FORM 3

AMENDED REPORT ☐

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

## APPLICATION FOR PERMIT TO DRILL

**1. WELL NAME and NUMBER**
LC Tribal 5-22D-57

**2. TYPE OF WORK**
DRILL NEW WELL ☒ REENTER P&A WELL ☐ DEEPEN WELL ☐

**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**
BERRY PETROLEUM COMPANY

**7. OPERATOR PHONE**
303 999-4044

**8. ADDRESS OF OPERATOR**
4000 South 4028 West Rt 2 Box 7735, Roosevelt, UT, 84066

**9. OPERATOR E-MAIL**
kao@bry.com

**10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)**
2OG0005500

**11. MINERAL OWNERSHIP**
FEDERAL ☐ INDIAN ☒ STATE ☐ FEE ☐

**12. SURFACE OWNERSHIP**
FEDERAL ☐ INDIAN ☐ STATE ☒ FEE ☐

**13. NAME OF SURFACE OWNER (if box 12 = 'fee')**
DWR

**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')**
Ute Indian Tribe

**18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS**
YES ☒ (Submit Commingling Application) NO ☐

**19. SLANT**
VERTICAL ☐ DIRECTIONAL ☒ HORIZONTAL ☐

| 20. LOCATION OF WELL | FOOTAGES | QTR-QTR | SECTION | TOWNSHIP | RANGE | MERIDIAN |
|---|---|---|---|---|---|---|
| LOCATION AT SURFACE | 1833 FSL 1905 FWL | NESW | 22 | 5.0 S | 7.0 W | U |
| Top of Uppermost Producing Zone | 2654 FNL 1241 FWL | SWNW | 22 | 5.0 S | 7.0 W | U |
| At Total Depth | 2242 FNL 924 FWL | SWNW | 22 | 5.0 S | 7.0 W | U |

**21. COUNTY**
DUCHESNE

**22. DISTANCE TO NEAREST LEASE LINE (Feet)**
924

**23. NUMBER OF ACRES IN DRILLING UNIT**
640

**25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)**
20

**26. PROPOSED DEPTH**
MD: 6178 TVD: 5821

**27. ELEVATION - GROUND LEVEL**
6966

**28. BOND NUMBER**
RLB0005647

**29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE**
43-12400

### Hole, Casing, and Cement Information

| String | Hole Size | Casing Size | Length | Weight | Grade & Thread | Max Mud Wt. | Cement | Sacks | Yield | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| Surf | 12.25 | 8.625 | 0 - 800 | 24.0 | J-55 ST&C | 9.5 | Class G | 515 | 1.15 | 15.8 |
| Prod | 7.875 | 5.5 | 0 - 6178 | 17.0 | N-80 LT&C | 9.5 | Type V | 200 | 3.82 | 11.0 |
| | | | | | | | Class G | 340 | 1.7 | 13.1 |

### ATTACHMENTS

**VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES**

- ☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER
- ☑ COMPLETE DRILLING PLAN
- ☑ AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)
- ☐ FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER
- ☑ DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)
- ☑ TOPOGRAPHICAL MAP

| | | |
|---|---|---|
| **NAME** Krista Mecham | **TITLE** Regulatory Permitting Tech | **PHONE** 435 722-1325 |
| **SIGNATURE** | **DATE** 04/06/2013 | **EMAIL** kmm@bry.com |

**API NUMBER ASSIGNED** 43013521330000 **APPROVAL**

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Received: April 10, 2013

BERRY PETROLEUM COMPANY
LC Tribal 5-22D-57
Section 22, T5S, R7W, U.S.B.&M.
Surface: 1833' FSL & 1905' FWL (NE/4SW/4)
BHL: 2242' FNL & 924' FWL (SW/4NW/4)
Duchesne County, Utah

ONSHORE ORDER NO. 1

DRILLING PROGRAM

**A,B Estimated Tops of Geological Markers and Formations Expected to Contain Water, Oil and Gas and Other Minerals**

| FORMATION | DRILL DEPTH * @ SHL (TVD) | DRILL DEPTH* @ BHL (TVD) | Measured Depth |
|---|---|---|---|
| Uinta Fm | Surface | Surface | Surface |
| Green River | 41' | 57' | 41' |
| Green River Fouch Marker | 591' | 607' | 591' |
| Mahogany | 1114' | 1121' | 1120' |
| Tgr3 | 2193' | 2204' | 2342' |
| *Douglas Creek | 2993' | 3006' | 3269' |
| Black Shale | 3658' | 3677' | 4010' |
| *Castle Peak | 3942' | 3956' | 4306' |
| *Uteland Butte | 4292' | 4304' | 4661' |
| *Wasatch | 4509' | 4521' | 4878' |
| CR-6 (base U Wasatch) | 5709' | 5721' | 6078' |
| TD | 5809' | 5821' | 6178' |
| Base of Moderate Saline Water | 5000' | 5000' | |

*PROSPECTIVE PAY

**Berry is locating the well at the proposed surface location and directionally drilling to the proposed bottom hole location. By drilling directionally, Berry Petroleum Company will improve field development efficiency by potentially combining multiple surface hole locations together. This will significantly reduce total surface disturbance plus combine the use of access roads and existing pipelines.**
**Furthermore, Berry hereby certifies that it is the sole working interest owner with 460 feet of the entire directional well bore and the remainder of the Ute Tribal section.**

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Received: April 06, 2013

**C Pressure Control Equipment :** (Schematic Attached)

The BOP and related equipment shall meet the minimum requirements of Onshore Oil and Gas Order No. 2 for equipment and testing requirements, procedures, etc. A 3M system will be utilized. The attached diagram depicts the use of an annular in conjunction with double rams. However, an annular, double rams or both may be used depending on the drilling rig contracted.

Chart recorders will be used for all pressure tests.

Test charts, with individual test results identified, shall be maintained on location while drilling and shall be made available to a representative upon request.

Mud volumes will be monitored visually.
Upper and Lower Kelly cocks will be utilized.
A gas buster will be utilized, if necessary.

| Depth Intervals | BOP Equipment |
|---|---|
| 0 – 800' | No Pressure Control |
| 800' – 6178' | 11" 3000# Ram Type BOP<br>11" 3000# Annular BOP |

**D,E Proposed Casing and Cementing Program**

| Purpose | Depth | Hole Size | Casing Size | Type | Connection | Weight |
|---|---|---|---|---|---|---|
| Surface | 800' | 12.25" | 8-5/8" | J-55 | ST&C | 24# |
| Production | 6178' | 7.875" | 5-1/2" | N-80 or LIDA-80 | LT&C | 17# |

| Surface | Type & Amount |
|---|---|
| 0' – 800' | Approx. 515 SX Premium Class G, plus additives or a similar slurry with a minimum weight of 15.8 #/gal and approximate yield of 1.15 cuft/sx, minimum 24 hr compressive strength = 500 psi (Cement will be circulated to surface and topped off, if necessary.) |

| Production | Type & Amount |
|---|---|
| 0' – 3500' | Lead: +/- 200 sx Premium Type V + additives or similar slurry with a minimum weight of 11.0 #/gal and approximate yield of 3.82 cuft/sx |
| 3500' – 6178' | Tail: +/- 340 sx Premium Class G + additives or similar slurry with a minimum weight of 13.1 #/gal and approximate yield of 1.70cuft/sk. |

For production casing, actual cement volumes will be determined from the caliper log plus a minimum of 15% excess.

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Received: April 06, 2013

## F Drilling Fluids Program

| Interval | Weight | Viscosity | Fluid Loss | Remarks |
|---|---|---|---|---|
| 0' – 800' | 8.4 – 9.5 | 27 | NC | DAP Mud |
| 800'-6178' | 8.4 – 9.5 | 27 | NC | DAP Water |

## G Evaluation Program

| | |
|---|---|
| Logging Program: | HRI-GR-SP with SDL-DSN-PE: surface casing to TD. Preserve samples from all show intervals. |
| Sampling: | 10' dry cut samples: Douglas Creek to TD. Preserve samples From all show intervals. |
| Surveys: | As deemed necessary |
| Mud Logger: | As deemed necessary |
| Drill Stem Tests: | As deemed necessary |
| Cores: | As deemed necessary |

## H Anticipated Abnormal Pressures or Temperatures

No abnormal temperatures or pressures or other hazards are anticipated.

Shallow gas and/or water flows are possible below surface casing.

Maximum anticipated bottom hole pressure equals approximately 3052 psi* and maximum anticipated surface pressure equals approximately 1693**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 – (0.22xTD)

## I Anticipated Starting Dates and Notification of Operations

Drilling Activity:

| | |
|---|---|
| Anticipated Commencement Date: | Upon approval of the APD. |
| Drilling Days: | Approximately 10 days. |
| Completion Days: | Approximately 7 days. |

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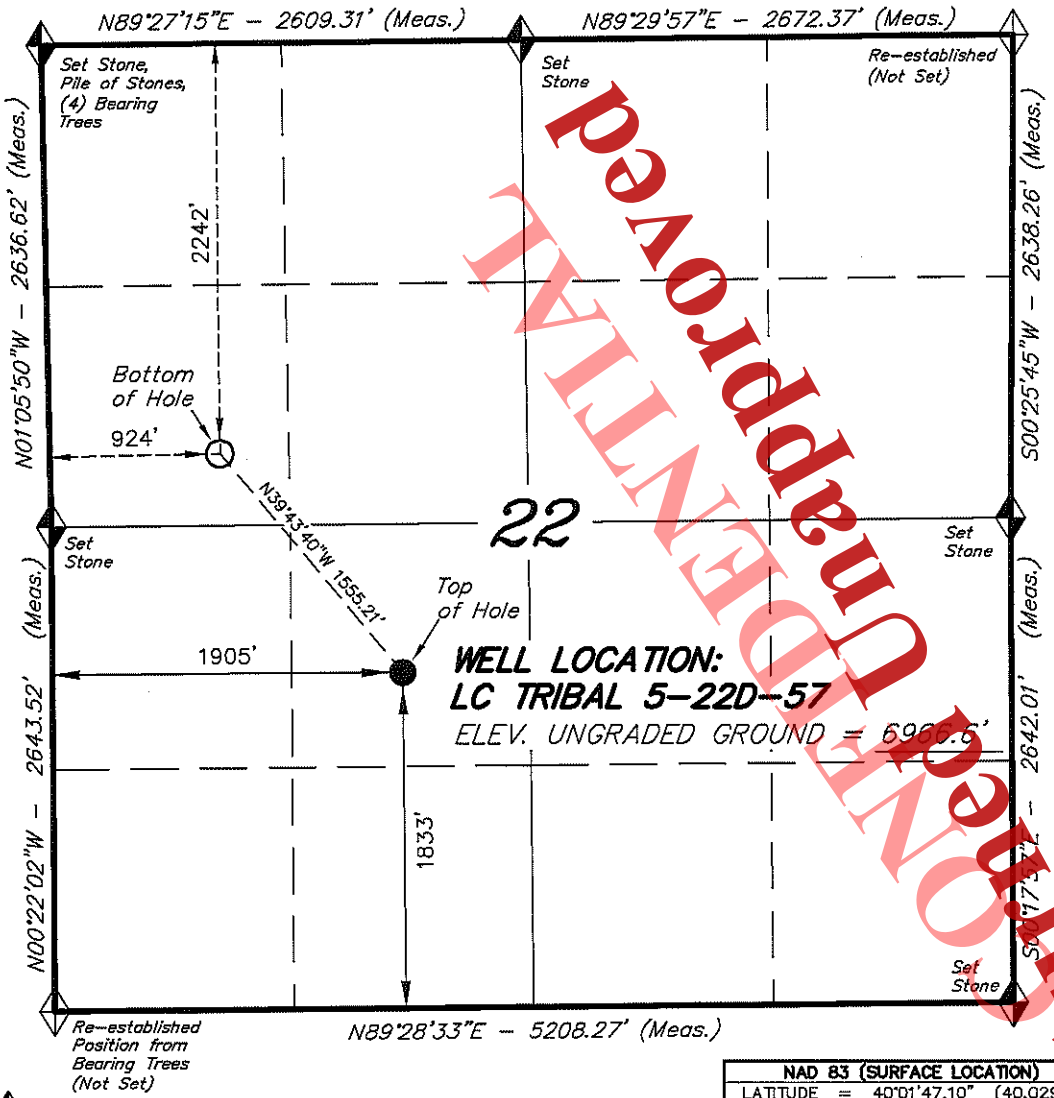
Received: April 06, 2013

# T5S, R7W, U.S.B.&M.




= SECTION CORNERS LOCATED

BASIS OF ELEV; Elevations are base on an N.G.S. OPUS Correction. LOCATION: LAT. 39°58'55.06" LONG. 110°22'05.00" (Tristate Aluminum Cap) Elev. 7307.99'

| NAD 83 (SURFACE LOCATION) | | |
|---|---|---|
| LATITUDE = | 40°01'47.10" | (40.029750) |
| LONGITUDE = | 110°39'37.42" | (110.660394) |
| **NAD 27 (SURFACE LOCATION)** | | |
| LATITUDE = | 40°01'47.25" | (40.029790) |
| LONGITUDE = | 110°39'34.86" | (110.659683) |
| **NAD 83 (BOTTOM HOLE LOCATION)** | | |
| LATITUDE = | 40°01'59.01" | (40.033058) |
| LONGITUDE = | 110°39'50.05" | (110.663902) |
| **NAD 27 (BOTTOM HOLE LOCATION)** | | |
| LATITUDE = | 40°01'59.15" | (40.033098) |
| LONGITUDE = | 110°39'47.49" | (110.663191) |

## BERRY PETROLEUM COMPANY

WELL LOCATION, LC TRIBAL 5–22D–57, LOCATED AS SHOWN IN THE NE 1/4 SW 1/4 OF SECTION 22, T5S, R7W, U.S.B.&M. DUCHESNE COUNTY, UTAH.

1000' 500' 0' 1000'
BAR SCALE

N

**NOTES:**
1. Well footages are measured at right angles to the Section Lines.
2. Bearings are based on Global Positioning Satellite observations.

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.

REGISTERED LAND SURVEYOR
REGISTRATION No. 189377
STATE OF UTAH

REGISTERED LAND SURVEYOR No.189377 06-06-12 STACY W. STEWART STATE OF UTAH

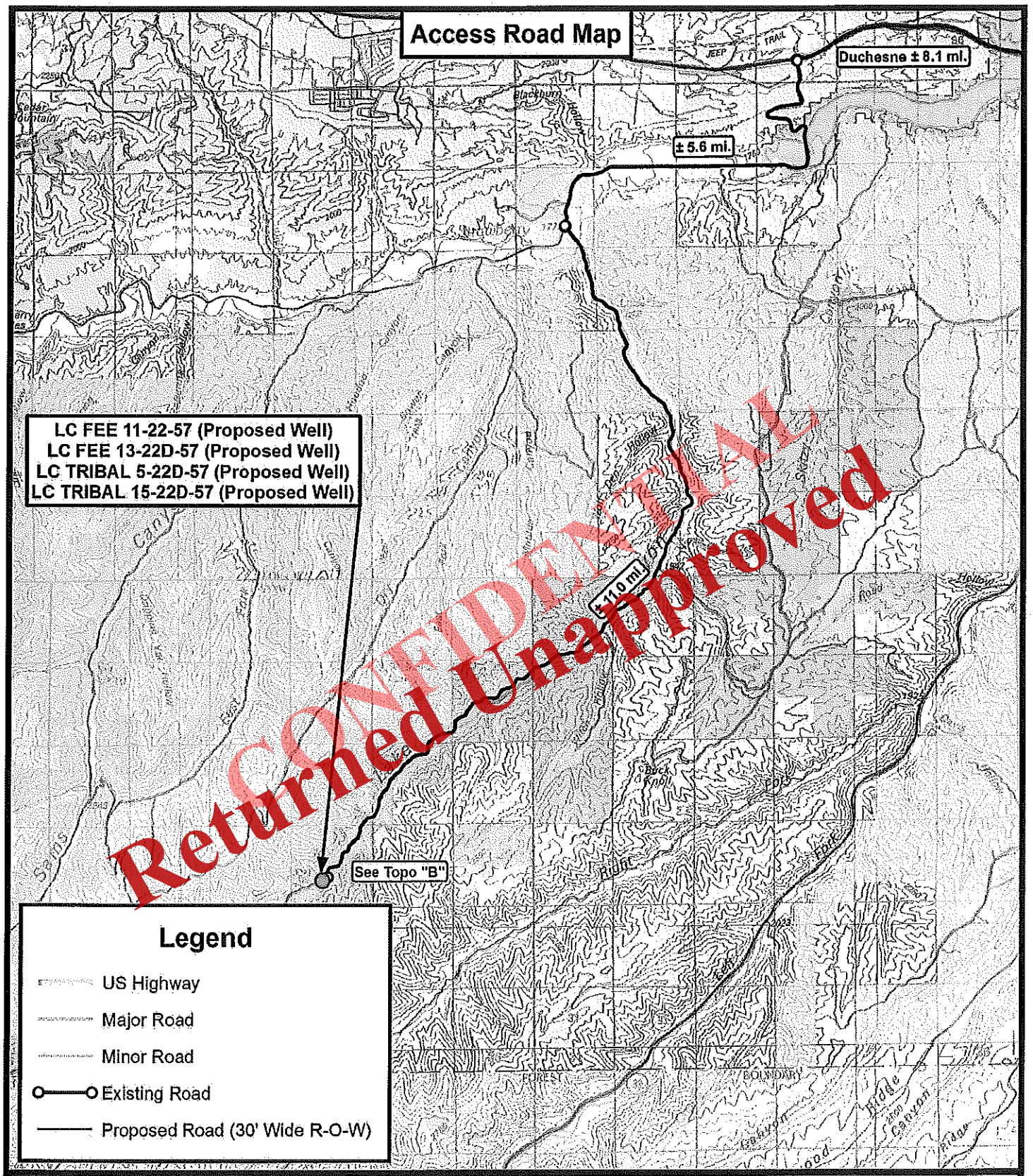
05-11-11

**TRI STATE LAND SURVEYING & CONSULTING**
180 NORTH VERNAL AVE. – VERNAL, UTAH 84078
(435) 781-2501

| | |
|---|---|
| DATE SURVEYED: 05-30-12 | SURVEYED BY: K.G.S. |
| DATE DRAWN: 06-06-12 | DRAWN BY: L.C.S. |
| REVISED: | SCALE: 1" = 1000' |

Results Unapproved
CONFIDENTIAL

Received: April 06, 2013

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Tri State
Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
P: (435) 781-2501
F: (435) 781-2518

N

**BERRY PETROLEUM COMPANY**
LC FEE 11-22-57, 13-22D-57 (Proposed Well)
LC TRIBAL 5-22D-57, 15-22D-57 (Proposed Well)
SEC. 22, T5S, R7W, U.S.B.&M.
Duchesne County, UT.

| | |
|---|---|
| DRAWN BY: | J.A.S. |
| DATE: | 06-11-2012 |
| SCALE: | 1:100,000 |

TOPOGRAPHIC MAP

SHEET A

Received: April 06, 2013

# Well Planning Proposal

FOR

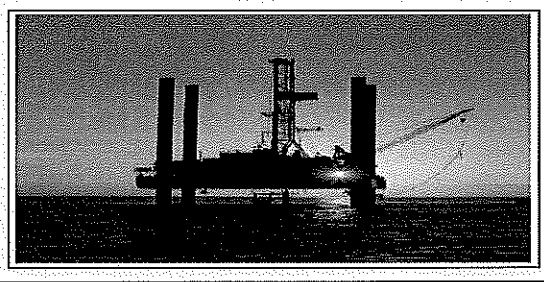
Berry Petroleum Co.
LC Tribal 5-22D-57
Duchesne Co., UT

Well File: Design #1 (11/2/12)

Presented By:

Pat Rasmussen
Regional Manager

Bret Wolford
Well Planner



Sharewell Energy Services

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Received: April 06, 2013

# Berry Petroleum Company

Project: Duchesne Co., UT (UT27C)
Site: Sec.22-T5S-R7W
Well: LC Tribal 5-22D-57
Wellbore: Wellbore #1
Design: Design #1
Latitude: 40° 1' 47.244 N
Longitude: 110° 39' 34.859 W
Ground Level: 6968.00
WELL @ 6988.00usft

Sharewell Energy Services

**WELL DETAILS: LC Tribal 5-22D-57**

Ground Level: 6968.00

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 619001.462 | 2235303.675 | 40° 1' 47.244 N | 110° 39' 34.859 W | |

**WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)**

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|
| LCT 5-22D-57 Box | 5821.00 | 1457.87 | -1277.22 | 40° 2' 1.662 N | 110° 39' 51.280 W | Polygon |
| LCT 5-22D-57 Tgt | 5821.00 | 1196.32 | -993.68 | 40° 1' 59.067 N | 110° 39' 47.634 W | Circle (Radius: 100.00) |

**SECTION DETAILS**

| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Annotation |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 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 | Start Build 3.00 |
| 1598.96 | 29.97 | 320.29 | 1554.03 | 196.43 | -163.16 | 3.00 | 320.29 | 255.36 | Start 1835.30 hold at 1598.96 MD |
| 3434.27 | 29.97 | 320.29 | 3143.95 | 901.67 | -748.94 | 0.00 | 0.00 | 1172.15 | Start Drop -2.00 |
| 4932.72 | 0.00 | 0.00 | 4575.00 | 1196.32 | -993.68 | 2.00 | 180.00 | 1555.18 | Start 1246.00 hold at 4932.72 MD |
| 6178.72 | 0.00 | 0.00 | 5821.00 | 1196.32 | -993.68 | 0.00 | 0.00 | 1555.18 | TD at 6178.72 |

**PROJECT DETAILS: Duchesne Co., UT (UT27C)**

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Utah Central 4302

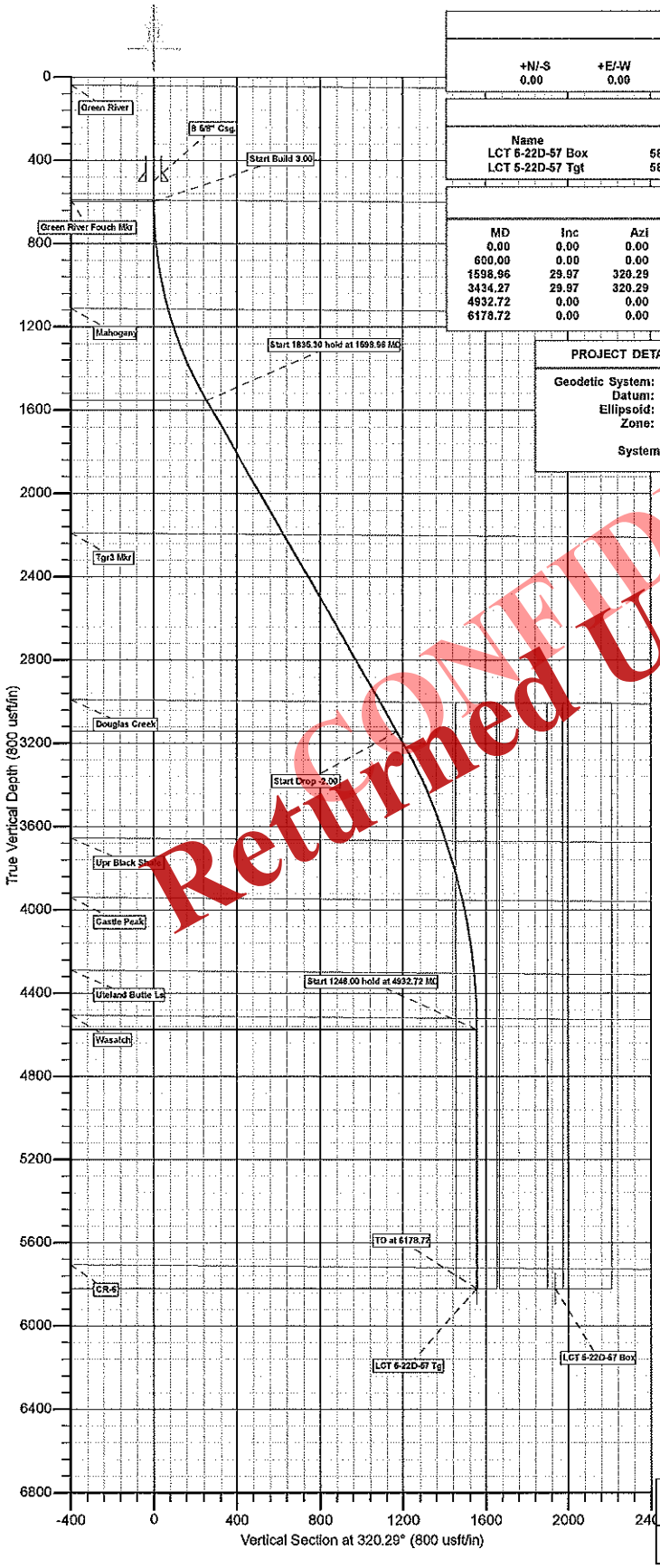
System Datum: Mean Sea Level

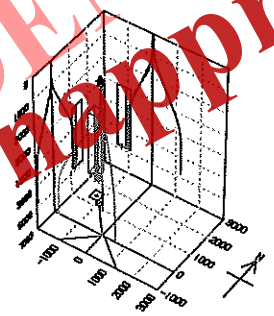
**REFERENCE INFORMATION**

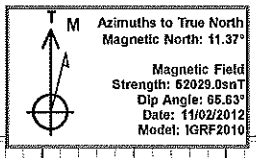
Co-ordinate (N/E) Reference: Well LC Tribal 5-22D-57, True North
Vertical (TVD) Reference: WELL @ 6988.00usft
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: WELL @ 6988.00usft
Calculation Method: Minimum Curvature

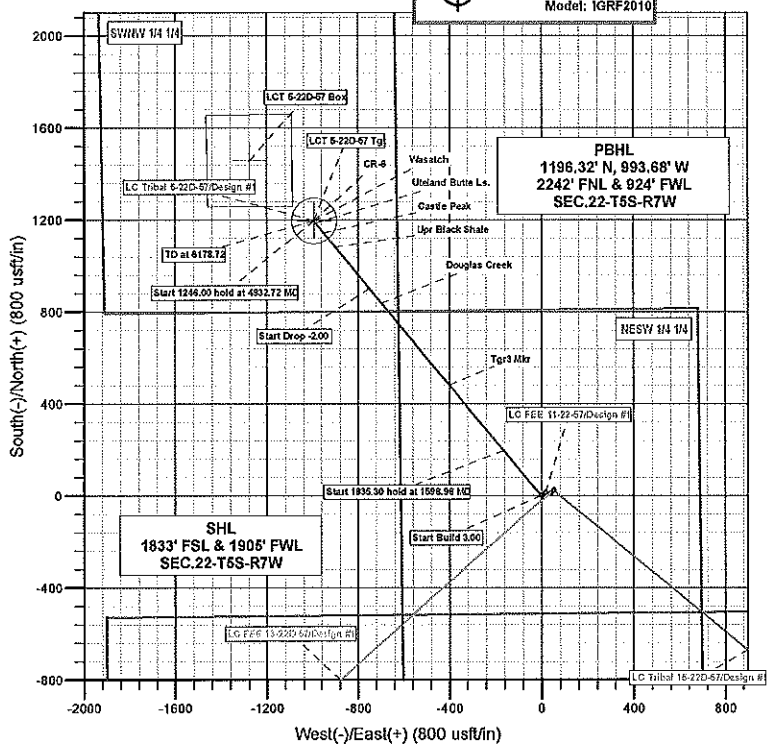
**FORMATION TOP DETAILS**

| TVDPath | MDPath | Formation |
|---|---|---|
| 41.00 | 41.00 | Green River |
| 591.00 | 591.00 | Green River Fouch Mkr |
| 1114.54 | 1120.98 | Mahogany |
| 2197.81 | 2342.10 | Tgr3 Mkr |
| 3001.37 | 3269.68 | Douglas Creek |
| 3668.81 | 4010.69 | Upr Black Shale |
| 3953.42 | 4306.15 | Castle Peak |
| 4303.84 | 4661.15 | Uteland Butte Ls. |
| 4520.94 | 4878.66 | Wasatch |
| 5720.94 | 6078.66 | CR-6 |






Plan: Design #1 (LC Tribal 5-22D-57/Wellbore #1)

Created By: BRET WOLFORD Date: 15:56, November 02 2012

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Returned Unapproved

Received: April 06, 2013

# Berry Petroleum Company

**Duchesne Co., UT (UT27C)**
**Sec.22-T5S-R7W**
**LC Tribal 5-22D-57**

**Wellbore #1**

**Plan: Design #1**

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# Standard Planning Report

**02 November, 2012**

Sharewell
Energy Services

**Received:** April 06, 2013

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Company:** | Berry Petroleum Company | **TVD Reference:** | WELL @ 6988.00usft |
| **Project:** | Duchesne Co., UT (UT27C) | **MD Reference:** | WELL @ 6988.00usft |
| **Site:** | Sec.22-T5S-R7W | **North Reference:** | True |
| **Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Project** Duchesne Co., UT (UT27C)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Utah Central 4302 | | |

**Site** Sec.22-T5S-R7W

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 619,025.997 usft | **Latitude:** | 40° 1' 47.482 N |
| **From:** | Lat/Long | **Easting:** | 2,235,355.251 usft | **Longitude:** | 110° 39' 34.193 W |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13-3/16" | **Grid Convergence:** | 0.54 ° |

**Well** LC Tribal 5-22D-57

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | -24.05 usft | **Northing:** | 619,001.462 usft | **Latitude:** | 40° 1' 47.244 N |
| | **+E/-W** | -51.80 usft | **Easting:** | 2,235,303.675 usft | **Longitude:** | 110° 39' 34.859 W |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 6,968.00 usft |

**Wellbore** Wellbore #1

| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
|---|---|---|---|---|---|
| | IGRF2010 | 11/02/12 | 11.37 | 65.63 | 52,029 |

**Design** Design #1

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.00 |

| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 320.29 |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | 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 | |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,598.96 | 29.97 | 320.29 | 1,554.03 | 196.43 | -163.16 | 3.00 | 3.00 | 0.00 | 320.29 | |
| 3,434.27 | 29.97 | 320.29 | 3,143.95 | 901.67 | -748.94 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4,932.72 | 0.00 | 0.00 | 4,575.00 | 1,196.32 | -993.68 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 6,178.72 | 0.00 | 0.00 | 5,821.00 | 1,196.32 | -993.68 | 0.00 | 0.00 | 0.00 | 0.00 | |

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Returned Unapproved



Received: April 06, 2013

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Company:** | Berry Petroleum Company | **TVD Reference:** | WELL @ 6988.00usft |
| **Project:** | Duchesne Co., UT (UT27C) | **MD Reference:** | WELL @ 6988.00usft |
| **Site:** | Sec.22-T5S-R7W | **North Reference:** | True |
| **Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | 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 |
| **Green River** | | | | | | | | | |
| 41.00 | 0.00 | 0.00 | 41.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 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 |
| 300.00 | 0.00 | 0.00 | 300.00 | 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 |
| **8 5/8" Csg.** | | | | | | | | | |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Green River Fouch Mkr** | | | | | | | | | |
| 591.00 | 0.00 | 0.00 | 591.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Start Build 3.00** | | | | | | | | | |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 3.00 | 320.29 | 699.95 | 2.01 | -1.67 | 2.62 | 3.00 | 3.00 | 0.00 |
| 800.00 | 6.00 | 320.29 | 799.63 | 8.05 | -6.68 | 10.46 | 3.00 | 3.00 | 0.00 |
| 900.00 | 9.00 | 320.29 | 898.77 | 18.09 | -15.02 | 23.51 | 3.00 | 3.00 | 0.00 |
| 1,000.00 | 12.00 | 320.29 | 997.08 | 32.10 | -26.67 | 41.74 | 3.00 | 3.00 | 0.00 |
| 1,100.00 | 15.00 | 320.29 | 1,094.31 | 50.06 | -41.58 | 65.08 | 3.00 | 3.00 | 0.00 |
| **Mahogany** | | | | | | | | | |
| 1,120.98 | 15.63 | 320.29 | 1,114.54 | 54.32 | -45.12 | 70.62 | 3.00 | 3.00 | 0.00 |
| 1,200.00 | 18.00 | 320.29 | 1,190.18 | 71.91 | -59.73 | 93.48 | 3.00 | 3.00 | 0.00 |
| 1,300.00 | 21.00 | 320.29 | 1,284.43 | 97.58 | -81.05 | 126.85 | 3.00 | 3.00 | 0.00 |
| 1,400.00 | 24.00 | 320.29 | 1,376.81 | 127.02 | -105.50 | 165.12 | 3.00 | 3.00 | 0.00 |
| 1,500.00 | 27.00 | 320.29 | 1,467.06 | 160.13 | -133.01 | 208.16 | 3.00 | 3.00 | 0.00 |
| **Start 1835.30 hold at 1598.96 MD** | | | | | | | | | |
| 1,598.96 | 29.97 | 320.29 | 1,554.03 | 196.43 | -163.16 | 255.36 | 3.00 | 3.00 | 0.00 |
| 1,600.00 | 29.97 | 320.29 | 1,554.93 | 196.83 | -163.49 | 255.87 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 29.97 | 320.29 | 1,641.56 | 235.26 | -195.41 | 305.83 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 29.97 | 320.29 | 1,728.19 | 273.68 | -227.32 | 355.78 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 29.97 | 320.29 | 1,814.82 | 312.11 | -259.24 | 405.73 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 29.97 | 320.29 | 1,901.45 | 350.53 | -291.16 | 455.68 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 29.97 | 320.29 | 1,988.08 | 388.96 | -323.08 | 505.64 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 29.97 | 320.29 | 2,074.71 | 427.39 | -354.99 | 555.59 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 29.97 | 320.29 | 2,161.34 | 465.81 | -386.91 | 605.54 | 0.00 | 0.00 | 0.00 |
| **Tgr3 Mkr** | | | | | | | | | |
| 2,342.10 | 29.97 | 320.29 | 2,197.81 | 481.99 | -400.35 | 626.58 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 29.97 | 320.29 | 2,247.97 | 504.24 | -418.83 | 655.50 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 29.97 | 320.29 | 2,334.60 | 542.67 | -450.75 | 705.45 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 29.97 | 320.29 | 2,421.23 | 581.09 | -482.66 | 755.40 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 29.97 | 320.29 | 2,507.86 | 619.52 | -514.58 | 805.36 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 29.97 | 320.29 | 2,594.49 | 657.95 | -546.50 | 855.31 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 29.97 | 320.29 | 2,681.11 | 696.37 | -578.42 | 905.26 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 29.97 | 320.29 | 2,767.74 | 734.80 | -610.33 | 955.22 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 29.97 | 320.29 | 2,854.37 | 773.22 | -642.25 | 1,005.17 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 29.97 | 320.29 | 2,941.00 | 811.65 | -674.17 | 1,055.12 | 0.00 | 0.00 | 0.00 |
| **Douglas Creek** | | | | | | | | | |
| 3,269.68 | 29.97 | 320.29 | 3,001.37 | 838.43 | -696.41 | 1,089.93 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 29.97 | 320.29 | 3,027.63 | 850.08 | -706.09 | 1,105.07 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 29.97 | 320.29 | 3,114.26 | 888.50 | -738.00 | 1,155.03 | 0.00 | 0.00 | 0.00 |
| **Start Drop -2.00** | | | | | | | | | |
| 3,434.27 | 29.97 | 320.29 | 3,143.95 | 901.67 | -748.94 | 1,172.15 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 28.65 | 320.29 | 3,201.26 | 926.43 | -769.50 | 1,204.32 | 2.00 | -2.00 | 0.00 |
| 3,600.00 | 26.65 | 320.29 | 3,289.84 | 962.13 | -799.16 | 1,250.74 | 2.00 | -2.00 | 0.00 |

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Received: April 06, 2013

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Company:** | Berry Petroleum Company | **TVD Reference:** | WELL @ 6988.00usft |
| **Project:** | Duchesne Co., UT (UT27C) | **MD Reference:** | WELL @ 6988.00usft |
| **Site:** | Sec.22-T5S-R7W | **North Reference:** | True |
| **Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 3,700.00 | 24.65 | 320.29 | 3,379.97 | 995.43 | -826.82 | 1,294.03 | 2.00 | -2.00 | 0.00 |
| 3,800.00 | 22.65 | 320.29 | 3,471.57 | 1,026.29 | -852.45 | 1,334.15 | 2.00 | -2.00 | 0.00 |
| 3,900.00 | 20.65 | 320.29 | 3,564.51 | 1,054.68 | -876.03 | 1,371.05 | 2.00 | -2.00 | 0.00 |
| 4,000.00 | 18.65 | 320.29 | 3,658.67 | 1,080.55 | -897.52 | 1,404.68 | 2.00 | -2.00 | 0.00 |
| **Upr Black Shale** | | | | | | | | | |
| 4,010.69 | 18.44 | 320.29 | 3,668.81 | 1,083.16 | -899.69 | 1,408.08 | 2.00 | -2.00 | 0.00 |
| 4,100.00 | 16.65 | 320.29 | 3,753.96 | 1,103.88 | -916.89 | 1,435.00 | 2.00 | -2.00 | 0.00 |
| 4,200.00 | 14.65 | 320.29 | 3,850.25 | 1,124.63 | -934.13 | 1,461.99 | 2.00 | -2.00 | 0.00 |
| 4,300.00 | 12.65 | 320.29 | 3,947.41 | 1,142.79 | -949.22 | 1,485.59 | 2.00 | -2.00 | 0.00 |
| **Castle Peak** | | | | | | | | | |
| 4,306.15 | 12.53 | 320.29 | 3,953.42 | 1,143.82 | -950.07 | 1,486.93 | 2.00 | -2.00 | 0.00 |
| 4,400.00 | 10.65 | 320.29 | 4,045.35 | 1,158.33 | -962.12 | 1,505.79 | 2.00 | -2.00 | 0.00 |
| 4,500.00 | 8.65 | 320.29 | 4,143.93 | 1,171.23 | -972.84 | 1,522.53 | 2.00 | -2.00 | 0.00 |
| 4,600.00 | 6.65 | 320.29 | 4,243.03 | 1,181.47 | -981.35 | 1,535.88 | 2.00 | -2.00 | 0.00 |
| **Uteland Butte Ls.** | | | | | | | | | |
| 4,661.15 | 5.43 | 320.29 | 4,303.84 | 1,186.43 | -985.46 | 1,542.32 | 2.00 | -2.00 | 0.00 |
| 4,700.00 | 4.65 | 320.29 | 4,342.54 | 1,188.05 | -987.64 | 1,545.73 | 2.00 | -2.00 | 0.00 |
| 4,800.00 | 2.65 | 320.29 | 4,442.33 | 1,193.96 | -991.72 | 1,552.11 | 2.00 | -2.00 | 0.00 |
| **Wasatch** | | | | | | | | | |
| 4,878.65 | 1.08 | 320.29 | 4,520.94 | 1,195.93 | -993.35 | 1,554.67 | 2.00 | -2.00 | 0.00 |
| 4,900.00 | 0.65 | 320.29 | 4,542.28 | 1,196.18 | -993.56 | 1,554.99 | 2.00 | -2.00 | 0.00 |
| **Start 1246.00 hold at 4932.72 MD** | | | | | | | | | |
| 4,932.72 | 0.00 | 0.00 | 4,575.00 | 1,196.32 | -993.68 | 1,555.18 | 2.00 | -2.00 | 0.00 |
| 5,000.00 | 0.00 | 0.00 | 4,642.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 0.00 | 0.00 | 4,742.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 0.00 | 0.00 | 4,842.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 0.00 | 0.00 | 4,942.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 0.00 | 0.00 | 5,042.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 0.00 | 0.00 | 5,142.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 0.00 | 0.00 | 5,242.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 0.00 | 0.00 | 5,342.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 0.00 | 0.00 | 5,442.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 0.00 | 0.00 | 5,542.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 0.00 | 0.00 | 5,642.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| **CR-6** | | | | | | | | | |
| 6,078.66 | 0.00 | 0.00 | 5,720.94 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 5,742.28 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |
| **TD at 6178.72 - LCT 5-22D-57 Box - LCT 5-22D-57 Tgt** | | | | | | | | | |
| 6,178.72 | 0.00 | 0.00 | 5,821.00 | 1,196.32 | -993.68 | 1,555.18 | 0.00 | 0.00 | 0.00 |

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Received: April 06, 2013

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Company:** | Berry Petroleum Company | **TVD Reference:** | WELL @ 6988.00usft |
| **Project:** | Duchesne Co., UT (UT27C) | **MD Reference:** | WELL @ 6988.00usft |
| **Site:** | Sec.22-T5S-R7W | **North Reference:** | True |
| **Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| LCT 5-22D-57 Box | 0.00 | 0.00 | 5,821.00 | 1,457.87 | -1,277.22 | 620,447.269 | 2,234,012.815 | 40° 2' 1.652 N | 110° 39' 51.280 W |
| - plan misses target center by 385.75usft at 6178.72usft MD (5821.00 TVD, 1196.32 N, -993.68 E) | | | | | | | | | |
| - Polygon | | | | | | | | | |
| Point 1 | | | 5,821.00 | 197.50 | -189.30 | 620,642.98 | 2,233,821.67 | | |
| Point 2 | | | 5,821.00 | 200.80 | 183.10 | 620,649.78 | 2,234,194.02 | | |
| Point 3 | | | 5,821.00 | -197.50 | 188.00 | 620,251.54 | 2,234,202.66 | | |
| Point 4 | | | 5,821.00 | -200.80 | -181.70 | 620,244.77 | 2,233,833.01 | | |
| LCT 5-22D-57 Tgt | 0.00 | 0.00 | 5,821.00 | 1,196.32 | -993.68 | 620,188.394 | 2,234,298.800 | 40° 1' 59.967 N | 110° 39' 47.634 W |
| - plan hits target center | | | | | | | | | |
| - Circle (radius 100.00) | | | | | | | | | |

**Casing Points**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
|---|---|---|---|---|
| 500.00 | 500.00 | 8 5/8" Csg. | 8-5/8 | 11 |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 41.00 | 41.00 | Green River | | 0.44 | 320.29 |
| 591.00 | 591.00 | Green River Fouch Mkr | | 0.44 | 320.29 |
| 1,120.98 | 1,114.00 | Mahogany | | 0.44 | 320.29 |
| 2,342.10 | 2,193.00 | Tgr3 Mkr | | 0.44 | 320.29 |
| 3,269.68 | 2,993.00 | Douglas Creek | | 0.44 | 320.29 |
| 4,010.69 | 3,658.00 | Upr Black Shale | | 0.44 | 320.29 |
| 4,306.15 | 3,942.00 | Castle Peak | | 0.44 | 320.29 |
| 4,661.15 | 4,292.00 | Uteland Butte Ls. | | 0.44 | 320.29 |
| 4,878.65 | 4,509.00 | Wasatch | | 0.44 | 320.29 |
| 6,078.66 | 5,709.00 | CR-6 | | 0.44 | 320.29 |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 600.00 | 600.00 | 0.00 | 0.00 | Start Build 3.00 |
| 1,598.96 | 1,554.03 | 196.43 | -163.16 | Start 1835.30 hold at 1598.96 MD |
| 3,434.27 | 3,143.95 | 901.67 | -748.94 | Start Drop -2.00 |
| 4,932.72 | 4,575.00 | 1,196.32 | -993.68 | Start 1246.00 hold at 4932.72 MD |
| 6,178.72 | 5,821.00 | 1,196.32 | -993.68 | TD at 6178.72 |

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Received: April 06, 2013

# Berry Petroleum Company

**Duchesne Co., UT (UT27C)**
**Sec.22-T5S-R7W**
**LC Tribal 5-22D-57**

**Wellbore #1**
**Design #1**

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# Anticollision Report

**02 November, 2012**

Sharewell
Energy Services

Received: April 06, 2013

# Sharewell Energy Services

Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Reference** Design #1

| | | | |
|---|---|---|---|
| **Filter type:** | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| **Interpolation Method:** | Stations | **Error Model:** | ISCWSA |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 9,999.98 usft | **Error Surface:** | Elliptical Conic |
| **Warning Levels Evaluated at:** | 2.00 Sigma | **Casing Method:** | Not applied |

**Survey Tool Program** **Date** 11/02/12

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.00 | 6,178.72 | Design #1 (Wellbore #1) | MWD | MWD - Standard |

**Summary**

| Site Name / Offset Well - Wellbore - Design | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| Sec.22-T5S-R7W | | | | | | |
| LC FEE 11-22-57 - Wellbore #1 - Design #1 | 633.89 | 633.88 | 20.23 | 17.65 | 7.842 | CC |
| LC FEE 11-22-57 - Wellbore #1 - Design #1 | 700.00 | 699.95 | 20.36 | 17.49 | 7.085 | ES |
| LC FEE 11-22-57 - Wellbore #1 - Design #1 | 800.00 | 799.63 | 22.66 | 19.33 | 6.815 | SF |
| LC FEE 13-22D-57 - Wellbore #1 - Design #1 | 600.00 | 600.00 | 38.11 | 35.69 | 15.701 | CC, ES |
| LC FEE 13-22D-57 - Wellbore #1 - Design #1 | 900.00 | 901.46 | 46.75 | 43.03 | 12.572 | SF |
| LC Tribal 15-22D-57 - Wellbore #1 - Design #1 | 600.00 | 600.00 | 57.11 | 54.68 | 23.527 | CC, ES |
| LC Tribal 15-22D-57 - Wellbore #1 - Design #1 | 800.00 | 795.34 | 67.08 | 63.80 | 20.462 | SF |

**Offset Design** Sec.22-T5S-R7W - LC FEE 11-22-57 - Wellbore #1 - Design #1

**Survey Program:** 1-MWD

**Offset Site Error:** 0.00 usft

**Offset Well Error:** 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 49.59 | 13.11 | 15.40 | 20.23 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.09 | 0.09 | 49.59 | 13.11 | 15.40 | 20.23 | 20.05 | 0.18 | 112.491 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.31 | 0.31 | 49.59 | 13.11 | 15.40 | 20.23 | 19.60 | 0.63 | 32.140 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.54 | 0.54 | 49.59 | 13.11 | 15.40 | 20.23 | 19.15 | 1.08 | 18.748 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.76 | 0.76 | 49.59 | 13.11 | 15.40 | 20.23 | 18.70 | 1.53 | 13.234 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 49.59 | 13.11 | 15.40 | 20.23 | 18.25 | 1.98 | 10.226 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.21 | 1.21 | 49.59 | 13.11 | 15.40 | 20.23 | 17.80 | 2.43 | 8.333 | |
| 633.89 | 633.88 | 633.88 | 633.88 | 1.29 | 1.29 | 90.15 | 13.11 | 15.40 | 20.23 | 17.65 | 2.58 | 7.842 | CC |
| 700.00 | 699.95 | 699.95 | 699.95 | 1.44 | 1.44 | 98.68 | 13.11 | 15.40 | 20.36 | 17.49 | 2.87 | 7.085 | ES |
| 800.00 | 799.63 | 799.63 | 799.63 | 1.67 | 1.66 | 116.67 | 13.11 | 15.40 | 22.66 | 19.33 | 3.32 | 6.815 | SF |
| 900.00 | 898.77 | 898.77 | 898.77 | 1.93 | 1.89 | 138.65 | 13.11 | 15.40 | 30.83 | 27.05 | 3.78 | 8.155 | |
| 1,000.00 | 997.08 | 997.08 | 997.08 | 2.23 | 2.11 | 153.51 | 13.11 | 15.40 | 46.16 | 41.93 | 4.23 | 10.918 | |
| 1,100.00 | 1,094.31 | 1,094.31 | 1,094.31 | 2.61 | 2.32 | 162.10 | 13.11 | 15.40 | 67.91 | 63.25 | 4.66 | 14.558 | |
| 1,200.00 | 1,190.18 | 1,190.18 | 1,190.18 | 3.08 | 2.54 | 167.15 | 13.11 | 15.40 | 95.40 | 90.30 | 5.10 | 18.719 | |
| 1,300.00 | 1,284.43 | 1,284.43 | 1,284.43 | 3.64 | 2.75 | 170.29 | 13.11 | 15.40 | 128.21 | 122.69 | 5.52 | 23.210 | |
| 1,400.00 | 1,376.81 | 1,376.81 | 1,376.81 | 4.32 | 2.96 | 172.35 | 13.11 | 15.40 | 166.11 | 160.16 | 5.95 | 27.922 | |
| 1,500.00 | 1,467.06 | 1,467.06 | 1,467.06 | 5.10 | 3.16 | 173.77 | 13.11 | 15.40 | 208.90 | 202.53 | 6.37 | 32.785 | |
| 1,598.96 | 1,554.03 | 1,554.03 | 1,554.03 | 5.99 | 3.36 | 174.77 | 13.11 | 15.40 | 255.91 | 249.12 | 6.79 | 37.699 | |
| 1,600.00 | 1,554.93 | 1,554.93 | 1,554.93 | 6.00 | 3.36 | 174.78 | 13.11 | 15.40 | 256.42 | 249.63 | 6.79 | 37.746 | |
| 1,700.00 | 1,641.56 | 1,641.56 | 1,641.56 | 6.97 | 3.55 | 175.63 | 13.11 | 15.40 | 306.25 | 298.94 | 7.31 | 41.880 | |
| 1,800.00 | 1,728.19 | 1,728.19 | 1,728.19 | 7.96 | 3.75 | 176.24 | 13.11 | 15.40 | 356.11 | 348.26 | 7.84 | 45.403 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

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| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Sec.22-T5S-R7W - LC FEE 11-22-57 - Wellbore #1 - Design #1 — Offset Site Error: 0.00 usft

Survey Program: 0-MWD — Offset Well Error: 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,900.00 | 1,814.82 | 1,814.82 | 1,814.82 | 8.97 | 3.94 | 176.70 | 13.11 | 15.40 | 405.99 | 397.61 | 8.38 | 48.428 | |
| 2,000.00 | 1,901.45 | 1,901.45 | 1,901.45 | 9.98 | 4.14 | 177.07 | 13.11 | 15.40 | 455.89 | 446.96 | 8.93 | 51.047 | |
| 2,100.00 | 1,988.08 | 1,988.08 | 1,988.08 | 11.00 | 4.33 | 177.36 | 13.11 | 15.40 | 505.80 | 496.31 | 9.48 | 53.332 | |
| 2,200.00 | 2,074.71 | 2,074.71 | 2,074.71 | 12.02 | 4.53 | 177.59 | 13.11 | 15.40 | 555.71 | 545.67 | 10.04 | 55.339 | |
| 2,300.00 | 2,161.34 | 2,161.34 | 2,161.34 | 13.05 | 4.72 | 177.79 | 13.11 | 15.40 | 605.64 | 595.03 | 10.60 | 57.115 | |
| 2,400.00 | 2,247.97 | 2,247.97 | 2,247.97 | 14.09 | 4.92 | 177.96 | 13.11 | 15.40 | 655.58 | 644.39 | 11.17 | 58.694 | |
| 2,500.00 | 2,334.60 | 2,334.60 | 2,334.60 | 15.12 | 5.11 | 178.10 | 13.11 | 15.40 | 705.49 | 693.76 | 11.74 | [illegible] | |
| 2,600.00 | 2,421.23 | 2,421.23 | 2,421.23 | 16.16 | 5.31 | 178.23 | 13.11 | 15.40 | 755.43 | 743.12 | 12.31 | 61.379 | |
| 2,700.00 | 2,507.86 | 2,507.86 | 2,507.86 | 17.19 | 5.50 | 178.34 | 13.11 | 15.40 | 805.36 | 792.48 | [illegible] | [illegible] | |
| 2,800.00 | 2,594.49 | 2,594.49 | 2,594.49 | 18.23 | 5.70 | 178.44 | 13.11 | 15.40 | 855.30 | 841.85 | [illegible] | 63.571 | |
| 2,900.00 | 2,681.11 | 2,681.11 | 2,681.11 | 19.27 | 5.89 | 178.52 | 13.11 | 15.40 | 905.24 | 891.21 | 14.03 | 64.520 | |
| 3,000.00 | 2,767.74 | 2,767.74 | 2,767.74 | 20.31 | 6.09 | 178.60 | 13.11 | 15.40 | 955.18 | 940.58 | 14.61 | 65.389 | |
| 3,100.00 | 2,854.37 | 2,854.37 | 2,854.37 | 21.36 | 6.28 | 178.67 | 13.11 | 15.40 | [illegible] | 989.94 | 15.19 | 66.186 | |
| 3,200.00 | 2,941.00 | 2,941.00 | 2,941.00 | 22.40 | 6.48 | 178.73 | 13.11 | 15.40 | 1,055.07 | 1,039.30 | 15.77 | 66.920 | |
| 3,300.00 | 3,027.63 | 3,027.63 | 3,027.63 | 23.44 | 6.67 | 178.79 | 13.11 | [illegible] | [illegible] | 1,088.67 | 16.35 | 67.598 | |
| 3,400.00 | 3,114.26 | 3,114.26 | 3,114.26 | 24.49 | 6.86 | 178.84 | 13.11 | [illegible] | 1,154.96 | 1,138.03 | 16.93 | 68.226 | |
| 3,434.27 | 3,143.95 | 3,143.95 | 3,143.95 | 24.84 | 6.93 | 178.86 | 13.11 | 15.40 | 1,172.07 | 1,154.95 | 17.13 | 68.430 | |
| 3,500.00 | 3,201.26 | 3,201.26 | 3,201.26 | 25.46 | 7.06 | 178.90 | 13.11 | 15.40 | 1,204.25 | 1,186.67 | 17.58 | 68.504 | |
| 3,600.00 | 3,289.84 | 3,289.84 | 3,289.84 | 26.26 | 7.26 | 178.96 | 13.11 | 15.40 | 1,250.65 | 1,232.42 | 18.23 | 68.599 | |
| 3,700.00 | 3,379.97 | 3,379.97 | 3,379.97 | 27.01 | 7.46 | [illegible] | 13.11 | 15.40 | 1,293.94 | 1,275.08 | 18.86 | 68.613 | |
| 3,800.00 | 3,471.57 | 3,471.57 | 3,471.57 | 27.71 | [illegible] | [illegible] | 13.11 | 15.40 | 1,334.05 | 1,314.60 | 19.46 | 68.560 | |
| 3,900.00 | 3,564.51 | 3,564.51 | 3,564.51 | [illegible] | [illegible] | 179.10 | 13.11 | 15.40 | 1,370.95 | 1,350.92 | 20.03 | 68.450 | |
| 4,000.00 | 3,658.67 | 3,658.67 | 3,658.67 | [illegible] | [illegible] | 179.13 | 13.11 | 15.40 | 1,404.58 | 1,384.01 | 20.57 | 68.291 | |
| 4,100.00 | 3,753.96 | 3,753.96 | 3,753.96 | 29.47 | 8.30 | 179.16 | 13.11 | 15.40 | 1,434.90 | 1,413.83 | 21.07 | 68.090 | |
| 4,200.00 | 3,850.25 | 3,850.25 | 3,850.25 | 29.94 | 8.52 | 179.18 | 13.11 | 15.40 | 1,461.88 | 1,440.33 | 21.55 | 67.851 | |
| 4,300.00 | 3,947.41 | 3,947.41 | 3,947.41 | 30.36 | 8.74 | 179.20 | 13.11 | 15.40 | 1,485.48 | 1,463.50 | 21.98 | 67.579 | |
| 4,400.00 | [illegible] | [illegible] | [illegible] | 30.73 | 8.96 | 179.22 | 13.11 | 15.40 | 1,505.68 | 1,483.30 | 22.38 | 67.278 | |
| 4,500.00 | [illegible] | [illegible] | 4,143.93 | 31.03 | 9.18 | 179.23 | 13.11 | 15.40 | 1,522.45 | 1,499.71 | 22.74 | 66.949 | |
| 4,600.00 | [illegible] | [illegible] | 4,243.03 | 31.29 | 9.40 | 179.24 | 13.11 | 15.40 | 1,535.77 | 1,512.70 | 23.06 | 66.593 | |
| 4,700.00 | [illegible] | 4,342.54 | 4,342.54 | 31.49 | 9.63 | 179.25 | 13.11 | 15.40 | 1,545.62 | 1,522.27 | 23.34 | 66.213 | |
| 4,800.00 | 4,442.33 | 4,442.33 | 4,442.33 | 31.64 | 9.85 | 179.25 | 13.11 | 15.40 | 1,551.99 | 1,528.41 | 23.58 | 65.808 | |
| 4,900.00 | 4,542.28 | 4,542.28 | 4,542.28 | 31.74 | 10.07 | 179.25 | 13.11 | 15.40 | 1,554.88 | 1,531.09 | 23.78 | 65.378 | |
| 4,932.72 | 4,575.00 | 4,575.00 | 4,575.00 | 31.76 | 10.15 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,531.22 | 23.84 | 65.232 | |
| 5,000.00 | 4,642.28 | 4,642.28 | 4,642.28 | 31.81 | 10.30 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,530.98 | 24.08 | 64.576 | |
| 5,100.00 | 4,742.28 | 4,742.28 | 4,742.28 | 31.87 | 10.52 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,530.61 | 24.45 | 63.604 | |
| 5,200.00 | 4,842.28 | 4,842.28 | 4,842.28 | 31.94 | 10.75 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,530.24 | 24.82 | 62.656 | |
| 5,300.00 | 4,942.28 | 4,942.28 | 4,942.28 | 32.01 | 10.97 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,529.87 | 25.19 | 61.731 | |
| 5,400.00 | 5,042.28 | 5,042.28 | 5,042.28 | 32.08 | 11.20 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,529.50 | 25.57 | 60.828 | |
| 5,500.00 | 5,142.28 | 5,142.28 | 5,142.28 | 32.16 | 11.42 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,529.12 | 25.94 | 59.946 | |
| 5,600.00 | 5,242.28 | 5,242.28 | 5,242.28 | 32.23 | 11.65 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,528.75 | 26.32 | 59.086 | |
| 5,700.00 | 5,342.28 | 5,342.28 | 5,342.28 | 32.30 | 11.87 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,528.37 | 26.70 | 58.245 | |
| 5,800.00 | 5,442.28 | 5,442.28 | 5,442.28 | 32.38 | 12.10 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,527.98 | 27.08 | 57.425 | |
| 5,900.00 | 5,542.28 | 5,542.28 | 5,542.28 | 32.46 | 12.32 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,527.60 | 27.46 | 56.624 | |
| 6,000.00 | 5,642.28 | 5,642.28 | 5,642.28 | 32.54 | 12.55 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,527.22 | 27.85 | 55.841 | |
| 6,100.00 | 5,742.28 | 5,742.28 | 5,742.28 | 32.62 | 12.77 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,526.83 | 28.23 | 55.077 | |
| 6,142.93 | 5,785.21 | 5,785.21 | 5,785.21 | 32.65 | 12.87 | 139.54 | 13.11 | 15.40 | 1,555.06 | 1,526.66 | 28.40 | 54.754 | |
| 6,178.72 | 5,821.00 | 5,800.00 | 5,800.00 | 32.68 | 12.90 | 139.54 | 13.11 | 15.40 | 1,555.21 | 1,526.71 | 28.49 | 54.583 | |

CONFIDENTIAL
Returned Unapproved

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Received: April 06, 2013

# Sharewell Energy Services

Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Sec.22-T5S-R7W - LC FEE 13-22D-57 - Wellbore #1 - Design #1

**Survey Program:** 0-MWD

**Offset Site Error:** 0.00 usft

**Offset Well Error:** 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 72.77 | 11.29 | 36.40 | 38.11 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.09 | 0.09 | 72.77 | 11.29 | 36.40 | 38.11 | 37.93 | 0.18 | 211.964 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.31 | 0.31 | 72.77 | 11.29 | 36.40 | 38.11 | 37.48 | 0.63 | 60.561 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.54 | 0.54 | 72.77 | 11.29 | 36.40 | 38.11 | 37.04 | 1.08 | 35.327 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.76 | 0.76 | 72.77 | 11.29 | 36.40 | 38.11 | 36.59 | 1.53 | 24.937 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 72.77 | 11.29 | 36.40 | 38.11 | 36.14 | 1.98 | 19.269 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.21 | 1.21 | 72.77 | 11.29 | 36.40 | 38.11 | 35.69 | 2.43 | [illegible] CC, ES | |
| 700.00 | 699.95 | 699.95 | 699.95 | 1.44 | 1.44 | 115.99 | 11.29 | 36.40 | 39.19 | 36.32 | 2.87 | [illegible] | |
| 800.00 | 799.63 | 801.05 | 801.02 | 1.67 | 1.65 | 126.84 | 10.15 | 35.12 | 41.88 | 38.57 | [illegible] | [illegible] | |
| 900.00 | 898.77 | 901.46 | 901.18 | 1.93 | 1.84 | 145.19 | 5.58 | 29.96 | 46.75 | 43.03 | [illegible].72 | 12.572 SF | |
| 1,000.00 | 997.08 | 999.99 | 998.99 | 2.23 | 2.06 | 165.28 | -2.30 | 21.07 | 58.88 | [illegible] | [illegible].16 | 14.169 | |
| 1,100.00 | 1,094.31 | 1,095.88 | 1,093.46 | 2.61 | 2.32 | -178.80 | -13.17 | 8.82 | [illegible] | [illegible].21 | 4.65 | 17.387 | |
| 1,200.00 | 1,190.18 | 1,188.49 | 1,183.81 | 3.08 | 2.64 | -167.93 | -26.64 | -6.38 | [illegible] | [illegible].02 | 5.22 | 21.488 | |
| 1,300.00 | 1,284.43 | 1,277.26 | 1,269.39 | 3.64 | 3.02 | -160.60 | -42.26 | -24.90 | 151.78 | 145.91 | 5.88 | 25.829 | |
| 1,400.00 | 1,376.81 | 1,361.78 | 1,349.77 | 4.32 | 3.45 | -155.40 | -59.58 | [illegible] | [illegible].47 | 191.86 | 6.61 | 30.024 | |
| 1,500.00 | 1,467.06 | 1,441.74 | 1,424.68 | 5.10 | 3.92 | -151.49 | -78.11 | [illegible] | 251.51 | 244.09 | 7.42 | 33.887 | |
| 1,598.96 | 1,554.03 | 1,516.19 | 1,493.33 | 5.99 | 4.42 | -148.35 | -97.23 | -85.98 | 309.64 | 301.34 | 8.30 | 37.305 | |
| 1,600.00 | 1,554.93 | 1,516.94 | 1,494.02 | 6.00 | 4.42 | -148.33 | -97.43 | -86.21 | 310.28 | 301.96 | 8.31 | 37.336 | |
| 1,700.00 | 1,641.56 | 1,588.45 | 1,558.83 | 6.97 | 4.96 | [illegible] | -117.46 | -108.81 | 372.50 | 363.17 | 9.32 | 39.948 | |
| 1,800.00 | 1,728.19 | 1,657.32 | 1,620.14 | 7.96 | 5.54 | [illegible] | -138.27 | -132.27 | 436.36 | 425.96 | 10.40 | 41.961 | |
| 1,900.00 | 1,814.82 | 1,724.27 | 1,678.63 | 8.97 | [illegible] | [illegible] | -159.88 | -156.64 | 501.84 | 490.33 | 11.52 | 43.579 | |
| 2,000.00 | 1,901.45 | 1,798.52 | 1,742.97 | [illegible] | [illegible] | -142.34 | -184.47 | -184.38 | 568.11 | 555.40 | 12.71 | 44.702 | |
| 2,100.00 | 1,988.08 | 1,872.78 | 1,807.31 | 11.00 | [illegible] | -141.24 | -209.07 | -212.12 | 634.53 | 620.61 | 13.92 | 45.586 | |
| 2,200.00 | 2,074.71 | 1,947.04 | 1,871.65 | 12.02 | 8.27 | -140.35 | -233.66 | -239.86 | 701.05 | 685.92 | 15.14 | 46.310 | |
| 2,300.00 | 2,161.34 | 2,021.29 | [illegible] | 13.05 | 9.00 | -139.62 | -258.26 | -267.60 | 767.66 | 751.29 | 16.37 | 46.907 | |
| 2,400.00 | 2,247.97 | 2,095.55 | [illegible] | 14.09 | 9.73 | -139.00 | -282.85 | -295.33 | 834.32 | 816.72 | 17.60 | 47.403 | |
| 2,500.00 | [illegible] | [illegible] | 2,084.67 | 15.12 | 10.47 | -138.47 | -307.45 | -323.07 | 901.03 | 882.19 | 18.84 | 47.817 | |
| 2,600.00 | [illegible] | [illegible] | 2,129.01 | 16.16 | 11.21 | -138.01 | -332.04 | -350.81 | 967.78 | 947.69 | 20.09 | 48.173 | |
| 2,700.00 | [illegible] | [illegible] | 2,193.35 | 17.19 | 11.95 | -137.61 | -356.64 | -378.55 | 1,034.55 | 1,013.21 | 21.34 | 48.479 | |
| 2,800.00 | [illegible] | 2,392.58 | 2,257.69 | 18.23 | 12.70 | -137.26 | -381.23 | -406.29 | 1,101.35 | 1,078.76 | 22.59 | 48.745 | |
| 2,900.00 | 2,681.11 | 2,466.83 | 2,322.03 | 19.27 | 13.45 | -136.95 | -405.83 | -434.03 | 1,168.18 | 1,144.32 | 23.85 | 48.976 | |
| 3,000.00 | 2,767.74 | 2,541.09 | 2,386.37 | 20.31 | 14.20 | -136.68 | -430.42 | -461.76 | 1,235.01 | 1,209.90 | 25.11 | 49.180 | |
| 3,100.00 | 2,854.37 | 2,615.35 | 2,450.71 | 21.36 | 14.95 | -136.43 | -455.02 | -489.50 | 1,301.87 | 1,275.49 | 26.37 | 49.361 | |
| 3,200.00 | 2,941.00 | 2,689.60 | 2,515.05 | 22.40 | 15.70 | -136.20 | -479.61 | -517.24 | 1,368.73 | 1,341.09 | 27.64 | 49.523 | |
| 3,300.00 | 3,027.63 | 2,763.86 | 2,579.40 | 23.44 | 16.46 | -136.00 | -504.21 | -544.98 | 1,435.61 | 1,406.70 | 28.90 | 49.667 | |
| 3,400.00 | 3,114.26 | 2,838.12 | 2,643.74 | 24.49 | 17.21 | -135.82 | -528.80 | -572.72 | 1,502.49 | 1,472.32 | 30.17 | 49.797 | |
| 3,434.27 | 3,143.95 | 2,863.56 | 2,665.78 | 24.84 | 17.47 | -135.76 | -537.23 | -582.22 | 1,525.41 | 1,494.81 | 30.61 | 49.839 | |
| 3,500.00 | 3,201.26 | 2,912.70 | 2,708.36 | 25.46 | 17.97 | -136.43 | -553.51 | -600.58 | 1,568.98 | 1,537.51 | 31.47 | 49.862 | |
| 3,600.00 | 3,289.84 | 2,988.70 | 2,774.21 | 26.26 | 18.74 | -137.31 | -578.68 | -628.97 | 1,633.68 | 1,600.98 | 32.71 | 49.952 | |
| 3,700.00 | 3,379.97 | 3,066.10 | 2,841.28 | 27.01 | 19.53 | -138.03 | -604.32 | -657.88 | 1,696.44 | 1,662.50 | 33.94 | 49.983 | |
| 3,800.00 | 3,471.57 | 3,144.82 | 2,909.48 | 27.71 | 20.33 | -138.61 | -630.39 | -687.29 | 1,757.22 | 1,722.05 | 35.16 | 49.971 | |
| 3,900.00 | 3,564.51 | 3,224.75 | 2,978.74 | 28.35 | 21.15 | -139.07 | -656.86 | -717.14 | 1,815.97 | 1,779.59 | 36.37 | 49.926 | |
| 4,000.00 | 3,658.67 | 3,305.81 | 3,048.97 | 28.94 | 21.97 | -139.43 | -683.71 | -747.42 | 1,872.67 | 1,835.10 | 37.56 | 49.856 | |
| 4,100.00 | 3,753.96 | 3,387.88 | 3,120.08 | 29.47 | 22.81 | -139.69 | -710.89 | -778.08 | 1,927.29 | 1,888.57 | 38.72 | 49.771 | |
| 4,200.00 | 3,850.25 | 3,507.48 | 3,224.26 | 29.94 | 23.92 | -139.60 | -749.87 | -822.04 | 1,979.44 | 1,939.37 | 40.07 | 49.401 | |
| 4,300.00 | 3,947.41 | 3,669.91 | 3,369.31 | 30.36 | 25.09 | -139.27 | -798.34 | -876.70 | 2,026.69 | 1,985.23 | 41.46 | 48.888 | |
| 4,400.00 | 4,045.35 | 3,843.12 | 3,528.27 | 30.73 | 26.22 | -138.96 | -843.93 | -928.12 | 2,068.23 | 2,025.47 | 42.76 | 48.364 | |
| 4,500.00 | 4,143.93 | 4,026.53 | 3,700.80 | 31.03 | 27.27 | -138.68 | -885.17 | -974.62 | 2,103.60 | 2,059.64 | 43.96 | 47.854 | |
| 4,600.00 | 4,243.03 | 4,219.13 | 3,885.85 | 31.29 | 28.18 | -138.44 | -920.49 | -1,014.46 | 2,132.35 | 2,087.35 | 45.01 | 47.379 | |
| 4,700.00 | 4,342.54 | 4,419.46 | 4,081.67 | 31.49 | 28.93 | -138.25 | -948.40 | -1,045.93 | 2,154.10 | 2,108.23 | 45.87 | 46.959 | |
| 4,800.00 | 4,442.33 | 4,625.62 | 4,285.75 | 31.64 | 29.48 | -138.12 | -967.56 | -1,067.55 | 2,168.51 | 2,121.98 | 46.53 | 46.603 | |
| 4,900.00 | 4,542.28 | 4,835.35 | 4,494.95 | 31.74 | 29.81 | -138.04 | -977.02 | -1,078.22 | 2,175.36 | 2,128.39 | 46.97 | 46.314 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

CONFIDENTIAL
Returned Unapproved



Received: April 06, 2013

| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Sec.22-T5S-R7W - LC FEE 13-22D-57 - Wellbore #1 - Design #1

**Offset Site Error:** 0.00 usft
**Survey Program:** 0-MWD **Offset Well Error:** 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,932.72 | 4,575.00 | 4,904.32 | 4,563.91 | 31.76 | 29.88 | -177.75 | -977.91 | -1,079.22 | 2,175.94 | 2,128.87 | 47.07 | 46.230 | |
| 5,000.00 | 4,642.28 | 4,982.69 | 4,642.28 | 31.81 | 29.93 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,128.78 | 47.19 | 46.114 | |
| 5,100.00 | 4,742.28 | 5,082.69 | 4,742.28 | 31.87 | 30.00 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,128.60 | 47.36 | 45.944 | |
| 5,200.00 | 4,842.28 | 5,182.69 | 4,842.28 | 31.94 | 30.07 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,128.43 | 47.54 | 45.772 | |
| 5,300.00 | 4,942.28 | 5,282.69 | 4,942.28 | 32.01 | 30.14 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,128.24 | 47.72 | 45.598 | |
| 5,400.00 | 5,042.28 | 5,382.69 | 5,042.28 | 32.08 | 30.21 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,128.06 | 47.91 | 45.422 | |
| 5,500.00 | 5,142.28 | 5,482.69 | 5,142.28 | 32.16 | 30.29 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,127.87 | 48.09 | [illegible] | |
| 5,600.00 | 5,242.28 | 5,582.69 | 5,242.28 | 32.23 | 30.36 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,127.68 | 48.29 | [illegible] | |
| 5,700.00 | 5,342.28 | 5,682.69 | 5,342.28 | 32.30 | 30.44 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,127.48 | [illegible] | [illegible] | |
| 5,800.00 | 5,442.28 | 5,782.69 | 5,442.28 | 32.38 | 30.52 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | 2,127.28 | [illegible] | 44.699 | |
| 5,900.00 | 5,542.28 | 5,882.69 | 5,542.28 | 32.46 | 30.59 | -177.75 | -977.96 | -1,079.28 | 2,175.96 | [illegible] | [illegible] | 44.515 | |
| 6,000.00 | 5,642.28 | 5,982.69 | 5,642.28 | 32.54 | 30.68 | -177.75 | -977.96 | -1,079.28 | [illegible] | [illegible] | 49.09 | 44.328 | |
| 6,100.00 | 5,742.28 | 6,082.69 | 5,742.28 | 32.62 | 30.76 | -177.75 | -977.96 | -1,079.28 | [illegible] | [illegible] | 49.30 | 44.141 | |
| 6,178.72 | 5,821.00 | 6,101.41 | 5,761.00 | 32.68 | 30.77 | -177.75 | -977.96 | -1,079.28 | [illegible] | 2,127.39 | 49.40 | 44.065 | |

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Received: April 06, 2013

# Sharewell Energy Services

Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Sec.22-T5S-R7W - LC Tribal 15-22D-57 - Wellbore #1 - Design #1

**Offset Site Error:** 0.00 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.10 | 24.04 | 51.80 | 57.11 | | | | |
| 100.00 | 100.00 | 100.00 | 100.00 | 0.09 | 0.09 | 65.10 | 24.04 | 51.80 | 57.11 | 56.93 | 0.18 | 317.620 | |
| 200.00 | 200.00 | 200.00 | 200.00 | 0.31 | 0.31 | 65.10 | 24.04 | 51.80 | 57.11 | 56.48 | 0.63 | 90.749 | |
| 300.00 | 300.00 | 300.00 | 300.00 | 0.54 | 0.54 | 65.10 | 24.04 | 51.80 | 57.11 | 56.03 | 1.08 | 52.937 | |
| 400.00 | 400.00 | 400.00 | 400.00 | 0.76 | 0.76 | 65.10 | 24.04 | 51.80 | 57.11 | 55.58 | 1.53 | 37.367 | |
| 500.00 | 500.00 | 500.00 | 500.00 | 0.99 | 0.99 | 65.10 | 24.04 | 51.80 | 57.11 | 55.13 | 1.98 | 28.875 | |
| 600.00 | 600.00 | 600.00 | 600.00 | 1.21 | 1.21 | 65.10 | 24.04 | 51.80 | 57.11 | 54.68 | 2.43 | 23.527 CC, ES | |
| 700.00 | 699.95 | 698.45 | 698.41 | 1.44 | 1.42 | 109.39 | 22.44 | 53.77 | 59.10 | 55.25 | 2.85 | 20.734 | |
| 800.00 | 799.63 | 795.34 | 795.00 | 1.67 | 1.61 | 120.90 | 17.73 | 59.53 | 67.08 | 63.80 | 3.28 | 20.452 SF | |
| 900.00 | 898.77 | 889.22 | 888.11 | 1.93 | 1.83 | 133.91 | 10.21 | 68.72 | 84.79 | 81.05 | 3.74 | 22.646 | |
| 1,000.00 | 997.08 | 978.80 | 976.32 | 2.23 | 2.10 | 144.28 | 0.34 | 80.79 | 113.96 | 109.73 | 4.22 | 26.978 | |
| 1,100.00 | 1,094.31 | 1,063.06 | 1,058.54 | 2.61 | 2.40 | 151.37 | -11.32 | 95.05 | 153.09 | 149.30 | 4.70 | 32.793 | |
| 1,200.00 | 1,190.18 | 1,141.24 | 1,134.03 | 3.08 | 2.74 | 155.98 | -24.18 | 110.78 | 208.61 | 203.46 | 5.15 | 39.511 | |
| 1,300.00 | 1,284.43 | 1,212.84 | 1,202.38 | 3.64 | 3.10 | 158.96 | -37.67 | 127.27 | 261.58 | 255.98 | 5.60 | 46.745 | |
| 1,400.00 | 1,376.81 | 1,277.61 | 1,263.48 | 4.32 | 3.48 | 160.88 | -51.25 | 143.69 | 320.83 | 315.83 | 6.03 | 54.187 | |
| 1,500.00 | 1,467.06 | 1,335.49 | 1,317.45 | 5.10 | 3.87 | 162.05 | -64.50 | 160.09 | 378.43 | 391.97 | 6.46 | 61.653 | |
| 1,598.96 | 1,554.03 | 1,386.12 | 1,364.11 | 5.99 | 4.22 | 162.67 | -76.94 | 175.29 | 474.71 | 467.82 | 6.89 | 68.875 | |
| 1,600.00 | 1,554.93 | 1,386.62 | 1,364.57 | 6.00 | 4.23 | 162.69 | -77.06 | 175.44 | 475.53 | 468.63 | 6.90 | 68.946 | |
| 1,700.00 | 1,641.58 | 1,432.91 | 1,406.75 | 6.97 | 4.59 | 164.03 | -89.12 | 190.19 | 555.91 | 548.54 | 7.38 | 75.481 | |
| 1,800.00 | 1,728.19 | 1,476.25 | 1,445.83 | 7.96 | 4.95 | 165.04 | -100.99 | 204.70 | 637.77 | 629.93 | 7.84 | 81.347 | |
| 1,900.00 | 1,814.82 | 1,516.88 | 1,482.07 | 8.97 | 5.30 | 165.81 | -112.62 | 218.93 | 720.95 | 712.63 | 8.32 | 86.645 | |
| 2,000.00 | 1,901.45 | 1,555.01 | 1,515.71 | 9.98 | 5.64 | 166.42 | -123.98 | 232.83 | 805.31 | 796.50 | 8.81 | 91.382 | |
| 2,100.00 | 1,988.08 | 1,590.70 | 1,554.67 | 11.00 | 6.09 | 167.02 | -137.84 | 249.77 | 890.79 | 881.51 | 9.28 | 95.960 | |
| 2,200.00 | 2,074.71 | 1,637.23 | 1,587.18 | 12.02 | 6.47 | 167.46 | -149.71 | 264.29 | 976.85 | 967.09 | 9.77 | 100.026 | |
| 2,300.00 | 2,161.34 | 1,687.75 | 1,630.93 | 13.05 | 6.98 | 167.96 | -165.70 | 283.84 | 1,063.03 | 1,052.78 | 10.25 | 103.694 | |
| 2,400.00 | 2,247.97 | 1,738.28 | 1,674.59 | 14.09 | 7.50 | 168.38 | -181.69 | 303.39 | 1,149.23 | 1,138.49 | 10.74 | 106.992 | |
| 2,500.00 | 2,334.60 | 1,788.80 | 1,718.45 | 15.12 | 8.02 | 168.75 | -197.67 | 322.94 | 1,235.45 | 1,224.22 | 11.23 | 110.037 | |
| 2,600.00 | 2,421.23 | 1,839.32 | 1,762.20 | 16.16 | 8.55 | 169.07 | -213.66 | 342.49 | 1,321.67 | 1,309.95 | 11.72 | 112.748 | |
| 2,700.00 | 2,507.86 | 1,889.84 | 1,805.96 | 17.19 | 9.08 | 169.35 | -229.64 | 362.04 | 1,407.91 | 1,395.69 | 12.22 | 115.248 | |
| 2,800.00 | 2,594.49 | 1,940.36 | 1,849.71 | 18.23 | 9.61 | 169.59 | -245.63 | 381.58 | 1,494.15 | 1,481.43 | 12.72 | 117.490 | |
| 2,900.00 | 2,681.11 | 1,990.88 | 1,893.47 | 19.27 | 10.15 | 169.82 | -261.62 | 401.13 | 1,580.40 | 1,567.18 | 13.22 | 119.570 | |
| 3,000.00 | 2,767.74 | 2,041.40 | 1,937.22 | 20.31 | 10.68 | 170.01 | -277.60 | 420.68 | 1,666.65 | 1,652.93 | 13.72 | 121.447 | |
| 3,100.00 | 2,854.37 | 2,091.92 | 1,980.98 | 21.36 | 11.22 | 170.19 | -293.59 | 440.23 | 1,752.91 | 1,738.68 | 14.23 | 123.197 | |
| 3,200.00 | 2,941.00 | 2,142.44 | 2,024.74 | 22.40 | 11.76 | 170.35 | -309.58 | 459.78 | 1,839.17 | 1,824.43 | 14.74 | 124.786 | |
| 3,300.00 | 3,027.63 | 2,192.96 | 2,068.49 | 23.44 | 12.30 | 170.50 | -325.56 | 479.33 | 1,925.43 | 1,910.19 | 15.25 | 126.274 | |
| 3,400.00 | 3,114.26 | 2,243.48 | 2,112.25 | 24.49 | 12.84 | 170.64 | -341.55 | 498.88 | 2,011.70 | 1,995.94 | 15.76 | 127.631 | |
| 3,434.27 | 3,143.95 | 2,260.79 | 2,127.24 | 24.84 | 13.03 | 170.68 | -347.03 | 505.58 | 2,041.27 | 2,025.33 | 15.94 | 128.077 | |
| 3,500.00 | 3,201.26 | 2,294.64 | 2,156.56 | 25.46 | 13.39 | 171.10 | -357.74 | 518.68 | 2,097.59 | 2,081.27 | 16.32 | 128.540 | |
| 3,600.00 | 3,289.84 | 2,348.58 | 2,203.28 | 26.26 | 13.97 | 171.65 | -374.81 | 539.55 | 2,181.77 | 2,164.88 | 16.89 | 129.174 | |
| 3,700.00 | 3,379.97 | 2,405.41 | 2,252.50 | 27.01 | 14.58 | 172.11 | -392.79 | 561.54 | 2,264.04 | 2,246.58 | 17.46 | 129.657 | |
| 3,800.00 | 3,471.57 | 2,465.05 | 2,304.15 | 27.71 | 15.22 | 172.50 | -411.66 | 584.62 | 2,344.30 | 2,326.27 | 18.03 | 130.003 | |
| 3,900.00 | 3,564.51 | 2,527.44 | 2,358.19 | 28.35 | 15.90 | 172.83 | -431.40 | 608.76 | 2,422.44 | 2,403.85 | 18.60 | 130.258 | |
| 4,000.00 | 3,658.67 | 2,592.50 | 2,414.54 | 28.94 | 16.60 | 173.11 | -451.99 | 633.94 | 2,498.38 | 2,479.23 | 19.15 | 130.439 | |
| 4,100.00 | 3,753.96 | 2,660.15 | 2,473.12 | 29.47 | 17.33 | 173.35 | -473.40 | 660.11 | 2,572.02 | 2,552.32 | 19.70 | 130.555 | |
| 4,200.00 | 3,850.25 | 2,730.30 | 2,533.89 | 29.94 | 18.09 | 173.55 | -495.59 | 687.26 | 2,643.27 | 2,623.03 | 20.23 | 130.629 | |
| 4,300.00 | 3,947.41 | 2,802.88 | 2,596.74 | 30.36 | 18.87 | 173.72 | -518.56 | 715.34 | 2,712.04 | 2,691.28 | 20.76 | 130.669 | |
| 4,400.00 | 4,045.35 | 2,877.79 | 2,661.62 | 30.73 | 19.68 | 173.86 | -542.26 | 744.33 | 2,778.25 | 2,756.99 | 21.26 | 130.677 | |
| 4,500.00 | 4,143.93 | 2,954.94 | 2,728.44 | 31.03 | 20.52 | 173.98 | -566.68 | 774.18 | 2,841.83 | 2,820.08 | 21.75 | 130.665 | |
| 4,600.00 | 4,243.03 | 3,034.24 | 2,797.13 | 31.29 | 21.38 | 174.07 | -591.77 | 804.87 | 2,902.69 | 2,880.47 | 22.22 | 130.638 | |
| 4,700.00 | 4,342.54 | 3,115.59 | 2,867.58 | 31.49 | 22.26 | 174.15 | -617.51 | 836.35 | 2,960.76 | 2,938.09 | 22.67 | 130.601 | |
| 4,800.00 | 4,442.33 | 3,198.89 | 2,939.73 | 31.64 | 23.16 | 174.21 | -643.87 | 868.58 | 3,015.98 | 2,992.88 | 23.10 | 130.556 | |
| 4,900.00 | 4,542.28 | 4,886.19 | 4,542.28 | 31.74 | 31.65 | 173.59 | -927.34 | 1,215.24 | 3,064.00 | 3,036.49 | 27.52 | 111.353 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

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Received: April 06, 2013

| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Sec.22-T5S-R7W - LC Tribal 15-22D-57 - Wellbore #1 - Design #1

**Survey Program:** 0-MWD

**Offset Site Error:** 0.00 usft
**Offset Well Error:** 0.00 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,932.72 | 4,575.00 | 4,918.90 | 4,575.00 | 31.76 | 31.67 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,036.59 | 27.60 | 111.010 | |
| 5,000.00 | 4,642.28 | 4,986.19 | 4,642.28 | 31.81 | 31.72 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,036.40 | 27.78 | 110.285 | |
| 5,100.00 | 4,742.28 | 5,086.19 | 4,742.28 | 31.87 | 31.78 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,036.13 | 28.06 | 109.189 | |
| 5,200.00 | 4,842.28 | 5,186.19 | 4,842.28 | 31.94 | 31.85 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,035.84 | 28.35 | 108.099 | |
| 5,300.00 | 4,942.28 | 5,286.19 | 4,942.28 | 32.01 | 31.91 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,035.56 | 28.63 | 107.014 | |
| 5,400.00 | 5,042.28 | 5,386.19 | 5,042.28 | 32.08 | 31.98 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,035.26 | 28.93 | 105.935 | |
| 5,500.00 | 5,142.28 | 5,486.19 | 5,142.28 | 32.16 | 32.06 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,034.97 | 29.22 | [illegible] | |
| 5,600.00 | 5,242.28 | 5,586.19 | 5,242.28 | 32.23 | 32.13 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,034.67 | 29.52 | [illegible] | |
| 5,700.00 | 5,342.28 | 5,686.19 | 5,342.28 | 32.30 | 32.20 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,034.37 | [illegible] | [illegible] | |
| 5,800.00 | 5,442.28 | 5,786.19 | 5,442.28 | 32.38 | 32.28 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,034.06 | [illegible] | 101.698 | |
| 5,900.00 | 5,542.28 | 5,886.19 | 5,542.28 | 32.46 | 32.35 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | [illegible] | [illegible] | 100.661 | |
| 6,000.00 | 5,642.28 | 5,986.19 | 5,642.28 | 32.54 | 32.43 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | [illegible] | 30.75 | 99.634 | |
| 6,100.00 | 5,742.28 | 6,086.19 | 5,742.28 | 32.62 | 32.51 | 133.87 | -927.34 | 1,215.24 | [illegible] | [illegible] | 31.07 | 98.616 | |
| 6,148.66 | 5,790.94 | 6,134.85 | 5,790.94 | 32.66 | 32.55 | 133.87 | -927.34 | 1,215.24 | 3,064.19 | 3,032.96 | 31.23 | 98.125 | |
| 6,178.72 | 5,821.00 | 6,154.90 | 5,811.00 | 32.68 | 32.57 | 133.87 | -927.34 | [illegible] | [illegible] | 3,032.90 | 31.31 | 97.875 | |

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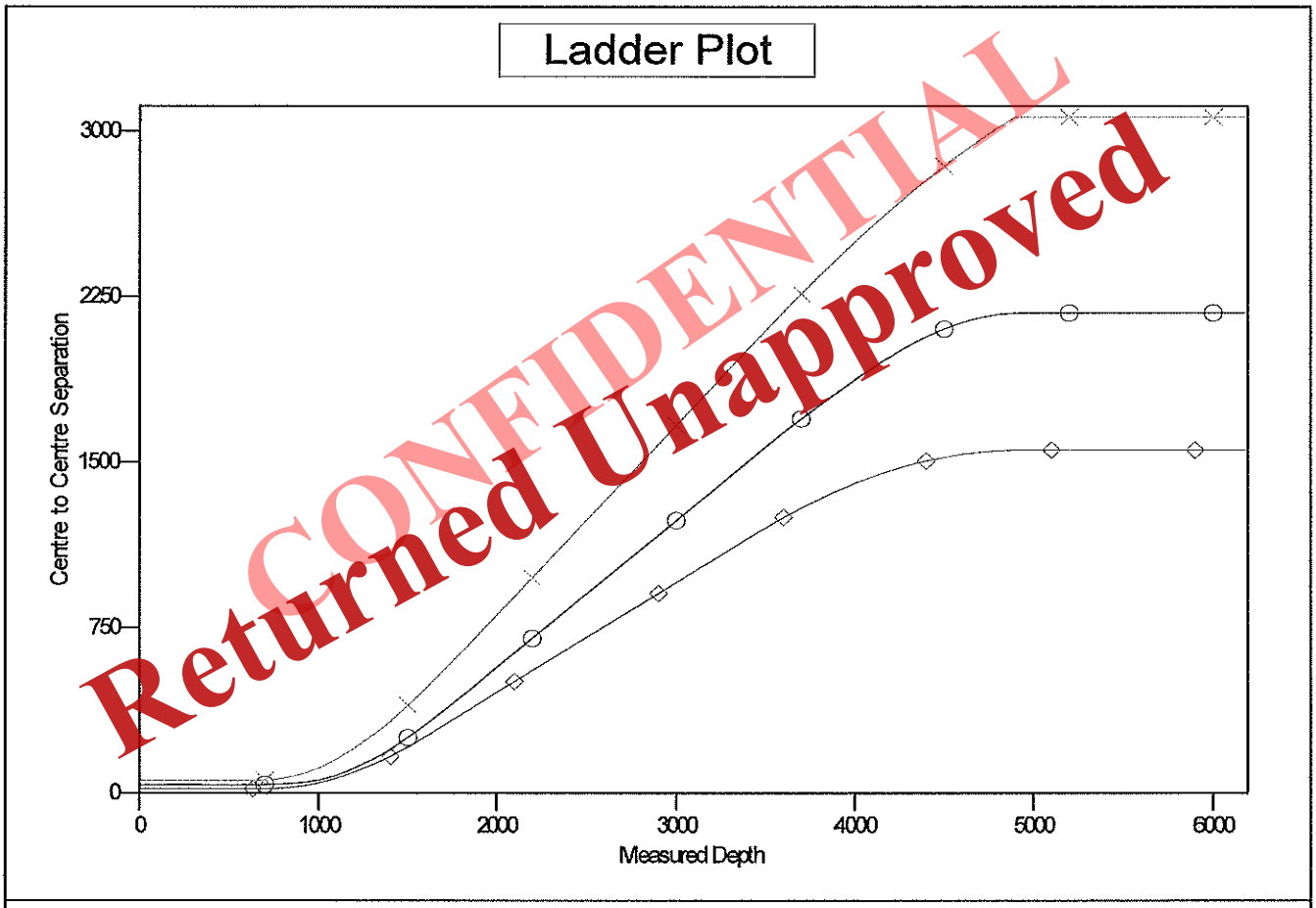
Received: April 06, 2013

| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 6988.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 111° 30' 0.000 W

Coordinates are relative to: LC Tribal 5-22D-57
Coordinate System is US State Plane 1927 (Exact solution), Utah Central 4302
Grid Convergence at Surface is: 0.54°

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LEGEND

LC FEE 11-22-57, Wellbore #1, Design #1 V0 — LC FEE 13-22D-57, Wellbore #1, Design #1 V0 — LC Tribal 15-22D-57, Wellbore #1, Design #1 V0



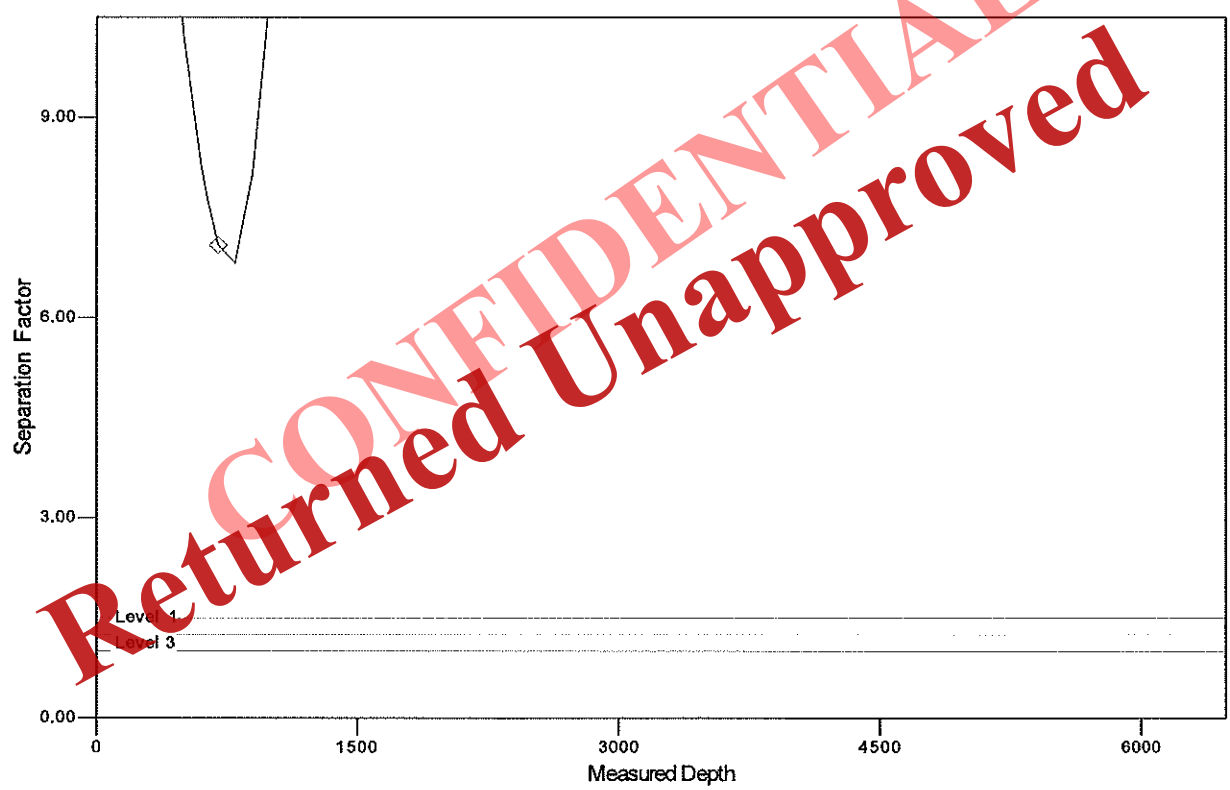
Received: April 06, 2013

| | | | |
|---|---|---|---|
| **Company:** | Berry Petroleum Company | **Local Co-ordinate Reference:** | Well LC Tribal 5-22D-57 |
| **Project:** | Duchesne Co., UT (UT27C) | **TVD Reference:** | WELL @ 6988.00usft |
| **Reference Site:** | Sec.22-T5S-R7W | **MD Reference:** | WELL @ 6988.00usft |
| **Site Error:** | 0.00 usft | **North Reference:** | True |
| **Reference Well:** | LC Tribal 5-22D-57 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.00 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | Design #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 6988.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 111° 30' 0.000 W

Coordinates are relative to: LC Tribal 5-22D-57
Coordinate System is US State Plane 1927 (Exact solution), Utah Central 4302
Grid Convergence at Surface is: 0.54°

## Separation Factor Plot

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LEGEND

LC FEE 11-22-57, Wellbore #1, Design #1 V0 — LC FEE 13-22D-57, Wellbore #1, Design #1 V0 — LC Tribal 15-22D-57, Wellbore #1, Design #1 V0

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Received: April 06, 2013

## AFFIDAVIT OF SURFACE DAMAGE AGREEMENT

SHAWN HAWK, the Affiant herein, is a Production Superintendent for Berry Petroleum Company, a Delaware corporation, with an office located at 4000 S 4028 W, Rt 2 Box 7735, Roosevelt, Utah 84066, being of lawful age and duly sworn upon his oath and being duly authorized to make this affidavit on behalf of said corporation hereby deposes and states to the best of his knowledge as follows:

That Berry Petroleum Company has a Surface Damage Agreement signed by the current surface owner covering the following described property, hereinafter referred to as the Land:

**TOWNSHIP 5 SOUTH, RANGE 7 WEST, USB&M**
Section 22 NE ¼ SW ¼

Affiant further states said Surface Damage Agreement GRANTS, SELLS, and CONVEYS unto Berry Petroleum Company an easement for ingress and egress to, along with a right to use, that portion of the herein described property as may be necessary to construct, use, and maintain a well site or well sites (including location of additional wells on each well site in the case of directional or horizontal drilling) for the drilling, completion and operation of an oil and gas well or wells (including but not limited to pumping facilities and tank batteries) over, under and through the herein described Land.

Affiant further states said Surface Damage Agreement GRANTS, SELLS, and CONVEYS unto Berry Petroleum Company the right to construct, entrench, maintain, operate, replace, remove, protect, or abandon a pipeline or pipelines for water or gas with appurtenances thereto, including, but not limited to, valves, metering equipment, and cathodic equipment; to construct, maintain, relocate, or abandon a road (said well sites, pipelines, appurtenance, valves, metering equipment, cathodic equipment and road being sometimes collectively call the "facilities") over, under, and through the herein described Land.

Executed and effective as of this 5th day of April 2013.

**Berry Petroleum Company**

By: Shawn Hawk
Shawn Hawk
Field Landman

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# SURFACE USE PLAN of OPERATIONS

***Attachment for Permit to Drill:***

| | |
|---|---|
| **Name of Operator:** | Berry Petroleum Company |
| **Address:** | 4000 South 4028 West/Rt. 2 Box 7735<br>Roosevelt, Utah 80466 |
| **Well Location:** | LC Tribal 5-22D-57<br>SHL: 1833' FSL & 1905' FWL<br>BHL: 2242' FNL & 924' FWL<br>NE/SW/4 of Sec. 22, T5S, R7W. |

The surface owner or surface owner representative and dirt contractor will be proved with an approved copy of the surface use plan of operations and approved conditions of approval before initiating construction.

**A Existing Roads**

To reach the Berry Petroleum Company well, LC Tribal 5-22D-57, in Section 22-T5S-R7W:

The proposed well site is approximately 25 miles west of Duchesne, Utah.

Proceed in a westerly direction from Duchesne, Utah, along US Highway 40 for approximately 8.1 miles to the junction of this road and the existing Strawberry Road to the south. Turn left and proceed in a southerly thence westerly direction thence southerly direction for approximately 5.6 miles to the junction of this road and the Lake Canyon Road to the south. Proceed in a southerly thence southwesterly direction for approximately 11.0 miles to the beginning of the proposed access. Follow the road flags in a southwesterly direction for approximately 219 feet to the proposed LC Fee 11-22-27 and 13-22D-27 and LC Tribal 5-22D-57 and 15-22D-57 location.

Berry Petroleum Company will improve or maintain existing roads in a condition the same or better than before operations began. Best Management Practices will be considered when improving or maintaining existing roads. In general this would involve the need for some surface material or fill to prevent or repair holes in the road due to heavy truck traffic during the drilling and completion operations. If repairs are made the operator will secure the appropriate material from private sources.

**B New or Reconstructed Access Roads**

See Topographic Map "A & B" for the location of the proposed access road. Berry Petroleum Company will construct a new access road across DWR surface for approximately 219 feet (0.04 miles) to the proposed LC Fee 11-22-57, 13-22D-57, LC Tribal 5-22D-57 and 15-22D-57 location.

**C Location of Existing Wells**

See Topographic Map "D" for the location of existing wells within a 1mile radius.

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**D Location of Tank Batteries, Production Facilities and Production Gathering and Service Lines**

A containment dike will be constructed completely around those production facilities which contain fluids (i.e., production tanks, produced water tanks). This dike will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank. The site specific APD will address additional capacity if such is needed due to environmental concerns. The use of topsoil for the construction of dikes will not be allowed. If a Spill Prevention, Control, and Countermeasure (SPCC) Plan is required by the Environmental Protection Agency, the containment dike may be expanded with the Authorized Agency Officer's approval to meet SPCC requirements.

The proposed pipeline will tie in at an existing pipeline. Map "C" illustrating the proposed route is attached. The proposed pipeline will be 4"-6" polypipe and be placed above ground. The pipeline will run in the same corridor as the above proposed access road.

All site security guidelines identified in Federal regulation 43 CFR 3126.7, will be adhered to. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease production will have prior written approval form the Authorized Agency Officer.

Gas meter runs will be located approximately 100 feet from the wellhead. Where necessary, the gas line will be anchored down from the wellhead to the meter.

**E Location and Type of Water Supply**

Water for the drilling and completion will be pumped or trucked from one of the following Berry source wells:

- Water Permit # 43-12400, Sec. 23, T5S, R5W
- Water Permit # 43-12400, Sec. 24, T5S, R5W
- Water Permit # 43-1221, Sec. 30, T3S, R8W
- Water Permit # 43-1226, Sec. 30, T3S, R8W
- Water Permit # 43-1627, Sec. 30, T3S, R8W
- Water Permit # 43-1628, Sec. 12, T5S, R6W (Douglas E. & Yordis Nielsen )
- Duchesne City Culinary Water Dock located in Sec. 1, T4S, R5W
- East Duchesne Water, Arcadia Feedlot, Sec. 28, T3S, R3W
- Petroglyph Operating Company 08-04 Waterplant, Sec. 8, T5S, R3W.

**F Source of Construction Materials**

All construction materials for this location site and access road shall be borrow material accumulated during the construction of the location site and access road.

Additional gravel or pit lining material will be obtained from a private source.

The use of materials under Authorized Agency jurisdiction will conform to 43 CFR 3610.2-3.

**G Methods of Handling Waste Materials**

Drill fluids will be contained in a closed loop system. Cuttings will be contained on site and buried in a pit or used on location and/or access roads, whichever is deemed appropriate by the authorized agency.

After first production, produced wastewater from Berry Petroleum Company wells will be used for injection in our enhanced oil recovery project(s) in the Brundage Canyon Field or they will be trucked to one of the following approved waste water disposal sites:

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- R.N. Industries, Inc. Sec. 4, T2S, R2W, Bluebell
- MC & MC Disposal Sec. 12, T6S, R19E, Vernal
- LaPoint Recycle & Storage Sec. 12, T5S, R19E, LaPoint
- Water Disposal Inc. Sec. 32, T1S, R1W, Roosevelt
- ITL 4461 W 3000 So Roosevelt Location Pleasant Valley
- IWM PO Box 430 Altamont or 20250 W 2000 S Duchesne Location – Blue Bench
- Pro Water 12223 Highland Ave Ste B503 Rancho Cucamonga CA 91739 Location – Blue Bench

Should operations of the field be prohibited by the Authorized Officer, the wastewater shall be confined to the approved pit or storage tank for a period not to exceed 90 days. The use of such pit is hereby approved as part of this Application for Permit to Drill.

Production fluids will be contained in leak-proof tanks. All production fluids will be disposed of at approved disposal sites. Produced water, oil, and other byproducts will not be applied to roads or well pads for control of dust or weeds. The indiscriminate dumping of produced fluids on roads, well sites, or other areas will not be allowed.

Any spills of oil, gas, salt water, or other noxious fluids will be immediately cleaned up and removed to an approved disposal site.

A chemical portable toilet will be furnished with the drilling rig.

Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. Trash will not be burned on location.

All debris and other waste materials not contained in the trash cage will be cleaned up and removed from the location promptly after removal of the completion rig (weather permitting).

Any open pits will be fenced during the operations. The fencing will be maintained with best efforts until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of wells. Furthermore, extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will not be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completing of wells within these areas.

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**H Ancillary Facilities**

There are no ancillary facilities planned for at this time and none are foreseen in the future.

**I Well site Layout**

The attached Location Layout diagram describes drill pad cross-sections, cuts and fills, and locations of the mud tanks, reserve pit, pipe racks, trailer parking, spoil dirt stockpile(s) and surface material stockpile(s

**J Plans for Restoration of the Surface**

**Interim**
The dirt contractor will be provided with approved copies of the Surface Use Plan prior to construction activities.



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Upon well completion, within a reasonable time, the location and surrounding area will be cleared of all unused tubing, materials, trash, and debris not required for production.

Abandoned well sites, roads, and other disturbed areas will be restored as near as practical to their original condition. Where applicable, these conditions may include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions, and the re-establishment of vegetation as specified.

All disturbed areas will be re-contoured to the approximate natural contours.

Any drainage rerouted during the construction activities shall be restored to its original line of flow or as near as possible.

All areas of disturbance (including surface pipelines) must have appropriate surface use agreements or approvals in place with the proper owner and/or agency before such action is started.

The conditions of approval, as set forth by those owners and/or agencies, shall be adhered to.

Interim Reclamation consisting of minimizing the footprint of disturbance shall be accomplished by reclaiming all portions of the well site not needed for safe production operations. The portions of the well site not needed for operational and safety purposes will be recontoured to a final appearance that blends with the surrounding topography. Topsoil will be spread over these areas. The operator will spread the topsoil over the entire location except where an all-weather surface, access route or turnaround is needed. Production facilities should be clustered or placed offsite to maximize the opportunity for interim reclamation. Any incidental use on interim reclamation may require restoration of damage. This may require recontouring and seeding of the damaged area.

Paint all production facilities and equipment, not otherwise regulated (OSHA, etc.), Yuma Green.

Install Hospital muffler to the Pump-jack to minimize engine noise.

**Final**

Prior to the construction of the location, the top 12 inches of soil material (if present) will be stripped and stockpiled. Placement of the topsoil is noted on the location plat attached. Topsoil shall be stockpiled separately from subsoil materials. Topsoil salvaged from the reserve pit shall be stockpiled separately near the reserve pit.

When restoration activities have been completed, the location site and new access road cuts and shoulders shall be reseeded. Prior to reseeding, all disturbed areas, including the old access road will be scarified and left with a rough surface.

The Authorized Agency Officer shall be contacted for the required seed mixture. Seed will be broadcast and the amount of seed mixture per acre will be doubled. The seeded area will then be "walked" with a dozer to assure coverage of the seeds. The seed mixture will reflect the recommendation from the Archeology study done.

At final abandonment, all casing shall be cut off at the base of the cellar or 3 feet below final restored ground level, whichever is deeper, and cap the casing with a metal plate a minimum of 0.25 inches thick. The cap will be welded in place and the well location and identity will be permanently inscribed on the cap. The cap also will be constructed with a weep hole.

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**K Well Surface & Access Ownership:**

State of Utath – DWR
1594 West North Temple, STE 2110
Salt Lake City, UT 84114
Local Contact – Ben Williams, 435-823-0946

**L Other information**

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

Berry will control noxious weeds along access road use authorizations, pipeline route authorizations, well sites or other applicable facilities. A list of noxious weeds may be obtained from the Authorized Agency or the appropriate County Extension Office.

Drilling rigs and/or equipment used during drilling operations on this location will not be stacked or stored on administered lands after the conclusion of drilling operations or at any other time without authorization by the Authorized Agency Officer. If authorization is obtained, such storage is only a temporary measure.

Travel is restricted to approved routes only.

Outlaw Engineering Inc. has conducted a Class I archaeological survey. A copy of this report has been submitted under separate cover by Outlaw Engineering Inc. to the appropriate agencies.

Outlaw Engineering Inc. has conducted a Biological Assessment of the proposed location. A copy of this report has been submitted under separate cover by Outlaw Engineering Inc. to the appropriate agencies.

All personnel will refrain from collecting artifacts and from disturbing any significant cultural resources in the area. The operator is responsible for informing all persons in the area who are associated with this project that they may be subject to prosecution for knowingly disturbing historic or archaeological sites or for collecting artifacts. All vehicular traffic, personnel movement, construction, and restoration activities shall be confined to the areas examined, as referenced in the archaeological report, and to the existing roadways and/or evaluated access routes. If historic or archaeological materials are uncovered during construction, Berry Petroleum Company is to immediately stop work that might further disturb such materials and contact the Authorized Agency Officer.

Within five working days, the Authorized Agency Officer will inform the operator as to:

- Whether the materials appear eligible for the National Historic Register of Historic Places;
- The mitigation measures Berry will likely have to undertake before the site can be used (assuming in-situ preservation is not necessary); and a time frame for the Authorized Officer to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the Authorized Officer are correct and that the mitigation measures are appropriate.

If Berry wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the Authorized Agency Officer and/or the surface owner will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise the operator will be responsible for mitigation costs. The Authorized Agency Officer and/or the surface owner will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Agency Officer that required mitigation has been completed, Berry will then be allowed to resume construction.

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All Surface Use Conditions of Approval associated with the Landowner Surface Use Agreement and Environmental Analysis Mitigation Stipulations will be adhered to.

All well site locations will have appropriate signs indicating the name of the operator, the lease serial number, the well name and number, the survey description of the well (footages or the quarter/quarter section, the section, township, and range).

## M Air Emissions Analysis

Proposed Action Annual Emissions (tons/year) [1]

Table 4-1.

| Pollutant | Development | Production | Total |
|---|---|---|---|
| $NO_x$ | 3.8 | 5.4 | 9.2 |
| CO | 2.6 | 5 | 7.6 |
| VOC | 1.16 | 39.8 | 40.4 |
| $SO_2$ | 0.003 | 0.28 | 0.286 |
| $PM_{10}$ | 1.8 | 0.52 | 2.32 |
| $PM_{2.5}$ | 0.6 | 0.52 | 1.12 |
| Benzene | 0.02 | 0.2 | 0.22 |
| Toluene | 0.008 | 0.202 | 0.412 |
| Ethylbenzene | 0.002 | 0.388 | 0.39 |
| Xylene | 0.006 | 0.654 | 0.66 |
| n-Hexane | 0 | 2.14 | 2.14 |
| Formaldehyde | 0.06 | 0.326 | 0.386 |

[1] Emissions include 2 producing well and associated operations traffic during the year in which the project is developed

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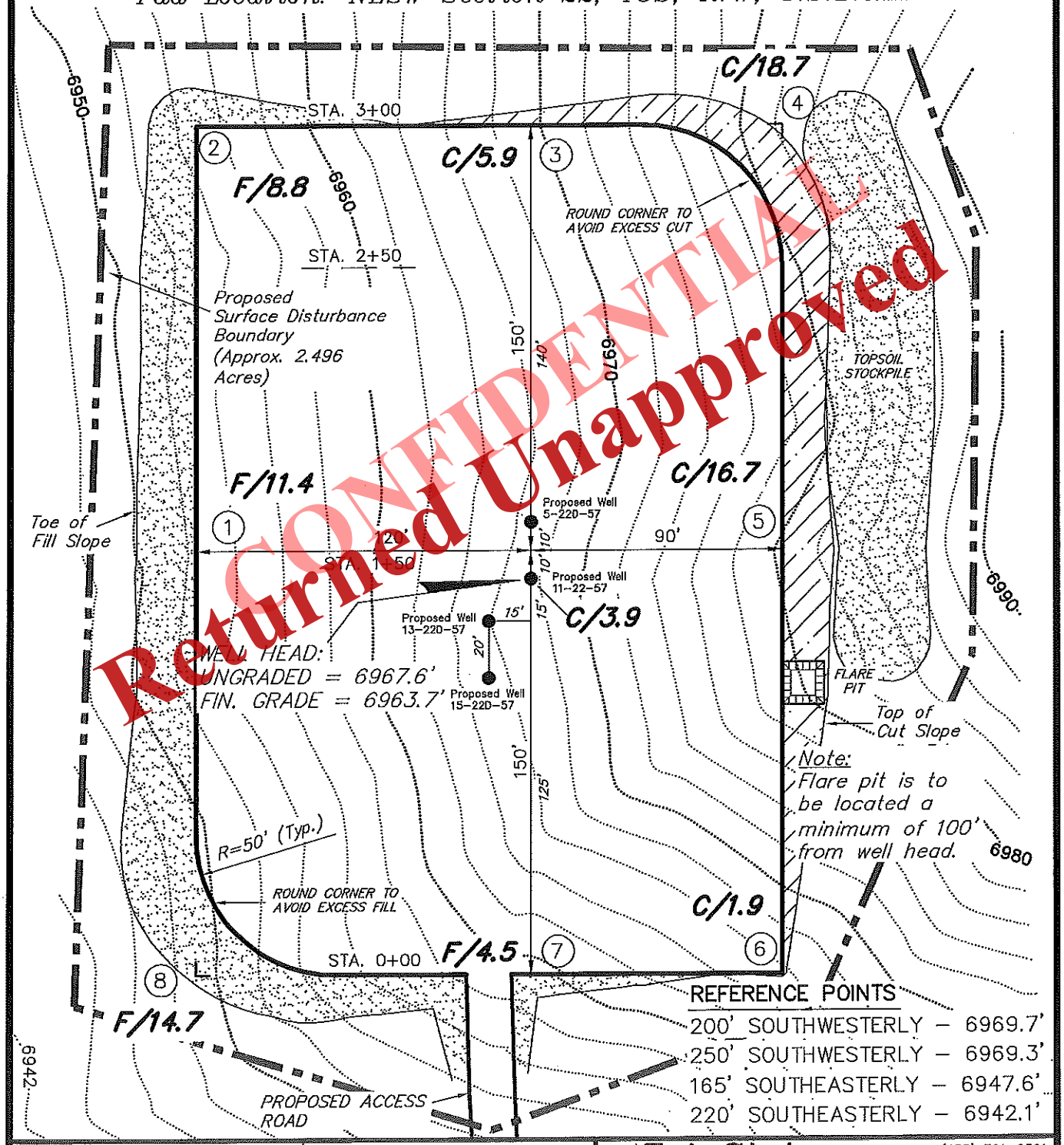
# BERRY PETROLEUM COMPANY

## LOCATION LAYOUT

**LC FEE 11-22-57 (Proposed Well)**
**LC FEE 13-22D-57 (Proposed Well)**
**LC TRIBAL 5-22D-57 (Proposed Well)**
**LC TRIBAL 15-22D-57 (Proposed Well)**

Pad Location: NESW Section 22, T5S, R7W, U.S.B.&M.

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| | | | |
|---|---|---|---|
| SURVEYED BY: K.G.S. | DATE SURVEYED: | 05-30-12 | Tri State Land Surveying, Inc. (435) 781-2501 |
| DRAWN BY: L.C.S. | DATE DRAWN: | 06-06-12 | 180 NORTH VERNAL AVE. VERNAL, UTAH 84078 |
| SCALE: 1" = 50' | REVISED: | | |

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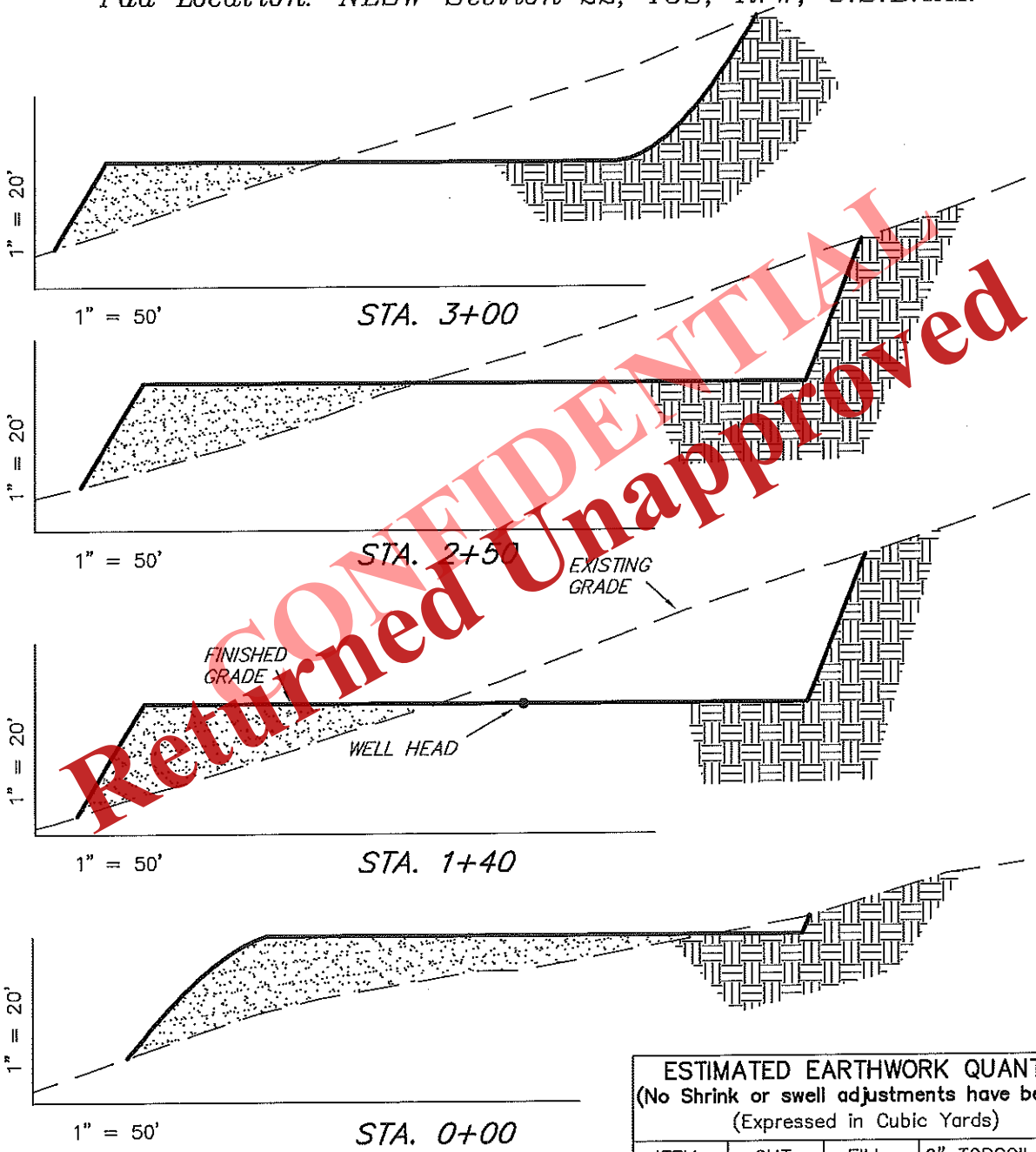
# BERRY PETROLEUM COMPANY

## CROSS SECTIONS

**LC FEE 11-22-57 (Proposed Well)**
**LC FEE 13-22D-57 (Proposed Well)**
**LC TRIBAL 5-22D-57 (Proposed Well)**
**LC TRIBAL 15-22D-57 (Proposed Well)**

*Pad Location: NESW Section 22, T5S, R7W, U.S.B.&M.*

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**ESTIMATED EARTHWORK QUANTITIES**
**(No Shrink or swell adjustments have been used)**
(Expressed in Cubic Yards)

| ITEM | CUT | FILL | 6" TOPSOIL | EXCESS |
|---|---|---|---|---|
| PAD | 8,780 | 8,780 | Topsoil Is not Included in Pad Cut | 0 |
| PIT | 0 | 0 | | 0 |
| TOTALS | 8,780 | 8,780 | 1,420 | 0 |

NOTE:
UNLESS OTHERWISE NOTED
CUT SLOPES ARE AT 1:1
FILL SLOPES ARE AT 1.5:1

| | | | |
|---|---|---|---|
| SURVEYED BY: K.G.S. | DATE SURVEYED: | 05-30-12 | |
| DRAWN BY: L.C.S. | DATE DRAWN: | 06-06-12 | |
| SCALE: 1" = 50' | REVISED: | | |

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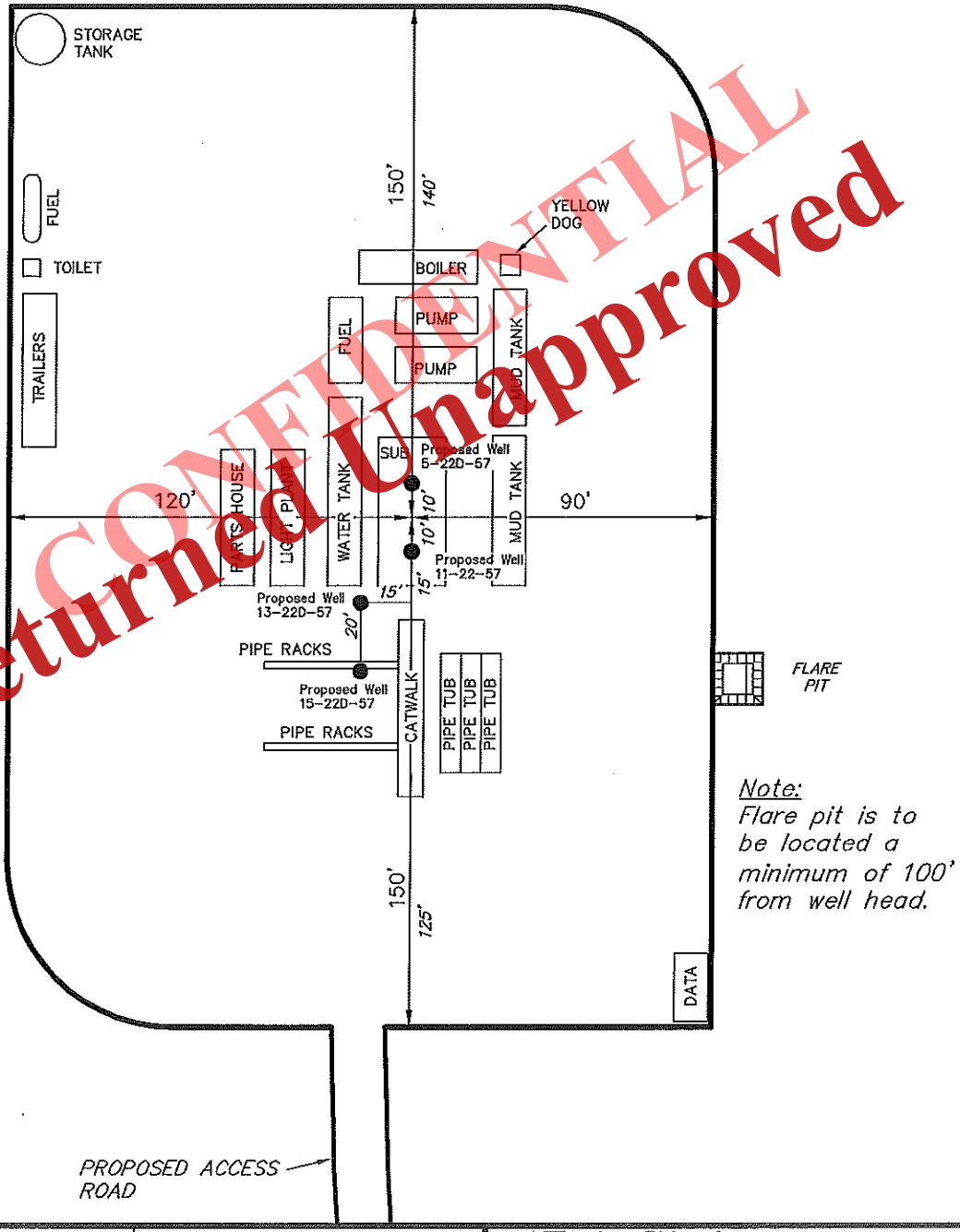
# BERRY PETROLEUM COMPANY

## TYPICAL RIG LAYOUT

**LC FEE 11-22-57 (Proposed Well)**
**LC FEE 13-22D-57 (Proposed Well)**
**LC TRIBAL 5-22D-57 (Proposed Well)**
**LC TRIBAL 15-22D-57 (Proposed Well)**

*Pad Location: NESW Section 22, T5S, R7W, U.S.B.&M.*




*Note:*
*Flare pit is to be located a minimum of 100' from well head.*

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| | | | |
|---|---|---|---|
| SURVEYED BY: K.G.S. | DATE SURVEYED: 05-30-12 | Tri State Land Surveying, Inc. | (435) 781-2501 |
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| SCALE: 1" = 50' | REVISED: | | |

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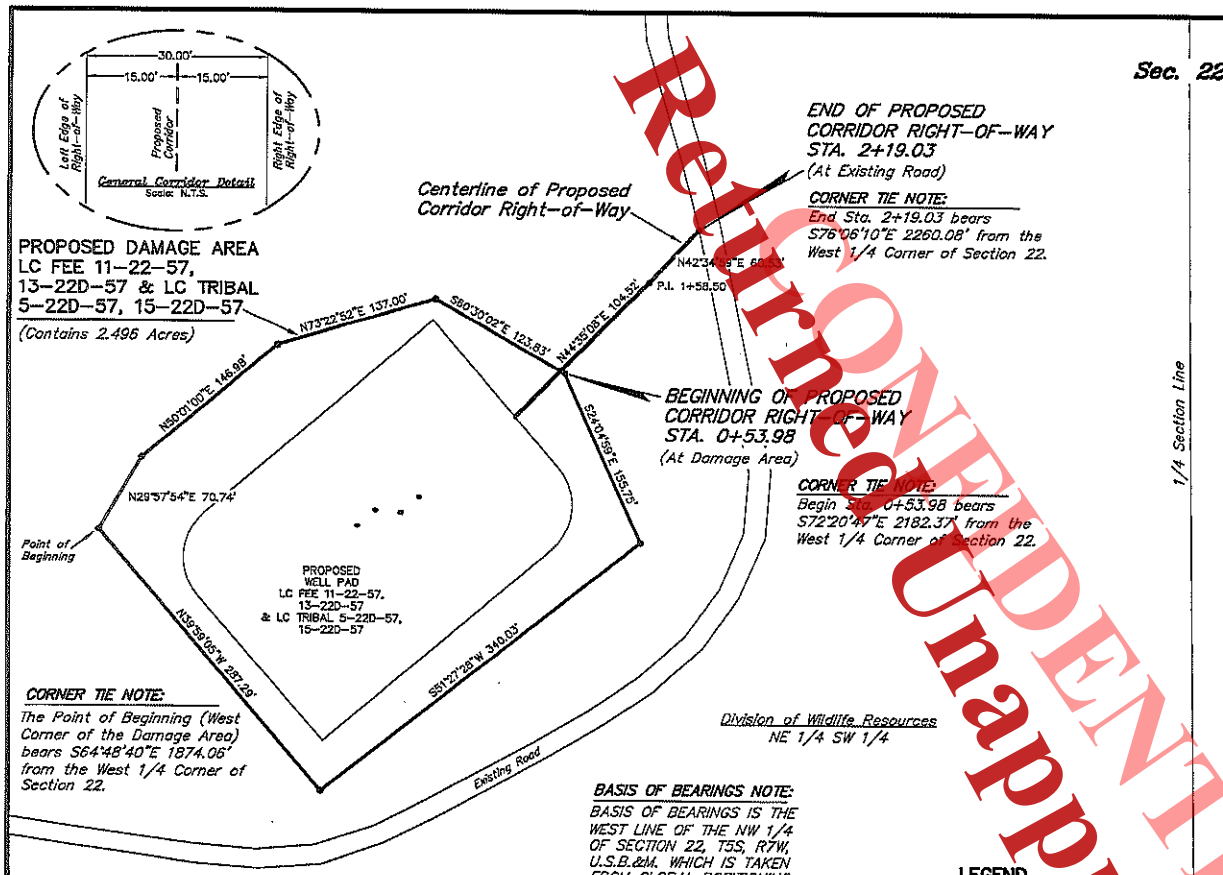
# BERRY PETROLEUM COMPANY

## PROPOSED CORRIDOR RIGHT–OF–WAY ON DIVISION OF WILDLIFE RESOURCES

**For LC FEE 11–22–57, 13–22D–57 & LC TRIBAL 5–22D–57, 15–22D–57**

*Located in Section 22, T5S, R7W, U.S.B.&M.*
*Duchesne County, Utah*




| RIGHT–OF–WAY LENGTH – Division of Wildlife Resources | | |
|---|---|---|
| Section 22 | = | 165.05' |

**LEGEND**

◆ = SECTION CORNERS FOUND
P.L. = POINT OF INTERSECTION

**CORRIDOR RIGHT–OF–WAY DESCRIPTION**

A 30' WIDE RIGHT–OF–WAY LOCATED IN SECTION 22, T5S, R7W, U.S.B.&M. ALSO IN 34, T4S, R5W, U.S.B.&M. THE WIDTH OF SAID RIGHT–OF–WAY BEING 15' ON EITHER SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

BEGINNING A 30' WIDE RIGHT–OF–WAY AT A POINT IN THE NE 1/4 SW 1/4 OF SECTION 22, T5S, R7W, U.S.B.&M. WHICH BEARS S72°20'47"E 2182.37' FROM THE WEST 1/4 CORNER OF SAID SECTION 22; THENCE N44°35'08"E 104.52'; THENCE N42°34'59"E 60.53' TO A POINT IN THE SAID NE 1/4 SW 1/4 OF SAID SECTION 22 WHICH BEARS S76°06'10"E 2260.08' FROM THE SAID WEST 1/4 CORNER OF SECTION 22. THE SIDE LINES OF SAID DESCRIBED RIGHT–OF–WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. BASIS OF BEARINGS IS THE WEST LINE OF THE NW 1/4 OF SAID SECTION 22 WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N01°05'50"W A MEASURED DISTANCE OF 2636.62'. CONTAINS 2.553 ACRES MORE OR LESS.

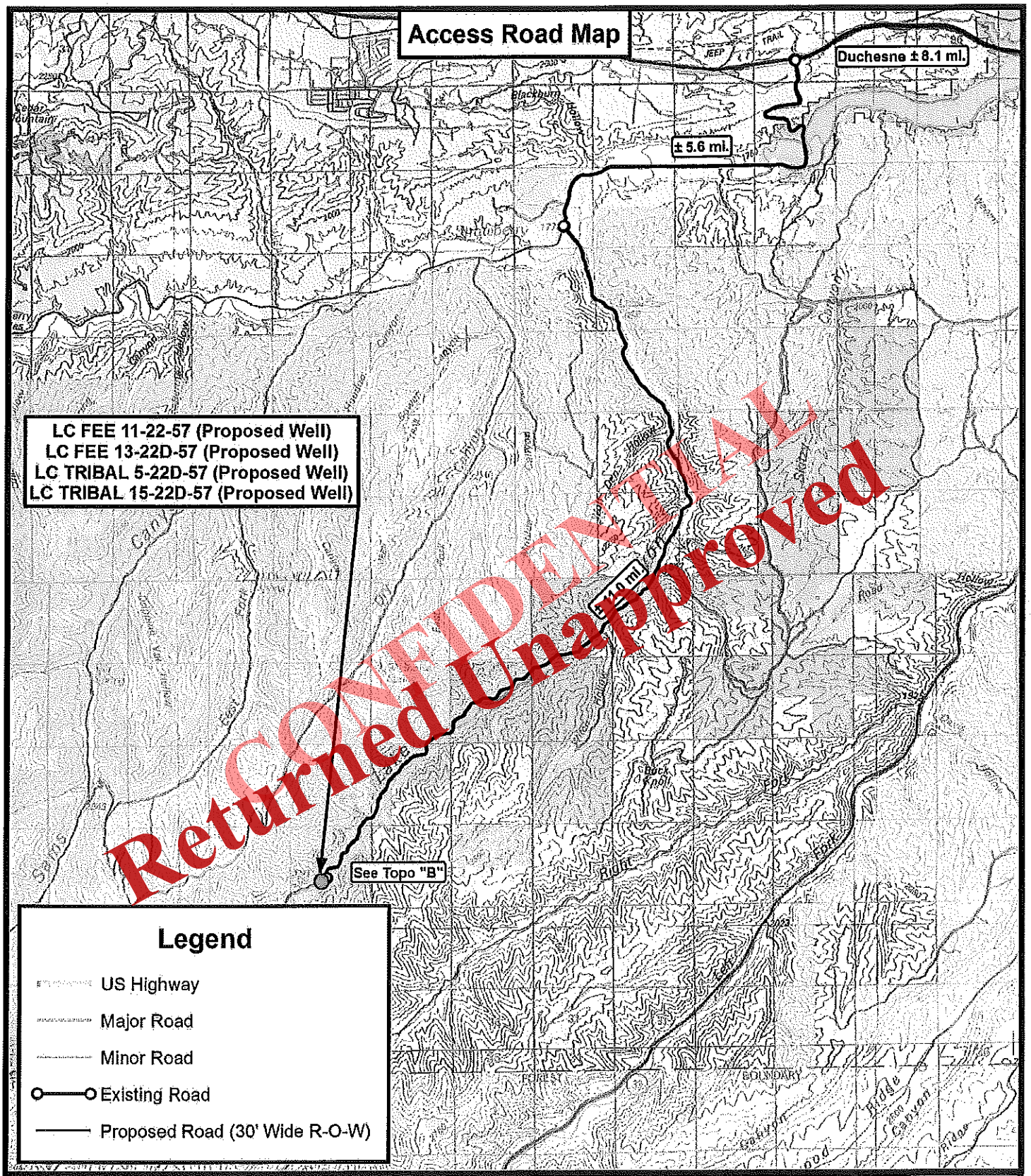
**DAMAGE AREA DESCRIPTION**

BEGINNING AT A POINT IN THE NE 1/4 SW 1/4 OF SECTION 22, T5S, R7W, U.S.B.&M. WHICH BEARS S64°48'40"E 1874.06' FROM THE WEST 1/4 CORNER OF SAID SECTION 22; THENCE N29°57'54"E 70.74'; THENCE N50°01'00"E 146.98'; THENCE N73°22'52"E 137.00'; THENCE S80°30'02"E 123.83'; THENCE S24°04'59"E 155.75'; THENCE S51°27'28"W 340.03'; THENCE N39°59'05"W 287.29' TO THE POINT OF BEGINNING. BASIS OF BEARINGS IS THE WEST LINE OF THE NW 1/4 OF SAID SECTION 22 WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N01°05'50"W A MEASURED DISTANCE OF 2636.62'. CONTAINS 2.496 ACRES MORE OR LESS.

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.

REGISTERED LAND SURVEYOR
REGISTRATION NO. 189377
STATE OF UTAH
06–12–12
STACY W. STEWART
STATE OF UTAH

| | | | |
|---|---|---|---|
| SURVEYED BY: K.G.S. | Tri State Land Surveying, Inc. (435) 781–2501 180 NORTH VERNAL AVE. – VERNAL, UTAH 84078 | SHEET | |
| DRAWN BY: L.C.S. | | 1 | |
| DATE: 06–12–12 | | OF 1 | |
| SCALE: 1" = 100' | | | |
| DWG: 12–0399 | | | |





Tri State Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
P: (435) 781-2501
F: (435) 781-2518


N

**BERRY PETROLEUM COMPANY**
LC FEE 11-22-57, 13-22D-57 (Proposed Well)
LC TRIBAL 5-22D-57, 15-22D-57 (Proposed Well)
SEC. 22, T5S, R7W, U.S.B.&M.
Duchesne County, UT.

| | |
|---|---|
| DRAWN BY: | J.A.S. |
| DATE: | 06-11-2012 |
| SCALE: | 1:100,000 |

TOPOGRAPHIC MAP

SHEET A

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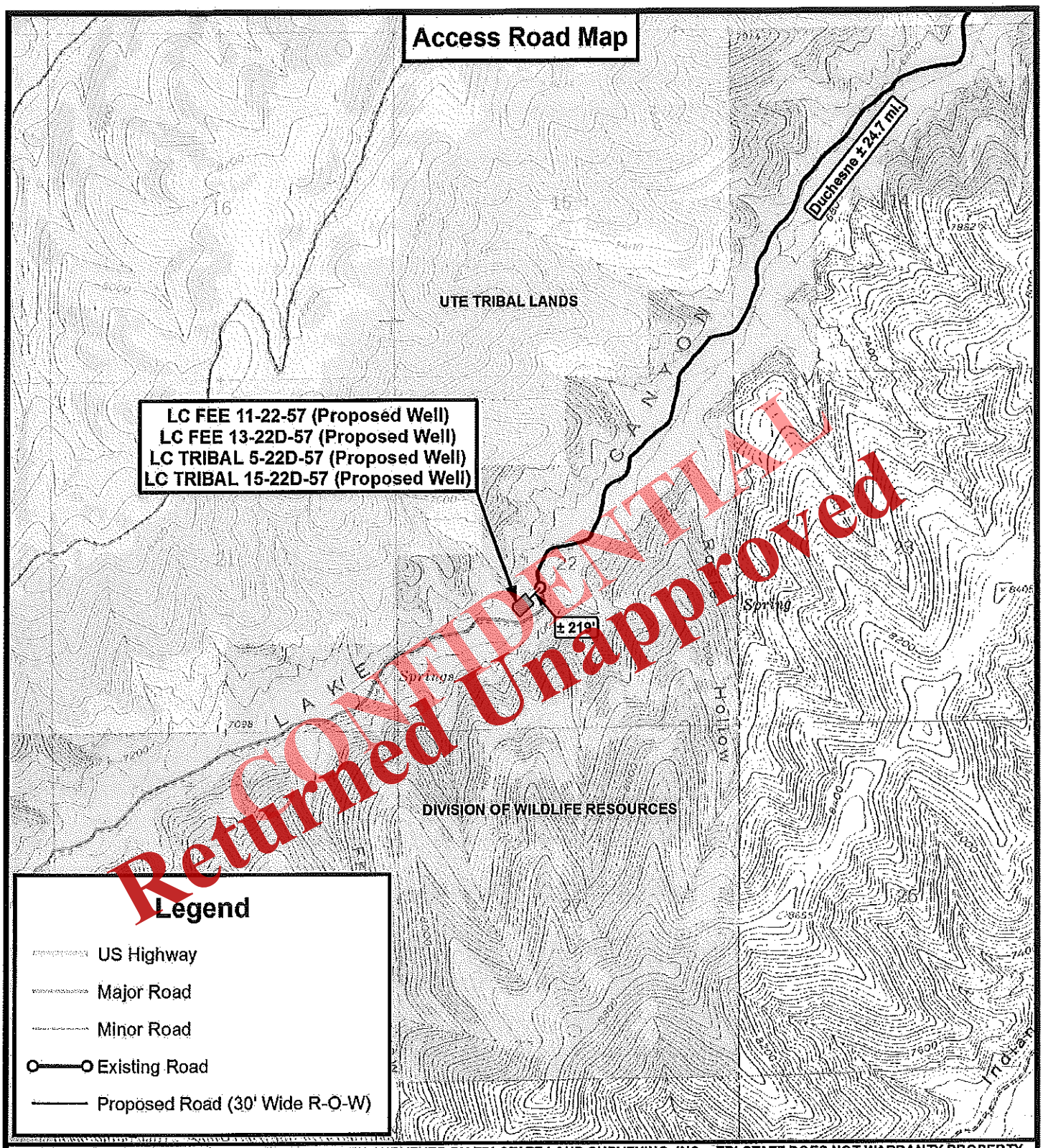


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Tri State Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
P: (435) 781-2501
F: (435) 781-2518

N

**BERRY PETROLEUM COMPANY**
LC FEE 11-22-57, 13-22D-57(Proposed Well)
LC TRIBAL 5-22D-57, 15-22D-57 (Proposed Well)
SEC. 22, T5S, R7W, U.S.B.&M.
Duchesne County, UT.

| | |
|---|---|
| DRAWN BY: | J.A.S. |
| DATE: | 06-11-2012 |
| SCALE: | 1" = 2,000' |

TOPOGRAPHIC MAP

SHEET B

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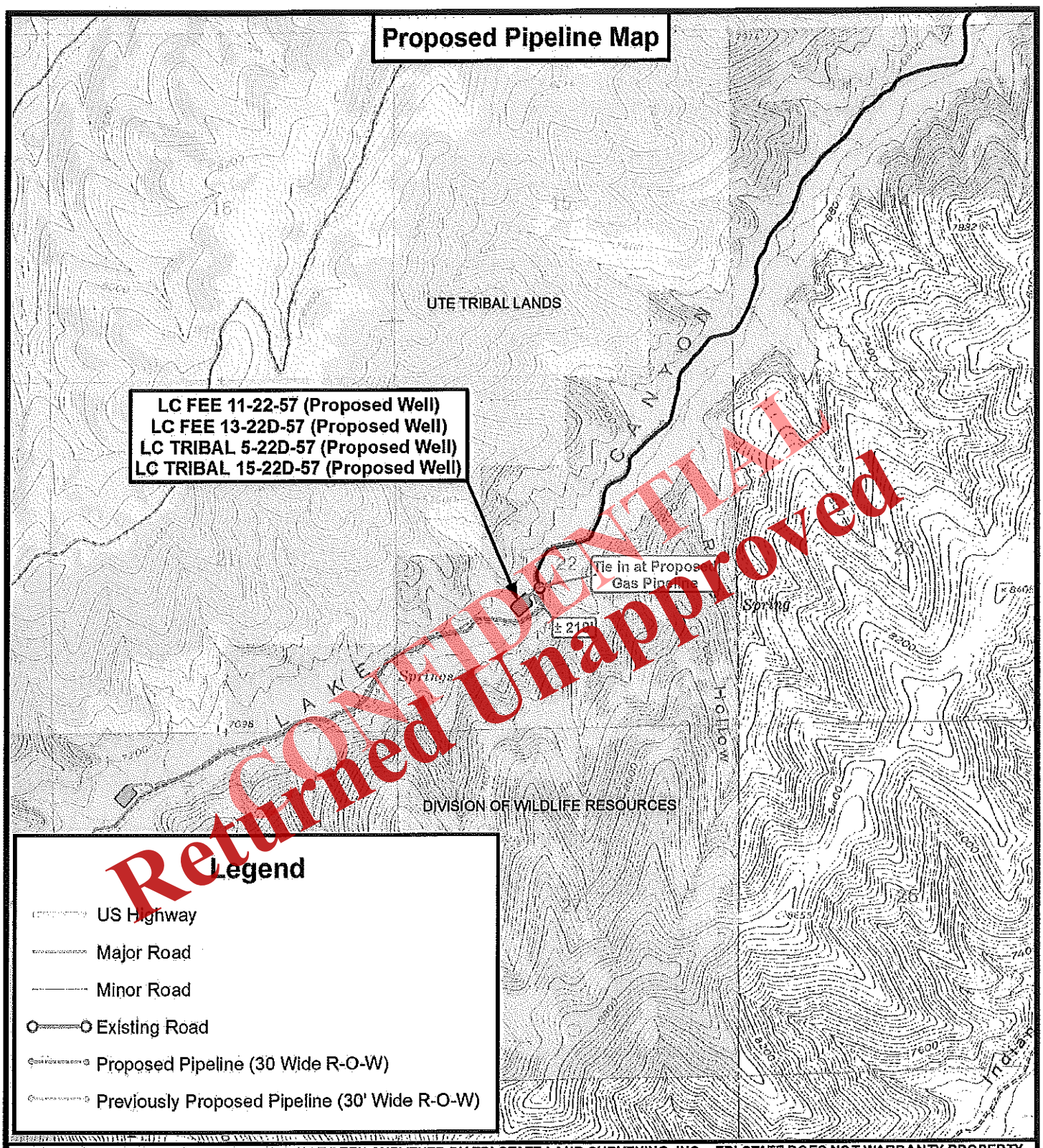


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Tri State Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
P: (435) 781-2501
F: (435) 781-2518

N

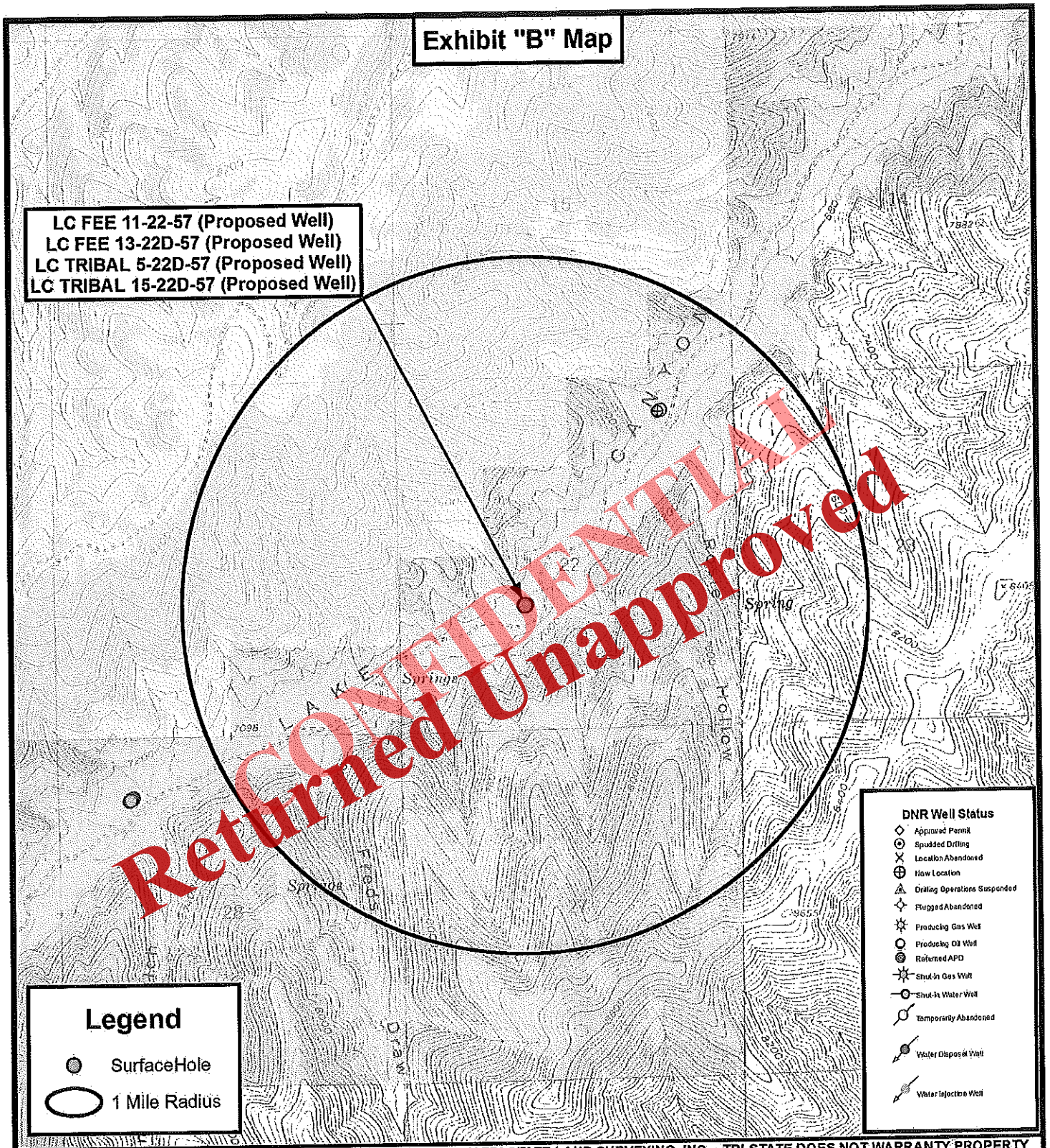
**BERRY PETROLEUM COMPANY**
LC FEE 11-22-57, 13-22D-57 (Proposed Well)
LC TRIBAL 5-22D-57, 15-22D-57 (Proposed Well)
SEC. 22, T5S, R7W, U.S.B.&M.
Duchesne County, UT.

| | |
|---|---|
| DRAWN BY: | J.A.S. |
| DATE: | 06-11-2012 |
| SCALE: | 1" = 2,000' |

TOPOGRAPHIC MAP

SHEET C

Received: April 06, 2013




THE PARCEL INFORMATION SHOWN HAS NOT BEEN SURVEYED BY TRI-STATE LAND SURVEYING, INC. - TRI-STATE DOES NOT WARRANTY PROPERTY PARCEL DATA OR ANY ASSOCIATED INFORMATION. A PROPERTY SURVEY IS REQUIRED TO DETERMINE THE ACTUAL LOCATION OF PROPERTY LINES AND SHOW ACCURATE DISTANCES ACROSS PARCELS.


Tri State Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
P: (435) 781-2501
F: (435) 781-2518


N

**BERRY PETROLEUM COMPANY**

LC FEE 11-22-57, 13-22D-57(Proposed Well)
LC TRIBAL 5-22D-57, 15-22D-57 (Proposed Well)
SEC. 22, T5S, R7W, U.S.B.&M.
Duchesne County, UT.

| | |
|---|---|
| DRAWN BY: | J.A.S. |
| DATE: | 06-11-2012 |
| SCALE: | 1" = 2,000' |

TOPOGRAPHIC MAP

SHEET D

Received: April 06, 2013

## Location Photos

### Center Stake
Looking Southerly

| | |
|---|---|
| Date Photographed: | 05/30/2012 |
| Photographed By: | K.Stewart |

### Access
Looking Westerly

| | |
|---|---|
| Date Photographed: | 05/30/2012 |
| Photographed By: | K.Stewart |

CONFIDENTIAL
Returned Unapproved

Tri State
Land Surveying, Inc.
180 NORTH VERNAL AVE. VERNAL, UTAH 84078
P: (435) 781-2501
F: (435) 781-2518

| | | | |
|---|---|---|---|
| DRAWN BY: | J.A.S. | REVISED: | |
| DATE: | 06-11-2012 | | |

**BERRY PETROLEUM COMPANY**

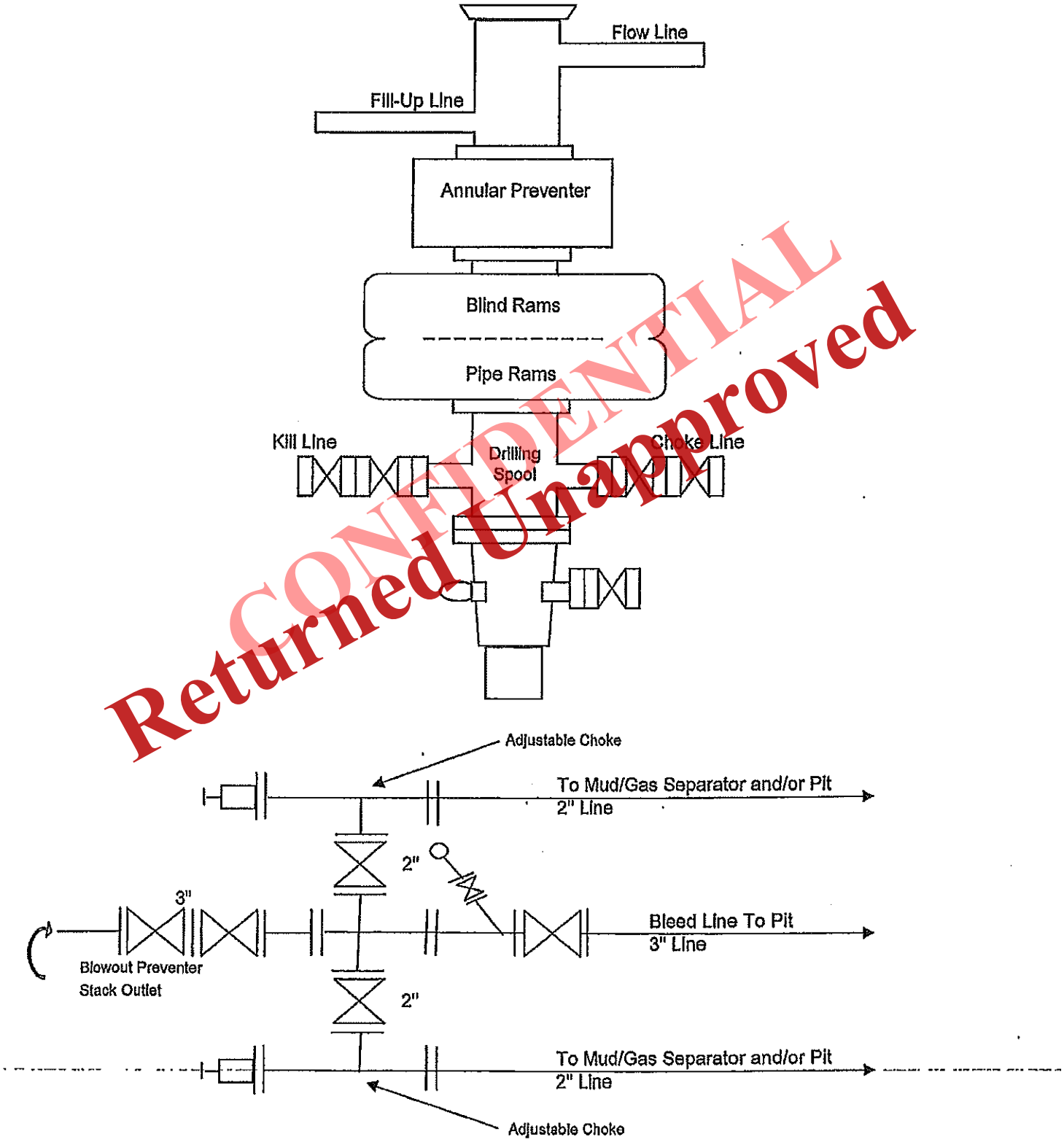
LC FEE 11-22-57, 13-22D-57 (Proposed Well)
LC TRIBAL 5-22D-57, 15-22D-57 (Proposed Well)
SEC. 22, T5S, R7W, U.S.B.&M.
Duchesne County, UT.

COLOR PHOTOGRAPHS

SHEET P

Received: April 06, 2013

## SCHEMATIC DIAGRAM OF 3,000 PSI BOP STACK

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Returned Unapproved

Received: April 06, 2013

# AFFIDAVIT OF NOTICE

I, **Kathy Fieldsted**, the affiant herein, being of lawful age and duly sworn upon his oath deposes and states to the best of my knowledge as follows:

Kathy Fieldsted is a Sr Regulatory & Permitting Tech. for **Berry Petroleum Company**, a Delaware Corporation, with headquarters located at 1999 Broadway, Suite 3700, Denver, Colorado 80202, and is duly authorized to make this affidavit on behalf of said corporation. This Affidavit is made in accordance with Utah's Oil, Gas and Mining regulation R649-3-22.

Berry Petroleum Company has submitted notices to commingle production from the Wasatch and Green River formations in the following wells:

LC Tribal 4-9D-56
LC Tribal 11-14D-57
LC Tribal 9-15D-57
LC Tribal 13-21D-57
LC Tribal 5-22D-57
LC Tribal 15-22D-57
LC Tribal 11-18D-56
LC Tribal 13-18D-56
LC Tribal 15-18D-56

Per the terms of the Ute Tribal Lake Canyon Exploration and Development Agreement BIA Lease # 14-20-H62-5500, Berry Petroleum Company is the owner of contiguous oil and gas leases or drilling units or has the right to the minerals overlying the pool for the aforementioned wells. Notice of intent to commingle production is hereby waived.

This instrument is executed this 12th day of December, 2012.

**Berry Petroleum Company**

By: Kathy Fieldsted

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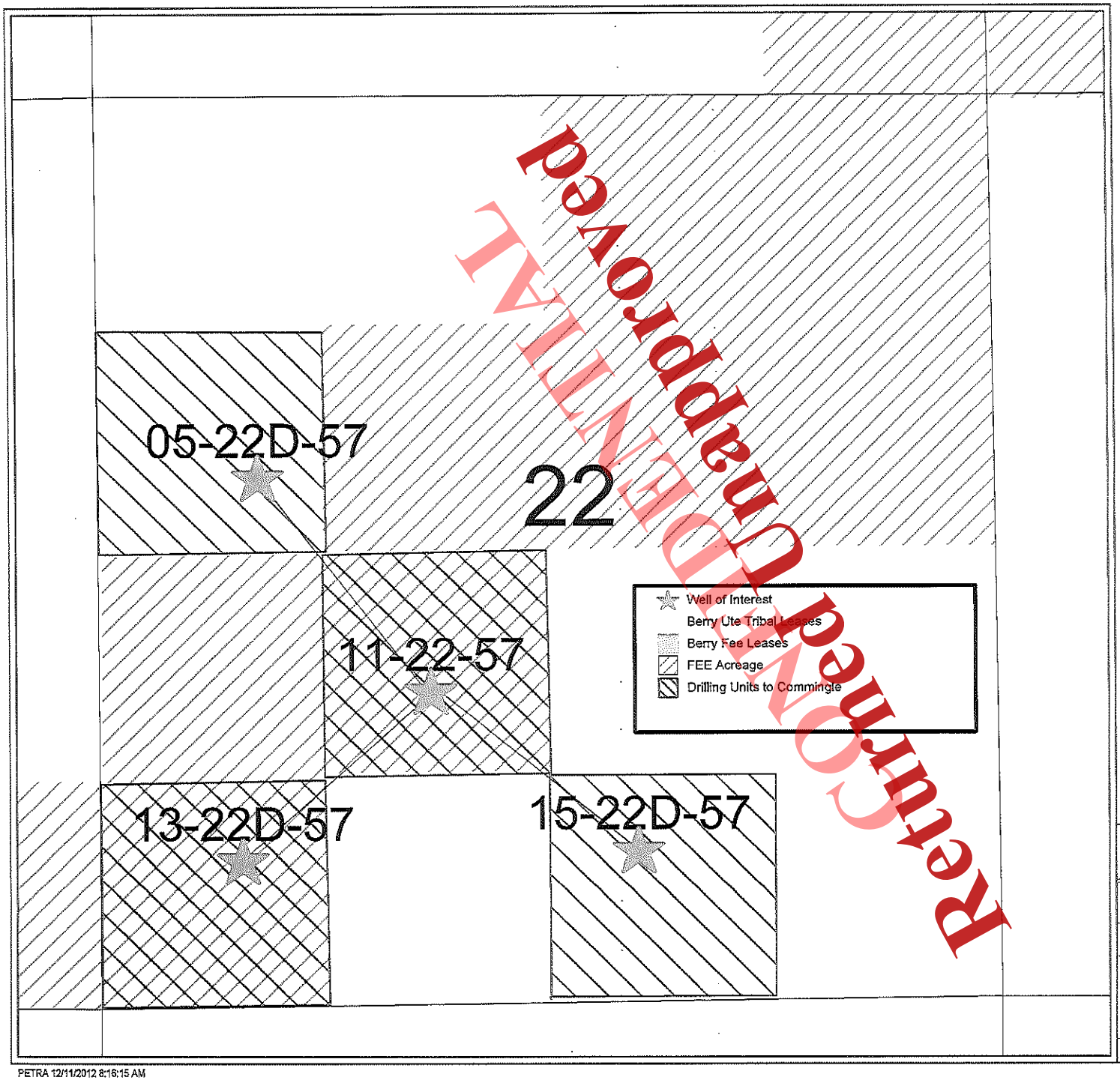
Returned Unapproved

Received: April 06, 2013

Received: April 06, 2013




Retuned Unapproved
CONFIDENTIAL

Berry Petroleum Company

Statewide Utah

Commingle Map

0 801 1,602
FEET

December 11, 2012

PETRA 12/11/2012 8:16:15 AM

Berry Petroleum Company
Rt 2 Box 7735
4000 S. 4028 W
Roosevelt, Utah 84066
Phone (435) 722-1325
Fax (435) 722-1321

April 5, 2013

Ms. Diana Whitney
State of Utah
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, UT 84115-5801

Re: Directional Drilling R649-3-11
LC TRIBAL 5-22D-57 1833' FSL & 1905' FWL (NESW – SHL)
2242' FNL & 924' FWL (SWNW – BHL)

Section 22, T5S-R7W
Duchesne, County, Utah

CONFIDENTIAL
Returned Unapproved

Dear Ms. Whitney:

Pursuant to the filing of Berry Petroleum's Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to the Exception to Location and Siting of Wells.

- The LC Tribal 5-22D-57 well is to be located within the Lake Canyon Field Area.
- Berry is locating the well at the surface location and directionally drilling from this location to minimize surface disturbance and Berry will be able to utilize the existing road and pipelines in the area.
- Furthermore, Berry hereby certifies that it is the sole working interest owner with 460 feet of the entire directional well bore and the remainder of the Ute Tribal section.

Therefore, based on the above stated information Berry Petroleum Company requests the permit be granted pursuant to R649-3-11.

Respectfully Submitted,

Krista Mecham

Krista Mecham
Sr. Regulatory & Permitting Technician

Received: April 06, 2013

SELF-CERTIFICATION STATEMENT

The following self -certification statement is provided per federal requirements dated May 7, 2007.

Please be advised that Berry Petroleum Company is considered to be the operator of the following well.

LC Tribal 5-22D-57
Section 22, T5S, R7W, U.S.B.& M.
SHL: 1833' FSL & 1905' FWL (NE/4SW/4)
BHL: 2242' FNL & 924' FWL (SW/4NW/4)
Duchesne, County, Utah

Berry Petroleum Company is responsible under the terms of the lease for the operations conducted upon the lease lands.

**Operator's Representative and Certification**

A) Representative

NAME: Krista M. Mecham

ADDRESS: Berry Petroleum Company
4000 South 4028 West
Route 2, Box 7735
Roosevelt, Utah 84066

PHONE: 435-722-1325

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations and onshore oil and gas orders. Berry Petroleum Company is fully responsible for the actions of its subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

The drilling permit will be valid for a period of two years from the date of approval. After permit termination, a new application will be filed for approval for any future operations.

B) Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge and belief, true and correct; and that the work associated with the operations proposed herein will be performed by Berry Petroleum Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

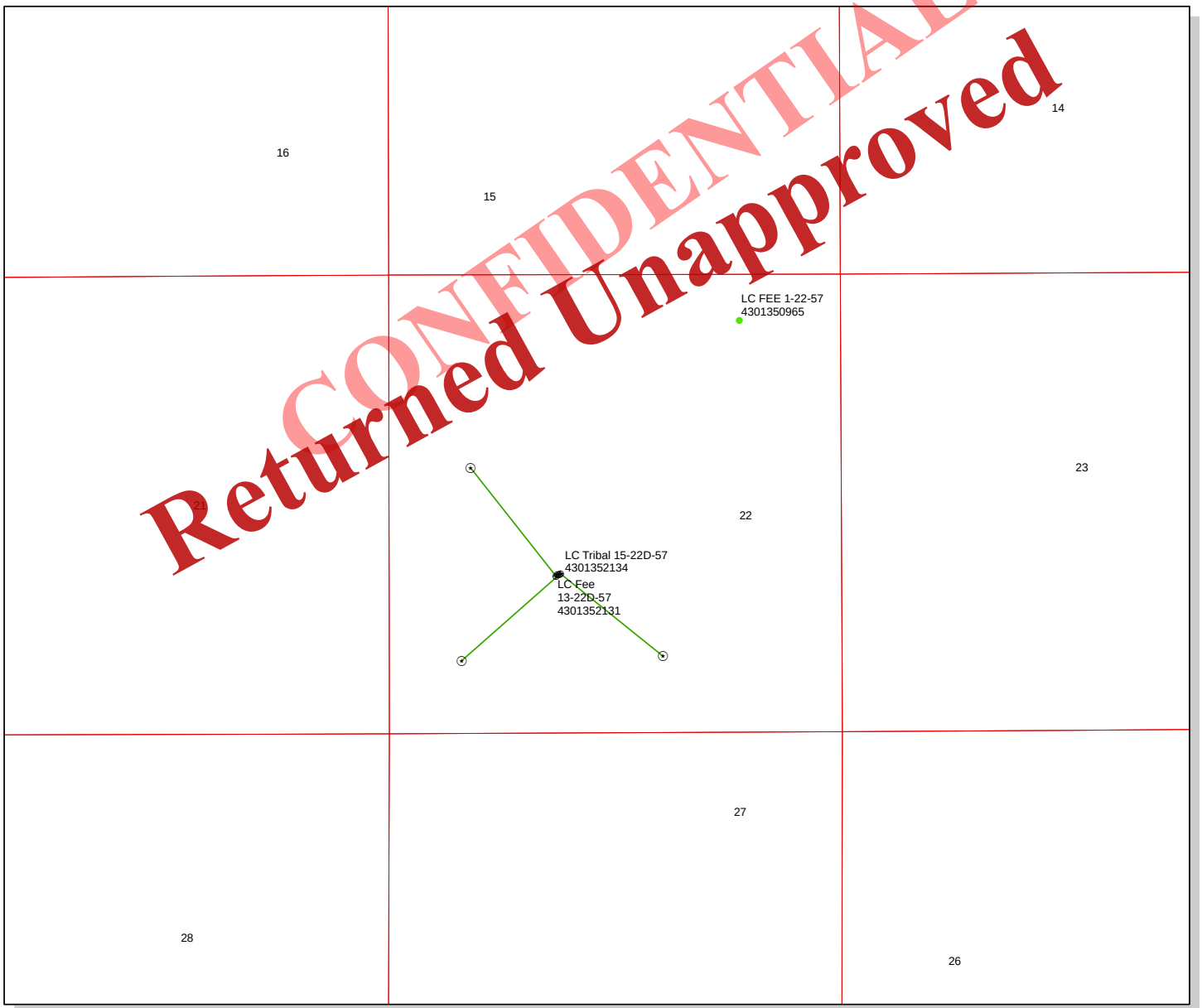
4/4/2013
DATE

Krista Mecham
Krista M. Mecham
Sr. Regulatory & Permitting Tech.

CONFIDENTIAL
Returned Unapproved



Received: April 06, 2013




CONFIDENTIAL
Returned Unapproved

**API Number: 4301352133**

**Well Name: LC Tribal 5-22D-57**

**Township T05.0S Range R07.0W Section 22**

**Meridian: UBM**

Operator: BERRY PETROLEUM COMPANY

Map Prepared:
Map Produced by Diana Mason

**Units**

**STATUS**

- ACTIVE
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

**Fields**

**STATUS**

- Unknown
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- STORAGE
- TERMINATED

1,500 750 0 1,500 Feet

1:14,255

**Received: April 10, 2013**

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*

April 07, 2015

LINN OPERATING, INC.
Rt. 2 Box 7735
Roosevelt, UT 84066

Re: Application for Permit to Drill - DUCHESNE County, Utah

Ladies and Gentlemen:

The Application for Permit to Drill (APD) for the LC Tribal 5-22D-57 well, API 43013521330000 that was submitted April 06, 2013 is being returned unapproved. If you plan on drilling this well in the future, you must first submit a new application.

Should you have any questions regarding this matter, please call me at (801) 538-5312.

Sincerely,

Diana Mason
Environmental Scientist

Enclosure
cc: Bureau of Land Management, Vernal, Utah

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

UTAH DNR OIL, GAS & MINING

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*

February 4, 2016

Andrea Gurr
Linn Operating, Inc.
4000 S. 4028 W.
Roosevelt, UT 84066

Re: APDs Rescinded for Linn Operating, Inc. Duchesne County

Dear Ms. Gurr:

Enclosed find the list of APDs that you asked to be rescinded. No drilling activity at these locations has been reported to the division. Therefore, approval to drill these wells is hereby rescinded effective February 3, 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

1594 West North Temple, Suite 1210, Salt Lake City, UT 84116
PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

UTAH DNR OIL, GAS & MINING

LINN Energy

NASDAQ:LINE
NASDAQ:LNCO

February 3, 2016

State of Utah
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, UT 84115-5801

To Whom It May Concern:

Linn Operating, Inc. respectfully requests to rescind the following APD applications:

| Well Name: | Well Number: | API#: | Lease#: |
|---|---|---|---|
| LC TRIBAL | 12H-34-56 | 43013516340000 | 2OG0005500 |
| LC TRIBAL | 13-11D-58 | 43013517080000 | 2OG0005500 |
| LC TRIBAL | 15-11D-58 | 43013517090000 | 2OG0005500 |
| LC TRIBAL | 8M-23-45 | 43013517220000 | 2OG0005500 |
| LC TRIBAL | 3-14D-58 | 43013517260000 | 2OG0005500 |
| LC TRIBAL | 11-11D-58 | 43013517290000 | 2OG0005500 |
| LC TRIBAL | 8-31D-56 | 43013517460000 | 2OG0005500 |
| LC TRIBAL | 1-13D-58 | 43013517850000 | 2OG0005500 |
| LC TRIBAL | 15-12D-58 | 43013517830000 | 2OG0005500 |
| LC TRIBAL | 9-12D-58 | 43013517840000 | 2OG0005500 |
| LC TRIBAL | 13-7D-57 | 43013517860000 | 2OG0005500 |
| LC TRIBAL | 9-2D-58 | 43013517880000 | 2OG0005500 |
| LC TRIBAL | 1-2D-58 | 43013517890000 | 2OG0005500 |
| LC TRIBAL | 5-1D-58 | 43013517900000 | 2OG0005500 |
| LC TRIBAL | 5-31D-45 | 43013518580000 | 2OG0005500 |
| LC FEE | 7-31D-45 | 43013518570000 | 2OG0005500 |
| LC TRIBAL | 16-31-45 | 43013518630000 | 2OG0005500 |
| LC TRIBAL | 5-22D-57 | 43013521330000 | 2OG0005500 |

As always, if you have any questions or concerns, please feel free to contact me anytime at 435-722-1325, or email agurr@linnenergy.com

Sincerely,

Andrea Gurr

LINN Energy
NASDAQ:LINE
NASDAQ:LNCO

**Andrea Gurr**
*Regulatory Compliance Specialist 1*
4000 S. 4028 W.
Roosevelt, UT 84066
T: 435.722.1325
F: 435.722.1321
C: 435.823.1846
agurr@linnenergy.com