

**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 1022-11A1BS
<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> UO 01197-A ST	<b>11. MINERAL OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>	
<b>12. SURFACE OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" 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>
<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"/>

20. LOCATION OF WELL	FOOTAGES	QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN
LOCATION AT SURFACE	221 FSL 1352 FEL	SWSE	2	10.0 S	22.0 E	S
Top of Uppermost Producing Zone	80 FNL 473 FEL	NENE	11	10.0 S	22.0 E	S
At Total Depth	80 FNL 473 FEL	NENE	11	10.0 S	22.0 E	S

<b>21. COUNTY</b> UINTAH	<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 80	<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 1674
<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 675	<b>26. PROPOSED DEPTH</b> MD: 8652 TVD: 8509	
<b>27. ELEVATION - GROUND LEVEL</b> 5094	<b>28. BOND NUMBER</b> 22013542	<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> 43-8496

**Hole, Casing, and Cement Information**

String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
Surf	11	8.625	0 - 2150	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 - 8652	11.6	I-80 LT&C	12.5	Premium Lite High Strength	270	3.38	11.0
							50/50 Poz	1190	1.31	14.3

**ATTACHMENTS**

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

<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> Gina Becker	<b>TITLE</b> Regulatory Analyst II	<b>PHONE</b> 720 929-6086
<b>SIGNATURE</b>	<b>DATE</b> 08/10/2011	<b>EMAIL</b> gina.becker@anadarko.com
<b>API NUMBER ASSIGNED</b> 43047518420000	<b>APPROVAL</b>   Permit Manager	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-11A1BS**

Surface: 221 FSL / 1352 FEL SWSE  
 BHL: 80 FNL / 473 FEL NENE

Section 2 T10S R22E

Uintah County, Utah  
 Mineral Lease: UO 01197-A ST

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

1. & 2. **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	1047	
Birds Nest	1329	Water
Mahogany	1697	Water
Wasatch	4110	Gas
Mesaverde	6330	Gas
MVU2	7292	Gas
MVL1	7867	Gas
TVD	8509	
TD	8652	

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

*Please refer to the attached Drilling Program*

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

*Please refer to the attached Drilling Program*

5. **Drilling Fluids Program:**

*Please refer to the attached Drilling Program*

6. **Evaluation Program:**

*Please refer to the attached Drilling Program*

**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 8509' TVD, approximately equals  
 5,446 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 3,562 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 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 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.*

***Conclusion***

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

10. **Other Information:**

*Please refer to the attached Drilling Program.*





**KERR-McGEE OIL & GAS ONSHORE LP**  
**DRILLING PROGRAM**

**CASING PROGRAM**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	COLLAPSE	TENSION	
CONDUCTOR	14"	0-40'							
SURFACE	8-5/8"	0 to 2,150	28.00	IJ-55	LTC	3,390	1,880	348,000	N/A
						2.52	1.87	6.60	N/A
PRODUCTION	4-1/2"	0 to 8,652	11.60	I-80	LTC/BTC	7,780	6,350	279,000	367,000
						1.11	1.15	3.44	4.52

**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 @ 7000 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 Option 1	LEAD 500'	Premium cmt + 2% CaCl + 0.25 pps flocele	180	60%	15.80	1.15
	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 Option 2	LEAD 1,650'	65/35 Poz + 6% Gel + 10 pps gilsonite + 0.25 pps Flocele + 3% salt BWOW	150	35%	11.00	3.82
	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 3,602'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	270	20%	11.00	3.38
	TAIL 5,050'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,190	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. No centralizers will be used.

**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.

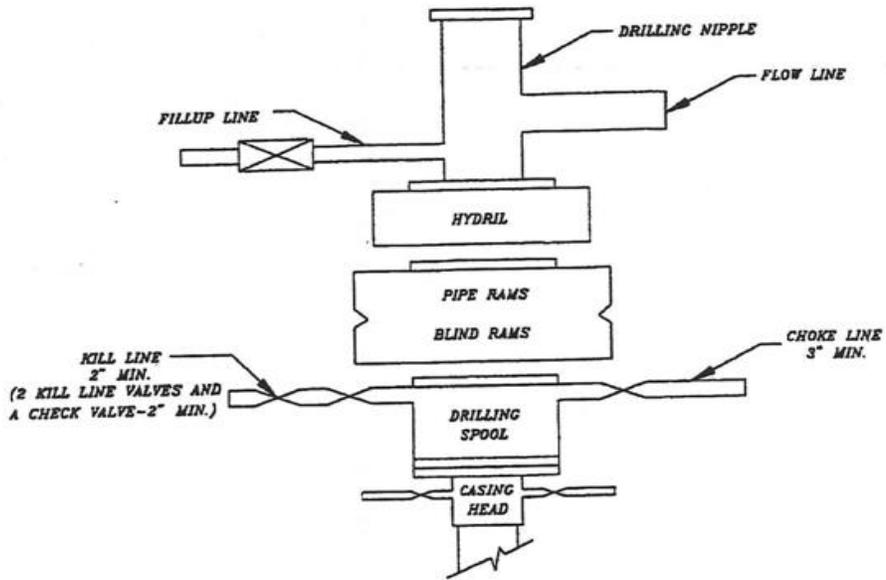
DRILLING ENGINEER: \_\_\_\_\_  
Nick Spence / Danny Showers

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

DRILLING SUPERINTENDENT: \_\_\_\_\_  
Kenny Gathings / Lovel Young

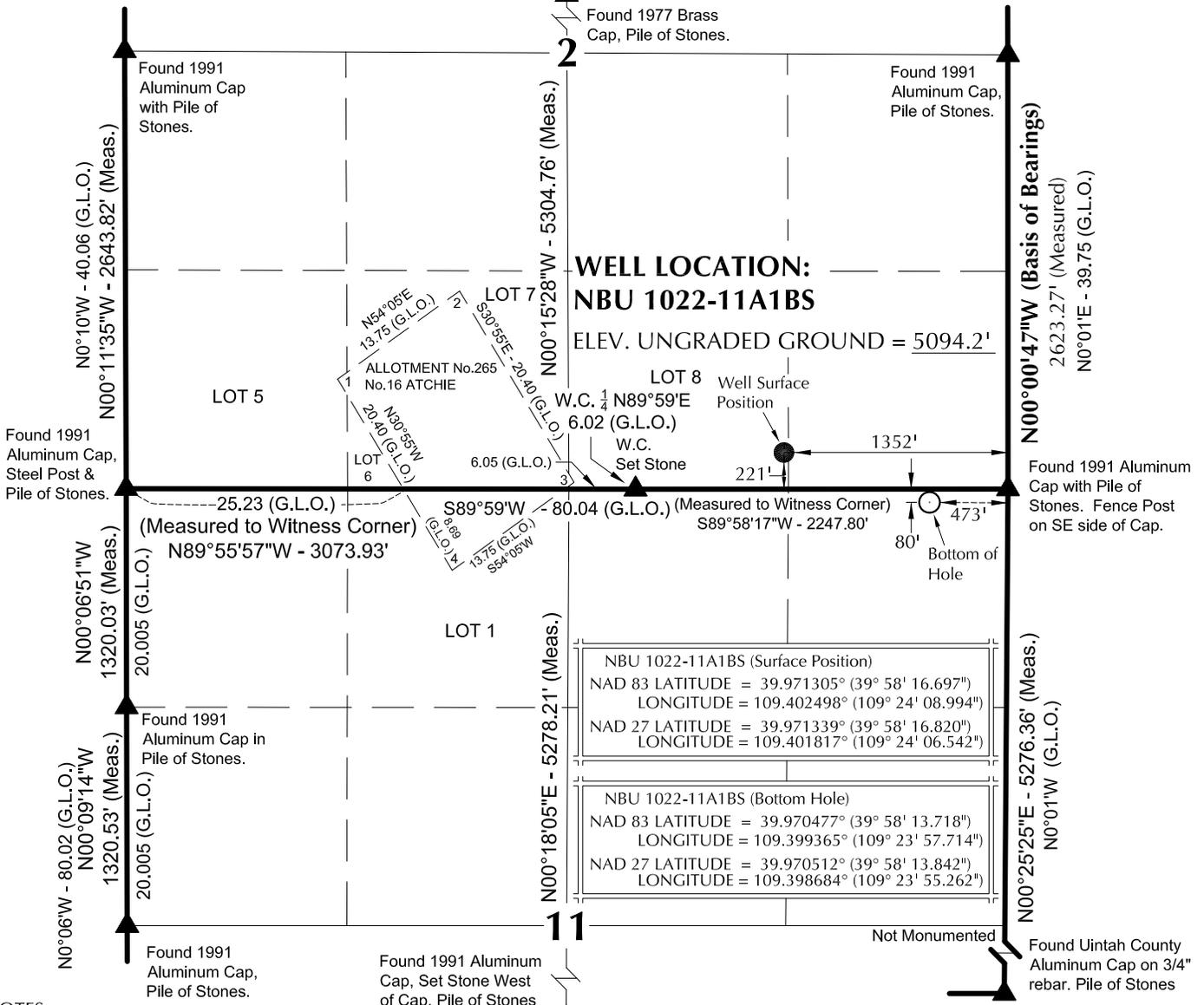
DATE: \_\_\_\_\_

EXHIBIT A  
NBU 1022-11A1BS



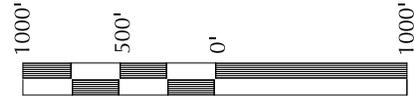
SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

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



**NOTES:**

- ▲ = Section Corners Located
- 1. Well footages are measured at right angles to the Section Lines.
- 2. G.L.O. distances are shown in feet or chains.  
1 chain = 66 feet.
- 3. The Bottom of hole bears S71°06'05"E 928.73' 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 1/4 of Section 1, T10S, R21E, S.L.B.&M. The elevation of this Tri-Sta is shown on the Big Pack Mtn NE 7.5 Min. Quadrangle as being 5238'.



**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. Laugh*  
 No. 6028691  
 JOHN R. LAUGH  
 PROFESSIONAL LAND SURVEYOR  
 REGISTRATION No. 6028691  
 STATE OF UTAH 2-25-11

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

**WELL PAD: NBU 1022-2P**

**NBU 1022-11A1BS**  
**WELL PLAT**  
**80' FNL, 473' FEL (Bottom Hole)**  
**NE 1/4 NE 1/4 OF SECTION 11, T10S, R22E,**  
**S.L.B.&M., UTAH COUNTY, UTAH.**

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

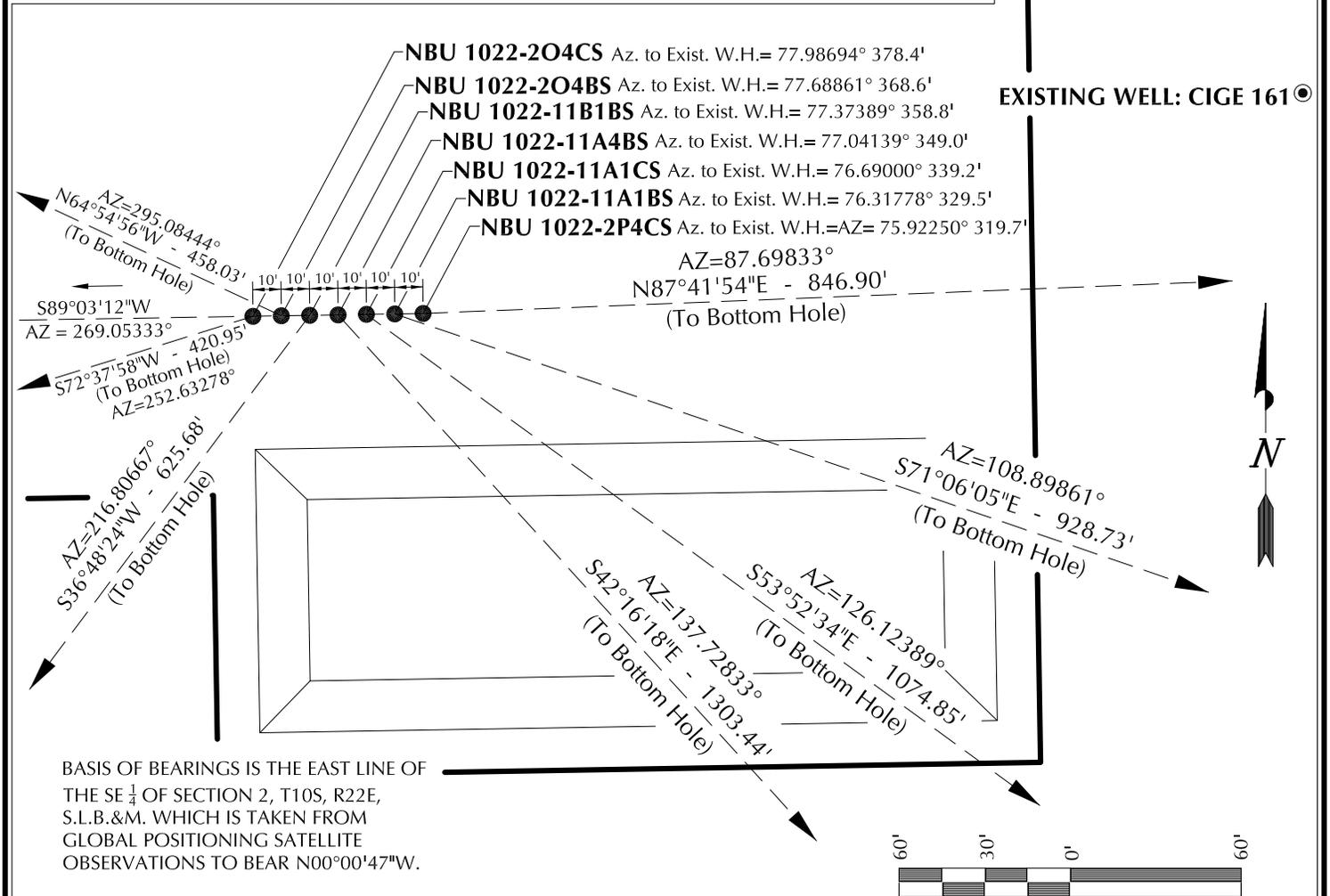
**TIMBERLINE** (435) 789-1365  
**ENGINEERING & LAND SURVEYING, INC.**  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 01-06-11	SURVEYED BY: R.Y.	SHEET NO: <b>2</b>
DATE DRAWN: 01-24-11	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	
NBU 1022-2P4CS	39°58'16.698"	109°24'08.866"	39°58'16.822"	109°24'06.413"	221' FSL	39°58'17.028"	109°23'57.999"	39°58'17.152"	109°23'55.547"	255' FSL
NBU 1022-11A1BS	39.971305°	109.402463°	39.971339°	109.401781°	1342' FEL	39.971397°	109.399444°	39.971431°	109.398763°	496' FEL
NBU 1022-11A1CS	39°58'16.697"	109°24'08.994"	39°58'16.820"	109°24'06.542"	221' FSL	39°58'13.718"	109°23'57.714"	39°58'13.842"	109°23'55.262"	80' FNL
NBU 1022-11A1BS	39.971305°	109.402498°	39.971339°	109.401817°	1352' FEL	39.970477°	109.399365°	39.970512°	109.398684°	473' FEL
NBU 1022-11A1CS	39°58'16.695"	109°24'09.122"	39°58'16.819"	109°24'06.670"	221' FSL	39°58'10.428"	109°23'57.980"	39°58'10.552"	109°23'55.528"	413' FNL
NBU 1022-11A1CS	39.971304°	109.402534°	39.971338°	109.401853°	1362' FEL	39.969563°	109.399439°	39.969598°	109.398758°	491' FEL
NBU 1022-11A4BS	39°58'16.693"	109°24'09.251"	39°58'16.817"	109°24'06.798"	221' FSL	39°58'07.158"	109°23'58.001"	39°58'07.282"	109°23'55.550"	744' FNL
NBU 1022-11A4BS	39.971304°	109.402570°	39.971338°	109.401888°	1372' FEL	39.968655°	109.399445°	39.968689°	109.398764°	490' FEL
NBU 1022-11B1BS	39°58'16.692"	109°24'09.379"	39°58'16.815"	109°24'06.927"	221' FSL	39°58'11.745"	109°24'14.197"	39°58'11.868"	109°24'11.744"	280' FNL
NBU 1022-11B1BS	39.971303°	109.402605°	39.971338°	109.401924°	1382' FEL	39.969929°	109.403944°	39.969963°	109.403262°	1755' FEL
NBU 1022-2O4BS	39°58'16.690"	109°24'09.508"	39°58'16.814"	109°24'07.055"	221' FSL	39°58'18.612"	109°24'14.833"	39°58'18.735"	109°24'12.380"	415' FSL
NBU 1022-2O4BS	39.971303°	109.402641°	39.971337°	109.401960°	1392' FEL	39.971837°	109.404120°	39.971871°	109.403439°	1807' FEL
NBU 1022-2O4CS	39°58'16.689"	109°24'09.636"	39°58'16.812"	109°24'07.184"	220' FSL	39°58'15.450"	109°24'14.796"	39°58'15.574"	109°24'12.343"	95' FSL
NBU 1022-2O4CS	39.971302°	109.402677°	39.971337°	109.401995°	1402' FEL	39.970958°	109.404110°	39.970993°	109.403429°	1804' FEL
CIGE 161	39°58'17.464"	109°24'04.883"	39°58'17.588"	109°24'02.431"	299' FSL					
	39.971518°	109.401356°	39.971552°	109.400675°	1032' FEL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 1022-2P4CS	34.0'	846.2'	NBU 1022-11A1BS	-300.8'	878.7'	NBU 1022-11A1CS	-633.7'	868.2'	NBU 1022-11A4BS	-964.5'	876.8'
NBU 1022-11B1BS	-501.0'	-374.9'	NBU 1022-2O4BS	194.2'	-414.8'	NBU 1022-2O4CS	-125.7'	-401.8'			



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

**WELL PAD - NBU 1022-2P**

**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 1022-2P4CS,  
NBU 1022-11A1BS, NBU 1022-11A1CS,  
NBU 1022-11A4BS, NBU 1022-11B1BS,  
NBU 1022-2O4BS & NBU 1022-2O4CS  
LOCATED IN SECTION 2, T10S, R22E,  
S.L.B.&M., Uintah County, Utah.



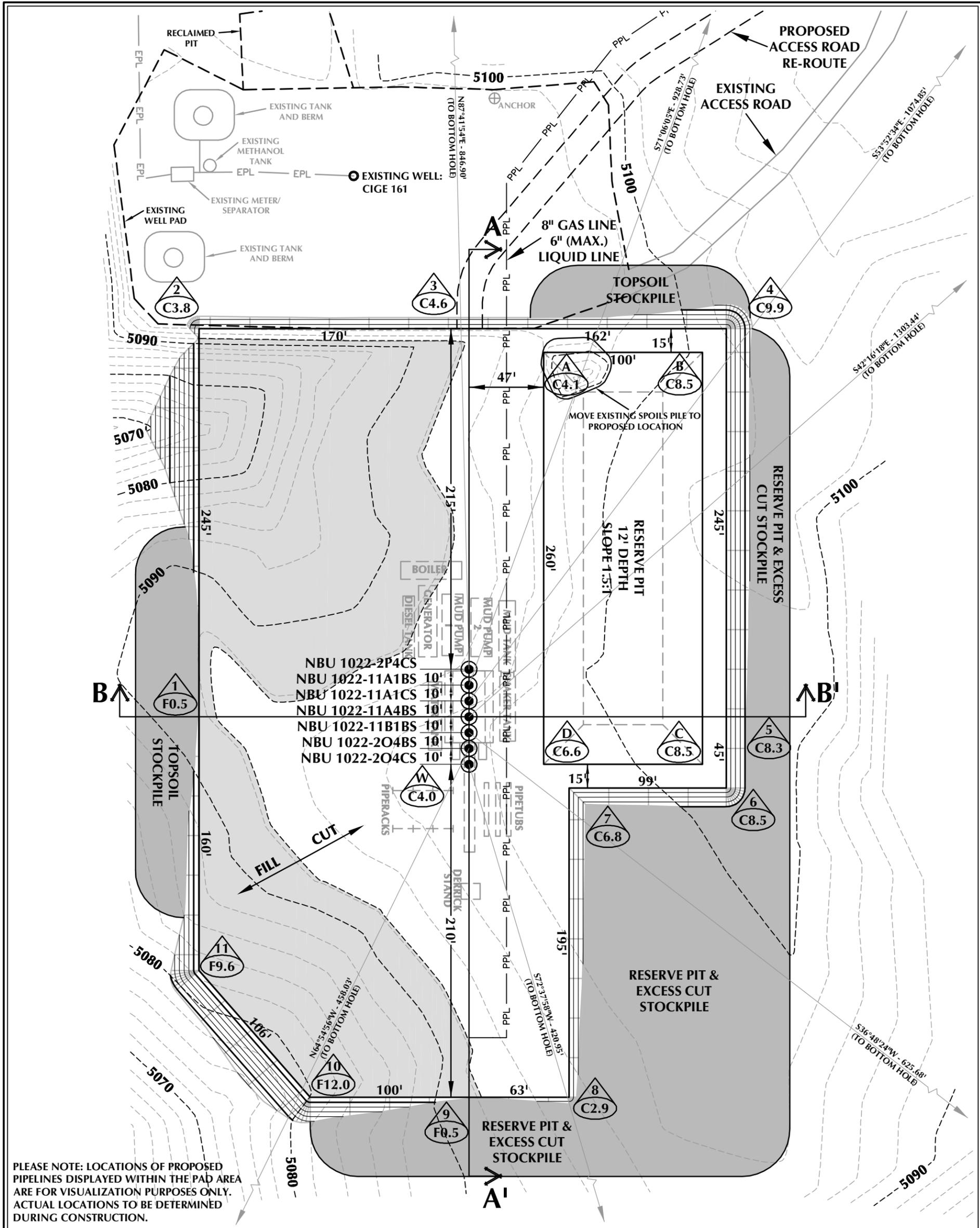
**CONSULTING, LLC**  
2155 North Main Street  
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**TIMBERLINE**

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209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365

DATE SURVEYED: 01-06-11	SURVEYED BY: R.Y.	SHEET NO: <b>8</b>
DATE DRAWN: 01-24-11	DRAWN BY: M.W.W.	8 OF 19
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 1022-2P DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 5096.2'  
 FINISHED GRADE ELEVATION = 5092.2'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.58 ACRES  
 TOTAL DISTURBANCE AREA = 6.30 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 1022-2P**  
 WELL PAD - LOCATION LAYOUT  
 NBU 1022-2P4CS,  
 NBU 1022-11A1BS, NBU 1022-11A1CS,  
 NBU 1022-11A4BS, NBU 1022-11B1BS,  
 NBU 1022-2O4BS & NBU 1022-2O4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH



**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 = 14,772 C.Y.  
 TOTAL FILL FOR WELL PAD = 12,060 C.Y.  
 TOPSOIL @ 6" DEPTH = 2,863 C.Y.  
 EXCESS MATERIAL = 2,712 C.Y.

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

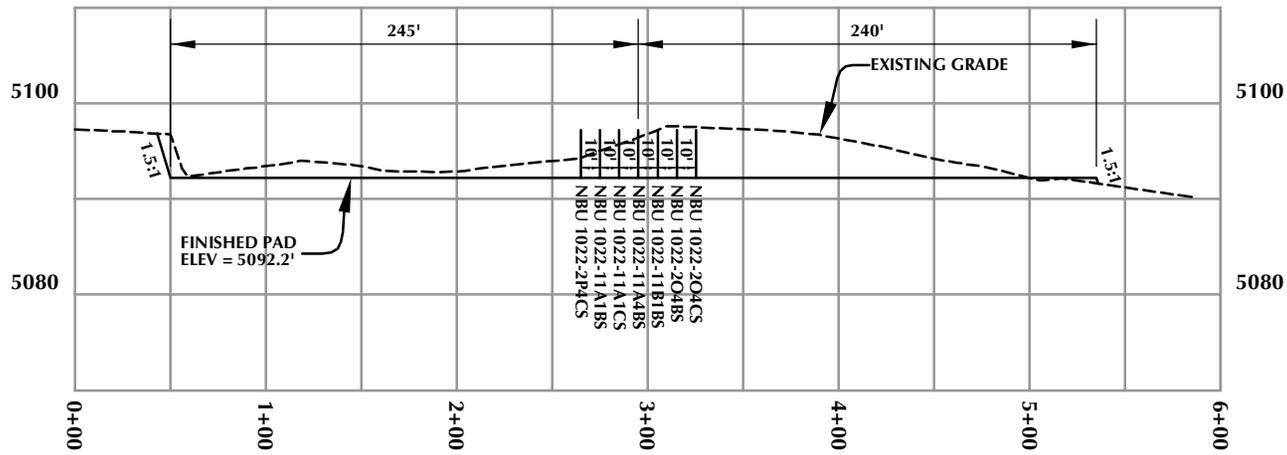
- WELL PAD LEGEND**
- EXISTING WELL LOCATION
  - PROPOSED WELL LOCATION
  - PROPOSED BOTTOM HOLE LOCATION
  - EXISTING CONTOURS (2' INTERVAL)
  - PROPOSED CONTOURS (2' INTERVAL)
  - PPL - PROPOSED PIPELINE
  - EPL - EXISTING PIPELINE



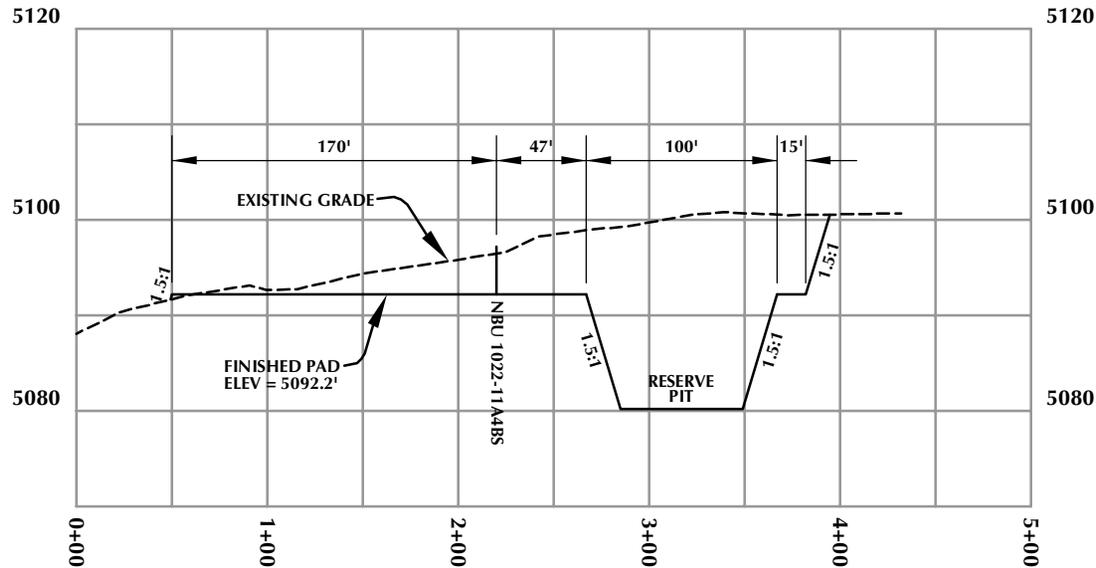
HORIZONTAL 0 30' 60' 1" = 60'  
 2' CONTOURS

SCALE: 1"=60' DATE: 3/30/11 SHEET NO:  
 REVISED: **9** 9 OF 19

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



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 1022-2P**

**WELL PAD - CROSS SECTIONS**

NBU 1022-2P4CS,

NBU 1022-11A1BS, NBU 1022-11A1CS,

NBU 1022-11A4BS, NBU 1022-11B1BS,

NBU 1022-2O4BS & NBU 1022-2O4CS

LOCATED IN SECTION 2, T10S, R22E,

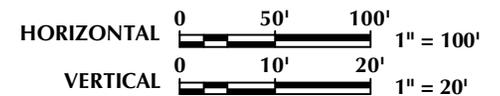
S.L.B.&M., UINTAH COUNTY, UTAH



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

**TIMBERLINE**  
**ENGINEERING & LAND SURVEYING, INC.**  
209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365



Scale: 1"=100'

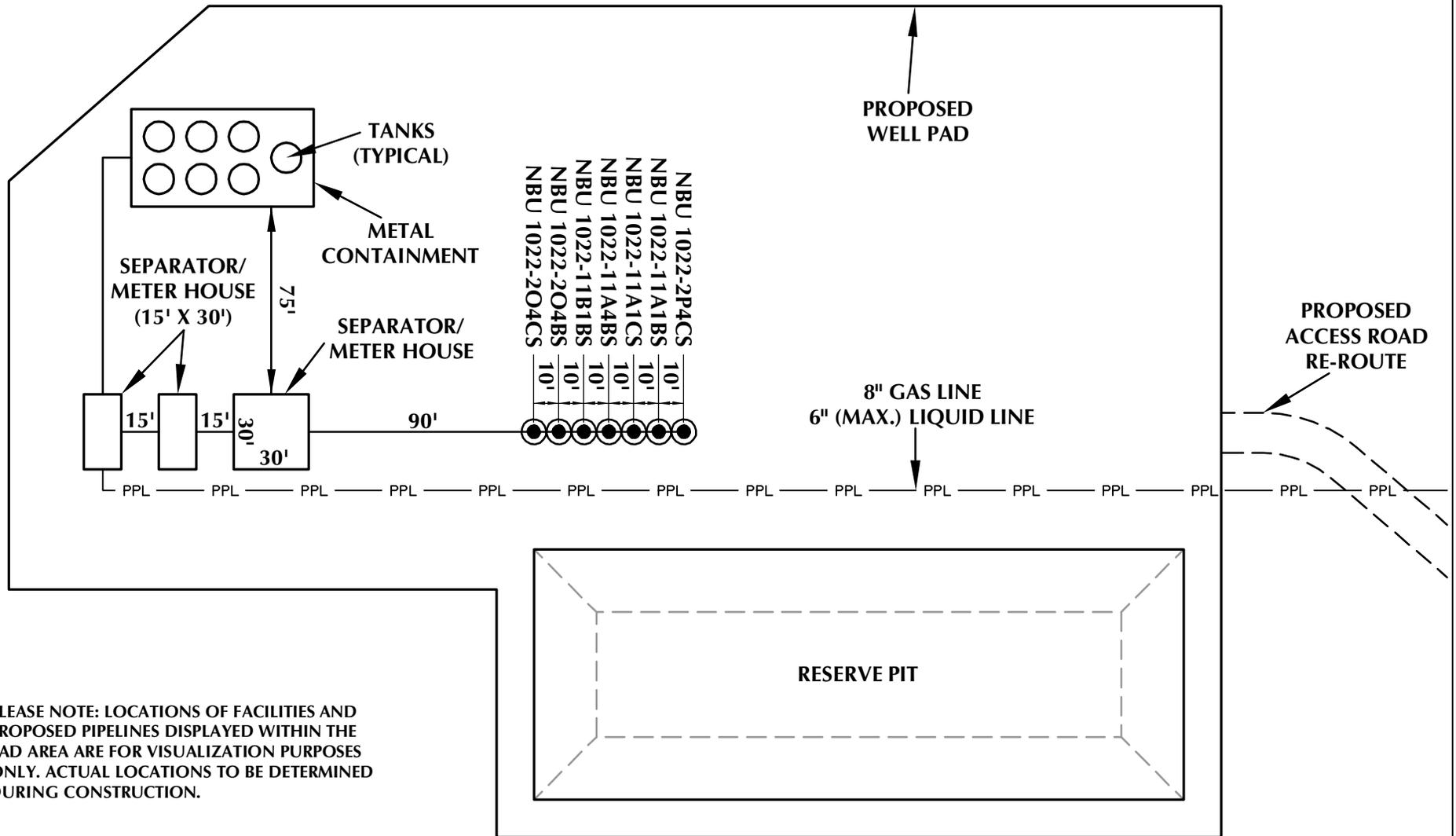
Date: 3/30/11

SHEET NO:

REVISED:

**10** 10 OF 19

**RECEIVED: August 10, 2011**



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

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

WELL PAD - NBU 1022-2P

WELL PAD - FACILITIES DIAGRAM

NBU 1022-2P4CS,

NBU 1022-11A1BS, NBU 1022-11A1CS,  
NBU 1022-11A4BS, NBU 1022-11B1BS,  
NBU 1022-2O4BS & NBU 1022-2O4CS  
LOCATED IN SECTION 2, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH



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

**WELL PAD LEGEND**

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE



HORIZONTAL 0 30' 60' 1" = 60'

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

Scale: 1"=60'

Date: 3/30/11

SHEET NO:

REVISED:

**11** 11 OF 19

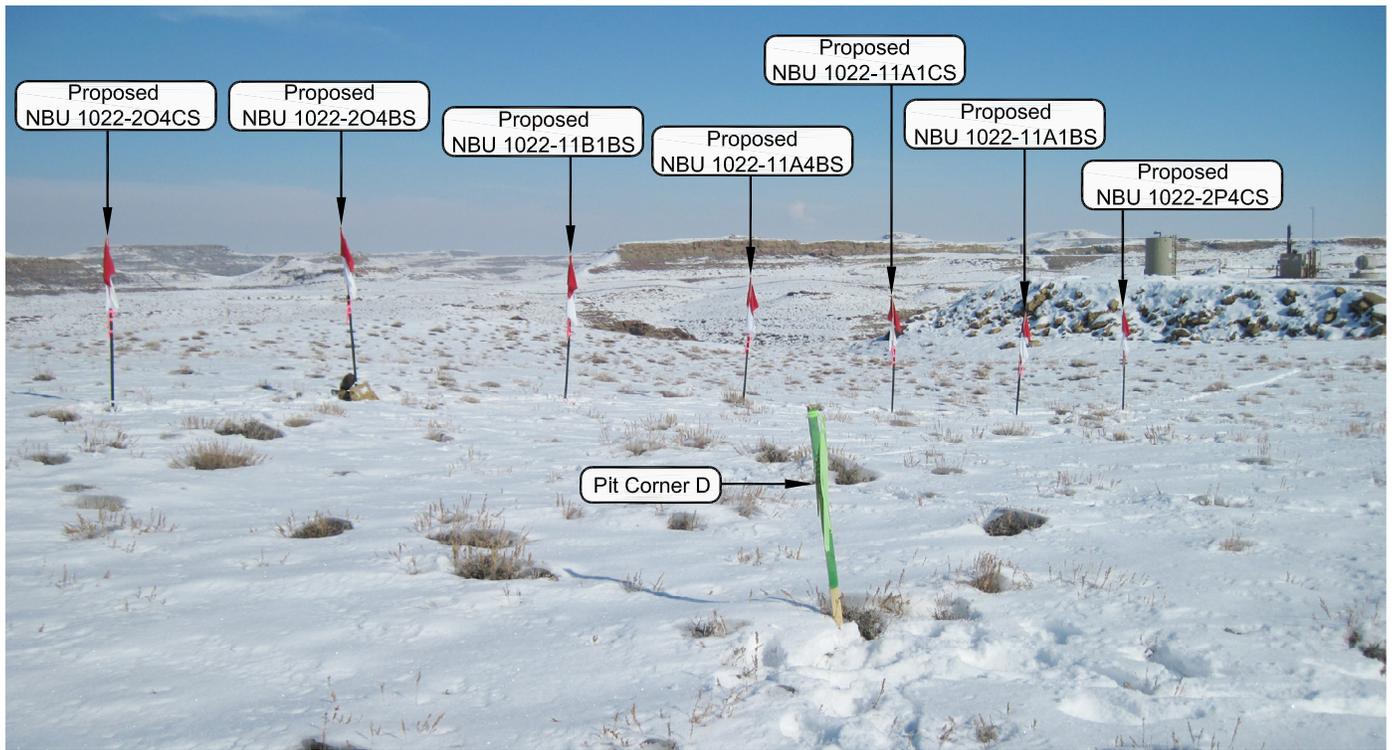


PHOTO VIEW: FROM CORNER D TO LOCATION STAKE

CAMERA ANGLE: NORTHEASTERLY

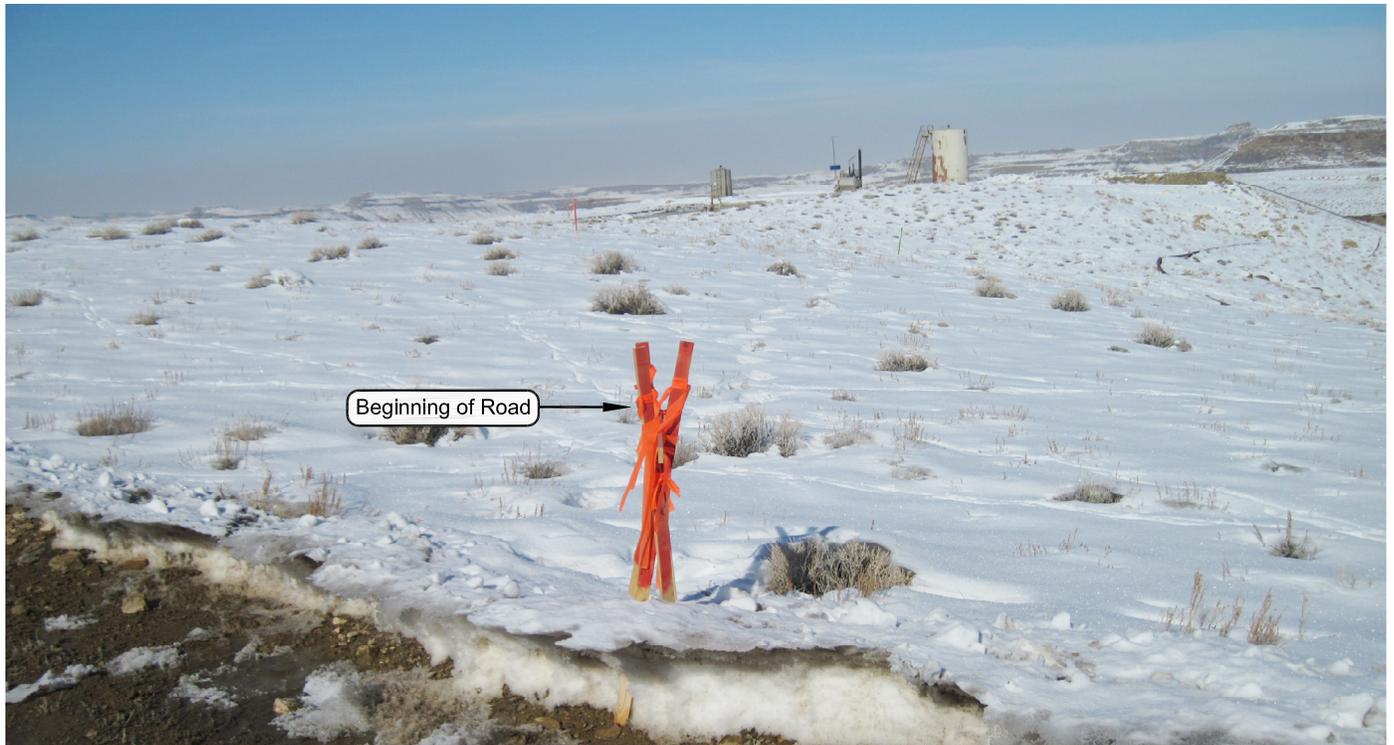


PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: NORTHWESTERLY

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

**WELL PAD - NBU 1022-2P**

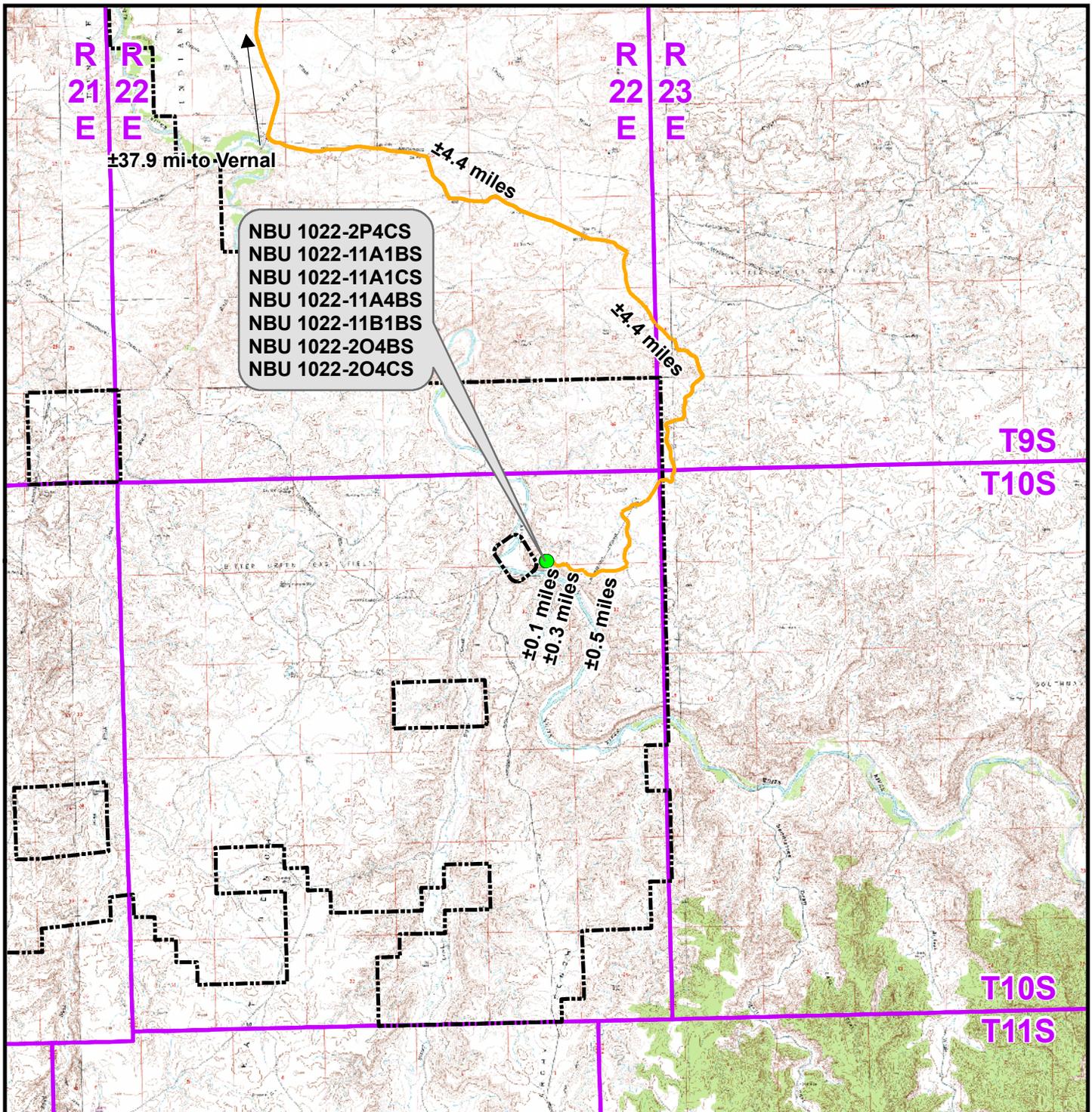
LOCATION PHOTOS  
 NBU 1022-2P4CS,  
 NBU 1022-11A1BS, NBU 1022-11A1CS,  
 NBU 1022-11A4BS, NBU 1022-11B1BS,  
 NBU 1022-2O4BS & NBU 1022-2O4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH.



**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 PHOTOS TAKEN: 01-06-11	PHOTOS TAKEN BY: R.Y.	SHEET NO: <b>12</b>
DATE DRAWN: 01-24-11	DRAWN BY: M.W.W.	
Date Last Revised:		12 OF 19



**Legend**

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

Distance From Well Pad - NBU 1022-2P To Unit Boundary: ±1,230ft

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

**WELL PAD - NBU 1022-2P**

TOPO A  
 NBU 1022-2P4CS,  
 NBU 1022-11A1BS, NBU 1022-11A1CS,  
 NBU 1022-11A4BS, NBU 1022-11B1BS,  
 NBU 1022-2O4BS & NBU 1022-2O4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

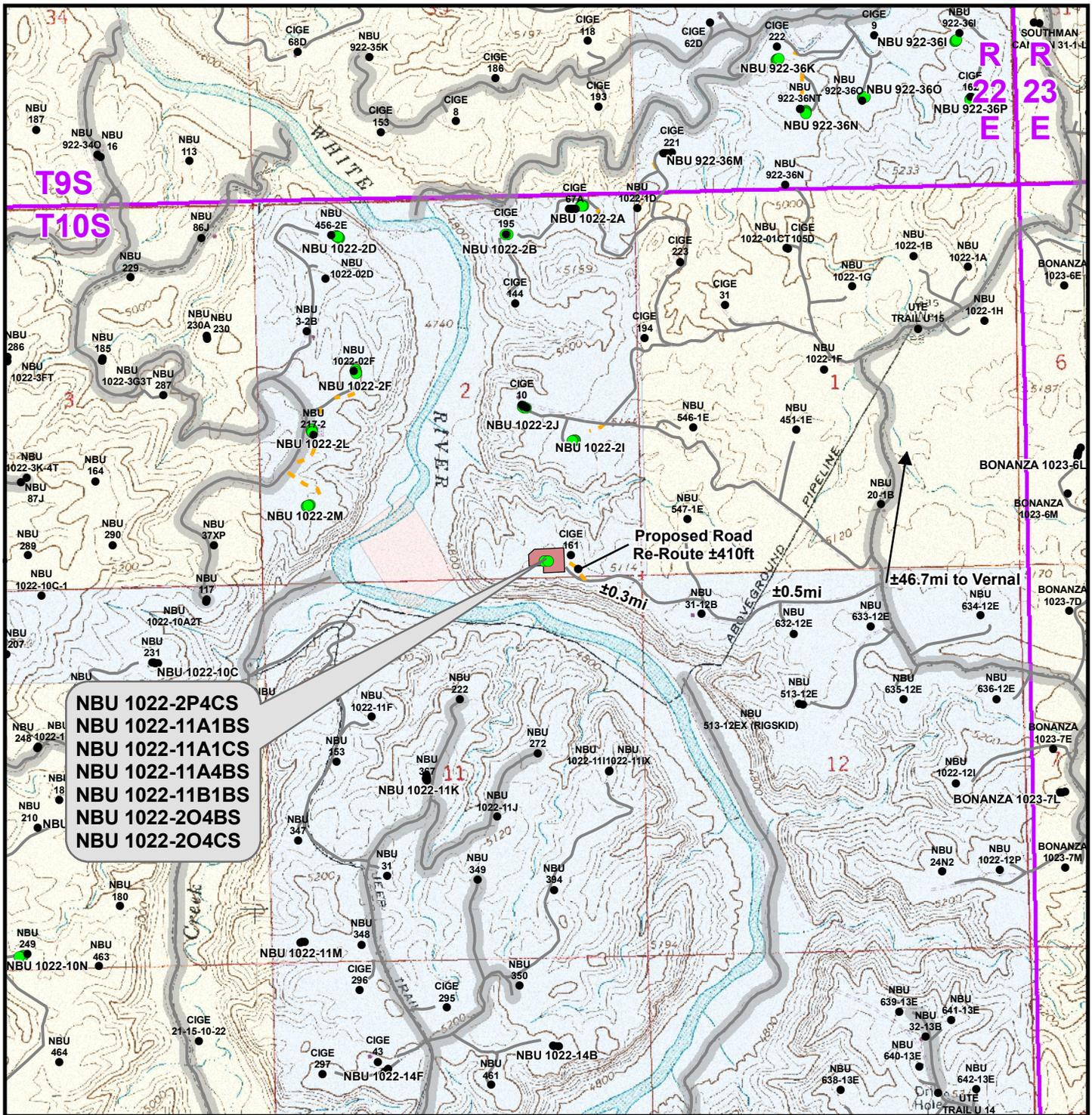


**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
 Phone (307) 674-0609  
 Fax (307) 674-0182



Scale: 1:100,000	NAD83 USP Central
Drawn: KGS	Date: 30 Mar 2011
Revised:	Date:

Sheet No:  
13 13 of 19



**NBU 1022-2P4CS**  
**NBU 1022-11A1BS**  
**NBU 1022-11A1CS**  
**NBU 1022-11A4BS**  
**NBU 1022-11B1BS**  
**NBU 1022-2O4BS**  
**NBU 1022-2O4CS**

**Legend**

<span style="color: green;">●</span> Well - Proposed	<span style="background-color: #c00000; color: white; padding: 2px;"> </span> Well Pad	<span style="border-bottom: 1px dashed orange;"> </span> Road - Proposed	<span style="border-bottom: 1px solid gray;"> </span> County Road	<span style="background-color: #ffff00; border: 1px solid black;"> </span> Bureau of Land Management	<span style="background-color: #add8e6; border: 1px solid black;"> </span> State
<span style="color: black;">●</span> Well - Existing	<span style="border-bottom: 1px solid gray;"> </span> Road - Existing	<span style="background-color: #ffcccc; border: 1px solid black;"> </span> Indian Reservation	<span style="border: 1px solid black;"> </span> Private		

Total Proposed Road Re-Route Length: ±410ft

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

**WELL PAD - NBU 1022-2P**

**TOPO B**  
**NBU 1022-2P4CS,**  
**NBU 1022-11A1BS, NBU 1022-11A1CS,**  
**NBU 1022-11A4BS, NBU 1022-11B1BS,**  
**NBU 1022-2O4BS & NBU 1022-2O4CS**  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UTAH COUNTY, UTAH

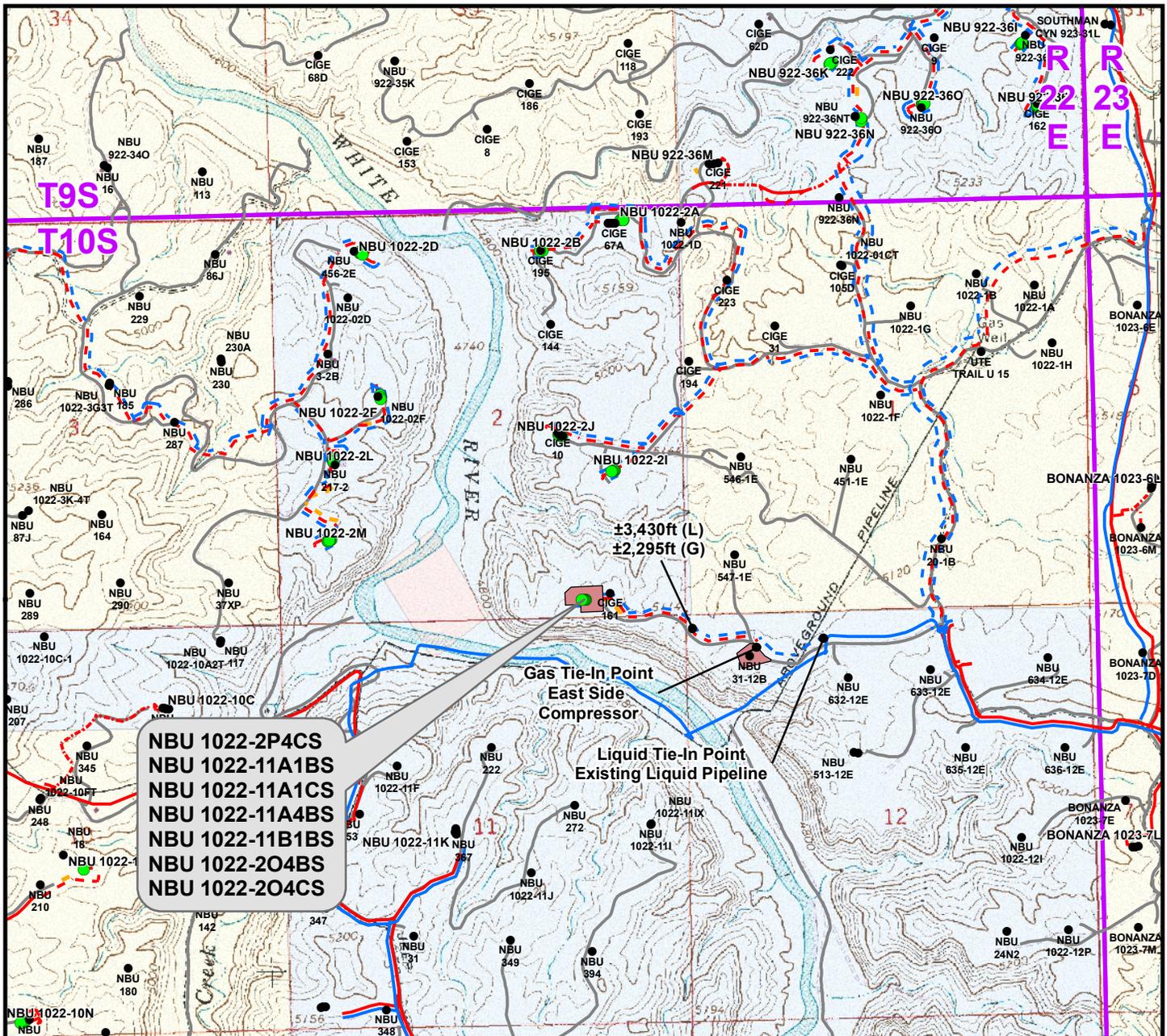
**609**

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	<b>14</b>
Revised:	Date:	





**NBU 1022-2P4CS**  
**NBU 1022-11A1BS**  
**NBU 1022-11A1CS**  
**NBU 1022-11A4BS**  
**NBU 1022-11B1BS**  
**NBU 1022-2O4BS**  
**NBU 1022-2O4CS**

Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±475ft
Proposed 6" (Max.) (Edge of Pad to Existing Liquid Pipeline)	±3,430ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±3,905ft</b>

Proposed Gas Pipeline	Length
Proposed 8" (Meter House to Edge of Pad)	±475ft
Proposed 8" (Edge of Pad to East Side Compressor)	±2,295ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,770ft</b>

**Legend**

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

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

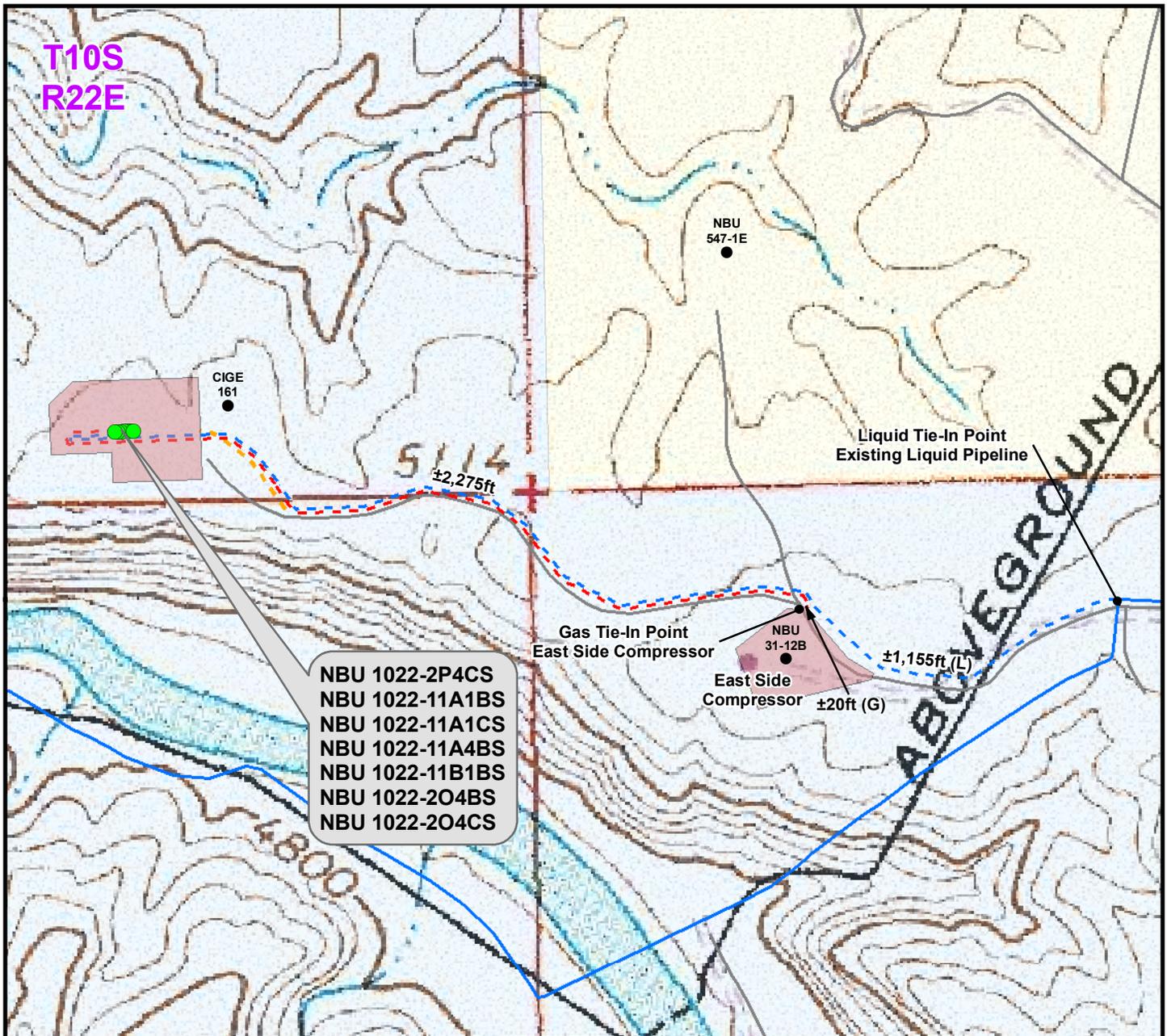
**WELL PAD - NBU 1022-2P**

**TOPO D**  
 NBU 1022-2P4CS,  
 NBU 1022-11A1BS, NBU 1022-11A1CS,  
 NBU 1022-11A4BS, NBU 1022-11B1BS,  
 NBU 1022-2O4BS & NBU 1022-2O4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

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



Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	<b>16</b> 16 of 19
Revised:	Date:	



Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±475ft
Proposed 6" (Max.) (Edge of Pad to Existing Liquid Pipeline)	±3,430ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±3,905ft</b>

Proposed Gas Pipeline	Length
Proposed 8" (Meter House to Edge of Pad)	±475ft
Proposed 8" (Edge of Pad to East Side Compressor)	±2,295ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,770ft</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

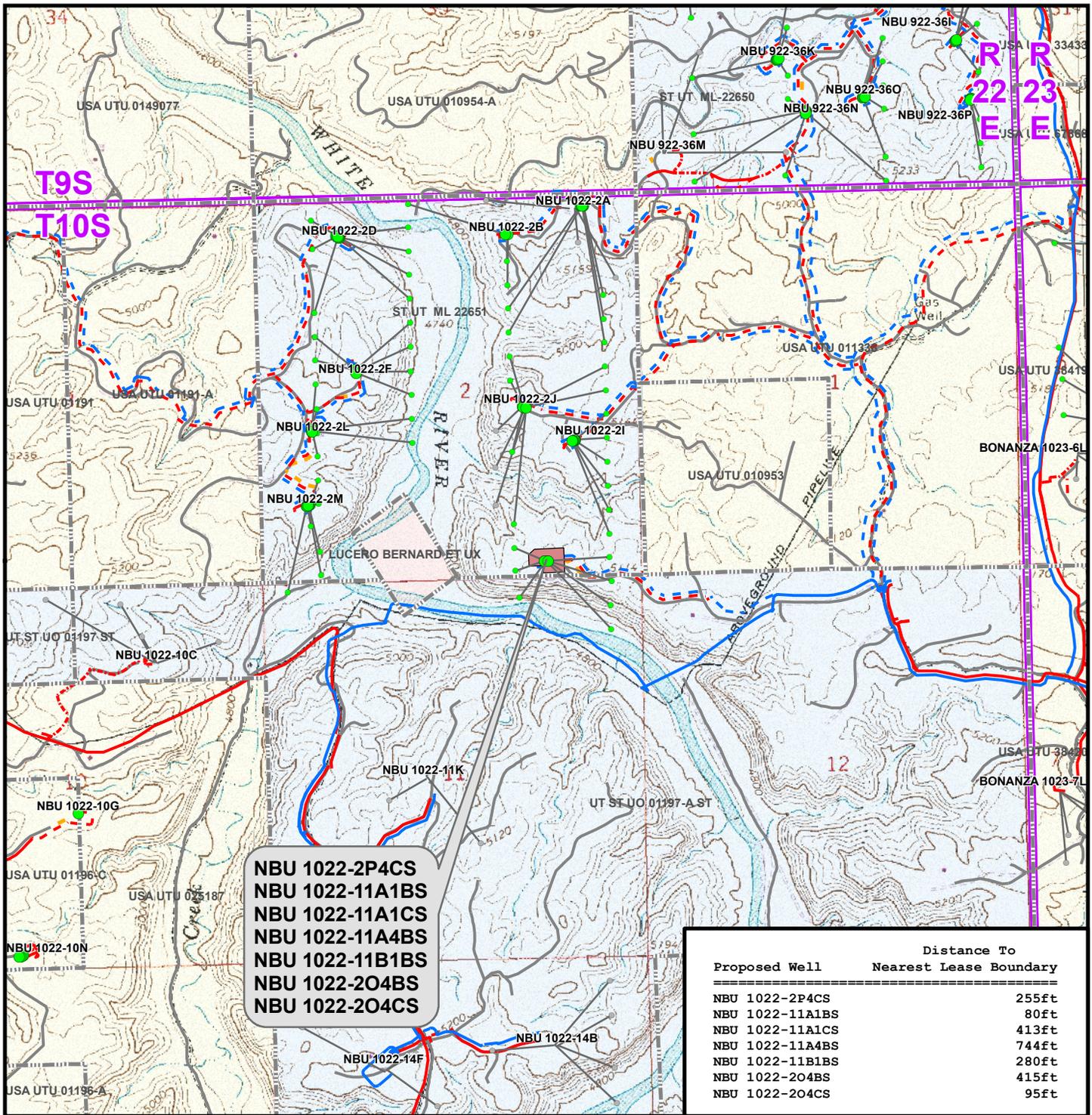
**Kerr-McGee Oil & Gas Onshore, LP**  
 1099 18th Street, Denver, Colorado 80202

**WELL PAD - NBU 1022-2P**  
 TOPO D2 (PAD & PIPELINE DETAIL)  
 NBU 1022-2P4CS,  
 NBU 1022-11A1BS, NBU 1022-11A1CS,  
 NBU 1022-11A4BS, NBU 1022-11B1BS,  
 NBU 1022-2O4BS & NBU 1022-2O4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., Uintah County, Utah

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



Scale: 1" = 500ft	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	<b>17</b> 17 of 19
Revised:	Date:	



**Legend**

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

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

**WELL PAD - NBU 1022-2P**

**TOPO E**  
 NBU 1022-2P4CS,  
 NBU 1022-11A1BS, NBU 1022-11A1CS,  
 NBU 1022-11A4BS, NBU 1022-11B1BS,  
 NBU 1022-2O4BS & NBU 1022-2O4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**609**

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

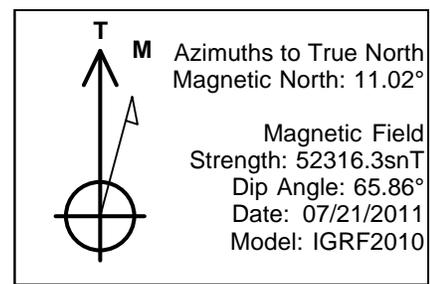


Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	<b>18</b>
Revised:	Date:	

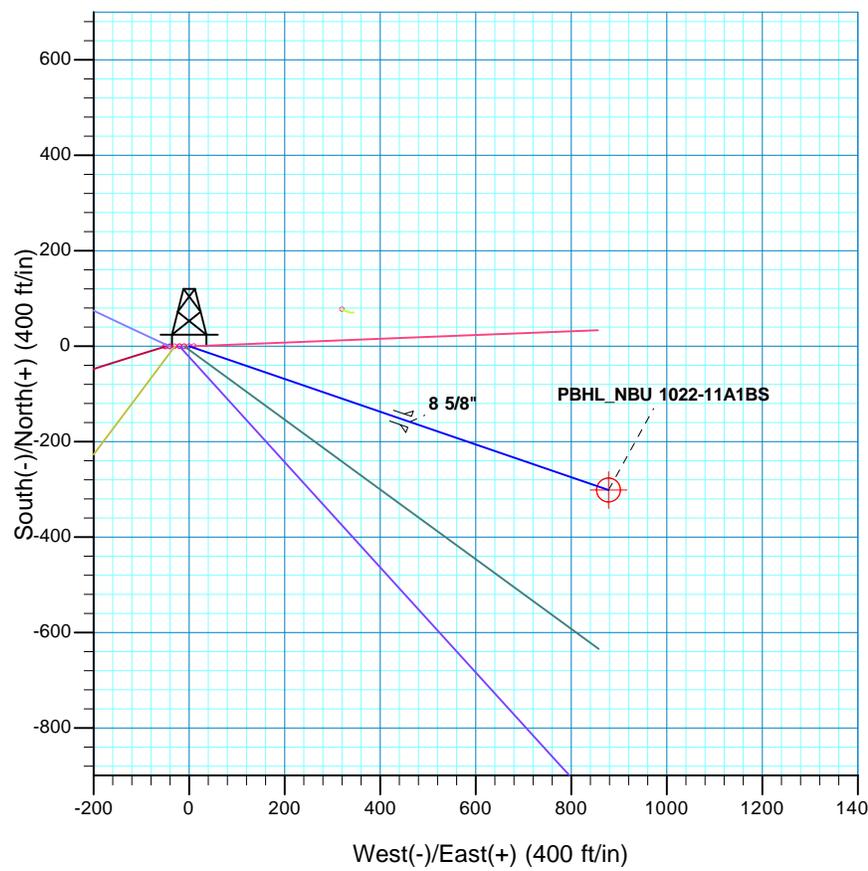
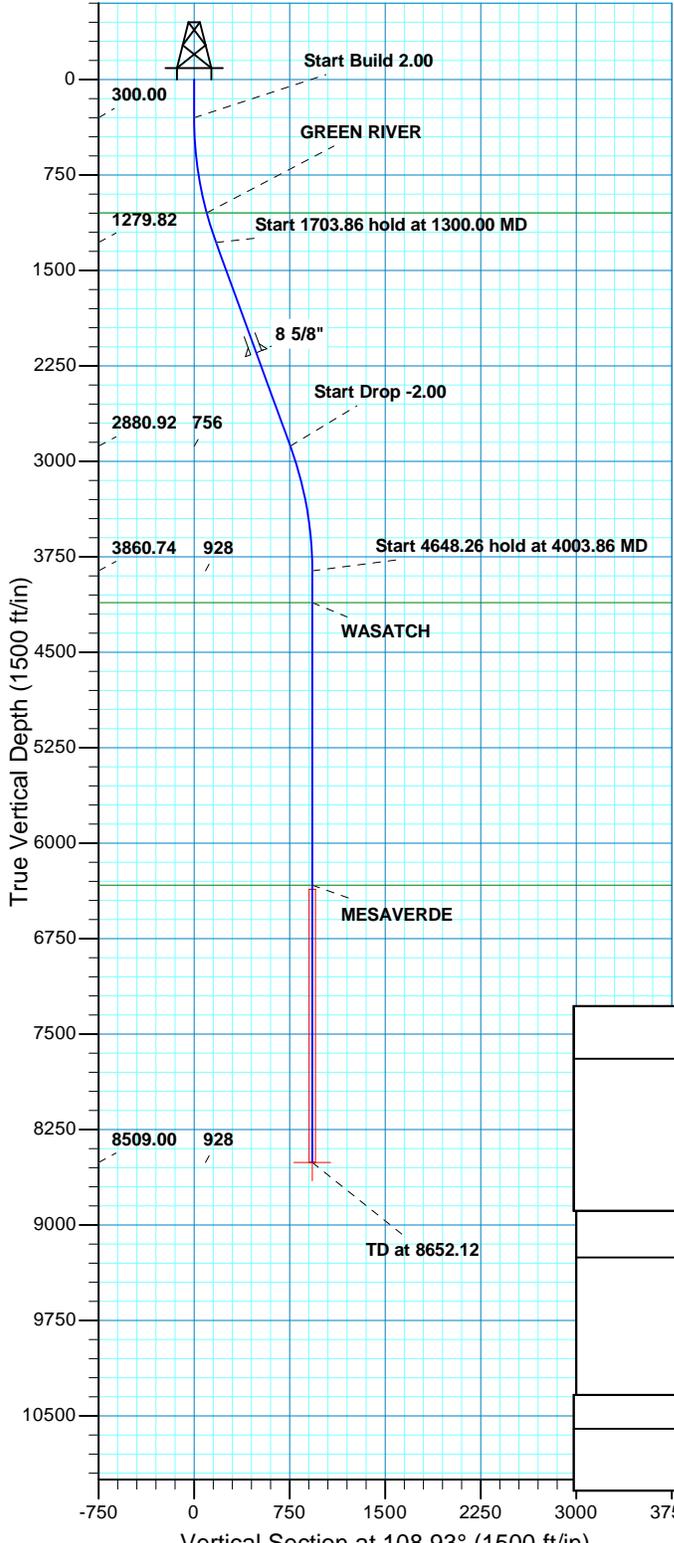
**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD – NBU 1022-2P  
WELLS – NBU 1022-2P4CS,  
NBU 1022-11A1BS, NBU 1022-11A1CS,  
NBU 1022-11A4BS, NBU 1022-11B1BS,  
NBU 1022-2O4BS & NBU 1022-2O4CS  
Section 2, T10S, R22E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly, then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 14.4 miles to the intersection of the Fidlar Road (County B Road 3410) which road intersection is approximately 400 feet northeast of the Mountain Fuel Bridge at the White River. Exit left and proceed in a southeasterly direction along the Fidlar Road approximately 4.4 miles to the intersection of the Seven Sisters Road (County B Road 3420). Exit right and proceed in a southeasterly, then southwesterly direction along the Seven Sisters Road approximately 4.4 miles to a service road to the west. Exit right and proceed in a westerly direction along the service road approximately 0.5 miles to a second service road to the northwest. Exit left and proceed in a northwesterly direction along the second service road approximately 0.3 miles to the proposed access road. Follow the road flags in a northwesterly direction approximately 410 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 47.6 miles in a southerly direction.



WELL DETAILS: NBU 1022-11A1BS						
GL 5092' & KB 4' @ 5096.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	603502.47	2587982.63	39° 58' 16.820 N	109° 24' 6.541 W	
DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude Longitude Shape
PBHL	8509.00	-301.20	878.07	603221.95	2588867.52	39° 58' 13.843 N 109° 23' 55.262 W Circle (Radius: 25.00)
- plan hits target center						



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	108.93	1279.82	-56.06	163.42	2.00	108.93	172.77	
3003.86	20.00	108.93	2880.92	-245.14	714.65	0.00	0.00	755.52	
4003.86	0.00	0.00	3860.74	-301.20	878.07	2.00	180.00	928.29	
8652.12	0.00	0.00	8509.00	-301.20	878.07	0.00	0.00	928.29	PBHL_NBU 1022-11A1BS

PROJECT DETAILS: Uintah County, UT NAD27		
Geodetic System:	US State Plane 1927 (Exact solution)	
Datum:	NAD 1927 (NADCON CONUS)	
Ellipsoid:	Clarke 1866	
Zone:	Utah Central 4302	
Location:	SECTION 2 T10S R22E	
System Datum:	Mean Sea Level	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1047.00	1055.73	GREEN RIVER
4110.00	4253.12	WASATCH
6330.00	6473.12	MESAVERDE

CASING DETAILS			
TVD	MD	Name	Size
2147.00	2222.84	8 5/8"	8.625

RECEIVED



# **Kerr McGee Oil and Gas Onshore LP**

**Uintah County, UT NAD27  
NBU 1022-2P PAD  
NBU 1022-11A1BS**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**21 July, 2011**





SDI  
Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-11A1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-11A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

<b>Project</b>	Uintah County, UT NAD27		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Utah Central 4302		

<b>Site</b>	NBU 1022-2P PAD, SECTION 2 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	603,502.73 usft	<b>Latitude:</b>	39° 58' 16.820 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,587,992.71 usft	<b>Longitude:</b>	109° 24' 6.412 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.34 °

<b>Well</b>	NBU 1022-11A1BS, 221 FSL 1352 FEL					
<b>Well Position</b>	<b>+N/-S</b>	-0.01 ft	<b>Northing:</b>	603,502.48 usft	<b>Latitude:</b>	39° 58' 16.820 N
	<b>+E/-W</b>	-10.09 ft	<b>Easting:</b>	2,587,982.63 usft	<b>Longitude:</b>	109° 24' 6.541 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,092.00 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	07/21/11	11.02	65.86	52,316

<b>Design</b>	PLAN #1 PRELIMINARY			
<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	108.93

<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	108.93	1,279.82	-56.06	163.42	2.00	2.00	0.00	108.93	
3,003.86	20.00	108.93	2,880.92	-245.14	714.65	0.00	0.00	0.00	0.00	
4,003.86	0.00	0.00	3,860.74	-301.20	878.07	2.00	-2.00	0.00	180.00	
8,652.12	0.00	0.00	8,509.00	-301.20	878.07	0.00	0.00	0.00	0.00	PBHL_NBU 1022-11/



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-11A1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-11A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Start Build 2.00</b>										
400.00	2.00	108.93	399.98	-0.57	1.65	1.75	2.00	2.00	0.00	
500.00	4.00	108.93	499.84	-2.26	6.60	6.98	2.00	2.00	0.00	
600.00	6.00	108.93	599.45	-5.09	14.84	15.69	2.00	2.00	0.00	
700.00	8.00	108.93	698.70	-9.05	26.37	27.88	2.00	2.00	0.00	
800.00	10.00	108.93	797.47	-14.12	41.17	43.52	2.00	2.00	0.00	
900.00	12.00	108.93	895.62	-20.31	59.22	62.60	2.00	2.00	0.00	
1,000.00	14.00	108.93	993.06	-27.61	80.49	85.10	2.00	2.00	0.00	
1,055.73	15.11	108.93	1,047.00	-32.16	93.74	99.11	2.00	2.00	0.00	
<b>GREEN RIVER</b>										
1,100.00	16.00	108.93	1,089.64	-36.01	104.97	110.98	2.00	2.00	0.00	
1,200.00	18.00	108.93	1,185.27	-45.49	132.63	140.21	2.00	2.00	0.00	
1,300.00	20.00	108.93	1,279.82	-56.06	163.42	172.77	2.00	2.00	0.00	
<b>Start 1703.86 hold at 1300.00 MD</b>										
1,400.00	20.00	108.93	1,373.78	-67.16	195.77	206.97	0.00	0.00	0.00	
1,500.00	20.00	108.93	1,467.75	-78.25	228.12	241.17	0.00	0.00	0.00	
1,600.00	20.00	108.93	1,561.72	-89.35	260.48	275.37	0.00	0.00	0.00	
1,700.00	20.00	108.93	1,655.69	-100.45	292.83	309.58	0.00	0.00	0.00	
1,800.00	20.00	108.93	1,749.66	-111.54	325.18	343.78	0.00	0.00	0.00	
1,900.00	20.00	108.93	1,843.63	-122.64	357.53	377.98	0.00	0.00	0.00	
2,000.00	20.00	108.93	1,937.60	-133.74	389.88	412.18	0.00	0.00	0.00	
2,100.00	20.00	108.93	2,031.57	-144.84	422.23	446.38	0.00	0.00	0.00	
2,200.00	20.00	108.93	2,125.54	-155.93	454.58	480.59	0.00	0.00	0.00	
2,222.84	20.00	108.93	2,147.00	-158.47	461.97	488.40	0.00	0.00	0.00	
<b>8 5/8"</b>										
2,300.00	20.00	108.93	2,219.51	-167.03	486.94	514.79	0.00	0.00	0.00	
2,400.00	20.00	108.93	2,313.48	-178.13	519.29	548.99	0.00	0.00	0.00	
2,500.00	20.00	108.93	2,407.45	-189.23	551.64	583.19	0.00	0.00	0.00	
2,600.00	20.00	108.93	2,501.42	-200.32	583.99	617.39	0.00	0.00	0.00	
2,700.00	20.00	108.93	2,595.39	-211.42	616.34	651.60	0.00	0.00	0.00	
2,800.00	20.00	108.93	2,689.35	-222.52	648.69	685.80	0.00	0.00	0.00	
2,900.00	20.00	108.93	2,783.32	-233.62	681.05	720.00	0.00	0.00	0.00	
3,000.00	20.00	108.93	2,877.29	-244.71	713.40	754.20	0.00	0.00	0.00	
3,003.86	20.00	108.93	2,880.92	-245.14	714.65	755.52	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
3,100.00	18.08	108.93	2,971.80	-255.32	744.31	786.88	2.00	-2.00	0.00	
3,200.00	16.08	108.93	3,067.38	-264.85	772.09	816.25	2.00	-2.00	0.00	
3,300.00	14.08	108.93	3,163.94	-273.29	796.69	842.26	2.00	-2.00	0.00	
3,400.00	12.08	108.93	3,261.34	-280.63	818.09	864.88	2.00	-2.00	0.00	
3,500.00	10.08	108.93	3,359.47	-286.86	836.26	884.09	2.00	-2.00	0.00	
3,600.00	8.08	108.93	3,458.21	-291.98	851.18	899.87	2.00	-2.00	0.00	
3,700.00	6.08	108.93	3,557.45	-295.98	862.84	912.19	2.00	-2.00	0.00	
3,800.00	4.08	108.93	3,657.05	-298.85	871.21	921.04	2.00	-2.00	0.00	
3,900.00	2.08	108.93	3,756.90	-300.59	876.29	926.41	2.00	-2.00	0.00	
4,000.00	0.08	108.93	3,856.88	-301.20	878.06	928.29	2.00	-2.00	0.00	
4,003.86	0.00	0.00	3,860.74	-301.20	878.07	928.29	2.00	-2.00	-2,822.61	
<b>Start 4648.26 hold at 4003.86 MD</b>										



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-11A1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-11A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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	0.00	0.00	3,956.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,056.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,253.12	0.00	0.00	4,110.00	-301.20	878.07	928.29	0.00	0.00	0.00	
<b>WASATCH</b>										
4,300.00	0.00	0.00	4,156.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,256.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,356.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,456.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,556.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,656.88	-301.20	878.07	928.29	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,756.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,856.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,956.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,056.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,156.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,256.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,356.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,456.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,556.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,656.88	-301.20	878.07	928.29	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,756.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,856.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,956.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,056.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,156.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,256.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,473.12	0.00	0.00	6,330.00	-301.20	878.07	928.29	0.00	0.00	0.00	
<b>MESAVERDE</b>										
6,500.00	0.00	0.00	6,356.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,456.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,556.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,656.88	-301.20	878.07	928.29	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,756.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,856.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,956.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,056.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,156.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,256.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,356.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,456.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,556.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,656.88	-301.20	878.07	928.29	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,756.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,856.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,956.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,056.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,156.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,256.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,356.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,456.88	-301.20	878.07	928.29	0.00	0.00	0.00	
8,652.12	0.00	0.00	8,509.00	-301.20	878.07	928.29	0.00	0.00	0.00	
TD at 8652.12 - PBHL_NBU 1022-11A1BS										



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-11A1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 5092' & KB 4' @ 5096.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2P PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-11A1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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)

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_NBU 1022-11A1E - hit/miss target - Shape - plan hits target center - Circle (radius 25.00)	0.00	0.00	8,509.00	-301.20	878.07	603,221.95	2,588,867.52	39° 58' 13.843 N	109° 23' 55.262 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,222.84	2,147.00	8 5/8"	8.625	11.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,055.73	1,047.00	GREEN RIVER			
4,253.12	4,110.00	WASATCH			
6,473.12	6,330.00	MESAVERDE			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
1,300.00	1,279.82	-56.06	163.42	Start 1703.86 hold at 1300.00 MD
3,003.86	2,880.92	-245.14	714.65	Start Drop -2.00
4,003.86	3,860.74	-301.20	878.07	Start 4648.26 hold at 4003.86 MD
8,652.12	8,509.00	-301.20	878.07	TD at 8652.12

NBU 1022-11A1BS/ 1022-11A1CS/ 1022-11A4BS/ 1022-11B1BS  
 1022-2O4BS/ 1022-2O4CS/ 1022-2P4CS

Surface Use Plan of Operations  
 1 of 9

**NBU 1022-11A1BS**

Surface:	221 FSL / 1352 FEL	SWSE	Lot 8
BHL:	80 FNL / 473 FEL	NENE	Lot

**NBU 1022-11A1CS**

Surface:	221 FSL / 1362 FEL	SWSE	Lot 8
BHL:	413 FNL / 491 FEL	NENE	Lot

**NBU 1022-11A4BS**

Surface:	221 FSL / 1372 FEL	SWSE	Lot 8
BHL:	744 FNL / 490 FEL	NENE	Lot

**NBU 1022-11B1BS**

Surface:	221 FSL / 1382 FEL	SWSE	Lot 8
BHL:	280 FNL / 1755 FEL	NWNE	Lot

**NBU 1022-2O4BS**

Surface:	221 FSL / 1392 FEL	SWSE	Lot 8
BHL:	415 FSL / 1807 FEL	SWSE	Lot 8

**NBU 1022-2O4CS**

Surface:	220 FSL / 1402 FEL	SWSE	Lot 8
BHL:	95 FSL / 1804 FEL	SWSE	Lot 8

**NBU 1022-2P4CS**

Surface:	221 FSL / 1342 FEL	SWSE	Lot 8
BHL:	255 FSL / 496 FEL	SESE	Lot

Pad: NBU 1022-2P PAD  
 Section 2 T10S R22E  
 Mineral Lease: ST UT ML 22651

Uintah County, Utah  
 Operator: Kerr-McGee Oil & Gas Onshore LP

This SUPO contains surface operating procedures for Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation (APC) pertaining to actions that involve the State of Utah School and Institutional Trust Lands Administration (SITLA) in the development of minerals leased to APC/KMG (including but not limited to, APDs/SULAs/ROEs/ROWs and/or easements.)

See associated Utah Division of Oil, Gas, and Mining (UDOGM) Form 3(s), plats, maps, and other attachments for site-specific information on projects represented herein.

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.

**A. Existing Roads:**

Existing roads consist of county and improved/unimproved lease roads. KMG will maintain existing roads in a condition that is the same as or better than before operations began and in a safe and usable condition. Maintenance of existing roads will continue until final abandonment and reclamation of well pads and/or other facilities. The road maintenance may include, but is not limited to, blading, ditching, culvert installation/cleanout, surfacing, and dust control.

Typically, roads, gathering lines and electrical distribution lines will occupy common disturbance corridors and roadways will be used as working space. All disturbances located in the same corridor will overlap each other to the maximum extent possible; in no case will the maximum disturbance width of the access road and utility corridors exceed 50', unless otherwise approved.

**B. Planned Access Roads:**

One new access road is proposed (see Topo Map B). The  $\pm 410'$  reroute will follow the proposed gas and liquid pipelines from the East edge of the pad to existing access road. Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

If there are roads that are new or to be reconstructed, they will be located, designed, and maintained to meet the standards of SITLA and other commonly accepted Best Management Practices (BMPs). If a new road/corridor were to cross a water of the United States, KMG will adhere to the requirements of applicable Nationwide or Individual Permits of the Department of Army Corps of Engineers.

During the onsite, turnouts, major cut and fills, culverts, bridges, gates, cattle guards, low water crossings, or modifications needed to existing infrastructure/facilities were determined, as applicable, are typically shown on attached Exhibits and Topo maps.

**C. Location of Existing and Proposed Facilities:**

This pad will expand the existing pad for the CIGE 161. The CIGE 161 well location is a vertical producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of June 2, 2011.

Production facilities (see Well Pad Design Summary and Facilities Diagram):

Production facilities will be installed on the disturbed portion of the well pad and may include bermed components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks).

The berms will be constructed of compacted subsoil or corrugated metal, impervious, designed to hold 110% of the capacity of the largest tank, and be independent of the back cut. All permanent (on-site six months or longer) above ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with SITLA.

### **Gathering Facilities:**

The following pipeline transmission facilities will apply if the well is productive (see Topo D):

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is  $\pm 2,770'$  and the individual segments are broken up as follows:

- $\pm 475'$  (0.09 miles) –New 8” buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 2,295'$  (0.43 miles) –New 8” buried gas pipeline from the edge of pad to the tie-in at the East Side Compressor. Please refer to Topo D2 - Pad and Pipeline Detail.

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 3,905'$  and the individual segments are broken up as follows:

- $\pm 475'$  (0.09 miles) –New 6” buried liquid pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 3,430'$  (0.65 miles) –New 6” buried liquid pipeline from the edge of pad to the tie-in at the existing liquid pipeline. Please refer to Topo D2 - Pad and Pipeline Detail.

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.

The proposed pipelines will be buried and will include gas gathering and liquid gathering pipelines in the same trench. 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. KMG requests a permanent 30' right-of-way adjacent to the road for life-of-project for maintenance, repairs, and/or upgrades, no additional right-of-way will be needed beyond the 30'. Where the pipeline is not adjacent to the road or well pad, KMG requests a temporary 45' construction right-of-way 30' permanent right-of-way.

The proposed trench width for the pipeline would range from 18-48 inches and will be excavated to a depth of 48 to 60 inches of normal soil cover or 24 inches of cover in consolidated rock. During construction blasting may occur along the proposed right-of-way where trenching equipment cannot cut into the bedrock. Large debris and rocks removed from the earth during trenching and blasting that could not be returned to the trench would be distributed evenly and naturally in the project area. The proposed pipelines will be pressure tested pneumatically (depending on size) or with fluids (either fresh or produced). If fluids are used, there will be no discharge to the surface.

Pipeline signs will be installed along the right-of-way to indicate the pipeline proximity and ownership, as well as to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

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

Water for drilling purposes will be obtained from one of the following sources:

- Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim number 43-8496, application number 53617.
- Price Water Pumping Inc. Green River and White River, various sources, Water Right Number 49-1659, application number: a35745.

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.

**E. Source of Construction Materials:**

Construction operations will typically be completed with native materials found on location. If needed, 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 and described in subsequent Sundry requests. No construction materials will be removed from State lands without prior approval from SITLA.

**F. Methods for Handling Waste Materials:**

Should the well be productive, produced water will be contained in a water tank and will be transported by pipeline and/or truck to an approved disposal sites facilities and/or Salt Water Disposal (SWD) injection well. Currently, those facilities are:

RNI in Sec. 5 T9S R22E  
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  
Ouray #1 SWD in Sec. 1 T9S R21E  
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. 33 T9S R21E  
NBU 921-34L SWD in Sec. 34 T9S R21E

Drill cuttings and/or fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless otherwise approved, 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 runoff. Should fluid hydrocarbons be encountered during drilling, completions or well testing, product 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 SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods (e.g. solidification.)

The reserve and/or fracture stimulation pit will be lined with a synthetic material 20 mil or thicker. 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. 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.

For the protection of livestock and wildlife, all open pits and cellars will be fenced/covered 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.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after six (6) months 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. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift. Reserve pit liners will be cut off or folded as near to the mud surface as possible and as safety considerations allow and buried on location.

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 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.

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.

Any undesirable event, including accidental release of fluids, or release in excess of reportable quantities, will be managed according to the notification requirements of UDOGMs "Reporting Oil and Gas Undesirable Events" rule. Where State wells are participatory to a Federal agreement, according to NTL-3A, the appropriate Federal agencies will be notified.

### **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.

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 and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

#### **G. Ancillary Facilities:**

None are anticipated.

#### **H. Well Site Layout (see Well Pad Design Summary):**

The location, orientation and aerial extent of each drill pad; reserve/completion/flare pit; 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 and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

Coordinates are provided in the National Spatial Reference System, North American Datum, 1927 (NAD27) or latest edition. Distances are depicted on each plat to the nearest two adjacent section lines.

#### **I. Plans for Reclamation of the Surface:**

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. This 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 includes pit closure, re-contouring (where possible), soil bed preparation, topsoil placement, seeding, and/or weed control.

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.

**Final Reclamation**

Final reclamation will be performed for newly drilled unproductive wells and/or at 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 KMG. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. 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, final grading will be conducted over the entire surface of the well site and access road. Where practical, the area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers and surface materials will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep perpendicular to the natural flow of water.

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.

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

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

Reclaimed areas may be fenced to exclude grazing and encourage re-vegetation.

On slopes where severe erosion can become a problem and the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. The slope 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 and bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

Seeding will occur year-round as conditions allow. 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 site specific seed mix will be provided by SITLA.

**J. Surface/Mineral Ownership:**

SITLA  
675 East 500 South, Suite 500  
Salt Lake City, UT 84102

**L. Other Information:**

None

NBU 1022-11A1BS/ 1022-11A1CS/ 1022-11A4BS/ 1022-11B1BS  
1022-2O4BS/ 1022-2O4CS/ 1022-2P4CS

Surface Use Plan of Operations  
9 of 9

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

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

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

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

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

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

Bond coverage for State lease activities is provided by State Surety Bond 22013542, and for applicable Federal lease activities and pursuant to 43 CFR 3104, 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.



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Gina T. Becker

August 10, 2011

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Date



Joseph D. Johnson  
1099 18TH STREET STE. 1800 • DENVER, CO 80202  
720-929-6708 • FAX 720-929-7708  
E-MAIL: JOE.JOHNSON@ANADARKO.COM

August 4, 2011

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

Re: Directional Drilling R649-3-11  
NBU 1022-11A1BS  
T10S-R22E  
Section 2: SWSE  
Surface: 221' FSL, 1352' FEL  
T10S-R22E  
Section 11: NENE  
Bottom Hole: 80' FNL, 473' FEL  
Uintah County, Utah

Dear Ms. Mason:

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

- Kerr-McGee's NBU 1022-11A1BS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

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

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

A handwritten signature in blue ink, appearing to read 'Joe D. Johnson', with a horizontal line underneath.

Joseph D. Johnson  
Landman

API Well Number: 43047518420000

**RECEIVED:** August 10, 2011

# 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)

August 19, 2011

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2011 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 2011 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
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(Proposed PZ WASATCH-MESA VERDE)

**NBU 1022-11F PAD**

43-047-51797	NBU 1022-11C2CS	Sec 11 T10S R22E 1860 FNL 1499 FWL
	BHL	Sec 11 T10S R22E 0370 FNL 1365 FWL

43-047-51799	NBU 1022-11C3DS	Sec 11 T10S R22E 1852 FNL 1505 FWL
	BHL	Sec 11 T10S R22E 1268 FNL 1726 FWL

43-047-51800	NBU 1022-11D1CS	Sec 11 T10S R22E 1868 FNL 1493 FWL
	BHL	Sec 11 T10S R22E 0576 FNL 0818 FWL

43-047-51801	NBU 1022-11F2DS	Sec 11 T10S R22E 1844 FNL 1512 FWL
	BHL	Sec 11 T10S R22E 1622 FNL 1625 FWL

**NBU 1022-11G2 PAD**

43-047-51802	NBU 1022-11B4CS	Sec 11 T10S R22E 1627 FNL 2594 FEL
	BHL	Sec 11 T10S R22E 1238 FNL 1803 FEL

43-047-51813	NBU 1022-11B4BS	Sec 11 T10S R22E 1633 FNL 2601 FEL
	BHL	Sec 11 T10S R22E 0908 FNL 1804 FEL

43-047-51815	NBU 1022-11B1CS	Sec 11 T10S R22E 1639 FNL 2609 FEL
	BHL	Sec 11 T10S R22E 0577 FNL 1805 FEL

43-047-51817	NBU 1022-C4AS	Sec 11 T10S R22E 1645 FNL 2617 FEL
	BHL	Sec 11 T10S R22E 0825 FNL 2462 FWL

43-047-51818	NBU 1022-11C4CS	Sec 11 T10S R22E 1651 FNL 2625 FEL
	BHL	Sec 11 T10S R22E 1071 FNL 2131 FWL

**RECEIVED: August 22, 2011**

API #	WELL NAME	LOCATION						
(Proposed PZ WASATCH-MESA VERDE)								
43-047-51855	NBU 1022-11F4AS	Sec 11	T10S	R22E	1657	FNL	2633	FEL
	BHL	Sec 11	T10S	R22E	2138	FNL	2288	FWL
<b>NBU 1022-2A PAD</b>								
43-047-51803	NBU 1022-2G1CS	Sec 02	T10S	R22E	0165	FNL	0760	FEL
	BHL	Sec 02	T10S	R22E	1905	FNL	1814	FEL
43-047-51807	NBU 1022-2G1BS	Sec 02	T10S	R22E	0164	FNL	0770	FEL
	BHL	Sec 02	T10S	R22E	1573	FNL	1815	FEL
43-047-51808	NBU 1022-2H1BS	Sec 02	T10S	R22E	0167	FNL	0730	FEL
	BHL	Sec 02	T10S	R22E	1410	FNL	0494	FEL
43-047-51812	NBU 1022-2H1CS	Sec 02	T10S	R22E	0166	FNL	0740	FEL
	BHL	Sec 02	T10S	R22E	1743	FNL	0494	FEL
43-047-51825	NBU 1022-2H4BS	Sec 02	T10S	R22E	0165	FNL	0750	FEL
	BHL	Sec 02	T10S	R22E	2074	FNL	0493	FEL
<b>NBU 1022-11G4 PAD</b>								
43-047-51805	NBU 1022-11A4CS	Sec 11	T10S	R22E	2411	FNL	1535	FEL
	BHL	Sec 11	T10S	R22E	1075	FNL	0490	FEL
43-047-51814	NBU 1022-11H1BS	Sec 11	T10S	R22E	2405	FNL	1526	FEL
	BHL	Sec 11	T10S	R22E	1406	FNL	0490	FEL
43-047-51822	NBU 1022-11G4CS	Sec 11	T10S	R22E	2435	FNL	1566	FEL
	BHL	Sec 11	T10S	R22E	2559	FNL	1799	FEL
43-047-51823	NBU 1022-11G1BS	Sec 11	T10S	R22E	2423	FNL	1550	FEL
	BHL	Sec 11	T10S	R22E	1568	FNL	1802	FEL
43-047-51837	NBU 1022-11G1CS	Sec 11	T10S	R22E	2417	FNL	1542	FEL
	BHL	Sec 11	T10S	R22E	1954	FNL	1646	FEL
43-047-51853	NBU 1022-11G4BS	Sec 11	T10S	R22E	2429	FNL	1558	FEL
	BHL	Sec 11	T10S	R22E	2229	FNL	1800	FEL
<b>NBU 1022-2I PAD</b>								
43-047-51809	NBU 1022-2I4CS	Sec 02	T10S	R22E	1886	FSL	0949	FEL
	BHL	Sec 02	T10S	R22E	1576	FSL	0492	FEL
43-047-51810	NBU 1022-2P1BS	Sec 02	T10S	R22E	1881	FSL	0957	FEL
	BHL	Sec 02	T10S	R22E	1245	FSL	0492	FEL
43-047-51824	NBU 1022-2I1CS	Sec 02	T10S	R22E	1895	FSL	0931	FEL
	BHL	Sec 02	T10S	R22E	2240	FSL	0493	FEL
43-047-51829	NBU 1022-2I4BS	Sec 02	T10S	R22E	1890	FSL	0940	FEL
	BHL	Sec 02	T10S	R22E	1909	FSL	0492	FEL
43-047-51838	NBU 1022-2P4BS	Sec 02	T10S	R22E	1872	FSL	0975	FEL
	BHL	Sec 02	T10S	R22E	0581	FSL	0492	FEL
43-047-51852	NBU 1022-2P1CS	Sec 02	T10S	R22E	1877	FSL	0966	FEL
	BHL	Sec 02	T10S	R22E	0913	FSL	0492	FEL
<b>NBU 1022-2B PAD</b>								
43-047-51811	NBU 1022-2B1CS	Sec 02	T10S	R22E	0544	FNL	1813	FEL
	BHL	Sec 02	T10S	R22E	0579	FNL	1818	FEL

API #	WELL NAME	LOCATION						
(Proposed PZ WASATCH-MESA VERDE)								
43-047-51827	NBU 1022-2B4CS	Sec 02	T10S	R22E	0543	FNL	1793	FEL
		BHL Sec 02	T10S	R22E	1242	FNL	1816	FEL
43-047-51828	NBU 1022-2B4BS	Sec 02	T10S	R22E	0543	FNL	1803	FEL
		BHL Sec 02	T10S	R22E	0910	FNL	1817	FEL
43-047-51830	NBU 1022-2C1BS	Sec 02	T10S	R22E	0544	FNL	1823	FEL
		BHL Sec 02	T10S	R22E	0090	FNL	2158	FWL
<b>NBU 1022-11J PAD</b>								
43-047-51816	NBU 1022-11K4BS	Sec 11	T10S	R22E	1980	FSL	2131	FEL
		BHL Sec 11	T10S	R22E	1804	FSL	1963	FWL
43-047-51843	NBU 1022-11J1CS	Sec 11	T10S	R22E	1990	FSL	2130	FEL
		BHL Sec 11	T10S	R22E	2065	FSL	1797	FEL
43-047-51851	NBU 1022-11J1BS	Sec 11	T10S	R22E	2000	FSL	2129	FEL
		BHL Sec 11	T10S	R22E	2395	FSL	1798	FEL
<b>NBU 1022-2J PAD</b>								
43-047-51819	NBU 1022-2G4CS	Sec 02	T10S	R22E	2375	FSL	1639	FEL
		BHL Sec 02	T10S	R22E	2568	FNL	1813	FEL
43-047-51820	NBU 1022-2H4CS	Sec 02	T10S	R22E	2351	FSL	1584	FEL
		BHL Sec 02	T10S	R22E	2406	FNL	0493	FEL
43-047-51844	NBU 1022-2J4BS	Sec 02	T10S	R22E	2367	FSL	1621	FEL
		BHL Sec 02	T10S	R22E	1741	FSL	1811	FEL
43-047-51845	NBU 1022-2O1CS	Sec 02	T10S	R22E	2343	FSL	1566	FEL
		BHL Sec 02	T10S	R22E	0747	FSL	1808	FEL
43-047-51847	NBU 1022-2I1BS	Sec 02	T10S	R22E	2347	FSL	1575	FEL
		BHL Sec 02	T10S	R22E	2572	FSL	0493	FEL
43-047-51854	NBU 1022-2G4BS	Sec 02	T10S	R22E	2359	FSL	1602	FEL
		BHL Sec 02	T10S	R22E	2237	FNL	1814	FEL
<b>NBU 1022-O1 PAD</b>								
43-047-51821	NBU 1022-11O1CS	Sec 11	T10S	R22E	0944	FSL	1360	FEL
		BHL Sec 11	T10S	R22E	0744	FSL	1793	FEL
43-047-51831	NBU 1022-11O4CS	Sec 11	T10S	R22E	0925	FSL	1366	FEL
		BHL Sec 11	T10S	R22E	0079	FSL	1824	FEL
43-047-51832	NBU 1022-11P1BS	Sec 11	T10S	R22E	0973	FSL	1351	FEL
		BHL Sec 11	T10S	R22E	1068	FSL	0474	FEL
43-047-51833	NBU 1022-11P4BS	Sec 11	T10S	R22E	0954	FSL	1357	FEL
		BHL Sec 11	T10S	R22E	0456	FSL	0504	FEL
43-047-51836	NBU 1022-12M1BS	Sec 11	T10S	R22E	0963	FSL	1354	FEL
		BHL Sec 12	T10S	R22E	1077	FSL	0824	FWL
43-047-51856	NBU 1022-11O4BS	Sec 11	T10S	R22E	0935	FSL	1363	FEL
		BHL Sec 11	T10S	R22E	0413	FSL	1792	FEL

API #	WELL NAME	LOCATION						
(Proposed PZ WASATCH-MESA VERDE)								
<b>NBU 1022-11I1 PAD</b>								
43-047-51834	NBU 1022-11I1CS	Sec 11	T10S	R22E	2545	FSL	0532	FEL
	BHL	Sec 11	T10S	R22E	2112	FSL	0481	FEL
43-047-51835	NBU 1022-12L1CS	Sec 11	T10S	R22E	2554	FSL	0528	FEL
	BHL	Sec 12	T10S	R22E	2070	0FSL	823	FWL
43-047-51857	NBU 1022-11H4BS	Sec 11	T10S	R22E	2582	FSL	0518	FEL
	BHL	Sec 11	T10S	R22E	2067	FNL	0489	FEL
43-047-51858	NBU 1022-11H4CS	Sec 11	T10S	R22E	2592	FSL	0514	FEL
	BHL	Sec 11	T10S	R22E	2398	FNL	0489	FEL
43-047-51861	NBU 1022-12L1BS	Sec 11	T10S	R22E	2564	FSL	0525	FEL
	BHL	Sec 12	T10S	R22E	2401	FSL	0822	FWL
43-047-51863	NBU 1022-11H1CS	Sec 11	T10S	R22E	2573	FSL	0521	FEL
	BHL	Sec 11	T10S	R22E	1737	FNL	0490	FEL
<b>NBU 1022-2P PAD</b>								
43-047-51839	NBU 1022-2P4CS	Sec 02	T10S	R22E	0221	FSL	1342	FEL
	BHL	Sec 02	T10S	R22E	0255	FSL	0496	FEL
43-047-51841	NBU 1022-11B1BS	Sec 02	T10S	R22E	0221	FSL	1382	FEL
	BHL	Sec 11	T10S	R22E	0280	FNL	1755	FEL
43-047-51842	NBU 1022-11A1BS	Sec 02	T10S	R22E	0221	FSL	1352	FEL
	BHL	Sec 11	T10S	R22E	0080	FNL	0473	FEL
43-047-51846	NBU 1022-2O4CS	Sec 02	T10S	R22E	0220	FSL	1402	FEL
	BHL	Sec 02	T10S	R22E	0095	FSL	1804	FEL
43-047-51848	NBU 1022-11A4BS	Sec 02	T10S	R22E	0221	FSL	1372	FEL
	BHL	Sec 11	T10S	R22E	0744	FNL	0490	FEL
43-047-51849	NBU 1022-2O4BS	Sec 02	T10S	R22E	0221	FSL	1392	FEL
	BHL	Sec 02	T10S	R22E	0415	FSL	1807	FEL
43-047-51850	NBU 1022-11A1CS	Sec 02	T10S	R22E	0221	FSL	1362	FEL
	BHL	Sec 11	T10S	R22E	0413	FNL	0491	FEL
<b>NBU 1022-14A PAD</b>								
43-047-51840	NBU 1022-11P4CS	Sec 14	T10S	R22E	0379	FNL	1228	FEL
	BHL	Sec 11	T10S	R22E	0088	FSL	0466	FEL
43-047-51860	NBU 1022-12M1CS	Sec 14	T10S	R22E	0385	FNL	1236	FEL
	BHL	Sec 12	T10S	R22E	0746	FSL	0825	FWL
43-047-51868	NBU 1022-12M4BS	Sec 14	T10S	R22E	0391	FNL	1244	FEL
	BHL	Sec 12	T10S	R22E	0415	FSL	0825	FWL
43-047-51870	NBU 1022-12M4CS	Sec 14	T10S	R22E	0397	FNL	1252	FEL
	BHL	Sec 12	T10S	R22E	0086	FSL	0819	FWL
<b>NBU 1022-11O2 PAD</b>								
43-047-51859	NBU 1022-11K4CS	Sec 11	T10S	R22E	1103	FSL	2372	FEL
	BHL	Sec 11	T10S	R22E	1442	FSL	2113	FWL

API #	WELL NAME	LOCATION						
(Proposed PZ WASATCH-MESA VERDE)								
43-047-51862	NBU 1022-11N1BS	Sec 11	T10S	R22E	1094	FSL	2377	FEL
		BHL	Sec 11	T10S	R22E	1111	FSL	2105
43-047-51864	NBU 1022-11N1CS	Sec 11	T10S	R22E	1085	FSL	2382	FEL
		BHL	Sec 11	T10S	R22E	0801	FSL	2127
43-047-51865	NBU 1022-11N4BS	Sec 11	T10S	R22E	1077	FSL	2387	FEL
		BHL	Sec 11	T10S	R22E	0462	FSL	2127
43-047-51867	NBU 1022-11N4CS	Sec 11	T10S	R22E	1068	FSL	2392	FEL
		BHL	Sec 11	T10S	R22E	0146	FSL	2084
43-047-51869	NBU 1022-11O2AS	Sec 11	T10S	R22E	1111	FSL	2367	FEL
		BHL	Sec 11	T10S	R22E	1102	FSL	1964
<b>NBU 1022-11I3 PAD</b>								
43-047-51866	NBU 1022-11I4BS	Sec 11	T10S	R22E	1489	FSL	0996	FEL
		BHL	Sec 11	T10S	R22E	1774	FSL	0485
43-047-51871	NBU 1022-11I4CS	Sec 11	T10S	R22E	1459	FSL	0997	FEL
		BHL	Sec 11	T10S	R22E	1443	FSL	0497
43-047-51872	NBU 1022-12L4BS	Sec 11	T10S	R22E	1479	FSL	0996	FEL
		BHL	Sec 12	T10S	R22E	1739	FSL	0823
43-047-51873	NBU 1022-12L4CS	Sec 11	T10S	R22E	1469	FSL	0996	FEL
		BHL	Sec 12	T10S	R22E	1408	FSL	0824

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

Michael L. Coulthard  Digitally signed by Michael L. Coulthard  
 DN: cn=Michael L. Coulthard, o=Bureau of Land Management,  
 ou=Branch of Minerals, email=Michael\_Coulthard@blm.gov, c=US  
 Date: 2011.08.19 08:43:17 -06'00'

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

MCoulthard:mc:8-19-11



**From:** Jim Davis  
**To:** Hill, Brad; Mason, Diana  
**CC:** Bonner, Ed; Garrison, LaVonne; Lytle, Andy  
**Date:** 9/26/2011 5:08 PM  
**Subject:** Anadarko APD approvals 10S 22E Sec 2, 11 and 14  
**Attachments:** Anadarko Approvals from SITLA 9.26.11.xls

The following APDs have been approved by SITLA including arch clearance and paleo clearance:

4304751840 NBU 1022-11P4CS  
4304751860 NBU 1022-12M1CS  
4304751868 NBU 1022-12M4BS  
4304751870 NBU 1022-12M4CS  
4304751803 NBU 1022-2G1CS  
4304751807 NBU 1022-2G1BS  
4304751808 NBU 1022-2H1BS  
4304751812 NBU 1022-2H1CS  
4304751825 NBU 1022-2H4BS  
4304751811 NBU 1022-2B1CS  
4304751827 NBU 1022-2B4CS  
4304751828 NBU 1022-2B4BS  
4304751830 NBU 1022-2C1BS  
4304751809 NBU 1022-2I4CS  
4304751810 NBU 1022-2P1BS  
4304751824 NBU 1022-2I1CS  
4304751829 NBU 1022-2I4BS  
4304751838 NBU 1022-2P4BS  
4304751852 NBU 1022-2P1CS  
4304751839 NBU 1022-2P4CS  
4304751841 NBU 1022-11B1BS  
4304751842 NBU 1022-11A1BS  
4304751846 NBU 1022-2O4CS  
4304751848 NBU 1022-11A4BS  
4304751849 NBU 1022-2O4BS  
4304751850 NBU 1022-11A1CS

These APDS are approved including arch clearance but will require **spot paleo monitoring** as recommended in the applicable paleo reports:

4304751758 NBU 1022-2C1CS  
4304751767 NBU 1022-2C4BS  
4304751768 NBU 1022-2C4CS  
4304751779 NBU 1022-2D1BS  
4304751780 NBU 1022-2D4BS  
4304751782 NBU 1022-2E1BS  
4304751783 NBU 1022-2F1BS  
4304751760 NBU 1022-2E4BS  
4304751761 NBU 1022-2F1CS  
4304751764 NBU 1022-2F4BS  
4304751765 NBU 1022-2F4CS  
4304751766 NBU 1022-2K1BS  
4304751785 NBU 1022-2E1CS  
4304751775 NBU 1022-2L4CS  
4304751778 NBU 1022-2M1BS  
4304751781 NBU 1022-2M1CS  
4304751784 NBU 1022-2M4BS  
4304751786 NBU 1022-2M4CS  
4304751789 NBU 1022-11D2AS

4304751802 NBU 1022-11B4CS  
4304751813 NBU 1022-11B4BS  
4304751815 NBU 1022-11B1CS  
4304751817 NBU 1022-11C4AS  
4304751818 NBU 1022-11C4CS  
4304751855 NBU 1022-11F4AS  
4304751805 NBU 1022-11A4CS  
4304751814 NBU 1022-11H1BS  
4304751822 NBU 1022-11G4CS  
4304751823 NBU 1022-11G1BS  
4304751837 NBU 1022-11G1CS  
4304751853 NBU 1022-11G4BS  
4304751834 NBU 1022-11I1CS  
4304751835 NBU 1022-12L1CS  
4304751857 NBU 1022-11H4BS  
4304751858 NBU 1022-11H4CS  
4304751861 NBU 1022-12L1BS  
4304751863 NBU 1022-11H1CS  
4304751866 NBU 1022-11I4BS  
4304751871 NBU 1022-11I4CS  
4304751872 NBU 1022-12L4BS  
4304751873 NBU 1022-12L4CS  
4304751816 NBU 1022-11K4BS  
4304751843 NBU 1022-11J1CS  
4304751851 NBU 1022-11J1BS  
4304751859 NBU 1022-11K4CS  
4304751862 NBU 1022-11N1BS  
4304751864 NBU 1022-11N1CS  
4304751865 NBU 1022-11N4BS  
4304751867 NBU 1022-11N4CS  
4304751869 NBU 1022-11O2AS

These APDS are approved including arch clearance but will require **full paleo monitoring** as recommended in the applicable paleo reports:

4304751771 NBU 1022-2E4CS  
4304751772 NBU 1022-2L1CS  
4304751773 NBU 1022-2L1BS  
4304751774 NBU 1022-2L4BS  
4304751776 NBU 1022-2K1CS  
4304751777 NBU 1022-2K4BS  
4304751819 NBU 1022-2G4CS  
4304751820 NBU 1022-2H4CS  
4304751844 NBU 1022-2J4BS  
4304751845 NBU 1022-2O1CS  
4304751847 NBU 1022-2I1BS  
4304751854 NBU 1022-2G4BS  
4304751797 NBU 1022-11C2CS  
4304751799 NBU 1022-11C3DS  
4304751800 NBU 1022-11D1CS  
4304751801 NBU 1022-11F2DS  
4304751821 NBU 1022-11O1CS  
4304751831 NBU 1022-11O4CS  
4304751832 NBU 1022-11P1BS  
4304751833 NBU 1022-11P4BS  
4304751836 NBU 1022-12M1BS  
4304751856 NBU 1022-11O4BS

That's a big enough list that I'm including a simple spreadsheet that has this same information, but organized in such a way as may be more useful to some of you.

Thanks.

-Jim

Jim Davis  
Utah Trust Lands Administration  
jimdavis1@utah.gov  
Phone: (801) 538-5156

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-11A1B			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2079	8509		
Previous Shoe Setting Depth (TVD)	40	2079		
Max Mud Weight (ppg)	8.3	12.5		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	5446	12.3		

Calculations	Surf String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	897	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	648	NO <input type="text" value="air drill"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	440	YES <input type="text" value="OK"/>
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	448	NO <input type="text" value="Reasonable depth in area"/>
Required Casing/BOPE Test Pressure=		2079	psi
*Max Pressure Allowed @ Previous Casing Shoe=		40	psi *Assumes 1psi/ft frac gradient

Calculations	Prod String	4.500	"
Max BHP (psi)	.052*Setting Depth*MW=	5531	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	4510	YES <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	3659	YES <input type="text" value="OK"/>
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	4116	NO <input type="text" value="Reasonable"/>
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2079	psi *Assumes 1psi/ft frac gradient

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

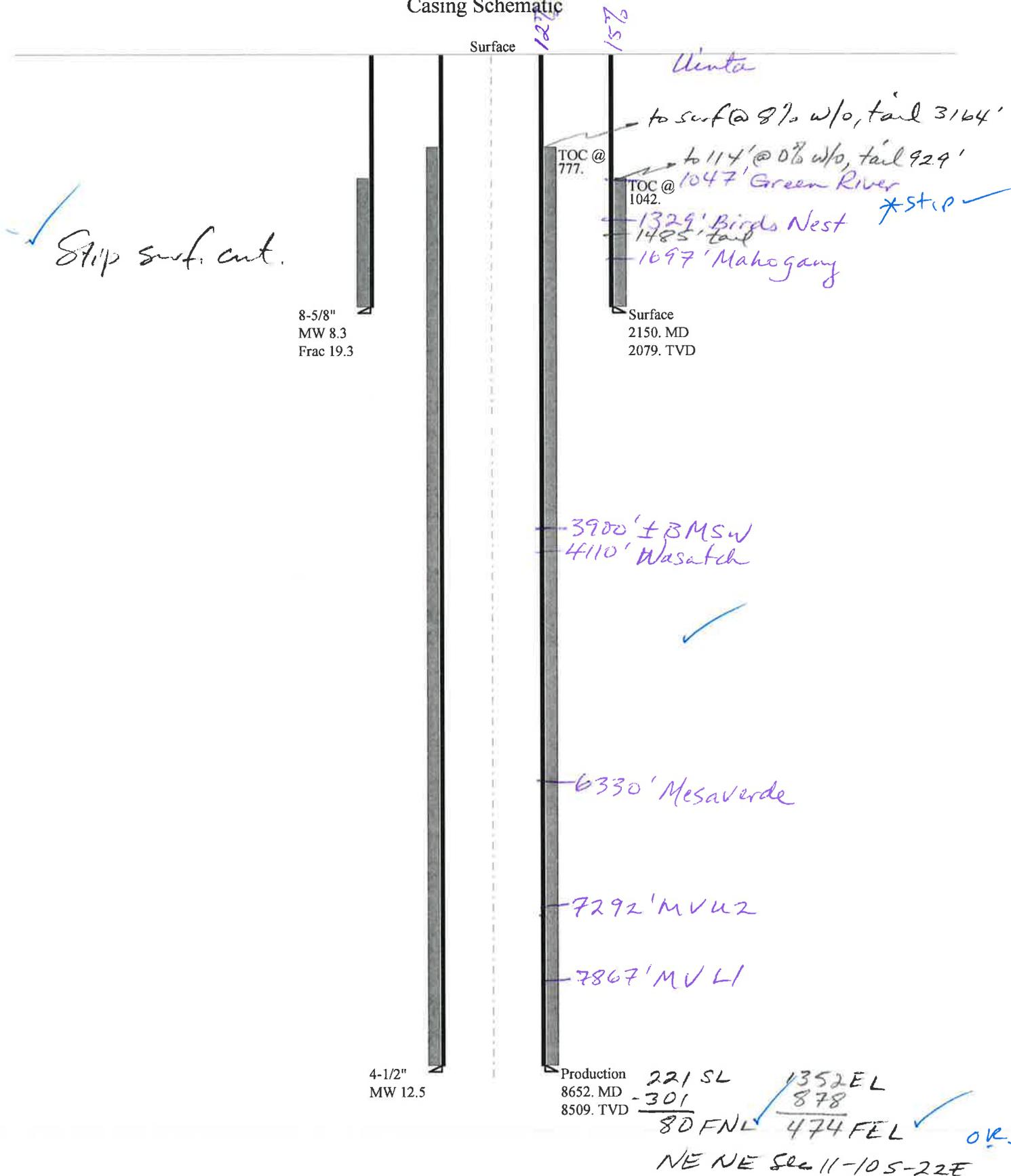
Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO <input type="text"/>
			<b>*Can Full Expected Pressure Be Held At Previous Shoe?</b>
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO <input type="text"/>
Required Casing/BOPE Test Pressure=			psi

API Well Number: 43047518420000

*Max Pressure Allowed @ Previous Casing Shoe=	<input type="text"/>	psi *Assumes 1psi/ft frac gradient
---	----------------------	------------------------------------

# 43047518420000 NBU 1022-11A1BS

## Casing Schematic



Well name:	<b>43047518420000 NBU 1022-11A1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-51842
Location:	UINTAH COUNTY		

**Design parameters:**

**Collapse**

Mud weight: 8.330 ppg  
 Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 103 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft

Cement top: 1,042 ft

**Burst**

Max anticipated surface pressure: 1,892 psi  
 Internal gradient: 0.120 psi/ft  
 Calculated BHP 2,141 psi

No backup mud specified.

**Tension:**

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

Tension is based on air weight.  
 Neutral point: 1,878 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
 Departure at shoe: 463 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 20 °

**Re subsequent strings:**

Next setting depth: 8,652 ft  
 Next mud weight: 12.500 ppg  
 Next setting BHP: 5,618 psi  
 Fracture mud wt: 19.250 ppg  
 Fracture depth: 2,150 ft  
 Injection pressure: 2,150 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2150	8.625	28.00	I-55	LT&C	2079	2150	7.892	85140
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	899	1880	2.090	2141	3390	1.58	58.2	348	5.98 J

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

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

Date: October 3, 2011  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2079 ft, a mud weight of 8.33 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

Well name:	<b>43047518420000 NBU 1022-11A1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-51842
Location:	UINTAH COUNTY		

**Design parameters:**

**Collapse**

Mud weight: 12.500 ppg  
 Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
 Surface temperature: 74 °F  
 Bottom hole temperature: 193 °F  
 Temperature gradient: 1.40 °F/100ft  
 Minimum section length: 100 ft  
 Cement top: 777 ft

**Burst**

Max anticipated surface pressure: 3,653 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP 5,525 psi

No backup mud specified.

**Tension:**

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

Tension is based on air weight.  
 Neutral point: 7,062 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
 Departure at shoe: 928 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	8652	4.5	11.60	I-80	LT&C	8509	8652	3.875	114206
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	5525	6360	1.151	5525	7780	1.41	98.7	212	2.15 J

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

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

Date: October 3, 2011  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 8509 ft, a mud weight of 12.5 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

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

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** NBU 1022-11A1BS  
**API Number** 43047518420000      **APD No** 4398      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** SWSE      **Sec 2 Tw** 10.0S      **Rng** 22.0E      221 FSL 1352 FEL  
**GPS Coord (UTM)** 636481 4425590      **Surface Owner**

### Participants

Andy Lytle, Sheila Wopsock, Charles Chase, Grizz Oleen, Mark Kuehn, Doyle Holmes, (Kerr McGee). John Slaugh, Mitch Batty, (Timberline ). Jim Davis (SITLA). David Hackford, (DOGM).

### Regional/Local Setting & Topography

The general area is in the southeast portion of the Natural Buttes Unit . Within this area is the White River and rugged drainages that drain into it. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River is approx. 1100 feet to the southwest. The side drainages are dry except for ephemeral flows. No seeps or springs exist in the area. An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 40 air miles to the northwest. Access from Vernal is approximately 47.6 road miles following Utah State, Uintah County and oilfield development roads. Six wells, in addition to this one (for a total of seven) will be directionally drilled from this pad. This proposed location will be a new pad. The CIGE 161 location is directly to the east of this site, but this location is not adequate for seven additional wells.. A 410 foot access road will be constructed. The proposed location will run in an east-west direction along the top of a flat topped ridge. This ridge breaks off sharply into rugged secondary canyons especially on the south side. A shallow draw coming to this site from the north will be re-routed around the location. The reserve pit will be on the south side of the location and the excess cut stockpile will be on the south and west sides of the location. The pad should be stable and should be a suitable location for seven wells, and is on the best site available in the immediate area.

### Surface Use Plan

#### **Current Surface Use**

Wildlfe Habitat

#### **New Road Miles**

0.13

#### **Well Pad**

**Width** 332      **Length** 425

#### **Src Const Material**

Onsite

#### **Surface Formation**

UNTA

#### **Ancillary Facilities** N

### Waste Management Plan Adequate?

Y

### Environmental Parameters

#### **Affected Floodplains and/or Wetlands** N

#### **Flora / Fauna**

Prickly pear, wild onion, shadscale, mat saltbrush, Indian ricegrass, halogeton, pepper grass, annuals and curly Vegetation is a salt desert shrub type. Principal species present are cheatgrass, black sagebrush, stipa, mesquite grass.

Sheep, antelope, raptors and small mammals and birds.

#### **Soil Type and Characteristics**

Shallow rocky sandy loam.

**Erosion Issues Y**

Fill on north side of location will be compacted during construction.

**Sedimentation Issues N**

**Site Stability Issues N**

**Drainage Diversion Required? Y**

Shallow draw coming into location from the north will be re-routed.

**Berm Required? N**

**Erosion Sedimentation Control Required? N**

**Paleo Survey Run? Y   Paleo Potential Observed? N   Cultural Survey Run? Y   Cultural Resources? N**

**Reserve Pit**

**Site-Specific Factors**

**Site Ranking**

<b>Distance to Groundwater (feet)</b>	100 to 200	5	
<b>Distance to Surface Water (feet)</b>	>1000	0	
<b>Dist. Nearest Municipal Well (ft)</b>	>5280	0	
<b>Distance to Other Wells (feet)</b>		20	
<b>Native Soil Type</b>	Mod permeability	10	
<b>Fluid Type</b>	Fresh Water	5	
<b>Drill Cuttings</b>	Normal Rock	0	
<b>Annual Precipitation (inches)</b>		0	
<b>Affected Populations</b>			
<b>Presence Nearby Utility Conduits</b>	Not Present	0	
	<b>Final Score</b>	40	1 Sensitivity Level

**Characteristics / Requirements**

The reserve pit is planned in an area of cut on the south side of the location. Dimensions are 100' x 260' x 12' deep with 2' of freeboard. Kerr McGee agreed to line the pit with a 30-mil liner and 2 layers of felt.

**Closed Loop Mud Required? N   Liner Required? Y   Liner Thickness 30   Pit Underlayment Required? Y**

**Other Observations / Comments**

Of the seven wells being drilled from this pad, four will have well bores that leave section two and produce from section eleven to the south. These four are the NBU 1022-11A1BS, NBU 1022-11A1CS, NBU 1022-11A4BS and the NBU 1022-11B1BS.

David Hackford  
**Evaluator**

8/18/2011  
**Date / Time**

# Application for Permit to Drill Statement of Basis

10/27/2011

## Utah Division of Oil, Gas and Mining

Page 1

<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
4398	43047518420000	SITLA	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 1022-11A1BS	<b>Unit</b>		NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES	<b>Type of Work</b>		DRILL	
<b>Location</b>	SWSE 2 10S 22E S 221 FSL 1352 FEL		GPS Coord (UTM)	636407E	4425791N

### Geologic Statement of Basis

Kerr McGee proposes to set 2,150' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 3,900'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 2. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought up above the base of the moderately saline ground water to isolate it from fresher waters uphole.

Brad Hill  
**APD Evaluator**

9/1/2011  
**Date / Time**

### Surface Statement of Basis

The general area is in the southeast portion of the Natural Buttes Unit. Within this area is the White River and rugged drainages that drain into it. Topography is varied and frequently dissected by short draws or washes, which become overly steep as they approach the White River breaks or rim. Distance to the White River is 1100' to the southwest. The side drainages are dry except for ephemeral flows. No seeps or springs exist in the area. An occasional pond has been constructed to supply water for livestock and antelope. Vernal, Utah is approximately 40 air miles to the northwest. Access from Vernal is approximately 47.6 road miles following Utah State, Uintah County and oilfield development roads. A 410' access road will be constructed.

Seven wells will be directionally drilled from this location. They are the NBU 1022-2P4CS, NBU 1022-11A1BS, NBU 1022-11A1CS, NBU 1022-11A4BS, NBU 1022-11B1BS, NBU 1022-2O4BS, and the NBU 1022-2O4CS. The proposed location is on the point of a flat topped ridge that runs in an east-west direction. This ridge breaks off sharply into rugged secondary canyons especially to the south. A shallow drainage enters the proposed site from the north and will be re-routed around the location.. The pad as constructed should be stable and sufficient for seven wells, and is the best site in the immediate area.

Excess material will be stockpiled on the west side of the reserve pit The north side of location will be fill and will be compacted during construction..

Both the surface and minerals are owned by SITLA. Jim Davis of SITLA and Ben Williams with DWR were invited by email to the pre-site evaluation. Jim Davis was present. Kerr McGee was told to consult with SITLA for reclamation standards including seeding mixes to be used.

David Hackford  
**Onsite Evaluator**

8/18/2011  
**Date / Time**

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

<b>Category</b>	<b>Condition</b>
Pits	A synthetic liner with a minimum thickness of 30 mils with a felt subliner shall be properly installed and maintained in the reserve pit.

**RECEIVED: October 27, 2011**

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# Application for Permit to Drill Statement of Basis

10/27/2011

Utah Division of Oil, Gas and Mining

Page 2

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Pits	The reserve pit should be located on the south side of the location.
Surface	Drainages adjacent to the proposed pad shall be diverted around the location.

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 8/10/2011**API NO. ASSIGNED:** 43047518420000**WELL NAME:** NBU 1022-11A1BS**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)**PHONE NUMBER:** 720 929-6086**CONTACT:** Gina Becker**PROPOSED LOCATION:** SWSE 02 100S 220E**Permit Tech Review:** **SURFACE:** 0221 FSL 1352 FEL**Engineering Review:** **BOTTOM:** 0080 FNL 0473 FEL**Geology Review:** **COUNTY:** UINTAH**LATITUDE:** 39.97128**LONGITUDE:** -109.40268**UTM SURF EASTINGS:** 636407.00**NORTHINGS:** 4425791.00**FIELD NAME:** NATURAL BUTTES**LEASE TYPE:** 3 - State**LEASE NUMBER:** UO 01197-A ST**PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE**SURFACE OWNER:** 3 - State**COALBED METHANE:** NO**RECEIVED AND/OR REVIEWED:**

- PLAT
- Bond: STATE/FEE - 22013542
- 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:** 460' Fr U Bdry & Uncommitted Tracts
- R649-3-11. Directional Drill

**Comments:** Presite Completed

**Stipulations:**

- 3 - Commingle - ddoucet
- 5 - Statement of Basis - bhill
- 15 - Directional - dmason
- 17 - Oil Shale 190-5(b) - dmason
- 25 - Surface Casing - hmaconnald



GARY R. HERBERT  
*Governor*

GREGORY S. BELL  
*Lieutenant Governor*

## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

### Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 1022-11A1BS  
**API Well Number:** 43047518420000  
**Lease Number:** UO 01197-A ST  
**Surface Owner:** STATE  
**Approval Date:** 10/27/2011

**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:**

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.

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

Surface casing shall be cemented to the surface.

**Additional Approvals:**

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

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

**Notification Requirements:**

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

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

**Contact Information:**

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

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

**Reporting Requirements:**

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

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

**Approved By:**



For John Rogers  
Associate Director, Oil & Gas

BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
Submitted By GINA BECKER Phone Number 720.929.6086  
Well Name/Number NBU 1022-11A1BS  
Qtr/Qtr SWSE Section 2 Township 10S Range 22E  
Lease Serial Number UO 01197A ST  
API Number 4304751842

Spud Notice – Spud is the initial spudding of the well, not drilling out below a casing string.

Date/Time 12/29/2011 09:00 HRS AM  PM

Casing – Please report time casing run starts, not cementing times.

- Surface Casing
- Intermediate Casing
- Production Casing
- Liner
- Other

**RECEIVED**  
DEC 29 2011  
DIV. OF OIL, GAS & MINING

Date/Time 01/16/2012 08:00 HRS AM  PM

BOPE

- Initial BOPE test at surface casing point
- BOPE test at intermediate casing point
- 30 day BOPE test
- Other

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

Remarks ESTIMATED DATE AND TIME. PLEASE CONTACT KENNY GATHINGS AT  
435.828.0986 OR LEVEL YOUNG AT 435.781.7051

<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>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UO 01197-A ST
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>
		<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 1022-11A1BS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047518420000	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6515 Ext	<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0221 FSL 1352 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWSE Section: 02 Township: 10.0S Range: 22.0E Meridian: S	<b>COUNTY:</b> UINTAH	
		<b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:  <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:  <input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 12/31/2011  <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	
	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 CONDUCTOR PIPE. CMT W/ 28 SX READY MIX. SPUD WELL LOCATION ON DEC. 31, 2011 AT 08:30 HRS.		
<b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY</b>		
<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 1/6/2012	

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

FORM 6

**ENTITY ACTION FORM**

Operator: KERR MCGEE OIL & GAS ONSHORE LP Operator Account Number: N 2995  
Address: P.O. Box 173779  
city DENVER  
state CO zip 80217 Phone Number: (720) 929-6086

**Well 1**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751839	NBU 1022-2P4CS		SWSE	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<i>B</i>	99999	<i>2900</i>	12/29/2011		<i>1/18/2012</i>		
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL LOCATION ON 12/29/2011 AT 08:30 HRS. <i>BHL = SESE</i>							

**Well 2**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751842	NBU 1022-11A1BS		SWSE	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<i>B</i>	99999	<i>2900</i>	12/31/2011		<i>1/18/2012</i>		
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL LOCATION ON 12/31/2011 AT 08:30 HRS. <i>BHL = Sec 11 NENE</i>							

**Well 3**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751850	NBU 1022-11A1CS		SWSE	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
<i>B</i>	99999	<i>2900</i>	12/29/2011		<i>1/18/2012</i>		
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL LOCATION ON 12/29/2011 AT 13:30 HRS. <i>BHL = Sec 11 NENE</i>							

**ACTION CODES:**

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

GINA BECKER

Name (Please Print)

Signature

REGULATORY ANALYST

Title

1/6/2012

Date

**RECEIVED**

JAN 18 2012

DIV. OF OIL, GAS & MINING

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9	
<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> UO 01197-A ST	
		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<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 1022-11A1BS	
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>9. API NUMBER:</b> 43047518420000	
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0221 FSL 1352 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWSE Section: 02 Township: 10.0S Range: 22.0E Meridian: S		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
		<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"/> SUBSEQUENT REPORT Date of Work Completion:  <input type="checkbox"/> SPUD REPORT Date of Spud:  <input checked="" type="checkbox"/> DRILLING REPORT Report Date: 1/29/2012	<input type="checkbox"/> ACIDIZE  <input type="checkbox"/> CHANGE TO PREVIOUS PLANS  <input type="checkbox"/> CHANGE WELL STATUS  <input type="checkbox"/> DEEPEN  <input type="checkbox"/> OPERATOR CHANGE  <input type="checkbox"/> PRODUCTION START OR RESUME  <input type="checkbox"/> REPERFORATE CURRENT FORMATION  <input type="checkbox"/> TUBING REPAIR  <input type="checkbox"/> WATER SHUTOFF  <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING  <input type="checkbox"/> CHANGE TUBING  <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS  <input type="checkbox"/> FRACTURE TREAT  <input type="checkbox"/> PLUG AND ABANDON  <input type="checkbox"/> RECLAMATION OF WELL SITE  <input type="checkbox"/> SIDETRACK TO REPAIR WELL  <input type="checkbox"/> VENT OR FLARE  <input type="checkbox"/> SI TA STATUS EXTENSION  <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR  <input type="checkbox"/> CHANGE WELL NAME  <input type="checkbox"/> CONVERT WELL TYPE  <input type="checkbox"/> NEW CONSTRUCTION  <input type="checkbox"/> PLUG BACK  <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION  <input type="checkbox"/> TEMPORARY ABANDON  <input type="checkbox"/> WATER DISPOSAL  <input type="checkbox"/> APD EXTENSION  OTHER: <input style="width: 100px;" type="text"/>
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.			
<p>MIRU AIR RIG ON JAN. 27, 2012. DRILLED SURFACE HOLE TO 2376'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.</p>			
<p><b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY January 30, 2012</b></p>			
<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske		<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A		<b>DATE</b> 1/30/2012	

<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> UO 01197-A ST	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-11A1BS	
<b>9. API NUMBER:</b> 43047518420000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>COUNTY:</b> UINTAH	
<b>STATE:</b> UTAH	

**SUNDRY NOTICES AND REPORTS ON WELLS**

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

<b>1. TYPE OF WELL</b> Gas Well	<b>1. TYPE OF WELL</b> Gas Well
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.
<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>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0221 FSL 1352 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWSE Section: 02 Township: 10.0S Range: 22.0E Meridian: S	

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 1/17/2012	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input checked="" type="checkbox"/> <b>CHANGE TO PREVIOUS PLANS</b>	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> <b>DRILLING REPORT</b> 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.

The Operator requests approval for changes in the drilling plan. Specifically, the Operator requests approval for a FIT wavier, closed loop drilling option, and a production casing change. All other aspects of the previously approved drilling plan will not change. Please see the attachment. Thank you.

**Approved by the Utah Division of Oil, Gas and Mining**  
**Date:** February 02, 2012  
**By:** *Derek Duff*

<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regularatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 1/17/2012	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-11A1BS**

Surface:	221 FSL / 1352 FEL	SWSE
BHL:	80 FNL / 473 FEL	NENE

Section 2 T10S R22E

Uintah County, Utah  
Mineral Lease: UO 01197-A ST

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

1. & 2. **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	1,047'	
Birds Nest	1,329'	Water
Mahogany	1,697'	Water
Wasatch	4,110'	Gas
Mesaverde	6,330'	Gas
MVU2	7,292'	Gas
MVL1	7,867'	Gas
TVD	8,509'	
TD	8,652'	

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

Please refer to the attached Drilling Program

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

Please refer to the attached Drilling Program

5. **Drilling Fluids Program:**

Please refer to the attached Drilling Program

6. **Evaluation Program:**

Please refer to the attached Drilling Program

**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 8509' TVD, approximately equals  
 5,446 psi 0.64 psi/ft = actual bottomhole gradient

---

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

Maximum anticipated surface pressure equals approximately 3,562 psi (bottom hole pressure  
 minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

---

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

**8. Anticipated Starting Dates:**

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

**9. Variances:**

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

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

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

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

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

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

**Background**

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

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

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.

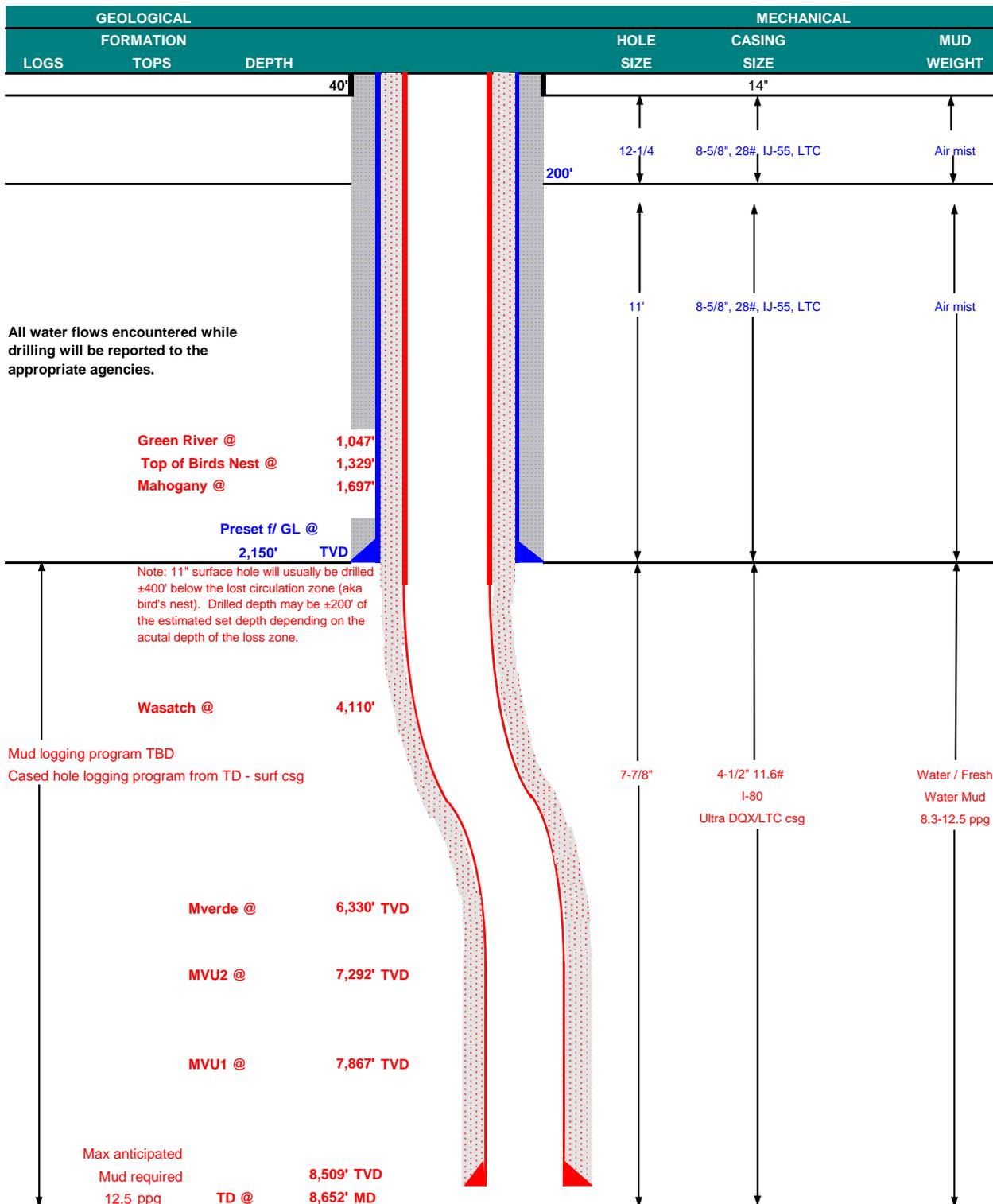
10. **Other Information:**

Please refer to the attached Drilling Program.



### KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	January 16, 2012	
WELL NAME	<b>NBU 1022-11A1BS</b>		TD	8,509' TVD	8,652' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah
SURFACE LOCATION	SWSE	221 FSL	1352 FEL	Sec 2 T 10S R 22E	FINISHED ELEVATION 5,092'
BTM HOLE LOCATION	NENE	80 FNL	473 FEL	Sec 11 T 10S R 22E	
OBJECTIVE ZONE(S)	Wasatch/Mesaverde				
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.				





**KERR-McGEE OIL & GAS ONSHORE LP**  
**DRILLING PROGRAM**

**CASING PROGRAM**

							DESIGN FACTORS			
	SIZE	INTERVAL		WT.	GR.	CPLG.	LTC		DQX	
							BURST	COLLAPSE	TENSION	
CONDUCTOR	14"	0-40'								
SURFACE	8-5/8"	0	to 2,150	28.00	IJ-55	LTC	3,390	1,880	348,000	N/A
							7,780	6,350	223,000	267,035
PRODUCTION	4-1/2"	0	to 5,000	11.60	I-80	DQX	1.11	1.15		3.29
							1.11	1.15	6.51	

**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 @ 7000 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	180	60%	15.80		1.15
			+ 0.25 pps flocele					
Option 1	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>								
SURFACE	LEAD	1,650'	65/35 Poz + 6% Gel + 10 pps gilsonite	150	35%	11.00		3.82
			+ 0.25 pps Flocele + 3% salt BWOW					
Option 2	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps flocele					
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	3,602'	Premium Lite II +0.25 pps	270	20%	11.00		3.38
			celloflake + 5 pps gilsonite + 10% gel					
			+ 0.5% extender					
	TAIL	5,050'	50/50 Poz/G + 10% salt + 2% gel	1,190	35%	14.30		1.31
			+ 0.1% R-3					

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

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

**FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. No centralizers will be used.

**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 / Chad Loesel

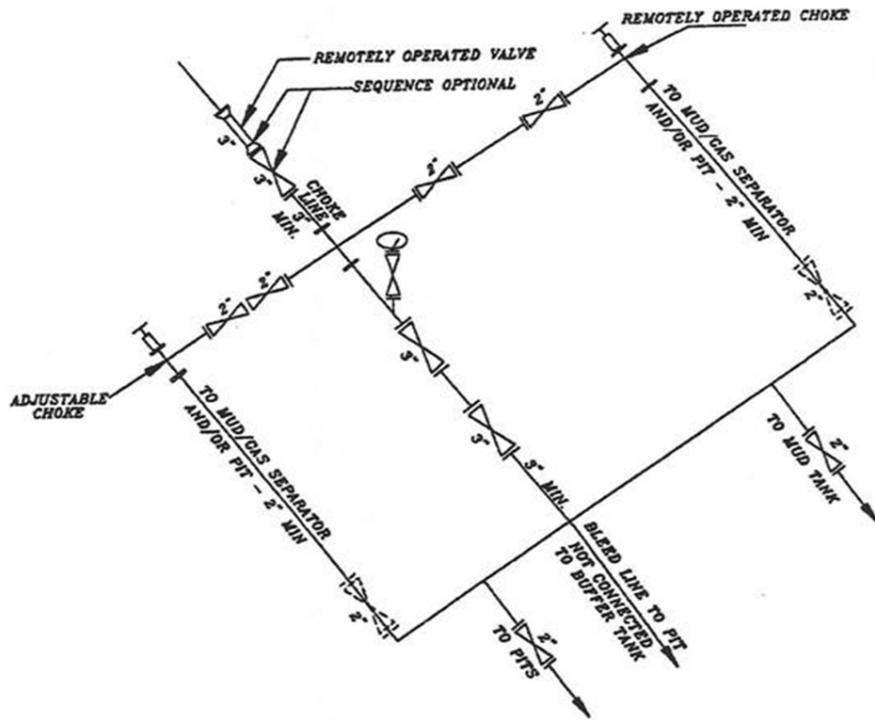
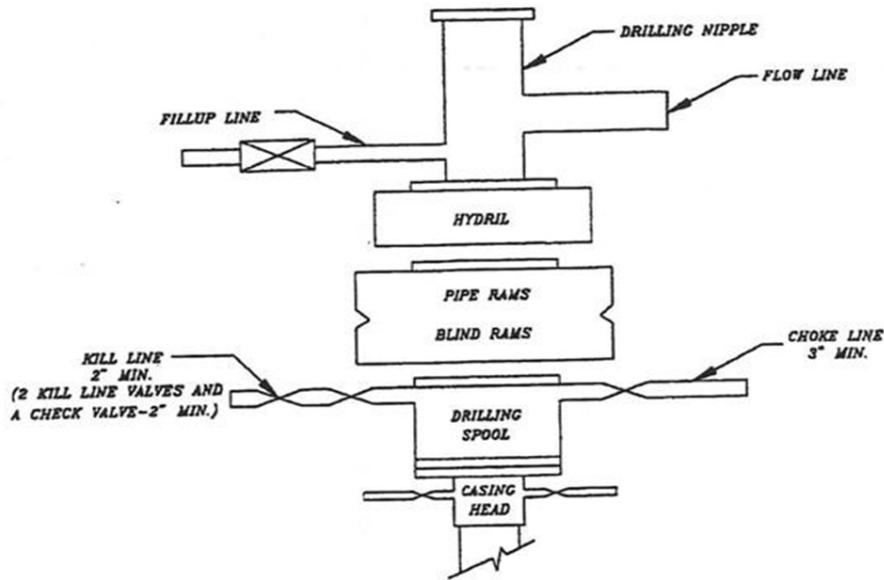
**DATE:**

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

**DATE:**

**EXHIBIT A**  
**NBU 1022-11A1BS**



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

Requested Drilling Options:

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

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

BLM - Vernal Field Office - Notification Form

Operator KERR MCGEE Rig Name/# H&P 311  
Submitted By SCOTT ALLRED Phone Number 435- 790-1884  
Well Name/Number NBU 1022-11A1BS  
Qtr/Qtr NE/SE Section 2 Township 10S Range 22E  
Lease Serial Number UO01197-A ST  
API Number 43-047-518420000

Spud Notice – Spud is the initial spudding of the well, not drilling out below a casing string.

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

Casing – Please report time casing run starts, not cementing times.

- Surface Casing
- Intermediate Casing
- Production Casing
- Liner
- Other

**RECEIVED**

FEB 08 2012

DEPT. OF OIL, GAS & MINING

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

BOPE

- Initial BOPE test at surface casing point
- BOPE test at intermediate casing point
- 30 day BOPE test
- Other

Date/Time 2/9/2012 04:00 AM  PM

Remarks TIME ESTIMATED

\_\_\_\_\_

BLM - Vernal Field Office - Notification Form

Operator KERR MCGEE Rig Name/# H&P 311  
Submitted By SCOTT ALLRED Phone Number 435- 790-1884  
Well Name/Number NBU 1022-11A1BS  
Qtr/Qtr NE/SE Section 2 Township 10S Range 22E  
Lease Serial Number UO01197-A ST  
API Number 43-047-518420000

Spud Notice – Spud is the initial spudding of the well, not drilling out below a casing string.

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

Casing – Please report time casing run starts, not cementing times.

- Surface Casing
- Intermediate Casing
- Production Casing
- Liner
- Other

**RECEIVED**  
**FEB 10 2012**  
DIV. OF OIL, GAS & MINING

Date/Time 2/12/2012 11:00 AM  PM

BOPE

- Initial BOPE test at surface casing point
- BOPE test at intermediate casing point
- 30 day BOPE test
- Other

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

Remarks TIME ESTIMATED

\_\_\_\_\_

<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> UO 01197-A ST
<b>1. TYPE OF WELL</b> Gas Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>8. WELL NAME and NUMBER:</b> NBU 1022-11A1BS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0221 FSL 1352 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWSE Section: 02 Township: 10.0S Range: 22.0E Meridian: S		<b>9. API NUMBER:</b> 43047518420000
<b>PHONE NUMBER:</b> 720 929-6511		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>COUNTY:</b> UINTAH		<b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> ALTER CASING	
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CASING REPAIR	
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 2/14/2012	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	
	<input type="checkbox"/> CHANGE TUBING	
	<input type="checkbox"/> CHANGE WELL STATUS	
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	
	<input type="checkbox"/> CHANGE WELL NAME	
	<input type="checkbox"/> DEEPEN	
	<input type="checkbox"/> CONVERT WELL TYPE	
	<input type="checkbox"/> OPERATOR CHANGE	
	<input type="checkbox"/> FRACTURE TREAT	
	<input type="checkbox"/> PRODUCTION START OR RESUME	
	<input type="checkbox"/> PLUG AND ABANDON	
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	
	<input type="checkbox"/> RECLAMATION OF WELL SITE	
	<input type="checkbox"/> TUBING REPAIR	
	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	
	<input type="checkbox"/> WATER SHUTOFF	
	<input type="checkbox"/> VENT OR FLARE	
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	
	<input type="checkbox"/> SI TA STATUS EXTENSION	
	<input type="checkbox"/> OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. MIRU ROTARY RIG. FINISHED DRILLING FROM 2376' TO 8712' ON FEBRUARY 12, 2012. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED H&P 311 RIG ON FEBRUARY 14, 2012 @ 06:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES.		
<b>Accepted by the          Utah Division of          Oil, Gas and Mining          FOR RECORD ONLY          February 16, 2012</b>		
<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regularatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 2/14/2012	

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9	
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> UO 01197-A ST	
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>	
		<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 1022-11A1BS		
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047518420000		
<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> 0221 FSL 1352 FEL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SWSE Section: 02 Township: 10.0S Range: 22.0E Meridian: S	<b>COUNTY:</b> UINTAH		
	<b>STATE:</b> UTAH		
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:  <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:  <input type="checkbox"/> SPUD REPORT Date of Spud:  <input checked="" type="checkbox"/> DRILLING REPORT Report Date: 5/10/2012	<input type="checkbox"/> ACIDIZE  <input type="checkbox"/> CHANGE TO PREVIOUS PLANS  <input type="checkbox"/> CHANGE WELL STATUS  <input type="checkbox"/> DEEPEN  <input type="checkbox"/> OPERATOR CHANGE  <input checked="" type="checkbox"/> PRODUCTION START OR RESUME  <input type="checkbox"/> REPERFORATE CURRENT FORMATION  <input type="checkbox"/> TUBING REPAIR  <input type="checkbox"/> WATER SHUTOFF  <input type="checkbox"/> WILDCAT WELL DETERMINATION  <input type="checkbox"/> ALTER CASING  <input type="checkbox"/> CHANGE TUBING  <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS  <input type="checkbox"/> FRACTURE TREAT  <input type="checkbox"/> PLUG AND ABANDON  <input type="checkbox"/> RECLAMATION OF WELL SITE  <input type="checkbox"/> SIDETRACK TO REPAIR WELL  <input type="checkbox"/> VENT OR FLARE  <input type="checkbox"/> SI TA STATUS EXTENSION  <input type="checkbox"/> OTHER		<input type="checkbox"/> CASING REPAIR  <input type="checkbox"/> CHANGE WELL NAME  <input type="checkbox"/> CONVERT WELL TYPE  <input type="checkbox"/> NEW CONSTRUCTION  <input type="checkbox"/> PLUG BACK  <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION  <input type="checkbox"/> TEMPORARY ABANDON  <input type="checkbox"/> WATER DISPOSAL  <input type="checkbox"/> APD EXTENSION  OTHER: <input style="width: 100px;" type="text"/>
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.			
<p>THE SUBJECT WELL WAS PLACED ON PRODUCTION ON MAY 10, 2012 AT 09:30 HOURS. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.</p>			
<p><b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY May 14, 2012</b></p>			
<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regulatory Analyst	
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/14/2012		

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

AMENDED REPORT  FORM 8  
(highlight changes)

**WELL COMPLETION OR RECOMPLETION REPORT AND LOG**

5. LEASE DESIGNATION AND SERIAL NUMBER:  
**UO 01197-A ST**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT or CA AGREEMENT NAME  
**UTU63047A**

8. WELL NAME and NUMBER:  
**NBU 1022-11A1BS**

9. API NUMBER:  
**4304751842**

10. FIELD AND POOL, OR WILDCAT  
**NATURAL BUTTES**

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:  
**SWSE 2 10S 22E S**

12. COUNTY  
**UINTAH**

13. STATE  
**UTAH**

14. TYPE OF WELL: OIL WELL  GAS WELL  DRY  OTHER \_\_\_\_\_

b. TYPE OF WORK: NEW WELL  HORIZ. LATS.  DEEP-EN  RE-ENTRY  DIFF. RESVR.  OTHER \_\_\_\_\_

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

3. ADDRESS OF OPERATOR: P.O. BOX 173779 CITY **DENVER** STATE **CO** ZIP **80217** PHONE NUMBER: **(720) 929-6000**

4. LOCATION OF WELL (FOOTAGES)  
AT SURFACE: **SWSE 221 FSL 1352 FEL S2,T10S,R22E**  
AT TOP PRODUCING INTERVAL REPORTED BELOW: **NENE 61 FNL 480 FEL S11,T10S,R22E**  
AT TOTAL DEPTH: **NENE 77 FNL 479 FEL S11,T10S,R22E** *BHL by HSM*

14. DATE SPUDDED: **12/31/2011** 15. DATE T.D. REACHED: **2/14/2012** 16. DATE COMPLETED: **5/10/2012** ABANDONED  READY TO PRODUCE

17. ELEVATIONS (DF, RKB, RT, GL): **5092 GL**

18. TOTAL DEPTH: MD **8,712** 19. PLUG BACK T.D.: MD **8,654** 20. IF MULTIPLE COMPLETIONS, HOW MANY? \*  
TVD **8,571** TVD **8,518**

21. DEPTH BRIDGE MD PLUG SET: TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)  
**CBL/CMI/GR/CCL-BHV-DSN/SD/ACTR**

23. WAS WELL CORED? NO  YES  (Submit analysis)  
WAS DST RUN? NO  YES  (Submit report)  
DIRECTIONAL SURVEY? NO  YES  (Submit copy)

24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
20"	14" STL	36.7#	0	40		28			
11"	8 5/8" IJ-55	28#	0	2,368		600		0	
7 7/8"	4 1/2" I-80	11.6#	0	8,697		1,771		100	

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	7,891							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
(A) WASATCH	4,922	5,926			4,922 5,926	0.36	72	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(B) MESAVERDE	6,600	8,518			6,600 8,518	0.36	139	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(C)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(D)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
4922-8518	PUMP 9492 BBLs SLICK H2O & 211,224 LBS 30/50 OTTAWA SAND 9 STAGES

**RECEIVED**  
**JUL 31 2012**  
DIV. OF OIL, GAS & MINING

29. ENCLOSED ATTACHMENTS:

ELECTRICAL/MECHANICAL LOGS  GEOLOGIC REPORT  DST REPORT  DIRECTIONAL SURVEY  
 SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION  CORE ANALYSIS  OTHER: \_\_\_\_\_

30. WELL STATUS:  
**PROD**

31. INITIAL PRODUCTION

INTERVAL A (As shown in Item #26)

DATE FIRST PRODUCED: 5/10/2012		TEST DATE: 5/12/2012		HOURS TESTED: 24		TEST PRODUCTION RATES: →	OIL - BBL: 0	GAS - MCF: 3,083	WATER - BBL: 411	PROD. METHOD:
CHOKE SIZE: 20/64	TBG. PRESS. 1,620	CSG. PRESS. 2,135	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL: 0	GAS - MCF: 3,083	WATER - BBL: 411	INTERVAL STATUS: PROD

INTERVAL B (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

INTERVAL C (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

INTERVAL D (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

33. 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.

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
				GREEN RIVER	1,047
				BIRD'S NEST	1,363
				MAHOGANY	1,755
				WASATCH	4,280
				MESAVERDE	6,408

35. ADDITIONAL REMARKS (Include plugging procedure)

The first 210' of the surface hole was drilled with a 12 1/4" bit. The remainder of surface hole was drilled with an 11" bit. DQX csg was run from surface to 4926'; LTC csg was run from 4926' to 8697'. Attached is the chronological well history, perforation report & final survey.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) CARA MAHLER TITLE REGULATORY ANALYST  
 SIGNATURE  DATE 7/23/2012

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top - Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining Phone: 801-538-5340  
 1594 West North Temple, Suite 1210  
 Box 145801 Fax: 801-359-3940  
 Salt Lake City, Utah 84114-5801

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-11A1BS - BLUE			Spud Date: 1/27/2012		
Project: UTAH-UINTAH		Site: NBU 1022-2P PAD		Rig Name No: PROPETRO 12/12, H&P 311/311	
Event: DRILLING		Start Date: 1/9/2012		End Date: 2/14/2012	
Active Datum: RKB @5,117.01ft (above Mean Sea Level)			UWI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
1/27/2012	13:00 - 16:00	3.00	MIRU	01	C	P		SKID RIG 10' TO NBU 1022-11A1BS (WELL 2 OF 7). INSTALL DIVERTOR HEAD AND BOWME LINE. BUILD DITCH. SPOT IN RIG. SPOT IN CATWALK AND PIPE RACKS. READY. RIG UP PIT PUMP. RIG UP PUMP. PRIME PUMP. INSPECT RIG.
	16:00 - 16:30	0.50	PRSPD	01	B	P		HELD PRE-SPUD SAFETY MEETING. TALKED ABOUT HORSEPLAY. P/U 8" 1.83 BEND .17 RPG MUD MOTOR (4TH RUN) (SN 775-77428). M/U QD507 12.25" BIT (1ST RUN) (SN 7137066). TRIP IN TO SPUD.
	16:30 - 18:00	1.50	DRLSUR	02	D	P		SPUD 01/27/2012 16:30. DRILL 12.25" HOLE 44'-210' (166', 140'/HR). GPM 400. DH RPM 68 RPM=45, WOB 5-15K. PSI ON/OFF 600/400. UP/DOWN/ ROT 20/20/20 K. DRAG 0 K. CIRC RESERVE W. 8.3# WATER. DRILL DOWN TO 210' W/ 6" COLLARS.
	18:00 - 18:30	0.50	DRLSUR	06	A	P		TRIP OUT TO PICK UP DIRECTIONAL TOOLS/11" BIT.
	18:30 - 22:30	4.00	DRLSUR	08	A	Z		WAITED FOR HYDRAULIC HOSE TO COME FROM TOWN, FIX/REPLACE HYDRAULIC HOSE ON RIG.
	22:30 - 0:00	1.50	DRLSUR	06	A	P		TRIP OUT. LAY DOWN 6" DRILL COLLARS, 12 1/4 BIT. CHECK BIT AND MOTOR. PICK UP Q506 11" BIT (3RD RUN) (SN 7019741) SCRIBE MOTOR. P/U 8" DIRECTIONAL ASSEMBLY AND SCRIBE. INSTALL EM TOOL. TRIP IN TO 210' TO DRILL AHEAD.
1/28/2012	0:00 - 7:00	7.00	DRLSUR	02	D	P		DRILL 11" HOLE ROTATE/SLIDE 210'-920' (710', 101'/HR) GPM 491. DH RPM 86 RPM=55, WOB 15-20K. PSI ON/OFF 1,113/880. UP/DOWN/ ROT 51/47/49 K. DRAG 2 K. CIRC RESERVE W. 8.3# WATER. NO LOSSES.
	7:00 - 12:00	5.00	DRLSUR	06	A	Z		TRIP OUT OF HOLE FOR MUD MOTOR, REPLACE MUD MOTOR, TRIP IN TO DRILL AHEAD.
	12:00 - 0:00	12.00	DRLSUR	02	D	P		DRILL 11" HOLE ROTATE/SLIDE 920'-2,030' (1,120', 93'/HR) GPM 491. DH RPM 86 RPM=55, WOB 15-20K. PSI ON/OFF 1,550/1,330. UP/DOWN/ ROT 71/58/67 K. DRAG 4 K. CIRC RESERVE W. 8.3# WATER. LOST RETURNS @ 1,510'. PUT AIR ON THE HOLE @ 1,800 CFM.
1/29/2012	0:00 - 4:30	4.50	DRLSUR	02	D	P		DRILL 11" HOLE ROTATE/SLIDE 2,030'-2,376' (346', 77'/HR) TD @ 2,376' 01/29/2012 04:30 GPM 491. DH RPM 86 RPM=55, WOB 15-20K. PSI ON/OFF 1,550/1,330. UP/DOWN/ ROT 71/58/67 K. DRAG 4 K. CIRC RESERVE W. 8.3# WATER. LOST RETURNS @ 1,510'. PUT AIR ON THE HOLE @ 1,800 CFM. LAST SURVEY @ 2,315' INC-20.93 AZ-99.63 APPROXIMATELY 8' LEFT 5' HIGH OF THE LINE
	4:30 - 7:30	3.00	DRLSUR	05	A	P		CIRCULATE AND CONDITION HOLE FOR CASING RUN.
	7:30 - 11:30	4.00	DRLSUR	06	D	P		LDDS NO TIGHT WHILE LAYING DOWN DRILL STRING. LAY DOWN DIRECTIONAL TOOLS. PULL MOTOR AND BREAK BIT. LAY DOWN MOTOR.

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

Well: NBU 1022-11A1BS - BLUE

Spud Date: 1/27/2012

Project: UTAH-UINTAH

Site: NBU 1022-2P PAD

Rig Name No: PROPETRO 12/12, H&P 311/311

Event: DRILLING

Start Date: 1/9/2012

End Date: 2/14/2012

Active Datum: RKB @5,117.01ft (above Mean Sea Level)

UVI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	11:30 - 12:30	1.00	DRLSUR	12	A	P		MOVE PIPE RACKS AND CATWALK. PULL DIVERTER HEAD. RIG UP TO RUN CSG. AND MOVE CSG INTO POSITION TO P/U.
	12:30 - 15:30	3.00	DRLSUR	12	C	P		HOLD SAFETY MEETING. RUN 53 JNT'S OF 8-5/8" 28# J-55 LTC CSG. LAND FLOAT SHOE @ 2346.77' KB. LAND BAFFLE PLATE @ 2300.83' KB. MADE FLOAT SHOE UP WITH THREAD LOCK. RAN 5 TOTAL CENTRALIZERS.
	15:30 - 16:00	0.50	DRLSUR	12	B	P		HOLD SAFETY MEETING, RUN 200' OF 1". RIG DOWN RIG MOVE OFF WELL, REBUILD DITCH. RIG UP CEMENT TRUCK, 2" HARD LINES, CEMENT HEAD, LOAD PLUG.
	16:00 - 17:30	1.50	DRLSUR	12	E	P		PRESSURE TEST LINES TO 2000 PSI. PUMP 130 BBLs OF WATER AHEAD. CATCH PSI. PUMP 20 BBLs OF 8.3# GEL WATER AHEAD. MIX AND PUMP (300 SX) 61.4 BBLs OF 15.8# 1.15 YD 5 GAL/SK PREMIUM CEMENT W/ 2% CALC. DROP PLUG ON FLY. DISPLACE W/ 143.4 BBLs OF H2O. NO CIRC THROUGH OUT. FINAL LIFT OF 150 PSI AT 4 BBL/MIN. BUMP PLUG WITH 600 PSI FOR 5 MIN. FLOAT HELD.
	17:30 - 21:00	3.50	DRLSUR	12	E	P		MIX AND PUMP (150 SX) 30.7 BBLs OF SAME TAIL CEMENT W/ 4% CALC. DOWN BACKSIDE, NO CEMENT TO SURFACE. SHUT DOWN AND CLEAN TRUCK.. WAIT 1.5 HOURS MIX AND PUMP (150 SX) 30.7 BBLs OF SAME TAIL CEMENT W/ 4% CALC. DOWN BACKSIDE NO CEMENT TO SURFACE. SHUT DOWN AND CLEAN TRUCK.. WILL HAVE TRIPLE A TOP OUT. RELEASE RIG @ 01/29/2012 21:00.
2/9/2012	4:00 - 5:00	1.00	DRLPRO	01	A	P		SKID RIG FROM NBU 1022-2P4CS
	5:00 - 6:00	1.00	DRLPRO	14	A	P		NIPPLE UP BOP'S AND STRATA STRATA LINES
	6:00 - 10:30	4.50	DRLPRO	15	A	P		HOLD SAFETY MEETING, RIG UP BOP TESTERS PRESS TEST THE BOP, TIW, DART VALVE, BOP VALVES, PIPE RAMS, BLIND RAMS, CHOKE VALVES, KILL LINE AND STRATA LINES TO 250 PSI LOW/5MIN AND 5000 PSI HIGH/10 MIN. TESTED THE ANNULAR T/250 PSI LOW & 2500 PSI HIGH, TEST 8 5/8" CASING T/1500 PSI (OK) RD TESTER. INSTALL WEAR BUSHING
	10:30 - 14:00	3.50	DRLPRO	06	A	P		PICK UP MUD MOTOR, MAKE UP BIT, MWD TOOLS AND BHA. TRIP IN HOLE
	14:00 - 16:00	2.00	DRLPRO	02	D	P		TAG CEMENT @2227' DRILL CEMENT STRINGERS, CEMENT, FLOAT @ 2321' SHOE 2389'
	16:00 - 17:30	1.50	DRLPRO	02	D			DRILLED 2397' T/2541', 144' 1.5 HRS, 96 FPH WOB 10/20K, HOOK LOAD PU 116K 116 132 ROT 98K OFF BOTTOM PUMP PRESS.1700# ON BOTTOM PUMP PRESS. # OFF/ON BOTTOM TORQUE 3 K. MM/ 85 RPM,35 TD/ 120 RPM PUMP 1/2 60/60 SPM, 535 GPM,. DIFF PRESS. 250-500# MUD 8.5 MW 28 VIS DRILL 76' SLIDE 9', 5'LOW 6' LEFT

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-11A1BS - BLUE		Spud Date: 1/27/2012	
Project: UTAH-UINTAH		Site: NBU 1022-2P PAD	Rig Name No: PROPETRO 12/12, H&P 311/311
Event: DRILLING		Start Date: 1/9/2012	End Date: 2/14/2012
Active Datum: RKB @5,117.01ft (above Mean Sea Level)		UWI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	17:30 - 18:00	0.50	DRLPRO	07	A	P		RIG SERVICE
	18:00 - 20:30	2.50	DRLPRO	02	D	P		DRILLED 2541' T/ 2828', 287' 2.5 HRS, 114.8 FPH WOB 10/20K, HOOK LOAD PU 116K 116 132 ROT 98K OFF BOTTOM PUMP PRESS.1700# ON BOTTOM PUMP PRESS. # OFF/ON BOTTOM TORQUE 3 K. MM/ 123 RPM,35 TD/ 158 RPM PUMP 1/2 60/60 SPM, 535 GPM,, DIFF PRESS. 250-500# MUD 8.5 MW 28 VIS DRILL ' SLIDE 287 ', 11' LOW 14' LEFT
	20:30 - 21:30	1.00	DRLPRO	05	C	X		CIRC. HOLE WAIT ON ORDERS, 1.5 MOTOR WILL NOT GIVE THE LIFT TO STAY ON TARGET
	21:30 - 0:00	2.50	DRLPRO	06	A	X		TOOH FOR 1.75 MOTOR
2/10/2012	0:00 - 1:30	1.50	DRLPRO	09	A	X		CUT AND SLIP DRILLING LINE
	1:30 - 4:30	3.00	DRLPRO	21	D	X		WAIT ON NEW MUD MOTOR
	4:30 - 5:30	1.00	DRLPRO	06	A	X		MAKE UP 1.75 .16 LOW SPEED MUD MOTOR, TRIP IN HOLE TO
	5:30 - 7:00	1.50	DRLPRO	06	A	X		
	7:00 - 14:00	7.00	DRLPRO	02	D			DRILLED 2828' T/ 3473', 645' 7 HRS, 92.1 FPH WOB 10/20K, HOOK LOAD PU 116K 116 132 ROT 98K OFF BOTTOM PUMP PRESS.1700# ON BOTTOM PUMP PRESS. # OFF/ON BOTTOM TORQUE 3 K. MM/ 85 RPM,35 TD/ 140 RPM PUMP 1/2 60/60 SPM, 535 GPM,, DIFF PRESS. 250-500# MUD 8.5 MW VIS 27 SLIDE 69'
	14:00 - 14:30	0.50	DRLPRO	22	L	Z		CHANGE OUT STRATA ROTATING BEARINGS AND RUBBER
	14:30 - 17:00	2.50	DRLPRO	02	D	P		DRILLED 3473' T/ 3803', 330' 2.5 HRS, 132 FPH WOB 10/20K, HOOK LOAD PU 116K 116 132 ROT 98K OFF BOTTOM PUMP PRESS.1700# ON BOTTOM PUMP PRESS. # OFF/ON BOTTOM TORQUE 3 K. MM/ 85 RPM,35 TD/ 140 RPM PUMP 1/2 60/60 SPM, 535 GPM,, DIFF PRESS. 250-500# MUD 8.5 MW VIS 27 SLIDE 89.5' DRILL 240.5
	17:00 - 17:30	0.50	DRLPRO	07	A	P		RIG SERVICE

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

Well: NBU 1022-11A1BS - BLUE

Spud Date: 1/27/2012

Project: UTAH-UINTAH

Site: NBU 1022-2P PAD

Rig Name No: PROPETRO 12/12, H&P 311/311

Event: DRILLING

Start Date: 1/9/2012

End Date: 2/14/2012

Active Datum: RKB @5,117.01ft (above Mean Sea Level)

UWI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	17:30 - 0:00	6.50	DRLPRO	02	D	P		DRILLED 3803' T/ 4716', 913' 6.5 HRS, 140.4 FPH WOB 10/20K, HOOK LOAD PU 165K 100 132 ROT 120K OFF BOTTOM PUMP PRESS.1500# ON BOTTOM PUMP PRESS. 1800# OFF/ON BOTTOM TORQUE 3/11 K. MM/ 85 RPM,50 TD/ 140 RPM PUMP 1/2 60/60 SPM, 535 GPM,. DIFF PRESS. 250-500# MUD 8.5 MW VIS 27 DRILL 754 'SLIDE159' 1' LEFT 8' LOW
2/11/2012	0:00 - 12:00	12.00	DRLPRO	02	D	P		DRILLED 4716' T/ 6414', 1698' 12 HRS, 141.5 FPH WOB 20/25K, HOOK LOAD PU 215K SO 109 ROT 153K OFF BOTTOM PUMP PRESS.1700# ON BOTTOM PUMP PRESS. 1800# OFF/ON BOTTOM TORQUE 3/11 K. MM/ 85 RPM,50 TD/ 140 RPM PUMP 1/2 60/60 SPM, 535 GPM,. DIFF PRESS. 250-500# MUD 8.5 MW VIS 27 DRILL 1620 'SLIDE 78 17' WEST 10' NORTH RIG SERVICE
	12:00 - 12:30	0.50	DRLPRO	07	A	P		
	12:30 - 0:00	11.50	DRLPRO					DRILLED 6414' T/ 7548 1134', 11.5 HRS, 98.6 FPH WOB 20/25K, HOOK LOAD PU 258K SO 114 ROT 164K OFF BOTTOM PUMP PRESS.1780# ON BOTTOM PUMP PRESS. 1925# OFF/ON BOTTOM TORQUE 15/16 K. MM/ 85 RPM,50 TD/ 140 RPM PUMP 1/2 60/60 SPM, 535 GPM,. DIFF PRESS. 250-500# MUD 8.5 MW VIS 27 DRILL 1094 'SLIDE 40 16' WEST 10' NORTH
2/12/2012	0:00 - 13:30	13.50	DRLPRO	02	D	P		DRILLED 7548' T/ 8666 1118', 13 HRS, 86 FPH WOB 20/25K, HOOK LOAD PU 258K SO 114 ROT 164K OFF BOTTOM PUMP PRESS.1780# ON BOTTOM PUMP PRESS. 1925# OFF/ON BOTTOM TORQUE 15/16 K. MM/ 85 RPM,50 TD/ 140 RPM PUMP 1/2 60/60 SPM, 535 GPM,. DIFF PRESS. 250-500# MUD 8.5 MW VIS 27 DRILL 1094 'SLIDE 40 10' WEST 6' NORTH
	13:30 - 15:30	2.00	DRLPRO	05	G	X		CIRC. OUT GAS, AND DISPLACE WATER W/ 11.7 MUD, 38 BBL GAIN 70' FLARE, CIRC THUR STRATA W 900 ANNULAR PRESS.

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

Well: NBU 1022-11A1BS - BLUE

Spud Date: 1/27/2012

Project: UTAH-UINTAH

Site: NBU 1022-2P PAD

Rig Name No: PROPETRO 12/12, H&P 311/311

Event: DRILLING

Start Date: 1/9/2012

End Date: 2/14/2012

Active Datum: RKB @5,117.01ft (above Mean Sea Level)

UWI: SW/SE/010/S/22/E/210/026/PM/S/221/E/01352/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	15:30 - 16:30	1.00	DRLPRO	02		D		DRILLED 8666' T/ 8712 TD, 46', 13 HRS, 86 FPH WOB 20/25K, HOOK LOAD PU 262K SO 133 ROT 180K OFF BOTTOM PUMP PRESS.2100# ON BOTTOM PUMP PRESS. 2400# OFF/ON BOTTOM TORQUE 12/18 K. MM/ 85 RPM,50 TD/ 140 RPM PUMP 1/2 60/60 SPM, 535 GPM., DIFF PRESS. 250-500# MUD 11.7 MW VIS 40 4' WEST 3' NORTH
	16:30 - 17:30	1.00	DRLPRO	05	C	P		CIRC. COND. HOLE FOR WIPER TRIP
	17:30 - 18:00	0.50	DRLPRO	05	J	P		CHECK FOR FLOW, OK
	18:00 - 0:00	6.00	DRLPRO	06	E	P		TRIP TO SHOE AND BACK TO BOTTOM
2/13/2012	0:00 - 1:30	1.50	DRLPRO	05	C	P		CIRC COND HOLE FOR LOGS CHECK FOR FLOW
	1:30 - 6:00	4.50	DRLPRO	06	B	P		TRIP OUT FOR OPEN HOLE LOGS
	6:00 - 11:00	5.00	DRLPRO					SAFETY MEETING RU HALLIBUTON AND RUN INTO BOTTOM 8712 W/ TRIPLE COMBO OPEN HOLE LOGS
	11:00 - 21:30	10.50	DRLPRO					PULL WEAR BUSHING AND SAFETY MEETING, RIG UP CASING CREW. RUN FLOAT SHOE,SHOE JT FLOAT COLLAR & 55 JNTS 4 1/2" I-80 11.6# LT&C ,1MARKER JT.33 JTS LT&C CASING X OVER F/LT&C T/ DQX & 115 JNTS 4 1/2" I-80 11.6# DQX CASING W/THE SHOE SET @ 8697' & THE FLOAT COLLAR @ 8653' (TORQUE TURN DQX CSG) WASATCH X-OVER JNT @ 4925' & THE MESA VERDE MARKER JNT @ 6378, RD CASING CREWS
	21:30 - 0:00	2.50	DRLPRO	05	D	P		CIRC. OUT GAS FOR CEMENT JOB
2/14/2012	0:00 - 5:00	5.00						HOLD SAFTEY MEETING,RU BJ CEMENTERS,PRESSURE TEST LINES TO 5000 PSI FOR 5 MIN. ,PUMPED 25 BBL PRE FLUSH 8.4 PPG H2O, LEAD CEMENT,12.5 PPG @2.02 CU/FT SK YIELD ,485 SKS,175 BBLS, TAIL CEMENT 14.3 PPG @ 1.31 CU/FT SK YIELD,1286 SKS,300 BBLS,DISPLACED 134 BBLS H2O W/CLAY CARE, FINAL LIFT PRESS 2820 PSI, BUMP PLUG T/3500 PSI HELD FOR 5 MIN BLEED OFF FLOAT HELD, 8 BBLS CEMENT TO SURF,EST. TOP OF TAIL 3610',R/D BJ CEMENTING EQUIP,FLUSH OUT BOPS & FLOWLINE NIPPLE DOWN BOPE,SET 4 1/2" CASING SLIPS W/100K ON SLIPS, CUT OFF CASING, CLEAN MUD TANKS, RIG RELEASED 06:00
	5:00 - 6:00	1.00						SKID TO THE NBU 1022-11A1CS

## 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	NBU 1022-11A1BS - BLUE	Wellbore No.	OH
Well Name	NBU 1022-11A1BS	Wellbore Name	NBU 1022-11A1BS
Report No.	1	Report Date	4/23/2012
Project	UTAH-UINTAH	Site	NBU 1022-2P PAD
Rig Name/No.		Event	COMPLETION
Start Date	5/9/2012	End Date	5/9/2012
Spud Date	1/27/2012	Active Datum	RKB @5,117.01ft (above Mean Sea Level)
UWI	SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0		

### 1.3 General

Contractor		Job Method	PERFORATE	Supervisor	
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

### 1.4 Initial Conditions

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

### 1.5 Summary

Gross Interval	4,922.0 (ft)-8,518.0 (ft)	Start Date/Time	4/23/2012 12:00AM
No. of Intervals	41	End Date/Time	4/23/2012 12:00AM
Total Shots	211	Net Perforation Interval	64.00 (ft)
Avg Shot Density	3.30 (shot/ft)	Final Surface Pressure	
		Final Press Date	

## 2 Intervals

### 2.1 Perforated Interval

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top (ft)	MD Base (ft)	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
4/23/2012 12:00AM	WASATCH/			4,922.0	4,928.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top (ft)	MD Base (ft)	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
4/23/2012 12:00AM	WASATCH/			5,484.0	5,490.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	WASATCH/			5,920.0	5,926.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,600.0	6,602.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,673.0	6,674.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,702.0	6,704.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,768.0	6,771.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,860.0	6,861.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,888.0	6,889.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,942.0	6,943.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			6,987.0	6,988.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,040.0	7,042.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,097.0	7,098.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,112.0	7,113.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,302.0	7,303.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,328.0	7,329.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,464.0	7,465.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,504.0	7,505.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,536.0	7,537.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,552.0	7,553.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,562.0	7,563.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,664.0	7,665.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top (ft)	MD Base (ft)	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
4/23/2012 12:00AM	MESAVERDE/			7,730.0	7,731.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,764.0	7,766.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,856.0	7,858.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,876.0	7,877.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,927.0	7,928.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,942.0	7,943.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,950.0	7,951.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			7,970.0	7,971.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,004.0	8,005.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,096.0	8,097.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,150.0	8,151.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,176.0	8,177.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,230.0	8,231.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,260.0	8,261.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,278.0	8,279.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,296.0	8,297.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,412.0	8,414.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,490.0	8,491.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
4/23/2012 12:00AM	MESAVERDE/			8,517.0	8,518.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

3 Plots

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-11A1BS - BLUE		Spud Date: 1/27/2012	
Project: UTAH-UINTAH		Site: NBU 1022-2P PAD	Rig Name No: ROYAL WELL SERVICE 2/2, ROYAL WELL SERVICE 2/2
Event: COMPLETION		Start Date: 5/9/2012	End Date: 5/9/2012
Active Datum: RKB @5,117.01ft (above Mean Sea Level)		UWI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
1/27/2012	-							
4/19/2012	11:00 - 11:12	0.20	COMP	48		P		HSM & JSA W/B&C QUICK TEST.
	11:12 - 12:21	1.15	COMP	33	E	P		WHP 0 PSI. FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1031 PSI. HELD FOR 15 MIN LOST 13 PSI. PSI TEST T/ 3525 PSI. HELD FOR 15 MIN LOST 25 PSI. 1ST PSI TEST T/ 7037 PSI. HELD FOR 30 MIN LOST 56 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI. MOVE T/ NEXT WELL. SWIFN
4/24/2012	15:30 - 15:45	0.25	COMP	48		P		HSM & JSA W/CASED HOLE SOLUTIONS.
	17:40 - 17:40	0.00	COMP	37	B	P		WHP 0 PSI - MIRU CASED HOLE SOLUTIONS. PERF STG 1) P/U 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 90 DEG PHSG. PERF M.V. AS PER PERF DESIGN. POOH & HANG BACK LUB. SWI - SDFN.
4/25/2012	6:45 - 7:00	0.25	COMP	48		P		HSM & JSA W/SUPERIOR WELL SERVICE & CASED HOLE SOLUTIONS
	10:13 - 10:47	0.57	COMP	37	B	P		WHP 0 PSI - MIRU SUPERIOR WELL SERVICE. PT SURFACD EQUIP TO 8500 PSI. 265# LOSS IN 15 MIN. FRAC STG 1) WHP 1775 PSI. BRK DWN PERF 4.5 BPM @ 3629 PSI. ISIP 2569 PSI. FG. 0.75. EST INJ RATE 49.7 BPM @ 4924 PSI. 24/24 PERFS OPEN - 100%. MP 6486 PSI, MR 50.4 BPM, AP 4885 PSI, AR 49.5 BPM. ISIP 2583 PSI, FG. 0.75, NPI 14 PSI. PMP'D 30/50 SND. X-OVER FOR WL.
	10:50 - 11:40	0.83	COMP	37	B	P		PERF STG 2) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 120 DEG PHSG. RIH SET CBP @ 8207'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC
	12:00 - 12:20	0.33	COMP	36				FRAC STG 2) WHP 2350 PSI. BRK DWN PERF 4.7 BPM @ 3911 PSI. ISIP 2705 PSI. FG. 0.77. EST INJ RATE 52.1 BPM @ 5111 PSI. 24/24 PERFS OPEN - 100%. MP 5596 PSI, MR 52.5 BPM, AP 4954 PSI, AR 52 BPM. ISIP 2540 PSI, FG. 0.75, NPI (-165) PSI. PMP'D 30/50 SND. X-OVER FOR WL
	12:25 - 13:15	0.83	COMP	37	B	P		PERF STG 3) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 120 DEG PHSG. RIH SET CBP @ 7907'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-11A1BS - BLUE		Spud Date: 1/27/2012	
Project: UTAH-UINTAH		Site: NBU 1022-2P PAD	Rig Name No: ROYAL WELL SERVICE 2/2, ROYAL WELL SERVICE 2/2
Event: COMPLETION		Start Date: 5/9/2012	End Date: 5/9/2012
Active Datum: RKB @5,117.01ft (above Mean Sea Level)		UWM: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	15:19 - 15:36	0.28	COMP	36	E	P		FRAC STG 3) WHP 380 PSI. BRK DWN PERF 4.7 BPM @ 5179 PSI. ISIP 2315 PSI. FG. 0.74. EST INJ RATE 51.9 BPM @ 5231 PSI. 21/21 PERFS OPEN - 100%. MP 6179 PSI, MR 52.7 BPM, AP 5155 PSI, AR 52.1 BPM. ISIP 2390 PSI, FG. 0.75, NPI 75 PSI. PMP'D 30/50 SND. X-OVER FOR WL.
	15:41 - 16:31	0.83	COMP	37	B	P		PERF STG 4) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 90 & 120 DEG PHSG. RIH SET CBP @ 7593'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC
	17:06 - 17:42	0.60	COMP	36	E	P		FRAC STG 4) WHP 1100 PSI. BRK DWN PERF 2.9 BPM @ 6435 PSI. ISIP 1760 PSI. FG. 0.68. EST INJ RATE 47.5 BPM @ 5503 PSI. 16/22 PERFS OPEN - 74%. MP 6764 PSI, MR 51.4 BPM, AP 4590 PSI, AR 50.5 BPM. ISIP 2233 PSI, FG. 0.74, NPI 473 PSI. PMP'D 30/50 SND. X-OVER FOR WL.
	17:45 - 18:20	0.58	COMP	37	B	P		PERF STG 5) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 120 DEG PHSG. RIH SET CBP @ 7143'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC SW - SDFN.
4/26/2012	6:45 - 6:54	0.15	COMP	48		P		HSM & JSA W/SUPERIOR WELL SERVICE & CASEDHOLE SOLUTIONS
	6:54 - 7:13	0.32	COMP	36	E	P		FRAC STG 5) WHP 912 PSI. BRK DWN PERF 4.2 BPM @ 2876 PSI. ISIP 1885 PSI. FG. 0.71. EST INJ RATE 49.5 BPM @ 4811 PSI. 20/24 PERFS OPEN - 100%. MP 5418 PSI, MR 50 BPM, AP 4864 PSI, AR 49.7 BPM. ISIP 2223 PSI, FG. 0.76, NPI 338 PSI. PUMPED 30/50 SND. X-OVER FOR WL.
	7:18 - 8:08	0.83	COMP	37	B	P		PERF STG 6) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 120 DEG PHSG. RIH SET CBP @ 6801'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC
	8:17 - 9:19	1.03	COMP	36	E	P		FRAC STG 6) WHP 922 PSI. BRK DWN PERF 2.1 BPM @ 1720 PSI. ISIP 697 PSI. FG. 0.54. EST INJ RATE 52.3 BPM @ 3298 PSI. 24/24 PERFS OPEN - 100%. ((CALLED DNVR ON FG - PATRICIA - CONT. FRAC)) MP 5580 PSI, MR 54.3 BPM, AP 4433 PSI, AR 53.9 BPM. ISIP 2036 PSI, FG. 0.74, NPI 1339 PSI. PMP'D 30/50 SND. X-OVER FOR WL. ((RAN FR @ 0.25/M))
	9:24 - 10:14	0.83	COMP	37	B	P		PERF STG 7) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 90 DEG PHSG. RIH SET CBP @ 5956'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-11A1BS - BLUE

Spud Date: 1/27/2012

Project: UTAH-UINTAH

Site: NBU 1022-2P PAD

Rig Name No: ROYAL WELL SERVICE 2/2, ROYAL WELL SERVICE 2/2

Event: COMPLETION

Start Date: 5/9/2012

End Date: 5/9/2012

Active Datum: RKB @5,117.01ft (above Mean Sea Level)

UWI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	10:20 - 10:41	0.35	COMP	36	E	P		FRAC STG 7) WHP 305 PSI. BRK DWN PERF 3.8 BPM @ 2280 PSI. ISIP 606 PSI. FG. 0.54. EST INJ RATE 52.1 BPM @ 3445 PSI. 21/24 PERFS OPEN - 89%. ((CALLED DNVR ON FG - PATRICIA - CONT. FRAC)) MP 4626 PSI, MR 52.6 BPM, AP 3449 PSI, AR 52.3 BPM. ISIP 1629 PSI, FG. 0.71, NPI 1023 PSI. PMP'D 30/50 SND. X-OVER FOR WL. ((RAN FR @ 0.25/M))
	10:45 - 11:35	0.83	COMP	37	B	P		PERF STG 8) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 90 DEG PHSG. RIH SET CBP @ 5520'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC
	12:03 - 12:18	0.25	COMP	36	E	P		FRAC STG 8) WHP 281 PSI. BRK DWN PERF 3.6 BPM @ 2223 PSI. ISIP 668 PSI. FG. 0.56. EST INJ RATE 52.3 BPM @ 3025 PSI. 24/24 PERFS OPEN - 100%. MP 4432 PSI, MR 52.7 BPM, AP 3392 PSI, AR 52.4 BPM. ISIP 1568 PSI, FG. 0.72, NPI 900 PSI. PMP'D 30/50 SND. X-OVER FOR WL. ((RAN FR @ 0.25/M))
	12:23 - 13:13	0.83	COMP	37	B	P		PERF STG 9) P/U HALCO 8K CBP & 3 1/8" EXP GNS, 23 GRM, 0.36 HOLE, 90 DEG PHSG. RIH SET CBP @ 4958'. PERF MESA VERDE AS PER PERF DESIGN. POOH & HANG BACK LUB. X-OVER FOR FRAC
	13:48 - 14:13	0.42	COMP	36	E	P		FRAC STG 9) WHP 190 PSI. BRK DWN PERF 3.1 BPM @ 1990 PSI. ISIP 331 PSI. FG. 0.51. EST INJ RATE 54.4 BPM @ 3108 PSI. 22/24 PERFS OPEN - 87%. ((CALLED DNVR ON FG - PATRICIA - CONT. FRAC)) MP 3316 PSI, MR 54.6 BPM, AP 2735 PSI, AR 51.4 BPM. ISIP 1629 PSI, FG. 0.77, NPI 1298 PSI. PMP'D 30/50 SND. X-OVER FOR WL. ((RAN FR @ 0.25/M)) FINISH FRACING THIS WELL.
	14:18 - 15:08	0.83	COMP	34	I	P		TOTAL SAND = 211,224 LBS TOTAL CLFL = 9491 BBL KILL PLUG) RIH W/HALCO 8K CBP & SETL @ 4872'. POOH & R/D WIRELINE. SWI - SDFN.
5/9/2012	6:45 - 7:00	0.25	COMP	48		P		HSM, JSA
	7:00 - 9:20	2.33	COMP	31	I	P		SPOT TBG TRAILER, P/U TBG, REMOVE THREAD PROTECTORS, TALLY & DRIFT TBG TO KILL PLUG
	9:20 - 9:50	0.50	COMP	47	B	P		PRESS TEST BOP'S TO 3,000 PSI FOR 15 MIN, LOST 0 PSI

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-11A1BS - BLUE

Spud Date: 1/27/2012

Project: UTAH-UINTAH

Site: NBU 1022-2P PAD

Rig Name No: ROYAL WELL SERVICE 2/2, ROYAL WELL SERVICE 2/2

Event: COMPLETION

Start Date: 5/9/2012

End Date: 5/9/2012

Active Datum: RKB @5,117.01ft (above Mean Sea Level)

UWI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	9:50 - 18:00	8.17	COMP	44	C	P		MIRU PWR SWWL & NEW WASHINGTON RUBBER
								C/O 18' SAND, TAG 1ST PLUG @ 4,879' DRL PLUG IN 3 MIN. 0 PSI INCREASE RIH, CSG PRESS 0 PSI.
								C/O 23' SAND, TAG 2ND PLUG @ 4,955' DRL PLUG IN 3 MIN. 0 PSI INCREASE RIH, CSG PRESS 0 PSI.
								C/O 18' SAND, TAG 3RD PLUG @ 5,523' DRL PLUG IN 3 MIN. 0 PSI INCREASE RIH, CSG PRESS 0 PSI.
								C/O 22' SAND, TAG 4TH PLUG @ 5,961' DRL PLUG IN 4 MIN. 0 PSI INCREASE RIH, CSG PRESS 0 PSI.
								C/O 59' SAND, TAG 5TH PLUG @ 6,803' DRL PLUG IN 3 MIN. 0 PSI INCREASE RIH, CSG PRESS 0 PSI.
								C/O 34' SAND, TAG 6TH PLUG @ 7,147' DRL PLUG IN 3 MIN. 500 PSI INCREASE RIH, CSG PRESS 300 PSI.
								C/O 25' SAND, TAG 7TH PLUG @ 7,603' DRL PLUG IN 5 MIN. 0 PSI INCREASE RIH, CSG PRESS 500 PSI.
								C/O 30' SAND, TAG 8TH PLUG @ 7,902' DRL PLUG IN 4 MIN. 0 PSI INCREASE RIH, CSG PRESS 650 PSI.
								C/O 32' SAND, TAG 9TH PLUG @ 8,201' DRL PLUG IN 5 MIN. 0 PSI INCREASE RIH, CSG PRESS 650 PSI.
								NOTE: FIRST 3 ZONES NOT MUCH GAS MOSTLY WATER, LAST 6 ZONES GOOD GAS
								PBTD @ 8,652', BTM PERF @ 8,518', RIH TAG @ 8,559', C/O TO 8,652, 134' PAST BTM PERF W/ 272 JTS 2 3/8" L-80 TBG, LD 24 JTS, PU & STRIP IN TBG HANGER & LAND TBG W/ 248 JTS 2 3/8" L-80, EOT 7890.55'.
								RD POWER SWIVEL, FLOOR & TBG EQUIP, ND BOPS, NU WH, DROP BALL TO SHEAR OFF BIT W/ 1000 PSI, LET BIT FALL FOR 20 MIN.
								TURN OVER TO FLOW BACK CREW, RD & MOVE TO NEXT WELL ON PAD.
								KB= 25' 4 1/16" WEATHERFORD HANGER= .83' TBG DELIVERED 283 JTS 248 JTS 2 3/8" L-80 = 7862.52' TBG USED 248 JTS POBS= 2.20' TBG RETURNED 34 JTS EOT @7890.55'

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-11A1BS - BLUE

Spud Date: 1/27/2012

Project: UTAH-UINTAH

Site: NBU 1022-2P PAD

Rig Name No: ROYAL WELL SERVICE 2/2, ROYAL WELL SERVICE 2/2

Event: COMPLETION

Start Date: 5/9/2012

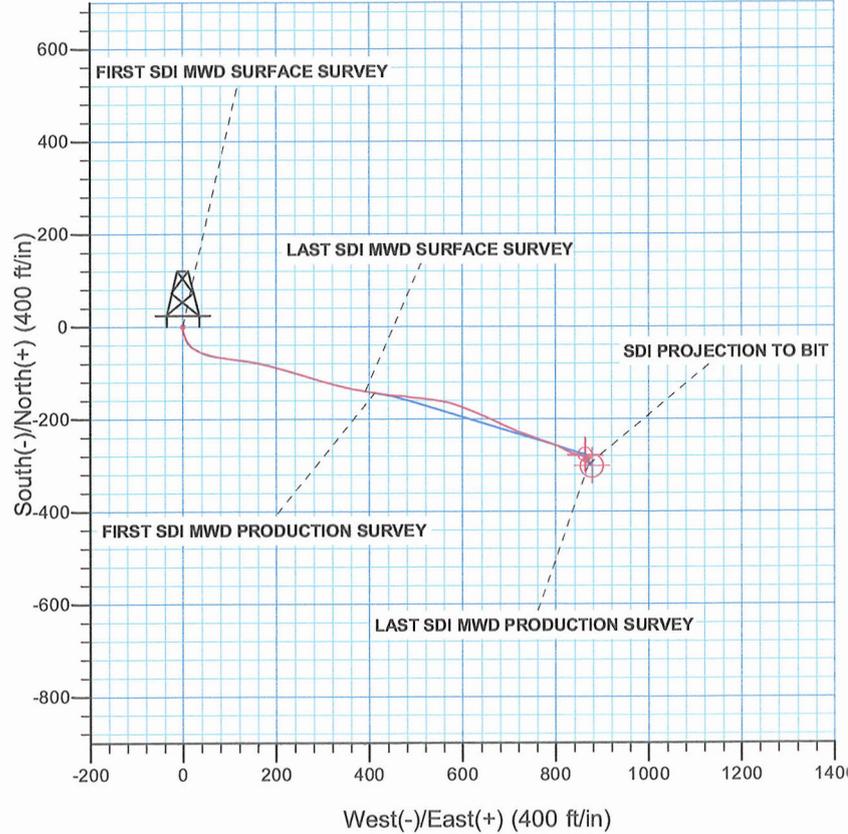
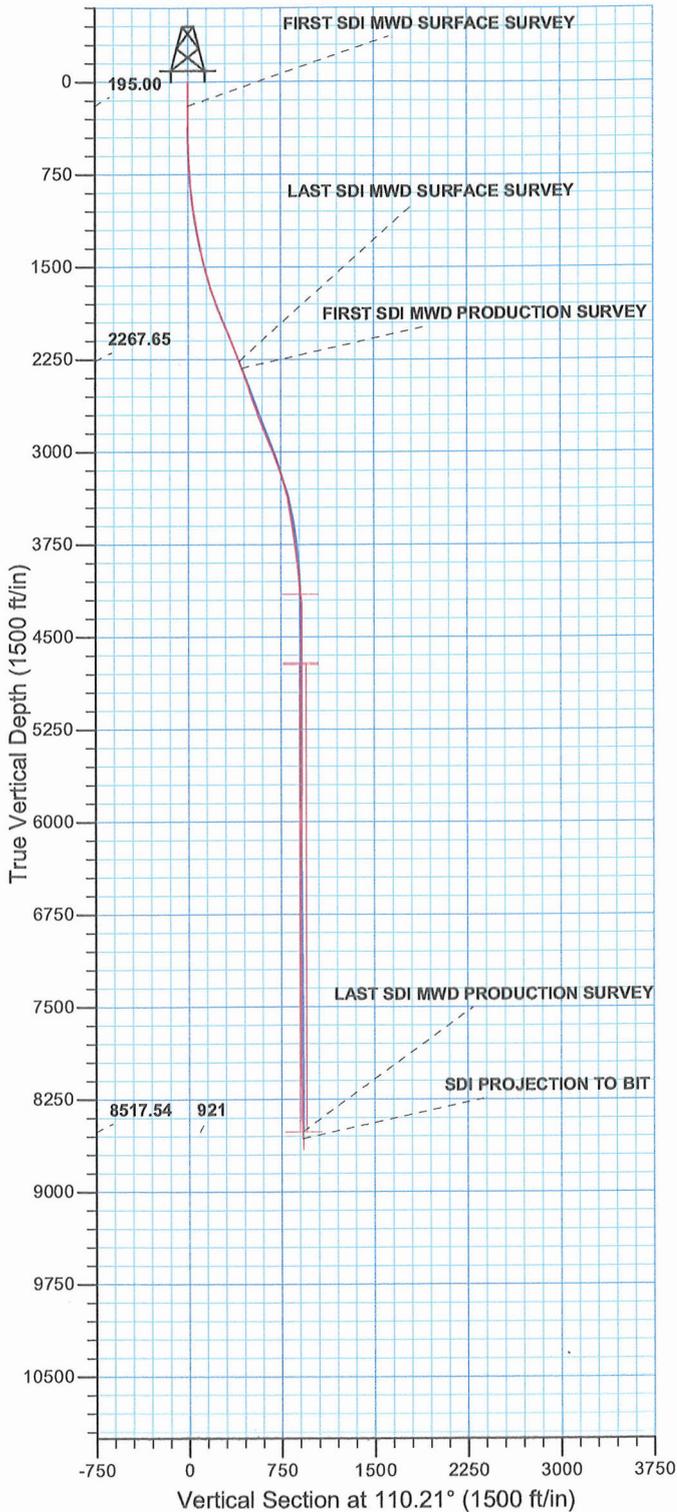
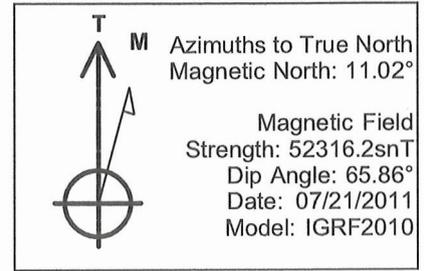
End Date: 5/9/2012

Active Datum: RKB @5,117.01ft (above Mean Sea Level)

UWI: SW/SE/0/10/S/22/E/2/0/0/26/PM/S/221/E/0/1352/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
								CRIPMED JTS 1
								TWTR= 9,491 BBLS TWR= 1,000 BBLS TWLTR= 8491 BBLS
	21:30 - 22:00	0.50	COMP	50				WELL TURNED TO SALES @ 21:30 HR ON 5/10/2012- 3000 MCFD, 1440 BWPD, FCP 2600#, FTP 2600#, 20/64"
5/10/2012	-							
5/12/2012	7:00 -			50				WELL IP'D ON 5/12/12 - 3083 MCFD, 0 BOPD, 411 BWPD, CP 2135, FTP 1620#, CK 20/64, LP 132#, 24 HRS

WELL DETAILS: NBU 1022-11A1BS					
GL 5092' & KB 21' @ 5113.00ft (HP 311)					
+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14519620.40	2088198.42	39.971339	-109.401817



PROJECT DETAILS: Uintah County, UT UTM12
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 - Western US
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 2 T10S R22E
System Datum: Mean Sea Level

Design: OH (NBU 1022-11A1BS/OH)
Created By: Gabe Kendall Date: 10:03, March 16 2012



# Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12  
NBU 1022-2P PAD  
NBU 1022-11A1BS

OH

Design: OH

## Standard Survey Report

16 March, 2012



<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-11A1BS
<b>Project:</b>	Uintah County, UT UTM12	<b>TVD Reference:</b>	GL 5092' & KB 21' @ 5113.00ft (HP 311)
<b>Site:</b>	NBU 1022-2P PAD	<b>MD Reference:</b>	GL 5092' & KB 21' @ 5113.00ft (HP 311)
<b>Well:</b>	NBU 1022-11A1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Uintah County, UT UTM12		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 - Western US		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	NBU 1022-2P PAD, SECTION 2 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,519,620.58 usft	<b>Latitude:</b>	39.971339
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,088,208.52 usft	<b>Longitude:</b>	-109.401781
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.03 °

<b>Well</b>	NBU 1022-11A1BS, 221 FSL 1352 FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,519,620.41 usft	<b>Latitude:</b>	39.971339
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,088,198.42 usft	<b>Longitude:</b>	-109.401817
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,092.00 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	07/21/11	11.02	65.86	52,316

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	110.21	

<b>Survey Program</b>	<b>Date</b>	03/16/12			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
21.00	2,332.00	Survey #1 SDI MWD SURFACE (OH)	MWD SDI	MWD - Standard ver 1.0.1	
2,391.00	8,712.00	Survey #2 SDI MWD PRODUCTION (OH)	MWD SDI	MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21.00	0.00	0.00	21.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
195.00	0.09	292.03	195.00	0.05	-0.13	-0.14	0.05	0.05	0.05	0.00
<b>FIRST SDI MWD SURFACE SURVEY</b>										
281.00	0.62	259.85	281.00	-0.01	-0.65	-0.61	0.63	0.62	0.62	-37.42
362.00	0.70	185.77	361.99	-0.57	-1.13	-0.86	0.98	0.10	0.10	-91.46
452.00	2.29	170.56	451.96	-2.90	-0.89	0.17	1.81	1.77	1.77	-16.90
542.00	3.69	169.95	541.84	-7.52	-0.09	2.52	1.56	1.56	1.56	-0.68
632.00	4.92	157.73	631.58	-13.95	1.88	6.58	1.70	1.37	1.37	-13.58
722.00	5.45	160.98	721.21	-21.56	4.74	11.89	0.67	0.59	0.59	3.61

**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT UTM12  
**Site:** NBU 1022-2P PAD  
**Well:** NBU 1022-11A1BS  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Well NBU 1022-11A1BS  
**TVD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**MD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
812.00	5.72	155.00	810.79	-29.66	8.02	17.78	0.71	0.30	-6.64
902.00	7.18	141.30	900.22	-38.12	13.44	25.78	2.35	1.62	-15.22
992.00	8.09	123.80	989.43	-46.03	22.22	36.75	2.76	1.01	-19.44
1,082.00	8.87	114.73	1,078.45	-52.46	33.78	49.83	1.72	0.87	-10.08
1,172.00	9.36	109.20	1,167.32	-57.77	47.00	64.06	1.11	0.54	-6.14
1,262.00	10.55	105.17	1,255.96	-62.33	61.86	79.59	1.53	1.32	-4.48
1,352.00	12.22	99.90	1,344.19	-66.12	79.20	97.17	2.18	1.86	-5.86
1,442.00	13.01	97.79	1,432.02	-69.14	98.62	116.43	1.02	0.88	-2.34
1,532.00	14.16	96.73	1,519.50	-71.80	119.59	137.03	1.31	1.28	-1.18
1,622.00	16.44	100.42	1,606.31	-75.39	143.05	160.29	2.75	2.53	4.10
1,712.00	18.03	101.92	1,692.26	-80.57	169.21	186.62	1.83	1.77	1.67
1,802.00	20.22	105.08	1,777.29	-87.50	197.85	215.90	2.69	2.43	3.51
1,892.00	21.81	107.46	1,861.30	-96.56	228.82	248.09	2.00	1.77	2.64
1,982.00	23.21	107.02	1,944.45	-106.77	261.73	282.50	1.57	1.56	-0.49
2,072.00	23.21	105.35	2,027.16	-116.65	295.79	317.88	0.73	0.00	-1.86
2,162.00	22.77	104.28	2,110.01	-125.65	329.77	352.88	0.67	-0.49	-1.19
2,252.00	22.07	102.89	2,193.21	-133.71	363.13	386.97	0.98	-0.78	-1.54
2,332.00	20.93	99.63	2,267.65	-139.46	391.87	415.92	2.06	-1.43	-4.08
<b>LAST SDI MWD SURFACE SURVEY</b>									
2,391.00	20.49	97.87	2,322.83	-142.63	412.49	436.37	1.29	-0.75	-2.98
<b>FIRST SDI MWD PRODUCTION SURVEY</b>									
2,486.00	19.29	96.94	2,412.17	-146.81	444.54	467.89	1.31	-1.26	-0.98
2,580.00	18.82	96.11	2,501.01	-150.30	475.03	497.70	0.58	-0.50	-0.88
2,674.00	20.14	97.25	2,589.63	-153.95	506.16	528.18	1.46	1.40	1.21
2,769.00	20.31	97.52	2,678.77	-158.17	538.73	560.20	0.20	0.18	0.28
2,863.00	22.07	104.29	2,766.43	-164.67	572.03	593.69	3.20	1.87	7.20
2,957.00	21.98	113.16	2,853.59	-175.95	605.32	628.83	3.54	-0.10	9.44
3,052.00	21.28	114.57	2,941.90	-190.11	637.35	663.78	0.92	-0.74	1.48
3,146.00	22.07	114.74	3,029.26	-204.59	668.90	698.39	0.84	0.84	0.18
3,241.00	19.17	112.90	3,118.16	-218.14	699.48	731.77	3.13	-3.05	-1.94
3,335.00	16.27	111.32	3,207.69	-228.93	725.97	760.36	3.13	-3.09	-1.68
3,429.00	15.83	110.70	3,298.03	-238.25	750.23	786.35	0.50	-0.47	-0.66
3,524.00	11.96	111.23	3,390.23	-246.40	771.54	809.15	4.08	-4.07	0.56
3,618.00	9.06	105.87	3,482.65	-251.95	787.74	826.28	3.25	-3.09	-5.70
3,712.00	8.71	115.89	3,575.52	-257.08	801.26	840.74	1.69	-0.37	10.66
3,807.00	9.15	116.41	3,669.37	-263.58	814.50	855.41	0.47	0.46	0.55
3,901.00	7.21	116.15	3,762.41	-269.51	826.49	868.70	2.06	-2.06	-0.28
3,996.00	7.30	108.77	3,856.65	-274.08	837.55	880.67	0.98	0.09	-7.77
4,090.00	5.54	106.83	3,950.06	-277.31	847.55	891.17	1.89	-1.87	-2.06
4,185.00	4.48	109.38	4,044.70	-279.87	855.44	899.46	1.14	-1.12	2.68
4,279.00	4.91	111.76	4,138.38	-282.58	862.64	907.15	0.50	0.46	2.53
4,373.00	3.52	109.91	4,232.12	-285.06	869.09	914.06	1.49	-1.48	-1.97
4,468.00	1.14	78.09	4,327.04	-285.85	872.76	917.77	2.76	-2.51	-33.49

Company: Kerr McGee Oil and Gas Onshore LP  
 Project: Uintah County, UT UTM12  
 Site: NBU 1022-2P PAD  
 Well: NBU 1022-11A1BS  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well NBU 1022-11A1BS  
 TVD Reference: GL 5092' & KB 21' @ 5113.00ft (HP 311)  
 MD Reference: GL 5092' & KB 21' @ 5113.00ft (HP 311)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.1 Single User Db

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)
4,562.00	1.73	335.73	4,421.02	-284.37	873.09	917.57	2.41	0.63	-108.89
4,666.00	1.41	337.37	4,514.99	-282.01	872.06	915.79	0.34	-0.34	1.74
4,761.00	0.00	5.06	4,609.98	-280.93	871.61	915.00	1.48	-1.48	0.00
4,845.00	0.09	230.50	4,703.98	-280.97	871.55	914.96	0.10	0.10	0.00
4,939.00	0.62	171.96	4,797.98	-281.52	871.57	915.16	0.62	0.56	-62.28
5,034.00	0.35	151.48	4,892.97	-282.29	871.78	915.62	0.33	-0.28	-21.56
5,128.00	0.70	159.92	4,986.97	-283.08	872.11	916.21	0.38	0.37	8.98
5,222.00	0.62	151.40	5,080.96	-284.07	872.55	916.96	0.13	-0.09	-9.06
5,317.00	1.06	171.96	5,175.95	-285.39	872.92	917.77	0.55	0.46	21.64
5,411.00	0.79	218.37	5,269.94	-286.76	872.64	917.98	0.82	-0.29	49.37
5,505.00	0.88	319.27	5,363.94	-286.72	871.77	917.14	1.37	0.10	107.34
5,600.00	0.53	318.83	5,458.93	-285.83	871.00	916.12	0.37	-0.37	-0.46
5,694.00	0.18	204.39	5,552.93	-285.64	870.66	915.73	0.67	-0.37	-121.74
5,789.00	0.35	193.49	5,647.93	-286.06	870.53	915.75	0.19	0.18	-11.47
5,883.00	0.79	175.57	5,741.92	-286.98	870.51	916.06	0.50	0.47	-19.06
5,977.00	1.06	178.47	5,835.91	-288.50	870.58	916.65	0.29	0.29	3.09
6,072.00	1.06	174.07	5,930.89	-290.25	870.70	917.36	0.09	0.00	-4.63
6,166.00	1.58	305.47	6,024.88	-290.37	869.73	916.49	2.57	0.55	139.79
6,260.00	1.41	295.27	6,118.85	-289.12	867.63	914.09	0.34	-0.18	-10.85
6,355.00	1.14	289.38	6,213.82	-288.31	865.68	911.98	0.32	-0.28	-6.20
6,449.00	0.97	276.55	6,307.81	-287.91	864.01	910.27	0.31	-0.18	-13.65
6,543.00	0.79	257.13	6,401.80	-287.96	862.59	908.96	0.37	-0.19	-20.66
6,638.00	0.79	227.95	6,496.79	-288.54	861.46	908.10	0.42	0.00	-30.72
6,732.00	0.79	204.39	6,590.78	-289.57	860.71	907.75	0.34	0.00	-25.06
6,827.00	0.96	186.13	6,685.77	-290.96	860.36	907.90	0.34	0.18	-19.22
6,921.00	1.14	353.02	6,779.76	-290.81	860.16	907.67	2.22	0.19	177.54
7,015.00	0.18	284.37	6,873.76	-289.85	859.90	907.09	1.16	-1.02	-73.03
7,110.00	0.53	194.02	6,968.76	-290.24	859.65	906.99	0.59	0.37	-95.11
7,204.00	0.62	81.61	7,062.75	-290.58	860.05	907.48	1.02	0.10	-119.59
7,298.00	0.79	129.95	7,156.75	-290.92	861.05	908.54	0.64	0.18	51.43
7,393.00	0.88	158.87	7,251.74	-292.03	861.82	909.64	0.45	0.09	30.44
7,487.00	1.40	331.20	7,345.73	-291.69	861.52	909.25	2.42	0.55	183.33
7,581.00	0.88	320.67	7,439.71	-290.13	860.51	907.76	0.59	-0.55	-11.20
7,676.00	0.88	293.43	7,534.70	-289.27	859.38	906.40	0.44	0.00	-28.67
7,770.00	0.54	74.48	7,628.70	-288.87	859.14	906.04	1.43	-0.36	150.05
7,864.00	0.68	65.82	7,722.69	-288.52	860.08	906.80	0.18	0.15	-9.21
7,959.00	0.44	88.64	7,817.69	-288.28	860.96	907.54	0.34	-0.25	24.02
8,053.00	0.79	110.35	7,911.68	-288.50	861.93	908.52	0.44	0.37	23.10
8,147.00	1.06	110.61	8,005.67	-289.03	863.35	910.04	0.29	0.29	0.28
8,242.00	1.32	131.44	8,100.65	-290.06	864.99	911.94	0.53	0.27	21.93
8,336.00	1.38	141.16	8,194.62	-291.66	866.51	913.92	0.25	0.06	10.34
8,430.00	1.23	131.80	8,288.60	-293.22	867.98	915.83	0.28	-0.16	-9.96
8,525.00	1.14	139.71	8,383.58	-294.62	869.35	917.60	0.20	-0.09	8.33
8,659.00	1.74	125.57	8,517.54	-296.82	871.86	920.72	0.52	0.45	-10.55

**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT UTM12  
**Site:** NBU 1022-2P PAD  
**Well:** NBU 1022-11A1BS  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Well NBU 1022-11A1BS  
**TVD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**MD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

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)
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
8,712.00	1.74	125.57	8,570.51	-297.75	873.17	922.27	0.00	0.00	0.00
<b>SDI PROJECTION TO BIT</b>									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
195.00	195.00	0.05	-0.13	FIRST SDI MWD SURFACE SURVEY
2,332.00	2,267.65	-139.46	391.87	LAST SDI MWD SURFACE SURVEY
2,391.00	2,322.83	-142.63	412.49	FIRST SDI MWD PRODUCTION SURVEY
8,659.00	8,517.54	-296.82	871.86	LAST SDI MWD PRODUCTION SURVEY
8,712.00	8,570.51	-297.75	873.17	SDI PROJECTION TO BIT

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



**Scientific Drilling**  
Rocky Mountain Operations

# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12  
NBU 1022-2P PAD  
NBU 1022-11A1BS

OH

Design: OH

## **Survey Report - Geographic**

16 March, 2012

**Anadarko**   
Petroleum Corporation

<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-11A1BS
<b>Project:</b>	Uintah County, UT UTM12	<b>TVD Reference:</b>	GL 5092' & KB 21' @ 5113.00ft (HP 311)
<b>Site:</b>	NBU 1022-2P PAD	<b>MD Reference:</b>	GL 5092' & KB 21' @ 5113.00ft (HP 311)
<b>Well:</b>	NBU 1022-11A1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Uintah County, UT UTM12		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 - Western US		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	NBU 1022-2P PAD, SECTION 2 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	14,519,620.58 usft	<b>Latitude:</b>	39.971339
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,088,208.52 usft	<b>Longitude:</b>	-109.401781
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.03 °

<b>Well</b>	NBU 1022-11A1BS, 221 FSL 1352 FEL					
<b>Well Position</b>	<b>+N-S</b>	0.00 ft	<b>Northing:</b>	14,519,620.41 usft	<b>Latitude:</b>	39.971339
	<b>+E-W</b>	0.00 ft	<b>Easting:</b>	2,088,198.42 usft	<b>Longitude:</b>	-109.401817
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,092.00 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	07/21/11	11.02	65.86	52,316

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	110.21	

<b>Survey Program</b>	<b>Date</b>	03/16/12			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
21.00	2,332.00	Survey #1 SDI MWD SURFACE (OH)	MWD SDI	MWD - Standard ver 1.0.1	
2,391.00	8,712.00	Survey #2 SDI MWD PRODUCTION (OH)	MWD SDI	MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>	
0.00	0.00	0.00	0.00	0.00	0.00	14,519,620.41	2,088,198.42	39.971339	-109.401817	
21.00	0.00	0.00	21.00	0.00	0.00	14,519,620.41	2,088,198.42	39.971339	-109.401817	
195.00	0.09	292.03	195.00	0.05	-0.13	14,519,620.45	2,088,198.29	39.971339	-109.401818	
<b>FIRST SDI MWD SURFACE SURVEY</b>										
281.00	0.62	259.85	281.00	-0.01	-0.65	14,519,620.39	2,088,197.77	39.971339	-109.401820	
362.00	0.70	185.77	361.99	-0.57	-1.13	14,519,619.81	2,088,197.30	39.971337	-109.401821	
452.00	2.29	170.56	451.96	-2.90	-0.89	14,519,617.49	2,088,197.58	39.971331	-109.401820	
542.00	3.69	169.95	541.84	-7.52	-0.09	14,519,612.88	2,088,198.47	39.971318	-109.401818	
632.00	4.92	157.73	631.58	-13.95	1.88	14,519,606.50	2,088,200.55	39.971301	-109.401811	
722.00	5.45	160.98	721.21	-21.56	4.74	14,519,598.94	2,088,203.54	39.971280	-109.401800	
812.00	5.72	155.00	810.79	-29.66	8.02	14,519,590.89	2,088,206.97	39.971258	-109.401789	

**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT UTM12  
**Site:** NBU 1022-2P PAD  
**Well:** NBU 1022-11A1BS  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Well NBU 1022-11A1BS  
**TVD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**MD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
902.00	7.18	141.30	900.22	-38.12	13.44	14,519,582.53	2,088,212.54	39.971234	-109.401769
992.00	8.09	123.80	989.43	-46.03	22.22	14,519,574.78	2,088,221.46	39.971213	-109.401738
1,082.00	8.87	114.73	1,078.45	-52.46	33.78	14,519,568.56	2,088,233.14	39.971195	-109.401697
1,172.00	9.36	109.20	1,167.32	-57.77	47.00	14,519,563.49	2,088,246.44	39.971180	-109.401650
1,262.00	10.55	105.17	1,255.96	-62.33	61.86	14,519,559.19	2,088,261.39	39.971168	-109.401597
1,352.00	12.22	99.90	1,344.19	-66.12	79.20	14,519,555.71	2,088,278.79	39.971158	-109.401535
1,442.00	13.01	97.79	1,432.02	-69.14	98.62	14,519,553.05	2,088,298.26	39.971149	-109.401465
1,532.00	14.16	96.73	1,519.50	-71.80	119.59	14,519,550.76	2,088,319.28	39.971142	-109.401391
1,622.00	16.44	100.42	1,606.31	-75.39	143.05	14,519,547.59	2,088,342.80	39.971132	-109.401307
1,712.00	18.03	101.92	1,692.26	-80.57	169.21	14,519,542.88	2,088,369.04	39.971118	-109.401213
1,802.00	20.22	105.08	1,777.29	-87.50	197.85	14,519,536.47	2,088,397.81	39.971099	-109.401111
1,892.00	21.81	107.46	1,861.30	-96.56	228.82	14,519,527.96	2,088,428.94	39.971074	-109.401001
1,982.00	23.21	107.02	1,944.45	-106.77	261.73	14,519,518.35	2,088,462.02	39.971046	-109.400883
2,072.00	23.21	105.35	2,027.16	-116.65	295.79	14,519,509.07	2,088,496.25	39.971019	-109.400762
2,162.00	22.77	104.28	2,110.01	-125.65	329.77	14,519,500.69	2,088,530.39	39.970994	-109.400641
2,252.00	22.07	102.89	2,193.21	-133.71	363.13	14,519,493.22	2,088,563.89	39.970972	-109.400521
2,332.00	20.93	99.63	2,267.65	-139.46	391.87	14,519,487.99	2,088,592.73	39.970956	-109.400419
<b>LAST SDI MWD SURFACE SURVEY</b>									
2,391.00	20.49	97.87	2,322.83	-142.63	412.49	14,519,485.19	2,088,613.40	39.970947	-109.400345
<b>FIRST SDI MWD PRODUCTION SURVEY</b>									
2,486.00	19.29	96.94	2,412.17	-146.81	444.54	14,519,481.59	2,088,645.52	39.970936	-109.400231
2,580.00	18.82	96.11	2,501.01	-150.30	475.03	14,519,478.65	2,088,676.07	39.970926	-109.400122
2,674.00	20.14	97.25	2,589.63	-153.95	506.16	14,519,475.55	2,088,707.26	39.970916	-109.400011
2,769.00	20.31	97.52	2,678.77	-158.17	538.73	14,519,471.91	2,088,739.90	39.970905	-109.399895
2,863.00	22.07	104.29	2,766.43	-164.67	572.03	14,519,466.01	2,088,773.30	39.970887	-109.399776
2,957.00	21.98	113.16	2,853.59	-175.95	605.32	14,519,455.33	2,088,806.80	39.970856	-109.399657
3,052.00	21.28	114.57	2,941.90	-190.11	637.35	14,519,441.75	2,088,839.07	39.970817	-109.399543
3,146.00	22.07	114.74	3,029.26	-204.59	668.90	14,519,427.83	2,088,870.88	39.970777	-109.399430
3,241.00	19.17	112.90	3,118.16	-218.14	699.48	14,519,414.84	2,088,901.70	39.970740	-109.399321
3,335.00	16.27	111.32	3,207.69	-228.93	725.97	14,519,404.52	2,088,928.38	39.970710	-109.399227
3,429.00	15.83	110.70	3,298.03	-238.25	750.23	14,519,395.64	2,088,952.80	39.970685	-109.399140
3,524.00	11.96	111.23	3,390.23	-246.40	771.54	14,519,387.87	2,088,974.25	39.970663	-109.399064
3,618.00	9.06	105.87	3,482.65	-251.95	787.74	14,519,382.61	2,088,990.55	39.970647	-109.399006
3,712.00	8.71	115.89	3,575.52	-257.08	801.26	14,519,377.73	2,089,004.16	39.970633	-109.398958
3,807.00	9.15	116.41	3,669.37	-263.58	814.50	14,519,371.46	2,089,017.51	39.970615	-109.398911
3,901.00	7.21	116.15	3,762.41	-269.51	826.49	14,519,365.75	2,089,029.60	39.970599	-109.398868
3,996.00	7.30	108.77	3,856.65	-274.08	837.55	14,519,361.38	2,089,040.75	39.970587	-109.398829
4,090.00	5.54	106.83	3,950.06	-277.31	847.55	14,519,358.33	2,089,050.80	39.970578	-109.398793
4,185.00	4.48	109.38	4,044.70	-279.87	855.44	14,519,355.91	2,089,058.74	39.970571	-109.398765
4,279.00	4.91	111.76	4,138.38	-282.58	862.64	14,519,353.33	2,089,065.98	39.970563	-109.398739
4,373.00	3.52	109.91	4,232.12	-285.06	869.09	14,519,350.97	2,089,072.48	39.970556	-109.398716
4,468.00	1.14	78.09	4,327.04	-285.85	872.76	14,519,350.24	2,089,076.16	39.970554	-109.398703
4,562.00	1.73	335.73	4,421.02	-284.37	873.09	14,519,351.73	2,089,076.46	39.970558	-109.398702
4,656.00	1.41	337.37	4,514.99	-282.01	872.06	14,519,354.07	2,089,075.39	39.970565	-109.398705
4,751.00	0.00	5.06	4,609.98	-280.93	871.61	14,519,355.15	2,089,074.92	39.970568	-109.398707
4,845.00	0.09	230.50	4,703.98	-280.97	871.55	14,519,355.10	2,089,074.87	39.970568	-109.398707
4,939.00	0.62	171.96	4,797.98	-281.52	871.57	14,519,354.55	2,089,074.89	39.970566	-109.398707
5,034.00	0.35	151.48	4,892.97	-282.29	871.78	14,519,353.79	2,089,075.12	39.970564	-109.398706
5,128.00	0.70	159.92	4,986.97	-283.08	872.11	14,519,353.00	2,089,075.46	39.970562	-109.398705
5,222.00	0.62	151.40	5,080.96	-284.07	872.55	14,519,352.02	2,089,075.92	39.970559	-109.398704
5,317.00	1.06	171.96	5,175.95	-285.39	872.92	14,519,350.71	2,089,076.32	39.970555	-109.398702
5,411.00	0.79	218.37	5,269.94	-286.76	872.64	14,519,349.34	2,089,076.06	39.970552	-109.398703
5,505.00	0.88	319.27	5,363.94	-286.72	871.77	14,519,349.36	2,089,075.19	39.970552	-109.398707
5,600.00	0.53	318.83	5,458.93	-285.83	871.00	14,519,350.23	2,089,074.40	39.970554	-109.398709
5,694.00	0.18	204.39	5,552.93	-285.64	870.66	14,519,350.41	2,089,074.05	39.970555	-109.398710

**Company:** Kerr McGee Oil and Gas Onshore LP  
**Project:** Uintah County, UT UTM12  
**Site:** NBU 1022-2P PAD  
**Well:** NBU 1022-11A1BS  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Well NBU 1022-11A1BS  
**TVD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**MD Reference:** GL 5092' & KB 21' @ 5113.00ft (HP 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,789.00	0.35	193.49	5,647.93	-286.06	870.53	14,519,349.99	2,089,073.93	39.970554	-109.398711
5,883.00	0.79	175.57	5,741.92	-286.98	870.51	14,519,349.07	2,089,073.93	39.970551	-109.398711
5,977.00	1.06	178.47	5,835.91	-288.50	870.58	14,519,347.56	2,089,074.03	39.970547	-109.398711
6,072.00	1.06	174.07	5,930.89	-290.25	870.70	14,519,345.81	2,089,074.18	39.970542	-109.398710
6,166.00	1.58	305.47	6,024.88	-290.37	869.73	14,519,345.68	2,089,073.21	39.970542	-109.398714
6,260.00	1.41	295.27	6,118.85	-289.12	867.63	14,519,346.88	2,089,071.09	39.970545	-109.398721
6,355.00	1.14	289.38	6,213.82	-288.31	865.68	14,519,347.66	2,089,069.13	39.970547	-109.398728
6,449.00	0.97	276.55	6,307.81	-287.91	864.01	14,519,348.03	2,089,067.45	39.970549	-109.398734
6,543.00	0.79	257.13	6,401.80	-287.96	862.59	14,519,347.95	2,089,066.03	39.970548	-109.398739
6,638.00	0.79	227.95	6,496.79	-288.54	861.46	14,519,347.35	2,089,064.91	39.970547	-109.398743
6,732.00	0.79	204.39	6,590.78	-289.57	860.71	14,519,346.31	2,089,064.18	39.970544	-109.398746
6,827.00	0.96	186.13	6,685.77	-290.96	860.36	14,519,344.92	2,089,063.85	39.970540	-109.398747
6,921.00	1.14	353.02	6,779.76	-290.81	860.16	14,519,345.06	2,089,063.65	39.970541	-109.398748
7,015.00	0.18	284.37	6,873.76	-289.85	859.90	14,519,346.02	2,089,063.38	39.970543	-109.398749
7,110.00	0.53	194.02	6,968.76	-290.24	859.65	14,519,345.62	2,089,063.13	39.970542	-109.398750
7,204.00	0.62	81.61	7,062.75	-290.58	860.05	14,519,345.28	2,089,063.54	39.970541	-109.398748
7,298.00	0.79	129.95	7,156.75	-290.92	861.05	14,519,344.96	2,089,064.54	39.970540	-109.398745
7,393.00	0.88	158.87	7,251.74	-292.03	861.82	14,519,343.87	2,089,065.33	39.970537	-109.398742
7,487.00	1.40	331.20	7,345.73	-291.69	861.52	14,519,344.20	2,089,065.03	39.970538	-109.398743
7,581.00	0.88	320.87	7,439.71	-290.13	860.51	14,519,345.75	2,089,063.99	39.970542	-109.398747
7,676.00	0.88	293.43	7,534.70	-289.27	859.38	14,519,346.58	2,089,062.84	39.970545	-109.398751
7,770.00	0.54	74.48	7,628.70	-288.87	859.14	14,519,346.98	2,089,062.60	39.970546	-109.398752
7,864.00	0.68	65.82	7,722.69	-288.52	860.08	14,519,347.35	2,089,063.53	39.970547	-109.398748
7,959.00	0.44	88.64	7,817.69	-288.28	860.96	14,519,347.60	2,089,064.41	39.970548	-109.398745
8,053.00	0.79	110.35	7,911.68	-288.50	861.93	14,519,347.40	2,089,065.38	39.970547	-109.398742
8,147.00	1.06	110.61	8,005.67	-289.03	863.35	14,519,346.90	2,089,066.81	39.970545	-109.398737
8,242.00	1.32	131.44	8,100.65	-290.06	864.99	14,519,345.89	2,089,068.47	39.970543	-109.398731
8,336.00	1.38	141.16	8,194.62	-291.66	866.51	14,519,344.32	2,089,070.02	39.970538	-109.398725
8,430.00	1.23	131.80	8,288.60	-293.22	867.98	14,519,342.79	2,089,071.51	39.970534	-109.398720
8,525.00	1.14	139.71	8,383.58	-294.62	869.35	14,519,341.42	2,089,072.91	39.970530	-109.398715
8,659.00	1.74	125.57	8,517.54	-296.82	871.86	14,519,339.26	2,089,075.46	39.970524	-109.398706
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
8,712.00	1.74	125.57	8,570.51	-297.75	873.17	14,519,338.35	2,089,076.79	39.970522	-109.398702
<b>SDI PROJECTION TO BIT</b>									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
195.00	195.00	0.05	-0.13	FIRST SDI MWD SURFACE SURVEY
2,332.00	2,267.65	-139.46	391.87	LAST SDI MWD SURFACE SURVEY
2,391.00	2,322.83	-142.63	412.49	FIRST SDI MWD PRODUCTION SURVEY
8,659.00	8,517.54	-296.82	871.86	LAST SDI MWD PRODUCTION SURVEY
8,712.00	8,570.51	-297.75	873.17	SDI PROJECTION TO BIT

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_