API Well Number: 43047529130000

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

FORM 3

AMENDED REPORT ☐

## APPLICATION FOR PERMIT TO DRILL

**1. WELL NAME and NUMBER**
NBU 1022-3F4CS

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

**3. FIELD OR WILDCAT**
NATURAL BUTTES

**4. TYPE OF WELL**
Gas Well Coalbed Methane Well: NO

**5. UNIT or COMMUNITIZATION AGREEMENT NAME**
NATURAL BUTTES

**6. NAME OF OPERATOR**
KERR-MCGEE OIL & GAS ONSHORE, L.P.

**7. OPERATOR PHONE**
720 929-6515

**8. ADDRESS OF OPERATOR**
P.O. Box 173779, Denver, CO, 80217

**9. OPERATOR E-MAIL**
julie.jacobson@anadarko.com

**10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)**
UTU-01191

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

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

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

**14. SURFACE OWNER PHONE (if box 12 = 'fee')**

**15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')**

**16. SURFACE OWNER E-MAIL (if box 12 = 'fee')**

**17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')**

**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 | 2133 FNL 1790 FWL | SENW | 3 | 10.0 S | 22.0 E | S |
| Top of Uppermost Producing Zone | 2531 FNL 1987 FWL | SENW | 3 | 10.0 S | 22.0 E | S |
| At Total Depth | 2531 FNL 1987 FWL | SENW | 3 | 10.0 S | 22.0 E | S |

**21. COUNTY**
UINTAH

**22. DISTANCE TO NEAREST LEASE LINE (Feet)**
652

**23. NUMBER OF ACRES IN DRILLING UNIT**
1042

**25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)**
464

**26. PROPOSED DEPTH**
MD: 10059 TVD: 10020

**27. ELEVATION - GROUND LEVEL**
5119

**28. BOND NUMBER**
WYB000291

**29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE**
43-8496

### Hole, Casing, and Cement Information

| String | Hole Size | Casing Size | Length | Weight | Grade & Thread | Max Mud Wt. | Cement | Sacks | Yield | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| Surf | 11 | 8.625 | 0 - 2410 | 28.0 | J-55 LT&C | 0.2 | Type V | 180 | 1.15 | 15.8 |
| | | | | | | | Class G | 270 | 1.15 | 15.8 |
| Prod | 7.875 | 4.5 | 0 - 10059 | 11.6 | P-110 LT&C | 13.0 | Premium Lite High Strength | 300 | 3.38 | 12.0 |
| | | | | | | | 50/50 Poz | 1480 | 1.31 | 14.3 |

### 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** Gina Becker | **TITLE** Regulatory Analyst II | **PHONE** 720 929-6086

**SIGNATURE** | **DATE** 07/06/2012 | **EMAIL** gina.becker@anadarko.com

**API NUMBER ASSIGNED**
43047529130000

**APPROVAL**
Permit Manager

RECEIVED: August 21, 2012

# Kerr-McGee Oil & Gas Onshore. L.P.

**NBU 1022-3F4CS**

Surface: 2133 FNL / 1790 FWL SENW
BHL: 2531 FNL / 1987 FWL SENW

Section 3 T10S R22E

Unitah County, Utah
Mineral Lease: UTU-01191

**ONSHORE ORDER NO. 1**

**DRILLING PROGRAM**

**1. & 2. Estimated Tops of Important Geologic Markers:**
**Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

| Formation | Depth | Resource |
|---|---|---|
| Uinta | 0 - Surface | |
| Green River | 1,242' | |
| Birds Nest | 1,462' | Water |
| Mahogany | 1,959' | Water |
| Wasatch | 4,317' | Gas |
| Mesaverde | 6,664' | Gas |
| Sego | 8,858' | Gas |
| Castlegate | 8,979' | Gas |
| Blackhawk | 9,420' | Gas |
| TVD | 10,020' | |
| TD | 10,059' | |

**3. Pressure Control Equipment** (Schematic Attached)

Please refer to the attached Drilling Program

**4. Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program

**5. Drilling Fluids Program:**

Please refer to the attached Drilling Program

**6. Evaluation Program:**

Please refer to the attached Drilling Program



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**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 10020' TVD, approximately equals 6,613 psi (0.66 psi/ft = actual bottomhole gradient)

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 4,454 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

**8. Anticipated Starting Dates:**

Drilling is planned to commence immediately upon approval of this application.

**9. Variances:**

Please refer to the attached Drilling Program.
Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

**Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may

be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.



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The air rig is then mobilized to drill the surface casing hole by drilling a 12 1/4 inch hole for the first 200 feet, then will drill a 11inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

**Variance for BOPE Requirements**
The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

**Variance for Mud Material Requirements**
Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

**Variance for Special Drilling Operation (surface equipment placement) Requirements**
Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.



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**Variance for FIT Requirements**
KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.

**Conclusion**
The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

## 10. Other Information:

Please refer to the attached Drilling Program.



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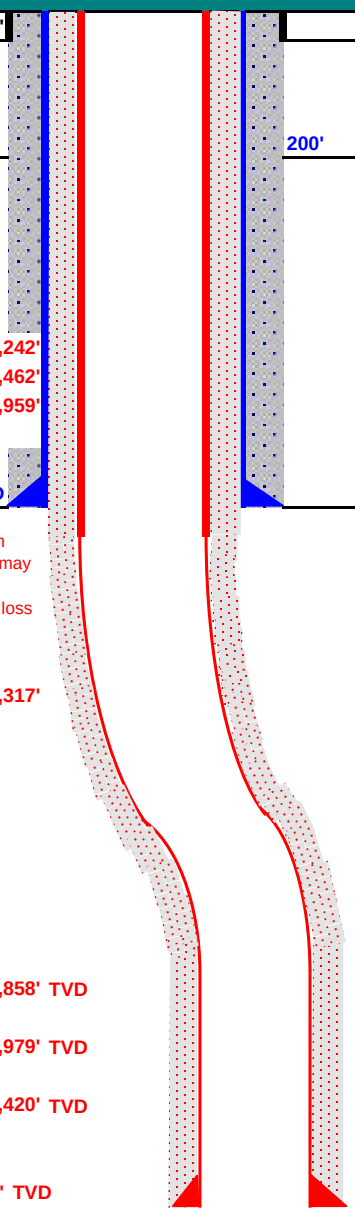
# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

| | | | |
|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | DATE | February 8, 2012 |
| WELL NAME | **NBU 1022-3F4CS** | TD | 10,020' TVD 10,059' MD |
| FIELD | Natural Buttes | COUNTY Uintah | STATE Utah / FINISHED ELEVATION 5118.7 |
| SURFACE LOCATION | SENW 2133 FNL 1790 FWL Sec 3 T 10S R 22E | | |
| | Latitude: 39.979413 Longitude: -109.429109 | | NAD 83 |
| BTM HOLE LOCATION | SENW 2531 FNL 1987 FWL Sec 3 T 10S R 22E | | |
| | Latitude: 39.978320 Longitude: -109.428391 | | NAD 83 |
| OBJECTIVE ZONE(S) | BLACKHAWK (Part of the Mesaverde Group) | | |
| ADDITIONAL INFO | Regulatory Agencies: BLM (Minerals), BLM (Surface), UDOGM Tri-County Health Dept. | | |

| GEOLOGICAL | | | MECHANICAL | | |
|---|---|---|---|---|---|
| LOGS | FORMATION TOPS | DEPTH | HOLE SIZE | CASING SIZE | MUD WEIGHT |
| | | 40' | | 14" | |
| | | | 12-1/4 | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | | 200' | | | |
| **All water flows encountered while drilling will be reported to the appropriate agencies.** | | | 11.00' | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | **Green River @** | **1,242'** | | | |
| | **Top of Birds Nest @** | **1,462'** | | | |
| | **Mahogany @** | **1,959'** | | | |
| | **Preset f/ GL @ 2,410' TVD** | | | | |
| | Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone. | | | | |
| | **Wasatch @** | **4,317'** | | | |
| Mud logging program TBD<br>Cased hole logging program from TD - surf csg | | | 7-7/8" | 4-1/2" 11.6#<br>HCP-110<br>Ultra DQX/LTC csg | Water / Fresh<br>Water Mud<br>8.3-13.0 ppg |
| | **Sego @** | **8,858' TVD** | | | |
| | **Castlegate @** | **8,979' TVD** | | | |
| | **Blackhawk @** | **9,420' TVD** | | | |
| | Max anticipated Mud required 13.0 ppg | **TD @ 10,020' TVD 10,059' MD** | | | |





RECEIVED: July 06, 2012

API Well Number: 43047529130000

# KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

**CASING PROGRAM**

| | SIZE | INTERVAL | | | WT. | GR. | CPLG. | DESIGN FACTORS BURST | COLLAPSE | TENSION LTC | TENSION DQX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONDUCTOR | 14" | 0-40' | | | | | | | | | |
| | | | | | | | | 3,390 | 1,880 | 348,000 | N/A |
| SURFACE | 8-5/8" | 0 | to | 2,410 | 28.00 | IJ-55 | LTC | 2.23 | 1.67 | 5.89 | N/A |
| | | | | | | | | 10,690 | 8,650 | 279,000 | 367,174 |
| PRODUCTION | 4-1/2" | 0 | to | 5,000 | 11.60 | HCP-110 | DQX | 1.19 | 1.28 | | 3.93 |
| | 4-1/2" | 5,000 | to | 10,059' | 11.60 | HCP-110 | LTC | 1.19 | 1.28 | 5.93 | |

**Surface Casing:**

(Burst Assumptions: TD = 13.0 ppg) 0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 9000 psi) 0.66 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)

**CEMENT PROGRAM**

| | | FT. OF FILL | DESCRIPTION | SACKS | EXCESS | WEIGHT | | YIELD |
|---|---|---|---|---|---|---|---|---|
| SURFACE | LEAD | 500' | Premium cmt + 2% CaCl | 180 | 60% | 15.80 | | 1.15 |
| **Option 1** | | | + 0.25 pps flocele | | | | | |
| | TOP OUT CMT (6 jobs) | 1,200' | 20 gals sodium silicate + Premium cmt | 270 | 0% | 15.80 | | 1.15 |
| | | | + 2% CaCl + 0.25 pps flocele | | | | | |
| SURFACE | | | **NOTE: If well will circulate water to surface, option 2 will be utilized** | | | | | |
| **Option 2** | LEAD | 1,910' | 65/35 Poz + 6% Gel + 10 pps gilsonite | 180 | 35% | 11.00 | | 3.82 |
| | | | + 0.25 pps Flocele + 3% salt BWOW | | | | | |
| | TAIL | 500' | Premium cmt + 2% CaCl | 150 | 35% | 15.80 | | 1.15 |
| | | | + 0.25 pps flocele | | | | | |
| | TOP OUT CMT | as required | Premium cmt + 2% CaCl | as req. | | 15.80 | | 1.15 |
| PRODUCTION | LEAD | 3,809' | Premium Lite II +0.25 pps | 300 | 35% | 12.00 | | 3.38 |
| | | | celloflake + 5 pps gilsonite + 10% gel | | | | | |
| | | | + 0.5% extender | | | | | |
| | TAIL | 6,250' | 50/50 Poz/G + 10% salt + 2% gel | 1,480 | 35% | 14.30 | | 1.31 |
| | | | + 0.1% R-3 | | | | | |

*Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

*Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

**FLOAT EQUIPMENT & CENTRALIZERS**

| | |
|---|---|
| SURFACE | Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe |
| | |
| PRODUCTION | Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well.<br>1 centralizer on the first 3 joints and one every third joint thereafter. |
| | |

**ADDITIONAL INFORMATION**

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

**DRILLING ENGINEER:** _____ **DATE:** _____

Nick Spence / Danny Showers / Chad Loesel

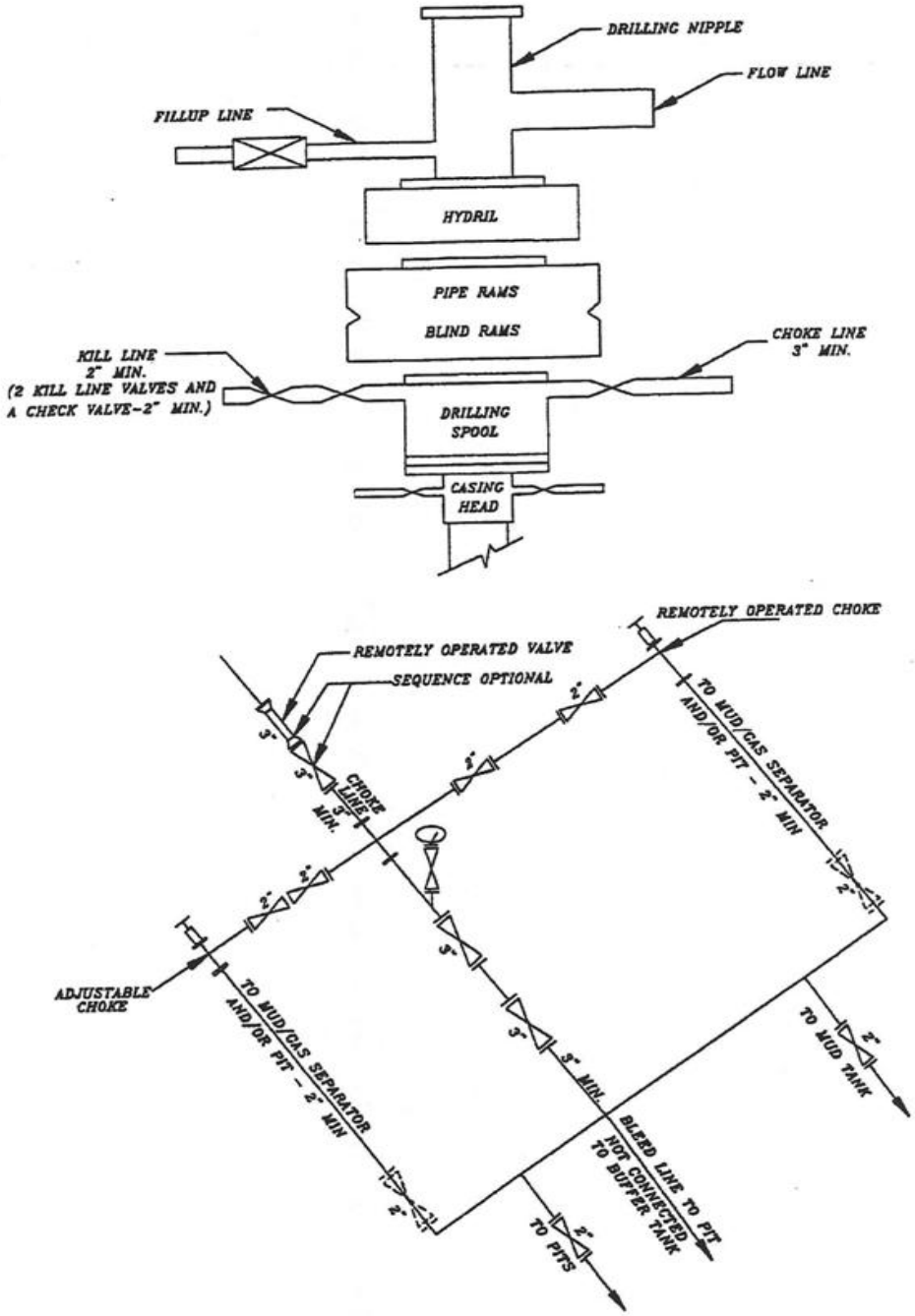
**DRILLING SUPERINTENDENT:** _____ **DATE:** _____

Kenny Gathings / Lovel Young

NBU 1022-3F Pad- Directional Drilling Blackhawk Program (2 wells) Approved by Drilling REVISED- 031212.xlsx

RECEIVED: July 06, 2012

**EXHIBIT A**
**NBU 1022-3F4CS**




**SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**

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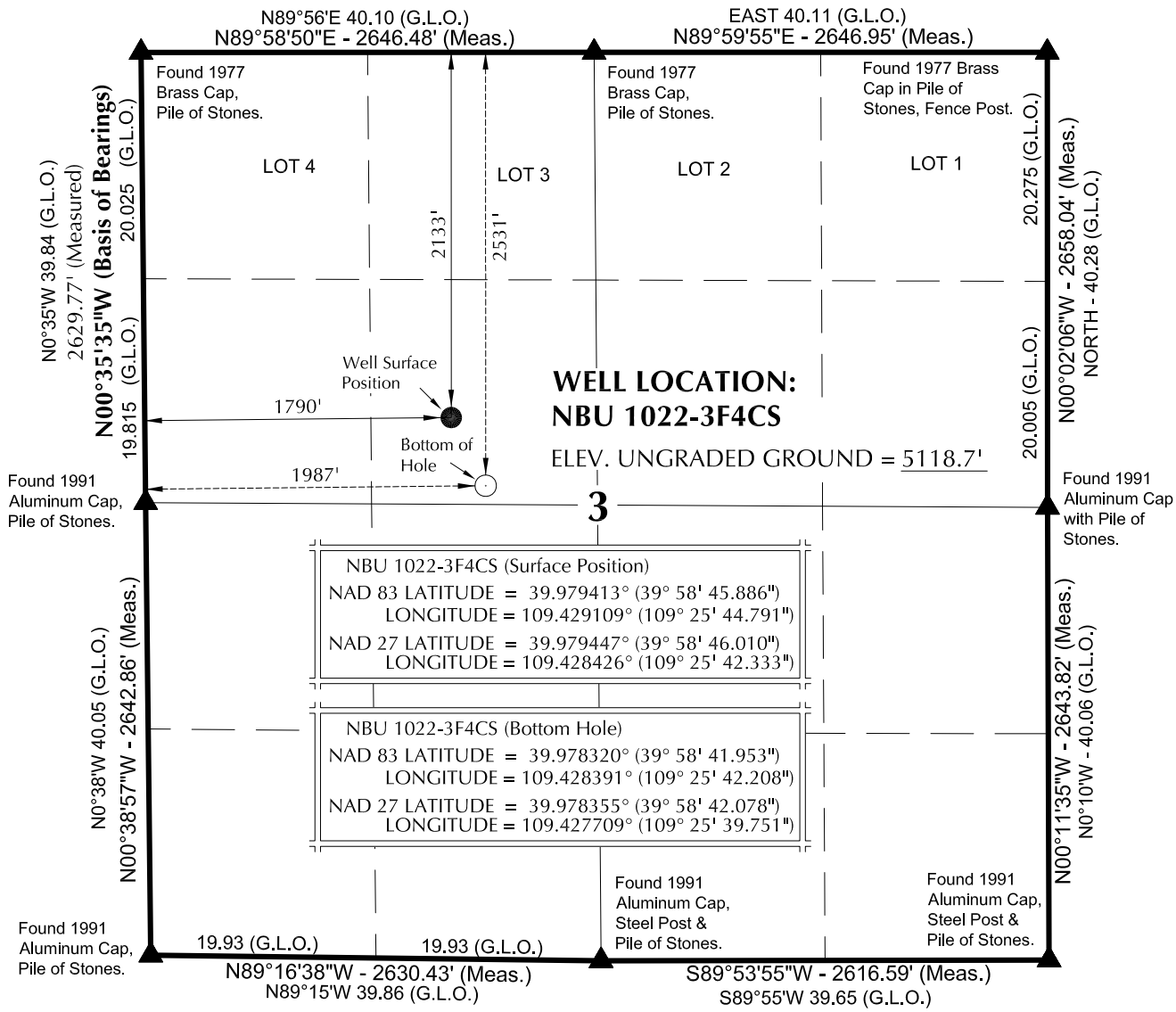
# T10S, R22E, S.L.B.&M.




NOTES:

▲ = Section Corners Located

1. Well footages are measured at right angles to the Section Lines.
2. G.L.O. distances are shown in feet or chains. 1 chain = 66 feet.
3. The Bottom of hole bears S26°49'20"E 445.94' from the Surface Position.
4. Bearings are based on Global Positioning Satellite observations.
5. Basis of elevation is Tri-Sta "Two Water" located in the NW $\frac{1}{4}$ of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.

N

1000' 500' 0' 1000'

SCALE

SURVEYOR'S CERTIFICATE

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

11-18-11

PROFESSIONAL LAND SURVEYOR No.6028691 JOHN R LAUGHLIN STATE OF UTAH

PROFESSIONAL LAND SURVEYOR
REGISTRATION No. 6028691
STATE OF UTAH

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD: NBU 1022-3F**

**NBU 1022-3F4CS**
**WELL PLAT**
**2531' FNL, 1987' FWL (Bottom Hole)**
**SE $\frac{1}{4}$ NW $\frac{1}{4}$ OF SECTION 3, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.**

609 CONSULTING, LLC
2155 North Main Street
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

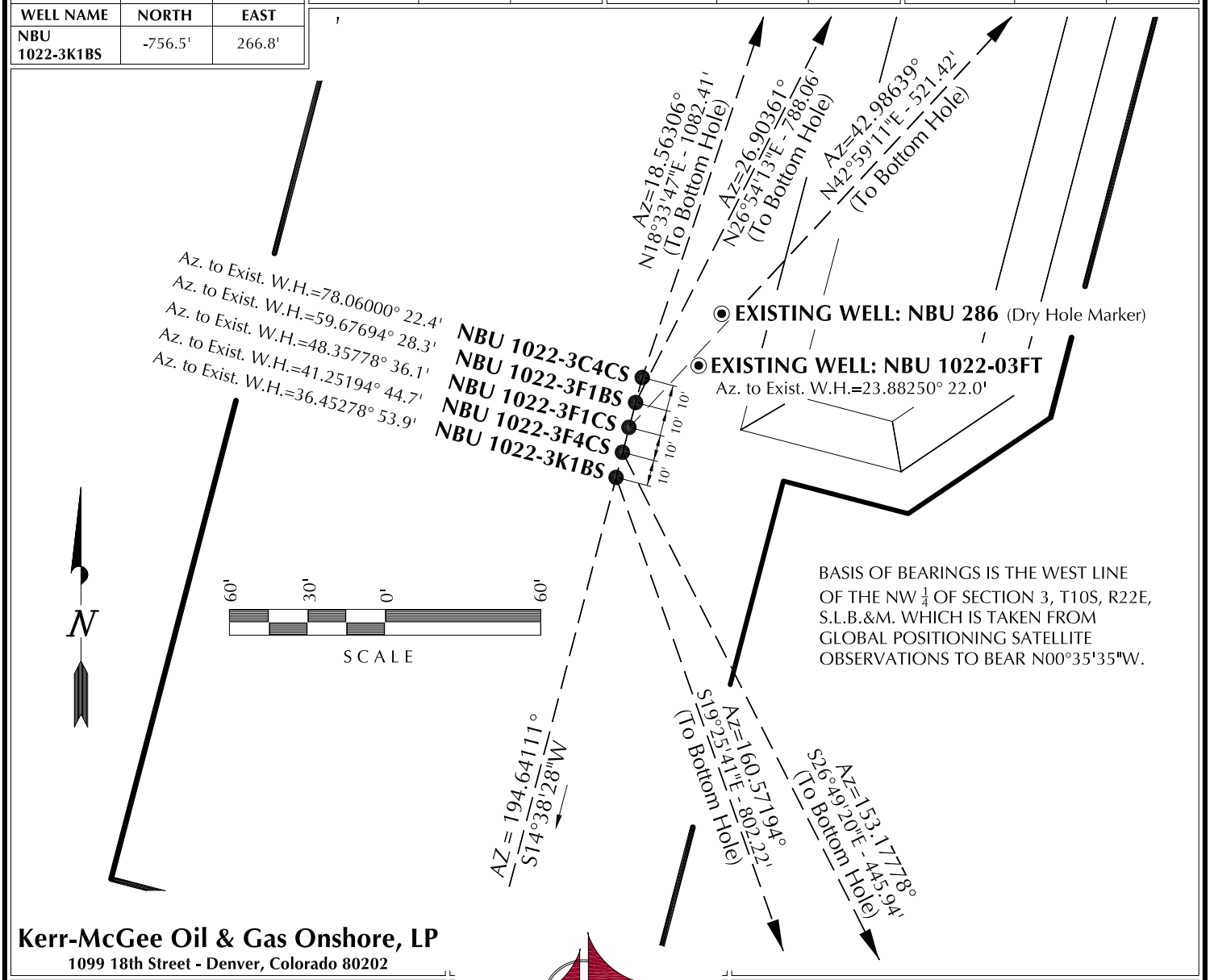
**TIMBERLINE** (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

| | | |
|---|---|---|
| DATE SURVEYED: 11-9-11 | SURVEYED BY: J.W. | SHEET NO: |
| DATE DRAWN: 11-15-11 | DRAWN BY: T.J.R. | 4 |
| SCALE: 1" = 1000' | Date Last Revised: | 4 OF 17 |

| WELL NAME | SURFACE POSITION | | | | | BOTTOM HOLE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | NAD83 | | NAD27 | | | NAD83 | | NAD27 | | |
| | LATITUDE | LONGITUDE | LATITUDE | LONGITUDE | FOOTAGES | LATITUDE | LONGITUDE | LATITUDE | LONGITUDE | FOOTAGES |
| NBU 1022-3C4CS | 39°58'46.172" 39.979492° | 109°25'44.693" 109.429081° | 39°58'46.297" 39.979527° | 109°25'42.235" 109.428399° | 2104' FNL 1798' FWL | 39°58'56.309" 39.982308° | 109°25'40.262" 109.427851° | 39°58'56.433" 39.982343° | 109°25'37.805" 109.427168° | 1078' FNL 2153' FWL |
| NBU 1022-3F1BS | 39°58'46.077" 39.979466° | 109°25'44.726" 109.429090° | 39°58'46.201" 39.979500° | 109°25'42.268" 109.428408° | 2114' FNL 1795' FWL | 39°58'53.019" 39.981394° | 109°25'40.143" 109.427817° | 39°58'53.143" 39.981429° | 109°25'37.685" 109.427135° | 1411' FNL 2159' FWL |
| NBU 1022-3F1CS | 39°58'45.981" 39.979439° | 109°25'44.758" 109.429099° | 39°58'46.106" 39.979474° | 109°25'42.300" 109.428417° | 2123' FNL 1793' FWL | 39°58'49.749" 39.980486° | 109°25'40.190" 109.427831° | 39°58'49.873" 39.980520° | 109°25'37.733" 109.427148° | 1742' FNL 2152' FWL |
| NBU 1022-3F4CS | 39°58'45.886" 39.979413° | 109°25'44.791" 109.429109° | 39°58'46.010" 39.979447° | 109°25'42.333" 109.428426° | 2133' FNL 1790' FWL | 39°58'41.953" 39.978320° | 109°25'42.208" 109.428391° | 39°58'42.078" 39.978355° | 109°25'39.751" 109.427709° | 2531' FNL 1987' FWL |
| NBU 1022-3K1BS | 39°58'45.790" 39.979386° | 109°25'44.823" 109.429118° | 39°58'45.914" 39.979421° | 109°25'42.365" 109.428435° | 2143' FNL 1787' FWL | 39°58'38.314" 39.977310° | 109°25'41.400" 109.428167° | 39°58'38.439" 39.977344° | 109°25'38.943" 109.427484° | 2399' FSL 2046' FWL |
| NBU 286 | 39°58'46.417" 39.979560° | 109°25'44.297" 109.428971° | 39°58'46.541" 39.979595° | 109°25'41.840" 109.428289° | 2079' FNL 1829' FWL | | | | | |
| NBU 1022-03FT | 39°58'46.218" 39.979505° | 109°25'44.412" 109.429003° | 39°58'46.342" 39.979540° | 109°25'41.954" 109.428321° | 2099' FNL 1820' FWL | | | | | |

**RELATIVE COORDINATES** - From Surface Position to Bottom Hole

| WELL NAME | NORTH | EAST | WELL NAME | NORTH | EAST | WELL NAME | NORTH | EAST | WELL NAME | NORTH | EAST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NBU 1022-3C4CS | 1026.1' | 344.6' | NBU 1022-3F1BS | 702.8' | 356.6' | NBU 1022-3F1CS | 381.4' | 355.5' | NBU 1022-3F4CS | -398.0' | 201.2' |
| WELL NAME | NORTH | EAST | | | | | | | | | |
| NBU 1022-3K1BS | -756.5' | 266.8' | | | | | | | | | |




**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1022-3F**

**WELL PAD INTERFERENCE PLAT**
**WELLS - NBU 1022-3C4CS, NBU 1022-3F1BS, NBU 1022-3F1CS, NBU 1022-3F4CS & NBU 1022-3K1BS**
**LOCATED IN SECTION 3, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.**

609 CONSULTING, LLC
2155 North Main Street
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

**TIMBERLINE** (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

| | | |
|---|---|---|
| DATE SURVEYED: 11-9-11 | SURVEYED BY: J.W. | SHEET NO: 6 |
| DATE DRAWN: 11-15-11 | DRAWN BY: T.J.R. | |
| SCALE: 1" = 60' | Date Last Revised: | 6 OF 17 |

RECEIVED: July 06, 2012

PLEASE NOTE: LOCATIONS OF PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.

N26°54'13"E - 788.06' (TO BOTTOM HOLE)

N42°59'11"E - 521.42' (TO BOTTOM HOLE)

N18°33'47"E - 1082.41' (TO BOTTOM HOLE)

S26°49'20"E - 445.94' (TO BOTTOM HOLE)

S19°25'41"E - 802.22' (TO BOTTOM HOLE)

TOPSOIL STOCKPILE

RESERVE PIT & EXCESS CUT STOCKPILE

RESERVE PIT 12' DEPTH SLOPE 1.5:1

RECLAIMED PIT

MOVE EXISTING SPOILS PILE TO PROPOSED LOCATION

EXISTING WELL PAD

EXISTING WELL: NBU 286 (PLUGGED AND ABANDONED)

EXISTING WELL: NBU 1022-03FT

NBU 1022-3C4CS
NBU 1022-3F1BS
NBU 1022-3F1CS
NBU 1022-3F4CS
NBU 1022-3K1BS

FILL CUT

BOILER
DIESEL TANK
GENERATOR
MUD PUMP 1
MUD PUMP 2
WATER TANK
PIPERACKS
PIPETUBS
DERRICK STAND

8" GAS LINE
6" (MAX.) LIQUID LINE

PROPOSED ACCESS ROAD RE-ROUTE

EXISTING ACCESS ROAD

## WELL PAD - NBU 1022-3F DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5118.7'
FINISHED GRADE ELEVATION = 5117.4'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1
TOTAL WELL PAD AREA = 3.24 ACRES
TOTAL DISTURBANCE AREA = 4.49 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

### WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 14,569 C.Y.
TOTAL FILL FOR WELL PAD = 13,415 C.Y.
TOPSOIL @ 6" DEPTH = 1,799 C.Y.
EXCESS MATERIAL = 1,154 C.Y.

### RESERVE PIT QUANTITIES

TOTAL CUT FOR RESERVE PIT
+/- 7,170 C.Y.
RESERVE PIT CAPACITY (2' OF FREEBOARD)
+/- 27,230 BARRELS

### WELL PAD LEGEND

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE

HORIZONTAL 0 30' 60' 1" = 60'
2' CONTOURS

WELL PAD - NBU 1022-3F

WELL PAD - LOCATION LAYOUT
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
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TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

SCALE: 1"=60' | DATE: 11/18/11 | SHEET NO: 7
REVISED: JID 1/11/12 | 7 OF 17

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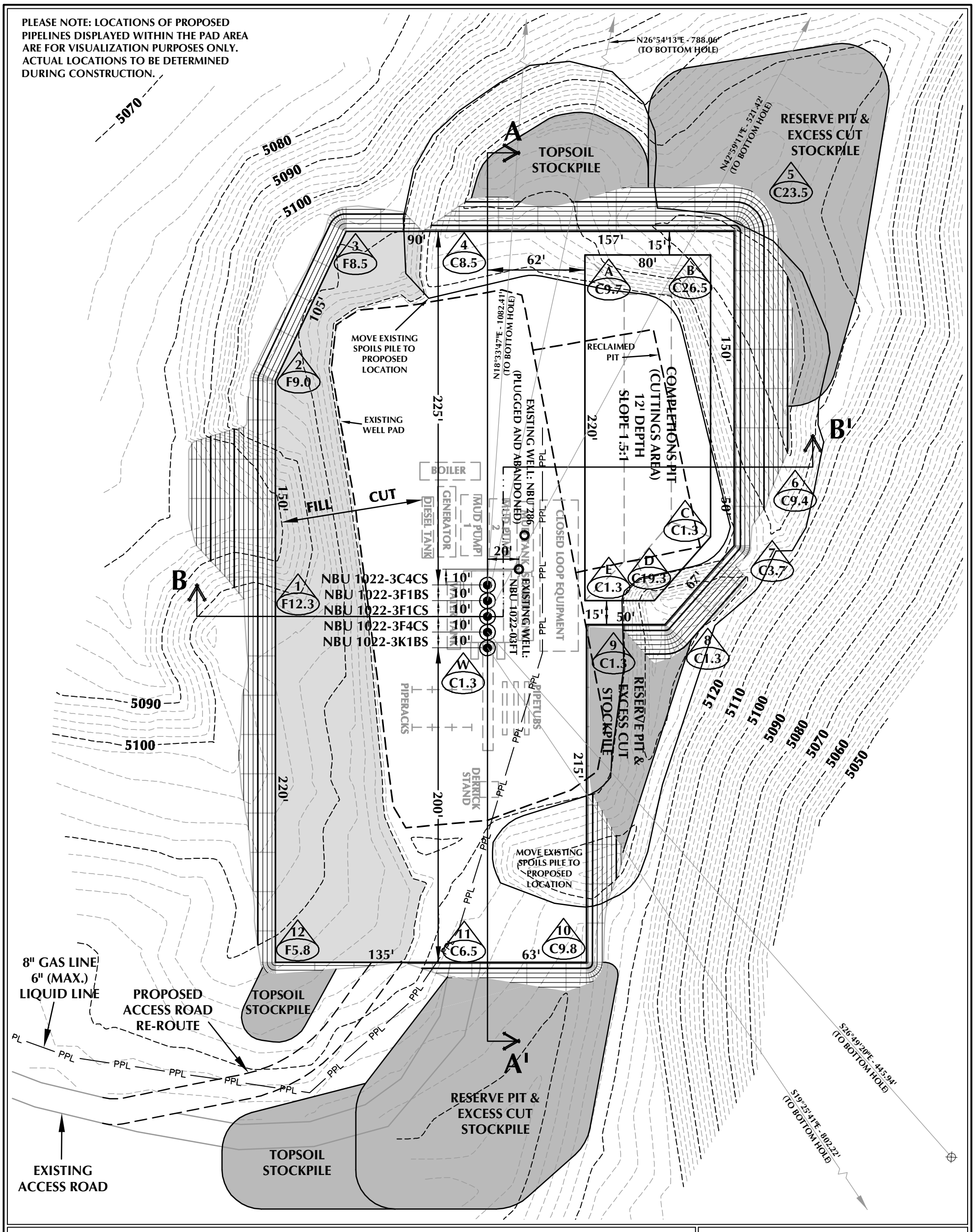
RECEIVED: July 06, 2012




## WELL PAD - NBU 1022-3F (CLOSED LOOP) DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5118.7'
FINISHED GRADE ELEVATION = 5117.4'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1
TOTAL WELL PAD AREA = 3.24 ACRES
TOTAL DISTURBANCE AREA = 4.49 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

### WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 14,569 C.Y.
TOTAL FILL FOR WELL PAD = 13,415 C.Y.
TOPSOIL @ 6" DEPTH = 1,799 C.Y.
EXCESS MATERIAL = 1,154 C.Y.

### COMPLETIONS PIT QUANTITIES

TOTAL CUT FOR COMPLETIONS PIT
+/- 5,370 C.Y.
COMPLETIONS PIT CAPACITY
(2' OF FREEBOARD)
+/- 20,140 BARRELS

### WELL PAD LEGEND

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE

HORIZONTAL 0 30' 60' 1" = 60'
2' CONTOURS

WELL PAD - NBU 1022-3F

WELL PAD - LOCATION LAYOUT
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

SCALE: 1"=60' | DATE: 1/11/12 | SHEET NO: 7B 7B OF 17
REVISED:

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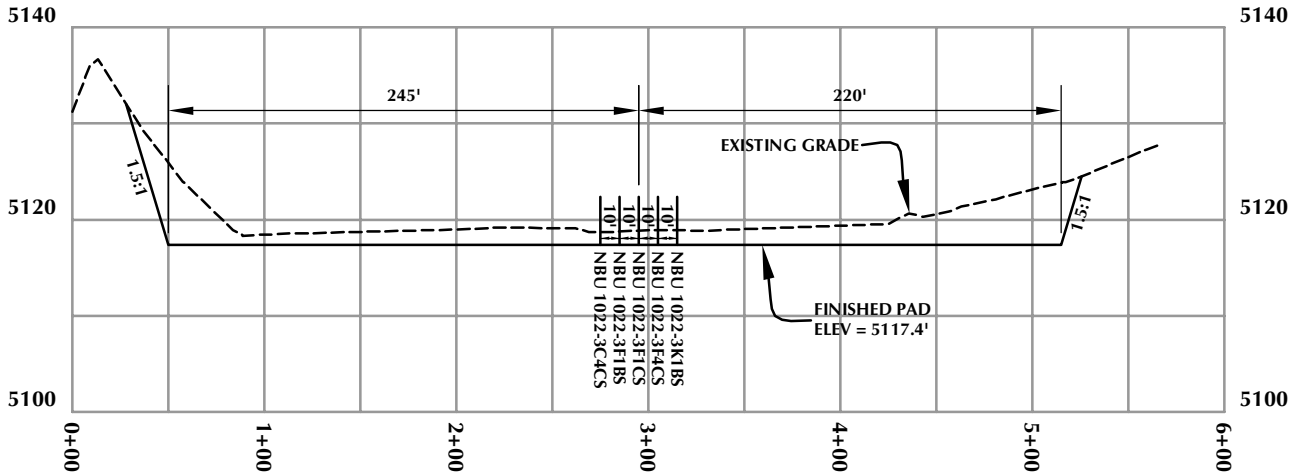
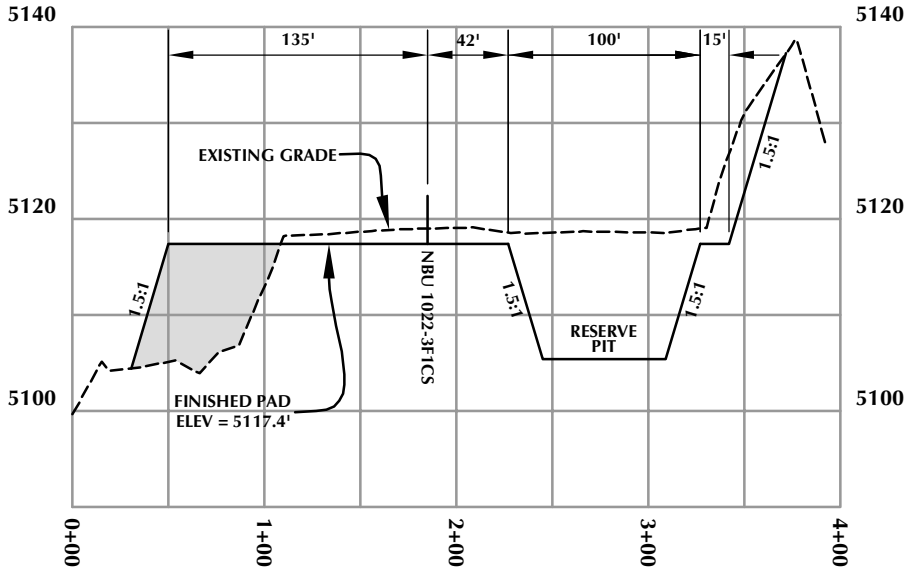



## CROSS SECTION A-A'




## CROSS SECTION B-B'

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1022-3F**

**WELL PAD - CROSS SECTIONS**
**NBU 1022-3C4CS,**
**NBU 1022-3F1BS, NBU 1022-3F1CS,**
**NBU 1022-3F4CS & NBU 1022-3K1BS**
**LOCATED IN SECTION 3, T10S, R22E,**
**S.L.B.&M., UINTAH COUNTY, UTAH**

609
CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

HORIZONTAL 0 50' 100' 1" = 100'
VERTICAL 0 10' 20' 1" = 20'

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

Scale: 1"=100' | Date: 11/18/11 | SHEET NO: 8
REVISED:
8 OF 17

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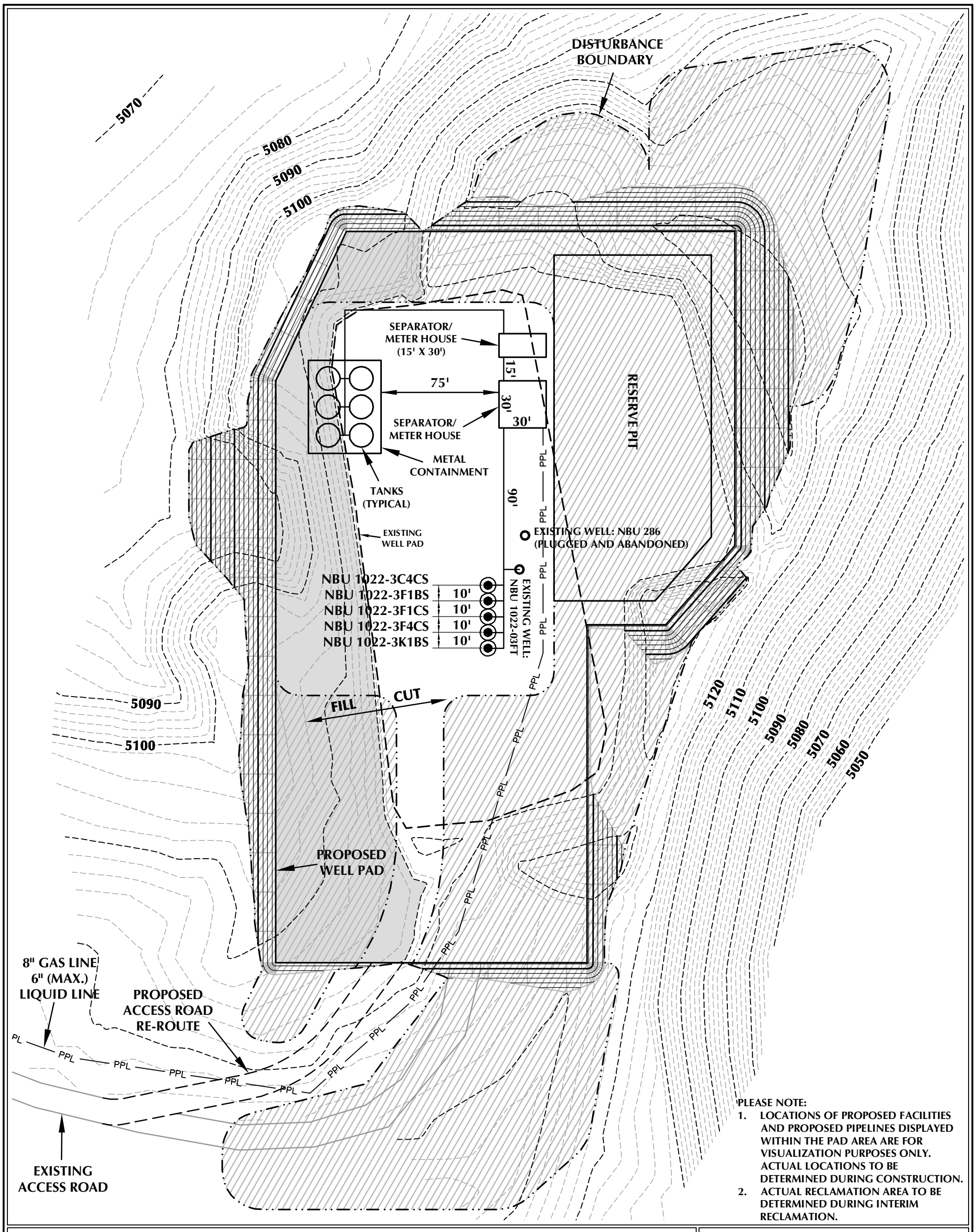


PLEASE NOTE:
1. LOCATIONS OF PROPOSED FACILITIES AND PROPOSED PIPELINES DISPLAYED WITHIN THE PAD AREA ARE FOR VISUALIZATION PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED DURING CONSTRUCTION.
2. ACTUAL RECLAMATION AREA TO BE DETERMINED DURING INTERIM RECLAMATION.

## WELL PAD - NBU 1022-3F DESIGN SUMMARY

TOTAL DISTURBANCE AREA = 4.49 ACRES (INCLUDING EXISTING)
RECLAMATION AREA = 3.37 ACRES
TOTAL WELL PAD AREA AFTER RECLAMATION = 1.12 ACRES

**WELL PAD LEGEND**

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED BOTTOM HOLE LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE
- RECLAMATION AREA

HORIZONTAL 0 30' 60' 1" = 60'
2' CONTOURS

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

WELL PAD - NBU 1022-3F

WELL PAD - RECLAMATION LAYOUT
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

SCALE: 1"=60' | DATE: 1/11/12 | SHEET NO: 9
REVISED:
9 OF 17

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RECEIVED: July 06, 2012

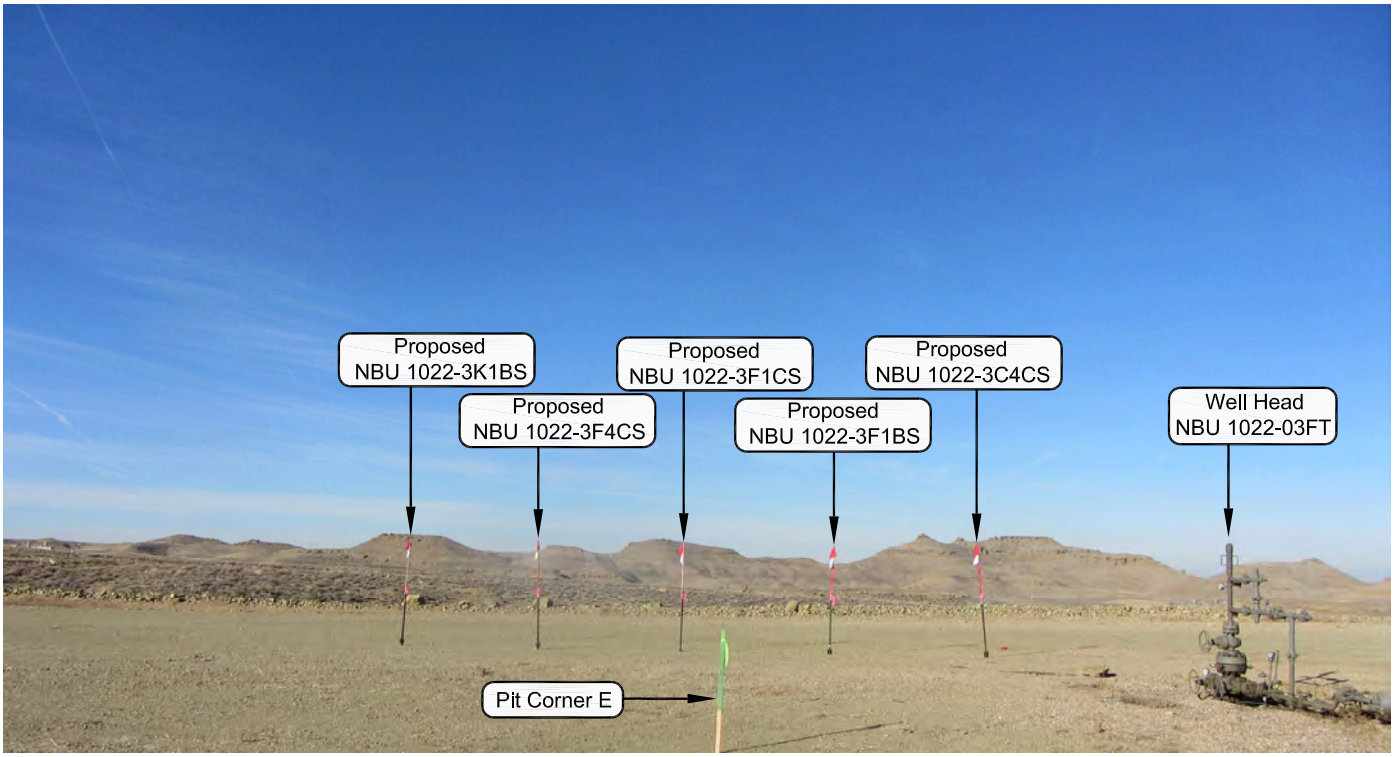



**PHOTO VIEW: FROM PIT CORNER E TO LOCATION STAKE** **CAMERA ANGLE: WESTERLY**

**PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD** **CAMERA ANGLE: EASTERLY**

**Kerr-McGee Oil & Gas Onshore, LP**
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1022-3F**

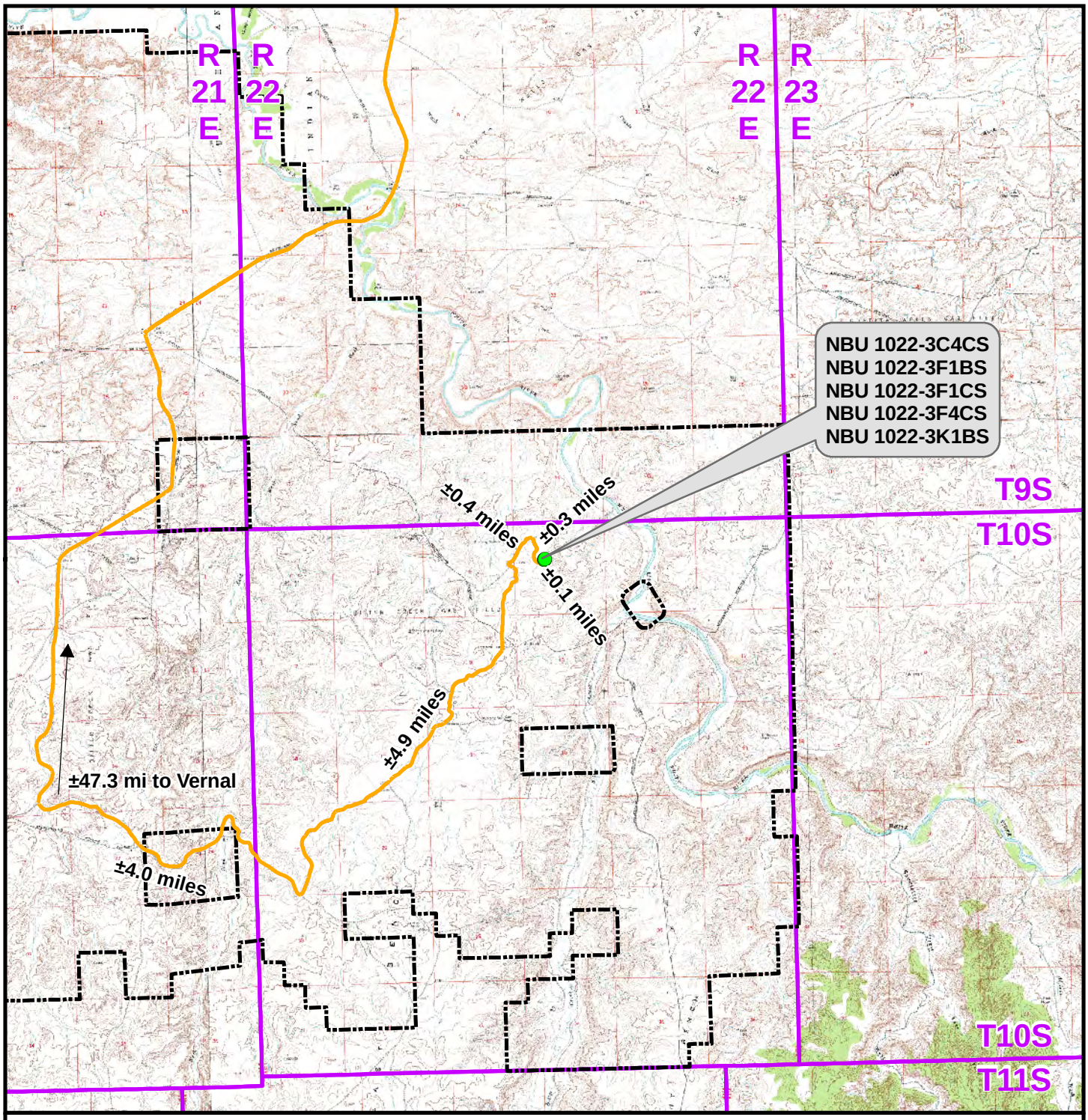
**LOCATION PHOTOS**
**NBU 1022-3C4CS,**
**NBU 1022-3F1BS, NBU 1022-3F1CS,**
**NBU 1022-3F4CS & NBU 1022-3K1BS**
**LOCATED IN SECTION 3, T10S, R22E,**
**S.L.B.&M., UINTAH COUNTY, UTAH.**

609
CONSULTING, LLC
2155 North Main Street
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

| | | |
|---|---|---|
| DATE PHOTOS TAKEN: 11-9-11 | PHOTOS TAKEN BY: J.W. | SHEET NO: |
| DATE DRAWN: 11-15-11 | DRAWN BY: T.J.R. | 10 |
| Date Last Revised: | | 10 OF 17 |

RECEIVED: July 06, 2012




**Legend**

Distance From Well Pad - NBU 1022-3F To Unit Boundary: ±5,400ft

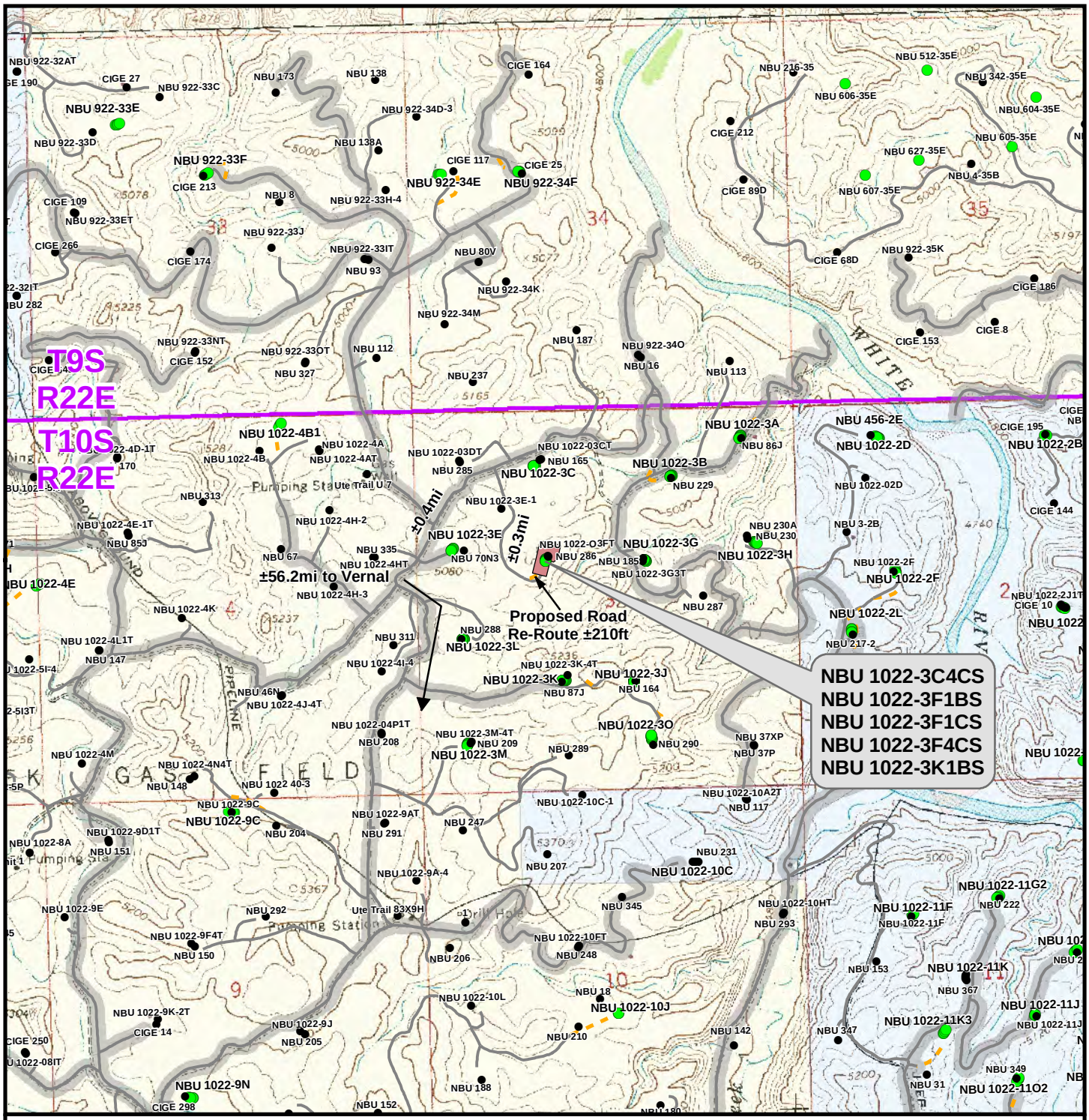
- Proposed Well Location
- Natural Buttes Unit Boundary
- Access Route - Proposed

| | | |
|---|---|---|
| **WELL PAD - NBU 1022-3F**<br>TOPO A<br>NBU 1022-3C4CS,<br>NBU 1022-3F1BS, NBU 1022-3F1CS,<br>NBU 1022-3F4CS & NBU 1022-3K1BS<br>LOCATED IN SECTION 3, T10S, R22E,<br>S.L.B.&M., UINTAH COUNTY, UTAH | **Kerr-McGee Oil & Gas Onshore L.P.**<br>1099 18th Street<br>Denver, Colorado 80202 | 609 CONSULTING, LLC<br>2155 North Main Street<br>Sheridan, Wyoming 82801<br>Phone 307-674-0609<br>Fax 307-674-0182<br>N |

| | | |
|---|---|---|
| SCALE: 1:100,000 | NAD83 USP Central | SHEET NO: 11 |
| DRAWN: TL | DATE: 18 Nov 2011 | 11 OF 17 |
| REVISED: | DATE: | |

RECEIVED: July 06, 2012

API Well Number: 43047529130000




**Legend**

Total Proposed Road Re-Route Length: ±210ft

- Well - Proposed
- Well - Existing
- Well Pad
- Road - Proposed
- Road - Existing
- County Road
- Bureau of Land Management
- Indian Reservation
- State
- Private

# WELL PAD - NBU 1022-3F

TOPO B
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil & Gas Onshore L.P.**

1099 18th Street
Denver, Colorado 80202

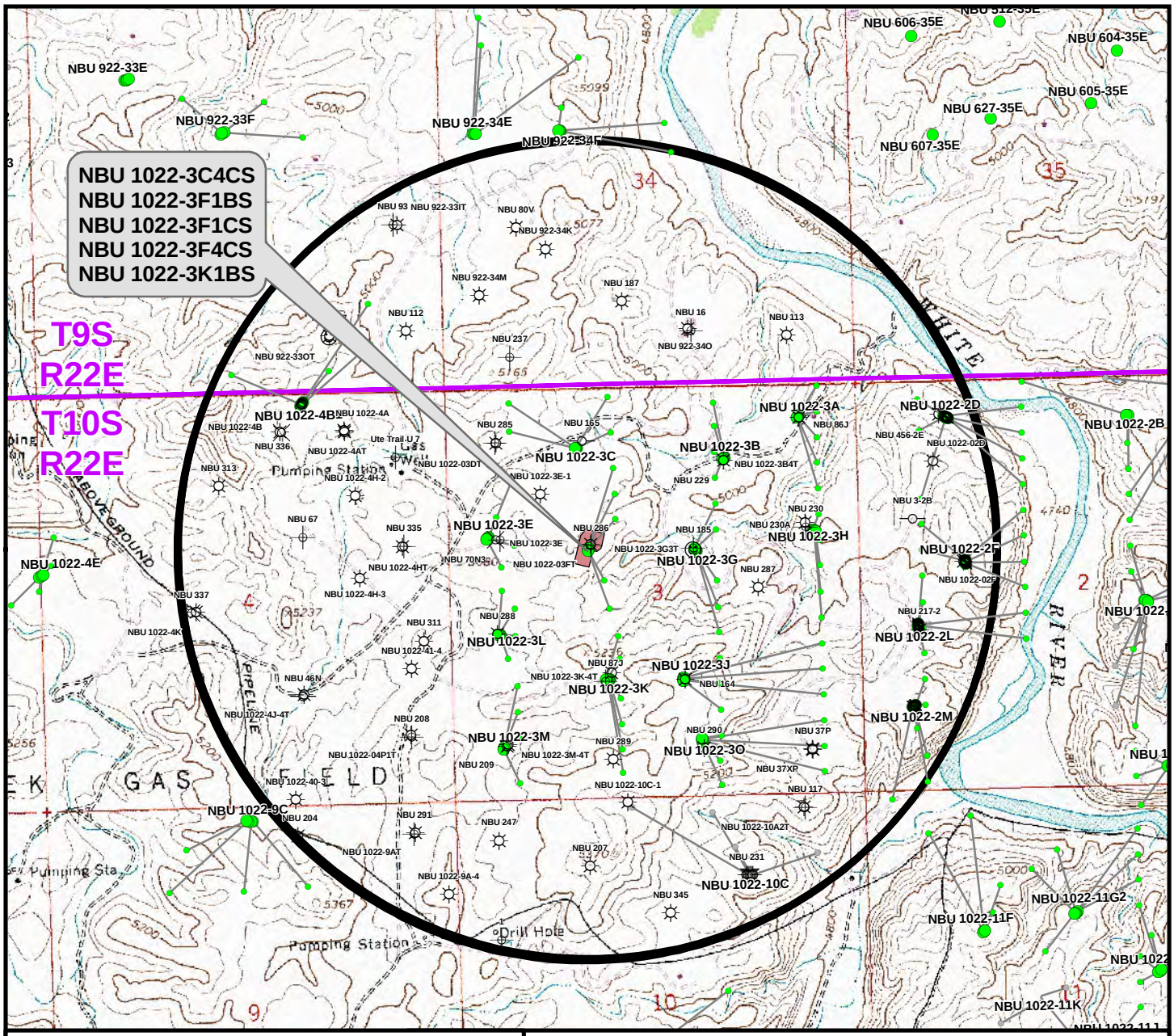

609 CONSULTING, LLC
2155 North Main Street
Sheridan, Wyoming 82801
Phone 307-674-0609
Fax 307-674-0182


N

| | | |
|---|---|---|
| SCALE: 1" = 2,000ft | NAD83 USP Central | SHEET NO: 12 |
| DRAWN: TL | DATE: 18 Nov 2011 | 12 OF 17 |
| REVISED: | DATE: | |

RECEIVED: July 06, 2012

API Well Number: 43047529130000




Well locations derived from Utah Division of Oil, Gas and Mining (UDOGM) (oilgas.ogm.utah.gov). The estimated distances from proposed bore locations to the nearest existing bore locations are based on UDOGM data.

| Proposed Well | Nearest Well Bore | Footage |
|---|---|---|
| NBU 1022-3C4CS | NBU 165 | 529ft |
| NBU 1022-3F1BS | NBU 286 | 742ft |
| NBU 1022-3F1CS | NBU 286 | 465ft |
| NBU 1022-3F4CS | NBU 1022-03FT | 464ft |
| NBU 1022-3K1BS | NBU 1022-3K-4T | 829ft |

**Legend**

- Well - Proposed
- Bottom Hole - Proposed
- Bottom Hole - Existing
- Well Path
- Well Pad
- Well - 1 Mile Radius
- Producing
- Spudded
- APD Approved
- Preliminary Location
- Deferred
- Cancelled
- Temporarily Abandoned
- Active Injector
- Location Abandoned
- Plugged & Abandoned
- Shut-In

# WELL PAD - NBU 1022-3F

TOPO C
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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Fax 307-674-0182

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|---|---|---|
| SCALE: 1" = 2,000ft | NAD83 USP Central | SHEET NO: 13 |
| DRAWN: TL | DATE: 18 Nov 2011 | 13 OF 17 |
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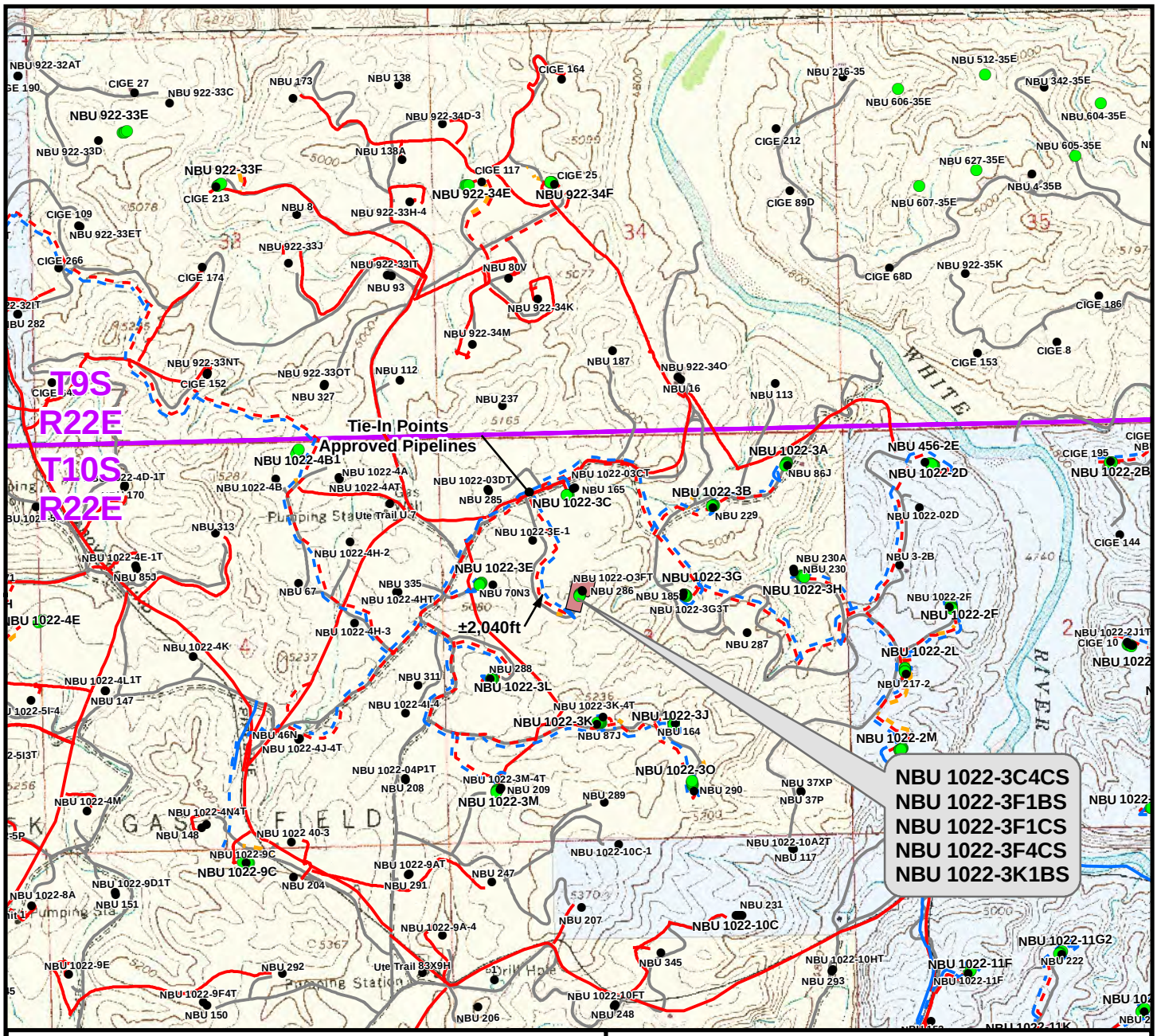
RECEIVED: July 06, 2012




| Proposed Liquid Pipeline | Length |
|---|---|
| Buried 6"(Max.) (Meter House to Edge of pad) | ±355ft |
| Buried 6"(Max.) (Edge of Pad to Approved Liquid Pipeline) | ±2,040ft |
| TOTAL PROPOSED BURIED LIQUID PIPELINE = | ±2,395ft |

| Proposed Gas Pipeline | Length |
|---|---|
| Buried 8" (Meter House to Edge of Pad) | ±355ft |
| Buried 8" (Edge of Pad to Approved 16" Gas Pipeline) | ±2,040ft |
| TOTAL PROPOSED BURIED GAS PIPELINE = | ±2,395ft |

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

# WELL PAD - NBU 1022-3F

TOPO D
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

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Denver, Colorado 80202

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Fax 307-674-0182

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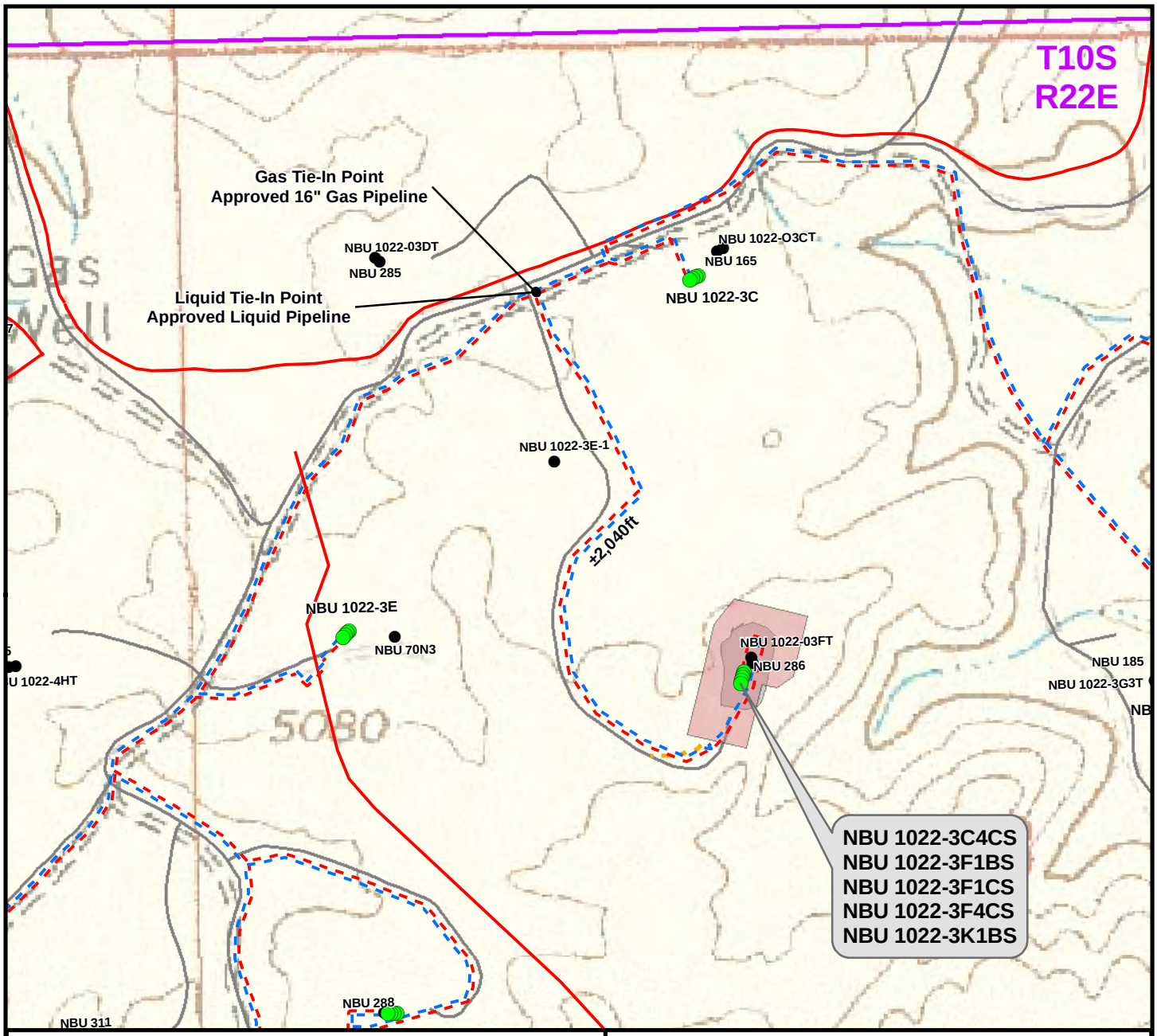
|---|---|---|
| SCALE: 1" = 2,000ft | NAD83 USP Central | SHEET NO: 14 |
| DRAWN: TL | DATE: 18 Nov 2011 | 14 OF 17 |
| REVISED: | DATE: | |

RECEIVED: July 06, 2012




| Proposed Liquid Pipeline | Length |
|---|---|
| Buried 6"(Max.) (Meter House to Edge of pad) | ±355ft |
| Buried 6"(Max.) (Edge of Pad to Approved Liquid Pipeline) | ±2,040ft |
| TOTAL PROPOSED BURIED LIQUID PIPELINE = | ±2,395ft |

| Proposed Gas Pipeline | Length |
|---|---|
| Buried 8" (Meter House to Edge of Pad) | ±355ft |
| Buried 8" (Edge of Pad to Approved 16" Gas Pipeline) | ±2,040ft |
| TOTAL PROPOSED BURIED GAS PIPELINE = | ±2,395ft |

**Legend**

- Well - Proposed
- Well - Existing
- Well Pad - Proposed
- Well Pad - Existing
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

# WELL PAD - NBU 1022-3F

TOPO D2 (PAD & PIPELINE DETAIL)
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil & Gas Onshore L.P.**

1099 18th Street
Denver, Colorado 80202

609 CONSULTING, LLC
2155 North Main Street
Sheridan, Wyoming 82801
Phone 307-674-0609
Fax 307-674-0182

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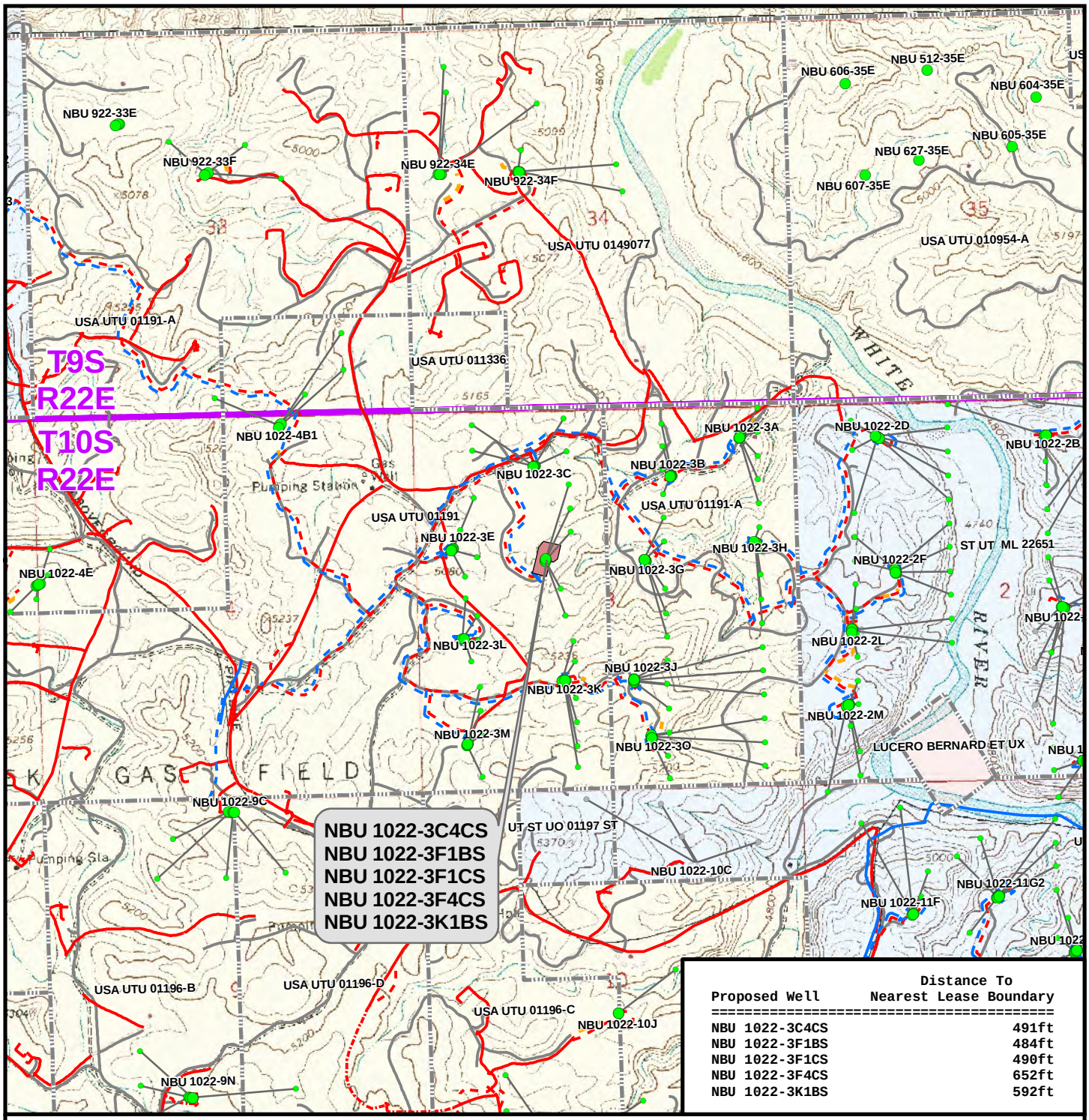
|---|---|---|
| SCALE: 1" = 500ft | NAD83 USP Central | SHEET NO: 15 |
| DRAWN: TL | DATE: 18 Nov 2011 | 15 OF 17 |
| REVISED: | DATE: | |

RECEIVED: July 06, 2012

API Well Number: 43047529130000




| Proposed Well | Distance To Nearest Lease Boundary |
|---|---|
| NBU 1022-3C4CS | 491ft |
| NBU 1022-3F1BS | 484ft |
| NBU 1022-3F1CS | 490ft |
| NBU 1022-3F4CS | 652ft |
| NBU 1022-3K1BS | 592ft |

**Legend**

- Well - Proposed
- Bottom Hole - Proposed
- Bottom Hole - Existing
- Well Path
- Well Pad
- Lease Boundary
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

# WELL PAD - NBU 1022-3F

TOPO E
NBU 1022-3C4CS,
NBU 1022-3F1BS, NBU 1022-3F1CS,
NBU 1022-3F4CS & NBU 1022-3K1BS
LOCATED IN SECTION 3, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

**Kerr-McGee Oil & Gas Onshore L.P.**

1099 18th Street
Denver, Colorado 80202


609 CONSULTING, LLC
2155 North Main Street
Sheridan, Wyoming 82801
Phone 307-674-0609
Fax 307-674-0182


N

| | | |
|---|---|---|
| SCALE: 1" = 2,000ft | NAD83 USP Central | SHEET NO: 16 |
| DRAWN: TL | DATE: 18 Nov 2011 | 16 OF 17 |
| REVISED: | DATE: | |

RECEIVED: July 06, 2012

**Kerr-McGee Oil & Gas Onshore, LP**
**WELL PAD – NBU 1022-3F**
**WELLS - NBU 1022-3C4CS,**
**NBU 1022-3F1BS, NBU 1022-3F1CS,**
**NBU 1022-3F4CS & NBU 1022-3K1BS**
**Section 3, T10S, R22E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 23.8 miles to the intersection of the Bitter Creek Road (County B Road 4120). Exit left and proceed in a southeasterly direction along the Bitter Creek Road approximately 4.0 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 4.9 miles to a second Class D County Road to the northeast. Exit right and proceed in a northeasterly direction along the second Class D County Road approximately 0.4 miles to a service road to the southeast. Exit right and proceed in a southeasterly direction along the service road approximately 0.3 miles to the proposed access road to the east. Follow road flags in an easterly, then northeasterly direction approximately 210 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 56.9 miles in a southerly direction.



RECEIVED: July 06, 2012

API Well Number: 43047520180000

Scientific Drilling
Rocky Mountain Operations

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: NBU 1022-3F PAD
Well: NBU_1022-3F4CS
Wellbore: OH
Design: PLAN #1

Anadarko Petroleum Corporation

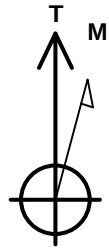
**WELL DETAILS: NBU_1022-3F4CS**

GL 5117 & KB 4 @ 5121.00ft (ASSUMED)

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|
| 0.00 | 0.00 | 14522440.48 | 2080690.69 | 39.979447 | -109.428426 |

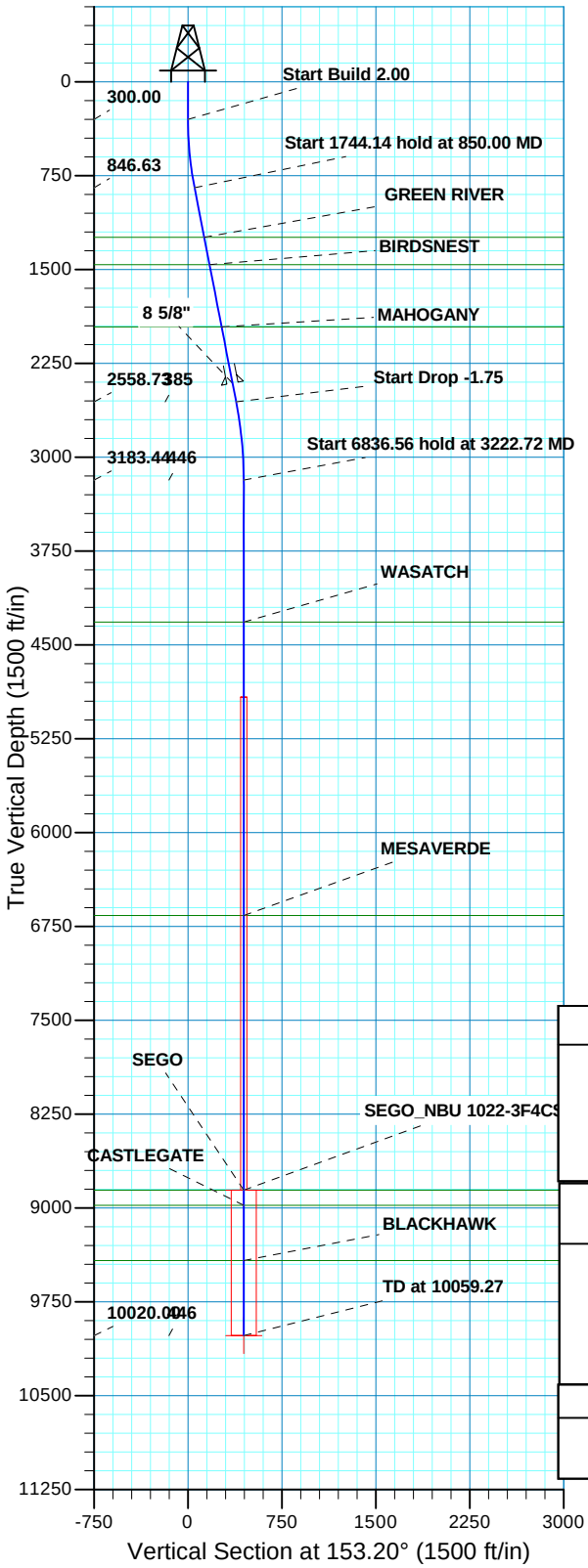
**DESIGN TARGET DETAILS**

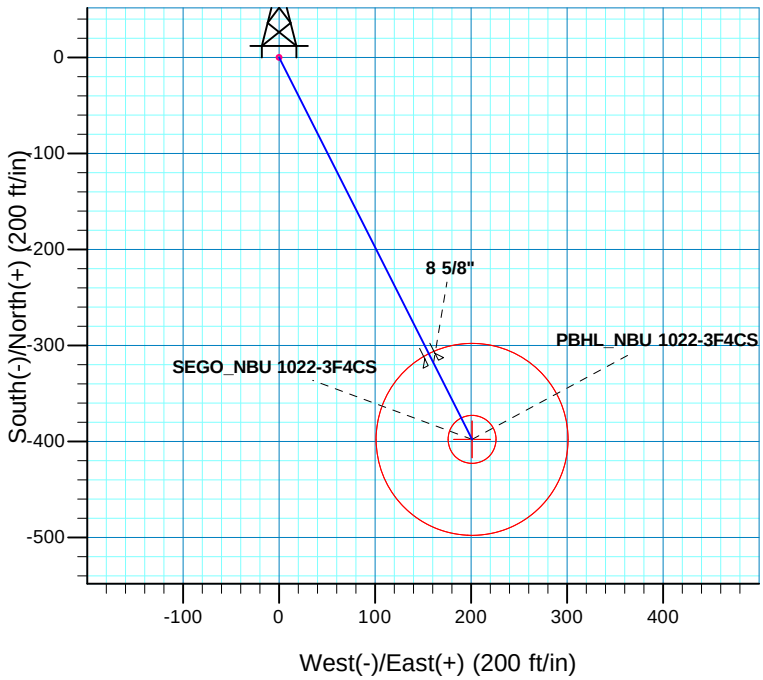
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|
| SEGO | 8858.00 | -397.72 | 200.91 | 14522046.36 | 2080898.58 | 39.978355 | -109.427709 | Circle (Radius: 25.00) |
| - plan hits target center | | | | | | | | |
| PBHL | 10020.00 | -397.72 | 200.91 | 14522046.36 | 2080898.58 | 39.978355 | -109.427709 | Circle (Radius: 100.00) |
| - plan hits target center | | | | | | | | |




Azimuths to True North
Magnetic North: 10.96°

Magnetic Field
Strength: 52262.1snT
Dip Angle: 65.85°
Date: 02/07/2012
Model: IGRF2010




**SECTION DETAILS**

| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 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 | |
| 850.00 | 11.00 | 153.20 | 846.63 | -46.98 | 23.73 | 2.00 | 153.20 | 52.63 | |
| 2594.14 | 11.00 | 153.20 | 2558.73 | -344.03 | 173.79 | 0.00 | 0.00 | 385.43 | |
| 3222.72 | 0.00 | 0.00 | 3183.44 | -397.72 | 200.91 | 1.75 | 180.00 | 445.59 | |
| 10059.27 | 0.00 | 0.00 | 10020.00 | -397.72 | 200.91 | 0.00 | 0.00 | 445.59 | PBHL_NBU 1022-3F4CS |

**PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N**

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location:
System Datum: Mean Sea Level

**FORMATION TOP DETAILS**

| TVDPath | MDPath | Formation |
|---|---|---|
| 1242.00 | 1252.77 | GREEN RIVER |
| 1462.00 | 1476.89 | BIRDSNEST |
| 1959.00 | 1983.19 | MAHOGANY |
| 4317.00 | 4356.27 | WASATCH |
| 6664.00 | 6703.27 | MESAVERDE |
| 8858.00 | 8897.27 | SEGO |
| 8979.00 | 9018.27 | CASTLEGATE |
| 9420.00 | 9459.27 | BLACKHAWK |

**CASING DETAILS**

| TVD | MD | Name | Size |
|---|---|---|---|
| 2409.00 | 2441.61 | 8 5/8" | 8.625 |

Plan: PLAN #1 (NBU_1022-3F4CS/OH)

Created By: Gabe Kendall Date: 15:06, February 07 2012

RECEIV

API Well Number: 43047529130000

Scientific Drilling
Rocky Mountain Operations

# US ROCKIES REGION PLANNING

**UTAH - UTM (feet), NAD27, Zone 12N**
**NBU 1022-3F PAD**
**NBU_1022-3F4CS**

**OH**

**Plan: PLAN #1**

# Standard Planning Report

**07 February, 2012**

Anadarko
Petroleum Corporation

RECEIVED: July 06, 2012

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well NBU_1022-3F4CS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Site:** | NBU 1022-3F PAD | **North Reference:** | True |
| **Well:** | NBU_1022-3F4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 | | |

**Project** UTAH - UTM (feet), NAD27, Zone 12N

| | | | |
|---|---|---|---|
| **Map System:** | Universal Transverse Mercator (US Survey Feet) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Zone 12N (114 W to 108 W) | | |

**Site** NBU 1022-3F PAD

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 14,522,469.75 usft | **Latitude:** | 39.979527 |
| **From:** | Lat/Long | **Easting:** | 2,080,697.74 usft | **Longitude:** | -109.428399 |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | 1.01 ° |

**Well** NBU_1022-3F4CS, 2133 FNL 1790 FWL

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | -29.14 ft | **Northing:** | 14,522,440.48 usft | **Latitude:** | 39.979447 |
| | **+E/-W** | -7.57 ft | **Easting:** | 2,080,690.69 usft | **Longitude:** | -109.428426 |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | | **Ground Level:** | 5,117.00 ft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 02/07/12 | 10.96 | 65.85 | 52,262 |

**Design** PLAN #1

**Audit Notes:**

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

| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 153.20 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 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 | |
| 850.00 | 11.00 | 153.20 | 846.63 | -46.98 | 23.73 | 2.00 | 2.00 | 0.00 | 153.20 | |
| 2,594.14 | 11.00 | 153.20 | 2,558.73 | -344.03 | 173.79 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,222.72 | 0.00 | 0.00 | 3,183.44 | -397.72 | 200.91 | 1.75 | -1.75 | 0.00 | 180.00 | |
| 10,059.27 | 0.00 | 0.00 | 10,020.00 | -397.72 | 200.91 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL_NBU 1022-3F4 |



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Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well NBU_1022-3F4CS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Site:** | NBU 1022-3F PAD | **North Reference:** | True |
| **Well:** | NBU_1022-3F4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 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 |
| **Start Build 2.00** | | | | | | | | | |
| 400.00 | 2.00 | 153.20 | 399.98 | -1.56 | 0.79 | 1.75 | 2.00 | 2.00 | 0.00 |
| 500.00 | 4.00 | 153.20 | 499.84 | -6.23 | 3.15 | 6.98 | 2.00 | 2.00 | 0.00 |
| 600.00 | 6.00 | 153.20 | 599.45 | -14.01 | 7.08 | 15.69 | 2.00 | 2.00 | 0.00 |
| 700.00 | 8.00 | 153.20 | 698.70 | -24.89 | 12.57 | 27.88 | 2.00 | 2.00 | 0.00 |
| 800.00 | 10.00 | 153.20 | 797.47 | -38.85 | 19.62 | 43.52 | 2.00 | 2.00 | 0.00 |
| 850.00 | 11.00 | 153.20 | 846.63 | -46.98 | 23.73 | 52.63 | 2.00 | 2.00 | 0.00 |
| **Start 1744.14 hold at 850.00 MD** | | | | | | | | | |
| 900.00 | 11.00 | 153.20 | 895.71 | -55.50 | 28.03 | 62.17 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 11.00 | 153.20 | 993.87 | -72.53 | 36.64 | 81.26 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 11.00 | 153.20 | 1,092.03 | -89.56 | 45.24 | 100.34 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 11.00 | 153.20 | 1,190.20 | -106.59 | 53.84 | 119.42 | 0.00 | 0.00 | 0.00 |
| 1,252.77 | 11.00 | 153.20 | 1,242.00 | -115.58 | 58.38 | 129.49 | 0.00 | 0.00 | 0.00 |
| **GREEN RIVER** | | | | | | | | | |
| 1,300.00 | 11.00 | 153.20 | 1,288.36 | -123.62 | 62.45 | 138.50 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 11.00 | 153.20 | 1,386.52 | -140.65 | 71.05 | 157.58 | 0.00 | 0.00 | 0.00 |
| 1,476.89 | 11.00 | 153.20 | 1,462.00 | -153.75 | 77.67 | 172.25 | 0.00 | 0.00 | 0.00 |
| **BIRDSNEST** | | | | | | | | | |
| 1,500.00 | 11.00 | 153.20 | 1,484.69 | -157.68 | 79.65 | 176.66 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 11.00 | 153.20 | 1,582.85 | -174.71 | 88.26 | 195.74 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 11.00 | 153.20 | 1,681.01 | -191.75 | 96.86 | 214.82 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 11.00 | 153.20 | 1,779.17 | -208.78 | 105.46 | 233.90 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 11.00 | 153.20 | 1,877.34 | -225.81 | 114.07 | 252.98 | 0.00 | 0.00 | 0.00 |
| 1,983.19 | 11.00 | 153.20 | 1,959.00 | -239.98 | 121.22 | 268.86 | 0.00 | 0.00 | 0.00 |
| **MAHOGANY** | | | | | | | | | |
| 2,000.00 | 11.00 | 153.20 | 1,975.50 | -242.84 | 122.67 | 272.06 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 11.00 | 153.20 | 2,073.66 | -259.87 | 131.27 | 291.15 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 11.00 | 153.20 | 2,171.82 | -276.90 | 139.88 | 310.23 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 11.00 | 153.20 | 2,269.99 | -293.93 | 148.48 | 329.31 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 11.00 | 153.20 | 2,368.15 | -310.96 | 157.08 | 348.39 | 0.00 | 0.00 | 0.00 |
| 2,441.61 | 11.00 | 153.20 | 2,409.00 | -318.05 | 160.66 | 356.33 | 0.00 | 0.00 | 0.00 |
| **8 5/8"** | | | | | | | | | |
| 2,500.00 | 11.00 | 153.20 | 2,466.31 | -328.00 | 165.69 | 367.47 | 0.00 | 0.00 | 0.00 |
| 2,594.14 | 11.00 | 153.20 | 2,558.73 | -344.03 | 173.79 | 385.43 | 0.00 | 0.00 | 0.00 |
| **Start Drop -1.75** | | | | | | | | | |
| 2,600.00 | 10.90 | 153.20 | 2,564.48 | -345.02 | 174.29 | 386.54 | 1.75 | -1.75 | 0.00 |
| 2,700.00 | 9.15 | 153.20 | 2,662.95 | -360.56 | 182.14 | 403.95 | 1.75 | -1.75 | 0.00 |
| 2,800.00 | 7.40 | 153.20 | 2,761.90 | -373.40 | 188.62 | 418.34 | 1.75 | -1.75 | 0.00 |
| 2,900.00 | 5.65 | 153.20 | 2,861.25 | -383.54 | 193.74 | 429.69 | 1.75 | -1.75 | 0.00 |
| 3,000.00 | 3.90 | 153.20 | 2,960.90 | -390.96 | 197.50 | 438.01 | 1.75 | -1.75 | 0.00 |
| 3,100.00 | 2.15 | 153.20 | 3,060.76 | -395.67 | 199.87 | 443.29 | 1.75 | -1.75 | 0.00 |
| 3,200.00 | 0.40 | 153.20 | 3,160.73 | -397.65 | 200.87 | 445.51 | 1.75 | -1.75 | 0.00 |
| 3,222.72 | 0.00 | 0.00 | 3,183.44 | -397.72 | 200.91 | 445.59 | 1.75 | -1.75 | 0.00 |
| **Start 6836.56 hold at 3222.72 MD** | | | | | | | | | |
| 3,300.00 | 0.00 | 0.00 | 3,260.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 0.00 | 0.00 | 3,360.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 0.00 | 0.00 | 3,460.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 0.00 | 0.00 | 3,560.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 0.00 | 0.00 | 3,660.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |



RECEIVED: July 06, 2012

Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well NBU_1022-3F4CS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Site:** | NBU 1022-3F PAD | **North Reference:** | True |
| **Well:** | NBU_1022-3F4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 3,800.00 | 0.00 | 0.00 | 3,760.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 0.00 | 0.00 | 3,860.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 0.00 | 0.00 | 3,960.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 0.00 | 0.00 | 4,060.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 0.00 | 0.00 | 4,160.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 0.00 | 0.00 | 4,260.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,356.27 | 0.00 | 0.00 | 4,317.00 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| **WASATCH** | | | | | | | | | |
| 4,400.00 | 0.00 | 0.00 | 4,360.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 0.00 | 0.00 | 4,460.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 0.00 | 0.00 | 4,560.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 0.00 | 0.00 | 4,660.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 0.00 | 0.00 | 4,760.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 0.00 | 0.00 | 4,860.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 0.00 | 0.00 | 4,960.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 0.00 | 0.00 | 5,060.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 0.00 | 0.00 | 5,160.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 0.00 | 0.00 | 5,260.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 0.00 | 0.00 | 5,360.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 0.00 | 0.00 | 5,460.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 0.00 | 0.00 | 5,560.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 0.00 | 0.00 | 5,660.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 0.00 | 0.00 | 5,760.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 0.00 | 0.00 | 5,860.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 0.00 | 0.00 | 5,960.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 6,060.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 0.00 | 0.00 | 6,160.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 0.00 | 0.00 | 6,260.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 0.00 | 0.00 | 6,360.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 0.00 | 0.00 | 6,460.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 0.00 | 0.00 | 6,560.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 0.00 | 0.00 | 6,660.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,703.27 | 0.00 | 0.00 | 6,664.00 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| **MESAVERDE** | | | | | | | | | |
| 6,800.00 | 0.00 | 0.00 | 6,760.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 0.00 | 0.00 | 6,860.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 0.00 | 0.00 | 6,960.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 0.00 | 0.00 | 7,060.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 0.00 | 0.00 | 7,160.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 7,260.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,360.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,460.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 0.00 | 0.00 | 7,560.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,660.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,760.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 0.00 | 0.00 | 7,860.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 0.00 | 0.00 | 7,960.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 8,060.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 8,160.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 0.00 | 0.00 | 8,260.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 0.00 | 0.00 | 8,360.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 0.00 | 0.00 | 8,460.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 0.00 | 0.00 | 8,560.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 0.00 | 0.00 | 8,660.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |



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Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well NBU_1022-3F4CS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Site:** | NBU 1022-3F PAD | **North Reference:** | True |
| **Well:** | NBU_1022-3F4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 8,800.00 | 0.00 | 0.00 | 8,760.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 8,897.27 | 0.00 | 0.00 | 8,858.00 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| **SEGO - SEGO_NBU 1022-3F4CS** | | | | | | | | | |
| 8,900.00 | 0.00 | 0.00 | 8,860.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 0.00 | 0.00 | 8,960.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,018.27 | 0.00 | 0.00 | 8,979.00 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| **CASTLEGATE** | | | | | | | | | |
| 9,100.00 | 0.00 | 0.00 | 9,060.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 0.00 | 0.00 | 9,160.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 0.00 | 0.00 | 9,260.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 0.00 | 0.00 | 9,360.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,459.27 | 0.00 | 0.00 | 9,420.00 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| **BLACKHAWK** | | | | | | | | | |
| 9,500.00 | 0.00 | 0.00 | 9,460.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 0.00 | 0.00 | 9,560.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 0.00 | 0.00 | 9,660.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 0.00 | 0.00 | 9,760.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 0.00 | 0.00 | 9,860.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 0.00 | 0.00 | 9,960.73 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| 10,059.27 | 0.00 | 0.00 | 10,020.00 | -397.72 | 200.91 | 445.59 | 0.00 | 0.00 | 0.00 |
| **PBHL_NBU 1022-3F4CS** | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| SEGO_NBU 1022-3F4C<br>- plan hits target center<br>- Circle (radius 25.00) | 0.00 | 0.00 | 8,858.00 | -397.72 | 200.91 | 14,522,046.36 | 2,080,898.57 | 39.978355 | -109.427709 |
| PBHL_NBU 1022-3F4C<br>- plan hits target center<br>- Circle (radius 100.00) | 0.00 | 0.00 | 10,020.00 | -397.72 | 200.91 | 14,522,046.36 | 2,080,898.57 | 39.978355 | -109.427709 |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---|---|---|---|---|
| 2,441.61 | 2,409.00 | 8 5/8" | 8.625 | 11.000 |



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Scientific Drilling
Rocky Mountain Operations

# SDI
## Planning Report

Anadarko Petroleum Corporation

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well NBU_1022-3F4CS |
| **Company:** | US ROCKIES REGION PLANNING | **TVD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **MD Reference:** | GL 5117 & KB 4 @ 5121.00ft (ASSUMED) |
| **Site:** | NBU 1022-3F PAD | **North Reference:** | True |
| **Well:** | NBU_1022-3F4CS | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PLAN #1 | | |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,252.77 | 1,242.00 | GREEN RIVER | | | |
| 1,476.89 | 1,462.00 | BIRDSNEST | | | |
| 1,983.19 | 1,959.00 | MAHOGANY | | | |
| 4,356.27 | 4,317.00 | WASATCH | | | |
| 6,703.27 | 6,664.00 | MESAVERDE | | | |
| 8,897.27 | 8,858.00 | SEGO | | | |
| 9,018.27 | 8,979.00 | CASTLEGATE | | | |
| 9,459.27 | 9,420.00 | BLACKHAWK | | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 300.00 | 300.00 | 0.00 | 0.00 | Start Build 2.00 |
| 850.00 | 846.63 | -46.98 | 23.73 | Start 1744.14 hold at 850.00 MD |
| 2,594.14 | 2,558.73 | -344.03 | 173.79 | Start Drop -1.75 |
| 3,222.72 | 3,183.44 | -397.72 | 200.91 | Start 6836.56 hold at 3222.72 MD |
| 10,059.27 | 10,020.00 | -397.72 | 200.91 | TD at 10059.27 |



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# Kerr-McGee Oil & Gas Onshore. L.P.

## NBU 1022-3F PAD

| API # | NBU 1022-3C4CS | | |
|---|---|---|---|
| Surface: | 2104 FNL / 1798 FWL | SENW | Lot |
| BHL: | 1078 FNL / 2153 FWL | NENW | Lot 3 |

| API # | NBU 1022-3F1BS | | |
|---|---|---|---|
| Surface: | 2114 FNL / 1795 FWL | SENW | Lot |
| BHL: | 1411 FNL / 2159 FWL | SENW | Lot |

| API # | NBU 1022-3F1CS | | |
|---|---|---|---|
| Surface: | 2123 FNL / 1793 FWL | SENW | Lot |
| BHL: | 1742 FNL / 2152 FWL | SENW | Lot |

| API # | NBU 1022-3F4CS | | |
|---|---|---|---|
| Surface: | 2133 FNL / 1790 FWL | SENW | Lot |
| BHL: | 2531 FNL / 1987 FWL | SENW | Lot |

| API # | NBU 1022-3K1BS | | |
|---|---|---|---|
| Surface: | 2143 FNL / 1787 FWL | SENW | Lot |
| BHL: | 2399 FSL / 2046 FWL | NESW | Lot |

This Surface Use Plan of Operations (SUPO) or 13-point plan provides site-specific information for the above-referenced wells.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

An on-site meeting was held on December 6, 2011. Present were:

- David Gordon, Tyler Cox - BLM;
- Jacob Dunham - 609 Consulting;
- John Slaugh, Mitch Batty - Timberline Engineering & Land Surveying, Inc.; and
- Gina Becker, Charles Chase, Doyle Holmes, Casey McGee, Grizz Oleen, Sheila Wopsock - Kerr-McGee

**A. Existing Roads:**

Existing roads consist of county and improved/unimproved access roads (two-tracks). In accordance with Onshore Order #1, Kerr-McGee will, in accordance with BMPs, improve or maintain existing roads in a condition that is the same as or better than before operations began. New or reconstructed proposed access roads are discussed in Section B.

The existing roads will be maintained in a safe and usable condition. Maintenance for existing roads will continue until final abandonment and reclamation of well pads and/or other facilities, as applicable. Road maintenance will include, but is not limited to, blading, ditching, and/or culvert installation and cleanout. To ensure safe operating conditions, gravel surfacing will be performed where excessive rutting or erosion may occur. Dust control will be performed as necessary to ensure safe operating conditions.

Roads, gathering lines and electrical distribution lines will occupy common disturbance corridors where possible. Where available, roadways will be used as the staging area and working space for installation of gathering lines. All disturbances located in the same corridor will overlap each other to the maximum extent possible, while maintaining safe and sound construction and installation practices. Unless otherwise approved or requested in site specific



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documents, in no case will the maximum disturbance widths of the access road and utility corridors exceed the widths specified in Part D of this document.

Please refer to Topo B, for existing roads.

**B. New or Reconstructed Access Roads:**

All new or reconstructed roads will be located, designed, and maintained to meet the standards of the BLM. BMPs. Described in the BLM's Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition (Gold Book) (USDI and USDA, 2007) and/or BLM Manual Section 9113 (1985) will be considered in consultation with the BLM in the design, construction, improvement and maintenance of all new or reconstructed roads. If a new road would cross a water of the United States, Kerr-McGee will adhere to the requirements of applicable Nationwide Permits of the Department of Army Corps of Engineers.

Each new well pad or pad expansion may require construction of a new access road and/or de-commissioning of an older road. Plans, routes, and distances for new roads and road improvements are provided in design packages, exhibits and maps for a project. Project-specific maps are submitted to depict the locations of existing, proposed, and/or decommissioned and include the locations for supporting structures, including, but not limited to, culverts, bridges, low water crossings, range infrastructure, and haul routes, as per OSO 1. Designs for cuts and fills, including spoils source and storage areas, are provided with the road designs, as necessary.

Where safety objectives can be met. As applicable, Kerr-McGee may use unimproved and/or two-track roads for lease operations, to lessen total disturbance.

Road designs will be based on the road safety requirements, traffic characteristics, environmental conditions, and the vehicles the road is intended to carry. Generally, newly constructed unpaved lease roads will be crowned and ditched with the running surfaces of the roads approximately 12-18 feet wide and a total road corridor width not to exceed 45 feet, except where noted in the road design for a specific project. Maximum grade will generally not exceed 8%. Borrow ditches will be back sloped 3:1 or less. Construction BMPs will be employed to control onsite and offsite erosion.

Where topography would direct storm water runoff to an access road or well pad, drainage ditches or other common drainage control facilities, such as V- or wing-ditches, will be constructed to divert surface water runoff. Drainage features, including culverts, will be constructed or installed prior to commencing other operations, including drilling or facilities placement. Riprap will be placed at the inlet and outlet at the culvert(s), as necessary.

Prior to construction, new access road(s) will be staked according to the requirements of OSO 1. Construction activity will not be conducted using frozen or saturated materials or during periods when significant watershed damage (e.g. rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur. Vegetative debris will not be placed in or under fill embankments.

New road maintenance will include, but is not limited to, blading, ditching, culvert installation and cleanout, gravel surfacing where excessive rutting or erosion may occur and dust control, as necessary to ensure safe operating conditions. All vehicular traffic, personnel movement, construction/restoration operations will be confined to the approved area and to existing roadways and/or access routes.

Snow removal will be conducted on an as-needed basis to accommodate safe travel. Snow removal will occur as necessary throughout the year, as will necessary drainage ditch construction. Removed snow may be stored on permitted well pads to reduce hauling distances and/or at the aerial extent of approved disturbance boundaries to facilitate snow removal for the remainder of the season.

If a county road crossing or encroachment permit is needed, it will be obtained prior to construction.



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**The following segments are "on-lease"**

±210' (0.04 miles) – Section 3 T10S R22E (SE/4 NW/4) – On-lease UTU01191, Re-route the existing road from the southern edge of pad and curve southwesterly to the existing road. Please refer to Topo B.

**C. Location of Existing Wells:**

A) Refer to Topo Map C.

**D. Location of Existing and/or Proposed Facilities:**

This pad will expand the existing pad for the NBU 286, which is a plugged and abandoned gas well according to Utah Division of Oil, Gas and Mining (UDOGM) records on February 6, 2012. Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (Kerr-McGee).

Should the well(s) prove productive, production facilities will be installed on the disturbed portion of each well pad. A berm will be constructed completely around production components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will generally be constructed of compacted subsoil or corrugated metal, and will hold the capacity of the largest tank and have sufficient freeboard to accomodate a 25 year rainfall event. This includes pumping units. Aboveground structures constructed or installed onsite for 6 months or longer, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with the BLM (typically Shadow Gray). A production facility layout is provided as part of a project-specific APD, ROW or NOS submission.

**GAS GATHERING**

*Please refer to Exhibit A and Topo D2- Pad and Pipeline Detail.*

The gas gathering pipeline material: Steel line pipe. Surface = Bare pipe. Buried = Coated with fusion bonded epoxy coating (or equivalent). The total gas gathering pipeline distance from the meter to the tie in point is ±2,395' and the individual segments are broken up as follows:

**The following segments are "onlease", no ROW needed.**

±355' (0.07 miles) – Section 3 T10S R22E (SE/4 NW/4) – On-lease UTU01191, BLM surface, New 8" buried gas gathering pipeline from the meter to the edge of the pad. Please refer to Topo D2- Pad and Pipeline Detail.

±2,040' (0.39 miles) – Section 3 T10S R22E (SW/4 NW/4) – On-lease UTU01191, BLM surface, New 8" buried gas gathering pipeline from the edge of the pad to tie-in to the approved 16" gas pipeline. Please refer to Topo D2- Pad and Pipeline Detail and Exhibit A, Line 10.

**LIQUID GATHERING**

*Please refer to Exhibit B and Topo D2- Pad and Pipeline Detail.*

The total liquid gathering pipeline distance from the separator to the tie in point is ±2,395' and the individual segments are broken up as follows:

**The following segments are "onlease", no ROW needed.**

±355' (0.07 miles) – Section 3 T10S R22E (SE/4 NW/4) – On-lease UTU01191, BLM surface, New 6" buried liquid gathering pipeline from the separator to the edge of the pad. Please refer to Topo D2-Pad and Pipeline Detail.



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±2,040' (0.39 miles) – Section 3 T10S R22E (SW/4 NW/4) – On-lease UTU01191, BLM surface, New 6" buried liquid gathering pipeline from the edge of the pad to tie-in to the approved liquid pipeline. Please refer to Topo D2-Pad and Pipeline Detail and Exhibit B, Line 10.

**Pipeline Gathering Construction**

Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee. Gas gathering pipeline(s,) gas lift, or liquids pipelines may be constructed to lie on the surface or be buried. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. The area of disturbance during construction from the edge of road or well pad will typically be 30' in width. Where pipelines run cross country, the width of disturbance will typically be 45 ft for buried lines and 30 ft for surface lines. In addition, Kerr-McGee requests for a permanent 30' distrubance width that will be maintained for the portion adjacent to the road. The need for the 30' permanent distrubance width is for maintenance and repairs. Cross country permanent distrubance width also are required to be 30ft.

Above-ground installation will generally not require clearing of vegetation or blading of the surface, except where safety considerations necessitate earthwork. In some surface pipeline installation instances pipe cannot be constructed where it will lay. In these cases where an above-ground pipeline is constructed parallel and adjacent to a road, it will be welded/fused on the road and then lifted from the road to the pipeline route. In other cases where a pipeline route is not parallel and adjacent to a road (cross-country between sites), it will be welded/fused in place at a well pad, access road, or designated work area and pulled between connection locations with a suitable piece of equipment.

Buried pipelines will generally be installed parallel and adjacent to existing and/or newly constructed roads and within the permitted disturbance corridor. Buried pipelines may vary from 2 inches (typically fuel gas lines) to 24 inches (typically transportation lines) in diameter, but 6 to 16 inches is typical for a buried gas line. The diameter of liquids pipelines may vary from 2 inches to 12 inches, but 6 inches is the typical diameter. Gas lift lines may vary from 2 to 12 inches in diameter, but 6-inch diameter pipes are generally used for gas lift. If two or more pipelines are present (gas gathering, gas lift, and fluids), they will share a common trench where possible.

Typically, to install a buried pipeline, topsoil will be removed, windrowed and placed on the non-working side of the route for later reclamation. Because working room is limited, the spoil may be spread out across the working side and construction will take place on the spoil. The working side of the corridor will be used for pipe stringing, bending, welding and equipment travel. Small areas on the working side displaying ruts or uneven ground will be groomed to facilitate the safe passage of equipment. After the pipelines are installed, spoil will be placed back into the trench, and the topsoil will be redistributed over the disturbed corridor prior to final reclamation. Typical depth of the trench will be 6 feet, but depths may vary according to site-specific conditions (presence of bedrock, etc.). The proposed trench width for the pipeline would range from 18-48 inches.

The pipeline will be welded along the proposed route and lowered into place. Trenching equipment will cut through the soil or into the bedrock and create good backfill, eliminating the need to remove large rocks. The proposed buried pipeline will be visually and radiographically inspected and the entire pipeline will be pneumatically or hydrostatically tested before being placed into service. Routine vehicle traffic will be prevented from using pipeline routes as travel ways by posting signs at the route's intersection with an access road.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

If pipelines or roads encounter a drainage that could be subject to flooding or surface water during extreme precipitation events, Kerr-McGee will apply all applicable Army Corps mandates as well as the BLM's Hydraulic Considerations for Pipeline Crossings of Stream Channels (BLM Technical Note 423, April 2007). In addition, all stream and drainage crossings will be evaluated to determine the need for stream alteration permits from the State of Utah Division of Water Rights and if necessary, required permits will be secured. Similarly, where a road or pipeline crossing exists the pipe will



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be butt welded and buried to a depth between 24 and 48 inches or more. Dirt roads will be cut and restored to a condition equivalent to the existing condition. All Uintah County road encroachment and crossing permits, where applicable, will be obtained prior to crossing construction. In no case will pressure testing of pipelines result in discharge of liquids to the surface.

Pipeline signs will be installed along the route to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves and lateral T's will be installed at various locations for production integrity and safety purposes.

Upon completion of the proposed buried pipeline, the entire area of disturbance will be reclaimed to the standards proposed in the Green River District Reclamation Guidelines. Please refer to section J for more details regarding final reclamation.

When no longer deemed necessary by the operator, Kerr-McGee or it's successor will consult with the BLM, Vernal Field Office before terminating of the use of the pipeline(s).

**The Anadarko Completions Transportation System (ACTS) information:**

Please refer to Exhibit C for ACTs Lines

Kerr-McGee will use either a closed loop drilling system that will require one pit and one storage area to be constructed on the drilling pad or a traditional drilling operation with one pit. The storage area will be used to contain only the de-watered drill cuttings and will be lined and reclaimed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit is lined and will be used for the wells drilled on the pad or used as part of our Anadarko Completions Transportation (ACTS) system which is disussed in more detail below. Using the closed loop drilling system will allow Kerr-McGee to decrease the amount of disturbance/footprint on location compared to a single large drilling/completion pit.

If Kerr-McGee does not use a closed loop system, it will construct a drilling reserve pit to contain drill cuttings and for use in completion operations. Depending on the location of the pit, its relation to future drilling locations, the reserve/completion pit will be utilized for the completion of the wells on that pad and/or be used as part of our ACTS system.

Kerr-McGee will use ACTS to optimize the completion processes for multiple pads across the project area which may include up to a section of development. ACTS will facilitate management of frac fluids by utilizing existing reserve pits and temporary, surface-laid aluminum liquids transfer lines between frac locations. The pit will be refurbished as follows when a traditional drill pit is used: mix and pile up drill cuttings with dry dirt, bury the original liner in the pit, walk bottom o pit with cat. Kerr-McGee will reline the pit with a 30 mil liner and double felt padding. The refurbished pit will be the same size or smaller as specified in the originally approved ROW/APD. The pit refurb will be done in a normal procedure and there will be no modification to the pit.

All four sides of the completions pit will be fenced in according to standard pit fencing procedures. Netting will be installed over all pits.

Any hydrocarbons collected will be treated and sold at approved sales facilities. A loading rack with drip containment will also be installed where water trucks would unload and load to prevent damage caused from pulling hoses in and out of the pit .

ACTS will require temporarily laying multiple 6” aluminum water transfer lines on the surface between either existing or refurbished reserve pits. Please see the attached ACTS exhibit C for placement of the proposed temporary lines. The temporary aluminum transfer lines will be utilized to transport frac fluid being injected and/or recovered during the completion process and will be laid adjacent to existing access roads or pipeline corridors. Upon completion of the frac operation, the liquids transfer lines will be flushed with fresh water and purged with compressed air. The contents of the transfer lines will be flushed into a water truck for delivery to another ACTS location or a reserve pit.



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The volume of frac fluid transported through a water transfer line will vary, but volume is projected to be approximately 1.75 bbls per 50-foot joint. Although the maximum working pressure is 125 psig, the liquids transfer lines will be operated at a pressure of approximately 30 to 40 psig. Kerr-McGee requests to keep the netted pit open for one year from first production of the first produced well on the pad. During this time the surrounding well location completion fluids may be recycled in this pit and utilized for other frac jobs in the area. After one year Kerr-McGee will backfill the pit and reclaim. If the pit is not needed for an entire year it will be backfilled and reclaimed earlier. Kerr-McGee understands that due to the temporary nature of this system, BLM considers this a casual use situation; therefore, no permanent ROW or temporary use plan will need to be issued by the BLM.

**E. Location and Types of Water Supply:**

Water for drilling and completion operations will be obtained from the following sources:

| | | |
|---|---|---|
| Permit # 49-2307 | JD Field Services | Green River- Section 15, T2N, R22E |
| Permit # 49-2321 | R.N. Industries | White River- Section 2, T10S, R24E |
| Permit # 49-2319 | R.N. Industries | White River- Various Sources |
| Permit # 49-2320 | R.N. Industries | Green River- Section 33, T8S, R23E |

Water will be hauled to location over the roads marked on Maps A and B.

No water well is to be drilled on this lease.

**F. Construction Materials:**

Construction operations will typically be completed with native materials found on location. Construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source (described in site-specific documents). No construction materials will be removed from federal lands without prior approval from the BLM. A source location other than an on-location construction site will be designated either via a map or narrative within the project specific materials provided to the BLM.

**G. Methods for Handling Waste:**

All wastes subject to regulation will be handled in compliance with applicable laws to minimize the potential for leaks or spills to the environment. Kerr-McGee also maintains a Spill Control and Countermeasure Plan, which includes notification requirements, including the BLM, for all reportable spills of oil, produced liquids, and hazardous materials.

Any accidental release, such as a leak or spill in excess of the reportable quantity, as established by 40 CFR Part 117.3, will be reported as per the requirements of CERCLA, Section 102 B. If a release involves petroleum hydrocarbons or produced liquids, Kerr-McGee will comply with the notification requirements of NTL-3A. Drill cuttings and/or drilling fluids will be contained in the reserve/frac pit whether a closed loop system is used or not. Cuttings will be buried in pit(s) upon closure. Unless specifically approved by the BLM, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

Pits will be constructed to minimize the accumulation of surface precipitation runoff into the pit (via appropriate placement of subsoil storage areas and/or construction of berms, ditches, etc). Should unexpected liquid petroleum hydrocarbons (crude oil or condensate) be encountered during drilling, completions or well testing, liquid petroleum hydrocarbons will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a reserve/completion pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by the BLM. Should timely removal not be feasible, the pit will be netted as soon as practical. Similarly, hydrocarbon removal will take place prior to the closure of the pit, unless authorization is provided for disposal via alternate pit closure methods (e.g. solidification).



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The reserve and/or fracture stimulation pit will be lined with an impermeable liner. The liner will be a synthetic material 30 mil or thicker. The bottom and side walls of the pit will be void of any sharp rocks that could puncture the liner. The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. After evaporation and when dry, the reserve pit liners will be cut off, ripped and/or folded back (as safety considerations allow) as near to the mud surface as possible and buried on location or hauled to a landfill prior to backfilling the pit with a minimum of five feet of soil material.

Where necessary and if conditions (freeboard, etc.) allow, produced liquids from newly completed wells may be temporarily disposed of into pits for a period not to exceed 90 days as per Onshore Order Number 7 (OSO 7). Subsequently, permanent approved produced water disposal methods will be employed in accordance with OSO 7 and/or as described in a Water Management Plan (WMP). Otherwise, fluids disposal locations and associated haul routes, for ROW consideration, are typically depicted on Topo A of individual projects. Revisions to the water source or method of transportation will be subject to written approval from the BLM.

Any additional pits necessary for subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after one year from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse (trash and other solid waste including cans, paper, cable, etc.) generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility. Immediately after removal of the drilling rig, all debris and other waste materials not contained within trash receptacles will be collected and removed from the well location.

For the protection of livestock and wildlife, all open pits (excluding flare pits) will be fenced to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet. Siphons, catchments, and absorbent pads will be installed to keep hydrocarbons produced by the drilling rig or other equipment on location from entering the reserve pit. Hydrocarbons, contaminated pads, and/or soils will be disposed of in accordance with state and federal requirements.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

**Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term “hazardous materials” as used here means: (1) any substance, pollutant, or containment listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.



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Hazardous materials may be contained in some grease or lubricants, solvents, acids, paint, and herbicides, among others as defined above. Kerr-McGee maintains a file, per 29 CFR 1910.1200 (g) containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances that are used during the course of construction, drilling, completion, and production operations for this project. The transport, use, storage and handling of hazardous materials will follow procedures specified by federal and state regulations. Transportation of hazardous materials to the well location is regulated by the Department of Transportation (DOT) under 49 CFR, Parts 171-180. DOT regulations pertain to the packing, container handling, labeling, vehicle placarding, and other safety aspects.

Potentially hazardous materials used in the development or operation of wells will be kept in limited quantities on well sites and at the production facilities for short periods of time. Chemicals meeting the criteria for being an acutely hazardous material/substance or meet the quantities criteria per BLM Instruction Memorandum No. 93-344 will not be used.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities (crude oil/condensate, produced water). They may also be kept in limited quantities on drilling sites (barite, diesel fuel, cement, cottonseed hulls etc.) for short periods of time during drilling or completion activities.

Fluids disposal and pipeline/haul routes are depicted on Topo Map A.

Any produced water separated from recoverable condensate from the proposed well will be contained in a water tank and will then be transported by pipeline and/or truck to one of the pre-approved disposal sites:

RNI in Sec. 5 T9S R22E
NBU #159 in Sec. 35 T9S R21E
Ace Oilfield in Sec. 2 T6S R20E
MC&MC in Sec. 12 T6S R19E
Pipeline Facility in Sec. 36 T9S R20E
Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E
Bonanza Evaporation Pond in Sec. 2 T10S R23E

Or to one of the following Kerr-McGee active Salt Water Disposal (SWD) wells:

NBU 159 SWD in Sec. 35 T9S R21E
CIGE 112D SWD in Sec. 19 T9S R21E
CIGE 114 SWD in Sec. 34 T9S R21E
NBU 921-34K SWD in Sec. 34 T9S R21E
NBU 921-33F SWD in Sec. 34 T9S R21E

**H. Ancillary Facilities:**

No additional ancillary facilities are planned for this location.

**I. Well Site Layout:**

The location, orientation and aerial extent of each drill pad, reserve/completion/flare pit (for closed loop or non-closed loop operations), access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure, proposed cuts and fills, and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable. Site-specific conditions may require slight deviation in actual equipment depending on whether a closed loop system is used. Surface distance may be less if using closed loop. But in either case, the area of distrubance will not exceed the maximum disturbance outlined in the attached exhibits.



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For the protection of livestock and wildlife, all open pits and cellars will be fenced to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Each well will utilize either a centralized tank battery, centralized fluids management system, or have tanks installed on its pad. Production/ Produced Liquid tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks will be kept reasonably free from surface accumulations of liquid hydrocarbons. The tanks are not to be used for disposal of liquids from additional sources without prior approval of BLM.

**J. Plans for Surface Reclamation:**

The surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. Interim reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but is not limited to the re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

**Interim Reclamation**

Interim reclamation may include pit evaporation, fluid removal, pit solidification, re-contouring, ripping, spreading top soil, seeding, and/or weed control. Interim reclamation will be performed in accordance with OSO 1, or written notification will be provided to the BLM for approval. Where feasible, drilling locations, reserve pits, or access routes not utilized for production operations will be re-contoured to a natural appearance.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left “rough” after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit. Disposal of pit fluids and linings is discussed in Section G.

**Final Reclamation**

Final reclamation will be performed for unproductive wells and after the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by Kerr-McGee. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. The BLM will be notified prior to commencement of reclamation operations. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.



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After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring the site to the approximate contour that existed prior to pad construction, final grading will be conducted over the entire surface of the well site and access road. The area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers, where practical. The surface soil material will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep, where practical. The entire area will be uniformly covered with the depressions constructed perpendicular to the natural flow of water.

Reclamation of roads will be performed at the discretion of the BLM. All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded in accordance with the seeding specifications of the BLM.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to the BLM.

**Measures Common to Interim and Final Reclamation**

Soil preparation will be conducted using a disk for areas in need of more soil preparation following site preparation. This will provide primary soil tillage to a depth no greater than 6 inches. Prior to reseeding, compacted areas will be scarified by ripping or chiseling to loosen compacted soils, promote water infiltration, and improve soil aeration and root penetration.

Seeding will occur year-round as conditions allow and will typically be accomplished through the use of a no-till rangeland style seed drill with a “picker box” in order to seed “fluffy” seed. Where drill seeding is not the preferred method, seed will be broadcast and then raked into the ground at double the rate of drill seeding. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for re-vegetation. The seed mixes will be selected from a list provided by or approved by the BLM, or a specific seed mix will be proposed by Kerr-McGee to the BLM and used after its approval. The selected specific seed mix for each well location and road segment will be utilized while performing interim and final reclamation for each project. All seed will be certified and tags will be maintained by Kerr-McGee. Every effort will be made to obtain “cheat grass free seed”.

Seed Mix to be used for Well Site, Access Road, and Pipeline (as applicable):

| **Bonanza Area Mix** | **Pure Live Seed lbs/acre** |
|---|---|
| Crested Wheat (Hycrest) | 2 |
| Bottlebrush Squirreltail | 1 |
| Western Wheatgrass | 1 |
| Indian Ricegrass | 1 |
| Fourwing Saltbush | 2 |
| Shadscale | 2 |
| Forage Kochia | 0.25 |
| Rocky Mountain Bee | 0.5 |
| **Total** | 9.75 |

Additional soil amendments and/or stabilization may be required on sites with poor soils and/or excessive erosion potential. Where severe erosion can become a problem and/or the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. Slopes will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to: erosion control blankets, hydro-mulch, and/or bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage. Soil amendments such as “Sustain” (an organic fertilizer that will be applied at the rate 1,800 – 2,100 lbs/acre with seed) may also be dry broadcast or applied with hydro-seeding equipment.



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**Weed Control**

All weed management will be done in accordance with the Vernal BLM Surface Disturbance Weed Policy. Noxious weeds will be controlled, as applicable, on project areas. Monitoring and management of noxious and/or invasive weeds of concern will be completed annually until the project is deemed successfully reclaimed by the surface management agency and/or owner according to the Anadarko Integrated Weed Management Plan. Noxious weed infestations will be mapped using a GPS unit and submitted to the BLM with information required in the Vernal BLM Surface Disturbance Weed Policy. If herbicide is to be applied it will be done according to an approved Pesticide Use Permit (PUP), inclusive of applicable locations. All pesticide applications will be recorded using a Pesticide Application Record (PAR) and will be submitted along with a Pesticide Use Report (PUR) annually prior to Dec. 31.

**Monitoring**

Monitoring of reclaimed project areas will be completed annually during the growing season and actions to ensure reclamation success will be taken as needed. During the first two growing seasons an ocular methodology will be used to determine the success of the reclamation activities. During the 3rd growing season a 200 point line intercept (quantitative) methodology will be used to obtain basal cover. The goal is to have the reclaimed area reach 30% basal cover when compared to the reference site. If after three growing seasons the area has not reached 30% basal cover, additional reclamation activities may be necessary. Monitoring will continue until the reclaimed area reaches 75% basal cover of desirable vegetation when compared to the reference site. (Green River District Reclamation Guidelines)

All monitoring reports will be submitted electronically to the Vernal BLM in the form of a geo-database no later than March 1st of the calendar year following the data collection.

**K. Surface/Mineral Ownership:**

United States of America
Bureau of Land Management
170 South 500 East
Vernal, UT 84078
(435)781-4400

**L. Other Information:**

**Onsite Specifics:**

- Potentially move production facilities from corner 11 to corner 4.

**Cultural and Paleontological Resources**

All personnel are strictly prohibited from collecting artifacts, any paleontological specimens or fossils, and from disturbing any significant cultural resources in the area. If artifacts, fossils, or any culturally sensitive materials are exposed or identified in the area of construction, all construction operations that would affect the newly discovered resource will cease, and Kerr-McGee will provide immediate notification to the BLM.

**Resource Reports:**

A Class I literature review was completed on February 1, 2012 by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 11-404.

A paleontological reconnaissance survey was completed on February 3, 2012 by Intermountain Paleo Consultants. For additional details please refer to report IPC 11-202PRE.



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Biological field survey was completed on June 15, 2011 by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-686.

**Proposed Action Annual Emissions Tables:**

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

| Pollutant | Development | Production | Total |
|---|---|---|---|
| NOx | 3.8 | 0.12 | 3.92 |
| CO | 2.2 | 0.11 | 2.31 |
| VOC | 0.1 | 4.9 | 5 |
| $SO_2$ | 0.005 | 0.0043 | 0.0093 |
| $PM_{10}$ | 1.7 | 0.11 | 1.81 |
| $PM_{2.5}$ | 0.4 | 0.025 | 0.425 |
| Benzene | 2.2E-03 | 0.044 | 0.046 |
| Toluene | 1.6E-03 | 0.103 | 0.105 |
| Ethylbenzene | 3.4E-04 | 0.005 | 0.005 |
| Xylene | 1.1E-03 | 0.076 | 0.077 |
| n-Hexane | 1.7E-04 | 0.145 | 0.145 |
| Formaldehyde | 1.3E-02 | 8.64E-05 | 1.31E-02 |

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

**Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison**

| Species | Proposed Action Production Emissions (ton/yr) | WRAP Phase III 2012 Uintah Basin Emission Inventory[a] (ton/yr) | Percentage of Proposed Action to WRAP Phase III |
|---|---|---|---|
| NOx | 31.36 | 16,547 | 0.19% |
| VOC | 40 | 127,495 | 0.03% |

[a] http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html Uintah Basin Data



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**M. Lessee's or Operators' Representative & Certification:**

Gina T. Becker
Regulatory Analyst II
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6086

Tommy Thompson
General Manager, Drilling
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6724

Certification: 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 will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Gina T.Becker

February 14, 2012
Date

Kerr-McGee Oil & Gas Onshore LP
1099 18TH STREET STE. 1800
DENVER, CO 80202
720-929-6708 • FAX 720-929-7708
E-MAIL: JOE.JOHNSON@ANADARKO.COM

February 14, 2012

Ms. Diana Mason
Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11
NBU 1022-3F4CS
T10S-R22E
Section 3: SENW/SENW
Surface: 2133' FNL, 1790' FWL
Bottom Hole: 2531' FNL, 1987' FWL
Uintah County, Utah

Dear Ms. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) 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.

- Kerr-McGee's NBU 1022-3F4CS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

Therefore, based on the above stated information Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Joseph D. Johnson
Landman

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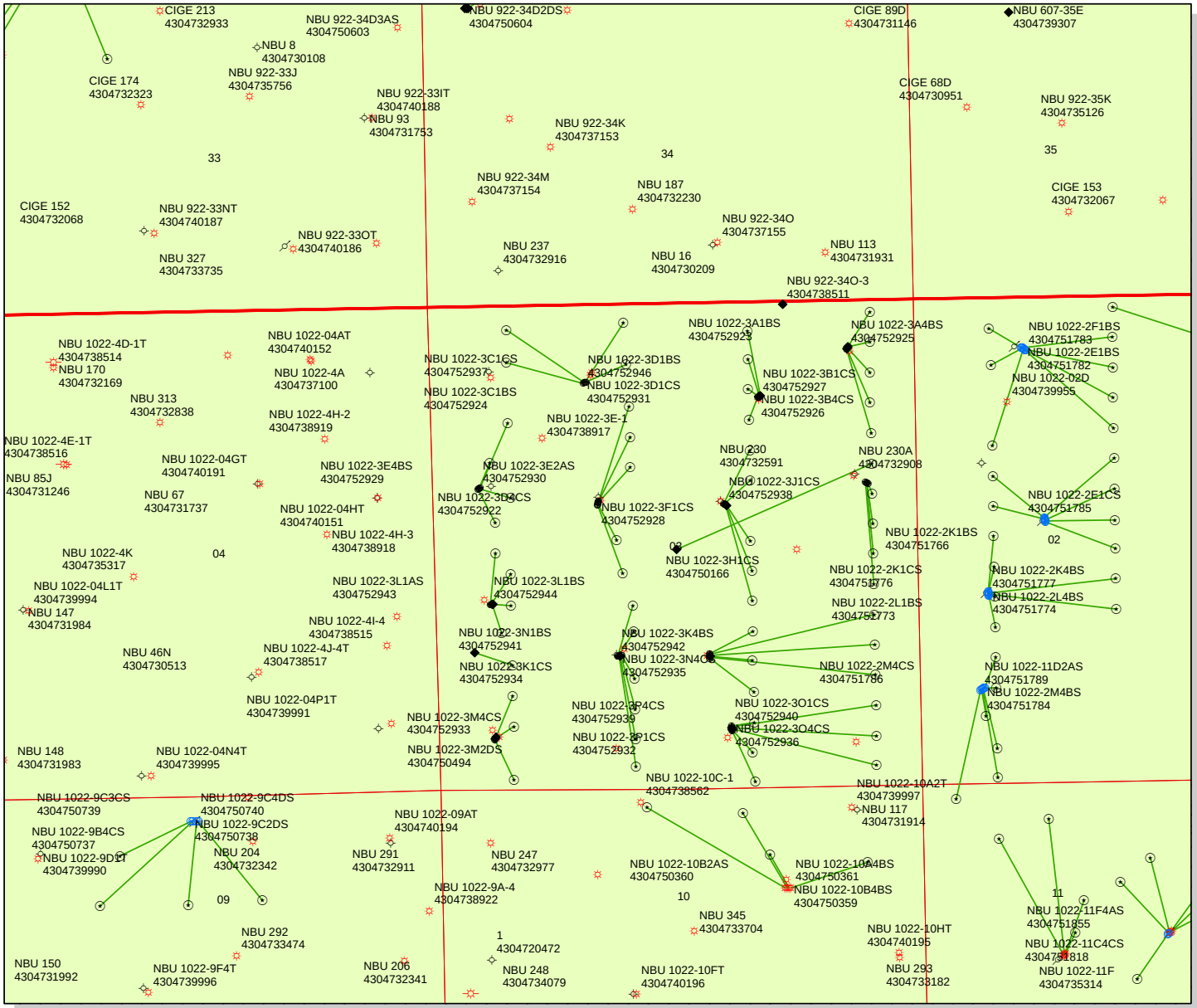
API Well Number: 43047529130000




**API Number: 4304752913**

**Well Name: NBU 1022-3F4CS**

**Township T10.0S Range R22.0E Section 03**

**Meridian: SLBM**

Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

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

**Wells Query**
**Status**
- APD - Aproved Permit
- DRL - Spuded (Drilling Commenced)
- GIW - Gas Injection
- GS - Gas Storage
- LOC - New Location
- OPS - Operation Suspended
- PA - Plugged Abandoned
- PGW - Producing Gas Well
- POW - Producing Oil Well
- SGW - Shut-in Gas Well
- SOW - Shut-in Oil Well
- TA - Temp. Abandoned
- TW - Test Well
- WDW - Water Disposal
- WIW - Water Injection Well
- WSW - Water Supply Well
- Bottom Hole Location - OilGasDb

1,400 700 0 1,400 Feet

1:13,484

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# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
**Utah State Office**
**P.O. Box 45155**
**Salt Lake City, Utah 84145-0155**

**IN REPLY REFER TO:**
**3160**
**(UT-922)**

July 16, 2012

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2012 Plan of Development Natural Buttes Unit
Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2012 within the Natural Buttes Unit, Uintah County, Utah.

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ WASATCH-MESA VERDE) | | |
| **WELL PAD - NBU 1022-3H** | | |
| 43-047-52902 | NBU 1022-3H4CS | Sec 03 T10S R22E 1949 FNL 0549 FEL |
| | | BHL Sec 03 T10S R22E 2396 FNL 0494 FEL |
| 43-047-52906 | NBU 1022-3I1CS | Sec 03 T10S R22E 1939 FNL 0567 FEL |
| | | BHL Sec 03 T10S R22E 2232 FSL 0494 FEL |
| 43-047-52910 | NBU 1022-3H4BS | Sec 03 T10S R22E 1953 FNL 0540 FEL |
| | | BHL Sec 03 T10S R22E 2065 FNL 0494 FEL |
| 43-047-52914 | NBU 1022-3I1BS | Sec 03 T10S R22E 1944 FNL 0558 FEL |
| | | BHL Sec 03 T10S R22E 2562 FSL 0494 FEL |
| **WELL PAD - NBU 1022-3G** | | |
| 43-047-52903 | NBU 1022-3J1BS | Sec 03 T10S R22E 2166 FNL 2090 FEL |
| | | BHL Sec 03 T10S R22E 2402 FSL 1820 FEL |
| 43-047-52907 | NBU 1022-3G1CS | Sec 03 T10S R22E 2153 FNL 2105 FEL |
| | | BHL Sec 03 T10S R22E 1903 FNL 1821 FEL |
| 43-047-52917 | NBU 1022-3G1BS | Sec 03 T10S R22E 2146 FNL 2112 FEL |
| | | BHL Sec 03 T10S R22E 1572 FNL 1821 FEL |
| 43-047-52938 | NBU 1022-3J1CS | Sec 03 T10S R22E 2159 FNL 2097 FEL |
| | | BHL Sec 03 T10S R22E 2071 FSL 1820 FEL |

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| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ WASATCH-MESA VERDE) | | |
| **WELL PAD - NBU 1022-3F** | | |
| 43-047-52904 | NBU 1022-3K1BS | Sec 03 T10S R22E 2143 FNL 1787 FWL |
| | | BHL Sec 03 T10S R22E 2399 FSL 2046 FWL |
| 43-047-52913 | NBU 1022-3F4CS | Sec 03 T10S R22E 2133 FNL 1790 FWL |
| | | BHL Sec 03 T10S R22E 2531 FNL 1987 FWL |
| 43-047-52919 | NBU 1022-3F1BS | Sec 03 T10S R22E 2114 FNL 1795 FWL |
| | | BHL Sec 03 T10S R22E 1411 FNL 2159 FWL |
| 43-047-52921 | NBU 1022-3C4CS | Sec 03 T10S R22E 2104 FNL 1798 FWL |
| | | BHL Sec 03 T10S R22E 1078 FNL 2153 FWL |
| 43-047-52928 | NBU 1022-3F1CS | Sec 03 T10S R22E 2123 FNL 1793 FWL |
| | | BHL Sec 03 T10S R22E 1742 FNL 2152 FWL |
| **WELL PAD – NBU 1022-3J** | | |
| 43-047-52905 | NBU 1022-3J4BS | Sec 03 T10S R22E 1505 FSL 2293 FEL |
| | | BHL Sec 03 T10S R22E 1740 FSL 1820 FEL |
| 43-047-52908 | NBU 1022-3I4BS | Sec 03 T10S R22E 1496 FSL 2294 FEL |
| | | BHL Sec 03 T10S R22E 1901 FSL 0494 FEL |
| 43-047-52912 | NBU 1022-3O1BS | Sec 03 T10S R22E 1456 FSL 2295 FEL |
| | | BHL Sec 03 T10S R22E 1077 FSL 1819 FEL |
| 43-047-52915 | NBU 1022-3P1BS | Sec 03 T10S R22E 1466 FSL 2295 FEL |
| | | BHL Sec 03 T10S R22E 1240 FSL 0494 FEL |
| 43-047-52916 | NBU 1022-3I4CS | Sec 03 T10S R22E 1486 FSL 2294 FEL |
| | | BHL Sec 03 T10S R22E 1571 FSL 0494 FEL |
| **WELL PAD - NBU 1022-3A** | | |
| 43-047-52909 | NBU 1022-3H1BS | Sec 03 T10S R22E 0488 FNL 0748 FEL |
| | | BHL Sec 03 T10S R22E 1405 FNL 0495 FEL |
| 43-047-52923 | NBU 1022-3A1BS | Sec 03 T10S R22E 0453 FNL 0728 FEL |
| | | BHL Sec 03 T10S R22E 0083 FNL 0488 FEL |
| 43-047-52925 | NBU 1022-3A4BS | Sec 03 T10S R22E 0470 FNL 0738 FEL |
| | | BHL Sec 03 T10S R22E 0744 FNL 0495 FEL |
| **WELL PAD - NBU 1022-3K** | | |
| 43-047-52918 | NBU 1022-3N1CS | Sec 03 T10S R22E 1500 FSL 2008 FWL |
| | | BHL Sec 03 T10S R22E 0913 FSL 2150 FWL |
| 43-047-52934 | NBU 1022-3K1CS | Sec 03 T10S R22E 1493 FSL 1969 FWL |
| | | BHL Sec 03 T10S R22E 2047 FSL 2147 FWL |
| 43-047-52935 | NBU 1022-3N4CS | Sec 03 T10S R22E 1496 FSL 1988 FWL |
| | | BHL Sec 03 T10S R22E 0287 FSL 2143 FWL |
| 43-047-52941 | NBU 1022-3N1BS | Sec 03 T10S R22E 1501 FSL 2018 FWL |
| | | BHL Sec 03 T10S R22E 1244 FSL 2150 FWL |
| 43-047-52942 | NBU 1022-3K4BS | Sec 03 T10S R22E 1494 FSL 1978 FWL |
| | | BHL Sec 03 T10S R22E 1760 FSL 2154 FWL |

RECEIVED: July 18, 2012

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ WASATCH-MESA VERDE) | | |
| **WELL PAD - NBU 1022-3E** | | |
| 43-047-52920 | NBU 1022-3E4CS | Sec 03 T10S R22E 1960 FNL 0490 FWL |
| | | BHL Sec 03 T10S R22E 2324 FNL 0667 FWL |
| 43-047-52922 | NBU 1022-3D4CS | Sec 03 T10S R22E 1939 FNL 0511 FWL |
| | | BHL Sec 03 T10S R22E 1245 FNL 0826 FWL |
| 43-047-52929 | NBU 1022-3E4BS | Sec 03 T10S R22E 1953 FNL 0497 FWL |
| | | BHL Sec 03 T10S R22E 2057 FNL 0841 FWL |
| 43-047-52930 | NBU 1022-3E2AS | Sec 03 T10S R22E 1946 FNL 0504 FWL |
| | | BHL Sec 03 T10S R22E 1676 FNL 0625 FWL |
| **WELL PAD - NBU 1022-3C** | | |
| 43-047-52924 | NBU 1022-3C1BS | Sec 03 T10S R22E 0810 FNL 1682 FWL |
| | | BHL Sec 03 T10S R22E 0166 FNL 2110 FWL |
| 43-047-52931 | NBU 1022-3D1CS | Sec 03 T10S R22E 0817 FNL 1664 FWL |
| | | BHL Sec 03 T10S R22E 0581 FNL 0826 FWL |
| 43-047-52937 | NBU 1022-3C1CS | Sec 03 T10S R22E 0806 FNL 1692 FWL |
| | | BHL Sec 03 T10S R22E 0619 FNL 2130 FWL |
| 43-047-52946 | NBU 1022-3D1BS | Sec 03 T10S R22E 0813 FNL 1673 FWL |
| | | BHL Sec 03 T10S R22E 0224 FNL 0833 FWL |
| **WELL PAD - NBU 1022-3B** | | |
| 43-047-52926 | NBU 1022-3B4CS | Sec 03 T10S R22E 0998 FNL 1724 FEL |
| | | BHL Sec 03 T10S R22E 1241 FNL 1822 FEL |
| 43-047-52927 | NBU 1022-3B1CS | Sec 03 T10S R22E 0988 FNL 1706 FEL |
| | | BHL Sec 03 T10S R22E 0578 FNL 1822 FEL |
| **WELL PAD - NBU 1022-3O** | | |
| 43-047-52932 | NBU 1022-3P1CS | Sec 03 T10S R22E 0699 FSL 2072 FEL |
| | | BHL Sec 03 T10S R22E 0909 FSL 0494 FEL |
| 43-047-52936 | NBU 1022-3O4CS | Sec 03 T10S R22E 0660 FSL 2065 FEL |
| | | BHL Sec 03 T10S R22E 0106 FSL 1825 FEL |
| 43-047-52939 | NBU 1022-3P4CS | Sec 03 T10S R22E 0680 FSL 2069 FEL |
| | | BHL Sec 03 T10S R22E 0256 FSL 0500 FEL |
| 43-047-52940 | NBU 1022-3O1CS | Sec 03 T10S R22E 0709 FSL 2073 FEL |
| | | BHL Sec 03 T10S R22E 0746 FSL 1819 FEL |
| **WELL PAD - NBU 1022-3M** | | |
| 43-047-52933 | NBU 1022-3M4CS | Sec 03 T10S R22E 0607 FSL 0615 FWL |
| | | BHL Sec 03 T10S R22E 0163 FSL 0812 FWL |
| **WELL PAD - NBU 1022-3L** | | |
| 43-047-52943 | NBU 1022-3L1AS | Sec 03 T10S R22E 2086 FSL 0607 FWL |
| | | BHL Sec 03 T10S R22E 2411 FSL 0825 FWL |
| 43-047-52944 | NBU 1022-3L1BS | Sec 03 T10S R22E 2086 FSL 0597 FWL |
| | | BHL Sec 03 T10S R22E 2644 FSL 0665 FWL |

RECEIVED: July 18, 2012

This office has no objection to permitting the wells at this time.

Michael L. Coulthard

Digitally signed by Michael L. Coulthard
DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals, email=Michael_Coulthard@blm.gov, c=US
Date: 2012.07.16 13:26:05 -06'00'

bcc: File - Natural Buttes Unit
Division of Oil Gas and Mining
Central Files
Agr. Sec. Chron
Fluid Chron

MCoulthard:mc:7-16-12

RECEIVED: July 18, 2012

# WORKSHEET
# APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 7/6/2012
**API NO. ASSIGNED:** 43047529130000
**WELL NAME:** NBU 1022-3F4CS
**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)
**PHONE NUMBER:** 720 929-6086
**CONTACT:** Gina Becker

**PROPOSED LOCATION:** SENW 03 100S 220E
**Permit Tech Review:** ✔

**SURFACE:** 2133 FNL 1790 FWL
**Engineering Review:** ✔

**BOTTOM:** 2531 FNL 1987 FWL
**Geology Review:** ✔

**COUNTY:** UINTAH
**LATITUDE:** 39.97930
**LONGITUDE:** -109.42909
**UTM SURF EASTINGS:** 634136.00
**NORTHINGS:** 4426641.00
**FIELD NAME:** NATURAL BUTTES
**LEASE TYPE:** 1 - Federal
**LEASE NUMBER:** UTU-01191
**PROPOSED PRODUCING FORMATION(S):** BLACKHAWK
**SURFACE OWNER:** 1 - Federal
**COALBED METHANE:** NO

**RECEIVED AND/OR REVIEWED:**

- ✔ **PLAT**
- ✔ **Bond:** FEDERAL - WYB000291
- ☐ **Potash**
- ✔ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ✔ **Water Permit:** 43-8496
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ✔ **Intent to Commingle**

**Commingling Approved**

**LOCATION AND SITING:**

- ☐ **R649-2-3.**

**Unit:** NATURAL BUTTES

- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ✔ **Drilling Unit**

**Board Cause No:** Cause 173-14
**Effective Date:** 12/2/1999
**Siting:** Suspends General Siting

- ✔ **R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:**
3 - Commingling - ddoucet
4 - Federal Approval - dmason
15 - Directional - dmason
17 - Oil Shale 190-5(b) - dmason

RECEIVED: August 21, 2012

GARY R. HERBERT
*Governor*

GREGORY S. BELL
*Lieutenant Governor*

# State of Utah

**DEPARTMENT OF NATURAL RESOURCES**

MICHAEL R. STYLER
*Executive Director*

**Division of Oil, Gas and Mining**

JOHN R. BAZA
*Division Director*

# Permit To Drill

**********

**Well Name:** NBU 1022-3F4CS
**API Well Number:** 43047529130000
**Lease Number:** UTU-01191
**Surface Owner:** FEDERAL
**Approval Date:** 8/21/2012

**Issued to:**
KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

**Authority:**
Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the BLACKHAWK Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

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

**Commingle:**
In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

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

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

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

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil

shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

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

- Within 24 hours following the spudding of the well - contact Carol Daniels at 801-538-5284
  (please leave a voicemail message if not available)
  OR
  submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website
  at http://oilgas.ogm.utah.gov

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

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

**Approved By:**

For John Rogers
Associate Director, Oil & Gas

RECEIVED

RECEIVED

AUG 0 8 2012

DIV. OF OIL, GAS & MINING

FEB 2 7 2012

BLM, Vernal Utah

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No.
UTU01191

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
UTU63047A

8. Lease Name and Well No.
NBU 1022-3F4CS

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone

2. Name of Operator
KERR-MCGEE OIL & GAS ONSHORE
Contact: GINA T BECKER
Email: GINA.BECKER@ANADARKO.COM

9. API Well No.
43-047-52913.

3a. Address
P.O. BOX 173779
DENVER, CO 80202-3779

3b. Phone No. (include area code)
Ph: 720-929-6086
Fx: 720-929-7086

10. Field and Pool, or Exploratory
NATURAL BUTTES

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface SENW 2133FNL 1790FWL 39.979413 N Lat, 109.429109 W Lon

At proposed prod. zone SENW 2531FNL 1987FWL 39.978320 N Lat, 109.428391 W Lon

11. Sec., T., R., M., or Blk. and Survey or Area
Sec 3 T10S R22E Mer SLB

14. Distance in miles and direction from nearest town or post office*
APPROXIMATELY 57 MILES SOUTHEAST OF VERNAL, UTAH

12. County or Parish
UINTAH

13. State
UT

15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
652

16. No. of Acres in Lease
1042.00

17. Spacing Unit dedicated to this well

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
464

19. Proposed Depth
10059 MD
10020 TVD

20. BLM/BIA Bond No. on file
WYB000291

21. Elevations (Show whether DF, KB, RT, GL, etc.
5119 GL

22. Approximate date work will start
08/08/2012

23. Estimated duration
60-90 DAYS

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature
(Electronic Submission)

Name (Printed/Typed)
GINA T BECKER Ph: 720-929-6086

Date
02/14/2012

Title
REGULATORY ANALYST II

Approved by (Signature)

Name (Printed/Typed) Jerry Kenczka

Date AUG 0 2 2012

Title Assistant Field Manager
Lands & Mineral Resources

Office
VERNAL FIELD OFFICE

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

CONDITIONS OF APPROVAL ATTACHED

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**Additional Operator Remarks (see next page)**

**Electronic Submission #130930 verified by the BLM Well Information System**
**For KERR-MCGEE OIL & GAS ONSHORE, sent to the Vernal**

NOTICE OF APPROVAL

UDOGM

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

NOS 11/10/10

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VERNAL FIELD OFFICE
170 South 500 East VERNAL, UT 84078 (435) 781-4400

## *CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL*

| | | | |
|---|---|---|---|
| **Company:** | **Kerr-McGee Oil & Gas Onshore, LP** | **Location:** | **SENW Sec. 3, T10S, R22E** |
| **Well No:** | **NBU 1022-3F4CS** | **Lease No:** | **UTU-01191** |
| **API No:** | **43-047-52913** | **Agreement:** | **Natural Buttes** |

# OFFICE NUMBER: (435) 781-4400

# OFFICE FAX NUMBER: (435) 781-3420

## A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. **This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.**

## NOTIFICATION REQUIREMENTS

| | | |
|---|---|---|
| Location Construction<br>(Notify Environmental Scientist) | - | Forty-Eight (48) hours prior to construction of location and access roads. |
| Location Completion<br>(Notify Environmental Scientist) | - | Prior to moving on the drilling rig. |
| Spud Notice<br>(Notify Petroleum Engineer) | - | Twenty-Four (24) hours prior to spudding the well. |
| Casing String & Cementing<br>(Notify Supv. Petroleum Tech.) | - | Twenty-Four (24) hours prior to running casing and cementing all casing strings to:<br>blm_ut_vn_opreport@blm.gov |
| BOP & Related Equipment Tests<br>(Notify Supv. Petroleum Tech.) | - | Twenty-Four (24) hours prior to initiating pressure tests. |
| First Production Notice<br>(Notify Petroleum Engineer) | - | Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days. |

## *SURFACE USE PROGRAM*
## *CONDITIONS OF APPROVAL (COAs)*

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horse power must not emit more than 2 grams of NOx per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower-hour.

- All new and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 grams of NOx per horsepower-hour.

- The following will be used as standard operating procedures: Green completion or controlled VOC emissions methods with 90% efficiency for Oil or Gas Atmospheric Storage Tanks, VOC Venting controls or flaring, Glycol Dehydration and Amine Unites, Well Completion, Re-Completion, Venting, and Planned Blowdown Emissions.

- All reclamation activities will comply with the Green River Reclamation Guidelines

- All vehicles and equipment shall be cleaned either through power-washing, or other approved method, if the vehicles or equipment were previously operated outside the Uinta Basin, to prevent weed seed introduction.

- All disturbance areas shall be monitored for noxious weeds annually, for a minimum of three growing seasons following completion of project or until desirable vegetation is established

- Noxious and invasive weeds will be controlled by the proponent throughout the area of project disturbance.

- Noxious weeds will be inventoried and reported to BLM in the annual reclamation report. Where an integrated pest management program is applicable, coordination has been undertaken with the state and local management program (if existing). A copy of the pest management plan will be submitted for each project.

- A pesticide use proposal (PUP) will be obtained for the project, by the proponent if applicable.

- A permitted paleontologist is to be present to monitor construction at all well pads during all surface disturbing actives: examples include the following; building of the well pad, access road, and pipelines.

To maintain compliance with current cactus survey protocols, the following measures will be required

1. If construction does not occur within 4 years of the original survey date, new 100% clearance surveys will be required.
2. Prior to construction within 4 years of the original survey date, a spot check survey will be required during the year of construction. KMG and their respective 3rd party surveyor will refer to the current *Sclerocactus* Spot Check Survey Methods, to determine site specific survey distances and intensity levels.
3. Spot check reports will be reported to the BLM and the US Fish and Wildlife Service.
4. Construction will not commence until written approval is received from the BLM

*Discovery Stipulation*: Reinitiation of section 7 consultation with the USFWS will be sought immediately if any loss of plants or occupied habitat for Uinta Basin hookless cactus is anticipated as a result of project activities.

- Construction or drilling is not allowed from January 1 – August 31 on the NBU 1022-3O pad to minimize impacts during golden eagle nesting.

- If it is anticipated that construction or drilling will occur during the given timing restriction, a BLM or qualified biologist shall be notified to conduct surveys for raptors. Depending upon the results of the surveys, permission to proceed may or may not be granted by the Authorized Officer.

- The best method to avoid entrainment is to pump from an off-channel location – one that does not connect to the river during high spring flows. An infiltration gallery constructed in a BLM and Service approved location is best.

- If the pump head is located in the river channel where larval fish are known to occur, the following measures apply:
    a. do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval fishes;
    b. limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (April 1 to August 31); and
    c. limit the amount of pumping, to the greatest extent possible, during the pre-dawn hours as larval drift studies indicate that this is a period of greatest daily activity.

- Screen all pump intakes with 3/32 inch mesh material.

- Approach velocities for intake structures will follow the National Marine Fisheries Service's document "Fish Screening Criteria for Anadromous Salmonids". For projects with an in-stream intake that operate in stream reaches where larval fish may be present, the approach velocity will not exceed 0.33 feet per second (ft/s).

- Report any fish impinged on the intake screen to the Service (801.975.3330) and the Utah Division of Wildlife Resources:
    Northeastern Region
    152 East 100 North, Vernal, UT 84078
    Phone: (435) 781-9453

- Kerr McGee can only use the following water source:
  Permit # 49-2307 JD Field Services Green River-Section 15, T2N, R22E

## *DOWNHOLE PROGRAM*
## *CONDITIONS OF APPROVAL (COAs)*

**SITE SPECIFIC DOWNHOLE COAs:**

- Gamma ray Log shall be run from Total Depth to Surface.

**Variances Granted:**

**Air Drilling**

- Properly lubricated and maintained rotating head. Variance granted to use a properly maintained and lubricated diverter bowl in place of a rotating head.
- Blooie line discharge 100' from the well bore. Variance granted for blooie line discharge to be 45' from the well bore.
- Compressors located in the opposite direction from the blooie line a minimum of 100' from the well bore. Variance granted for truck/trailer mounted air compressors located 40'from the well bore.
- In lieu of mud products on location, Kerr McGee will fill the reserve pit with water for the kill medium and will utilize a skid pump near the reserve pit to supply the water to the well bore if necessary.
- Automatic igniter. Variance granted for igniter due to there being no productive formations encountered while air drilling.
- FIT Test. Variance granted due to well-known geology and the problems that can occur with the FIT test.

**All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to.** The following items are emphasized:

**DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS**

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and **NOT** by the rig pumps. Test shall be reported in the driller's log.

- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.

- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.

- No aggressive/fresh hard-banded drill pipe shall be used within casing.

- **Cement baskets shall not be run on surface casing.**

- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.

- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.

- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.

- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.

- A cement bond log (CBL) will be run from the production casing shoe to the <u>top of cement</u> and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.

- **Please submit an electronic copy of all other logs run on this well in LAS format to BLM_UT_VN_Welllogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.**

- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

**OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.

- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at www.ONRR.gov.

- Should the well be successfully completed for production, the BLM Vernal Field office must be notified when it is placed in a producing status. Such notification will be by written communication and must be received in this office by not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following informational items:

    - Operator name, address, and telephone number.

    - Well name and number.

    - Well location (¼¼, Sec., Twn, Rng, and P.M.).

    - Date well was placed in a producing status (date of first production for which royalty will be paid).

    - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).

    - The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.

    - Unit agreement and/or participating area name and number, if applicable.

    - Communitization agreement number, if applicable.

- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.

- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.

- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs,

core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.

- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.

- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.

- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.

- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover equipment shall be removed from a well to be placed in a suspended status without prior approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior approval of the BLM Vernal Field Office shall be obtained and notification given before resumption of operations.

- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.

- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

FORM 9

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-01191

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-3F4CS

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047529130000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6515 EXT

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2133 FNL 1790 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENW Section: 03 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start: 8/21/2013 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ✓ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.

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

**Date:** July 22, 2013

**By:**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Teena Paulo | 720 929-6236 | Staff Regulatory Specialist |

| SIGNATURE | DATE |
|---|---|
| N/A | 7/19/2013 |

RECEIVED: Jul. 19, 2013

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

**- State of Utah**
**- Department of Natural Resources**

**Electronic Permitting System - Sundry Notices**

## Request for Permit Extension Validation Well Number 43047529130000

**API:** 43047529130000
**Well Name:** NBU 1022-3F4CS
**Location:** 2133 FNL 1790 FWL QTR SENW SEC 03 TWNP 100S RNG 220E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 8/21/2012

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

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

**Signature:** Teena Paulo **Date:** 7/19/2013
**Title:** Staff Regulatory Specialist **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED: Jul. 19, 2013

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

**FORM 9**

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-01191

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-3F4CS

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047529130000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
**PHONE NUMBER:** 720 929-6515 EXT

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2133 FNL 1790 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENW Section: 03 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

**TYPE OF SUBMISSION**

- ☐ NOTICE OF INTENT — Approximate date work will start:
- ☐ SUBSEQUENT REPORT — Date of Work Completion:
- ✓ SPUD REPORT — Date of Spud: 8/23/2013
- ☐ DRILLING REPORT — Report Date:

**TYPE OF ACTION**

| | | |
|---|---|---|
| ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

Spud well 08/23/2013 @ 09:00. Drill 24" conductor hole to 40', run 14" X .250 wall conductor pipe, cement with 81 sacks ready mix.
Anticipated surface spud date and surface casing cement 09/02/2013.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
August 26, 2013

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Doreen Green | 435 781-9758 | Regulatory Analyst II |

| SIGNATURE | DATE |
|---|---|
| N/A | 8/26/2013 |

RECEIVED: Aug. 26, 2013

FORM 9

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-01191

## SUNDRY NOTICES AND REPORTS ON WELLS

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**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-3F4CS

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047529130000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6515 EXT

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2133 FNL 1790 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENW Section: 03 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ✓ DRILLING REPORT<br>Report Date:<br>10/4/2013 | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

Drilled to 2,500 ft. since last report.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
October 07, 2013

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Matthew P Wold | 720 929-6993 | Regulatory Analyst I |
| **SIGNATURE** N/A | | **DATE** 10/4/2013 |

RECEIVED: Oct. 04, 2013

State of Utah - Notification Form

Operator ANADARKO PETROLEUM Rig Name/# SST 8
Submitted By DALTON KING Phone Number 435- 828-0987
Well Name/Number NBU 1022-03F4CS
Qtr/Qtr SE / NW Section 03 Township 10S Range 22E
Lease Serial Number UTU01191
API Number 4304752913

Casing – Time casing run starts, not cementing times.

☐ Production Casing
☐ Other

Date/Time _____ _____ AM ☐ PM ☐

BOPE
☐ Initial BOPE test at surface casing point
☐ Other

Date/Time 11/3/2013 0700 AM ☐ PM ☐

Rig Move
Location To: _____

Date/Time _____ _____ AM ☐ PM ☐

Remarks TIME IS ESTIMATED

RECEIVED
NOV 03 2013
DIV. OF OIL, GAS & MINING

State of Utah - Notification Form

Operator ANADARKO PETROLEUM Rig Name/# SST 8
Submitted By DALTON KING Phone Number 435- 828-0987
Well Name/Number NBU 1022-03F4CS
Qtr/Qtr SE / NW Section 03 Township 10S Range 22E
Lease Serial Number UTU01191
API Number 4304752913

Casing – Time casing run starts, not cementing times.

☐ Production Casing
☐ Other

Date/Time 11/6/2013 18:00 AM ☐ PM ☐

BOPE
☐ Initial BOPE test at surface casing point
☐ Other

Date/Time _____ _____ AM ☐ PM ☐

Rig Move
Location To: NBU 1022-3K1BS

Date/Time 11/7/2013 08:00 AM ☐ PM ☐

Remarks TIME IS ESTIMATED

RECEIVED
NOV 05 2013
DIV. OF OIL, GAS & MINING

FORM 9

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-01191

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-3F4CS

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047529130000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779

**PHONE NUMBER:** 720 929-6582

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2133 FNL 1790 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENW Section: 03 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ✓ DRILLING REPORT<br>Report Date:<br>1/2/2014 | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

Started completing the well. Well TD at 8,917 ft.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
January 03, 2014

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Kay E. Kelly | 720 929 6582 | Regulatory Analyst |

| SIGNATURE | DATE |
|---|---|
| N/A | 1/2/2014 |

RECEIVED: Jan. 02, 2014

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

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-01191

## SUNDRY NOTICES AND REPORTS ON WELLS

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**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-3F4CS

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047529130000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
**PHONE NUMBER:** 720 929-6515 EXT

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2133 FNL 1790 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENW Section: 03 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

**TYPE OF SUBMISSION**

- ☐ NOTICE OF INTENT — Approximate date work will start:
- ✓ SUBSEQUENT REPORT — Date of Work Completion: 1/7/2014
- ☐ SPUD REPORT — Date of Spud:
- ☐ DRILLING REPORT — Report Date:

**TYPE OF ACTION**

| | | |
|---|---|---|
| ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
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| ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| ☐ WILDCAT WELL DETERMINATION | ☐ OTHER | OTHER: |

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

The NBU 1022-3F4CS was placed on production 01/07/2014.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
January 10, 2014

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Doreen Green | 435 781-9758 | Regulatory Analyst II |

| SIGNATURE | DATE |
|---|---|
| N/A | 1/10/2014 |

RECEIVED: Jan. 10, 2014

API Well Number: 43047529130000

Form 3160-4
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No. UTU01191

1a. Type of Well ☐ Oil Well ☒ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other _____

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No. UTU63047A

2. Name of Operator KERR-MCGEE OIL AND GAS ONSHORE LP
Contact: KAY KELLY
E-Mail: kay.kelly@anadarko.com

8. Lease Name and Well No. NBU 1022-3F4CS

3. Address P.O. BOX 173779
DENVER, CO 82017

3a. Phone No. (include area code) Ph: 720-929-6000

9. API Well No. 43-047-52913

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface SENW 2133FNL 1790FWL 39.979413 N Lat, 109.429109 W Lon

At top prod interval reported below SENW 2512FNL 1998FWL

At total depth SENW 2536FNL 2000FWL

10. Field and Pool, or Exploratory NATURAL BUTTES

11. Sec., T., R., M., or Block and Survey or Area Sec 3 T10S R22E Mer SLB

12. County or Parish UINTAH

13. State UT

14. Date Spudded 08/23/2013

15. Date T.D. Reached 11/06/2013

16. Date Completed ☐ D & A ☒ Ready to Prod. 01/07/2014

17. Elevations (DF, KB, RT, GL)* 5141 KB

18. Total Depth: MD 8917 TVD 8881

19. Plug Back T.D.: MD 8846 TVD 8810

20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each) CBL/GR/CCL/TEMP

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit analysis)
Directional Survey? ☐ No ☒ Yes (Submit analysis)

23. Casing and Liner Record *(Report all strings set in well)*

| Hole Size | Size/Grade | Wt. (#/ft.) | Top (MD) | Bottom (MD) | Stage Cementer Depth | No. of Sks. & Type of Cement | Slurry Vol. (BBL) | Cement Top* | Amount Pulled |
|---|---|---|---|---|---|---|---|---|---|
| 20.000 | 14.000 STL | 36.7 | 0 | 40 | | 28 | | | |
| 11.000 | 8.625 J-55 | 28.0 | 24 | 2488 | | 300 | | 0 | |
| 7.875 | 4.500 I-80 | 11.6 | 24 | 8893 | | 1555 | | 946 | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

24. Tubing Record

| Size | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) |
|---|---|---|---|---|---|---|---|---|
| 2.375 | 8348 | | | | | | | |

25. Producing Intervals

| Formation | Top | Bottom |
|---|---|---|
| A) MESAVERDE | 6748 | 8780 |
| B) | | |
| C) | | |
| D) | | |

26. Perforation Record

| Perforated Interval | Size | No. Holes | Perf. Status |
|---|---|---|---|
| 6748 TO 8780 | 0.360 | 192 | OPEN |
| | | | |
| | | | |
| | | | |

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

| Depth Interval | Amount and Type of Material |
|---|---|
| 6748 TO 8780 | PUMP 10,561 BBLS SLICKWATER AND 226,201 LBS 30/50 MESH SAND |
| | |
| | |
| | |

28. Production - Interval A

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| 01/07/2014 | 01/14/2014 | 24 | → | 49.0 | 2658.0 | 0.0 | | | FLOWS FROM WELL |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| 20/64 | 1488 | 1839.0 | → | 49 | 2658 | 0 | | PGW |

28a. Production - Interval B

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | | |

| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status |
|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | |

*(See Instructions and spaces for additional data on reverse side)*

**ELECTRONIC SUBMISSION #234254 VERIFIED BY THE BLM WELL INFORMATION SYSTEM**

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

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API Well Number: 43047529130000

28b. Production - Interval C

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status | |

28c. Production - Interval D

| Date First Produced | Test Date | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---|---|---|---|---|---|---|---|---|---|
| Choke Size | Tbg. Press. Flwg. SI | Csg. Press. | 24 Hr. Rate | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio | Well Status | |

29. Disposition of Gas*(Sold, used for fuel, vented, etc.)*
SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

| Formation | Top | Bottom | Descriptions, Contents, etc. |
|---|---|---|---|
| | | | |

31. Formation (Log) Markers

| Name | Top Meas. Depth |
|---|---|
| GREEN RIVER | 1006 |
| BIRD'S NEST | 1544 |
| MAHOGANY | 2018 |
| WASATCH | 4376 |
| MESAVERDE | 6708 |

32. Additional remarks (include plugging procedure):
The first 200 ft. of the surface hole was drilled with a 12 ? in. bit. The remainder of surface hole was drilled with an 11 in. bit. DQX csg was run from surface to 5025 ft.; LTC csg was run from 5025 ft. to 8893 ft. Attached is the chronological well history, perforation report & final survey. Operator upgraded base cement with cleaner /?Neater? cement for a more precise cement blend.? By removing the additives operator controlled the mixture better and put more base cement in the hole providing a stronger compressive strength.

33. Circle enclosed attachments:

1. Electrical/Mechanical Logs (1 full set req'd.)
2. Geologic Report
3. DST Report
4. Directional Survey
5. Sundry Notice for plugging and cement verification
6. Core Analysis
7 Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

**Electronic Submission #234254 Verified by the BLM Well Information System.**
**For KERR-MCGEE OIL AND GAS ONSHORE, sent to the Vernal**

Name *(please print)* KAY KELLY Title SR STAFF REGULATORY SPECIALIST

Signature (Electronic Submission) Date 02/03/2014

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fradulent statements or representations as to any matter within its jurisdiction.

**** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ****

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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 9/1/2013 | 8:30 - 10:00 | 1.50 | MIRU3 | 01 | A | P | 64 | RIG DOWN TO PREPARE TO SKID. CONDUCT JSA WITH TRUCKS TO SKID RIG / SKID RIG TO THE NBU 1022-3F4CS, WELL 2 OF 5. HOWCROFT FIELD SERVICES HAD 2 TRUCKS 2 SWAMPERS 1 TRUCK PUSHER |
| | 10:00 - 11:00 | 1.00 | MIRU3 | 01 | B | P | 64 | WELD ON CONDUCTOR PIPE AND BOLT UP ROTATING HEAD / RIG UP FLOW LINE |
| | 11:00 - 12:00 | 1.00 | PRPSPD | 01 | B | P | 64 | FINISH RIGGING UP RIG TO PREPARE TO SPUD. CONDUCTED PRE SPUD SAFETY MEETING WITH RIG CREW AND SCIENTIFIC CREWS / REVIEW DIRECTIONAL PLANS WITH DIRECTIONAL DRILLERS. |
| | 12:00 - 13:30 | 1.50 | DRLSUR | 02 | B | P | 64 | SET UP PIPE RACKS / LOAD BHA ON RACKS AND STRAP / PICK UP BHA AND BIT TRIP IN TO SPUD |
| | 13:30 - 15:30 | 2.00 | DRLSUR | 02 | B | P | 64 | DRILL 12 1/4 SURFACE HOLE F/49' TO 200' , 151' @ 100 FPH<br>WOB = 8 TO 12K<br>ROTORY RPM = 60 / MUD MOTOR RPM = 101 / TOTAL = 161<br>PUMPING 596 GPM @ 200 SPM<br>STAND PIPE PRESSURE ON/OFF = 800/600<br>TORQUE ON/OFF = 1950/700<br>PU = 58 / SO = 48 / ROT = 42<br>PEAK ON LINE<br>MUD WT 8.4<br>NO HOLE ISSUES |
| | 15:30 - 17:00 | 1.50 | DRLSUR | 06 | A | P | 215 | TRIP OUT OF THE HOLE AND LAY DOWN 12.25" ASSEMBLY / PICK UP 11" DIRECTIONAL ASSEMBLY AND DRILL COLLARS. |
| | 17:00 - 17:30 | 0.50 | DRLSUR | 06 | A | P | 215 | TRIP IN HOLE / INSTALL ROTATING HEAD RUBBER |
| | 17:30 - 0:00 | 6.50 | DRLSUR | 02 | B | P | 215 | DRILL 11" SURFACE HOLE F/ 200' TO 880' @ 113.3 FPH<br>WOB = 12 TO 18K<br>ROTORY RPM = 60 / MUD MOTOR RPM = 112 / TOTAL = 172<br>PUMPING 660 GPM @ 214 SPM<br>STAND PIPE PRESSURE 0N/OFF = 1,400/1,150<br>TORQUE ON/OFF = 2,480 / 700<br>PU = 64 / SO = 55 / ROT = 58<br>CLEAN HARBORS ON LINE<br>MUD WT 8.4<br>SLID 92' = 13.53%<br>4.67' HIGH & 0.58' LEFT OF THE LINE<br>NO HOLE ISSUES |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 9/2/2013 | 0:00 - 6:00 | 6.00 | DRLSUR | 02 | B | P | 895 | DRILL 11" SURFACE HOLE F/880' TO 1,319' 439' @ 73.2 FPH<br>WOB = 12 TO 18K<br>ROTORY RPM = 60 / MUD MOTOR RPM = 112 / TOTAL = 172<br>PUMPING 660 GPM @ 214 SPM<br>STAND PIPE PRESSURE 0N/OFF = 1,400 / 1,150<br>TORQUE ON/OFF = 2,480 / 700<br>PU = 64 / SO = 55 / ROT = 58<br>CLEAN HARBORS ON LINE<br>MUD WT 8.4<br>SLID 30' = 6.99%<br>4.67' HIGH & 0.58' LEFT OF THE LINE<br>NO HOLE ISSUES |
| | 6:00 - 12:00 | 6.00 | DRLSUR | 02 | B | P | 1334 | DRILL 11" SURFACE HOLE F/1,656' TO 1,' 357' @ 56.2 FPH<br>WOB = 12 TO 18K<br>ROTORY RPM = 60 / MUD MOTOR RPM = 112 / TOTAL = 172<br>PUMPING 373 GPM @ 120 SPM<br>STAND PIPE PRESSURE 0N/OFF = 1,400 / 1,150<br>TORQUE ON/OFF = 2,480 / 700<br>PU = 67 / SO = 59 / ROT = 61<br>CLEAN HARBORS ON LINE<br>ARCHER IS ON LINE<br>MUD WT 8.4<br>SLID 35' = 10.03%<br>11.74' HIGH & 1.56' LEFT OF THE LINE<br>NO HOLE ISSUES |
| | 12:00 - 17:30 | 5.50 | DRLSUR | 02 | B | P | 1671 | DRILL 11" SURFACE HOLE F/1,656' TO 1,945' 286' @ 52.5 FPH<br>WOB = 12 TO 18K<br>ROTORY RPM = 60 / MUD MOTOR RPM = 66 / TOTAL = 126<br>PUMPING 373 GPM @ 120 SPM<br>STAND PIPE PRESSURE 0N/OFF = 1,060 / 850<br>TORQUE ON/OFF = 2,600 / 1800<br>PU = 76 / SO = 66 / ROT = 71<br>CLEAN HARBORS ON LINE<br>ARCHER IS ON LINE<br>MUD WT 8.4<br>SLID 23' = 7.74%<br>8.99' HIGH & 1.19' LEFT OF THE LINE<br>NO HOLE ISSUES |
| | 17:30 - 18:00 | 0.50 | DRLSUR | 07 | A | P | 1960 | RIG SERVICE |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 18:00 - 0:00 | 6.00 | DRLSUR | 02 | B | P | 1960 | DRILL 11" SURFACE HOLE F/1,945' TO 2,290' 345' @ 57.5 FPH<br>WOB = 12 TO 18K<br>ROTORY RPM = 60 / MUD MOTOR RPM = 66 / TOTAL = 126<br>PUMPING 373 GPM @ 120 SPM<br>STAND PIPE PRESSURE 0N/OFF = 1,060 / 850<br>TORQUE ON/OFF = 2,400 / 1800<br>PU = 84 / SO = 73 / ROT = 76<br>CLEAN HARBORS ON LINE<br>ARCHER IS ON LINE<br>MUD WT 8.4<br>SLID 26' = 7.83%<br>5.10' HIGH & 2.00' LEFT OF THE LINE<br>NO HOLE ISSUES |
| 9/3/2013 | 0:00 - 3:30 | 3.50 | DRLSUR | 02 | B | P | 2305 | DRILL 11" SURFACE HOLE F/2,290' TO 2,485' 195' @ 55.7 FPH<br>WOB = 12 TO 18K<br>ROTORY RPM = 60 / MUD MOTOR RPM = 66 / TOTAL = 126<br>PUMPING 373 GPM @ 120 SPM<br>STAND PIPE PRESSURE 0N/OFF = 1,060 / 850<br>TORQUE ON/OFF = 2,400 / 1800<br>PU = 87 / SO = 79 / ROT = 83<br>CLEAN HARBORS ON LINE<br>ARCHER IS ON LINE<br>MUD WT 8.4<br>SLID 26' = 7.83%<br>5.10' HIGH & 2.00' LEFT OF THE LINE<br>NO HOLE ISSUES |
| | 3:30 - 5:30 | 2.00 | DRLSUR | 05 | A | P | 2500 | CIRCULATE AND CONDITION HOLE FOR LAYING DOWN DP & BHA |
| | 5:30 - 8:30 | 3.00 | DRLSUR | 06 | A | P | 2500 | LAY DOWN DRILL PIPE AND BHA / DIRECTIONAL TOOLS |
| | 8:30 - 9:00 | 0.50 | CSGSUR | 08 | A | Z | 2500 | *** REPAIR RIG: AIR HOSE ON RIG COMPRESSOR FAILED |
| | 9:00 - 9:30 | 0.50 | CSGSUR | 12 | A | P | 2500 | PJSM / RIG UP TO RUN CASING |
| | 9:30 - 12:00 | 2.50 | CSGSUR | 12 | C | P | 2500 | RAN 56 JTS (2,472.86') OF 8 5/8", 28#, J-55, LT&C CASING WITH CTE FLOAT GUIDE SHOE AND BAFFLE PLATE LOCATED 1 JOINT ABOVE THE SHOE. 5 CENTRALIZERS SPACED 10' ABOVE THE SHOE, 2ND & 3RD COLLARS, AND EVERY THIRD COLLAR TO 2,116'. LANDED CASING SHOE AT 2,472'. BAFFLE PLATE @ 2,426' |



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# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 12:00 - 15:30 | 3.50 | CSGSUR | 12 | E | P | 2500 | PREJOB SAFETY WITH PRO PETRO CEMENTERS & RIG CREW.<br>RAN 200' OF 1" PIPE DOWN BACKSIDE OF CASING TESTED LINES TO 2000 PSI<br>PUMPED 140 BBLS FRESH WATER CLEARING SHOE MIXED AND PUMPED 20 BBL GELLED WATER FLUSH AHEAD OF CEMENT<br>MIXED AND PUMPED 300 SX OF PREMIUM CEMENT WITH 2% CACL2 & 1/4 LB/SX FLOCELE. 61.4 BBL OF SLURRY MIXED @ 15.8 PPG WITH YIELD OF 1.15 CF/SX.<br>DROP PLUG ON FLY.<br>DISPLACE WITH 147 BBL FRESH WATER. NO RETURNS THROUGHT JOB. FINAL LIFT OF 375 PSI @ 3 BBL/MINUTE.<br>BUMP PLUG WITH 675 PSI. HELD 600 PSI FOR 5 MINUTES.<br>CHECK FLOAT. FLOAT HELD.<br>NIPPLE DOWN CONDUCTOR PIPE AND CUT OFF CASING<br>TOP JOB # 1: PUMP CEMENT DOWN 1" PIPE WITH 150 SX PREMIUM CEMENT WITH 4% CACL2, 2% GR-3, & 1/4 LB/SX FLOCELE. 30.7 BBL OF SLURRY MIXED @ 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO RETURNS<br>RELEASE RIG @ 15:30, 9/3/2013<br>WAIT ON CEMENT 2 HRS<br>TOP JOB # 2: CEMENT DOWN BACK SIDE WITH 175 SX PREMIUM CEMENT WITH 4% CACL2, 2% GR-3, & 1/4 LB/SX FLOCELE. 35.8 BBL OF SLURRY MIXED @ 15.8 PPG WITH YIELD OF 1.15 CF/SX. NO RETURNS<br>WAIT ON CEMENT 2 HRS<br><br>JOB FINISHED @ 18:30, 9/3/2013. |
| 11/3/2013 | 3:00 - 4:00 | 1.00 | MIRU | 01 | E | P | 2500 | PREPARE TO SKID |
| | 4:00 - 5:00 | 1.00 | MIRU | 01 | C | P | 2500 | SKID RIG |
| | 5:00 - 6:00 | 1.00 | MIRU | 01 | B | P | 2500 | RIG UP |
| | 6:00 - 7:00 | 1.00 | PRPSPD | 14 | A | P | 2500 | NIPPLE UP BOP |
| | 7:00 - 12:00 | 5.00 | PRPSPD | 15 | A | P | 2500 | HELD A SAFETY MEETING WITH A-1 TESTER, FILL THE TRUCK WITH WATER, RIGGED UP TESTER TESTING CASING AND CHOKE TO 1500 PSI FOR 30 MINUTES.<br>TEST ANNULLAR TO 2500 PSI FOR 10 MIN AND 250 PSI FOR 5 MINUTES. TEST I-BOP VALVE, FLOOR VALVE, DART VALVE, PIPE AND BLIND RAMS, INSIDE AND OUTSIDE KILL LINE VALVES INSIDE OUTSIDE CHOKE LINE VALVE, HCR VALVE, CHOKE LINE, CHOKE MANIFOLD VALVES TO 5000 PSI FOR 10 MINUTES AND 250 PSI FOR 5 MINUTES. |
| | 12:00 - 12:30 | 0.50 | PRPSPD | 23 | | P | 2500 | PRE SPUD INSPECTION |
| | 12:30 - 13:00 | 0.50 | PRPSPD | 14 | B | P | 2500 | INSTALL THE WEAR BUSHING |



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|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 13:00 - 18:00 | 5.00 | PRPSPD | 06 | A | P | 2500 | PICKED UP AND SCRIBED THE MUD MOTOR / INSTALLED AND TESTED THE MWD / TEST FAILED: CHANGED OUT THE GAP SUB AND DIPOLE / TRIPPED IN THE HOLE TAGGED CEMENT @ 2380' |
| | 18:00 - 19:30 | 1.50 | DRLPRC | 02 | B | P | 2500 | DRILLED THE CEMENT AND FLOAT EQUIPMENT:<br>ROTARY 40 RPM<br>PUMPS: 80 STKS 335 PSI<br>MUD MOTOR: 70 RPM<br>WEIGHT ON BIT : 10-12K |
| | 19:30 - 0:00 | 4.50 | DRLPRC | 02 | B | P | 2500 | DRILL SLIDE F/ 2500' - 3201' ' ( 701' @ 155.8' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 123.<br>STROKES PER MINUTE 140<br>GALLONS PER MINUTE 586<br>OFF/ON PSI 1350 / 1700<br>DIFFERENTIAL 350<br>TORQUE HIGH/LOW 7000/9000<br>OFF BOTTOM TORQUE 5000<br>STRING WEIGHT UP/DOWN/ROT 105/95/100.<br>DRAG 5 K<br>BOS DEWATER AS NEEDED<br>WT 8.7 VIS 31.<br>////// DRILLING WITH FLOWZAN MUD CHEM /////<br>PUMP LCM SWEEPS TO HELP WITH LOSSES.<br>USED 40 BBL. FLUID FOR HOLE VOLUME<br>15 BARRELS LOSSES @ 4 BBL/HR<br>NO FLARE<br><br>BIT POSITION:<br>3,201' : North 7.90' West 10.32'<br>Actual On Bottom Drilling Time 3.75<br>Total Footage Drilled Rotating 666 Percent of Footage Rotated 95.01%<br>Total Footage Drilled Sliding 35 Percent of Footage Sliding 4.99%<br>Hours<br>Total Time Rotate Drilling 3.25 Percent of Time Rotated 86.67%<br>Total Time Slide Drilling 0.50 Percent of Time Sliding 13.33%<br>Connection / Ream / Rig Time / Circulating 0.75 Percent Non-Drilling Time 16.67% |



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| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
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| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 11/4/2013 | 0:00 - 1:00 | 1.00 | DRLPRC | 02 | B | P | 3201 | DRILL SLIDE F/ 3201' - 3338' ( 136' @ 136' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 123.<br>STROKES PER MINUTE 140<br>GALLONS PER MINUTE 586<br>OFF/ON PSI 1350 / 1700<br>DIFFERENTIAL 350<br>TORQUE HIGH/LOW 7000/9000<br>OFF BOTTOM TORQUE 5000<br>STRING WEIGHT UP/DOWN/ROT 105/95/100.<br>DRAG 5 K<br>BOS DEWATER AS NEEDED<br>WT 8.7 VIS 31.<br>////// DRILLING WITH FLOWZAN MUD CHEM /////<br>PUMP LCM SWEEPS TO HELP WITH LOSSES.<br>USED 10 BBL. FLUID FOR HOLE VOLUME<br>5 BARRELS LOSSES @ 5 BBL/HR<br>NO FLARE<br><br>BIT POSITION: |
| | 1:00 - 2:00 | 1.00 | DRLPRC | 08 | A | Z | 3338 | ***FAILURE: RIG EQUIPMENT - (FLOW LINE)<br><br>PULLED 10 STANDS BACK TO THE SHOE<br>REPAIRED A CRACKED WELD ON THE FLOW LINE<br>FITTING TO THE TRIP TANK<br>TRIPPED BACK TO BOTTOM |



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# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
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| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 2:00 - 5:00 | 3.00 | DRLPRV | 02 | B | P | 3338 | DRILL SLIDE F/ 3338' - 3772' ( 434' @ 144.6' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 123.<br>STROKES PER MINUTE 140<br>GALLONS PER MINUTE 586<br>OFF/ON PSI 1350 / 1700<br>DIFFERENTIAL 350<br>TORQUE HIGH/LOW 7000/9000<br>OFF BOTTOM TORQUE 5000<br>STRING WEIGHT UP/DOWN/ROT 105/95/100.<br>DRAG 5 K<br>BOS DEWATER AS NEEDED<br>WT 8.7 VIS 31.<br>////// DRILLING WITH FLOWZAN MUD CHEM /////<br>PUMP LCM SWEEPS TO HELP WITH LOSSES.<br>USED 25 BBL. FLUID FOR HOLE VOLUME<br>15 BARRELS LOSSES @ 5 BBL/HR<br>NO FLARE<br><br>BIT POSITION: MD 3772'<br>South 6.21' West 6.73'<br>Total Footage Drilled From 3338' To 3772' 434'<br>Total Footage Drilled Rotating 398 Percent of Footage Rotated 91.71%<br>Total Footage Drilled Sliding 36 Percent of Footage Sliding 8.29%<br>Hours<br>Total Time Rotate Drilling 2.17 Percent of Time Rotated 84.11%<br>Total Time Slide Drilling 0.41 Percent of Time Sliding 15.89%<br>Connection / Ream / Rig Time / Circulating 0.42 Percent Non-Drilling Time 14.00% |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 5:00 - 14:00 | 9.00 | DRLPRV | 02 | B | P | 3772 | DRILL SLIDE F/ 3772' - 5107' ( 1335' @ 148.3' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 123.<br>STROKES PER MINUTE 140<br>GALLONS PER MINUTE 586<br>OFF/ON PSI 1550 / 2000<br>DIFFERENTIAL 450<br>TORQUE HIGH/LOW 8000/10000<br>OFF BOTTOM TORQUE 7000<br>STRING WEIGHT UP/DOWN/ROT 130/155/125.<br>DRAG 5 K<br>BOS DEWATER AS NEEDED<br>WT 8.5 VIS 29.<br>////// DRILLING WITH DIRTY WATER /////<br>PUMP LCM / CAL CARB SWEEPS TO HELP WITH LOSSES.<br>USED 80 BBL. FLUID FOR HOLE VOLUME<br>100 BARRELS LOSSES @ 11 BBL/HR<br>NO FLARE<br><br>BIT POSITION:<br>MD: 5107' North 5.75' West 3.75' PBHL<br>Bit Position Update Start / Stop Times From 5:00 To 14:00 9:00<br>Actual On Bottom Drilling Time 7.25 / 9.00<br>Total Footage Drilled From 3772' To 5107' 1335'<br>Total Footage Drilled Rotating 1226 Percent of Footage Rotated 91.84%<br>Total Footage Drilled Sliding 109 Percent of Footage Sliding 8.16%<br>Hours<br>Total Time Rotate Drilling 5.92 Percent of Time Rotated 81.66%<br>Total Time Slide Drilling 1.34 Percent of Time Sliding 18.48%<br>Connection / Ream / Rig Time / Circulating 1.75 Percent Non-Drilling Time 19.44% |
| | 14:00 - 14:30 | 0.50 | DRLPRV | 07 | A | P | 5107 | RIG SERVICE |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 14:30 - 0:00 | 9.50 | DRLPRV | 02 | B | P | 5107 | DRILL SLIDE F/ 5107' - 6370' ( 1263' @ 148.3' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 105.<br>STROKES PER MINUTE 120<br>GALLONS PER MINUTE 502<br>OFF/ON PSI 1350 / 1750<br>DIFFERENTIAL 400<br>TORQUE HIGH/LOW 10000/12000<br>OFF BOTTOM TORQUE 9000<br>STRING WEIGHT UP/DOWN/ROT 160/125/135.<br>DRAG 25 K<br>BOS DEWATER AS NEEDED<br>WT 8.8 VIS 32.<br>////// DRILLING WITH FLOWZAN /////<br>PUMP LCM / CAL CARB SWEEPS TO HELP WITH LOSSES.<br>USED 75 BBL. FLUID FOR HOLE VOLUME<br>300 BARRELS LOSSES : LOST 200 BBL. @ 5700'<br>NO FLARE<br><br>*** BROUGHT OVER 130 BBL. OF 12.0 AND 130 BBL. OF 11.5 FROM THE MUD PLANT FOR HEAVY MUD STORAGE: SAVED 3-4 HOURS MIXING TIME<br><br>BIT POSITION:<br>6370' North 16.9' West 4.64' PBHL<br>Total Footage Drilled From 5107' To 6370' 1263'<br>Total Footage Drilled Rotating 1227 Percent of Footage Rotated 97.15%<br>Total Footage Drilled Sliding 36 Percent of Footage Sliding 2.85%<br>Hours<br>Total Time Rotate Drilling 7.33 Percent of Time Rotated 92.55%<br>Total Time Slide Drilling 0.56 Percent of Time Sliding 7.07%<br>Connection / Ream / Rig Time / Circulating 2.08 Percent Non-Drilling Time 20.80% |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 11/5/2013 | 0:00 - 5:00 | 5.00 | DRLPRV | 02 | B | P | 6370 | DRILL SLIDE F/ 6370' - 6917' ( 547' @ 109.4' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 105.<br>STROKES PER MINUTE 120<br>GALLONS PER MINUTE 502<br>OFF/ON PSI 1500 / 1900<br>DIFFERENTIAL 400<br>TORQUE HIGH/LOW 11000/13000<br>OFF BOTTOM TORQUE 10000<br>STRING WEIGHT UP/DOWN/ROT 175/125/145.<br>DRAG 30 K<br>BOS DEWATER AS NEEDED<br>WT 9.0 VIS 32.<br>////// DRILLING WITH FLOWZAN /////<br>PUMP LCM / CAL CARB SWEEPS TO HELP WITH LOSSES.<br>USED 30 BBL. FLUID FOR HOLE VOLUME<br>30 BARRELS LOSSES @ 6 BARREL / HOUR.<br>NO FLARE<br><br>BIT POSITION:<br>6917' North 13.92' West 1.76' PBHL<br>Actual On Bottom Drilling Time 4.50 / 5.00<br>Total Footage Drilled From 6370' To 6917' 547'<br>Total Footage Drilled Rotating 529 Percent of Footage Rotated 96.71%<br>Total Footage Drilled Sliding 18 Percent of Footage Sliding 3.29%<br>Hours<br>Total Time Rotate Drilling 4.00 Percent of Time Rotated 88.89%<br>Total Time Slide Drilling 0.50 Percent of Time Sliding 11.11%<br>Connection / Ream / Rig Time / Circulating 0.50 Percent Non-Drilling Time 10.00% |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 5:00 - 15:00 | 10.00 | DRLPRV | 02 | B | P | 6917 | DRILL SLIDE F/ 6917'- 7869' ( 952 ' @ 95.2' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 105.<br>STROKES PER MINUTE 120<br>GALLONS PER MINUTE 502<br>OFF/ON PSI 1650 / 2000<br>DIFFERENTIAL 350<br>TORQUE HIGH/LOW 12000/14000<br>OFF BOTTOM TORQUE 11000<br>STRING WEIGHT UP/DOWN/ROT 205/135/170.<br>DRAG 45 K<br>BOS DEWATER AS NEEDED<br>WT 9.0+ VIS 32.<br>////// DRILLING WITH FLOWZAN /////<br>PUMP LCM / CAL CARB SWEEPS TO HELP WITH LOSSES.<br>USED 55 BBL. FLUID FOR HOLE VOLUME<br>40 BARRELS LOSSES @ 4 BARREL / HOUR.<br>NO FLARE<br><br>BIT POSITION:<br>MD: 7869' North 18.01' West 9.89' PBHL<br>Actual On Bottom Drilling Time 9.17 / 10.00<br>Total Footage Drilled From 6917' To 7869' 952'<br>Total Footage Drilled Rotating 884 Percent of Footage Rotated 92.86%<br>Total Footage Drilled Sliding 68 Percent of Footage Sliding 7.14%<br>Hours<br>Total Time Rotate Drilling 6.83 Percent of Time Rotated 74.48%<br>Total Time Slide Drilling 2.33 Percent of Time Sliding 25.41%<br>Connection / Ream / Rig Time / Circulating 0.83 Percent Non-Drilling Time 8.30%<br>Last Survey<br>MD: 7819' Inc 0.8 Azm 231.2 TVD 7783.06' |
| | 15:00 - 15:30 | 0.50 | DRLPRV | 07 | A | P | 7869 | RIG SERVICE |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 15:30 - 21:30 | 6.00 | DRLPRV | 02 | B | P | 7869 | DRILL SLIDE F/ 7869' - 8403' ( 534 ' @ 89' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 105.<br>STROKES PER MINUTE 120<br>GALLONS PER MINUTE 502<br>OFF/ON PSI 1650 / 2000<br>DIFFERENTIAL 350<br>TORQUE HIGH/LOW 12000/14000<br>OFF BOTTOM TORQUE 11000<br>STRING WEIGHT UP/DOWN/ROT 205/135/170.<br>DRAG 45 K<br>BOS DEWATER AS NEEDED<br>WT 9.1 VIS 32.<br>////// DRILLING WITH FLOWZAN /////<br>PUMP LCM / CAL CARB SWEEPS TO HELP WITH LOSSES.<br>USED 35 BBL. FLUID FOR HOLE VOLUME<br>40 BARRELS LOSSES @ 7 BARREL / HOUR.<br>FLARE: 5-10' DRILLING 10'-15' CONNECTION<br><br>MUD UP AT 8270' // 10.8 - 11.0 36 VIS<br>LOST APPROXIMATELY 150 BARRELS OF MUD ON THE TRANSFER<br>AFTER THE TRANSFER WE TOOK A 30 BARREL GAIN AND LOST 250# OF PUMP PRESURE @ 8400'<br>20-35' FLARE<br><br>BIT POSITION:<br>MD: 8403' North 10.57' West 9.36' PBHL<br>Actual On Bottom Drilling Time 5.58 6.50<br>Total Footage Drilled From 7869' To 8403' 534'<br>Total Footage Drilled Rotating 534 Percent of Footage Rotated 100.00%<br>Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00%<br>Hours<br>Total Time Rotate Drilling 5.09 Percent of Time Rotated 91.22%<br>Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00%<br>Connection / Ream / Rig Time / Circulating 0.92 Percent Non-Drilling Time 14.15% |
| | 21:30 - 23:00 | 1.50 | DRLPRV | 05 | B | S | 8403 | CIRCULATED AND CONDITIONED TO BRING THE MUD WEIGHT UP TO 11.2<br>WE HAD 11.0 IN AND 10.7 OUT<br>I CALLED KENNY TO INFORM HIM WE HAD TAKEN A 30 BARREL GAIN AND LOST PUMP PRESSURE. WE ALSO NEEDED TO GET THE GAS DOWN ENOUGH TO CHANGE OUT A LEAKING DRILLING RUBBER |



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# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 23:00 - 0:00 | 1.00 | DRLPRV | 02 | B | P | 8403 | DRILL SLIDE F/ 8403'- 8475' ( 73' @ 73' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 20K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 88.<br>STROKES PER MINUTE 110<br>GALLONS PER MINUTE 418<br>OFF/ON PSI 1750 / 2000<br>DIFFERENTIAL 250<br>TORQUE HIGH/LOW 9000/11000<br>OFF BOTTOM TORQUE 8000<br>STRING WEIGHT UP/DOWN/ROT 210/130/160.<br>DRAG 50 K<br>BOS DEWATER AS NEEDED<br>WT 11.4 VIS 35.<br>////// DRILLING WITH FLOWZAN /////<br>PUMP LCM / CAL CARB SWEEPS TO HELP WITH LOSSES.<br>USED 6 BBL. FLUID FOR HOLE VOLUME<br>100 BARRELS LOSSES @ 100 BARREL / HOUR. @ 8515'<br>FLARE: 5-10' DRILLING 10'-15' CONNECTION<br><br>BIT POSITION:<br>MD: 8475' North 5.63' West 7.71' PBHL<br>Actual On Bottom Drilling Time 0.83 / 1.0<br>Total Footage Drilled From 8403' To 8475' 72'<br>Total Footage Drilled Rotating 72 Percent of Footage Rotated 100.00%<br>Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00%<br>Hours<br>Total Time Rotate Drilling 0.83 Percent of Time Rotated 100.00%<br>Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00%<br>Connection / Ream / Rig Time / Circulating 1.67 Percent Non-Drilling Time 66.80% |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 11/6/2013 | 0:00 - 6:00 | 6.00 | DRLPRV | 02 | B | P | 8475 | DRILL SLIDE F/ 8475' - 8917' ( 442' @ 73.7' / HR)<br>WEIGHT ON BIT 18-22 K.<br>AVERAGE WOB 18K<br>ROTARY RPM 60-70,<br>MUD MOTOR RPM 88.<br>STROKES PER MINUTE 110<br>GALLONS PER MINUTE 418<br>OFF/ON PSI 1750 / 2000<br>DIFFERENTIAL 250<br>TORQUE HIGH/LOW 9000/11000<br>OFF BOTTOM TORQUE 8000<br>STRING WEIGHT UP/DOWN/ROT 210/130/160.<br>DRAG 50 K<br>BYPASSED SHAKER<br>WT 12.0 VIS 38. 6-8% LCM<br>////// DRILLING WITH FLOWZAN /////<br>USED 25 BBL. FLUID FOR HOLE VOLUME<br>125 BARRELS LOSSES<br>FLARE: 10'-15' CONNECTION<br><br>*** WE TOOK 2 LOADS OF 11.7 MUD FROM THE MUD PLANT: SAVED 3-4 HOURS TIME<br><br>BIT POSITION:<br>MD:8917 ' South 10.45' East 0.03' PBHL<br>Total Footage Drilled Rotating 442 Percent of Footage Rotated 100.00%<br>Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00%<br>Hours<br>Total Time Rotate Drilling 5.67 Percent of Time Rotated 100.00%<br>Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00%<br>Connection / Ream / Rig Time / Circulating 0.33 Percent Non-Drilling Time 5.50% |
| | 6:00 - 8:00 | 2.00 | DRLPRV | 05 | C | P | 8917 | CIRCULATE AND CONDITION FOR WIPER TRIP FLOW CHECK |
| | 8:00 - 10:00 | 2.00 | DRLPRV | 06 | E | P | 8917 | WE PULLED 10 STANDS / CHANGED OUT THE DRILLING RUBBER / TRIPPED BACK IN THE HOLE. HAD TO BACKREAM THROUGH A TIGHT SPOT @ 8400' ON THE WAY OUT |
| | 10:00 - 13:00 | 3.00 | DRLPRV | 05 | A | P | 8917 | CIRCULATED AND CONDITIONED FOR A CASING RUN<br>ON BOTTOMS UP WE HAD A 25-30' FLARE WITH 30 BARREL GAIN.<br>I LET KENNY KNOW WE NEEDED MORE MUD WEIGHT .<br>RAISED THE MUD WEIGHT TO 12.4 40 VIS 8% LCM |
| | 13:00 - 19:30 | 6.50 | DRLPRV | 06 | A | P | 8917 | TRIP OUT OF THE HOLE AND LAY DOWN THE MUD MOTOR |
| | 19:30 - 20:00 | 0.50 | DRLPRV | 14 | B | P | 8917 | PULL THE WEAR BUSHING |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: SST 8/8, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 9/1/2013 | End Date: 11/7/2013 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 20:00 - 0:00 | 4.00 | CSGPRO | 12 | C | P | 8917 | HELD A SAFETY MEETING WITH KIMZEY<br>RIG UP THE CASING CREW<br><br>START RUNNING 202 TOTAL JTS. OF CASING (87 JOINTS OF 4.5"/11.6# / I-80/ LTC + 1 MARKER) + (113 JTS. OF 4.5"/ 11.6#/ I-80/ DQX) + ( 1-DQX CROSS OVER). LANDED @ 8893.28', FLOAT COLLAR @ 8846.07', MESA VERDE MARKER @ 6660.08', CROSS OVER JT. @ 5003.52'.<br><br>CASING DEPTH AT MIDNIGHT 4116' |
| 11/7/2013 | 0:00 - 3:30 | 3.50 | CSGPRO | 12 | C | P | 8917 | CONTINUE RUNNING 202 TOTAL JTS. OF CASING (87 JOINTS OF 4.5"/11.6# / I-80/ LTC + 1 MARKER) + (113 JTS. OF 4.5"/ 11.6#/ I-80/ DQX) + ( 1-DQX CROSS OVER). LANDED @ 8893.28', FLOAT COLLAR @ 8846.07', MESA VERDE MARKER @ 6660.08', CROSS OVER JT. @ 5003.52'. |
| | 3:30 - 5:00 | 1.50 | CSGPRO | 05 | D | P | 8917 | CIRCULATED THE CASING<br>PUMP 70 STROKES<br>420 PSI<br>293 GALLON / MINUTE<br>MUD: 12.4 MW, 39 VIS 8% LCM<br>HELD A SAFETY MEETING WITH BJ CEMENTERS |
| | 5:00 - 7:30 | 2.50 | CSGPRO | 12 | E | P | 8917 | PRESSURE TEST TO 4950 PSI. PUMP BOTTOM PLUG AND 25 BBLS OF FRESH WATER. PUMP 170 BBLS (555 SX) OF PREMIUM LITE II LEAD CEMENT,13.0 PPG 1.72 YLD, .05 LB/SACK OF STATIC FREE + .3% BWOC R-3 +.25 LBS/SACK CELLO FLAKE + 5 LBS/SACK KOL-SEAL + .4% BWOC FL-57 + 3% BWOC BENTONITE + 0.1 BWOC CD-32 + 82.4 %FRESH WATER . FOLLOWED BY 229 BBLS (1000 SX) OF 14.3# 1.34 YD 5.61 GAL/SK. POZ 50/50 TAIL CEMENT + 2% BWOC BENTONITE + .005 LB/SACK STATIC FREE + 10% BWOW SODIUM CHLORIDE + .55%BWOC R-3 + .25 LB/SACK CELLO FLAKE + 5 LB/SACK KOL SEAL + .002GPS FP-6L + 0.75% BWOC SODIUM METASILICATE + 55.7% FRESH WATER . SHUT DOWN AND FLUSH LINES. DROP PLUG AND DISPLACE W/ 137 BBLS OF FRESH WATER TREATED WITH CLAYFIX AND MAGNACIDE. FULL RETURNS WITH 0 BBLS CEMENT OR SPACER RETURNED. LIFT PSI 2199 / BUMP PLUG 2707 PSI. . PRESSURE HELD 5 MINS. FLOAT HELD. FLOW BACK 1.5 BBLS. EST. TOC FOR LEAD 580' , EST TOC FOR TAIL 3850'. RIG DOWN CEMENTERS. |
| | 7:30 - 8:00 | 0.50 | CSGPRO | 14 | B | P | 8917 | PULL THE LANDING JOINT AND SET THE PACKOFF |
| | 8:00 - 9:00 | 1.00 | RDMO | 14 | A | P | 8917 | NIPPLE DOWN THE BOP<br><br>RIG RELEASED @ 09:00 |



RECEIVED: Feb. 03, 2014

API Well Number: 43047529130000



# 1 General

## 1.1 Customer Information

| | |
|---|---|
| **Company** | US ROCKIES REGION |
| **Representative** | |
| **Address** | |

## 1.2 Well/Wellbore Information

| | | | |
|---|---|---|---|
| **Well** | NBU 1022-3F4CS GREEN | **Wellbore No.** | OH |
| **Well Name** | NBU 1022-3F4CS | **Wellbore Name** | NBU 1022-3F4CS |
| **Report No.** | 1 | **Report Date** | 12/16/2013 |
| **Project** | UTAH-UINTAH | **Site** | NBU 1022-03F PAD |
| **Rig Name/No.** | | **Event** | COMPLETION |
| **Start Date** | 12/11/2013 | **End Date** | 1/7/2014 |
| **Spud Date** | 9/1/2013 | **Active Datum** | RKB @5,141.00usft (above Mean Sea Level) |
| **UWI** | SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | | |

## 1.3 General

| | | | | | |
|---|---|---|---|---|---|
| **Contractor** | | **Job Method** | | **Supervisor** | |
| **Perforated Assembly** | | **Conveyed Method** | | | |

## 1.4 Initial Conditions

| | | | |
|---|---|---|---|
| **Fluid Type** | | **Fluid Density** | |
| **Surface Press** | | **Estimate Res Press** | |
| **TVD Fluid Top** | | **Fluid Head** | |
| **Hydrostatic Press** | | **Press Difference** | |
| **Balance Cond** | NEUTRAL | | |

## 1.5 Summary

| | | | |
|---|---|---|---|
| **Gross Interval** | 6,748.0 (usft)-8,780.0 (usft | **Start Date/Time** | 12/16/2013 12:00AM |
| **No. of Intervals** | 47 | **End Date/Time** | 12/16/2013 12:00AM |
| **Total Shots** | 192 | **Net Perforation Interval** | 62.00 (usft) |
| **Avg Shot Density** | 3.10 (shot/ft) | **Final Surface Pressure** | |
| | | **Final Press Date** | |

# 2 Intervals

## 2.1 Perforated Interval

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API Well Number: 43047529130000



## 2.1 Perforated Interval (Continued)

| Date | Formation/ Reservoir | CCL@ (usft) | CCL-TS (usft) | MD Top (usft) | MD Base (usft) | Shot Density (shot/ft) | Misfires/ Add. Shot | Diameter (in) | Carr Type /Stage No | Carr Size (in) | Phasing (°) | Charge Desc /Charge Manufacturer | Charge Weight (gram) | Reason | Misrun |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/16/2013 12:00AM | MESAVERDE/ | | | 6,748.0 | 6,750.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 6,772.0 | 6,775.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 6,982.0 | 6,985.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,266.0 | 7,268.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,278.0 | 7,280.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,310.0 | 7,312.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,328.0 | 7,330.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,493.0 | 7,494.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,507.0 | 7,508.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,620.0 | 7,621.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,648.0 | 7,649.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,678.0 | 7,680.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,710.0 | 7,712.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

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## 2.1 Perforated Interval (Continued)

| Date | Formation/ Reservoir | CCL@ (usft) | CCL-TS (usft) | MD Top (usft) | MD Base (usft) | Shot Density (shot/ft) | Misfires/ Add. Shot | Diameter (in) | Carr Type /Stage No | Carr Size (in) | Phasing (°) | Charge Desc /Charge Manufacturer | Charge Weight (gram) | Reason | Misrun |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,743.0 | 7,744.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,762.0 | 7,763.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,782.0 | 7,783.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,816.0 | 7,817.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,864.0 | 7,865.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,899.0 | 7,900.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,930.0 | 7,931.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,958.0 | 7,959.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 7,994.0 | 7,995.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,028.0 | 8,029.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,074.0 | 8,075.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,087.0 | 8,088.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,095.0 | 8,096.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |



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## 2.1 Perforated Interval (Continued)

| Date | Formation/ Reservoir | CCL@ (usft) | CCL-TS (usft) | MD Top (usft) | MD Base (usft) | Shot Density (shot/ft) | Misfires/ Add. Shot | Diameter (in) | Carr Type /Stage No | Carr Size (in) | Phasing (°) | Charge Desc /Charge Manufacturer | Charge Weight (gram) | Reason | Misrun |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,144.0 | 8,145.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,169.0 | 8,171.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,197.0 | 8,198.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,214.0 | 8,215.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,235.0 | 8,236.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,268.0 | 8,269.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,278.0 | 8,279.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,293.0 | 8,294.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,316.0 | 8,317.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,348.0 | 8,349.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,373.0 | 8,374.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,388.0 | 8,389.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,413.0 | 8,414.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

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### 2.1 Perforated Interval (Continued)

| Date | Formation/ Reservoir | CCL@ (usft) | CCL-TS (usft) | MD Top (usft) | MD Base (usft) | Shot Density (shot/ft) | Misfires/ Add. Shot | Diameter (in) | Carr Type /Stage No | Carr Size (in) | Phasing (°) | Charge Desc /Charge Manufacturer | Charge Weight (gram) | Reason | Misrun |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,430.0 | 8,431.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,453.0 | 8,454.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,473.0 | 8,474.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,483.0 | 8,484.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,490.0 | 8,491.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,574.0 | 8,576.0 | 4.00 | | 0.360 | EXP/ | 3.375 | 90.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,594.0 | 8,596.0 | 4.00 | | 0.360 | EXP/ | 3.375 | 90.00 | | 23.00 | PRODUCTION | |
| 12/16/2013 12:00AM | MESAVERDE/ | | | 8,778.0 | 8,780.0 | 4.00 | | 0.360 | EXP/ | 3.375 | 90.00 | | 23.00 | PRODUCTION | |

## 3 Plots

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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: |
| Event: COMPLETION | Start Date: 12/11/2013 | End Date: 1/7/2014 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 11/24/2013 | - | | | | | | | |
| 12/11/2013 | 8:00 - 9:00 | 1.00 | SUBSPR | 52 | B | P | | FILL SURFACE CSG. MIRU CAMERON QUICK TEST. PRESSURE TEST CSG & FRAC VALVES<br>1ST PSI TEST T/ 7000 PSI. HELD FOR 15 MIN LOST 65 PSI.<br>NO COMMUNICATION OR MIGRATION WITH SURFACE CSG<br>BLEED OFF PSI.<br><br>PRESSURE TEST 8 5/8 X 4 1/2 TO 507 PSI HELD FOR 5 MIN<br>LOST -22 PSI, BLED PSI OFF, REINSTALLED POP OFF SWIFN<br>NO PRESSURE ON SURFACE CASING<br>FILLED SURFACE WITH 1 BBL H2O |
| 12/13/2013 | 7:00 - 8:00 | 1.00 | SUBSPR | 37 | | P | | PERF STG 1)PU 3 1/8 EXP GUN, 19 GM, .40 HOLE SIZE. RIH PERFWELL, AS PER PERF DESIGN. POOH. SWIFW |
| 12/16/2013 | 7:00 - 7:15 | 0.25 | FRAC | 48 | | P | | HSM, REVIEW FRAC DESIGN |
| 12/17/2013 | 10:00 - 18:00 | 8.00 | FRAC | 36 | B | P | | DID TO GET TO WELL |
| 12/18/2013 | 6:15 - 6:30 | 0.25 | FRAC | 48 | | P | | HSM, ICE PLUGS |
| | 6:30 - 19:00 | 12.50 | FRAC | 36 | B | P | | REFER TO STIMULATION PJR FOR FLUID, SAND AND CHEMICAL VOLUMES, ALL STAGES WERE PERFORATED ACCORDING TO PERF RECORD IN OPEN WELLS, ALL STAGES WERE STIMULATED TO VENDOR POST JOB REPORT. ALL PLUGS ARE HALIBURTON 8K CBPS<br><br>FRAC STG #1] WHP=580#, BRK DN PERFS=3,925#, @=4.2 BPM, INTIAL ISIP=2,455#, FG=.72, FINAL ISIP=2,477#, FG=.72,<br><br>SET PLUG & PERFORATE STG #2<br>SWIFN. |
| 12/19/2013 | 6:45 - 7:00 | 0.25 | FRAC | 48 | | P | | HSM, STAYING OUT OF RED ZONE WHILE PUMPING |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: |
| Event: COMPLETION | Start Date: 12/11/2013 | End Date: 1/7/2014 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 7:00 - 18:00 | 11.00 | FRAC | 36 | B | P | | FRAC STG #2] WHP=1,898#, BRK DN PERFS=3,511#, @=4.2 BPM, INTIAL ISIP=2,462#, FG=.73, FINAL ISIP=2,587#, FG=.75,<br><br>SET PLUG & PERFORATE STG #3<br><br>FRAC STG #3] WHP=502#, BRK DN PERFS=1,991#, @=6.1 BPM, INTIAL ISIP=994#, FG=.56, FINAL ISIP=2,552#, FG=.75,<br><br>SET PLUG & PERFORATE STG #4<br><br>FRAC STG #4] WHP=1,834#, BRK DN PERFS=2,622#, @=3.7 BPM, INTIAL ISIP=2,074#, FG=.70, FINAL ISIP=2,622#, FG=.76,<br><br>SET PLUG PERFORATE STG #5<br>SWIFN. |
| 12/20/2013 | 6:45 - 7:00 | 0.25 | FRAC | 48 | | P | | HSM, CHECKING VALVES |
| | 7:00 - 17:30 | 10.50 | FRAC | 36 | B | P | | FRAC STG #5] WHP=1,502#, BRK DN PERFS=3,712#, @=4.0 BPM, INTIAL ISIP=1,973#, FG=.69, FINAL ISIP=2,402#, FG=.74,<br><br>SET PLUG AND PERFORATE STG #6<br><br>FRAC STG #6] WHP=1,816#, BRK DN PERFS=3,103#, @=4.0 BPM, INTIAL ISIP=2,258#, FG=.74, FINAL ISIP=2,258#, FG=.74,<br><br>SET PLUUG AND PERFORATE STG #7<br>SWIFN. |
| 12/21/2013 | 6:45 - 7:00 | 0.25 | FRAC | 48 | | P | | HSM, RIGGING DOWN |
| | 7:00 - 13:00 | 6.00 | FRAC | 36 | B | P | | FRAC STG #7] WHP=940#, BRK DN PERFS=2,889#, @=5.0 BPM, INTIAL ISIP=2,102#, FG=.73, FINAL ISIP=2,316#, FG=.76,<br><br>SET PLUUG AND PERFORATE STG #8<br><br>FRAC STG #8] WHP=550#, BRK DN PERFS=2,795#, @=4.5 BPM, INTIAL ISIP=960#, FG=.58, FINAL ISIP=1,529#, FG=.66,<br><br>SET TOP KILL<br><br>TOTAL BBLS=10,565<br>TOTAL SAND=226,201# |
| 1/6/2014 | 7:00 - 7:15 | 0.25 | DRLOUT | 48 | | P | | SAFETY = JSA. |
| | 7:15 - 16:00 | 8.75 | DRLOUT | 30 | | P | | RDMO OF YELLOW WELL. MIRU. NDWH. NUBOP. R/U FLOOR. P/U & RIH W/ 3-7/8" ROCK BIT + POBS + XN + 150JTS 2-3/8" J-55 TBNG + 62JTS 2-3/8" L-80 TBNG W/ TBNG PUP JT AS MARKER JT. 212 TOTAL JTS TBNG IN THE HOLE. T/U ON KILL PLUG @6698'. L/D 1JT TBNG. R/U POWER SWIVEL. R/U PUMP LINES. WILL PRESSURE TEST IN THE AM. SWIFN. |
| 1/7/2014 | 7:00 - 7:15 | 0.25 | DRLOUT | 48 | | P | | SAFETY = JSA. |



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US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | Spud Date: 9/1/2013 | |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: |
| Event: COMPLETION | Start Date: 12/11/2013 | End Date: 1/7/2014 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 7:15 - 17:00 | 9.75 | DRLOUT | 30 | | P | | P/U 1JT TBNG. FINISH R/U SWIVEL. BREAK CIRC. PRESSURE TEST BOP GOOD @ 3000#. D/O 8 CBP'S AS FOLLOWS:<br><br>#1 CBP @ 6698'. D/O IN 12MIN W/ 0# DIFFERENTIAL PRESSURE. FCP= 0#. CONT RIH. C/O 15' OF SAND. T/U ON NEXT CBP.<br>#2 CBP @ 7015'. D/O IN 9MIN W/ 400# DIFFERENTIAL PRESSURE. FCP= 100#. CONT RIH. C/O 25' OF SAND. T/U ON NEXT CBP.<br>#3 CBP @ 7360'. D/O IN 9MIN W/ 300# DIFFERENTIAL PRESSURE. FCP= 150#. CONT RIH. C/O 20' OF SAND. T/U ON NEXT CBP.<br>#4 CBP @ 7732'. D/O IN 9MIN W/ 600# DIFFERENTIAL PRESSURE. FCP= 300#. CONT RIH. C/O 15' OF SAND. T/U ON NEXT CBP.<br>#5 CBP @ 7979'. D/O IN 11MIN W/ 400# DIFFERENTIAL PRESSURE. FCP= 350#. CONT RIH. C/O 30' OF SAND. T/U ON NEXT CBP.<br>#6 CBP @ 8186'. D/O IN 11MIN W/ 100# DIFFERENTIAL PRESSURE. FCP= 300#. CONT RIH. C/O 35' OF SAND. T/U ON NEXT CBP.<br>#7 CBP @ 8363'. D/O IN 7MIN W/ 900# DIFFERENTIAL PRESSURE. FCP= 450#. CONT RIH. C/O 30' OF SAND. T/U ON NEXT CBP.<br>#8 CBP @ 8521'. D/O IN 12MIN W/ 900# DIFFERENTIAL PRESSURE. FCP= 500#. CONT RIH. C/O 10' OF SAND. C/O TO PBTD @ 8846' W/ TOTAL OF 279JTS OF TBNG. CIRC WELL CLEAN FOR 30MIN. R/D POWER SWIVEL. L/D 16JTS OF TBNG. LAND WELL ON HANGER. NDBOP. NUWH. PRESSURE TEST FLOWLINES GOOD @ 3000#. DROP BALL & PUMP OFF BIT @ 2600# W/20BBLS TMAC. BURP TBNG & TURN WELL OVER TO FLOWBACK @ 1500HRS. SICP = 2380#. SITP= 2100#. RDMO. MIRU ON ORANGE WELL.<br><br>TBNG LANDED AS FOLLOWS:<br><br>KB= 24.00'<br>HANGER = .83'<br>113JTS 2-3/8" NEW L-80 TBNG = 3578.28'<br>2-3/8" NEW L-80 PUP JT = 6.13'<br>150JTS 2-3/8" NEW J-55 TBNG = 4742.19'<br>XN / POBS= 2.20'<br><br>EOT @ 8347.87'<br><br>TTL FLUID PUMPED= 10,565BBLS<br>RIG REC= 1100BBLS<br>TWLTR= 9,465BBLS |



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API Well Number: 43047529130000

# Anadarko Petroleum Corporation

PRODIRECTIONAL

**Project: Uintah Co., UT (UTM)**
**Site: Sec 3-T10S-R22E**
**Well: NBU 1022-3F4CS**
**Wellbore: Original Hole**
**Final Surveys**
**Rig: SST 8**

**Surface Location:**
**SHL 2133' FNL & 1709' FWL Sec 3-T10S-R22E**

Universal Transverse Mercator (US Survey Feet)
NAD 1927 (NADCON CONUS)
Zone 12N (114 W to 108 W)
**Elevation: 5119' GL + 24' KB @ 5143.00ft (SST 8)**

| Northing | Easting | Latitude | Longitude |
|---|---|---|---|
| 14522469.51 | 2080694.85 | 39.979447 | -109.428426 |

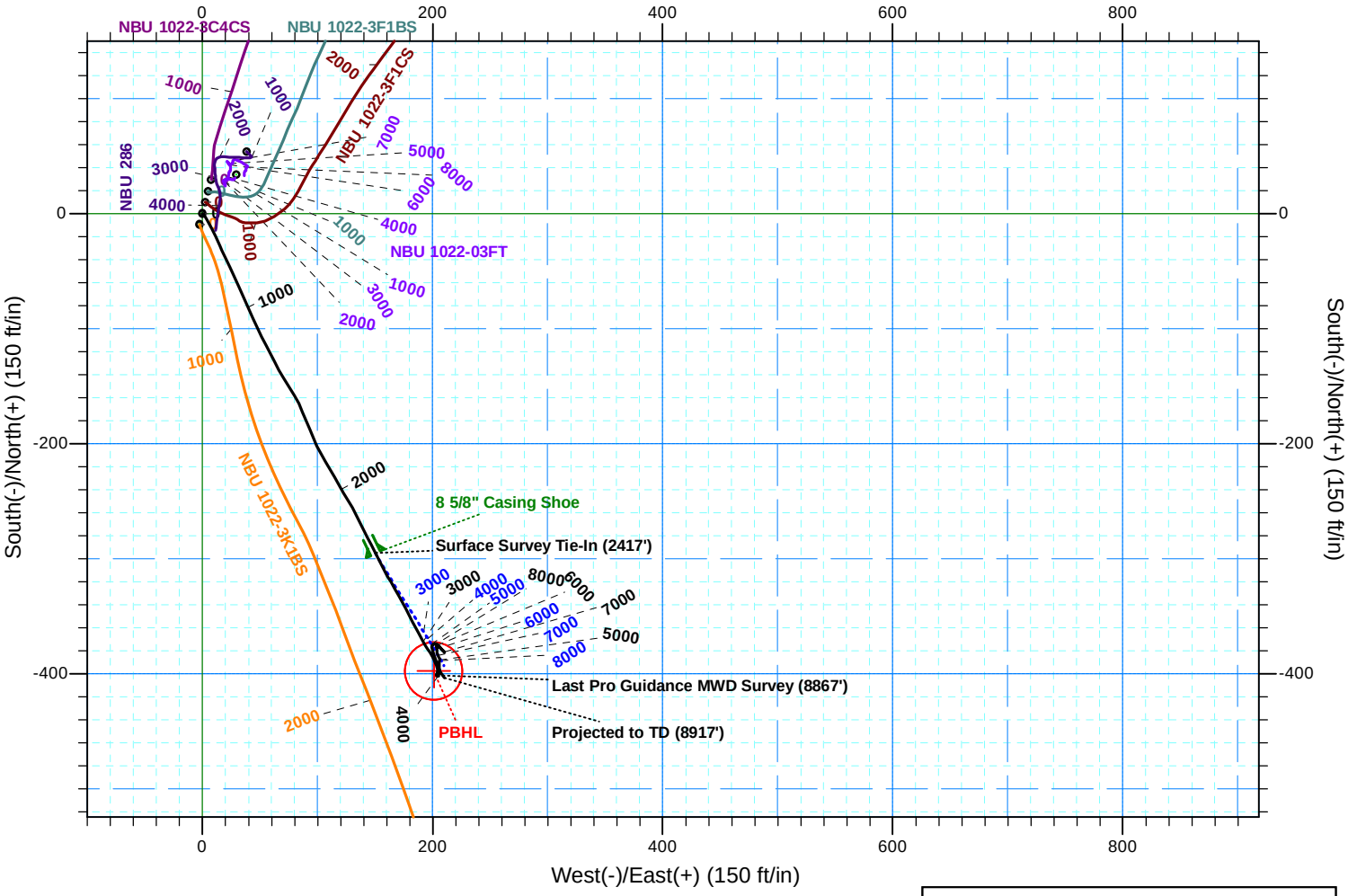
**SECTION DETAILS**
**Plan 1**

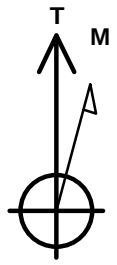
| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Annotation |
|---|---|---|---|---|---|---|---|---|---|
| 2417.00 | 10.20 | 153.84 | 2388.93 | -295.20 | 150.39 | 0.00 | 0.00 | 331.30 | Survey Tie-In/Begin Turn at 2417' MD, 2389' TVD |
| 2485.52 | 10.20 | 148.03 | 2456.37 | -305.79 | 156.27 | 1.50 | -92.86 | 343.41 | Begin Hold at 2486' MD, 2456' TVD |
| 2558.52 | 10.20 | 148.03 | 2528.22 | -316.76 | 163.12 | 0.00 | 0.00 | 356.28 | Begin Drop at 2559' MD, 2528' TVD |
| 3238.52 | 0.00 | 0.00 | 3204.63 | -367.98 | 195.08 | 1.50 | 180.00 | 416.41 | Begin Hold at 3239' MD, 3205' TVD |
| 3638.52 | 0.00 | 0.00 | 3604.63 | -367.98 | 195.08 | 0.00 | 0.00 | 416.41 | Begin Build at 3639' MD, 3605' TVD |
| 3745.18 | 0.32 | 149.03 | 3711.30 | -368.23 | 195.23 | 0.30 | 149.03 | 416.70 | Begin Hold at 3745' MD, 3711' TVD |
| 8891.97 | 0.32 | 149.03 | 8858.00 | -392.88 | 210.02 | 0.00 | 0.00 | 445.37 | PBHL |

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

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
|---|---|---|---|---|---|
| PBHL | 8858.00 | -397.71 | 200.91 | 39.978355 | -109.427709 |

Anadarko Petroleum Corporation




**Azimuths to True North**
Magnetic North: 10.74°

Magnetic Field
Strength: 52092.9snT
Dip Angle: 65.80°
Date: 10/20/2013
Model: IGRF2010

Created By: Bob Hays Date: 15:42, November 14 2013

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API Well Number: 43047529130000

# Anadarko Petroleum Corporation

PRODIRECTIONAL

**Project: Uintah Co., UT (UTM)**
**Site: Sec 3-T10S-R22E**
**Well: NBU 1022-3F4CS**
**Wellbore: Original Hole**
**Final Surveys**
**Rig: SST 8**

**Surface Location:**
**SHL 2133' FNL & 1709' FWL Sec 3-T10S-R22E**

Universal Transverse Mercator (US Survey Feet)
NAD 1927 (NADCON CONUS)
Zone 12N (114 W to 108 W)
**Elevation: 5119' GL + 24' KB @ 5143.00ft (SST 8)**

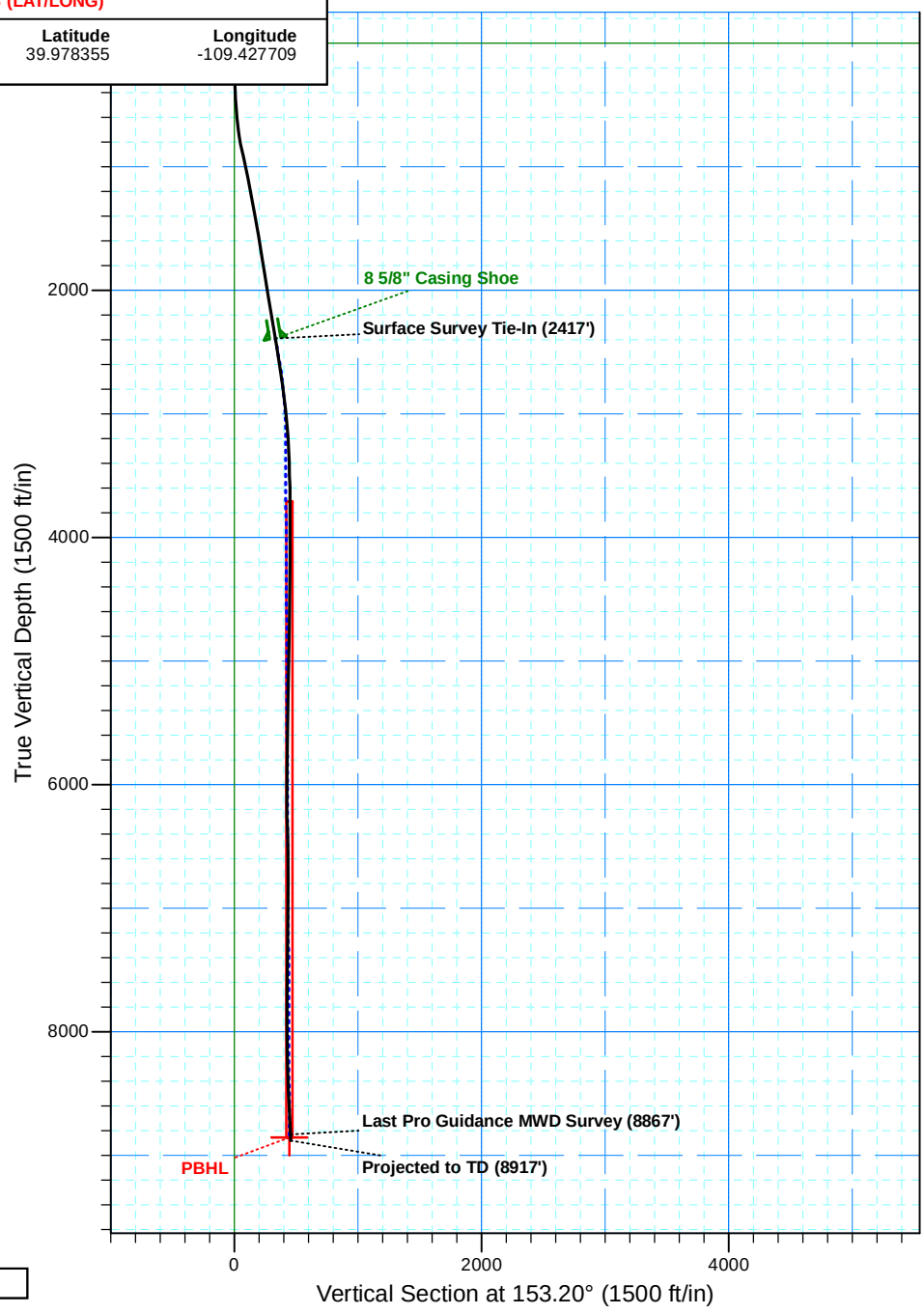
| Northing | Easting | Latitude | Longitude |
|---|---|---|---|
| 14522469.51 | 2080694.85 | 39.979447 | -109.428426 |

**SECTION DETAILS**
**Plan 1**

| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Annotation |
|---|---|---|---|---|---|---|---|---|---|
| 2417.00 | 10.20 | 153.84 | 2388.93 | -295.20 | 150.39 | 0.00 | 0.00 | 331.30 | Survey Tie-In/Begin Turn at 2417' MD, 2389' TVD |
| 2485.52 | 10.20 | 148.03 | 2456.37 | -305.79 | 156.27 | 1.50 | -92.86 | 343.41 | Begin Hold at 2486' MD, 2456' TVD |
| 2558.52 | 10.20 | 148.03 | 2528.22 | -316.76 | 163.12 | 0.00 | 0.00 | 356.28 | Begin Drop at 2559' MD, 2528' TVD |
| 3238.52 | 0.00 | 0.00 | 3204.63 | -367.98 | 195.08 | 1.50 | 180.00 | 416.41 | Begin Hold at 3239' MD, 3205' TVD |
| 3638.52 | 0.00 | 0.00 | 3604.63 | -367.98 | 195.08 | 0.00 | 0.00 | 416.41 | Begin Build at 3639' MD, 3605' TVD |
| 3745.18 | 0.32 | 149.03 | 3711.30 | -368.23 | 195.23 | 0.30 | 149.03 | 416.70 | Begin Hold at 3745' MD, 3711' TVD |
| 8891.97 | 0.32 | 149.03 | 8858.00 | -392.88 | 210.02 | 0.00 | 0.00 | 445.37 | PBHL |

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

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
|---|---|---|---|---|---|
| PBHL | 8858.00 | -397.71 | 200.91 | 39.978355 | -109.427709 |




Anadarko Petroleum Corporation

Created By: Bob Hays Date: 15:42, November 14 2013

RECEIVED: Feb. 03, 2014

API Well Number: 43047529130000

# Anadarko Petroleum Corporation

**Uintah Co., UT (UTM)**
**Sec 3-T10S-R22E**
**NBU 1022-3F4CS**

**Original Hole**

**Design: Final Surveys**

# Standard Survey Report

**14 November, 2013**

RECEIVED: Feb. 03, 2014

API Well Number: 43047529130000

# Professional Directional LTD

Survey Report

| | | | |
|---|---|---|---|
| **Company:** | Anadarko Petroleum Corporation | **Local Co-ordinate Reference:** | Well NBU 1022-3F4CS |
| **Project:** | Uintah Co., UT (UTM) | **TVD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Site:** | Sec 3-T10S-R22E | **MD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Well:** | NBU 1022-3F4CS | **North Reference:** | True |
| **Wellbore:** | Original Hole | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Final Surveys | **Database:** | EDM 5000.1 Single User Db |

**Project** Uintah Co., UT (UTM)

| | | | |
|---|---|---|---|
| **Map System:** | Universal Transverse Mercator (US Survey Fee | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Zone 12N (114 W to 108 W) | | |

**Site** Sec 3-T10S-R22E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 14,523,793.82 ft | **Latitude:** | 39.983089 |
| **From:** | Lat/Long | **Easting:** | 2,080,559.97 ft | **Longitude:** | -109.428824 |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | 1.01 ° |

**Well** NBU 1022-3F4CS

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 ft | **Northing:** | 14,522,469.52 ft | **Latitude:** | 39.979447 |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,080,694.85 ft | **Longitude:** | -109.428426 |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | 0.00 ft | **Ground Level:** | 5,119.00 ft |

**Wellbore** Original Hole

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 10/20/13 | 10.74 | 65.80 | 52,093 |

**Survey Program** **Date** 11/14/13

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 170.00 | 2,417.00 | Surface Surveys (Original Hole) | CB-GYRO-MS | Gyro Multishot |
| 2,548.00 | 8,867.00 | Pro Guidance MWD Surveys (Original Hol | MWD | MWD |
| 8,917.00 | 8,917.00 | Projected to TD (Original Hole) | Projection | Projection |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 170.00 | 0.14 | 52.10 | 170.00 | 0.13 | 0.16 | -0.04 | 0.08 | 0.08 | 0.00 |
| 261.00 | 0.77 | 137.00 | 261.00 | -0.25 | 0.67 | 0.53 | 0.85 | 0.69 | 93.30 |
| 352.00 | 1.93 | 152.96 | 351.97 | -2.06 | 1.78 | 2.65 | 1.33 | 1.27 | 17.54 |
| 447.00 | 3.34 | 149.35 | 446.87 | -5.87 | 3.92 | 7.01 | 1.49 | 1.48 | -3.80 |
| 542.00 | 4.84 | 150.94 | 541.62 | -11.75 | 7.28 | 13.77 | 1.58 | 1.58 | 1.67 |
| 636.00 | 6.77 | 154.28 | 635.14 | -20.21 | 11.61 | 23.28 | 2.08 | 2.05 | 3.55 |
| 731.00 | 8.89 | 155.37 | 729.25 | -31.93 | 17.10 | 36.21 | 2.24 | 2.23 | 1.15 |
| 824.00 | 11.17 | 154.80 | 820.82 | -46.62 | 23.93 | 52.40 | 2.45 | 2.45 | -0.61 |
| 918.00 | 12.31 | 155.77 | 912.85 | -63.99 | 31.92 | 71.51 | 1.23 | 1.21 | 1.03 |
| 1,012.00 | 12.31 | 156.38 | 1,004.69 | -82.31 | 40.05 | 91.53 | 0.14 | 0.00 | 0.65 |
| 1,106.00 | 10.80 | 154.52 | 1,096.78 | -99.44 | 47.85 | 110.34 | 1.65 | -1.61 | -1.98 |
| 1,199.00 | 9.85 | 152.46 | 1,188.28 | -114.36 | 55.28 | 127.00 | 1.10 | -1.02 | -2.22 |
| 1,294.00 | 9.94 | 153.48 | 1,281.86 | -128.90 | 62.70 | 143.33 | 0.21 | 0.09 | 1.07 |
| 1,388.00 | 10.90 | 148.74 | 1,374.31 | -143.76 | 70.93 | 160.30 | 1.37 | 1.02 | -5.04 |



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Anadarko Petroleum Corporation

# Professional Directional LTD

Survey Report

ProDirectional

| | | | |
|---|---|---|---|
| **Company:** | Anadarko Petroleum Corporation | **Local Co-ordinate Reference:** | Well NBU 1022-3F4CS |
| **Project:** | Uintah Co., UT (UTM) | **TVD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Site:** | Sec 3-T10S-R22E | **MD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Well:** | NBU 1022-3F4CS | **North Reference:** | True |
| **Wellbore:** | Original Hole | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Final Surveys | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1,480.00 | 10.02 | 148.56 | 1,464.78 | -158.03 | 79.62 | 176.95 | 0.96 | -0.96 | -0.20 |
| 1,575.00 | 9.71 | 157.50 | 1,558.38 | -172.48 | 87.00 | 193.18 | 1.64 | -0.33 | 9.41 |
| 1,669.00 | 10.02 | 157.79 | 1,650.99 | -187.37 | 93.12 | 209.23 | 0.33 | 0.33 | 0.31 |
| 1,763.00 | 9.58 | 154.19 | 1,743.62 | -201.99 | 99.62 | 225.21 | 0.80 | -0.47 | -3.83 |
| 1,857.00 | 9.41 | 149.88 | 1,836.34 | -215.68 | 106.88 | 240.70 | 0.78 | -0.18 | -4.59 |
| 1,951.00 | 9.85 | 149.68 | 1,929.01 | -229.26 | 114.79 | 256.40 | 0.47 | 0.47 | -0.21 |
| 2,044.00 | 9.25 | 150.03 | 2,020.72 | -242.61 | 122.54 | 271.80 | 0.65 | -0.65 | 0.38 |
| 2,139.00 | 9.15 | 149.71 | 2,114.50 | -255.74 | 130.17 | 286.96 | 0.12 | -0.11 | -0.34 |
| 2,233.00 | 8.79 | 154.10 | 2,207.35 | -268.66 | 137.08 | 301.60 | 0.82 | -0.38 | 4.67 |
| 2,326.00 | 9.09 | 152.75 | 2,299.22 | -281.58 | 143.54 | 316.05 | 0.39 | 0.32 | -1.45 |
| 2,417.00 | 10.20 | 153.84 | 2,388.93 | -295.20 | 150.39 | 331.30 | 1.24 | 1.22 | 1.20 |
| **Surface Survey Tie-In (2417')** | | | | | | | | | |
| 2,548.00 | 9.80 | 150.50 | 2,517.94 | -315.32 | 160.99 | 354.03 | 0.54 | -0.31 | -2.55 |
| 2,580.00 | 9.50 | 149.80 | 2,549.49 | -319.97 | 163.66 | 359.39 | 1.01 | -0.94 | -2.19 |
| 2,675.00 | 7.90 | 151.50 | 2,643.40 | -332.48 | 170.72 | 373.74 | 1.71 | -1.68 | 1.79 |
| 2,770.00 | 7.50 | 151.00 | 2,737.54 | -343.64 | 176.84 | 386.47 | 0.43 | -0.42 | -0.53 |
| 2,865.00 | 7.30 | 153.20 | 2,831.75 | -354.45 | 182.57 | 398.70 | 0.37 | -0.21 | 2.32 |
| 2,961.00 | 6.50 | 152.30 | 2,927.05 | -364.71 | 187.84 | 410.23 | 0.84 | -0.83 | -0.94 |
| 3,056.00 | 6.30 | 149.90 | 3,021.46 | -373.98 | 192.96 | 420.81 | 0.35 | -0.21 | -2.53 |
| 3,151.00 | 4.80 | 147.80 | 3,116.01 | -381.85 | 197.69 | 429.97 | 1.59 | -1.58 | -2.21 |
| 3,246.00 | 3.70 | 154.30 | 3,210.75 | -387.98 | 201.14 | 436.99 | 1.26 | -1.16 | 6.84 |
| 3,341.00 | 2.60 | 157.80 | 3,305.60 | -392.74 | 203.28 | 442.21 | 1.17 | -1.16 | 3.68 |
| 3,437.00 | 1.60 | 172.70 | 3,401.54 | -396.08 | 204.27 | 445.64 | 1.18 | -1.04 | 15.52 |
| 3,532.00 | 0.90 | 189.20 | 3,496.52 | -398.13 | 204.32 | 447.49 | 0.82 | -0.74 | 17.37 |
| 3,627.00 | 0.70 | 211.70 | 3,591.51 | -399.36 | 203.90 | 448.40 | 0.39 | -0.21 | 23.68 |
| 3,722.00 | 0.70 | 180.00 | 3,686.50 | -400.44 | 203.59 | 449.22 | 0.40 | 0.00 | -33.37 |
| 3,818.00 | 0.30 | 254.50 | 3,782.50 | -401.09 | 203.35 | 449.69 | 0.71 | -0.42 | 77.60 |
| 3,913.00 | 0.70 | 137.20 | 3,877.50 | -401.58 | 203.51 | 450.20 | 0.93 | 0.42 | -123.47 |
| 4,008.00 | 0.70 | 100.70 | 3,972.49 | -402.12 | 204.47 | 451.12 | 0.46 | 0.00 | -38.42 |
| 4,104.00 | 0.50 | 29.20 | 4,068.48 | -401.86 | 205.25 | 451.24 | 0.75 | -0.21 | -74.48 |
| 4,199.00 | 1.00 | 6.70 | 4,163.48 | -400.68 | 205.55 | 450.31 | 0.60 | 0.53 | -23.68 |
| 4,295.00 | 1.00 | 358.10 | 4,259.46 | -399.01 | 205.62 | 448.86 | 0.16 | 0.00 | -8.96 |
| 4,390.00 | 0.70 | 354.90 | 4,354.45 | -397.60 | 205.54 | 447.57 | 0.32 | -0.32 | -3.37 |
| 4,485.00 | 0.20 | 345.70 | 4,449.45 | -396.86 | 205.45 | 446.86 | 0.53 | -0.53 | -9.68 |
| 4,580.00 | 0.80 | 16.50 | 4,544.44 | -396.06 | 205.60 | 446.22 | 0.67 | 0.63 | 32.42 |
| 4,676.00 | 0.40 | 11.50 | 4,640.44 | -395.09 | 205.85 | 445.47 | 0.42 | -0.42 | -5.21 |
| 4,771.00 | 1.50 | 0.00 | 4,735.42 | -393.52 | 205.92 | 444.10 | 1.17 | 1.16 | -12.11 |
| 4,866.00 | 1.30 | 358.00 | 4,830.40 | -391.20 | 205.88 | 442.01 | 0.22 | -0.21 | -2.11 |
| 4,961.00 | 1.10 | 8.90 | 4,925.38 | -389.23 | 205.98 | 440.29 | 0.32 | -0.21 | 11.47 |
| 5,057.00 | 0.70 | 10.20 | 5,021.36 | -387.74 | 206.23 | 439.08 | 0.42 | -0.42 | 1.35 |
| 5,152.00 | 0.30 | 327.30 | 5,116.36 | -386.96 | 206.20 | 438.36 | 0.55 | -0.42 | -45.16 |
| 5,247.00 | 1.60 | 335.80 | 5,211.34 | -385.54 | 205.52 | 436.79 | 1.37 | 1.37 | 8.95 |
| 5,343.00 | 1.30 | 337.20 | 5,307.31 | -383.31 | 204.55 | 434.37 | 0.31 | -0.31 | 1.46 |
| 5,438.00 | 1.10 | 349.50 | 5,402.29 | -381.42 | 203.97 | 432.42 | 0.34 | -0.21 | 12.95 |



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Anadarko Petroleum Corporation

# Professional Directional LTD

Survey Report

ProDirectional

| | | | |
|---|---|---|---|
| **Company:** | Anadarko Petroleum Corporation | **Local Co-ordinate Reference:** | Well NBU 1022-3F4CS |
| **Project:** | Uintah Co., UT (UTM) | **TVD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Site:** | Sec 3-T10S-R22E | **MD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Well:** | NBU 1022-3F4CS | **North Reference:** | True |
| **Wellbore:** | Original Hole | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Final Surveys | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,533.00 | 0.60 | 353.90 | 5,497.28 | -380.03 | 203.75 | 431.08 | 0.53 | -0.53 | 4.63 |
| 5,628.00 | 0.30 | 50.40 | 5,592.28 | -379.38 | 203.89 | 430.56 | 0.53 | -0.32 | 59.47 |
| 5,724.00 | 0.80 | 345.10 | 5,688.28 | -378.57 | 203.91 | 429.84 | 0.76 | 0.52 | -68.02 |
| 5,819.00 | 0.80 | 347.30 | 5,783.27 | -377.28 | 203.59 | 428.55 | 0.03 | 0.00 | 2.32 |
| 5,915.00 | 0.60 | 351.90 | 5,879.26 | -376.13 | 203.37 | 427.43 | 0.22 | -0.21 | 4.79 |
| 6,010.00 | 0.20 | 39.30 | 5,974.26 | -375.51 | 203.41 | 426.89 | 0.51 | -0.42 | 49.89 |
| 6,105.00 | 0.30 | 61.90 | 6,069.26 | -375.27 | 203.73 | 426.82 | 0.15 | 0.11 | 23.79 |
| 6,200.00 | 0.30 | 105.70 | 6,164.25 | -375.22 | 204.19 | 426.98 | 0.24 | 0.00 | 46.11 |
| 6,295.00 | 0.60 | 128.30 | 6,259.25 | -375.59 | 204.82 | 427.60 | 0.36 | 0.32 | 23.79 |
| 6,390.00 | 0.70 | 136.40 | 6,354.25 | -376.32 | 205.61 | 428.60 | 0.14 | 0.11 | 8.53 |
| 6,486.00 | 1.00 | 134.80 | 6,450.24 | -377.33 | 206.61 | 429.96 | 0.31 | 0.31 | -1.67 |
| 6,581.00 | 1.10 | 135.80 | 6,545.22 | -378.57 | 207.83 | 431.62 | 0.11 | 0.11 | 1.05 |
| 6,676.00 | 0.10 | 197.40 | 6,640.21 | -379.31 | 208.45 | 432.55 | 1.11 | -1.05 | 64.84 |
| 6,772.00 | 0.10 | 343.00 | 6,736.21 | -379.30 | 208.40 | 432.52 | 0.20 | 0.00 | 151.67 |
| 6,867.00 | 0.40 | 125.80 | 6,831.21 | -379.42 | 208.64 | 432.74 | 0.51 | 0.32 | 150.32 |
| 6,962.00 | 1.10 | 133.40 | 6,926.20 | -380.24 | 209.57 | 433.89 | 0.74 | 0.74 | 8.00 |
| 7,057.00 | 0.60 | 156.00 | 7,021.19 | -381.32 | 210.44 | 435.24 | 0.62 | -0.53 | 23.79 |
| 7,152.00 | 0.90 | 310.10 | 7,116.19 | -381.30 | 210.07 | 435.05 | 1.54 | 0.32 | 162.21 |
| 7,248.00 | 0.90 | 316.50 | 7,212.18 | -380.26 | 208.97 | 433.64 | 0.10 | 0.00 | 6.67 |
| 7,343.00 | 1.80 | 326.70 | 7,307.15 | -378.47 | 207.64 | 431.44 | 0.98 | 0.95 | 10.74 |
| 7,438.00 | 1.50 | 323.20 | 7,402.11 | -376.23 | 206.08 | 428.73 | 0.33 | -0.32 | -3.68 |
| 7,533.00 | 1.10 | 302.50 | 7,497.09 | -374.75 | 204.56 | 426.73 | 0.64 | -0.42 | -21.79 |
| 7,629.00 | 0.90 | 285.80 | 7,593.07 | -374.05 | 203.06 | 425.42 | 0.37 | -0.21 | -17.40 |
| 7,724.00 | 0.70 | 260.40 | 7,688.06 | -373.94 | 201.77 | 424.75 | 0.42 | -0.21 | -26.74 |
| 7,819.00 | 0.80 | 231.20 | 7,783.06 | -374.45 | 200.68 | 424.71 | 0.41 | 0.11 | -30.74 |
| 7,914.00 | 0.50 | 217.40 | 7,878.05 | -375.20 | 199.91 | 425.03 | 0.35 | -0.32 | -14.53 |
| 8,010.00 | 0.70 | 200.90 | 7,974.04 | -376.08 | 199.45 | 425.61 | 0.27 | 0.21 | -17.19 |
| 8,105.00 | 0.70 | 163.00 | 8,069.04 | -377.17 | 199.41 | 426.57 | 0.48 | 0.00 | -39.89 |
| 8,200.00 | 1.10 | 157.50 | 8,164.03 | -378.57 | 199.93 | 428.05 | 0.43 | 0.42 | -5.79 |
| 8,295.00 | 1.70 | 169.70 | 8,259.00 | -380.80 | 200.53 | 430.31 | 0.70 | 0.63 | 12.84 |
| 8,391.00 | 2.20 | 164.50 | 8,354.94 | -383.98 | 201.28 | 433.48 | 0.55 | 0.52 | -5.42 |
| 8,486.00 | 2.40 | 159.30 | 8,449.87 | -387.59 | 202.47 | 437.25 | 0.30 | 0.21 | -5.47 |
| 8,581.00 | 2.40 | 158.80 | 8,544.78 | -391.31 | 203.89 | 441.21 | 0.02 | 0.00 | -0.53 |
| 8,676.00 | 2.50 | 157.90 | 8,639.69 | -395.08 | 205.39 | 445.25 | 0.11 | 0.11 | -0.95 |
| 8,772.00 | 2.10 | 156.60 | 8,735.62 | -398.64 | 206.88 | 449.09 | 0.42 | -0.42 | -1.35 |
| 8,867.00 | 2.40 | 141.40 | 8,830.54 | -401.79 | 208.81 | 452.78 | 0.70 | 0.32 | -16.00 |
| **Last Pro Guidance MWD Survey (8867')** | | | | | | | | | |
| 8,917.00 | 2.40 | 141.40 | 8,880.50 | -403.43 | 210.11 | 454.83 | 0.00 | 0.00 | 0.00 |
| **Projected to TD (8917')** | | | | | | | | | |



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Anadarko Petroleum Corporation

# Professional Directional LTD

Survey Report

ProDirectional

| | | | |
|---|---|---|---|
| **Company:** | Anadarko Petroleum Corporation | **Local Co-ordinate Reference:** | Well NBU 1022-3F4CS |
| **Project:** | Uintah Co., UT (UTM) | **TVD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Site:** | Sec 3-T10S-R22E | **MD Reference:** | 5119' GL + 24' KB @ 5143.00ft (SST 8) |
| **Well:** | NBU 1022-3F4CS | **North Reference:** | True |
| **Wellbore:** | Original Hole | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Final Surveys | **Database:** | EDM 5000.1 Single User Db |

**Design Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 2,417.00 | 2,388.93 | -295.20 | 150.39 | Surface Survey Tie-In (2417') |
| 8,867.00 | 8,830.54 | -401.79 | 208.81 | Last Pro Guidance MWD Survey (8867') |
| 8,917.00 | 8,880.50 | -403.43 | 210.11 | Projected to TD (8917') |



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

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-01191

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:** NATURAL BUTTES

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 1022-3F4CS

**2. NAME OF OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**9. API NUMBER:** 43047529130000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779
**PHONE NUMBER:** 720 929-6100

**9. FIELD and POOL or WILDCAT:** NATURAL BUTTES

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2133 FNL 1790 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SENW Section: 03 Township: 10.0S Range: 22.0E Meridian: S

**COUNTY:** UINTAH

**STATE:** UTAH

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT<br>Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ✓ SUBSEQUENT REPORT<br>Date of Work Completion:<br>4/28/2014 | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: WELLBORE CLEANOUT |

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

THE OPERATOR HAS COMPLETED THE FOLLOWING WORKOVER/WELLBORE CLEANOUT ON THE SUBJECT WELL ON 04/28/2014. SEE ATTACHED OPERATIONS SUMMARY REPORT.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
April 30, 2014

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Doreen Green | 435 781-9758 | Regulatory Analyst II |

| SIGNATURE | DATE |
|---|---|
| N/A | 4/29/2014 |

RECEIVED: Apr. 29, 2014

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 1022-3F4CS GREEN | | Spud Date: 9/1/2013 |
| Project: UTAH-UINTAH | Site: NBU 1022-03F PAD | Rig Name No: MILES 2/2, ROCKY MOUNTAIN WELL SERVICE 3/3 |
| Event: WELL WORK EXPENSE | Start Date: 4/22/2014 | End Date: 4/28/2014 |
| Active Datum: RKB @5,141.00usft (above Mean Sea Level) | UWI: SE/NW/0/10/S/22/E/3/0/0/26/PM/N/2133/W/0/1790/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 4/28/2014 | 7:00 - 7:15 | 0.25 | MAINT | 48 | | P | | HSM, JSA |
| | 7:15 - 9:30 | 2.25 | MAINT | 30 | A | P | | MIRU, 260# FCP, CONTROL WELL W/ 30 BBLS T-MAC, ND WH, NU BOP'S, RU FLOOR & TBG EQUIP |
| | 9:30 - 13:00 | 3.50 | MAINT | 31 | I | P | | P/U TBG & TIH, TAG PBTD @ 8846' W/ 17 JTS, TOOH & LD 17 JTS, MIRU SCAN TECH, TOOH & SCAN 2-3/8" TBG & REMOVE SLICKLINE TOOLS, SCAN SHOWED 217 YELLOW JTS, 42 BLUR JTS & 4 RED JTS |
| | 13:00 - 16:00 | 3.00 | MAINT | 31 | I | P | | MU XN, TIH W/ 2-3/8" TBGM BROACH TBG W/ 1.910 BROACH TO XN, LAND TBG ON HANGER W/ 263 JTS TBG |
| | 16:00 - 17:00 | 1.00 | MAINT | 30 | C | P | | ND BOP'S, NU WH, SWI, SDFN |

| | |
|---|---|
| KB | 24' |
| HANGER | .83' |
| 117 JTS 2-3/8" L-80 TBG | 3704.39' |
| 6' PUP JNT 2-3/8" L-80 | 6.13' |
| 147 JTS 2-3/8" J-55 TBG | 4610.47' |
| XN | 1.05' |
| EOT @ | 8346.87' |
| TWLTR | |



RECEIVED: Apr. 29, 2014