

**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 1022-2E1BS
<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> ST UT ML 22651	<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	520 FNL 1177 FWL	NWNW	2	10.0 S	22.0 E	S
Top of Uppermost Producing Zone	1569 FNL 823 FWL	SWNW	2	10.0 S	22.0 E	S
At Total Depth	1569 FNL 823 FWL	SWNW	2	10.0 S	22.0 E	S

<b>21. COUNTY</b> UINTAH	<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 823	<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 620
<b>24. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 274	<b>25. PROPOSED DEPTH</b> MD: 8685 TVD: 8510	
<b>26. ELEVATION - GROUND LEVEL</b> 4876	<b>27. BOND NUMBER</b> 22013542	<b>28. 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 - 2070	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 - 8685	11.6	I-80 LT&C	12.5	Premium Lite High Strength	270	3.38	11.0
							50/50 Poz	1210	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> Andy Lytle	<b>TITLE</b> Regulatory Analyst	<b>PHONE</b> 720 929-6100
<b>SIGNATURE</b>	<b>DATE</b> 07/28/2011	<b>EMAIL</b> andrew.lytle@anadarko.com
<b>API NUMBER ASSIGNED</b> 43047517820000	<b>APPROVAL</b>  Permit Manager	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-2E1BS**

Surface: 520 FNL / 1177 FWL      NWNW  
 BHL: 1569 FNL / 823 FWL      SWNW

Section 2 T10S R22E

Uintah County, Utah  
 Mineral Lease: ST UT ML 22651

**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	996	
Birds Nest	1238	Water
Mahogany	1617	Water
Wasatch	4076	Gas
Mesaverde	6404	Gas
MVU2	7339	Gas
MVL1	7892	Gas
TVD	8510	Gas
TD	8685	Gas

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 8510' 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.*

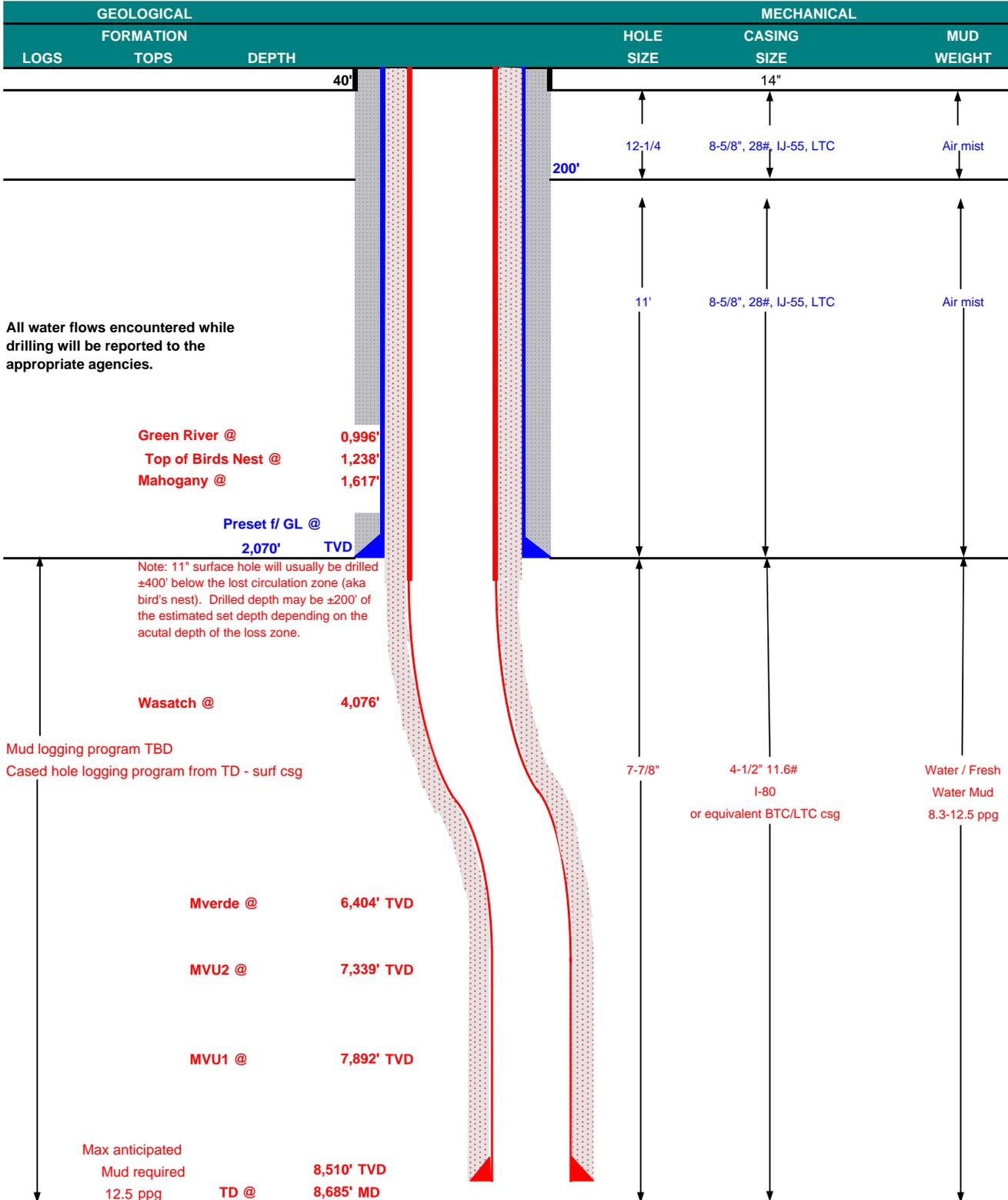
10. **Other Information:**

*Please refer to the attached Drilling Program.*



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

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	July 26, 2011			
WELL NAME	<b>NBU 1022-2E1BS</b>		TD	8,510'	TVD	8,685' MD	
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	FINISHED ELEVATION	4,874'
SURFACE LOCATION	NWNW	520 FNL	1177 FWL	Sec 2	T 10S R 22E		
	Latitude: 39.983869		Longitude: -109.411805		NAD 27		
BTM HOLE LOCATION	SWNW	1569 FNL	823 FWL	Sec 2	T 10S R 22E		
	Latitude: 39.98099		Longitude: -109.413067		NAD 27		
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**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	COLLAPSE	LTC	BTC
CONDUCTOR	14"	0-40'							
						3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0 to 2,070	28.00	IJ-55	LTC	2.61	1.94	6.86	N/A
						7,780	6,350	279,000	367,000
PRODUCTION	4-1/2"	0 to 8,685	11.60	I-80	LTC/BTC	1.11	1.15	3.42	4.50

**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 + 0.25 pps flocele	180	60%	15.80	1.15
Option 1	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
SURFACE		<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>					
Option 2	LEAD	1,570'	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	3,575'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	270	20%	11.00	3.38
	TAIL	5,110'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,210	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

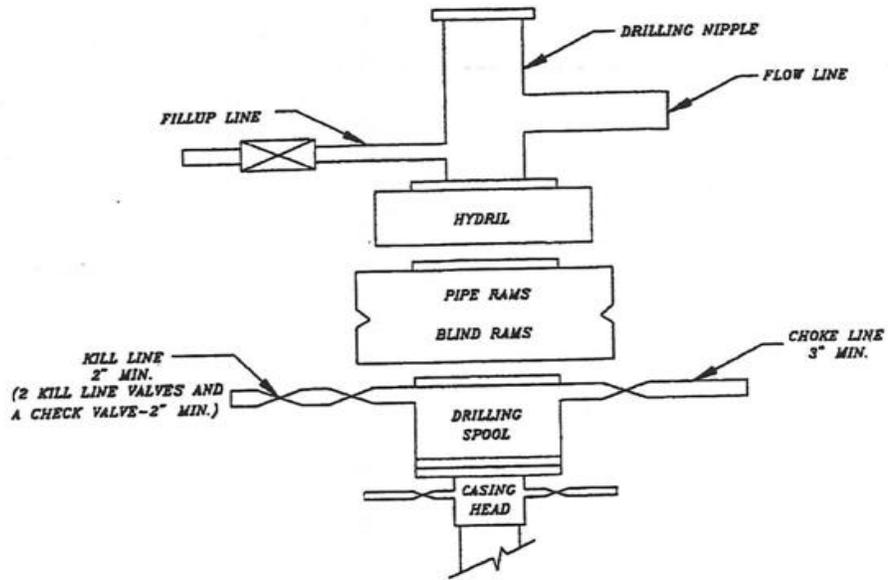
**DATE:**

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

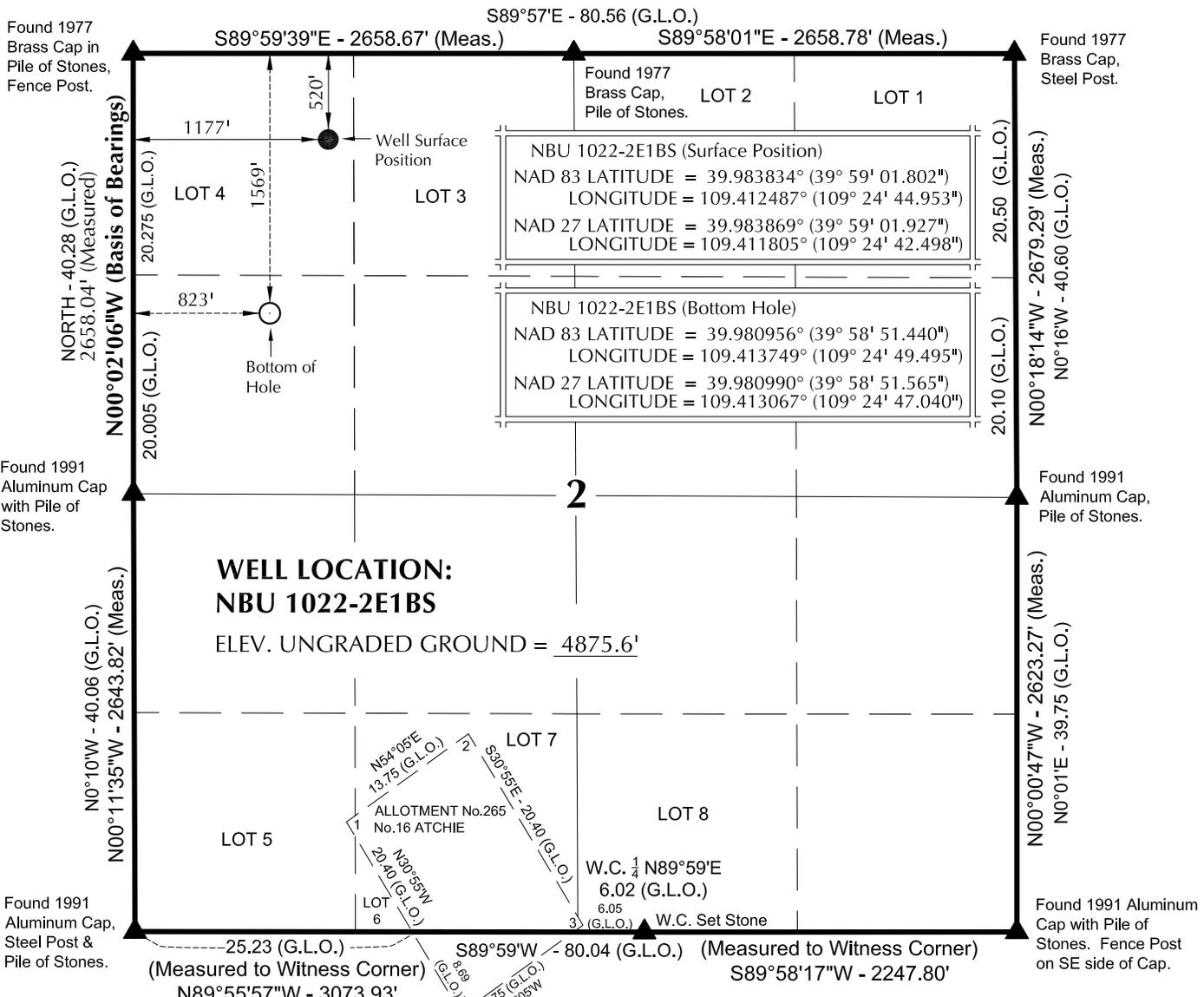
**DATE:**

EXHIBIT A  
NBU 1022-2E1BS



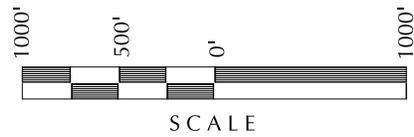
SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

# 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 S18°36'13"W 1106.84' 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. Slough*  
 No. 6028691  
**JOHN R. SLAUGH**  
 PROFESSIONAL LAND SURVEYOR  
 REGISTRATION No. 6028691  
 STATE OF UTAH 2-8-11

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

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

**NBU 1022-2E1BS  
 WELL PLAT  
 1569' FNL, 823' FWL (Bottom Hole)  
 SW 1/4 NW 1/4 OF 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

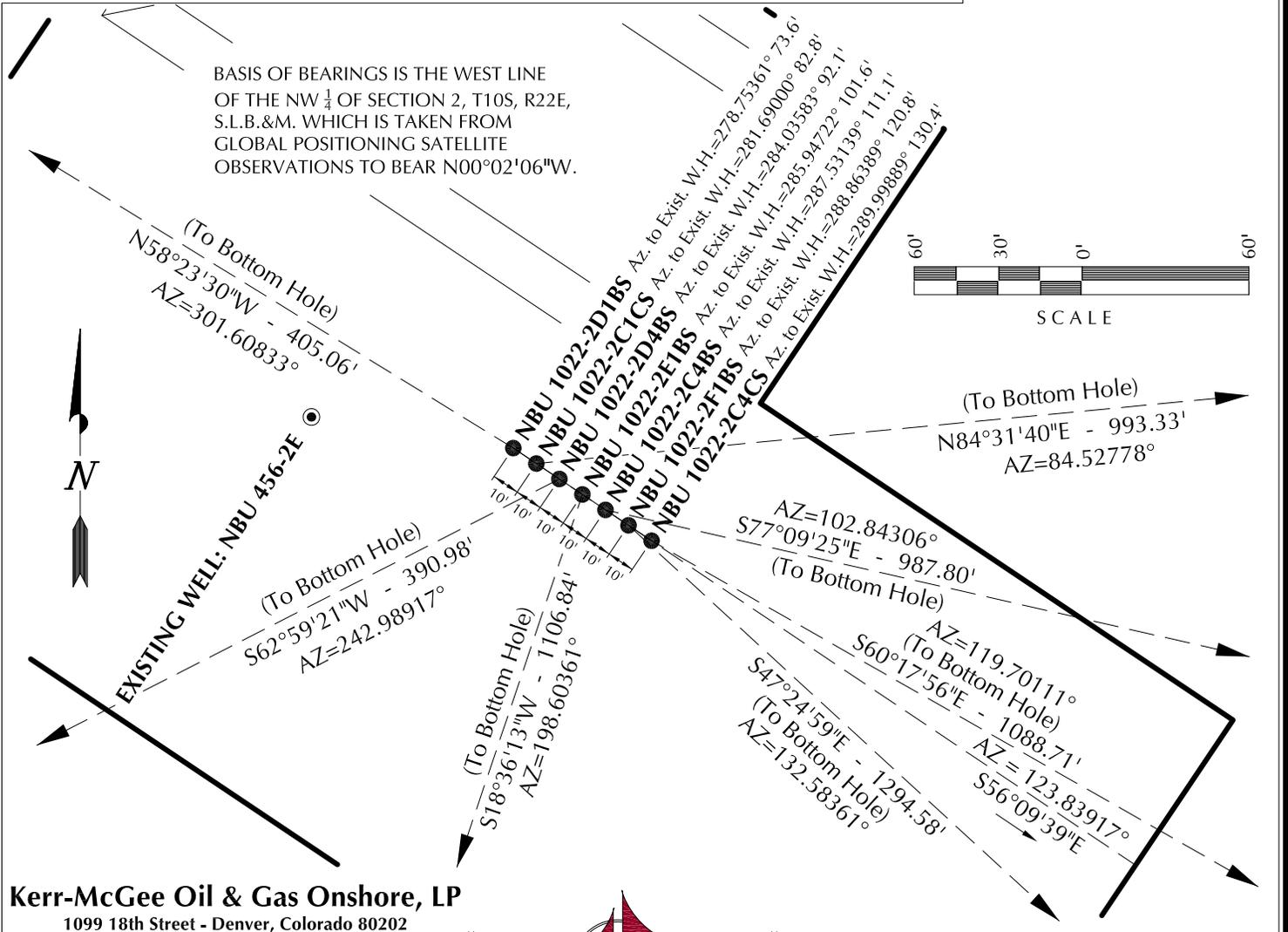
**TIMBERLINE** (435) 789-1365  
 ENGINEERING & LAND SURVEYING, INC.  
 209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 01-13-11	SURVEYED BY: R.Y.	SHEET NO: <b>4</b>
DATE DRAWN: 01-25-11	DRAWN BY: E.M.S.	
SCALE: 1" = 1000'		4 OF 19

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 1022-2D1BS	39°59'01.968"	109°24'45.273"	39°59'02.092"	109°24'42.818"	503' FNL	39°59'04.067"	109°24'49.702"	39°59'04.191"	109°24'47.247"	291' FNL
NBU 1022-2C1CS	39.983880°	109.412576°	39.983914°	109.411894°	1152' FWL	39.984463°	109.413806°	39.984498°	109.413124°	807' FWL
NBU 1022-2D4BS	39°59'01.913"	109°24'45.166"	39°59'02.037"	109°24'42.711"	509' FNL	39°59'02.843"	109°24'32.466"	39°59'02.967"	109°24'30.011"	414' FNL
NBU 1022-2E1BS	39.983865°	109.412546°	39.983899°	109.411864°	1160' FWL	39.984123°	109.409018°	39.984157°	109.408336°	2149' FWL
NBU 1022-2D4BS	39°59'01.858"	109°24'45.059"	39°59'01.982"	109°24'42.604"	514' FNL	39°59'00.105"	109°24'49.535"	39°59'00.229"	109°24'47.079"	692' FNL
NBU 1022-2E1BS	39.983849°	109.412517°	39.983884°	109.411835°	1168' FWL	39.983363°	109.413760°	39.983397°	109.413078°	820' FWL
NBU 1022-2C4BS	39°59'01.802"	109°24'44.953"	39°59'01.927"	109°24'42.498"	520' FNL	39°58'51.440"	109°24'49.495"	39°58'51.565"	109°24'47.040"	1569' FNL
NBU 1022-2E1BS	39.983834°	109.412487°	39.983869°	109.411805°	1177' FWL	39.980956°	109.413749°	39.980990°	109.413067°	823' FWL
NBU 1022-2C4BS	39°59'01.747"	109°24'44.846"	39°59'01.872"	109°24'42.391"	526' FNL	39°58'59.572"	109°24'32.479"	39°58'59.697"	109°24'30.024"	745' FNL
NBU 1022-2F1BS	39.983819°	109.412457°	39.983853°	109.411775°	1185' FWL	39.983215°	109.409022°	39.983249°	109.408340°	2148' FWL
NBU 1022-2F1BS	39°59'01.692"	109°24'44.740"	39°59'01.816"	109°24'42.285"	531' FNL	39°58'53.032"	109°24'32.504"	39°58'53.156"	109°24'30.050"	1407' FNL
NBU 1022-2C4CS	39.983803°	109.412428°	39.983838°	109.411746°	1193' FWL	39.981398°	109.409029°	39.981432°	109.408347°	2146' FWL
NBU 1022-2C4CS	39°59'01.637"	109°24'44.633"	39°59'01.761"	109°24'42.178"	537' FNL	39°58'56.302"	109°24'32.492"	39°58'56.426"	109°24'30.037"	1076' FNL
NBU 456-2E	39.983788°	109.412398°	39.983823°	109.411716°	1202' FWL	39.982306°	109.409025°	39.982341°	109.408344°	2147' FWL
NBU 456-2E	39°59'02.079"	109°24'46.207"	39°59'02.203"	109°24'43.752"	492' FNL					
NBU 456-2E	39.983911°	109.412835°	39.983945°	109.412153°	1079' FWL					

RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 1022-2D1BS	212.3'	-345.0'	NBU 1022-2C1CS	94.7'	988.8'	NBU 1022-2D4BS	-177.6'	-348.3'	NBU 1022-2E1BS	-1,049.0'	-353.1'
NBU 1022-2C4BS	-219.6'	963.1'	NBU 1022-2F1BS	-876.0'	953.2'	NBU 1022-2C4CS	-539.4'	945.7'			



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

**WELL PAD - NBU 1022-2D**

**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 1022-2D1BS,  
NBU 1022-2C1CS, NBU 1022-2D4BS,  
NBU 1022-2E1BS, NBU 1022-2C4BS,  
NBU 1022-2F1BS & NBU 1022-2C4CS  
LOCATED IN SECTION 2, T10S, R22E,  
S.L.B.&M., UTAH COUNTY, UTAH.



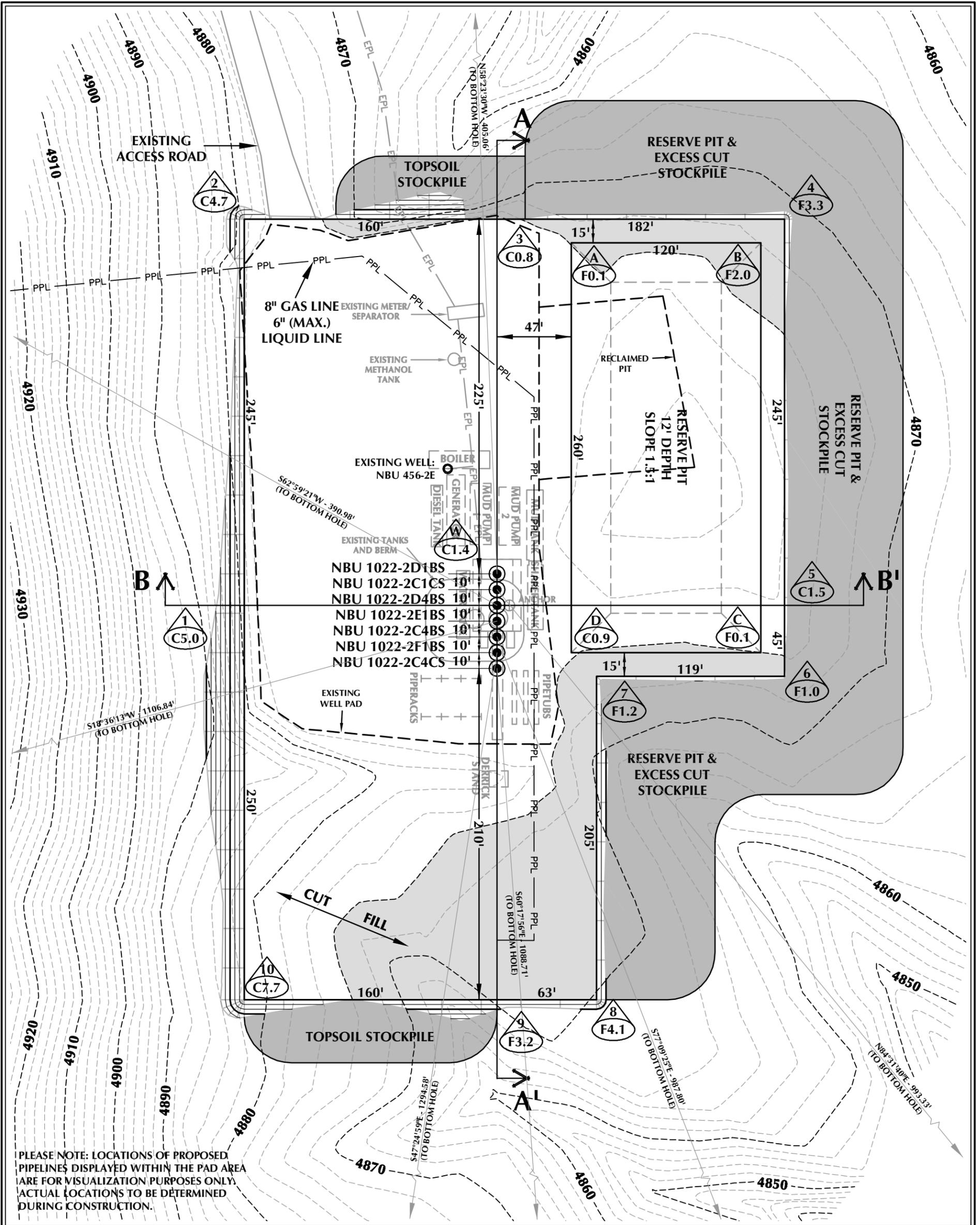
**CONSULTING, LLC**  
2155 North Main Street  
Sheridan WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

**TIMBERLINE**

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

(435) 789-1365

DATE SURVEYED: 01-13-11	SURVEYED BY: R.Y.	SHEET NO: <b>8</b> 8 OF 19
DATE DRAWN: 01-25-11	DRAWN BY: E.M.S.	
SCALE: 1" = 60'		Date Last Revised: 02-04-11 E.M.S.



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 1022-2D DESIGN SUMMARY**

EXISTING GRADE @ CENTER OF WELL PAD = 4875.4'  
 FINISHED GRADE ELEVATION = 4874.0'  
 CUT SLOPES = 1.5:1  
 FILL SLOPES = 1.5:1  
 TOTAL WELL PAD AREA = 3.61 ACRES  
 TOTAL DISTURBANCE AREA = 6.54 ACRES  
 SHRINKAGE FACTOR = 1.10  
 SWELL FACTOR = 1.00

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

**WELL PAD - NBU 1022-2D**

WELL PAD - LOCATION LAYOUT  
 NBU 1022-2D1BS,  
 NBU 1022-2C1CS, NBU 1022-2D4BS,  
 NBU 1022-2E1BS, NBU 1022-2C4BS,  
 NBU 1022-2F1BS & NBU 1022-2C4CS  
 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 = 9,316 C.Y.  
 TOTAL FILL FOR WELL PAD = 2,927 C.Y.  
 TOPSOIL @ 6" DEPTH = 1,820 C.Y.  
 EXCESS MATERIAL = 6,389 C.Y.

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

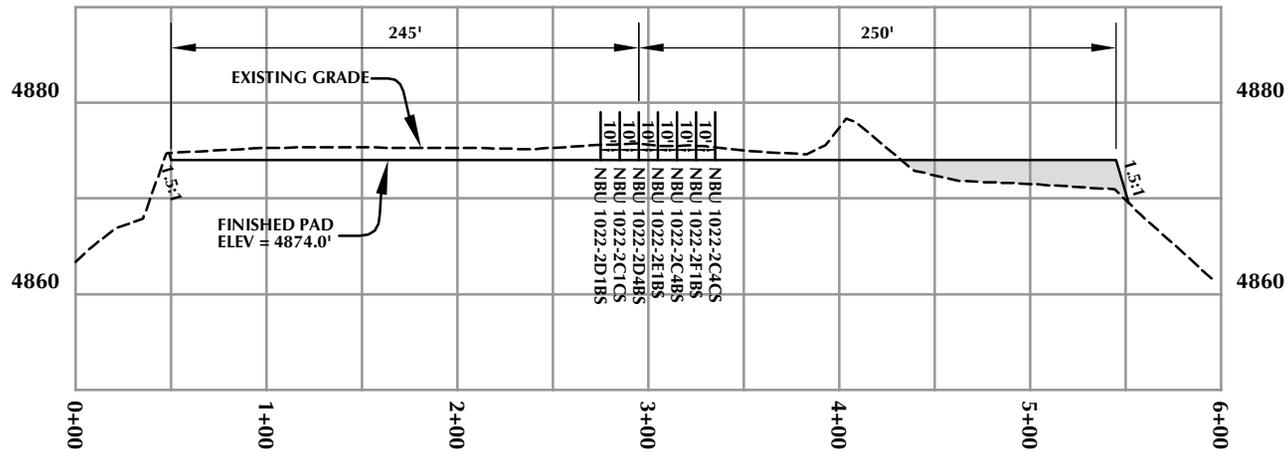
- WELL PAD LEGEND**
- EXISTING WELL LOCATION
  - PROPOSED WELL LOCATION
  - PROPOSED BOTTOM HOLE LOCATION
  - EXISTING CONTOURS (2' INTERVAL)
  - PROPOSED CONTOURS (2' INTERVAL)
  - PPL - PROPOSED PIPELINE
  - EPL - EXISTING PIPELINE



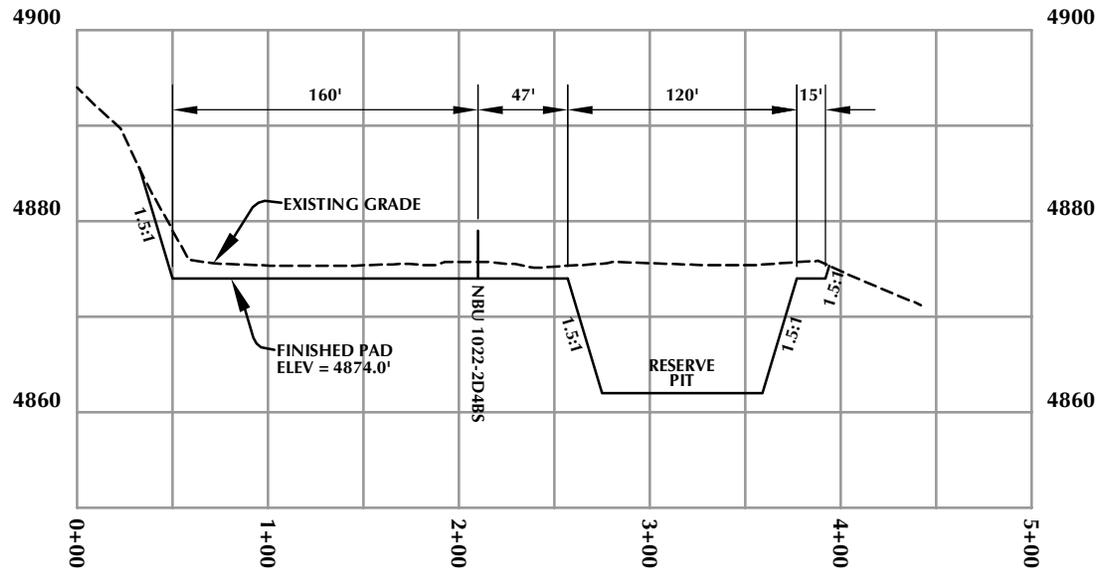
HORIZONTAL 0 30' 60' 1" = 60'  
 2' CONTOURS

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

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



**CROSS SECTION A-A'**



**CROSS SECTION B-B'**

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

**WELL PAD - NBU 1022-2D**

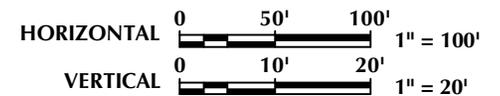
**WELL PAD - CROSS SECTIONS**  
NBU 1022-2D1BS,  
NBU 1022-2C1CS, NBU 1022-2D4BS,  
NBU 1022-2E1BS, NBU 1022-2C4BS,  
NBU 1022-2F1BS & NBU 1022-2C4CS  
LOCATED IN SECTION 2, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH



**CONSULTING, LLC**  
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**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:

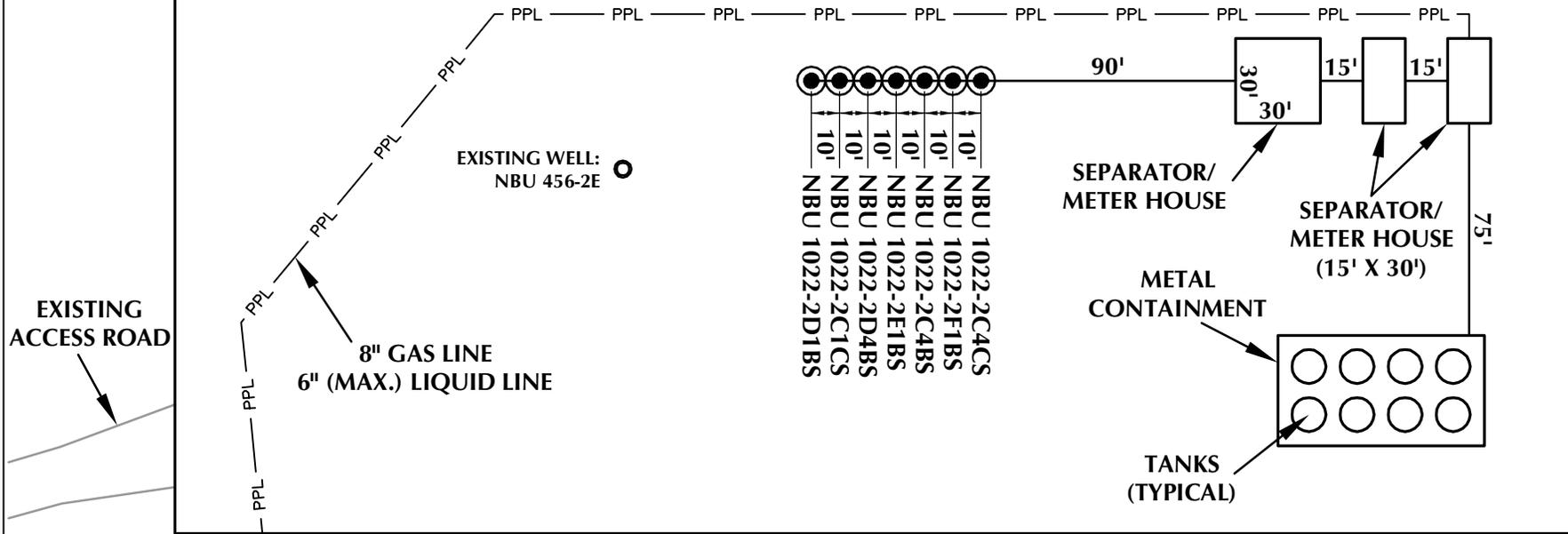
**10** 10 OF 19

**RECEIVED: July 28, 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.

RESERVE PIT

PROPOSED WELL PAD



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

WELL PAD - NBU 1022-2D

WELL PAD - FACILITIES DIAGRAM  
NBU 1022-2D1BS,  
NBU 1022-2C1CS, NBU 1022-2D4BS,  
NBU 1022-2E1BS, NBU 1022-2C4BS,  
NBU 1022-2F1BS & NBU 1022-2C4CS  
LOCATED IN SECTION 2, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH



CONSULTING, LLC  
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WELL PAD LEGEND

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PROPOSED PIPELINE
- EXISTING PIPELINE



HORIZONTAL 0 30' 60' 1" = 60'

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

(435) 789-1365

Scale: 1"=60'

Date: 3/30/11

SHEET NO:

REVISED:

**11**

11 OF 19

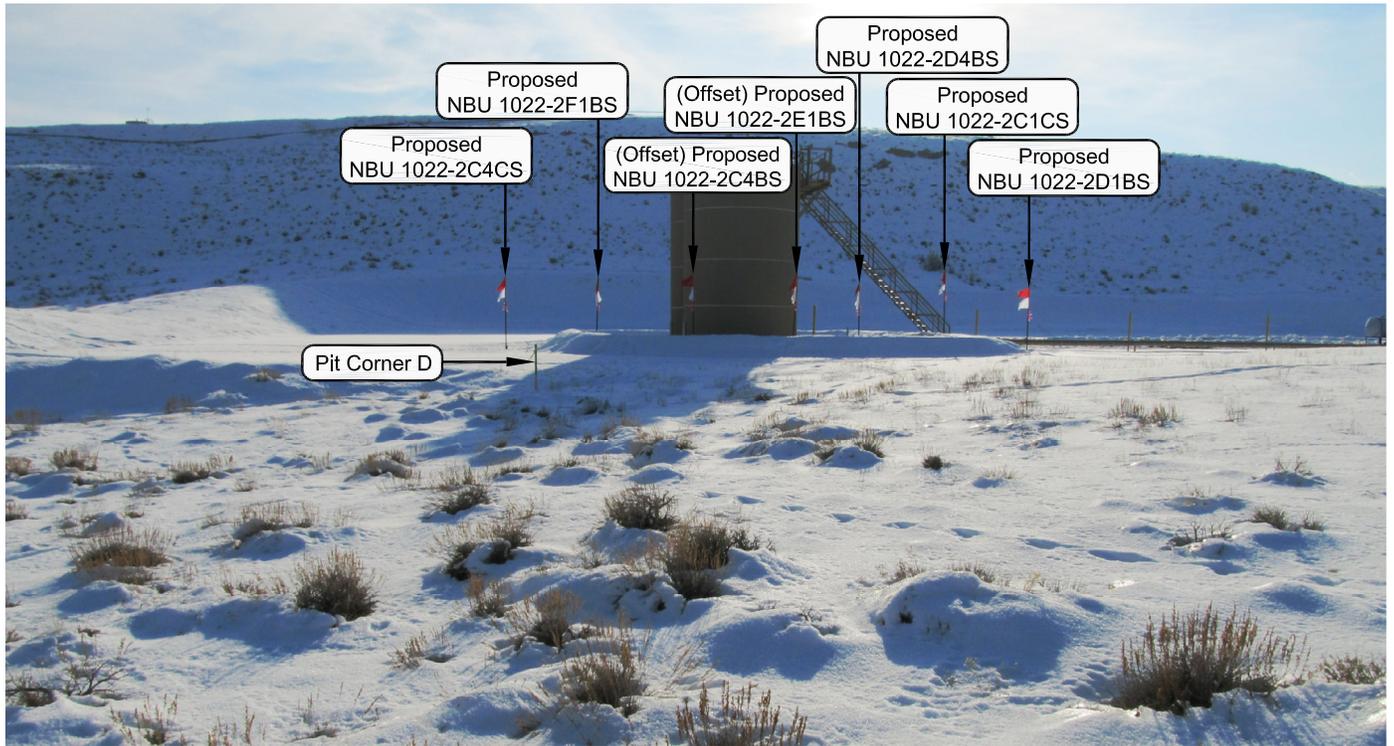


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: SOUTHWESTERLY



PHOTO VIEW: FROM EXISTING ACCESS ROAD

CAMERA ANGLE: SOUTHEASTERLY

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

**WELL PAD - NBU 1022-2D**

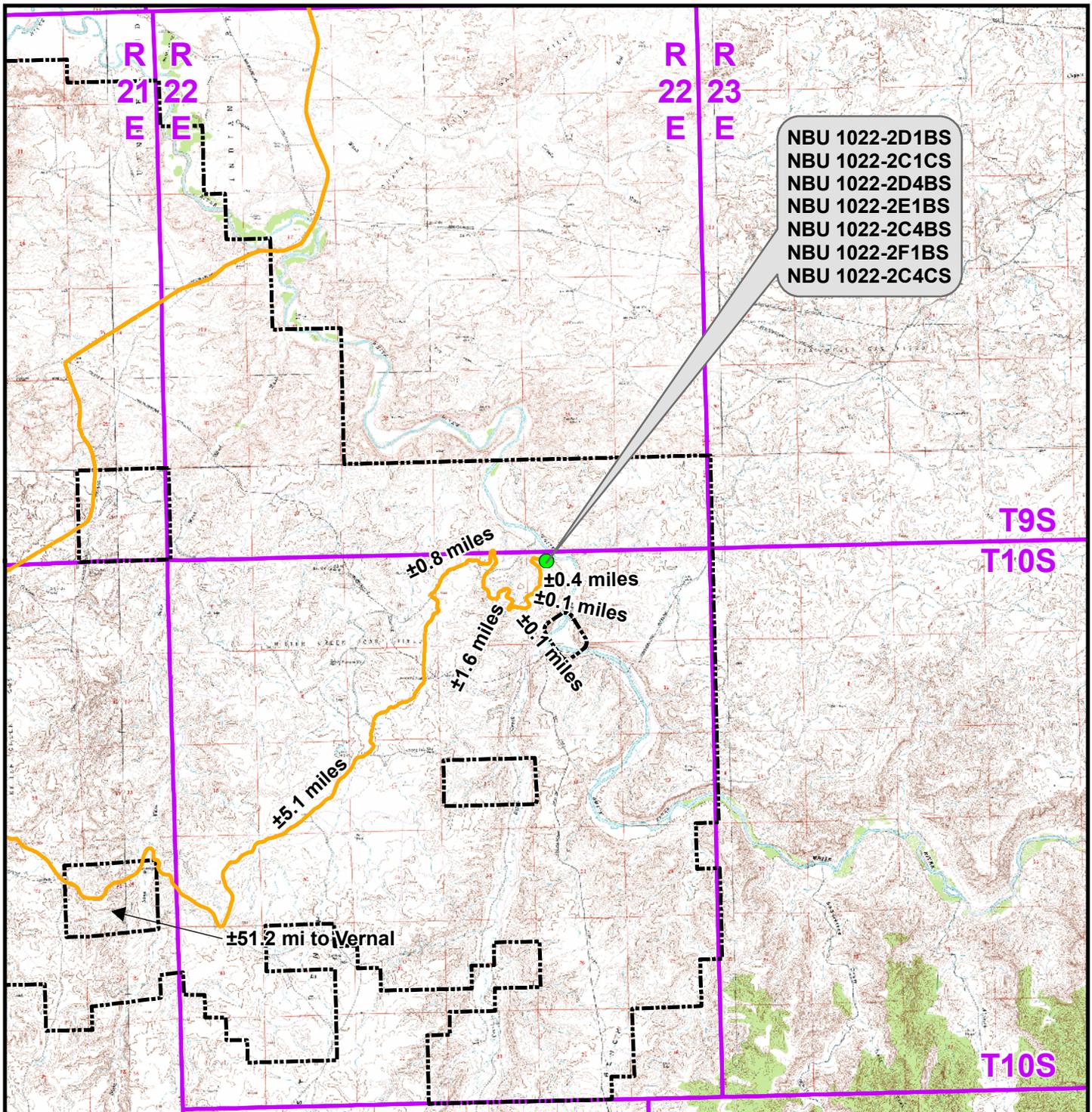
LOCATION PHOTOS  
 NBU 1022-2D1BS,  
 NBU 1022-2C1CS, NBU 1022-2D4BS,  
 NBU 1022-2E1BS, NBU 1022-2C4BS,  
 NBU 1022-2F1BS & NBU 1022-2C4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH.



**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: 01-13-11	PHOTOS TAKEN BY: R.Y.	SHEET NO: <b>12</b>
DATE DRAWN: 01-25-11	DRAWN BY: E.M.S.	
Date Last Revised:		12 OF 19



NBU 1022-2D1BS  
 NBU 1022-2C1CS  
 NBU 1022-2D4BS  
 NBU 1022-2E1BS  
 NBU 1022-2C4BS  
 NBU 1022-2F1BS  
 NBU 1022-2C4CS

R 21E R 22E R 23E  
 T 9S  
 T 10S

T 10S

**Legend**

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

Distance From Well Pad - NBU 1022-2D To Unit Boundary: ±3,663ft

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

**WELL PAD - NBU 1022-2D**

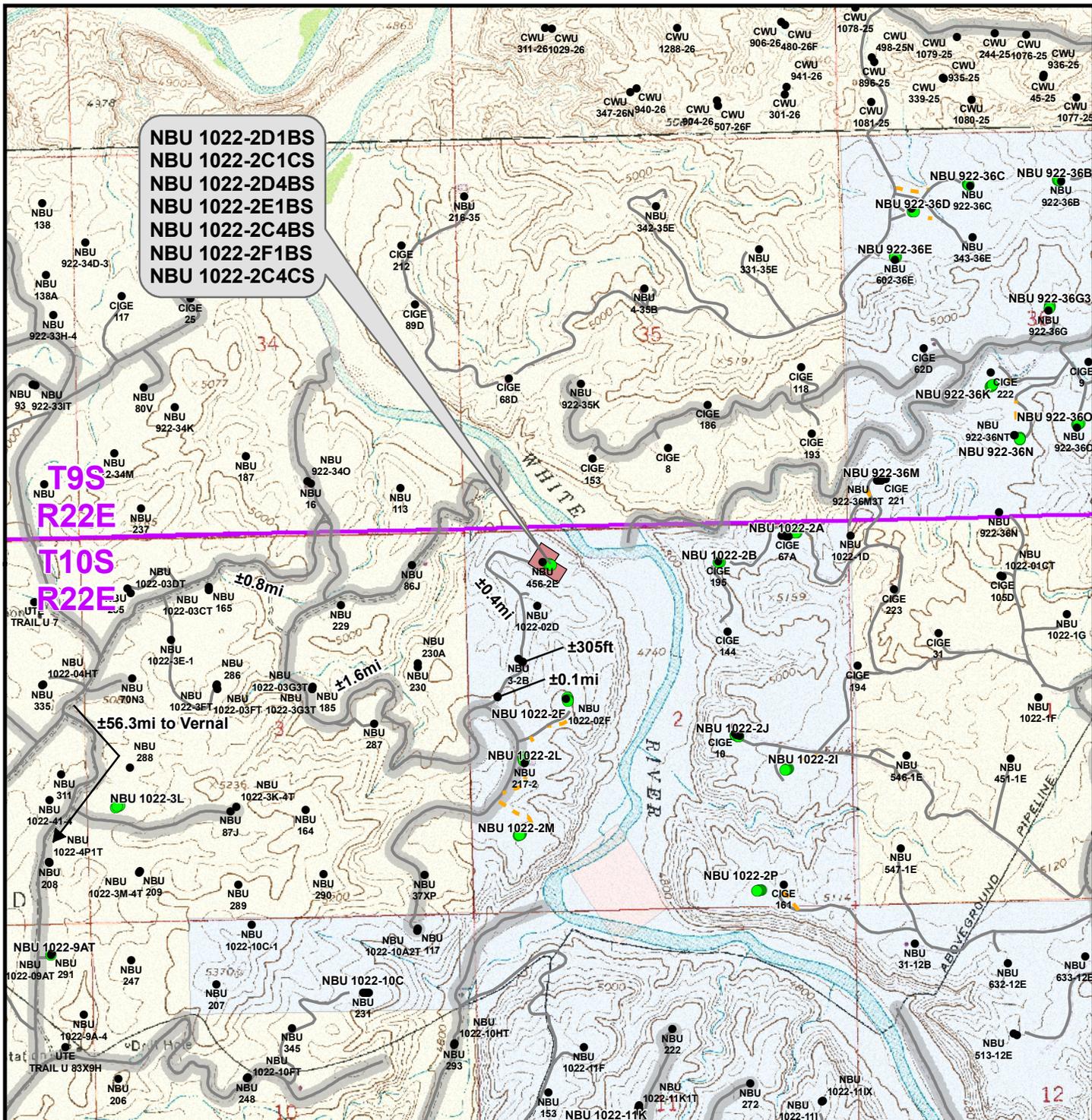
TOPO A  
 NBU 1022-2D1BS,  
 NBU 1022-2C1CS, NBU 1022-2D4BS,  
 NBU 1022-2E1BS, NBU 1022-2C4BS,  
 NBU 1022-2F1BS & NBU 1022-2C4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH



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



Scale: 1:100,000	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	<b>13</b>
Revised:	Date:	



**NBU 1022-2D1BS  
 NBU 1022-2C1CS  
 NBU 1022-2D4BS  
 NBU 1022-2E1BS  
 NBU 1022-2C4BS  
 NBU 1022-2F1BS  
 NBU 1022-2C4CS**

**Legend**

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

Total Proposed Road Length: ±0ft

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

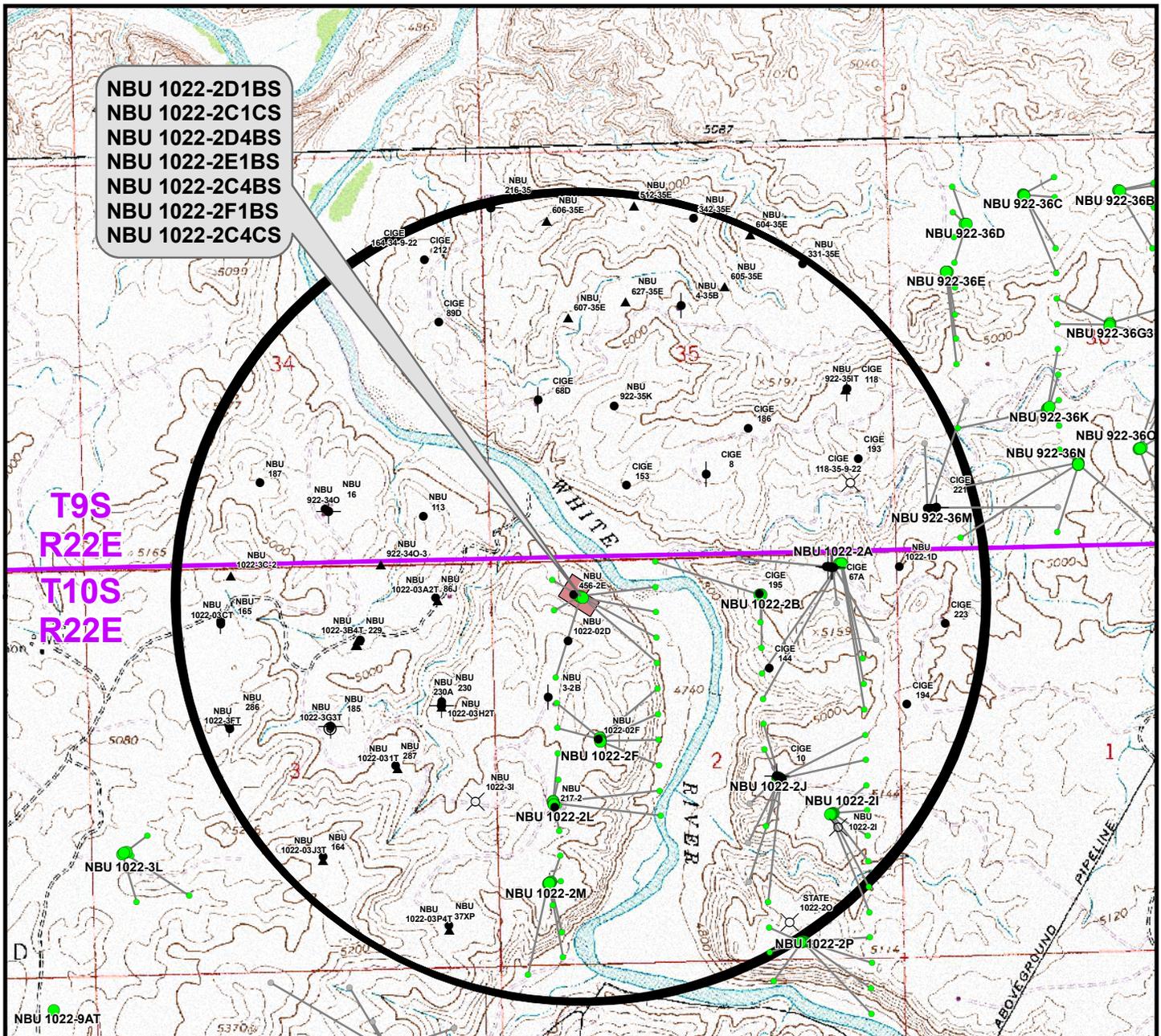
**WELL PAD - NBU 1022-2D**

**TOPO B**  
 NBU 1022-2D1BS,  
 NBU 1022-2C1CS, NBU 1022-2D4BS,  
 NBU 1022-2E1BS, NBU 1022-2C4BS,  
 NBU 1022-2F1BS & NBU 1022-2C4CS  
 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" = 2,000ft	NAD83 USP Central	Sheet No: <b>14</b>
Drawn: KGS	Date: 30 Mar 2011	14 of 19
Revised:	Date:	



Proposed Well	Nearest Well Bore	Footage
NBU 1022-2D1BS	NBU 456-2E	338ft
NBU 1022-2C1CS	NBU 456-2E	1,072ft
NBU 1022-2D4BS	NBU 456-2E	327ft
NBU 1022-2E1BS	NBU 3-2B	274ft

Proposed Well	Nearest Well Bore	Footage
NBU 1022-2C4BS	NBU 456-2E	1,098ft
NBU 1022-2F1BS	NBU 1022-02D	1,198ft
NBU 1022-2C4CS	NBU 1022-02D	1,157ft

Well locations derived from State of Utah, Dept. of Natural Resources, Division of Oil, Gas and Mining

**Legend**

- Well - Proposed
- Bottom Hole - Proposed
- Well Pad
- Producing
- Temporarily-Abandoned
- Well Path
- Bottom Hole - Existing
- Well - 1 Mile Radius
- ☼ Active
- Shut-in
- ☉ Spudded (Drilling commenced; Not yet completed)
- ▲ Approved permit (APD); not yet spudded
- Plugged and Abandoned
- New Permit (Not yet approved or drilled)
- ⊕ Inactive
- ⊗ Location Abandoned
- ⊗ Drilling Operations Suspended
- ⊗ Dry hole marker, buried
- ⊗ Returned APD (Unapproved)

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

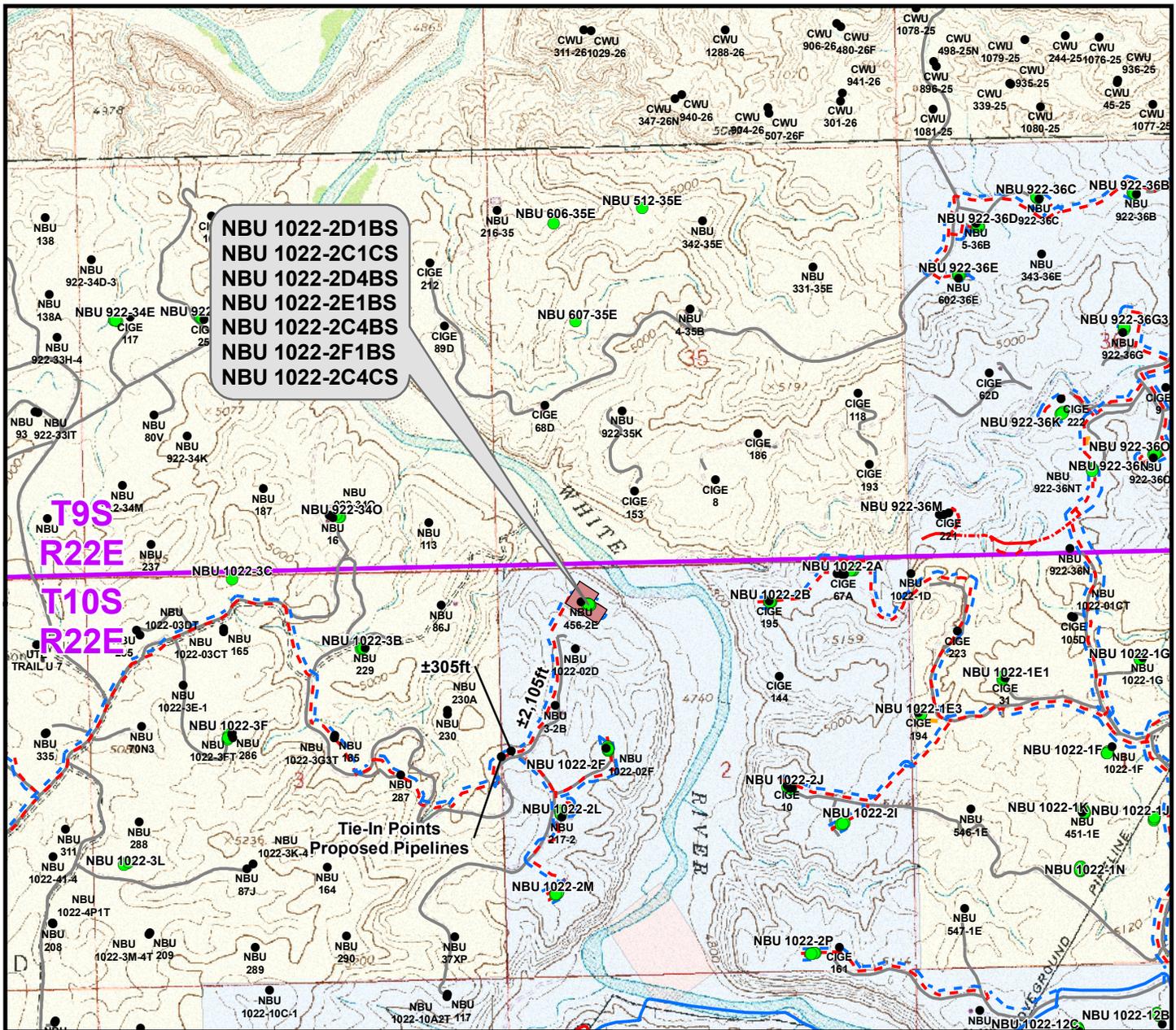
**WELL PAD - NBU 1022-2D**

TOPO C  
NBU 1022-2D1BS,  
NBU 1022-2C1CS, NBU 1022-2D4BS,  
NBU 1022-2E1BS, NBU 1022-2C4BS,  
NBU 1022-2F1BS & NBU 1022-2C4CS  
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

N

Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	15
Revised:	Date:	



NBU 1022-2D1BS  
 NBU 1022-2C1CS  
 NBU 1022-2D4BS  
 NBU 1022-2E1BS  
 NBU 1022-2C4BS  
 NBU 1022-2F1BS  
 NBU 1022-2C4CS

Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±585ft
Proposed 6" (Max.) (Edge of Pad to 2F Intersection)	±2,105ft
Proposed 6" (Max.) (2F Intersection to West Line of Section 2)	±305ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±2,995ft</b>

Proposed Gas Pipeline	Length
Proposed 8" (Meter House to Edge of Pad)	±585ft
Proposed 8" (Edge of Pad to 2F Intersection)	±2,105ft
Proposed 16" (2F Intersection to West Line of Section 2)	±305ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,995ft</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 1022-2D**

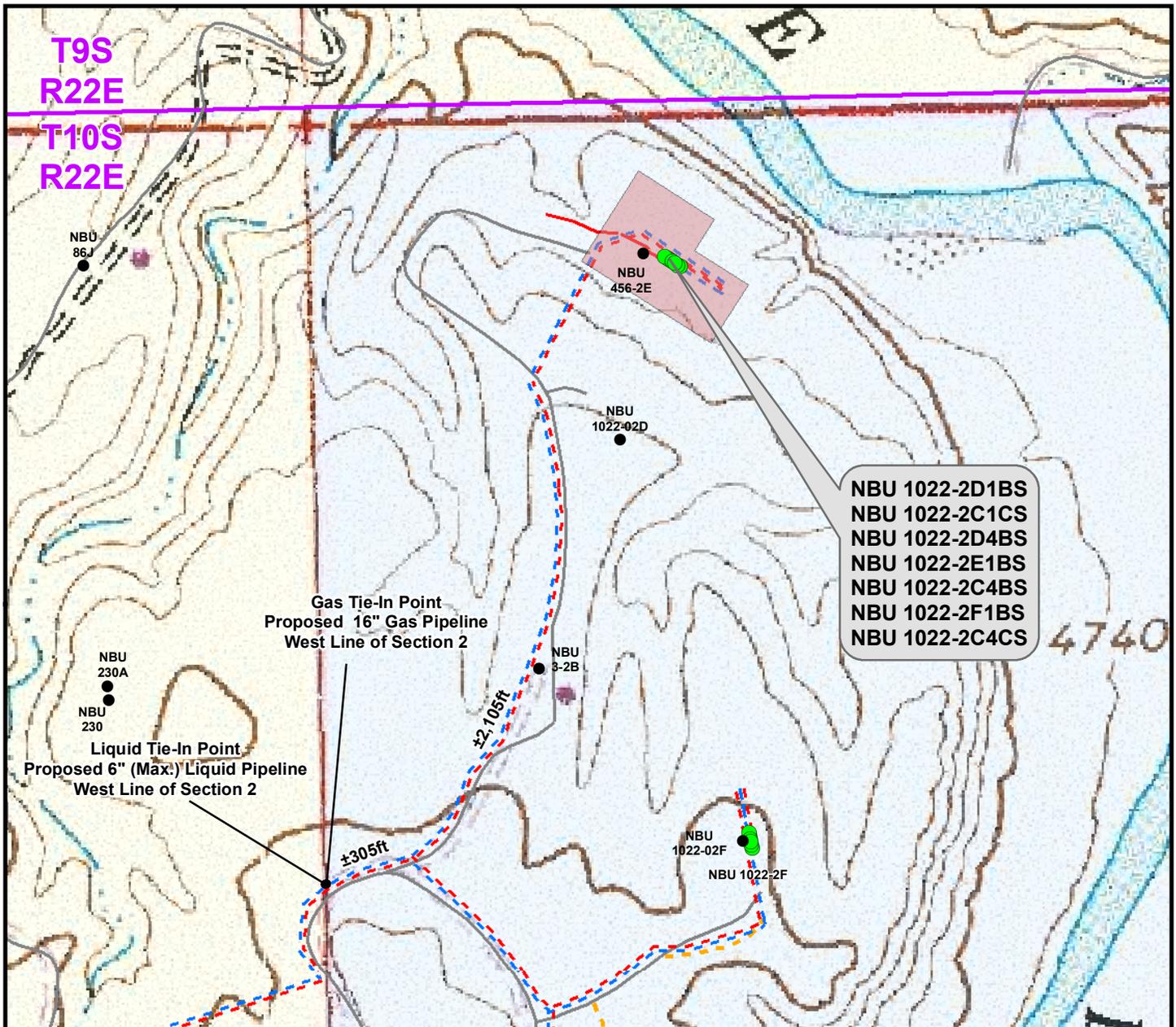
**TOPO D**  
 NBU 1022-2D1BS,  
 NBU 1022-2C1CS, NBU 1022-2D4BS,  
 NBU 1022-2E1BS, NBU 1022-2C4BS,  
 NBU 1022-2F1BS & NBU 1022-2C4CS  
 LOCATED IN SECTION 2, T10S, R22E,  
 S.L.B.&M., UINTAH COUNTY, UTAH

**609**

**CONSULTING, LLC**  
 2155 North Main Street  
 Sheridan, WY 82801  
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Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	<b>16</b>
Revised: TL	Date: 27 July 2011	



NBU 1022-2D1BS  
 NBU 1022-2C1CS  
 NBU 1022-2D4BS  
 NBU 1022-2E1BS  
 NBU 1022-2C4BS  
 NBU 1022-2F1BS  
 NBU 1022-2C4CS

Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±585ft
Proposed 6" (Max.) (Edge of Pad to 2F Intersection)	±2,105ft
Proposed 6" (Max.) (2F Intersection to West Line of Section 2)	±305ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±2,995ft</b>

Proposed Gas Pipeline	Length
Proposed 8" (Meter House to Edge of Pad)	±585ft
Proposed 8" (Edge of Pad to 2F Intersection)	±2,105ft
Proposed 16" (2F Intersection to West Line of Section 2)	±305ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±2,995ft</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

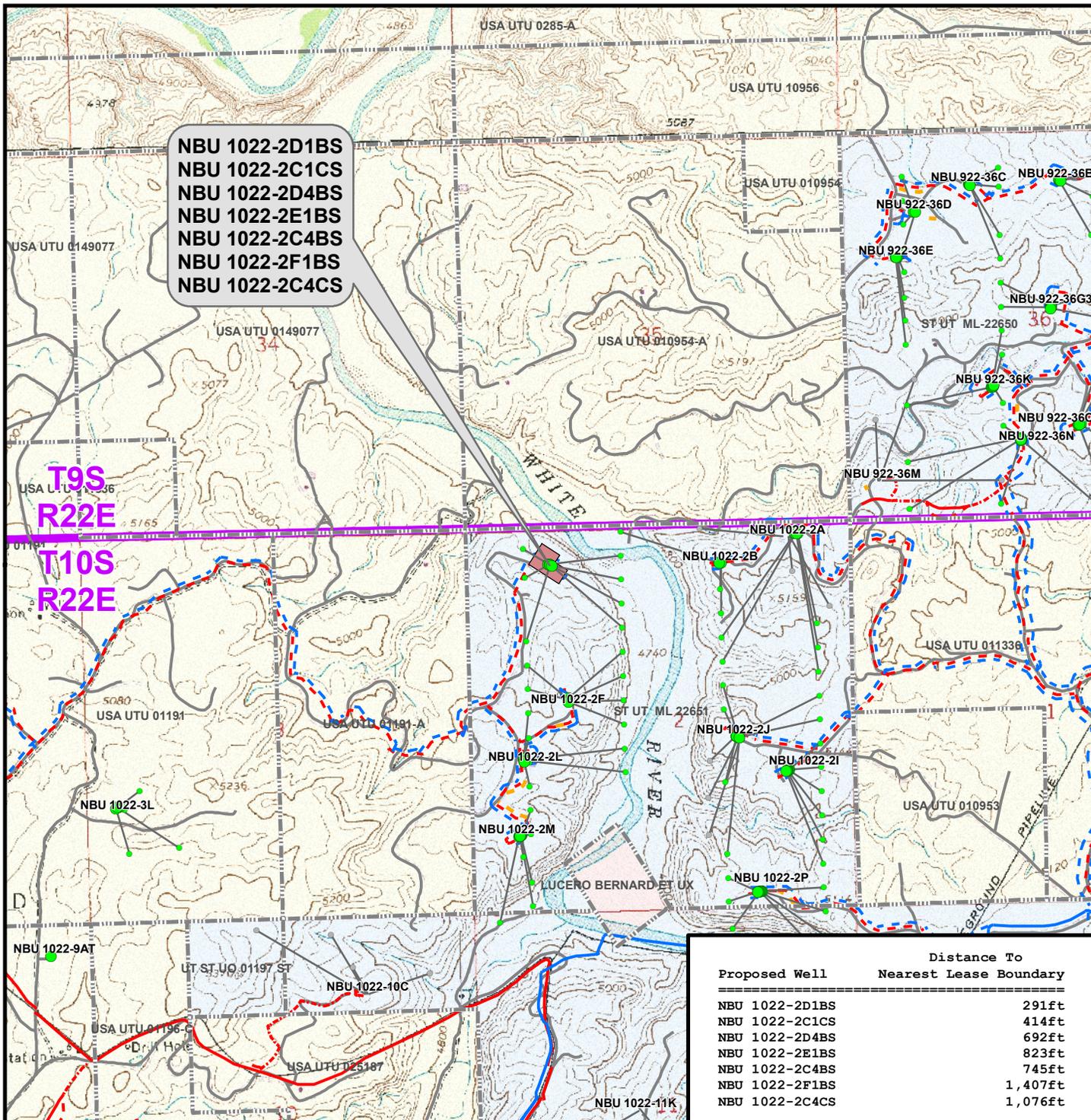
**WELL PAD - NBU 1022-2D**

TOPO D2 (PAD & PIPELINE DETAIL)  
 NBU 1022-2D1BS,  
 NBU 1022-2C1CS, NBU 1022-2D4BS,  
 NBU 1022-2E1BS, NBU 1022-2C4BS,  
 NBU 1022-2F1BS & NBU 1022-2C4CS  
 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" = 500ft	NAD83 USP Central	Sheet No:
Drawn: TL	Date: 30 Mar 2011	<b>17</b>
Revised: TL	Date: 27 July 2011	



**Legend**

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

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

**WELL PAD - NBU 1022-2D**

TOPO E  
NBU 1022-2D1BS,  
NBU 1022-2C1CS, NBU 1022-2D4BS,  
NBU 1022-2E1BS, NBU 1022-2C4BS,  
NBU 1022-2F1BS & NBU 1022-2C4CS  
LOCATED IN SECTION 2, T10S, R22E,  
S.L.B.&M., UINTAH COUNTY, UTAH

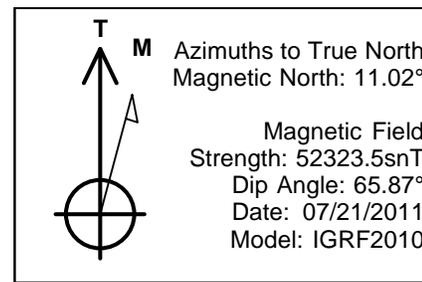
**609**  
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Sheridan, WY 82801  
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Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No:
Drawn: KGS	Date: 30 Mar 2011	<b>18</b> 18 of 19
Revised:	Date:	

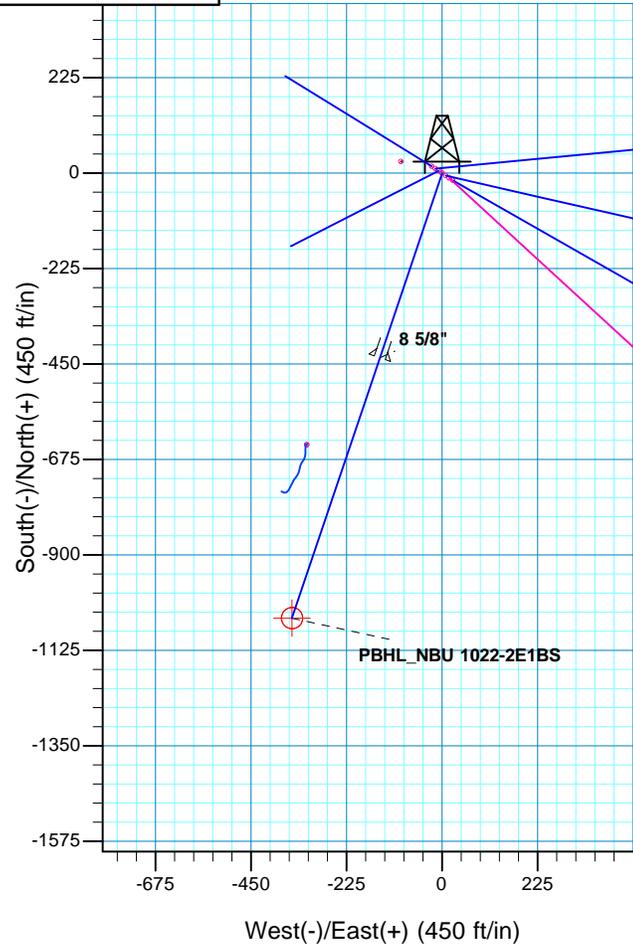
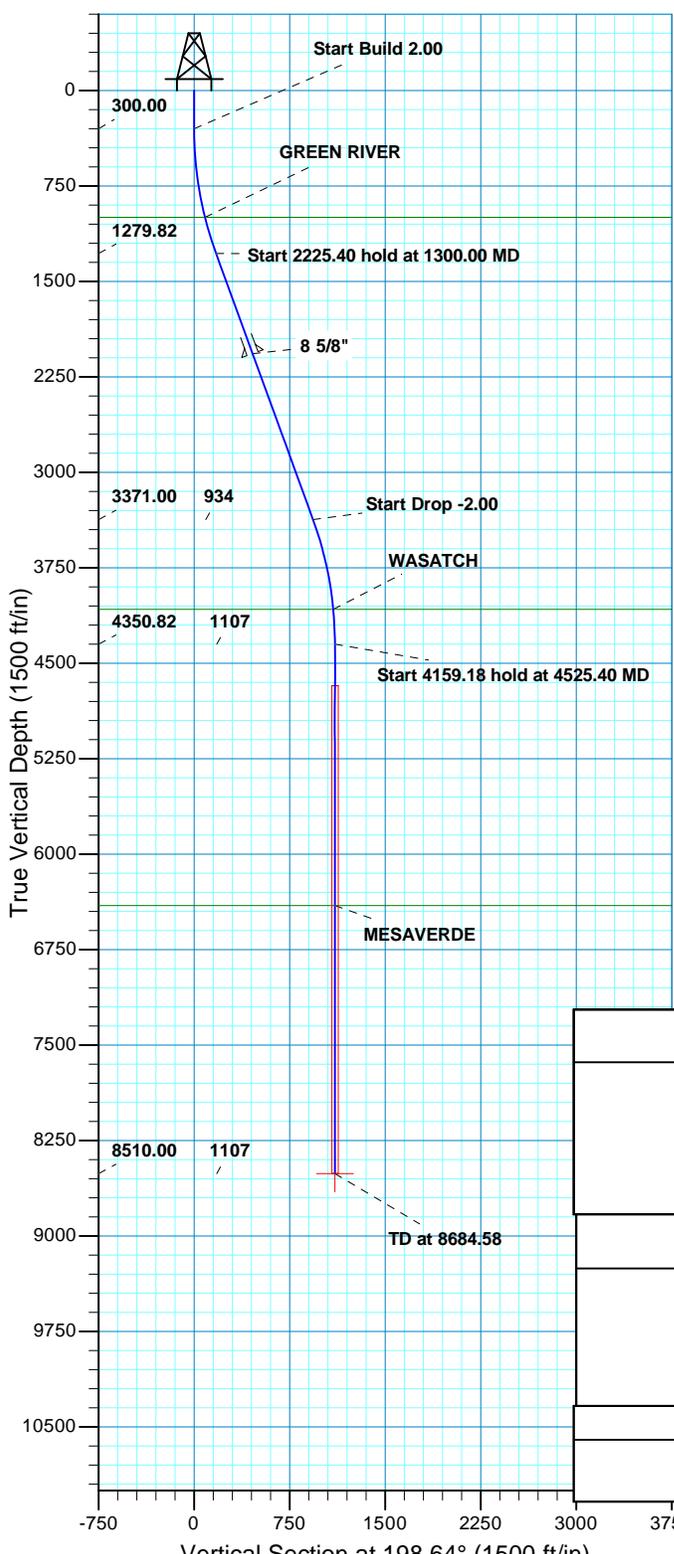
**Kerr-McGee Oil & Gas Onshore, LP**  
**WELL PAD - NBU 1022-2D**  
**WELLS – NBU 1022-2D1BS, NBU 1022-2C1CS, NBU 1022-2D4BS,**  
**NBU 1022-2E1BS, NBU 1022-2C4BS, NBU 1022-2F1BS & NBU 1022-2C4CS**  
**Section 2, T10S, R22E, S.L.B.&M.**

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 23.8 miles to the intersection of the Bitter Creek Road (County B Road 4120). Exit left and proceed in a southeasterly direction along the Bitter Creek Road approximately 3.9 miles to a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 5.1 miles to a second Class D County Road to the northeast. Exit right and proceed in a northeasterly direction along the second Class D County Road approximately 0.8 miles to a third Class D County Road to the south. Exit right and proceed in a southerly, then easterly direction along the third Class D County Road approximately 1.6 miles to a service road to the northeast. Exit left and proceed in a northeasterly direction along the service road approximately 0.1 miles to the NBU 3-2B well pad. Continue through the NBU 3-2B pad in a northerly direction approximately 305 feet. Continue in a northerly, northwesterly, then easterly direction along the service road approximately 0.4 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 59.3 miles in a southerly direction.



WELL DETAILS: NBU 1022-2E1BS									
GL 4874' & KB 4' @ 4878.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	607999.68	2585077.62	39° 59' 1.928 N	109° 24' 42.498 W				
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8510.00	-1048.64	-353.64	606943.07	2584748.56	39° 58' 51.564 N	109° 24' 47.041 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	198.64	1279.82	-163.71	-55.21	2.00	198.64	172.77	
3525.40	20.00	198.64	3371.00	-884.93	-298.43	0.00	0.00	933.90	
4525.40	0.00	0.00	4350.82	-1048.64	-353.64	2.00	180.00	1106.67	
8684.58	0.00	0.00	8510.00	-1048.64	-353.64	0.00	0.00	1106.67	PBHL_NBU 1022-2E1BS

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
996.00	1003.04	GREEN RIVER
4076.00	4250.15	WASATCH
6404.00	6578.58	MESAVERDE

CASING DETAILS			
TVD	MD	Name	Size
2067.00	2137.70	8 5/8"	8.625

RE



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

**Uintah County, UT NAD27  
NBU 1022-2D PAD  
NBU 1022-2E1BS**

**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 1022-2E1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2D PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-2E1BS	<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 1022-2D PAD, SECTION 2 T10S R22E				
<b>Site Position:</b>		<b>Northing:</b>	608,010.24 usft	<b>Latitude:</b>	39° 59' 2.036 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,585,060.83 usft	<b>Longitude:</b>	109° 24' 42.710 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 1022-2E1BS, 520 FNL 1177 FWL					
<b>Well Position</b>	<b>+N/-S</b>	-10.94 ft	<b>Northing:</b>	607,999.69 usft	<b>Latitude:</b>	39° 59' 1.928 N
	<b>+E/-W</b>	16.53 ft	<b>Easting:</b>	2,585,077.62 usft	<b>Longitude:</b>	109° 24' 42.498 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,874.00 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	65.87	52,324

<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	198.64

<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	198.64	1,279.82	-163.71	-55.21	2.00	2.00	0.00	198.64	
3,525.40	20.00	198.64	3,371.00	-884.93	-298.43	0.00	0.00	0.00	0.00	
4,525.40	0.00	0.00	4,350.82	-1,048.64	-353.64	2.00	-2.00	0.00	180.00	
8,684.58	0.00	0.00	8,510.00	-1,048.64	-353.64	0.00	0.00	0.00	0.00	PBHL_NBU 1022-2E'



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-2E1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2D PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-2E1BS	<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	198.64	399.98	-1.65	-0.56	1.75	2.00	2.00	0.00	
500.00	4.00	198.64	499.84	-6.61	-2.23	6.98	2.00	2.00	0.00	
600.00	6.00	198.64	599.45	-14.87	-5.01	15.69	2.00	2.00	0.00	
700.00	8.00	198.64	698.70	-26.42	-8.91	27.88	2.00	2.00	0.00	
800.00	10.00	198.64	797.47	-41.24	-13.91	43.52	2.00	2.00	0.00	
900.00	12.00	198.64	895.62	-59.32	-20.00	62.60	2.00	2.00	0.00	
1,000.00	14.00	198.64	993.06	-80.63	-27.19	85.10	2.00	2.00	0.00	
1,003.04	14.06	198.64	996.00	-81.33	-27.43	85.83	2.00	2.00	0.00	
<b>GREEN RIVER</b>										
1,100.00	16.00	198.64	1,089.64	-105.16	-35.46	110.98	2.00	2.00	0.00	
1,200.00	18.00	198.64	1,185.27	-132.86	-44.81	140.21	2.00	2.00	0.00	
1,300.00	20.00	198.64	1,279.82	-163.71	-55.21	172.77	2.00	2.00	0.00	
<b>Start 2225.40 hold at 1300.00 MD</b>										
1,400.00	20.00	198.64	1,373.78	-196.12	-66.14	206.97	0.00	0.00	0.00	
1,500.00	20.00	198.64	1,467.75	-228.53	-77.07	241.17	0.00	0.00	0.00	
1,600.00	20.00	198.64	1,561.72	-260.94	-88.00	275.37	0.00	0.00	0.00	
1,700.00	20.00	198.64	1,655.69	-293.34	-98.93	309.58	0.00	0.00	0.00	
1,800.00	20.00	198.64	1,749.66	-325.75	-109.86	343.78	0.00	0.00	0.00	
1,900.00	20.00	198.64	1,843.63	-358.16	-120.78	377.98	0.00	0.00	0.00	
2,000.00	20.00	198.64	1,937.60	-390.57	-131.71	412.18	0.00	0.00	0.00	
2,100.00	20.00	198.64	2,031.57	-422.98	-142.64	446.38	0.00	0.00	0.00	
2,137.70	20.00	198.64	2,067.00	-435.20	-146.76	459.28	0.00	0.00	0.00	
<b>8 5/8"</b>										
2,200.00	20.00	198.64	2,125.54	-455.39	-153.57	480.59	0.00	0.00	0.00	
2,300.00	20.00	198.64	2,219.51	-487.80	-164.50	514.79	0.00	0.00	0.00	
2,400.00	20.00	198.64	2,313.48	-520.21	-175.43	548.99	0.00	0.00	0.00	
2,500.00	20.00	198.64	2,407.45	-552.61	-186.36	583.19	0.00	0.00	0.00	
2,600.00	20.00	198.64	2,501.42	-585.02	-197.29	617.39	0.00	0.00	0.00	
2,700.00	20.00	198.64	2,595.39	-617.43	-208.22	651.60	0.00	0.00	0.00	
2,800.00	20.00	198.64	2,689.35	-649.84	-219.15	685.80	0.00	0.00	0.00	
2,900.00	20.00	198.64	2,783.32	-682.25	-230.08	720.00	0.00	0.00	0.00	
3,000.00	20.00	198.64	2,877.29	-714.66	-241.01	754.20	0.00	0.00	0.00	
3,100.00	20.00	198.64	2,971.26	-747.07	-251.94	788.40	0.00	0.00	0.00	
3,200.00	20.00	198.64	3,065.23	-779.48	-262.87	822.61	0.00	0.00	0.00	
3,300.00	20.00	198.64	3,159.20	-811.88	-273.80	856.81	0.00	0.00	0.00	
3,400.00	20.00	198.64	3,253.17	-844.29	-284.73	891.01	0.00	0.00	0.00	
3,500.00	20.00	198.64	3,347.14	-876.70	-295.65	925.21	0.00	0.00	0.00	
3,525.40	20.00	198.64	3,371.00	-884.93	-298.43	933.90	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
3,600.00	18.51	198.64	3,441.43	-908.24	-306.29	958.50	2.00	-2.00	0.00	
3,700.00	16.51	198.64	3,536.80	-936.75	-315.90	988.58	2.00	-2.00	0.00	
3,800.00	14.51	198.64	3,633.15	-962.08	-324.45	1,015.32	2.00	-2.00	0.00	
3,900.00	12.51	198.64	3,730.38	-984.21	-331.91	1,038.67	2.00	-2.00	0.00	
4,000.00	10.51	198.64	3,828.36	-1,003.12	-338.29	1,058.62	2.00	-2.00	0.00	
4,100.00	8.51	198.64	3,926.98	-1,018.77	-343.56	1,075.14	2.00	-2.00	0.00	
4,200.00	6.51	198.64	4,026.12	-1,031.15	-347.74	1,088.21	2.00	-2.00	0.00	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-2E1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2D PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-2E1BS	<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)	
4,250.15	5.50	198.64	4,076.00	-1,036.12	-349.42	1,093.45	2.00	-2.00	0.00	
<b>WASATCH</b>										
4,300.00	4.51	198.64	4,125.66	-1,040.24	-350.81	1,097.80	2.00	-2.00	0.00	
4,400.00	2.51	198.64	4,225.46	-1,046.04	-352.76	1,103.92	2.00	-2.00	0.00	
4,500.00	0.51	198.64	4,325.42	-1,048.53	-353.60	1,106.55	2.00	-2.00	0.00	
4,525.40	0.00	0.00	4,350.82	-1,048.64	-353.64	1,106.67	2.00	-2.00	0.00	
<b>Start 4159.18 hold at 4525.40 MD</b>										
4,600.00	0.00	0.00	4,425.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,525.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,625.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,725.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,825.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,100.00	0.00	0.00	4,925.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,025.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,125.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,225.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,325.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,425.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,525.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,625.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,725.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,825.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,925.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,025.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,125.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,225.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,325.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,578.58	0.00	0.00	6,404.00	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
<b>MESAVERDE</b>										
6,600.00	0.00	0.00	6,425.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,525.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,625.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,725.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,825.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,925.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,025.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,125.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,225.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,325.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,425.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,525.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,625.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,725.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,825.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,925.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,025.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,125.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,225.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,325.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,425.42	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
8,684.58	0.00	0.00	8,510.00	-1,048.64	-353.64	1,106.67	0.00	0.00	0.00	
<b>TD at 8684.58 - PBHL_NBU 1022-2E1BS</b>										



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-2E1BS
<b>Company:</b>	Kerr McGee Oil and Gas Onshore LP	<b>TVD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Project:</b>	Uintah County, UT NAD27	<b>MD Reference:</b>	GL 4874' & KB 4' @ 4878.00ft (ASSUMED)
<b>Site:</b>	NBU 1022-2D PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1022-2E1BS	<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 1022-2E1B: - hit/miss target - Shape - Circle (radius 25.00)	0.00	0.00	8,510.00	-1,048.64	-353.64	606,943.08	2,584,748.55	39° 58' 51.564 N	109° 24' 47.041 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,137.70	2,067.00	8 5/8"	8.625	11.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,003.04	996.00	GREEN RIVER			
4,250.15	4,076.00	WASATCH			
6,578.58	6,404.00	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	-163.71	-55.21	Start 2225.40 hold at 1300.00 MD
3,525.40	3,371.00	-884.93	-298.43	Start Drop -2.00
4,525.40	4,350.82	-1,048.64	-353.64	Start 4159.18 hold at 4525.40 MD
8,684.58	8,510.00	-1,048.64	-353.64	TD at 8684.58

<b>NBU 1022-2C1CS</b>			
Surface:	509 FNL / 1160 FWL	NWNW	Lot 4
BHL:	414 FNL / 2149 FWL	NENW	Lot 3
<b>NBU 1022-2C4BS</b>			
Surface:	526 FNL / 1185 FWL	NWNW	Lot 4
BHL:	745 FNL / 2148 FWL	NENW	Lot 3
<b>NBU 1022-2C4CS</b>			
Surface:	537 FNL / 1202 FWL	NWNW	Lot 4
BHL:	1076 FNL / 2147 FWL	NENW	Lot 3
<b>NBU 1022-2D1BS</b>			
Surface:	503 FNL / 1152 FWL	NWNW	Lot 4
BHL:	291 FNL / 807 FWL	NWNW	Lot 4
<b>NBU 1022-2D4BS</b>			
Surface:	514 FNL / 1168 FWL	NWNW	Lot 4
BHL:	692 FNL / 820 FWL	NWNW	Lot 4
<b>NBU 1022-2E1BS</b>			
Surface:	520 FNL / 1177 FWL	NWNW	Lot 4
BHL:	1569 FNL / 823 FWL	SWNW	Lot
<b>NBU 1022-2F1BS</b>			
Surface:	531 FNL / 1193 FWL	NWNW	Lot 4
BHL:	1407 FNL / 2146 FWL	SENW	Lot

Pad: NBU 1022-2D 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:**

No new access road is proposed. (See Topo Map B).  
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 NBU 456-2E. The NBU 456-2E well location is a vertical producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of July 19, 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 Western Section line is  $\pm 2,995'$  and the individual segments are broken up as follows:

- $\pm 585'$  (0.11 miles) –New 8" buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 2,105'$  (0.40 miles) –New 8" buried gas pipeline from the edge of pad to the tie-in at the proposed 1022-2F Intersection. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 305'$  (0.06 miles) - New 16" buried gas pipeline from the proposed NBU 1022-2F Intersection to the Western Section line. Please refer to Topo D2-Pad and Pipeline Detail.

The total liquid gathering pipeline distance from the separator to the Western Section line is  $\pm 2,995'$  and the individual segments are broken up as follows:

- $\pm 585'$  (0.11 miles) - Up to 6" new buried liquid pipeline from the separator to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 2,105'$  (0.40 miles) –Up to 6" new buried liquid pipeline from the edge of pad to the tie-in at the proposed 1022-2F Intersection. Please refer to Topo D2 - Pad and Pipeline Detail.
- $\pm 305'$  (0.06 miles) - Up to 6" new buried liquid pipeline from the proposed NBU 1022-2F Intersection to the Western Section line. 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

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

Andy Lytle  
Regulatory Analyst I  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6100

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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Andy Lytle

July 19, 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

July 25, 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 1022-2E1BS  
T10S-R22E  
Section 2: NWNW  
Surface: 520' FNL, 1177' FWL  
T10S-R22E  
Section 2: SWNW  
Bottom Hole: 1569' FNL, 823' FWL  
Uintah County, Utah

Dear Ms. Mason:

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

- Kerr-McGee's NBU 1022-2E1BS 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,

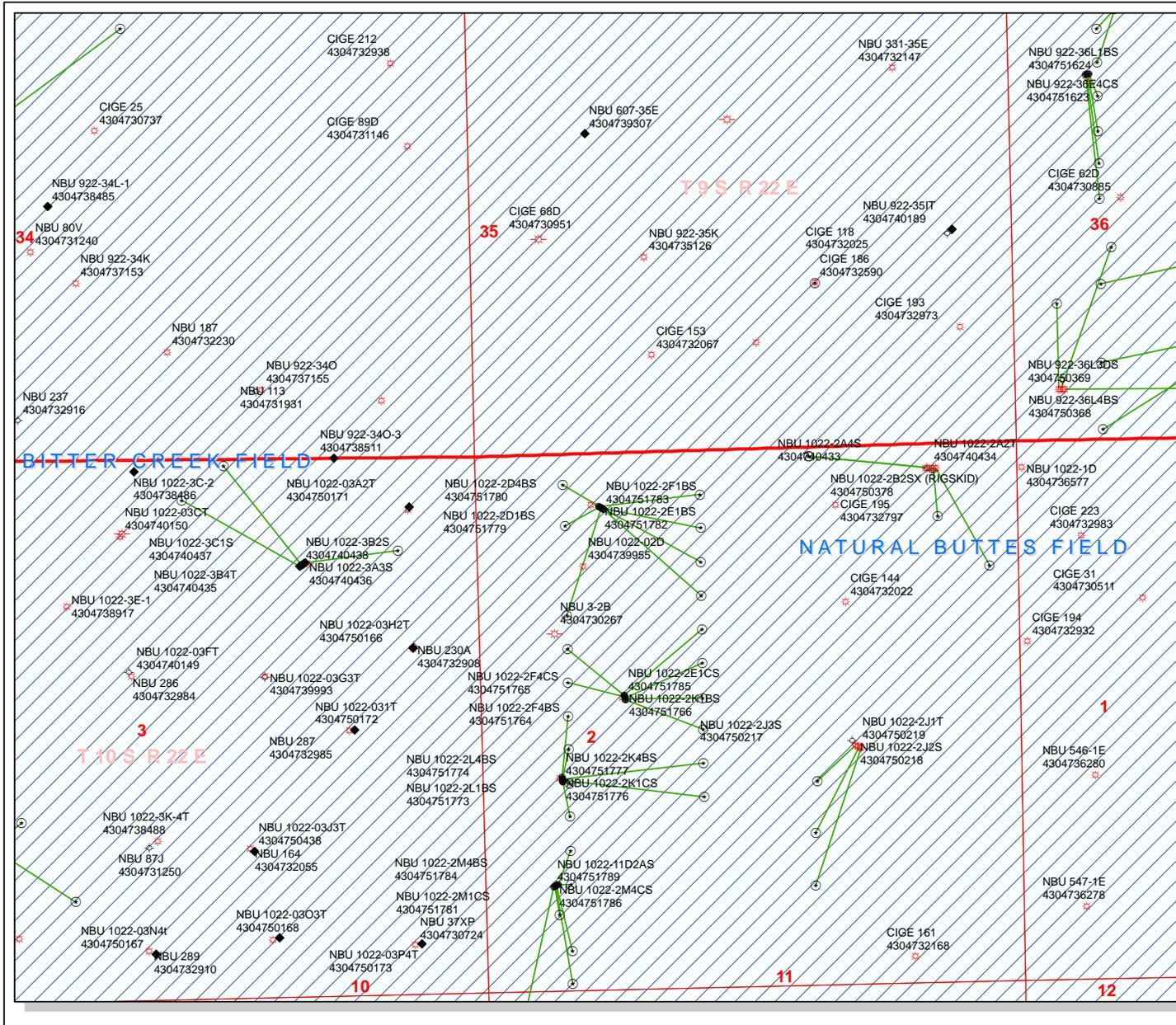
KERR-MCGEE OIL & GAS ONSHORE LP

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

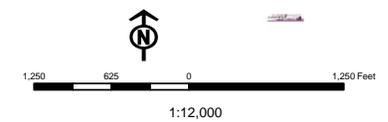
Joseph D. Johnson  
Landman

**API Number: 4304751782**  
**Well Name: NBU 1022-2E1BS**  
 Township T1.0 . Range R2.2 . Section 102  
**Meridian: SLBM**  
 Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Map Prepared:  
 Map Produced by Diana Mason



Units STATUS	Wells Query Status
ACTIVE	APD - Approved Permit
EXPLORATORY	DRL - Spudded (Drilling Commenced)
GAS STORAGE	GIW - Gas Injection
NF PP OIL	GS - Gas Storage
NF SECONDARY	LA - Location Abandoned
PI OIL	LOC - New Location
PP GAS	OPS - Operation Suspended
PP GEOTHERMAL	PA - Plugged Abandoned
PP OIL	PGW - Producing Gas Well
SECONDARY	POW - Producing Oil Well
TERMINATED	RET - Returned APD
Unknown	SGW - Shut-in Gas Well
ABANDONED	SOW - Shut-in Oil Well
ACTIVE	TA - Temp. Abandoned
COMBINED	TW - Test Well
INACTIVE	WDW - Water Disposal
STORAGE	WIW - Water Injection Well
TERMINATED	WSW - Water Supply Well
Sections	
Township	



# 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 5, 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 1022-2F PAD**

43-047-51760	NBU 1022-E4BS	Sec 02 T10S R22E 2386 FNL 1379 FWL
	BHL	Sec 02 T10S R22E 2231 FNL 0822 FWL

43-047-51761	NBU 1022-2F1CS	Sec 02 T10S R22E 2366 FNL 1376 FWL
	BHL	Sec 02 T10S R22E 1738 FNL 2145 FWL

43-047-51764	NBU 1022-2F4BS	Sec 02 T10S R22E 2395 FNL 1381 FWL
	BHL	Sec 02 T10S R22E 2069 FNL 2144 FWL

43-047-51765	NBU 1022-2F4CS	Sec 02 T10S R22E 2405 FNL 1382 FWL
	BHL	Sec 02 T10S R22E 2412 FNL 2141 FWL

43-047-51766	NBU 1022-2K1BS	Sec 02 T10S R22E 2415 FNL 1384 FWL
	BHL	Sec 02 T10S R22E 2566 FSL 2142 FWL

43-047-51785	NBU 1022-2E1CS	Sec 02 T10S R22E 2376 FNL 1377 FWL
	BHL	Sec 02 T10S R22E 1900 FNL 0823 FWL

**NBU 1022-2D PAD**

43-047-51767	NBU 1022-2C4BS	Sec 02 T10S R22E 0526 FNL 1185 FWL
	BHL	Sec 02 T10S R22E 0745 FNL 2148 FWL

43-047-51768	NBU 1022-2C4CS	Sec 02 T10S R22E 0537 FNL 1202 FWL
	BHL	Sec 02 T10S R22E 1076 FNL 2147 FWL

43-047-51779	NBU 1022-2D1BS	Sec 02 T10S R22E 0503 FNL 1152 FWL
	BHL	Sec 02 T10S R22E 0291 FNL 0807 FWL

**RECEIVED: August 08, 2011**

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-51780	NBU 1022-2D4BS	Sec 02 T10S R22E 0514 FNL 1168 FWL BHL Sec 02 T10S R22E 0692 FNL 0820 FWL
43-047-51782	NBU 1022-2E1BS	Sec 02 T10S R22E 0520 FNL 1177 FWL BHL Sec 02 T10S R22E 1569 FNL 0823 FWL
43-047-51783	NBU 1022-2F1BS	Sec 02 T10S R22E 0531 FNL 1193 FWL BHL Sec 02 T10S R22E 1407 FNL 2146 FWL
<b>NBU 1022-2L PAD</b>		
43-047-51771	NBU 1022-2E4CS	Sec 02 T10S R22E 2127 FSL 0750 FWL BHL Sec 02 T10S R22E 2561 FNL 0822 FWL
43-047-51772	NBU 1022-2L1CS	Sec 02 T10S R22E 2087 FSL 0753 FWL BHL Sec 02 T10S R22E 2067 FSL 0821 FWL
43-047-51773	NBU 1022-2L1BS	Sec 02 T10S R22E 2117 FSL 0751 FWL BHL Sec 02 T10S R22E 2398 FSL 0822 FWL
43-047-51774	NBU 1022-2L4BS	Sec 02 T10S R22E 2077 FSL 0754 FWL BHL Sec 02 T10S R22E 1736 FSL 0821 FWL
43-047-51776	NBU 1022-2K1CS	Sec 02 T10S R22E 2107 FSL 0752 FWL BHL Sec 02 T10S R22E 2235 FSL 2141 FWL
43-047-51777	NBU 1022-2K4BS	Sec 02 T10S R22E 2097 FSL 0752 FWL BHL Sec 02 T10S R22E 1904 FSL 2140 FWL
<b>NBU 1022-2M PAD</b>		
43-047-51775	NBU 1022-2L4CS	Sec 02 T10S R22E 1075 FSL 0695 FWL BHL Sec 02 T10S R22E 1406 FSL 0820 FWL
43-047-51778	NBU 1022-2M1BS	Sec 02 T10S R22E 1071 FSL 0686 FWL BHL Sec 02 T10S R22E 1075 FSL 0820 FWL
43-047-51781	NBU 1022-2M1CS	Sec 02 T10S R22E 1057 FSL 0659 FWL BHL Sec 02 T10S R22E 0771 FSL 0704 FWL
43-047-51784	NBU 1022-2M4BS	Sec 02 T10S R22E 1066 FSL 0677 FWL BHL Sec 02 T10S R22E 0414 FSL 0819 FWL
43-047-51786	NBU 1022-2M4CS	Sec 02 T10S R22E 1062 FSL 0668 FWL BHL Sec 02 T10S R22E 0092 FSL 0822 FWL
43-047-51789	NBU 1022-11D2AS	Sec 02 T10S R22E 1053 FSL 0650 FWL BHL Sec 11 T10S R22E 0133 FNL 0360 FWL

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: 2011.08.08 08:31:52 -06'00'

**RECEIVED: August 08, 2011**

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

MCoulthard:mc:8-5-11

**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 1022-2E1BS			
String	Surf	Prod		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2003	8510		
Previous Shoe Setting Depth (TVD)	40	2003		
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=	864	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	624	NO <input type="text" value="air drill"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	423	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)=	432	NO <input type="text" value="Reasonable for area"/>
Required Casing/BOPE Test Pressure=		2003	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=	5532	
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	4511	YES <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	3660	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)=	4100	NO <input type="text" value="Reasonable"/>
Required Casing/BOPE Test Pressure=		5000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		2003	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

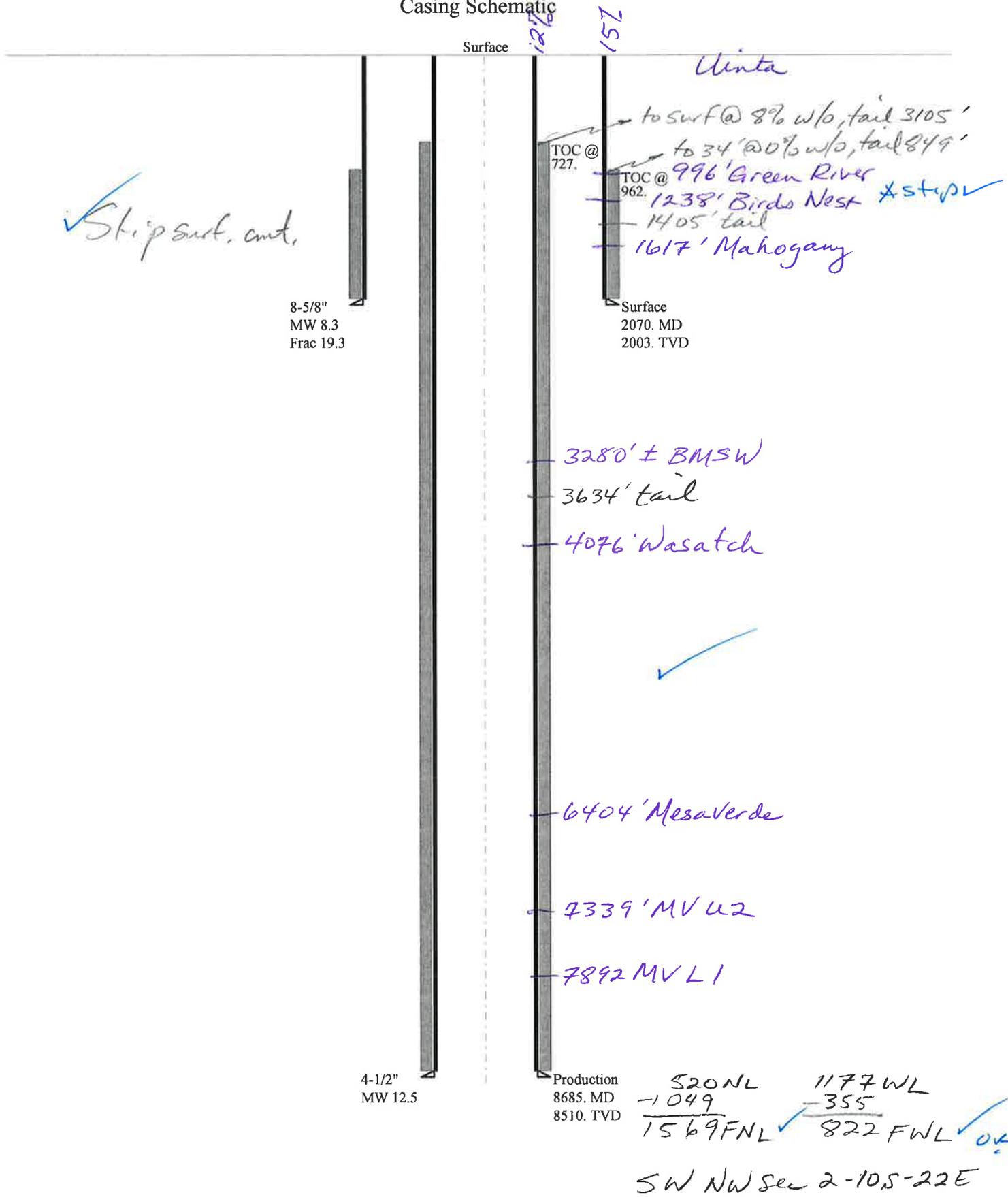
Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			<b>BOPE Adequate For Drilling And Setting Casing at Depth?</b>
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO <input type="text"/>
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO <input type="text"/>
			<b>*Can Full Expected 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: 43047517820000

*Max Pressure Allowed @ Previous Casing Shoe=	<input type="text"/>	psi *Assumes 1psi/ft frac gradient
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# 43047517820000 NBU 1022-2E1BS

## Casing Schematic



Well name:	<b>43047517820000 NBU 1022-2E1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Surface	Project ID:	43-047-51782
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: 102 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 962 ft

**Burst**

Max anticipated surface pressure: 1,822 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 2,062 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: 1,808 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
Departure at shoe: 436 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 20 °

**Re subsequent strings:**

Next setting depth: 8,510 ft  
Next mud weight: 12.500 ppg  
Next setting BHP: 5,526 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 2,070 ft  
Injection pressure: 2,070 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	2070	8.625	28.00	I-55	LT&C	2003	2070	7.892	81972
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	867	1880	2.169	2062	3390	1.64	56.1	348	6.20 J

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

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

Date: August 24, 2011  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2003 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>43047517820000 NBU 1022-2E1BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-51782
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: 727 ft

**Burst**

Max anticipated surface pressure: 3,654 psi  
 Internal gradient: 0.220 psi/ft  
 Calculated BHP 5,526 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)

**Directional Info - Build & Drop**

Kick-off point 300 ft  
 Departure at shoe: 1107 ft  
 Maximum dogleg: 2 °/100ft  
 Inclination at shoe: 0 °

Tension is based on air weight.

Neutral point: 7,095 ft

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	8685	4.5	11.60	I-80	LT&C	8510	8685	3.875	114642
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	5526	6360	1.151	5526	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: August 24, 2011  
 Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 8510 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 1022-2E1BS  
**API Number** 43047517820000      **APD No** 4281      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** NWNW      **Sec 2 Tw** 10.0S      **Rng** 22.0E      520 FNL 1177 FWL  
**GPS Coord (UTM)** 635605 4426960      **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 on the northeast end of a major drainage divide called Archy Bench. . 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 varies from ¼ mile to 2 miles. 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 41 air miles to the northwest. Access from Vernal is approximately 59.3 road miles following Utah State, Uintah County and oilfield development roads. Six wells, in addition to this one will be directionally drilled from this pad. (for a total of seven new wells). There is one existing well on this pad. (The NBU 456-2E). At this time, the decision rather to PA or TA this well has not been made. This proposed location takes in an existing location, and very little new construction will be necessary except for digging the reserve pit. The existing access road will be adequate. The location runs in an east-west direction along the top of a steep ridge. This ridge breaks off sharply into rugged secondary canyons especially on the northeast and east sides. New construction will consist of approx. 75 feet to the east of the existing pad, and 50 feet on the north and west sides for reserve pit and excess cut stockpile. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and should be a suitable location for eight wells, and is on the best site available in the immediate area.

### Surface Use Plan

#### **Current Surface Use**

Wildlife Habitat  
Existing Well Pad

<b>New Road Miles</b>	<b>Well Pad</b>	<b>Src Const Material</b>	<b>Surface Formation</b>
0	<b>Width 342 Length 435</b>	Onsite	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** N

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diversion Required?** N

**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 north side of the location. Dimensions are 120' x 260' x 12' deep with 2' of freeboard. Freeboard on the northwest corner of pit will be fill. 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**

David Hackford  
**Evaluator**

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

# Application for Permit to Drill Statement of Basis

9/27/2011

## 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>
4281	43047517820000	SITLA	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 1022-2E1BS	<b>Unit</b>		NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES	<b>Type of Work</b>		DRILL	
<b>Location</b>	NWNW 2 10S 22E S 520 FNL 1177 FWL GPS Coord (UTM)				635611E 4426952N

### Geologic Statement of Basis

Kerr McGee proposes to set 2,070' 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 3,280'. 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**

9/21/2011  
**Date / Time**

### Surface Statement of Basis

The general area is in the southeast portion of the Natural Buttes Unit on the northeast end of a major drainage divide called Archy Bench. 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 varies from ¼ mile to 2 miles. 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 41 air miles to the northwest. Access from Vernal is approximately 59.3 road miles following Utah State, Uintah County and oilfield development roads. It will not be necessary to construct an access road. The existing access road will be adequate.

Seven wells will be directionally drilled from this location. They are the NBU 1022-2D1BS, NBU 1022-2C1CS, NBU 1022-2D4BS, NBU 1022-2E1BS, NBU 1022-2C4BS, NBU 1022-2F1BS and the NBU 1022-2C4CS. The existing location has one existing well. This well is the NBU 456-2E and at this time the decision rather to PA or TA this well has not been made. The location is on a sharp ridge that runs in an east-west direction. This ridge breaks off sharply into rugged secondary canyons on the northeast and east sides. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and sufficient for eight wells.

Excess material will be stockpiled on the north side of the new reserve pit. Approx. 75' of additional construction will be necessary on the east side of the original location.

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**

**RECEIVED: September 27, 2011**

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# Application for Permit to Drill Statement of Basis

9/27/2011

Utah Division of Oil, Gas and Mining

Page 2

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**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.
Pits	The reserve pit should be located on the north side of the location.

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 7/28/2011**API NO. ASSIGNED:** 43047517820000**WELL NAME:** NBU 1022-2E1BS**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)**PHONE NUMBER:** 720 929-6100**CONTACT:** Andy Lytle**PROPOSED LOCATION:** NWNW 02 100S 220E**Permit Tech Review:** **SURFACE:** 0520 FNL 1177 FWL**Engineering Review:** **BOTTOM:** 1569 FNL 0823 FWL**Geology Review:** **COUNTY:** UINTAH**LATITUDE:** 39.98375**LONGITUDE:** -109.41176**UTM SURF EASTINGS:** 635611.00**NORTHINGS:** 4426952.00**FIELD NAME:** NATURAL BUTTES**LEASE TYPE:** 3 - State**LEASE NUMBER:** ST UT ML 22651**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 1022-2E1BS  
**API Well Number:** 43047517820000  
**Lease Number:** ST UT ML 22651  
**Surface Owner:** STATE  
**Approval Date:** 9/27/2011

**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

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> ST UT ML 22651
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 1022-2E1BS	
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047517820000	
<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> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW 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: 5/15/2012  <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <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"/> DEEPEN <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> WILDCAT WELL DETERMINATION <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 TRIPLE A 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 DATE 5/15/2012 AT TIME 20:00 HRS.		
<b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY May 18, 2012</b>		
<b>NAME (PLEASE PRINT)</b> Cara Mahler	<b>PHONE NUMBER</b> 720 929-6029	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A	<b>DATE</b> 5/18/2012	

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
 Submitted By J. Scharnowske Phone Number 720.929.6304  
 Well Name/Number NBU 1022-2E1BS  
 Qtr/Qtr NWNW Section 2 Township 10S Range 22E  
 Lease Serial Number ST UT ML 22651  
 API Number 4304751782

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

Date/Time 05/15/2012 15:00 HRS AM  PM

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

- Surface Casing  
 Intermediate Casing  
 Production Casing  
 Liner  
 Other

Date/Time 06/05/2012 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 LOVEL YOUNG AT 435.781.7051

**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) 929-6029

**Well 1**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751782	NBU 1022-2E1BS		NWNW	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
B	99999	2900	5/15/2012		5/21/2012		
<b>Comments:</b> MIRU BUCKET RIG. <i>Wsmvd</i> SPUD WELL LOCATION ON 5/15/2012 AT 20:00 HRS. <i>BHL Swnw</i>							

**Well 2**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751767	NBU 1022-2C4BS		NWNW	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
B	99999	2900	5/15/2012		5/21/2012		
<b>Comments:</b> MIRU BUCKET RIG. <i>Wsmvd</i> SPUD WELL LOCATION ON 5/15/2012 AT 22:30 HRS. <i>BHL henuw</i>							

**Well 3**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751783	NBU 1022-2F1BS		NWNW	2	10S	22E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
B	99999	2900	5/16/2012		5/21/2012		
<b>Comments:</b> MIRU BUCKET RIG. <i>Wsmvd</i> SPUD WELL LOCATION ON 5/16/2012 AT 08:00 HRS. <i>BHL:Senw</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)

**RECEIVED**  
**MAY 21 2012**

CARA MAHLER

Name (Please Print)

Signature

REGULATORY ANALYST

Title

5/18/2012

Date

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
 Submitted By J. Scharnowske Phone Number 720.929.6304  
 Well Name/Number NBU 1022-2E1BS  
 Qtr/Qtr NWNW Section 2 Township 10S Range 22E  
 Lease Serial Number ST UT ML 22651  
 API Number 4304751782

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

Date/Time 05/15/2012 15:00 HRS AM  PM

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

- Surface Casing  
 Intermediate Casing  
 Production Casing  
 Liner  
 Other

RECEIVED

MAY 15 2012

DIV. OF OIL, GAS &amp; MINING

Date/Time 06/05/2012 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 LOVEL 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>5.LEASE DESIGNATION AND SERIAL NUMBER:</b> ST UT ML 22651
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <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 1022-2E1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047517820000
<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> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW 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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 6/5/2012  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> ACIDIZE <input checked="" 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.

THE OPERATOR REQUESTS APPROVAL FOR A FIT WAIVER, A 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.

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

<b>NAME (PLEASE PRINT)</b> Cara Mahler	<b>PHONE NUMBER</b> 720 929-6029	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A	<b>DATE</b> 6/5/2012	

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1022-2E1BS**

Surface: 520 FNL / 1177 FWL NWNW  
 BHL: 1569 FNL / 823 FWL SWNW

Section 2 T10S R22E

Uintah County, Utah  
 Mineral Lease: ST UT ML 22651

**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	996	
Birds Nest	1238	Water
Mahogany	1617	Water
Wasatch	4076	Gas
Mesaverde	6404	Gas
MVU2	7339	Gas
MVL1	7892	Gas
TVD	8510	Gas
TD	8685	Gas

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 8510' 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 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.*

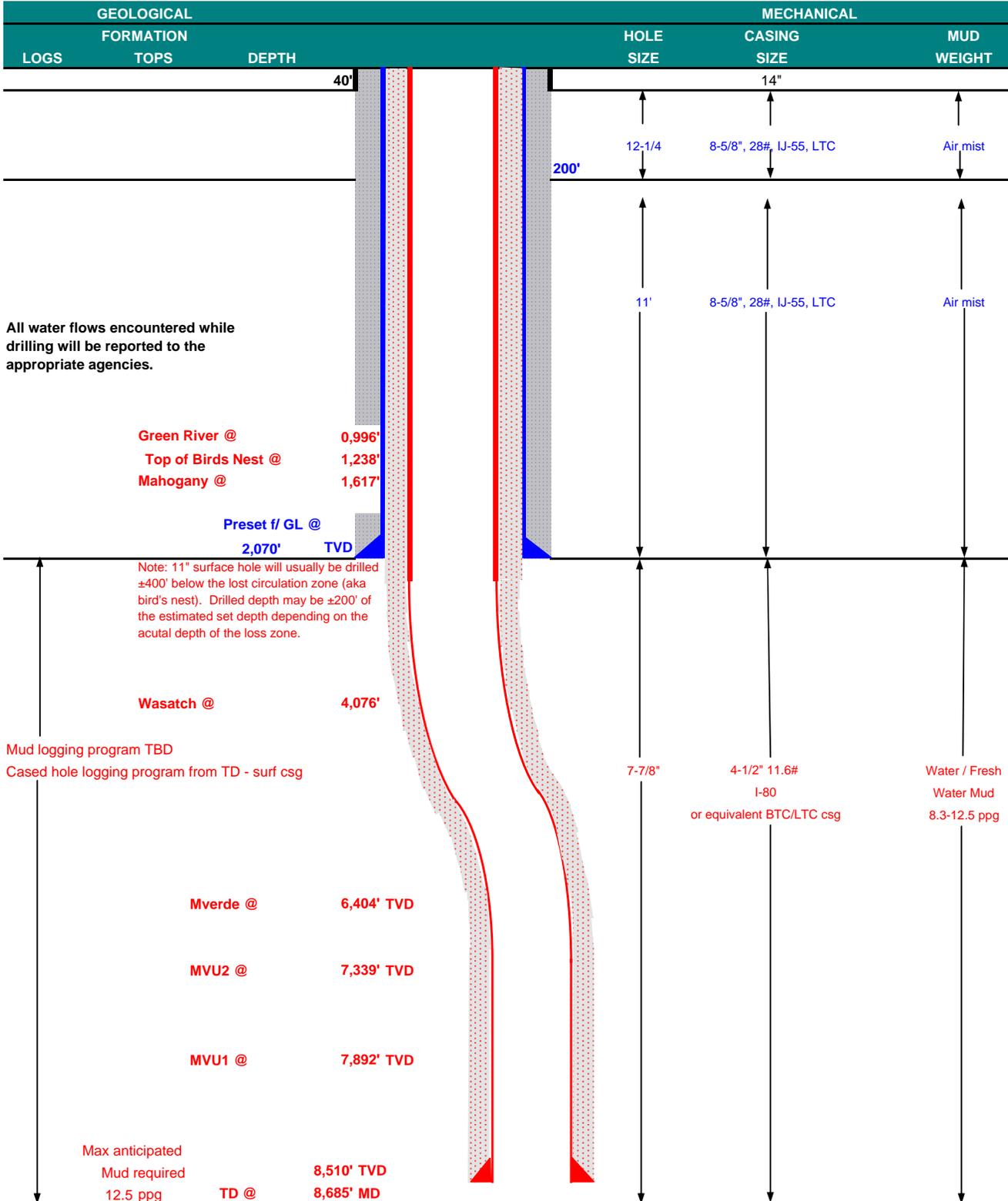
10. **Other Information:**

*Please refer to the attached Drilling Program.*



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

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP		DATE	July 26, 2011			
WELL NAME	<b>NBU 1022-2E1BS</b>		TD	8,510'	TVD	8,685' MD	
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	FINISHED ELEVATION	4,874'
SURFACE LOCATION	NWNW	520 FNL	1177 FWL	Sec 2	T 10S R 22E		
	Latitude: 39.983869		Longitude: -109.411805		NAD 27		
BTM HOLE LOCATION	SWNW	1569 FNL	823 FWL	Sec 2	T 10S R 22E		
	Latitude: 39.98099		Longitude: -109.413067		NAD 27		
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**

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS			
						BURST	LTC		BTC
							COLLAPSE	TENSION	
CONDUCTOR	14"	0-40'							
SURFACE	8-5/8"	0 to 2,070	28.00	IJ-55	LTC	3,390	1,880	348,000	N/A
						2.61	1.94	6.86	N/A
PRODUCTION	4-1/2"	0 to 8,685	11.60	I-80	LTC/BTC	7,780	6,350	279,000	367,000
						1.11	1.15	3.42	4.50

**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 + 0.25 pps flocele	180	60%	15.80	1.15	
	Option 1	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt + 2% CaCl + 0.25 pps flocele	270	0%	15.80	1.15
<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>								
SURFACE	Option 2	LEAD	1,570'	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	3,575'	Premium Lite II +0.25 pps celloflake + 5 pps gilsonite + 10% gel + 0.5% extender	270	20%	11.00	3.38	
	TAIL	5,110'	50/50 Poz/G + 10% salt + 2% gel + 0.1% R-3	1,210	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

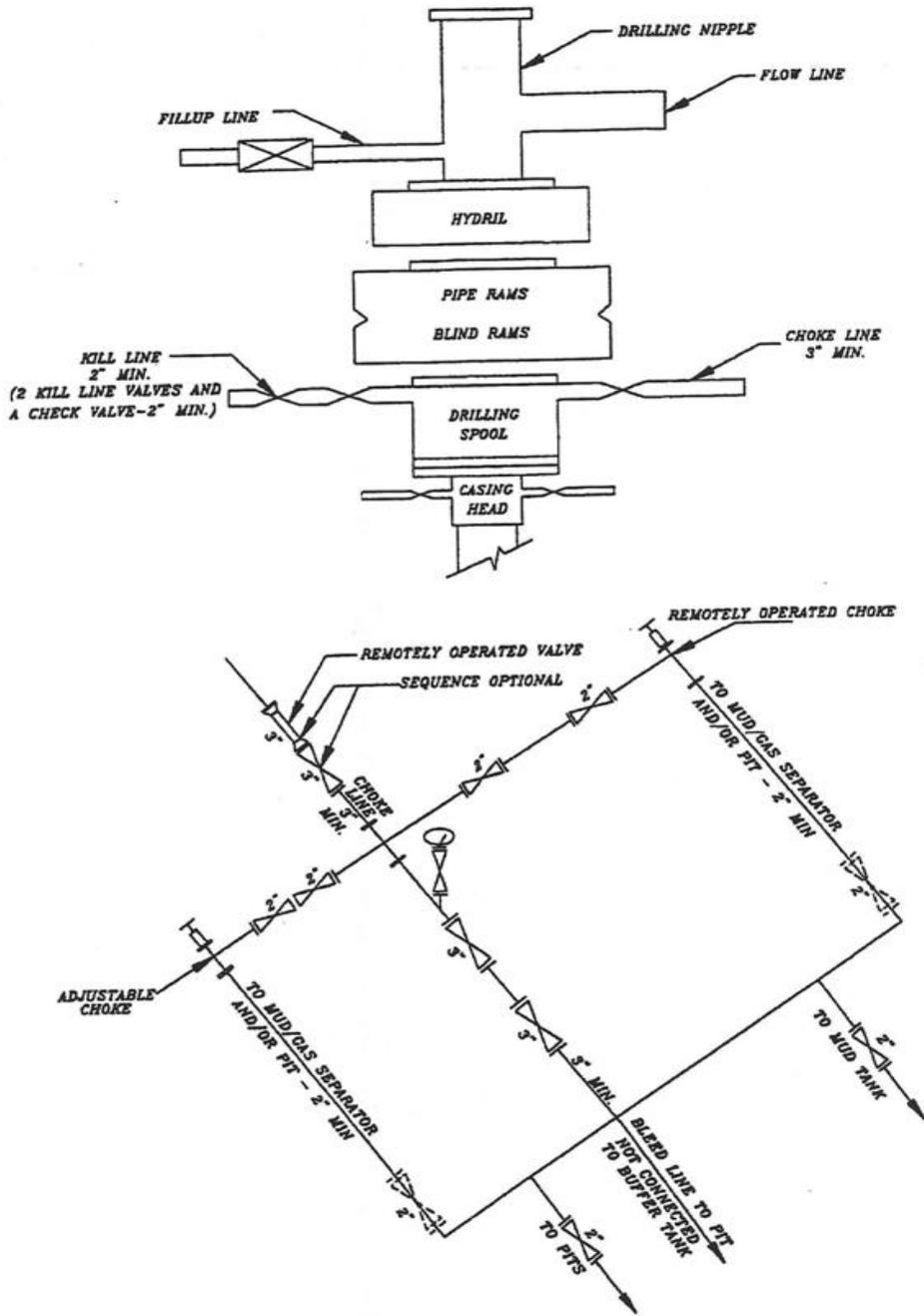
**DATE:**

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

**DATE:**

### EXHIBIT A NBU 1022-2E1BS



**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.

<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> ST UT ML 22651	
<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>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 1022-2E1BS
<b>PHONE NUMBER:</b> 720 929-6511	<b>9. API NUMBER:</b> 43047517820000
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW 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"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 6/9/2012	<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.

MIRU AIR RIG ON JUNE 8, 2012. DRILLED SURFACE HOLE TO 2,296'.  
 RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY  
 RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL  
 COMPLETION REPORT.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 July 06, 2012

<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> 7/6/2012	

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# Ensign 146  
Submitted By SID ARMSTRONG Phone Number 435- 828-0987  
Well Name/Number NBU 1022-2E1BS  
Qtr/Qtr NW/WW Section 2 Township 10S Range 22E  
Lease Serial Number ST UT ML 22651  
API Number 43047517820000

Casing – Time casing run starts, not cementing times.

- Production Casing
- Other

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

RECEIVED  
JUL 10 2012

BOPE

- Initial BOPE test at surface casing point
- Other

DIV. OF OIL, GAS & MINING

Date/Time 7/11/2012 11:30 AM  PM

Rig Move

Location To: \_\_\_\_\_

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

Remarks \_\_\_\_\_  
\_\_\_\_\_

<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> ST UT ML 22651
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>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 1022-2E1BS
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>9. API NUMBER:</b> 43047517820000
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW 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"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 7/15/2012	<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.

MIRU ROTARY RIG. FINISHED DRILLING FROM 2296' TO 8720' ON 7/14/2012. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED ENSIGN 146 RIG ON 7/15/2012 @ 17:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 July 18, 2012**

<b>NAME (PLEASE PRINT)</b> Cara Mahler	<b>PHONE NUMBER</b> 720 929-6029	<b>TITLE</b> Regulatory Analyst I
<b>SIGNATURE</b> N/A	<b>DATE</b> 7/17/2012	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9  5. LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651
<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.	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:  7. UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 1022-2E1BS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	9. API NUMBER: 43047517820000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	PHONE NUMBER: 720 929-6511  9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0520 FNL 1177 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWNW Section: 02 Township: 10.0S Range: 22.0E Meridian: S	COUNTY: UINTAH  STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 9/5/2012	<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.  
 Well was completed, finishing well completion report. Well TD at 8,720

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

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 9/5/2012	

<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>1. TYPE OF WELL</b> Gas Well	<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST UT ML 22651
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW Section: 02 Township: 10.0S Range: 22.0E Meridian: S	<b>8. WELL NAME and NUMBER:</b> NBU 1022-2E1BS
<b>PHONE NUMBER:</b> 720 929-6511	<b>9. API NUMBER:</b> 43047517820000
<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"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 10/3/2012	<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.

Well was completed, finishing well completion report. Well TD at 8,720.

**Accepted by the  
 Utah Division of  
 Oil, Gas and Mining  
 FOR RECORD ONLY  
 October 03, 2012**

<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> 10/3/2012	

<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> ST UT ML 22651
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>  <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 1022-2E1BS
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>9. API NUMBER:</b> 43047517820000
<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> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW 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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 11/5/2012	<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.

No Activity for the month of October 2012. Well TD at 8,720.

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

<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> 11/5/2012	

<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> ST UT ML 22651	
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-2E1BS	
<b>9. API NUMBER:</b> 43047517820000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<b>1. TYPE OF WELL</b> Gas Well	
<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 <span style="float: right;"><b>PHONE NUMBER:</b> 720 929-6511</span>	
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW 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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 12/4/2012	<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.

Well was completed, finishing well completion report. Well TD at 8,720.

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 December 04, 2012

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 12/4/2012	

<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> ST UT ML 22651	
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>	
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	
<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>	
<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES	
<b>8. WELL NAME and NUMBER:</b> NBU 1022-2E1BS	
<b>9. API NUMBER:</b> 43047517820000	
<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES	
<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> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW 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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 1/3/2013	<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.

Well was completed, finishing well completion report. Well TD at 8,720

**Accepted by the**  
**Utah Division of**  
**Oil, Gas and Mining**  
**FOR RECORD ONLY**  
 January 04, 2013

<b>NAME (PLEASE PRINT)</b> Laura Abrams	<b>PHONE NUMBER</b> 720 929-6356	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 1/3/2013	

<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>1. TYPE OF WELL</b> Gas Well	<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ST UT ML 22651
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.	<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779	<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 0520 FNL 1177 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: NWNW Section: 02 Township: 10.0S Range: 22.0E Meridian: S	<b>8. WELL NAME and NUMBER:</b> NBU 1022-2E1BS
<b>PHONE NUMBER:</b> 720 929-6511	<b>9. API NUMBER:</b> 43047517820000
<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"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 1/1/2013	<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 checked="" 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 subject well was placed on production on 01/01/2013. The Chronological Well History will be submitted with the well completion report.

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

<b>NAME (PLEASE PRINT)</b> Lindsey Frazier	<b>PHONE NUMBER</b> 720 929-6857	<b>TITLE</b> Regulatory Analyst II
<b>SIGNATURE</b> N/A	<b>DATE</b> 1/3/2013	

**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**

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: <b>ST UT ML 22651</b>	
b. TYPE OF WORK: NEW WELL <input checked="" type="checkbox"/> HORIZ. LATS. <input type="checkbox"/> DEEP-EN <input type="checkbox"/> RE-ENTRY <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR: <b>KERR MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		7. UNIT or CA AGREEMENT NAME <b>UTU63047A</b>	
3. ADDRESS OF OPERATOR: <b>P.O.BOX 173779</b> CITY <b>DENVER</b> STATE <b>CO</b> ZIP <b>80217</b>		8. WELL NAME and NUMBER: <b>NBU 1022-2E1BS</b>	
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: <b>NWNW 520 FNL 1177 FWL S2,T10S,R22E</b> AT TOP PRODUCING INTERVAL REPORTED BELOW: <b>SWNW 1560 FNL 802 FWL S2,T10S,R22E</b> AT TOTAL DEPTH: <b>SWNW 1561 FNL 825 FWL S2,T10S,R22E</b>		9. API NUMBER: <b>4304751782</b>	
14. DATE SPUDDED: <b>5/15/2012</b>		10. FIELD AND POOL, OR WILDCAT <b>NATURAL BUTTES</b>	
15. DATE T.D. REACHED: <b>7/14/2012</b>		11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: <b>NWNW 2 10S 22E S</b>	
16. DATE COMPLETED: <b>1/1/2013</b>		12. COUNTY <b>UINTAH</b>	
17. ELEVATIONS (DF, RKB, RT, GL): <b>4888 RKB</b>		13. STATE <b>UTAH</b>	
18. TOTAL DEPTH: MD <b>8,720</b> TVD <b>8,554</b>		19. PLUG BACK T.D.: MD <b>8,661</b> TVD <b>8,496</b>	
20. IF MULTIPLE COMPLETIONS, HOW MANY? *		21. DEPTH BRIDGE MD PLUG SET: TVD	
22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each) <b>CBL/GR/CCL/TEMP</b>		23. WAS WELL CORED? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (Submit analysis) WAS DST RUN? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (Submit report) DIRECTIONAL SURVEY? NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> (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	2,265		800		0	
7 7/8"	4 1/2" I-80	11.6#	0	8,708		1,560		1810	

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"	8,124							

26. PRODUCING INTERVALS					27. PERFORATION RECORD				
FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS	
(A) MESAVERDE	6,884	8,557			6,884 8,557	0.36	183	Open <input checked="" type="checkbox"/>	Squeezed <input type="checkbox"/>
(B)								Open <input 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
6884-8557	PUMP 9309 BBLs SLICK H2O & 193,300 LBS 30/50 OTTAWA SAND 8 STAGES

29. ENCLOSED ATTACHMENTS:		30. WELL STATUS:	
<input type="checkbox"/> ELECTRICAL/MECHANICAL LOGS	<input type="checkbox"/> GEOLOGIC REPORT	<input type="checkbox"/> DST REPORT	<input checked="" type="checkbox"/> DIRECTIONAL SURVEY
<input type="checkbox"/> SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION	<input type="checkbox"/> CORE ANALYSIS	<input type="checkbox"/> OTHER: _____	

**PROD RECEIVED**  
**JAN 30 2013**

**31. INITIAL PRODUCTION**

**INTERVAL A (As shown in item #26)**

DATE FIRST PRODUCED: <b>1/1/2013</b>		TEST DATE: <b>1/2/2013</b>		HOURS TESTED: <b>24</b>		TEST PRODUCTION RATES: →	OIL - BBL: <b>0</b>	GAS - MCF: <b>2,887</b>	WATER - BBL: <b>0</b>	PROD. METHOD: <b>FLOWING</b>
CHOKE SIZE: <b>20/64</b>	TBG. PRESS. <b>1,969</b>	CSG. PRESS. <b>2,760</b>	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL: <b>0</b>	GAS - MCF: <b>2,887</b>	WATER - BBL: <b>0</b>	INTERVAL STATUS: <b>PROD</b>

**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.)**

**SOLD**

**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	1,050
				BIRD'S NEST	1,284
				MAHOGANY	1,810
				WASATCH	4,230
				MESAVERDE	6,520

**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 4930'; LTC csg was run from 4930' to 8708'. 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) LINDSEY FRAZIER TITLE REGULATORY ANALYST  
 SIGNATURE *Lindsey Frazier* DATE 1-21-2013

This report must be submitted within 30 days of

- completing or plugging a new well
- reentering a previously plugged and abandoned well
- drilling horizontal laterals from an existing well bore
- significantly deepening an existing well bore below the previous bottom-hole depth
- recompleting to a different producing formation
- 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  
 1594 West North Temple, Suite 1210  
 Box 145801  
 Salt Lake City, Utah 84114-5801  
 Phone: 801-538-5340  
 Fax: 801-359-3940

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

Well: NBU 1022-2E1BS GREEN		Spud Date: 6/8/2012	
Project: UTAH-UINTAH		Site: NBU 1022-2D PAD	Rig Name No: ENSIGN 146/146, PROPETRO 11/11
Event: DRILLING		Start Date: 12/8/2011	End Date: 7/15/2012
Active Datum: RKB @4,888.00usft (above Mean Sea Level)		UWM: NW/NW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
6/8/2012	0:00 - 2:30	2.50	MIRU	01	B	P		NBU 1022-2E1BS ( WELL 4 OF 7 ) INSTALL DIVERTOR HEAD AND BLUEY LINE. RIG UP NOV. SPOT IN RIG. SPOT IN CATWALK AND PIPE RACKS. RIG UP PIT PUMP. RIG UP PUMP. PRIME PUMP. INSPECT RIG. SAFETY MEETING
	2:30 - 4:00	1.50	DRLSUR	02	D	P		DRL F/ 44'- T/210' (166'@ 110.6' PER HR) W.O.B. 5-15K RPM 45 UP/DWN/ROT 20/20/20 PSI ON/OFF 600/400 M.W. 8.7# VIS 27 395.8 GPM PUMP RATE /NO AIR NOV-DEWATERING
	4:00 - 4:30	0.50	DRLSUR	06	A	P		TOOH LDDP & BHA #1
	4:30 - 5:30	1.00	DRLSUR	06	A	P		TIH #2 BHA WITH 11" BIT
	5:30 - 12:00	6.50	DRLSUR	02	D	P		DRL F/210' T/1040' (830'@ 1274.7' PER HR) W.O.B. 20K RPM 40 UP/DWN/ROT 60/45/55 PSI ON/OFF 1100/900 M.W. 8.6 VIS 27 395.8 GPM PUMP RATE / NO AIR NOV-DEWATERING
	12:00 - 15:00	3.00	DRLSUR	02	D	P		DRL F/1040' T/1310' ( 270' @ 90' PER HR) W.O.B. 20K RPM 40
	15:00 - 16:30	1.50	DRLSUR	22	L	Z		NOV DISCHARGE LINE PLUGED, CLEANED LINE, CHANGED OUT PUMP
	16:30 - 20:00	3.50	DRLSUR	22	K	Z		BRAKE ON POWERHEAD (FIXED)
	20:00 - 0:00	4.00	DRLSUR	02	D	P		DRL F/1310' T/1760' (450'@ 112.5' PER HR) W.O.B. 20K RPM 40 UP/DWN/ROT 70/59/62 PSI ON/OFF 1200/1000 M.W. 8.6 VIS 27 395.8 GPM PUMP RATE / 2420 CFM AIR NOV-DEWATERING
6/9/2012	0:00 - 7:30	7.50	DRLSUR	02	D	P		18' HIGH 4' RIGHT OF LINE DRL F/1760' - T/2286' ( 526' @ 92.1' PER HR) W.O.B. 20K RPM 40 UP/DWN/ROT 80/60/71 PSI ON/OFF 1400/1200 M.W. 8.6# VIS 27 395.8 GPM PUMP RATE / 2420 CFM AIR NOV-DEWATERING 27.4' BELOW AND 6.2' LEFT OF LINE
	7:30 - 9:30	2.00	DRLSUR	05	C	P		CIRCULATE FOR CASING
	9:30 - 12:30	3.00	DRLSUR	06	D	P		LDDS, BHA & DIR. TOOLS
	12:30 - 13:30	1.00	DRLSUR	12	A	P		MOVE PIPE RACKS AND CATWALK. PULL DIVERTER HEAD. RIG UP TO RUN CSG. MOVE CSG INTO POSITION TO P/U.
	13:30 - 16:00	2.50	DRLSUR	12	C	P		RUN 51 JOINTS 8 5/8", 28#, J55 CASING SHOE IS AT 2251' BAFFLE IS AT 2205.2'
	16:00 - 16:30	0.50	DRLSUR	12	B	P		HOLD SAFETY MEETING PUMP ON CASING RUN 200' OF 1". RIG DOWN RIG MOVE OFF WELL, REBUILD DITCH. RIG UP CEMENT TRUCK, 2" HARD LINES.

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

Well: NBU 1022-2E1BS GREEN

Spud Date: 6/8/2012

Project: UTAH-UINTAH

Site: NBU 1022-2D PAD

Rig Name No: ENSIGN 146/146, PROPETRO 11/11

Event: DRILLING

Start Date: 12/8/2011

End Date: 7/15/2012

Active Datum: RKB @4,888.00usft (above Mean Sea Level)

UWI: NWNW/010/S/22/E/2/0/0/26/PM/N/520/W/01177/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	16:30 - 17:30	1.00	DRLSUR	12	E	P		PRO PETRO CMTERS MAKE UP HEAD & LOAD PLUG TEST LINES TO 2000 PSI. PUMP 130 BBLS OF 8.4# GEL WATER AHEAD. PUMP 300 SX(61.4 BBLS) OF 15.8# 1.15 YIELD TAIL(2% CALC, 1/4# /SK OF FLOCELE). DROP PLUG ON FLY AND DISPLACE W/ 137 BBLS OF 8.4# H2O. FINAL LIFT PRESSURE 400 PSI. BUMP PLUG AND HOLD 700 PSI FOR 5 MIN. FLOAT HELD, NO RETURNS THRU OUT JOB, PUMP 150 SX 15.8# (30.7BBLS) CMT W/4% CALCIUM DOWN 1". NO CEMENT TO SURFACE
	17:30 - 19:00	1.50	CSGSUR	13	A	P		WOC PUMP 125 SXS (25.6 BBLS) CEMENT DOWN BACKSIDE. (NO CMT TO SURFACE).
	19:00 - 20:30	1.50	CSGSUR	13	A	P		WOC PUMP 100 SXS (20.5 BBLS) CEMENT DOWN BACKSIDE. (NO CMT TO SURFACE).
	20:30 - 22:00	1.50	CSGSUR	13	A	P		WOC PUMP 125 SXS (25.6 BBLS) CEMENT TO SURFACE. RELEASE RIG @ 22:00
7/11/2012	6:00 - 7:00	1.00	MIRU	01	C	P		SKID RIG TO NBU 1022-2E1BS
	7:00 - 8:30	1.50	DRLPRO	14	A	P		NIPLLE UP B.O.P'S & FLARE LINES
	8:30 - 12:00	3.50	DRLPRO	15	A	P		TEST B.O.P'S & TEST BLINDS-PIPE RAM - 4"-2" VALUES & HCR & CHOKE MAINFOLD - 250 LOW 5000 HIGH & ANNULAR 250 LOW 2500 HIGH & CASING TO 1500 PSI.
	12:00 - 12:00	0.00	DRLPRO	14	B	P		SET WEAR BUSHING
	12:00 - 13:30	1.50	DRLPRO	14	B	P		SET WEAR BUSHING & CHANGE OUT SAVER SUB & GRABBER DIES
	13:30 - 16:00	2.50	DRLPRO	06	A	P		PICK UP MOTOR & BIT & DIR TOOLS & TRIP IN HOLE & TAG CEMENT @ 2156
	16:00 - 16:30	0.50	DRLPRO	07	B	P		LEVEL DERRICK OVER CENTER HOLE
	16:30 - 17:00	0.50	DRLPRO	02	F	P		DRILL SHOE TRACK
	17:00 - 0:00	7.00	DRLPRO	02	D	P		DRILL/SLIDE F/2296' TO 3265' (969' @ 138.4 fph) MW 8.5 VIS 27 WOB 1820 RPM 45 MM RPM 115 TQ 6/8 SPM 120 GPM 588 PSI OFF/ON 1775/2150 PU 119, SO 99, ROT 107 NOV - ON LINE SLIDE 265/2.75 HRS 37% ROT 711/4.25 HRS 63% 12' EAST 2' LOW OF LINE
7/12/2012	0:00 - 16:30	16.50	DRLPRO	02	D	P		DRILL/SLIDE F/3265' TO 5584 (2319' @ 140.5 fph) MW 8.5 VIS 27 WOB 18/20 RPM 45 MM RPM 156 TQ 6/8 SPM 110 GPM 539 PSI OFF/ON 1775/2150 PU 165, SO 120, ROT 146 NOV - ON LINE SLIDE 451/ 24% ROT 1861/ 76% 8.85' NORTH 18.38' WEST OF CENTER

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

Well: NBU 1022-2E1BS GREEN

Spud Date: 6/8/2012

Project: UTAH-UINTAH

Site: NBU 1022-2D PAD

Rig Name No: ENSIGN 146/146, PROPETRO 11/11

Event: DRILLING

Start Date: 12/8/2011

End Date: 7/15/2012

Active Datum: RKB @4,888.00usft (above Mean Sea Level)

UWI: NWNW/0/10/S/22/E/2/0/0/26/PM/N/520/NW/0/1177/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	16:30 - 17:00	0.50	DRLPRO	07	A	P		SER RIG
	17:00 - 0:00	7.00	DRLPRO	02	D	P		DRILL/SLIDE F/ 5584 TO 6407 (823' @ 117.5 fph) MW 8.5 VIS 27 WOB 18/20 RPM 45 MM RPM 156 TQ 6/8 SPM 110 GPM 539 PSI OFF/ON 1775/2150 PU 210, SO 123 , ROT 149 NOV - ON LINE SLIDE 38' - 4.62% ROT 785'- 95.38% 7.35' NORTH 21.85' WEST OF CENTER
7/13/2012	0:00 - 8:30	8.50	DRLPRO	02	D	P		DRILL/SLIDE F/ 6407 TO 7397 (990' @ 116.4 fph) MW 8.5 VIS 27 WOB 18/20 RPM 45 MM RPM 156 TQ 6/8 SPM 110 GPM 539 PSI OFF/ON 1775/2150 PU 210, SO 123 , ROT 149 NOV - ON LINE SLIDE 44' - 4.0% ROT 946'- 96% 16.34' NORTH 8.03' WEST OF CENTER
	8:30 - 9:30	1.00	DRLPRO	05	A	P		DISPLACED HOLE WITH MUD & MUD UP SYSTEM @ 7,400
	9:30 - 10:30	1.00	DRLPRO	02	D	P		DRILL/SLIDE F/ 7397 TO 7487 (87' @ 87.0 fph) MW 12.0 VIS 34 WOB 18/20 RPM 45 MM RPM 142 TQ 6/8 SPM 100 GPM 490 PSI OFF/ON 2200/2525 PU 210, SO 123 , ROT 149 NOV - OFF LINE BYPASS SHAKERS SLIDE 0' - 0% ROT 87'- 100% 16.34' NORTH 8.03' WEST OF CENTER
	10:30 - 11:00	0.50	DRLPRO	07	A	P		SER RIG
	11:00 - 12:00	1.00	DRLPRO	08	B	P		WELD UP WASHED OUT STAND PIPE ( WASH OUT IN THE 90 DEG TURN ON RIG FLOOR

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-2E1BS GREEN

Spud Date: 6/8/2012

Project: UTAH-UINTAH

Site: NBU 1022-2D PAD

Rig Name No: ENSIGN 146/146, PROPETRO 11/11

Event: DRILLING

Start Date: 12/8/2011

End Date: 7/15/2012

Active Datum: RKB @4,888.00usft (above Mean Sea Level)

UWI: NWW/NW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	12:00 - 0:00	12.00	DRLPRO	02	D	P		DRILL/SLIDE F/ 7487 TO 8085 (598' @ 49.8 fph) MW 12.0 VIS 34 LCM 3% WOB 18/20 RPM 45 MM RPM 142 TQ 6/8 SPM 100 GPM 490 PSI OFF/ON 2200/2525 PU 243, SO 148 , ROT 176 NOV - OFF LINE SLIDE 29' - 4.85% ROT 569'- 95.15% 13.15' NORTH .49' EAST OF CENTER
7/14/2012	0:00 - 11:30	11.50	DRLPRO	02	D	P		DRILL/SLIDE F/ 8085 TO 8720 (635' @ 55.2 fph) MW 12. VIS 41 LCM 5% WOB 18/20 RPM 45 MM RPM 142 TQ 6/8 SPM 100 GPM 490 PSI OFF/ON 2300/2725 PU 243, SO 148 , ROT 176 NOV - OFF LINE SLIDE 0' - 0% ROT 635'- 100% 8.3' NORTH .1.19' EAST OF CENTER CIRCULATE BOTTOM UP WIPER TRIP 10 STANDS CIRCULATE BOTTOM UP
	11:30 - 12:30	1.00	DRLPRO	05	A	P		
	12:30 - 14:30	2.00	DRLPRO	06	E	P		
	14:30 - 16:00	1.50	DRLPRO	05	P	P		
	16:00 - 0:00	8.00	DRLPRO	06	D	P		TRIP OUT OF HOLE FOR PRODUCTION CASING. ( SHUT DOWN HALF HOUR DUE TO RAIN & WIND ) PULL WEAR BUSHING
7/15/2012	0:00 - 0:30	0.50	DRLPRO	14	B	P		HELD SAFETY MEETING & RIG UP FRANKS CASING CREW & RUN 4.5 PRODUCTION CASING & SHOE @ 8708 & FLOAT COLLAR @ 8666
	0:30 - 9:00	8.50	DRLPRO	12	C	P		CIRCULATE BOTTOM UP HPJSM, R/UP BJ & CEMENT 4.5" PROD CASING, TEST LINES 5000 PSI, PUMP 25 BBLS FRESH WATER 1st LEAD 50 SKS 13.0 PPG 1.75 YIELD, PLII+4%Gel+1%FL-25+1%SMS+.4%R-3+5#/SK Kol-Seal+5#/skS.F. 2nd LEAD 450 SKS 13.0 PPG 1.75 YIELD, PLII+6%Gel+1%FL-25+1%SMS+.4%R-3+5#/SK Kol-Seal+.2%BA-59 5#/skS.F. TAIL 1060 SKS 14.3 PPG, 1.31 YIELD, 50:50+2%Gel+10%Salt+.3%R-3+.3%SMS+.2%BA-59+5#/skStatic free
	9:00 - 10:00	1.00	DRLPRO	05	D	P		
	10:00 - 12:30	2.50	DRLPRO	12		P		DROPPED PLUG & DISPLACED W/134.6 BBLS FRESH WATER W/0.1 gal/bbl CLAYFIX II & 0.01 gal/bbl MAGNACIDE @ 2700 PSI, BUMPED PLUG @ 3300 PSI - FLOATS HELD W/1.5 BBLS RETURN, GOT BACK 15 BBLS CMT TO SURFACE, RIG DOWN BJ

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

Well: NBU 1022-2E1BS GREEN				Spud Date: 6/8/2012				
Project: UTAH-UINTAH			Site: NBU 1022-2D PAD			Rig Name No: ENSIGN 146/146, PROPETRO 11/11		
Event: DRILLING			Start Date: 12/8/2011		End Date: 7/15/2012			
Active Datum: RKB @4,888.00usft (above Mean Sea Level)				UWI: NWNW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0				
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	12:30 - 17:00	4.50	DRLPRO	14	A			WASH OUT STACK & LAY DOWN LANDING JT & SET PACK OFF ON HANGER NIPPLE DOWN B.O.P'S & WASH CLEAN OUT MUD TANKS & RELEASED RIG @ 17:00 ON 7/15/2012

## 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	NBU 1022-2E1BS GREEN	Wellbore No.	OH
Well Name	NBU 1022-2E1BS	Wellbore Name	NBU 1022-2E1BS
Report No.	1	Report Date	11/29/2012
Project	UTAH-UINTAH	Site	NBU 1022-2D PAD
Rig Name/No.		Event	COMPLETION
Start Date	11/29/2012	End Date	12/31/2012
Spud Date	6/8/2012	Active Datum	RKB @4,888.00usft (above Mean Sea Level)
UWI	NW/NW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0		

### 1.3 General

Contractor		Job Method		Supervisor	
Perforated Assembly		Conveyed Method			

### 1.4 Initial Conditions

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

### 1.5 Summary

Gross Interval	6,884.0 (usft)-8,557.0 (usft)	Start Date/Time	11/29/2012 12:00AM
No. of Intervals	54	End Date/Time	11/29/2012 12:00AM
Total Shots	183	Net Perforation Interval	61.00 (usft)
Avg Shot Density	3.00 (shot/ft)	Final Surface Pressure	
		Final Press Date	

## 2 Intervals

### 2.1 Perforated Interval

Date	Formation/Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/Add. Shot	Diameter (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
11/29/2012 12:00AM	MESAVERDE/			6,884.0	6,886.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
11/29/2012 12:00AM	MESAVERDE/			6,902.0	6,903.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			6,976.0	6,977.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			6,982.0	6,983.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,020.0	7,021.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,029.0	7,030.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,100.0	7,101.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,121.0	7,122.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,142.0	7,143.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,152.0	7,153.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,234.0	7,235.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,240.0	7,242.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,246.0	7,247.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,316.0	7,317.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,336.0	7,338.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No.	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
11/29/2012 12:00AM	MESAVERDE/			7,472.0	7,473.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,490.0	7,492.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,524.0	7,526.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,576.0	7,577.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,601.0	7,602.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,615.0	7,616.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,635.0	7,636.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,660.0	7,661.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,679.0	7,680.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,697.0	7,698.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,720.0	7,721.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,757.0	7,758.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,781.0	7,782.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,799.0	7,800.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
11/29/2012 12:00AM	MESAVERDE/			7,818.0	7,819.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,898.0	7,899.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,907.0	7,908.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,922.0	7,923.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,953.0	7,954.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			7,975.0	7,976.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,009.0	8,010.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,025.0	8,026.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,046.0	8,047.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,082.0	8,083.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,120.0	8,122.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,156.0	8,157.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,177.0	8,178.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,208.0	8,209.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
11/29/2012 12:00AM	MESAVERDE/			8,222.0	8,223.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,242.0	8,243.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,293.0	8,294.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,329.0	8,331.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,377.0	8,378.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,416.0	8,417.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,432.0	8,433.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,445.0	8,446.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,482.0	8,483.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,532.0	8,533.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
11/29/2012 12:00AM	MESAVERDE/			8,556.0	8,557.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

3 Plots

**US ROCKIES REGION  
Operation Summary Report**

Well: NBU 1022-2E1BS GREEN

Spud Date: 6/8/2012

Project: UTAH-UINTAH

Site: NBU 1022-2D PAD

Rig Name No:

Event: COMPLETION

Start Date: 11/29/2012

End Date: 12/31/2012

Active Datum: RKB @4,888.00usft (above Mean Sea Level)

UWI: NW/NW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
7/11/2012	-							
7/12/2012	-							
11/29/2012	9:15 - 10:00	0.75	FRAC	33	C	P		FILL SURFACE CSG. MIRU B&C QUICK TEST. 1ST PSI TEST T/ 7000 PSI. HELD FOR 15 MIN LOST 59 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI. MOVE T/ NEXT WELL.SWMFN
12/10/2012	7:00 - 8:00	1.00	FRAC	48		P		HSM, COLD WEATHER & ICE PLUGS, PRESSURE TEST SURFACE LINES
	8:00 - 15:00	7.00	FRAC	46	E	Z		PROBLEMS W/ CRANE NOT WORKING
	15:00 - 18:00	3.00	FRAC	36	B	P		PERF & FRAC FOLLOWING WELL AS PER DESIGN W/ 30/50 MESH SAND & SLK WTR. ALL CBP'S ARE HALIBURTON 8K CBP'S. REFER TO STIM PJR FOR FLUID, SAND AND CHEMICAL VOLUME PUM'D
								MIRU CASED HOLE SOLUTIONS, [STG #1]PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE, AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW.
								FRAC STG #1] WHP=234#, BRK DN PERFS=4,463#, @=9.6 BPM, INJ RT=49.9, INJ PSI=4,112#, INITIAL ISIP=2,955#, INITIAL FG=.78, FINAL ISIP=2,537#, FINAL FG=.73, AVERAGE RATE=49.1, AVERAGE PRESSURE=4,145#, MAX RATE=49.9, MAX PRESSURE=5,501#, NET PRESSURE INCREASE=-418#, 21/21 100% CALC PERFS OPEN. X OVER TO WIRE LINE
								PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,361', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
								FRAC STG #2] WHP=2,176#, BRK DN PERFS=3,249#, @=9.7 BPM, INJ RT=49.4, INJ PSI=4,163#, INITIAL ISIP=2,393#, INITIAL FG=.72, FINAL ISIP=2,588#, FINAL FG=.75, AVERAGE RATE=49.6, AVERAGE PRESSURE=4,055#, MAX RATE=49.9, MAX PRESSURE=4,217#, NET PRESSURE INCREASE=195#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE
								PERF STG #3] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,146', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWMFN.

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

Well: NBU 1022-2E1BS GREEN				Spud Date: 6/8/2012				
Project: UTAH-UINTAH			Site: NBU 1022-2D PAD			Rig Name No:		
Event: COMPLETION			Start Date: 11/29/2012		End Date: 12/31/2012			
Active Datum: RKB @4,888.00usft (above Mean Sea Level)				UWI: NWNW/0/10/S/22/E/2/0/0/26/PM/N/520/NW/0/1177/0/0				
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/11/2012	6:45 - 7:00	0.25	FRAC	48		P		HSM, SLIPS, TRIPS, FALLS, WATCH WHERE YOUR GOING

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

Well: NBU 1022-2E1BS GREEN

Spud Date: 6/8/2012

Project: UTAH-UINTAH

Site: NBU 1022-2D PAD

Rig Name No:

Event: COMPLETION

Start Date: 11/29/2012

End Date: 12/31/2012

Active Datum: RKB @4,888.00usft (above Mean Sea Level)

UWI: NW/NW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 17:30	10.50	FRAC	36	B	P		<p>FRAC STG #3] WHP=2,110#, BRK DN PERFS=4,592#, @=10 BPM, INJ RT=50.2, INJ PSI=4,330#, INITIAL ISIP=1,674#, INITIAL FG=.64, FINAL ISIP=2,590#, FINAL FG=.75, AVERAGE RATE=49.9, AVERAGE PRESSURE=4,251#, MAX RATE=50.2, MAX PRESSURE=4,530#, NET PRESSURE INCREASE=916#, 20/24 83% CALC PERFS OPEN. X OVER TO WRE LINE</p> <p>PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,943', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #4] WHP=1,022#, BRK DN PERFS=5,423#, @=9.6 BPM, INJ RT=50, INJ PSI=4,404#, INITIAL ISIP=2,858#, INITIAL FG=.80, FINAL ISIP=2,468#, FINAL FG=.75, AVERAGE RATE=49.8, AVERAGE PRESSURE=4,193#, MAX RATE=50, MAX PRESSURE=4,617#, NET PRESSURE INCREASE=-390#, 21/21 100% CALC PERFS OPEN. X OVER TO WRE LINE</p> <p>PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,747', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #5] WHP=#, BRK DN PERFS=4,928#, @=9.5 BPM, INJ RT=49.9, INJ PSI=3,978#, INITIAL ISIP=2,148#, INITIAL FG=.71, FINAL ISIP=2,507#, FINAL FG=.76, AVERAGE RATE=49.6, AVERAGE PRESSURE=4,103#, MAX RATE=50, MAX PRESSURE=4,268#, NET PRESSURE INCREASE=359#, 24/24 100% CALC PERFS OPEN. X OVER TO WRE LINE</p> <p>PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,556', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p> <p>FRAC STG #6] WHP=1,639#, BRK DN PERFS=5,154#, @=9.6 BPM, INJ RT=50, INJ PSI=4,639#, INITIAL ISIP=2,216#, INITIAL FG=.73, FINAL ISIP=2,527#, FINAL FG=.77, AVERAGE RATE=49.7, AVERAGE PRESSURE=4,403#, MAX RATE=50, MAX PRESSURE=5,005#, NET PRESSURE INCREASE=311#, 21/24 88% CALC PERFS OPEN. X OVER TO WRE LINE</p> <p>PERF STG #7] P/U RIH W/ HALIBURTON 8K CBP &amp; PERF GUN, SET CBP @=7,277', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW</p>

US ROCKIES REGION  
**Operation Summary Report**

Well: NBU 1022-2E1BS GREEN

Spud Date: 6/8/2012

Project: UTAH-UINTAH

Site: NBU 1022-2D PAD

Rig Name No:

Event: COMPLETION

Start Date: 11/29/2012

End Date: 12/31/2012

Active Datum: RKB @4,888.00usft (above Mean Sea Level)

UWI: NW/NW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
								FRAC STG #7] WHP=717#, BRK DN PERFS=3,138#, @=9.7 BPM, INJ RT=55.2, INJ PSI=4,450#, INITIAL ISIP=1,960#, INITIAL FG=.71, FINAL ISIP=2,678#, FINAL FG=.81, AVERAGE RATE=54.9, AVERAGE PRESSURE=4,430#, MAX RATE=55.2, MAX PRESSURE=4,862#, NET PRESSURE INCREASE=718#, 23/24 96% CALC PERFS OPEN. X OVER TO WIRE LINE
12/12/2012	6:30 - 6:45	0.25	FRAC	48		P		PERF STG #8] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,060', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWMFn.
	6:45 - 6:45	0.00	FRAC	36	B	P		HSM, PRESSURE TESTING, HIGH PRESSURE
								FRAC STG #8] WHP=1,434#, BRK DN PERFS=4,379#, @=9.5 BPM, INJ RT=45.4, INJ PSI=5,430#, INITIAL ISIP=2,490#, INITIAL FG=.79, FINAL ISIP=2,142#, FINAL FG=.74, AVERAGE RATE=50.2, AVERAGE PRESSURE=5,319#, MAX RATE=55.1, MAX PRESSURE=5,581#, NET PRESSURE INCREASE=-348#, 17/21 81% CALC PERFS OPEN. X OVER TO WIRE LINE
								P/U RIH W/ HALIBURTON 8K CBP, SET FOR TOP KILL @=6,834'
12/31/2012	7:00 - 7:15	0.25	DRLOUT	48		P		TOTAL FLUID PUMP'D=9,309 BBLS TOTAL SAND PUMP'D=193,300# SAFETY = JSA.

US ROCKIES REGION

**Operation Summary Report**

Well: NBU 1022-2E1BS GREEN Spud Date: 6/8/2012

Project: UTAH-UINTAH Site: NBU 1022-2D PAD Rig Name No:

Event: COMPLETION Start Date: 11/29/2012 End Date: 12/31/2012

Active Datum: RKB @4,888.00usft (above Mean Sea Level) UWI: NW/NW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 17:00	9.75	DRL OUT	31		P		<p>0# ON WELL. MIRU. NDWH. NUBOP. P/U &amp; RIH W/ 3-7/8" BIT + POBS + XN + 215JTS 2-3/8" L-80 TBNG. T/U ON KILL CBP @6834'. R/U PUMP. LOAD TBNG. PRESSURE TEST BOP GOOD @ 3000#. R/U POWER SWVCL. BEGIN D/O AS FOLLOWS:</p> <p>CBP #1) DRL OUT BAKER 8K CBP @ 6834' IN 10 MIN. 0 #S DIFF. PSI. RIH. C/O 45' OF SND. FCP = 0PSI.</p> <p>CBP #2) DRL OUT BAKER 8K CBP @ 7060' IN 7 MIN. 700 #S DIFF. PSI. RIH. C/O 40' OF SND. FCP = 50 PSI.</p> <p>CBP #3) DRL OUT BAKER 8K CBP @ 7277' IN 8 MIN. 400 #S DIFF. PSI. RIH. C/O 25' OF SND. FCP = 100 PSI.</p> <p>CBP #4) DRL OUT BAKER 8K CBP @ 7556' IN 8 MIN. 400 #S DIFF. PSI. RIH. C/O 30' OF SND. FCP = 100 PSI.</p> <p>CBP #5) DRL OUT BAKER 8K CBP @ 7747' IN 10 MIN. 800 #S DIFF. PSI. RIH. C/O 40' OF SND. FCP = 500 PSI.</p> <p>CBP #6) DRL OUT BAKER 8K CBP @ 7943' IN 10 MIN. 900 #S DIFF. PSI. RIH. C/O 30' OF SND. FCP = 400 PSI.</p> <p>CBP #7) DRL OUT BAKER 8K CBP @ 8146' IN 10 MIN. 800 #S DIFF. PSI. RIH. C/O 68' OF SND. FCP = 500 PSI.</p> <p>CBP #8) DRL OUT BAKER 8K CBP @ 8361' IN 12 MIN. 900 #S DIFF. PSI. RIH. C/O TO PBTB @ 8661' W/ 273JTS 2-3/8" L-80 TBNG. CIRC WELL CLEAN. R/D POWER SWVCL. R/U TBNG EQUIP. L/D 17 JTS TBNG. LAND WELL ON HANGER AS FOLLOWS:</p> <p>KB= 14.00' HANGER= .83' 256 JTS NEW 2-3/8" L-80 TBNG = 8105.63' XN = 1.34' POBS= 2.20' EOT @8124.00'</p> <p>NDBOP. NUWH. SWFN. DRAIN EQUIP. WILL PUMP OFF BIT IN THE A.M.</p> <p>WATER USED FOR FRAC= 9309 BBLS. RIG RECOVERED = 1200 BBLS TWLTR = 8109 BBLS</p>

US ROCKIES REGION

**Operation Summary Report**

Well: NBU 1022-2E1BS GREEN				Spud Date: 6/8/2012				
Project: UTAH-UINTAH			Site: NBU 1022-2D PAD			Rig Name No:		
Event: COMPLETION			Start Date: 11/29/2012		End Date: 12/31/2012			
Active Datum: RKB @4,888.00usft (above Mean Sea Level)				UWI: NWNW/0/10/S/22/E/2/0/0/26/PM/N/520/W/0/1177/0/0				
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
1/2/2013	7:00 -			50				WELL IP'D ON 1/2/13 - 2887 MCFD, 0 BWPD, 0 BOPD, CP 2760#, FTP 1969#, LP 144#, 24 HRS, CK 20/64

Site: UINTAH\_NBU 1022-2D PAD  
 Well: NBU 1022-2E1BS  
 Wellbore: NBU 1022-2E1BS  
 Section:  
 SHL:  
 Design: NBU 1022-2E1BS (wp01)  
 Latitude: 39.983869  
 Longitude: -109.411805  
 GL: 4874.00  
 KB: 14' RKB + 4874' GL @ 4888.00ft (Ensign 146)

TVDPATH	MDPATH	FORMATION
4076.00	4232.27	WASATCH
4676.00	4845.56	top of cylinder
6414.00	6583.98	MESAVERDE
8550.00	8720.04	SEGO

WELL DETAILS: NBU 1022-2E1BS						
+N/-S	+E/-W	Northing	Ground Level: Easting	4874.00	Longitude	Slot
0.00	0.00	14524133.30	2085318.56	Latitude 39.983869	-109.411805	

CASING DETAILS			
TVD	MD	Name	Size
2235.26	2255.00	8-5/8"	8-5/8

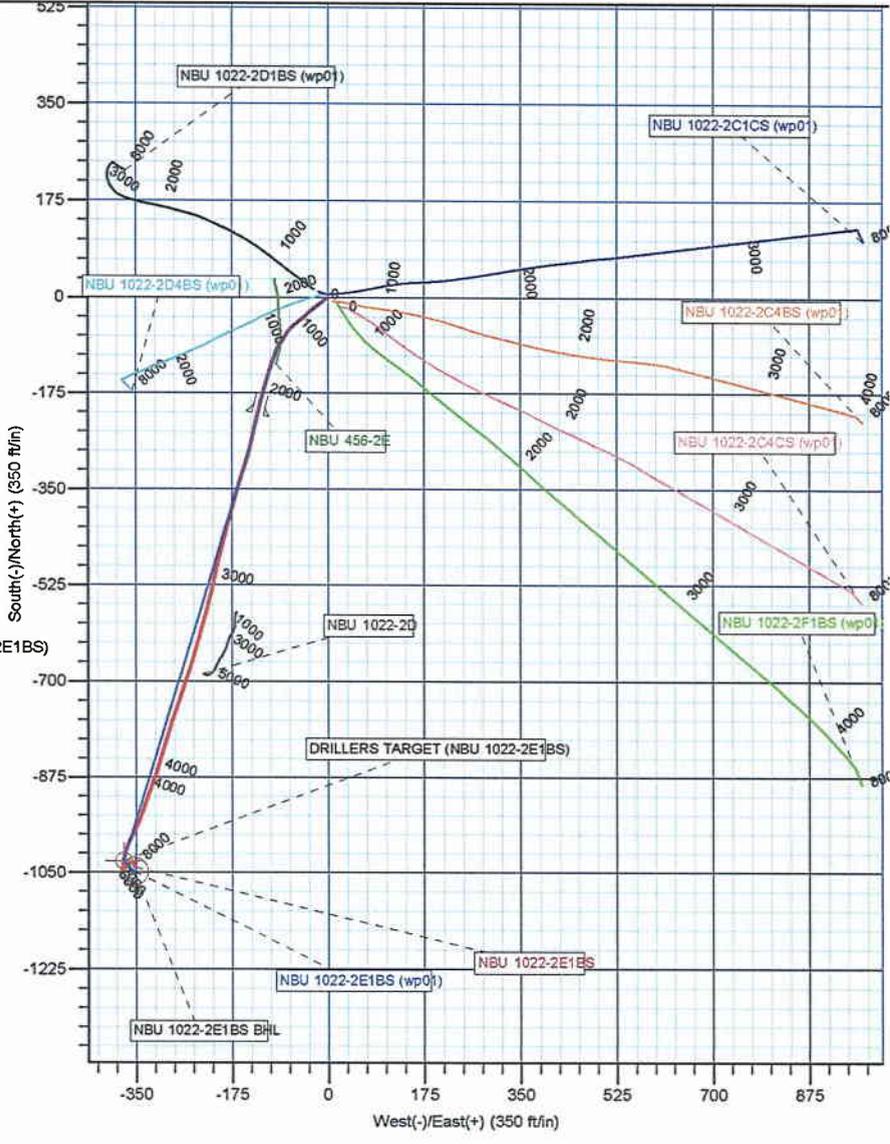
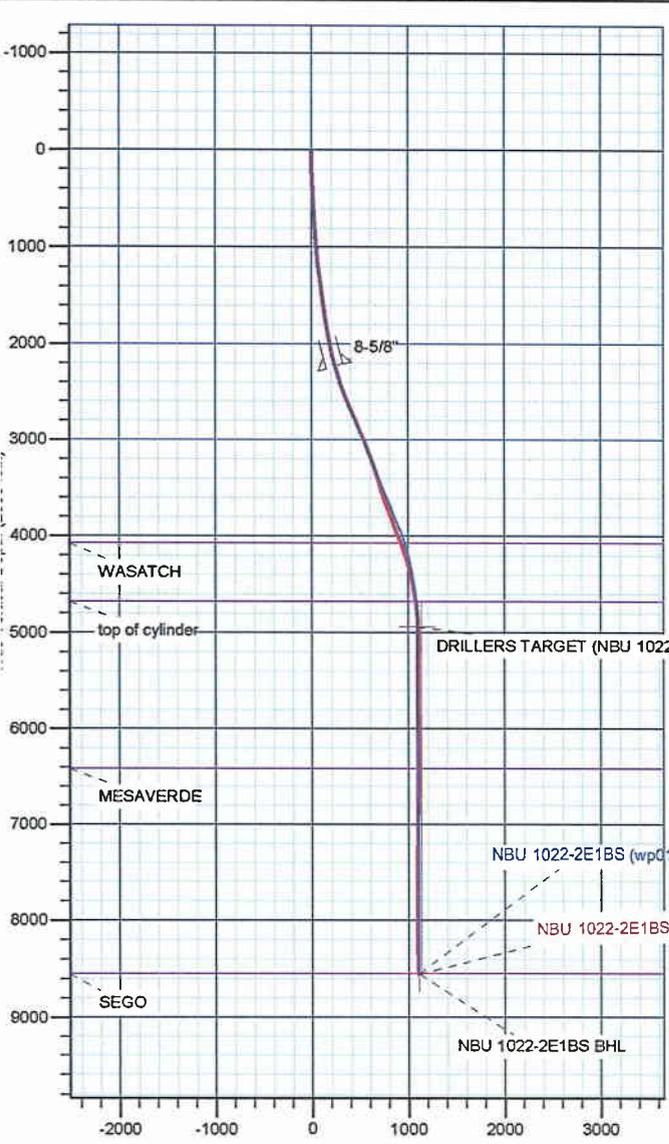
Azimuths to True North: 10.9  
 Magnetic North: 10.9  
 Magnetic Field Strength: 52232.5sr  
 Dip Angle: 65.8  
 Date: 6/19/201  
 Model: IGRF201

**DESIGN TARGET DETAILS**

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
DRILLERS TARGET (NBU 1022-2E1BS)	4940.07	-1028.91	-372.87	14523097.91	2084964.08	39.981044	-109.413136	Circle (Radius: 15.00)
NBU 1022-2E1BS BHL	8550.00	-1048.57	-353.61	14523078.60	2084983.68	39.980990	-109.413067	Circle (Radius: 25.00)

**SECTION DETAILS**

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
2231.00	15.74	193.64	2212.16	-206.57	-126.29	0.00	0.00	236.09
2331.00	15.74	193.64	2308.41	-232.93	-132.69	0.00	0.00	263.12
2667.00	22.46	197.00	2625.73	-338.84	-161.89	2.03	9.29	372.81
3987.00	22.46	197.00	3845.60	-821.10	-309.33	0.00	0.00	876.90
5110.00	0.00	197.00	4940.07	-1028.91	-372.87	2.00	180.00	1094.11
5258.66	0.45	135.61	5088.73	-1029.32	-372.46	0.30	135.61	1094.37
8720.04	0.45	135.61	8550.00	-1048.57	-353.61	0.00	0.00	1106.59



# **US ROCKIES REGION PLANNING**

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

**UINTAH\_NBU 1022-2D PAD**

**NBU 1022-2E1BS**

**NBU 1022-2E1BS**

**Design: NBU 1022-2E1BS**

## **Standard Survey Report**

**23 August, 2012**

# Andarko Petroleum Corporation

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-2E1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Site:</b>	UINTAH_NBU 1022-2D PAD	<b>MD Reference:</b>	14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Well:</b>	NBU 1022-2E1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-2E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-2E1BS	<b>Database:</b>	edmp

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

<b>Site</b>	UINTAH_NBU 1022-2D PAD				
<b>Site Position:</b>		<b>Northing:</b>	14,524,149.25 usft	<b>Latitude:</b>	39.983914
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,085,293.33 usft	<b>Longitude:</b>	-109.411894
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	1.02 °

<b>Well</b>	NBU 1022-2E1BS					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,524,133.31 usft	<b>Latitude:</b>	39.983869
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,085,318.55 usft	<b>Longitude:</b>	-109.411805
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,874.00 ft

<b>Wellbore</b>	NBU 1022-2E1BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/19/2012	10.91	65.85	52,233

<b>Design</b>	NBU 1022-2E1BS				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	10.00
<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		198.68

<b>Survey Program</b>	Date 8/23/2012				
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
152.00	2,231.00	Survey #1 (NBU 1022-2E1BS)	MWD	MWD - STANDARD	
2,265.00	8,720.00	Survey #2 (NBU 1022-2E1BS)	MWD	MWD - STANDARD	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
152.00	0.62	241.36	152.00	-0.37	-0.67	0.56	0.44	0.44	0.00
181.00	0.97	266.59	180.99	-0.46	-1.06	0.77	1.68	1.21	87.00
210.00	1.06	236.44	209.99	-0.62	-1.53	1.08	1.84	0.31	-103.97
238.00	1.37	232.23	237.98	-0.97	-2.01	1.56	1.15	1.11	-15.04
264.00	1.67	234.42	263.97	-1.38	-2.56	2.13	1.18	1.15	8.42
293.00	1.85	231.17	292.96	-1.92	-3.27	2.87	0.71	0.62	-11.21
321.00	2.46	230.11	320.94	-2.59	-4.08	3.76	2.18	2.18	-3.79
350.00	2.64	227.74	349.91	-3.44	-5.05	4.87	0.72	0.62	-8.17
441.00	3.34	230.90	440.79	-6.52	-8.66	8.95	0.79	0.77	3.47

# Andarko Petroleum Corporation

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-2E1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Site:</b>	UINTAH_NBU 1022-2D PAD	<b>MD Reference:</b>	14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Well:</b>	NBU 1022-2E1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-2E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-2E1BS	<b>Database:</b>	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
531.00	4.22	231.26	530.59	-10.24	-13.28	13.96	0.98	0.98	0.40
621.00	4.48	236.44	620.33	-14.26	-18.79	19.53	0.52	0.29	5.76
711.00	4.57	230.90	710.05	-18.46	-24.50	25.34	0.50	0.10	-6.16
801.00	4.75	227.30	799.75	-23.25	-30.02	31.64	0.38	0.20	-4.00
891.00	4.40	225.89	889.47	-28.18	-35.24	37.99	0.41	-0.39	-1.57
981.00	4.84	228.36	979.18	-33.11	-40.56	44.35	0.54	0.49	2.74
1,071.00	5.80	231.08	1,068.79	-38.49	-46.93	51.49	1.10	1.07	3.02
1,161.00	6.86	229.85	1,158.24	-44.81	-54.58	59.93	1.19	1.18	-1.37
1,251.00	8.27	226.95	1,247.45	-52.69	-63.42	70.23	1.62	1.57	-3.22
1,341.00	8.79	217.63	1,336.46	-62.56	-72.35	82.44	1.64	0.58	-10.36
1,431.00	8.97	213.77	1,425.38	-73.84	-80.45	95.72	0.69	0.20	-4.29
1,521.00	8.44	211.22	1,514.35	-85.32	-87.77	108.94	0.73	-0.59	-2.83
1,611.00	7.30	204.36	1,603.50	-96.18	-93.55	121.08	1.64	-1.27	-7.62
1,701.00	7.83	198.91	1,692.72	-107.19	-97.90	132.90	0.99	0.59	-6.06
1,791.00	8.79	197.42	1,781.77	-119.55	-101.94	145.90	1.09	1.07	-1.66
1,881.00	10.55	197.24	1,870.49	-133.98	-106.44	161.02	1.96	1.96	-0.20
1,971.00	11.08	198.21	1,958.89	-150.06	-111.59	177.90	0.62	0.59	1.08
2,061.00	11.87	195.66	2,047.09	-167.19	-116.79	195.79	1.04	0.88	-2.83
2,151.00	13.89	192.58	2,134.82	-186.65	-121.64	215.78	2.37	2.24	-3.42
2,231.00	15.74	193.64	2,212.16	-206.57	-126.29	236.14	2.34	2.31	1.33
<b>TIE ON</b>									
2,265.00	15.87	192.79	2,244.87	-215.58	-128.41	245.36	0.78	0.38	-2.50
<b>FIRST MWD SURVEY</b>									
2,356.00	17.59	193.65	2,332.02	-241.08	-134.41	271.43	1.91	1.89	0.95
2,446.00	18.56	193.57	2,417.58	-268.22	-140.98	299.24	1.08	1.08	-0.09
2,537.00	19.88	196.19	2,503.50	-297.16	-148.69	329.13	1.73	1.45	2.88
2,628.00	24.25	199.44	2,587.82	-329.66	-159.23	363.29	4.98	4.80	3.57
2,719.00	21.81	193.69	2,671.57	-363.71	-169.45	398.83	3.64	-2.68	-6.32
2,809.00	22.38	194.82	2,754.96	-396.52	-177.79	432.58	0.79	0.63	1.26
2,900.00	24.25	195.94	2,838.53	-431.24	-187.36	468.53	2.11	2.05	1.23
2,991.00	23.56	193.57	2,921.72	-466.89	-196.76	505.31	1.30	-0.76	-2.60
3,081.00	21.56	192.07	3,004.83	-500.55	-204.44	539.66	2.31	-2.22	-1.67
3,172.00	21.00	193.57	3,089.63	-532.75	-211.76	572.51	0.86	-0.62	1.65
3,263.00	20.94	193.44	3,174.60	-564.42	-219.36	604.94	0.08	-0.07	-0.14
3,353.00	21.25	197.57	3,258.58	-595.61	-228.03	637.27	1.69	0.34	4.59
3,444.00	17.75	194.07	3,344.35	-624.80	-236.38	667.59	4.05	-3.85	-3.85
3,535.00	17.44	198.19	3,431.09	-651.21	-244.01	695.06	1.41	-0.34	4.53
3,625.00	17.19	196.82	3,517.01	-676.75	-252.07	721.84	0.53	-0.28	-1.52
3,716.00	18.19	198.32	3,603.71	-703.11	-260.42	749.48	1.21	1.10	1.65
3,807.00	18.81	200.32	3,690.01	-730.35	-269.98	778.35	0.97	0.68	2.20
3,898.00	21.06	199.32	3,775.55	-759.54	-280.49	809.37	2.50	2.47	-1.10
3,988.00	21.38	197.44	3,859.45	-790.45	-290.75	841.94	0.84	0.36	-2.09
4,079.00	21.06	195.44	3,944.28	-822.04	-300.08	874.84	0.87	-0.35	-2.20

# Andarko Petroleum Corporation

## Survey Report

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1022-2E1BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Site:</b>	UINTAH_NBU 1022-2D PAD	<b>MD Reference:</b>	14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Well:</b>	NBU 1022-2E1BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1022-2E1BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1022-2E1BS	<b>Database:</b>	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,169.00	21.06	196.82	4,028.27	-853.10	-309.06	907.15	0.55	0.00	1.53
4,260.00	19.75	200.07	4,113.56	-883.20	-319.07	938.87	1.90	-1.44	3.57
4,351.00	18.19	198.94	4,199.62	-911.08	-328.96	968.44	1.76	-1.71	-1.24
4,441.00	16.88	199.69	4,285.43	-936.67	-337.92	995.56	1.48	-1.46	0.83
4,532.00	14.25	202.94	4,373.09	-959.42	-346.74	1,019.94	3.04	-2.89	3.57
4,622.00	11.94	207.32	4,460.74	-977.90	-355.33	1,040.19	2.79	-2.57	4.87
4,713.00	9.56	206.19	4,550.14	-993.05	-362.99	1,056.99	2.63	-2.62	-1.24
4,804.00	8.75	199.19	4,639.98	-1,006.36	-368.60	1,071.41	1.51	-0.89	-7.69
4,894.00	6.88	192.32	4,729.15	-1,018.10	-372.00	1,083.61	2.32	-2.08	-7.63
4,985.00	4.69	188.32	4,819.68	-1,027.10	-373.70	1,092.69	2.45	-2.41	-4.40
5,076.00	2.94	189.82	4,910.47	-1,033.09	-374.64	1,098.66	1.93	-1.92	1.65
5,166.00	0.88	144.57	5,000.42	-1,035.92	-374.63	1,101.34	2.67	-2.29	-50.28
5,257.00	1.31	131.69	5,091.40	-1,037.18	-373.45	1,102.16	0.54	0.47	-14.15
5,348.00	1.31	159.57	5,182.38	-1,038.85	-372.31	1,103.37	0.69	0.00	30.64
5,438.00	0.13	337.44	5,272.37	-1,039.72	-371.99	1,104.09	1.60	-1.31	197.63
5,529.00	0.13	75.19	5,363.37	-1,039.60	-371.93	1,103.96	0.22	0.00	107.42
5,620.00	0.19	164.07	5,454.37	-1,039.72	-371.79	1,104.03	0.25	0.07	97.67
5,710.00	0.25	176.32	5,544.37	-1,040.06	-371.73	1,104.33	0.08	0.07	13.61
5,801.00	0.25	157.82	5,635.37	-1,040.44	-371.65	1,104.66	0.09	0.00	-20.33
5,891.00	0.44	143.94	5,725.37	-1,040.90	-371.37	1,105.01	0.23	0.21	-15.42
5,982.00	1.00	158.19	5,816.36	-1,041.92	-370.87	1,105.82	0.64	0.62	15.66
6,073.00	1.00	257.32	5,907.35	-1,042.83	-371.35	1,106.83	1.67	0.00	108.93
6,163.00	0.88	234.82	5,997.34	-1,043.40	-372.68	1,107.80	0.43	-0.13	-25.00
6,254.00	1.00	215.07	6,088.33	-1,044.45	-373.71	1,109.13	0.38	0.13	-21.70
6,344.00	0.94	207.57	6,178.32	-1,045.75	-374.50	1,110.61	0.16	-0.07	-8.33
6,435.00	0.13	311.32	6,269.31	-1,046.35	-374.92	1,111.31	1.08	-0.89	114.01
6,526.00	0.13	181.94	6,360.31	-1,046.38	-375.00	1,111.37	0.26	0.00	-142.18
6,617.00	1.56	356.19	6,451.30	-1,045.25	-375.09	1,110.32	1.86	1.57	191.48
6,707.00	1.38	354.44	6,541.27	-1,042.95	-375.28	1,108.20	0.21	-0.20	-1.94
6,798.00	0.81	353.07	6,632.26	-1,041.22	-375.46	1,106.62	0.63	-0.63	-1.51
6,889.00	0.92	12.04	6,723.25	-1,039.86	-375.38	1,105.32	0.34	0.12	20.85
6,979.00	0.94	45.69	6,813.24	-1,038.64	-374.71	1,103.94	0.60	0.02	37.39
7,070.00	0.88	88.44	6,904.22	-1,038.10	-373.47	1,103.03	0.73	-0.07	46.98
7,161.00	2.63	51.57	6,995.18	-1,036.78	-371.14	1,101.04	2.19	1.92	-40.52
7,251.00	2.31	58.57	7,085.10	-1,034.56	-367.97	1,097.91	0.49	-0.36	7.78
7,342.00	2.00	76.94	7,176.03	-1,033.24	-364.86	1,095.67	0.83	-0.34	20.19
7,432.00	2.31	68.82	7,265.97	-1,032.23	-361.64	1,093.68	0.48	0.34	-9.02
7,523.00	1.06	79.94	7,356.93	-1,031.42	-359.10	1,092.10	1.41	-1.37	12.22
7,614.00	0.44	39.94	7,447.92	-1,031.01	-358.05	1,091.37	0.85	-0.68	-43.96
7,705.00	0.38	140.19	7,538.92	-1,030.97	-357.63	1,091.20	0.69	-0.07	110.17
7,794.00	0.56	153.32	7,627.92	-1,031.58	-357.25	1,091.66	0.23	0.20	14.75
7,885.00	0.31	165.82	7,718.91	-1,032.22	-356.99	1,092.18	0.29	-0.27	13.74
7,976.00	0.69	115.32	7,809.91	-1,032.69	-356.43	1,092.45	0.60	0.42	-55.49
8,066.00	0.63	140.07	7,899.91	-1,033.31	-355.62	1,092.77	0.32	-0.07	27.50

# Andarko Petroleum Corporation

## Survey Report

<b>Company:</b> US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b> Well NBU 1022-2E1BS
<b>Project:</b> UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b> 14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Site:</b> UINTAH_NBU 1022-2D PAD	<b>MD Reference:</b> 14' RKB + 4874' GL @ 4888.00ft (Ensign 146)
<b>Well:</b> NBU 1022-2E1BS	<b>North Reference:</b> True
<b>Wellbore:</b> NBU 1022-2E1BS	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> NBU 1022-2E1BS	<b>Database:</b> edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,157.00	1.00	132.94	7,990.90	-1,034.23	-354.72	1,093.36	0.42	0.41	-7.84
8,248.00	0.81	176.69	8,081.89	-1,035.41	-354.10	1,094.28	0.77	-0.21	48.08
8,339.00	0.50	138.94	8,172.88	-1,036.35	-353.80	1,095.08	0.57	-0.34	-41.48
8,429.00	0.63	174.32	8,262.88	-1,037.14	-353.50	1,095.73	0.41	0.14	39.31
8,520.00	0.81	142.19	8,353.87	-1,038.15	-353.05	1,096.54	0.48	0.20	-35.31
8,665.00	0.94	168.78	8,498.85	-1,040.13	-352.19	1,098.14	0.29	0.09	18.34
<b>LAST MWD SURVEY</b>									
8,720.00	0.94	168.78	8,553.85	-1,041.01	-352.02	1,098.92	0.00	0.00	0.00
<b>PROJECTION TO TD</b>									

Checked By: _____	Approved By: _____	Date: _____
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