API Well Number: 43047517600000

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

FORM 3

AMENDED REPORT ☑

APPLICATION FOR PERMIT TO DRILL

1. WELL NAME and NUMBER
NBU 1022-2E4BS

2. TYPE OF WORK
DRILL NEW WELL ◉ REENTER P&A WELL ○ DEEPEN WELL ○

3. FIELD OR WILDCAT
NATURAL BUTTES

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

5. UNIT or COMMUNITIZATION AGREEMENT NAME
NATURAL BUTTES

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

7. OPERATOR PHONE
720 929-6515

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

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

10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)
ST UT ML 22651

11. MINERAL OWNERSHIP
FEDERAL ○ INDIAN ○ STATE ◉ FEE ○

12. SURFACE OWNERSHIP
FEDERAL ○ INDIAN ○ STATE ◉ FEE ○

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

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

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

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

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

18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS
YES ◉ (Submit Commingling Application) NO ○

19. SLANT
VERTICAL ○ DIRECTIONAL ◉ HORIZONTAL ○

20. LOCATION OF WELL	FOOTAGES	QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN
LOCATION AT SURFACE	2386 FNL 1379 FWL	SENW	2	10.0 S	22.0 E	S
Top of Uppermost Producing Zone	2231 FNL 822 FWL	SWNW	2	10.0 S	22.0 E	S
At Total Depth	2231 FNL 822 FWL	SWNW	2	10.0 S	22.0 E	S

21. COUNTY
UINTAH

22. DISTANCE TO NEAREST LEASE LINE (Feet)
822

23. NUMBER OF ACRES IN DRILLING UNIT
620

25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)
424

26. PROPOSED DEPTH
MD: 8688 TVD: 8619

27. ELEVATION - GROUND LEVEL
5013

28. BOND NUMBER
22013542

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

Hole, Casing, and Cement Information

String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
SURF	11	8.625	0 - 2180	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 - 8688	11.6	I-80 LT&C	12.5	Premium Lite High Strength	280	3.38	11.0
							50/50 Poz	1180	1.31	14.3

ATTACHMENTS

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

- ☑ **WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER**
- ☑ **COMPLETE DRILLING PLAN**
- ☐ **AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)**
- ☐ **FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER**
- ☑ **DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)**
- ☑ **TOPOGRAPHICAL MAP**

NAME Andy Lytle **TITLE** Regulatory Analyst **PHONE** 720 929-6100

SIGNATURE **DATE** 07/29/2011 **EMAIL** andrew.lytle@anadarko.com

API NUMBER ASSIGNED
43047517600000

APPROVAL

Permit Manager

RECEIVED: October 05, 2011

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

NBU 1022-2E4BS

Surface: 2386 FNL / 1379 FWL SENW
BHL: 2231 FNL / 822 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:

Formation	Depth	Resource
Uinta	0 - Surface	
Green River	1102	
Birds Nest	1357	Water
Mahogany	1732	Water
Wasatch	4188	Gas
Mesaverde	6534	Gas
MVU2	7441	Gas
MVL1	8006	Gas
TVD	8619	Gas
TD	8688	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

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7. Abnormal Conditions:

Maximum anticipated bottom hole pressure calculated at 8619' TVD, approximately equals 5,516 psi 0.64 psi/ft = actual bottomhole gradient

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

Maximum anticipated surface pressure equals approximately 3,608 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.

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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

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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.

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API Well Number: 43047517600000

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP	DATE	July 26, 2011
WELL NAME	**NBU 1022-2E4BS**	TD	8,619' TVD 8,688' MD
FIELD	Natural Buttes	COUNTY Uintah	STATE Utah
FINISHED ELEVATION	5012.5		
SURFACE LOCATION	SENW 2386 FNL 1379 FWL Sec 2 T 10S R 22E		
	Latitude: 39.978748 Longitude: -109.411083 NAD 27		
BTM HOLE LOCATION	SWNW 2231 FNL 822 FWL Sec 2 T 10S R 22E		
	Latitude: 39.979173 Longitude: -109.41307 NAD 27		
OBJECTIVE ZONE(S)	Wasatch/Mesaverde		
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.		

GEOLOGICAL			MECHANICAL		
LOGS	FORMATION TOPS	DEPTH	HOLE SIZE	CASING SIZE	MUD WEIGHT
		40'		14"	
		200'	12-1/4	8-5/8", 28#, IJ-55, LTC	Air mist
			11'	8-5/8", 28#, IJ-55, LTC	Air mist
			7-7/8"	4-1/2" 11.6# I-80 or equivalent BTC/LTC csg	Water / Fresh Water Mud 8.3-12.5 ppg

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

Green River @ 1,102'

Top of Birds Nest @ 1,357'

Mahogany @ 1,732'

Preset f/ GL @ 2,180' TVD

Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone.

Wasatch @ 4,188'

Mud logging program TBD

Cased hole logging program from TD - surf csg

Mverde @ 6,534' TVD

MVU2 @ 7,441' TVD

MVU1 @ 8,006' TVD

Max anticipated Mud required 12.5 ppg

TD @ 8,619' TVD 8,688' MD

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API Well Number: 43047517600000

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

CASING PROGRAM

	SIZE	INTERVAL			WT.	GR.	CPLG.	DESIGN FACTORS BURST	COLLAPSE	COLLAPSE LTC	TENSION BTC
CONDUCTOR	14"	0-40'									
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,180	28.00	IJ-55	LTC	2.48	1.84	6.51	N/A
								7,780	6,350	279,000	367,000
PRODUCTION	4-1/2"	0	to	8,688	11.60	I-80	LTC/BTC	1.11	1.13	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	180	60%	15.80		1.15
Option 1			+ 0.25 pps flocele					
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
SURFACE			**NOTE: If well will circulate water to surface, option 2 will be utilized**					
Option 2	LEAD	1,680'	65/35 Poz + 6% Gel + 10 pps gilsonite	160	35%	11.00		3.82
			+ 0.25 pps Flocele + 3% salt BWOW					
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps flocele					
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	3,688'	Premium Lite II +0.25 pps	280	20%	11.00		3.38
			celloflake + 5 pps gilsonite + 10% gel					
			+ 0.5% extender					
	TAIL	5,000'	50/50 Poz/G + 10% salt + 2% gel	1,180	35%	14.30		1.31
			+ 0.1% R-3					

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

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

FLOAT EQUIPMENT & CENTRALIZERS

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

ADDITIONAL INFORMATION

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

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

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

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

DRILLING ENGINEER: _____ **DATE:** _____

Nick Spence / Danny Showers

DRILLING SUPERINTENDENT: _____ **DATE:** _____

Kenny Gathings / Lovel Young

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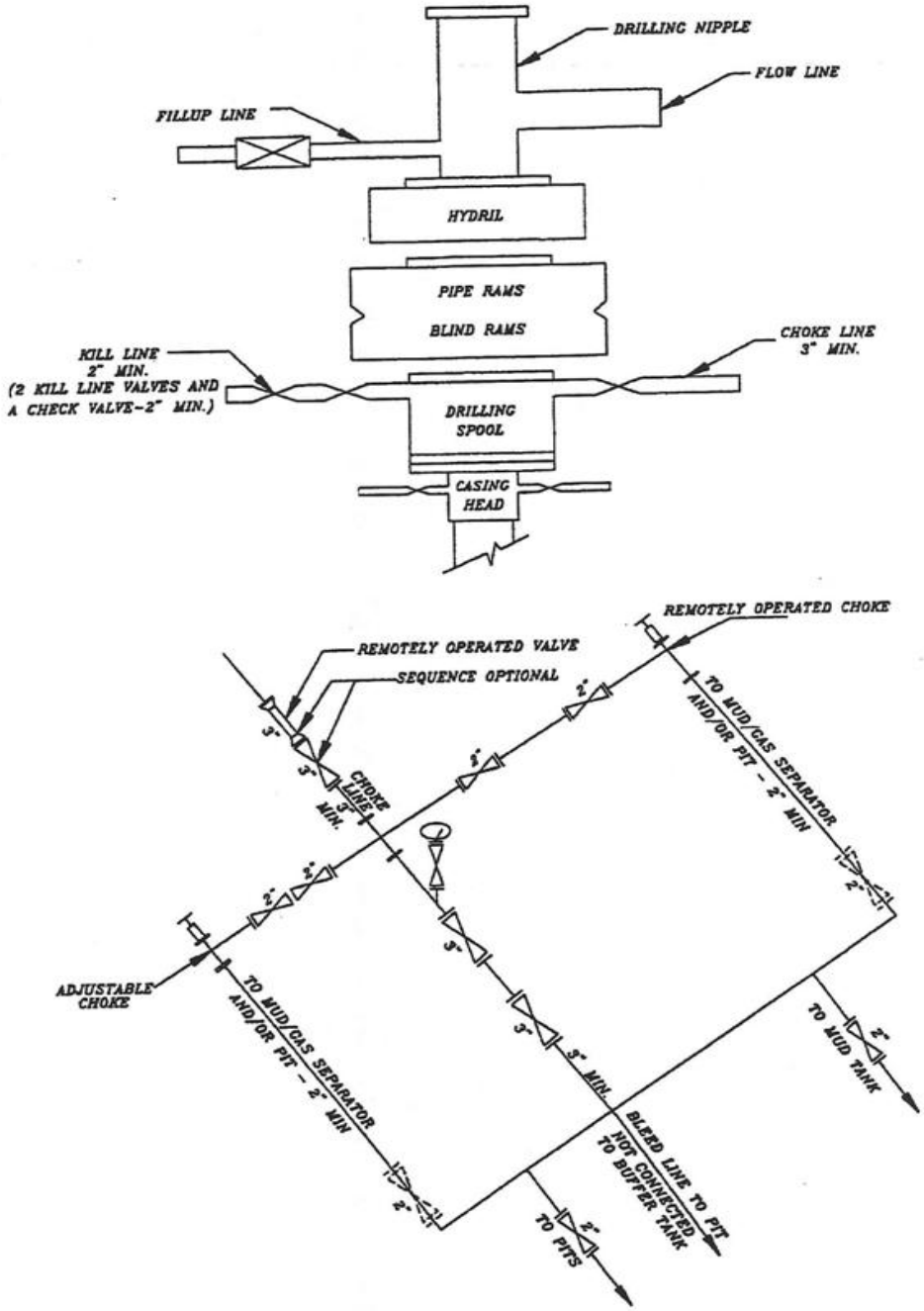
EXHIBIT A
NBU 1022-2E4BS



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

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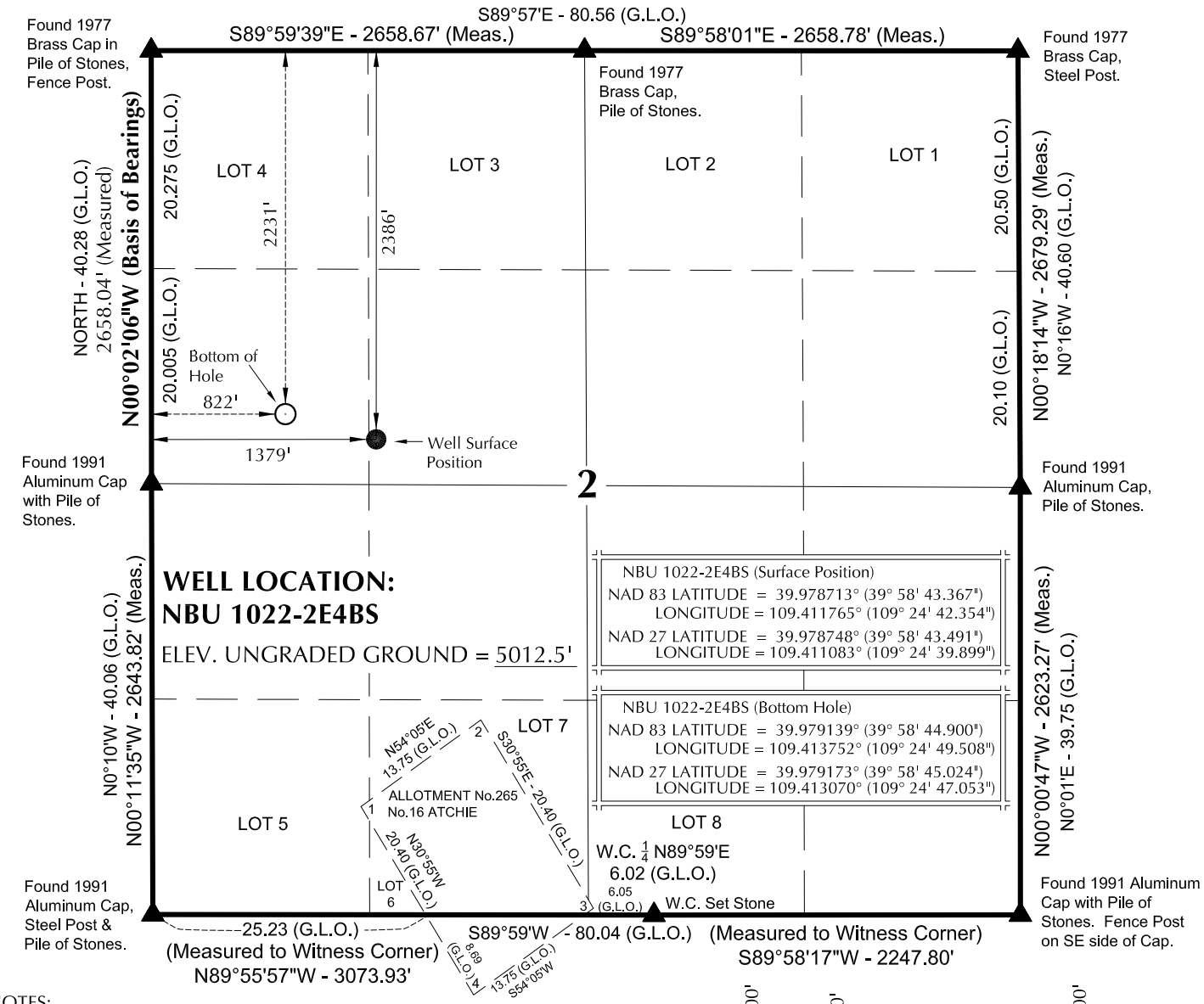
T10S, R22E, S.L.B.&M.



NOTES:

▲ = Section Corners Located

1. Well footages are measured at right angles to the Section Lines.
2. G.L.O. distances are shown in feet or chains. 1 chain = 66 feet.
3. The Bottom of hole bears N74°28'21"W - 578.27' 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.

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

PROFESSIONAL LAND SURVEYOR
REGISTRATION No. 6028691
STATE OF UTAH

1-31-11

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

WELL PAD: NBU 1022-2F

NBU 1022-2E4BS
WELL PLAT
2231' FNL, 822' FWL (Bottom Hole)
SW 1/4 NW 1/4 OF 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

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

DATE SURVEYED: 01-11-11	SURVEYED BY: R.Y.	SHEET NO: 4
DATE DRAWN: 01-28-11	DRAWN BY: E.M.S.	
SCALE: 1" = 1000'	Date Last Revised:	4 OF 18

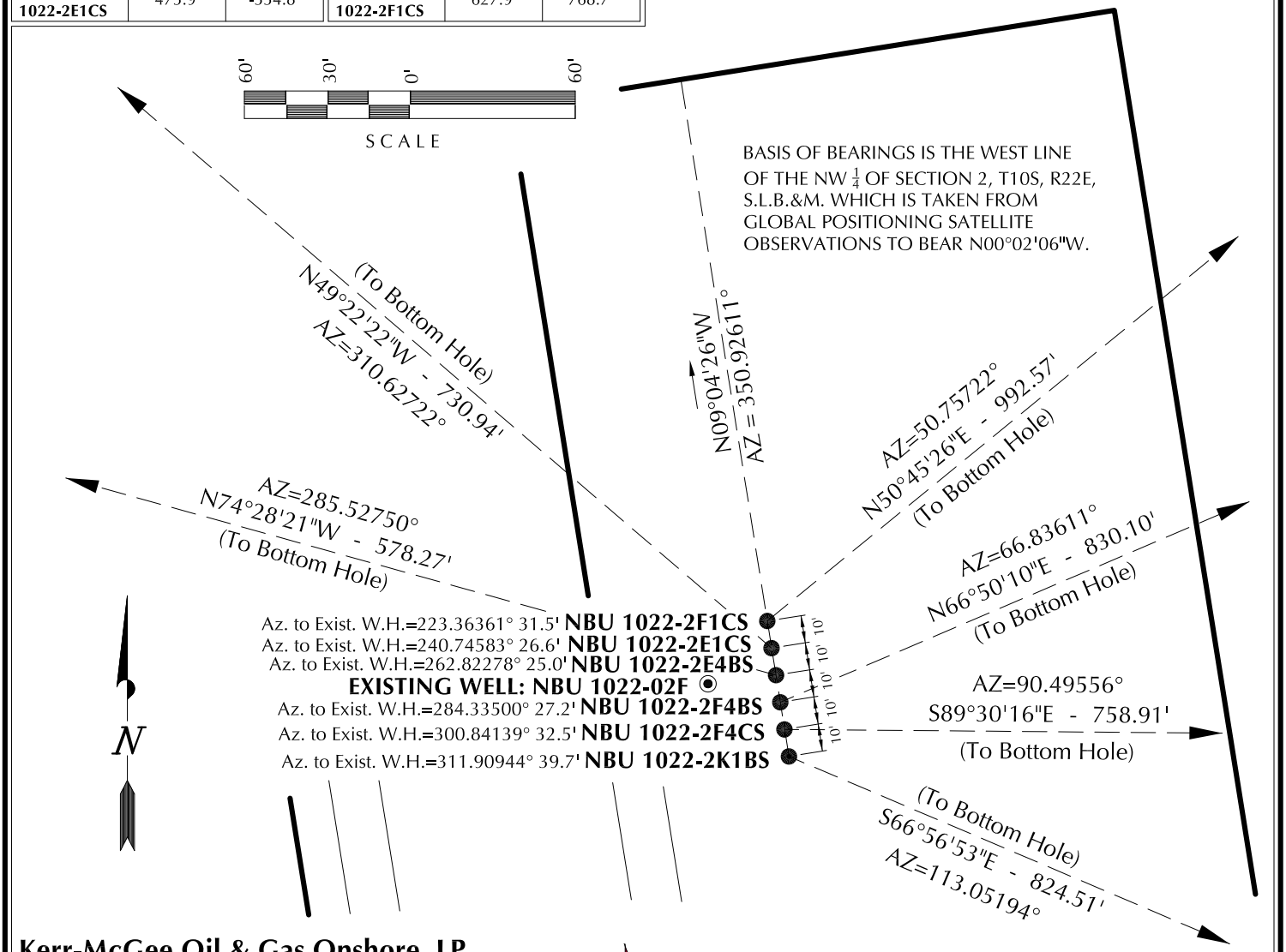
RECEIVED: July 29, 2011

API Well Number: 43047517600000

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27			NAD83		NAD27		
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	FOOTAGES	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	FOOTAGES
NBU 1022-2K1BS	39°58'43.075" 39.978632°	109°24'42.293" 109.411748°	39°58'43.199" 39.978666°	109°24'39.839" 109.411066°	2415' FNL 1384' FWL	39°58'39.881" 39.977745°	109°24'32.553" 109.409042°	39°58'40.005" 39.977779°	109°24'30.099" 109.408361°	2566' FSL 2142' FWL
NBU 1022-2F4CS	39°58'43.172" 39.978659°	109°24'42.314" 109.411754°	39°58'43.296" 39.978693°	109°24'39.860" 109.411072°	2405' FNL 1382' FWL	39°58'43.103" 39.978640°	109°24'32.569" 109.409047°	39°58'43.227" 39.978674°	109°24'30.114" 109.408365°	2412' FNL 2141' FWL
NBU 1022-2F4BS	39°58'43.270" 39.978686°	109°24'42.334" 109.411759°	39°58'43.394" 39.978721°	109°24'39.879" 109.411078°	2395' FNL 1381' FWL	39°58'46.492" 39.979581°	109°24'32.530" 109.409036°	39°58'46.615" 39.979615°	109°24'30.076" 109.408354°	2069' FNL 2144' FWL
NBU 1022-2E4BS	39°58'43.367" 39.978713°	109°24'42.354" 109.411765°	39°58'43.491" 39.978748°	109°24'39.899" 109.411083°	2386' FNL 1379' FWL	39°58'44.900" 39.979139°	109°24'49.508" 109.413752°	39°58'45.024" 39.979173°	109°24'47.053" 109.413070°	2231' FNL 822' FWL
NBU 1022-2E1CS	39°58'43.465" 39.978740°	109°24'42.374" 109.411771°	39°58'43.589" 39.978775°	109°24'39.920" 109.411089°	2376' FNL 1377' FWL	39°58'48.170" 39.980047°	109°24'49.495" 109.413749°	39°58'48.294" 39.980082°	109°24'47.040" 109.413067°	1900' FNL 823' FWL
NBU 1022-2F1CS	39°58'43.563" 39.978767°	109°24'42.394" 109.411776°	39°58'43.687" 39.978802°	109°24'39.940" 109.411094°	2366' FNL 1376' FWL	39°58'49.762" 39.980489°	109°24'32.517" 109.409033°	39°58'49.886" 39.980524°	109°24'30.063" 109.408351°	1738' FNL 2145' FWL
NBU 1022-02F	39°58'43.337" 39.978705°	109°24'42.672" 109.411853°	39°58'43.461" 39.978739°	109°24'40.218" 109.411172°	2389' FNL 1354' 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 1022-2K1BS	-322.8'	758.7'	NBU 1022-2F4CS	-6.6'	758.9'	NBU 1022-2F4BS	326.5'	763.2'	NBU 1022-2E4BS	154.8'	-557.2'
WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST						
NBU 1022-2E1CS	475.9'	-554.8'	NBU 1022-2F1CS	627.9'	768.7'						



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

WELL PAD - NBU 1022-2F

WELL PAD INTERFERENCE PLAT
WELLS - NBU 1022-2K1BS, NBU 1022-2F4CS, NBU 1022-2F4BS, NBU 1022-2E4BS, NBU 1022-2E1CS & NBU 1022-2F1CS LOCATED IN SECTION 2, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.

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

TIMBERLINE (435) 789-1365
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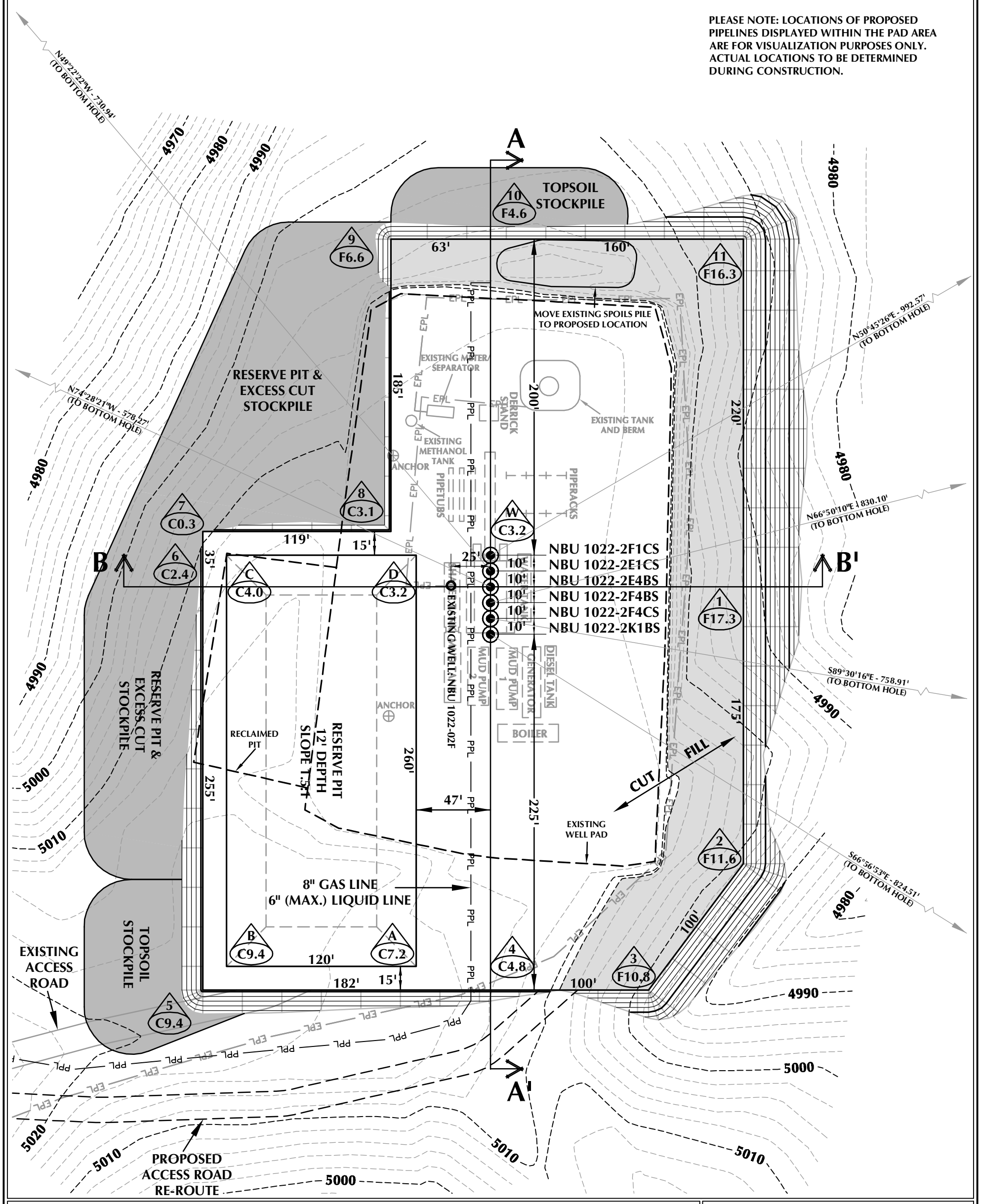
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 01-11-11	SURVEYED BY: R.Y.	SHEET NO: 7
DATE DRAWN: 01-28-11	DRAWN BY: E.M.S.	
SCALE: 1" = 60'	Date Last Revised:	7 OF 18

RECEIVED: July 29, 2011

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 1022-2F DESIGN SUMMARY

EXISTING GRADE @ CENTER OF WELL PAD = 5012.5'
FINISHED GRADE ELEVATION = 5009.3'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1
TOTAL WELL PAD AREA = 3.77 ACRES
TOTAL DISTURBANCE AREA = 6.34 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00

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

WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 16,867 C.Y.
TOTAL FILL FOR WELL PAD = 15,122 C.Y.
TOPSOIL @ 6" DEPTH = 1,749 C.Y.
EXCESS MATERIAL = 1,745 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

WELL PAD - NBU 1022-2F

WELL PAD - LOCATION LAYOUT
NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
LOCATED IN SECTION 2, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

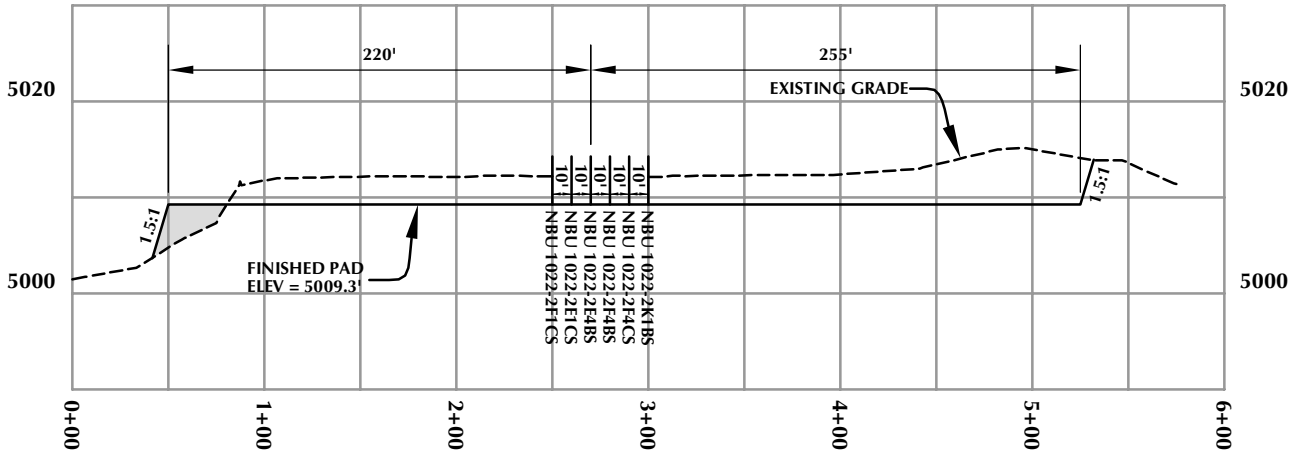
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

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

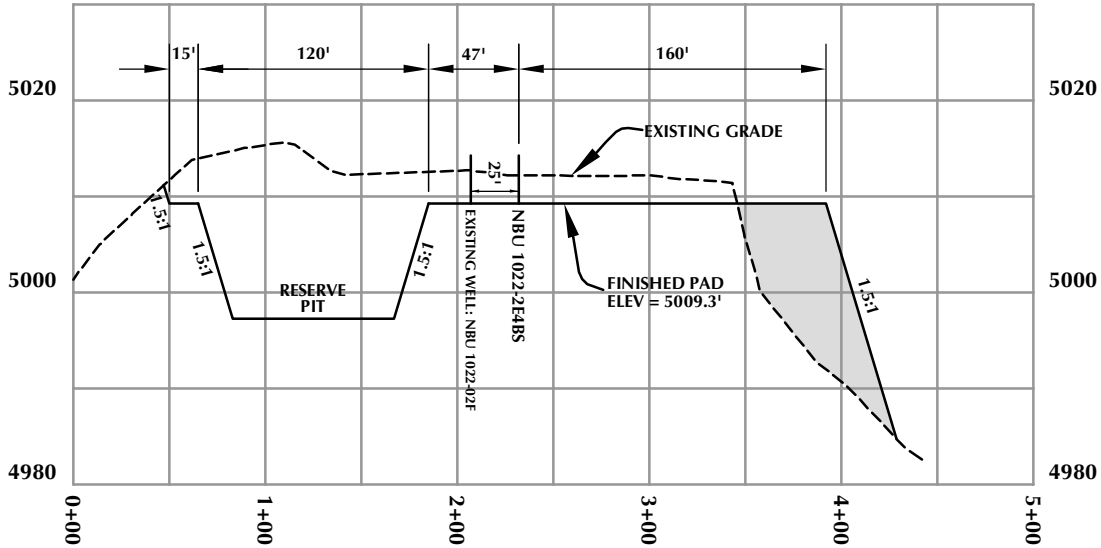
SCALE: 1"=60' | DATE: 3/30/11 | SHEET NO: 8
REVISED:
8 OF 18

K:\ANADARKO\2010_63_NBU_FOCUS_1022-2\DWG\NBU_1022_2F\NBU_1022_2F_20110124.dwg

RECEIVED: July 29, 2011



CROSS SECTION A-A'



CROSS SECTION B-B'

NOTE: CROSS SECTION B-B' DEPICTS MAXIMUM RESERVE PIT DEPTH.

HORIZONTAL 0 50' 100' 1" = 100'

VERTICAL 0 10' 20' 1" = 20'

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

WELL PAD - NBU 1022-2F

WELL PAD - CROSS SECTIONS
NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
LOCATED IN SECTION 2, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

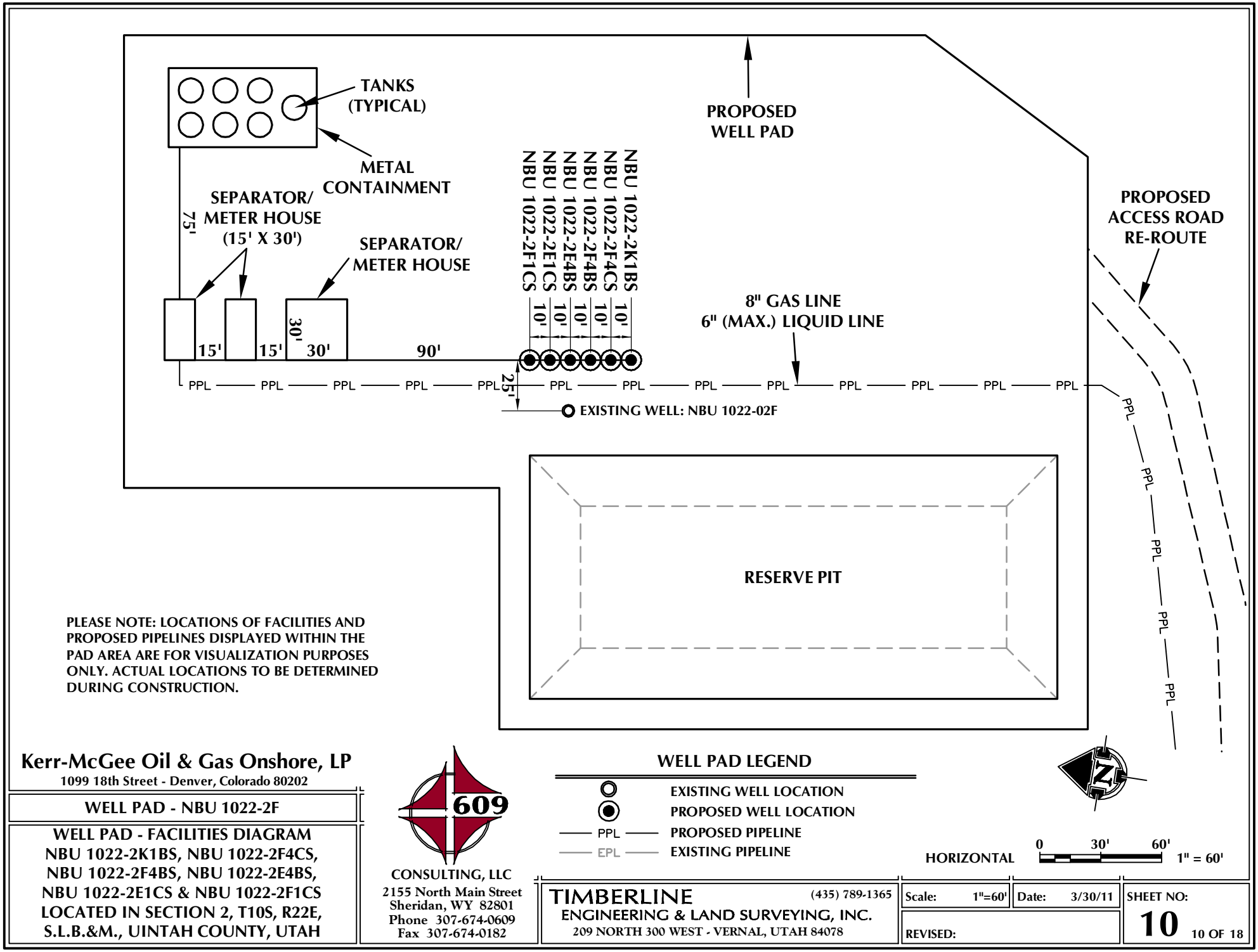
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone 307-674-0609
Fax 307-674-0182

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

Scale: 1"=100' | Date: 3/30/11 | SHEET NO: 9
REVISED:
9 OF 18

K:\ANADARKO\2010_63_NBU_FOCUS_1022-2\DWG\NBU_1022_2F\NBU_1022_2F_20110124.dwg

RECEIVED: July 29, 2011



RECEIVED: July 29, 2011

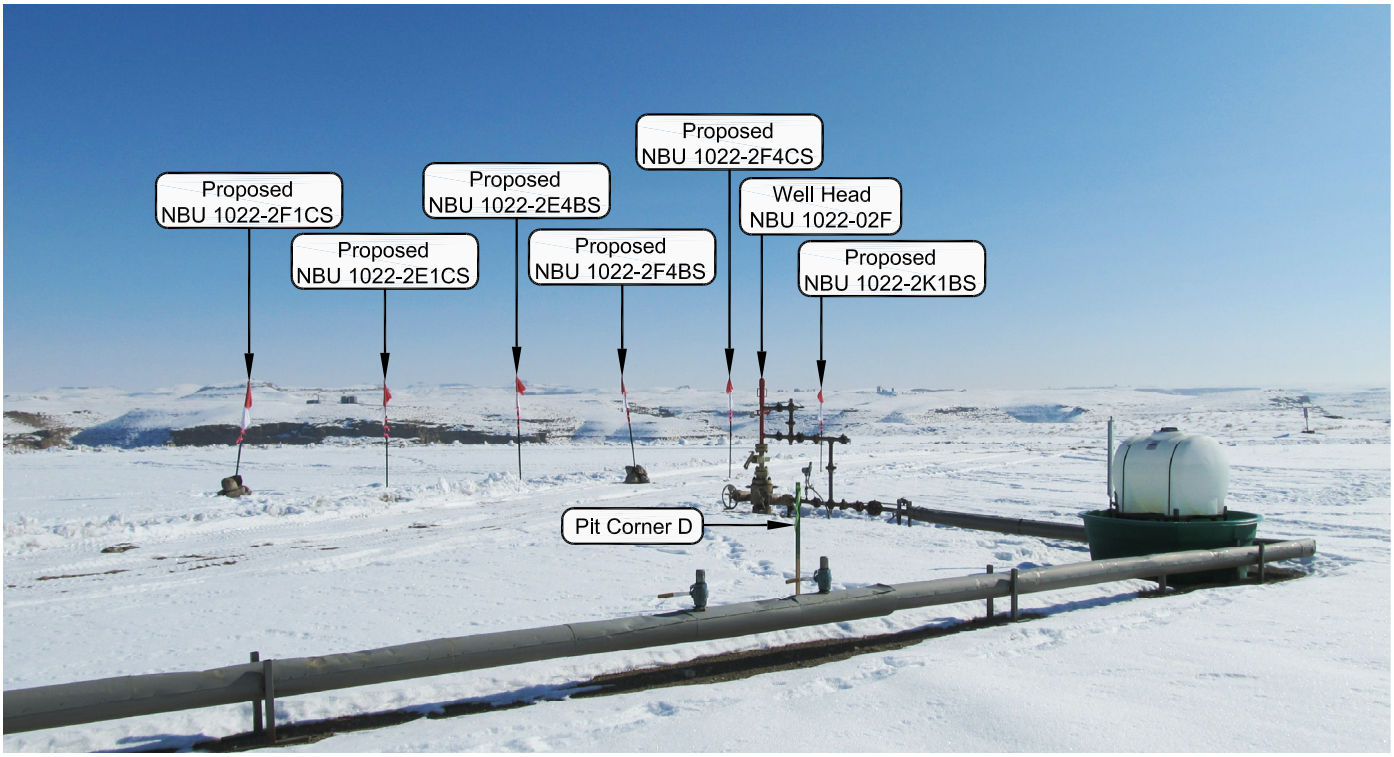


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE CAMERA ANGLE: SOUTHEASTERLY

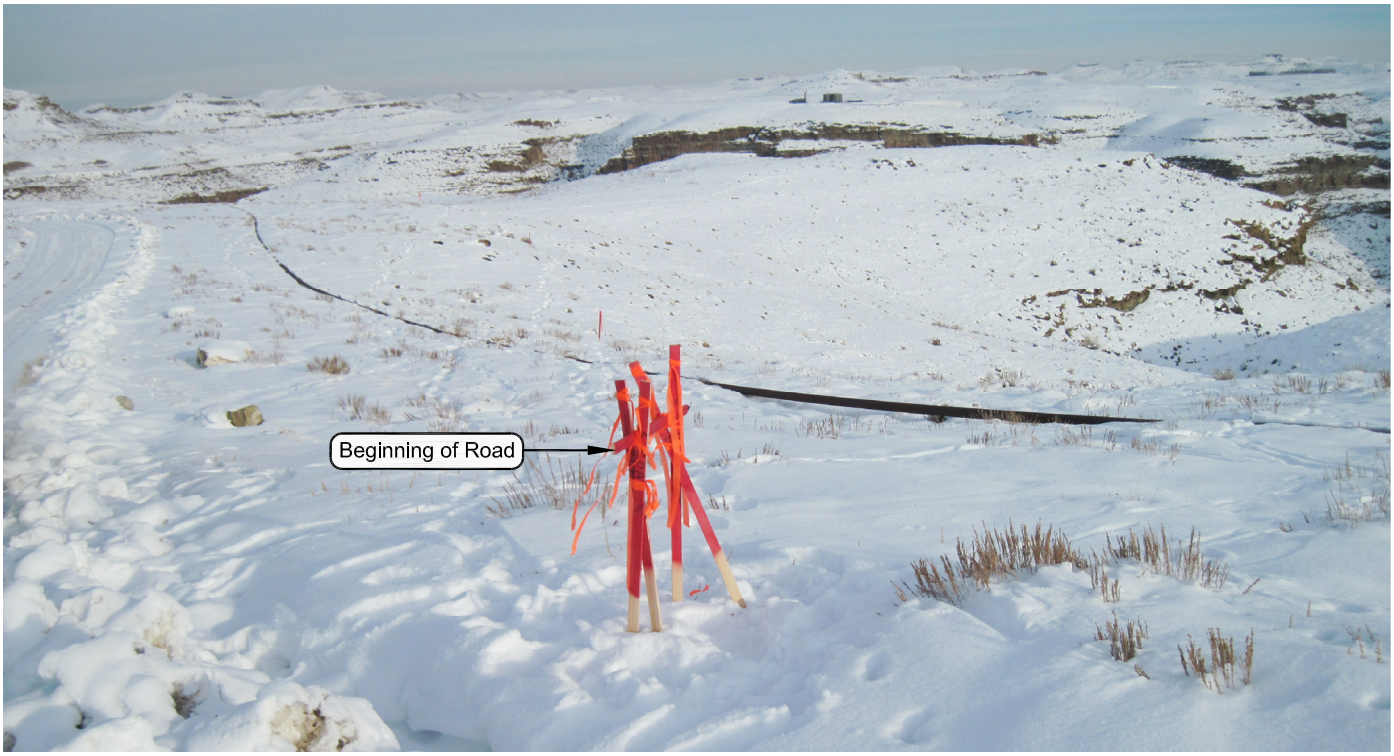


PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD CAMERA ANGLE: NORTHEASTERLY

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

WELL PAD - NBU 1022-2F

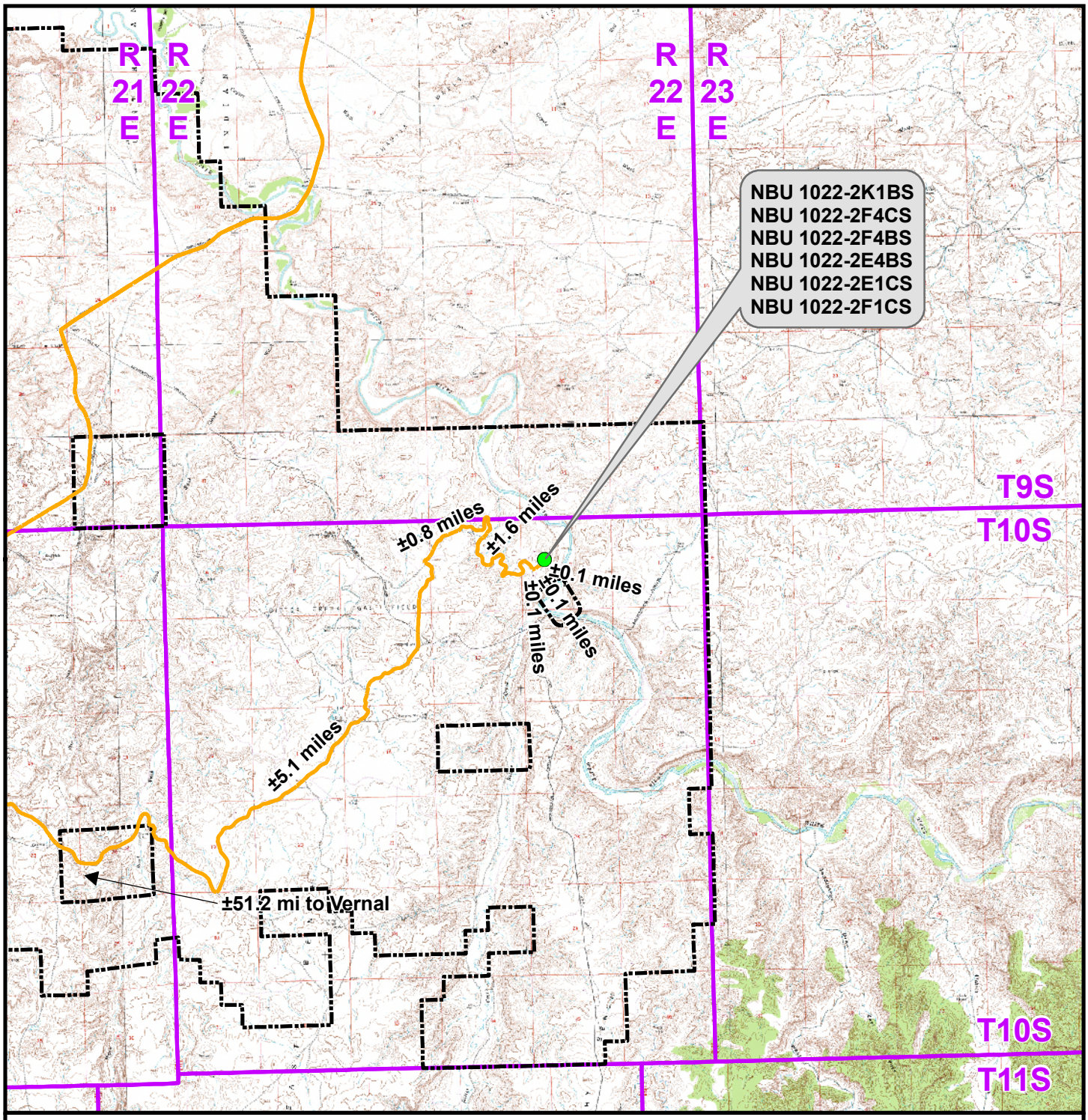
LOCATION PHOTOS
NBU 1022-2K1BS, NBU 1022-2F4CS, NBU 1022-2F4BS, NBU 1022-2E4BS, NBU 1022-2E1CS & NBU 1022-2F1CS
LOCATED IN SECTION 2, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH.

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

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

DATE PHOTOS TAKEN: 01-28-11	PHOTOS TAKEN BY: M.S.B.	SHEET NO:
DATE DRAWN: 01-31-11	DRAWN BY: E.M.S.	11
Date Last Revised:		11 OF 18

RECEIVED: July 29, 2011



Legend

Distance From Well Pad - NBU 1022-2F To Unit Boundary: ±1,808ft

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

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

WELL PAD - NBU 1022-2F

TOPO A
NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
LOCATED IN SECTION 2, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

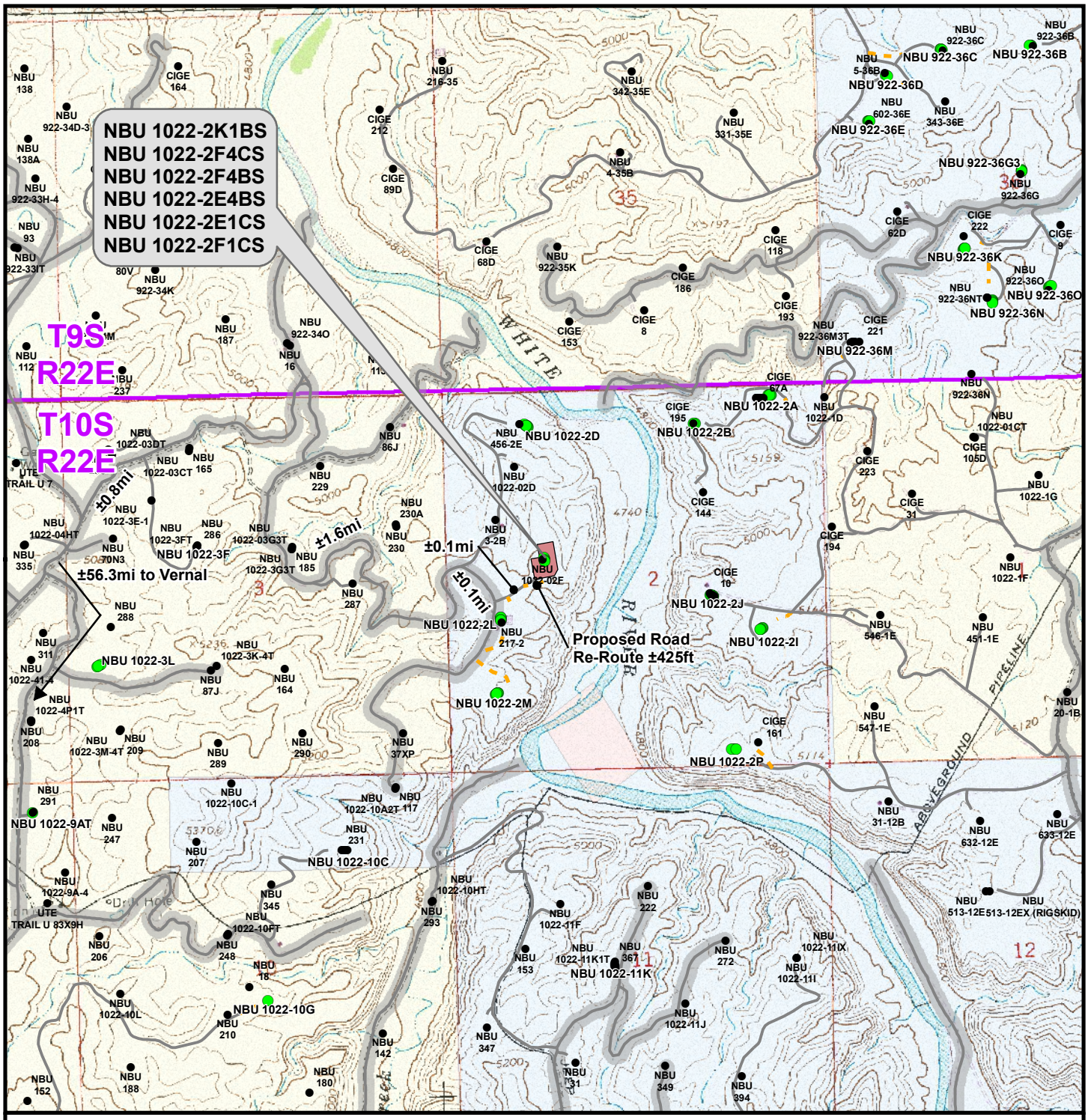
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

Scale: 1:100,000	NAD83 USP Central	Sheet No: 12 12 of 18
Drawn: KGS	Date: 30 Mar 2011	
Revised:	Date:	

RECEIVED: July 29, 2011

API Well Number: 43047517600000



Legend

Total Proposed Road Re-Route Length: ±425ft

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

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

WELL PAD - NBU 1022-2F

TOPO B
NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
LOCATED IN SECTION 2, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

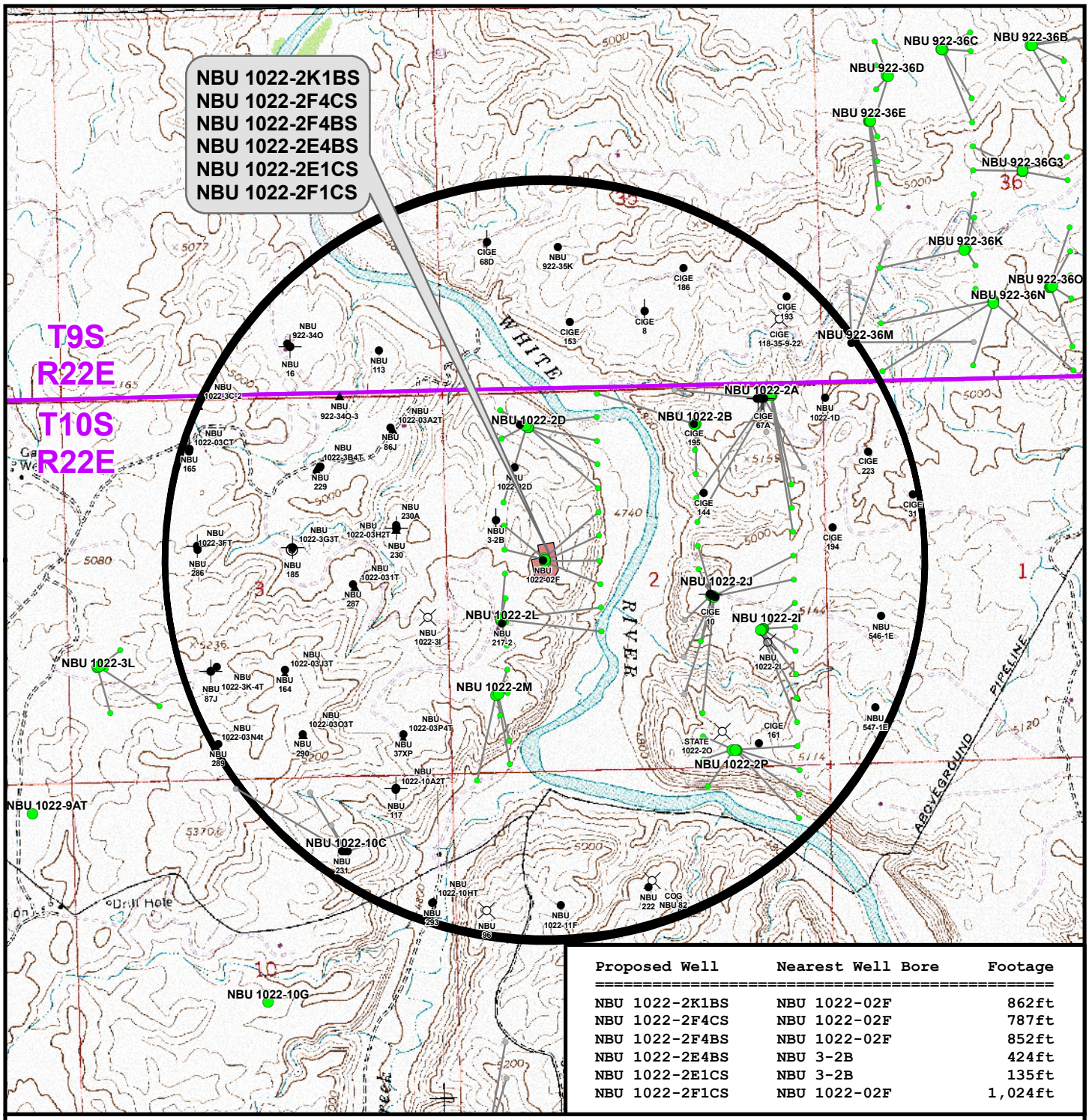
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: 13
Drawn: KGS	Date: 30 Mar 2011	13 of 18
Revised:	Date:	

RECEIVED: July 29, 2011

API Well Number: 43047517600000



Proposed Well	Nearest Well Bore	Footage
NBU 1022-2K1BS	NBU 1022-02F	862ft
NBU 1022-2F4CS	NBU 1022-02F	787ft
NBU 1022-2F4BS	NBU 1022-02F	852ft
NBU 1022-2E4BS	NBU 3-2B	424ft
NBU 1022-2E1CS	NBU 3-2B	135ft
NBU 1022-2F1CS	NBU 1022-02F	1,024ft

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

Legend

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

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

WELL PAD - NBU 1022-2F

TOPO C
NBU 1022-2K1BS, NBU 1022-2F4CS, NBU 1022-2F4BS, NBU 1022-2E4BS, NBU 1022-2E1CS & NBU 1022-2F1CS
LOCATED IN SECTION 2, T10S, R22E, S.L.B.&M., UINTAH COUNTY, UTAH

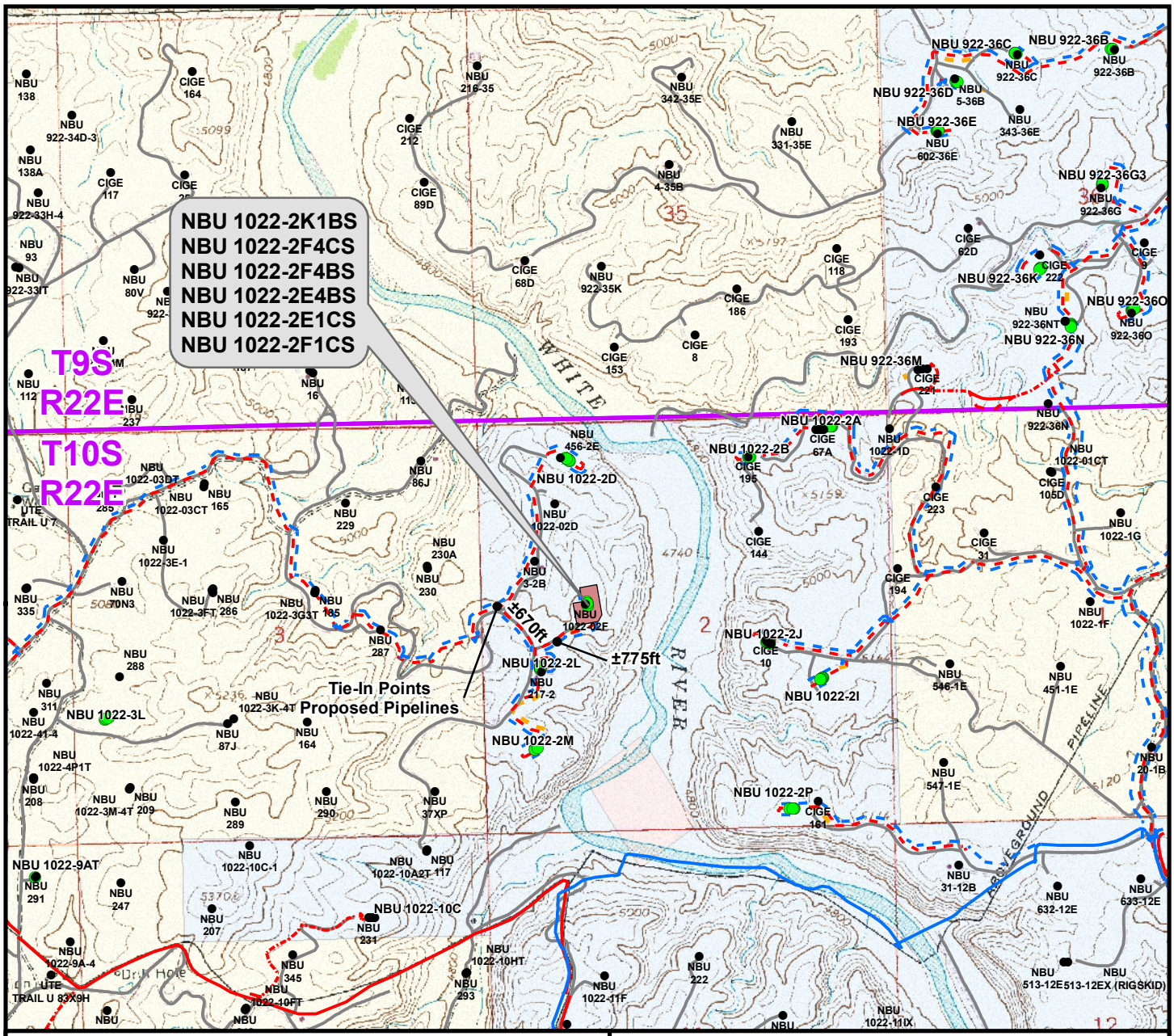
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: 14
Drawn: KGS	Date: 30 Mar 2011	14 of 18
Revised:	Date:	

RECEIVED: July 29, 2011

API Well Number: 43047517600000



Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±475ft
Proposed 6" (Max.) (Edge of Pad to 2L Intersection)	±775ft
Proposed 6" (Max.) (2L Intersection to 2D Intersection)	±670ft
TOTAL PROPOSED LIQUID PIPELINE =	±1,920ft

Proposed Gas Pipeline	Length
Proposed 8" (Meter House to Edge of Pad)	±475ft
Proposed 8" (Edge of Pad to 2L Intersection)	±775ft
Proposed 10" (2L Intersection to 2D Intersection)	±670ft
TOTAL PROPOSED GAS PIPELINE =	±1,920ft

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 1022-2F

TOPO D
NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
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

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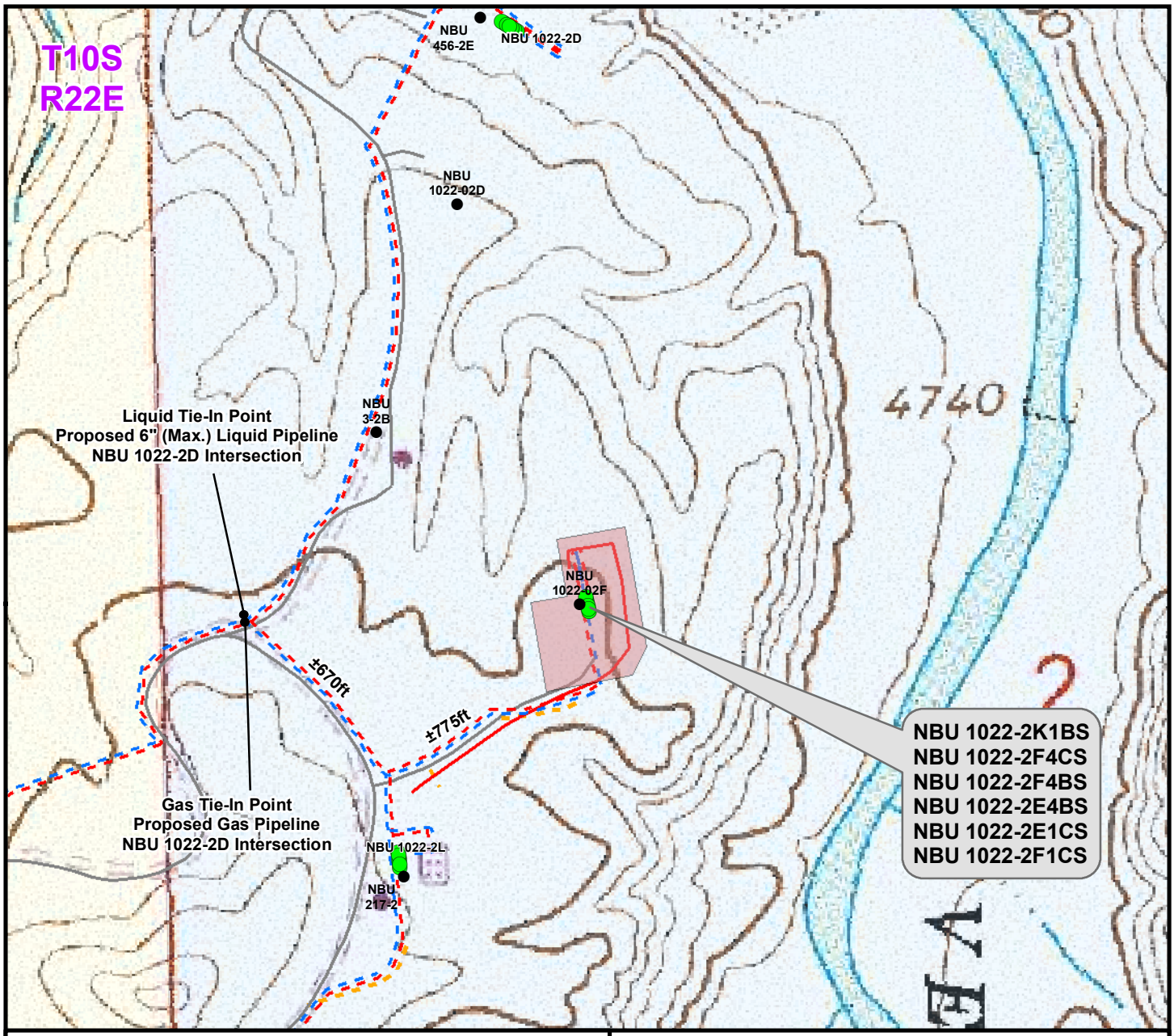
Scale: 1" = 2,000ft	NAD83 USP Central	Sheet No: 15
Drawn: TL	Date: 30 Mar 2011	15 of 18
Revised:	Date:	

RECEIVED: July 29, 2011



Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±475ft
Proposed 6" (Max.) (Edge of Pad to 2L Intersection)	±775ft
Proposed 6" (Max.) (2L Intersection to 2D Intersection)	±670ft
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Proposed 8" (Meter House to Edge of Pad)	±475ft
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Proposed 10" (2L Intersection to 2D Intersection)	±670ft
TOTAL PROPOSED GAS PIPELINE =	±1,920ft

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 1022-2F

TOPO D2 (PAD & PIPELINE DETAIL)
NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
LOCATED IN SECTION 2, T10S, R22E,
S.L.B.&M., UINTAH COUNTY, UTAH

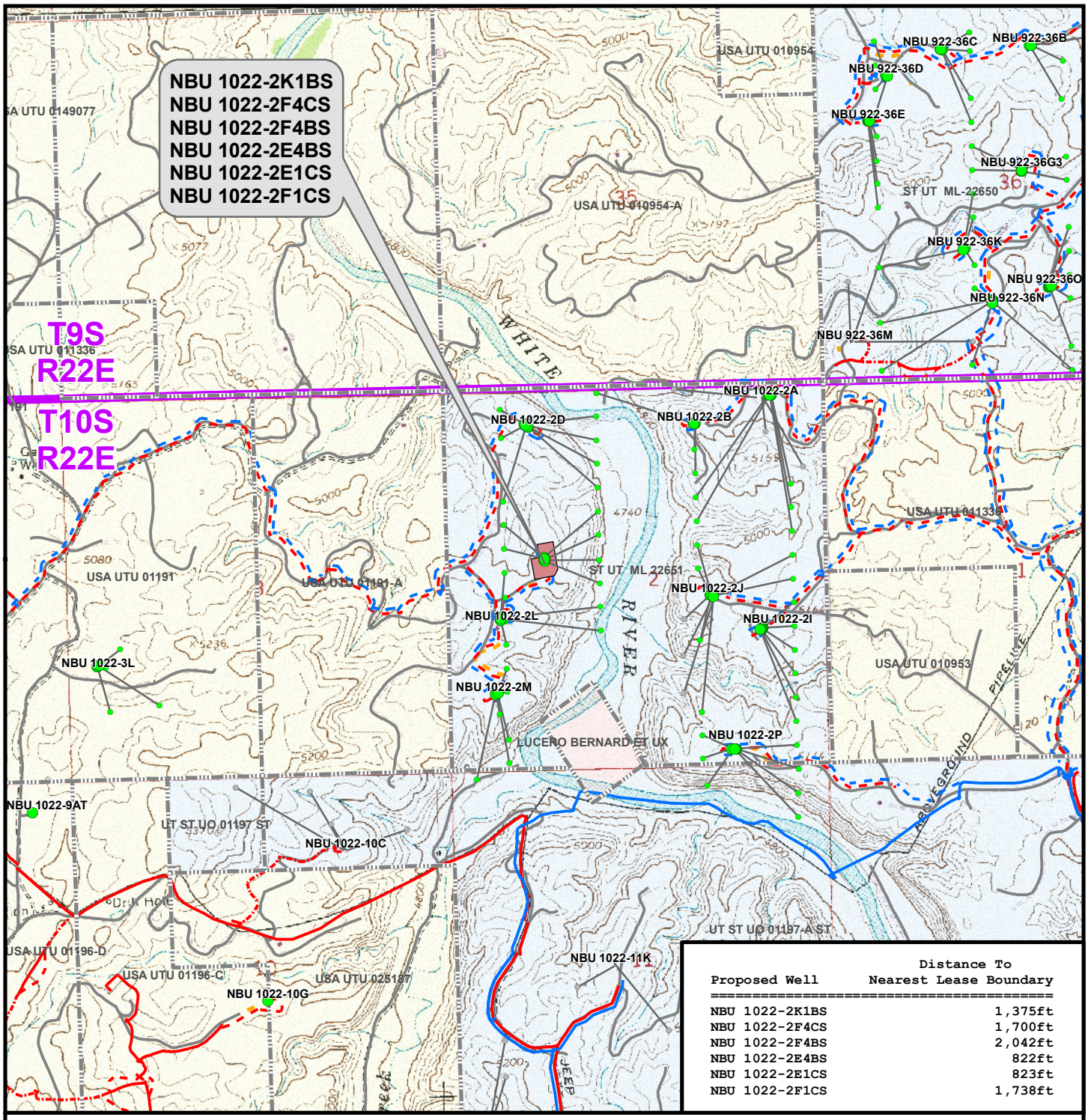
609 CONSULTING, LLC
2155 North Main Street
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

Scale: 1" = 500ft	NAD83 USP Central	Sheet No: 16
Drawn: TL	Date: 30 Mar 2011	16 of 18
Revised:	Date:	

RECEIVED: July 29, 2011

API Well Number: 43047517600000



Proposed Well	Distance To Nearest Lease Boundary
NBU 1022-2K1BS	1,375ft
NBU 1022-2F4CS	1,700ft
NBU 1022-2F4BS	2,042ft
NBU 1022-2E4BS	822ft
NBU 1022-2E1CS	823ft
NBU 1022-2F1CS	1,738ft

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 1022-2F

TOPO E
NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
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: 17
Drawn: TL	Date: 30 Mar 2011	17 of 18
Revised:	Date:	

RECEIVED: July 29, 2011

Kerr-McGee Oil & Gas Onshore, LP
WELL PAD - NBU 1022-2F
WELLS – NBU 1022-2K1BS, NBU 1022-2F4CS,
NBU 1022-2F4BS, NBU 1022-2E4BS,
NBU 1022-2E1CS & NBU 1022-2F1CS
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 fourth Class D County Road to the southeast. Exit right and proceed in a southeasterly direction along the Class D County Road approximately 0.1 miles to an existing access road to the northeast. Exit left and proceed in a northeasterly direction approximately 0.1 miles to the proposed access road. Follow road flags in a northeasterly direction approximately 425 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 59.0 miles in a southerly direction.

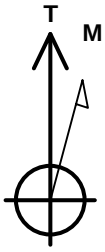
RECEIVED: July 29, 2011

API Well Number: 43047517600000

Scientific Drilling
Rocky Mountain Operations

Project: Uintah County, UT NAD27
Site: NBU 1022-2F PAD
Well: NBU 1022-2E4BS
Wellbore: OH
Design: PLAN #1 PRELIMINARY

Anadarko Petroleum Corporation



Azimuths to True North
Magnetic North: 11.02°

Magnetic Field
Strength: 52319.7snT
Dip Angle: 65.87°
Date: 07/21/2011
Model: IGRF2010

WELL DETAILS: NBU 1022-2E4BS

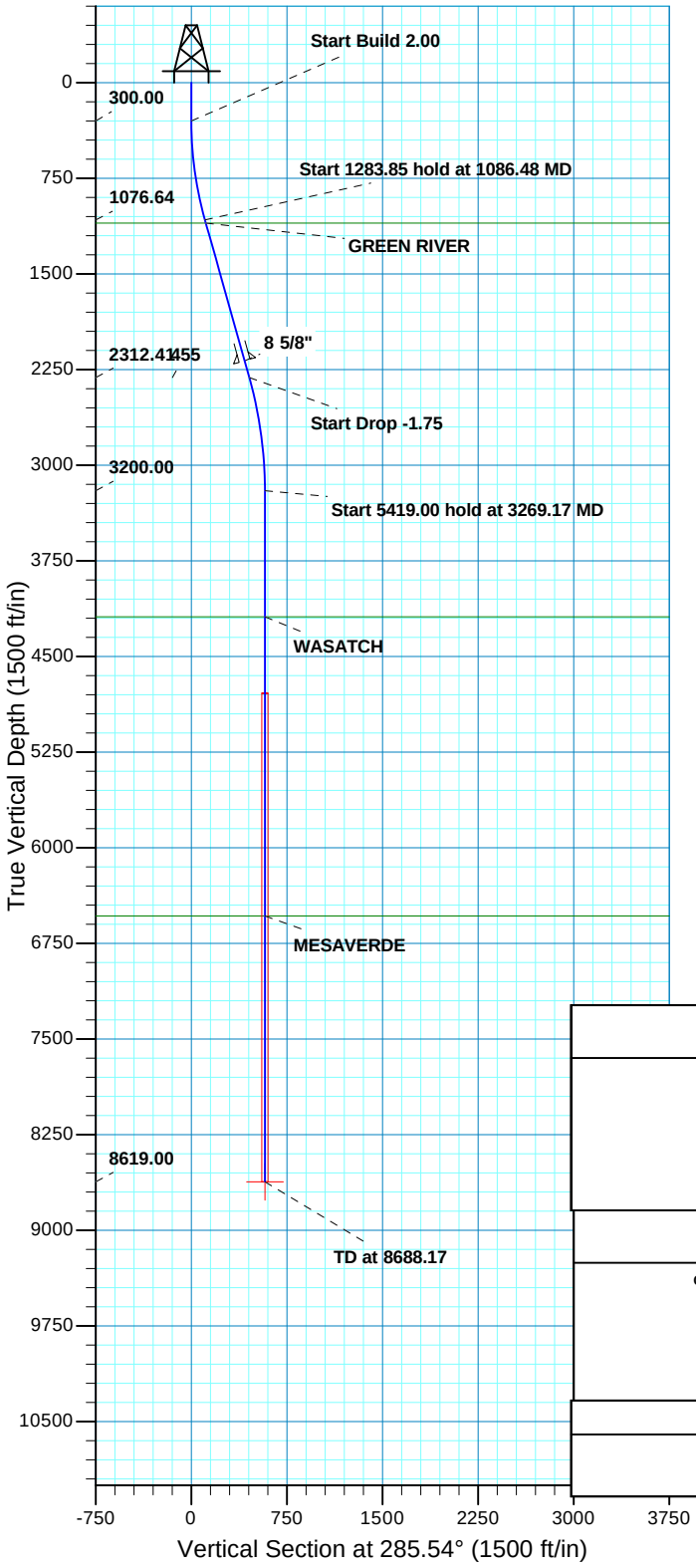
GL 5009' & KB 4'
@ 5013.00ft (ASSUMED)

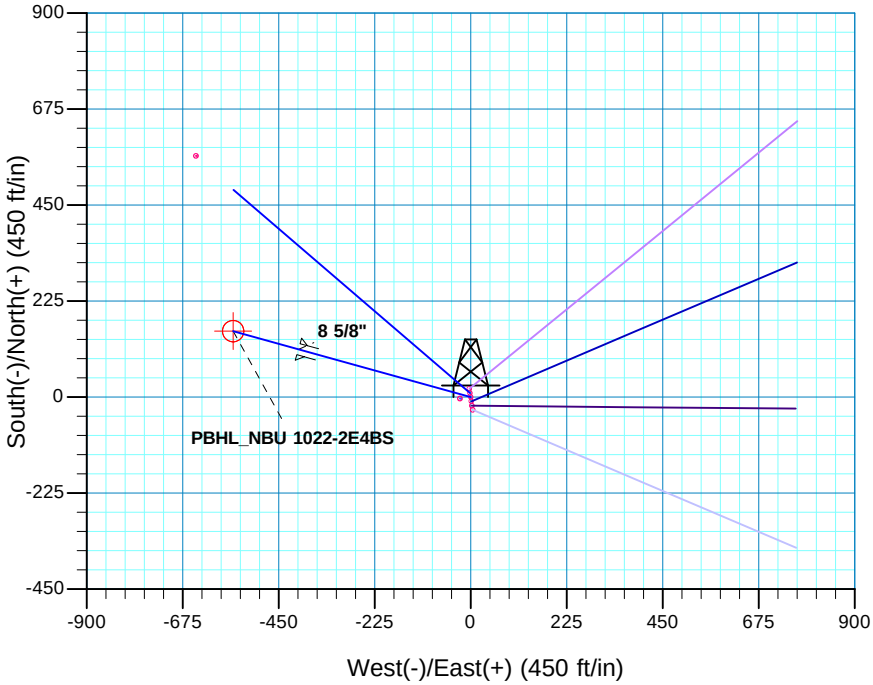
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	606139.62	2585323.43	39° 58' 43.493 N	109° 24' 39.899 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8619.00	154.83	-556.81	606281.41	2584763.16	39° 58' 45.023 N	109° 24' 47.052 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	
1086.48	15.73	285.54	1076.64	28.74	-103.36	2.00	285.54	107.28	
2370.33	15.73	285.54	2312.41	121.98	-438.69	0.00	0.00	455.33	
3269.17	0.00	0.00	3200.00	154.83	-556.81	1.75	180.00	577.94	
8688.17	0.00	0.00	8619.00	154.83	-556.81	0.00	0.00	577.94	PBHL_NBU 1022-2E4BS

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
1102.00	1112.83	GREEN RIVER
4188.00	4257.17	WASATCH
6534.00	6603.17	MESAVERDE

CASING DETAILS

TVD	MD	Name	Size
2182.00	2234.85	8 5/8"	8.625

Plan: PLAN #1 PRELIMINARY (NBU 1022-2E4BS/OH)

Created By: RobertScott Date: 16:15, July 21 2011

RE

Scientific Drilling
Rocky Mountain Operations

Kerr McGee Oil and Gas Onshore LP

Uintah County, UT NAD27
NBU 1022-2F PAD
NBU 1022-2E4BS

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

21 July, 2011

Anadarko
Petroleum Corporation

RECEIVED: July 29, 2011

Scientific Drilling
Rocky Mountain Operations

SDI
Planning Report

Anadarko Petroleum Corporation

Database:	EDM5000-RobertS-Local	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Company:	Kerr McGee Oil and Gas Onshore LP	**TVD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Project:	Uintah County, UT NAD27	**MD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Site:	NBU 1022-2F PAD	**North Reference:**	True
Well:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Project Uintah County, UT NAD27

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Utah Central 4302		

Site NBU 1022-2F PAD, SECTION 2 T10S R22E

Site Position:		**Northing:**	606,149.44 usft	**Latitude:**	39° 58' 43.590 N
From:	Lat/Long	**Easting:**	2,585,321.52 usft	**Longitude:**	109° 24' 39.920 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	1.34 °

Well NBU 1022-2E4BS, 2386 FNL 1379 FWL

Well Position	**+N/-S**	-9.85 ft	**Northing:**	606,139.63 usft	**Latitude:**	39° 58' 43.493 N
	+E/-W	1.68 ft	**Easting:**	2,585,323.43 usft	**Longitude:**	109° 24' 39.899 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	5,009.00 ft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	07/21/11	11.02	65.87	52,320

Design PLAN #1 PRELIMINARY

Audit Notes:

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

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.00	0.00	0.00	285.54

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,086.48	15.73	285.54	1,076.64	28.74	-103.36	2.00	2.00	0.00	285.54	
2,370.33	15.73	285.54	2,312.41	121.98	-438.69	0.00	0.00	0.00	0.00	
3,269.17	0.00	0.00	3,200.00	154.83	-556.81	1.75	-1.75	0.00	180.00	
8,688.17	0.00	0.00	8,619.00	154.83	-556.81	0.00	0.00	0.00	0.00	PBHL_NBU 1022-2E4

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Scientific Drilling
Rocky Mountain Operations

SDI
Planning Report

Anadarko Petroleum Corporation

Database:	EDM5000-RobertS-Local	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Company:	Kerr McGee Oil and Gas Onshore LP	**TVD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Project:	Uintah County, UT NAD27	**MD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Site:	NBU 1022-2F PAD	**North Reference:**	True
Well:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	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
Start Build 2.00									
400.00	2.00	285.54	399.98	0.47	-1.68	1.75	2.00	2.00	0.00
500.00	4.00	285.54	499.84	1.87	-6.72	6.98	2.00	2.00	0.00
600.00	6.00	285.54	599.45	4.20	-15.12	15.69	2.00	2.00	0.00
700.00	8.00	285.54	698.70	7.47	-26.86	27.88	2.00	2.00	0.00
800.00	10.00	285.54	797.47	11.66	-41.93	43.52	2.00	2.00	0.00
900.00	12.00	285.54	895.62	16.77	-60.31	62.60	2.00	2.00	0.00
1,000.00	14.00	285.54	993.06	22.80	-81.99	85.10	2.00	2.00	0.00
1,086.48	15.73	285.54	1,076.64	28.74	-103.36	107.28	2.00	2.00	0.00
Start 1283.85 hold at 1086.48 MD									
1,100.00	15.73	285.54	1,089.65	29.72	-106.89	110.95	0.00	0.00	0.00
1,112.83	15.73	285.54	1,102.00	30.65	-110.24	114.42	0.00	0.00	0.00
GREEN RIVER									
1,200.00	15.73	285.54	1,185.91	36.98	-133.01	138.06	0.00	0.00	0.00
1,300.00	15.73	285.54	1,282.16	44.25	-159.13	165.17	0.00	0.00	0.00
1,400.00	15.73	285.54	1,378.42	51.51	-185.25	192.28	0.00	0.00	0.00
1,500.00	15.73	285.54	1,474.67	58.77	-211.37	219.39	0.00	0.00	0.00
1,600.00	15.73	285.54	1,570.93	66.04	-237.49	246.50	0.00	0.00	0.00
1,700.00	15.73	285.54	1,667.18	73.30	-263.60	273.61	0.00	0.00	0.00
1,800.00	15.73	285.54	1,763.44	80.56	-289.72	300.72	0.00	0.00	0.00
1,900.00	15.73	285.54	1,859.69	87.82	-315.84	327.83	0.00	0.00	0.00
2,000.00	15.73	285.54	1,955.95	95.09	-341.96	354.93	0.00	0.00	0.00
2,100.00	15.73	285.54	2,052.20	102.35	-368.08	382.04	0.00	0.00	0.00
2,200.00	15.73	285.54	2,148.46	109.61	-394.20	409.15	0.00	0.00	0.00
2,234.85	15.73	285.54	2,182.00	112.14	-403.30	418.60	0.00	0.00	0.00
8 5/8"									
2,300.00	15.73	285.54	2,244.71	116.87	-420.32	436.26	0.00	0.00	0.00
2,370.33	15.73	285.54	2,312.41	121.98	-438.69	455.33	0.00	0.00	0.00
Start Drop -1.75									
2,400.00	15.21	285.54	2,341.00	124.10	-446.31	463.24	1.75	-1.75	0.00
2,500.00	13.46	285.54	2,437.89	130.73	-470.17	488.00	1.75	-1.75	0.00
2,600.00	11.71	285.54	2,535.48	136.57	-491.16	509.79	1.75	-1.75	0.00
2,700.00	9.96	285.54	2,633.69	141.61	-509.27	528.59	1.75	-1.75	0.00
2,800.00	8.21	285.54	2,732.44	145.84	-524.48	544.38	1.75	-1.75	0.00
2,900.00	6.46	285.54	2,831.61	149.26	-536.78	557.15	1.75	-1.75	0.00
3,000.00	4.71	285.54	2,931.13	151.86	-546.16	566.88	1.75	-1.75	0.00
3,100.00	2.96	285.54	3,030.91	153.66	-552.60	573.57	1.75	-1.75	0.00
3,200.00	1.21	285.54	3,130.84	154.63	-556.11	577.21	1.75	-1.75	0.00
3,269.17	0.00	0.00	3,200.00	154.83	-556.81	577.94	1.75	-1.75	0.00
Start 5419.00 hold at 3269.17 MD									
3,300.00	0.00	0.00	3,230.83	154.83	-556.81	577.94	0.00	0.00	0.00
3,400.00	0.00	0.00	3,330.83	154.83	-556.81	577.94	0.00	0.00	0.00
3,500.00	0.00	0.00	3,430.83	154.83	-556.81	577.94	0.00	0.00	0.00
3,600.00	0.00	0.00	3,530.83	154.83	-556.81	577.94	0.00	0.00	0.00
3,700.00	0.00	0.00	3,630.83	154.83	-556.81	577.94	0.00	0.00	0.00
3,800.00	0.00	0.00	3,730.83	154.83	-556.81	577.94	0.00	0.00	0.00
3,900.00	0.00	0.00	3,830.83	154.83	-556.81	577.94	0.00	0.00	0.00

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Scientific Drilling
Rocky Mountain Operations

SDI
Planning Report

Anadarko Petroleum Corporation

Database:	EDM5000-RobertS-Local	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Company:	Kerr McGee Oil and Gas Onshore LP	**TVD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Project:	Uintah County, UT NAD27	**MD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Site:	NBU 1022-2F PAD	**North Reference:**	True
Well:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	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)
4,000.00	0.00	0.00	3,930.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,100.00	0.00	0.00	4,030.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,200.00	0.00	0.00	4,130.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,257.17	0.00	0.00	4,188.00	154.83	-556.81	577.94	0.00	0.00	0.00
WASATCH									
4,300.00	0.00	0.00	4,230.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,400.00	0.00	0.00	4,330.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,500.00	0.00	0.00	4,430.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,600.00	0.00	0.00	4,530.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,700.00	0.00	0.00	4,630.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,800.00	0.00	0.00	4,730.83	154.83	-556.81	577.94	0.00	0.00	0.00
4,900.00	0.00	0.00	4,830.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,000.00	0.00	0.00	4,930.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,100.00	0.00	0.00	5,030.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,200.00	0.00	0.00	5,130.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,300.00	0.00	0.00	5,230.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,400.00	0.00	0.00	5,330.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,500.00	0.00	0.00	5,430.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,600.00	0.00	0.00	5,530.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,700.00	0.00	0.00	5,630.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,800.00	0.00	0.00	5,730.83	154.83	-556.81	577.94	0.00	0.00	0.00
5,900.00	0.00	0.00	5,830.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,000.00	0.00	0.00	5,930.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,100.00	0.00	0.00	6,030.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,200.00	0.00	0.00	6,130.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,300.00	0.00	0.00	6,230.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,400.00	0.00	0.00	6,330.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,500.00	0.00	0.00	6,430.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,600.00	0.00	0.00	6,530.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,603.17	0.00	0.00	6,534.00	154.83	-556.81	577.94	0.00	0.00	0.00
MESAVERDE									
6,700.00	0.00	0.00	6,630.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,800.00	0.00	0.00	6,730.83	154.83	-556.81	577.94	0.00	0.00	0.00
6,900.00	0.00	0.00	6,830.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,000.00	0.00	0.00	6,930.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,100.00	0.00	0.00	7,030.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,200.00	0.00	0.00	7,130.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,300.00	0.00	0.00	7,230.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,400.00	0.00	0.00	7,330.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,500.00	0.00	0.00	7,430.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,600.00	0.00	0.00	7,530.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,700.00	0.00	0.00	7,630.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,800.00	0.00	0.00	7,730.83	154.83	-556.81	577.94	0.00	0.00	0.00
7,900.00	0.00	0.00	7,830.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,000.00	0.00	0.00	7,930.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,100.00	0.00	0.00	8,030.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,200.00	0.00	0.00	8,130.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,300.00	0.00	0.00	8,230.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,400.00	0.00	0.00	8,330.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,500.00	0.00	0.00	8,430.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,600.00	0.00	0.00	8,530.83	154.83	-556.81	577.94	0.00	0.00	0.00
8,688.17	0.00	0.00	8,619.00	154.83	-556.81	577.94	0.00	0.00	0.00

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Anadarko Petroleum Corporation

Database:	EDM5000-RobertS-Local	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Company:	Kerr McGee Oil and Gas Onshore LP	**TVD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Project:	Uintah County, UT NAD27	**MD Reference:**	GL 5009' & KB 4' @ 5013.00ft (ASSUMED)
Site:	NBU 1022-2F PAD	**North Reference:**	True
Well:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	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)
PBHL_NBU 1022-2E4BS									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_NBU 1022-2E4BS - plan hits target center - Circle (radius 25.00)	0.00	0.00	8,619.00	154.83	-556.81	606,281.41	2,584,763.15	39° 58' 45.023 N	109° 24' 47.052 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
2,234.85	2,182.00	8 5/8"	8.625	11.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,112.83	1,102.00	GREEN RIVER			
4,257.17	4,188.00	WASATCH			
6,603.17	6,534.00	MESAVERDE			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
1,086.48	1,076.64	28.74	-103.36	Start 1283.85 hold at 1086.48 MD
2,370.33	2,312.41	121.98	-438.69	Start Drop -1.75
3,269.17	3,200.00	154.83	-556.81	Start 5419.00 hold at 3269.17 MD
8,688.17	8,619.00	154.83	-556.81	TD at 8688.17

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	NBU 1022-2E1CS		
Surface:	2376 FNL / 1377 FWL	SENW	Lot
BHL:	1900 FNL / 823 FWL	SWNW	Lot

	NBU 1022-2E4BS		
Surface:	2386 FNL / 1379 FWL	SENW	Lot
BHL:	2231 FNL / 822 FWL	SWNW	Lot

	NBU 1022-2F1CS		
Surface:	2366 FNL / 1376 FWL	SENW	Lot
BHL:	1738 FNL / 2145 FWL	SENW	Lot

	NBU 1022-2F4BS		
Surface:	2395 FNL / 1381 FWL	SENW	Lot
BHL:	2069 FNL / 2144 FWL	SENW	Lot

	NBU 1022-2F4CS		
Surface:	2405 FNL / 1382 FWL	SENW	Lot
BHL:	2412 FNL / 2141 FWL	SENW	Lot

	NBU 1022-2K1BS		
Surface:	2415 FNL / 1384 FWL	SENW	Lot
BHL:	2566 FSL / 2142 FWL	NESW	Lot

Pad: NBU 1022-2F 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.

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

B. Planned Access Roads:

One new access road is proposed (see Topo Map B). The ±425' re-route will follow the proposed gas and liquid pipelines from the South edge of the pad to the existing access road. Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

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

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

C. Location of Existing and Proposed Facilities:

This pad will expand the existing pad for the NBU 1022-02F. The NBU 1022-02F 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 tie in point is ±1,920' and the individual segments are broken up as follows:

±475' (0.09 miles) –New 8" buried gas pipeline from the meter to the edge of the pad. Please refer to Topo D2 - Pad and Pipeline Detail.
±775' (0.15 miles) –New 8" buried gas pipeline from the edge of pad to the tie-in at the proposed 1022-2L Intersection. Please refer to Topo D2 - Pad and Pipeline Detail.
±670' (0.13 miles) –New 10" buried gas pipeline from the proposed 1022-2L Intersection to the tie-in at the proposed 1022-2D Intersection. Please refer to Topo D2 - Pad and Pipeline Detail.

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The total liquid gathering pipeline distance from the separator to the tie in point is ±1,920'and the individual segments are broken up as follows:

±475' (0.09 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.
±775' (0.15 miles) – Up to 6" new buried liquid pipeline from the edge of pad to the tie-in at the proposed 1022-2L Intersection . Topo D2 - Pad and Pipeline Detail.
±670' (0.13 miles) – Up to 6" new buried liquid pipeline from the tie-in at the proposed 1022-2L Intersection to the tie-in at the proposed 1022-2D Intersection . 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.

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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 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.

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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.

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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. <u>Surface/Mineral Ownership</u>:

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

L. <u>Other Information</u>:

None

RECEIVED: July 29, 2011

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.

Andy Lytle

July 19, 2011
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 1022-2E4BS
T10S-R22E
Section 2: SENW
Surface: 2386' FNL, 1379' FWL
T10S-R22E
Section 2: SWNW
Bottom Hole: 2231' FNL, 822' 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 1022-2E4BS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

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

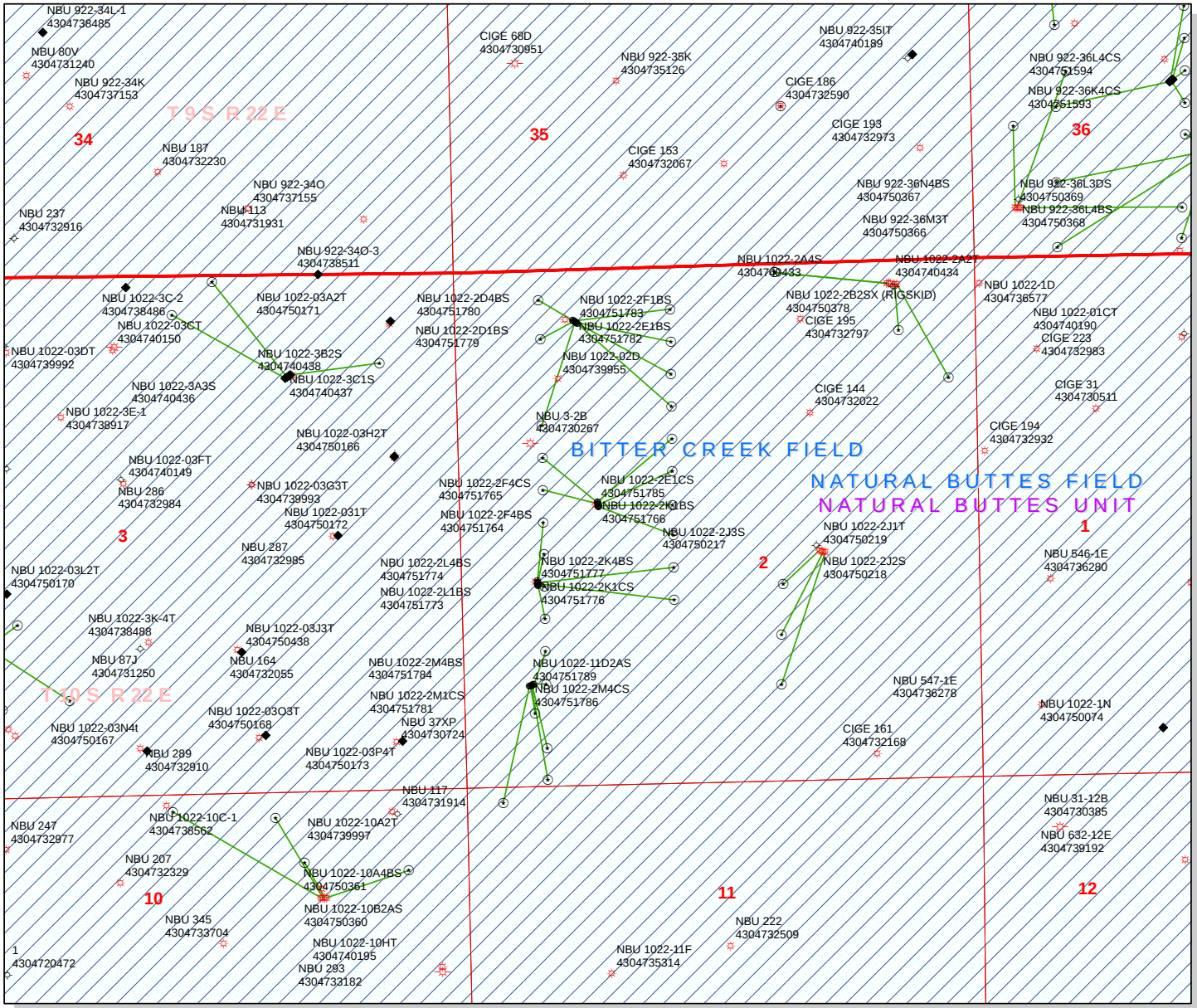
Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Joseph D. Johnson
Landman

RECEIVED: July 29, 2011

API Well Number: 43047517600000



API Number: 4304751760

Well Name: NBU 1022-2E4BS

Township T1.0 . Range R2.2 . Section 02

Meridian: SLBM

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

Map Prepared:
Map Produced by Diana Mason

Units
STATUS
- ACTIVE
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Fields
STATUS
- Unknown
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- STORAGE
- TERMINATED
- Sections
- Township

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

1,250 625 0 1,250 Feet

1:12,625

RECEIVED: August 02, 2011

United States Department of the Interior

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

IN REPLY REFER TO:
3160
(UT-922)

August 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
(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

NBU 1022-2L PAD

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

NBU 1022-2M PAD

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

RECEIVED: August 08, 2011

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

RECEIVED: September 27, 2011

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

RECEIVED: September 27, 2011

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

RECEIVED: September 27, 2011

API Well Number: 43047517600000

BOPE REVIEW KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-2E4BS 43047517600000

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1022-2E4BS			
String	SURF	PROD		
Casing Size(")	8.625	4.500		
Setting Depth (TVD)	2129	8619		
Previous Shoe Setting Depth (TVD)	40	2129		
Max Mud Weight (ppg)	8.3	12.5		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	5516	12.3		

Calculations	**SURF String**	**8.625**	**"**	
Max BHP (psi)	.052*Setting Depth*MW=	919		
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	664	NO	air drill
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	451	YES	OK
			***Can Full Expected Pressure Be Held At Previous Shoe?**	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	459	NO	Reasonable for area
Required Casing/BOPE Test Pressure=		2129	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=	5602		
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	4568	YES	
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	3706	YES	OK
			***Can Full Expected Pressure Be Held At Previous Shoe?**	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	4174	NO	Reasonable
Required Casing/BOPE Test Pressure=		5000	psi	
***Max Pressure Allowed @ Previous Casing Shoe=**		2129	psi *Assumes 1psi/ft frac gradient	

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

RECEIVED: September 27, 2011

***Max Pressure Allowed @ Previous Casing Shoe=**		psi *Assumes 1psi/ft frac gradient

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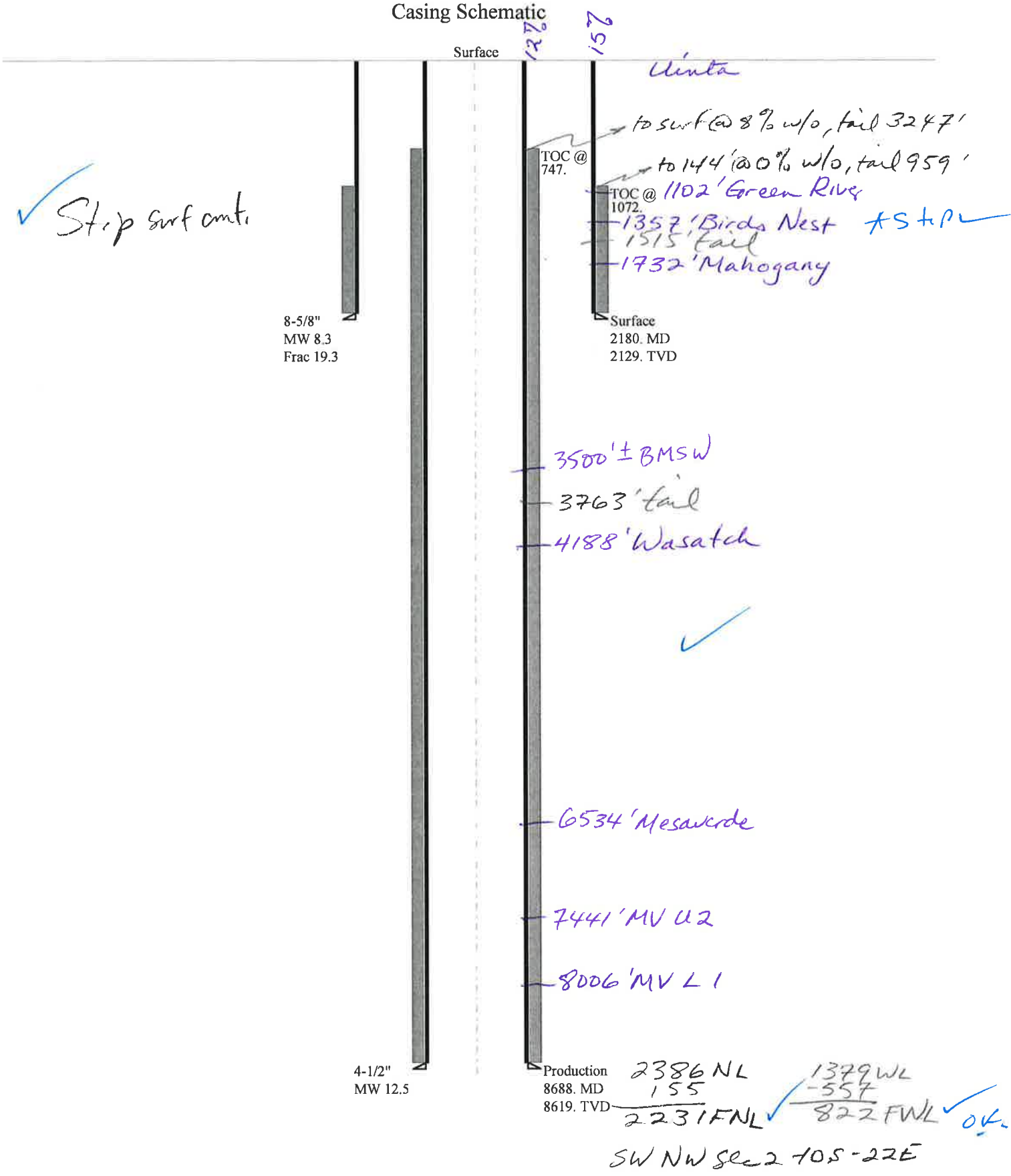
43047517600000 NBU 1022-2E4BS

Casing Schematic



Well name:	**43047517600000 NBU 1022-2E4BS**
Operator:	**KERR-MCGEE OIL & GAS ONSHORE, L.P.**
String type:	Surface
Project ID:	43-047-51760
Location:	UINTAH COUNTY

Design parameters:

Collapse

Mud weight: 8.330 ppg

Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 1,918 psi

Internal gradient: 0.120 psi/ft

Calculated BHP 2,174 psi

No backup mud specified.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

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: 1,906 ft

Environment:

H2S considered? No

Surface temperature: 74 °F

Bottom hole temperature: 104 °F

Temperature gradient: 1.40 °F/100ft

Minimum section length: 100 ft

Cement top: 1,072 ft

Directional Info - Build & Drop

Kick-off point 300 ft

Departure at shoe: 404 ft

Maximum dogleg: 2 °/100ft

Inclination at shoe: 15.73 °

Re subsequent strings:

Next setting depth: 8,619 ft

Next mud weight: 12.500 ppg

Next setting BHP: 5,597 psi

Fracture mud wt: 19.250 ppg

Fracture depth: 2,180 ft

Injection pressure: 2,180 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	2180	8.625	32.00	H-40	ST&C	2129	2180	7.875	17381

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	921	2200	2.388	2174	2860	1.32	68.1	279	4.09 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 2129 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

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	**43047517600000 NBU 1022-2E4BS**
Operator:	**KERR-MCGEE OIL & GAS ONSHORE, L.P.**
String type:	Production
Project ID:	43-047-51760
Location:	UINTAH COUNTY

Design parameters:

Collapse

Mud weight: 12.500 ppg

Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 3,701 psi

Internal gradient: 0.220 psi/ft

Calculated BHP 5,597 psi

No backup mud specified.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Tension:

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

Tension is based on air weight.

Neutral point: 7,078 ft

Environment:

H2S considered?	No
Surface temperature:	74 °F
Bottom hole temperature:	195 °F
Temperature gradient:	1.40 °F/100ft
Minimum section length:	100 ft
Cement top:	747 ft

Directional Info - Build & Drop

Kick-off point	300 ft
Departure at shoe:	578 ft
Maximum dogleg:	2 °/100ft
Inclination at shoe:	0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost ($)
1	8688	4.5	11.60	I-80	LT&C	8619	8688	3.875	114682

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	5597	6360	1.136	5597	7780	1.39	100	212	2.12 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 8619 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

Engineering responsibility for use of this design will be that of the purchaser.

ON-SITE PREDRILL EVALUATION
Utah Division of Oil, Gas and Mining

Operator	KERR-MCGEE OIL & GAS ONSHORE, L.P.				
Well Name	NBU 1022-2E4BS				
API Number	43047517600000	**APD No**	4292	**Field/Unit**	NATURAL BUTTES
Location: 1/4,1/4	SENW **Sec** 2 **Tw** 10.0S **Rng** 22.0E 2386 FNL 1379 FWL				
GPS Coord (UTM)	635680 4426398	**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 59.0 road miles following Utah State, Uintah County and oilfield development roads. Five wells, in addition to this one will be directionally drilled from this pad. (for a total of six new wells). There is one existing well on this pad. (The NBU 1022-O2F). 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 reclaimed and a new access road of 425 feet will be constructed. The location runs in a north-south direction along the top of a flat topped ridge. This ridge breaks off sharply into rugged secondary canyons especially on the south and east sides. New construction will consist of approx. 60 feet to the south and 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 seven wells, and is on the best site available in the immediate area.

Surface Use Plan

Current Surface Use
Wildlfe Habitat
Existing Well Pad

New Road Miles	Well Pad	Src Const Material	Surface Formation
0.12	**Width** 300 **Length** 425	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 Diverson Required? N

Berm Required? N

Erosion Sedimentation Control Required? N

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

Reserve Pit

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

Characteristics / Requirements

The reserve pit is planned in an area of cut on the west side of the location. Dimensions are 120’ x 255’ x 12’ deep with 2’ of freeboard. Kerr McGee agreed to line the pit with a 30-mil liner and 2 layers of felt.

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

Other Observations / Comments

David Hackford	8/18/2011
Evaluator	**Date / Time**

Application for Permit to Drill
Statement of Basis

Utah Division of Oil, Gas and Mining

APD No	API WellNo	Status	Well Type	Surf Owner	CBM
4292	43047517600000	LOCKED	GW	S	No

Operator	KERR-MCGEE OIL & GAS ONSHORE, L.P.	**Surface Owner-APD**	
Well Name	NBU 1022-2E4BS	**Unit**	NATURAL BUTTES
Field	NATURAL BUTTES	**Type of Work**	DRILL
Location	SENW 2 10S 22E S 2386 FNL 1379 FWL GPS Coord (UTM)		635681E 4426385N

Geologic Statement of Basis

Kerr McGee proposes to set 2,180' 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 3,500'. 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	9/21/2011
APD Evaluator	**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 59.0 road miles following Utah State, Uintah County and oilfield development roads. The existing access road will be reclaimed and a new one of 425 feet will be constructed.

Six wells will be directionally drilled from this location. They are the NBU 1022-2K1BS, NBU 1022-2F4CS, NBU 1022-2F4BS, NBU 1022-2E4BS, NBU 1022-2E1CS, and the NBU 1022-2F1CS. The existing location has one existing well. This well is the NBU 1022-O2F and at this time the decision rather to PA or TA this well has not been made. The location is on a flat topped ridge that runs in a north-south direction. This ridge breaks off sharply into rugged secondary canyons on the south and east sides. No drainage concerns exist, and no diversions will be needed. The pad as modified should be stable and sufficient for seven wells.

Excess material will be stockpiled on the north side of the new reserve pit. Approx. 60' of additional construction will be necessary on the south and east sides 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	8/18/2011
Onsite Evaluator	**Date / Time**

Conditions of Approval / Application for Permit to Drill

RECEIVED: October 05, 2011

Application for Permit to Drill
Statement of Basis

Category	Condition
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 west side of the location.

RECEIVED: October 05, 2011

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 7/29/2011
API NO. ASSIGNED: 43047517600000
WELL NAME: NBU 1022-2E4BS
OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)
PHONE NUMBER: 720 929-6100
CONTACT: Andy Lytle

PROPOSED LOCATION: SENW 02 100S 220E
Permit Tech Review: ✔

SURFACE: 2386 FNL 1379 FWL
Engineering Review: ✔

BOTTOM: 2231 FNL 0822 FWL
Geology Review: ✔

COUNTY: UINTAH
LATITUDE: 39.97863
LONGITUDE: -109.41105
UTM SURF EASTINGS: 635681.00
NORTHINGS: 4426385.00
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 - 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**

Commingling Approved

LOCATION AND SITING:

- ☐ **R649-2-3.**

Unit: NATURAL BUTTES

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

Board Cause No: Cause 173-14
Effective Date: 12/2/1999
Siting: 460' Fr U Bdry & Uncommitted Tracts

- ✔ **R649-3-11. Directional Drill**

Comments: Presite Completed

Stipulations:
3 - Commingling - ddoucet
5 - Statement of Basis - bhill
15 - Directional - dmason
17 - Oil Shale 190-5(b) - dmason
25 - Surface Casing - hmacdonald

RECEIVED: October 05, 2011

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 1022-2E4BS
API Well Number: 43047517600000
Lease Number: ST UT ML 22651
Surface Owner: STATE
Approval Date: 10/5/2011

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

5.LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

SUNDRY NOTICES AND REPORTS ON WELLS

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

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES

1. TYPE OF WELL Gas Well

8. WELL NAME and NUMBER: NBU 1022-2E4BS

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

9. API NUMBER: 43047517600000

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

PHONE NUMBER: 720 929-6515 EXT

9. FIELD and POOL or WILDCAT: NATURAL BUTTES

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 2386 FNL 1379 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW 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		
✓ NOTICE OF INTENT Approximate date work will start: 3/19/2012	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	✓ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	✓ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

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

Approved by the Utah Division of Oil, Gas and Mining

Date: March 22, 2012

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Jaime Scharnowske	720 929-6304	Regulartory Analyst

SIGNATURE	DATE
N/A	3/19/2012

RECEIVED: Mar. 19, 2012

Well name:	**43047517600000 NBU 1022-2E4BS**
Operator:	**KERR-MCGEE OIL & GAS ONSHORE, L.P.**
String type:	Production
Project ID:	43-047-51760
Location:	UINTAH COUNTY

Design parameters:

Collapse

Mud weight: 13.000 ppg

Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 4,502 psi → 5mBOPE ✓ ok.

Internal gradient: 0.220 psi/ft

Calculated BHP 6,678 psi

No backup mud specified.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Tension:

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

Tension is based on air weight.

Neutral point: 7,966 ft

Estimated cost: 155,550 ($)

Environment:

H2S considered?	No
Surface temperature:	74 °F
Bottom hole temperature:	212 °F
Temperature gradient:	1.40 °F/100ft
Minimum section length:	100 ft
Cement top:	629 ft w/128 no ✓ ok.

Non-directional string.

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 ($)
2	5000	4.5	11.60	HCP-110	DQX	5000	5000	3.875	132000
1	4888	4.5	11.60	HCP-110	LT&C	9888	9888	3.875	23550

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
2	3377	8206	2.430 ✓	5602	10690	1.91 ✓	114.7	367.2	3.20 B ✓
1	6678	8650	1.295 ✓	6678	10690	1.60 ✓	56.7	279	4.92 J ✓

Prepared by: Helen Sadik-Macdonald
Div of Oil,Gas & Mining
Phone: 801 538-5357
FAX: 801-359-3940

Date: March 22,2012
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 9888 ft, a mud weight of 13 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.

Engineering responsibility for use of this design will be that of the purchaser.

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

NBU 1022-2E4BS

Surface: 2386 FNL / 1379 FWL SENW
BHL: 2231 FNL / 822 FWL SWNW

Section 2 T10S R22E

Unitah 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:

Formation	Depth	Resource
Uinta	0 - Surface	
Green River	1,073'	
Birds Nest	1,351'	Water
Mahogany	1,846'	Water
Wasatch	4,186'	Gas
Mesaverde	6,536'	Gas
Sego	8,651'	Gas
Castlegate	8,784'	Gas
Blackhawk	9,227'	Gas
TVD	9,819'	
TD	9,888'	

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

Please refer to the attached Drilling Program

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

Please refer to the attached Drilling Program

5. **Drilling Fluids Program:**

Please refer to the attached Drilling Program

6. **Evaluation Program:**

Please refer to the attached Drilling Program

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7. Abnormal Conditions:

Maximum anticipated bottom hole pressure calculated at 9819' TVD, approximately equals 6,481 psi (0.66 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 4,365 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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

8. Anticipated Starting Dates:

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

9. Variances:

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

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

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

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

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

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

Background

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

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

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

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

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

Variance for BOPE Requirements

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

Variance for Mud Material Requirements

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

Variance for Special Drilling Operation (surface equipment placement) Requirements

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

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

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

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

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Variance for FIT Requirements

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

Conclusion

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

10. Other Information:

Please refer to the attached Drilling Program.

RECEIVED: Mar. 19, 2012

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP	DATE	February 8, 2012
WELL NAME	**NBU 1022-2E4BS**	TD	9,819' TVD 9,888' MD
FIELD	Natural Buttes	COUNTY Uintah STATE Utah	FINISHED ELEVATION 5,013'
SURFACE LOCATION	SENW 2386 FNL 1379 FWL Sec 2 T 10S R 22E		
	Latitude: 39.978748 Longitude: -109.411083		NAD 27
BTM HOLE LOCATION	SWNW 2231 FNL 822 FWL Sec 2 T 10S R 22E		
	Latitude: 39.979173 Longitude: -109.413070		NAD 27
OBJECTIVE ZONE(S)	BLACKHAWK (Part of the Mesaverde Group)		
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.		

GEOLOGICAL			MECHANICAL		
LOGS	FORMATION TOPS	DEPTH	HOLE SIZE	CASING SIZE	MUD WEIGHT
		40'		14"	
		200'	12-1/4	8-5/8", 28#, IJ-55, LTC	Air mist
			11.00'	8-5/8", 28#, IJ-55, LTC	Air mist
			7-7/8"	4-1/2" 11.6# HCP-110 Ultra DQX/LTC csg	Water / Fresh Water Mud 8.3-13.0 ppg

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

Green River @ 1,073'
Top of Birds Nest @ 1,351'
Mahogany @ 1,846'

Preset f/ GL @ 2,300' TVD

Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone.

Wasatch @ 4,186'

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

Mverde @ 6,536'

Sego @ 8,651'

Castlegate @ 8,784'

Blackhawk @ 9,227'

Max anticipated Mud required 13.0 ppg

TD @ 9,819' TVD 9,888' MD

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

CASING PROGRAM

	SIZE	INTERVAL			WT.	GR.	CPLG.	DESIGN FACTORS BURST	COLLAPSE	TENSION LTC	TENSION DQX
CONDUCTOR	14"	0-40'									
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,300	28.00	IJ-55	LTC	2.34	1.75	6.17	N/A
								10,690	8,650	279,000	367,174
PRODUCTION	4-1/2"	0	to	5,000	11.60	HCP-110	DQX	1.19	1.30		3.99
	4-1/2"	5,000	to	9,888'	11.60	HCP-110	LTC	1.19	1.30	6.14	

Surface Casing:

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

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

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

Production casing:

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

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

CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT		YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80		1.15
Option 1			+ 0.25 pps flocele					
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
SURFACE			**NOTE: If well will circulate water to surface, option 2 will be utilized**					
Option 2	LEAD	1,800'	65/35 Poz + 6% Gel + 10 pps gilsonite	170	35%	11.00		3.82
			+ 0.25 pps Flocele + 3% salt BWOW					
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps flocele					
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	3,678'	Premium Lite II +0.25 pps	290	35%	12.00		3.38
			celloflake + 5 pps gilsonite + 10% gel					
			+ 0.5% extender					
	TAIL	6,210'	50/50 Poz/G + 10% salt + 2% gel	1,470	35%	14.30		1.31
			+ 0.1% R-3					

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

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

FLOAT EQUIPMENT & CENTRALIZERS

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

ADDITIONAL INFORMATION

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

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

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

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

DRILLING ENGINEER: _____ **DATE:** _____

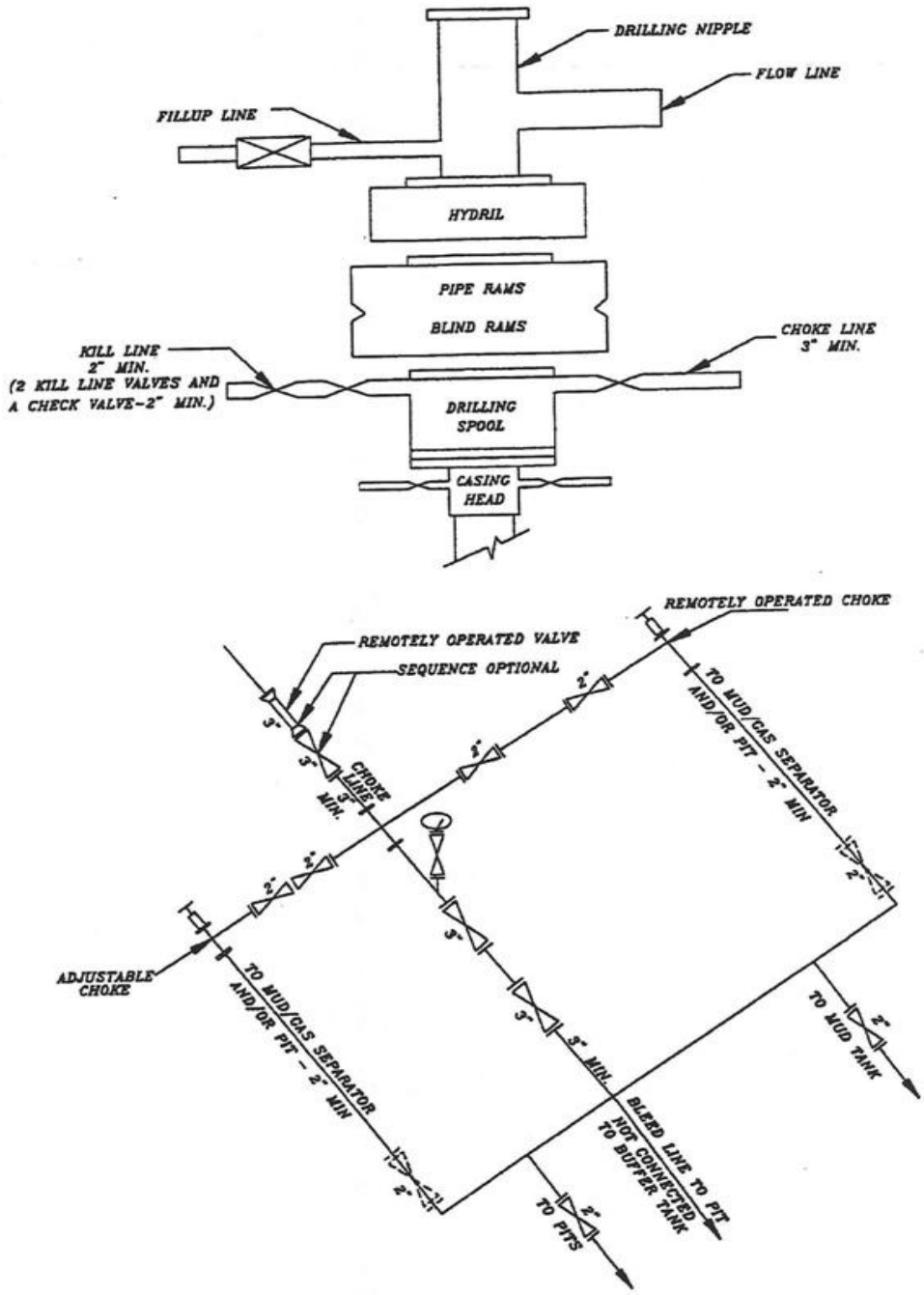
Nick Spence / Danny Showers / Chad Loesel

DRILLING SUPERINTENDENT: _____ **DATE:** _____

Kenny Gathings / Lovel Young

RECEIVED: Mar. 19, 2012

EXHIBIT A
NBU 1022-2E4BS



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

RECEIVED: Mar. 19, 2012

Requested Drilling Options:

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

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

RECEIVED: Mar. 19, 2012

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

SUNDRY NOTICES AND REPORTS ON WELLS

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

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES

1. TYPE OF WELL Gas Well

8. WELL NAME and NUMBER: NBU 1022-2E4BS

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

9. API NUMBER: 43047517600000

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

PHONE NUMBER: 720 929-6515 EXT

9. FIELD and POOL or WILDCAT: NATURAL BUTTES

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 2386 FNL 1379 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW 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

- ☐ NOTICE OF INTENT — Approximate date work will start:
- ☐ SUBSEQUENT REPORT — Date of Work Completion:
- ✓ SPUD REPORT — Date of Spud: 3/20/2012
- ☐ DRILLING REPORT — Report Date:

TYPE OF ACTION

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

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

MIRU TRIPLE A BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 CONDUCTOR PIPE. CEMENT WITH 28 SACKS READY MIX. SPUD WELL LOCATION ON MARCH 20, 2012 AT 08:30 HRS.

Accepted by the Utah Division of Oil, Gas and Mining
FOR RECORD ONLY
March 26, 2012

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Jaime Scharnowske	720 929-6304	Regulartory Analyst

SIGNATURE	DATE
N/A	3/21/2012

RECEIVED: Mar. 21, 2012

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

SUNDRY NOTICES AND REPORTS ON WELLS

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

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES

1. TYPE OF WELL Gas Well

8. WELL NAME and NUMBER: NBU 1022-2E4BS

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

9. API NUMBER: 43047517600000

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

PHONE NUMBER: 720 929-6515 EXT

9. FIELD and POOL or WILDCAT: NATURAL BUTTES

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 2386 FNL 1379 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW 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

- ☐ NOTICE OF INTENT — Approximate date work will start:
- ☐ SUBSEQUENT REPORT — Date of Work Completion:
- ☐ SPUD REPORT — Date of Spud:
- ✓ DRILLING REPORT — Report Date: 3/28/2012

TYPE OF ACTION

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

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

MIRU AIR RIG ON MARCH 25, 2012. DRILLED SURFACE HOLE TO 2,320'. 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
April 04, 2012

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Jaime Scharnowske	720 929-6304	Regulartory Analyst

SIGNATURE	DATE
N/A	3/28/2012

RECEIVED: Mar. 28, 2012

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

FORM 6

ENTITY ACTION FORM

Operator: KERR McGEE OIL & GAS ONSHORE LP

Operator Account Number: N 2995

Address: P.O. Box 173779

City Denver

State CO Zip 80217

Phone Number: (720) 929-6304

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751760	NBU 1022-2E4BS		SENW	2	10S	22E	UINTAH
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
B	99999	2900	3/20/2012			4/24/2012	

Comments: MIRU BUCKET RIG
SPUD WELL LOCATION ON 3/20/2012 AT 08:30 HOURS.
WSMVD

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751785	NBU 1022-2E1CS		SENW	2	10S	22E	UINTAH
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
B	99999	2900	3/20/2012			4/24/2012	

Comments: MIRU BUCKET RIG
SPUD WELL LOCATION ON 3/20/2012 AT 12:00 HOURS.
WSMVD

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751761	NBU 1022-2F1CS		SENW	2	10S	22e	UINTAH
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
B	99999	2900	3/20/2012			4/24/2012	

Comments: MIRU BUCKET RIG
SPUD WELL LOCATION ON 3/20/2012 AT 15:30 HOURS.
WSMVD

ACTION CODES:

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

RECEIVED
APR 18 2012
Div. of Oil, Gas & Mining

JAIME SCHARNOWSKE
Name (Please Print)

Jaime Scharnowske
Signature

REGULATORY ANALYST
Title

4/12/2012
Date

(5/2000)

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

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

SUNDRY NOTICES AND REPORTS ON WELLS

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

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES

1. TYPE OF WELL Gas Well

8. WELL NAME and NUMBER: NBU 1022-2E4BS

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

9. API NUMBER: 43047517600000

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

9. FIELD and POOL or WILDCAT: NATURAL BUTTES

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 2386 FNL 1379 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW 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		
✓ NOTICE OF INTENT Approximate date work will start: 4/26/2012	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	✓ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

The Operator is requesting to shallow the well to what was originally permitted. Please see attached for casing. change. Thank you.

Approved by the Utah Division of Oil, Gas and Mining

Date: May 07, 2012

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Gina Becker	720 929-6086	Regulatory Analyst II

SIGNATURE	DATE
N/A	4/26/2012

RECEIVED: Apr. 26, 2012

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

NBU 1022-2E4BS

Surface: 2386 FNL / 1379 FWL SENW
BHL: 2231 FNL / 822 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:

Formation	Depth	Resource
Uinta	0 - Surface	
Green River	1,102'	
Birds Nest	1,357'	Water
Mahogany	1,732'	Water
Wasatch	4,188'	Gas
Mesaverde	6,534'	Gas
Sego	8,619'	Gas
TVD	8,619'	
TD	8,688'	

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

RECEIVED: May. 01, 2012

7. Abnormal Conditions:

Maximum anticipated bottom hole pressure calculated at 8619' TVD, approximately equals 5,516 psi (0.64 psi/ft = actual bottomhole gradient)

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

Maximum anticipated surface pressure equals approximately 3,608 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.

RECEIVED: May. 01, 2012

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

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

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

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

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

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

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

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and

on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

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

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

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

10. Other Information:

Please refer to the attached Drilling Program.

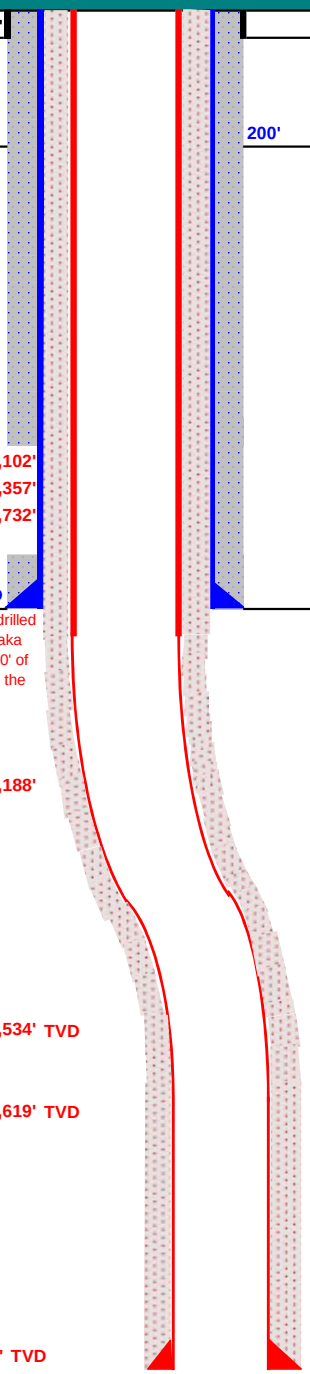
RECEIVED: May. 01, 2012

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP	DATE	May 1, 2012
WELL NAME	**NBU 1022-2E4BS**	TD	8,619' TVD 8,688' MD
FIELD	Natural Buttes	COUNTY Uintah	STATE Utah
FINISHED ELEVATION	5009.3		
SURFACE LOCATION	SENW 2386 FNL 1379 FWL Sec 2 T 10S R 22E		
	Latitude: 39.978748 Longitude: -109.411083	NAD 27	
BTM HOLE LOCATION	SWNW 2231 FNL 822 FWL Sec 2 T 10S R 22E		
	Latitude: 39.979173 Longitude: -109.41307	NAD 27	
OBJECTIVE ZONE(S)	Wasatch/Mesaverde		
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.		

GEOLOGICAL			MECHANICAL		
LOGS	FORMATION TOPS	DEPTH	HOLE SIZE	CASING SIZE	MUD WEIGHT
		40'		14"	
		200'	12-1/4	8-5/8", 28#, IJ-55, LTC	Air mist
			11'	8-5/8", 28#, IJ-55, LTC	Air mist
			7-7/8"	4-1/2" 11.6# I-80 Ultra DQX/LTC csg	Water / Fresh Water Mud 8.3-12.5 ppg



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

Green River @ 1,102'
Top of Birds Nest @ 1,357'
Mahogany @ 1,732'

Preset f/ GL @ 2,180' TVD

Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone.

Wasatch @ 4,188'

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

Mverde @ 6,534' TVD

Sego @ 8,619' TVD

Max anticipated Mud required 12.5 ppg

TD @ 8,619' TVD
8,688' MD

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

CASING PROGRAM

	SIZE	INTERVAL			WT.	GR.	CPLG.	DESIGN FACTORS BURST	COLLAPSE	COLLAPSE LTC	TENSION DQX
CONDUCTOR	14"	0-40'									
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,180	28.00	IJ-55	LTC	2.48	1.84	6.51	N/A
								7,780	6,350	223,000	267,035
PRODUCTION	4-1/2"	0	to	5,000	11.60	I-80	DQX	1.11	1.13		3.28
								7,780	6,350	223,000	267,035
	4-1/2"	5,000	to	8,688'	11.60	I-80	LTC	1.11	1.13	6.44	

Surface Casing:

(Burst Assumptions: TD = 12.5 ppg) 0.73 psi/ft = frac gradient @ surface shoe

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

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

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi) 0.64 psi/ft = bottomhole gradient

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

CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT		YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80		1.15
Option 1			+ 0.25 pps flocele					
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
SURFACE			**NOTE: If well will circulate water to surface, option 2 will be utilized**					
Option 2	LEAD	1,680'	65/35 Poz + 6% Gel + 10 pps gilsonite	160	35%	11.00		3.82
			+ 0.25 pps Flocele + 3% salt BWOW					
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps flocele					
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	3,688'	Premium Lite II +0.25 pps	290	35%	12.00		3.38
			celloflake + 5 pps gilsonite + 10% gel					
			+ 0.5% extender					
	TAIL	5,000'	50/50 Poz/G + 10% salt + 2% gel	1,180	35%	14.30		1.31
			+ 0.1% R-3					

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

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

FLOAT EQUIPMENT & CENTRALIZERS

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

ADDITIONAL INFORMATION

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

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

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

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

DRILLING ENGINEER: _____ **DATE:** _____

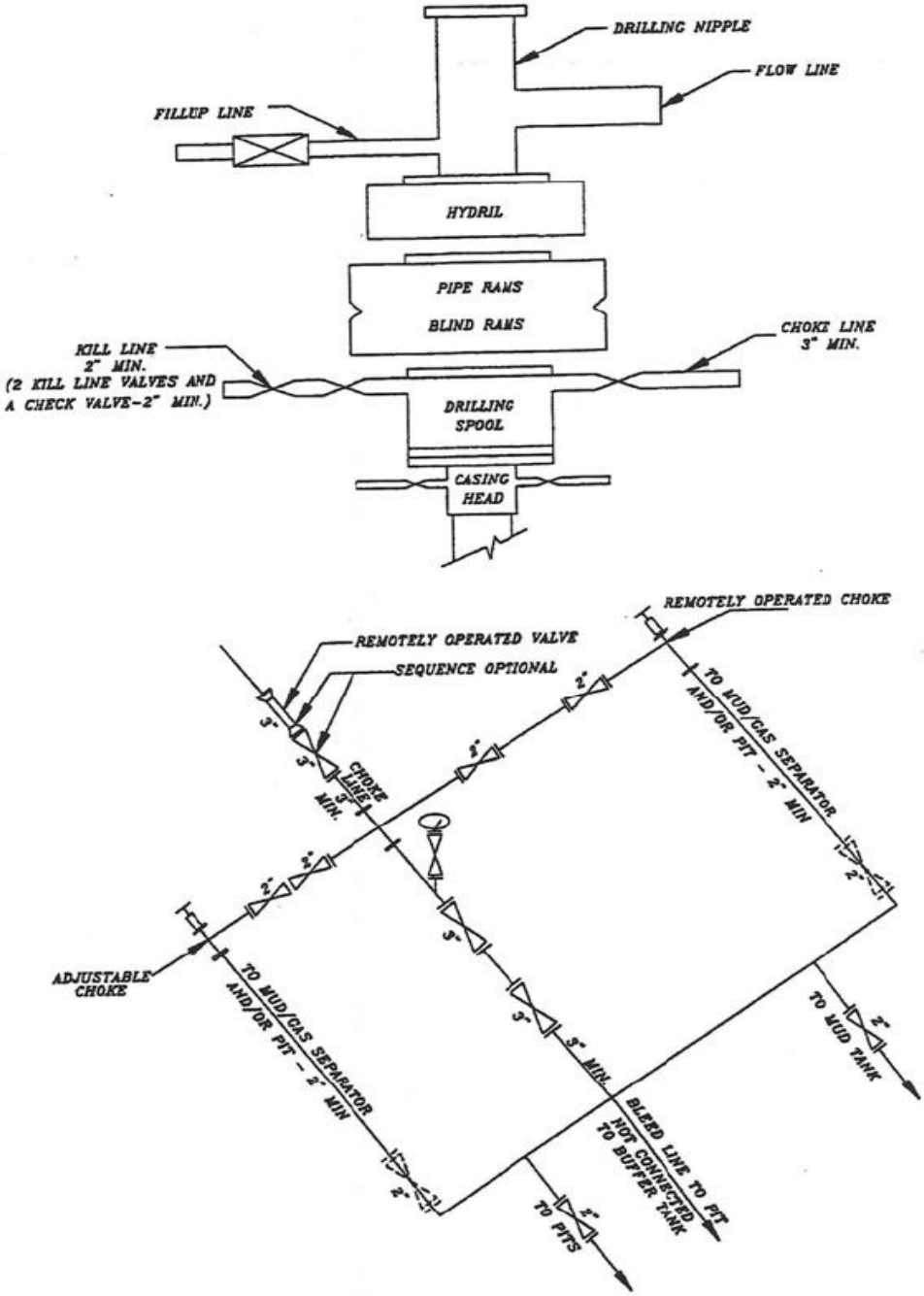
Nick Spence / Danny Showers / Chad Loesel

DRILLING SUPERINTENDENT: _____ **DATE:** _____

Kenny Gathings / Lovel Young

RECEIVED: May. 01, 2012

EXHIBIT A
NBU 1022-2E4BS



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

RECEIVED: May. 01, 2012

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# Ensign 146
Submitted By KENT MOORE Phone Number 435- 828-0987
Well Name/Number NBU 1022-2E4BS
Qtr/Qtr SE/NW Section 2 Township 10S Range 22E
Lease Serial Number ST UT ML 22651
API Number 4304751760

Casing – Time casing run starts, not cementing times.

☐ Production Casing
☐ Other

Date/Time _____ __ AM ☐ PM ☐

RECEIVED
MAY 01 2012
DIV. OF OIL, GAS & MINING

BOPE
☒ Initial BOPE test at surface casing point
☐ Other

Date/Time 5/2/12 08:00 AM ☒ PM ☐

Rig Move
Location To: _____

Date/Time _____ _____ AM ☐ PM ☐

Remarks _____

State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# Ensign 146
Submitted By KENT MOORE Phone Number 435- 828-0987
Well Name/Number NBU 1022-2E4BS
Qtr/Qtr SE/NW Section 2 Township 10S Range 22E
Lease Serial Number ST UT ML 22651
API Number 4304751760

Casing – Time casing run starts, not cementing times.

☒ Production Casing
☐ Other

Date/Time 5/6/12 23:00 AM ☐ PM ☒

BOPE
☐ Initial BOPE test at surface casing point
☐ Other

Date/Time _____ AM ☐ PM ☐

RECEIVED
MAY 08 2012
DIV. OF OIL, GAS & MINING

Rig Move
Location To: _____

Date/Time AM ☐ PM ☐

Remarks _____

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

SUNDRY NOTICES AND REPORTS ON WELLS

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

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES

1. TYPE OF WELL Gas Well

8. WELL NAME and NUMBER: NBU 1022-2E4BS

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

9. API NUMBER: 43047517600000

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

PHONE NUMBER: 720 929-6515 EXT

9. FIELD and POOL or WILDCAT: NATURAL BUTTES

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 2386 FNL 1379 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW 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

- ☐ NOTICE OF INTENT — Approximate date work will start:
- ☐ SUBSEQUENT REPORT — Date of Work Completion:
- ☐ SPUD REPORT — Date of Spud:
- ✓ DRILLING REPORT — Report Date: 5/8/2012

TYPE OF ACTION

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

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

MIRU ROTARY RIG. FINISHED DRILLING FROM 2320' TO 8725' ON 5/5/2012. RAN 4-1/2" 11.6# I-80 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED ENSIGN 146 RIG ON 5/8/2012 @ 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
May 15, 2012

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Cara Mahler	720 929-6029	Regulatory Analyst I

SIGNATURE	DATE
N/A	5/10/2012

RECEIVED: May. 10, 2012

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

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7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES

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

PHONE NUMBER: 720 929-6515 EXT

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FOOTAGES AT SURFACE: 2386 FNL 1379 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW Section: 02 Township: 10.0S Range: 22.0E Meridian: S

COUNTY: UINTAH

STATE: UTAH

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TYPE OF SUBMISSION

- ☐ NOTICE OF INTENT — Approximate date work will start:
- ☐ SUBSEQUENT REPORT — Date of Work Completion:
- ☐ SPUD REPORT — Date of Spud:
- ✓ DRILLING REPORT — Report Date: 7/6/2012

TYPE OF ACTION

☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
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☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

No activity for the month of June 2012. Well TD at 8,725'.

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

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Jaime Scharnowske	720 929-6304	Regulartory Analyst

SIGNATURE	DATE
N/A	7/6/2012

RECEIVED: Jul. 06, 2012

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

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QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW Section: 02 Township: 10.0S Range: 22.0E Meridian: S

COUNTY: UINTAH

STATE: UTAH

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- ☐ NOTICE OF INTENT — Approximate date work will start:
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- ☐ SPUD REPORT — Date of Spud:
- ✓ DRILLING REPORT — Report Date: 7/18/2012

TYPE OF ACTION

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

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

THE SUBJECT WELL WAS PLACED ON PRODUCTION ON DATE 7/18/2012. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.

Accepted by the Utah Division of Oil, Gas and Mining
FOR RECORD ONLY
July 19, 2012

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Cara Mahler	720 929-6029	Regulatory Analyst I

SIGNATURE	DATE
N/A	7/19/2012

RECEIVED: Jul. 19, 2012

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

AMENDED REPORT ☐ (highlight changes)

FORM 8

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER: ST UT ML 22651

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME: UTU63407A

8. WELL NAME and NUMBER: NBU 1022-2E4BS

9. API NUMBER: 4304751760

10 FIELD AND POOL, OR WILDCAT: NATURAL BUTTES

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ DRY ☐ OTHER

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

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

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

4. LOCATION OF WELL (FOOTAGES)

AT SURFACE: SENW 2386 FNL 1379 FWL S2,T10S,R22E

AT TOP PRODUCING INTERVAL REPORTED BELOW: SWNW 2214 FNL 814 FWL S2,T10S,R22E

AT TOTAL DEPTH: SWNW 2251 FNL 838 FWL S2,T10S,R22E BHLby HSM

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

12. COUNTY: UINTAH

13. STATE: UTAH

14. DATE SPUDDED: 3/20/2012

15. DATE T.D. REACHED: 5/5/2012

16. DATE COMPLETED: 7/18/2012 ABANDONED ☐ READY TO PRODUCE ☑

17. ELEVATIONS (DF, RKB, RT, GL): 5009 GL

18. TOTAL DEPTH: MD 8,725 TVD 8,654

19. PLUG BACK T.D.: MD 8,666 TVD 8,595

20. IF MULTIPLE COMPLETIONS, HOW MANY? *

21. DEPTH BRIDGE PLUG SET: MD TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)

CBL, BHP

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

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

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
20"	14" STL	36.7#	0	40		28			
11"	8 5/8" IJ-55	28#	0	2,362		1,460		0	
7 7/8"	4 1/2" I-80	11.6#	0	8,712		1,772		46	

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"	8,257							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)
(A) MESAVERDE	6,715	8,676		
(B)				
(C)				
(D)				

27. PERFORATION RECORD

INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
6,715 8,676	0.36	180	Open ☑ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐
			Open ☐ Squeezed ☐

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

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6715-8676	PUMP 7735 BBLS SLICK H2O & 153,600 LBS 30/50 OTTAWA SAND
	8 STAGES

29. ENCLOSED ATTACHMENTS:

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

30. WELL STATUS: PROD

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(5/2000)

(CONTINUED ON BACK)

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
7/18/2012		7/22/2012		24			0	3,236	0	FLOWING
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:
20/64	1,973	2,425					0	3,236	0	PROD

INTERVAL B (As shown in item #26)

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

INTERVAL C (As shown in item #26)

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

INTERVAL D (As shown in item #26)

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

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

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.

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.

34. FORMATION (Log) MARKERS:

Name	Top (Measured Depth)
GREEN RIVER	1,102
BIRD'S NEST	1,352
MAHOGANY	1,726
WASATCH	4,257
MESAVERDE	6,505

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 5061'; LTC csg was run from 5061' to 8712'.Attached is the chronological well history, perforation report & final survey.

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

NAME (PLEASE PRINT) CARA MAHLER TITLE REGULATORY ANALYST

SIGNATURE DATE 8/27/2012

This report must be submitted within 30 days of

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

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

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

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

(5/2000)

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN		Spud Date: 3/25/2012
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: ENSIGN 146/146, PROPETRO 11/11
Event: DRILLING	Start Date: 12/8/2011	End Date: 5/8/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
3/25/2012	20:00 - 21:30	1.50	MIRU	01	B	P		NBU 1022 - 2E4BS (WELL 4 OF 6) INSTALL DIVERTOR HEAD AND BLUEY LINE. BUILD DITCH. SPOT IN RIG. SPOT IN CATWALK AND PIPE RACKS. RIG UP PIT PUMP. RIG UP PUMP. PRIME PUMP. INSPECT RIG. SAFETY MEETING
	21:30 - 22:00	0.50	DRLSUR	06	A	P		PU 12.25" BIT & DIR. TOOLS
	22:00 - 23:00	1.00	DRLSUR	02	D	P		DRL F/ 44' T/150' (106'@ 106' PER HR)
	23:00 - 23:30	0.50	DRLSUR	08	B	Z		SHUT DOWN REPLACE VALVE IN MUD PUMP
	23:30 - 0:00	0.50	DRLSUR	02	D	P		DRL F/ 150' T/210' (60'@ 120' PER HR) W.O.B. 5-15K RPM 45 UP/DWN/ROT 20/20/20 PSI ON/OFF 600/400 M.W. 8.4# VIS 27
3/26/2012	0:00 - 1:30	1.50	DRLSUR	06	A	P		TOOH LDDP & BHA #1,TIH #2 BHA WITH 11" BIT
	1:30 - 10:30	9.00	DRLSUR	02	D	P		DRL F/210' T/1270' (1060'@ 117.7 ' PER HR) W.O.B. 20K RPM 45 UP/DWN/ROT 70/48/60 PSI ON/OFF 1350/1200 M.W. 8.4# VIS 27 12' RIGHT 3' HIGH OF TARGET
	10:30 - 13:00	2.50	DRLSUR	06	A	X		TOOH DUE TO COMMUNICATION ON NBU 1022-2F4BS, TOP JOB ON 2F4BS (165 SKS)
	13:00 - 16:00	3.00	DRLSUR	13	A	P		WAIT ON TOP JOB ON NBU 1022-2F4BS
	16:00 - 20:00	4.00	DRLSUR	06	A	P		TIH #3 BHA WITH 11" BIT
	20:00 - 22:30	2.50	DRLSUR	02	D	P		DRL F 1270' - T/ 1510' (240' @ 96' ROP) LOST RETURNS
	22:30 - 23:00	0.50	DRLSUR	08	A	Z		FIX AIR BOOSTER LEAK
	23:00 - 0:00	1.00	DRLSUR	02	D	P		DRL F/1510' T/1570' (60'@ 60 ' PER HR) W.O.B. 20K RPM 45 UP/DWN/ROT 67/52/57 PSI ON/OFF 1350/1150 M.W. 8.4# VIS 27 14.2' RIGHT 8.87' LOW OF TARGET
3/27/2012	0:00 - 10:30	10.50	DRLSUR	02	D	P		DRL F/1570'- T/2383' (813'@ 77.4 ' PER HR) WOB 20K RPM 45 UP/DWN/ROT 82/56/66 PSI ON/OFF 1700/1500 M.W. 8.4# VIS 27 .72' RIGHT- 1.91' BELOW TARGET
	10:30 - 12:30	2.00	DRLSUR	05	C	P		CIRCULATE FOR CASING
	12:30 - 16:30	4.00	DRLSUR	06	D	P		LDDS, BHA & DIRECTIONAL TOOLS
	16:30 - 17:30	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.
	17:30 - 20:30	3.00	DRLSUR	12	C	P		RUN 53 JTS 8 5/8, 28# J55 CASING SET SHOE @ 2348.2' SET BAFFLE @ 2303.8' LAND CASING @ 20:30

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN	Spud Date: 3/25/2012	
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: ENSIGN 146/146, PROPETRO 11/11
Event: DRILLING	Start Date: 12/8/2011	End Date: 5/8/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	20:30 - 21:30	1.00	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,.
	21:30 - 22:30	1.00	DRLSUR	12	E	P		HOLD SAFETY MEETING. PRO PETRO CMTERS MAKE UP HEAD & LOAD PLUG TEST LINES TO 2000 PSI. PUMP 50 BBLS OF 8.4# H20 AHEAD,FULL RETURNS PUMP 20 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/ 146.5 BBLS OF 8.4# H20. LIFT PRESSURE 350 PSI. BUMP PLUG AND HOLD 700 PSI FOR 5 MIN. NO RETURNS THRU OUT JOB. PUMP 150 SX (30.7 BBLS) 15.8# CMT W/4% CALCIUM DOWN 1".
	22:30 - 0:00	1.50	DRLSUR	13	A	P		WOC, 1.5 HOURS PUMP 125 SKS (25.6 BBLS). NO RETURNS
3/28/2012	0:00 - 1:00	1.00	DRLSUR	13	A	P		WAIT ON CEMENT, PUMP 225 SKS (46 BBLS) NO CEMENT TO SURFACE, RELEASE RIG @ 01:00
	1:00 - 1:00	0.00	DRLSUR	13	A	P		WAIT ON CEMENT, PUMP,225 SKS (46BBLS) NO CEMENT TO SURFACE
	1:00 - 1:00	0.00	DRLSUR	13	A			WAIT ON CEMENT , PUMP 435 SKS (89BBLS) CEMENT TO SURFACE
5/2/2012	10:00 - 11:00	1.00	MIRU	01	C	P		RIG DOWN, SKID RIG 10', RIG UP
	11:00 - 12:00	1.00	DRLPRO	14	A	P		NIPPLE UP BOPE
	12:00 - 15:30	3.50	DRLPRO	15	A	P		TEST BOPE, RAMS, CHOKE, CHOKE LINE, MANUAL VALVES, FLOOR VALVES, HCR & IBOP 250 LOW 5000 HIGH, ANNULAR 250 LOW 2500 HIGH, CASING 1500
	15:30 - 16:00	0.50	DRLPRO	14	B	P		SET WEARBUSHING
	16:00 - 18:00	2.00	DRLPRO	09	A	P		SLIP & CUT DRILL LINE
	18:00 - 19:30	1.50	DRLPRO	06	A	P		P/UP SMITH BIT MMDI616, HUNTING MUD MOTOR 1.50 deg .21 RPG, RIH DIRECTIONAL BHA SCRIBE & ORIENT - SHALLOW SURFACE TEST FAILED ON MWD
	19:30 - 23:00	3.50	DRLPRO	22	L	Z		TROUBLESHOOT MWD TOOL FAILURE - POOH L/OUT MWD TOOL - CHECK SURFACE TRANSCEIVERS - CHANGE OUT TRANSCEIVERS
	23:00 - 0:00	1.00	DRLPRO	02	F	P		MAKEUP MWD IN TOOL CARRIER - RIH - SHALLOW SURFACE TEST GOOD, CONTINUE RIH TO 1400' @ MIDNIGHT
5/3/2012	0:00 - 1:00	1.00	DRLPRO	06	A	P		TRIP IN HOLE F1400' TO 2268' - TAGGED CEMENT @ 2268'
	1:00 - 1:30	0.50	DRLPRO	07	B	P		CENTER & LEVEL RIG - INSTALL ROTATING HEAD
	1:30 - 2:30	1.00	DRLPRO	02	F	P		DRILL CEMENT, FLOAT & RATHOLE F/2268' TO 2393'

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN	Spud Date: 3/25/2012	
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: ENSIGN 146/146, PROPETRO 11/11
Event: DRILLING	Start Date: 12/8/2011	End Date: 5/8/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	2:30 - 10:00	7.50	DRLPRO	02	D	P		DRILL/SLIDE F/2393' TO 3311' (918' @ 122fph) MW 8.5 VIS 27 WOB 22 RPM 45 MM RPM 115 TQ 6/8 SPM 112 GPM 550 PSI OFF/ON 1450/1775 DIFF 300/325 PU 125, SO 102, ROT 108 NOV - ON LINE SLIDE 140'/1.75 hrs 23% ROT 778'/5.75 hrs 77% 2' LOW 5' LEFT OF CENTER LINE
	10:00 - 10:30	0.50	DRLPRO	07	A	P		RIG SER
	10:30 - 13:30	3.00	DRLPRO	02	D	P		DRILL/SLIDE F/3311' TO 3946' (635' @ 211fph) MW 8.5 VIS 27 WOB 22 RPM 45 MM RPM 115 TQ 6/8 SPM 112 GPM 550 PSI OFF/ON 1450/1775 DIFF 300/325 PU 128, SO 102, ROT 110 NOV - ON LINE SLIDE 60'/.50 hrs 16% ROT 575'/2.5 hrs 84% 4' NORTH 18' WEST OF CENTER
	13:30 - 14:00	0.50	DRLPRO	22	I	P		RETRIEVE STANDS DRILL PIPE IN DERRICK - HIGH WINDS BLEW STANDS OUT FROM DERRICK FINGERS
	14:00 - 0:00	10.00	DRLPRO	02	D	P		DRILL/SLIDE F/3946' TO 5580' (1634' @ 163fph) MW 8.5 VIS 27 WOB 22 RPM 45 MM RPM 115 TQ 6/10 SPM 112 GPM 550 PSI OFF/ON 1925/2250 DIFF 300/325 PU 168, SO 136, ROT 148 NOV - ON LINE SLIDE 88'/1.0 hrs 10% ROT 1546'/9.0 hrs 90% 20' NORTH 9' WEST OF CENTER
5/4/2012	0:00 - 13:30	13.50	DRLPRO	02	D	P		DRILL/SLIDE F/5580' TO 7210' (1630' @ 120fph) MW 8.5 VIS 27 WOB 22 RPM 35 MM RPM 105 TQ 6/10 SPM 102 GPM 500 PSI OFF/ON 1825/2125 DIFF 300/325 PU 225, SO 142, ROT 175 NOV - ON LINE SLIDE 86'/1.75 hrs 12% ROT 1544'/9.0 hrs 88% 19' NORTH 9' WEST OF CENTER

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN	Spud Date: 3/25/2012	
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: ENSIGN 146/146, PROPETRO 11/11
Event: DRILLING	Start Date: 12/8/2011	End Date: 5/8/2012
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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	13:30 - 14:00	0.50	DRLPRO	07	A	P		RIG SER
	14:00 - 16:30	2.50	DRLPRO	02	D	P		DRILL/SLIDE F/7210' TO 7527' (317' @ 126fph) MW 8.5 VIS 27 WOB 22 RPM 35 MM RPM 105 TQ 8/10 SPM 102 GPM 500 PSI OFF/ON 1825/2125 DIFF 300/325 PU 225, SO 142, ROT 175 NOV - ON LINE SLIDE - 0% ROT - 100% 17' NORTH 9' WEST OF CENTER MUD UP SYSTEM @ 7480' 5' FLARE 15 MIN @ 7500'
	16:30 - 18:00	1.50	DRLPRO	22	G	X		DISPLACED WELL WITH 12.3 PPG - LOST RETURNS - CIRC @ REDUCED RATE, MIX 2% LCM IN SYSTEM, LOWER MW TO 10.9, REGAINED RETURNS LOST 160 BBLS MUD
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DRILL/SLIDE F/7527' TO 8005' (317' @ 52fph) MW 11.5 VIS 36 LCM 2% WOB 22 RPM 35 MM RPM 102 TQ 8/12 SPM 100 GPM 490 PSI OFF/ON 2350/2725 DIFF 300/325 PU 230, SO 153, ROT 180 NOV - OFF LINE SLIDE - 12'/.50 hrs 8% ROT - 305'/5.5 hrs 92% 1.5' NORTH 2.5' EAST OF CENTER
5/5/2012	0:00 - 10:00	10.00	DRLPRO	02	D	P		DRILL/SLIDE F/8005' TO 8725' (720' @ 72fph) MW 12.0 VIS 38 LCM 2% WOB 24 RPM 35 MM RPM 100 TQ 8/12 SPM 98 GPM 480 PSI OFF/ON 2550/2925 DIFF 300/375 PU 230, SO 155, ROT 187 NOV - OFF LINE SLIDE - 0% ROT - 100% 18 SOUTH 15' EAST OF CENTER
	10:00 - 10:30	0.50	DRLPRO	07	A	P		RIG SER
	10:30 - 12:00	1.50	DRLPRO	05	C	P		CIRC PRIOR TO WIPER TRIP
	12:00 - 19:30	7.50	DRLPRO	06	E	P		WIPER TRIP - BACKREAM OUT F/8725' TO 7754' (11 STANDS) - CONTINUE TRIP OUT OF HOLE TO 2363' - BACKREAM THROUGH TIGHT SPOTS @ 6150', 5200', 5080', 4300', 4041' & 3960'

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN		Spud Date: 3/25/2012
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: ENSIGN 146/146, PROPETRO 11/11
Event: DRILLING	Start Date: 12/8/2011	End Date: 5/8/2012
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Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	19:30 - 0:00	4.50	DRLPRO	06	E	P		WIPER TRIP - RIH F/2362' TO 6180' - WASHED THROUGH TIGHT SPOTS @ 3946', 4127', 5034', 5668', 5760' & 5940'
5/6/2012	0:00 - 3:00	3.00	DRLPRO	06	E	P		TRIP IN WIPER TRIP #1 F/6180' TO 8707' - WASH F/8707' TO 8725' (WASH TIGHT SPOTS ON TRIP IN @ 8116', 8343', 8479' & 8615')
	3:00 - 4:30	1.50	DRLPRO	05	C	P		CIRC - 5' FLARE 10 MIN
	4:30 - 10:30	6.00	DRLPRO	06	E			WIPER TRIP #2 - BACKREAM OUT F/8725' TO 7754' - 11STANDS - CONTINUE TRIP OUT TO 2363' - WASHED THROUGH TIGHT SPOT @ 5240'
	10:30 - 15:00	4.50	DRLPRO	06	E	P		WIPER TRIP - RIH F/2362' TO 8660', WASH F8660' TO 8725' 65' - 15' FILL - MINIMAL PROBLEMS ON TRIP IN HOLE TIGHT SPOT @ 5150' & 5800'
	15:00 - 16:30	1.50	DRLPRO	05	C	P		CIRC PRIOR TO TRIP OUT FOR LOGS - 5' FLARE 15 MIN
	16:30 - 23:00	6.50	DRLPRO	06	E	P		POOH FOR OPEN HOLE LOGS, BACKREAM F/8725' TO 8569' 2 STANDS, CONTINUE TRIP OUT FOR LOGS - NO PROBLEMS ON TRIP OUT, L/DOWN MUD MOTOR & BIT
	23:00 - 23:30	0.50	DRLPRO	14	B	P		RETRIEVE WEARBUSHING
	23:30 - 0:00	0.50	DRLPRO	11	D	P		PRE-JOB SAFETY MEETING - RIG UP BAKER ATLAS & PREPARE TO RUN TRIPLE COMBO
5/7/2012	0:00 - 4:00	4.00	EVALPR	11	D	P		RUN TRIPLE COMBO TO LOGGERS TD @ 7110' - BRIDGED OFF @ 7110'
	4:00 - 4:30	0.50	EVALPR	22	M	P		SET WEARBUSHING
	4:30 - 10:30	6.00	EVALPR	22	M	X		PICK UP TRI-CONE BIT & BIT SUB, TRIP IN FOR CLEAN OUT - TRIP IN FROM SURFACE TO 7580' - TAGGED UP, WASHED THROUGH SPOT @ 7590', CONTINUE TRIP IN TO 8676' - WASH F/8676' TO 8725' - 5' FILL
	10:30 - 12:00	1.50	EVALPR	22	M	X		CIRC - NO FLARE
	12:00 - 18:30	6.50	EVALPR	22	M	X		TRIP OUT FOR OPEN HOLE LOGS - BACKREAM F8725' TO 8631' 1 STAND, CONTINUE TRIP OUT TO SURFACE - NO PROBLEMS ON TRIP OUT
	18:30 - 19:00	0.50	EVALPR	22	M	X		RETRIEVE WEARBUSHING
	19:00 - 22:30	3.50	EVALPR	22	M	X		PRE-JOB SAFETY MEETING - RIG UP BAKER ATLAS RUN TRIPLE COMBO TO LOOGERS TD @ 8724' - LOG OUT TO 7110'
	22:30 - 0:00	1.50	CSGPRO	12	C	P		PRE-JOB SAFETY MEETING, RIG UP FRANKS & RUN 205 JOINTS 4.5" 11.60 I-80 LTC/DQX PROD CASING , FLOAT SHOE 8711', FLOAT COLLAR 8666', MESA MKR 6620', XOVER 5039'
5/8/2012	0:00 - 11:30	11.50	CSGPRO	12	C	P		RUN 205 JOINTS 4.5" 11.60 I-80 LTC/DQX PROD CASING , FLOAT SHOE 8711', FLOAT COLLAR 8666', MESA MKR 6620', XOVER 5039' - L/DOWN JOINT DQX BAD COLLAR @ 6000', WALL STUCK AT 6000', PUMPED & DISPLACED 200 BBLS FRESH WATER, CASING CAME FREE, CONTINUE RUN CASING F/6000' TO 6580', TIGHT HOLE @ 6580' WASHED F6580' TO 6620', RUN CASING F/6520' TO 6966', LAYED DOWN 2 JOINTS DQX, DUMP VALVE ON TORQUE TURN MALFUNCTION OVER TORQUED CONNECTION, CONTINUE RUN CASING F/6966' TO 8711'

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN	Spud Date: 3/25/2012	
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: ENSIGN 146/146, PROPETRO 11/11
Event: DRILLING	Start Date: 12/8/2011	End Date: 5/8/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	11:30 - 12:30	1.00	CSGPRO	05	D	P		CIRC CASING - NO FLARE
	12:30 - 15:30	3.00	CSGPRO	12	E	P		HPJSM, R/UP BJ & CEMENT 4.5" PROD CASING, TEST LINES 5000 PSI, PUMP 25 BBLS FRESH WATER, 470 SKS LEAD 12.5 PPG 2.02 YIELD, TAIL 1302 SKS 14.3 PPG, 1.31 YIELD, DROPPED PLUG & DISPLACED W/134 BBLS FRESH WATER W/0.1 gal/bbl CLAYFIX II & 0.01 gal/bbl ALDACIDE G @ 2500 PSI, BUMPED PLUG @ 3000 PSI - FLOATS HELD W/1.25 BBLS RETURN, GOOD RETURNS DURING CMT JOB W/30 BBLS LEAD CEMENT TO SURFACE - R/DN BJ
	15:30 - 16:00	0.50	CSGPRO	14	B	P		SET C-22 SLIPS W/95K STRING WEIGHT - WEATHERFORD TIM
	16:00 - 17:00	1.00	CSGPRO	14	A	P		NIPPLE DOWN BOPE, ROUGH CUT CASING, RELEASE RIG @ 17:00 - CLEANING RIG TANKS WITH SUPER VAC WHILE SKIDDING RIG AND TEST BOPE

Project: UTAH - UTM (feet), NAD27, Zone 12N
Site: UINTAH_NBU 1022-2F PAD
Well: NBU 1022-2E4BS
Wellbore: NBU 1022-2E4BS
Section:
SHL:
Design: NBU 1022-2E4BS (wp02)
Latitude: 39.978748
Longitude: -109.411083
GL: 5009.00
KB: 14' RKB + GL @ 5023.00ft (ENSIGN 146)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4186.00	4255.74	WASATCH
4786.00	4855.75	top of cylinder
6536.00	6605.79	MESAVERDE
8651.00	8720.83	SEGO

WELL DETAILS: NBU 1022-2E4BS

+N/-S	+E/-W	Northing	Ground Level: Easting	5009.00 Latitude	Longitude	Slot
0.00	0.00	14522272.05	2085554.06	39.978748	-109.411083	

CASING DETAILS

TVD	MD	Name	Size
2306.63	2362.22	8-5/8	8-5/8

T M

Azimuths to True North
Magnetic North: 10.93°

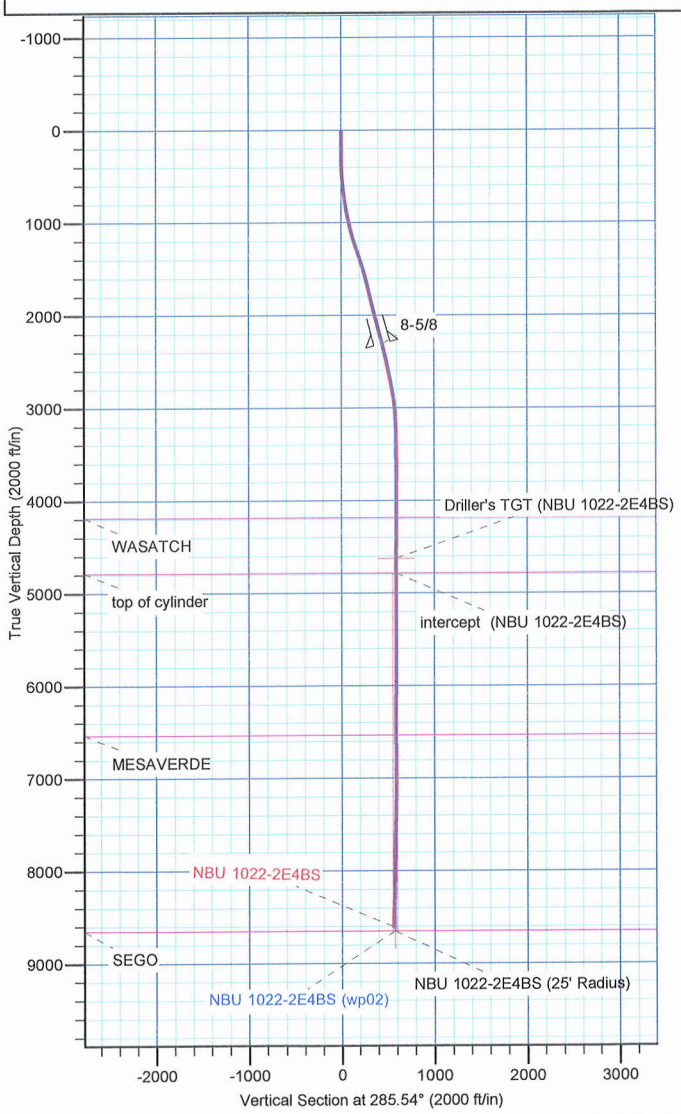
Magnetic Field
Strength: 52249.6snT
Dip Angle: 65.85°
Date: 4/3/2012
Model: IGRF2010

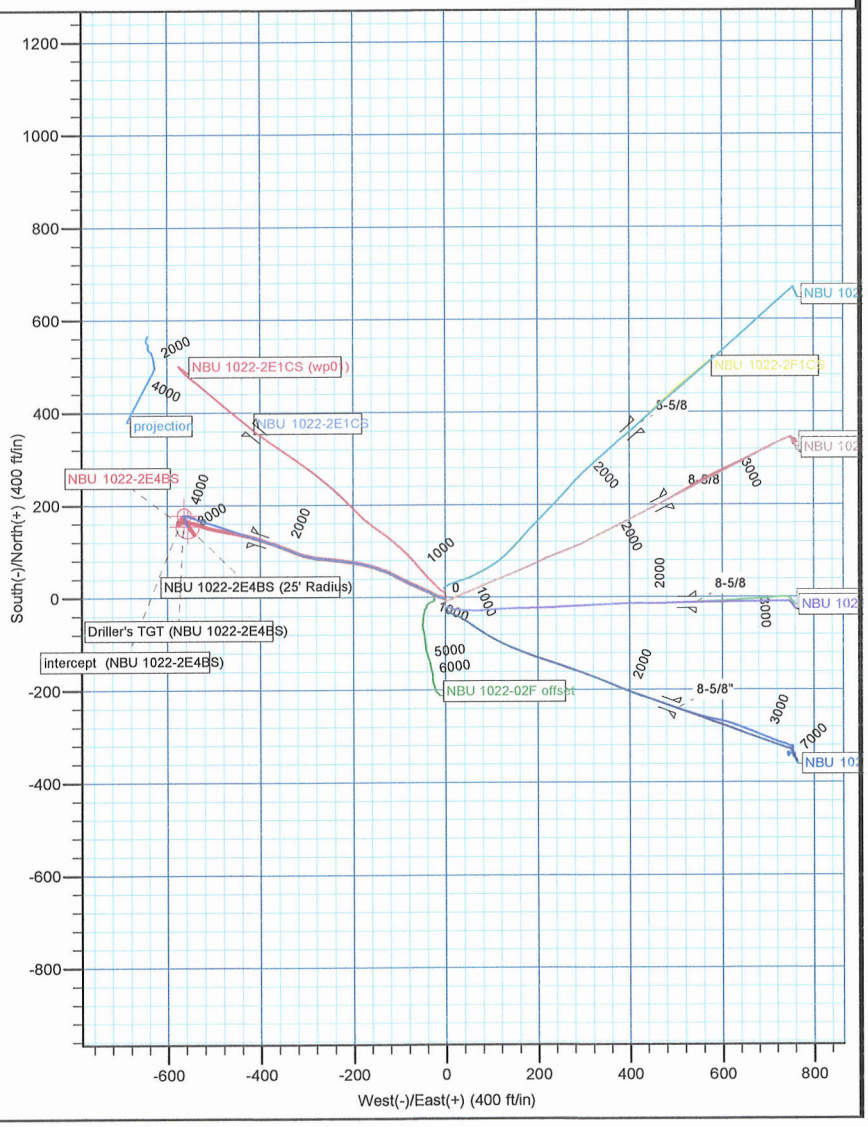
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Driller's TGT (NBU 1022-2E4BS)	4624.00	178.80	-563.77	14522440.78	2084987.19	39.979239	-109.413095	Circle (Radius: 15.00)
intercept (NBU 1022-2E4BS)	4786.00	178.59	-564.19	14522440.57	2084986.78	39.979238	-109.413096	Point
NBU 1022-2E4BS (25' Radius)	8651.00	154.80	-556.77	14522416.91	2084994.62	39.979173	-109.413070	Circle (Radius: 25.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
2330.00	14.95	288.32	2275.50	129.47	-414.93	0.00	0.00	434.45
2530.00	14.95	288.32	2468.73	145.69	-463.91	0.00	0.00	485.99
3260.95	0.33	288.56	3191.22	176.16	-555.92	2.00	179.99	582.79
4693.75	0.33	288.56	4624.00	178.80	-563.77	0.00	0.00	591.06
4902.07	0.37	162.63	4832.32	178.35	-564.14	0.30	-151.33	591.30
8720.83	0.37	162.63	8651.00	154.80	-556.77	0.00	0.00	577.89





US ROCKIES REGION PLANNING

UTAH - UTM (feet), NAD27, Zone 12N
UINTAH_NBU 1022-2F PAD
NBU 1022-2E4BS

NBU 1022-2E4BS

Design: NBU 1022-2E4BS

Standard Survey Report

23 August, 2012

Andarko Petroleum Corporation

Survey Report

Company:	US ROCKIES REGION PLANNING	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**TVD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Site:	UINTAH_NBU 1022-2F PAD	**MD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Well:	NBU 1022-2E4BS	**North Reference:**	True
Wellbore:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Design:	NBU 1022-2E4BS	**Database:**	edmp

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

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

Site UINTAH_NBU 1022-2F PAD

Site Position:		**Northing:**	14,522,242.28 usft	**Latitude:**	39.978666
From:	Lat/Long	**Easting:**	2,085,559.35 usft	**Longitude:**	-109.411066
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.02 °

Well NBU 1022-2E4BS

Well Position	**+N/-S**	0.00 ft	**Northing:**	14,522,272.06 usft	**Latitude:**	39.978748
	+E/-W	0.00 ft	**Easting:**	2,085,554.06 usft	**Longitude:**	-109.411083
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,009.00 ft

Wellbore NBU 1022-2E4BS

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	4/3/2012	10.93	65.85	52,250

Design NBU 1022-2E4BS

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	10.00

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	10.00	0.00	0.00	285.54

Survey Program **Date** 8/23/2012

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
151.00	2,330.00	Survey #1 (NBU 1022-2E4BS)	MWD	MWD - STANDARD
2,445.00	8,725.00	Survey #2 (NBU 1022-2E4BS)	MWD	MWD - STANDARD

Survey

Measured Depth (ft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Vertical Section (ft)**	**Dogleg Rate (°/100usft)**	**Build Rate (°/100usft)**	**Turn Rate (°/100usft)**
10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
151.00	0.88	230.57	150.99	-0.69	-0.84	0.62	0.62	0.62	0.00
180.00	1.06	231.89	179.99	-0.99	-1.22	0.91	0.63	0.62	4.55
207.00	1.12	232.00	206.99	-1.31	-1.62	1.21	0.22	0.22	0.41
235.00	1.14	243.06	234.98	-1.61	-2.09	1.58	0.78	0.07	39.50
261.00	1.32	251.05	260.97	-1.82	-2.60	2.02	0.95	0.69	30.73
290.00	1.41	258.35	289.97	-2.00	-3.27	2.61	0.67	0.31	25.17
319.00	1.58	267.49	318.96	-2.09	-4.02	3.31	1.01	0.59	31.52
350.00	2.02	278.21	349.94	-2.03	-4.98	4.26	1.78	1.42	34.58
440.00	3.17	287.26	439.85	-1.07	-8.93	8.32	1.35	1.28	10.06

Andarko Petroleum Corporation

Survey Report

Company:	US ROCKIES REGION PLANNING	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**TVD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Site:	UINTAH_NBU 1022-2F PAD	**MD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Well:	NBU 1022-2E4BS	**North Reference:**	True
Wellbore:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Design:	NBU 1022-2E4BS	**Database:**	edmp

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
530.00	4.31	292.98	529.65	0.99	-14.42	14.16	1.33	1.27	6.36
620.00	5.72	295.97	619.31	4.28	-21.57	21.92	1.59	1.57	3.32
710.00	7.47	297.37	708.71	8.93	-30.79	32.06	1.95	1.94	1.56
800.00	9.23	294.47	797.75	14.61	-42.56	44.92	2.01	1.96	-3.22
890.00	10.99	293.42	886.35	21.01	-57.00	60.55	1.97	1.96	-1.17
980.00	12.87	295.72	974.40	28.77	-73.91	78.91	2.15	2.09	2.56
1,070.00	15.30	297.37	1,061.69	38.58	-93.49	100.40	2.74	2.70	1.83
1,160.00	17.05	295.76	1,148.13	49.78	-115.92	125.01	2.01	1.94	-1.79
1,250.00	16.91	290.67	1,234.21	60.13	-140.05	151.04	1.66	-0.16	-5.66
1,340.00	18.20	284.89	1,320.02	68.36	-165.88	178.13	2.41	1.43	-6.42
1,430.00	17.84	279.89	1,405.61	74.34	-193.04	205.91	1.76	-0.40	-5.56
1,520.00	16.62	277.07	1,491.57	78.30	-219.40	232.36	1.64	-1.36	-3.13
1,610.00	16.18	276.28	1,577.91	81.25	-244.64	257.46	0.55	-0.49	-0.88
1,700.00	13.98	276.37	1,664.81	83.83	-267.91	280.57	2.44	-2.44	0.10
1,790.00	12.84	279.27	1,752.35	86.65	-288.58	301.25	1.47	-1.27	3.22
1,880.00	12.93	286.65	1,840.09	91.14	-308.10	321.26	1.83	0.10	8.20
1,970.00	14.16	293.50	1,927.59	98.42	-327.85	342.23	2.24	1.37	7.61
2,060.00	15.12	291.92	2,014.67	107.19	-348.83	364.80	1.16	1.07	-1.76
2,150.00	14.95	288.49	2,101.59	115.25	-370.73	388.06	1.01	-0.19	-3.81
2,240.00	14.95	287.26	2,188.54	122.38	-392.83	411.25	0.35	0.00	-1.37
2,330.00	14.95	288.32	2,275.50	129.47	-414.93	434.45	0.30	0.00	1.18
tie on									
2,445.00	13.68	280.92	2,386.93	136.71	-442.37	462.83	1.93	-1.10	-6.43
2,536.00	12.93	279.78	2,475.49	140.48	-462.97	483.68	0.87	-0.82	-1.25
2,627.00	11.88	280.84	2,564.37	143.97	-482.20	503.15	1.18	-1.15	1.16
2,717.00	11.31	283.21	2,652.53	147.73	-499.90	521.20	0.83	-0.63	2.63
2,808.00	10.56	286.96	2,741.88	152.20	-516.56	538.45	1.14	-0.82	4.12
2,899.00	9.25	289.46	2,831.52	157.07	-531.43	554.09	1.51	-1.44	2.75
2,989.00	7.75	286.84	2,920.53	161.24	-544.06	567.37	1.72	-1.67	-2.91
3,080.00	6.06	280.21	3,010.87	163.87	-554.66	578.29	2.05	-1.86	-7.29
3,171.00	3.88	270.34	3,101.52	164.74	-562.47	586.04	2.56	-2.40	-10.85
3,261.00	2.19	269.96	3,191.39	164.76	-567.23	590.64	1.88	-1.88	-0.42
3,352.00	2.06	262.09	3,282.33	164.53	-570.59	593.81	0.35	-0.14	-8.65
3,443.00	1.56	241.71	3,373.28	163.72	-573.30	596.21	0.89	-0.55	-22.40
3,533.00	1.50	214.96	3,463.25	162.17	-575.06	597.48	0.79	-0.07	-29.72
3,624.00	1.50	198.21	3,554.22	160.06	-576.11	597.93	0.48	0.00	-18.41
3,715.00	0.50	149.71	3,645.21	158.59	-576.28	597.70	1.35	-1.10	-53.30
3,805.00	0.31	54.84	3,735.21	158.39	-575.89	597.27	0.68	-0.21	-105.41
3,896.00	0.88	27.21	3,826.20	159.15	-575.37	596.97	0.68	0.63	-30.36
3,987.00	0.56	38.59	3,917.19	160.12	-574.77	596.66	0.38	-0.35	12.51
4,077.00	0.44	114.21	4,007.19	160.33	-574.18	596.14	0.69	-0.13	84.02
4,168.00	0.69	40.21	4,098.19	160.60	-573.51	595.57	0.78	0.27	-81.32
4,259.00	0.44	73.96	4,189.18	161.12	-572.82	595.04	0.45	-0.27	37.09

Andarko Petroleum Corporation

Survey Report

Company:	US ROCKIES REGION PLANNING	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**TVD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Site:	UINTAH_NBU 1022-2F PAD	**MD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Well:	NBU 1022-2E4BS	**North Reference:**	True
Wellbore:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Design:	NBU 1022-2E4BS	**Database:**	edmp

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,349.00	0.44	121.34	4,279.18	161.03	-572.19	594.41	0.39	0.00	52.64
4,440.00	1.00	30.59	4,370.18	161.53	-571.49	593.87	1.21	0.62	-99.73
4,530.00	0.69	31.84	4,460.17	162.67	-570.80	593.52	0.35	-0.34	1.39
4,621.00	0.81	40.09	4,551.16	163.63	-570.10	593.10	0.18	0.13	9.07
4,712.00	0.94	17.34	4,642.15	164.83	-569.46	592.80	0.40	0.14	-25.00
4,802.00	1.63	10.09	4,732.13	166.80	-569.02	592.90	0.79	0.77	-8.06
4,893.00	1.50	7.59	4,823.09	169.25	-568.63	593.19	0.16	-0.14	-2.75
4,984.00	1.31	18.34	4,914.06	171.42	-568.15	593.30	0.36	-0.21	11.81
5,074.00	0.88	10.96	5,004.05	173.07	-567.69	593.31	0.50	-0.48	-8.20
5,165.00	0.88	13.84	5,095.04	174.44	-567.39	593.39	0.05	0.00	3.16
5,256.00	0.81	32.21	5,186.03	175.66	-566.88	593.22	0.31	-0.08	20.19
5,346.00	0.06	299.96	5,276.02	176.22	-566.59	593.09	0.91	-0.83	-102.50
5,437.00	0.25	130.59	5,367.02	176.12	-566.48	592.95	0.34	0.21	-186.12
5,528.00	0.38	154.09	5,458.02	175.72	-566.19	592.57	0.20	0.14	25.82
5,618.00	0.56	151.71	5,548.02	175.06	-565.85	592.07	0.20	0.20	-2.64
5,709.00	0.81	157.84	5,639.01	174.07	-565.40	591.37	0.29	0.27	6.74
5,800.00	1.25	162.09	5,730.00	172.53	-564.85	590.43	0.49	0.48	4.67
5,890.00	0.19	176.34	5,819.99	171.45	-564.54	589.84	1.19	-1.18	15.83
5,981.00	0.19	273.59	5,910.99	171.31	-564.68	589.94	0.31	0.00	106.87
6,072.00	0.06	185.46	6,001.99	171.27	-564.84	590.07	0.22	-0.14	-96.85
6,162.00	0.31	153.34	6,091.99	171.01	-564.73	589.90	0.29	0.28	-35.69
6,253.00	0.44	135.84	6,182.99	170.54	-564.38	589.44	0.19	0.14	-19.23
6,344.00	0.63	131.59	6,273.98	169.95	-563.76	588.69	0.21	0.21	-4.67
6,435.00	0.56	276.21	6,364.98	169.67	-563.83	588.67	1.25	-0.08	158.92
6,525.00	0.81	337.46	6,454.98	170.31	-564.51	589.50	0.81	0.28	68.06
6,616.00	0.50	339.34	6,545.97	171.27	-564.90	590.13	0.34	-0.34	2.07
6,707.00	0.25	17.21	6,636.97	171.83	-564.98	590.36	0.37	-0.27	41.62
6,797.00	0.88	343.84	6,726.96	172.68	-565.11	590.72	0.76	0.70	-37.08
6,888.00	0.44	11.71	6,817.96	173.70	-565.24	591.11	0.59	-0.48	30.63
6,978.00	0.50	305.59	6,907.95	174.26	-565.49	591.50	0.57	0.07	-73.47
7,069.00	0.06	325.84	6,998.95	174.53	-565.84	591.91	0.49	-0.48	22.25
7,160.00	0.19	152.09	7,089.95	174.44	-565.79	591.84	0.27	0.14	-190.93
7,250.00	0.69	157.84	7,179.95	173.81	-565.52	591.41	0.56	0.56	6.39
7,341.00	1.06	152.21	7,270.94	172.55	-564.92	590.50	0.42	0.41	-6.19
7,432.00	1.50	151.71	7,361.92	170.76	-563.96	589.09	0.48	0.48	-0.55
7,522.00	1.75	142.71	7,451.88	168.63	-562.57	587.18	0.40	0.28	-10.00
7,613.00	1.81	140.59	7,542.84	166.41	-560.82	584.90	0.10	0.07	-2.33
7,704.00	1.94	144.59	7,633.79	164.05	-559.01	582.53	0.20	0.14	4.40
7,794.00	1.94	148.21	7,723.74	161.51	-557.33	580.22	0.14	0.00	4.02
7,885.00	1.88	150.46	7,814.69	158.90	-555.78	578.03	0.11	-0.07	2.47
7,976.00	1.88	149.46	7,905.64	156.32	-554.28	575.90	0.04	0.00	-1.10
8,066.00	1.88	148.59	7,995.59	153.79	-552.76	573.76	0.03	0.00	-0.97
8,157.00	2.00	147.21	8,086.54	151.18	-551.13	571.48	0.14	0.13	-1.52

Andarko Petroleum Corporation

Survey Report

Company:	US ROCKIES REGION PLANNING	**Local Co-ordinate Reference:**	Well NBU 1022-2E4BS
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**TVD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Site:	UINTAH_NBU 1022-2F PAD	**MD Reference:**	14' RKB + GL @ 5023.00ft (ENSIGN 146)
Well:	NBU 1022-2E4BS	**North Reference:**	True
Wellbore:	NBU 1022-2E4BS	**Survey Calculation Method:**	Minimum Curvature
Design:	NBU 1022-2E4BS	**Database:**	edmp

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,247.00	1.69	149.84	8,176.49	148.71	-549.61	569.36	0.36	-0.34	2.92
8,338.00	1.81	145.71	8,267.45	146.36	-548.13	567.30	0.19	0.13	-4.54
8,429.00	1.88	148.21	8,358.40	143.91	-546.53	565.11	0.12	0.08	2.75
8,519.00	2.06	144.46	8,448.35	141.34	-544.81	562.76	0.25	0.20	-4.17
8,610.00	2.13	149.71	8,539.29	138.55	-543.01	560.28	0.22	0.08	5.77
8,675.00	2.07	145.52	8,604.24	136.54	-541.73	558.51	0.25	-0.09	-6.45
last survey									
8,725.00	2.07	145.52	8,654.21	135.05	-540.71	557.13	0.00	0.00	0.00
projectin to td									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,330.00	2,275.50	129.47	-414.93	tie on
8,675.00	8,604.24	136.54	-541.73	last survey
8,725.00	8,654.21	135.05	-540.71	projectin to td

Checked By: _____ Approved By: _____ Date: _____

1 General

1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

1.2 Well/Wellbore Information

Well	NBU 1022-2E4BS GREEN	**Wellbore No.**	OH
Well Name	NBU 1022-2E4BS	**Wellbore Name**	NBU 1022-2E4BS
Report No.	1	**Report Date**	7/2/2012
Project	UTAH-UINTAH	**Site**	NBU 1022-2F PAD
Rig Name/No.	MILES 3/3	**Event**	COMPLETION
Start Date	7/2/2012	**End Date**	7/18/2012
Spud Date	3/25/2012	**Active Datum**	RKB @5,023.00usft (above Mean Sea Level)
UWI	SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0		

1.3 General

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

1.4 Initial Conditions

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

1.5 Summary

Gross Interval	6,715.0 (usft)-8,676.0 (usft	**Start Date/Time**	7/2/2012 12:00AM
No. of Intervals	29	**End Date/Time**	7/2/2012 12:00AM
Total Shots	180	**Net Perforation Interval**	56.00 (usft)
Avg Shot Density	3.21 (shot/ft)	**Final Surface Pressure**	
		Final Press Date	

2 Intervals

2.1 Perforated Interval

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
7/2/2012 12:00AM	MESA VERDE/			6,715.0	6,716.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	

2.1 Perforated Interval (Continued)

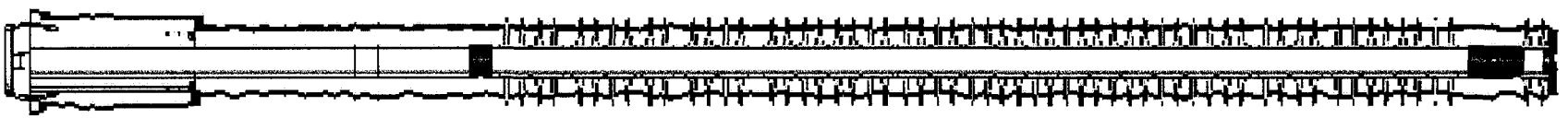
Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
7/2/2012 12:00AM	MESA VERDE/			6,750.0	6,752.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			6,930.0	6,932.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			6,964.0	6,966.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,084.0	7,086.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,305.0	7,306.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,331.0	7,335.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,612.0	7,614.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,636.0	7,638.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,692.0	7,693.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,720.0	7,723.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,818.0	7,820.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,844.0	7,848.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,912.0	7,913.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,924.0	7,925.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,944.0	7,945.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,966.0	7,968.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			7,982.0	7,984.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,004.0	8,005.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,037.0	8,039.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,062.0	8,063.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,104.0	8,106.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	

2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-TS (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diameter (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
7/2/2012 12:00AM	MESA VERDE/			8,252.0	8,254.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,302.0	8,304.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,458.0	8,459.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,491.0	8,492.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,512.0	8,513.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,552.0	8,554.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTION	
7/2/2012 12:00AM	MESA VERDE/			8,670.0	8,676.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTION	

3 Plots

3.1 Wellbore Schematic



US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN		Spud Date: 3/25/2012
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: MILES 3/3
Event: COMPLETION	Start Date: 7/2/2012	End Date: 7/18/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
3/25/2012	-							
6/27/2012	7:00 - 7:30	0.50	DRLOUT	48		P		HSM, RIGGING DOWN RIG. 0 PSI ON WELL
	7:30 - 9:00	1.50	DRLOUT	30	A	P		RDMO NBU 217-2, MIRU, N/D FV, N/U BOPS, R/U FLOOR & TBG EQUIP.
	9:00 - 12:00	3.00	DRLOUT	31	I	P		P/U 3 7/8" SBB, X/O SUB, RIH W/ 274 JTS 2 3/8" L-80 TBG TAG @ 8663', R/U PWR SWVL, BRK CIRC REV,
	12:00 - 14:30	2.50	DRLOUT	44	D	P		D/O 3' CMT, FC @ 8666', 20' CMT TO 8686' CIRC CLN 2X TBG VOL.
	14:30 - 17:00	2.50	DRLOUT	31	I	P		POOH L/D 175 JTS, EOT @ 3166', SWI SDFN.
	18:00 - 18:30	0.50	COMP	33		P		RU HOT OILER FILLED SURFACE WITH 1/2 BBL PRESSURED TO 1500 PSI LOST 850 PSI 1 MIN PRESSURED TO 1500 PSI LOST 800 PSI 1 MIN PRESSURED TO 1500 PSI LOST 800 PSI 1 MIN PRESSURED TO 1500 PSI LOST 800 PSI 1 MIN PRESSURED TO 1500 PSI LOST 800 PSI 1 MIN BLED WELL DOWN MOVED TO NEXT WELL
6/28/2012	7:30 - 7:30	0.00	DRLOUT	48		P		HSM, L/D TBG. 0 PSI ON WELL
	7:30 - 10:00	2.50	DRLOUT	31	I	P		EOT @ 3166', L/D 100 JTS 2 3/8" J-55 TBG, N/D BOPS, N/U FV, RDMO.
	10:00 - 12:00	2.00	DRLOUT	30	A	P		MOVE RIG & EQUIPMENT TO NBU 190.
	12:30 - 14:00	1.50	COMP	33		P		FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 9 PSI. PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 37 PSI. 1ST PSI TEST T/ 7000 PSI. HELD FOR 30 MIN LOST 80 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG BLEED OFF PSI. MOVE T/ NEXT WELL. SWIFW
6/29/2012	7:00 - 10:30	3.50	COMP	37		P		PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER PERF DESIGN. POOH. SWIFW
7/2/2012	7:00 - 7:15	0.25	COMP	48		P		HSM, REVIEW RIG UP
	7:15 - 9:00	1.75	COMP	46	E	Z		DID NOT BRING ALL CHEMICAL W/ TO LOC. SDFN.
7/3/2012	5:45 - 6:00	0.25	COMP	48		P		HSM, REVIEW FRAC

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN		Spud Date: 3/25/2012
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: MILES 3/3
Event: COMPLETION	Start Date: 7/2/2012	End Date: 7/18/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00 - 17:30	11.50	COMP	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 FLIUD, SAND AND CHEMICL VOLUME PUM'D FRAC STG #1] WHP=1,726#, BRK DN PERFS=5,043#, @=2.4 BPM, INJ RT=46.3, INJ PSI=4,776#, INITIAL ISIP=2,949#, INITIAL FG=.77, FINAL ISIP=3,012#, FINAL FG=.78, AVERAGE RATE=46.3, AVERAGE PRESSURE=4,972#, MAX RATE=46.3, MAX PRESSURE=6,177#, NET PRESSURE INCREASE=63#, 21/24 88% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,584', 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=1,836#, BRK DN PERFS=4,288#, @=4.7 BPM, INJ RT=50, INJ PSI=5,116#, INITIAL ISIP=2,497#, INITIAL FG=.73, FINAL ISIP=2,570#, FINAL FG=.74, AVERAGE RATE=50, AVERAGE PRESSURE=4,830#, MAX RATE=50.6, MAX PRESSURE=5,130#, NET PRESSURE INCREASE=73#, 17/21 81% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #3] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,284', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW SWIFN.
7/4/2012	6:30 - 6:45	0.25	COMP	48		P		HSM, HIGH PRESSURE LINES / WIRE LINE

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN	Spud Date: 3/25/2012	
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: MILES 3/3
Event: COMPLETION	Start Date: 7/2/2012	End Date: 7/18/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:45 - 18:30	11.75	COMP	36	B	P		FRAC STG #3] WHP=1,918#, BRK DN PERFS=4,490#, @=9.4 BPM, INJ RT=57, INJ PSI=5,064#, INITIAL ISIP=2,811#, INITIAL FG=.78, FINAL ISIP=2,611#, FINAL FG=.75, AVERAGE RATE=56.9, AVERAGE PRESSURE=5,040#, MAX RATE=57.2, MAX PRESSURE=5,144#, NET PRESSURE INCREASE=-200#, 21/21 100% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,027', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #4] WHP=2,190#, BRK DN PERFS=4,500#, @=9.4 BPM, INJ RT=57.1, INJ PSI=5,074#, INITIAL ISIP=2,943#, INITIAL FG=.80, FINAL ISIP=2,591#, FINAL FG=.76, AVERAGE RATE=57, AVERAGE PRESSURE=5,111#, MAX RATE=57.1, MAX PRESSURE=5,177#, NET PRESSURE INCREASE=-352#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,878', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #5] WHP=1,626#, BRK DN PERFS=5,397#, @=6.6 BPM, INJ RT=57, INJ PSI=4,917#, INITIAL ISIP=2,828#, INITIAL FG=.79, FINAL ISIP=2,592#, FINAL FG=.76, AVERAGE RATE=57, AVERAGE PRESSURE=4,697#, MAX RATE=57.2, MAX PRESSURE=4,946#, NET PRESSURE INCREASE=-236#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,753', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW SWIFN.
7/5/2012	6:45 - 7:00	0.25	COMP	48		P		HSM, SLIPS / TRIPS / FALLS

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN		Spud Date: 3/25/2012
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: MILES 3/3
Event: COMPLETION	Start Date: 7/2/2012	End Date: 7/18/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 17:30	10.50	COMP	36	B	P		FRAC STG #6] WHP=1,620#, BRK DN PERFS=6,147#, @=6.7 BPM, INJ RT=48.9, INJ PSI=4,497#, INITIAL ISIP=2,869#, INITIAL FG=.81, FINAL ISIP=2,487#, FINAL FG=.76, AVERAGE RATE=49.8, AVERAGE PRESSURE=4,021#, MAX RATE=50.1, MAX PRESSURE=4,603#, NET PRESSURE INCREASE=-382#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #7] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,365', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #7] WHP=541#, BRK DN PERFS=2,841#, @=6.7 BPM, INJ RT=50.8, INJ PSI=4,254#, INITIAL ISIP=2,094#, INITIAL FG=.72, FINAL ISIP=2,420#, FINAL FG=.77, AVERAGE RATE=57.3, AVERAGE PRESSURE=4,344#, MAX RATE=58.9, MAX PRESSURE=4,571#, NET PRESSURE INCREASE=326#, 21/21 100% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #8] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=6,996', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #8] WHP=419#, BRK DN PERFS=2,949#, @=6.7 BPM, INJ RT=49.5, INJ PSI=3,627#, INITIAL ISIP=1,794#, INITIAL FG=.70, FINAL ISIP=2,167#, FINAL FG=.75, AVERAGE RATE=49.6, AVERAGE PRESSURE=3,785#, MAX RATE=49.7, MAX PRESSURE=3,960#, NET PRESSURE INCREASE=326#, 21/21 100% CALC PERFS OPEN. X OVER TO WIRE LINE P/U RIH W/ HALIBURTON 8K CBP, SET FOR TOP KILL @=6,665' TOTAL FLUID PUMP'D=7,735 BBLS TOTAL SAND PUMP'D=153,600#
7/6/2012	-							
7/7/2012	-							
7/17/2012	12:00 - 16:00	4.00	DRLOUT	31	I	P		WELL 3/6. MIRU, N/D WH, N/U BOPS, RIG UP FLOOR & TBG EQUIP, P/U 3 7/8" SBB, POBS, XN NIPPLE, RIH W/ 210 JTS 2 3/8" L-80 TBG, TAG KILL PLUG @ 6665', R/U PWR SWVL, PSI TEST BOPS TO 3000#,LEAKING,CHANGE RAMS, RETEST, 0 LOSS 15 MIN, PREP TO D/O IN AM. SWI, SDFN
7/18/2012	7:00 - 7:15	0.25	DRLOUT	48		P		HSM, PWR SWVL CONNECTIONS

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN	Spud Date: 3/25/2012	
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: MILES 3/3
Event: COMPLETION	Start Date: 7/2/2012	End Date: 7/18/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 12:00	4.75	DRLOUT	44	C	P		EOT @ 6630', 0 PSI ON WELL, BRK CIRC CONV, C/O 30' SAND. (DRLG CBP #1) 6665 ', DRILL OUT HALLIBURTON 8K CBP IN 5 MIN, 0 # DIFF, RIH TAG @ 76966 ', C/O 30 ' SAND, FCP = 0#, (DRLG CBP # 2) 6996 ', DRILL OUT HALLIBURTON 8K CBP IN 5 MIN, 400# DIFF, RIH TAG @ 7335', C/O 30 ' SAND, FCP = 400 #, (DRLG CBP # 3) 7365 ', DRILL OUT HALLIBURTON 8K CBP IN 5 MIN, 0 # DIFF, RIH TAG @ 7733 ', C/O 20' SAND, FCP = 400 #, (DRLG CBP #4) 7753 ', DRILL OUT HALLIBURTON 8K CBP IN 5 MIN, 300 # DIFF, RIH TAG @ 7848 ', C/O 30 ' SAND, FCP = 400 #, (DRLG CBP #5) 7878', DRILL OUT HALLIBURTON 8K CBP IN 5 MIN, 400 # DIFF, RIH TAG @ 7997 ', C/O 30 ' SAND, FCP = 600 #, (DRLG CBP #6) 8027', DRILL OUT HALLIBURTON 8K CBP IN 10 MIN, 600 # DIFF, RIH TAG @ 8272 ', C/O 12 ' SAND, FCP = 800 #, (DRLG CBP #7) 8284', DRILL OUT HALLIBURTON 8K CBP IN 5MIN, 600 # DIFF, RIH TAG @ 8554', C/O 30' SAND , FCP = 800 #, (DRLG CBP #8) 8584', DRILL OUT HALLIBURTON 8K CBP IN 5 MIN, 200 # DIFF, RIH TAG @ 8676 ', C/O 10 ' SAND, TO 8686' PBTD 8666' FLOAT COLLAR WAS DRILLED OUT . BTM PERF 8676' CIRC WELL CLEAN,R/D SWIVEL, POOH LAY DN 14 JTS ON TRAILER,LAND TBG W/ TBG HANGER, W/ 260 JTS 2 3/8" L-80 TBG, @ 8257.22 ', N/D BOPS, DROP BALL DN TBG, N/U WH, PRESSURE TEST FLOW LINES TO 3000#, , PUMP BIT OFF AT 1800 #, TURN WELL OVER TO FLOW BACK CREW & PRODUCTION KB = 14.00' HANGER = .83' 262 JTS 2 3/8" L-80 TBG = 8240.19' XN-NIPPLE 1.875" = 2.20' EOT = 8257.22' 285 JTS 2 3/8" L-80 TBG DELIVERD 260 JTS 2 3/8" L-80 TBG USED 25 JTS 2 3/8" L-80 TBG RETURNED OLTR = 7735

US ROCKIES REGION

Operation Summary Report

Well: NBU 1022-2E4BS GREEN	Spud Date: 3/25/2012	
Project: UTAH-UINTAH	Site: NBU 1022-2F PAD	Rig Name No: MILES 3/3
Event: COMPLETION	Start Date: 7/2/2012	End Date: 7/18/2012
Active Datum: RKB @5,023.00usft (above Mean Sea Level)	UWI: SE/NW/0/10/S/22/E/2/0/0/26/PM/N/2386/W/0/1379/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	12:00 - 12:00	0.00	DRLOUT	50				RECOVERED = 1500 LTR = 6235 FTP = 1550# ON 20/64 CHOKE SICP =2500# RDMO, MIRU NBU 1022-2E1CS WELL TURNED TO SALES @ 14:15 HR ON 7/18/2012, 2500 MCFD, 1920 BWPD, FCP 2900#, FTP 2660#, 20/64"