

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

FORM 3

AMENDED REPORT

<b>APPLICATION FOR PERMIT TO DRILL</b>						<b>1. WELL NAME and NUMBER</b> NBU 921-20L4BS				
<b>2. TYPE OF WORK</b> DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						<b>3. FIELD OR WILDCAT</b> NATURAL BUTTES				
<b>4. TYPE OF WELL</b> Gas Well      Coalbed Methane Well: NO						<b>5. UNIT or COMMUNITIZATION AGREEMENT NAME</b> NATURAL BUTTES				
<b>6. NAME OF OPERATOR</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.						<b>7. OPERATOR PHONE</b> 720 929-6515				
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217						<b>9. OPERATOR E-MAIL</b> julie.jacobson@anadarko.com				
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> UTU0575			<b>11. MINERAL OWNERSHIP</b> FEDERAL <input checked="" type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>			<b>12. SURFACE OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input checked="" type="checkbox"/> STATE <input type="checkbox"/> FEE <input type="checkbox"/>				
<b>13. NAME OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>14. SURFACE OWNER PHONE (if box 12 = 'fee')</b>				
<b>15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>16. SURFACE OWNER E-MAIL (if box 12 = 'fee')</b>				
<b>17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')</b> Ute Tribe			<b>18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS</b> YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>			<b>19. SLANT</b> VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>				
<b>20. LOCATION OF WELL</b>		<b>FOOTAGES</b>		<b>QTR-QTR</b>	<b>SECTION</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>MERIDIAN</b>		
LOCATION AT SURFACE		2401 FSL 80 FWL		NWSW	20	9.0 S	21.0 E	S		
Top of Uppermost Producing Zone		1736 FSL 818 FWL		NWSW	20	9.0 S	21.0 E	S		
At Total Depth		1736 FSL 818 FWL		NWSW	20	9.0 S	21.0 E	S		
<b>21. COUNTY</b> UINTAH			<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 818			<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 1600				
			<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 429			<b>26. PROPOSED DEPTH</b> MD: 11429 TVD: 11274				
<b>27. ELEVATION - GROUND LEVEL</b> 4818			<b>28. BOND NUMBER</b> WYB000291			<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> 43-8496				
<b>Hole, Casing, and Cement Information</b>										
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Surf	11	8.625	0 - 2820	28.0	J-55 LT&C	0.2	Type V	180	1.15	15.8
							Class G	270	1.15	15.8
Prod	7.875	4.5	0 - 11429	11.6	HCP-110 LT&C	12.5	Premium Lite High Strength	350	3.38	12.0
							50/50 Poz	1640	1.31	14.3
<b>ATTACHMENTS</b>										
<b>VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES</b>										
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER					<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN					
<input type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)					<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER					
<input checked="" type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)					<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP					
<b>NAME</b> Cara Mahler				<b>TITLE</b> Regulatory Analyst I				<b>PHONE</b> 720 929-6029		
<b>SIGNATURE</b>				<b>DATE</b> 11/27/2012				<b>EMAIL</b> cara.mahler@anadarko.com		
<b>API NUMBER ASSIGNED</b> 43047533500000				<b>APPROVAL</b>  Permit Manager						

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

**NBU 921-20L4BS**

Surface: 2401 FSL / 80 FWL      NWSW  
BHL: 1736 FSL / 818 FWL      NWSW

Section 20 T9S R21E

Unitah County, Utah  
Mineral Lease: UTU 0575

**ONSHORE ORDER NO. 1****DRILLING PROGRAM**

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

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1,605'	
Birds Nest	1,865'	Water
Mahogany	2,373'	Water
Wasatch	4,970'	Gas
Mesaverde	8,002'	Gas
Sego	10,237'	Gas
Castlegate	10,306'	Gas
Blackhawk	10,674'	Gas
TVD =	11,274'	
TD =	11,429'	

- 2.c Kerr McGee Oil & Gas Onshore LP (Kerr McGee) may elect to drill to (i) the Blackhawk formation (part of the Mesaverde Group), (ii) to a shallower depth within the Mesaverde Group, or (iii) to the Wasatch Formation. If Kerr McGee drills to the Blackhawk formation, please refer to Blackhawk as the bottom formation. The attached Blackhawk Drilling Program includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the deeper formation.

If Kerr-McGee drills to a shallower depth in the Mesaverde Group or to the Wasatch Formation, please refer to the attached Wasatch/Mesaverde Drilling Program which includes Total Vertical Depth, Total Depth, and appropriate casing and cement programs for the shallower formations.

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

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

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

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

5. **Drilling Fluids Program:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

6. **Evaluation Program:**

Please refer to the attached Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program

7. **Abnormal Conditions:**

**7.a Blackhawk (Part of Mesaverde Group)**

Maximum anticipated bottom hole pressure calculated at 11274' TVD, approximately equals  
 7,215 psi (0.64 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 4,719 psi (bottom hole pressure  
 minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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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))

**7.b Wasach Formation/Mesaverde Group**

Maximum anticipated bottom hole pressure calculated at 10237' TVD, approximately equals  
 6,245 psi (0.61 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 4,019 psi (bottom hole pressure  
 minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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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 Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program  
 Onshore Order #2 – Air Drilling Variance

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

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

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

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

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

**Background**

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

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

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

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

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

#### **Variance for BOPE Requirements**

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

#### **Variance for Mud Material Requirements**

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

#### **Variance for Special Drilling Operation (surface equipment placement) Requirements**

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

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

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

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

#### **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 Blackhawk Drilling Program and the Wasatch/Mesaverde Drilling Program





**KERR-McGEE OIL & GAS ONSHORE LP**  
**Blackhawk Drilling Program**

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	COLLAPSE	LTC	DQX
								TENSION	
CONDUCTOR	14"	0-40'							
						3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0 to 2,820	28.00	IJ-55	LTC	1.91	1.42	5.03	N/A
						10,690	8,650	279,000	367,174
PRODUCTION	4-1/2"	0 to 5,000	11.60	HCP-110	DQX	1.19	1.18		3.42
	4-1/2"	5,000 to 11,429'	11.60	HCP-110	LTC	1.19	1.18	4.62	

**Surface Casing:**

(Burst Assumptions: TD = 12.5 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) 0.64 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 + 0.25 pps flocele	180	60%	15.80	1.15
Option 1	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE	LEAD	2,320'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	210	35%	11.00	3.82
Option 2	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	4,469'	Premium Lite II + 0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	350	35%	12.00	3.38
	TAIL	6,960'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,640	35%	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. 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:**

Nick Spence / Danny Showers / Travis Hansell

DATE: \_\_\_\_\_

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

DATE: \_\_\_\_\_





**KERR-McGEE OIL & GAS ONSHORE LP**  
**Wasatch/Mesaverde Drilling Program**

**CASING PROGRAM**

							DESIGN FACTORS			
	SIZE	INTERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	LTC	DQX
		TENSION								
CONDUCTOR	14"	0-40'					3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to 2,820	28.00	IJ-55	LTC	1.91	1.42	5.03	N/A
PRODUCTION	4-1/2"	0	to 5,000	11.60	I-80	DQX	1.11	0.99		267,035
	4-1/2"	5,000	to 10,392'	11.60	HCP-110	LTC	10,690	8,650	223,000	2.71
							1.53	1.35	4.37	

**Surface Casing:**

(Burst Assumptions: TD = 12.0 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\*Buoyn.Fact. of water)

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.61 psi/ft = bottomhole gradient  
 (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoyn.Fact. of water)

**CEMENT PROGRAM**

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
Option 1	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>							
SURFACE	LEAD	2,320'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	210	35%	11.00	3.82
Option 2	TAIL	500'	Premium cmt + 2% CaCl + 0.25 pps flocele	150	35%	15.80	1.15
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	4,462'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	350	35%	12.00	3.38
	TAIL	5,930'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,400	35%	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

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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.

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**DRILLING ENGINEER:**

Nick Spence / Danny Showers / Travis Hansell

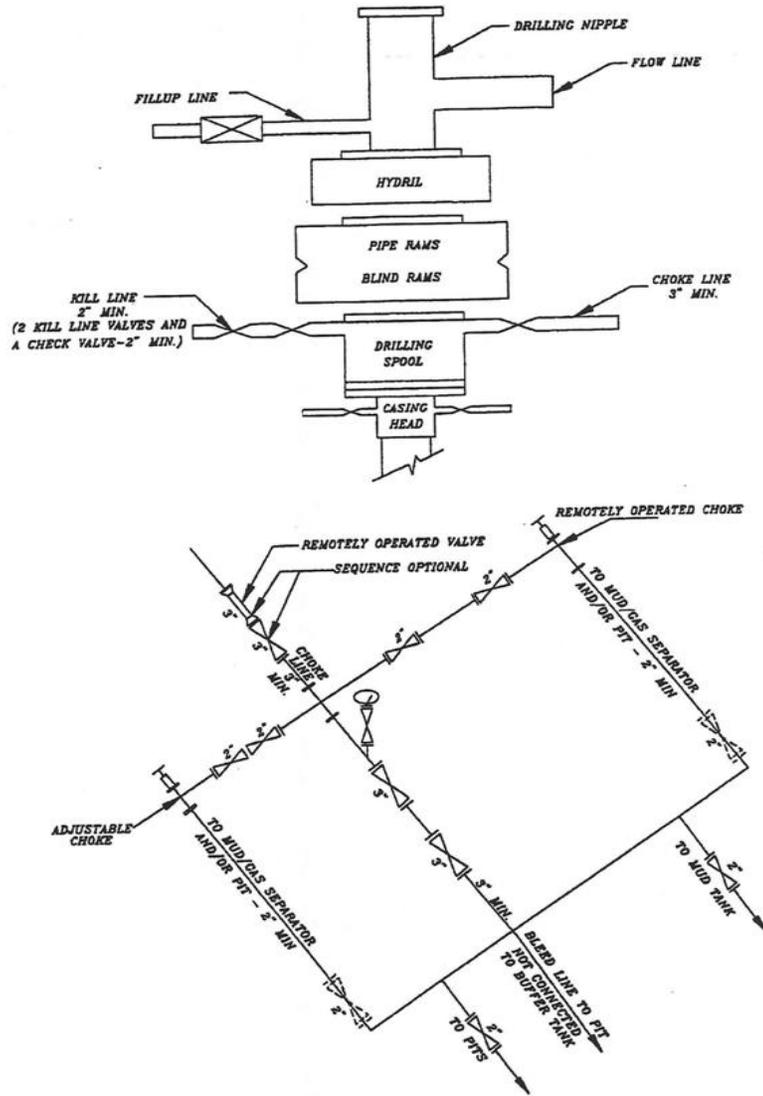
**DATE:**

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

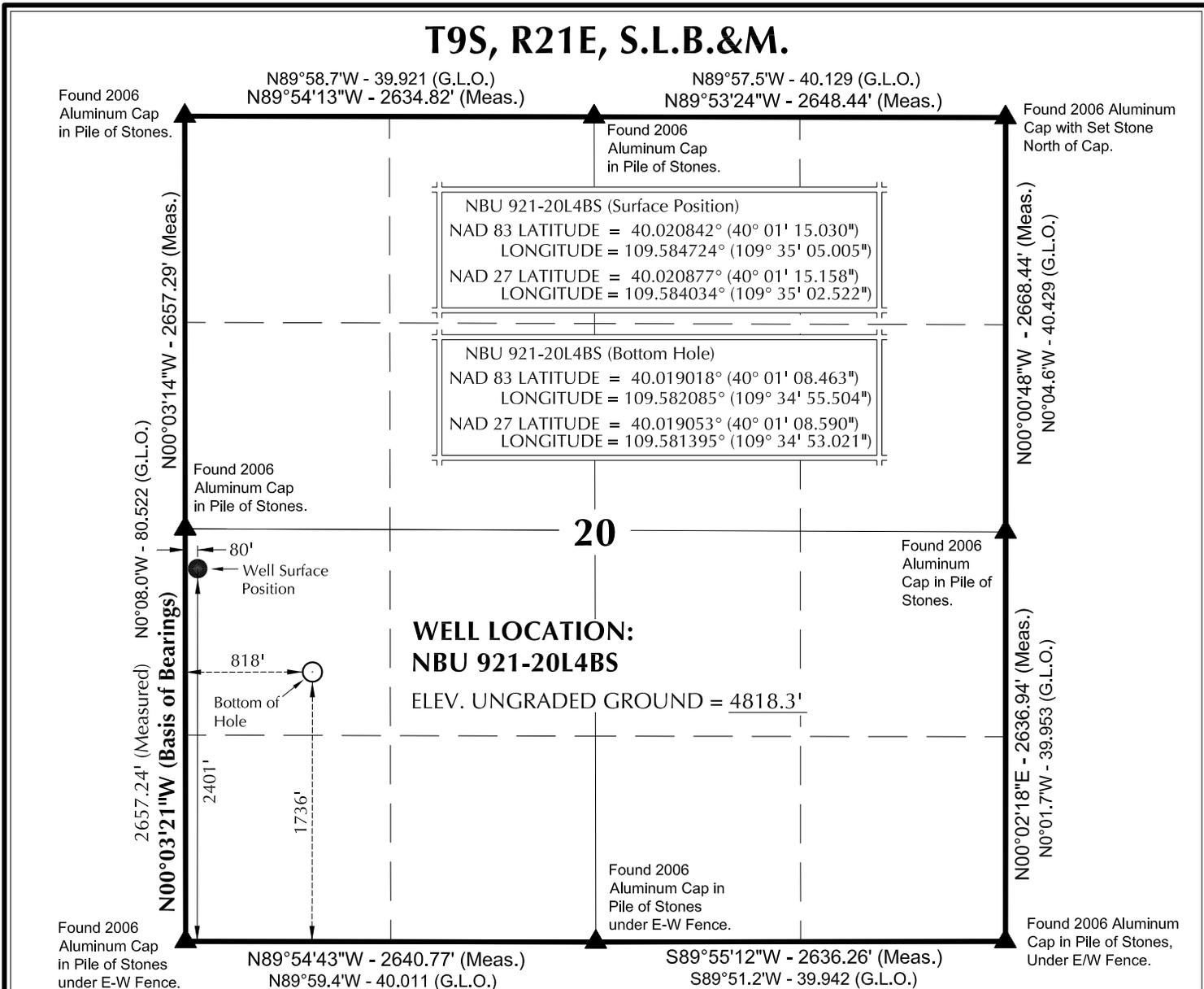
**DATE:**

**EXHIBIT A**  
**NBU 921-20L4BS**



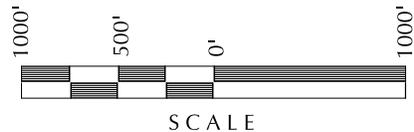
**SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**

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



**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines.
- 2. G.L.O. distances are shown in feet or chains. 1 chain = 66 feet.
- 3. The Bottom of hole bears S47°58'01"E 994.24' from the Surface Position.
- 4. Bearings are based on Global Positioning Satellite observations.
- 5. Basis of elevation is Tri-Sta "Two Water" located in the NW ¼ of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.



**SURVEYOR'S CERTIFICATE**

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

John R. Laughlin  
 PROFESSIONAL LAND SURVEYOR  
 REGISTRATION No. 6028691  
 STATE OF UTAH

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

**WELL PAD: NBU 921-20L**

**NBU 921-20L4BS  
 WELL PLAT  
 1736' FSL, 818' FWL (Bottom Hole)  
 NW ¼ SW ¼ OF SECTION 20, T9S, R21E,  
 S.L.B.&M., UTAH COUNTY, UTAH.**



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

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

DATE SURVEYED: 03-19-12	SURVEYED BY: A.F.	SHEET NO: <b>2</b>
DATE DRAWN: 03-23-12	DRAWN BY: M.W.W.	
SCALE: 1" = 1000'		2 OF 19

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
MU 921-20L	40°01'14.834"	109°35'04.977"	40°01'14.961"	109°35'02.494"	2381' FSL 82' FWL					
NBU 921-20L4BS	40°01'15.030"	109°35'05.005"	40°01'15.158"	109°35'02.522"	2401' FSL 80' FWL	40°01'08.463"	109°34'55.504"	40°01'08.590"	109°34'53.021"	1736' FSL 818' FWL
NBU 921-20L1BS	40°01'15.128"	109°35'05.020"	40°01'15.255"	109°35'02.536"	2410' FSL 79' FWL	40°01'14.984"	109°34'55.511"	40°01'15.111"	109°34'53.028"	2396' FSL 819' FWL
NBU 921-20E4CS	40°01'15.226"	109°35'05.033"	40°01'15.353"	109°35'02.549"	2420' FSL 78' FWL	40°01'18.485"	109°34'55.522"	40°01'18.612"	109°34'53.038"	2564' FNL 819' FWL
NBU 921-20E4BS	40°01'15.324"	109°35'05.047"	40°01'15.451"	109°35'02.563"	2430' FSL 77' FWL	40°01'21.755"	109°34'55.531"	40°01'21.883"	109°34'53.048"	2233' FNL 819' FWL
NBU 921-20E1CS	40°01'15.423"	109°35'05.061"	40°01'15.550"	109°35'02.577"	2440' FSL 76' FWL	40°01'25.026"	109°34'55.541"	40°01'25.153"	109°34'53.057"	1902' FNL 819' FWL
NBU 921-20E1BS	40°01'15.521"	109°35'05.075"	40°01'15.648"	109°35'02.591"	2450' FSL 75' FWL	40°01'28.296"	109°34'55.550"	40°01'28.423"	109°34'53.067"	1571' FNL 819' FWL
CIGE 132-20-9-21	40°01'16.110"	109°35'05.159"	40°01'16.237"	109°35'02.675"	2510' FSL 68' FWL	40.024527°	109.582097°	40.024562°	109.581407°	

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 921-20L4BS	-665.7'	738.5'	NBU 921-20L1BS	-15.6'	739.9'	NBU 921-20E4CS	328.9'	740.6'	NBU 921-20E4BS	649.9'	741.4'
NBU 921-20E1CS	971.0'	742.1'	NBU 921-20E1BS	1,292.0'	742.9'						

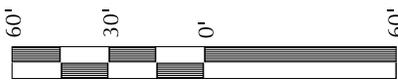
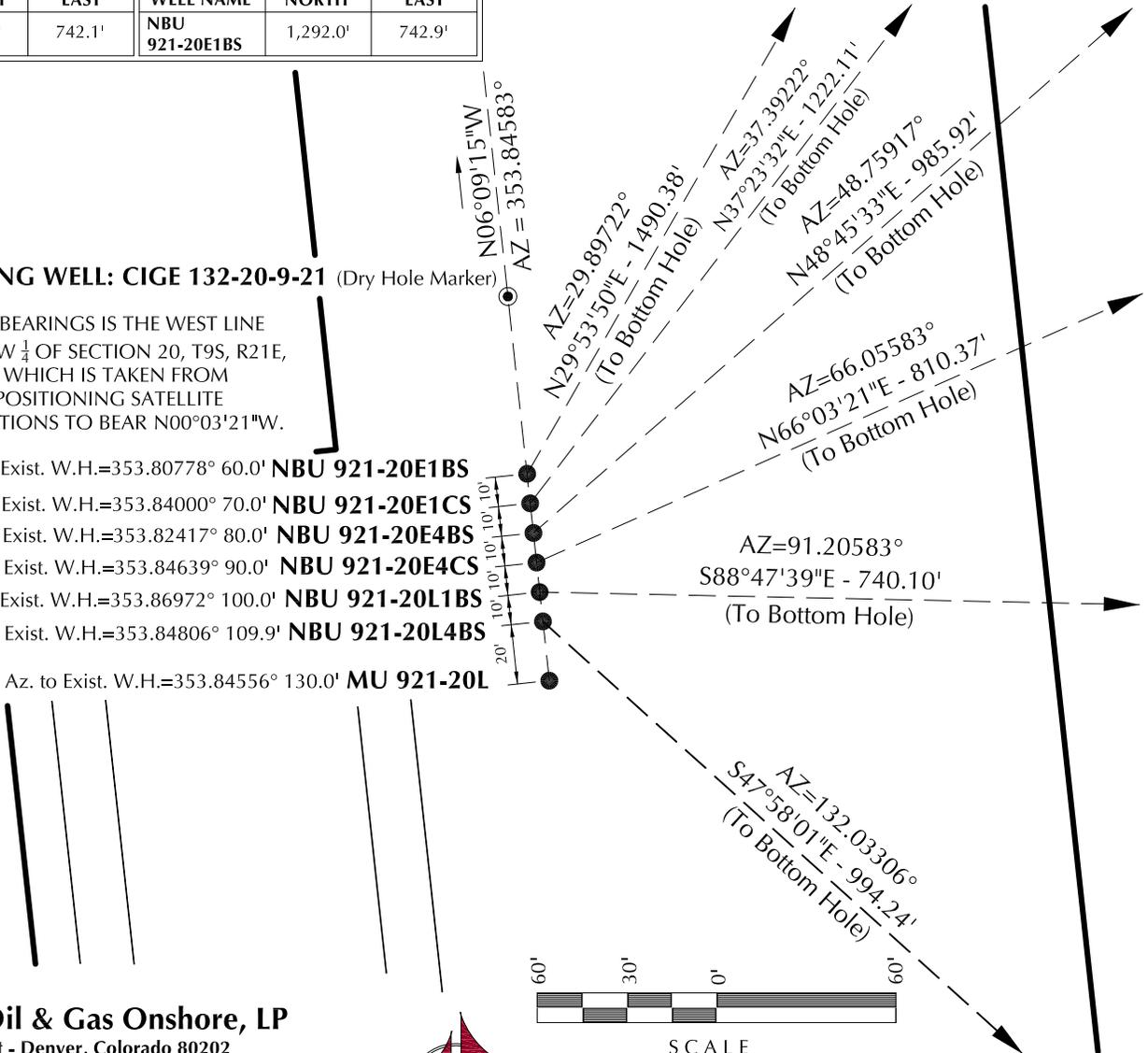
EXISTING WELL: CIGE 132-20-9-21 (Dry Hole Marker)

BASIS OF BEARINGS IS THE WEST LINE OF THE SW ¼ OF SECTION 20, T9S, R21E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N00°03'21"W.



- Az. to Exist. W.H.=353.80778° 60.0' NBU 921-20E1BS
- Az. to Exist. W.H.=353.84000° 70.0' NBU 921-20E1CS
- Az. to Exist. W.H.=353.82417° 80.0' NBU 921-20E4BS
- Az. to Exist. W.H.=353.84639° 90.0' NBU 921-20E4CS
- Az. to Exist. W.H.=353.86972° 100.0' NBU 921-20L1BS
- Az. to Exist. W.H.=353.84806° 109.9' NBU 921-20L4BS

Az. to Exist. W.H.=353.84556° 130.0' MU 921-20L



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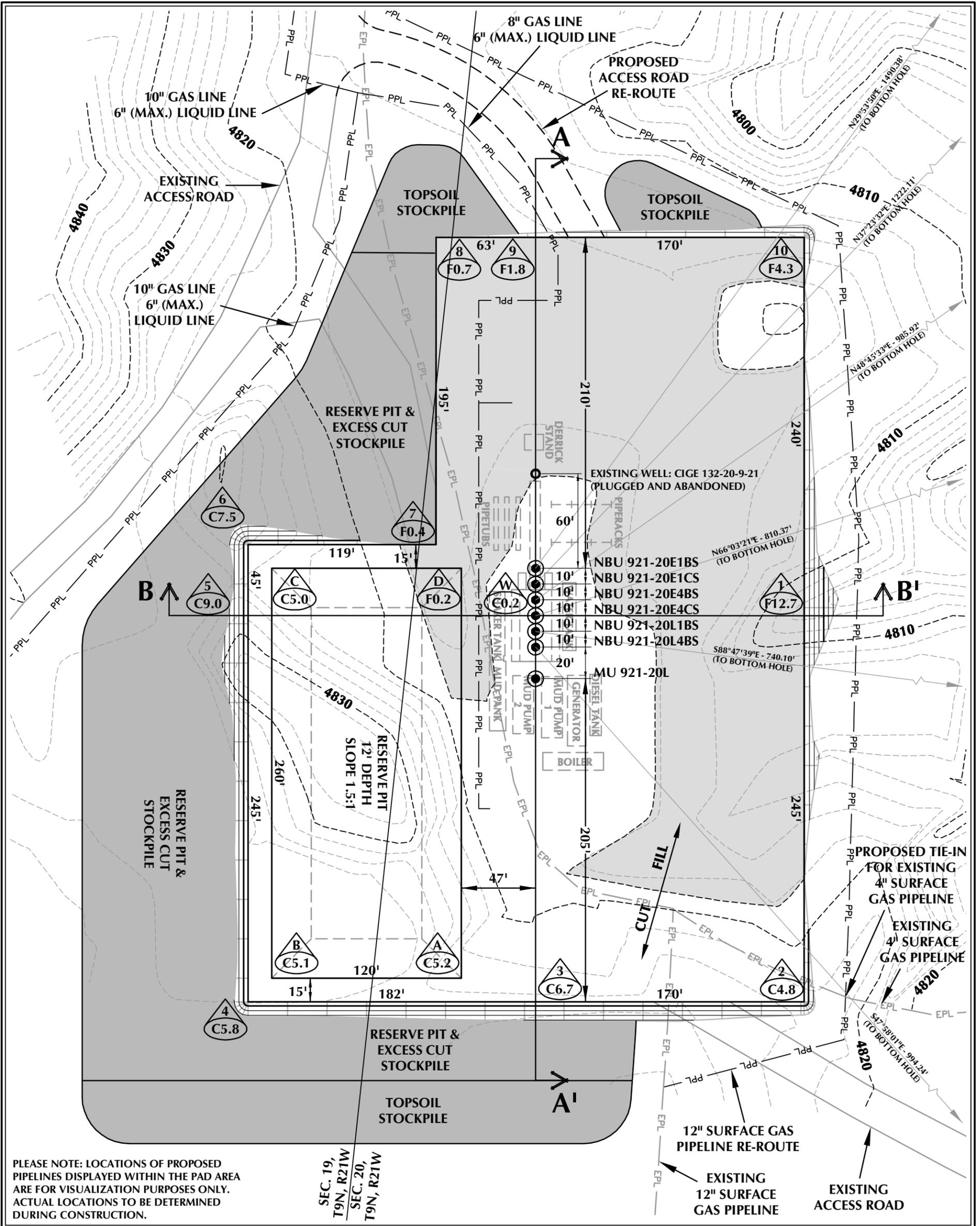
**WELL PAD - NBU 921-20L**  
**WELL PAD INTERFERENCE PLAT**  
WELLS - MU 921-20L,  
NBU 921-20L4BS, NBU 921-20L1BS,  
NBU 921-20E4CS, NBU 921-20E4BS,  
NBU 921-20E1CS & NBU 921-20E1BS  
LOCATED IN SECTION 20, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH.



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

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

DATE SURVEYED: 03-19-12	SURVEYED BY: A.F.	SHEET NO: <b>8</b> 8 OF 19
DATE DRAWN: 03-23-12	DRAWN BY: M.W.W.	
SCALE: 1" = 60'		Date Last Revised:



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

**WELL PAD - NBU 921-20L DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4818.4'  
 FINISHED GRADE ELEVATION = 4818.2'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.65 ACRES  
 TOTAL DISTURBANCE AREA = 5.51 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 921-20L**  
 WELL PAD - LOCATION LAYOUT  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



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 Sheridan, WY 82801  
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 Fax 307-674-0182

**WELL PAD QUANTITIES**

TOTAL CUT FOR WELL PAD = 11,674 C.Y.  
 TOTAL FILL FOR WELL PAD = 5,576 C.Y.  
 TOPSOIL @ 6" DEPTH = 2,942 C.Y.  
 EXCESS MATERIAL = 6,098 C.Y.

**RESERVE PIT QUANTITIES**

TOTAL CUT FOR RESERVE PIT  
 +/- 11,020 C.Y.  
 RESERVE PIT CAPACITY (2' OF FREEBOARD)  
 +/- 42,290 BARRELS

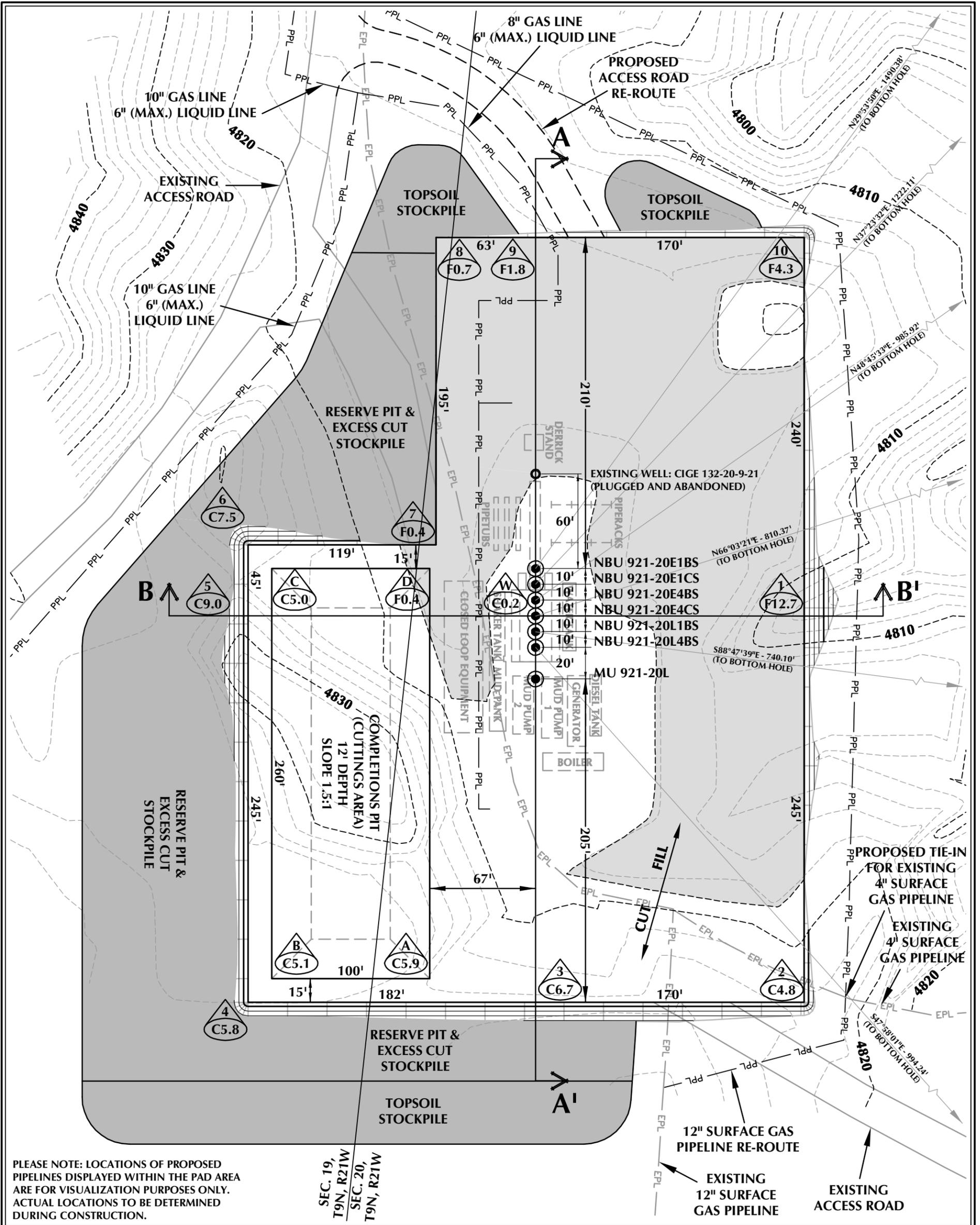
**WELL PAD LEGEND**

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



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

SCALE: 1"=60' DATE: 4/17/12 SHEET NO: 9 OF 19  
 REVISED:



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

**WELL PAD - NBU 921-20L (CLOSED LOOP) DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4818.4'  
 FINISHED GRADE ELEVATION = 4818.2'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.65 ACRES  
 TOTAL DISTURBANCE AREA = 5.51 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 921-20L**  
 WELL PAD - LOCATION LAYOUT  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



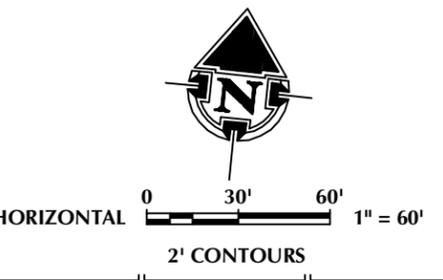
**609 CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
 Fax 307-674-0182

**WELL PAD QUANTITIES**  
 TOTAL CUT FOR WELL PAD = 11,674 C.Y.  
 TOTAL FILL FOR WELL PAD = 5,576 C.Y.  
 TOPSOIL @ 6" DEPTH = 2,942 C.Y.  
 EXCESS MATERIAL = 6,098 C.Y.

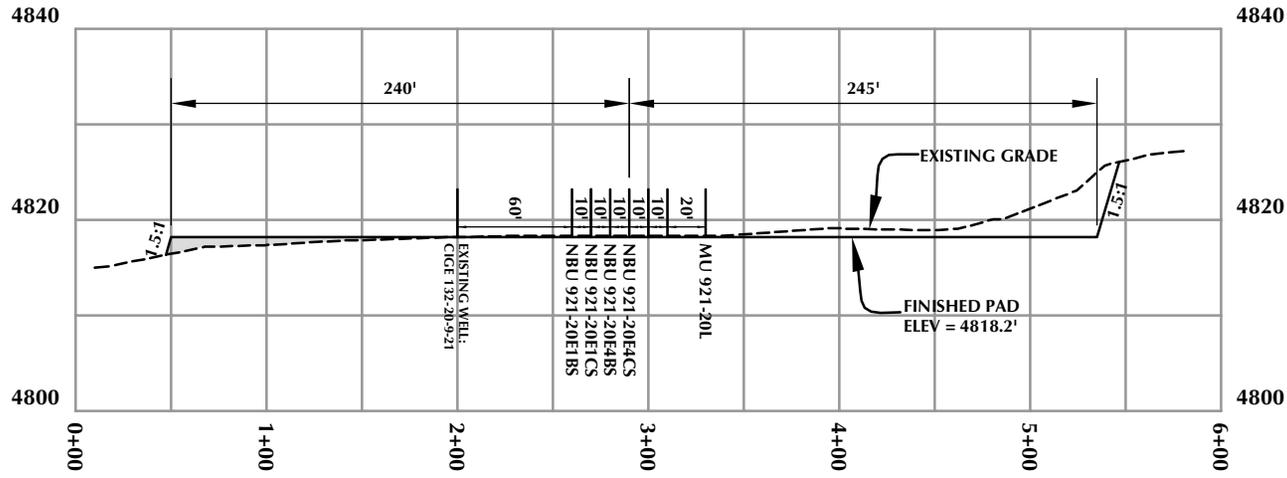
**COMPLETIONS PIT QUANTITIES**  
 TOTAL CUT FOR COMPLETIONS PIT  
 +/- 8,870 C.Y.  
 COMPLETIONS PIT CAPACITY  
 (2' OF FREEBOARD)  
 +/- 33,770 BARRELS

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

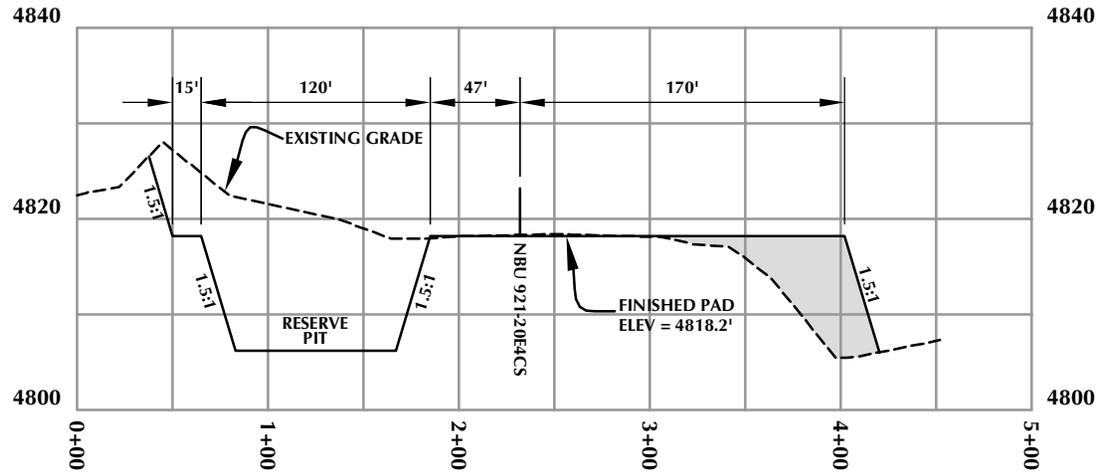
- WELL PAD LEGEND**
- EXISTING WELL LOCATION
  - PROPOSED WELL LOCATION
  - PROPOSED BOTTOM HOLE LOCATION
  - EXISTING CONTOURS (2' INTERVAL)
  - PROPOSED CONTOURS (2' INTERVAL)
  - PROPOSED PIPELINE
  - EXISTING PIPELINE



SCALE: 1"=60' DATE: 4/17/12 SHEET NO:  
 REVISED: **9B** 9B OF 19



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 921-20L**

**WELL PAD - CROSS SECTIONS**  
MU 921-20L,

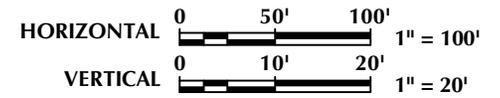
NBU 921-20L4BS, NBU 921-20L1BS,  
NBU 921-20E4CS, NBU 921-20E4BS,  
NBU 921-20E1CS & NBU 921-20E1BS  
LOCATED IN SECTION 20, T9S, R21E,  
S.L.B.&M., UINTAH COUNTY, UTAH



**CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
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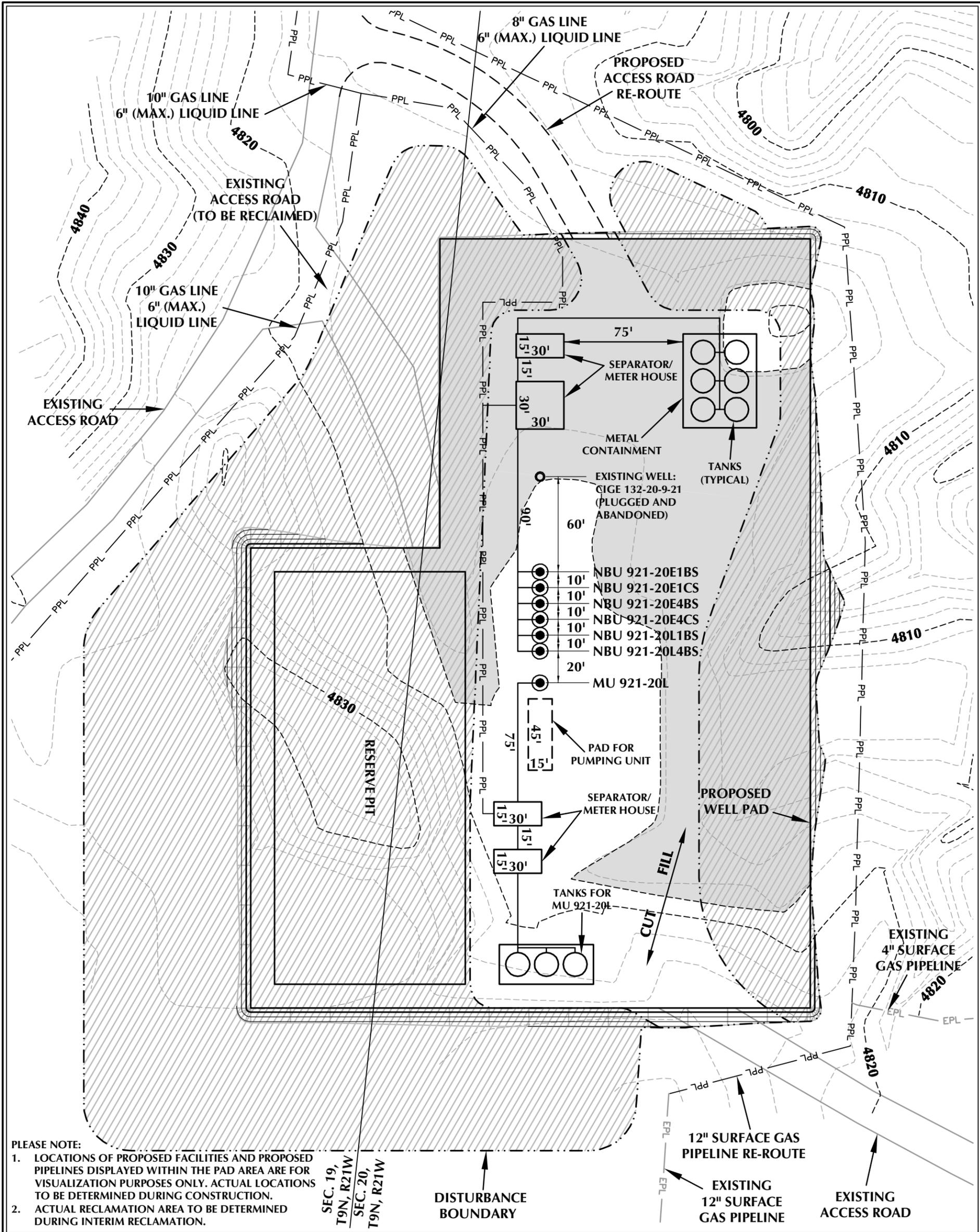
Scale: 1"=100'

Date: 4/17/12

SHEET NO:

REVISED:

**10** 10 OF 19



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

**WELL PAD - NBU 921-20L DESIGN SUMMARY**

TOTAL DISTURBANCE AREA = 5.51 ACRES  
 RECLAMATION AREA = 3.85 ACRES  
 TOTAL WELL PAD AREA AFTER RECLAMATION = 1.66 ACRES

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

**WELL PAD - NBU 921-20L**  
**WELL PAD - RECLAMATION LAYOUT**  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



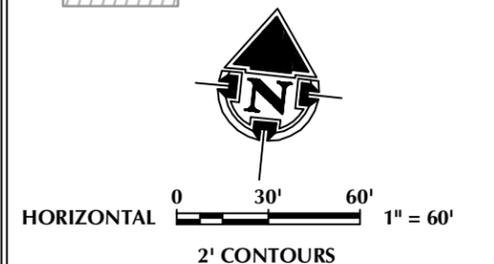
**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone 307-674-0609  
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**TIMBERLINE**  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365

**WELL PAD LEGEND**

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



SCALE: 1"=60' DATE: 4/17/12 SHEET NO:  
 REVISED: **11** 11 OF 19

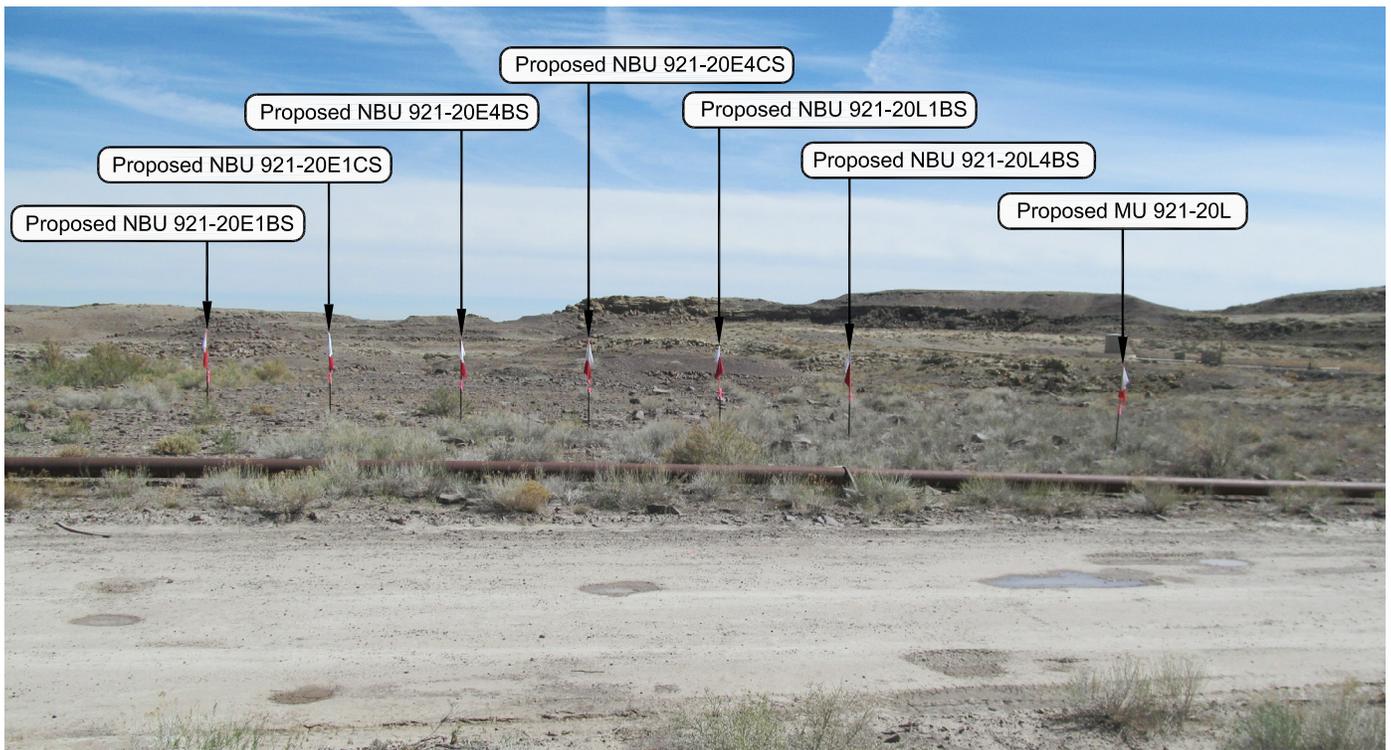


PHOTO VIEW: FROM CORNER #5 TO LOCATION STAKE

CAMERA ANGLE: EASTERLY



PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: SOUTHEASTERLY

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

**WELL PAD - NBU 921-20L**

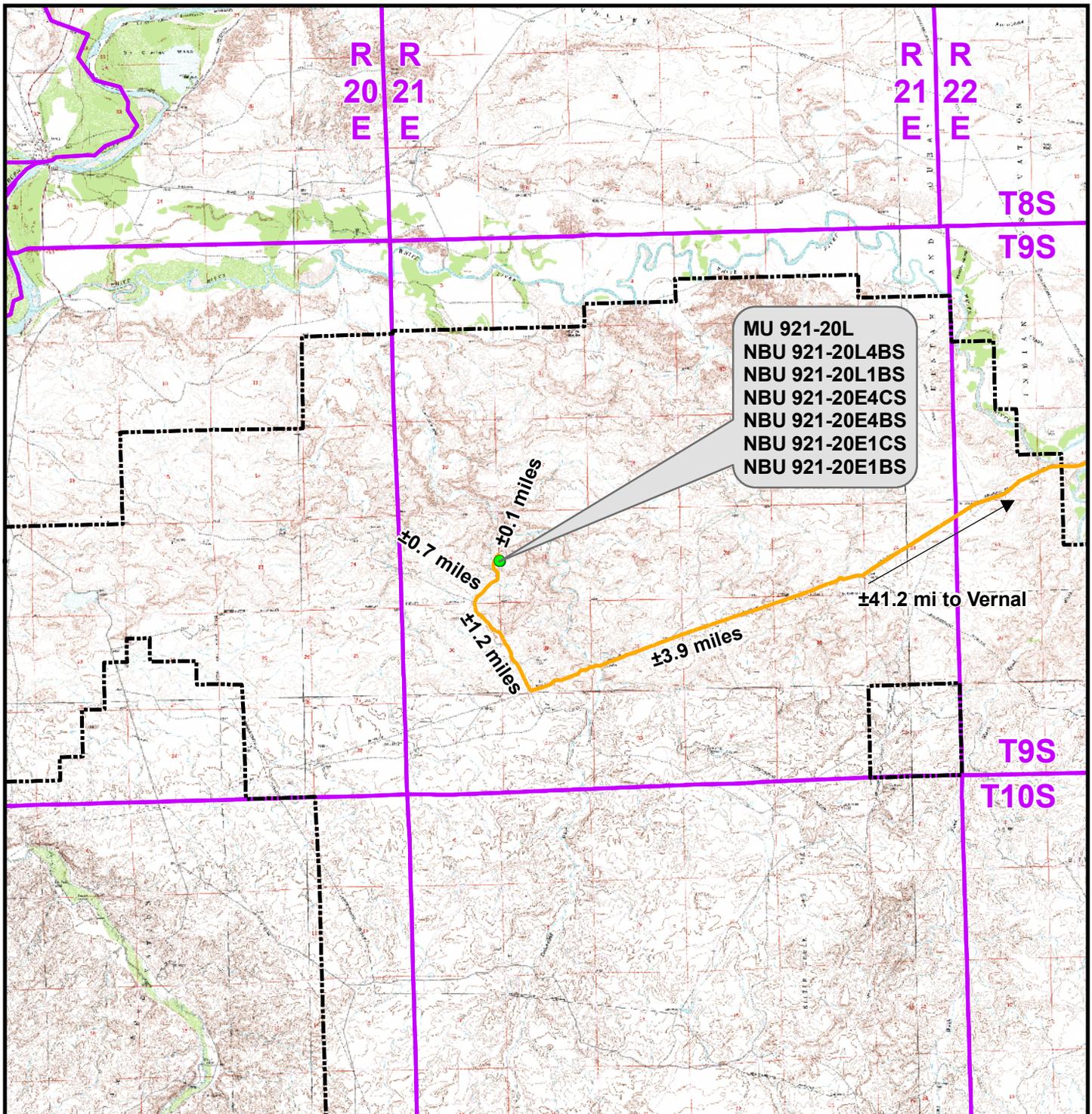
LOCATION PHOTOS  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH.



**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan WY 82801  
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 Fax 307-674-0182

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

DATE PHOTOS TAKEN: 03-19-12	PHOTOS TAKEN BY: A.F.	SHEET NO: <b>12</b>
DATE DRAWN: 03-23-12	DRAWN BY: M.W.W.	
Date Last Revised:		12 OF 19



MU 921-20L  
 NBU 921-20L4BS  
 NBU 921-20L1BS  
 NBU 921-20E4CS  
 NBU 921-20E4BS  
 NBU 921-20E1CS  
 NBU 921-20E1BS

±0.1 miles  
 ±0.7 miles  
 ±1.2 miles  
 ±3.9 miles  
 ±41.2 mi to Vernal

**Legend**

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

Distance From Well Pad - NBU 921-20L To Unit Boundary: ±13,431ft

**WELL PAD - NBU 921-20L**

TOPO A  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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

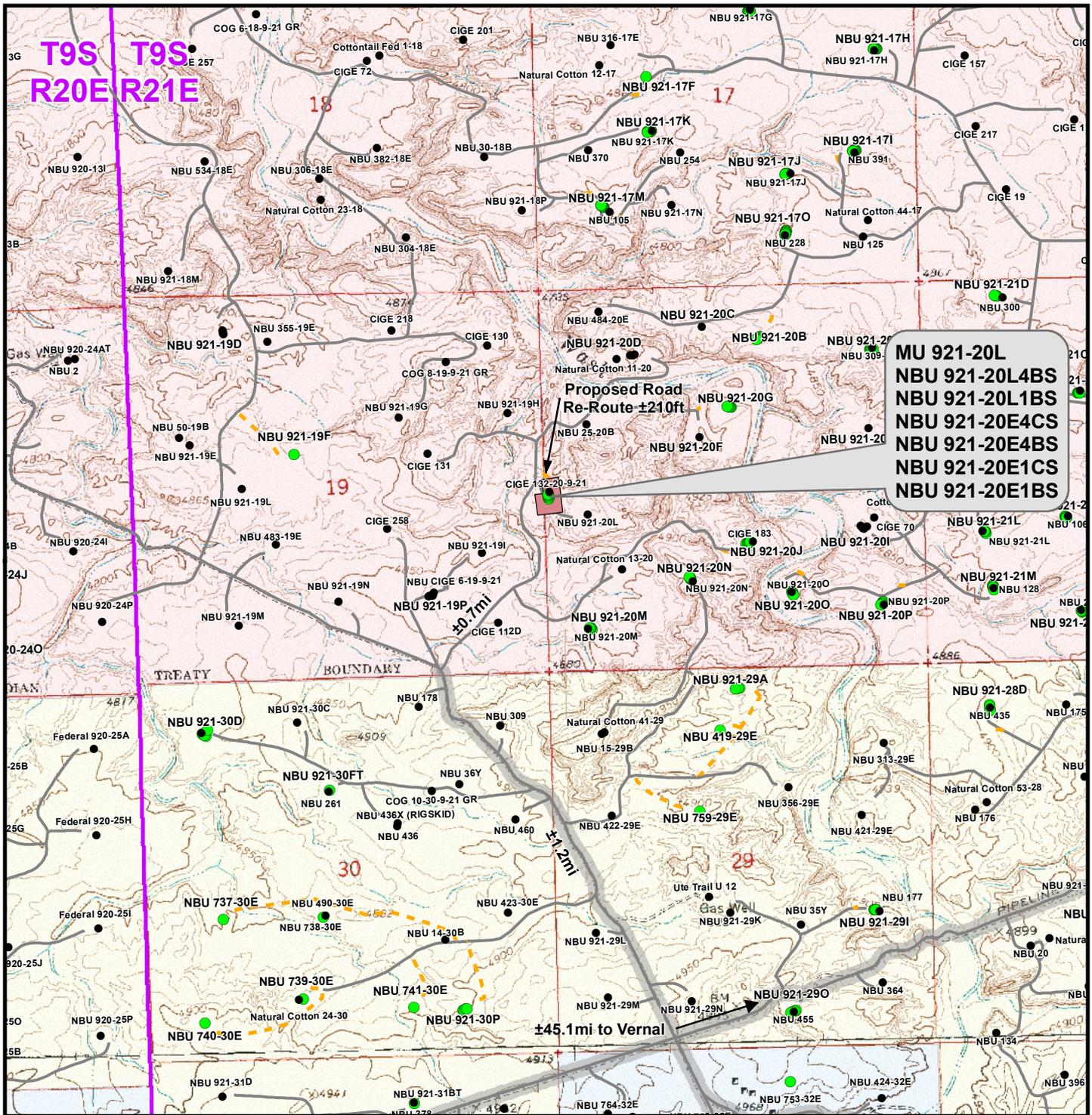
1099 18th Street  
 Denver, Colorado 80202



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



SCALE: 1:100,000	NAD83 USP Central	SHEET NO:
DRAWN: TL	DATE: 17 Apr 2012	<b>13</b>
REVISED:	DATE:	



**MU 921-20L**  
**NBU 921-20L4BS**  
**NBU 921-20L1BS**  
**NBU 921-20E4CS**  
**NBU 921-20E4BS**  
**NBU 921-20E1CS**  
**NBU 921-20E1BS**

**Legend**

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

Total Proposed Road Re-Route Length: ±210ft

**WELL PAD - NBU 921-20L**

TOPO B  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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

1099 18th Street  
 Denver, Colorado 80202

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

SCALE: 1" = 2,000ft

DRAWN: TL

REVISED:

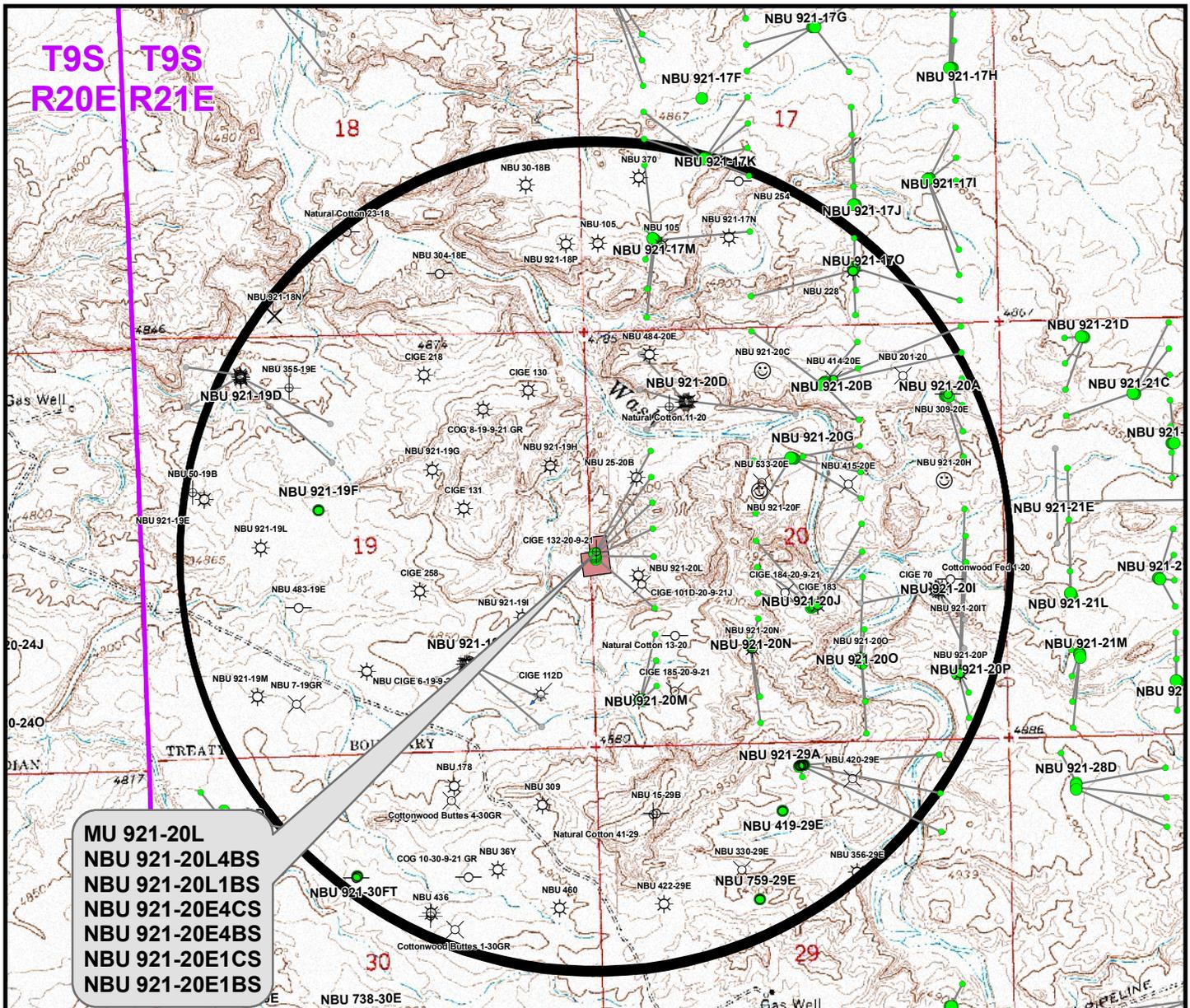
NAD83 USP Central

DATE: 17 Apr 2012

DATE:

SHEET NO:  
14

14 OF 19



**MU 921-20L**  
**NBU 921-20L4BS**  
**NBU 921-20L1BS**  
**NBU 921-20E4CS**  
**NBU 921-20E4BS**  
**NBU 921-20E1CS**  
**NBU 921-20E1BS**

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

Proposed Well	Nearest Well Bore	Footage
MU 921-20L	CIGE 132-20-9-21	130ft
NBU 921-20L4BS	Natural Cotton 13-20	429ft
NBU 921-20L1BS	NBU 921-20L	309ft
NBU 921-20E4CS	NBU 921-20L	623ft
NBU 921-20E4BS	NBU 25-20B	382ft
NBU 921-20E1CS	NBU 25-20B	196ft
NBU 921-20E1BS	NBU 921-20D4CS BH	269ft

**Legend**

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

**WELL PAD - NBU 921-20L**

TOPO C  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

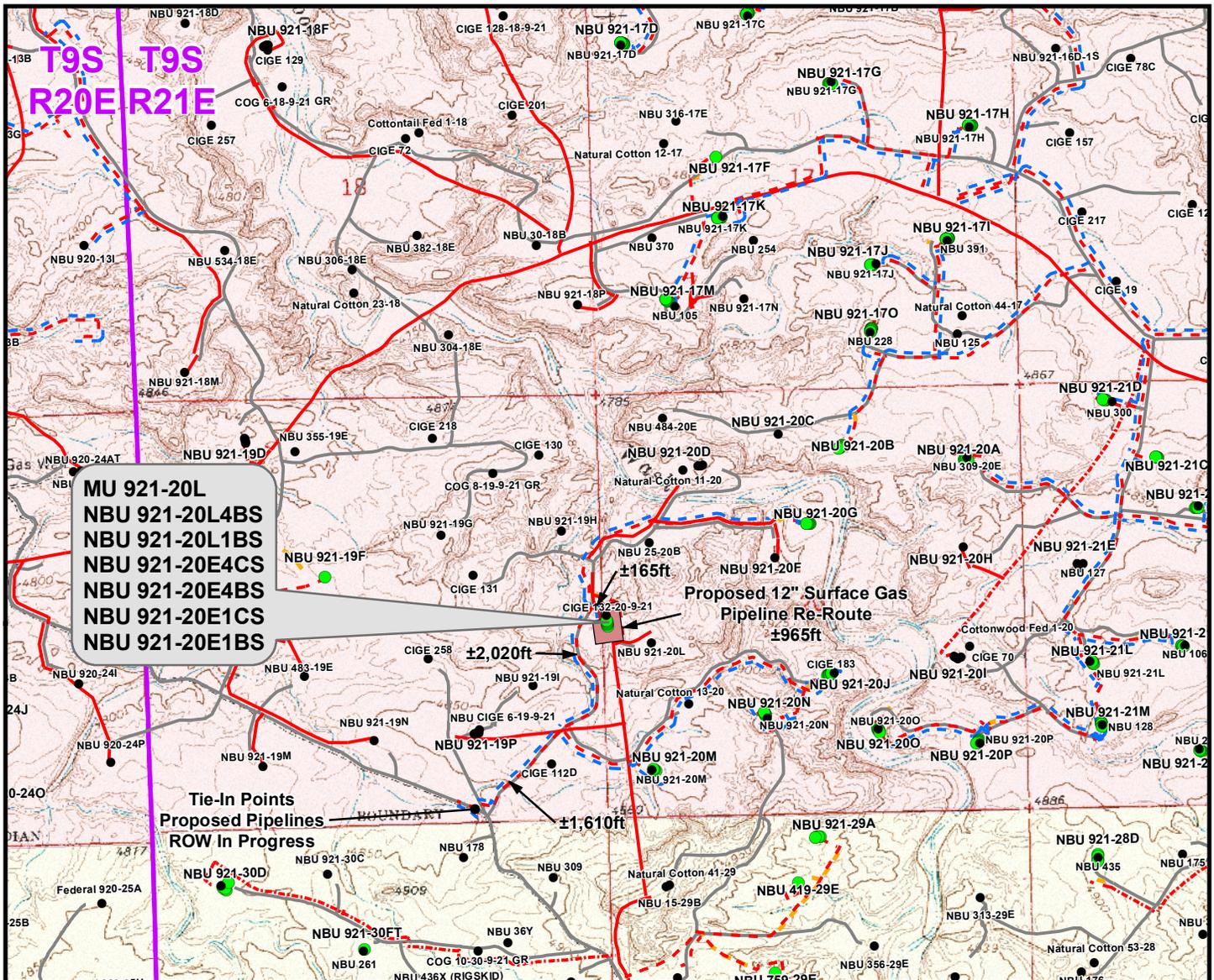
**Kerr-McGee Oil &  
 Gas Onshore L.P.**  
 1099 18th Street  
 Denver, Colorado 80202



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

SCALE: 1" = 2,000ft	NAD83 USP Central	<b>15</b>
DRAWN: TL	DATE: 17 Apr 2012	
REVISED:	DATE:	

SHEET NO:  
15 OF 19



**MU 921-20L**  
**NBU 921-20L4BS**  
**NBU 921-20L1BS**  
**NBU 921-20E4CS**  
**NBU 921-20E4BS**  
**NBU 921-20E1CS**  
**NBU 921-20E1BS**

**Proposed 12" Surface Gas Pipeline Re-Route**

**Tie-In Points Proposed Pipelines ROW In Progress**

Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Meter House to Edge of Pad)	±440ft
Buried 6" (Max.) (Edge of Pad to 20G Intersection)	±165ft
Buried 6" (Max.) (20G Intersection to 20M Intersection)	±2,020ft
Buried 6" (Max.) (20M Intersection to Proposed 6" Liquid Pipeline ROW In Progress)	±1,610ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±4,235ft</b>

Proposed Gas Pipeline	Length
Buried 8" (Meter House to Edge of Pad)	±440ft
Buried 8" (Edge of Pad to 20G Intersection)	±165ft
Buried 10" (20G Intersection to 20M Intersection)	±2,020ft
Buried 16" (20M Intersection to Proposed 16" Gas Pipeline ROW In Progress)	±1,610ft
Surface 12" (Surface Pipeline Re-Route)	±965ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±4,235ft</b>
<b>TOTAL PROPOSED SURFACE GAS PIPELINE =</b>	<b>±965ft</b>

**Legend**

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

**WELL PAD - NBU 921-20L**

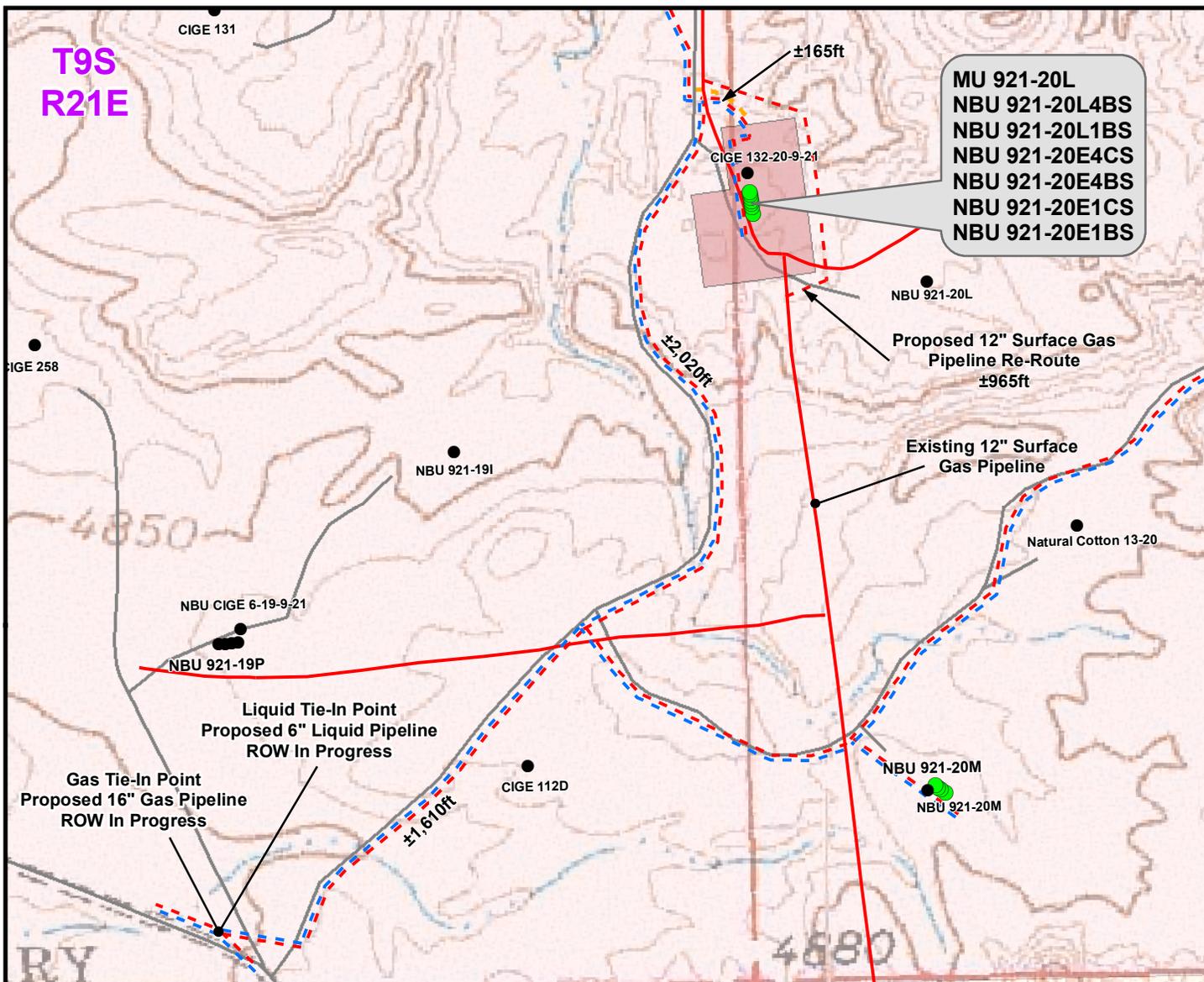
TOPO D  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

**Kerr-McGee Oil & Gas Onshore L.P.**  
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 Denver, Colorado 80202



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

SCALE: 1" = 2,000ft	NAD83 USP Central	<b>16</b>
DRAWN: TL	DATE: 17 Apr 2012	
REVISED:	DATE:	



Proposed Liquid Pipeline	Length
Buried 6" (Max.) (Meter House to Edge of Pad)	±440ft
Buried 6" (Max.) (Edge of Pad to 20G Intersection)	±165ft
Buried 6" (Max.) (20G Intersection to 20M Intersection)	±2,020ft
Buried 6" (Max.) (20M Intersection to Proposed 6" Liquid Pipeline ROW In Progress)	±1,610ft
<b>TOTAL PROPOSED BURIED LIQUID PIPELINE =</b>	<b>±4,235ft</b>

Proposed Gas Pipeline	Length
Buried 8" (Meter House to Edge of Pad)	±440ft
Buried 8" (Edge of Pad to 20G Intersection)	±165ft
Buried 10" (20G Intersection to 20M Intersection)	±2,020ft
Buried 16" (20M Intersection to Proposed 16" Gas Pipeline ROW In Progress)	±1,610ft
Surface 12" (Surface Pipeline Re-Route)	±965ft
<b>TOTAL PROPOSED BURIED GAS PIPELINE =</b>	<b>±4,235ft</b>
<b>TOTAL PROPOSED SURFACE GAS PIPELINE =</b>	<b>±965ft</b>

**Legend**

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

**WELL PAD - NBU 921-20L**

TOPO D2 (PAD & PIPELINE DETAIL)  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

1099 18th Street  
 Denver, Colorado 80202



**CONSULTING, LLC**

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



SCALE: 1" = 500ft

NAD83 USP Central

SHEET NO:

DRAWN: TL

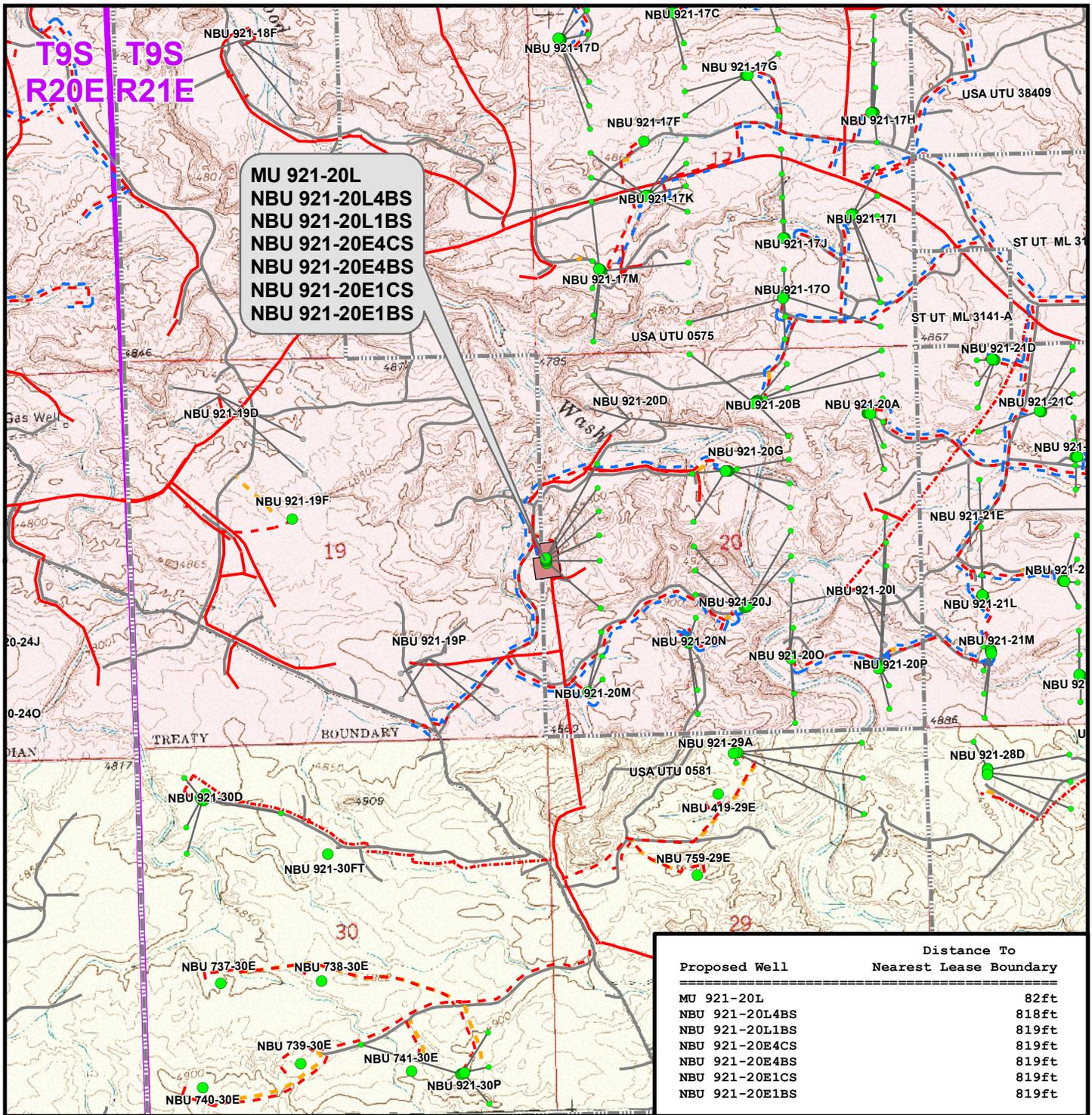
DATE: 17 Apr 2012

**17**

REVISED:

DATE:

17 OF 19



**Legend**

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

**WELL PAD - NBU 921-20L**

TOPO E  
 MU 921-20L,  
 NBU 921-20L4BS, NBU 921-20L1BS,  
 NBU 921-20E4CS, NBU 921-20E4BS,  
 NBU 921-20E1CS & NBU 921-20E1BS  
 LOCATED IN SECTION 20, T9S, R21E,  
 S.L.B.&M., Uintah County, Utah

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

1099 18th Street  
 Denver, Colorado 80202



**CONSULTING, LLC**

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

SCALE: 1" = 2,000ft

NAD83 USP Central

SHEET NO:

DRAWN: TL

DATE: 17 Apr 2012

**18**

REVISED:

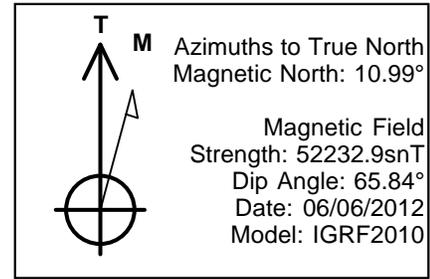
DATE:

18 OF 19

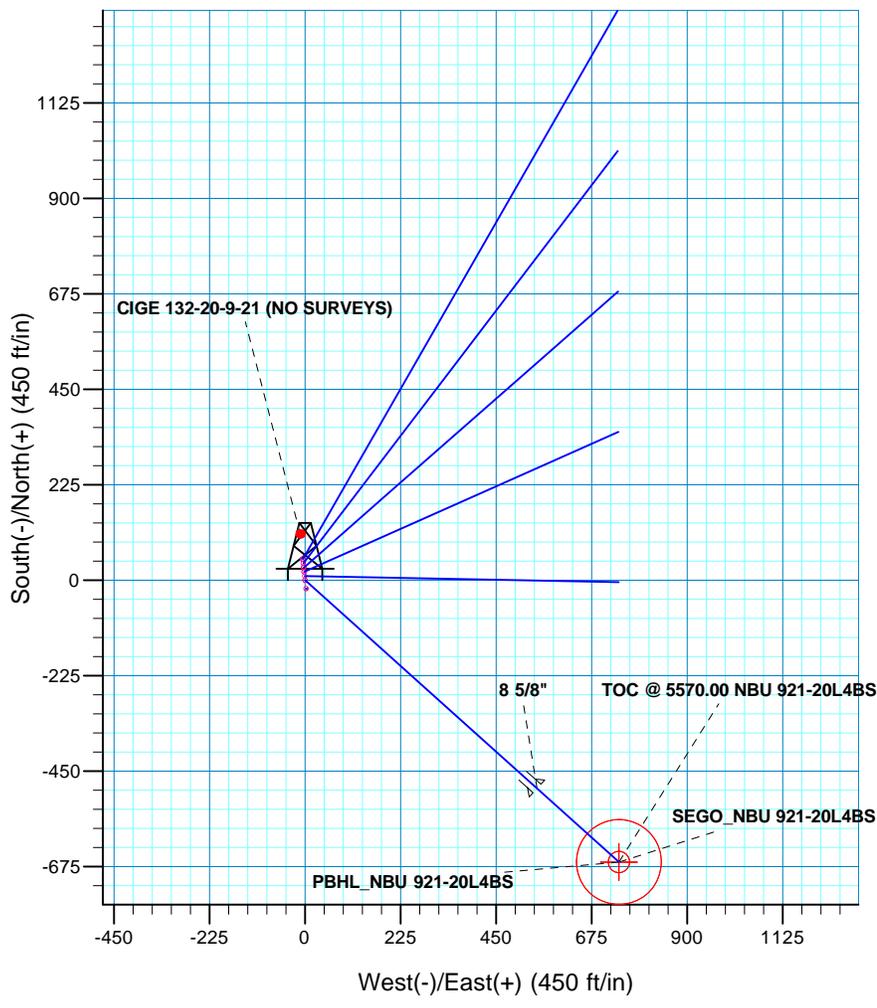
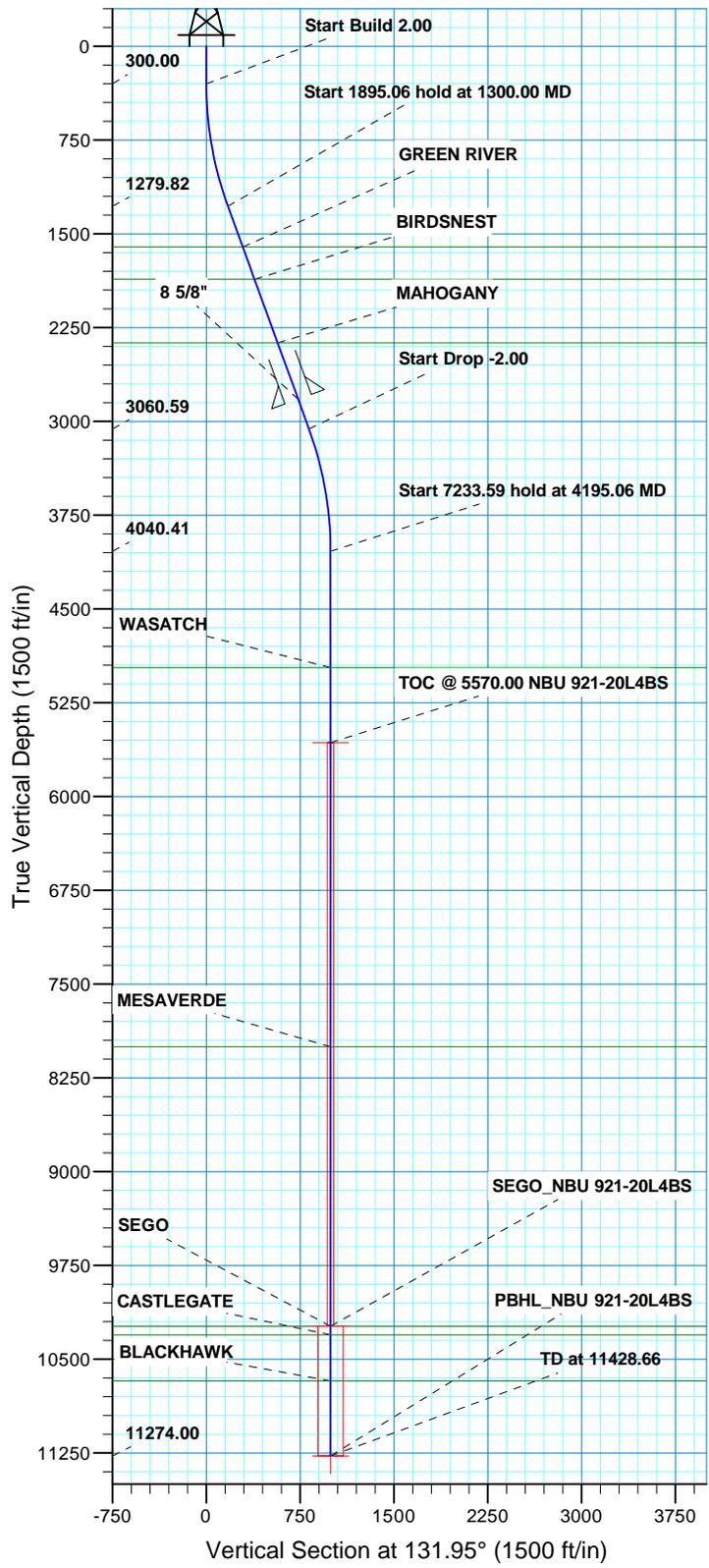
**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD - NBU 921-20L  
WELLS - MU 921-20L,  
NBU 921-20L4BS, NBU 921-20L1BS,  
NBU 921-20E4CS, NBU 921-20E4BS,  
NBU 921-20E1CS & NBU 921-20E1BS  
Section 20, T9S, R21E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 17.7 miles to a Class D County Road to the southwest. Exit right and proceed in a southwesterly direction along the Class D County Road approximately 3.9 miles to a second Class D County Road to the northwest. Exit right and proceed in a northwesterly direction along the second Class D County Road approximately 1.2 miles to a Tribal Road to the northeast. Exit right and proceed in a northeasterly, then northerly direction along the Tribal Road approximately 0.7 miles to the proposed access road to the southeast. Follow road flags in a southeasterly direction approximately 210 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 47.0 miles in a southerly direction.



WELL DETAILS: NBU 921-20L4BS								
GL 4818 & KB 4 @ 4822.00ft (ASSUMED)								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	14536796.93	2037605.99	40.020877	-109.584034			
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TOC	5570.00	-664.29	739.00	14536144.46	2037605.45	40.019053	-109.581395	Point
SEGO	10237.00	-664.29	739.00	14536144.46	2037605.45	40.019053	-109.581395	Circle (Radius: 25.00)
PBHL	11274.00	-664.29	739.00	14536144.46	2037605.45	40.019053	-109.581395	Circle (Radius: 100.00)



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
1300.00	20.00	131.95	1279.82	-115.50	128.49	2.00	131.95	172.77	
3195.06	20.00	131.95	3060.59	-548.80	610.51	0.00	0.00	820.92	
4195.06	0.00	0.00	4040.41	-664.29	739.00	2.00	180.00	993.69	
11428.66	0.00	0.00	11274.00	-664.29	739.00	0.00	0.00	993.69	PBHL_NBU 921-20L4BS

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N			FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet)	TVDPath	MDPath	Formation		
Datum: NAD 1927 (NADCON CONUS)	1605.00	1646.05	GREEN RIVER		
Ellipsoid: Clarke 1866	1865.00	1922.74	BIRDSNEST		
Zone: Zone 12N (114 W to 108 W)	2373.00	2463.34	MAHOGANY		
Location:	4970.00	5124.66	WASATCH		
System Datum: Mean Sea Level	8002.00	8156.66	MESAVERDE		
	10237.00	10391.66	SEGO		
	10306.00	10460.66	CASTLEGATE		
	10674.00	10828.66	BLACKHAWK		

CASING DETAILS			
TVD	MD	Name	Size
2823.00	2942.22	8 5/8"	8.625

RECEIVED:



# Scientific Drilling

## **US ROCKIES REGION PLANNING**

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

NBU 921-20L PAD

NBU 921-20L4BS

OH

Plan: PLAN #1 PERMIT

## **Standard Planning Report**

06 June, 2012





<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Site:</b>	NBU 921-20L PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-20L4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

<b>Project</b>	UTAH - UTM (feet), NAD27, Zone 12N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	NBU 921-20L PAD				
<b>Site Position:</b>	<b>Northing:</b>	14,536,796.93 usft	<b>Latitude:</b>	40.020877	
<b>From:</b> Lat/Long	<b>Easting:</b>	2,036,855.98 usft	<b>Longitude:</b>	-109.584034	
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.91 °

<b>Well</b>	NBU 921-20L4BS, 2401 FSL 80 FWL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,536,796.93 usft	<b>Latitude:</b>	40.020877
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,036,855.98 usft	<b>Longitude:</b>	-109.584034
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,818.00 ft	

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	06/06/12	10.99	65.84	52,233

<b>Design</b>	PLAN #1 PERMIT			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	131.95

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	20.00	131.95	1,279.82	-115.50	128.49	2.00	2.00	0.00	131.95	
3,195.06	20.00	131.95	3,060.59	-548.80	610.51	0.00	0.00	0.00	0.00	
4,195.06	0.00	0.00	4,040.41	-664.29	739.00	2.00	-2.00	0.00	180.00	
11,428.66	0.00	0.00	11,274.00	-664.29	739.00	0.00	0.00	0.00	0.00	PBHL_NBU 921-20L4



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Site:</b>	NBU 921-20L PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-20L4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>										
400.00	2.00	131.95	399.98	-1.17	1.30	1.75	2.00	2.00	2.00	0.00
500.00	4.00	131.95	499.84	-4.67	5.19	6.98	2.00	2.00	2.00	0.00
600.00	6.00	131.95	599.45	-10.49	11.67	15.69	2.00	2.00	2.00	0.00
700.00	8.00	131.95	698.70	-18.64	20.73	27.88	2.00	2.00	2.00	0.00
800.00	10.00	131.95	797.47	-29.10	32.37	43.52	2.00	2.00	2.00	0.00
900.00	12.00	131.95	895.62	-41.85	46.56	62.60	2.00	2.00	2.00	0.00
1,000.00	14.00	131.95	993.06	-56.89	63.29	85.10	2.00	2.00	2.00	0.00
1,100.00	16.00	131.95	1,089.64	-74.19	82.53	110.98	2.00	2.00	2.00	0.00
1,200.00	18.00	131.95	1,185.27	-93.73	104.28	140.21	2.00	2.00	2.00	0.00
1,300.00	20.00	131.95	1,279.82	-115.50	128.49	172.77	2.00	2.00	2.00	0.00
<b>Start 1895.06 hold at 1300.00 MD</b>										
1,400.00	20.00	131.95	1,373.78	-138.36	153.92	206.97	0.00	0.00	0.00	0.00
1,500.00	20.00	131.95	1,467.75	-161.23	179.36	241.17	0.00	0.00	0.00	0.00
1,600.00	20.00	131.95	1,561.72	-184.09	204.80	275.37	0.00	0.00	0.00	0.00
1,646.05	20.00	131.95	1,605.00	-194.62	216.51	291.13	0.00	0.00	0.00	0.00
<b>GREEN RIVER</b>										
1,700.00	20.00	131.95	1,655.69	-206.96	230.23	309.58	0.00	0.00	0.00	0.00
1,800.00	20.00	131.95	1,749.66	-229.82	255.67	343.78	0.00	0.00	0.00	0.00
1,900.00	20.00	131.95	1,843.63	-252.69	281.10	377.98	0.00	0.00	0.00	0.00
1,922.74	20.00	131.95	1,865.00	-257.88	286.89	385.76	0.00	0.00	0.00	0.00
<b>BIRDSNEST</b>										
2,000.00	20.00	131.95	1,937.60	-275.55	306.54	412.18	0.00	0.00	0.00	0.00
2,100.00	20.00	131.95	2,031.57	-298.41	331.98	446.38	0.00	0.00	0.00	0.00
2,200.00	20.00	131.95	2,125.54	-321.28	357.41	480.59	0.00	0.00	0.00	0.00
2,300.00	20.00	131.95	2,219.51	-344.14	382.85	514.79	0.00	0.00	0.00	0.00
2,400.00	20.00	131.95	2,313.48	-367.01	408.28	548.99	0.00	0.00	0.00	0.00
2,463.34	20.00	131.95	2,373.00	-381.49	424.39	570.65	0.00	0.00	0.00	0.00
<b>MAHOGAN Y</b>										
2,500.00	20.00	131.95	2,407.45	-389.87	433.72	583.19	0.00	0.00	0.00	0.00
2,600.00	20.00	131.95	2,501.42	-412.74	459.16	617.39	0.00	0.00	0.00	0.00
2,700.00	20.00	131.95	2,595.39	-435.60	484.59	651.60	0.00	0.00	0.00	0.00
2,800.00	20.00	131.95	2,689.35	-458.47	510.03	685.80	0.00	0.00	0.00	0.00
2,900.00	20.00	131.95	2,783.32	-481.33	535.46	720.00	0.00	0.00	0.00	0.00
2,942.22	20.00	131.95	2,823.00	-490.99	546.20	734.44	0.00	0.00	0.00	0.00
<b>8 5/8"</b>										
3,000.00	20.00	131.95	2,877.29	-504.20	560.90	754.20	0.00	0.00	0.00	0.00
3,100.00	20.00	131.95	2,971.26	-527.06	586.34	788.40	0.00	0.00	0.00	0.00
3,195.06	20.00	131.95	3,060.59	-548.80	610.51	820.92	0.00	0.00	0.00	0.00
<b>Start Drop -2.00</b>										
3,200.00	19.90	131.95	3,065.23	-549.92	611.77	822.60	2.00	-2.00	-2.00	0.00
3,300.00	17.90	131.95	3,159.84	-571.58	635.86	854.99	2.00	-2.00	-2.00	0.00
3,400.00	15.90	131.95	3,255.51	-591.01	657.48	884.07	2.00	-2.00	-2.00	0.00
3,500.00	13.90	131.95	3,352.14	-608.20	676.60	909.78	2.00	-2.00	-2.00	0.00
3,600.00	11.90	131.95	3,449.61	-623.13	693.21	932.11	2.00	-2.00	-2.00	0.00
3,700.00	9.90	131.95	3,547.81	-635.77	707.27	951.02	2.00	-2.00	-2.00	0.00
3,800.00	7.90	131.95	3,646.60	-646.11	718.78	966.49	2.00	-2.00	-2.00	0.00
3,900.00	5.90	131.95	3,745.87	-654.14	727.71	978.50	2.00	-2.00	-2.00	0.00
4,000.00	3.90	131.95	3,845.50	-659.86	734.07	987.05	2.00	-2.00	-2.00	0.00



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Site:</b>	NBU 921-20L PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-20L4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,100.00	1.90	131.95	3,945.36	-663.24	737.83	992.11	2.00	-2.00	0.00	
4,195.06	0.00	0.00	4,040.41	-664.29	739.00	993.69	2.00	-2.00	0.00	
<b>Start 7233.59 hold at 4195.06 MD</b>										
4,200.00	0.00	0.00	4,045.34	-664.29	739.00	993.69	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,145.34	-664.29	739.00	993.69	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,245.34	-664.29	739.00	993.69	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,345.34	-664.29	739.00	993.69	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,445.34	-664.29	739.00	993.69	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,545.34	-664.29	739.00	993.69	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,645.34	-664.29	739.00	993.69	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,745.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,845.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,945.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,124.66	0.00	0.00	4,970.00	-664.29	739.00	993.69	0.00	0.00	0.00	
<b>WASATCH</b>										
5,200.00	0.00	0.00	5,045.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,145.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,245.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,345.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,445.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,545.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,724.66	0.00	0.00	5,570.00	-664.29	739.00	993.69	0.00	0.00	0.00	
<b>TOC @ 5570.00 NBU 921-20L4BS</b>										
5,800.00	0.00	0.00	5,645.34	-664.29	739.00	993.69	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,745.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,845.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,945.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,045.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,145.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,245.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,345.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,445.34	-664.29	739.00	993.69	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,545.35	-664.29	739.00	993.69	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,645.35	-664.29	739.00	993.69	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,745.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,845.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,945.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,045.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,145.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,245.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,345.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,445.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,545.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,645.35	-664.29	739.00	993.69	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,745.35	-664.29	739.00	993.69	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,845.35	-664.29	739.00	993.69	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,945.35	-664.29	739.00	993.69	0.00	0.00	0.00	
8,156.66	0.00	0.00	8,002.00	-664.29	739.00	993.69	0.00	0.00	0.00	
<b>MESAVERDE</b>										
8,200.00	0.00	0.00	8,045.35	-664.29	739.00	993.69	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,145.35	-664.29	739.00	993.69	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,245.35	-664.29	739.00	993.69	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,345.35	-664.29	739.00	993.69	0.00	0.00	0.00	



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Site:</b>	NBU 921-20L PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-20L4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,600.00	0.00	0.00	8,445.35	-664.29	739.00	993.69	0.00	0.00	0.00
8,700.00	0.00	0.00	8,545.35	-664.29	739.00	993.69	0.00	0.00	0.00
8,800.00	0.00	0.00	8,645.35	-664.29	739.00	993.69	0.00	0.00	0.00
8,900.00	0.00	0.00	8,745.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,000.00	0.00	0.00	8,845.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,100.00	0.00	0.00	8,945.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,200.00	0.00	0.00	9,045.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,300.00	0.00	0.00	9,145.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,400.00	0.00	0.00	9,245.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,500.00	0.00	0.00	9,345.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,600.00	0.00	0.00	9,445.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,700.00	0.00	0.00	9,545.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,800.00	0.00	0.00	9,645.35	-664.29	739.00	993.69	0.00	0.00	0.00
9,900.00	0.00	0.00	9,745.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,000.00	0.00	0.00	9,845.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,100.00	0.00	0.00	9,945.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,200.00	0.00	0.00	10,045.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,300.00	0.00	0.00	10,145.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,391.66	0.00	0.00	10,237.00	-664.29	739.00	993.69	0.00	0.00	0.00
<b>SEGO - SEGO_NBU 921-20L4BS</b>									
10,400.00	0.00	0.00	10,245.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,460.66	0.00	0.00	10,306.00	-664.29	739.00	993.69	0.00	0.00	0.00
<b>CASTLEGATE</b>									
10,500.00	0.00	0.00	10,345.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,600.00	0.00	0.00	10,445.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,700.00	0.00	0.00	10,545.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,800.00	0.00	0.00	10,645.35	-664.29	739.00	993.69	0.00	0.00	0.00
10,828.66	0.00	0.00	10,674.00	-664.29	739.00	993.69	0.00	0.00	0.00
<b>BLACKHAWK</b>									
10,900.00	0.00	0.00	10,745.35	-664.29	739.00	993.69	0.00	0.00	0.00
11,000.00	0.00	0.00	10,845.35	-664.29	739.00	993.69	0.00	0.00	0.00
11,100.00	0.00	0.00	10,945.35	-664.29	739.00	993.69	0.00	0.00	0.00
11,200.00	0.00	0.00	11,045.35	-664.29	739.00	993.69	0.00	0.00	0.00
11,300.00	0.00	0.00	11,145.35	-664.29	739.00	993.69	0.00	0.00	0.00
11,400.00	0.00	0.00	11,245.35	-664.29	739.00	993.69	0.00	0.00	0.00
11,428.66	0.00	0.00	11,274.00	-664.29	739.00	993.69	0.00	0.00	0.00
<b>TD at 11428.66 - PBHL_NBU 921-20L4BS</b>									



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 4818 & KB 4 @ 4822.00ft (ASSUMED)
<b>Site:</b>	NBU 921-20L PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 921-20L4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PERMIT		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TOC @ 5570.00 NBU 921-20L4BS - hit/miss target - Shape - Point	0.00	0.00	5,570.00	-664.29	739.00	14,536,144.47	2,037,605.45	40.019053	-109.581395
SEGO_NBU 921-20L4BS - plan hits target center - Circle (radius 25.00)	0.00	0.00	10,237.00	-664.29	739.00	14,536,144.47	2,037,605.45	40.019053	-109.581395
PBHL_NBU 921-20L4BS - plan hits target center - Circle (radius 100.00)	0.00	0.00	11,274.00	-664.29	739.00	14,536,144.47	2,037,605.45	40.019053	-109.581395

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,942.22	2,823.00	8 5/8"	8.625	11.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,646.05	1,605.00	GREEN RIVER			
1,922.74	1,865.00	BIRDSNEST			
2,463.34	2,373.00	MAHOGANY			
5,124.66	4,970.00	WASATCH			
8,156.66	8,002.00	MESAVERDE			
10,391.66	10,237.00	SEGO			
10,460.66	10,306.00	CASTLEGATE			
10,828.66	10,674.00	BLACKHAWK			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,300.00	1,279.82	-115.50	128.49	Start 1895.06 hold at 1300.00 MD	
3,195.06	3,060.59	-548.80	610.51	Start Drop -2.00	
4,195.06	4,040.41	-664.29	739.00	Start 7233.59 hold at 4195.06 MD	
11,428.66	11,274.00	-664.29	739.00	TD at 11428.66	

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

### NBU 921-20L Pad

<u>API #</u>	<u>MU 921-20L</u>		
	Surface:	2381 FSL / 82 FWL	NWSW Lot
	BHL:	2381 FSL / 82 FWL	NWSW Lot
<u>API #</u>	<u>NBU 921-20E1BS</u>		
	Surface:	2450 FSL / 75 FWL	NWSW Lot
	BHL:	1571 FNL / 819 FWL	SWNW Lot
<u>API #</u>	<u>NBU 921-20E1CS</u>		
	Surface:	2440 FSL / 76 FWL	NWSW Lot
	BHL:	1902 FNL / 819 FWL	SWNW Lot
<u>API #</u>	<u>NBU 921-20E4BS</u>		
	Surface:	2430 FSL / 77 FWL	NWSW Lot
	BHL:	2233 FNL / 819 FWL	SWNW Lot
<u>API #</u>	<u>NBU 921-20E4CS</u>		
	Surface:	2420 FSL / 78 FWL	NWSW Lot
	BHL:	2564 FNL / 819 FWL	SWNW Lot
<u>API #</u>	<u>NBU 921-20L1BS</u>		
	Surface:	2410 FSL / 79 FWL	NWSW Lot
	BHL:	2396 FSL / 819 FWL	NWSW Lot
<u>API #</u>	<u>NBU 921-20L4BS</u>		
	Surface:	2401 FSL / 80 FWL	NWSW Lot
	BHL:	1736 FSL / 818 FWL	NWSW Lot

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

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

An on-site meeting was held on May 8, 2012. Present were:

- David Gordon, Melissa Wardle, Tyler Cox - BLM;
- Bucky Secakuku - BIA;
- Brad Pincoose - Ute Indian Tribe;
- Amy Ackman - Montgomery Archeological Consultants Inc.;
- Scott Carson - Smiling Lake Consulting;
- John Slaugh, Mitch Batty - Timberline Engineering & Land Surveying, Inc.;
- Danielle Piernot, Raleen White, Doyle Holmes, Rod Anderson, Charles Chase - Kerr-McGee
- Tim Horgan-Kobelski - Grasslands Consulting, Inc.
- Justin Strauss - SWCA Environmental Consultants

#### A. Existing Roads:

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

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

Roads, gathering lines and electrical distribution lines will occupy common disturbance corridors where possible. Where available, roadways will be used as the staging area and working space for installation of gathering lines. All disturbances located in the same corridor will overlap each other to the maximum extent possible, while maintaining safe and sound construction and installation practices. Unless otherwise approved or requested in site specific documents, in no case will the maximum disturbance widths of the access road and utility corridors exceed the widths specified in Part D of this document.

Please refer to Topo B, for existing roads.

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

All new or reconstructed roads will be located, designed, and maintained to meet the standards of the BIA.

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

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

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

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

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

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

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

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

**The following segments will require a ROW to be submitted under a different cover to the Ute Indian Tribe.**

±210' (0.04 miles) – Section 20 (NW/4 SW/4) T9S R21E – On lease UTU0575 Ute Indian Tribe surface, road re-route from the edge of the pad to the existing road to the north. Please refer to Topo B.

**C. Location of Existing Wells:**

A) Refer to Topo Map C.

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

This pad will expand the existing pad for the CIGE 132-20-9-21, which is a plugged and abandoned well according to Utah Division of Oil, Gas and Mining (UDOGM) records on June 28, 2012. Gathering (pipeline) infrastructure will be utilized to collect and transport gas and fluids from the wells which are owned and operated by Kerr McGee Oil and Gas Onshore LP (Kerr-McGee).

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

**GAS GATHERING**

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

The gas gathering pipeline material: Steel line pipe. Surface = Bare pipe. Buried = Coated with fusion bonded epoxy coating (or equivalent). The total gas gathering pipeline distance from the meter to the tie in point is ±5,200' and the individual segments are broken up as follows:

**The following segments will require a ROW to be submitted under a different cover to the Ute Indian Tribe.**

±4,235' (0.8 miles) – Section 20 and Section 19 T9S R21E– On-lease UTU0575 and UTU0581 Ute Indian Tribe Surface, New 8", 10" and 16" buried gas gathering pipeline from the meter to a proposed 16" gas pipeline. Please refer to Topo D2 - Pad and Pipeline Detail.  
 ±965' (0.2 miles) – Section 20 and Section 19 T9S R21E– On-lease UTU0575 and UTU0581 Ute Indian Tribe Surface, Re-route 12" surface gas gathering pipeline. Please refer to Topo D2 - Pad and Pipeline Detail.

**LIQUID GATHERING**

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

The total liquid gathering pipeline distance from the separator to the tie in point is ±4,235' and the individual segments are broken up as follows:

**The following segments will require a ROW to be submitted under a different cover to the Ute Indian Tribe.**

±4,235' (0.8 miles) – Section 20 and Section 19 T9S R21E– On-lease UTU0575 and UTU0581 Ute Indian Tribe Surface, New 6" buried liquid gathering pipeline from the separator to a proposed 6" liquid pipeline. Please refer to Topo D2 - Pad and Pipeline Detail.

### Pipeline Gathering Construction

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

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

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

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

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

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

If pipelines or roads encounter a drainage that could be subject to flooding or surface water during extreme precipitation events, Kerr-McGee will apply all applicable Army Corps mandates as well as the BLM's Hydraulic Considerations for Pipeline Crossings of Stream Channels (BLM Technical Note 423, April 2007). In addition, all stream and drainage crossings will be evaluated to determine the need for stream alteration permits from the State of Utah Division of Water Rights and if necessary, required permits will be secured. Similarly, where a road or pipeline crossing exists the pipe will be butt welded and buried to a depth between 24 and 48 inches or more. Dirt roads will be cut and restored to a condition equivalent to the existing condition. All Uintah County road encroachment and crossing permits, where applicable, will be obtained prior to crossing construction. In no case will pressure testing of pipelines result in discharge of liquids to the surface.

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

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

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

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

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

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

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

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

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

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

The temporary ACTS lines will be permitted under a separate cover to the Ute Indian Tribe.

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

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

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

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

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

No water well is to be drilled on this lease.

**F. Construction Materials:**

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

**G. Methods for Handling Waste:**

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

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

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

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

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

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

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

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

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

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

### **Materials Management**

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

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

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

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

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

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

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

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

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

#### H. Ancillary Facilities:

ancillary facilities are

#### I. Well Site Layout:

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

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

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

#### J. Plans for Surface Reclamation:

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

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

##### Interim Reclamation

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

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

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

### **Final Reclamation**

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

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

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

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

### **Measures Common to Interim and Final Reclamation**

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

Seeding will occur year-round as conditions allow and will typically be accomplished through the use of a no-till rangeland style seed drill with a "picker box" in order to seed "fluffy" seed. Where drill seeding is not the preferred method, seed will be broadcast and then raked into the ground at double the rate of drill seeding. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for

re-vegetation. The seed mixes will be selected from a list provided by or approved by the BIA/Tribe or a specific seed mix will be proposed by Kerr-McGee to the BIA/Tribe and used after its approval. The selected specific seed mix for each well location and road segment will be utilized while performing interim and final reclamation for each project. All seed will be certified and tags will be maintained by Kerr-McGee. Every effort will be made to obtain "cheat grass free seed".

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

Indian Ricegrass (Nezpar)	3
Sandberg Bluegrass	0.75
Bottlebrush Squirreltail	1
Great Basin Wildrye	0.5
Crested Wheatgrass	1.5
Winterfat	0.25
Shadscale	1.5
Four-wing Saltbrush	0.75
Forage Kochia	0.25
<b>Total</b>	<b>9.5</b>

Additional soil amendments and/or stabilization may be required on sites with poor soils and/or excessive erosion potential. Where severe erosion can become a problem and/or the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. Slopes will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to: erosion control blankets, hydro-mulch, and/or bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

#### **Weed Control**

Noxious weeds will be controlled in all affected areas in accordance with all applicable rules and regulations.

#### **K. Surface/Mineral Ownership:**

Ute Indian Tribe	United States of America
P.O. Box 70	Bureau of Land Management
988 South 7500 East Annex Building	170 South 500 East
Fort Duchesne, UT 84026	Vernal, UT 84078
(435) 722-4307	(435)781-4400

#### **L. Other Information:**

##### **Onsite Specifics:**

- No changes

#### **Cultural and Paleontological Resources**

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

#### **Resource Reports:**

A Class I literature survey report was completed on May 21, 2012 by Montgomery Archaeological Consultants, Inc (MOAC). For additional details please refer to report MOAC 12-152.

A paleontological reconnaissance survey was completed on April 10-16, 2012 by SWCA Environmental Consultants. For additional details please refer to report UT12-14314-101 and UT12-14314-122.

Biological field survey was completed on April 10-13, 2012 by Grasslands Consulting, Inc (GCI). For additional details please refer to report GCI-769 and GCI-776.

**Proposed Action Annual Emissions Tables:**

<b>Table 1: Proposed Action Annual Emissions (tons/year)<sup>1</sup></b>			
<b>Pollutant</b>	<b>Development</b>	<b>Production</b>	<b>Total</b>
NOx	3.8	0.12	3.92
CO	2.2	0.11	2.31
VOC	0.1	4.9	5
SO <sub>2</sub>	0.005	0.0043	0.0093
PM <sub>10</sub>	1.7	0.11	1.81
PM <sub>2.5</sub>	0.4	0.025	0.425
Benzene	2.2E-03	0.044	0.046
Toluene	1.6E-03	0.103	0.105
Ethylbenzene	3.4E-04	0.005	0.005
Xylene	1.1E-03	0.076	0.077
n-Hexane	1.7E-04	0.145	0.145
Formaldehyde	1.3E-02	8.64E-05	1.31E-02

<sup>1</sup> Emissions include 1 producing well and associated operations traffic during the year in which the project is developed

<b>Table 2: Proposed Action versus 2012 WRAP Phase III Emissions Inventory Comparison</b>			
<b>Species</b>	<b>Proposed Action Production Emissions (ton/yr)</b>	<b>WRAP Phase III 2012 Uintah Basin Emission Inventory<sup>a</sup> (ton/yr)</b>	<b>Percentage of Proposed Action to WRAP Phase III</b>
NOx	27.44	16,547	0.17%
VOC	35	127,495	0.03%

<sup>a</sup> [http://www.wrapair.org/forums/ogwg/PhaseIII\\_Inventory.html](http://www.wrapair.org/forums/ogwg/PhaseIII_Inventory.html)

Uintah Basin Data

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

Danielle Piernot  
Regulatory Analyst II  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6156

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

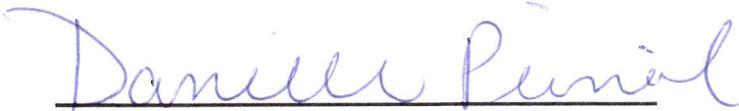
Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

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

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

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

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

  
\_\_\_\_\_

Danielle Piernot

June 22, 2012  
\_\_\_\_\_

Date



# 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)

December 6, 2012

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

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

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

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
<b>NBU 921-20A PAD</b>		
43-047-53330	NBU 921-20A4BS	Sec 20 T09S R21E 0947 FNL 0708 FEL BHL Sec 20 T09S R21E 0744 FNL 0491 FEL
43-047-53331	NBU 921-20A4CS	Sec 20 T09S R21E 0951 FNL 0678 FEL BHL Sec 20 T09S R21E 1075 FNL 0491 FEL
43-047-53334	NBU 921-20H1BS	Sec 20 T09S R21E 0950 FNL 0688 FEL BHL Sec 20 T09S R21E 1405 FNL 0491 FEL
43-047-53335	NBU 921-20H1CS	Sec 20 T09S R21E 0948 FNL 0698 FEL BHL Sec 20 T09S R21E 1736 FNL 0491 FEL
<b>NBU 921-20L PAD</b>		
43-047-53333	NBU 921-20E1BS	Sec 20 T09S R21E 2450 FSL 0075 FWL BHL Sec 20 T09S R21E 1571 FNL 0819 FWL
43-047-53336	NBU 921-20E1CS	Sec 20 T09S R21E 2440 FSL 0076 FWL BHL Sec 20 T09S R21E 1902 FNL 0819 FWL
43-047-53339	NBU 921-20E4BS	Sec 20 T09S R21E 2430 FSL 0077 FWL BHL Sec 20 T09S R21E 2233 FNL 0819 FWL
43-047-53342	NBU 921-20E4CS	Sec 20 T09S R21E 2420 FSL 0078 FWL BHL Sec 20 T09S R21E 2564 FNL 0819 FWL
43-047-53345	NBU 921-20L1BS	Sec 20 T09S R21E 2410 FSL 0079 FWL BHL Sec 20 T09S R21E 2396 FSL 0819 FWL
43-047-53350	NBU 921-20L4BS	Sec 20 T09S R21E 2401 FSL 0080 FWL BHL Sec 20 T09S R21E 1736 FSL 0818 FWL

RECEIVED: December 06, 2012

API #	WELL NAME	LOCATION						
(Proposed PZ WASATCH-MESA VERDE)								
<b>NBU 921-20B PAD</b>								
43-047-53337	NBU 921-20C1BS	Sec 20	T09S	R21E	0777	FNL	2269	FEL
	BHL	Sec 20	T09S	R21E	0083	FNL	2136	FWL
43-047-53338	NBU 921-20A1BS	Sec 20	T09S	R21E	0745	FNL	2231	FEL
	BHL	Sec 20	T09S	R21E	0083	FNL	0491	FEL
43-047-53340	NBU 921-20A1CS	Sec 20	T09S	R21E	0764	FNL	2253	FEL
	BHL	Sec 20	T09S	R21E	0413	FNL	0491	FEL
43-047-53341	NBU 921-20B1BS	Sec 20	T09S	R21E	0751	FNL	2238	FEL
	BHL	Sec 20	T09S	R21E	0248	FNL	1808	FEL
43-047-53343	NBU 921-20B1CS	Sec 20	T09S	R21E	0738	FNL	2223	FEL
	BHL	Sec 20	T09S	R21E	0578	FNL	1808	FEL
43-047-53344	NBU 921-20B4CS	Sec 20	T09S	R21E	0771	FNL	2261	FEL
	BHL	Sec 20	T09S	R21E	1240	FNL	1807	FEL
<b>NBU 921-20G PAD</b>								
43-047-53346	NBU 921-20G1BS	Sec 20	T09S	R21E	1706	FNL	2606	FWL
	BHL	Sec 20	T09S	R21E	1570	FNL	1807	FEL
43-047-53348	NBU 921-20G1CS	Sec 20	T09S	R21E	1712	FNL	2636	FWL
	BHL	Sec 20	T09S	R21E	1901	FNL	1807	FEL
43-047-53352	NBU 921-20F1BS	Sec 20	T09S	R21E	1702	FNL	2587	FWL
	BHL	Sec 20	T09S	R21E	1732	FNL	2126	FWL
43-047-53354	NBU 921-20F4CS	Sec 20	T09S	R21E	1704	FNL	2597	FWL
	BHL	Sec 20	T09S	R21E	2399	FNL	2134	FWL
43-047-53356	NBU 921-20G4BS	Sec 20	T09S	R21E	1710	FNL	2626	FWL
	BHL	Sec 20	T09S	R21E	2232	FNL	1806	FEL
<b>NBU 921-20M PAD</b>								
43-047-53347	NBU 921-20M1CS	Sec 20	T09S	R21E	0575	FSL	0625	FWL
	BHL	Sec 20	T09S	R21E	0746	FSL	0818	FWL
43-047-53349	NBU 921-20M1BS	Sec 20	T09S	R21E	0581	FSL	0617	FWL
	BHL	Sec 20	T09S	R21E	1076	FSL	0818	FWL
43-047-53355	NBU 921-20L4CS	Sec 20	T09S	R21E	0587	FSL	0609	FWL
	BHL	Sec 20	T09S	R21E	1406	FSL	0818	FWL
<b>NBU 921-20N PAD</b>								
43-047-53351	NBU 921-20N4CS	Sec 20	T09S	R21E	1256	FSL	2008	FWL
	BHL	Sec 20	T09S	R21E	0249	FSL	2132	FWL
43-047-53358	NBU 921-20J4CS	Sec 20	T09S	R21E	1239	FSL	2019	FWL
	BHL	Sec 20	T09S	R21E	1407	FSL	1805	FEL
43-047-53359	NBU 921-20K4CS	Sec 20	T09S	R21E	1265	FSL	2003	FWL
	BHL	Sec 20	T09S	R21E	1572	FSL	2133	FWL
43-047-53360	NBU 921-20N4BS	Sec 20	T09S	R21E	1248	FSL	2014	FWL
	BHL	Sec 20	T09S	R21E	0579	FSL	2132	FWL
43-047-53361	NBU 921-20O4BS	Sec 20	T09S	R21E	1231	FSL	2024	FWL
	BHL	Sec 20	T09S	R21E	0492	FSL	1810	FEL

API #	WELL NAME			LOCATION						
(Proposed PZ WASATCH-MESA VERDE)										
<b>NBU 921-20P PAD</b>										
43-047-53362	NBU 921-20H4CS	Sec	20	T09S	R21E	0842	FSL	0606	FEL	
		BHL	Sec	20	T09S	R21E	2397	FNL	0491	FEL
43-047-53363	NBU 921-20I1BS	Sec	20	T09S	R21E	0850	FSL	0599	FEL	
		BHL	Sec	20	T09S	R21E	2559	FSL	0491	FEL
43-047-53364	NBU 921-20I1CS	Sec	20	T09S	R21E	0857	FSL	0593	FEL	
		BHL	Sec	20	T09S	R21E	2229	FSL	0491	FEL
43-047-53366	NBU 921-20O4CS	Sec	20	T09S	R21E	0819	FSL	0625	FEL	
		BHL	Sec	20	T09S	R21E	0084	FSL	1804	FEL
43-047-53367	NBU 921-20P4CS	Sec	20	T09S	R21E	0827	FSL	0618	FEL	
		BHL	Sec	20	T09S	R21E	0249	FSL	0490	FEL
43-047-53368	NBU 921-20P4BS	Sec	20	T09S	R21E	0834	FSL	0612	FEL	
		BHL	Sec	20	T09S	R21E	0579	FSL	0490	FEL
<b>NBU 921-20J PAD</b>										
43-047-53365	NBU 921-20G4CS	Sec	20	T09S	R21E	1726	FSL	2431	FEL	
		BHL	Sec	20	T09S	R21E	2563	FNL	1806	FEL

Michael L. Coulthard

Digitally signed by Michael L. Coulthard  
 DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch of Minerals, email=Michael.Coulthard@blm.gov, c=US  
 Date: 2012.12.06 09:34:53 -0700

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

MCoulthard:mc:12-6-12

API Number	Well Name	Surface Location		
		Sec 20	T09S R21E	
43-047-53330	NBU 921-20A4BS	Sec 20	T09S R21E	0947 FNL 0708 FEL
43-047-53331	NBU 921-20A4CS	Sec 20	T09S R21E	0951 FNL 0678 FEL
43-047-53333	NBU 921-20E1BS	Sec 20	T09S R21E	2450 FSL 0075 FWL
43-047-53334	NBU 921-20H1BS	Sec 20	T09S R21E	0950 FNL 0688 FEL
43-047-53335	NBU 921-20H1CS	Sec 20	T09S R21E	0948 FNL 0698 FEL
43-047-53336	NBU 921-20E1CS	Sec 20	T09S R21E	2440 FSL 0076 FWL
43-047-53337	NBU 921-20C1BS	Sec 20	T09S R21E	0777 FNL 2269 FEL
43-047-53338	NBU 921-20A1BS	Sec 20	T09S R21E	0745 FNL 2231 FEL
43-047-53339	NBU 921-20E4BS	Sec 20	T09S R21E	2430 FSL 0077 FWL
43-047-53340	NBU 921-20A1CS	Sec 20	T09S R21E	0764 FNL 2253 FEL
43-047-53341	NBU 921-20B1BS	Sec 20	T09S R21E	0751 FNL 2238 FEL
43-047-53342	NBU 921-20E4CS	Sec 20	T09S R21E	2420 FSL 0078 FWL
43-047-53343	NBU 921-20B1CS	Sec 20	T09S R21E	0738 FNL 2223 FEL
43-047-53344	NBU 921-20B4CS	Sec 20	T09S R21E	0771 FNL 2261 FEL
43-047-53345	NBU 921-20L1BS	Sec 20	T09S R21E	2410 FSL 0079 FWL
43-047-53346	NBU 921-20G1BS	Sec 20	T09S R21E	1706 FNL 2606 FWL
43-047-53347	NBU 921-20M1CS	Sec 20	T09S R21E	0575 FSL 0625 FWL
43-047-53348	NBU 921-20G1CS	Sec 20	T09S R21E	1712 FNL 2636 FWL
43-047-53349	NBU 921-20M1BS	Sec 20	T09S R21E	0581 FSL 0617 FWL
43-047-53350	NBU 921-20L4BS	Sec 20	T09S R21E	2401 FSL 0080 FWL
43-047-53351	NBU 921-20N4CS	Sec 20	T09S R21E	1256 FSL 2008 FWL
43-047-53352	NBU 921-20F1BS	Sec 20	T09S R21E	1702 FNL 2587 FWL
43-047-53354	NBU 921-20F4CS	Sec 20	T09S R21E	1704 FNL 2597 FWL
43-047-53355	NBU 921-20L4CS	Sec 20	T09S R21E	0587 FSL 0609 FWL
43-047-53356	NBU 921-20G4BS	Sec 20	T09S R21E	1710 FNL 2626 FWL
43-047-53358	NBU 921-20J4CS	Sec 20	T09S R21E	1239 FSL 2019 FWL
43-047-53359	NBU 921-20K4CS	Sec 20	T09S R21E	1265 FSL 2003 FWL
43-047-53360	NBU 921-20N4BS	Sec 20	T09S R21E	1248 FSL 2014 FWL
43-047-53361	NBU 921-20O4BS	Sec 20	T09S R21E	1231 FSL 2024 FWL
43-047-53362	NBU 921-20H4CS	Sec 20	T09S R21E	0842 FSL 0606 FEL
43-047-53363	NBU 921-20I1BS	Sec 20	T09S R21E	0850 FSL 0599 FEL
43-047-53364	NBU 921-20I1CS	Sec 20	T09S R21E	0857 FSL 0593 FEL
43-047-53365	NBU 921-20G4CS	Sec 20	T09S R21E	1726 FSL 2431 FEL
43-047-53366	NBU 921-20O4CS	Sec 20	T09S R21E	0819 FSL 0625 FEL
43-047-53367	NBU 921-20P4CS	Sec 20	T09S R21E	0827 FSL 0618 FEL
43-047-53368	NBU 921-20P4BS	Sec 20	T09S R21E	0834 FSL 0612 FEL

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 11/27/2012

API NO. ASSIGNED: 43047533500000

WELL NAME: NBU 921-20L4BS

OPERATOR: KERR-MCGEE OIL &amp; GAS ONSHORE, L.P. (N2995)

PHONE NUMBER: 720 929-6029

CONTACT: Cara Mahler

PROPOSED LOCATION: NWSW 20 090S 210E

Permit Tech Review: 

SURFACE: 2401 FSL 0080 FWL

Engineering Review: 

BOTTOM: 1736 FSL 0818 FWL

Geology Review: 

COUNTY: UINTAH

LATITUDE: 40.02078

LONGITUDE: -109.58463

UTM SURF EASTINGS: 620781.00

NORTHINGS: 4431023.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU0575

PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

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: 43-8496
- RDCC Review:
- Fee Surface Agreement
- Intent to Commingle

Commingle Approved

## LOCATION AND SITING:

- R649-2-3.
- Unit: NATURAL BUTTES
- R649-3-2. General
- R649-3-3. Exception
- Drilling Unit
- Board Cause No: Cause 173-14
- Effective Date: 12/2/1999
- Siting: Suspends General Siting
- R649-3-11. Directional Drill

Comments: Presite Completed

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



GARY R. HERBERT  
Governor

GREGORY S. BELL  
Lieutenant Governor

# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

## Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 921-20L4BS  
**API Well Number:** 43047533500000  
**Lease Number:** UTU0575  
**Surface Owner:** INDIAN  
**Approval Date:** 12/10/2012

### Issued to:

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

### Authority:

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

### Duration:

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

### Commingle:

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

### General:

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

### Conditions of Approval:

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

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

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

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

**Notification Requirements:**

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

- Within 24 hours following the spudding of the well - contact Carol Daniels at 801-538-5284

(please leave a voicemail message if not available)

OR

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website

at <http://oilgas.ogm.utah.gov>

**Reporting Requirements:**

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

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

**Approved By:**



For John Rogers  
Associate Director, Oil & Gas

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

AUG 23 2012

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

REENTER  
DENVER, UTAH

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. UTU0575
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator KERR MCGEE OIL&GAS ONSHORE LP Contact: DANIELLE PIERNOT Daniele.Piernot@anadarko.com		7. If Unit or CA Agreement, Name and No. UTU63047A
3a. Address PO BOX 173779 DENVER, CO 80202-3779	3b. Phone No. (include area code) Ph: 720-929-6156 Fx: 720-929-7156	8. Lease Name and Well No. NBU 921-20L4BS
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWSW 2401FSL 80FWL 40.020842 N Lat, 109.584724 W Lon At proposed prod. zone NWSW 1736FSL 818FWL 40.019018 N Lat, 109.582085 W Lon		9. API Well No. 43-047-53350
14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 47 MILES SOUTH OF VERNAL, UT	10. Field and Pool, or Exploratory NATURAL BUTTES	11. Sec., T., R., M., or Blk. and Survey or Area Sec 20 T9S R21E Mer SLB
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 818'	16. No. of Acres in Lease 1600.00	12. County or Parish UINTAH COUNTY
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 429'	19. Proposed Depth 11429 MD 11274 TVD	13. State UT
21. Elevations (Show whether DF, KB, RT, GL, etc.) 4818 GL	22. Approximate date work will start 02/01/2013	17. Spacing Unit dedicated to this well
24. Attachments		20. BLM/BIA Bond No. on file. WYB000291
The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:		23. Estimated duration 60-90 DAYS

RECEIVED  
MAY 03 2013

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by Onshore Oil and Gas Order No. 1 (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature (Electronic Submission)	Name (Printed/Typed) DANIELLE PIERNOT Ph: 720-929-6156	Date 07/13/2012
Title REGULATORY ANALYST II		
Approved by (Signature) 	Name (Printed/Typed) Jerry Kenczka	Date MAY 01 2013
Title Assistant Field Manager Lands & Mineral Resources	Office VERNAL FIELD OFFICE	

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

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

Additional Operator Remarks (see next page)

Electronic Submission #142897 verified by the BLM Well Information System  
For KERR MCGEE OIL&GAS ONSHORE, LP, sent to the Vernal

NOTICE OF APPROVAL

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

12PPH2780A2

NOS-4/25/12



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: NWSW, Sec. 20, T9S, R21E  
Well No: NBU 921-20L4BS      Lease No: UTU-0575  
API No: 43-047-53350      Agreement: Natural Butte

**OFFICE NUMBER: (435) 781-4400**

**OFFICE FAX NUMBER: (435) 781-3420**

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

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

**NOTIFICATION REQUIREMENTS**

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

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

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NO<sub>x</sub> 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<sub>x</sub> per horsepower-hour.
- If there is an active Gilsonite mining operation within 2 miles of the well location, operator shall notify the Gilsonite operator at least 48 hours prior to any blasting during construction.
- If paleontological materials are uncovered during construction, the operator is to immediately stop work and contact the Authorized Officer (AO). A determination will be made by the AO as to what mitigation may be necessary for the discovered paleontologic material before construction can continue.
- Paint facilities "Shadow Gray."
- Conduct a raptor survey prior to construction operations if such activities would take place during raptor nesting season (January 1 through September 30). If active raptor nests are identified during the survey, operations should be conducted according to the seasonal restrictions detailed in the Uinta-Basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines.
- If construction operations are not initiated prior to April 19, 2013, an additional biological survey for Uinta Basin hookless cactus should be conducted prior to construction according to current USFWS protocol. Utilize cactus protection measures contained in the GNB BO for cacti within 300 feet of disturbance.
- Monitor construction with a permitted archaeologist.
- Monitor road re-route, well pad, and pipeline construction with a permitted paleontologist.
- Cut and bury old P&A marker.
- Re-route existing pipeline around pad.
- If quarter corner marker at Corner #8 needs to be moved for construction, resurvey and re-establish the marker.

**DOWNHOLE PROGRAM**

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

#### **SITE SPECIFIC DOWNHOLE COAs:**

- 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 CD (compact disc) format to the Vernal BLM Field Office. 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](http://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.

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5.LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU0575
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> Ute Tr  <b>7.UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 921-20L4BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047533500000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6511  <b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2401 FSL 0080 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSW Section: 20 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 9/5/2013	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width:100px;" type="text"/>

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

Spud well 09/05/2013 @ 16:00. Drill 24" conductor hole to 40', run 14" X .250 wall conductor pipe, cement with 81 sacks ready mix. Anticipated surface spud date and surface casing cement 10/03/2013.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 September 09, 2013**

<b>NAME (PLEASE PRINT)</b> Doreen Green	<b>PHONE NUMBER</b> 435 781-9758	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 9/9/2013	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5.LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU0575
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> Ute Tr  <b>7.UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
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<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047533500000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6514  <b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2401 FSL 0080 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSW Section: 20 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 1/2/2014	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
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	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width:100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  
 Drilled to 11,430 ft. TD in Quarter 4 of 2013.

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

<b>NAME (PLEASE PRINT)</b> Kay E. Kelly	<b>PHONE NUMBER</b> 720 929 6582	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 1/2/2014	

State of Utah - Notification Form

Operator ANADARKO PETROLEUM Rig Name/# SST 8  
Submitted By DALTON KING Phone Number 435- 828-0987  
Well Name/Number NBU 921-20L4BS  
Qtr/Qtr NW / SW Section 20 Township 9S Range 21E  
Lease Serial Number UTU0575  
API Number 4304753350

Casing – Time casing run starts, not cementing times.

- Production Casing
- Other

Date/Time \_\_\_\_\_ AM  PM

BOPE

- Initial BOPE test at surface casing point
- Other

Date/Time 12/14/2013 0100 AM  PM

RECEIVED

DEC 13 2013

Rig Move

Location To:

DIV. OF OIL, GAS & MINING

Date/Time \_\_\_\_\_ AM  PM

Remarks TIME IS ESTIMATED

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	<b>FORM 9</b>  <b>5.LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU0575
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> UTE  <b>7.UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>1. TYPE OF WELL</b> Gas Well	<b>8. WELL NAME and NUMBER:</b> NBU 921-20L4BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047533500000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6111  <b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 2401 FSL 0080 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWSW Section: 20 Township: 09.0S Range: 21.0E Meridian: S	<b>COUNTY:</b> UINTAH  <b>STATE:</b> UTAH

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

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<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 4/1/2014	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
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	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

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

Started completing the well. Well TD at 11,430 ft.

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

**FOR RECORD ONLY**

April 01, 2014

<b>NAME (PLEASE PRINT)</b> Teena Paulo	<b>PHONE NUMBER</b> 720 929-6236	<b>TITLE</b> Staff Regulatory Specialist
<b>SIGNATURE</b> N/A	<b>DATE</b> 4/1/2014	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UTU0575
		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b> UTE
<b>1. TYPE OF WELL</b> Gas Well		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>8. WELL NAME and NUMBER:</b> NBU 921-20L4BS
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>9. API NUMBER:</b> 43047533500000
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		<b>COUNTY:</b> UINTAH
		<b>STATE:</b> UTAH

11.

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 4/10/2014	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
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	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input type="text"/>

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

The NBU 921-20L4BS was placed on production 04/10/2014 after a new well completion. Producing from the MESAVERDE.

**Accepted by the  
Utah Division of  
Oil, Gas and Mining  
FOR RECORD ONLY  
April 11, 2014**

<b>NAME (PLEASE PRINT)</b> Doreen Green	<b>PHONE NUMBER</b> 435 781-9758	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 4/11/2014	

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.  
UTU0575

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

6. If Indian, Allottee or Tribe Name \_\_\_\_\_

7. Unit or CA Agreement Name and No.  
UTU63047A

2. Name of Operator  
KERR-MCGEE OIL AND GAS ONSHORE  
Contact: ILA BEALE  
Email: ila.beale@anadarko.com

8. Lease Name and Well No.  
NBU 921-20L4BS

3. Address P.O. BOX 173779  
DENVER, CO 82017  
3a. Phone No. (include area code)  
Ph: 720-929-6000

9. API Well No.  
43-047-53350

4. Location of Well (Report location clearly and in accordance with Federal requirements)\*  
 At surface NWSW 2401FSL 80FWL 40.020842 N Lat, 109.584724 W Lon  
 At top prod interval reported below NWSW 1756FSL 813FWL  
 At total depth NWSW 1724FSL 840FWL

10. Field and Pool, or Exploratory  
NATURAL BUTTES

11. Sec., T., R., M., or Block and Survey  
or Area Sec 20 T9S R21E Mer SLB

12. County or Parish  
UINTAH

13. State  
UT

14. Date Spudded  
09/05/2013

15. Date T.D. Reached  
12/22/2013

16. Date Completed  
 D & A  Ready to Prod.  
04/10/2014

17. Elevations (DF, KB, RT, GL)\*  
4842 KB

18. Total Depth: MD 11430  
TVD 11296

19. Plug Back T.D.: MD 11353  
TVD 11219

20. Depth Bridge Plug Set: MD  
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)  
COMPACT TRIPLE COMBO QUICK LOOK-AI-COMP PHOTO DEN/

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 Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
24.000	14.000 STL	36.7	0	40		81			
11.000	8.625 J55	28.0	24	2945		700		0	
7.875	4.500 P-110	11.6	24	11401		2315		796	

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	10849							

25. Producing Intervals

26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) MESAVERDE	8149	11265	8149 TO 11265	0.410	237	OPEN
B)						
C)						
D)						

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

Depth Interval	Amount and Type of Material
8149 TO 11265	PUMP 17,680 BBLS SLICKWATER, 60 BBLS 15% HCL ACID, AND 371,533 LBS 30/50 MESH SAND

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
04/10/2014	04/18/2014	24	→	21.0	2548.0	0.0			FLOWS FROM WELL
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status	
20/64	SI 2573	3361.0	→	21	2548	0		PGW	

28a. Production - Interval B

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

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

ELECTRONIC SUBMISSION #244747 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 BIRD'S NEST MAHOGANY WASATCH MESAVERDE	1608 1924 2449 5104 8156

32. Additional remarks (include plugging procedure):

The first 210 ft. of the surface hole was drilled with a 12 ? in. bit. The remainder of surface hole was drilled with an 11 in. bit. A DV tool was placed in the well from 5293 feet ? 5295 feet. DQX csg was run from surface to 5049 ft.; LTC csg was run from 5049 ft. to 11,401 ft. 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 #244747 Verified by the BLM Well Information System.  
For KERR-MCGEE OIL AND GAS ONSHORE, sent to the Vernal**

Name (please print) ILA BEALE Title STAFF REGULATORY SPECIALIST

Signature (Electronic Submission) Date 05/07/2014

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

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RECEIVED: May. 07, 2014

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013							
Project: UTAH-UINTAH			Site: NBU 921-20L PAD				Rig Name No: PROPETRO 12/12, SST 8/8		
Event: DRILLING			Start Date: 9/24/2013			End Date: 12/24/2013			
Active Datum: RKB @4,842.00usft (above Mean Sea Level)				UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0					
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation	
10/25/2013	10:00 - 10:30	0.50	MIRU	01	C	P	60	SKID RIG 20' TO NBU 921-20L4BS, RIG UP SET MATTING BOARD, SET RIG IN PLACE, CATWALK, PIPE RACKS,	
	10:30 - 11:00	0.50	MIRU	01	C	P	60	PLACE BOTTOM HOLE ASSEMBLY, PICK UP NOV 1.83 DEGREE BENT MOTOR (RUN # 5) .17 REV/GAL PICK UP 12 1/4 DRILL BIT .	
	11:00 - 12:00	1.00	DRLSUR	02	B	P	60	SPUD @ 10/25/2013 11:00. DRILL 12.25" HOLE 40' TO 210' (170' @ 170 FPH). WEIGHT ON BIT 5-15 K. STROKES PER MINUTE=120, GALLONS PER MINUTE=491. PRESSURE ON/OFF (BOTTOM) 800/600. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROTATE 25/25/25 K. DRAG 0 K. CIRCULATE CLOSED LOOP SYSTEM WITH 8.3# WATER. RUNNING VOLUME THROUGH 1 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS.	
	12:00 - 12:30	0.50	DRLSUR	06	A	P	230	CIRC 15 MINUTES AND, TRIP OUT TO CHANGE ASSEMBLY. BREAK 12 1/4" BIT. MAKE UP BAKER 11" BIT.	
	12:30 - 13:00	0.50	DRLSUR	06	A	P	230	PICK UP 8" DIRECTIONAL ASSEMBLY SCIBE MOTOR. INSTALL EM TOOL, TRIP IN HOLE.	
	13:00 - 17:30	4.50	DRLSUR	02	B	P	230	DRILL 11" SURFACE HOLE FROM 210' TO1,000' (790' @ 175 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1,000/700. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 56/49/52 K. DRAG 4 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 3' HIGH / 0.9' LEFT OF THE LINE WITH 70' OF SLIDE @ 6.88%. CIRCULATE CLOSED LOOP SYSTEM WITH 8.4# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES.	
	17:30 - 18:00	0.50	DRLSUR	07	A	P	1020	RIG SERVICE, CREW CHANGE	

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Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

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	18:00 - 0:00	6.00	DRLSUR	02	B	P	1020	DRILL 11" SURFACE HOLE FROM 1,000' TO 1,600' (600' @ 100 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1,040/845. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 68/58/62 K. DRAG 6 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 0.8' HIGH / 0.8' LEFT OF THE LINE WITH 215' OF SLIDE @ 38.39%. CIRCULATE CLOSED LOOP SYSTEM WITH 8.4# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES.
10/26/2013	0:00 - 6:00	6.00	DRLSUR	02	B	P	1620	DRILL 11" SURFACE HOLE FROM 1,600' TO 2,100' (500' @ 83 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1,240/1,000. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 78/60/65 K. DRAG 13 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 5.8' HIGH / 5.8' LEFT OF THE LINE WITH 116' OF SLIDE @ 29.00%. CIRCULATE CLOSED LOOP SYSTEM WITH 8.4# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES.
	6:00 - 12:00	6.00	DRLSUR	02	B	P	2120	DRILL 11" SURFACE HOLE FROM 2,100' TO 2,560' (460' @ 77 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1,385/1,171. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 90/60/73 K. DRAG 17 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 8.5' HIGH / 0.7' LEFT OF THE LINE WITH 67' OF SLIDE @ 12.57%. CIRCULATE CLOSED LOOP SYSTEM WITH 8.4# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES.

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Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

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	12:00 - 18:00	6.00	DRLSUR	02	B	P	2580	DRILL 11" SURFACE HOLE FROM 2,560' TO 2,955' (395' @ 65 FPH). WEIGHT ON BIT 18-21 K. STROKES PER MINUTE=120. GALLONS PER MINUTE=491. PRESSURE ON/OFF(BOTTOM) 1,450/1,255. ROTARY RPM 55, MOTOR RPM 83, TOTAL RPM 138. UP/DOWN/ ROT 98/62/77 K. DRAG 21 K. FROM DIRECTIONAL PLAN WE ARE CURRENTLY 4.9' HIGH / 1.2' RIGHT OF THE LINE WITH 80' OF SLIDE @ 19.75%. CIRCULATE CLOSED LOOP SYSTEM WITH 8.4# WATER. RUNNING VOLUME THROUGH 2 CENTRIFUGE DE WATERING AND, RUNNING VOLUME OVER BOTH SHAKERS. NO HOLE ISSUES.
	18:00 - 20:00	2.00	DRLSUR	05	C	P	2975	CIRCULATE AND CONDITION HOLE, VOLUME IS CLEAN COMING OVER SHAKERS, 1.5-400 BBL UPRIGHT'S FULL AND 4.5-400 BBL UPRIGHTS EMPTY, 1,000 BBL OF FRESH WATER ON LOCATION FOR CEMENT JOB.
	20:00 - 23:30	3.50	DRLSUR	06	D	P	2975	PRE JOB SAFETY MEETING, TRIP OUT OF HOLE, LAY DOWN DRILL STRING, BOTTOM HOLE ASSEMBLY, LAY DOWN DIRECTIONAL TOOLS, MOTOR AND, BIT. CLEAR TOOL AREA.
	23:30 - 0:00	0.50	CSGSUR	01	B	P	2975	SPOT SURFACE CASING FOR 8 5/8" CASING RUN, RIG UP FOR CASING RUN.
10/27/2013	0:00 - 0:30	0.50	CSGSUR	01	B	P	2975	SPOT SURFACE CASING FOR 8 5/8" CASING RUN, RIG UP FOR CASING RUN.
	0:30 - 3:30	3.00	CSGSUR	12	C	P	3015	RUN 66 JOINTS OF 8-5/8". 28# J-55 LTC CASING. RAN 1 CENTRALIZER ON FIRST THREE JOINTS, AND EVERY OTHER JOINT FOR 2 JOINTS FOR A TOTAL OF 5 CENTRALIZERS. RUN A TOTAL OF 66 JOINTS. RUN CASING TO BOTTOM WITH NO PROBLEMS. SET FLOAT SHOE @ 2,924.67' KB. SET TOP OF BAFFLE PLATE @ 2,878.70'.
	3:30 - 4:00	0.50	CSGSUR	01	B	P	2975	PRE JOB SAFETY MEETING WITH PRO PETRO CEMENTERS. RAN 200' OF 1" PIPE DOWN BACK-SIDE OF CASING. FINISH RIGGING UP CEMENT CREW.

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Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	4:00 - 7:30	3.50	CSGSUR	12	E	P	2975	<p>PRESSURE TEST LINES TO 2,500 PSI. PUMP 170.0 BBLS OF WATER AHEAD CLEARING SHOE. MIX AND PUMP 20 BBLS OF GEL WATER FLUSH AHEAD OF CEMENT. MIX AND PUMP 300 SX OF PREMIUM LEAD CEMENT WITH 16% GEL, 10 LB/SX GILSONITE, 2 LB/SX GR-3, 3% SALT, &amp; 0.25 LB/SX FLOCELE. 152.8 BBLS OF SLURRY MIXED @ 12.0 PPG WITH YIELD OF 2.86 CF/SX. MIX &amp; PUMP 200 SX OF PREMIUM TAIL CEMENT WITH 2% CACL2 &amp; 0.25 LB/SX FLOCELE. 40.9 BBL OF SLURRY MIXED @ 15.8 PPG WITH YIELD OF 1.15 CF/SX. DROP PLUG ON FLY. DISPLACE WITH 179.5 BBLS OF FRESH WATER. PARTIAL RETURNS THROUGH OUT JOB. FINAL LIFT OF 900 PSI AT 3.5 BBL/MINUTE. BUMPED PLUG @ 900 PSI. HELD @ 1,200 PSI FOR 5 MINUTES WITHOUT BLEED OFF. TESTED FLOAT AND FLOAT HELD. SHUT DOWN AND WASH UP</p> <p>TOP JOB # 1: PUMP CEMENT DOWN ONE INCH PIPE WITH 175 SX PREMIUM CEMENT WITH 4% CACL2 &amp; .25 LB/SX FLOCELE. 30.7 BBLS OF SLURRY MIXED AT 15.8 PPG WITH YIELD OF 1.15 CF/SX. CEMENT RETURNS TO SURFACE FELL BACK 50'.</p> <p>WAIT 1.5 HOURS ON CEMENT, CEMENT DOWN BACKSIDE W/ 75 SX (15.3 BBLS.) SAME CEMENT, 3 BBLS CEMENT RETURNS TO SURFACE. RIG DOWN CEMENTERS. (CEMENT JOB FINISHED @ 10/27/2013 07:30)</p>
	7:30 - 10:00	2.50	CSGSUR				2975	<p>RIG DOWN AND LOAD OUT PRO PETRO RIG AND PIPE TRAILERS AND MISC EQUIPMENT, FOR RIG MOVE TO NBU 1022-12L4BS. RELEASE THE RIG ON 10/27/2013 @ 10:00</p>
12/7/2013	21:00 - 0:00	3.00	RDMO	01	E	P	2975	<p>RIGGING DOWN THE FLOOR, DRAINING UP ALL LINES, PIT AND PUMPS TO MOVE:</p> <p>TODAY WE MOVED OUT THE PIPE TUBS, LOADED OUT THE BHA AND TRANSFERED THE I-80 CASING TO SST-57. MOVED SOME OF THE MUD TO THE MUD PLANT.</p> <p>RNI: 3 TRUCKS</p> <p>R. W. JONES 5 TRUCKS 1 FORKLIFT 1 PUSHER</p>
12/8/2013	0:00 - 6:00	6.00	RDMO	01	E	P	2975	<p>RIGGED DOWN THE FLOOR, DRAIN AND WINTERIZE THE PUMPS AND PIT, RIG DOWN THE TOP DRIVE</p>

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Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

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	6:00 - 18:00	12.00	RDMO	01	E	P	2975	<p>LAYED DOWN THE TOP DRIVE, LAYED DOWN THE DERRICK, RIGGED DOWN AND MOVED OUT THE CAMPS,WIND WALLS, RIGGED DOWN WATER AND STEAM SYSTEM, RIGGED DOWN AND WINTERIZED THE MUD LINES / EQUIPMENT. MOVED THE REST OF THE PIPE BASKETS, PART HOUSE, CONEX'S, FLARE LINES, EXTRA MATT BOARDS, FLARE LINES // STAGED OUT THE BAR SILO, CEMENT WATER UPRIGHTS, BAR HOPPER, SKID RAILS, MATT BOARDS.</p> <p>1 TRUCK ARRIVED @ 8:00 AM TO LOWER THE TOP DRIVE THE REST OF THE TRUCKS/CRANE ARRIVED @ 10:00 AND WORKED UNTIL 15:00</p> <p>SST: 1 EXTRA HAND</p> <p>R. W. JONES: 8 BED TRUCKS 5 HAUL TRUCKS 2 FORLIFTS 1 CRANE 2 RIGGERS 3 FLAGGERS 2 SAFETY HANDS 2 SUPERVISORS 2 SWAMPERS</p> <p>MOUNTAIN WEST: 3 HAUL TRUCKS 1 SUPERVISOR 2 ELECTRICIAN</p> <p>RNI: 3 WATER TRUCKS</p>
	18:00 - 0:00	6.00	RDMO	21	C	P	2975	WAIT ON DAYLIGHT AND TRUCKS TO CONTINUE MOVING
12/9/2013	0:00 - 6:00	6.00	MIRU3	21	C	P	2975	WAITING ON DAYLIGHT AND TRUCKS TO MOVE EQUIPMENT

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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 18:00	12.00	MIRU3	01	A	P	2975	FINISHED RIGGING DOWN / LOADED OUT AND MOVED THE BACK YARD, GAS BUSTER AND CHOKE, FINISHED RIGGING DOWN THE DERRICK AND LOADED IT OUT TO MOVE. VERY COLD AND ICY CONDITIONS. 80% OF RIG MOVED 10% RIGGED UP 17.8 MILE MOVE  THE DERICK IS LOADED AND READY TO TRANSPORT SUB WITH SKID RAIL / MATT BOARDS + MUD STORAGE UPRIGHTS ARE LEFT ON THE OLD LOCATION  TRUCKS ARRIVED @ 07:00 LEFT AT 19:30  SST: 1 EXTRA HAND  R. W. JONES: 8 BED TRUCKS 5 HAUL TRUCKS 2 FORLIFTS 1 CRANE 2 RIGGERS 3 FLAGGERS 2 SAFETY HANDS 2 SUPERVISORS 3 SWAMPERS  JD: 2 ROUSTABOUTS 1 BACKHOE 1 1-TON
	18:00 - 0:00	6.00	MIRU3	21	C	P	2975	WAIT ON DAYLIGHT AND TRUCKS
12/10/2013	0:00 - 6:00	6.00	MIRU	21	C	P	2975	WAITING ON DAYLIGHT AND TRUCKS TO FINISH MOVING EQUIPMENT AND RIGGING UP

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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 18:00	12.00	MIRU	01	B	P	2975	<p>WE HELD 2 SEPARATE SAFETY MEETINGS ON THE 2 SITES: MOVED THE DERRICK TO LOCAL STACK OUT SITE, LOADED OUT AND MOVED THE DRAWWORKS AND SUB / SET IN THE BACK YARD, PITS, BOSS EQUIPMENT, MATT BOARDS, SKID RAILS, LOWER SUB SECTIONS, 1/2 OF UPPER SUB SECTIONS PART OF THE MUD UPRIGHTS, SET THE BOP / PARTIALLY RIGGED UP ELECTRIC LINES. INSPECTED BHA RIG IS 95% ON SITE / 40% RIGGED UP</p> <p>TRUCKS ARRIVED @ 07:00 LEFT AT 19:30</p> <p>SST: 3 EXTRA HAND 1 EXTRA RIG MANAGER 1 SUPERINTENDANT</p> <p>R. W. JONES: 8 BED TRUCKS 5 HAUL TRUCKS 2 FORLIFTS 1 CRANE 2 RIGGERS 3 FLAGGERS 2 SAFETY HANDS 2 SUPERVISORS 3 SWAMPERS</p> <p>JD: 2 ROUSTABOUTS 1 BACKHOE 1 1-TON</p> <p>CONSTRUCTION : 1 TRACK HOE</p>
	18:00 - 0:00	6.00	MIRU	21	C	P	2975	WAITING ON DAYLIGHT AND TRUCKS
12/11/2013	0:00 - 6:00	6.00	MIRU3	21	C	P	2975	WAITING ON DAYLIGHT AND TRUCKS TO BEGIN SETTING THE SUB

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Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start Date: 9/24/2013

End Date: 12/24/2013

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

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	6:00 - 18:00	12.00	MIRU3	01	B	P	2975	<p>HELD A SAFETY MEETING WITH R.W. JONES TRUCKING</p> <p>FINISHED SETTING THE SUB, DRAWTOOL, RACKING BOARD, ROTARY TABLE, FLOOR PLATES AND HAND RAILS, WINDWALL FRAMES. SET THE DERRICK ON THE FLOOR AND STOOD UP THE A-LEGS, SET THE BOARD AND PREPPED THE DERRICK TO RAISE IT. PLUG IN ELECTRIC AND PASON TO THE FLOOR, SET STAIRS, GAS BUSTER, FLOW LINE, SET MUD FARM, CEMENT WATER AND CEMENT BINS, CHOKE HOUSE AND GAS BUSTER + PIPING. STARTED GENS AND GOT BOILER FULL AND READY TO RUN.</p> <p>SST DOING OVERHEADS ON MOTORS, 1 MOTOR WILL BE REPLACED TOMORROW</p> <p>R. W. JONES 5 TRUCKS 1 FORKLIFT 1 CRANE 2 OILERS 2 SWAMPERS 2 SUPERVISORS 1 SAFETY HAND</p> <p>TRUCKS ARRIVED @ 006:30 TRUCKS WERE RELEASED @ 16:00 CRANE LEFT @ 16:30. STILL NEED 1 TRUCK TO INSTALL TOP DRIVE.</p> <p>JD SERVICES: 1 1-TON 2 ROUSTABOUTS</p> <p>SST: 1 EXTRA HAND 1 EXTRA RIG MANAGER</p>
	18:00 - 0:00	6.00	MIRU3	21	C	P	2975	WAITING ON DAYLIGHT TO FINISH RIGGING UP
12/12/2013	0:00 - 6:00	6.00	MIRU3	21	C	P	2975	WAITING ON DAYLIGHT AND RIG PERSONEL TO RIG UP

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	6:00 - 18:00	12.00	MIRU3	01	B	P	2975	PREPARED THE DERRICK TO RAISE IT, CLEARED THE FLOOR, RAISE THE DERRICK, RIG UP THE FLOOR, PICKED UP THE TOP DRIVE, RIG UP THE TOP DRIVE, WORK ON THE BOILER ( CRACKED VALVE FLANGE )  12/11/2013: 2 HANDS - 8 HOURS ASSISTED THE MECHANIC IN A MOTOR CHANGE  12/12/2013: 2 HANDS FOR 3 HOURS TO ASSIST IN MOTOR CHANGE 2 HANDS FOR 2 HOURS TO REPAIR GUN LINES ON THE PIT MISC HANDS, APPROX. 8 HOUR TOTAL WORKING ON THE BOILER VALVE
	18:00 - 0:00	6.00	MIRU3	01	B	P	2975	SET THE CATWALK, HANG THE KELLY HOSE, BALES AND MUD TEE CONTINUE WORKING ON THE BOILER  1 PERSON 6 HOURS ON THE BOILER
12/13/2013	0:00 - 1:30	1.50	MIRU3	08	A	Z	2975	***FAILURE: RIG EQUIPMENT - (TOP DRIVE) CHANGE OUT A COM CABLE END AND REPAIR A HYDRAULIC FITTING
	1:30 - 6:00	4.50	MIRU3	08	B	Z	2975	***FAILURE: RIG EQUIPMENT - (FROZEN EQUIPMENT) BOILER STILL DOWN THAW OUT BUSTER LINES/ REPLACE A WASHED 8" VALVE, WORK ON GUN LINES
	6:00 - 9:30	3.50	MIRU3	01	B	P	2975	CONTINUE RIGGING UP THE FLOOR, BUILD AN IBOP AND ACTUATOR  *** 2 HANDS WORKING 3.5 HOURS ON THAWING FROZEN LINES ( GAS BUSTER, FLOW LINE, SUCTIONS )
	9:30 - 19:30	10.00	MIRU3	08	A	Z	2975	***FAILURE: RIG EQUIPMENT - (TOP DRIVE) TROUBLE SHOOT A HYDRAULIC ISSUE WITH THE TOP DRIVE, FOUND A LEAK , BUILT NEW HOSES AND REPLACED THE FITTINGS.  WHILE WORKING ON THE TOP DRIVE I HAD 4 ROUSTABOUTS FROM STUBBS HELP RIGGING UP. RIGGED UP THE WINDWALLS, WORKED ON THE CHOKE LINE REPAIR ( DAMAGED BY JONES TRUCKING), WORKED ON TANKS FARM, INSTALLED THE END OF THE FLOW LINE, REROUTE CAMP POWER.
	19:30 - 0:00	4.50	MIRU3	01	B	P	2975	INSTALL IBOP, LOWER MANUAL, SAVER SUB, RIG UP THE FLOW LINE, WORK ON CHOKE LINES
12/14/2013	0:00 - 7:30	7.50	MIRU3	08	A	Z	2975	***FAILURE: RIG EQUIPMENT - (TOP DRIVE) WAITING FOR AND INSTALLING THE STACK VALVE ON THE TOP DRIVE.
	7:30 - 9:00	1.50	PRSPD	14	A	P	2975	NIPPLE UP THE BOP, CHOKE AND KILL LINE

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	9:00 - 14:00	5.00	PRSPD	15	A	P	2975	HELD A SAFETY MEETING WITH A-1 TESTER, FILL THE TRUCK WITH WATER, RIGGED UP TESTER  TEST ANNULAR TO 2500 PSI FOR 10 MIN AND 250 PSI FOR 5 MINUTES. / TEST THE CASING TO 1500# FOR 30 MIN. TEST / DART VALVE, BLIND RAMS TO 5000 PSI FOR 10 MINUTES AND 250 PSI FOR 5 MINUTES. TEST CHOKE TO 1000 PSI / 10 MIN.
	14:00 - 19:00	5.00	PRSPD	08	C	Z	2975	*** CHANGE OUT THE PIPE RAMS AND CHANGE OUT THE OUTER KILL LINE VALVE ( BROKEN STEM)  2 MEN 2 HOURS SETTING UP THE FLARE LINE / 1 MAN 2 HOURS SETTING RACKS AND LOADING THE BHA DURING RIG REPAIR OPERATIONS
	19:00 - 22:00	3.00	PRSPD	15	A	P	2975	FINISH TESTING THE BOP TEST I-BOP VALVE, FLOOR VALVE, PIPE, INSIDE AND OUTSIDE KILL LINE VALVES INSIDE OUTSIDE CHOKE LINE VALVE, HCR VALVE, CHOKE LINE, CHOKE MANIFOLD VALVES TO 5000 PSI FOR 10 MINUTES AND 250 PSI FOR 5 MINUTES.
	22:00 - 22:30	0.50	PRSPD	14	B	P	2975	INSTALL THE WEAR BUSHING
	22:30 - 23:30	1.00	PRSPD	23		P	2975	PRE-SPUD INSPECTION
	23:30 - 0:00	0.50	PRSPD	06	A	P	2975	RIG UP THE LAYDOWN MACHINE
12/15/2013	0:00 - 1:00	1.00	PRSPD	06	A	Z	2975	*** THE LAYDOWN TRUCK HAD NUMEROUS WICKERS IN THE FAST LINE AND IT WAS RIGGED DOWN FOR REPAIR
	1:00 - 3:00	2.00	PRSPD	06	A	P	2975	PICKED UP AND SCRIBED THE BHA
	3:00 - 4:30	1.50	PRSPD	06	A	P	2975	RIG THE LAYDOWN TRUCK BACK UP ( AFTER REPAIRS) TO PICK UP HEAVY WEIGHT AND DRILL PIPE
	4:30 - 8:30	4.00	PRSPD	06	A	P	2975	PICK UP THE REST OF THE BHA AND TRIP IN THE HOLE WITH PIPE TO 2400'.
	8:30 - 9:30	1.00	PRSPD	06	A	P	2975	RIG DOWN THE LAYDOWN MACHINE
	9:30 - 10:30	1.00	PRSPD	09	A	P	2975	CUT AND SLIP 92' OF DRILLING LINE
	10:30 - 11:00	0.50	PRSPD	07	A	P	2975	RIG SERVICE
	11:00 - 12:30	1.50	PRSPD	14	B	P	2975	INSTALL THE DRILLING RUBBER
	11:00 - 11:00	0.00	PRSPD	06	A	P	2975	LOAD MORE PIPE ON THE RACKS AND TRIP IN THE HOLE
	12:30 - 14:00	1.50	PRSPD	06	A	P	2975	PICK UP PIPE AND TRIP IN THE HOLE. TAGGED CEMENT AT 2834'
	14:00 - 14:30	0.50	PRSPD	05	I	P	2975	CYCLE THE PUMP THROUGH THE FILL UP LINE ( ok ) BRING THE PUMPS ONLINE THROUGH THE STANDPIPE AND KELLY HOSE.
	14:30 - 16:00	1.50	DRLPRC	02	B	P	2975	DRILLING THE SHOE TRACK PUMP STROKES 80 GPM 337 MUD MOTOR RPM 54 ROTARY 40

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	16:00 - 20:00	4.00	DRLPRC	02	B	P	2975	DRILL SLIDE F/ 2975' - 3487' ( 512' @ 128' / HR) WEIGHT ON BIT 17-21 K. AVERAGE WOB 20K ROTARY RPM 60-70, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 1280 / 1650 DIFFERENTIAL 370 TORQUE HIGH/LOW 5000 / 9000 OFF BOTTOM TORQUE 4000 STRING WEIGHT UP/DOWN/ROT 100 / 80 / 90. DRAG 10 K BOS DEWATER AS NEEDED WT 8.6 VIS 28. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 30 BBL. FLUID FOR HOLE VOLUME 20 BARRELS LOSSES @ 5 BBL/HR NO FLARE  BIT POSITION: MD: 3487' Below 1.35' Right 2.53' PROPOSAL  Total Footage Drilled Rotating 424 / Percent of Footage Rotated 82.81% Total Footage Drilled Sliding 88 Percent of Footage Sliding 17.19% Hours Total Time Rotate Drilling 2.75 / Percent of Time Rotated 73.33% Total Time Slide Drilling 1.00 / Percent of Time Sliding 26.67% Connection / Ream / Rig Time / Circulating 0.25 Percent Non-Drilling Time 6.25%
	20:00 - 0:00	4.00	DRLPRC	22	N	X	3487	*** THE DRILLER TOOK A QUICK 12 BBL. INFLUX HE PICKED UP AND SHUT THE PIPE RAMS. INITIAL SHUT IN WAS: SIDPP 158 SICP 380 LINED UP TO TRANSFER SOME MUD OVER TO THE PITS AND WATER TO STORAGE. WHEN WE OPENED THE SUPER CHOKE AND STARTED WELL KILL PROCEDURES WE FOUND WE WERE PLUGGED SOMWHERE IN THE LINES BETWEEN THE CHOKE AND THE GAS BUSTER. WE BLEW DOWN THE TOP DRIVE AND MUD LINES THEN PROCEEDED TO TRY TO FIND AND THAW THE ICE PLUG. THE PLUG WAS IN THE 2" RISER TO THE GAS BUSTER

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/16/2013	0:00 - 2:30	2.50	DRLPRC	22	N	S	3487	<p>*** THE DRILLER TOOK A QUICK 12 BBL. INFLUX HE PICKED UP AND SHUT THE PIPE RAMS. INITIAL SHUT IN WAS: SIDPP 158 SICP 380 LINED UP TO TRANSFER SOME MUD OVER TO THE PITS AND WATER TO STORAGE. WHEN WE OPENED THE SUPER CHOKE AND STARTED WELL KILL PROCEDURES WE FOUND WE WERE PLUGGED SOMEWHERE IN THE LINES BETWEEN THE CHOKE AND THE GAS BUSTER. WE BLEW DOWN THE TOP DRIVE AND MUD LINES THEN PROCEEDED TO TRY TO FIND AND THAW THE ICE PLUG. THE PLUG WAS IN THE 2" RISER TO THE GAS BUSTER</p> <p>WE LOCATED AND THAWED THE ICE PLUG 2' UP IN THE RISER TO THE GAS BUSTER. DIPLACED THE MUD WITH 9.9 MW. WE BLEW DOWN THE CHOKE MANIFOLD AND FILLED IT FROM THE BOP TO THE TOP OF THE CHOKE LINE WITH METHANOL</p> <p>WE USED 340 BBL 12.5 TO BLEND IN THE SYTEM SAVED 3.5 HOURS MIXING TIME</p>

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-20L4BS RED

Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start Date: 9/24/2013

End Date: 12/24/2013

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	2:30 - 5:00	2.50	DRLPRC	02	B	P	3487	DRILL SLIDE F/ 3487' - 3772' ( 285' @ 114' / HR) WEIGHT ON BIT 17-21 K. AVERAGE WOB 20K ROTARY RPM 60-70, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 1570 / 2020 DIFFERENTIAL 470 TORQUE HIGH/LOW 7000 / 9000 OFF BOTTOM TORQUE 4000 STRING WEIGHT UP/DOWN/ROT 105 / 80 / 95. DRAG 10 K BOS DEWATER AS NEEDED WT 9.9 VIS 33. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 15 BBL. FLUID FOR HOLE VOLUME 10 BARRELS LOSSES @ 4 BBL/HR FLARE 5' THEN DIED OFF  BIT POSITION: MD: 3772' Below 12.6' Right 5.89' PROPOSAL Total Footage Drilled Rotating 252 Percent of Footage Rotated 88.42% Total Footage Drilled Sliding 33 Percent of Footage Sliding 11.58% Hours Total Time Rotate Drilling 1.33 Percent of Time Rotated 69.27% Total Time Slide Drilling 0.58 Percent of Time Sliding 30.21% Connection / Ream / Rig Time / Circulating 0.58 Percent Non-Drilling Time 23.20%

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	5:00 - 16:00	11.00	DRLPRC	02	B	P	3772	DRILL SLIDE F/ 3772' - 5199' ( 1427' @ 129.9' / HR) WEIGHT ON BIT 18-22 K. AVERAGE WOB 20K ROTARY RPM 60-70, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 1870 / 2250 DIFFERENTIAL 380 TORQUE HIGH/LOW 7000 / 9000 OFF BOTTOM TORQUE 4000 STRING WEIGHT UP/DOWN/ROT 105 / 80 / 95. DRAG 10 K BOS DEWATER AS NEEDED WT 9.3+ VIS 32. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 85 BBL. FLUID FOR HOLE VOLUME 20 BARRELS LOSSES @ 2 BBL/HR NO FLARE 2-5 BBL. GAIN ON CONNECTION BOTTOM UP  BIT POSITION: MD: 5201' North 21.65' West 24.72' PROPOSALTotal Footage Drilled Rotating1354 Percent of Footage Rotated94.89% Total Footage Drilled Sliding73Percent of Footage Sliding5.11% Hours Total Time Rotate Drilling8.00Percent of Time Rotated85.74% Total Time Slide Drilling1.34Percent of Time Sliding14.36%  Connection / Ream / Rig Time / Circulating 1.67 Percent Non-Drilling Time15.18%
	16:00 - 16:30	0.50	DRLPRV	07	A	P	5199	RIG SERVICE

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	16:30 - 0:00	7.50	DRLPRV	02	B	P	5199	DRILL SLIDE F/ 5199' - 6153' ( 954' @ 127.2' / HR) WEIGHT ON BIT 18-22 K. AVERAGE WOB 20K ROTARY RPM 60-70, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 2000 / 2300 DIFFERENTIAL 300 TORQUE HIGH/LOW 13000 / 10000 OFF BOTTOM TORQUE 8000 STRING WEIGHT UP/DOWN/ROT 170 / 120 / 135. DRAG 35 K BOS DEWATER AS NEEDED WT 9.4 VIS 32. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 60 BBL. FLUID FOR HOLE VOLUME 10 BARRELS LOSSES @ 2 BBL/HR NO FLARE 2-5 BBL. GAIN ON CONNECTION BOTTOM UP  BIT POSITION: MD: 6153' North 8.96' West 12.77' PBHL Total Footage Drilled Rotating 937 Percent of Footage Rotated 98.42% Total Footage Drilled Sliding 15 Percent of Footage Sliding 1.58% Hours Total Time Rotate Drilling 5.97 Percent of Time Rotated 95.52% Total Time Slide Drilling 0.25 Percent of Time Sliding 4.00% Connection / Ream / Rig Time / Circulating 1.75 Percent Non-Drilling Time 21.88%

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/17/2013	0:00 - 5:00	5.00	DRLPRV	02	B	P	6153	DRILL SLIDE F/ 6153' - 6629' ( 476' @ 95.2' / HR) WEIGHT ON BIT 18-22 K. AVERAGE WOB 20K ROTARY RPM 60-70, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 2000 / 2300 DIFFERENTIAL 300 TORQUE HIGH/LOW 13000 / 10000 OFF BOTTOM TORQUE 8000 STRING WEIGHT UP/DOWN/ROT 170 / 120 / 135. DRAG 35 K BOS DEWATER AS NEEDED WT 9.4 VIS 32. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 25 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES NO FLARE  BIT POSITION: MD: 6629' North 9.77' West 14.30' PBHL Total Footage Drilled Rotating 435 Percent of Footage Rotated 91.39% Total Footage Drilled Sliding 41 Percent of Footage Sliding 8.61% Hours Total Time Rotate Drilling 3.25 Percent of Time Rotated 72.22% Total Time Slide Drilling 1.25 Percent of Time Sliding 27.78% Connection / Ream / Rig Time / Circulating 0.50 Percent Non-Drilling Time 10.00%

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	5:00 - 16:00	11.00	DRLPRV	02	B	P	6629	DRILL SLIDE F/ 6629' - 7487' ( 858' @ 78' / HR) WEIGHT ON BIT 18-22 K. AVERAGE WOB 20K ROTARY RPM 55-65, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 2200 / 2450 DIFFERENTIAL 250 TORQUE HIGH/LOW 14000 / 12000 OFF BOTTOM TORQUE 10000 STRING WEIGHT UP/DOWN/ROT 195 / 120 / 140. DRAG 35 K BOS DEWATER AS NEEDED WT 9.5 VIS 33. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 50 BBL. FLUID FOR HOLE VOLUME 40 BARRELS LOSSES NO FLARE  BIT POSITION: MD: 7487' North 11.78' West 8.23' PBHL Total Footage Drilled Rotating 838 Percent of Footage Rotated 97.67% Total Footage Drilled Sliding 20 Percent of Footage Sliding 2.33% Hours Total Time Rotate Drilling 9.50 Percent of Time Rotated 94.25% Total Time Slide Drilling 0.58 Percent of Time Sliding 5.75% Connection / Ream / Rig Time / Circulating 0.92 Percent Non-Drilling Time 8.36%
	16:00 - 16:30	0.50	DRLPRV	07	A	P	7487	RIG SERVICE

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-20L4BS RED

Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start Date: 9/24/2013

End Date: 12/24/2013

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	16:30 - 0:00	7.50	DRLPRV	02	B	P	7487	DRILL SLIDE F/ 7487'- 7963 ( 476' @ 63.5' / HR) WEIGHT ON BIT 18-24 K. AVERAGE WOB 20K ROTARY RPM 55-65, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 2290 / 2490 DIFFERENTIAL 200 TORQUE HIGH/LOW 17000 / 14000 OFF BOTTOM TORQUE 14000 STRING WEIGHT UP/DOWN/ROT 205 / 120 / 160. DRAG 45 K BOS DEWATER AS NEEDED WT 9.6 VIS 34. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 50 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES NO FLARE  BIT POSITION: MD: 7963' North 15.88' West 5.91' PBHL Total Footage Drilled Rotating 456 Percent of Footage Rotated 95.80% Total Footage Drilled Sliding 20 Percent of Footage Sliding 4.20% Hours Total Time Rotate Drilling 6.33 Percent of Time Rotated 90.43% Total Time Slide Drilling 0.67 Percent of Time Sliding 9.57% Connection / Ream / Rig Time / Circulating 1.00 Percent Non-Drilling Time 12.50%

## US ROCKIES REGION

## Operation Summary Report

Well: NBU 921-20L4BS RED

Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start Date: 9/24/2013

End Date: 12/24/2013

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/18/2013	0:00 - 5:00	5.00	DRLPRV	02	B	P	7963	DRILL SLIDE F/ 7963' - 8220' ( 257' ' @ 51.4 ' / HR) WEIGHT ON BIT 18-24 K. AVERAGE WOB 20K ROTARY RPM 55-65, MUD MOTOR RPM 93. STROKES PER MINUTE 140 GALLONS PER MINUTE 586 OFF/ON PSI 2290 / 2490 DIFFERENTIAL 200 TORQUE HIGH/LOW 17000 / 14000 OFF BOTTOM TORQUE 14000 STRING WEIGHT UP/DOWN/ROT 205 / 120 / 160. DRAG 45 K BOS DEWATER AS NEEDED WT 9.6 VIS 34. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 15 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES NO FLARE  BIT POSITION: MD: 8220' North 21.54' West 6.67' PBHL Total Footage Drilled Rotating 239 Percent of Footage Rotated 93.00% Total Footage Drilled Sliding 18 Percent of Footage Sliding 7.00% Hours Total Time Rotate Drilling 3.83 Percent of Time Rotated 79.30% Total Time Slide Drilling 1.00 Percent of Time Sliding 20.70% Connection / Ream / Rig Time / Circulating 0.17 Percent Non-Drilling Time 3.40%

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	5:00 - 15:00	10.00	DRLPRV	02	B	P	8220	DRILL SLIDE F/8200'-8915' ( 700' ' @ 71.5' / HR) WEIGHT ON BIT 18-24 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2450 / 2650 DIFFERENTIAL 200 TORQUE HIGH/LOW 18000 / 15000 OFF BOTTOM TORQUE 14000 STRING WEIGHT UP/DOWN/ROT 225/130/175 DRAG 50 K BOS DEWATER AS NEEDED WT 10 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 43 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES NO FLARE Bit Position @ Time of Report / REF PBHL 2013/12/18 North 24.08' East 0.31' 8,915' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 5:00 To 15:00 10:00 Actual On Bottom Drilling Time 8.84 10.00 Total Footage Drilled From 8220' To 8915' 695' Total Footage Drilled Rotating 695 Percent of Footage Rotated 100.00% Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00% Hours Total Time Rotate Drilling 8.84 Percent of Time Rotated 100.00% Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00% Connection / Ream / Rig Time / Circulating 1.16 Percent Non-Drilling Time 11.60% Last Survey MD: 8860' Inc 1.1 Azm 83.2 TVD 8726.75' Projection to Bit from Last Survey MD: 8915' North 24.08' East 0.31' PBHL
	15:00 - 15:30	0.50	DRLPRV	07	A	P	8915	RIG SERVICE

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	15:30 - 0:00	8.50	DRLPRV	02	B	P	8915	DRILL SLIDE F/8915- 9425 (510' @ 60' / HR) WEIGHT ON BIT 20-24 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2450 / 2650 DIFFERENTIAL 200 TORQUE HIGH/LOW 18000 / 15000 OFF BOTTOM TORQUE 14000 STRING WEIGHT UP/DOWN/ROT 240/135/175 DRAG 65 K BOS DEWATER AS NEEDED WT 10.6 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 32 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES NO FLARE  Bit Position @ Time of Report / REF PBHL 2013/12/19 North 22.04' East 8.82' 9,425' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 15:00 To 0:00 9:00 Actual On Bottom Drilling Time 7.83 9.00 Total Footage Drilled From 8915' To 9425' 510' Total Footage Drilled Rotating 490 Percent of Footage Rotated 96.08% Total Footage Drilled Sliding 20 Percent of Footage Sliding 3.92% Hours Total Time Rotate Drilling 6.33 Percent of Time Rotated 80.84% Total Time Slide Drilling 1.50 Percent of Time Sliding 19.16% Connection / Ream / Rig Time / Circulating 1.17 Percent Non-Drilling Time 13.00% Last Survey MD: 9336' Inc 1.4 Azm 94.1 TVD 9202.67' Projection to Bit from Last Survey MD: 8915' North 22.04' East 8.82' PBHL

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/19/2013	0:00 - 6:00	6.00	DRLPRV	02	B	P	9425	DRILL SLIDE F/9425-9660 (235' @ 39' / HR) WEIGHT ON BIT 20-24 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2450 / 2650 DIFFERENTIAL 200 TORQUE HIGH/LOW 18000 / 15000 OFF BOTTOM TORQUE 14000 STRING WEIGHT UP/DOWN/ROT 240/135/175 DRAG 65 K BOS DEWATER AS NEEDED WT 10.6 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 14.5 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 10' FLARE F/ 10 MIN. (CONNECTION GAS)
Bit Position @ Time of Report / REF PBHL 2013/12/19 North 17.72' East 9.31' 9,610' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 0:00 To 5:00 5:00 Actual On Bottom Drilling Time 4.67 5.00 Total Footage Drilled From 9425' To 9610' 185' Total Footage Drilled Rotating 167 Percent of Footage Rotated 90.27% Total Footage Drilled Sliding 18 Percent of Footage Sliding 9.73% Hours Total Time Rotate Drilling 3.67 Percent of Time Rotated 78.59% Total Time Slide Drilling 1.00 Percent of Time Sliding 21.41% Connection / Ream / Rig Time / Circulating 0.33 Percent Non-Drilling Time 6.60% Last Survey MD: 9526' Inc 1.4 Azm 194.3 TVD 9392.62' Projection to Bit from Last Survey MD: 9610' North 17.72' East 9.31' PBHL								

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 11:00	5.00	DRLPRV	02	B	P	9660	DRILL SLIDE F/9660 -9803 (143' @ 20' / HR) WEIGHT ON BIT 20-24 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2450 / 2650 DIFFERENTIAL 200 TORQUE HIGH/LOW 18000 / 15000 OFF BOTTOM TORQUE 14000 STRING WEIGHT UP/DOWN/ROT 240/135/175 DRAG 65 K BOS DEWATER AS NEEDED WT 10.6 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 8.866 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 10' FLARE F/ 10 MIN. (CONNECTION GAS)
	11:00 - 11:30	0.50	DRLPRV	08	C	P	9803	CHANGE OUT ROTATING HEAD RUBBER
	11:30 - 13:00	1.50	DRLPRV	02	B	P	9803	DRILL SLIDE F/9803-9868 (65' @ 42' / HR) WEIGHT ON BIT 20-24 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2450 / 2650 DIFFERENTIAL 200 TORQUE HIGH/LOW 18000 / 15000 OFF BOTTOM TORQUE 14000 STRING WEIGHT UP/DOWN/ROT 250/145/180 DRAG 70 K BOS DEWATER AS NEEDED WT 10.8 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 4 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 10' FLARE F/ 10 MIN. (CONNECTION GAS)
	13:00 - 13:30	0.50	DRLPRV	07	A	P	9868	RIG SERVICE

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH	Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8	
Event: DRILLING	Start Date: 9/24/2013	End Date: 12/24/2013	
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	13:30 - 0:00	10.50	DRLPRV	02	B	P	9868	DRILL SLIDE F/9868 - 10248 (560' @ 53' / HR) WEIGHT ON BIT 22-25 K. AVERAGE WOB 24K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2900/3100 DIFFERENTIAL 200 TORQUE HIGH/LOW 19000 / 17000 OFF BOTTOM TORQUE 17000 STRING WEIGHT UP/DOWN/ROT240/150/180 DRAG 60 K BOS DEWATER AS NEEDED WT 10.8 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 35 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 10' FLARE F/ 10 MIN. (CONNECTION GAS)  Bit Position @ Time of Report / REF PBHL 2013/12/19 North 9.04' East 4.91' 10,248' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 13:30 To 0:00 10:30 Actual On Bottom Drilling Time 11.08 10.50 Total Footage Drilled From 9868' To 10248' 380' Total Footage Drilled Rotating 380 Percent of Footage Rotated 100.00% Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00% Hours Total Time Rotate Drilling 10.08 Percent of Time Rotated 90.97% Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00% Connection / Ream / Rig Time / Circulating -0.58 Percent Non-Drilling Time -5.52% Last Survey MD: 10098' Inc 0.7 Azm 194.1 TVD 9964.53' Projection to Bit from Last Survey MD: 10248' North 9.04' East 4.91' PBHL

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED

Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No: PROPETRO 12/12, SST 8/8

Event: DRILLING

Start Date: 9/24/2013

End Date: 12/24/2013

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/20/2013	0:00 - 6:30	6.50	DRLPRV	02	B	P	10,248	DRILL SLIDE F/10248-10410 (162" @ 25' / HR) WEIGHT ON BIT 22-25 K. AVERAGE WOB 24K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2900/3100 DIFFERENTIAL 200 TORQUE HIGH/LOW 19000 / 17000 OFF BOTTOM TORQUE 17000 STRING WEIGHT UP/DOWN/ROT240/150/180 DRAG 60 K BOS DEWATER AS NEEDED WT 11 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 35 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 10' FLARE F/ 10 MIN. (CONNECTION GAS) CALLED FRANK FERNANDEZ @ 0600 / DISCUSSED PENETRATION RATE AND METHODS ATTEMPTED TO IMPROVE PENETRATION RATE / DECISION WAS MADE TO TRIP OUT OF HOLE TO REPLACE MUD MOTOR AND BIT.  Bit Position @ Time of Report / REF PBHL 2013/12/21 North 8.78' East 5.25' 10,410' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 6:30 To 0:00 17:30 Actual On Bottom Drilling Time 0.00 17.50 Total Footage Drilled From 10410' To 10410' ' Total Footage Drilled Rotating 0 Percent of Footage Rotated #DIV/0! Total Footage Drilled Sliding 0 Percent of Footage Sliding #DIV/0! Hours Total Time Rotate Drilling 0.00 Percent of Time Rotated #DIV/0! Total Time Slide Drilling 0.00 Percent of Time Sliding #DIV/0! Connection / Ream / Rig Time / Circulating 17.50 Percent Non-Drilling Time 100.00% Last Survey MD: 10289' Inc 0.3 Azm 159.1 TVD 10155.52' Projection to Bit from Last Survey MD: 10410' North 8.78' East 5.25' PBHL
	6:30 - 8:00	1.50	DRLPRV	05	C	P	10,410	CIRCULATE BOTTOMS UP / MIX HEAVY PILL / FILL TRIP TANK
	8:00 - 9:30	1.50	DRLPRV	06	A	P	10,410	BACK REAM F/ 10410-9677 / TRIP OUT OF HOLE F/ 9677-9259
	9:30 - 10:30	1.00	DRLPRV	05	B	P	10,410	CHECK FLOW / CIRCULATE BOTTOMS UP / SPOT 70 BBLs 13 # PILL / BLOW DOWN TOP DRIVE

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	10:30 - 16:00	5.50	DRLPRV	06	A	P	10,410	TRIP OUT OF HOLE F/ 9259-5022' / WORK THROUGH TIGH HOLE @ 5022' / TRIP OUT OF HOLE F/ 5020'- 1000" / PULL ROTATING RUBBER / TRIP OUT OF HOLE WITH BHA/ BREAK OFF BIT / LAY DOWN MUD MOTOR
	16:00 - 23:30	7.50	DRLPRV	06	A	P	10,410	MAKE UP BIT & MUD MOTOR / SCRIBE DIRECTIONAL TOOLS / ORIENT MWD / CHANGE OUT MWD BATTERIES / TRIP IN HOLE W/ BHA / INSTALL ROT RUBBER / TRIP IN HOLE T/ 10200' / FILL PIPE @ 2987', 6200', 10410,
	23:30 - 0:00	0.50	DRLPRV	05	A	P	10,410	CIRCULATE OUT TRIP GAS
12/21/2013	0:00 - 0:30	0.50	DRLPRV	05	B	P	10,410	CIRCULATE OUT TRIP GAS (40' FLARE F/ TRIP GAS)
	0:30 - 6:00	5.50	DRLPRV	02	B	P	10,410	DRILL SLIDE F/10410-10654"(244 @ 44' / HR) WEIGHT ON BIT 22-25 K. AVERAGE WOB 24K ROTARY RPM 45-60 MUD MOTOR RPM 114. STROKES PER MINUTE 130 GALLONS PER MINUTE 544 OFF/ON PSI 2900/3100 DIFFERENTIAL 200 TORQUE HIGH/LOW 19000 / 17000 OFF BOTTOM TORQUE 17000 STRING WEIGHT UP/DOWN/ROT240/150/180 DRAG 60 K BOS DEWATER AS NEEDED WT 11 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 35 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 10' FLARE F/ 10 MIN. (CONNECTION GAS)
Bit Position @ Time of Report / REF PBHL 2013/12/21 North 5.67' East 5.37' 10,618' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 0:00 To 5:00 5:00 Actual On Bottom Drilling Time 4.08 5.00 Total Footage Drilled From 10410' To 10618' 208' Total Footage Drilled Rotating 208 Percent of Footage Rotated 100.00% Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00% Hours Total Time Rotate Drilling 4.08 Percent of Time Rotated 100.00% Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00% Connection / Ream / Rig Time / Circulating 0.92 Percent Non-Drilling Time 18.40% Last Survey MD: 10480' Inc 0.7 Azm 153.6 TVD 10346.52' Projection to Bit from Last Survey MD: 10618' North 5.67' East 5.37' PBHL								

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 15:00	9.00	DRLPRV	02	B	P	10,654	DRILL SLIDE F/10654- 11009'(355 @ 39' / HR) WEIGHT ON BIT 20-25 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 88. STROKES PER MINUTE 100 GALLONS PER MINUTE 419 OFF/ON PSI 2200/2600 DIFFERENTIAL 400 TORQUE HIGH/LOW 22000/18000 OFF BOTTOM TORQUE 18000 STRING WEIGHT UP/DOWN/ROT 240/150/180 DRAG 60 K BOS DEWATER AS NEEDED WT 11.7 VIS 35. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 22 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 5' FLARE F/ 10 MIN. (CONNECTION GAS) DISPLACE 12LB MUD INTO SYSTEM  Bit Position @ Time of Report / REF PBHL 2013/12/21 North 1.31' East 11.57' 11,009' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 5:00 To 15:00 10:00 Actual On Bottom Drilling Time 9.34 10.00 Total Footage Drilled From 10618' To 11009' 391' Total Footage Drilled Rotating 391 Percent of Footage Rotated 100.00% Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00% Hours Total Time Rotate Drilling 9.34 Percent of Time Rotated 100.00% Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00% Connection / Ream / Rig Time / Circulating 0.66 Percent Non-Drilling Time 6.60% Last Survey MD: 10956' Inc 1.4 Azm 143.0 TVD 10822.45' Projection to Bit from Last Survey MD: 11009' North 1.31' East 11.57' PBHL
	15:00 - 15:30	0.50	DRLPRV	07	A	P	11,009	RIG SERVICE

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	15:30 - 0:00	8.50	DRLPRV	02	B	P	11,009	DRILL SLIDE F/11009 - 11390'(381 @ 45' / HR) WEIGHT ON BIT 18-25 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 88. STROKES PER MINUTE 100 GALLONS PER MINUTE 419 OFF/ON PSI 2200/2600 DIFFERENTIAL 400 TORQUE HIGH/LOW 22000/18000 OFF BOTTOM TORQUE 18000 STRING WEIGHT UP/DOWN/ROT 265/155/200 DRAG 65 K BOS DEWATER AS NEEDED WT 12 VIS 39. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 24 BBL. FLUID FOR HOLE VOLUME 50 BARRELS LOSSES 5' FLARE F/ 10 MIN. (CONNECTION GAS)  Bit Position @ Time of Report / REF PBHL 2013/12/22 South 10.36' East 19.56' 11,390' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 15:00 To 0:00 9:00 Actual On Bottom Drilling Time 8.08 9.00 Total Footage Drilled From 11009' To 11390' 381' Total Footage Drilled Rotating 381 Percent of Footage Rotated 100.00% Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00% Hours Total Time Rotate Drilling 8.08 Percent of Time Rotated 100.00% Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00% Connection / Ream / Rig Time / Circulating 0.92 Percent Non-Drilling Time 10.22% Last Survey MD: 11337' Inc 2.4 Azm 149.3 TVD 11203.22' Projection to Bit from Last Survey MD: 11390' South 10.36' East 19.56' PBHL

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 921-20L4BS RED			Spud Date: 10/25/2013		
Project: UTAH-UINTAH		Site: NBU 921-20L PAD		Rig Name No: PROPETRO 12/12, SST 8/8	
Event: DRILLING		Start Date: 9/24/2013		End Date: 12/24/2013	
Active Datum: RKB @4,842.00usft (above Mean Sea Level)			UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/22/2013	0:00 - 1:30	1.50	DRLPRV	02	B	P	11,390	DRILL SLIDE F/11390-11430"(40 @ 26' / HR) WEIGHT ON BIT 18-25 K. AVERAGE WOB 20K ROTARY RPM 45-60 MUD MOTOR RPM 88. STROKES PER MINUTE 100 GALLONS PER MINUTE 419 OFF/ON PSI 2200/2600 DIFFERENTIAL 400 TORQUE HIGH/LOW 22000/18000 OFF BOTTOM TORQUE 18000 STRING WEIGHT UP/DOWN/ROT 265/155/200 DRAG 65 K BOS DEWATER AS NEEDED WT 12 VIS 39. ///// DRILLING FLOWZAN ///// PUMP LCM SWEEPS TO HELP WITH LOSSES. USED 3 BBL. FLUID FOR HOLE VOLUME 0 BARRELS LOSSES 0' FLARE .  Bit Position @ Time of Report / REF PBHL 2013/12/22 South 11.71' East 20.42' 11,430' Start Time End Time Hours / Minutes Bit Position Update Start / Stop Times From 0:00 To 1:30 1:30 Actual On Bottom Drilling Time 1.33 1.50 Total Footage Drilled From 11390' To 11430' 40' Total Footage Drilled Rotating 40 Percent of Footage Rotated 100.00% Total Footage Drilled Sliding 0 Percent of Footage Sliding 0.00% Hours Total Time Rotate Drilling 1.33 Percent of Time Rotated 100.00% Total Time Slide Drilling 0.00 Percent of Time Sliding 0.00% Connection / Ream / Rig Time / Circulating 0.17 Percent Non-Drilling Time 11.33% Last Survey MD: 11377' Inc 2.4 Azm 149.5 TVD 11243.18' Projection to Bit from Last Survey MD: 11430' South 11.71' East 20.42' PBHL
	1:30 - 3:30	2.00	EVALPR	05	C	P	11,430	CHECK FLOW / CIRCULATE TD SWEEP / BUILD 70BBLs 14 LB PILL
	3:30 - 4:30	1.00	EVALPR	06	A	P	11,430	TRIP OUT OF HOLE 10 STANDS
	4:30 - 5:00	0.50	EVALPR	05	C	P	11,430	CHECK FLOW / PUMP 70 BBLs 14LB PILL / BLOW DOWN TOP DRIVE & MUD LINES
	5:00 - 10:30	5.50	EVALPR	06	A	P	11,430	TRIP OUT OF HOLE / NO TIGHT SPOTS OBSERVED / BREAK OFF BIT / LAY DOWN MUD MOTOR
	10:30 - 11:00	0.50	EVALPR	07	A	P	11,430	RIG SERVICE

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	11:00 - 13:30	2.50	EVALPR	11	D	P	11,430	CHANGE OUT TO 3.5 WEATHERFORD ELEVATORS / HELD SAFETY MEETING / PICK UP WEATHERFORD SHUTTLE LOGGING EQUIPMENT / INSTALL SOURCE / PICK UP WEATHERFORD 3.5 DRILL PIPE CHANGE OUT TO 4.5 SST ELEVATORS
	13:30 - 20:30	7.00	EVALPR	06	B	P	11,430	TRIP IN HOLE T/ 11430 / FILL DRILL PIPE EVERY 20 STANDS @ 4 BBLS/MIN
	20:30 - 21:30	1.00	EVALPR	05	B	P	11,430	CIRCULATE GAS OUT
	21:30 - 23:00	1.50	EVALPR	06	B	P	11,430	TRIP IN HOLE WITH LOGGING TOOLS
	23:00 - 0:00	1.00	EVALPR	05	B	P	11,430	CIRCULATE BOTTOMS UP @ 4 BBLS /MIN / MIX 14 LB PILL
12/23/2013	0:00 - 1:30	1.50	EVALPR	05	C	P	11,430	CIRCULATE BOTTOMS UP @ 4 BBLS/MIN
	1:30 - 3:00	1.50	EVALPR	11	D	P	11,430	PUMP DART & DEPLOY LOGGING TOOL
	3:00 - 13:00	10.00	EVALPR	11	D	P	11,430	TRIP OUT OF HOLE WHILE LOGGING @ 30'/MIN. (HOLE CALIPER LOG /ARRAY INDUCTION LOG / COMPACT TRIPLE COMBO LOG / COMPENSATED DUAL NEUTRON LOG.
	13:00 - 13:30	0.50	CSGPRO	12	A	P	11,430	RETRIEVE WEAR BUSHING
	13:30 - 15:00	1.50	CSGPRO	12	A	P	11,430	RIG UP KIMZEY CASING CREW & LAY DOWN TRUCK
	15:00 - 0:00	9.00	CSGPRO	12	C	P	11,430	RAN 259 TOTAL JTS. OF 4.5 CASING (142 JOINTS OF 4.5"/11.6# / HCP 110/ 8 RND LTC + 1 MARKER + 1 PUP JOINT) + (114 JTS. OF 4.5"/ 11.6# HCP 110/ DQX) + ( 1-DQX CROSS OVER). LANDED @ 11400.55', FLOAT COLLAR @ 11354.64', MESA VERDE MARKER @ 8157.91', PUP JOINT @ 5072.58, STAGE TOOL @ 5293.02' CROSS OVER JT. @ 5049.22'. 15 CENTRALIZERS TOTAL. 1 CENTRALIZER ON 1ST THREE JOINTS THEN EVERY 3RD JOINT TO JOINT # 41. 2 CEMENT BASKETS. 1 ABOVE STAGE TOOL AND 1 BELOW STAGE TOOL FIXED WITH RING CLAMPS.
12/24/2013	0:00 - 2:00	2.00	CSGPRO	05	D	P	11,430	CIRCULATE CASING / FINAL CIRCULATING PSI - 700 / 335 GPM / RIG DOWN CASERS / RIG UP BAKER CEMENTERS

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No: PROPETRO 12/12, SST 8/8
Event: DRILLING		Start Date: 9/24/2013	End Date: 12/24/2013
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	2:00 - 4:30	2.50	CSGPRO	12	E	P	11,430	HELD SAFETY MEETING WITH RIG & BJ CEMENTING CREWS, MUD TRUCK DRIVER & WEATHERFORD DV TOOL HAND, TEST LINES TO 5400, 1st STAGE PUMP 25 BBLS WATER SPACER, 40% EXCESS, 265 BBLS / 1515 SACKS 14.3 PPG 1.32 YLD, 50/50 POZ +0.002 GPS FP-6L + .75 % BWOC SODIUM METASILICATE + 2% BWOC BENTONITE + .05% BWOC STATIC FREE + 10% BWOW SODIUM CHLORIDE + 0.55% R-3 58.7% FRESH WATER  DISPLACE WITH 100 BBLS WATER & 26 BBLS DRILL MUD, BUMP PLUG @ 3700 PSI FINAL LIFT OF2330, TEST FLOATS, FLOATS HELD WITH 2 BBL BACK TO TRUCK, DROP BOMB 25 MINS TO TAG WAITED 30MINS, OPEN DV TOOL 780 PSI, BREAK CIRC & TURN OVER TO RIG TO CIRC, 75 BBLS CEMENT TO PIT 25 BBL. OF WATER TO THE PIT, CEMENT ESTIMATED @ 1' BELOW DV TOOL
	4:30 - 8:30	4.00	CSGPRO	05	G	P	11,430	CIRCULATED BETWEEN STAGES 50 STROKES 210 GALLON / MINUTE 135 PSI
	8:30 - 12:00	3.50	CSGPRO	12	E	P	11,430	TEST LINES TO 5000, 2nd STAGE, LEAD 30% EXCESS,25 BBLS FRESH WATER, LEAD 235 BBLS/ 740 SACKS 13 PPG 2.01 YLD PREMIUM LITE + 0.05 #/SACK OF STATIC FREE + 2% BWOC CALCIUM CHLORIDE,.25 #/SACK CELLO FLAKE + 5 #/SACK KOL-SEAL +.4% BWOC FL52 +.4%BWOC SODIUM METASILICATE + 6% BWOC BENTONITE 101.2% FRESH WATER  TAIL 12.5 BBLS 60 SACKS, 15.8 PPG 1.16 YLD "G"+.4%SMS+1%CaCl2  SHUT DOWN DROP CLOSING PLUG, DISPLACE WITH 82.3 BBLS CLAYCARE WATER, BUMP PLUG @ 3200 PSI, 1500 OVER FINAL LIFT OF 1550 PSI, BLEED OFF PSI TEST TOOL, 1 BBL BLED BACK OFF, 10BBLS CEMENT AND 25 BBL. OF SPACER TO PIT 2nd STAGE @ SURFACE, R/D
	12:00 - 12:30	0.50	CSGPRO	14	B	P	11,430	SET PACK OFF TOOL / LAY DOWN LANDING JOINT
	12:30 - 14:00	1.50	RDMO	14	A	P	11,430	NIPPLE DOWN BOP / RELEASE RIG

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well/Wellbore Information

Well	NBU 921-20L4BS RED	Wellbore No.	OH
Well Name	NBU 921-20L4BS	Wellbore Name	NBU 921-20L4BS
Report No.	1	Report Date	3/31/2014
Project	UTAH-UINTAH	Site	NBU 921-20L PAD
Rig Name/No.		Event	COMPLETION
Start Date	2/17/2014	End Date	4/10/2014
Spud Date	10/25/2013	Active Datum	RKB @4,842.00usft (above Mean Sea Level)
UWI	NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0		

1.3 General

Contractor		Job Method		Supervisor	
Perforated Assembly		Conveyed Method			

1.4 Initial Conditions

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

1.5 Summary

Gross Interval	8,149.0 (usft)-11,265.0 (usft)	Start Date/Time	3/31/2014 12:00AM
No. of Intervals	69	End Date/Time	3/31/2014 12:00AM
Total Shots	237	Net Perforation Interval	79.00 (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-T S (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
3/31/2014 12:00AM	MESAVERDE/			8,149.0	8,150.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
3/31/2014 12:00AM	MESAVERDE/			8,168.0	8,170.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,257.0	8,259.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,304.0	8,307.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,386.0	8,387.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,464.0	8,466.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,591.0	8,593.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,603.0	8,605.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,686.0	8,687.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,707.0	8,708.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,728.0	8,729.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,812.0	8,813.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,851.0	8,852.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,874.0	8,875.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,899.0	8,901.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			8,950.0	8,951.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,006.0	9,007.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,026.0	9,027.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,073.0	9,074.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,085.0	9,086.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,098.0	9,099.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,106.0	9,108.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	

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2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
3/31/2014 12:00AM	MESAVERDE/			9,207.0	9,208.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,233.0	9,234.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,296.0	9,297.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,310.0	9,311.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,321.0	9,322.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,333.0	9,334.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,360.0	9,361.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,375.0	9,376.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,420.0	9,421.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,446.0	9,447.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,471.0	9,472.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,501.0	9,502.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,529.0	9,530.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,559.0	9,560.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,578.0	9,579.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,615.0	9,616.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,642.0	9,643.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,662.0	9,663.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,693.0	9,694.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,732.0	9,733.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,769.0	9,770.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	

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2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
3/31/2014 12:00AM	MESAVERDE/			9,795.0	9,796.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			9,884.0	9,886.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,014.0	10,015.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,056.0	10,057.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,085.0	10,086.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,098.0	10,099.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,110.0	10,111.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,121.0	10,122.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,156.0	10,157.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,206.0	10,207.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,872.0	10,873.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,881.0	10,882.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,890.0	10,891.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,912.0	10,913.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,922.0	10,923.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,947.0	10,948.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,955.0	10,956.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			10,957.0	10,958.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			11,037.0	11,038.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			11,070.0	11,071.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			11,097.0	11,098.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	

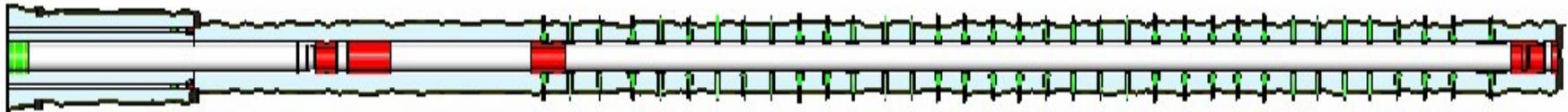
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2.1 Perforated Interval (Continued)

Date	Formation/Reservoir	CCL@ (usft)	CCL-T S (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
3/31/2014 12:00AM	MESAVERDE/			11,150.0	11,151.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			11,175.0	11,176.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			11,186.0	11,187.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			11,207.0	11,208.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	
3/31/2014 12:00AM	MESAVERDE/			11,264.0	11,265.0	3.00		0.410	EXP/	3.125	120.00		19.00	PRODUCTIO N	

3 Plots

3.1 Wellbore Schematic



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US ROCKIES REGION  
**Operation Summary Report**

Well: NBU 921-20L4BS RED

Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No:

Event: COMPLETION

Start Date: 2/17/2014

End Date: 4/10/2014

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
2/17/2014	7:00 - 11:30	4.50	SUBSPR	32	F	P		RU IPS, CTU, RIH WITH 3 79" MILL, RIH TAGGED @ CEMENT @ 5,212 DRILLED OUT CEMENT TO DV TOOL @ 5,292. DRILLED OUT DV TOOL IN 44 MIN. CONTINUED IN HOLE TAGGED @ 11,300 CLEANED OUT TO FLOAT COLLAR @ 11,354, CIRC CLEAN WITH TMAC, POOH RD CTU, INSTALL WH SWIFN
2/24/2014	-							
3/22/2014	10:00 - 11:00	1.00	SUBSPR	52	B	P		FILL SURFACE CSG. MIRU CAMERON QUICK TEST. PRESSURE TEST CSG & FRAC VALVES 1ST PSI TEST T/ 9000 PSI. HELD FOR 15 MIN LOST -73 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI.  PRESSURE TEST 8 5/8 X 4 1/2 TO 538 PSI HELD FOR 5 MIN LOST -101 PSI, BLED PSI OFF, REINSTALLED POP OFF SWIFN 50 PRESSURE ON SURFACE CASING FILLED SURFACE WITH 1/2 BBL H2O
3/31/2014	8:00 - 8:15	0.25	SUBSPR	48		P		HSM, RIGGING UP
	8:15 - 12:30	4.25	SUBSPR	37	B	P		MIRU CASED HOLE SOLUTIONS, 1ST SHOOT LOWER MESAVERDE STG #1
4/1/2014	6:15 - 6:30	0.25	FRAC	48		P		HSM, REVIEW FRAC DESIGN
	6:30 - 18:00	11.50	FRAC	36	B	P		REFER TO STIMULATION PJR FOR FLUID, SAND AND CHEMICAL VOLUMES, ALL STAGES WERE PERFORATED ACCORDING TO PERF RECORD IN OPEN WELLS, ALL STAGES WERE STIMULATED TO VENDOR POST JOB REPORT. ALL PLUGS ARE HALIBURTON 8K CBPS  FRAC STG #1] WHP=1735#, BRK DN PERFS=4,776#, @=6.9 BPM, INTIAL ISIP=3,917#, FG=.79, FINAL ISIP=3,834#, FG=.78, [CUT SAND DUE TO PRESSURE INCREASE, PUMP'D SWEEP TURNED SAND BACK ON PRESSURE CAME UP CUT AND RUN]  SET PLUG & PERFORATE STG #2  FRAC STG #2] WHP=1,751#, BRK DN PERFS=5,013#, @=6.8 BPM, INTIAL ISIP=3,560#, FG=.76, FINAL ISIP=3,925#, FG=.80,  SET PLUG & PERFORATE STG #3 SWIFN.
4/2/2014	6:00 - 6:15	0.25	FRAC	48		P		HSM, HAMMER HANDLES

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED

Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No:

Event: COMPLETION

Start Date: 2/17/2014

End Date: 4/10/2014

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:15 - 17:30	11.25	FRAC	36	B	P		FRAC STG #3] WHP=1,942#, BRK DN PERFS=3,748#, @=6.7 BPM, INTIAL ISIP=2,644#, FG=.70, FINAL ISIP=3,205#, FG=.76,  SET PLUG & PERFORATE STG #4  FRAC STG #4] WHP=1,700#, BRK DN PERFS=3,659#, @=5.7 BPM, INTIAL ISIP=3,153#, FG=.76, FINAL ISIP=3,220#, FG=.77,  SET PLUG PERFORATE STG #5 SWIFN
4/3/2014	6:30 - 6:45	0.25	FRAC	48		P		HSM, PINCH POINTS
	6:45 - 17:00	10.25	FRAC	36	B	P		FRAC STG #5] WHP=1,063#, BRK DN PERFS=3,156#, @=4.2 BPM, INTIAL ISIP=2,551#, FG=.71, FINAL ISIP=2,981#, FG=.75,  SET PLUG AND PERFORATE STG #6  FRAC STG #6] WHP=2,220#, BRK DN PERFS=4,341#, @=6.4 BPM, INTIAL ISIP=2,789#, FG=.74, FINAL ISIP=3,054#, FG=.77,  SET PLUG AND PERFORATE STG #7 SWIFN
4/4/2014	6:15 - 6:30	0.25	FRAC	48		P		HSM, WATCHING FOR LEAKS
	6:30 - 14:30	8.00	FRAC	36	B	P		FRAC STG #7] WHP=1,524#, BRK DN PERFS=3,537#, @=4.1 BPM, INTIAL ISIP=2,757#, FG=.74, FINAL ISIP=3,305#, FG=.80,  SET PLUUG AND PERFORATE STG #8  FRAC STG #8] WHP=1,915#, BRK DN PERFS=2,922#, @=4 BPM, INTIAL ISIP=2,266#, FG=.70, FINAL ISIP=2,880#, FG=.77,  SET PLUUG AND PERFORATE STG #9
	14:30 - 15:30	1.00	FRAC	46	E	Z		HAD TWO MISSFIRES ON WIRE LINE ON SAME SIDE OF WELLS HAD TO WAIT ON WIRE LINE TO CATCH UP
	15:30 - 18:00	2.50	FRAC	36	B	P		FRAC STG #9] WHP=2,009#, BRK DN PERFS=3,452#, @=4.1 BPM, INTIAL ISIP=2,882#, FG=.78, FINAL ISIP=2,938#, FG=.78,  SET PLUUG AND PERFORATE STG #10  SWIFN.
4/5/2014	6:45 - 7:00	0.25	FRAC	48		P		HSM, RIGGING DOWN

US ROCKIES REGION  
Operation Summary Report

Well: NBU 921-20L4BS RED

Spud Date: 10/25/2013

Project: UTAH-UINTAH

Site: NBU 921-20L PAD

Rig Name No:

Event: COMPLETION

Start Date: 2/17/2014

End Date: 4/10/2014

Active Datum: RKB @4,842.00usft (above Mean Sea Level)

UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 13:00	6.00	FRAC	36	B	P		FRAC STG #10] WHP=1,771#, BRK DN PERFS=2,842#, @=3.5 BPM, INTIAL ISIP=2,107#, FG=.69, FINAL ISIP=2,783#, FG=.78,  SET TOP KILL  TOTAL BBLS=17,739 TOTAL SAND=371,533#
4/9/2014	12:00 - 17:00	5.00	DRLOUT	31	I	P		2 OF 6, MIRU, ND WH, NU 4" 10K BOP, RU FLOOR & TBG EQUIP, CHECK RAM RUBBERS (BAD) C/O, PU 3 7/8" BIT, POBS, 1.875" XN S/N, TALLY & PU TBG, SWI, SDFN.
4/10/2014	7:00 - 7:15	0.25	DRLOUT	48		P		HSM, SLIPS, TRIPS & FALLS, PT BOP, D/O CBP'S, LANDING TBG

## US ROCKIES REGION

## Operation Summary Report

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Spud Date: 10/25/2013

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UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 17:00	9.75	DRLOUT	44	C	P		<p>2 OF 6, RU P/S, FILL TBG &amp; BREAK CIRC, P/T BOP TO 3,000 PSI, SURFACE CSG VALVE OPEN &amp; LOCKED, D/O 10 CBP'S THRU BJD &amp; HAL 9000</p> <p>C/O 10' SAND, TAG 1ST PLUG @ 8099', KICK 900 PSI, CSG PRESS 0 PSI, RIH</p> <p>C/O 30' SAND, TAG 2ND PLUG @ 8338', KICK 600 PSI, CSG PRESS 50 PSI, RIH</p> <p>C/O 30' SAND, TAG 3RD PLUG @ 8635', KICK 700 PSI, CSG PRESS 250 PSI, RIH</p> <p>C/O 30' SAND, TAG 4TH PLUG @ 8926', KICK 800 PSI, CSG PRESS 300 PSI, RIH</p> <p>C/O 20' SAND, TAG 5TH PLUG @ 9138', KICK 500 PSI, CSG PRESS 450 PSI, RIH</p> <p>C/O 30' SAND, TAG 6TH PLUG @ 9393', KICK 900 PSI, CSG PRESS 450 PSI, RIH</p> <p>C/O 40' SAND, TAG 7TH PLUG @ 9630', KICK 0 PSI, CSG PRESS 500 PSI, RIH</p> <p>C/O 40' SAND, TAG 8TH PLUG @ 9916', KICK 1300 PSI, CSG PRESS 500 PSI, RIH</p> <p>C/O 20' SAND, TAG 9TH PLUG @ 10237', KICK 900 PSI, CSG PRESS 800 PSI, RIH</p> <p>C/O 10' SAND, TAG 10TH PLUG @ 11004', KICK 1700 PSI, CSG PRESS 600 PSI,</p> <p>PBTD @ 11353', BTM PERF @ 11265', RIH TAGGED @ 11230', C/O TO 11353' PBTD, 88' PAST BTM PERF W/ 358 JTS 2 3/8" J-55 &amp; P-110 TBG, LD 16 JTS ((WET)), PU &amp; STRIP IN TBG HANGER &amp; LAND TBG W/ 342 JTS 2 3/8" TBG, EOT 10,849.36'.</p> <p>NOTE: D/O THRU BJD &amp; (2) HAL 9000, SOLD THRU 2 SEPERATORS NBU 921-20L4BS SOLD 510 MCF NBU 921-20E1BS SOLD 517 MCF, TOTAL GAS SOLD 1027 MCF.</p> <p>RD P/S, FLOOR &amp; TBG EQUIP, ND BOPS, NU WH, DROP BALL &amp; SHEAR OFF BIT, P/T LINE FROM WH TO HAL 9000 TO 3,000 PSI, NO VISIBLE LEAKS.</p> <p>TURN OVER TO FLOW BACK CREW &amp; SALES, RD TO MOVE TO NEXT WELL ON PAD</p> <p>KB= 24' 4 1/16" CAMERON HANGER= .83' TBG DELIVERED 212 JTS P-110</p>

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 921-20L4BS RED		Spud Date: 10/25/2013	
Project: UTAH-UINTAH		Site: NBU 921-20L PAD	Rig Name No:
Event: COMPLETION		Start Date: 2/17/2014	End Date: 4/10/2014
Active Datum: RKB @4,842.00usft (above Mean Sea Level)		UWI: NW/SW/0/9/S/21/E/20/0/0/26/PM/S/2401/W/0/80/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
								192 JTS 2 3/8" P-110= 6085.32' <span style="float: right;">TBG</span> DELIVERED 150 JTS J-55 1 - 6' PUP JT L-80= 6.08' TOTAL TBG= 362 JTS J-55 & P-110 150 JTS 2 3/8" J-55 = 4,730.93' TBG USED 342 JTS POBS= 2.20' TBG RETURNED 20 JTS P-110 EOT @ 10,849.36'  TWTR= 17739 BBLS TWR= 4500 BBLS TWLTR= 13239 BBLS

# Anadarko Petroleum Corporation



**Project:** Uintah Co., UT (UTM)  
**Site:** Sec 20-T9S-R21E  
**Well:** NBU 921-20L4BS  
**Wellbore:** Original Hole  
**Final Surveys**  
**Rig:** SST 8

**Surface Location:**  
 SHL 2401' FSL & 80' FWL Sec 20-T9S-R21E

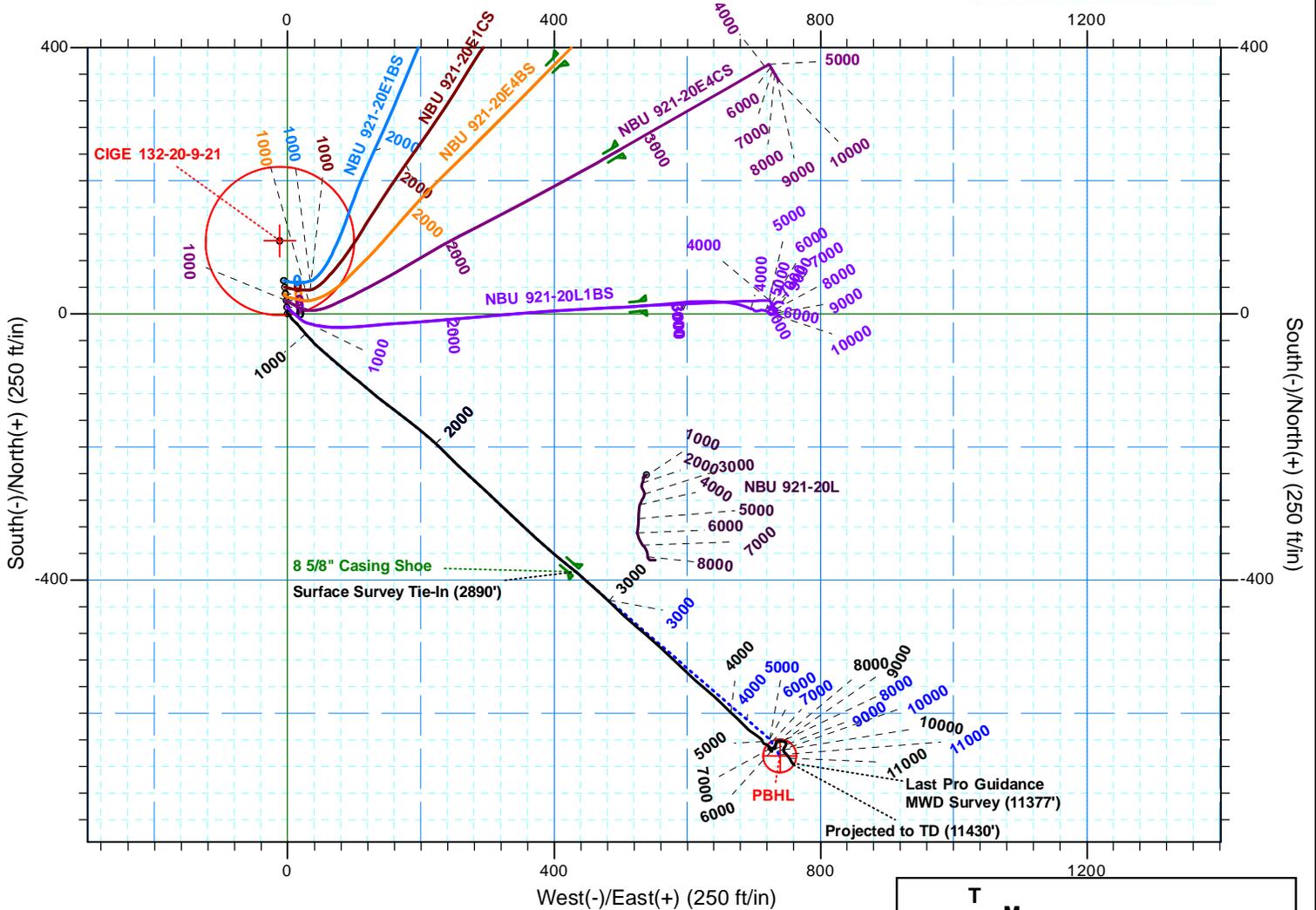
Universal Transverse Mercator (US Survey Feet)  
 NAD 1927 (NADCON CONUS)  
 Zone 12N (114 W to 108 W)  
**Elevation:** 4818+ GL + 24' KB @ 4842.00ft (SST 8)  
**Northing** 14536796.93 **Easting** 2036855.99 **Latitude** 40.020877 **Longitude** -109.584034

**SECTION DETAILS**  
 Plan 1

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Annotation
2890.00	18.20	129.99	2802.92	-388.17	432.76	0.00	0.00	581.34	Surface Survey Tie-In/Begin Turn at 2890' MD, 2803' TVD
2906.34	18.20	130.77	2818.45	-391.47	436.65	1.50	90.37	586.44	Begin Hold at 2906' MD, 2818' TVD
3509.39	18.20	130.77	3391.33	-514.49	579.29	0.00	0.00	774.76	Begin Drop at 3509' MD, 3391' TVD
4722.73	0.00	0.00	4584.36	-639.29	724.00	1.50	180.00	965.81	Begin Hold at 4723' MD, 4584' TVD
6122.73	0.00	0.00	5984.36	-639.29	724.00	0.00	0.00	965.81	Begin Build at 6123' MD, 5984' TVD
6229.39	0.32	149.03	6091.03	-639.54	724.15	0.30	149.03	966.09	Begin Hold at 6229' MD, 6091' TVD
11412.45	0.32	149.03	11274.00	-664.29	739.00	0.00	180.00	993.69	<b>PBHL</b>

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

Name	TVD	+N-S	+E-W	Latitude	Longitude
<b>PBHL</b>	11274.00	-664.29	739.00	40.019053	-109.581395



**Azimuth Corrections**

To convert a Magnetic Direction to a True Direction, Add 10.79° East  
 To convert a True Direction to a Grid Direction, Subtract 0.91°  
 To convert a Magnetic Direction to a Grid Direction, Add 9.88°



**Azimuths to True North**  
 Magnetic North: 10.79°

Magnetic Field  
 Strength: 52080.0snT  
 Dip Angle: 65.80°  
 Date: 12/20/2013  
 Model: IGRF2010

Created By: Bob Hays Date: 10:42, December 29 2013

# Anadarko Petroleum Corporation



**Project:** Uintah Co., UT (UTM)  
**Site:** Sec 20-T9S-R21E  
**Well:** NBU 921-20L4BS  
**Wellbore:** Original Hole  
**Final Surveys**  
**Rig:** SST 8

**Surface Location:**  
 SHL 2401' FSL & 80' FWL Sec 20-T9S-R21E

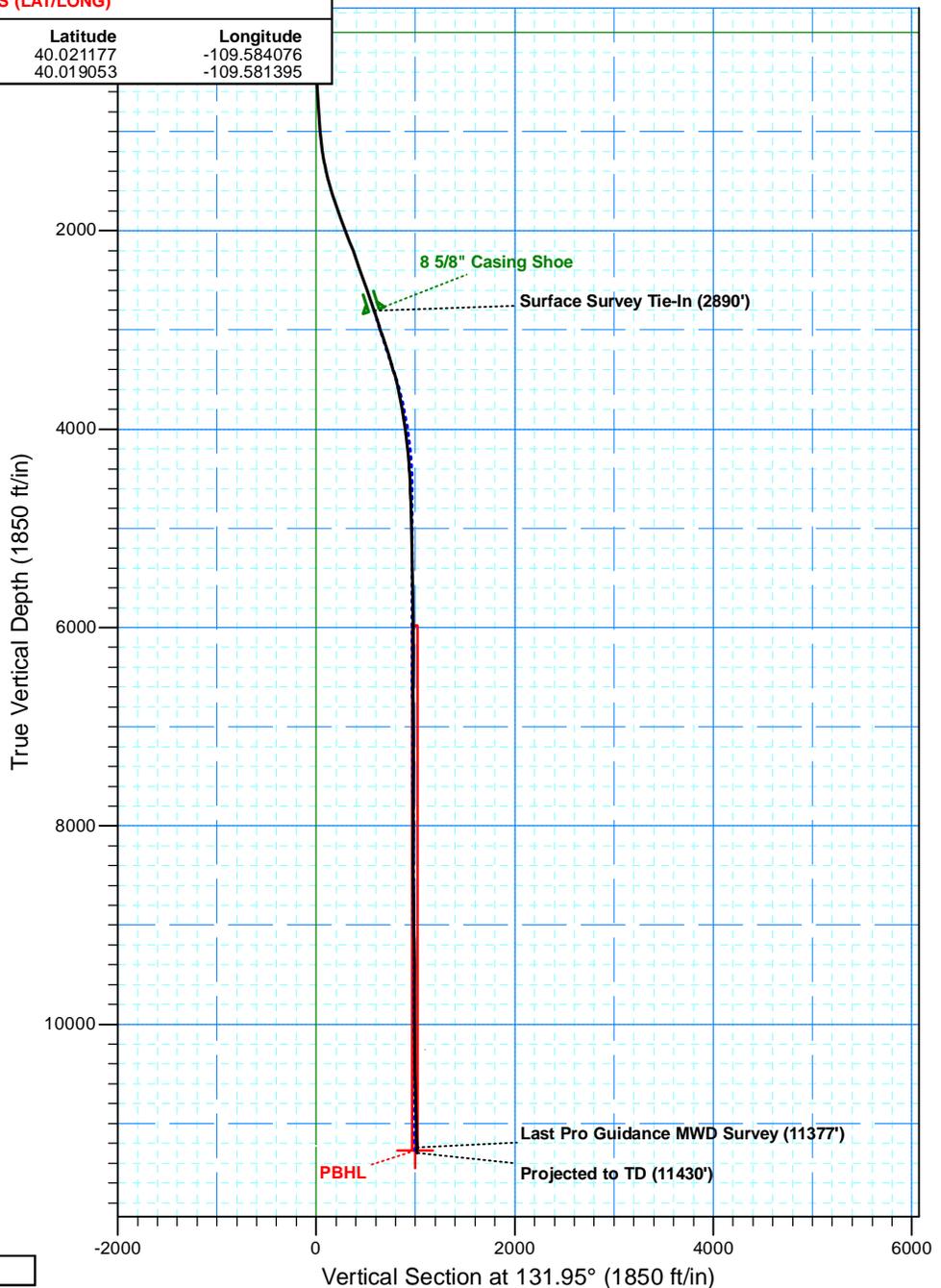
Universal Transverse Mercator (US Survey Feet)  
 NAD 1927 (NADCON CONUS)  
 Zone 12N (114 W to 108 W)  
**Elevation:** 4818+ GL + 24' KB @ 4842.00ft (SST 8)  
**Northing** 14536796.93 **Easting** 2036855.99 **Latitude** 40.020877 **Longitude** -109.584034

**SECTION DETAILS**  
 Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
2890.00	18.20	129.99	2802.92	-388.17	432.76	0.00	0.00	581.34	Surface Survey Tie-In/Begin Turn at 2890' MD, 2803' TVD
2906.34	18.20	130.77	2818.45	-391.47	436.65	1.50	90.37	586.44	Begin Hold at 2906' MD, 2818' TVD
3509.39	18.20	130.77	3391.33	-514.49	579.29	0.00	0.00	774.76	Begin Drop at 3509' MD, 3391' TVD
4722.73	0.00	0.00	4584.36	-639.29	724.00	1.50	180.00	965.81	Begin Hold at 4723' MD, 4584' TVD
6122.73	0.00	0.00	5984.36	-639.29	724.00	0.00	0.00	965.81	Begin Build at 6123' MD, 5984' TVD
6229.39	0.32	149.03	6091.03	-639.54	724.15	0.30	149.03	966.09	Begin Hold at 6229' MD, 6091' TVD
11412.45	0.32	149.03	11274.00	-664.29	739.00	0.00	180.00	993.69	<b>PBHL</b>

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

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
<b>PBHL</b>	11274.00	-664.29	739.00	40.021177	-109.584076
				40.019053	-109.581395





# **Anadarko Petroleum Corporation**

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

**Sec 20-T9S-R21E**

**NBU 921-20L4BS**

**Original Hole**

**Design: Final Surveys**

## **Standard Survey Report**

**29 December, 2013**





## Professional Directional LTD

### Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Well:</b>	NBU 921-20L4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Uintah Co., UT (UTM)		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Fee	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	Sec 20-T9S-R21E				
<b>Site Position:</b>		<b>Northing:</b>	14,536,796.93 usft	<b>Latitude:</b>	40.020877
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,036,855.98 usft	<b>Longitude:</b>	-109.584034
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.91 °

<b>Well</b>	NBU 921-20L4BS					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,536,796.93 usft	<b>Latitude:</b>	40.020877
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,036,855.98 usft	<b>Longitude:</b>	-109.584034
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b>	4,818.00 ft

<b>Wellbore</b>	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2013/12/20	10.79	65.80	52,080

Survey Program	Date	2013/12/29			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
197.00	2,890.00	Surface Surveys (Original Hole)	MWD	MWD	
2,990.00	11,377.00	Pro Guidance MWD Survey (Original Hole)	MWD	MWD	
11,430.00	11,430.00	Projected to TD (Original Hole)	Projection	Projection	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
197.00	0.79	336.00	196.99	1.24	-0.55	-1.24	0.40	0.40	0.00
279.00	0.88	140.98	278.99	1.27	-0.39	-1.13	2.02	0.11	201.20
360.00	2.37	146.69	359.96	-0.62	0.93	1.10	1.85	1.84	7.05
452.00	2.99	138.34	451.86	-4.00	3.57	5.32	0.79	0.67	-9.08
542.00	2.99	138.51	541.73	-7.51	6.68	9.99	0.01	0.00	0.19
632.00	3.71	136.33	631.58	-11.37	10.25	15.22	0.81	0.80	-2.42
722.00	3.87	136.14	721.38	-15.67	14.36	21.16	0.18	0.18	-0.21
812.00	3.78	141.33	811.18	-20.18	18.32	27.11	0.40	-0.10	5.77
902.00	3.96	137.46	900.98	-24.78	22.27	33.13	0.35	0.20	-4.30
992.00	4.57	141.33	990.73	-29.87	26.62	39.76	0.75	0.68	4.30
1,082.00	6.07	138.16	1,080.34	-36.22	32.03	48.03	1.70	1.67	-3.52
1,172.00	8.09	132.63	1,169.65	-44.05	39.86	59.10	2.37	2.24	-6.14
1,262.00	9.86	132.62	1,258.54	-53.56	50.20	73.14	1.97	1.97	-0.01
1,352.00	11.70	131.48	1,346.95	-64.82	62.70	89.97	2.06	2.04	-1.27



## Professional Directional LTD

## Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Well:</b>	NBU 921-20L4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,442.00	13.47	129.63	1,434.78	-77.55	77.61	109.57	2.02	1.97	-2.06
1,532.00	14.90	129.64	1,522.04	-91.62	94.60	131.60	1.59	1.59	0.01
1,622.00	17.23	130.69	1,608.52	-107.70	113.62	156.49	2.61	2.59	1.17
1,712.00	18.64	128.41	1,694.14	-125.32	135.00	184.18	1.75	1.57	-2.53
1,802.00	20.67	126.72	1,778.90	-143.76	159.00	214.35	2.34	2.26	-1.88
1,892.00	20.21	127.72	1,863.23	-162.77	184.03	245.68	0.64	-0.51	1.11
1,982.00	20.31	130.43	1,947.66	-182.41	208.22	276.79	1.05	0.11	3.01
2,072.00	20.51	134.94	2,032.02	-203.68	231.27	308.16	1.76	0.22	5.01
2,162.00	21.07	134.23	2,116.16	-226.10	254.02	340.07	0.68	0.62	-0.79
2,252.00	20.25	133.08	2,200.37	-248.02	276.99	371.80	1.02	-0.91	-1.28
2,342.00	19.70	132.63	2,284.95	-268.93	299.53	402.55	0.63	-0.61	-0.50
2,432.00	19.46	133.04	2,369.75	-289.44	321.65	432.70	0.31	-0.27	0.46
2,522.00	19.43	133.06	2,454.62	-309.89	343.54	462.66	0.03	-0.03	0.02
2,612.00	19.52	132.98	2,539.47	-330.36	365.48	492.66	0.10	0.10	-0.09
2,702.00	18.72	131.23	2,624.50	-350.13	387.34	522.13	1.09	-0.89	-1.94
2,792.00	18.29	129.29	2,709.85	-368.59	409.13	550.68	0.83	-0.48	-2.16
2,890.00	18.20	129.99	2,802.92	-388.17	432.76	581.34	0.24	-0.09	0.71
<b>Surface Survey Tie-In (2890')</b>									
3,051.00	18.40	132.30	2,955.78	-421.43	470.82	631.88	0.47	0.12	1.43
3,146.00	19.80	134.90	3,045.55	-442.88	493.31	662.94	1.72	1.47	2.74
3,241.00	19.50	129.60	3,135.03	-464.34	516.92	694.86	1.90	-0.32	-5.58
3,336.00	16.80	130.90	3,225.29	-483.44	539.52	724.43	2.87	-2.84	1.37
3,432.00	16.50	132.40	3,317.27	-501.72	560.08	751.93	0.55	-0.31	1.56
3,527.00	15.50	133.80	3,408.59	-519.60	579.20	778.11	1.13	-1.05	1.47
3,622.00	13.70	133.00	3,500.52	-536.06	596.59	802.05	1.91	-1.89	-0.84
3,717.00	12.90	131.70	3,592.97	-550.79	612.74	823.90	0.90	-0.84	-1.37
3,813.00	11.50	132.30	3,686.80	-564.36	627.82	844.19	1.46	-1.46	0.63
3,908.00	9.80	130.90	3,780.16	-576.03	640.93	861.74	1.81	-1.79	-1.47
4,003.00	8.40	133.20	3,873.96	-586.07	652.10	876.76	1.52	-1.47	2.42
4,099.00	8.60	135.50	3,968.90	-595.99	662.25	890.94	0.41	0.21	2.40
4,194.00	7.00	132.10	4,063.02	-604.94	671.52	903.82	1.75	-1.68	-3.58
4,289.00	5.70	135.10	4,157.44	-612.16	679.14	914.32	1.41	-1.37	3.16
4,384.00	5.50	134.50	4,251.98	-618.69	685.72	923.58	0.22	-0.21	-0.63
4,480.00	5.30	129.90	4,347.56	-624.76	692.41	932.60	0.50	-0.21	-4.79
4,575.00	3.50	124.00	4,442.28	-629.20	698.18	939.86	1.95	-1.89	-6.21
4,670.00	3.20	132.10	4,537.11	-632.60	702.55	945.38	0.59	-0.32	8.53
4,765.00	1.90	120.00	4,632.02	-635.16	705.88	949.58	1.47	-1.37	-12.74
4,860.00	1.60	130.90	4,726.97	-636.82	708.24	952.44	0.47	-0.32	11.47
4,955.00	1.50	134.50	4,821.94	-638.56	710.13	955.01	0.15	-0.11	3.79
5,051.00	1.80	149.20	4,917.90	-640.73	711.80	957.71	0.54	0.31	15.31
5,146.00	1.60	142.50	5,012.86	-643.07	713.37	960.44	0.30	-0.21	-7.05
5,241.00	1.40	149.90	5,107.83	-645.12	714.76	962.84	0.29	-0.21	7.79
5,336.00	1.20	102.00	5,202.80	-646.34	716.32	964.81	1.13	-0.21	-50.42
5,432.00	1.20	104.80	5,298.78	-646.80	718.27	966.58	0.06	0.00	2.92



## Professional Directional LTD

## Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Well:</b>	NBU 921-20L4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

## Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,527.00	1.20	112.40	5,393.76	-647.43	720.15	968.40	0.17	0.00	8.00
5,622.00	1.20	129.60	5,488.74	-648.45	721.84	970.33	0.38	0.00	18.11
5,717.00	1.00	144.10	5,583.72	-649.75	723.09	972.13	0.36	-0.21	15.26
5,812.00	1.00	151.70	5,678.71	-651.15	723.97	973.72	0.14	0.00	8.00
5,907.00	1.00	131.60	5,773.70	-652.44	724.99	975.33	0.37	0.00	-21.16
6,003.00	1.10	153.80	5,869.68	-653.82	726.02	977.03	0.43	0.10	23.13
6,098.00	1.00	153.40	5,964.66	-655.38	726.79	978.64	0.11	-0.11	-0.42
6,193.00	0.80	171.70	6,059.65	-656.78	727.26	979.93	0.37	-0.21	19.26
6,288.00	0.50	291.70	6,154.65	-657.28	726.97	980.05	1.20	-0.32	126.32
6,384.00	0.70	280.80	6,250.64	-657.01	726.01	979.15	0.24	0.21	-11.35
6,479.00	0.30	206.50	6,345.64	-657.13	725.32	978.72	0.72	-0.42	-78.21
6,574.00	1.50	335.90	6,440.63	-656.21	724.71	977.65	1.80	1.26	136.21
6,669.00	0.90	339.40	6,535.61	-654.38	723.94	975.85	0.64	-0.63	3.68
6,764.00	0.70	299.80	6,630.60	-653.39	723.17	974.62	0.60	-0.21	-41.68
6,860.00	0.50	270.30	6,726.60	-653.10	722.24	973.74	0.38	-0.21	-30.73
6,955.00	0.80	80.20	6,821.59	-652.99	722.48	973.84	1.36	0.32	178.84
7,050.00	1.00	89.00	6,916.58	-652.86	723.96	974.86	0.26	0.21	9.26
7,146.00	1.10	81.00	7,012.57	-652.70	725.71	976.05	0.18	0.10	-8.33
7,241.00	0.90	96.20	7,107.55	-652.64	727.35	977.23	0.35	-0.21	16.00
7,336.00	0.90	106.20	7,202.54	-652.93	728.81	978.51	0.17	0.00	10.53
7,432.00	0.90	117.10	7,298.53	-653.48	730.21	979.91	0.18	0.00	11.35
7,527.00	0.60	41.20	7,393.52	-653.45	731.20	980.63	1.00	-0.32	-79.89
7,622.00	0.90	0.20	7,488.51	-652.33	731.53	980.13	0.63	0.32	-43.16
7,718.00	0.60	5.30	7,584.51	-651.07	731.58	979.32	0.32	-0.31	5.31
7,812.00	0.60	42.80	7,678.50	-650.22	731.96	979.04	0.41	0.00	39.89
7,908.00	0.70	58.90	7,774.49	-649.55	732.80	979.22	0.22	0.10	16.77
8,003.00	1.40	355.50	7,869.48	-648.09	733.21	978.54	1.32	0.74	-66.74
8,098.00	1.10	349.60	7,964.46	-646.04	732.95	976.98	0.34	-0.32	-6.21
8,194.00	0.40	18.40	8,060.45	-644.81	732.89	976.12	0.81	-0.73	30.00
8,289.00	0.60	36.40	8,155.45	-644.10	733.29	975.94	0.27	0.21	18.95
8,384.00	0.50	14.40	8,250.44	-643.30	733.69	975.70	0.24	-0.11	-23.16
8,479.00	0.40	28.30	8,345.44	-642.60	733.95	975.43	0.16	-0.11	14.63
8,574.00	0.50	70.50	8,440.44	-642.17	734.50	975.55	0.35	0.11	44.42
8,670.00	0.70	75.00	8,536.43	-641.88	735.46	976.07	0.21	0.21	4.69
8,765.00	0.90	98.10	8,631.42	-641.84	736.76	977.00	0.40	0.21	24.32
8,860.00	1.10	83.20	8,726.41	-641.83	738.40	978.22	0.34	0.21	-15.68
8,955.00	1.00	87.00	8,821.39	-641.68	740.13	979.41	0.13	-0.11	4.00
9,050.00	1.00	100.80	8,916.38	-641.79	741.78	980.71	0.25	0.00	14.53
9,146.00	1.10	117.90	9,012.36	-642.38	743.41	982.32	0.34	0.10	17.81
9,241.00	0.70	100.80	9,107.35	-642.92	744.79	983.70	0.50	-0.42	-18.00
9,336.00	1.40	94.10	9,202.33	-643.11	746.52	985.11	0.75	0.74	-7.05
9,431.00	1.40	136.30	9,297.31	-644.03	748.48	987.19	1.06	0.00	44.42
9,526.00	1.40	194.30	9,392.28	-645.99	748.99	988.88	1.43	0.00	61.05



## Professional Directional LTD

### Survey Report



<b>Company:</b>	Anadarko Petroleum Corporation	<b>Local Co-ordinate Reference:</b>	Well NBU 921-20L4BS
<b>Project:</b>	Uintah Co., UT (UTM)	<b>TVD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Site:</b>	Sec 20-T9S-R21E	<b>MD Reference:</b>	4818+ GL + 24' KB @ 4842.00ft (SST 8)
<b>Well:</b>	NBU 921-20L4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

#### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,622.00	1.40	211.00	9,488.26	-648.14	748.10	989.65	0.42	0.00	17.40
9,717.00	1.40	208.50	9,583.23	-650.15	746.95	990.14	0.06	0.00	-2.63
9,812.00	0.70	225.50	9,678.21	-651.58	745.98	990.37	0.80	-0.74	17.89
9,908.00	0.70	197.50	9,774.20	-652.55	745.38	990.58	0.35	0.00	-29.17
10,003.00	0.80	203.90	9,869.20	-653.71	744.94	991.03	0.14	0.11	6.74
10,098.00	0.70	194.10	9,964.19	-654.88	744.53	991.50	0.17	-0.11	-10.32
10,194.00	0.60	185.30	10,060.18	-655.95	744.34	992.08	0.15	-0.10	-9.17
10,289.00	0.30	159.10	10,155.18	-656.67	744.39	992.59	0.38	-0.32	-27.58
10,385.00	0.10	120.40	10,251.18	-656.95	744.55	992.90	0.24	-0.21	-40.31
10,480.00	0.70	153.60	10,346.17	-657.51	744.88	993.52	0.65	0.63	34.95
10,575.00	0.70	142.40	10,441.17	-658.49	745.49	994.63	0.14	0.00	-11.79
10,671.00	0.90	125.10	10,537.16	-659.39	746.46	995.96	0.32	0.21	-18.02
10,766.00	1.00	142.20	10,632.15	-660.47	747.58	997.51	0.32	0.11	18.00
10,861.00	1.00	135.50	10,727.13	-661.72	748.67	999.16	0.12	0.00	-7.05
10,956.00	1.40	143.00	10,822.11	-663.24	749.95	1,001.12	0.45	0.42	7.89
11,051.00	1.90	138.60	10,917.07	-665.35	751.69	1,003.83	0.54	0.53	-4.63
11,147.00	2.10	149.00	11,013.01	-668.05	753.65	1,007.09	0.43	0.21	10.83
11,242.00	2.10	143.60	11,107.95	-670.94	755.58	1,010.46	0.21	0.00	-5.68
11,337.00	2.40	149.30	11,202.88	-674.05	757.63	1,014.06	0.39	0.32	6.00
11,377.00	2.40	149.50	11,242.84	-675.49	758.48	1,015.66	0.02	0.00	0.50
<b>Last Pro Guidance MWD Survey (11377')</b>									
11,430.00	2.40	149.50	11,295.79	-677.41	759.61	1,017.77	0.00	0.00	0.00
<b>Projected to TD (11430')</b>									

#### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,890.00	2,802.92	-388.17	432.76	Surface Survey Tie-In (2890')
11,377.00	11,242.84	-675.49	758.48	Last Pro Guidance MWD Survey (11377')
11,430.00	11,295.79	-677.41	759.61	Projected to TD (11430')