Wells In Sec Drl Unit
- R649-3-11. Directional Drill

Comments: Presite Completed

Stipulations: 4 - Federal Approval - dmason  
 5 - Statement of Basis - bhll  
 12 - Cement Volume (3) - hmacdonald  
 15 - Directional - dmason  
 25 - Surface Casing - bhll



GARY R. HERBERT  
Governor

GREGORY S. BELL  
Lieutenant Governor

# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

## Permit To Drill

\*\*\*\*\*

**Well Name:** LC Fee 16-21D-47

**API Well Number:** 43013517960000

**Lease Number:** Fee

**Surface Owner:** INDIAN

**Approval Date:** 2/26/2013

### Issued to:

BILL BARRETT CORP, 1099 18th Street Ste 2300, Denver, CO 80202

### Authority:

Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 139-87. The expected producing formation or pool is the GREEN RIVER-WASATCH Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

### Duration:

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

### Conditions of Approval:

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Cement volume for the 5 1/2 production string shall be determined from actual hole diameter in order to place cement from the pipe setting depth back to 300' MD as indicated in the submitted drilling plan.

Surface casing shall be cemented to the surface.

**Additional Approvals:**

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan - contact Dustin Doucet
- Significant plug back of the well - contact Dustin Doucet
- Plug and abandonment of the well - contact Dustin Doucet

**Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well - contact Carol Daniels  
OR  
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website  
at <http://oilgas.ogm.utah.gov>
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program
  - contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well - contact Dan Jarvis

**Contact Information:**

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office  
801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office  
801-231-8956 - after office hours

**Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) - due within 5 days of spudding the well
- Monthly Status Report (Form 9) - due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) - due prior to implementation
- Written Notice of Emergency Changes (Form 9) - due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) - due prior to implementation
- Report of Water Encountered (Form 7) - due within 30 days after completion
- Well Completion Report (Form 8) - due within 30 days after completion or plugging

Approved By:

**Approved by:**

A handwritten signature in black ink, appearing to read "J. Rogers", written in a cursive style.

For John Rogers  
Associate Director, Oil & Gas

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: Fee
1. TYPE OF WELL Oil Well	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
2. NAME OF OPERATOR: BILL BARRETT CORP	7. UNIT or CA AGREEMENT NAME:
3. ADDRESS OF OPERATOR: 1099 18th Street Ste 2300 , Denver, CO, 80202	8. WELL NAME and NUMBER: LC Fee 16-21D-47
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0179 FSL 0833 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESE Section: 21 Township: 04.0S Range: 07.0W Meridian: U	9. API NUMBER: 43013517960000
PHONE NUMBER: 303 312-8134 Ext	9. FIELD and POOL or WILDCAT: WILDCAT
	COUNTY: DUCHESNE
	STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 2/26/2015	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input checked="" type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

BBC is submitting this sundry to request a one year extension for APD

**Approved by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
 December 03, 2014

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

NAME (PLEASE PRINT) Christina Hirtler	PHONE NUMBER 303 312-8597	TITLE Administrative Assistant
SIGNATURE N/A	DATE 12/1/2014	



**The Utah Division of Oil, Gas, and Mining**

- State of Utah  
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

**Request for Permit Extension Validation Well Number 43013517960000**

API: 43013517960000

Well Name: LC Fee 16-21D-47

Location: 0179 FSL 0833 FEL QTR SESE SEC 21 TWP 040S RNG 070W MER U

Company Permit Issued to: BILL BARRETT CORP

Date Original Permit Issued: 2/26/2013

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- If located on private land, has the ownership changed, if so, has the surface agreement been updated?  Yes  No
  
- Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?  Yes  No
  
- Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?  Yes  No
  
- Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?  Yes  No
  
- Has the approved source of water for drilling changed?  Yes  No
  
- Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?  Yes  No
  
- Is bonding still in place, which covers this proposed well?  Yes  No

Signature: Christina Hirtler

Date: 12/1/2014

Title: Administrative Assistant Representing: BILL BARRETT CORP



GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

March 10, 2016

Bill Barrett  
1099 18th Street, Suite 2300  
Denver, CO 80202

Re: APD Rescinded – LC FEE 16-21D-47, Sec. 21, T. 4S, R. 7W  
Duchesne County, Utah API No. 43-013-51796

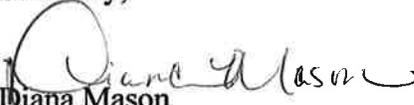
Ladies and Gentlemen:

The Application for Permit to Drill (APD) for the subject well was approved by the Division of Oil, Gas and Mining (Division) on February 26, 2013. On March 19, 2014 and December 3, 2014 the Division granted a one-year APD extension. No drilling activity at this location has been reported to the division. Therefore, approval to drill the well is hereby rescinded, effective March 10, 2016.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

  
Diana Mason  
Environmental Scientist

cc: Well File  
Bureau of Land Management, Vernal