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 1022-24O2S
2. TYPE OF WORK: DRILL NEW WELL (●) REENTER P&A WELL ( ) DEEPEN WELL ( )	3. FIELD OR WILDCAT: NATURAL BUTTES
4. TYPE OF WELL: Gas Well Coalbed Methane Well: NO	5. UNIT or COMMUNITIZATION AGREEMENT NAME: NATURAL BUTTES
6. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P.	7. OPERATOR PHONE: 720 929-6587
8. ADDRESS OF OPERATOR: P.O. Box 173779, Denver, CO, 80217	9. OPERATOR E-MAIL: mary.mondragon@anadarko.com
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE): UTU 0471	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	684 FSL 2016 FEL	SWSE	24	10.0 S	22.0 E	S
Top of Uppermost Producing Zone	1060 FSL 2080 FEL	SWSE	24	10.0 S	22.0 E	S
At Total Depth	1060 FSL 2080 FEL	SWSE	24	10.0 S	22.0 E	S

21. COUNTY	22. DISTANCE TO NEAREST LEASE LINE (Feet)	23. NUMBER OF ACRES IN DRILLING UNIT
UINTAH	1060	280
	25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed): 380	26. PROPOSED DEPTH: MD: 7805 TVD: 7760
27. ELEVATION - GROUND LEVEL: 5023	28. BOND NUMBER	29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE: Permit #43-8496

ATTACHMENTS

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

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

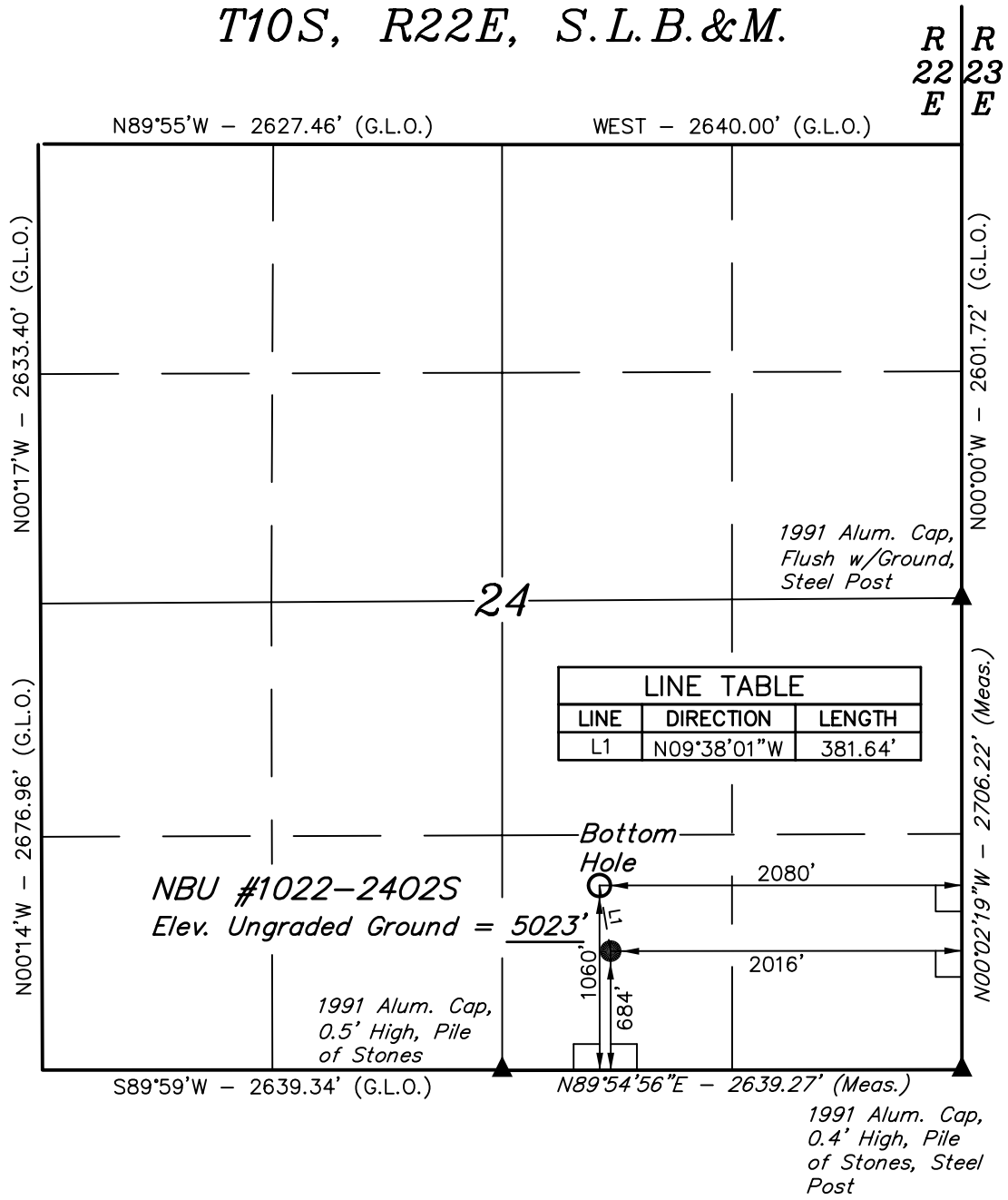
NAME Danielle Piernot	TITLE Regulatory Analyst	PHONE 720 929-6156
SIGNATURE	DATE 08/05/2009	EMAIL danielle.piernot@anadarko.com

API NUMBER ASSIGNED	APPROVAL
43047504610000	 Permit Manager

Proposed Hole, Casing, and Cement						
String	**Hole Size**	**Casing Size**	**Top (MD)**	**Bottom (MD)**		
Prod	7.875	4.5	0	7805		
Pipe	**Grade**	**Length**	**Weight**			
	Grade I-80 LT&C	7805	11.6			

Proposed Hole, Casing, and Cement						
String	**Hole Size**	**Casing Size**	**Top (MD)**	**Bottom (MD)**		
Surf	12.25	9.625	0	1490		
Pipe	**Grade**	**Length**	**Weight**			
	Grade J-55 LT&C	1490	36.0			

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



KERR-McGEE OIL & GAS ONSHORE LP

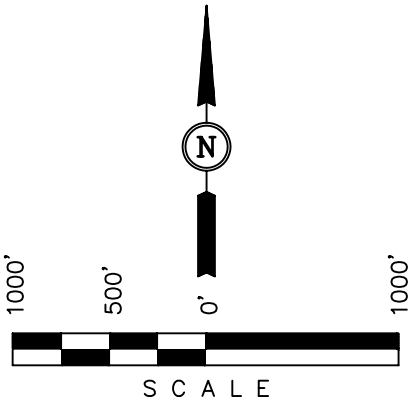
Well location, NBU #1022-2402S, located as shown in the SW 1/4 SE 1/4 of Section 24, T10S, R22E, S.L.B.&M. Uintah County, Utah.

BASIS OF ELEVATION

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

BASIS OF BEARINGS

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



CERTIFICATE

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

REGISTERED LAND SURVEYOR
REGISTRATION NO. 161319
STATE OF UTAH

REVISED: 12-19-08

LEGEND:

- ⌐ = 90° SYMBOL
- ● = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.

NAD 83 (TARGET BOTTOM HOLE)	NAD 83 (SURFACE LOCATION)
LATITUDE = 39°55'47.97" (39.929992)	LATITUDE = 39°55'44.26" (39.928961)
LONGITUDE = 109°23'10.71" (109.386308)	LONGITUDE = 109°23'09.89" (109.386081)
NAD 27 (TARGET BOTTOM HOLE)	**NAD 27 (SURFACE LOCATION)**
LATITUDE = 39°55'48.09" (39.930025)	LATITUDE = 39°55'44.38" (39.928994)
LONGITUDE = 109°23'08.26" (109.385628)	LONGITUDE = 109°23'07.44" (109.385400)

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

SCALE	DATE SURVEYED:	DATE DRAWN:
1" = 1000'	06-13-08	08-18-08
PARTY: L.K. D.D. C.C.	REFERENCES: G.L.O. PLAT	
WEATHER: WARM	FILE: KERR-McGEE OIL & GAS ONSHORE LP	

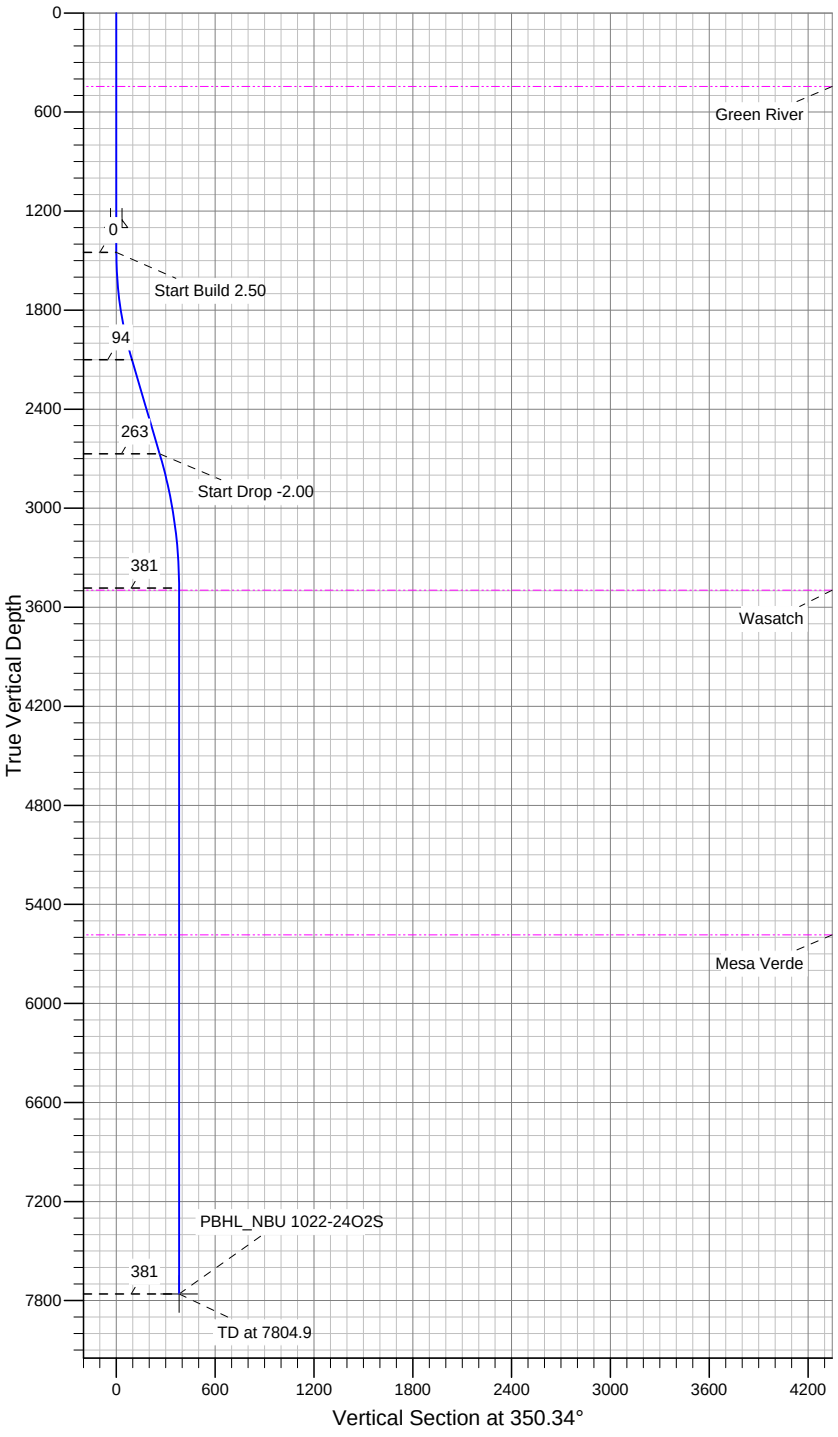
'API Well No: 43047504610000'

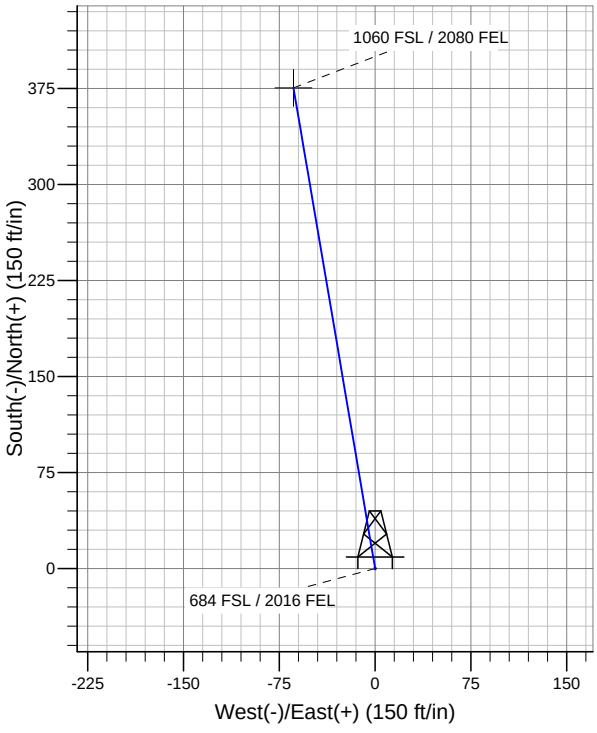
’APIWellNo:43047504610000’

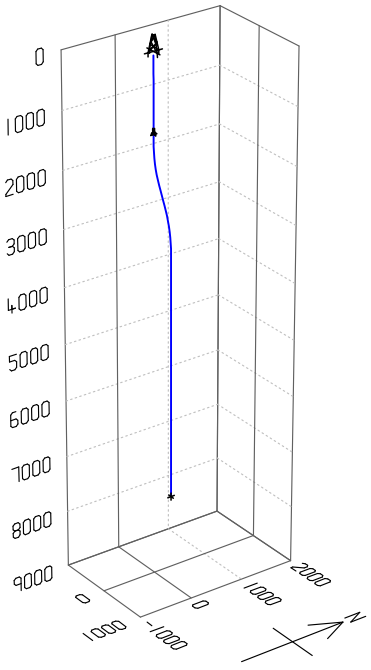
Anadarko Petroleum Corporation

Well Name: P_NBU 1022-24O2S
Surface Location: UINTAH_NBU 1022-24O PAD
NAD 1927 (NADCON CONUS) Universal Transverse Mercator (US Survey Feet)
UTAH - UTM (feet), NAD27, Zone 12N
Ground Elevation: 5023.0

Northing	Easting	Latitude	Longitude
14504283.08	2093077.48	39.928994°N	109.385400°W

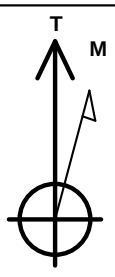






SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	1450.0	0.00	0.00	1450.0	0.0	0.0	0.00	0.00	0.0
3	2110.0	16.50	350.34	2100.9	93.0	-15.8	2.50	350.34	94.4
4	2703.5	16.50	350.34	2670.0	259.2	-44.1	0.00	0.00	262.9
5	3528.5	0.00	0.00	3483.6	375.5	-63.9	2.00	180.00	380.9
6	7804.9	0.00	0.00	7760.0	375.5	-63.9	0.00	0.00	380.9



Azimuths to True North
Magnetic North: 11.27°

Magnetic Field
Strength: 52539.7snT
Dip Angle: 65.89°
Date: 5/18/2009
Model: IGRF200510

ROCKIES - PLANNING

UTAH - UTM (feet), NAD27, Zone 12N
UINTAH_NBU 1022-24O PAD
P_NBU 1022-24O2S
P_NBU 1022-24O2S

Plan: Plan #1 05-18-09 ZJRA6

Standard Planning Report - Geographic

19 May, 2009

APC

Planning Report - Geographic

Database:	apc_edmp	**Local Co-ordinate Reference:**	Well P_NBU 1022-24O2S
Company:	ROCKIES - PLANNING	**TVD Reference:**	WELL @ 5023.0ft (Original Well Elev)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**MD Reference:**	WELL @ 5023.0ft (Original Well Elev)
Site:	UINTAH_NBU 1022-24O PAD	**North Reference:**	True
Well:	P_NBU 1022-24O2S	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	P_NBU 1022-24O2S		
Design:	Plan #1 05-18-09 ZJRA6		

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

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

Site UINTAH_NBU 1022-24O PAD

Site Position:		**Northing:**	14,504,243.92 ft	**Latitude:**	39.928886°N
From:	Lat/Long	**Easting:**	2,093,087.45 ft	**Longitude:**	109.385367°W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	1.04 °

Well P_NBU 1022-24O2S

Well Position	**+N/-S**	0.0 ft	**Northing:**	14,504,283.08 ft	**Latitude:**	39.928994°N
	+E/-W	0.0 ft	**Easting:**	2,093,077.48 ft	**Longitude:**	109.385400°W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,023.0 ft

Wellbore P_NBU 1022-24O2S

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/18/2009	11.27	65.89	52,540

Design Plan #1 05-18-09 ZJRA6

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	350.34

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,450.0	0.00	0.00	1,450.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,110.0	16.50	350.34	2,100.9	93.0	-15.8	2.50	2.50	0.00	350.34	
2,703.5	16.50	350.34	2,670.0	259.2	-44.1	0.00	0.00	0.00	0.00	
3,528.5	0.00	0.00	3,483.6	375.5	-63.9	2.00	-2.00	0.00	180.00	
7,804.9	0.00	0.00	7,760.0	375.5	-63.9	0.00	0.00	0.00	0.00	PBHL_NBU 1022-2

’APIWellNo:43047504610000’

APC

Planning Report - Geographic

Database:	apc_edmp	**Local Co-ordinate Reference:**	Well P_NBU 1022-24O2S
Company:	ROCKIES - PLANNING	**TVD Reference:**	WELL @ 5023.0ft (Original Well Elev)
Project:	UTAH - UTM (feet), NAD27, Zone 12N	**MD Reference:**	WELL @ 5023.0ft (Original Well Elev)
Site:	UINTAH_NBU 1022-24O PAD	**North Reference:**	True
Well:	P_NBU 1022-24O2S	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	P_NBU 1022-24O2S		
Design:	Plan #1 05-18-09 ZJRA6		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	14,504,283.08	2,093,077.48	39.928994°N	109.385400°W
445.0	0.00	0.00	445.0	0.0	0.0	14,504,283.08	2,093,077.48	39.928994°N	109.385400°W
Green River									
1,300.0	0.00	0.00	1,300.0	0.0	0.0	14,504,283.08	2,093,077.48	39.928994°N	109.385400°W
Surface Casing									
1,450.0	0.00	0.00	1,450.0	0.0	0.0	14,504,283.08	2,093,077.48	39.928994°N	109.385400°W
2,110.0	16.50	350.34	2,100.9	93.0	-15.8	14,504,375.82	2,093,059.96	39.929249°N	109.385456°W
2,703.5	16.50	350.34	2,670.0	259.2	-44.1	14,504,541.45	2,093,028.67	39.929706°N	109.385557°W
3,528.5	0.00	0.00	3,483.6	375.5	-63.9	14,504,657.37	2,093,006.77	39.930025°N	109.385628°W
3,540.9	0.00	0.00	3,496.0	375.5	-63.9	14,504,657.37	2,093,006.77	39.930025°N	109.385628°W
Wasatch									
5,629.9	0.00	0.00	5,585.0	375.5	-63.9	14,504,657.37	2,093,006.77	39.930025°N	109.385628°W
Mesa Verde									
7,804.9	0.00	0.00	7,760.0	375.5	-63.9	14,504,657.37	2,093,006.77	39.930025°N	109.385628°W

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL_NBU 1022-24C - plan hits target center - Point	0.00	0.00	7,760.0	375.5	-63.9	14,504,657.37	2,093,006.77	39.930025°N	109.385628°W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,300.0	1,300.0	Surface Casing	9-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,629.9	5,585.0	Mesa Verde		0.00	
445.0	445.0	Green River		0.00	
3,540.9	3,496.0	Wasatch		0.00	

NBU 1022-24O2S

Pad: NBU 1022-24O
Surface: 684’ FSL, 2,016’ FEL (SW/4SE/4)
BHL: 1,060’ FSL 2,080’ FEL (SW/4SE/4)
Sec. 24 T10S R22E

Uintah, Utah
Mineral Lease: UTU 00471

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	445’	
Birds Nest	841’	Water
Mahogany	1,286’	Water
Wasatch	3,496’	Gas
Mesaverde	5,585’	Gas
MVU2	6,359’	Gas
MVL1	7,175’	Gas
TVD	7,760’	
TD	7,805’	

3. Pressure Control Equipment (Schematic Attached)

Please refer to the attached Drilling Program.

4. Proposed Casing & Cementing Program:

Please refer to the attached Drilling Program.

5. Drilling Fluids Program:

Please refer to the attached Drilling Program.

6. Evaluation Program:

Please refer to the attached Drilling Program.

7. Abnormal Conditions:

Maximum anticipated bottomhole pressure calculated at 7,805' TD, approximately equals 4,620 psi (calculated at 0.59 psi/foot).

Maximum anticipated surface pressure equals approximately 2,886 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

8. Anticipated Starting Dates:

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

9. Variances:

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

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

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

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

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

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

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

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

The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 9-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

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

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

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

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

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

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

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

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

10. Other Information:

Please refer to the attached Drilling Program.

’APIWellNo:43047504610000’

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP			DATE	June 1, 2009		
WELL NAME	**NBU 1022-24O2S**			TD	7,760'	TVD	7,805' MD
FIELD	Natural Buttes	COUNTY	Uintah	STATE	Utah	ELEVATION	5,023' GL KB 5,038'
SURFACE LOCATION	SW/4 SE/4	684' FSL	2,016' FEL	Sec 24	T 10S	R 22E	
	Latitude:	39.928961	Longitude:	-109.386081		NAD 83	
BTM HOLE LOCATION	SW/4 SE/4	1,060' FSL	2,080' FEL	Sec 24	T 10S	R 22E	
	Latitude:	39.929992	Longitude:	-109.386308		NAD 83	
OBJECTIVE ZONE(S)	Wasatch/Mesaverde						
ADDITIONAL INFO	Regulatory Agencies: BLM (Minerals), BLM (Surface), Tri-County Health Dept.						

GEOLOGICAL			MECHANICAL		
LOGS	FORMATION TOPS	DEPTH	HOLE SIZE	CASING SIZE	MUD WEIGHT
		20'		14"	
			12-1/4"	9-5/8", 36#, J-55, LTC	Air mist

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

Green River @ **445'**

Top of Birds Nest @ **841**

Mahogany @ **1,286**

Preset f/ GL @ 1,490' MD

Note: 12.25" 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 @ **3,496'**

Mud logging program TBD

Cased hole logging program from TD - surf csg

7-7/8"	4-1/2" 11.6# I-80 or equivalent LTC csg	Water / Fresh Water Mud 8.3-11.6 ppg	

Mverde @ **5,585' TVD**

MVU2 @ **6,359' TVD**

MVU1 @ **7,175' TVD**

Max anticipated Mud required 11.6 ppg

TD @ **7,760' TVD 7,805' MD**

’APIWellNo:43047504610000’

KERR-McGEE OIL & GAS ONSHORE LP

DRILLING PROGRAM

CASING PROGRAM

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'						
						3520	2020	453000
SURFACE	9-5/8"	0 to 1,490	36.00	J-55	LTC	1.18	2.90	10.75
						7,780	6,350	201,000
PRODUCTION	4-1/2"	0 to 7,805	11.60	I-80	LTC	2.62	1.36	2.54

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

2) MASP (Prod Casing) = Pore Pressure at TD - (0.22 psi/ft-partial evac gradient x TD)
(Burst Assumptions: TD = 11.6 ppg) 0.22 psi/ft = gradient for partially evac wellbore
(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)
MASP 2,886 psi

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD
(Burst Assumptions: TD = 11.6 ppg) 0.59 psi/ft = bottomhole gradient
(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing*Buoy.Fact. of water)
MABHP 4,620 psi

CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500	Premium cmt + 2% CaCl	215	60%	15.60	1.18
Option 1			+ 0.25 pps flocele				
	TOP OUT CMT (1)	200	20 gals sodium silicate + Premium cmt	50		15.60	1.18
			+ 2% CaCl + 0.25 pps flocele				
	TOP OUT CMT (2)	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
SURFACE			**NOTE: If well will circulate water to surface, option 2 will be utilized**				
Option 2	LEAD	1500	65/35 Poz + 6% Gel + 10 pps gilsonite	360	35%	12.60	1.81
			+.25 pps Flocele + 3% salt BWOW				
	TAIL	500	Premium cmt + 2% CaCl	180	35%	15.60	1.18
			+ 0.25 pps flocele				
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
PRODUCTION	LEAD	2,995'	Premium Lite II + 3% KCl + 0.25 pps	280	40%	11.00	3.38
			celloflake + 5 pps gilsonite + 10% gel				
			+ 0.5% extender				
	TAIL	4,810'	50/50 Poz/G + 10% salt + 2% gel	1180	40%	14.30	1.31
			+.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.

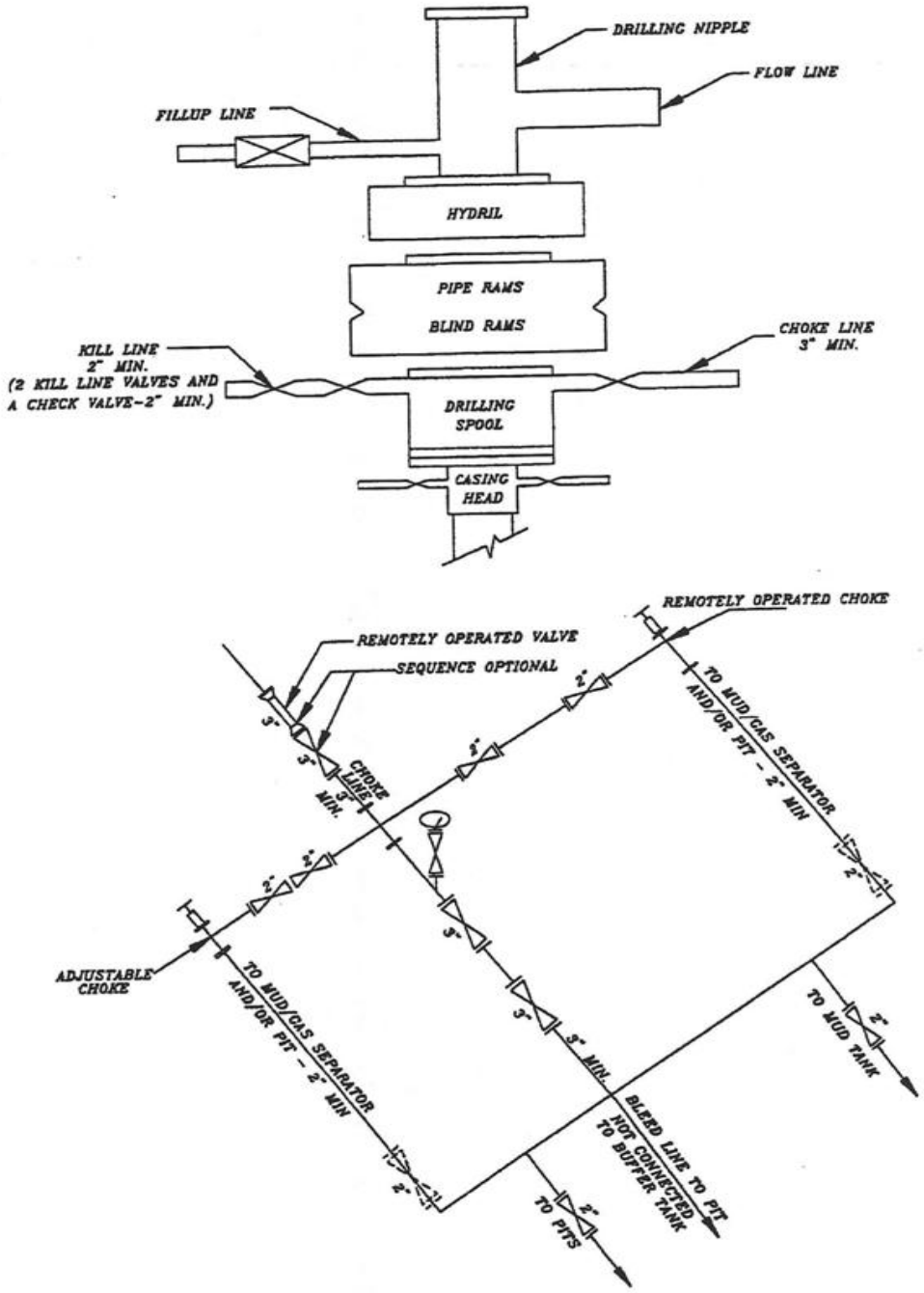
Surveys will be taken at 1,000' minimum intervals.

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

DRILLING ENGINEER: _____ **DATE:** _____
John Huycke / Grant Schluender

DRILLING SUPERINTENDENT: _____ **DATE:** _____
John Merkel / Lovel Young

EXHIBIT A
NBU 1022-24O2S



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

'APIWellNo:43047504610000'

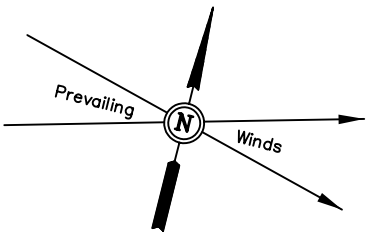
Kerr-McGee Oil & Gas Onshore LP

LOCATION LAYOUT FOR

NBU #1022-240, #1022-2402S,
#1022-24P2S & #1022-24P4S
SECTION 24, T10S, R22E, S.L.B.&M.
SW 1/4 SE 1/4

FIGURE #1

SCALE: 1" = 60'
DATE: 08-25-06
Drawn By: S.L.
REVISED: 07-10-08
REVISED: 08-18-08 C.C.
REVISED: 12-19-08 C.C.



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

Elev. Ungraded Ground at #1022-240 Location Stake = 5023.5'
Elev. Graded Ground at #1022-240 Location Stake = 5022.7'

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

'APIWellNo:43047504610000'

Kerr-McGee Oil & Gas Onshore LP

FIGURE #2

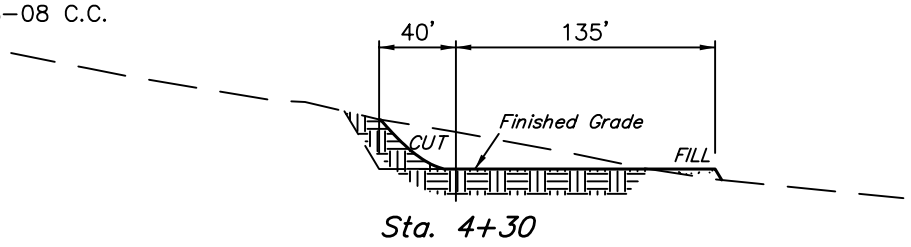
TYPICAL CROSS SECTIONS FOR

NBU #1022-240, #1022-2402S,
#1022-24P2S & #1022-24P4S
SECTION 24, T10S, R22E, S.L.B.&M.
SW 1/4 SE 1/4

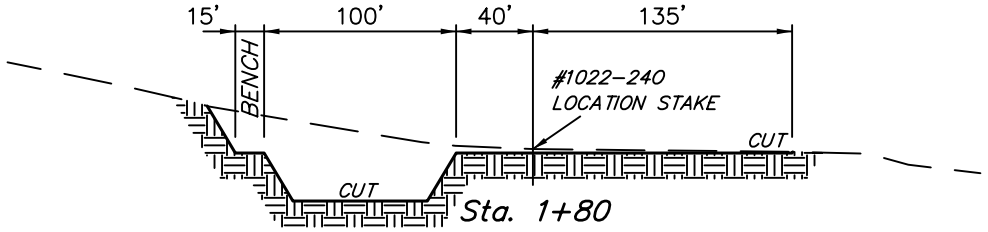
1" = 40'
X-Section
Scale
1" = 100'

DATE: 08-25-06
Drawn By: S.L.
REVISED: 07-10-08
REVISED: 08-18-08 C.C.

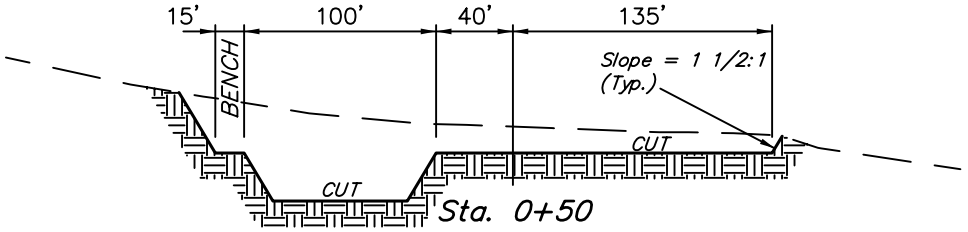
REGISTERED LAND SURVEYOR
No. 161319
ROBERT L. KAY
STATE OF UTAH



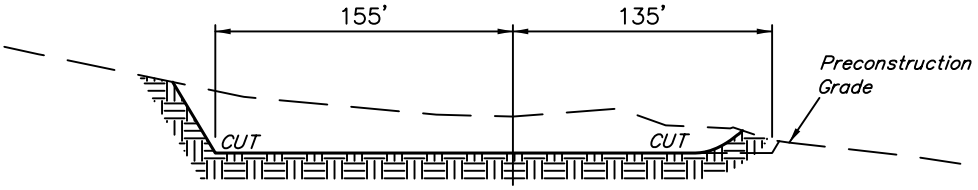
Sta. 4+30



Sta. 1+80



Sta. 0+50



Sta. 0+00

NOTE:
Topsoil should not be Stripped Below Finished Grade on Substructure Area.

APPROXIMATE YARDAGES

(6") Topsoil Stripping	=	2,670 Cu. Yds.
Remaining Location	=	28,490 Cu. Yds.
TOTAL CUT	=	31,160 CU.YDS.
FILL	=	1,610 CU.YDS.

* NOTE:
FILL QUANTITY INCLUDES 5% FOR COMPACTION

EXCESS MATERIAL	= 29,550 Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.)	= 7,570 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	= 21,980 Cu. Yds.

UINTAH ENGINEERING & LAND SURVEYING
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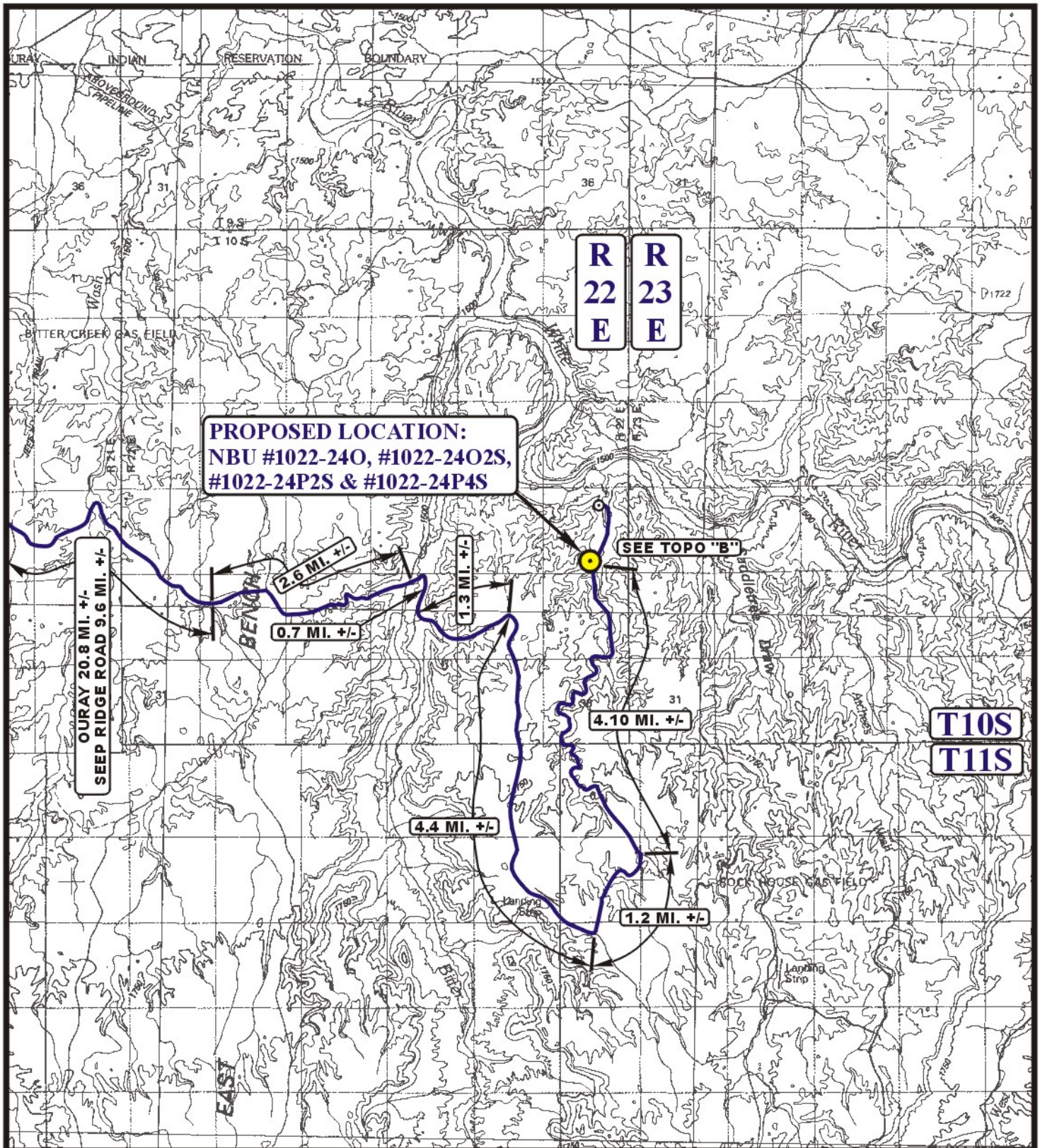
’APIWellNo:43047504610000’



LEGEND:

PROPOSED LOCATION

N

Kerr-McGee Oil & Gas Onshore LP

NBU #1022-24O, #1022-24O2S, #1022-24P2S & #1022-24P4S
SECTION 24, T10S, R22E, S.L.B.&M.
SW 1/4 SE 1/4

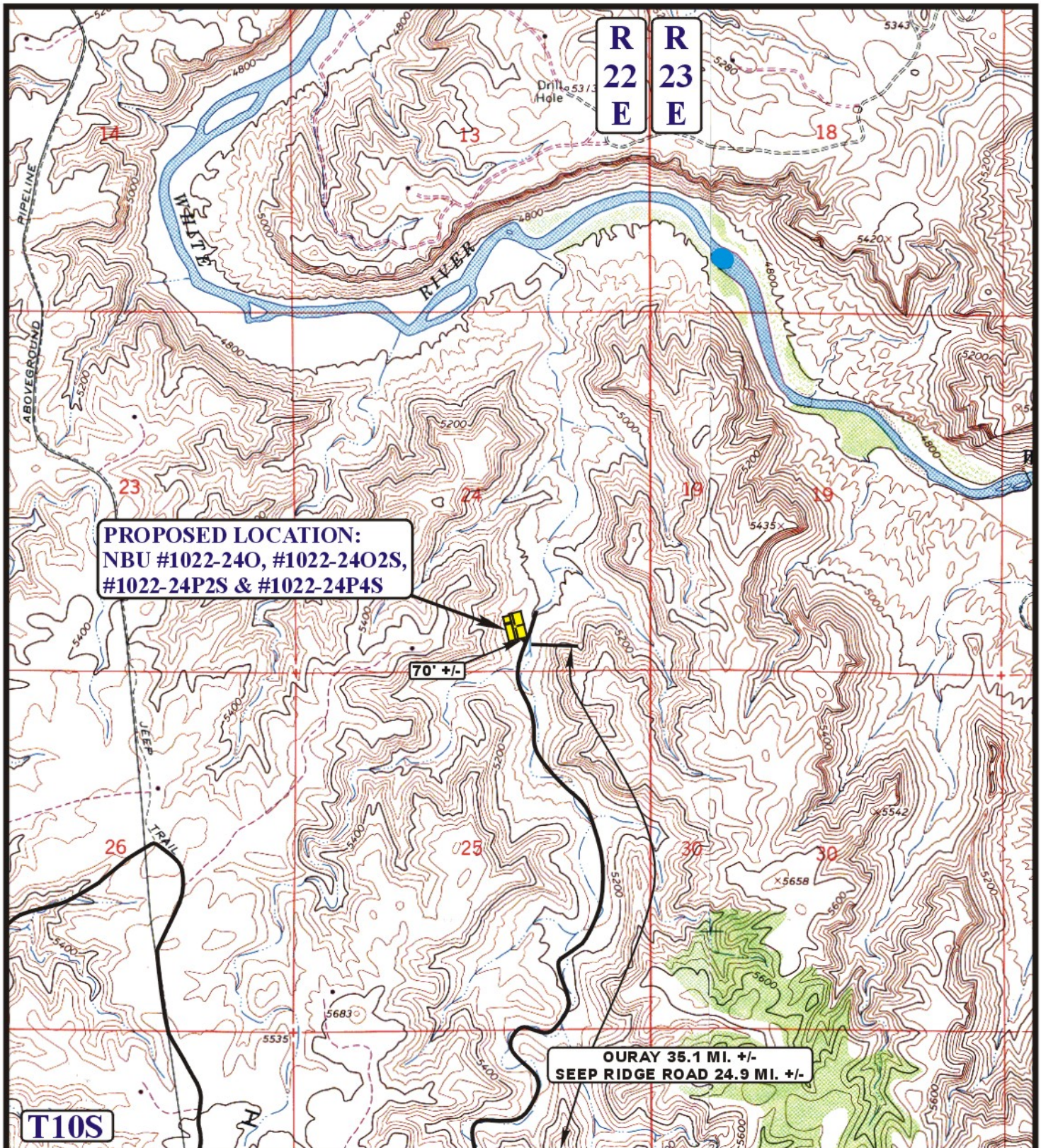
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP | 08 MONTH | 25 DAY | 06 YEAR

SCALE: 1:100,000 | DRAWN BY: A.A. | REV: 08-21-08 J.J.

A TOPO

’APIWellNo:43047504610000’



LEGEND:

EXISTING ROAD

PROPOSED ACCESS ROAD

Kerr-McGee Oil & Gas Onshore LP

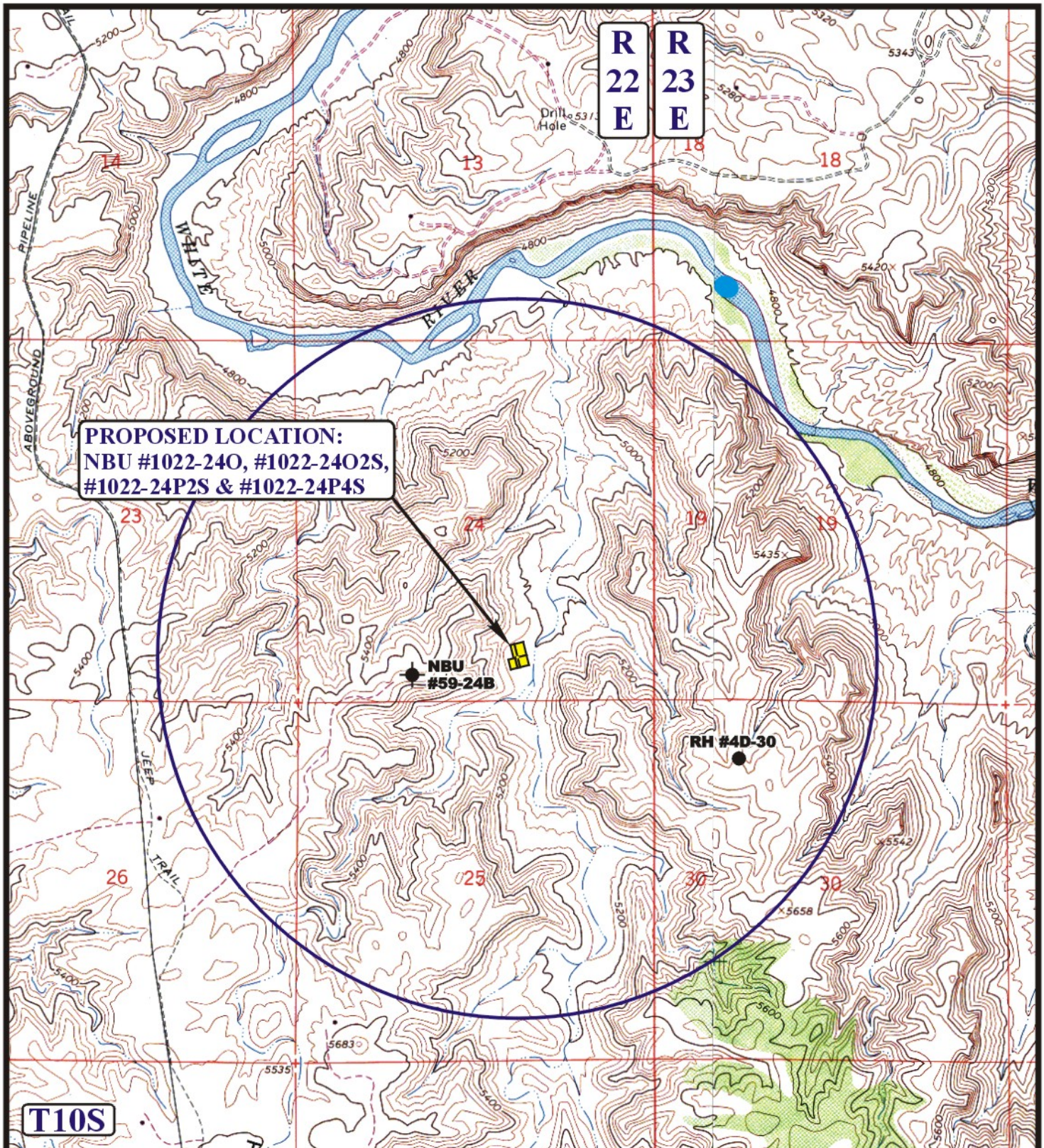
NBU #1022-24O, #1022-24O2S, #1022-24P2S & #1022-24P4S
SECTION 24, T10S, R22E, S.L.B.&M.
SW 1/4 SE 1/4

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

TOPOGRAPHIC MAP | 08 MONTH | 25 DAY | 06 YEAR | B TOPO

SCALE: 1" = 2000' | DRAWN BY: A.A. | REV: 08-21-08 J.J.

’APIWellNo:43047504610000’



LEGEND:

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

N

Kerr-McGee Oil & Gas Onshore LP

NBU #1022-24O, #1022-24O2S, #1022-24P2S & #1022-24P4S
SECTION 24, T10S, R22E, S.L.B.&M.
SW 1/4 SE 1/4

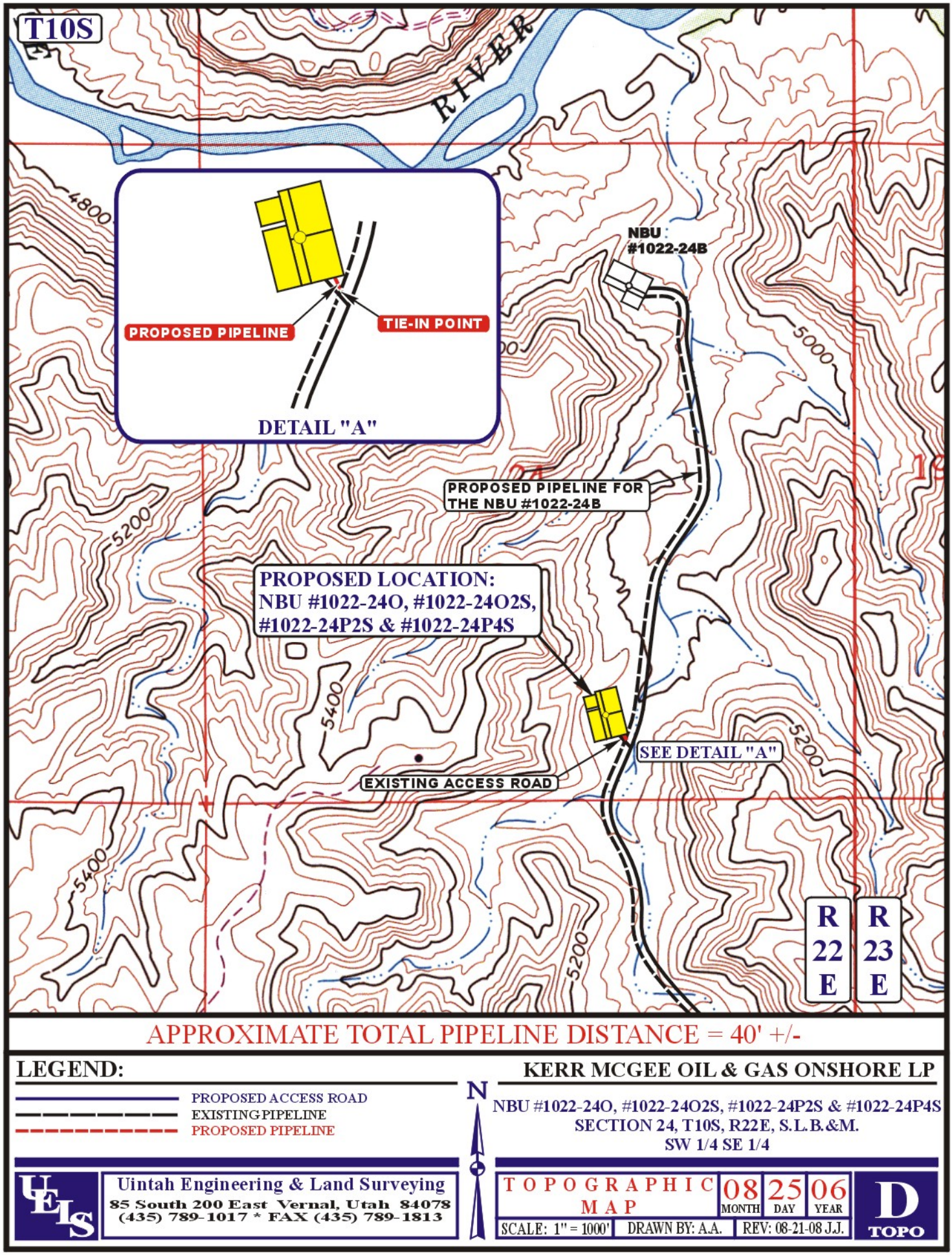
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP | 08 MONTH | 25 DAY | 06 YEAR

SCALE: 1" = 2000' | DRAWN BY: A.A. | REV: 08-21-08 J.J.

C TOPO

’APIWellNo:43047504610000’



APPROXIMATE TOTAL PIPELINE DISTANCE = 40' +/-

LEGEND:

PROPOSED ACCESS ROAD
EXISTING PIPELINE
PROPOSED PIPELINE

KERR MCGEE OIL & GAS ONSHORE LP

NBU #1022-24O, #1022-24O2S, #1022-24P2S & #1022-24P4S
SECTION 24, T10S, R22E, S.L.B.&M.
SW 1/4 SE 1/4

N

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

TOPOGRAPHIC MAP | 08 MONTH | 25 DAY | 06 YEAR | D TOPO

SCALE: 1" = 1000' | DRAWN BY: A.A. | REV: 08-21-08 J.J.

Kerr McGee Oil & Gas Onshore LP

NBU #1022-24O, #1022-24O2S, #1022-24P2S & #1022-24P4S

LOCATED IN UINTAH COUNTY, UTAH
SECTION 24, T10S, R22E, S.L.B.&M.

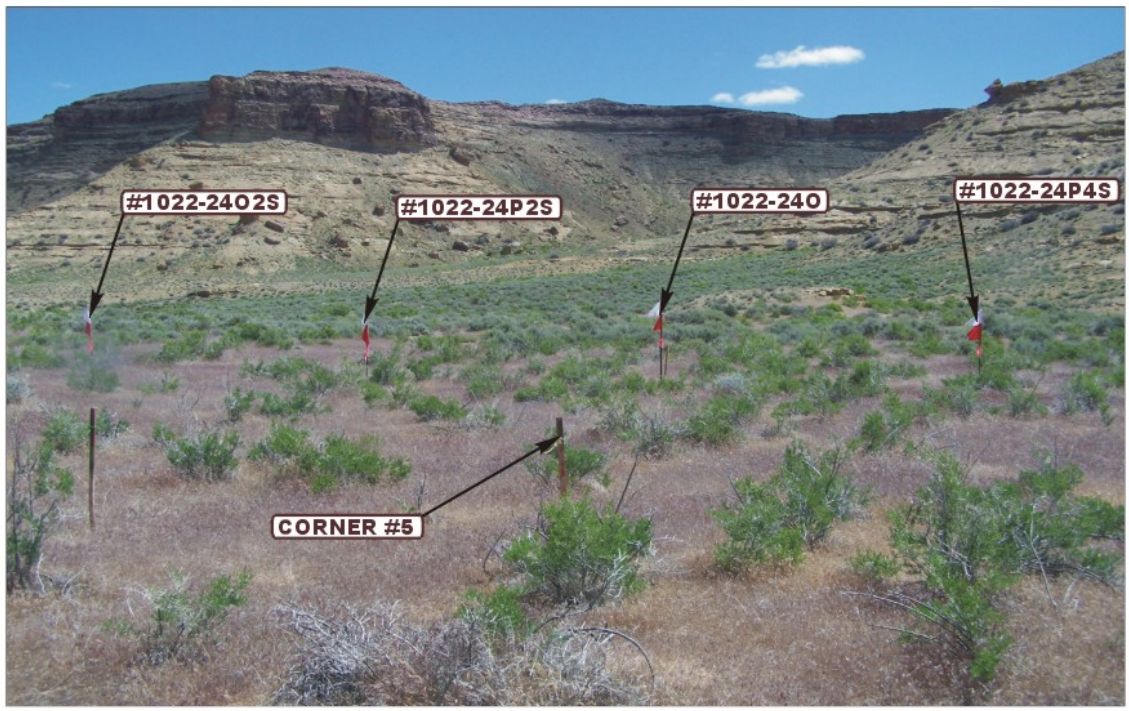


PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKE **CAMERA ANGLE: SOUTHWESTERLY**

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

LOCATION PHOTO	08 MONTH	21 DAY	08 YEAR	PHOTO
TAKEN BY: B.B.	DRAWN BY: J.J.	REVISED: 00-00-00		

Kerr-McGee Oil & Gas Onshore LP

NBU #1022-24O, #1022-24O2S, #1022-24P2S & #1022-24P4S
SECTION 24, T10S, R22E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 11.2 MILES ON THE SEEP RIDGE ROAD TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 9.6 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY, THEN NORTHEASTERLY DIRECTION APPROXIMATELY 2.6 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY, THEN SOUTHRELY DIRECTION APPROXIMATELY 0.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN LEFT AND PROCEED IN SOUTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 1.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTH; TURN RIGHT AND PROCEED IN A SOUTHERLY, THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 4.4 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN LEFT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 1.2 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHERLY DIRECTION APPROXIMATELY 4.1 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ACCESS TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY DIRECTION APPROXIMATELY 70’ TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 66.1 MILES.

NBU 1022-24O2S

Pad: NBU 1022-24O
Surface: 684' FSL, 2,016' FEL (SW/4SE/4)
BHL: 1,060' FSL 2,080' FEL (SW/4SE/4)
Sec. 24 T10S R22E

Uintah, Utah
Mineral Lease: UTU 00471

ONSHORE ORDER NO. 1

MULTI-POINT SURFACE USE & OPERATIONS PLAN

This Application for Permit to Drill (APD) is filed under the Notice of Staking (NOS) process as stated in Onshore Order No. 1 (OSO #1) and supporting Bureau of Land Management (BLM) documents. An NOS was submitted on November 12, 2008 showing the surface locations in SW/4 SE/4 of Section 24 T10S R22E.

An on-site meeting was held on March 5, 2009. Present were:

- Verlyn Pindell, Dave Gordon, Scott Ackerman, Cindy McKee – BLM;
- Michael Cook, Diane Coltharp, David Kay – Uintah Engineering & Land Surveying;
- Dennis Jensen – J&R Consulting Inc.
- Corey Stubbs – Stubbs & Stubbs
- Coby Sutton, Hal Blanchard, Clay Einerson, Jerry Jensen – Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee).

Directional Drilling:

In accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, this well will be directionally drilled in order to access portions of our lease which are otherwise inaccessible due to topography.

1. Existing Roads:

Refer to Topo Map A for directions to the location.

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

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

All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.

2. Planned Access Roads:

Approximately ±0.00 mi. (±0') of new access road is proposed. Please refer to the attached Topo Map B.

The upgraded and new portions of the access road will be crowned and ditched with a running surface of 18 feet and a maximum disturbed width of 30 feet. Appropriate water control will be installed to control erosion.

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

The access road was centerline flagged during time of staking.

Surfacing material may be necessary, depending upon weather conditions.

Surface disturbance and vehicular traffic will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.

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

Please refer to Topo Map C.

4. Location of Existing & Proposed Facilities:

The following guidelines will apply if the well is productive.

All production facilities will be located on the disturbed portion of the well pad and at a minimum of 25 feet from the toe of the back slope or the top of the fill slope.

A dike will be constructed completely around those production facilities which contain fluids (i.e., production tanks, produced water tanks, and/or heater/treater). These dikes will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank, and be independent of the back cut.

All permanent (on-site six months or longer) above the ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earthtone color to match one of the standard environmental colors, as determined by the five state Rocky Mountain Inter-Agency Committee.

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The required color is Shadow Gray, a non-reflective earthtone.

Any necessary pits will be properly fenced to protect livestock and prevent wildlife entry.

5. Location and Type of Water Supply:

Water for drilling purposes will be obtained from Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim #43-8496, Application #53617.

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.

6. Source of Construction Materials:

Surface and subsoil materials in the immediate area will be utilized.

Any gravel will be obtained from a commercial source.

7. Methods of Handling Waste Materials:

Drill cuttings will be contained and buried in the reserve pit.

Drilling fluids, including salts and chemicals, will be contained in the reserve pit. Upon termination of drilling and completion operations, the liquid contents of the reserve pit will be removed and disposed of at an approved waste disposal facility within 120 days after drilling is terminated.

The reserve pit will be constructed on the location and will not be located within natural drainage, where a flood hazard exists or surface runoff will destroy or damage the pit walls. The reserve pit will be constructed so that it will not leak, break, or allow discharge of liquids.

A plastic reinforced liner and felt will be used; it will be a minimum of 20 mil thick, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit. Any spills of oil, gas, salt water, or other noxious fluids will be immediately cleaned up and removed to an approved disposal site.

A chemical porta-toilet will be furnished with the drilling rig.

Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. No trash will be burned on location.

All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.

Any open pits will be fenced during the operations. The fencing will be maintained until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling of this well. Furthermore, no extremely hazardous substances, as defined in 40 CFR

355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the drilling of this well.
Any produced water from the proposed well will be contained in a water tank and will then be hauled By truck to one of the pre-approved disposal sites: RNI in Sec. 5 T9S R22E, NBU #159 in Sec. 35 T9S R21E, Ace Oilfield in Sec. 2 T6S R20E, MC&MC in Sec. 12 T6S R19E, Pipeline Facility in Sec. 36 T9S R20E, Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E, Bonanza Evaporation Pond in Sec. 2 T10S R23E.

8. Ancillary Facilities:

None are anticipated.

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

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

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

The reserve pit will be lined, and when the reserve pit is closed, the pit liner will be buried below plow depth.

All pits will be fenced according to the following minimum standards:

39 inch net wire will be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.

The net wire shall be no more than two inches above the ground. The barbed wire shall be three inches over the net wire. Total height of the fence shall be at least 42 inches.

Corner posts shall be cemented and/or braced in such a manner 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.

All wire shall be stretched, by using a stretching device, before it is attached to corner posts.

The reserve pit fencing will be on three sides during drilling operations, and on the fourth side when the rig moves off location. Pits will be fenced and maintained until cleanup.

Location size may change prior to the drilling of the well due to current rig availability. If the proposed location is not large enough to accommodate the drilling rig the location will be re-surveyed and a Form 9 shall be submitted.

10. Plans for Reclamation of the Surface:

Producing Location:

Immediately upon well completion, the location and surrounding area will be cleared of all unused tubing, materials, trash, and debris not required for production.

Immediately upon well completion, any hydrocarbons in the pit shall be removed in accordance with 43 CFR 3162.7-1.

A plastic, nylon reinforced liner will be used, it shall be torn and perforated before backfilling of the reserve pit.

Before any dirt work associated with location restoration takes place, the reserve pit shall be as dry as possible. All debris in it will be removed. Other waste and spoil materials will be disposed of immediately upon completion of operations.

The reserve pit and that portion of the location not needed for production facilities/operations will be recontoured to the approximate natural contours. The reserve pit will be reclaimed within 90 days from the date of well completion, weather permitting.

To prevent surface water(s) from standing (ponding) on the reclaimed reserve pit area, final reclamation of the reserve pit will consist of "mounding" the surface three feet above surrounding ground surface to allow the reclaimed pit area to drain effectively.

Upon completion of backfilling, leveling, and recontouring, the stockpiled topsoil will be spread evenly over the reclaimed area(s).

Dry Hole/Abandoned Location:

Abandoned well sites, roads, and other disturbed areas will be restored as near as practical to their original condition. Where applicable, these conditions include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions, and re-establishment of vegetation as specified.

All disturbed surfaces will be recontoured to the approximate natural contours, with reclamation of the well pad and access road to be performed as soon as practical after final abandonment. Reseeding operations will be performed after completion of other reclamation operations.

11. Surface/Mineral Ownership:

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

12. Other Information:

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, the approved Plan of Operations, and any applicable Notice of Lessees. The Operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.
The Operator will control noxious weeds along Rights-Of-Way for roads, pipelines, well sites, or other applicable facilities.

A Class III archaeological survey report and paleontological survey report is attached.

13. Lessee's or Operators' Representative & Certification:

Kathy Schneebeck Dulnoan
Regulatory Analyst
Kerr-McGee Oil & Gas Onshore LP
PO Box 173779
Denver, CO 80217-3779
(720) 929-6007

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

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

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

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

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

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

Danielle Piernot

Danielle Piernot

June 2, 2009
Date

CLASS I REVIEW OF KERR-MCGEE OIL AND GAS ONSHORE LP'S 73 PROPOSED NBU WELL LOCATIONS IN TOWNSHIP 10S, RANGE 22E UINTAH COUNTY, UTAH

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CLASS I REVIEW OF KERR-MCGEE OIL AND GAS ONSHORE LP’S 73 PROPOSED NBU WELL LOCATIONS IN TOWNSHIP 10S, RANGE 22E UINTAH COUNTY, UTAH

By:

Jacki A. Montgomery

Prepared For:

Bureau of Land Management
Vernal Field Office
and
School and Institutional
Trust Lands Administration

Prepared Under Contract With:

Kerr-McGee Oil and Gas Onshore LP
1368 South 1200 East
Vernal, Utah 84078

Prepared By:

Montgomery Archaeological Consultants, Inc.
P.O. Box 219
Moab, Utah 84532

MOAC Report No. 08-268

October 16, 2008

United States Department of Interior (FLPMA)
Permit No. 08-UT-60122

Public Lands Policy Coordination Office
Archaeological Survey Permit No. 117

INTRODUCTION

A Class I literature review was completed by Montgomery Archaeological Consultants, Inc. (MOAC) in October 2008 of Kerr-McGee Onshore's 73 proposed NBU well locations in Township 10S, Range 22E. The project area is situated south of the White River and southeast of the Ouray, Uintah County, Utah. The wells are designated NBU 1022-1I, 1022-1J, 1022-1N, 1022-1P, 1022-2A2T,1022-2A3S, 1022-2A4S, 1022-2B2S, 1022-2D, 1022-2F, 1022-2J1T, 1022-2J2S, 1022-2J3S, 1022-2O2S, 1022-03A2T, 1022-03A3S, 1022-03B2S, 1022-03B4T, 1022-03C1S, 1022-04H2CS, 1022-04H3BS, 1022-O3H2T, 1022-03L4BS, 1022-03L3DS, 1022-03M1DS, 1022-03M2DS, 1022-03J3T, 1022-03L2T, 1022-O3N4T, 1022-03P4T, 1022-03O3T, 1022-04K3S, 1022-04M1S, 1022-05H2BS, 1022-05H2CS, 1022-05E4S, 1022-05F2S, 1022-05K1S, 1022-05L1S, 1022-05IT, 1022-06DT, 1022-06ET, 1022-06FT, 1022-06I3AS, 1022-06J4CS, 1022-06O1BS, 1022-06P1CS, 1022-7AT, 1022-7A4BS, 1022-7A4CS, 1022-7B2DS, 1022-08GT, 1022-08IT, 1022-09AT, 1022-11F4S, 1022-11J3S, 1022-11K1T, 1022-11K2S, 1022-11K3S, 1022-11L2S, 1022-11L3S, 1022-11M1S, 1022-13H, 1022-24O, 1022-24O2S, 1022-24P2S, 1022-24P4S, 1022-25H, 1022-32B3S, 1022-32D1S, 1022-32D4AS, 1022-32D4DS, and 1022-35M.

The purpose of this Class I review is to identify, classify, and evaluate the previously conducted cultural resource inventories and archaeological sites in the project area in order to comply with Section 106 of 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Also, the inventory was implemented to attain compliance with a number of federal and state mandates, including the National Environmental Policy Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1990).

The project area in which Kerr-McGee Onshore's 73 proposed NBU well locations occur was previously inventoried by MOAC in 2007 for the Class III inventory of Township 10 South, Range 22 East (Montgomery 2008; U-07-MQ-1438b,s,p). A file search was completed by consulting MOAC's Class I existing data review of 459 square miles (293,805 acres) covering the Greater NBU study area between Bonanza and Ouray in Uintah County, northeastern Utah (Patterson et al. 2008). Kerr-McGee Oil & Gas Onshore LP proposes to explore and develop oil and natural gas resources throughout the area. Record searches were performed for this Class I project by Marty Thomas at the Utah State Historic Preservation Office (SHPO) on various dates between June 14, 2006 and January 27, 2007. The results of this Class I data review and Class III inventory indicated that no previously recorded sites occur in the current project area.

DESCRIPTION OF THE PROJECT AREA

The project area is situated west of the White River and both sides of Bitter Creek in the Uinta Basin. The legal description is Township 10S, Range 22E, Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 24, 25, 32, 36; Township 11S, Range 22E, Sections 1 and 2 (Figures 1, 2 and 3; Table 1). Land status is public land administered by the Bureau of Land Management (BLM) Vernal Field Office and School and Institutional Trust Lands Administration (SITLA) property.

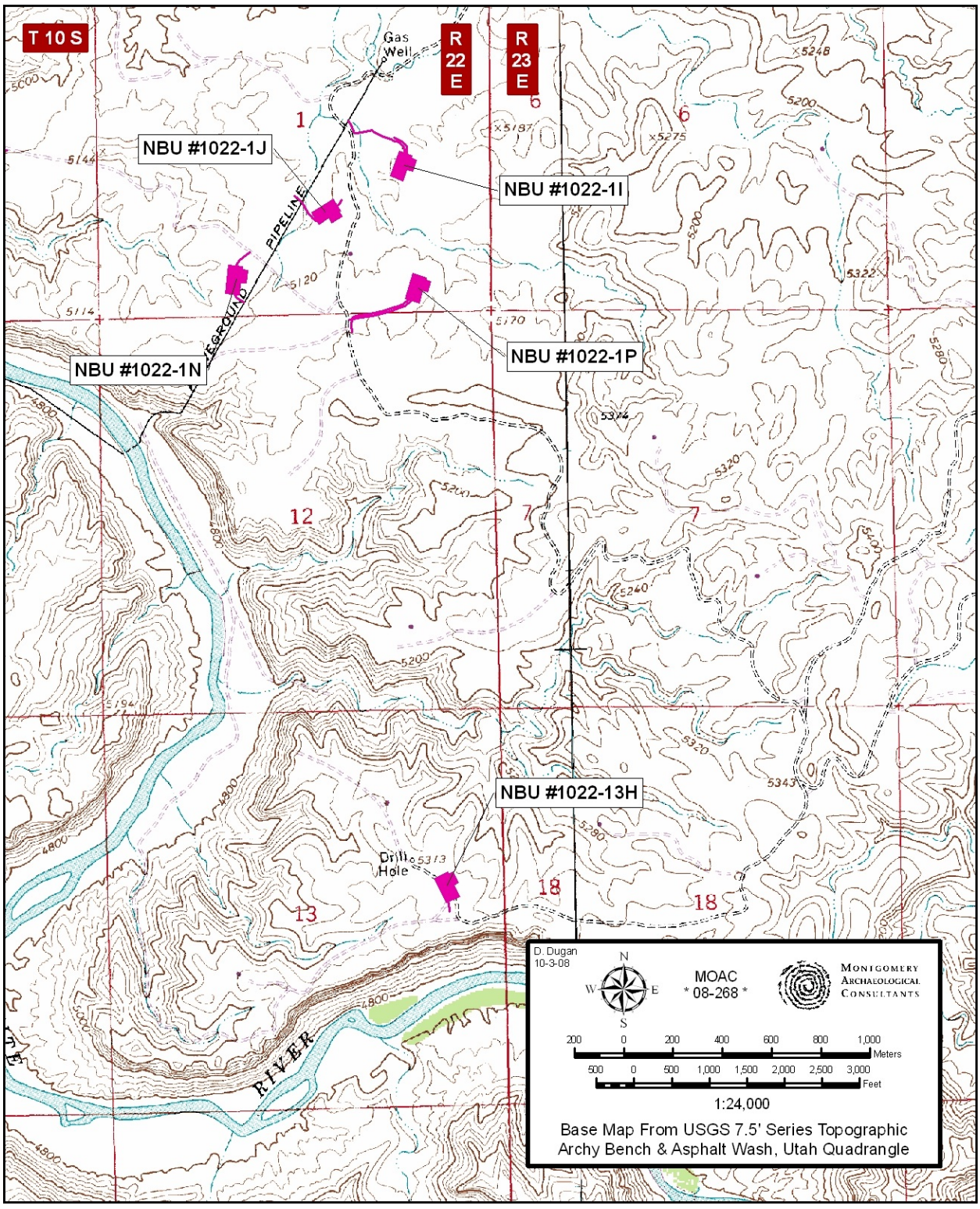

Figure 1. Location of Kerr-McGee Onshore’s Well Pads in T10S, R22E.

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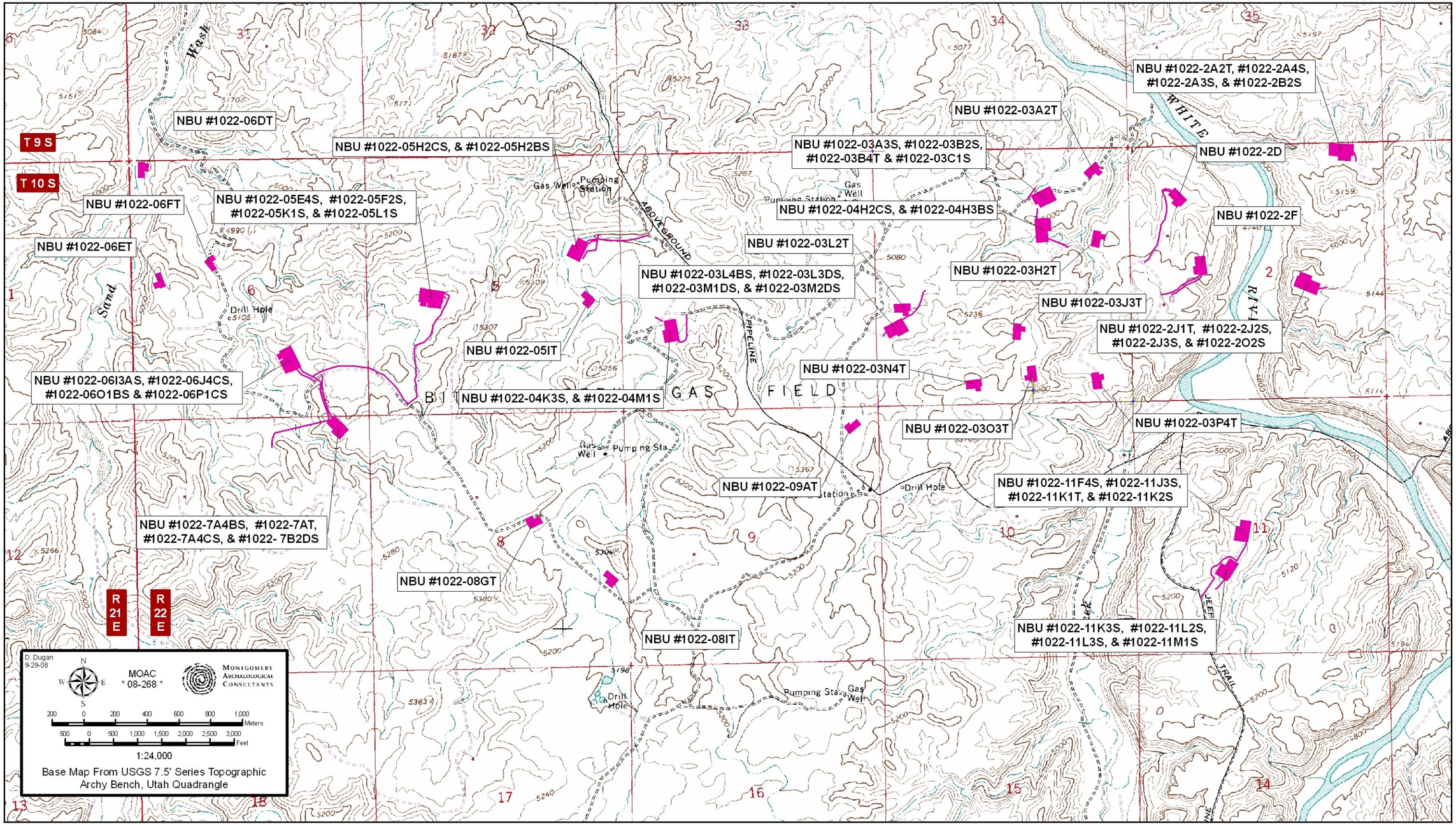

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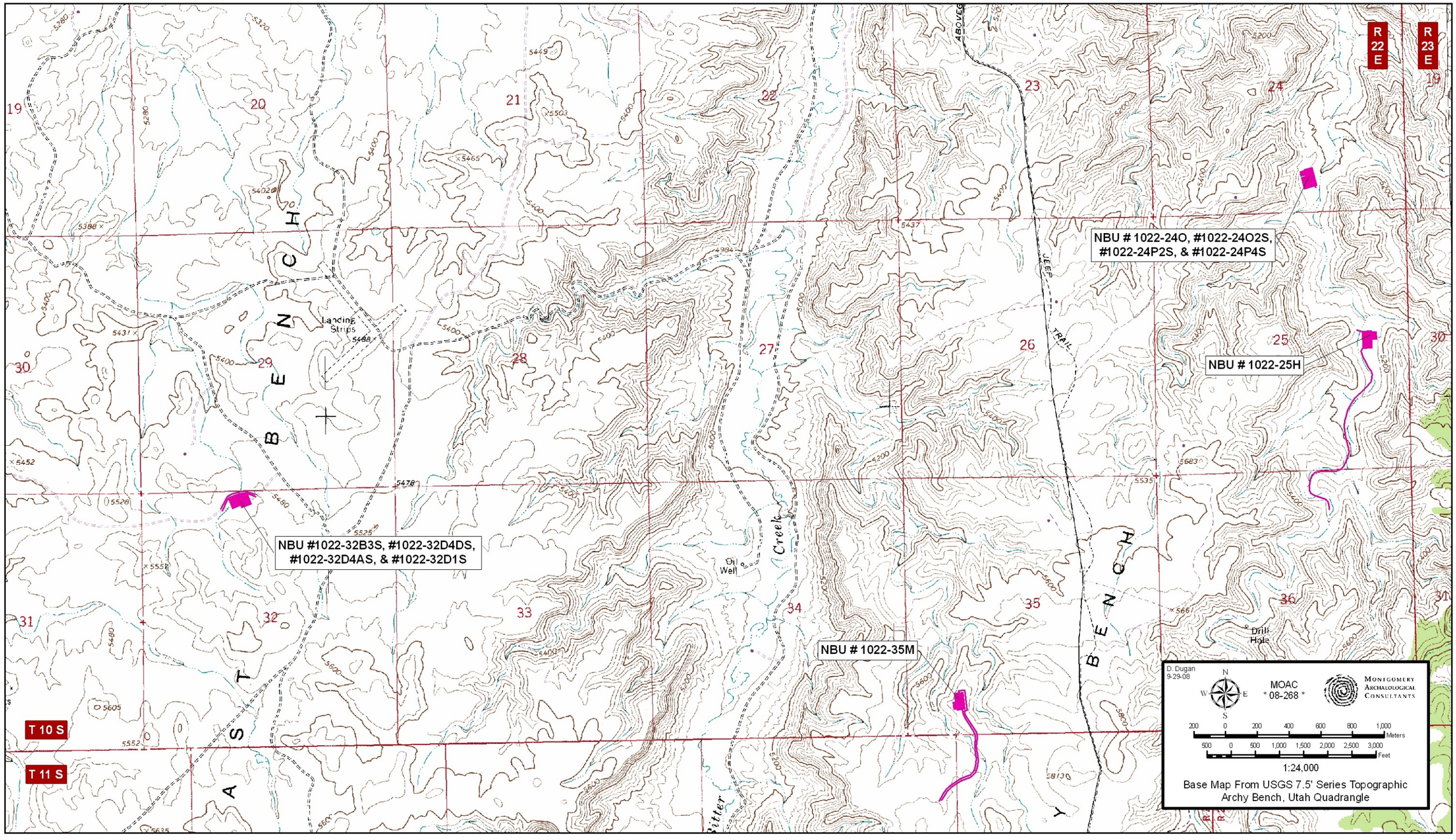

Table 1. Kerr-McGee Onshore’s 73 NBU Well Locations.

Well Designation	Legal Description	Access/Pipeline Corridor	Cultural Resources
NBU 1022-1I	T10S, R22E, Sec. 1 NE/SE	Pipeline: 1000 ft Access: 200 ft	None
NBU 1022-1J	T10S, R22E, Sec. 1 NW/SE	Pipeline: 400 ft Access: 50 ft	None
NBU 1022-1N	T10S, R22E, Sec. 1 SE/SW	Pipeline: 150 ft Access: 200 ft	None
NBU 1022-1P	T10S, R22E, Sec. 1 SE/SE	Pipeline: 1050 ft Access: 1000 ft	None
NBU 1022-2A2T, 1022-2A4S 1022-243S, 1022-2B2S	T10S, R22E, Sec. 2 NE/NE	Access: 200 ft	None
NBU 1022-2D	T10S, R22E, Sec. 2 NW/NW	Pipeline: 1600 ft	None
NBU 1022-2F	T10S, R22E, Sec. 2 SE/NW	Pipeline: 800 ft Access: 1000 ft	None
NBU 1022-2J1T, 1022-2J2S, 1022-2J3S, 1022-202S	T10S, R22E, Sec. 2 NW/SE	Pipeline: 200 ft	None
NBU 1022-03A2T	T10S, R22E, Sec. 3 NE/NE	None	None
NBU1022-03A3S, 1022-03B2S 1022-03B4T, 1022-03C1S	T10S, R22E, Sec. 3 NW/NE	None	None
NBU 1022-04H2CS 1022-04H3BS	T10S, R22E, Sec. 3 SW/NE	Pipeline: 450 ft Access: 200 ft	None
NBU 1022-03H2T	T10S, R22E, Sec. 3 SE/NE	None	None
NBU 1022-03J3T	T10S, R22E, Sec. 3 NW/SE	None	None
NBU 1022-03L2T	T10S, R22E, Sec. 3 NW/SW	None	None
NBU 1022-03L4BS, 1022-03L3DS 1022-03M1DS, 1022-03M2DS	T10S, R22E, Sec. 3 NW/SW	Pipeline: 800 ft Access: 100 ft	None
NBU 1022-03N4T	T10S, R22E, Sec. 3 SE/SW	None	None
NBU 1022-03O3T	T10S, R22E, Sec. 3 SW/SE	None	None
NBU 1022-03P4T	T10S, R22E, Sec. 3 SE/SE	None	None

Well Designation	Legal Description	Access/Pipeline Corridor	Cultural Resources
NBU 1022-04K3S, 1022-04M1S	T10S, R22E, Sec. 4 NW/SW	Pipeline: 200 ft Access: 600 ft	None
NBU 1022-05H2CS, 1022-05H2BS	T10S, R22E, Sec. 5 SE/NE	Pipeline: 800 ft Access: 1200 ft	None
NBU 1022-05E4S, 1022-05F2S 1022-05K1S, 1022-05L1S	T10S, R22E Sec. 5 NE/SW	Pipeline: 4800 ft Access: 100 ft	None
NBU 1022-05IT	T10S, R22E, Sec. 5 NE/SE	None	None
NBU 1022-06DT	T10S, R22E, Sec. 6 NW/NW	None	None
NBU 1022-06ET	T10S, R22E, Sec. 6 SW/NW	None	None
NBU 1022-06FT	T10S, R22E, Sec. 6 SE/NW	None	None
NBU 1022-06I3AS, 1022-06J4CS 1022-06O1BS, 1022-06P1CS	T10S, R22E, Sec. 6 SW/SE	Pipeline: 1400 ft Access: 450 ft	None
NBU 1022-7A4BS, 1022-7AT 1022-7A4CS, 1022-7B2DS	T10S, R22E, Sec. 7 NE/NE	Pipeline: 1300 ft Access: 1000 ft	None
NBU 1022-08GT	T10SS, R22E, Sec. 8 SW/NE	None	None
NBU 1022-08IT	T10S, R22E, Sec. 8 NE/SE	None	None
NBU 1022-09AT	T10S, R22E, Sec. 9 NE/NE	None	None
NBU 1022-11F4S, 1022-11J3S, 1022-11K1T, 1022-11K2S	T10S, R22E, Sec. 11 NE/SW	Pipeline: 1600 ft	None
NBU 1022-11K3S, 1022-11L2S, 1022-11L3S, 1022-11M1S	T10S, R22E, Sec. 11 NE/SW	Pipeline: 500 ft Access: 250 ft	None
NBU 1022-13H	T10S, R22E, Sec. 13 SE/NE	Pipeline: 100 ft	
NBU 1022-24O, 1022-24O2S 1022-24P2S, 1022-24P4S	T10S, R22E, Sec. 24 SW/SE	None	None
NBU 1022-25H	T10S, R22E, Sec. 25 SE/NE	Pipeline: 4000 ft	None

Well Designation	Legal Description	Access/Pipeline Corridor	Cultural Resources
NBU 1022-32B3S, 1022-32D4DS 1022-3-2D4AS, 1022-32D1S	T10S, R22E, Sec. 32 NE/NW	Pipeline: 900 ft Access: 800 ft	None
NBU 1022-35M	T10S, R22E, Sec. 35 SW/SW	Pipeline: 2750 ft Access: 2200 ft	None

Environmental Setting

The study area lies within the Uinta Basin physiographic unit, a distinctly bowl-shaped geologic structure (Stokes 1986:231). The Uinta Basin ecosystem is within the Green River drainage, considered to be the northernmost extension of the Colorado Plateau. The geology is comprised of Tertiary age deposits, which include Paleocene age deposits and Eocene age fluvial and lacustrine sedimentary rocks. The Uinta Formation, which is predominate in the project area, occurs as eroded outcrops (formed by fluvial deposited, stream laid interbedded sandstone and mudstone), and is known for its prolific paleontological localities. Specifically, the inventory area is situated south of the White River and on both sides of Cottonwood Wash. Elevation ranges from 5080 to 5680 ft asl. The project occurs within the Upper Sonoran Desert Shrub Association which includes sagebrush, shadscale, greasewood, mat saltbush, snakeweed, rabbitbrush, and prickly pear cactus. Modern disturbances include livestock grazing, roads, and oil/gas development.

CLASS I RESULTS AND RECOMMENDATIONS

The Class I literature review of Kerr-McGee Onshore's 73 proposed NBU well locations and associated pipeline/access corridors in Township 10S, Range 22E resulted in the location of no cultural resources. Based on the findings, a determination of "no adverse impact" is recommended for the undertaking pursuant to Section 106, CFR 800.

REFERENCES CITED

Montgomery, J. A.
2007 Cultural Resource Management Report for Kerr-McGee Oil and Gas Onshore LP's Greater NBU Blocks in Township 10 South, Range 22 East, Uintah County, Utah. Montgomery Archaeological Consultants, Moab, Utah. Report No. U-07-MQ-1438bsp.

Patterson, J. J., J. Fritz, K. Lower-Eskelson, R. Stash and A. Thomas
2008 NBU Class I Existing Data Review for Kerr-McGee Oil & Gas Onshore LP, Uintah County, Utah. Montgomery Archaeological Consultants, Moab, Utah.

Stokes, W. L.
1986 *Geology of Utah*. Utah Museum of Natural History and Utah Geological and Mineral Survey, Salt Lake City.

Paleontological Assessment for Anadarko Proposed Well Pad NBU 1022-24O (1022-24O2S, 1022-24P2S, 1022-24P4S) and Associated Infrastructure

Archy Bench Quadrangle

Uintah County, Utah

Prepared for

Anadarko Petroleum Corp.
and
Bureau of Land Management

Prepared by

SWCA Environmental Consultants

1/5/2009
SWCA #UT08-14314-43

Paleontological Assessment for Anadarko Proposed Well Pad NBU 1022-24O (1022-24O2S, 1022-24P2S, 1022-24P4S) and Associated Infrastructure

Prepared for

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Utah State Permit 07-363

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SWCA #UT08-14314-43

1/5/2009

TABLE OF CONTENTS

LIST OF TABLES

LIST OF MAPS

LIST OF FIGURES

LIST OF APPENDICES

1.0 PROJECT SUMMARY

- Paleontological assessment conducted at the request of Anadarko Petroleum Corp. and the Vernal Field Office of the Utah Bureau of Land Management. Performed by SWCA Environmental Consultants.
    - BLM Paleontological Resources Use Permit UT06-009C.

- Paleontological records search and field survey for the proposed well NBU 1022-24O (1022-24O2S, 1022-24P2S, 1022-24P4S) pad and 36.1 feet of proposed access road.

- Field survey of proposed well pad and access route completed on 11/06/2008 within T10S-R22E-Sec24 SWSE in Uintah County, Utah (USGS 7.5 Minute Archy Bench quadrangle).
    - 100-foot survey buffer around well pad.
    - 100-foot-wide corridors (50 ft on either side of existing pipelines or staked route).

- Geology
    - Geologic Units (mapped and observed):
        - Green River Formation, Parachute Creek Member (PFYC Class 4/5)
        - Lower unit of the Uinta Formation (PFYC Class 5)
        - Alluvium and colluvium (PFYC Class 2)

- Paleontology
    - One previously recorded locality within one-mile radius
    - One new non-significant fossil occurrence recorded: F1-081106-01
    - No new localities recorded.

- Recommendation
    - Recommend spot checking during construction of well pad.
    - This recommendation is based on (a) this area being poorly sampled due to limited activity (research or consulting) in the past, and (b) the presence of fossils on the surface, even if weathered and from being potentially stratigraphically higher. Note that spot checking will be recommended for two additional wells (1022-24B, 1022-25J3S) further to the north and south in this valley for the similar reasons but not the other two currently proposed wells.
    - If any subsurface bones or other potential fossils are encountered during construction anywhere within the project area, work in the immediate vicinity should cease, the BLM should be notified, and a qualified and BLM-permitted paleontologist should inspect the location *before* work continues.

- Distribution of Survey Report
    - Hard copies sent BLM Utah State Office, the BLM Vernal Field Office, and Anadarko Petroleum Corp. Hard copy and electronic copies on file at the SWCA Vernal office.

2.0 INTRODUCTION

At the request of Anadarko Petroleum Corp. and the Vernal Field Office of the Utah Bureau of Land Management (BLM), SWCA Environmental Consultants conducted a paleontological records search and field survey of a proposed well pad, access road, and pipeline for proposed well NBU 1022-24O (1022-24O2S, 1022-24P2S, 1022-24P4S).

The proposed well pad and access route are located in T10S-R22E-Sec24 SWSE in Uintah County, Utah (USGS 7.5 Minute Archy Bench quadrangle; See Map 1).

3.0 METHODS

The paleontological survey and evaluation procedures for this assessment were conducted according to BLM guidelines (IM 2009-011) under BLM Paleontological Resources Use Permit UT06-009C.

3.1 Personnel

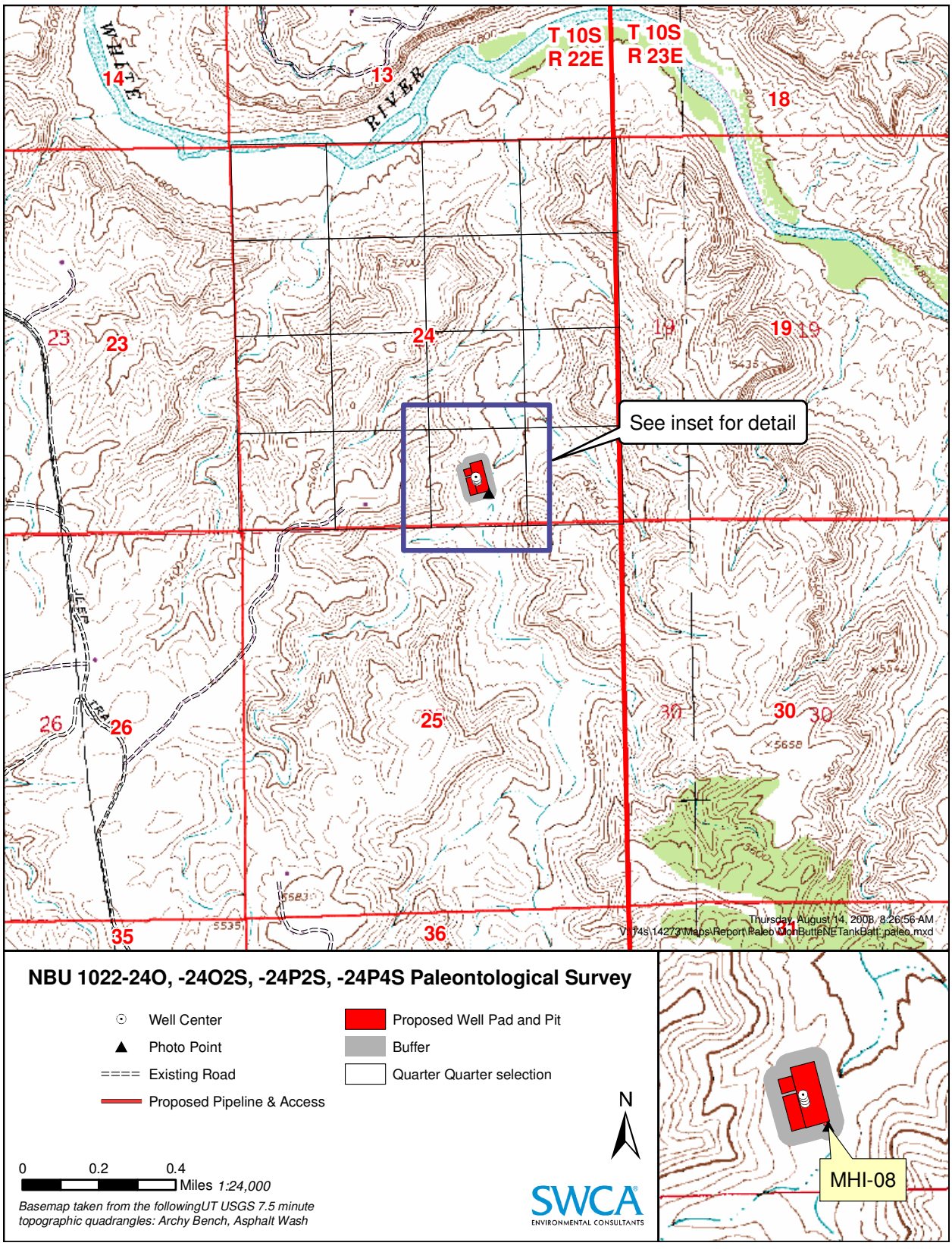
Wendi Shaver, M.S. and Margaret Imhof, M.S. completed the field survey of the project. Margaret Imhof, M.S., conducted the file searches and prepared the final report. Justin Strauss, M.S. assisted in preparation of the final report. Dr. Paul C. Murphey, Principal Investigator on the Utah State permit under which this survey was conducted, supervised the research, field work, and reviewed the final report. Rachel Johnson produced the maps.

3.2 Records Search Methods

Records searches were conducted in order to 1) determine whether any previously recorded fossil localities occur within the project areas; 2) assess the potential for disturbance of these localities during construction; and 3) evaluate the paleontological sensitivity within the area of potential effect (APE). Electronic paleontological records maintained by the Utah Geological Survey, Paleontology Department were searched in order to determine the presence of previously documented fossil localities within the project APE.

3.3 Resource Assessment Methods

The paleontological sensitivity of each geologic unit to be impacted was evaluated using the Potential Fossil Yield Classification System (PFYC), originally developed by the U.S. Forest Service (1996) and recently significantly revised and adopted as policy by the BLM (BLM IM 2008-009) to replace its previous resource management classification system (BLM *Conditions 1-3*). The PFYC utilizes the close relationship between paleontological resource occurrences and the geologic units in which they are preserved. The PFYC designations for the affected geologic units for this project were assigned by the BLM Regional Paleontologist.



Map 1. Location of Anadarko Petroleum Corp. proposed well NBU 1022-24O (1022-24O2S, 1022-24P2S, 1022-24P4S) and associated infrastructure.

3.4 Field Methods

The survey was designed to 1) determine the surface presence of previously unknown significant vertebrate fossils and/or noteworthy occurrences of invertebrate, plant, or trace fossils; 2) evaluate the condition of documented paleontological localities and the potential for disturbance of these localities during the proposed construction; and 3) evaluate potential adverse impacts to subsurface paleontological resources during construction.

The paleontological field survey consisted of 100-foot-wide buffer around well pad and a 100-ft corridor (50-ft on either side) of the access road and pipeline. The area of potential effect was inspected for 1) surface fossils; 2) exposures of potentially fossiliferous rocks; and 3) areas in which fossiliferous rocks will be exposed or otherwise impacted during construction. The survey was 100% pedestrian of outcrop.

A paleontological locality documents the location, identification and description of a scientifically significant fossil(s) along with its geologic context. In addition, however, we record the presence of highly weathered, fragmentary or otherwise unidentifiable fossils as non-significant fossil occurrences which typically consist of fragments of turtle shell, unidentifiable bone and tooth fragments, and unidentifiable plant fossils in order to communicate the presence of fossils in a manner that does not trigger mitigation measures. Typically, fossil locality forms and maps are provided only for significant fossil localities which are either collected at the time of discovery or recommended for avoidance and/or later mitigation.

3.5 Distribution of Data

Copies of this report will be submitted to BLM and Anadarko Petroleum Corp. Any newly recorded locality data will be submitted to the Utah Geological Survey, State Paleontologist. A hard-copy file will be retained at SWCA Environmental Consultants, Vernal office, along with relevant field notes, maps, and other data. No fossils were collected during this project.

4.0 GEOLOGY AND PALEONTOLOGY

The East-West trending Uinta Mountains were uplifted during the Rocky Mountain-forming Laramide orogeny (Rasmussen et al. 1999) in the Paleocene Epoch (Stokes 1986), exposing the Paleozoic-age rocks in the core of the mountains and Mesozoic-age rocks along their flanks. In conjunction with the uplift, the southerly-adjacent synclinal Uinta Basin formed (Rasmussen et al. 1999). From the Paleocene to the middle Eocene, sediments from freshwater lakes and later from river channels, river deltas and floodplains filled the basin with sediments and accompanying fossils (Stokes 1986, Townsend 2004). From oldest to youngest, these rock units include the Wasatch, Green River, Uinta and Duchesne River formations. Collectively, these units represent the primary source of middle Eocene-aged vertebrate, invertebrate and plant fossils from Utah and Colorado, and are thus of great scientific importance. Locally, Pleistocene- and Holocene-aged sediments deposited by rivers, streams, gravity, and wind overlie the bedrock geologic units.

The project APE contains one mapped geologic unit (Cashion 1973): Eocene-age Green River Formation, Parachute Creek Member. Two additional geologic units were observed: Uinta Formation, Lower Member and Holocene Alluvium and Colluvium.

4.1 Uinta Formation

In the Uinta Basin, the Uinta Formation consists of greenish-gray, reddish-brown, yellow, grayish-orange, and purple fluvial and lacustrine shale marlstone, siltstone, and sandstone beds which are locally tuffaceous (Cashion 1973; Dane 1954; Rowley et al. 1985). The Uinta Formation is scientifically important because it is the stratotype for the Uintan NALMA and represents nearly all of Uintan time (46.5-40.0 Ma) (Murphey and Evanoff 2007; Townsend 2004; Walsh 1996). In general terms, the Uinta Formation conformably overlies and interfingers with the Green River Formation in the Uinta and Piceance Creek Basins, and is overlain by the Duchesne River Formation in the Uinta Basin. Despite its historical and scientific importance to vertebrate paleontology, the detailed stratigraphy of the Uinta Formation is complex and not yet fully understood.

The Uinta Formation was named by O. C. Marsh in 1871. Based on lithologic differences, O. A Peterson (as quoted in Osborn 1895:72-74) was the first worker to subdivide the Uinta Formation, from stratigraphically lowest to highest, into Horizons A, B, and C. The Wood Committee (Wood et al. 1941) formally divided the Uinta Formation into the older Wagonhound Member (Horizons A and B) and younger Myton Member (Horizon C), and discarded the older tripartite subdivision. However, the older terminology is still widely used because 1) the Wagonhound Member combined two lithologically distinct units: the sandstone-dominated Uinta A, which contains few fossils, and the mudstone and claystone-dominated Uinta B, which contains locally abundant fossils; and 2) fossil collections made prior to the recommendations of the Wood Committee were made using the tripartite scheme. The specific location of the subunit boundaries has shifted slightly with almost each successive publication on the stratigraphy of the area, resulting in a well-understood broad picture for which the stratigraphic details are hazy and the biostratigraphy unresolved (Walsh 1996). The most recent stratigraphic and paleontologic work in the Uinta Formation has included important efforts to better characterize and document the lithostratigraphy, biostratigraphy paleoecology, and paleoenvironments of the Uinta Formation and time-equivalent strata (see Rasmussen et al. 1999; Townsend 2004; Walsh 1996; Townsend et al. 2006).

Approximately 31 percent of modern mammalian families appear in the fossil record of North America during the Uintan NALMA (Black and Dawson 1966). Many of the new taxa are thought to have either originated in North America or emigrated in from Asia (Black and Dawson 1966; Stucky 1992; Beard 1998). The distinctive shift in the composition and diversity of mammalian communities which occurred during the Uintan is marked by the disappearance or decline of more archaic groups such as condylarths, some types of insectivores and marsupials, plesiadapoids, and oxyaenid creodonts. At the same time, more modern groups including lagomorphs, selenodont artiodactyls, advanced carnivorans, and non-ischyromyine rodents began to dominate mammalian communities. See Rasmussen et al. (1999), Townsend (2004), Murphey and Daitch (2007), and Walsh (1996) for further discussions of the mammalian faunas and biostratigraphy of the Uinta Formation.

4.2 Green River Formation

Exposures of the early to middle Eocene-age Green River Formation are present throughout a large geographic area encompassing northeastern Utah, northwestern Colorado, and southwestern Wyoming. In the Uinta and Piceance Creek basins, the Green River Formation conformably

overlies and intertongues with the fluvial Wasatch (DeBeque) Formation and is conformably overlain by and intertongues with the Uinta Formation (Hail 1992).

Although the stratigraphic nomenclature and subdivisions of the Green River Formation in the Uinta Basin are complex because of the formation's geometry, stratigraphy, and facies relationships, two members are recognized in this report: the Douglas Creek and Parachute Creek members (Cashion 1967; Cashion and Donnell 1974). Originally, the Green River subdivisions included the Douglas Creek, Parachute Creek, and Evacuation Creek members, as named by Bradley (1931). Later stratigraphic work (Cashion and Donnell 1974) demonstrated that at its type locality in the eastern Uinta Basin, the Evacuation Creek Member is equivalent to the upper part of the Parachute Creek Member at its type locality in the Piceance Creek Basin. Furthermore, the Evacuation Creek Member as previously used by most workers in the Piceance Creek Basin is equivalent to the lower part of the Uinta Formation in the Uinta Basin. Hence, the term Evacuation Creek was abandoned and replaced by the Parachute Creek Member in the eastern Uinta Basin, and by the Uinta Formation in the Piceance Creek Basin (Cashion and Donnell 1974).

In summary, the uppermost member of the Green River Formation in the Uinta Basin, the Evacuation Creek Member, was assigned to the Parachute Creek Member, and the name Evacuation Creek has been abandoned (Cashion and Donnell 1974). In contrast, Bryant et al (1989) and Witkind (1995) adopted the terms "Upper" and "Lower" members. However, the names Douglas Creek and Parachute Creek are used in this report because they are applicable to much of the Uintah and Piceance Creek basins, most fossil collections with associated members utilize the nomenclature of Bradley's stratigraphic scheme.

Marker beds within the Green River Formation have been treated slightly differently by workers in subdividing the formation. Cashion (1967) used the Horse Bench Sandstone bed as the boundary between the Parachute Creek Member and overlying Evacuation Creek Member, and the Mahogany oil shale bed as the boundary between the Douglas Creek Member and overlying Parachute Creek Member. Bryant et al. (1989) and Witkind (1995) placed the Mahogany oil shale bed at the base of the Upper member of the Green River Formation, and the Horse Bench Sandstone in the approximate middle of the Upper member, making the Upper member roughly equivalent with the Parachute Creek and Evacuation Creek members of Bradley (1931) and Cashion (1967, 1973). For rocks exposed in the western part of the Uinta Basin, the Sandstone and Limestone facies of Bryant et al. (1989) and Witkind (1995) is a transitional facies that lies in between the Uinta Formation and the underlying Saline facies. The Saline facies intertongues with the overlying Sandstone and Limestone facies (Witkind 1995).

The Green River Formation is composed of beds of oil shale, marlstone, shale, siltstone, and sandstone; oolitic, algal, and ostracodal limestone; and tuff. Sediments were deposited in a variety of open- and marginal-lacustrine environments (Cole and Picard 1978), characterized by thin, even, continuous beds of marlstone, oil shale, siltstone, and tuff deposited in deeper waters, and massive shallow-water laterally discontinuous sandstone and limestone beds (Cashion 1967).

Accumulations of fossils occur in the Green River Formation throughout its distribution, although quality of preservation, abundance, and diversity varies both geographically and stratigraphically. Paleontological research focused on the Green River Formation continues to document the paleoecology (paleoenvironments and paleocommunities) of the early and middle Eocene of the Rocky Mountain region, and newly discovered fossils continue to add to this important fossil

record. Common fossil types known generally from this unit include ichnofossils (Moussa 1968); an abundant and diverse flora (MacGinitie 1969); a large assemblage of arthropods, including insects (Coddington 1993; Leggitt and Cushman 2001; Hodgkins and Smith 2002); mollusks (Kuchta 2000); and abundant vertebrates, especially fish (Grande 2001; Carvalho et al. 2003), birds (Leggitt and Buchheim 1998; Leggitt et al. 2001), and mammals (Froehlich and Breithaupt 1998; Zonneveld et al. 2000; Gunnell 2003). According to Grande (1984), fossil insects and plants are the most common fossils from the Green River Formation in the Uinta Basin in Utah. Vertebrate fossils, including fishes from the Green River Formation in the Uinta Basin, are less studied (and less abundant) than those from the Green River Formation in Wyoming.

4.2.1 Parachute Creek Member

Bradley (1931) named the Parachute Creek Member after rocks of the Green River Formation along Parachute Creek in the Piceance Creek Basin, Garfield County, Colorado. In northeastern Utah, the Parachute Creek Member is composed of sediments that were mostly deposited in deepwater facies, typically consisting of thin-bedded marlstone, oil shale, siltstone, sandstone, and tuff (Cashion 1967). Near the Utah-Colorado border, measured thicknesses of the Parachute Creek Member range from approximately 615 ft along the White River to 365 ft at Evacuation Creek. The Mahogany oil shale bed, the most widespread Green River Formation stratigraphic marker in the Piceance Creek and Uinta Basins, occurs within the Parachute Creek Member.

Fossils of the Parachute Creek Member include a diversity of plants (leaves, fruits, seeds, and wood); an ichnofossil record consisting of bird, mammal, and insect tracks (Moussa 1968); an inferred spider web with spiders and insects (Coddington 1992); bird feathers (unpublished paleontological data, University of Colorado Museum, compiled in 2002); and fish. Recently, researchers from the Denver Museum of Nature and Science have been collecting well-preserved plant fossils from Parachute Creek Member quarries in the southeastern Uinta Basin, some of which are on display in the Utah Field House of Natural History Museum in Vernal.

This member has been designated as PFYC Class 4/5 by the BLM (Murphey and Daitch 2007).

4.3 Holocene Alluvium and Colluvium

Holocene-age alluvium is composed primarily of poorly consolidated silt, sand, and cobbles derived from eroded bedrock and older alluvial and colluvial deposits. These sediments are deposited by rivers and streams in stream channels and on active alluvial floodplains.

Holocene-age colluvium consists of earthflow, mudflow, landslide, and talus deposits (Cashion 1973, Rowley et al. 1985). Both colluvium and landslide deposits consist of rock material that has moved under the influence of gravity. Lithologies of these units vary and are dependent upon the type of source rock. They form on unstable slopes and on older colluvial deposits. In general, colluvium is much less likely to contain well-preserved animal and plant remains than intact native sediments. Surficial deposits of Holocene age such as alluvium and colluvium may contain the unfossilized remains of modern taxa but are too young to contain in situ fossils.

These deposits have been designated as PFYC Class 2 by the BLM (Murphey and Daitch, 2007).

5.0 RESULTS

The following section presents the results of the records search and field survey conducted for the Anadarko Petroleum Corp. well pad and access road.

5.1 Previously Documented Localities

One previously documented fossil locality is known within a one-mile radius of the project area. Further information on all the previously recorded localities within a one-mile radius is provided in Appendix A.

5.2 Paleontological Sensitivities

The paleontological sensitivities of the one mapped and two observed geologic units (Cashion 1973) in the project APE have been classified according to the PFYC by the BLM and are summarized in Table 1.

Table 1. Paleontological Sensitivities of Geologic Units Within the Project APE.

Geologic Unit	Map Symbol*	Age	Typical Fossils	PFYC
Green River Formation, Parachute Creek Member	Tgp	Eocene	Abundant, diverse and well preserved plants (leaves, fruits, seeds, and wood); ichnofossil record (bird, mammal and insect tracks); invertebrate remains (spider and web); vertebrate remains (bird feathers, fish fossils)	Class 4/5
Uinta Formation, lower part**	Tul	Eocene	Locally abundant plants (leaves, seeds, wood); invertebrates (insects, mollusks); and a highly diverse and scientifically important vertebrate fauna (reptiles, mammals)	Class 5
Alluvium and colluvium	Qa	Holocene	Unfossilized remains of modern taxa, too young to contain in situ fossils.	Class 2

* Cashion 1973

5.3 Field Survey

NBU 1022-24O	**Well Pad, Access Road, Pipeline**		
Location:	T10S-R22E-Sec24 SWSE		
Surveyed on:	11/06/2008	**By:**	Wendi Shaver, Margaret Imhof
Survey Remarks:	100% pedestrian survey of well pad plus a 100-ft buffer and access route with a 100-ft corridor (50-ft buffer). All infrastructure staked at time of survey.		
Photos:	Figure 1-5		
Geologic Formation(s):	Alluvium and Colluvium	Holocene	PFYC Class 2
	Uinta Fm, lower member	Eocene	PFYC Class 5
	Green River Fm, Parachute Ck. Mbr	Eocene	PFYC Class 4/5
Reference:	Cashion 1973		
Topography:	On the west side of the canyon is a gently sloping floodplain. Cliffs forming a small ridge found on the north side of the pad.		
Bedrock Exposure Status:	No bedrock exposed on pad and pit. Bedrock exposed on cliffs within buffer to the north and on a low ridge and small knobs on the east side of the pad.		
Geologic Description:	The pad is located near the contact of the Uinta Formation and the Parachute Creek Member of the Green River Formation. The majority of the area is covered in large colluvial sandstone boulders, is vegetated, or is covered in alluvium and degraded colluvium. The surrounding cliffs, low ridges and small knobs are composed of sandstone and siltstone.		
Fossil Status:	Recorded one non-significant fossil occurrence (F1-081106-01). No material was collected.		
Fossil Description:	Three very weathered fragments of turtle shell located along slope of cliff north of the pit, not found in situ.		
Recommendation:	Recommend spot checking during construction of well pad. This recommendation is based on (a) this area being poorly sampled due to limited activity (research or consulting) in the past, and (b) the presence of fossils on the surface, even if weathered and from being potentially stratigraphically higher. Note that spot checking will be recommended for two additional wells (1022-24B, 1022-25J3S) further to the north and south in this valley for the similar reasons but not the other two currently proposed wells. If any subsurface bones or other potential fossils are encountered during construction anywhere within the project area, work in the immediate vicinity should cease, the BLM should be notified, and a qualified and BLM-permitted paleontologist should inspect the location *before* work continues.		

Figure 1. View to the North from the center stake.

Figure 2. View to the East from the center stake.

Figure 3. View to the South from the center stake.

Figure 4. View to West from the center stake.

Figure 5. View to the northwest from start of access road (where access road meets well pad boundary).

6.0 REFERENCES

Beard, K. C. 1998. East of Eden: Asia as an important center of taxonomic origination in mammalian evolution: In: K. C. Beard and M. R. Dawson (eds.): Dawn of the Age of Mammals in Asia, Bulletin of Carnegie Museum of Natural History, no. 34, p. 5-39.

Black, C. C., and M. R. Dawson. 1966. A review of late Eocene mammalian faunas from North America: American Journal of Science, v. 264, p. 321–349.

Bureau of Land Management (BLM). 2007. Instructional Memorandum 2008-009, Potential Fossil Resource Classification System.

Bureau of Land Management (BLM). 2009. Instructional Memorandum 2009-011, Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources.

Cashion, W. B. 1973. Geologic and structure map of the Grand Junction quadrangle, Colorado and Utah: U.S. Geological Survey, Miscellaneous Geologic Investigations Map I-736 (1:250,000).

Dane, C. H. 1954. Stratigraphic and facies relationships of upper part of Green River Formation and lower part of Uinta Formation in Duchesne, Uintah, Wasatch Counties, Utah: American Association of Petroleum Geologists Bulletin, v. 38, no. 2, p. 405-425.

Hail, W. J., Jr., and M. C. Smith. 1994. Geologic map of the northern part of the Piceance Creek Basin, northwestern Colorado: U.S. Geological Survey Map, I-2400.

Hail, W. J., Jr., and M. C. Smith. 1997. Geologic map of the southern part of the Piceance Creek Basin, northwestern Colorado: U.S. Geological Survey Map, I-2529.

Murphey, P.C., and Evanoff, E. 2007. Stratigraphy, fossil distribution and depositional environments of the upper Bridger Formation (middle Eocene), southwestern Wyoming: *Wyoming State Geological Survey Report of Investigation 57, 107 p,* (1 map, scale 1:100,000; 10 maps, scale 1:24,000).

Murphey, P.C., and Daitch, D. 2007. Paleontological overview of oil shale and tar sands areas in Colorado, Utah and Wyoming: U.S. Department of Energy, Argonne National Laboratory Report Prepared for the U.S. Department of Interior Bureau of Land Management, 468 p. and 6 maps (scale 1:500,000).

Osborn, H. F. 1895. Fossil mammals of the Uinta Basin, Expedition of 1894: Bulletin of the American Museum of Natural History, 7:71-105.

Rasmussen, D. T., G. C. Conroy, A. R. Friscia, K. E. Townsend, and M. D. Kinkel. 1999. Mammals of the middle Eocene Uinta Formation. In: Gillette, D.E. (ed.). Vertebrate Paleontology in Utah: Utah Geological Survey Miscellaneous Publication, 99-1: 401-420.

Robinson, P. 1978. Paleontological resources inventory and evaluation, Bureau of Mines Experimental Oil Shale Mine, Rio Blanco County, Colorado: Prepared for VTN Colorado, Inc. 2600 S. Parker Rd., Aurora, Colorado, 22 p.

Stokes, W. L. 1986. Geology of Utah: Utah Museum of Natural History, University of Utah and Utah Geological and Mineral Survey, Department of Natural Resources.

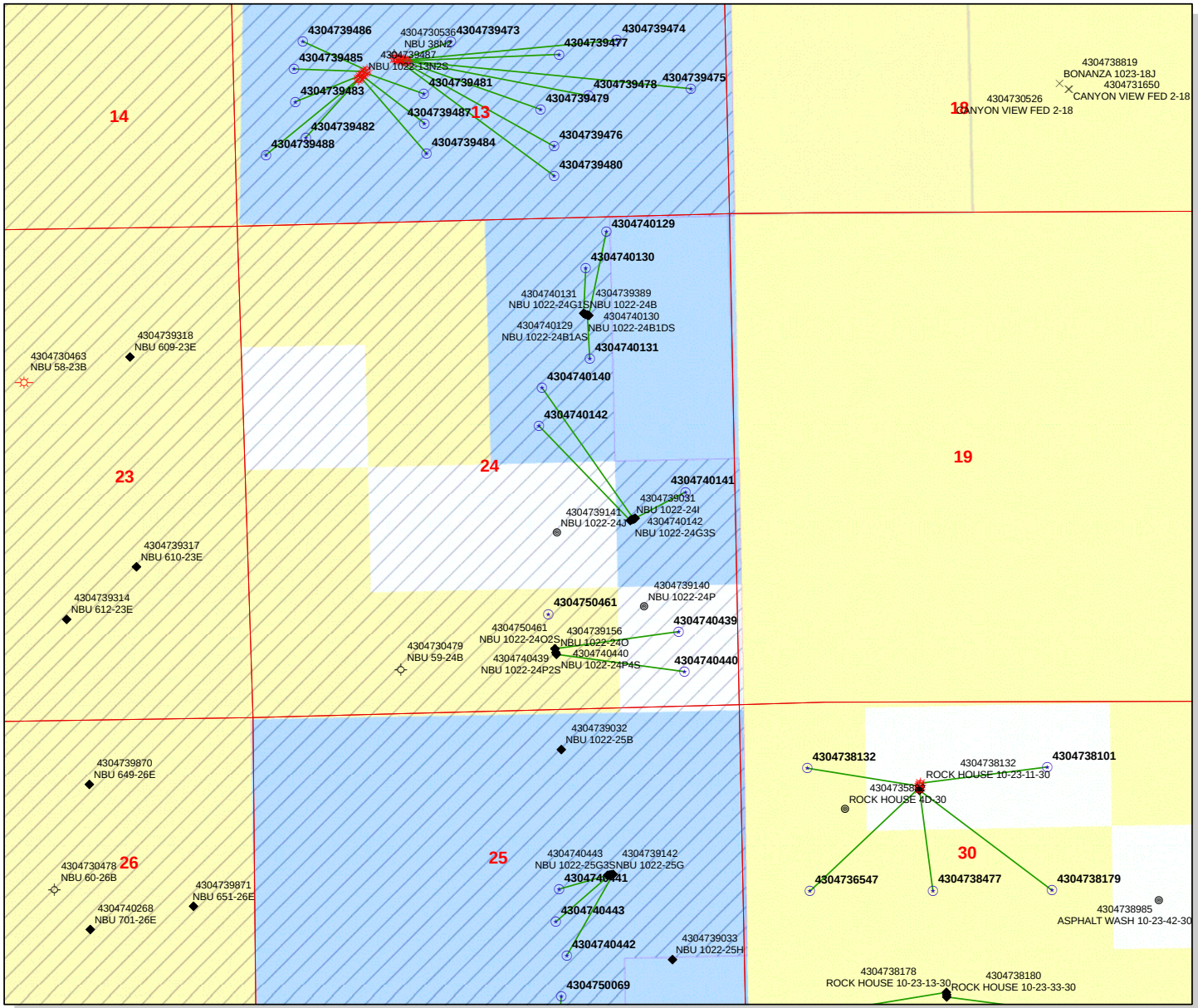
Stucky, R. K. 1992. Mammalian faunas in North America of Bridgerian to Arikareean "ages" (Eocene and Oligocene): In: D. R. Prothero and W. A. Berggren (eds.): Eocene-Oligocene Climatic and Biotic Evolution. Princeton, N.J.: Princeton University Press, pp. 463-93.

Townsend, K. E. 2004. Stratigraphy, paleoecology, and habitat change in the middle Eocene of North America: Unpublished dissertation, Washington University, 418 pp.

Townsend, K. E., Friscia, A. R., Rasmussen, D. T. 2006. Stratigraphic Distribrution of Upper Middle Eocene Fossil Vertebrate Localities in the Eastern Uinta Basin, Utah, with comments on Uintan Biostratigraphy. The Mountain Geologist, v43, n2, p115-134.

Walsh, S. L. 1996. Middle Eocene mammalian faunas of San Diego County, California. In: D. R. Prothero and R. J. Emry (eds.): The Terrestrial Eocene-Oligocene Transition in North America. Cambridge: Cambridge University Press: 75-119.

Wood, H. E., R. W. Chaney, J. Clark, E. H. Colbert, G. L. Jepsen, J. B. Reeside, Jr., and C. Stock. 1941. Nomenclature and correlation of the North American continental Tertiary: Bulletin of the Geological Society of America, 52:1-48.



API Number: 4304750461

Well Name: NBU 1022-24O2S

Township 10.0 S Range 22.0 E Section 24

Meridian: SLBM

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

Map Prepared:
Map Produced by Diana Mason

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

Fields
STATUS
ACTIVE
COMBINED
Sections

Wells Query Events
<all other values>

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APD
DRL
GI
GS
LA
NEW
OPS
PA
PGW
POW
RET
SGW
SOW
TA
TW
WD
WI
WS

1,300 650 0 1,300 Feet

1:13,277

'APIWellNo:43047504610000'

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)

June 5, 2009

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2009 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 2009 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-50415	NBU 922-31F2S	Sec 31 T09S R22E 2626 FSL 1451 FWL BHL Sec 31 T09S R22E 1737 FNL 1258 FWL
43-047-50417	NBU 922-31J2S	Sec 31 T09S R22E 2552 FSL 1420 FWL BHL Sec 31 T09S R22E 2611 FSL 1837 FEL
43-047-50419	NBU 922-31F3S	Sec 31 T09S R22E 2607 FSL 1443 FWL BHL Sec 31 T09S R22E 2215 FNL 1258 FWL
43-047-50428	NBU 1022-18I4BS	Sec 18 T10S R22E 0213 FSL 0292 FEL BHL Sec 18 T10S R22E 1690 FSL 0580 FEL
43-047-50429	NBU 1022-18O1AS	Sec 18 T10S R22E 0231 FSL 0301 FEL BHL Sec 18 T10S R22E 1115 FSL 1400 FEL
43-047-50430	NBU 1022-18P1DS	Sec 18 T10S R22E 0196 FSL 0283 FEL BHL Sec 18 T10S R22E 0855 FSL 0050 FEL
43-047-50431	NBU 1022-18P4AS	Sec 18 T10S R22E 0178 FSL 0274 FEL BHL Sec 18 T10S R22E 0505 FSL 0050 FEL
43-047-50446	NBU 922-32J4CS	Sec 32 T09S R22E 1453 FSL 2398 FEL BHL Sec 32 T09S R22E 1463 FSL 1902 FEL
43-047-50461	NBU 1022-24O2S	Sec 24 T10S R22E 0684 FSL 2016 FEL

API Well No: 43047504610000

BHL Sec 24 T10S R22E 1060 FSL 2080 FEL

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

/s/ Michael L. Coulthard

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

MCoulthard:mc:6-5-09

Kerr-McGee Oil & Gas Onshore LP

1099 18th Street, Suite 1800
Denver, CO 80202-1918
P.O. Box 173779
Denver, CO 80217-3779
720-929-6000

July 20, 2009

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 1022-24O2S
T10S-R22E
Section 24: SWSE/SWSE
Surface: 684' FSL, 2016' FEL
Bottom Hole: 1060' FSL, 2080' FEL
Uintah County, Utah

Dear Ms. Mason:

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

- Kerr-McGee's NBU 1022-24O2S 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

Jason Rayburn
Landman

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 6/2/2009 **API NO. ASSIGNED:** 43047504610000

WELL NAME: NBU 1022-24O2S

OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995) **PHONE NUMBER:** 720 929-6156

CONTACT: Danielle Piernot

PROPOSED LOCATION: SWSE 24 100S 220E **Permit Tech Review:** ☑

SURFACE: 0684 FSL 2016 FEL **Engineering Review:** ☑

BOTTOM: 1060 FSL 2080 FEL **Geology Review:** ☑

COUNTY: UINTAH

LATITUDE: 39.92902 **LONGITUDE:** -109.38535

UTM SURF EASTINGS: 637975.00 **NORTHINGS:** 4420917.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU 0471 **PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE

SURFACE OWNER: 1 - Federal **COALBED METHANE:** NO

RECEIVED AND/OR REVIEWED:

- ☑ **PLAT**
- ☑ **Bond:** FEDERAL - WYB000291
- ☐ **Potash**
- ☑ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ☑ **Water Permit:** Permit #43-8496
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ☑ **Intent to Commingle**

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 & uncomm. tract

- ☑ **R649-3-11. Directional Drill**

Comments: Presite Completed

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

JON M. HUNTSMAN, JR.
Governor
GARY R. HERBERT
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

Permit To Drill

****

Well Name: NBU 1022-24O2S
API Well Number: 43047504610000
Lease Number: UTU 0471
Surface Owner: FEDERAL
Approval Date: 8/5/2009

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, completion into and commingling of production from the Wasatch and Mesaverde formations is allowed.

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

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

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

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

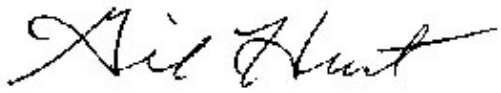
Notification Requirements:
The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well – contact Carol Daniels at 801-538-5284 (please leave a voicemail message if not available)
  OR
  submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at http://oilgas.ogm.utah.gov

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

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

Approved By:



Gil Hunt
Associate Director, Oil & Gas

API Well No: 43047504610000

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

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0471

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 1022-24O2S

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

9. API NUMBER: 43047504610000

3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779 **PHONE NUMBER:** 307-752-1169 Ext

9. FIELD and POOL or WILDCAT: NATURAL BUTTES

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0684 FSL 2016 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWSE Section: 24 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: 8/3/2010	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.

Approved by the Utah Division of Oil, Gas and Mining

Date: August 03, 2010

By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Danielle Piernot	720 929-6156	Regulatory Analyst
SIGNATURE N/A		**DATE** 8/3/2010

The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources
Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43047504610000

API: 43047504610000
Well Name: NBU 1022-24O2S
Location: 0684 FSL 2016 FEL QTR SWSE SEC 24 TWNP 100S RNG 220E MER S
Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.
Date Original Permit Issued: 7/30/2009

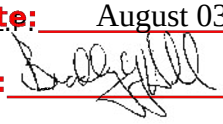
The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- **If located on private land, has the ownership changed, if so, has the surface agreement been updated?** ○ **Yes** ◉ **No**
- **Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?** ○ **Yes** ◉ **No**
- **Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?** ○ **Yes** ◉ **No**
- **Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?** ○ **Yes** ◉ **No**
- **Has the approved source of water for drilling changed?** ○ **Yes** ◉ **No**
- **Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?** ○ **Yes** ◉ **No**
- **Is bonding still in place, which covers this proposed well?** ◉ **Yes** ○ **No**

Approved by the Utah Division of Oil, Gas and Mining

Signature: Danielle Piernot **Date:** 8/3/2010
Title: Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

Date: August 03, 2010

By: 

RECEIVED August 03, 2010

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

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

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

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0471

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 1022-24O2S

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

9. API NUMBER: 43047504610000

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: 0684 FSL 2016 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWSE Section: 24 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: 7/30/2011	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ 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
☐ SPUD REPORT Date of Spud:	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT 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.

Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.

Approved by the Utah Division of Oil, Gas and Mining

Date: 06/20/2011

By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Andy Lytle	720 929-6100	Regulatory Analyst
SIGNATURE N/A		**DATE** 6/13/2011

RECEIVED Jun. 13, 2011

The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43047504610000

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Signature: Andy Lytle **Date:** 6/13/2011
Title: Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED Jun. 13, 2011

GARY R. HERBERT
Governor
GREG 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

May 9, 2012

Jenn Hawkins
Anadarko Petroleum Corporation
1099 18th Street, Suite 1800
Denver, CO 80202

Re: APDs Rescinded for Anadarko Petroleum Corporation
Uintah County

Dear Ms. Hawkins:

Enclosed find the list of APDs that you requested to be rescinded. No drilling activity at these locations has been reported to the division. Therefore, approval to drill these wells is hereby rescinded, effective May 2, 2012.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

Diana Mason
Environmental Scientist

cc: Well File
Bureau of Land Management, Vernal
SITLA, Ed Bonner

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

UTAH DNR OIL, GAS & MINING

4304750055	NBU 753-32E
4304750683	NBU 634-12EX
4304740346	NBU 921-15N1S
4304740347	NBU 921-14M3S
4304740348	NBU 921-22A1S
4304750089	NBU 921-15O3T
4304740441	NBU 1022-25G2S
4304740442	NBU 1022-25G4S
4304740443	NBU 1022-25G3S
4304750852	FEDERAL 920-23O
4304751026	NBU 921-12K
4304751027	NBU 921-12L
4304751028	NBU 921-12M
4304751039	NBU 920-21O
4304750697	NBU 687-30E
4304750811	NBU 699-25E
4304740153	NBU 1022-05JT
4304740135	NBU 921-15MT
4304750468	NBU 738-30E
4304739369	NBU 922-18O
4304739372	NBU 922-20E
4304740184	NBU 921-30FT
4304740217	NBU 759-29E
4304740218	NBU 737-30E
4304750461	NBU 1022-24O2S
4304740267	NBU 704-26E
4304740240	NBU 702-26E
4304740241	NBU 703-26E
4304750578	NBU 920-14B
4304750579	NBU 920-14A
4304740268	NBU 701-26E
4304750627	NBU 920-21P
4304750628	NBU 920-21N
4304750682	NBU 921-12J
4304750695	NBU 921-12N
4304750111	NBU 921-11GT
4304750112	NBU 921-11HT
4304750118	NBU 740-30E
4304740374	NBU 705-26E
4304750123	NBU 920-12N
4304750143	NBU 920-13J
4304750751	NBU 920-21G
4304750756	NBU 1022-35I1CS
4304750757	NBU 1022-35I4BS
4304750758	NBU 1022-35J1CS
4304750759	NBU 1022-35J4CS
4304740380	NBU 920-13D
4304750155	FEDERAL 920-24O
4304750769	NBU 1022-35K4CS
4304750770	NBU 1022-35N1CS
4304750771	NBU 1022-35O1BS
4304750772	NBU 1022-35O1CS
4304750791	NBU 921-10O
4304750792	NBU 921-10M
4304740439	NBU 1022-24P2S
4304740440	NBU 1022-24P4S

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Green River District-Vernal Field Office
170 South 500 East
Vernal, UT 84078
(435) 781-4400 Fax: (435) 781-4410
http://www.blm.gov/ut/st/en/fo/vernal.html

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MAY 1 4 2012

IN REPLY REFER TO:
3160 (UTG011)

Julie Jacobson
Anadarko Petroleum Corporation
Kerr McGee Oil & Gas Onshore LP
1099 18th Street, Suite 600
Denver, CO 80202

43 047 50461

Re: Request to Return APD
Well No. NBU 1022-24O2S
SWSE, Sec. 24, T10S, R22E
Uintah County, Utah
Lease No. UTU-471
Natural Buttes Unit

Dear Ms. Jacobson:

The Application for Permit to Drill (APD) for the above referenced well received in this office on June 8, 2009, is being returned unapproved per a request to this office in an email message from you received on April 23, 2012. If you intend to drill at this location at a future date, a new Application for Permit to Drill must be submitted.

If you have any questions regarding APD processing, please contact Cindy Severson at (435) 781-4455.

Sincerely,

Jerry Kenczka
Assistant Field Manager
Lands & Mineral Resources

Enclosures

cc: UDOGM

RECEIVED
MAY 2 2 2012
DIV. OF OIL, GAS & MINING