**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 921-21E4T |
|---|---|
| 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: 720 929-6587 |
| 8. ADDRESS OF OPERATOR: P.O. Box 173779, Denver, CO, 80217 | 9. OPERATOR E-MAIL: mary.mondragon@anadarko.com |
| 10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE): UTU-0576 / 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'): Ute / 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 | 2313 FNL 696 FWL | SWNW | 21 | 9.0 S | 21.0 E | S |
| Top of Uppermost Producing Zone | 2313 FNL 696 FWL | SWNW | 21 | 9.0 S | 21.0 E | S |
| At Total Depth | 2313 FNL 696 FWL | SWNW | 21 | 9.0 S | 21.0 E | S |

| 21. COUNTY: UINTAH | 22. DISTANCE TO NEAREST LEASE LINE (Feet): 696 | 23. NUMBER OF ACRES IN DRILLING UNIT: 1480 |
|---|---|---|
| | 25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed): 20 | 26. PROPOSED DEPTH: MD: 10100 TVD: |
| 27. ELEVATION - GROUND LEVEL: 4838 | 28. BOND NUMBER: WYB000291 | 29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE: Permit #43-8496 |

**ATTACHMENTS**

**VERIFY THE FOLLOWING ARE ATTACHED IN ACCORCANCE 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 Kevin McIntyre | TITLE Regulatory Analyst I | PHONE 720 929-6226 |
|---|---|---|
| SIGNATURE | DATE 09/17/2008 | EMAIL Kevin.McIntyre@anadarko.com |

| API NUMBER ASSIGNED | APPROVAL |
|---|---|
| 43047501100000 | Permit Manager |

| Proposed Hole, Casing, and Cement | | | | | | |
|---|---|---|---|---|---|---|
| **String** | **Hole Size** | **Casing Size** | **Top (MD)** | **Bottom (MD)** | | |
| Surf | 12.25 | 9.625 | 0 | 2600 | | |
| **Pipe** | **Grade** | **Length** | **Weight** | | | |
| | Grade J-55 LT&C | 2600 | 36.0 | | | |
| | | | | | | |
| | **Cement Interval** | **Top (MD)** | **Bottom (MD)** | | | |
| | | 0 | 2600 | | | |
| | | **Cement Description** | **Class** | **Sacks** | **Yield** | **Weight** |
| | | | Premium Foamed Cement | 215 | 1.18 | 15.6 |
| | | | | | | |

| Proposed Hole, Casing, and Cement | | | | | | |
|---|---|---|---|---|---|---|
| **String** | **Hole Size** | **Casing Size** | **Top (MD)** | **Bottom (MD)** | | |
| Prod | 7.875 | 4.5 | 0 | 10100 | | |
| **Pipe** | **Grade** | **Length** | **Weight** | | | |
| | Grade I-80 LT&C | 10100 | 11.6 | | | |
| | | | | | | |
| | **Cement Interval** | **Top (MD)** | **Bottom (MD)** | | | |
| | | 0 | 10100 | | | |
| | | **Cement Description** | **Class** | **Sacks** | **Yield** | **Weight** |
| | | | Premium Lite High Strength | 490 | 3.38 | 11.0 |
| | | | Pozzuolanic Cement | 1580 | 1.31 | 14.3 |
| | | | | | | |

API Well No: 43047501100000

KerrMcGee

# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

| | | | | | |
|---|---|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | | DATE | September 4, 2008 | |
| WELL NAME | NBU 921-21E4T | | TD | 10,100' MD/TVD | |
| FIELD | Natural Buttes | COUNTY Uintah | STATE Utah | ELEVATION 4,838' GL | KB 4,853' |
| SURFACE LOCATION | SWNW 2313' FNL & 696' FWL Sec. 21, T 9S R 21E | | | BHL | Straight Hole |
| | Latitude: 40.022519 | Longitude: -109.562989 | NAD 27 | | |
| OBJECTIVE ZONE(S) | Wasatch/Mesaverde | | | | |
| ADDITIONAL INFO | Regulatory Agencies: BLM (MINERALS), BIA (SURFACE), UDOGM, Tri-County Health Dept. | | | | |

| GEOLOGICAL LOGS | GEOLOGICAL FORMATION TOPS | GEOLOGICAL DEPTH | MECHANICAL HOLE SIZE | MECHANICAL CASING SIZE | MECHANICAL MUD WEIGHT |
|---|---|---|---|---|---|
| | | 40' | 14" | | |
| | | | 12-1/4" | 9-5/8", 36#, J-55, LTC | Air mist |
| Catch water sample, if possible, from 0 to 4,968' | Green River @ | 1,608' | | | |
| | Top of Birds Nest Water @ | 1,926' | | | |
| | Mahogany @ | 2411' | | | |
| | Preset f/ GL @ | 2,600' MD | | | |
| Note: 12.25" surface hole will usually be drilled ±400' below the bottom of lost circulation zone. Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone. | | | | | |
| Mud logging program TBD<br>Open hole logging program f/ TD - surf csg | | | 7-7/8" | 4-1/2", 11.6#, I-80 or equivalent LTC casing | Water/Fresh Water Mud 8.3-11.5 ppg |
| | Wasatch @ | 4,968' | | | |
| | Mverde @ | 7,949' | | | |
| | MVU2 @ | 8,952' | | | |
| | MVL1 @ | 9,475' | | | |
| | TD @ | 10,100' | | | Max anticipated Mud required 11.8 ppg |

# DRILLING PROGRAM

## CASING PROGRAM

| | SIZE | INTERVAL | WT. | GR. | CPLG. | DESIGN FACTORS BURST | COLLAPSE | TENSION |
|---|---|---|---|---|---|---|---|---|
| CONDUCTOR | 14" | 0-40' | | | | | | |
| | | | | | | 3520 | 2020 | 453000 |
| SURFACE | 9-5/8" | 0 to 2,600' | 36.00 | J-55 | LTC | 0.89 | 1.66 | 5.53 |
| | | | | | | 7780 | 6350 | 201000 |
| PRODUCTION | 4-1/2" | 0 to 10100 | 11.60 | I-80 | LTC | 1.96 | 1.02 | 1.97 |

1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point)

2) MASP (Prod Casing) = Pore Pressure at TD - (.22 psi/ft-partial evac gradient x TD)

(Burst Assumptions: TD = 11.8 ppg) .22 psi/ft = gradient for partially evac wellbore

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

MASP 4040 psi

## CEMENT PROGRAM

| | | FT. OF FILL | DESCRIPTION | SACKS | EXCESS | WEIGHT | YIELD |
|---|---|---|---|---|---|---|---|
| SURFACE | LEAD | 500 | Premium cmt + 2% CaCl + .25 pps flocele | 215 | 60% | 15.60 | 1.18 |
| Option 1 | TOP OUT CMT (1 | 250 | 20 gals sodium silicate + Premium cmt + 2% CaCl + .25 pps flocele | 100 | | 15.60 | 1.18 |
| | TOP OUT CMT (2 | as required | Premium cmt + 2% CaCl | as req. | | 15.60 | 1.18 |
| SURFACE | | NOTE: If well will circulate water to surface, option 2 will be utilized | | | | | |
| Option 2 | LEAD | 2000 | Prem cmt + 16% Gel + 10 pps gilsonite +.25 pps Flocele + 3% salt BWOC | 230 | 35% | 11.00 | 3.82 |
| | TAIL | 500 | Premium cmt + 2% CaCl + .25 pps flocele | 180 | 35% | 15.60 | 1.18 |
| | TOP OUT CMT | as required | Premium cmt + 2% CaCl | as req. | | 15.60 | 1.18 |
| PRODUCTION | LEAD | 4,460' | Premium Lite II + 3% KCl + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender | 490 | 60% | 11.00 | 3.38 |
| | TAIL | 5,640' | 50/50 Poz/G + 10% salt + 2% gel +.1% R-3 | 1580 | 60% | 14.30 | 1.31 |

*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. Centralize first 3 joints & every third joint to top of tail cement with bow spring centralizers. |
| | |

## 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. Test to 5,000 psi (annular to 2,500 psi) prior to drilling out. Record on chart recorder & tour sheet. Function test rams on each trip. Maintain safety valve & inside BOP on rig floor at all times. Kelly to be equipped with upper & lower kelly valves.

Drop Totco surveys every 2000'. Maximum allowable hole angle is 5 degrees.

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

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

Brad Laney

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

Randy Bayne

# NBU 921-21E4T
# Twin to NBU #127
# SWNW Sec. 21, T9S,R21E
# UINTAH COUNTY, UTAH
# UTU-0576

## ONSHORE ORDER NO. 1

## *DRILLING PROGRAM*

1. **Estimated Tops of Important Geologic Markers:**

| Formation | Depth |
|---|---|
| Uinta | 0- Surface |
| Green River | 1608' |
| Bird's Nest | 1926' |
| Mahogany | 2411' |
| Wasatch | 4968' |
| Mesaverde | 7949' |
| MVU2 | 8952' |
| MVL1 | 9475' |
| TD | 10,100' |

2. **Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

| Substance | Formation | Depth |
|---|---|---|
| | Green River | 1608' |
| | Bird's Nest | 1926' |
| | Mahogany | 2411' |
| Gas | Wasatch | 4968' |
| Gas | Mesaverde | 7949' |
| Gas | MVU2 | 8952' |
| Gas | MVL1 | 9475' |
| Water | N/A | |
| Other Minerals | N/A | |

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

*Please see the Natural Buttes Unit Standard Operating Procedure (SOP).*

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

*Please see the Natural Buttes Unit SOP.*

5. **Drilling Fluids Program:**

*Please see the Natural Buttes Unit SOP.*

6. **Evaluation Program:**

*Please see the Natural Buttes Unit SOP.*

7. **Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 10,100' TD, approximately equals 6262 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 4040 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

8. **Anticipated Starting Dates:**

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

9. **Variances:**

*Please see Natural Buttes Unit SOP 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.*

*The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 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 9-5/8 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.*

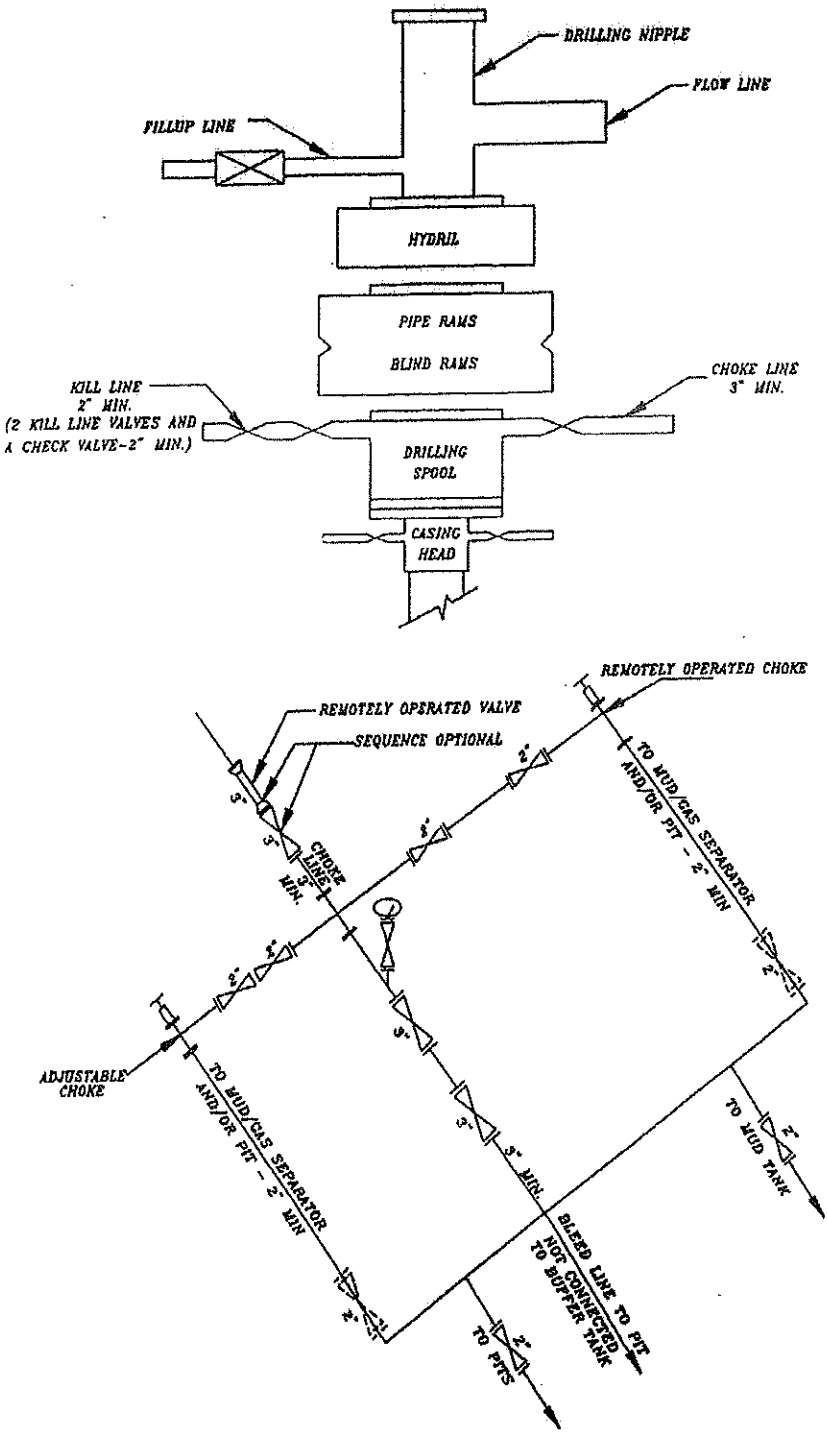
*Conclusion*
*The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above..*

**10. Other Information:**

*Please see Natural Buttes Unit SOP.*

NBU 921-21E4T

# EXHIBIT A




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

**NBU 921-21E4T**
**Twin to NBU #127**
**SWNW Sec. 21 ,T9S,R21E**
**UINTAH COUNTY, UTAH**
**UTU-0576**

# ONSHORE ORDER NO. 1

## *MULTI-POINT SURFACE USE & OPERATIONS PLAN*

1. **Existing Roads:**

   Refer to the attached location directions.

   Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

2. **Planned Access Roads:**

   No new access road is planned, as this is a twin location. Refer to Topo Map B.

   ***Existence of pipelines; maximum grade; turnouts; major cut and fills, culverts, or bridges; gates, cattle guards, fence cuts, or modifications to existing facilities were determined at the on-site.***

   *Please see the Natural Buttes Unit Standard Operating Procedure (SOP).*

3. **Location of Existing Wells Within a 1-Mile Radius:**

   Please refer to Topo Map C.

4. **Location of Existing & Proposed Facilities:**

   *Please see the Natural Buttes Unit SOP.*

   Refer to Topo Map D for the location of the proposed pipelines.

   **A 2600' rights-of-way will be required. Approximately 2600' of 4" steel pipeline is proposed from the location to the tie-in point in Section 16, T9S, R21E. Please refer to the Topo Map D. The pipeline will be constructed utilizing existing rights were possible and pulled into place using a rubber tired tractor. The pipeline will be butt-welded together.**

**Variances to Best Management Practices (BMPs) Requested:**

Approximately 2600' of 4" steel pipeline will be installed on surface within the access corridor for the well location. As a Best Management Practice (BMP), the pipeline would be buried within the access road corridor if possible. The construction of pipelines requires the corridor of 30 feet.

This exception to the BMP should be granted by the BLM Authorized Officer because indurated bedrock, such as sandstone, is at or within 2 feet of the surface and the soil has a poor history for successful rehabilitation.

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The requested color is Carlsbad Canyon Brown (2.5Y 6/2), a non-reflective earthtone.

Interim Surface Reclamation Plan:

This exception is requested due to the current twin and multi-well program. If determined that this well will not be a candidate for either twinning &/or multi-well the operator shall spread the topsoil pile on the location up to the rig anchor points. The location will be reshaped to the original contour to the extent possible. The operator will reseed the area using the BLM recommended seed mixture and reclamation methods.

5. **Location and Type of Water Supply:**

*Please see the Natural Buttes SOP.*

6. **Source of Construction Materials:**

*Please see the Natural Buttes SOP.*

7. **Methods of Handling Waste Materials:**

*Please see the Natural Buttes SOP.*

A plastic reinforced liner is to be used as discussed during on-site inspection. It will be a minimum of 20 mil thick and felt, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit.

Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to one of the pre-approved disposal sites: RNI, Sec. 5, T9S, R22E, NBU #159, Sec. 35, T9S R21E, Ace Oilfield, Sec. 2, T6S, R20E, MC&MC, Sec. 12, T6S, R19E, Pipeline Facility Sec. 36, T9S, R20E,Goat Pasture Evaporation Pond SW/4 Sec. 16, T10S, R22E, Bonanza Evaporation Pond Sec. 2, T10S, R23E *(Request is in lieu of filing Form 3160-5, after initial production).*

8. **Ancillary Facilities:**

*Please see the Natural Buttes SOP.*

9. **Well Site Layout:** (See Location Layout Diagram)

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

Please see the attached diagram to describe rig orientation, parking areas, and access roads.

Location size may change prior to the drilling of the well due to the current rig availability. If the proposed location is not large enough to accommodate the drilling rig. The location will be re-surveyed and a form 3160-5 will be submitted.

10. **Plans for Reclamation of the Surface:**

*Please see the Natural Buttes SOP.*

upon reclamation of the pit the following seed mixture will be used. A total of 12 lbs/acre will be used if the seeds are drilled (24 lbs/acre if the seeds are broadcast). The per acre requirements for ***drilled*** seed are:

Crested Wheatgrass 12 lbs.

Operator shall call the BLM for the seed mixture when final reclamation occurs.

11. **Surface/Mineral Ownership:**

The well pad and access road are located on lands owned by:

Ute Indian Tribe
P.O. Box 70
Fort Duchesne, Utah 84026
(435) 722-5141

The mineral ownership is listed below:

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

**12. Stipulations/Notices/Mitigation:**

There are no stipulations or notices for this location.

**13. Other Information:**

A Class III archaeological survey and a paleontological survey have been performed and will be submitted.

This location is not within 460' from the boundary of the Natural Buttes Unit, nor is it within 460' of any non-committed tract lying within the boundaries of the Unit.

**14. Lessee's or Operator's Representative & Certification:**

Kevin McIntyre
Regulatory Analyst
Kerr-McGee Oil & Gas Onshore LP
P.O. Box 173779
Denver, CO 80217-3779
(720) 929-6226

Randy Bayne
Drilling Manager
Kerr-McGee Oil & Gas Onshore LP
1368 South 1200 East
Vernal, UT 84078
(435) 781-7018

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.

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 the terms and conditions of the lease for the operations conducted upon leased lands.

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.

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 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 by the Operator, its contractors, and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Kevin McIntyre

*9/4/2008*
Date

# Kerr-McGee Oil & Gas Onshore LP
## NBU #921-21F4S, #921-21E4T, #921-21L1S & #921-21E1S
## SECTION 21, T9S, R21E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 6.9 MILES ON THE SEEP RIDGE ROAD TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.0 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTH; TURN LEFT AND PROCEED IN A NORTHERLY DIRECTION APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 1.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN LEFT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 2.5 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN LEFT AND PROCEED IN A SOUTHWESTERLY DIRECTION APPROXIMATELY 1.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN LEFT AND PROCEED IN A SOUTHWESTERLY DIRECTION APPROXIMATELY 0.6 MILES TO THE BEGINNING OF THE EXISTING ACCESS TO THE NORTHWEST; TURN RIGHT AND PROCEED IN A NORTHWESTERLY DIRECTION APPROXIMATELY 25' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 49.3 MILES.

# Kerr-McGee Oil & Gas Onshore LP

## NBU #921-21F4S, #921-21E4T, #921-21L1S & #921-21E1S

**LOCATED IN UINTAH COUNTY, UTAH**
**SECTION 21, T9S, R21E, S.L.B.&M.**

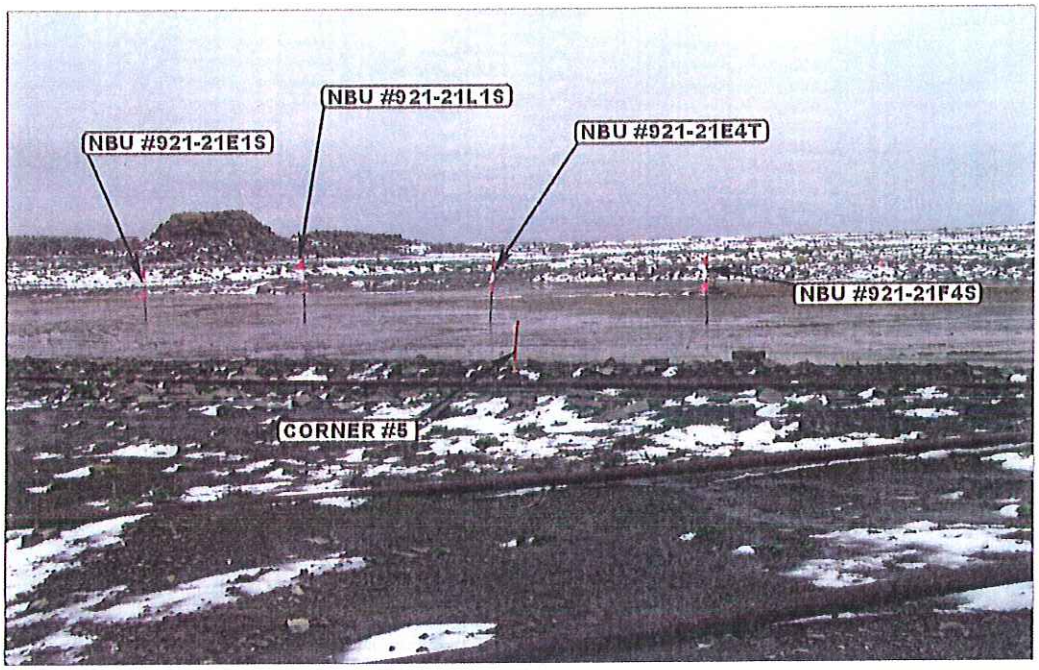



PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKES — CAMERA ANGLE: NORTHEASTERLY


PHOTO: VIEW OF EXISTING ACCESS — CAMERA ANGLE: NORTHWESTERLY

- Since 1964 -
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

| LOCATION PHOTOS | 06 MONTH | 30 DAY | 08 YEAR | PHOTO |
|---|---|---|---|---|
| TAKEN BY: D.K. | DRAWN BY: J.J. | REVISED: 00-00-00 | | |

# Kerr-McGee Oil & Gas Onshore LP

## NBU #921-21F4S, #921-21E4T, #921-21L1S & #921-21E1S

**LOCATED IN UINTAH COUNTY, UTAH**
**SECTION 21, T9S, R21E, S.L.B.&M.**


PHOTO: VIEW ALONG PIPELINE — CAMERA ANGLE: SOUTHERLY

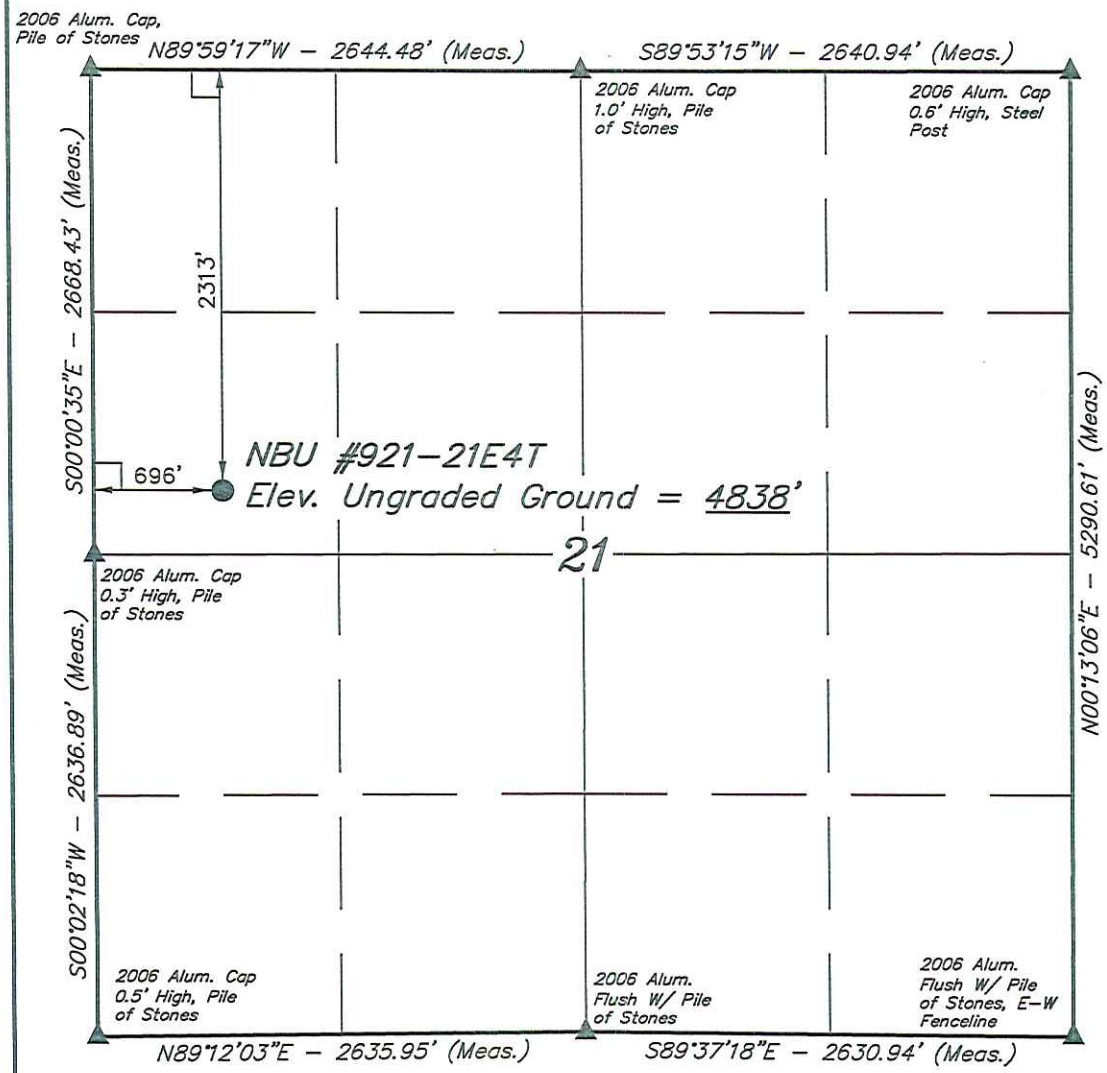

PHOTO: VIEW OFTIE-IN AT 8" — CAMERA ANGLE: SOUTHERLY

- Since 1964 -

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

| LOCATION PHOTOS | 06 MONTH | 30 DAY | 08 YEAR | PHOTO |
|---|---|---|---|---|
| TAKEN BY: D.K. | DRAWN BY: J.J. | REVISED: 00-00-00 | | |

# T9S, R21E, S.L.B.&M.




## Kerr–McGee Oil & Gas Onshore LP

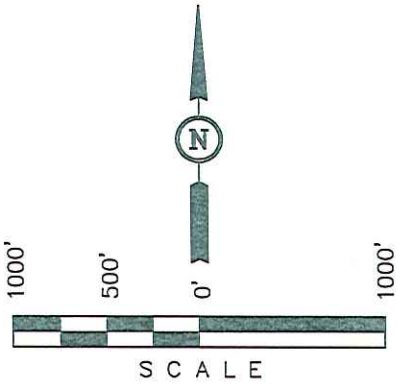
Well location, NBU #921–21E4T, located as shown in the SW 1/4 NW 1/4 of Section 21, T9S, R21E, S.L.B.&M., Uintah County, Utah.

### BASIS OF ELEVATION

TWO WATER TRIANGULATION STATION LOCATED IN THE NW 1/4 OF SECTION 1, T10S, R21E, S.L.B.&M. TAKEN FROM THE BIG PACK MTN NE, QUADRANGLE, UTAH, UINTAH COUNTY, 7.5 MINUTE QUAD. (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 5238 FEET.

### BASIS OF BEARINGS

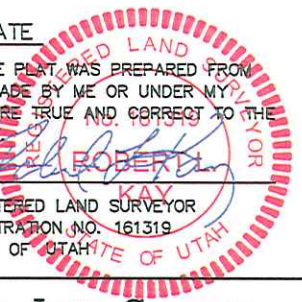
BASIS OF BEARINGS IS A G.P.S. OBSERVATION.




### 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.

REGISTERED LAND SURVEYOR
REGISTRATION NO. 161319
STATE OF UTAH




**LEGEND:**

└ = 90° SYMBOL

● = PROPOSED WELL HEAD.

▲ = SECTION CORNERS LOCATED.

(NAD 83)
LATITUDE = 40°01'20.94" (40.022483)
LONGITUDE = 109°33'49.24" (109.563678)
(NAD 27)
LATITUDE = 40°01'21.07" (40.022519)
LONGITUDE = 109°33'46.76" (109.562989)


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


| SCALE | DATE SURVEYED: | DATE DRAWN: |
|---|---|---|
| 1" = 1000' | 04–30–08 | 06–09–08 |
| PARTY: D.K. C.K. C.C. | REFERENCES: G.L.O. PLAT | |
| WEATHER: WARM | FILE: Kerr–McGee Oil & Gas Onshore LP | |

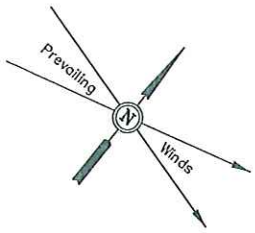
API Well No: 43047501100000

# Kerr-McGee Oil & Gas Onshore LP

SITE PLAN LAYOUT FOR

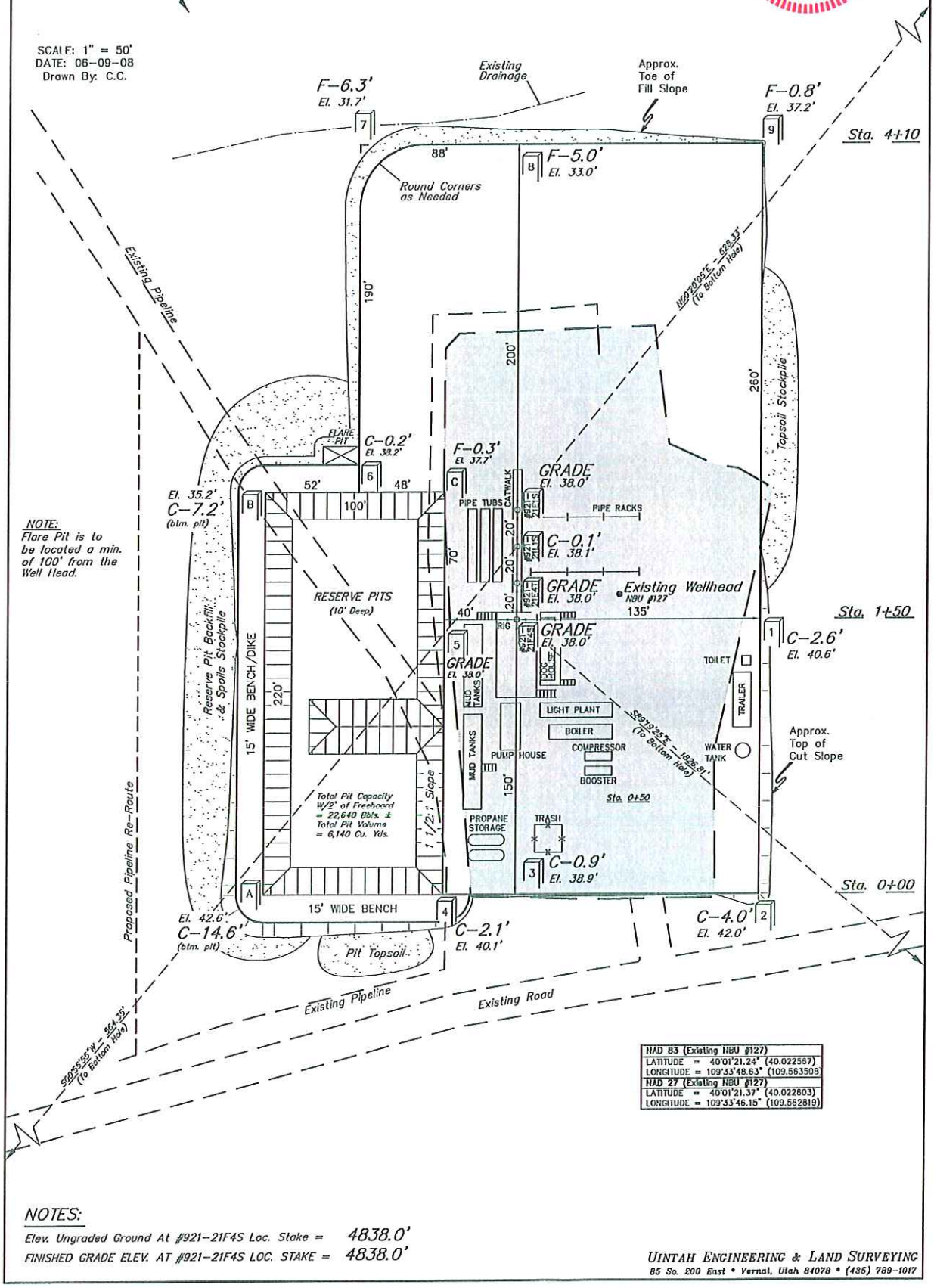
NBU #921-21F4S, #921-21E4T,
#921-21L1S & #921-21E1S
SECTION 21, T9S, R21E, S.L.B.&M.
SW 1/4 NW 1/4

FIGURE #1





SCALE: 1" = 50'
DATE: 06-09-08
Drawn By: C.C.




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

| NAD 83 (Existing NBU #127) |
|---|
| LATITUDE = 40°01'21.24" (40.022567) |
| LONGITUDE = 109°33'48.63" (109.563508) |
| NAD 27 (Existing NBU #127) |
| LATITUDE = 40°01'21.37" (40.022603) |
| LONGITUDE = 109°33'46.15" (109.562819) |

NOTES:

Elev. Ungraded Ground At #921-21F4S Loc. Stake = 4838.0'
FINISHED GRADE ELEV. AT #921-21F4S LOC. STAKE = 4838.0'


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

# Kerr-McGee Oil & Gas Onshore LP

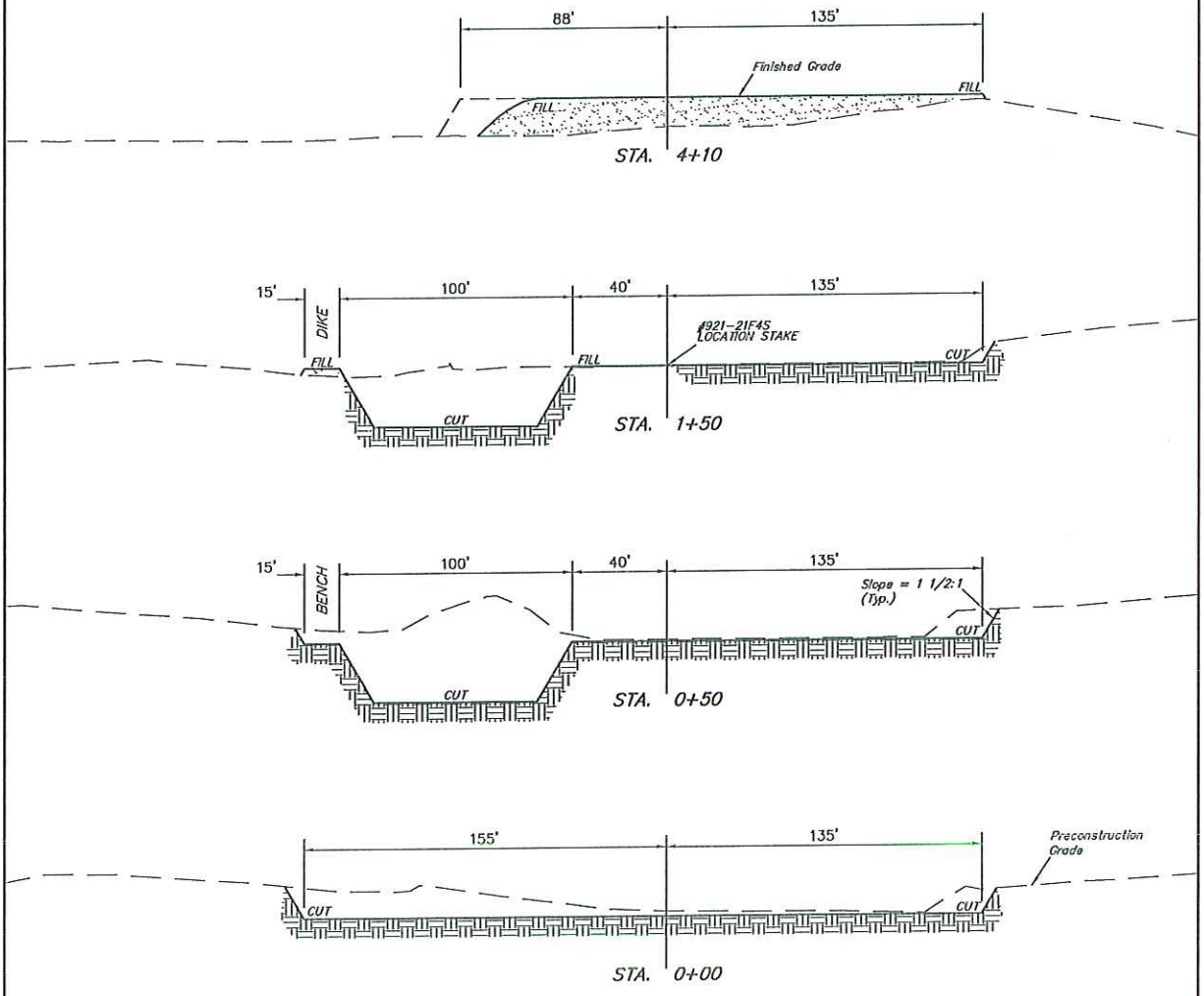
TYPICAL CROSS SECTIONS FOR
NBU #921-21F4S, #921-21E4T,
#921-21L1S & #921-21E1S
SECTION 21, T9S, R21E, S.L.B.&M.
SW 1/4 NW 1/4

FIGURE #2

1" = 20'
X-Section Scale
1" = 50'

DATE: 06-09-08
Drawn By: C.C.

REGISTERED LAND SURVEYOR
No. 161319
ROBERT L. KAY
STATE OF UTAH




* NOTE:
FILL QUANTITY INCLUDES
5% FOR COMPACTION

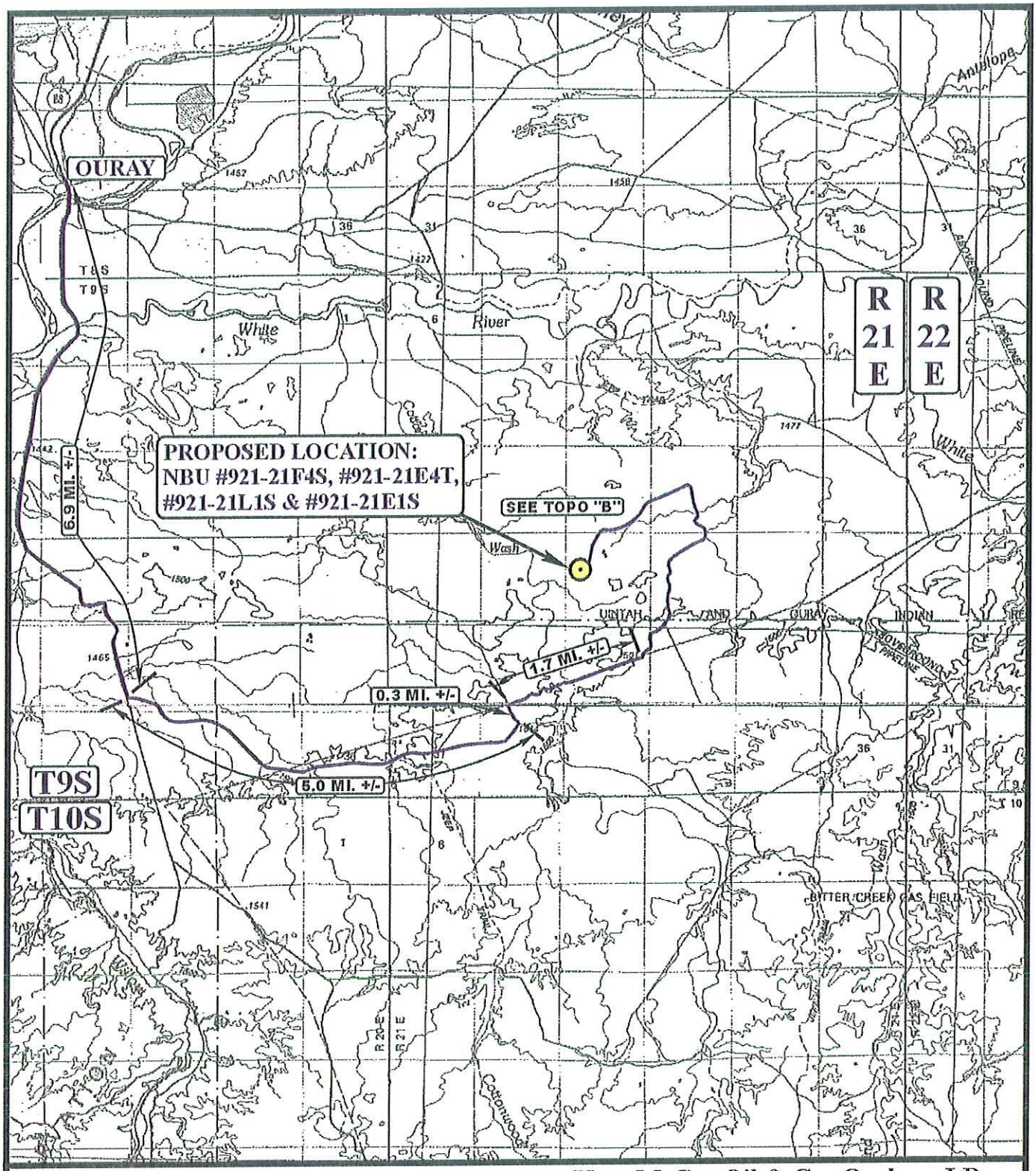
## APPROXIMATE YARDAGES

| | | |
|---|---|---|
| CUT | | |
| (12") Topsoil Stripping (New Construction Only) | = 2,370 | Cu. Yds. |
| Remaining Location | = 7,770 | Cu. Yds. |
| TOTAL CUT | = 10,140 | CU.YDS. |
| FILL | = 5,830 | CU.YDS. |

| | | |
|---|---|---|
| EXCESS MATERIAL | = 4,310 | Cu. Yds. |
| Topsoil & Pit Backfill (1/2 Pit Vol.) | = 5,440 | Cu. Yds. |
| DEFECIT UNBALANCE (After Interim Rehabilitation) | = <1,130> | Cu. Yds. |

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

API Well No: 43047501100000




**LEGEND:**

PROPOSED LOCATION

N

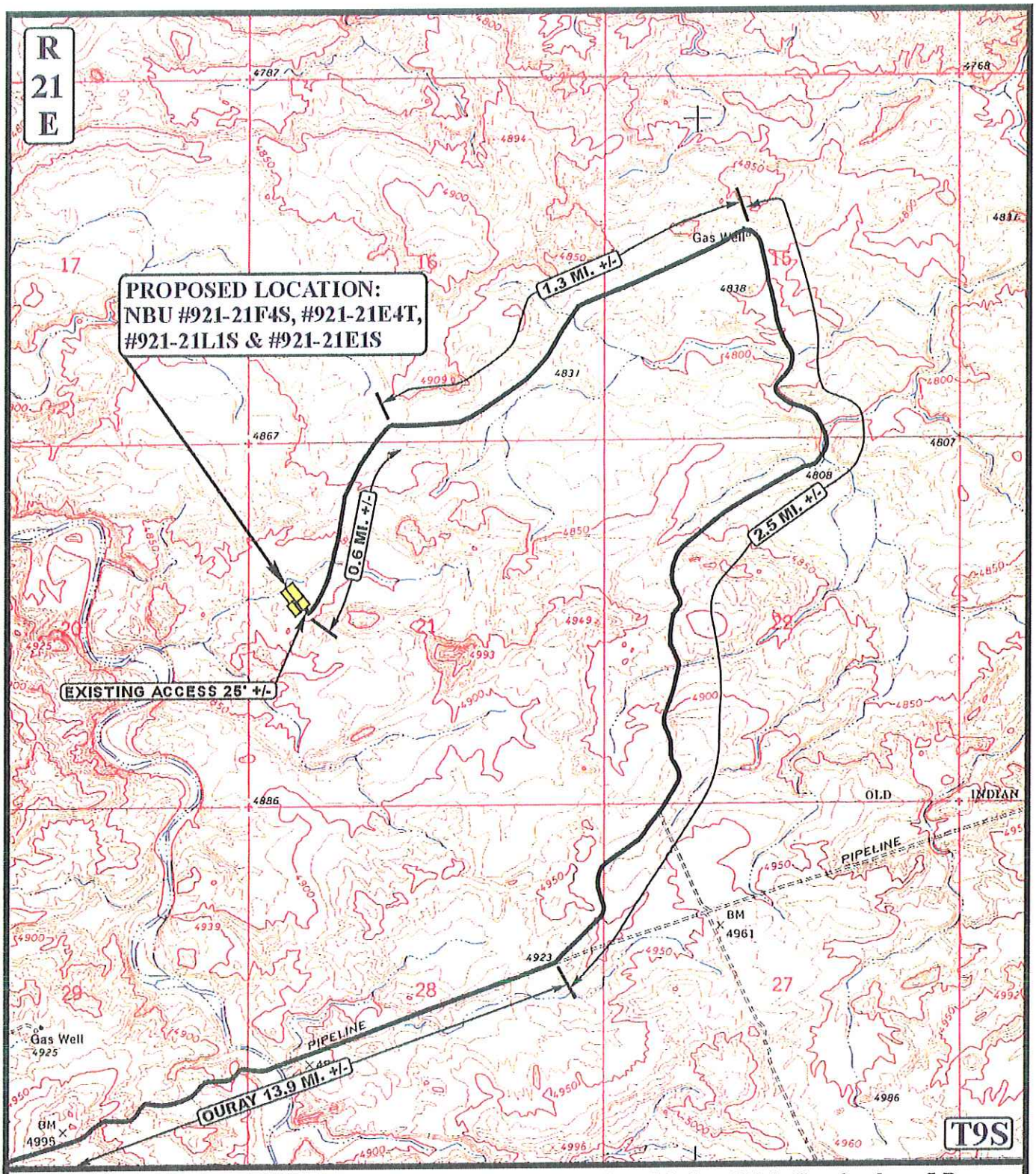
**Kerr-McGee Oil & Gas Onshore LP**

NBU #921-21F4S, #921-21E4T, #921-21L1S & #921-21E1S
SECTION 21, T9S, R21E, S.L.B.&M.
SW 1/4 NW 1/4


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


| TOPOGRAPHIC MAP | 06 MONTH | 30 DAY | 08 YEAR | A TOPO |
|---|---|---|---|---|
| SCALE: 1:100,000 | DRAWN BY: J.J. | REVISED: 00-00-00 | | |

API Well No: 43047501100000




**LEGEND:**

EXISTING ROAD

PROPOSED ACCESS ROAD

N

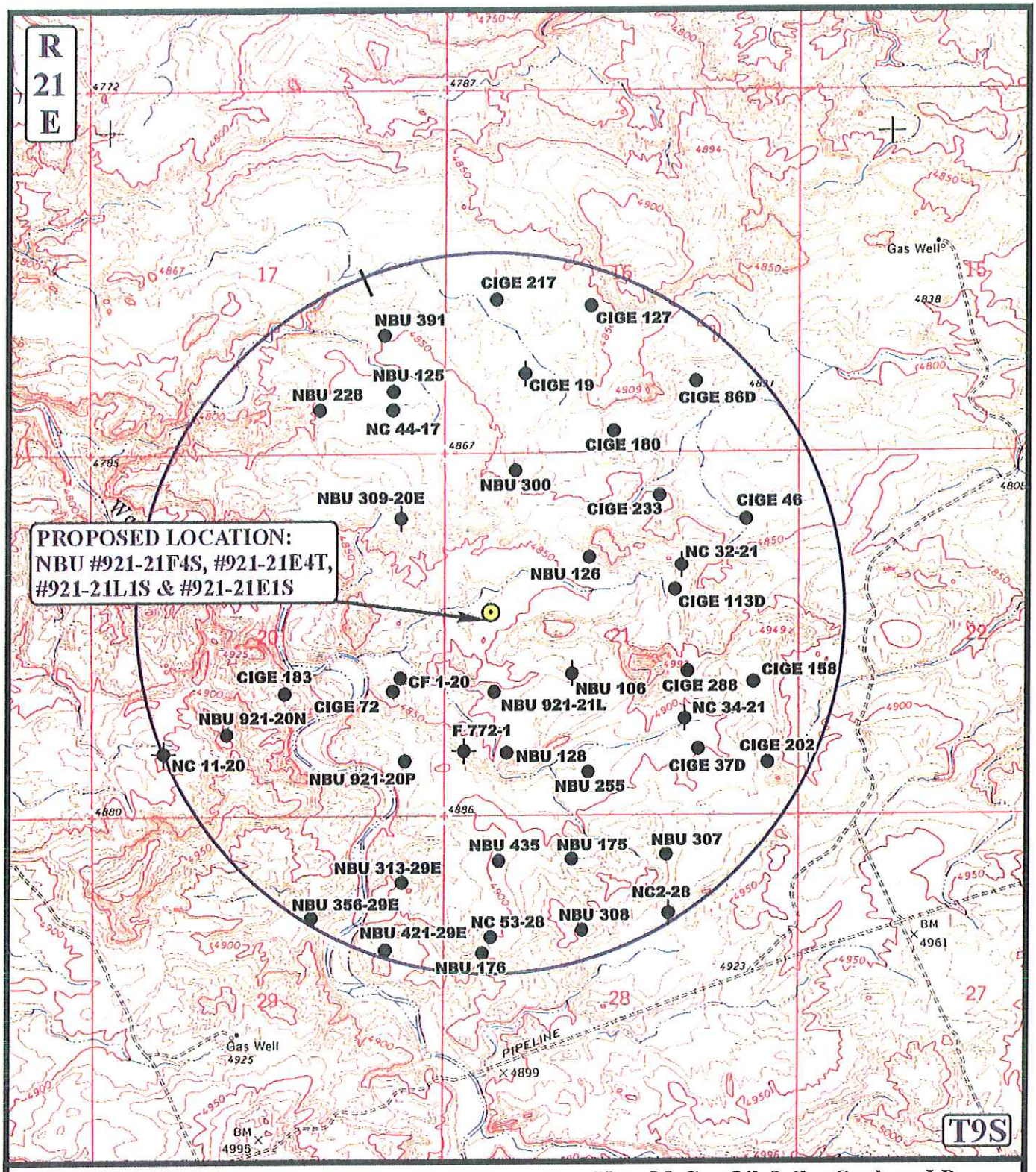
**Kerr-McGee Oil & Gas Onshore LP**

NBU #921-21F4S, #921-21E4T, #921-21L1S & #921-21E1S
SECTION 21, T9S, R21E, S.L.B.&M.
SW 1/4 NW 1/4


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


| TOPOGRAPHIC MAP | 06 MONTH | 30 DAY | 08 YEAR | B TOPO |
|---|---|---|---|---|
| SCALE: 1" = 2000' | DRAWN BY: J.J. | REVISED: 00-00-00 | | |

API Well No: 43047501100000




**LEGEND:**

- DISPOSAL WELLS
- PRODUCING WELLS
- SHUT IN WELLS
- WATER WELLS
- ABANDONED WELLS
- TEMPORARILY ABANDONED

N

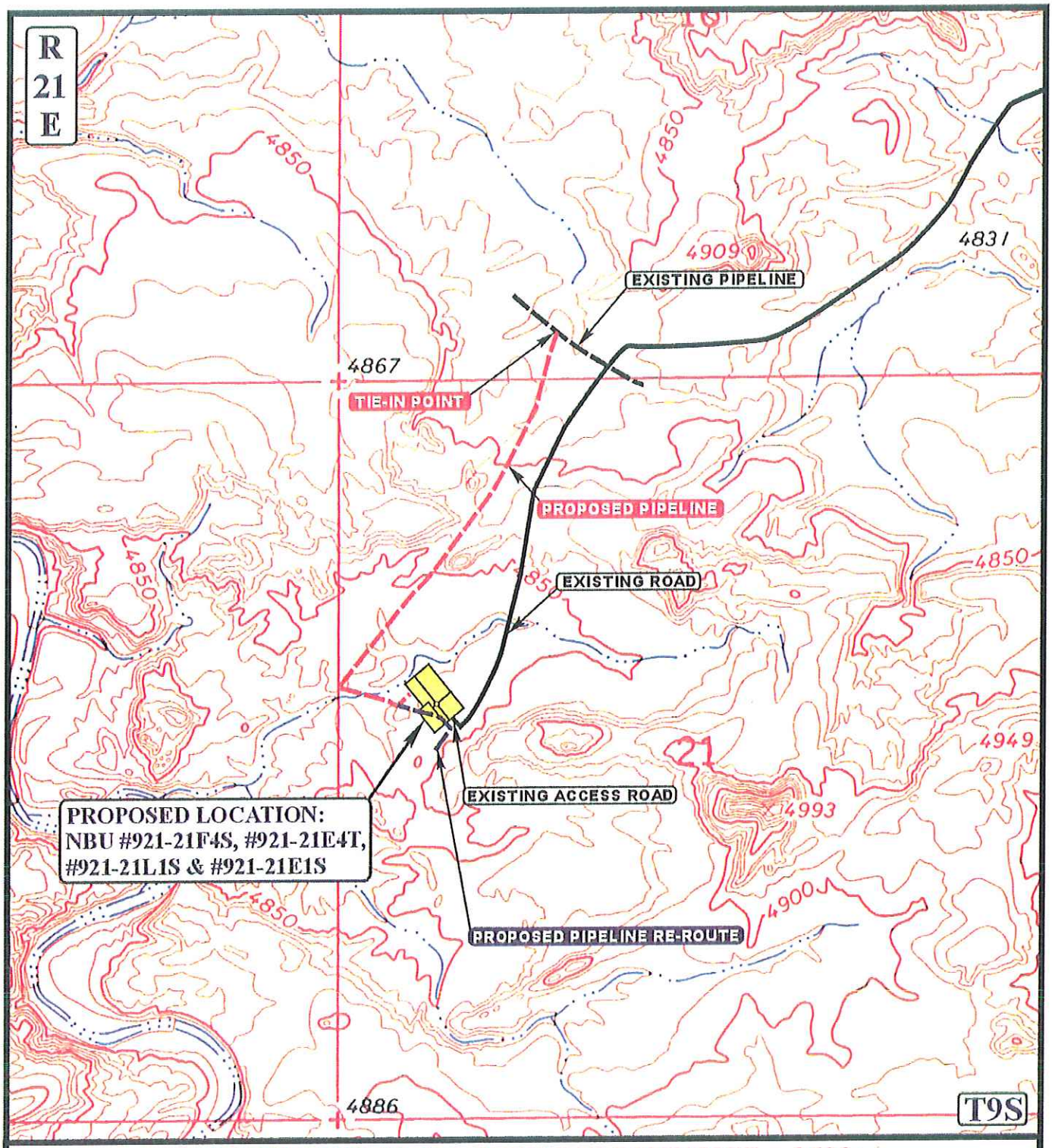
**Kerr-McGee Oil & Gas Onshore LP**

NBU #921-21F4S, #921-21E4T, #921-21L1S & #921-21E1S
SECTION 21, T9S, R21E, S.L.B.&M.
SW 1/4 NW 1/4


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


| TOPOGRAPHIC MAP | 06 MONTH | 30 DAY | 08 YEAR | C TOPO |
|---|---|---|---|---|
| SCALE: 1" = 2000' | DRAWN BY: J.J. | REVISED: 00-00-00 | | |

API Well No: 43047501100000




APPROXIMATE TOTAL PIPELINE DISTANCE = 2600+/-

**LEGEND:**

EXISTING ROAD
EXISTING PIPELINE
PROPOSED PIPELINE RE-ROUTE
PROPOSED PIPELINE

N

**Kerr-McGee Oil & Gas Onshore LP**

NBU #921-21F4S, #921-21E4T, #921-21L1S & #921-21E1S
SECTION 21, T9S, R21E, S.L.B.&M.
SW 1/4 NW 1/4


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


| TOPOGRAPHIC MAP | 06 MONTH | 30 DAY | 08 YEAR | D TOPO |
|---|---|---|---|---|
| SCALE: 1" = 1000' | DRAWN BY: J.J. | REVISED: 00-00-00 | | |

# API Number: 4304750110

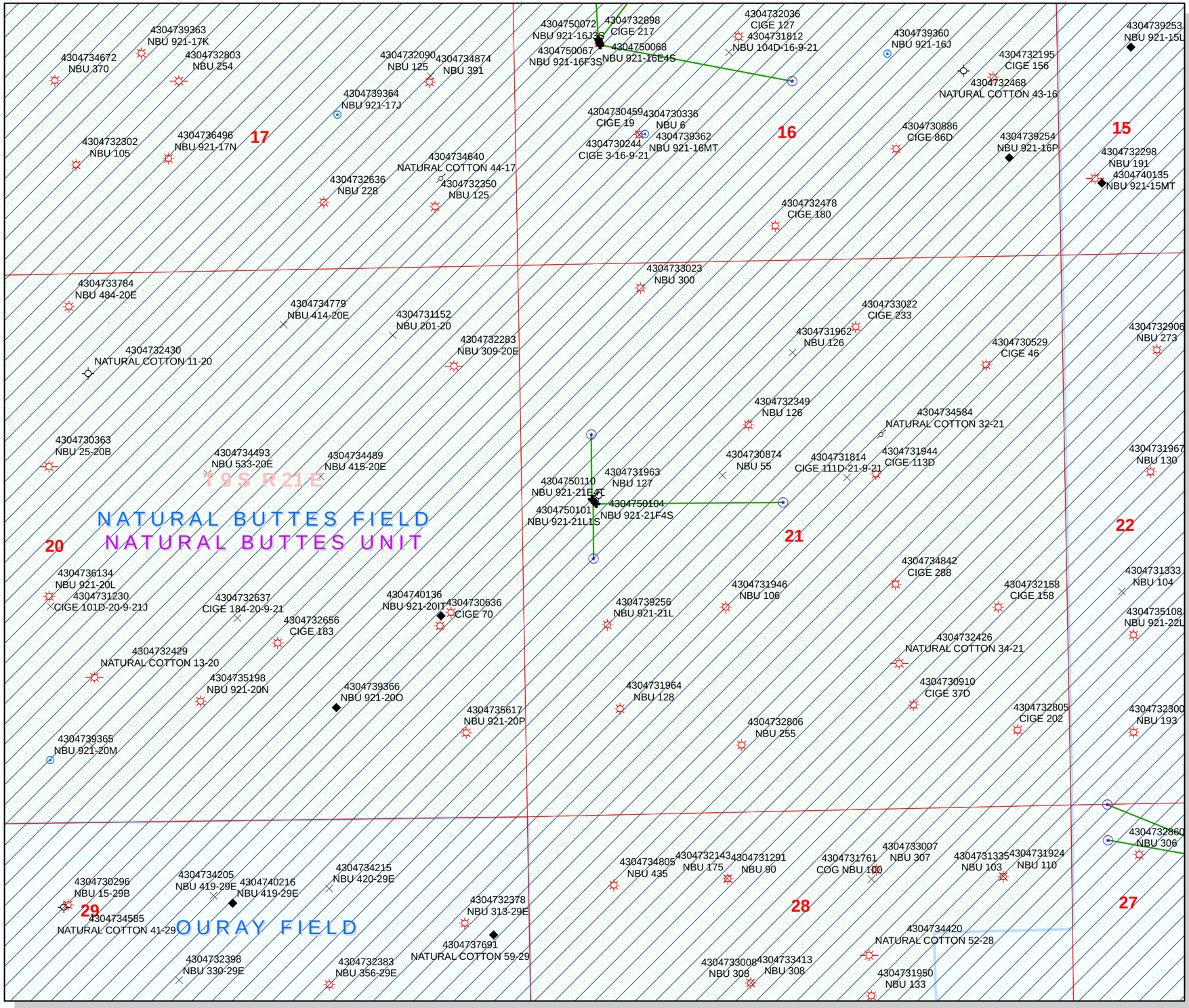
# Well Name: NBU 921-21E4T

**Township 09.0 S Range 21.0 E Section 21**

**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**
- ACTIVE
- COMBINED
- Sections
- Township

**Wells Query Events**
- <all other values>

**GIS_STAT_TYPE**
- <Null>
- APD
- DRL
- GI
- GS
- LA
- NEW
- OPS
- PA
- PGW
- POW
- RET
- SGW
- SOW
- TA
- TW
- WD
- WI
- WS
- Bottom Hole Location



1:12,000

API Well No: 43047501100000

# 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)**

September 15, 2008

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2008 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 2008 within the Natural Buttes Unit, Uintah County, Utah.

| API # | WELL NAME | LOCATION |
|---|---|---|
| (Proposed PZ Wasatch/MesaVerde) | | |
| 43-047-50106 | NBU 921-8A4T | Sec 08 T09S R21E 0946 FNL 0600 FEL |
| 43-047-50107 | NBU 921-8B4S | Sec 08 T09S R21E 0986 FNL 0604 FEL |
| | BHL | Sec 08 T09S R21E 1080 FNL 1749 FEL |
| 43-047-50109 | NBU 921-8A1S | Sec 08 T09S R21E 0926 FNL 0599 FEL |
| | BHL | Sec 08 T09S R21E 0307 FNL 0575 FEL |
| 43-047-50110 | NBU 921-21E4T | Sec 21 T09S R21E 2313 FNL 0696 FWL |
| 43-047-50111 | NBU 921-11GT | Sec 11 T09S R21E 2110 FNL 1800 FEL |
| 43-047-50112 | NBU 921-11HT | Sec 11 T09S R21E 1807 FNL 0790 FEL |
| 43-047-50113 | NBU 920-24B | Sec 24 T09S R20E 0473 FNL 2377 FEL |

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

/s/ Michael L. Coulthard

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

MCoulthard:mc:9-15-08

# WORKSHEET
# APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 9/8/2008 **API NO. ASSIGNED:** 43047501100000

**WELL NAME:** NBU 921-21E4T

**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995) **PHONE NUMBER:** 720 929-6226

**CONTACT:** Kevin McIntyre

**PROPOSED LOCATION:** SWNW 21 090S 210E **Permit Tech Review:** ☑

**SURFACE:** 2313 FNL 0696 FWL **Engineering Review:** ☐

**BOTTOM:** 2313 FNL 0696 FWL **Geology Review:** ☑

**COUNTY:** UINTAH

**LATITUDE:** 40.02244 **LONGITUDE:** -109.56297

**UTM SURF EASTINGS:** 622629.00 **NORTHINGS:** 4431027.00

**FIELD NAME:** NATURAL BUTTES

**LEASE TYPE:** 1 - Federal

**LEASE NUMBER:** UTU-0576 **PROPOSED FORMATION:** WSMVD

**SURFACE OWNER:** 2 - Indian **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:** Permit #43-8496
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ☐ **Intent to Commingle**

**LOCATION AND SITING:**

- ☐ **R649-2-3.**

  **Unit:** NATURAL BUTTES
- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ☑ **Drilling Unit**

  **Board Cause No:** 173-14

  **Effective Date:** 12/2/1999

  **Siting:** 460' fr u bdry & uncomm. tract
- ☐ **R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:** 4 - Federal Approval - dmason
17 - Oil Shale 190-5(b) - dmason

JON M. HUNTSMAN, JR.
Governor
GARY R. HERBERT
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 921-21E4T
**API Well Number:** 43047501100000
**Lease Number:** UTU-0576
**Surface Owner:** INDIAN
**Approval Date:** 9/17/2008

**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.

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

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

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

In accordance with 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.

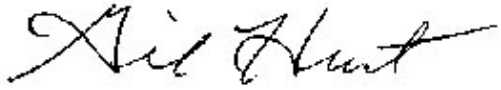
**Notification Requirements:**
Notify the Division with 24 hours of spudding the well.
- Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.
- Contact Dustin Doucet at (801) 538-5281 office (801) 733-0983 home

API Well No: 43047501100000

**Reporting Requirements:**
All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

**Approved By:**



Gil Hunt
Associate Director, Oil & Gas

API Well No: 43047501100000

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

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

**PHONE NUMBER:** 720 929-6007 Ext

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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 Approximate date work will start: 9/14/2009 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DRILLING REPORT Report Date: | ☐ 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.**

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:** September 14, 2009

**By:**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Danielle Piernot | 720 929-6156 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 9/10/2009 |

**RECEIVED** September 10, 2009

**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 43047501100000

**API:** 43047501100000
**Well Name:** NBU 921-21E4T
**Location:** 2313 FNL 0696 FWL QTR SWNW SEC 21 TWNP 090S RNG 210E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 9/18/2008

**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**

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

**Signature:** Danielle Piernot **Date:** 9/10/2009
**Title:** Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date:** September 14, 2009

**By:** 

**RECEIVED** September 10, 2009

API Well No: 43047501100000

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

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

## 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:** Ute

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6007 Ext

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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: 9/20/2010 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| ☐ DRILLING REPORT<br>Report Date: | ☐ 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.**

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:** September 28, 2010

**By:**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Danielle Piernot | 720 929-6156 | Regulatory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 9/20/2010 |

**RECEIVED** September 20, 2010

**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 43047501100000

**API:** 43047501100000
**Well Name:** NBU 921-21E4T
**Location:** 2313 FNL 0696 FWL QTR SWNW SEC 21 TWNP 090S RNG 210E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 9/18/2008

**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**

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

**Signature:** Danielle Piernot **Date:** 9/20/2010
**Title:** Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date:** September 28, 2010

**By:** 

**RECEIVED** September 20, 2010

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

**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:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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: 8/22/2011 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DRILLING REPORT<br>Report Date: | ☐ 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.**

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:** 08/22/2011

**By:** Dustin Doucet

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Andy Lytle | 720 929-6100 | Regulatory Analyst |
| **SIGNATURE** N/A | | **DATE** 8/22/2011 |

**RECEIVED** Aug. 22, 2011

# 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 43047501100000

**API:** 43047501100000
**Well Name:** NBU 921-21E4T
**Location:** 2313 FNL 0696 FWL QTR SWNW SEC 21 TWNP 090S RNG 210E MER S
**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.
**Date Original Permit Issued:** 9/18/2008

**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:** Andy Lytle **Date:** 8/22/2011
**Title:** Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**RECEIVED** Aug. 22, 2011

Form 3160-3
(August 2007)

RECEIVED
FEB 17 2011
BLM

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

| | |
|---|---|
| 1a. Type of Work: ☒ DRILL ☐ REENTER | 5. Lease Serial No. UTU0576 |
| | 6. If Indian, Allottee or Tribe Name |
| | 7. If Unit or CA Agreement, Name and No. UTU63047A |
| 1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone | 8. Lease Name and Well No. NBU 921-21E4T |
| 2. Name of Operator KERRMCGEE OIL&GAS ONSHORE LP Contact: DANIELLE E PIERNOT Mail: Danielle.Piernot@anadarko.com | 9. API Well No. 43-047-50110 |
| 3a. Address PO BOX 173779 DENVER, CO 80202-3779 / 3b. Phone No. (include area code) Ph: 720-929-6156 Fx: 720-929-7156 | 10. Field and Pool, or Exploratory NATURAL BUTTES |
| 4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface SWNW 2313FNL 696FWL 40.02248 N Lat, 109.56368 W Lon; At proposed prod. zone SWNW 2313FNL 696FWL 40.02248 N Lat, 109.56368 W Lon | 11. Sec., T., R., M., or Blk. and Survey or Area Sec 21 T9S R21E Mer SLB |
| 14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 14 MILES SOUTHEAST OF OURAY, 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) 696 FEET / 16. No. of Acres in Lease 1480.00 | 17. Spacing Unit dedicated to this well |
| 18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. APPROXIMATELY 630 FEET / 19. Proposed Depth 10100 MD 10100 TVD | 20. BLM/BIA Bond No. on file WYB000291 |
| 21. Elevations (Show whether DF, KB, RT, GL, etc. 4838 GL / 22. Approximate date work will start 06/01/2011 | 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 | Name (Printed/Typed) | Date |
|---|---|---|
| (Electronic Submission) | DANIELLE E PIERNOT Ph: 720-929-6156 | 02/17/2011 |

Title: REGULATORY ANALYST I

| Approved by (Signature) | Name (Printed/Typed) | Date |
|---|---|---|
| | Jerry Kenczka | OCT 04 2011 |
| 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.

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.

RECEIVED
OCT 12 2011
DIV. OF OIL, GAS & MINING

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

**Electronic Submission #102790 verified by the BLM Well Information System**
**For KERRMCGEE OIL&GAS ONSHORE LP, sent to the Vernal**
**Committed to AFMSS for processing by ROBIN R. HANSEN on 02/23/2011 ()**

UDOGM

## NOTICE OF APPROVAL

CONDITIONS OF APPROVAL ATTACHED

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

11RRH1263AE

NO NOS

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:** | **SWNW, Sec. 21, T9S R21E** |
| **Well No:** | **NBU 921-21E4T** | **Lease No:** | **UTU-0576** |
| **API No:** | **43-047-50110** | **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

| | | |
|---|---|---|
| Construction Activity<br>(Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist) | - | The Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist shall be notified at least 48 hours in advance of any construction activity. The Ute Tribal office is open Monday through Thursday. |
| Construction Completion<br>(Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist) | - | Upon completion of the pertinent APD/ROW construction, notify the Ute Tribe Energy & Minerals Dept. for a Tribal Technician to verify the Affidavit of Completion. Notify the BLM Environmental Scientist prior to moving on the drilling rig. |
| Spud Notice<br>(Notify BLM Petroleum Engineer) | - | Twenty-Four (24) hours prior to spudding the well. |
| Casing String & Cementing<br>(Notify BLM Supv. Petroleum Tech.) | - | Twenty-Four (24) hours prior to running casing and cementing all casing strings to: ut_vn_opreport@blm.gov. |
| BOP & Related Equipment Tests<br>(Notify BLM Supv. Petroleum Tech.) | - | Twenty-Four (24) hours prior to initiating pressure tests. |
| First Production Notice<br>(Notify BLM 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 horsepower must not emit more than 2 gms of $NO_x$ per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.

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

- Paint all facilities "Shadow Gray."

- Monitor by a permitted paleontologist during construction operations.

- Construct diversion drainages around the west side of the well pad.

- In accordance with the guidelines specified in the Utah BLM Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002, a raptor survey should be conducted prior to construction of the proposed location, pipeline, or access road if construction would take place during raptor nesting season (January 1 through September 30) and conduct its operations according to specifications in the guidelines.

- If project construction operations are not initiated before June 17, 2010, KMG should conduct additional biological surveys in accordance with the guidelines specified in the USFWS Rare Plant Conservation Measures for Uinta Basin hookless cactus (See Appendix D) and conduct its operation according to its specifications.

**BIA Standard Conditions of Approval:**

- Soil erosion will be mitigated by reseeding all disturbed areas.

- The gathering pipelines will be constructed to lie on the surface. The surface pipelines will not be bladed or cleared of vegetation. Where pipelines are constructed parallel to roads they may be welded on the road and then lifted from the road onto the right-of-way. Where pipelines do not parallel roads but cross-country between sites, they shall be welded in place at well sites or on access roads and then pulled between stations with a suitable piece of equipment. Traffic will be restricted along these areas so that the pipeline right-of-way will not be used as an access road.

- An open drilling system shall be used, unless otherwise specified in 10.0 Additional Stipulations of this document and in the Application for Permit to Drill. A closed drilling system shall be used in all flood plain areas, and other highly sensitive areas, recommended by the Ute Tribe Technician, BIA, and other agencies involved.

- The reserve pit shall be lined with a synthetic leak proof liner. After the drilling operation is complete, excess fluids shall be removed from the reserve pit and either hauled to an approved disposal site or shall be used to drill other wells. When the fluids are removed the pit shall be backfilled a minimum of 3.0' below the soil surface elevation.

- A closed production system shall be used. This means all produced water and oil field fluid wastes shall be contained in leak proof tanks. These fluids shall be disposed of in either approved injection wells or disposal pits.

- Major low water crossings will be armored with pit run material to protect them from erosion.

- All personnel should refrain from collecting any paleontological fossils and from disturbing any fossil resources in the area.

- If fossils are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.

- Before the site is abandoned the company will be required to restore the right-of-way to near its original state. The disturbed area will be reseeded with desirable perennial vegetation. If necessary, the Bureau of Indian Affairs or Bureau of Land Management will provide a suitable seed mixture.

- Noxious weeds will be controlled on all surface disturbances within the project area. If noxious weeds spread from the project area onto adjoining land, the company will also be responsible for their control.

- If project construction operations are scheduled to occur after December 31, 2009, KMG should conduct annual raptor surveys in accordance with the guidelines specified in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002. If active raptor nest are identified during a new survey, KMG should conduct its operations according to the seasonal restrictions detailed in the Uinta basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines (See Appendix D).

- USFWS threatened and endangered plant and animal conservation measures will be followed, as appropriate to the species identified by the biological resource survey (See Appendix D).

- All personnel should refrain from collecting artifacts and from disturbing any significant cultural resources in the area.

- If artifacts or any culturally sensitive materials are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.

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

**SITE SPECIFIC DOWNHOLE COAs:**

- A copy of Kerr McGee's Standard Operating Practices (SOP version: dated 7/17/08 and approved 7/28/08) shall be on location.
- Surface casing cement shall be brought to surface.
- Production casing cement shall be brought 200' up and into the surface casing.

**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 top of cement 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 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.

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

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

**PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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 |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☑ SPUD REPORT<br>Date of Spud:<br>2/27/2012 | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ DRILLING REPORT<br>Report Date: | ☐ 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.**

MIRU TRIPPLE A BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL ON 02/27/2012 AT 1200 HRS.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
March 02, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Sheila Wopsock | 435 781-7024 | Regulatory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 3/1/2012 |

RECEIVED: Mar. 01, 2012

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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 |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT<br>Report Date:<br>3/9/2012 | ☐ 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.**

MIRU AIR RIG ON MARCH 7, 2012. DRILLED SURFACE HOLE TO 2,860'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Jaime Scharnowske | 720 929-6304 | Regulartory Analyst |
| **SIGNATURE** N/A | | **DATE** 3/12/2012 |

RECEIVED: Mar. 12, 2012

Sundry Number: 24008 API Well Number: 43047501100000

**FEDERAL APPROVAL OF THIS ACTION IS NECESSARY**

**FORM 9**

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

**5.LEASE DESIGNATION AND SERIAL NUMBER:**
UTU-0576

## 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:**
Ute

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

**1. TYPE OF WELL**
Gas Well

**8. WELL NAME and NUMBER:**
NBU 921-21E4T

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

**9. API NUMBER:**
43047501100000

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

**PHONE NUMBER:**
720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:**
2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**
Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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:<br>3/19/2012 | ☐ 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 |
| ☐ 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: |

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

The operator requests approval to deepen the well to the Blackhawk formation (part of the Mesaverde Group). The Operator also requests approval for a FIT waiver, a closed loop drilling option, a surface casing change and a production casing change. All other aspects of the previously approved drilling plan will not change. Please see the attachment. Thank you.

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

**Date:** March 26, 2012

**By:**

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Jaime Scharnowske | 720 929-6304 | Regulartory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 3/19/2012 |

RECEIVED: Mar. 19, 2012

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

**NBU 921-21E4T**

Surface: 2313 FNL / 696 FWL SWNW

Section 21 T9S R21E

Unitah County, Utah
Mineral Lease: UTU-0576

**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 | 1,598' | |
| Birds Nest | 1,934' | Water |
| Mahogany | 2,413' | Water |
| Wasatch | 4,971' | Gas |
| Mesaverde | 7,924' | Gas |
| Sego | 10,178' | Gas |
| Castlegate | 10,268' | Gas |
| Blackhawk | 10,660' | Gas |
| TVD | 11,260' | |
| TD | 11,260' | |

**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

RECEIVED: Mar. 19, 2012

**5. Drilling Fluids Program:**

Please refer to the attached Drilling Program

**6. Evaluation Program:**

Please refer to the attached Drilling Program

**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 11260' TVD, approximately equals 7,432 psi (0.66 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 5,006 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.

RECEIVED: Mar. 19, 2012

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.

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.

RECEIVED: Mar. 19, 2012

**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.

**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.

RECEIVED: Mar. 19, 2012

# KERR-McGEE OIL & GAS ONSHORE LP

## DRILLING PROGRAM

| | | | | | |
|---|---|---|---|---|---|
| COMPANY NAME | KERR-McGEE OIL & GAS ONSHORE LP | | | DATE | March 19, 2012 |
| WELL NAME | **NBU 921-21E4T** | | | TD | 11,260' TVD 11,260' MD |
| FIELD | Natural Buttes | COUNTY Uintah | STATE Utah | FINISHED ELEVATION | 4,838' |
| SURFACE LOCATION | SWNW 2313 FNL 696 FWL | Sec 21 | T 9S | R 21E | |
| | Latitude: 40.022483 | Longitude: -109.563678 | | NAD 83 | |
| OBJECTIVE ZONE(S) | BLACKHAWK (Part of the Mesaverde Group) | | | | |
| ADDITIONAL INFO | Regulatory Agencies: BLM (Minerals), BIA (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' | | |
| | | | 11' | 8-5/8", 28#, IJ-55, LTC | Air mist |
| | Green River @ | 1,598' | | | |
| | Top of Birds Nest @ | 1,934' | | | |
| | Mahogany @ | 2,413' | | | |
| | Preset f/ GL @ 2,860' TVD | | | | |
| | Wasatch @ | 4,971' | | | |
| | Mverde @ | 7,924' TVD | | | |
| | Sego @ | 10,178' TVD | | | |
| | Castlegate @ | 10,268' TVD | | | |
| | MN5 @ | 10,660' TVD | | | |
| | TD @ | 11,260' TVD<br>11,260' MD | 7-7/8" | 4-1/2" 11.6# HCP-110 Ultra DQX/LTC csg | Water / Fresh Water Mud 8.3-13.0 ppg |

**All water flows encountered while drilling will be reported to the appropriate agencies.**

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.

Mud logging program TBD
Cased hole logging program from TD - surf csg

Max anticipated Mud required 13.0 ppg

# 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 | 2,860 | 28.00 | IJ-55 | LTC | 1.88 | 1.40 | 4.96 | N/A |
| | | | | | | | | 10,690 | 8,650 | 279,000 | 367,000 |
| PRODUCTION | 4-1/2" | 0 | to | 5,000 | 11.60 | HCP-110 | DQX | 1.19 | 1.14 | | 3.51 |
| | 4-1/2" | 5,000 | to | 11,260' | 11.60 | HCP-110 | LTC | 1.19 | 1.14 | 4.79 | |

**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 | 2,360' | 65/35 Poz + 6% Gel + 10 pps gilsonite | 220 | 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 | 4,470' | Premium Lite II +0.25 pps | 350 | 35% | 12.00 | 3.38 |
| | | | celloflake + 5 pps gilsonite + 10% gel | | | | |
| | | | + 0.5% extender | | | | |
| | TAIL | 6,790' | 50/50 Poz/G + 10% salt + 2% gel | 1,600 | 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. 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:** _____

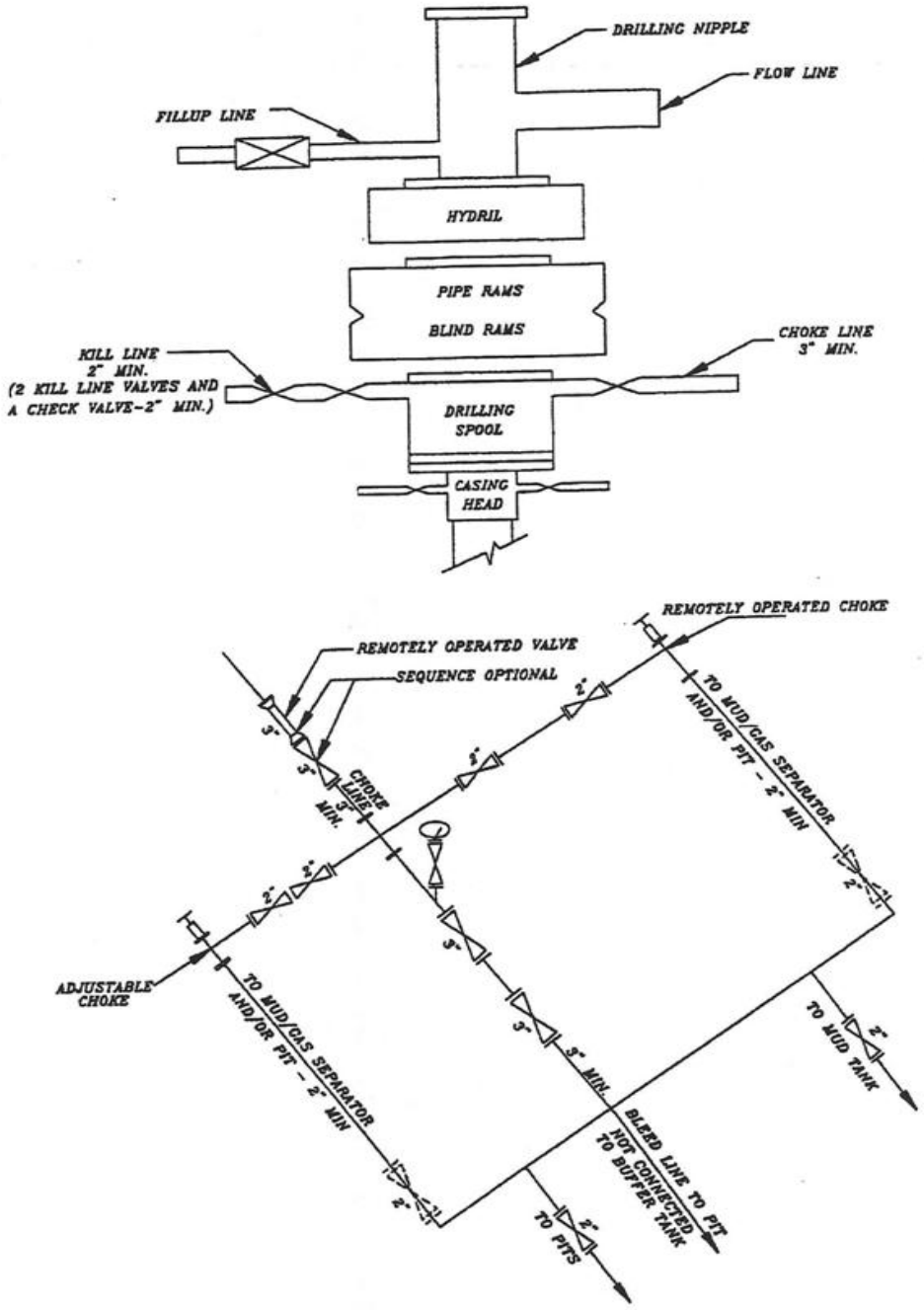
Nick Spence / Danny Showers / Chad Loesel

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

Kenny Gathings / Lovel Young

RECEIVED: Mar. 19, 2012

**EXHIBIT A**
**NBU 921-21E4T**




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

RECEIVED: Mar. 19, 2012

Requested Drilling Options:

Kerr-McGee will use either a closed loop drilling system that will require one pit and one cuttings storage area to be constructed on the drilling pad or a traditional drilling operation with one pit used for drilling and completion operations. The cuttings storage area will be used to contain only the de-watered drill cuttings and will be lined and bermed to prevent any liquid runoff. The drill cuttings will be buried in the completion pit once completion operations are completed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit will be lined with a synthetic material 20 mil or thicker and will be used for the completing of the wells on the pad or used as part of our Aandarko Completions Transportation System (ACTS). 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/completions pit.

If Kerr-McGee does not use a closed loop drilling system, it will construct a traditional drilling/completions pit to contain drill cuttings and for use in completion operations. The pit will be lined with a synthetic material 20 mil or thicker. The drill cuttings will be buried in the pit using traditional pit closure standards.

RECEIVED: Mar. 19, 2012

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

FORM 6

# ENTITY ACTION FORM

Operator: KERR McGEE OIL & GAS ONSHORE LP

Operator Account Number: N 2995

Address: 1368 SOUTH 1200 EAST

city VERNAL

state UT zip 84078

Phone Number: (435) 781-7024

Well 1

C

| API Number | Well Name | | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|---|
| 4304750104 | NBU 921-21F4S | | SWNW | 21 | 9S | 21E | UINTAH |
| **Action Code** | **Current Entity Number** | **New Entity Number** | **Spud Date** | | | **Entity Assignment Effective Date** | |
| | 99999 | 2900 | 2/27/2012 | | | 3/1/2012 | |

Comments: MIRU TRIPPLE A BUCKET RIG. WSMVD
SPUD WELL ON 02/27/2012 AT 0900 HRS.

Well 2

| API Number | Well Name | | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|---|
| 4304750110 | NBU 921-21E4T | | SWNW | 21 | 9S | 21E | UINTAH |
| **Action Code** | **Current Entity Number** | **New Entity Number** | **Spud Date** | | | **Entity Assignment Effective Date** | |
| B | 99999 | 2900 | 2/27/2012 | | | 3/1/2012 | |

Comments: MIRU TRIPPLE A BUCKET RIG.
SPUD WELL ON 02/27/2012 AT 1200 HRS.
WSMVD

Well 3

| API Number | Well Name | | QQ | Sec | Twp | Rng | County |
|---|---|---|---|---|---|---|---|
| 4304750101 | NBU 921-21L1S | | SWNW | 21 | 9S | 21E | UINTAH |
| **Action Code** | **Current Entity Number** | **New Entity Number** | **Spud Date** | | | **Entity Assignment Effective Date** | |
| B | 99999 | 2900 | 2/27/2012 | | | 3/1/2012 | |

Comments: MIRU TRIPPLE A BUCKET RIG.
SPUD WELL ON 02/27/2012 AT 1500 HRS. BHL NWSW
WSMVD

ACTION CODES:

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

SHEILA WOPSOCK
Name (Please Print)

Signature

REGULATORY ANALYST
Title

3/1/2012
Date

RECEIVED
MAR 01 2012
Div. of Oil, Gas & Mining

(5/2000)

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

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

**PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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 |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT<br>Report Date:<br>5/15/2012 | ☐ 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.**

MIRU ROTARY RIG. FINISHED DRILLING FROM 2860' TO 11184' ON 5/12/2012. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED H&P 298 RIG ON 5/15/2012 @ 5:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
May 15, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Cara Mahler | 720 929-6029 | Regulatory Analyst I |
| **SIGNATURE** N/A | | **DATE** 5/15/2012 |

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

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

**PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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 |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT<br>Report Date:<br>7/6/2012 | ☐ 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.**

No activity for the month of June 2012. Well TD at 11,184'.

**Accepted by the**
**Utah Division of**
**Oil, Gas and Mining**
**FOR RECORD ONLY**
July 09, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Jaime Scharnowske | 720 929-6304 | Regulartory Analyst |
| **SIGNATURE** N/A | | **DATE** 7/6/2012 |

RECEIVED: Jul. 06, 2012

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

**3. ADDRESS OF OPERATOR:** P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 720 929-6526

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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 Approximate date work will start: | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| ☐ SUBSEQUENT REPORT Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT Report Date: 7/25/2012 | ☐ 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.**

THE SUBJECT WELL WAS PLACED ON PRODUCTION ON 7/25/2012. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.

**Accepted by the Utah Division of Oil, Gas and Mining**
**FOR RECORD ONLY**
August 02, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Cara Mahler | 720 929-6029 | Regulatory Analyst I |
| **SIGNATURE** N/A | | **DATE** 7/27/2012 |

**RECEIVED: Jul. 27, 2012**

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

FORM 9

## 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.

**5.LEASE DESIGNATION AND SERIAL NUMBER:** UTU-0576

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

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

**1. TYPE OF WELL** Gas Well

**8. WELL NAME and NUMBER:** NBU 921-21E4T

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

**9. API NUMBER:** 43047501100000

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

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

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:** 2313 FNL 0696 FWL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:** Qtr/Qtr: SWNW Section: 21 Township: 09.0S Range: 21.0E 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 |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ✓ DRILLING REPORT<br>Report Date:<br>9/5/2012 | ☐ 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.**

Well was completed, finishing well completion report. Well TD at 11,184.

**Accepted by the**
**Utah Division of**
**Oil, Gas and Mining**
**FOR RECORD ONLY**
September 05, 2012

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Jaime Scharnowske | 720 929-6304 | Regulartory Analyst |
| **SIGNATURE** N/A | | **DATE** 9/5/2012 |

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. UTU0576

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 & GAS ONSHORE LP — Contact: CARA MAHLER — E-Mail: cara.mahler@anadarko.com

8. Lease Name and Well No. NBU 921-21E4T

3. Address 1099 18TH STREET, SUITE 1800, DENVER, CO 80202

3a. Phone No. (include area code) Ph: 720-929-6029

9. API Well No. 43-047-50110

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

At surface SWNW 2313FNL 696FWL 40.022484 N Lat, 109.563678 W Lon

At top prod interval reported below SWNW 2313FNL 696FWL 40.022484 N Lat, 109.563678 W Lon

At total depth SWNW ~~2313~~FNL ~~696~~FWL 40.022484 N Lat, 109.563678 W Lon BHL by HSM 13160 724

10. Field and Pool, or Exploratory NATURAL BUTTES

11. Sec., T., R., M., or Block and Survey or Area Sec 21 T9S R21E Mer SLB

12. County or Parish UINTAH

13. State UT

14. Date Spudded 02/27/2012

15. Date T.D. Reached 05/12/2012

16. Date Completed ☐ D & A ☒ Ready to Prod. 07/25/2012

17. Elevations (DF, KB, RT, GL)* 4838 GL

18. Total Depth: MD 11184 TVD 11182

19. Plug Back T.D.: MD 11155 TVD 11153

20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)
BHV-SD/DSN/ACTR-CBL/GR/COLLARS

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 IJ-55 | 28.0 | 0 | 2852 | | 530 | | 0 | |
| 7.875 | 4.500 P110 | 11.6 | 0 | 11178 | | 2262 | | 500 | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

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 | 10689 | | | | | | | |

25. Producing Intervals / 26. Perforation Record

| | Formation | Top | Bottom | Perforated Interval | Size | No. Holes | Perf. Status |
|---|---|---|---|---|---|---|---|
| A) | MESAVERDE | 7975 | 11048 | 7975 TO 11048 | 0.360 | 219 | OPEN |
| B) | | | | | | | |
| C) | | | | | | | |
| D) | | | | | | | |

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

| Depth Interval | Amount and Type of Material |
|---|---|
| 7975 TO 11048 | PUMP 13,007 BBLS SLICK H2O & 275,733 LBS 30/50 OTTAWA 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 |
|---|---|---|---|---|---|---|---|---|---|
| 07/25/2012 | 07/30/2012 | 24 | → | 0.0 | 2820.0 | 520.0 | | | 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 | 2005 SI | 2841.0 | → | 0 | 2820 | 520 | | 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 |
|---|---|---|---|---|---|---|---|---|
| | | | → | | | | | |

RECEIVED
SEP 19 2012
DIV. OF OIL, GAS & MINING

*(See Instructions and spaces for additional data on reverse side)*
**ELECTRONIC SUBMISSION #149447 VERIFIED BY THE BLM WELL INFORMATION SYSTEM**
**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED**

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.

31. Formation (Log) Markers

| Formation | Top | Bottom | Descriptions, Contents, etc. | Name | Top Meas. Depth |
|---|---|---|---|---|---|
| | | | | GREEN RIVER | 1682 |
| | | | | BIRD'S NEST | 1978 |
| | | | | MAHOGANY | 2428 |
| | | | | WASATCH | 5000 |
| | | | | MESAVERDE | 7961 |

32. Additional remarks (include plugging procedure):
The first 165ft. of the surface hole was drilled with a 12 1/4in. bit. The remainder of the surface hole was drilled with an 11in. bit. DQX P-110 csg was run from surface to 5071ft; LTC P-110 csg was run from 5071ft. to 11,178ft. Attached is the chronological well history, perforation report & final survey.

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 #149447 Verified by the BLM Well Information System.**
**For KERR MCGEE OIL & GAS ONSHORE L, sent to the Vernal**

Name *(please print)* CARA MAHLER Title AUTHORIZED REPRESENTATIVE

Signature (Electronic Submission) Date 09/10/2012

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 ****

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 3/7/2012 | 15:00 - 16:30 | 1.50 | MIRU | 01 | C | P | | MIRU /// HOWCROFT - 2 TRUCKS. CAPSTAR 5 HANDS & 1 FORKFIFT /// RELEASE TRUCKS @ 16:00 /// DERRICK IN AIR @ 16:00 |
| | 16:30 - 18:00 | 1.50 | PRPSPD | 14 | A | P | | WELD ON CONDUCTOR & RIG UP FLOW LINE |
| | 18:00 - 19:00 | 1.00 | PRPSPD | 06 | A | P | | PU 12.25" BIT & 8" MUD MOTOR & TIH |
| | 19:00 - 20:30 | 1.50 | DRLSUR | 02 | B | P | | DRILL 12.25" SURFACE HOLE F/ 49'- 165' |
| | 20:30 - 21:00 | 0.50 | DRLSUR | 06 | A | P | | TOOH & LAY DOWN 12.25" BIT |
| | 21:00 - 22:30 | 1.50 | DRLSUR | 06 | A | P | | PU 11" BIT & DIR TOOLS & SCRIBE /// TIH |
| | 22:30 - 0:00 | 1.50 | DRLSUR | 02 | D | P | | DRLG 11" SURFACE HOLE F/ 165'- 383' ROP= 218' @ 145 FPH WOB= 24-28K RPM= 55/105 SPP=1050/750 GPM= 595 TRQ = 2800/1400 NO LOSSES |
| 3/8/2012 | 0:00 - 13:00 | 13.00 | DRLSUR | 02 | D | P | | DRLG 11" SURFACE HOLE F/ 383'- 2090' ROP= 1707' @ 131 FPH WOB= 24-28K RPM= 55/105 SPP=1400/900 GPM= 595 TRQ = 2800/1400 NO LOSSES |
| | 13:00 - 14:00 | 1.00 | DRLSUR | 07 | A | P | | SERVICE RIG & EQUIPMENT |
| | 14:00 - 20:30 | 6.50 | DRLSUR | 02 | D | P | | DRLG 11" SURFACE HOLE F/ 2090'-2860 ROP= 770' @ 119 FPH WOB= 24-28K RPM= 55/105 SPP= GPM= 595 TRQ = 2800/1400 NO LOSSES LAST SURVEY @ 2805'= .44 INC & 161.30 AZ ROTATE 95% // SLIDE 5% |
| | 20:30 - 21:00 | 0.50 | DRLSUR | 05 | A | P | | CIRC & COND HOLE FOR 8-5/8" CSG |
| | 21:00 - 0:00 | 3.00 | DRLSUR | 06 | A | P | | LAY DOWN DRILL STRING & DIR. TOOLS |
| 3/9/2012 | 0:00 - 1:00 | 1.00 | DRLSUR | 06 | A | P | | LAY DOWN DRILL STRING & DIR. TOOLS |
| | 1:00 - 4:00 | 3.00 | CSG | 12 | C | P | | PJSM /// RUN 64 JT'S, 8.625", 28#, J-55, LT&C CSG /// SHOE SET @ 2834' & BAFFLE @ 2788' |
| | 4:00 - 4:30 | 0.50 | CSG | 05 | A | P | | CIRC. 8-5/8" CSG @ 2834' |

# US ROCKIES REGION

## Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 4:30 - 6:00 | 1.50 | CSG | 12 | E | P | | PJSM WITH PRO PETRO CMT CREW /// TEST LINES TO 2000 PSI /// PUMP 40 BB'S WATER AHEAD FOLLOWED BY 20 BBL GEL WATER SPACER /// LEAD = 240 SX CLASS G CMT @ 11.0 WT & 3.82 YIELD /// TAIL = 200 SX CLASS G CMT @ 15.8 WT & 1.15 YIELD /// DROP PLUG & DISPLACE W/ 170 BBLS WATER /// PLUG DN @ 06:05 03/09/2012 /// BUMP PLUG W/ 900 PSI /// FINAL LIFT = 630 PSI /// CHECK FLOATS- HELD W/ 1 BBL BACK /// FULL RETURNS THRU OUT JOB /// 10 BBL'S TO SURFACE |
| | 6:00 - 7:00 | 1.00 | CSG | 14 | A | P | | CUT OFF CONDUCTOR & HANG 8.625" CSG |
| | 7:00 - 7:30 | 0.50 | CSG | 12 | E | P | | PUMP TOP OUT W/ 90 SX CMT @ 15.8 WT & 1.15 YIELD /// CMT TO SURFACE & STAYED /// RELEASE RIG @ 07:30 03/09/2012 TO THE NBU 921-21L1S |
| 5/6/2012 | 11:00 - 16:30 | 5.50 | MIRU | 01 | C | P | | PREPARE & SKID RIG 20' TO NEW WELL CENTER RIG OVER WELL |
| | 16:30 - 18:00 | 1.50 | MIRU | 01 | B | P | | RIG UP ROTARY TOOLS |
| | 18:00 - 19:00 | 1.00 | PRPSPD | 14 | A | P | | NIPPLE UP BOP'S & EQUIPMENT |
| | 19:00 - 19:30 | 0.50 | PRPSPD | 07 | A | P | | SERVICE RIG |
| | 19:30 - 0:00 | 4.50 | PRPSPD | 15 | A | P | | PRESSURE TEST CASING TO 1500 PSI FOR 30 MINS / PRESSURE TEST BOP & EQUIPMENT AS PER PROGRAM 250 LOW / 5000 HIGH / 250 / 2500 ON ANNULAR |
| 5/7/2012 | 0:00 - 1:30 | 1.50 | PRPSPD | 15 | A | P | | CONTINUE TO PRESSURE TEST BOP'WS & EQUIPMENT AS PER PROGRAM 250/5000 / IBOP FAILED TEST |
| | 1:30 - 2:00 | 0.50 | PRPSPD | 14 | B | P | | INSTALL WEAR BUSHING |
| | 2:00 - 3:00 | 1.00 | PRPSPD | 15 | A | P | | REMOVE SMITH BEARING ASSY / PRESSURE TEST MI SWACO PRESSURE CONTROL EQUIPMENT / INSTALL BEARING ASSY |
| | 3:00 - 6:00 | 3.00 | PRPSPD | 07 | C | S | | CHANGE OUT IBOP FOR RE TEST |
| | 6:00 - 7:00 | 1.00 | PRPSPD | 15 | A | P | | PRESSURE TEST IBOP 250/5000 ( RE TEST) - OK |
| | 7:00 - 10:00 | 3.00 | PRPSPD | 06 | A | P | | PICK UP & MAKE UP BHA #1 SCRIBE ,ORIENTATE & TEST SAME / TIH TO 2,723' TAG CEMENT |
| | 10:00 - 11:00 | 1.00 | PRPSPD | 23 | | P | | PRE SPUD INSPECTION & MEETING / LEVEL DERRICK / INSTALL ROTATING RUBBER / PUMP THROUGH MI SWACO - OK |
| | 11:00 - 12:30 | 1.50 | PRPSPD | 09 | A | P | | SLIP & CUT 524' DRILL LINE FOUND A FEW WORN SPOTS IN DRILL LINE |
| | 12:30 - 14:00 | 1.50 | DRLPRO | 02 | F | P | | DRILL CEMENT & SHOE TRACK FROM 2,723' TO 2,851' CLEAN OUT RAT HOLE TO 2,877' |

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-21E4T BLUE | | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 14:00 - 17:30 | 3.50 | DRLPRO | 02 | B | P | | DRILL / SURVEY F/ 2,877' TO 3,376' = 499 ' @ 142.57 FPH<br>WOB 18,000-22,000<br>TOP DRIVE RPM 50-80<br>MUD MOTOR RPM 88<br>PUMPS 120 SPM=550 GPM<br>PUMP PRESSURE ON/OFF BTM 1,860/ 1,665<br>TORQUE ON/OFF BTM 6,000/ 4,000<br>PICK UP WT 125,000<br>SLACK OFF WT 85,000<br>ROT WT 102,000<br>SLIDE 8' IN 5 MIN 1.6% OF FOOTAGE DRILLED, 2.38 %OF HRS DRILLED<br>MUD WT 8.4 VIS 27 |
| | 17:30 - 18:00 | 0.50 | DRLPRO | 07 | A | P | | SERVICE RIG @ 3,376' |
| | 18:00 - 0:00 | 6.00 | DRLPRO | 02 | B | P | | DRILL / SURVEY F/ 3,376' TO 4,130' = 754 ' @125.66 FPH<br>WOB 18,000-23,000<br>TOP DRIVE RPM 50-80<br>MUD MOTOR RPM 88<br>PUMPS 120 SPM=550 GPM<br>PUMP PRESSURE ON/OFF BTM 1,940/ 1,710<br>TORQUE ON/OFF BTM 7,000/ 4,000<br>PICK UP WT 140,000<br>SLACK OFF WT 102,000<br>ROT WT 116,000<br>SLIDE 15' IN 15 MIN 1.19% OF FOOTAGE DRILLED, 2.5 %OF HRS DRILLED<br>MUD WT 8.7 VIS 27 |
| 5/8/2012 | 0:00 - 6:00 | 6.00 | DRLPRO | 02 | B | P | | DRILL / SURVEY F/ 4,130' TO 4,840' = 710 ' @ 118.33FPH<br>WOB 18,000-23,000<br>TOP DRIVE RPM 50-80<br>MUD MOTOR RPM 88<br>PUMPS 120 SPM=550 GPM<br>PUMP PRESSURE ON/OFF BTM 1,940/ 1,710<br>TORQUE ON/OFF BTM 7,000/ 4,000<br>PICK UP WT 140,000<br>SLACK OFF WT 102,000<br>ROT WT 116,000<br>MUD WT 8.7 VIS 27 |
| | 6:00 - 14:00 | 8.00 | DRLPRO | 02 | B | P | | DRILL / SURVEY F/ 4,840' TO 5,644' = 804 ' @ 100.5 FPH<br>WOB 20,000-24,000<br>TOP DRIVE RPM 50-80<br>MUD MOTOR RPM 79<br>PUMPS 110 SPM=495 GPM<br>PUMP PRESSURE ON/OFF BTM 1,725/ 1,475<br>TORQUE ON/OFF BTM 6,000/ 4,000<br>PICK UP WT 149,000<br>SLACK OFF WT 128,000<br>ROT WT 137,000<br>SLIDE 22' IN 20 MIN 2.7% OF FOOTAGE DRILLED, 4.16 %OF HRS DRILLED<br>MUD WT 8.6 VIS 27 |

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-21E4T BLUE | | Spud Date: 3/7/2012 | |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 14:00 - 14:30 | 0.50 | DRLPRO | 07 | A | P | | SERVICE RIG @ 5,644' |
| | 14:30 - 0:00 | 9.50 | DRLPRO | 02 | B | P | | DRILL / SURVEY F/ 5,644' TO 6,695' = 1,051' @ 110.63 FPH<br>WOB 20,000-24,000<br>TOP DRIVE RPM 50-80<br>MUD MOTOR RPM 88<br>PUMPS 120 SPM=550 GPM<br>PUMP PRESSURE ON/OFF BTM 2,125/ 1,950<br>TORQUE ON/OFF BTM 8,000/ 5,000<br>PICK UP WT 178,000<br>SLACK OFF WT 140,000<br>ROT WT 156,000<br>SLIDE 12' IN 16 MIN 1.16% OF FOOTAGE DRILLED, 2.8 %OF HRS DRILLED<br>MUD WT 8.6 VIS 27 |
| 5/9/2012 | 0:00 - 6:00 | 6.00 | DRLPRO | 02 | B | P | | DRILL / SURVEY F/ 6,695' TO 7,230 = 535' @ 89.16 FPH<br>WOB 20,000-24,000<br>TOP DRIVE RPM 50-80<br>MUD MOTOR RPM 88<br>PUMPS 120 SPM=550 GPM<br>PUMP PRESSURE ON/OFF BTM 2,125/ 1,950<br>TORQUE ON/OFF BTM 8,000/ 5,000<br>PICK UP WT 178,000<br>SLACK OFF WT 140,000<br>ROT WT 156,000<br>SLIDE 10' IN 15 MIN 1.8% OF FOOTAGE DRILLED, 4.16 %OF HRS DRILLED<br>MUD WT 8.6 VIS 27 |
| | 6:00 - 14:30 | 8.50 | DRLPRO | 02 | B | P | | DRILL / SLIDE / SURVEY F/ 7,230' TO 7,818 = 588' @ 69.1 FPH<br>WOB 20,000-27,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 88<br>PUMPS 110 SPM=495 GPM<br>PUMP PRESSURE ON/OFF BTM 1,920/ 1,625<br>TORQUE ON/OFF BTM 8,000/ 5,000<br>PICK UP WT 190,000<br>SLACK OFF WT 159,000<br>ROT WT 178,000<br>SLIDE 23' IN 50 MIN 3.9% OF FOOTAGE DRILLED, 9.8 %OF HRS DRILLED<br>MUD WT 8.6 VIS 27 |
| | 14:30 - 15:00 | 0.50 | DRLPRO | 07 | A | P | | RIG SERVICE |

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-21E4T BLUE | | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 15:00 - 0:00 | 9.00 | DRLPRO | 02 | B | | | DRILL / SLIDE / SURVEY F/ 7,818' TO 8,425 = 588' @ 69.1 FPH<br>WOB 20,000-27,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 88<br>PUMPS 110 SPM=495 GPM<br>PUMP PRESSURE ON/OFF BTM 1,920/ 1,625<br>TORQUE ON/OFF BTM 8,000/ 5,000<br>PICK UP WT 190,000<br>SLACK OFF WT 159,000<br>ROT WT 178,000<br>SLIDE 10' IN 15 MIN 1.7% OF FOOTAGE DRILLED, 2.5 %OF HRS DRILLED<br>MUD WT 8.8 VIS 31 / MI SWACO ON LINE 8,100 /5'-10' FLARE/ TRAPPED PRESSURE 150 PSI |
| 5/10/2012 | 0:00 - 6:00 | 6.00 | DRLPRV | 02 | B | P | | DRILL / SURVEY F/ 8,425' TO 8,800 = 375' @ 62.5 FPH<br>WOB 20,000-27,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 88<br>PUMPS 110 SPM=495 GPM<br>PUMP PRESSURE ON/OFF BTM 2,000/ 1,725<br>TORQUE ON/OFF BTM 8,000/ 5,000<br>PICK UP WT 204,000<br>SLACK OFF WT 166,000<br>ROT WT 185,000<br>MUD WT 8.8 VIS 31 |
| | 6:00 - 15:00 | 9.00 | DRLPRV | 02 | B | P | | DRILL / SLIDE / SURVEY F/8,800' TO 9,236 = 436' @ 48.4 FPH<br>WOB 20,000-27,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 79-88<br>PUMPS 110-122 SPM=495-550 GPM<br>PUMP PRESSURE ON/OFF BTM 2720/ 2,580<br>TORQUE ON/OFF BTM 10,000/ 8,000<br>PICK UP WT 220,000<br>SLACK OFF WT163,000<br>ROT WT 188,000<br>SLIDE 43' IN 155 MIN 9.8% OF FOOTAGE DRILLED,28%OF HRS DRILLED<br>MUD WT 8.9 VIS 36 / MI SWACO ON LINE |
| | 15:00 - 15:30 | 0.50 | DRLPRV | 07 | A | P | | RIG SERVICE |
| | 15:30 - 0:00 | 8.50 | DRLPRV | 02 | B | P | | DRILL / SURVEY F9,236 TO 9,835 = 599' @ 70.4 FPH<br>WOB 20,000-27,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 79-88<br>PUMPS 110-122 SPM=495-550 GPM<br>PUMP PRESSURE ON/OFF BTM 2,725/ 2,400<br>TORQUE ON/OFF BTM 11,000/ 10,000<br>PICK UP WT 228,000<br>SLACK OFF W179,000<br>ROT WT 202,000<br>MUD WT 9.2 VIS 36 10-15' FLARE<br>NO MUD LOSS |

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-21E4T BLUE | | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 5/11/2012 | 0:00 - 6:00 | 6.00 | DRLPRV | 02 | B | P | | DRILL / SURVEY F9,236 TO 9,835 = 599' @ 70.4 FPH<br>WOB 20,000-27,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 79-88<br>PUMPS 110-122 SPM=495-550 GPM<br>PUMP PRESSURE ON/OFF BTM 2,725/ 2,400<br>TORQUE ON/OFF BTM 11,000/ 10,000<br>PICK UP WT 228,000<br>SLACK OFF W179,000<br>ROT WT 202,000<br>MUD WT 9.2 VIS 36 10-15' FLARE<br>NO MUD LOSS |
| | 6:00 - 15:30 | 9.50 | DRLPRV | 02 | B | P | | DRILL / SURVEY F/ 9,835 TO 10,559 =724' @ 76.2 FPH<br>WOB 24,000-32,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 67-88<br>PUMPS 90-105 SPM=405-472 GPM<br>PUMP PRESSURE ON/OFF BTM 1,970/ 1,650<br>TORQUE ON/OFF BTM 12,000/ 11,000<br>PICK UP WT 256,000<br>SLACK OFF WT 187,000<br>ROT WT 215,000<br>MUD WT 9.4 VIS 36 10-15' FLARE<br>NO MUD LOSS |
| | 15:30 - 16:00 | 0.50 | DRLPRV | 07 | A | P | | RIG SERVICE |
| | 16:00 - 0:00 | 8.00 | DRLPRV | 02 | B | P | | DRILL / SURVEY F/ 10,559 TO 10,935 =376' @47 FPH<br>WOB 24,000-34,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 67-88<br>PUMPS 90-105 SPM=405-472 GPM<br>PUMP PRESSURE ON/OFF BTM 2,400/ 2,150<br>TORQUE ON/OFF BTM 12,000/ 9,000<br>PICK UP WT 252,000<br>SLACK OFF WT 202,000<br>ROT WT 216,000<br>MUD WT 9.8 VIS 36 10-15' FLARE<br>TRAPPED PRESS ON CONN 320 PSI |
| 5/12/2012 | 0:00 - 5:00 | 5.00 | DRLPRV | 02 | B | P | | DRILL / SURVEY F/ 10,935 TO 11,184 =249 @49.8 FPH<br>WOB 24,000-34,000<br>TOP DRIVE RPM 40-70<br>MUD MOTOR RPM 67-88<br>PUMPS 90-105 SPM=405-472 GPM<br>PUMP PRESSURE ON/OFF BTM 2,400/ 2,150<br>TORQUE ON/OFF BTM 12,000/ 9,000<br>PICK UP WT 252,000<br>SLACK OFF WT 202,000<br>ROT WT 216,000<br>MUD WT 10. VIS 36 10-15' FLARE<br>TRAPPED PRESS ON CONN 320 PSI |

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-21E4T BLUE | | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 5:00 - 9:30 | 4.50 | DRLPRV | 05 | B | P | | PRESSURE SPIKE FROM MUD MOTOR ,MOTOR LOCKED UP, CIRC @ 80 SPM,2,625 PSI / 11,184 CALLED TD / CCH RAISE MUD WT / FOR TRIP / MW 11.4 VIS 38 / SWACO OFF LINE |
| | 9:30 - 16:30 | 7.00 | DRLPRV | 06 | E | P | | TRIP,TO LAY DOWN DIRECTIONAL TOOLS AND MUD MOTOR, SPOT 90 BBLS 13# ON BTM ,PULL 10 STANDS PUMP SLUG TOH,NO PROBLEM / FLOW CHECK @ SHOE,PULL ROTATING RUBBER / PULL MWD TOOLSTAND BACK DIRECTIONAL TOOLS,,BREAK BIT,LAY DOWN MUD MOTOR,HOLE TOOK PROPER FLUID |
| | 16:30 - 19:30 | 3.00 | DRLPRV | 06 | E | P | | TRIP IN HOLE W/ TRICONE BIT,BREAK@ CSG SHOE, CIH, CLEAN OUT BRIDGE @ 4,360' |
| | 19:30 - 22:30 | 3.00 | DRLPRV | 03 | E | X | | WASH & REAM THROURH SOLID BRIDGES 5,268-5,269, / 5,273-5,277 / 5,294-5,302,TIH WASH THROUGH BRIDGES @ 6,025,6,710 7,080,7,400, 7,560, 7,600 MUD LOSS 35 BBLS |
| | 22:30 - 0:00 | 1.50 | DRLPRV | 06 | E | P | | TRIPPING IN HOLE F/ 7,600-9,000 |
| 5/13/2012 | 0:00 - 1:00 | 1.00 | DRLPRV | 06 | E | P | | TRIP IN HOLE F/ 9,000 TO 11,090 |
| | 1:00 - 1:30 | 0.50 | DRLPRV | 03 | D | P | | WASH & REAM 90' TO BTM 18' FILL |
| | 1:30 - 4:00 | 2.50 | DRLPRV | 05 | B | P | | CIRC AND COND HOLE FOR OPEN HOLE LOGS / PUMP 2 SWEEPS / 2/10'S CUT ON BTMS UP/ 10-12' FLARE / RAISE MUD WT TO 12.0# / 40 BBL MUD LOSS |
| | 4:00 - 9:30 | 5.50 | EVALPR | 06 | B | P | | SPOT 90 BBLS 13# ON BTM / TOH FOR OPEN HOLE LOGS/ ,FLOW CHECK AT CSG SHOE / HOLE GOOD |
| | 9:30 - 10:00 | 0.50 | EVALPR | 07 | A | P | | RIG SERVICE / FUNCT TEST PIPE & BLIND RAMS |
| | 10:00 - 12:00 | 2.00 | DRLPRV | 11 | G | P | | CTJSA RIG UP HALLIBURTON,RUN TRIPLE COMBO BRIGDED OUT @ 4,300', |
| | 12:00 - 13:00 | 1.00 | EVALPR | 11 | G | X | | PULL OUT / R/D HALCO LOG TOOLS |
| | 13:00 - 19:00 | 6.00 | EVALPR | 06 | E | X | | P/U TRICONE BIT TIH,(2ND WIPER TRIP) WORK TIGHT SPOTS @ 4,300,4,530 5,260 5,325,9,678 CIH TO 11,080,WASH 95'TO BTM 6 FILL,2/10 MUD CUT ON BTMS UP 15' FLARE,40 BBL MUD LOSS |
| | 19:00 - 21:30 | 2.50 | EVALPR | 06 | E | X | | CIRC AND CONDITION HOLE FOR OPEN HOLE LOGS MUD WT 12.1# VIS 40,SPOT 90 BBL 12.8 PILL ON BTM |
| | 21:30 - 0:00 | 2.50 | EVALPR | 06 | B | X | | TRIPPING OUT @ 6,900' FOR LOGS 2ND RUN |
| 5/14/2012 | 0:00 - 3:00 | 3.00 | EVALPR | 06 | B | X | | TOH FOR LOGS 2ND RUN , |
| | 3:00 - 9:00 | 6.00 | EVALPR | 11 | G | P | | CT JSA RU HALCO RUN TRIPLE COMBO DRILLERS TD 11,184 / LOGGER TD 11,190, LOG OUT TO SURFACE / RD SAME |
| | 9:00 - 9:30 | 0.50 | CSGPRO | 14 | A | P | | PULL SMITH BEARING ASSEMBLY/ PULL WEAR BUASHING,INSTALL BEARING ASSEMBLY |
| | 9:30 - 10:00 | 0.50 | CSGPRO | 12 | A | P | | CHANGE OUT DRILLING BAILS TO CASING BAILS |
| | 10:00 - 20:30 | 10.50 | CSGPRO | 12 | C | P | | CT JSA R/U & RUN 4 1/2" PRODUCTION CASING TO 11,178' W/ NO PROBLEMS / SHOE @ 11,178' / FLOAT COLLAR @ 11,158 BLACK HAWK MARKER @ 10,549' / M VERDE MARKER @ 7,934' / X-O @ 5,001' TOTAL JTS RAN 258 |
| | 20:30 - 22:00 | 1.50 | CSGPRO | 05 | D | P | | CIRCULATE & CONDITION MUD@ 11,178 RIG DOWN FRANKS CASERS / PRE JOB SAFETY MEETING WITH BJ CEMENTERS |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-21E4T BLUE | | Spud Date: 3/7/2012 | |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | | Rig Name No: H&P 298/298, CAPSTAR 310/310 |
| Event: DRILLING | Start Date: 2/26/2012 | | End Date: 5/15/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 22:00 - 0:00 | 2.00 | CSGPRO | 12 | E | P | | INSTALL BJ CMT HEAD , TEST PUMP & LINES TO 5,000 PSI, ,DROP BOTTOM PLUG PUMP 25 BBLS FW PUMP 604 SKS LEAD CEMENT @ 12.5 PPG,(217.3 BBLS) (PREM LITE II + .0.25 pps CELLO FLAKE + 10 pps KOL SEAL + .05 lb/sx STATIC FREE + 6% bwoc BENTONITE + .4% bwoc SODIUM META SILICATE + ..3 % R-3 + 118% FRESH WATER / (10.62 gal/sx, 2.02 yield) + 1,658 SX TAIL @ 14.3 ppg(346.8 BBLS)+ (CLS G 50/50 POZ + 10% SALT + .05llbs/sx STATIC FREE + .2% R3 + .002 GPS FP-6L + 2% BENTONITE +0.5%EC-1+ 58.6% FW / (5.94 gal/sx, 1.32 yield) / DROP TOP PLUG & DISPLACE W/ 173.4 BBLS H2O + ADDITIVES / PLUG DOWN @ 19:27 HOURS / FLOATS HELD W/ 2.5 BBLS H2O RETURNED TO INVENTORY/ GOOD RETURNS THROUGH OUT WITH 10 BBLS LEAD CMT TO SURFACE / LIFT PRESSURE @3,600 PSI / BUMP PRESSURE TO 4,150 PSI / TOP OF TAIL CEMENT CALCULATED @ 4,200 / RIG DOWN BJ |
| 5/15/2012 | 0:00 - 2:00 | 2.00 | CSGPRO | 12 | E | P | | INSTALL BJ CMT HEAD , TEST PUMP & LINES TO 5,000 PSI, ,DROP BOTTOM PLUG PUMP 25 BBLS FW PUMP 604 SKS LEAD CEMENT @ 12.5 PPG,(217.3 BBLS) (PREM LITE II + .0.25 pps CELLO FLAKE + 10 pps KOL SEAL + .05 lb/sx STATIC FREE + 6% bwoc BENTONITE + .4% bwoc SODIUM META SILICATE + ..3 % R-3 + 118% FRESH WATER / (10.62 gal/sx, 2.02 yield) + 1,658 SX TAIL @ 14.3 ppg(346.8 BBLS)+ (CLS G 50/50 POZ + 10% SALT + .05llbs/sx STATIC FREE + .2% R3 + .002 GPS FP-6L + 2% BENTONITE +0.5%EC-1+ 58.6% FW / (5.94 gal/sx, 1.32 yield) / DROP TOP PLUG & DISPLACE W/ 173.4 BBLS H2O + ADDITIVES / PLUG DOWN @ 01:17 HOURS / FLOATS HELD W/ 2.5 BBLS H2O RETURNED TO INVENTORY/ GOOD RETURNS THROUGH OUT WITH 10 BBLS LEAD CMT TO SURFACE / LIFT PRESSURE @3,500 PSI / BUMP PRESSURE TO 4,150 PSI / TOP OF TAIL CEMENT CALCULATED @ 4,400 / RIG DOWN BJ |
| | 2:00 - 3:30 | 1.50 | CSGPRO | 14 | A | P | | FLUSH OUT & PICK UP BOP STACK,SET C-22 CSG SLIPS W/ 110,000,CUT OFF CASING, |
| | 3:30 - 5:00 | 1.50 | CSGPRO | 01 | E | P | | CLEAN PITS /PREP TO SKID,X/O BAILS / RIG RELEASED TO NBU 921-21L1S @05:00 HRS 05/15/2012 |

# 1 General

## 1.1 Customer Information

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

## 1.2 Well/Wellbore Information

| | | | |
|---|---|---|---|
| **Well** | NBU 921-21E4T BLUE | **Wellbore No.** | OH |
| **Well Name** | NBU 921-21E4T | **Wellbore Name** | NBU 921-21E4T |
| **Report No.** | 1 | **Report Date** | 7/9/2012 |
| **Project** | UTAH-UINTAH | **Site** | NBU 921-21E PAD |
| **Rig Name/No.** | | **Event** | COMPLETION |
| **Start Date** | 7/9/2012 | **End Date** | 7/25/2012 |
| **Spud Date** | 3/7/2012 | **Active Datum** | RKB @4,864.00usft (above Mean Sea Level) |
| **UWI** | SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

## 1.3 General

| | | | | | |
|---|---|---|---|---|---|
| **Contractor** | CASED HOLE SOLUTIONS | **Job Method** | PERFORATE | **Supervisor** | ED GUDAC |
| **Perforated Assembly** | PRODUCTION CASING | **Conveyed Method** | WIRELINE | | |

## 1.4 Initial Conditions

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

## 1.5 Summary

| | | | |
|---|---|---|---|
| **Gross Interval** | 7,975.0 (usft)-11,048.0 (us | **Start Date/Time** | 7/9/2012 12:00AM |
| **No. of Intervals** | 38 | **End Date/Time** | 7/9/2012 12:00AM |
| **Total Shots** | 219 | **Net Perforation Interval** | 73.00 (usft) |
| **Avg Shot Density** | 3.00 (shot/ft) | **Final Surface Pressure** | |
| | | **Final Press Date** | |

# 2 Intervals

## 2.1 Perforated Interval

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/9/2012 12:00AM | MESAVERDE/ | | | 7,975.0 | 7,979.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,003.0 | 8,006.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,243.0 | 8,246.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,289.0 | 8,292.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,361.0 | 8,363.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,448.0 | 8,450.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,502.0 | 8,504.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,521.0 | 8,522.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,550.0 | 8,552.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,585.0 | 8,586.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,627.0 | 8,630.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,676.0 | 8,677.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,720.0 | 8,721.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,740.0 | 8,741.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,862.0 | 8,864.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 8,893.0 | 8,894.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,004.0 | 9,006.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,070.0 | 9,072.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,411.0 | 9,413.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,469.0 | 9,472.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,530.0 | 9,532.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,585.0 | 9,586.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,614.0 | 9,618.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,634.0 | 9,635.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,654.0 | 9,655.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,796.0 | 9,798.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,851.0 | 9,853.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 9,883.0 | 9,886.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,736.0 | 10,737.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,750.0 | 10,754.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,779.0 | 10,780.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,818.0 | 10,820.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,845.0 | 10,846.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,857.0 | 10,858.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,903.0 | 10,905.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 10,931.0 | 10,932.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 11,012.0 | 11,013.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |
| 7/9/2012 12:00AM | MESAVERDE/ | | | 11,046.0 | 11,048.0 | 3.00 | | 0.360 | EXP/ | 3.375 | 120.00 | | 23.00 | PRODUCTION | |

# 3 Plots

# US ROCKIES REGION

## Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | Spud Date: 3/7/2012 | |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: ROYAL WELL SERVICE/3, ROYAL WELL SERVICE/3 |
| Event: COMPLETION | Start Date: 7/9/2012 | End Date: 7/25/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 3/7/2012 | - | | | | | | | |
| 7/10/2012 | 9:30 - 11:45 | 2.25 | FRAC | 33 | | P | | FILL SURFACE CSG. MIRU B&C QUICK TEST.<br>PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 43 PSI.<br>PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 89 PSI.<br>1ST PSI TEST T/ 9000 PSI. HELD FOR 30 MIN LOST 43 PSI.<br>NO COMMUNICATION OR MIGRATION WITH SURFACE CSG<br>BLEED OFF PSI. MOVE T/ NEXT WELL.<br>SWIFW |
| 7/12/2012 | 7:30 - 10:30 | 3.00 | COMP | 37 | | P | | PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER PERF DESIGN. POOH. SWIFW |
| 7/16/2012 | 6:45 - 7:00 | 0.25 | COMP | 48 | | P | | HSM. HIGH PSI LINES & WL SAFETY. |
| | 7:00 - 18:00 | 11.00 | COMP | 36 | B | P | | MIRU FRAC CREW. PSI TEST FRAC LINES T/ 9000 PSI. LOST 300 PSI. NO VISABLE LEAKS.<br>SET N2 POP-OFF T/ 9000 PSI.<br><br>FRAC STG 1)WHP 2171 PSI, BRK 4670 PSI @ 4.8 BPM. ISIP 3665 PSI, FG .77.<br>CALC PERFS OPEN @ 51.5 BPM @ 6084 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN)<br>ISIP 3909 PSI, FG .80, NPI 244 PSI.<br>MP 7396 PSI, MR 53.4 BPM, AP 6454 PSI, AR 50.9 BPM,<br>PUMPED 30/50 TLC SAND. SWI, X-OVER FOR WL.<br><br>PERF STG 2)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 10,830' P/U PERF AS PER DESIGN. POOH. SWI, X-OVER FOR FRAC CREW.<br><br>FRAC STG 2)WHP 3625 PSI, BRK 4480 PSI @ 4.8 BPM. ISIP 3789 PSI, FG .79.<br>CALC PERFS OPEN @ 50.1 BPM @ 6185 PSI = 100% HOLES OPEN. (24/24 HOLES OPEN)<br>ISIP 4031 PSI, FG .81, NPI 242 PSI.<br>MP 8006 PSI, MR 52.5 BPM, AP 6505 PSI, AR 50.1 BPM,<br>PUMPED 30/50 OWATTA SAND. SWI, X-OVER FOR WL.<br><br>PERF STG 3)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 9916' P/U PERF AS PER DESIGN. POOH, X-OVER FOR FRAC CREW. |

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: ROYAL WELL SERVICE/3, ROYAL WELL SERVICE/3 |
| Event: COMPLETION | Start Date: 7/9/2012 | End Date: 7/25/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 7/17/2012 | 7:00 - 18:00 | 11.00 | COMP | 36 | E | P | | FRAC STG 3)WHP 2130 PSI, BRK 3403 PSI @ 4.7 BPM. ISIP 2625 PSI, FG .71.<br>CALC PERFS OPEN @ 48.6 BPM @ 5967 PSI = 91% HOLES OPEN. (19/21 HOLES OPEN)<br>ISIP 3030 PSI, FG .75, NPI 405 PSI.<br>MP 6143 PSI, MR 52.5 BPM, AP 5392 PSI, AR 49.6 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>PERF STG 4)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM ,.36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 9685' P/U PERF AS PER DESIGN.<br><br>FRAC STG 4)WHP 2485 PSI, BRK 4905 PSI @ 7.1 BPM. ISIP 4709 PSI, FG .72.<br>CALC PERFS OPEN @ 46.5 BPM @ 5993 PSI = 81% HOLES OPEN. (17/21 HOLES OPEN)<br>ISIP 3459 PSI, FG .80, NPI 750 PSI.<br>MP 6150 PSI, MR 54.6 BPM, AP 5695 PSI, AR 51.3 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>PERF STG 5)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM ,.36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 9562' P/U PERF AS PER DESIGN.<br><br>FRAC STG 5)WHP 1390 PSI, BRK 3529 PSI @ 4.7 BPM. ISIP 2869 PSI, FG .74.<br>CALC PERFS OPEN @ 52.8 BPM @ 5673 PSI = 100% HOLES OPEN. (21/24 HOLES OPEN)<br>ISIP 3303 PSI, FG .79, NPI 434 PSI.<br>MP 6180 PSI, MR 54.1 BPM, AP 5653 PSI, AR 52.4 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>PERF STG 6)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM ,.36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 9102' P/U PERF AS PER DESIGN.<br><br>FRAC STG 6)WHP 1370 PSI, BRK 2905 PSI @ 4.7 BPM. ISIP 2477 PSI, FG .77.<br>CALC PERFS OPEN @ 52.1 BPM @ 5873 PSI = 95% HOLES OPEN. (20/21 HOLES OPEN)<br>ISIP 2975 PSI, FG .77, NPI 498 PSI.<br>MP 5924 PSI, MR 54.5 BPM, AP 5018 PSI, AR 52.8 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>PERF STG 7)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM ,.36 HOLE SIZE. 120 DEG PHASING. RIH SET |

US ROCKIES REGION

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | Spud Date: 3/7/2012 | |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: ROYAL WELL SERVICE/3, ROYAL WELL SERVICE/3 |
| Event: COMPLETION | Start Date: 7/9/2012 | End Date: 7/25/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| 7/18/2012 | 6:30 - 6:45 | 0.25 | COMP | 48 | | P | | CBP @ 8771' P/U PERF AS PER DESIGN. JSA-SAFETY MEETING |

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | Spud Date: 3/7/2012 | |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: ROYAL WELL SERVICE/3, ROYAL WELL SERVICE/3 |
| Event: COMPLETION | Start Date: 7/9/2012 | End Date: 7/25/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 6:45 - 6:45 | 0.00 | COMP | 36 | E | P | | FRAC STG 7)WHP 1880 PSI, BRK 3047 PSI @ 4.6 BPM. ISIP 2213 PSI, FG .69.<br>CALC PERFS OPEN @ 49.9 BPM @ 5173 PSI = 100% HOLES OPEN. (21/21 HOLES OPEN)<br>ISIP 2916 PSI, FG .78, NPI 703 PSI.<br>MP 5506 PSI, MR 52.5 BPM, AP 4712 PSI, AR 48.5 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>PERF STG 8)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM ,.36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8562 ' P/U PERF AS PER DESIGN.<br><br>FRAC STG 8)WHP 2570 PSI, BRK 3169 PSI @ 6.7 BPM. ISIP 2663 PSI, FG .75.<br>CALC PERFS OPEN @ 49.8 BPM @ 4944 PSI = 100% HOLES OPEN. (21/21 HOLES OPEN)<br>ISIP 2822 PSI, FG .77, NPI 159 PSI.<br>MP 5198 PSI, MR 51 BPM, AP 4913 PSI, AR 49.5 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>PERF STG 9)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM ,.36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8393' P/U PERF AS PER DESIGN.<br><br>FRAC STG 9)WHP 830 PSI, BRK 2865 PSI @ 4.7 BPM. ISIP 1777 PSI, FG .65.<br>CALC PERFS OPEN @ 52.9 BPM @ 4613 PSI = 96% HOLES OPEN. (23/24 HOLES OPEN)<br>ISIP 2594 PSI, FG .75, NPI 817 PSI.<br>MP 5238 PSI, MR 55.1 BPM, AP 4934 PSI, AR 52.6 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>PERF STG 10)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM ,.36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 8036' P/U PERF AS PER DESIGN.<br><br>FRAC STG 10)WHP 1090 PSI, BRK 2247 PSI @ 4.7 BPM. ISIP 1597 PSI, FG .64.<br>CALC PERFS OPEN @ 52.7 BPM @ 4148 PSI = 100% HOLES OPEN. (21/21 HOLES OPEN)<br>ISIP 2669 PSI, FG .77, NPI 1072 PSI.<br>MP 5190 PSI, MR 54.6 BPM, AP 4799 PSI, AR 52.6 BPM,<br>PUMPED 30/50 OWATTA SAND<br><br>KILL PLUG ) RIH W/ HAL 8K CBP, SETR CBP @ |

US ROCKIES REGION

## Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: ROYAL WELL SERVICE/3, ROYAL WELL SERVICE/3 |
| Event: COMPLETION | Start Date: 7/9/2012 | End Date: 7/25/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 7925', R/D FRAC AND WIRELINE,<br><br>TOTAL WATER = 13,007 BBL<br>TOTAL SAND = 275,733 LBS |
| 7/19/2012 | - | | | | | | | |
| 7/24/2012 | 7:00 - 7:15 | 0.25 | COMP | 48 | | P | | SAFETY = JSA. |
| | 7:15 - 16:00 | 8.75 | COMP | 30 | | P | | MIRU. NDWH. NUBOP. REPLACE RUBBER ELEMENT IN HYDRILL. REPLACE PIPE RAM RUBBER ELEMENTS. R/U PUMP LINES. PRESSURE TEST BLIND RAMS GOOD @4000#. P/U & RIH W/ 3-7/8" ROCK BIT+POBS+XN+ 250 JTS 2-3/8" P-110 TBNG. T/U ON CBP (KILL PLUG) @7925'. R/U POWER SWIVEL. INSTALL STRIPPING HEAD RUBBER. PRESSURE TEST PIPE RAMS & ANNULAR GOOD @ 4000#. FINISH PREP FOR D/O IN THE AM. SWIFN. |
| 7/25/2012 | 6:00 - 6:15 | 0.25 | COMP | 48 | | P | | SAFETY = JSA. |

# Operation Summary Report

| | | |
|---|---|---|
| Well: NBU 921-21E4T BLUE | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | Rig Name No: ROYAL WELL SERVICE/3, ROYAL WELL SERVICE/3 |
| Event: COMPLETION | Start Date: 7/9/2012 | End Date: 7/25/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 6:15 - 14:00 | 7.75 | COMP | 30 | | P | | R/U SWIVEL. BREAK CIRC. D/O 10 CBP'S AS FOLLOWS:<br><br>CBP #1) DRLG OUT BAKER 8K CBP @ 7925' IN 4 MIN. 700 LBS DIFF. PSI.<br>RIH, TAG SND @ 7998'. C/O 38' OF SND. FCP = 25 PSI.<br><br>CBP #2) DRLG OUT BAKER 8K CBP @ 8036' IN 4 MIN. 800 LBS DIFF. PSI.<br>RIH, TAG SND @ 8365 '. C/O 28' OF SND. FCP = 100PSI.<br><br>CBP #3) DRLG OUT BAKER 8K CBP @ 8393' IN 7MIN. 400 LBS DIFF. PSI.<br>RIH, TAG SND @ 8540'. C/O 22 ' OF SND. FCP = 500 PSI.<br><br>CBP #4) DRLG OUT BAKER 8K CBP @ 8562' IN 6 MIN. 500 LBS DIFF. PSI.<br>RIH, TAG SND @ 8740'. C/O 31' OF SND. FCP = 500 PSI.<br><br>CBP #5) DRLG OUT BAKER 8K CBP @ 8771' IN 11 MIN. 400 LBS DIFF. PSI.<br>RIH, TAG SND @ 9080'. C/O 22' OF SND. FCP = 500 PSI.<br><br>CBP #6) DRLG OUT BAKER 8K CBP @ 9102' IN 4 MIN. 600 LBS DIFF. PSI.<br>RIH, TAG SND @ 9540'. C/O 22' OF SND. FCP = 700 PSI.<br><br>CBP #7) DRLG OUT BAKER 8K CBP @ 9562' IN 7 MIN. 500 LBS DIFF. PSI.<br>RIH, TAG SND @ 9662'. C/O 23' OF SND. FCP = 750 PSI.<br><br>CBP #8) DRLG OUT BAKER 8K CBP @ 9685' IN 6 MIN. 500 LBS DIFF. PSI.<br>RIH, TAG SND @ 9880'. C/O 36' OF SND. FCP = 750 PSI.<br><br>CBP #9) DRLG OUT BAKER 8K CBP @ 9916' IN 4MIN. 500 LBS DIFF. PSI.<br>RIH, TAG SND @ 10800' C/O 30' OF SND. FCP = 900 PSI.<br><br>CBP #10) DRLG OUT BAKER 8K CBP @ 10830' IN 3 MIN. 500 LBS DIFF. PSI.<br>RIH, TAG SND @ 11,100'. C/O 38 ' OF SND TO PBTD@ 11,138' W/ 351 JTS 2-3/8" P-110 4.7# TBNG. CIRC WELL CLEAN. FCP= 950 PSI. R/D SWIVEL. R/U TBNG EQUIP. L/D 15 JTS TBNG. LAND WELL AS FOLLOWS: |

US ROCKIES REGION

# Operation Summary Report

| | | | |
|---|---|---|---|
| Well: NBU 921-21E4T BLUE | | | Spud Date: 3/7/2012 |
| Project: UTAH-UINTAH | Site: NBU 921-21E PAD | | Rig Name No: ROYAL WELL SERVICE/3, ROYAL WELL SERVICE/3 |
| Event: COMPLETION | Start Date: 7/9/2012 | | End Date: 7/25/2012 |
| Active Datum: RKB @4,864.00usft (above Mean Sea Level) | UWI: SW/NW/0/9/S/21/E/21/0/0/26/PM/N/2313/W/0/696/0/0 | | |

| Date | Time Start-End | Duration (hr) | Phase | Code | Sub Code | P/U | MD From (usft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | KB= 26'<br>HANGER= .83'<br>336 JTS 2-3/8" P-110 4.7# TBNG = 10,658.72'<br>XN = 1.34'<br>POBS= 2.40'<br>EOT@ 10,689.29'<br><br>LAND WELL ON HANGER. NDBOP. NUWH. PRESSURE TEST FLOW LINES TO HAL 9000 GOOD @4000 PSI. DROP BALL DOWN TBNG & PUMP OFF THE BIT @2000#. BRING WELL ON LINE. RDMO TURN WELL OVER TO FLOWBACK CREW @ 1400 HRS. SICP =2995 PSI. SITP= 1400 PSI. TWLTR = 11,157 BBLS. |
| | 14:00 - 14:00 | 0.00 | COMP | 50 | | | | WELL TURNED TO SALES @ 14:30 HR ON 7/25/2012, 2000 MCFD, 1920 BWPD, FCP 2960#, FTP 2690#, 20/64" CK. |

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: UINTAH_NBU 921-21E PAD
Well: NBU 921-21E4T
Wellbore: NBU 921-21E4T
Section:
SHL:
Design: NBU 921-21E4T (wp01)
Latitude: 40.022519
Longitude: -109.562989
GL: 4838.00
KB: 4838' GL + 26' RKB @ 4864.00ft (H&P 298)

**FORMATION TOP DETAILS**

| TVDPath | MDPath | Formation |
|---|---|---|
| 4971.00 | 4971.42 | WASATCH |
| 5571.00 | 5571.44 | top of cylinder |
| 7924.00 | 7924.46 | MESAVERDE |
| 10178.00 | 10178.47 | SEGO |
| 10268.00 | 10268.47 | CASTLEGATE |
| 10660.00 | 10660.48 | BLACKHAWK |

**WELL DETAILS: NBU 921-21E4T**

Ground Level: 4838.00

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 14537489.23 | 2042738.69 | 40.022519 | -109.562989 | |

**CASING DETAILS**

| TVD | MD | Name | Size |
|---|---|---|---|
| 2851.57 | 2851.92 | 8-5/8" | 8-5/8 |

Azimuths to True North
Magnetic North: 11.00°

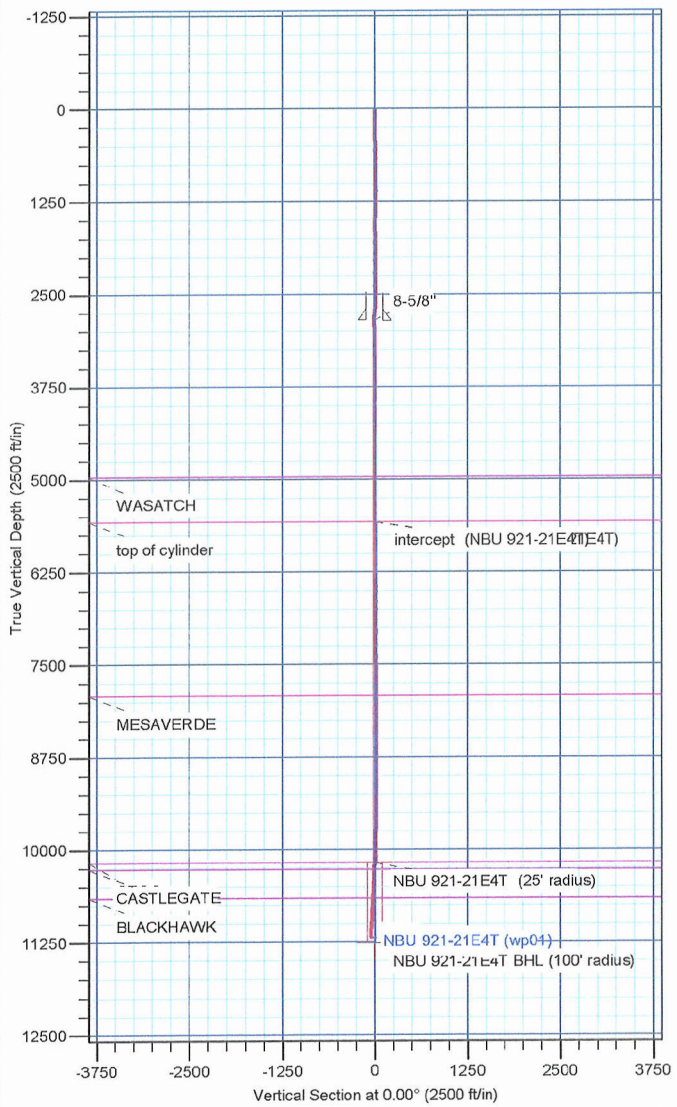
Magnetic Field
Strength: 52253.7snT
Dip Angle: 65.85°
Date: 4/3/2012
Model: IGRF2010

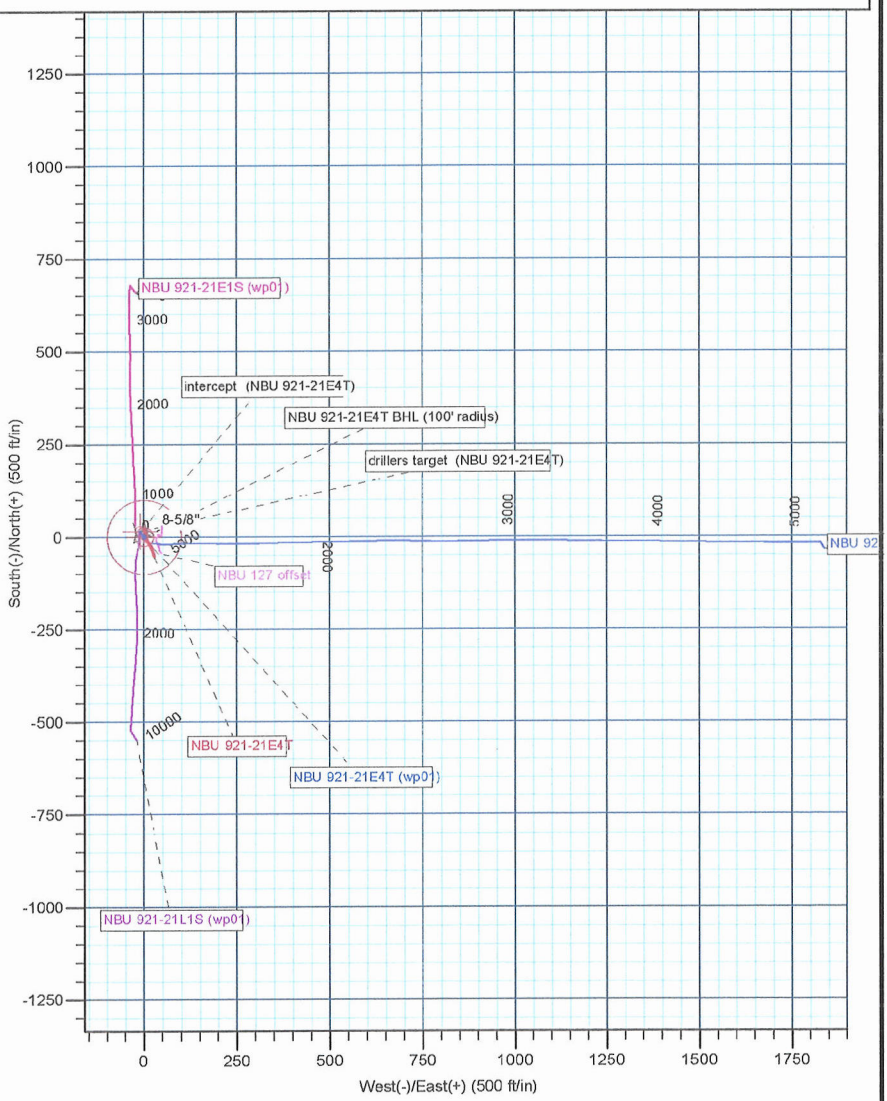
**DESIGN TARGET DETAILS**

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|
| drillers target (NBU 921-21E4T) | 5571.00 | 15.00 | -10.00 | 14537504.06 | 2042728.45 | 40.022560 | -109.563025 | Circle (Radius: 15.00) |
| intercept (NBU 921-21E4T) | 5571.00 | 15.00 | -10.00 | 14537504.06 | 2042728.45 | 40.022560 | -109.563025 | Point |
| NBU 921-21E4T (25' radius) | 10178.00 | 0.00 | 0.00 | 14537489.23 | 2042738.69 | 40.022519 | -109.562989 | Circle (Radius: 25.00) |
| NBU 921-21E4T BHL (100' radius) | 11260.00 | 0.00 | 0.00 | 14537489.23 | 2042738.69 | 40.022519 | -109.562989 | Circle (Radius: 100.00) |

**SECTION DETAILS**

| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect |
|---|---|---|---|---|---|---|---|---|
| 2822.00 | 0.44 | 161.30 | 2821.65 | -3.31 | -0.54 | 0.00 | 0.00 | -3.31 |
| 2972.00 | 0.44 | 161.30 | 2971.65 | -4.40 | -0.17 | 0.00 | 0.00 | -4.40 |
| 3018.26 | 0.49 | 333.20 | 3017.91 | -4.39 | -0.20 | 2.00 | 175.74 | -4.39 |
| 5571.44 | 0.49 | 333.20 | 5571.00 | 15.00 | -10.00 | 0.00 | 0.00 | 15.00 |
| 5798.71 | 0.20 | 146.66 | 5798.26 | 15.54 | -10.22 | 0.30 | 178.13 | 15.54 |
| 11260.48 | 0.20 | 146.66 | 11260.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |



# US ROCKIES REGION PLANNING

**UTAH - UTM (feet), NAD27, Zone 12N**
**UINTAH_NBU 921-21E PAD**
**NBU 921-21E4T**

**NBU 921-21E4T**

**Design: NBU 921-21E4T**

# Standard Survey Report

**05 September, 2012**

# Andarko Petroleum Corporation

Survey Report

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-21E4T |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Site:** | UINTAH_NBU 921-21E PAD | **MD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Well:** | NBU 921-21E4T | **North Reference:** | True |
| **Wellbore:** | NBU 921-21E4T | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | NBU 921-21E4T | **Database:** | edmp |

| | | | |
|---|---|---|---|
| **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** | UINTAH_NBU 921-21E PAD | | | | |
| **Site Position:** | | **Northing:** | 14,537,473.41 usft | **Latitude:** | 40.022475 |
| **From:** | Lat/Long | **Easting:** | 2,042,751.54 usft | **Longitude:** | -109.562944 |
| **Position Uncertainty:** | 0.00 ft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.92 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | NBU 921-21E4T | | | | | |
| **Well Position** | **+N/-S** | 0.00 ft | **Northing:** | 14,537,489.23 usft | **Latitude:** | 40.022519 |
| | **+E/-W** | 0.00 ft | **Easting:** | 2,042,738.69 usft | **Longitude:** | -109.562989 |
| **Position Uncertainty** | | 0.00 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 4,838.00 ft |

| | | | | | |
|---|---|---|---|---|---|
| **Wellbore** | NBU 921-21E4T | | | | |
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2010 | 4/3/2012 | 11.00 | 65.85 | 52,254 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Design** | NBU 921-21E4T | | | | | |
| **Audit Notes:** | | | | | | |
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | | 17.00 |
| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** | | |
| | 17.00 | 0.00 | 0.00 | 0.00 | | |

**Survey Program** **Date** 8/29/2012

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 188.00 | 2,822.00 | Survey #1 (NBU 921-21E4T) | MWD | MWD - STANDARD |
| 2,939.00 | 11,184.00 | Survey #2 (NBU 921-21E4T) | MWD | MWD - STANDARD |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00 | 0.00 | 0.00 | 17.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 188.00 | 0.19 | 100.26 | 188.00 | -0.05 | 0.28 | -0.05 | 0.11 | 0.11 | 0.00 |
| 249.00 | 0.18 | 120.26 | 249.00 | -0.12 | 0.46 | -0.12 | 0.11 | -0.02 | 32.79 |
| 341.00 | 0.26 | 132.74 | 341.00 | -0.33 | 0.74 | -0.33 | 0.10 | 0.09 | 13.57 |
| 430.00 | 0.53 | 339.55 | 430.00 | -0.08 | 0.74 | -0.08 | 0.87 | 0.30 | -172.12 |
| 525.00 | 0.79 | 339.37 | 524.99 | 0.94 | 0.36 | 0.94 | 0.27 | 0.27 | -0.19 |
| 618.00 | 0.79 | 337.88 | 617.98 | 2.14 | -0.11 | 2.14 | 0.02 | 0.00 | -1.60 |
| 713.00 | 0.79 | 328.82 | 712.97 | 3.30 | -0.69 | 3.30 | 0.13 | 0.00 | -9.54 |
| 807.00 | 0.88 | 320.56 | 806.96 | 4.41 | -1.49 | 4.41 | 0.16 | 0.10 | -8.79 |
| 901.00 | 0.35 | 358.80 | 900.96 | 5.26 | -1.95 | 5.26 | 0.68 | -0.56 | 40.68 |

# Andarko Petroleum Corporation

Survey Report

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-21E4T |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Site:** | UINTAH_NBU 921-21E PAD | **MD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Well:** | NBU 921-21E4T | **North Reference:** | True |
| **Wellbore:** | NBU 921-21E4T | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | NBU 921-21E4T | **Database:** | edmp |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 994.00 | 0.62 | 198.39 | 993.96 | 5.07 | -2.12 | 5.07 | 1.03 | 0.29 | -172.48 |
| 1,088.00 | 0.79 | 199.45 | 1,087.95 | 3.97 | -2.49 | 3.97 | 0.18 | 0.18 | 1.13 |
| 1,180.00 | 0.97 | 199.19 | 1,179.94 | 2.64 | -2.96 | 2.64 | 0.20 | 0.20 | -0.28 |
| 1,274.00 | 1.19 | 173.75 | 1,273.92 | 0.92 | -3.12 | 0.92 | 0.56 | 0.23 | -27.06 |
| 1,368.00 | 0.97 | 150.67 | 1,367.91 | -0.75 | -2.62 | -0.75 | 0.51 | -0.23 | -24.55 |
| 1,464.00 | 1.14 | 98.38 | 1,463.89 | -1.59 | -1.28 | -1.59 | 0.98 | 0.18 | -54.47 |
| 1,558.00 | 1.32 | 102.33 | 1,557.87 | -1.96 | 0.71 | -1.96 | 0.21 | 0.19 | 4.20 |
| 1,653.00 | 0.88 | 75.88 | 1,652.85 | -2.02 | 2.48 | -2.02 | 0.70 | -0.46 | -27.84 |
| 1,749.00 | 1.41 | 355.89 | 1,748.84 | -0.66 | 3.11 | -0.66 | 1.59 | 0.55 | -83.32 |
| 1,844.00 | 1.93 | 0.82 | 1,843.80 | 2.11 | 3.05 | 2.11 | 0.57 | 0.55 | 5.19 |
| 1,937.00 | 1.41 | 340.25 | 1,936.76 | 4.75 | 2.69 | 4.75 | 0.84 | -0.56 | -22.12 |
| 2,032.00 | 1.14 | 305.45 | 2,031.74 | 6.40 | 1.52 | 6.40 | 0.85 | -0.28 | -36.63 |
| 2,126.00 | 0.70 | 217.38 | 2,125.73 | 6.48 | 0.41 | 6.48 | 1.40 | -0.47 | -93.69 |
| 2,220.00 | 0.81 | 188.77 | 2,219.72 | 5.37 | -0.04 | 5.37 | 0.41 | 0.12 | -30.44 |
| 2,315.00 | 0.97 | 182.31 | 2,314.71 | 3.90 | -0.17 | 3.90 | 0.20 | 0.17 | -6.80 |
| 2,411.00 | 1.20 | 184.63 | 2,410.69 | 2.09 | -0.29 | 2.09 | 0.24 | 0.24 | 2.42 |
| 2,505.00 | 0.97 | 179.15 | 2,504.67 | 0.31 | -0.35 | 0.31 | 0.27 | -0.24 | -5.83 |
| 2,600.00 | 0.57 | 184.82 | 2,599.67 | -0.96 | -0.38 | -0.96 | 0.43 | -0.42 | 5.97 |
| 2,695.00 | 0.79 | 191.10 | 2,694.66 | -2.08 | -0.55 | -2.08 | 0.24 | 0.23 | 6.61 |
| 2,788.00 | 0.44 | 169.65 | 2,787.65 | -3.06 | -0.61 | -3.06 | 0.44 | -0.38 | -23.06 |
| 2,822.00 | 0.44 | 161.30 | 2,821.65 | -3.31 | -0.54 | -3.31 | 0.19 | 0.00 | -24.56 |
| **tie on point** | | | | | | | | | |
| 2,939.00 | 0.41 | 96.06 | 2,938.65 | -3.78 | 0.02 | -3.78 | 0.39 | -0.03 | -55.76 |
| **first mwd survey** | | | | | | | | | |
| 3,033.00 | 0.21 | 66.25 | 3,032.65 | -3.74 | 0.51 | -3.74 | 0.27 | -0.21 | -31.71 |
| 3,127.00 | 0.13 | 177.67 | 3,126.65 | -3.78 | 0.67 | -3.78 | 0.30 | -0.09 | 118.53 |
| 3,222.00 | 0.50 | 179.04 | 3,221.65 | -4.30 | 0.68 | -4.30 | 0.39 | 0.39 | 1.44 |
| 3,316.00 | 0.50 | 355.42 | 3,315.65 | -4.31 | 0.66 | -4.31 | 1.06 | 0.00 | 187.64 |
| 3,411.00 | 0.25 | 338.79 | 3,410.64 | -3.70 | 0.55 | -3.70 | 0.28 | -0.26 | -17.51 |
| 3,506.00 | 0.19 | 349.67 | 3,505.64 | -3.35 | 0.45 | -3.35 | 0.08 | -0.06 | 11.45 |
| 3,600.00 | 0.00 | 65.54 | 3,599.64 | -3.20 | 0.42 | -3.20 | 0.20 | -0.20 | 0.00 |
| 3,694.00 | 0.13 | 155.29 | 3,693.64 | -3.29 | 0.46 | -3.29 | 0.14 | 0.14 | 0.00 |
| 3,789.00 | 0.38 | 134.54 | 3,788.64 | -3.61 | 0.73 | -3.61 | 0.28 | 0.26 | -21.84 |
| 3,883.00 | 0.56 | 155.29 | 3,882.64 | -4.25 | 1.15 | -4.25 | 0.26 | 0.19 | 22.07 |
| 3,978.00 | 0.31 | 252.54 | 3,977.64 | -4.75 | 1.10 | -4.75 | 0.71 | -0.26 | 102.37 |
| 4,072.00 | 0.31 | 228.04 | 4,071.64 | -4.99 | 0.67 | -4.99 | 0.14 | 0.00 | -26.06 |
| 4,167.00 | 0.38 | 189.29 | 4,166.63 | -5.48 | 0.42 | -5.48 | 0.25 | 0.07 | -40.79 |
| 4,261.00 | 0.44 | 179.29 | 4,260.63 | -6.15 | 0.38 | -6.15 | 0.10 | 0.06 | -10.64 |
| 4,356.00 | 0.38 | 311.54 | 4,355.63 | -6.30 | 0.15 | -6.30 | 0.79 | -0.06 | 139.21 |
| 4,450.00 | 0.19 | 286.67 | 4,449.63 | -6.05 | -0.24 | -6.05 | 0.24 | -0.20 | -26.46 |
| 4,544.00 | 0.19 | 236.92 | 4,543.63 | -6.09 | -0.52 | -6.09 | 0.17 | 0.00 | -52.93 |
| 4,639.00 | 0.81 | 357.42 | 4,638.63 | -5.51 | -0.68 | -5.51 | 0.97 | 0.65 | 126.84 |
| 4,733.00 | 0.81 | 19.17 | 4,732.62 | -4.21 | -0.49 | -4.21 | 0.33 | 0.00 | 23.14 |

# Andarko Petroleum Corporation

Survey Report

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-21E4T |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Site:** | UINTAH_NBU 921-21E PAD | **MD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Well:** | NBU 921-21E4T | **North Reference:** | True |
| **Wellbore:** | NBU 921-21E4T | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | NBU 921-21E4T | **Database:** | edmp |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,828.00 | 0.58 | 25.64 | 4,827.61 | -3.15 | -0.06 | -3.15 | 0.26 | -0.24 | 6.81 |
| 4,923.00 | 0.38 | 98.17 | 4,922.61 | -2.76 | 0.46 | -2.76 | 0.62 | -0.21 | 76.35 |
| 5,017.00 | 0.38 | 118.29 | 5,016.60 | -2.95 | 1.04 | -2.95 | 0.14 | 0.00 | 21.40 |
| 5,112.00 | 0.44 | 347.29 | 5,111.60 | -2.74 | 1.24 | -2.74 | 0.79 | 0.06 | -137.90 |
| 5,206.00 | 0.56 | 345.42 | 5,205.60 | -1.95 | 1.04 | -1.95 | 0.13 | 0.13 | -1.99 |
| 5,300.00 | 0.38 | 353.42 | 5,299.60 | -1.19 | 0.89 | -1.19 | 0.20 | -0.19 | 8.51 |
| 5,395.00 | 0.38 | 351.92 | 5,394.59 | -0.57 | 0.81 | -0.57 | 0.01 | 0.00 | -1.58 |
| 5,489.00 | 0.13 | 187.04 | 5,488.59 | -0.36 | 0.75 | -0.36 | 0.54 | -0.27 | -175.40 |
| 5,571.51 | 0.64 | 316.63 | 5,571.10 | -0.12 | 0.43 | -0.12 | 0.88 | 0.62 | 157.06 |
| **drillers target (NBU 921-21E4T)** | | | | | | | | | |
| 5,571.63 | 0.64 | 316.63 | 5,571.22 | -0.12 | 0.43 | -0.12 | 0.00 | 0.00 | 0.00 |
| **intercept (NBU 921-21E4T)** | | | | | | | | | |
| 5,584.00 | 0.75 | 317.79 | 5,583.59 | -0.01 | 0.32 | -0.01 | 0.89 | 0.89 | 9.36 |
| 5,679.00 | 0.63 | 323.54 | 5,678.58 | 0.87 | -0.40 | 0.87 | 0.15 | -0.13 | 6.05 |
| 5,773.00 | 0.44 | 311.04 | 5,772.58 | 1.52 | -0.98 | 1.52 | 0.24 | -0.20 | -13.30 |
| 5,868.00 | 0.18 | 300.13 | 5,867.58 | 1.84 | -1.39 | 1.84 | 0.28 | -0.27 | -11.48 |
| 5,962.00 | 0.13 | 96.91 | 5,961.58 | 1.90 | -1.41 | 1.90 | 0.32 | -0.05 | 166.79 |
| 6,057.00 | 0.38 | 125.29 | 6,056.58 | 1.70 | -1.05 | 1.70 | 0.29 | 0.26 | 29.87 |
| 6,151.00 | 0.81 | 117.42 | 6,150.57 | 1.22 | -0.20 | 1.22 | 0.46 | 0.46 | -8.37 |
| 6,246.00 | 0.50 | 324.04 | 6,245.57 | 1.24 | 0.15 | 1.24 | 1.34 | -0.33 | -161.45 |
| 6,341.00 | 0.38 | 318.29 | 6,340.57 | 1.81 | -0.30 | 1.81 | 0.13 | -0.13 | -6.05 |
| 6,435.00 | 0.31 | 307.79 | 6,434.57 | 2.20 | -0.71 | 2.20 | 0.10 | -0.07 | -11.17 |
| 6,530.00 | 0.31 | 326.67 | 6,529.56 | 2.57 | -1.05 | 2.57 | 0.11 | 0.00 | 19.87 |
| 6,624.00 | 0.13 | 313.54 | 6,623.56 | 2.86 | -1.27 | 2.86 | 0.20 | -0.19 | -13.97 |
| 6,718.00 | 0.25 | 183.92 | 6,717.56 | 2.73 | -1.36 | 2.73 | 0.37 | 0.13 | -137.89 |
| 6,813.00 | 0.75 | 37.92 | 6,812.56 | 3.01 | -0.99 | 3.01 | 1.02 | 0.53 | -153.68 |
| 6,907.00 | 0.81 | 50.54 | 6,906.55 | 3.92 | -0.10 | 3.92 | 0.19 | 0.06 | 13.43 |
| 7,002.00 | 0.75 | 64.29 | 7,001.54 | 4.62 | 0.97 | 4.62 | 0.21 | -0.06 | 14.47 |
| 7,096.00 | 0.75 | 81.79 | 7,095.54 | 4.97 | 2.14 | 4.97 | 0.24 | 0.00 | 18.62 |
| 7,191.00 | 0.94 | 101.17 | 7,190.53 | 4.91 | 3.52 | 4.91 | 0.36 | 0.20 | 20.40 |
| 7,285.00 | 0.88 | 38.54 | 7,284.52 | 5.33 | 4.72 | 5.33 | 1.01 | -0.06 | -66.63 |
| 7,380.00 | 2.13 | 352.29 | 7,379.48 | 7.65 | 4.94 | 7.65 | 1.74 | 1.32 | -48.68 |
| 7,474.00 | 2.19 | 350.67 | 7,473.42 | 11.15 | 4.42 | 11.15 | 0.09 | 0.06 | -1.72 |
| 7,569.00 | 1.50 | 346.17 | 7,568.37 | 14.15 | 3.82 | 14.15 | 0.74 | -0.73 | -4.74 |
| 7,663.00 | 1.31 | 352.42 | 7,662.34 | 16.41 | 3.39 | 16.41 | 0.26 | -0.20 | 6.65 |
| 7,758.00 | 1.44 | 357.17 | 7,757.31 | 18.68 | 3.19 | 18.68 | 0.18 | 0.14 | 5.00 |
| 7,852.00 | 0.81 | 321.04 | 7,851.29 | 20.37 | 2.71 | 20.37 | 0.98 | -0.67 | -38.44 |
| 7,947.00 | 0.56 | 303.42 | 7,946.29 | 21.15 | 1.90 | 21.15 | 0.34 | -0.26 | -18.55 |
| 8,042.00 | 0.50 | 300.54 | 8,041.28 | 21.62 | 1.16 | 21.62 | 0.07 | -0.06 | -3.03 |
| 8,230.00 | 0.06 | 216.92 | 8,229.28 | 21.95 | 0.39 | 21.95 | 0.26 | -0.23 | -44.48 |
| 8,325.00 | 0.25 | 128.54 | 8,324.28 | 21.79 | 0.52 | 21.79 | 0.27 | 0.20 | -93.03 |
| 8,420.00 | 0.31 | 136.04 | 8,419.28 | 21.47 | 0.86 | 21.47 | 0.07 | 0.06 | 7.89 |
| 8,514.00 | 0.44 | 123.79 | 8,513.28 | 21.09 | 1.34 | 21.09 | 0.16 | 0.14 | -13.03 |
| 8,609.00 | 0.63 | 114.42 | 8,608.27 | 20.67 | 2.12 | 20.67 | 0.22 | 0.20 | -9.86 |

# Andarko Petroleum Corporation

Survey Report

| | | | |
|---|---|---|---|
| **Company:** | US ROCKIES REGION PLANNING | **Local Co-ordinate Reference:** | Well NBU 921-21E4T |
| **Project:** | UTAH - UTM (feet), NAD27, Zone 12N | **TVD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Site:** | UINTAH_NBU 921-21E PAD | **MD Reference:** | 4838' GL + 26' RKB @ 4864.00ft (H&P 298) |
| **Well:** | NBU 921-21E4T | **North Reference:** | True |
| **Wellbore:** | NBU 921-21E4T | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | NBU 921-21E4T | **Database:** | edmp |

**Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 8,703.00 | 0.44 | 107.04 | 8,702.27 | 20.35 | 2.93 | 20.35 | 0.21 | -0.20 | -7.85 |
| 8,798.00 | 0.56 | 37.66 | 8,797.27 | 20.61 | 3.57 | 20.61 | 0.61 | 0.13 | -73.03 |
| 8,892.00 | 0.25 | 26.04 | 8,891.26 | 21.16 | 3.94 | 21.16 | 0.34 | -0.33 | -12.36 |
| 8,986.00 | 0.56 | 31.92 | 8,985.26 | 21.73 | 4.27 | 21.73 | 0.33 | 0.33 | 6.26 |
| 9,081.00 | 0.13 | 339.54 | 9,080.26 | 22.23 | 4.48 | 22.23 | 0.52 | -0.45 | -55.14 |
| 9,175.00 | 0.38 | 209.17 | 9,174.26 | 22.05 | 4.29 | 22.05 | 0.50 | 0.27 | -138.69 |
| 9,270.00 | 1.00 | 194.79 | 9,269.25 | 20.98 | 3.92 | 20.98 | 0.67 | 0.65 | -15.14 |
| 9,364.00 | 1.38 | 191.79 | 9,363.23 | 19.08 | 3.48 | 19.08 | 0.41 | 0.40 | -3.19 |
| 9,458.00 | 1.50 | 185.04 | 9,457.20 | 16.74 | 3.14 | 16.74 | 0.22 | 0.13 | -7.18 |
| 9,553.00 | 1.88 | 188.92 | 9,552.16 | 13.97 | 2.79 | 13.97 | 0.42 | 0.40 | 4.08 |
| 9,648.00 | 1.75 | 186.67 | 9,647.11 | 10.99 | 2.38 | 10.99 | 0.16 | -0.14 | -2.37 |
| 9,742.00 | 1.94 | 181.67 | 9,741.06 | 7.97 | 2.17 | 7.97 | 0.26 | 0.20 | -5.32 |
| 9,837.00 | 2.25 | 170.54 | 9,836.00 | 4.52 | 2.43 | 4.52 | 0.54 | 0.33 | -11.72 |
| 9,931.00 | 2.31 | 165.42 | 9,929.93 | 0.87 | 3.21 | 0.87 | 0.23 | 0.06 | -5.45 |
| 10,026.00 | 2.38 | 157.92 | 10,024.85 | -2.81 | 4.43 | -2.81 | 0.33 | 0.07 | -7.89 |
| 10,120.00 | 2.38 | 141.54 | 10,118.77 | -6.15 | 6.38 | -6.15 | 0.72 | 0.00 | -17.43 |
| 10,178.81 | 2.45 | 146.59 | 10,177.53 | -8.15 | 7.83 | -8.15 | 0.38 | 0.12 | 8.58 |
| **NBU 921-21E4T (25' radius)** | | | | | | | | | |
| 10,215.00 | 2.50 | 149.54 | 10,213.68 | -9.48 | 8.66 | -9.48 | 0.38 | 0.14 | 8.16 |
| 10,309.00 | 2.38 | 148.67 | 10,307.60 | -12.91 | 10.71 | -12.91 | 0.13 | -0.13 | -0.93 |
| 10,403.00 | 2.44 | 148.79 | 10,401.51 | -16.29 | 12.76 | -16.29 | 0.06 | 0.06 | 0.13 |
| 10,498.00 | 2.50 | 150.79 | 10,496.42 | -19.83 | 14.82 | -19.83 | 0.11 | 0.06 | 2.11 |
| 10,592.00 | 2.56 | 155.29 | 10,590.33 | -23.53 | 16.70 | -23.53 | 0.22 | 0.06 | 4.79 |
| 10,687.00 | 2.69 | 157.42 | 10,685.23 | -27.51 | 18.44 | -27.51 | 0.17 | 0.14 | 2.24 |
| 10,781.00 | 2.94 | 156.54 | 10,779.12 | -31.76 | 20.25 | -31.76 | 0.27 | 0.27 | -0.94 |
| 10,876.00 | 3.00 | 157.29 | 10,873.99 | -36.29 | 22.18 | -36.29 | 0.08 | 0.06 | 0.79 |
| 10,971.00 | 2.88 | 160.67 | 10,968.87 | -40.83 | 23.93 | -40.83 | 0.22 | -0.13 | 3.56 |
| 11,065.00 | 3.25 | 159.79 | 11,062.73 | -45.56 | 25.63 | -45.56 | 0.40 | 0.39 | -0.94 |
| 11,124.00 | 3.25 | 159.70 | 11,121.64 | -48.70 | 26.79 | -48.70 | 0.01 | 0.00 | -0.15 |
| **last mwd survey** | | | | | | | | | |
| 11,184.00 | 3.25 | 159.79 | 11,181.54 | -51.89 | 27.97 | -51.89 | 0.01 | 0.00 | 0.15 |
| **projection to td - NBU 921-21E4T BHL (100' radius)** | | | | | | | | | |

**Design Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 2,822.00 | 2,821.65 | -3.31 | -0.54 | tie on point |
| 2,939.00 | 2,938.65 | -3.78 | 0.02 | first mwd survey |
| 11,124.00 | 11,121.64 | -48.70 | 26.79 | last mwd survey |
| 11,184.00 | 11,181.54 | -51.89 | 27.97 | projection to td |