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
North Bench Federal 32-20

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

3. FIELD OR WILDCAT
HELPER

4. TYPE OF WELL
Gas Well Coalbed Methane Well: YES

5. UNIT or COMMUNITIZATION AGREEMENT NAME

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)
UTU080554

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	2118 FNL 1466 FEL	SWNE	20	13.0 S	11.0 E	S
Top of Uppermost Producing Zone	2118 FNL 1466 FEL	SWNE	20	13.0 S	11.0 E	S
At Total Depth	2118 FNL 1466 FEL	SWNE	20	13.0 S	11.0 E	S

21. COUNTY
CARBON

22. DISTANCE TO NEAREST LEASE LINE (Feet)
1466

23. NUMBER OF ACRES IN DRILLING UNIT
1520

25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)
1513

26. PROPOSED DEPTH
MD: 4536 TVD: 4536

27. ELEVATION - GROUND LEVEL
6671

28. BOND NUMBER
WYB000291

29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE
Air Drilling-Water from City of Price UT

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 Debby Black	**TITLE** Staff Regulatory Analyst	**PHONE** 720 929-6472
SIGNATURE	**DATE** 05/11/2009	**EMAIL** Debby.Black@Anadarko.com

API NUMBER ASSIGNED
43007500010000

APPROVAL

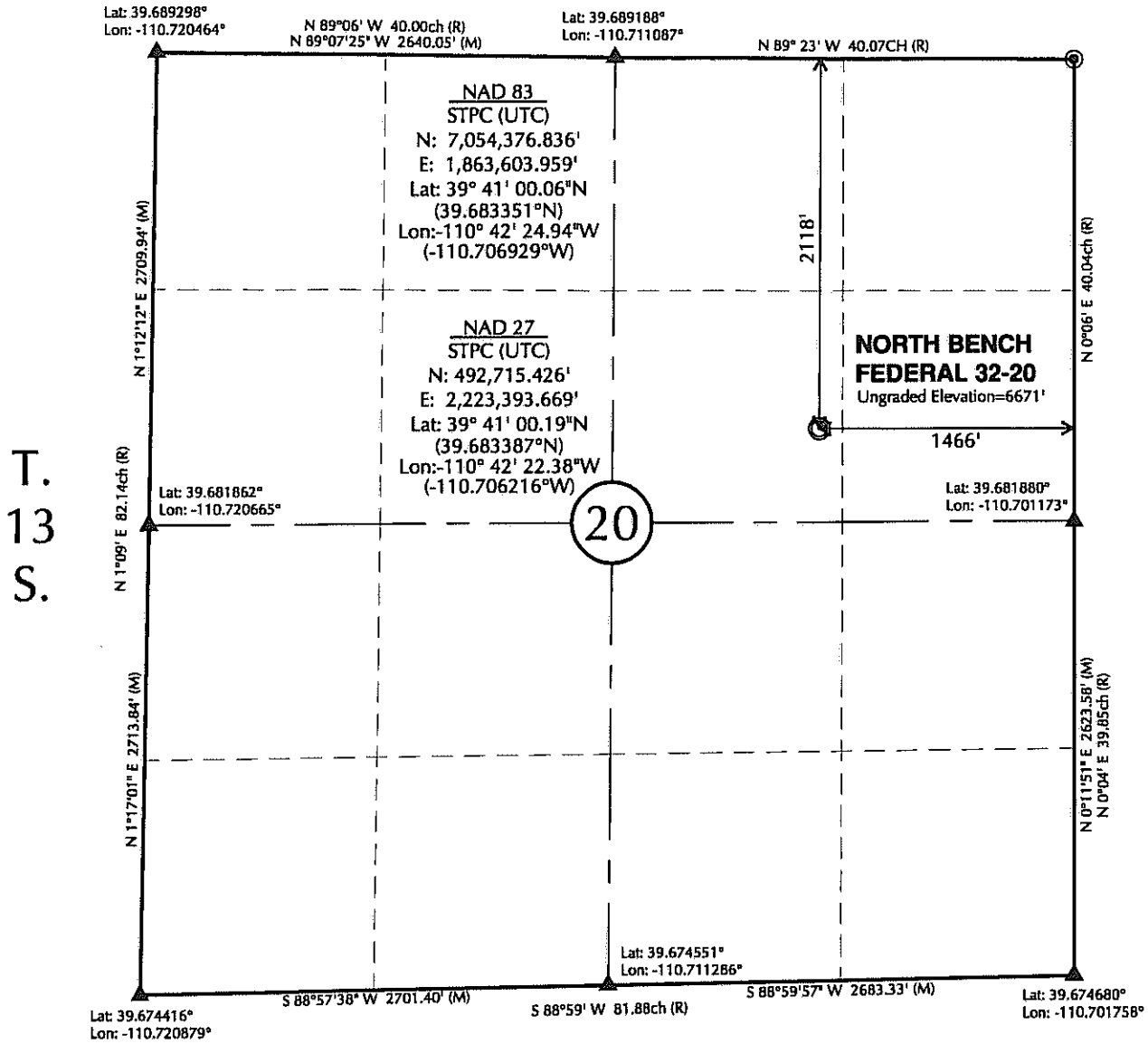
Permit Manager

Proposed Hole, Casing, and Cement						
String	**Hole Size**	**Casing Size**	**Top (MD)**	**Bottom (MD)**		
Cond	17.5	13.375	0	40		
Pipe	**Grade**	**Length**	**Weight**			
	Grade J-55 ST&C	40	54.5			

Proposed Hole, Casing, and Cement						
String	**Hole Size**	**Casing Size**	**Top (MD)**	**Bottom (MD)**		
Surf	11	8.625	0	454		
Pipe	**Grade**	**Length**	**Weight**			
	Grade J-55 ST&C	454	24.0			

Proposed Hole, Casing, and Cement						
String	**Hole Size**	**Casing Size**	**Top (MD)**	**Bottom (MD)**		
Prod	7.875	5.5	0	4536		
Pipe	**Grade**	**Length**	**Weight**			
	Grade J-55 LT&C	4536	15.5			

R. 11 E.



CERTIFICATE OF SURVEYOR:

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. 163167
STATE OF UTAH

PROFESSIONAL LAND SURVEYOR
DUANE D. FEHRINGER
No. 163167
7-28-08
STATE OF UTAH

NOTES:

1. ▲ INDICATES FOUND BLM BRASS CAP
2. ◉ INDICATES CALCULATED CORNER POSITION FROM RECORD
3. ELEVATION BASED NAVD88 (GEOID03)
4. BASIS OF BEARING IS WGS84
5. ALL COORDINATES DERIVED FROM AUTONOMOUS GPS SURVEY

N

0 1000 2000

HORIZONTAL
SCALE: 1" = 1000'

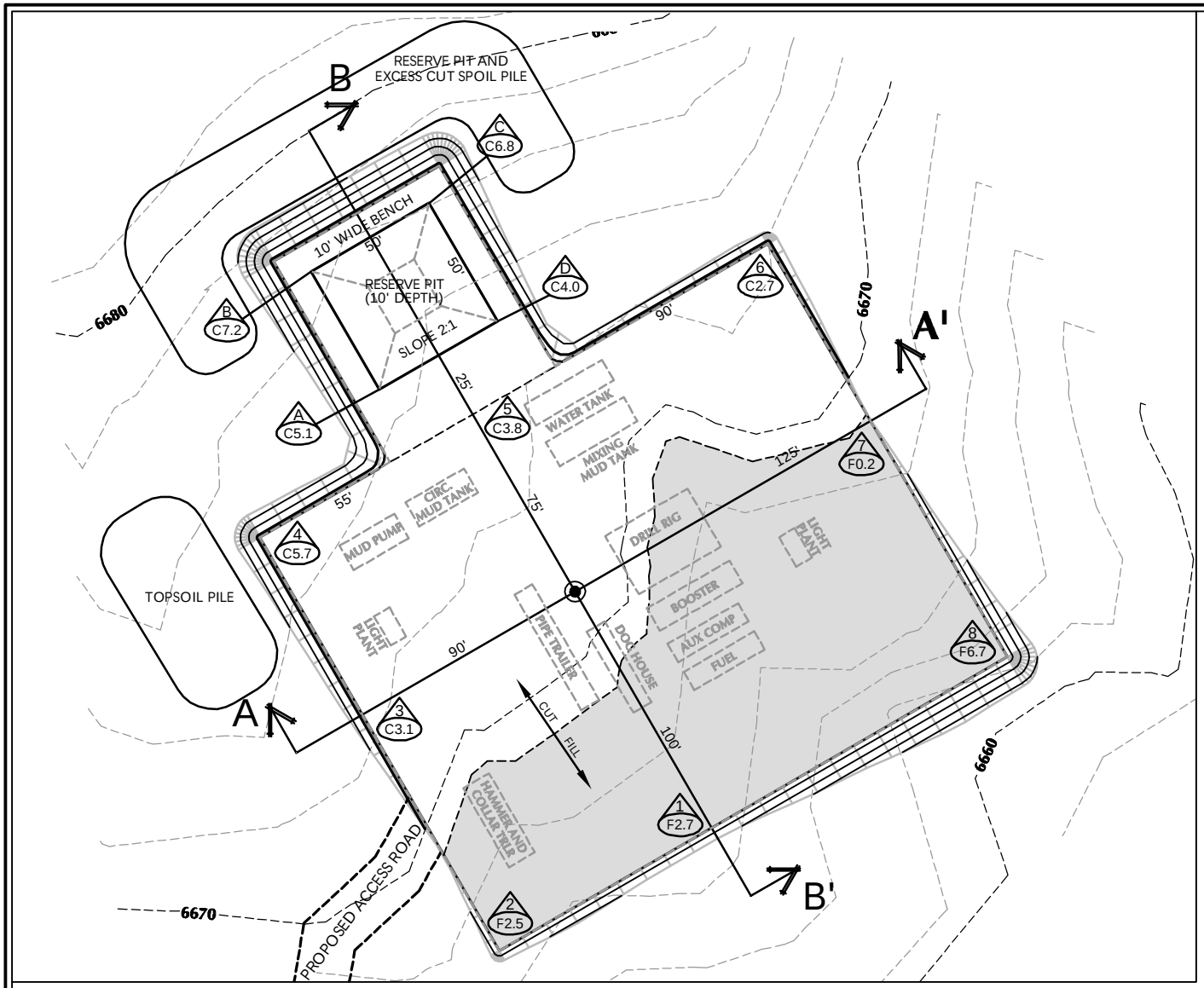
KERR-MCGEE OIL & GAS
ONSHORE, LP
1099 18th Street - Denver, Colorado 80202

NORTH BENCH FEDERAL 32-20
WELL PLAT
2118' FNL, 1466' FEL
SW1/4NE1/4, SECTION 20, T.13S., R.11E.
S.L.M., CARBON COUNTY, UTAH

609
CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

Scale: 1"=1000'	Date: 7/14/08	SHEET NO:
REVISED:	BY DATE	1

1 OF 9



WELL PAD LEGEND

- WELL LOCATION
- EXISTING CONTOURS (2' INTERVAL)
- PROPOSED CONTOURS (2' INTERVAL)

WELL PAD 32-20 QUANTITIES

EXISTING GRADE @ LOC. STAKE = 6,671.0'
FINISHED GRADE ELEVATION = 6,669.3'
CUT SLOPES = 1.5:1
FILL SLOPES = 1.5:1

TOTAL CUT FOR WELL PAD = 2,588 C.Y.
TOTAL FILL FOR WELL PAD = 2,259 C.Y.
TOPSOIL @ 6" DEPTH = 929 C.Y.
TOTAL DISTURBANCE = 1.15 ACRES
SHRINKAGE FACTOR = 1.15
SWELL FACTOR = 1.00
TOTAL PIT CAPACITY WITH 2' OF FREEBOARD
+/- 1,850 BARRELS
TOTAL PIT VOLUME
+/- 482 CY

KERR-MCGEE OIL & GAS
ONSHORE L.P.
1099 18th Street - Denver, Colorado 80202

NORTH BENCH FEDERAL 32-20
WELL PAD - LOCATION LAYOUT
2118' FNL, 1466' FEL
SW1/4NE1/4, SECTION 20, T.13S., R.11E.
S.L.M., CARBON COUNTY, UTAH

609
CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

Scale: 1"=60'	Date: 8/8/08	SHEET NO:
REVISED:	BY DATE	2 2 OF 9

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

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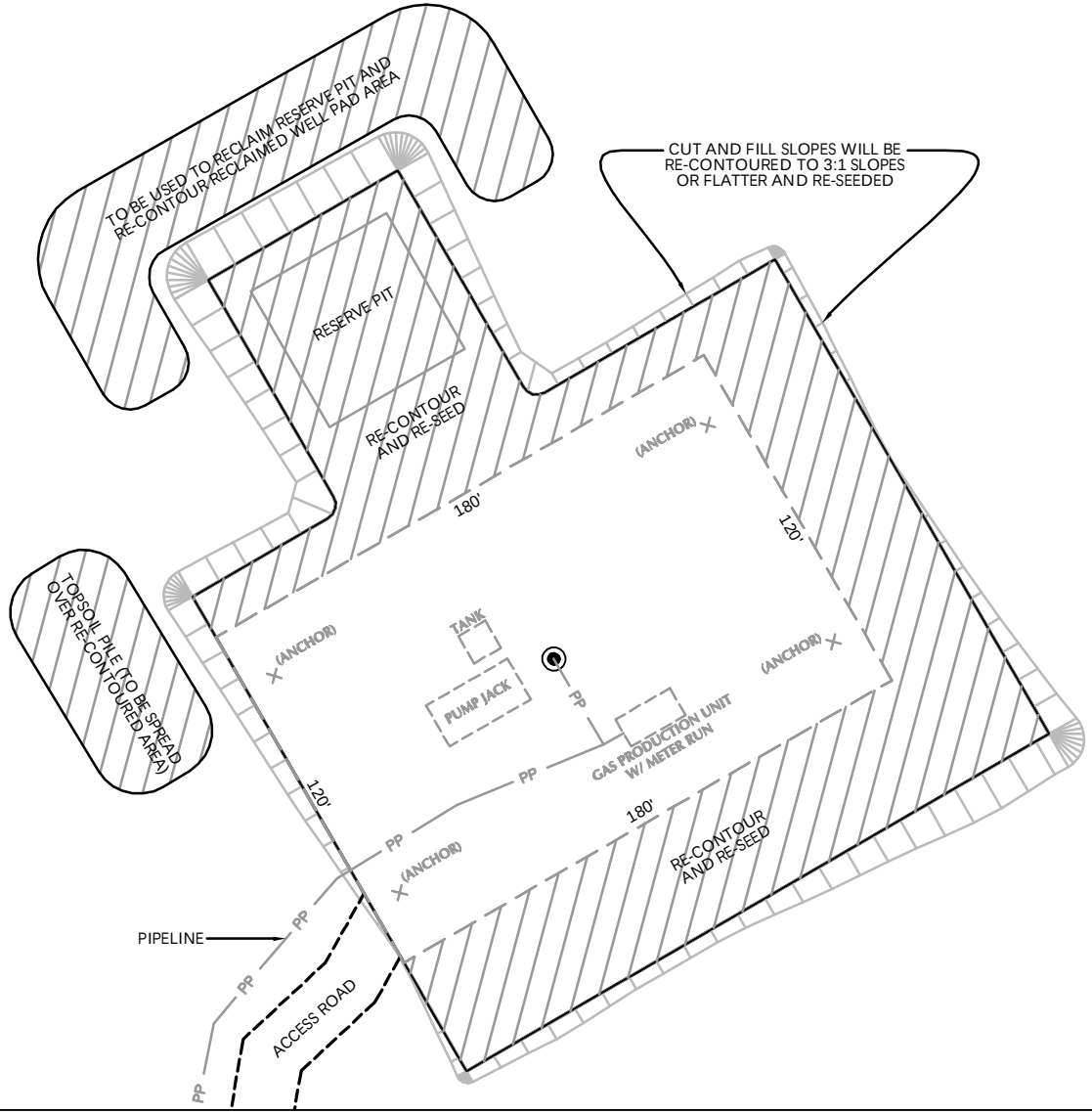


WELL PAD LEGEND

- WELL LOCATION
- RECLAIMED AREA
- RECLAIMED BOUNDARY

KERR-MCGEE OIL & GAS ONSHORE L.P.
1099 18th Street - Denver, Colorado 80202

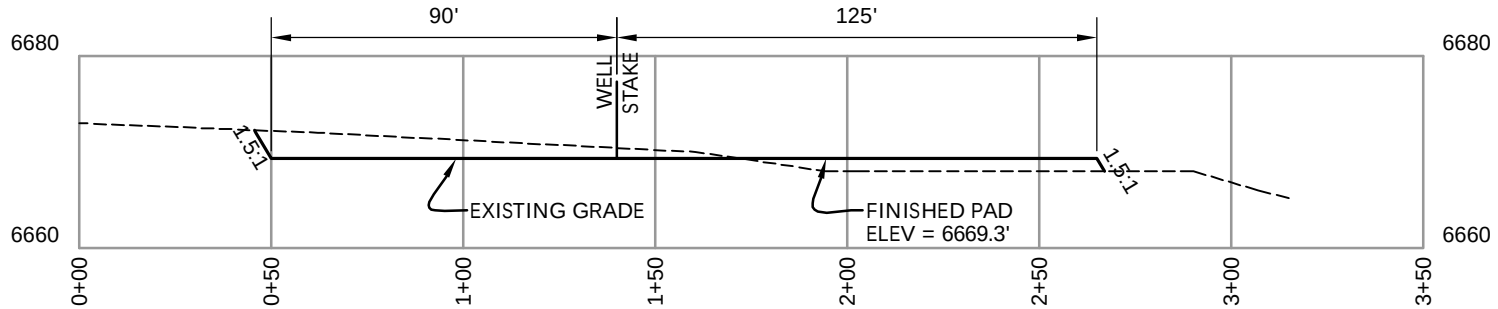
NORTH BENCH FEDERAL 32-20
WELL PAD - RECLAMATION LAYOUT
2118' FNL, 1466' FEL
SW1/4NE1/4, SECTION 20, T.13S., R.11E.
S.L.M., CARBON COUNTY, UTAH

609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

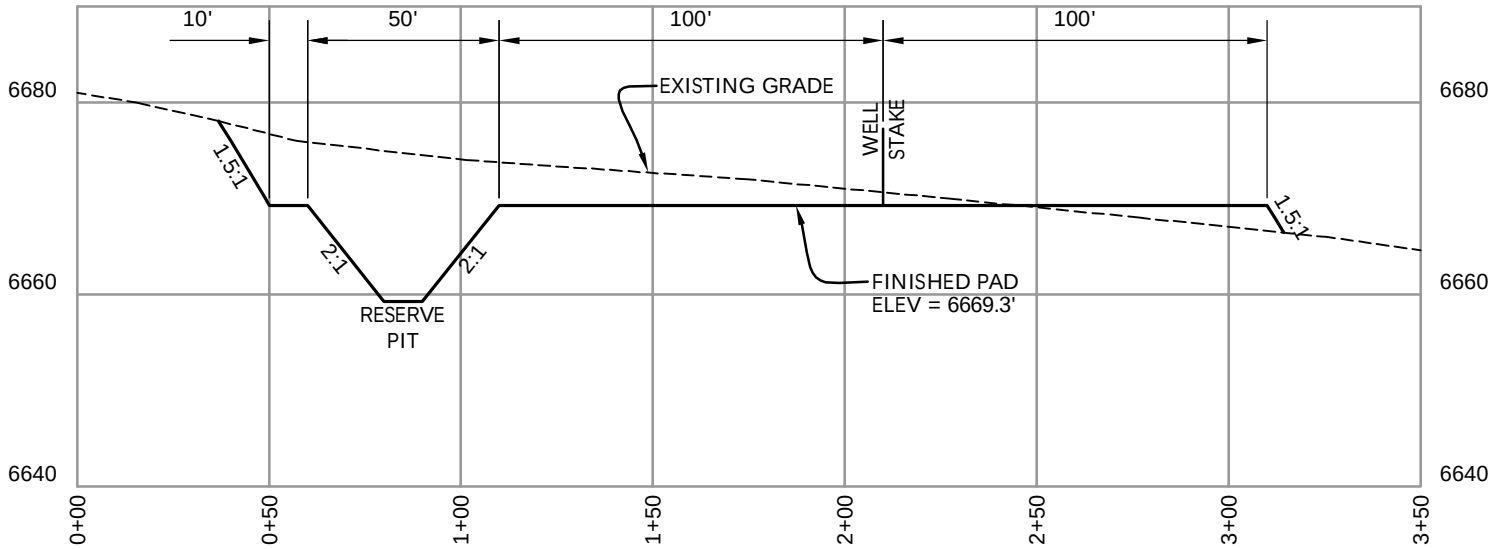
Scale: 1"=60'	Date: 8/8/08	SHEET NO:
REVISED:	BY DATE	2A 2A OF 9

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

API WellNo:43007500010000



CROSS SECTION A-A'



CROSS SECTION B-B'

KERR-MCGEE OIL & GAS ONSHORE L.P.
1099 18th Street - Denver, Colorado 80202

NORTH BENCH FEDERAL 32-20
WELL PAD - CROSS SECTIONS
2118' FNL, 1466' FEL
SW1/4NE1/4, SECTION 20, T.13S., R.11E.
S.L.M., CARBON COUNTY, UTAH

609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

Scale: 1"=50'	Date: 8/8/08	SHEET NO:
REVISED:	BY DATE	3 — 3 OF 9

HORIZONTAL 0 25 50 1" = 50'
VERTICAL 0 10 20 1" = 20'

’APIWellNo:43007500010000’

PHOTOGRAPH OF NORTH BENCH FEDERAL 32-20 WELL LOCATION - CAMERA ANGLE WEST

PHOTOGRAPH OF NORTH BENCH FEDERAL 32-20 WELL LOCATION - CAMERA ANGLE NORTH

KERR-MCGEE OIL & GAS
ONSHORE L.P.
1099 18th Street - Denver, Colorado 80202

NORTH BENCH FEDERAL 32-20
LOCATION PHOTOGRAPHS
2118' FNL, 1466' FEL
SW1/4NE1/4, SECTION 20, T.13S., R.11E.
S.L.M., CARBON COUNTY, UTAH

609
CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

Scale: NTS	Date: 07/29/08	SHEET NO: 4
REVISED:	BY DATE	4 OF 9

PHOTOGRAPH OF NORTH BENCH FEDERAL 32-20 WELL LOCATION - CAMERA ANGLE EAST

PHOTOGRAPH OF NORTH BENCH FEDERAL 32-20 WELL LOCATION - CAMERA ANGLE SOUTH

KERR-MCGEE OIL & GAS
ONSHORE L.P.
1099 18th Street - Denver, Colorado 80202

NORTH BENCH FEDERAL 32-20
LOCATION PHOTOGRAPHS
2118' FNL, 1466' FEL
SW1/4NE1/4, SECTION 20, T.13S., R.11E.
S.L.M., CARBON COUNTY, UTAH

609
CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

Scale: NTS	Date: 07/29/08	SHEET NO:	
REVISED:	BY DATE	4A	4A OF 9

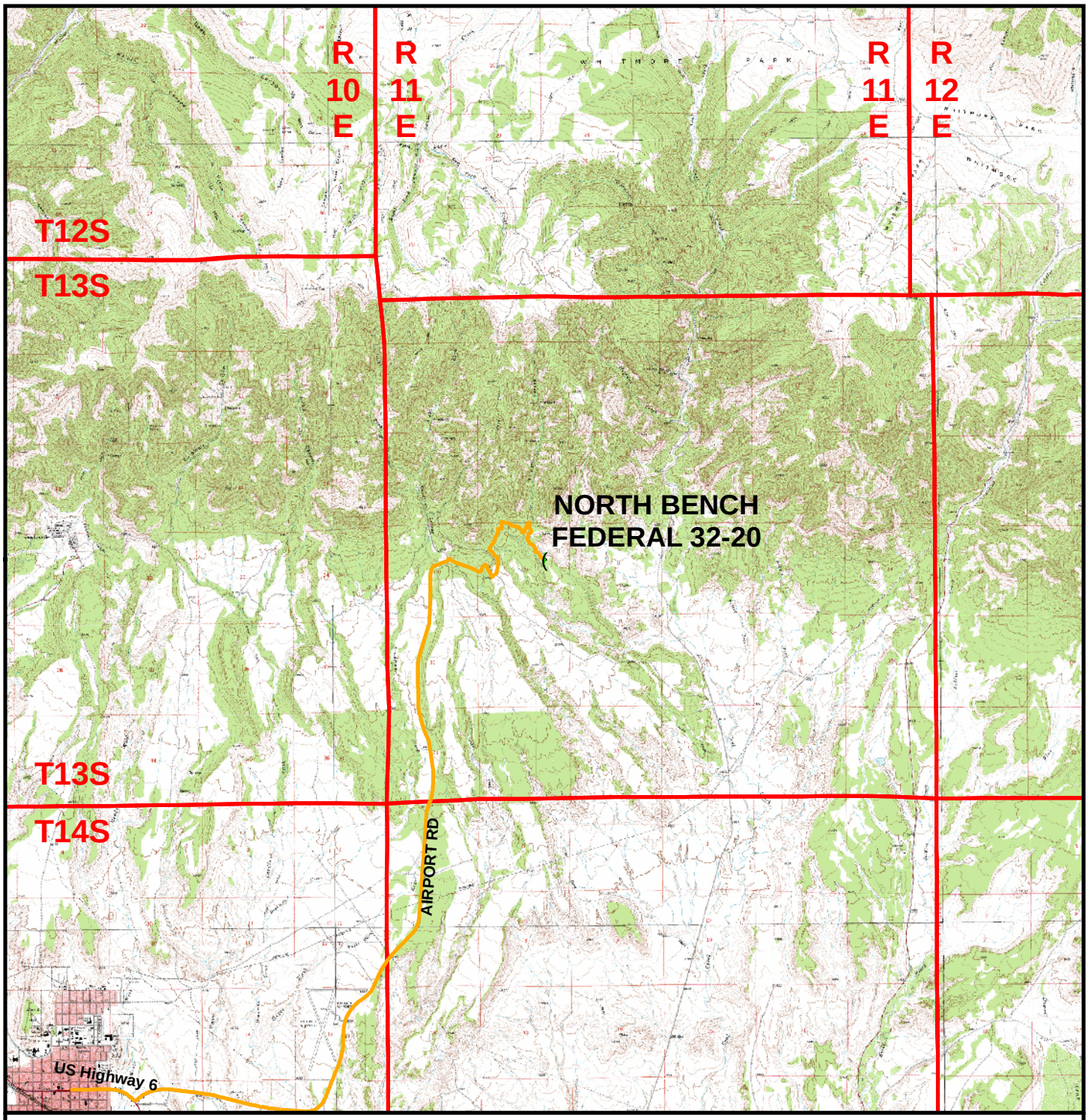
PHOTOGRAPH OF PROPOSED ACCESS TO THE NORTH BENCH FEDERAL 32-20 WELL LOCATION - CAMERA ANGLE NORTHEAST

KERR-MCGEE OIL & GAS
ONSHORE L.P.
1099 18th Street - Denver, Colorado 80202

NORTH BENCH FEDERAL 32-20
LOCATION PHOTOGRAPHS
2118' FNL, 1466' FEL
SW1/4NE1/4, SECTION 20, T.13S., R.11E.
S.L.M., CARBON COUNTY, UTAH

609
CONSULTING, LLC
371 Coffeen Avenue
Sheridan WY 82801
Phone 307-674-0609
Fax 307-674-0182

Scale: NTS	Date: 07/29/08	SHEET NO:	
REVISED:	BY DATE	4B	4B OF 9



Legend

(Proposed North Bench Federal 32-20 Well Location

Access Route - Proposed

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

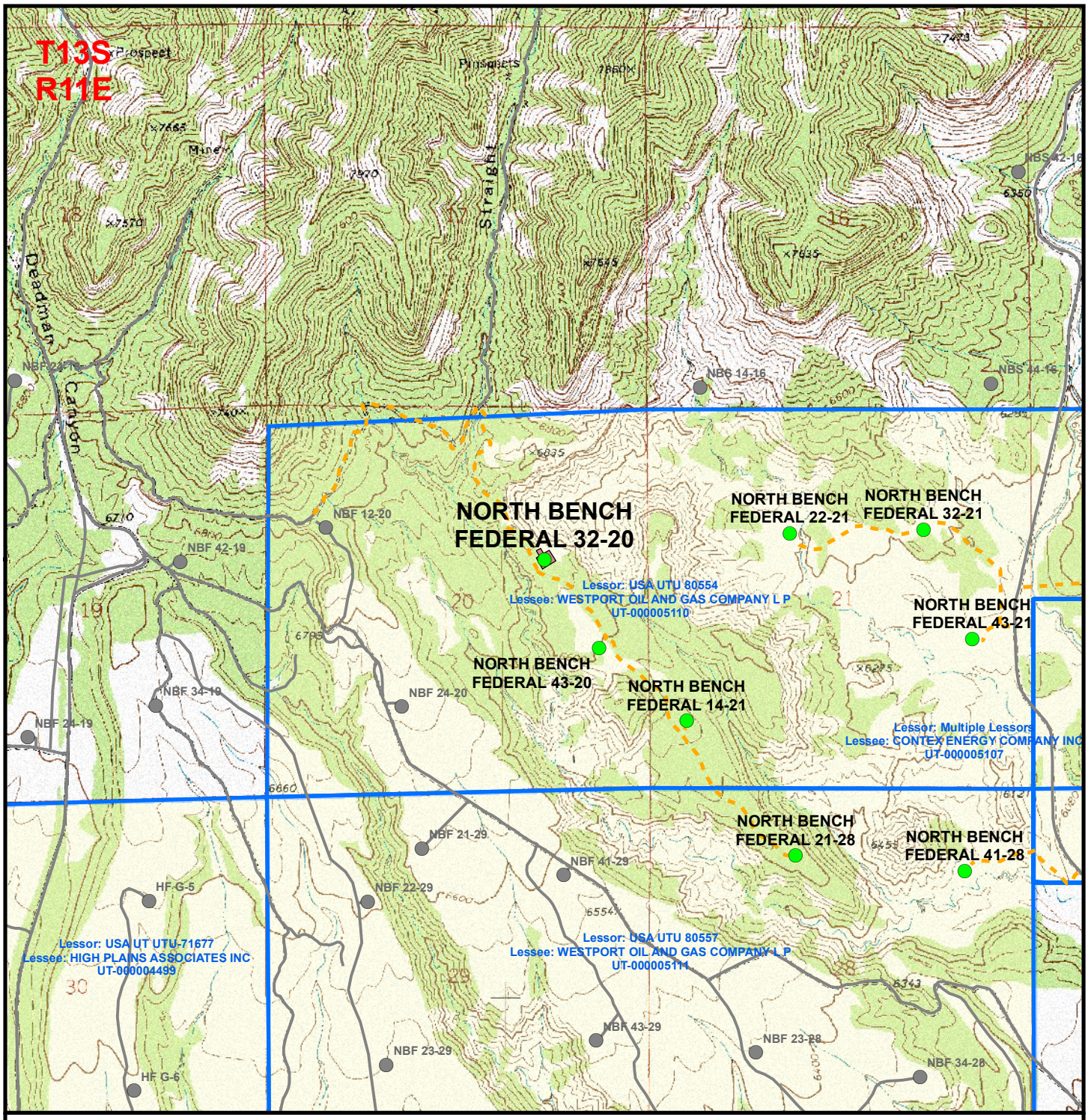
North Bench Federal 32-20
Topo A
2118' FNL, 1466' FEL
SW¼ NE¼, Section 20, T13S, R11E
S.L.M., Carbon County, Utah

609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

3

Scale: 1:100,000	NAD83 USP Central	Sheet No: 5	
Drawn: JELo	Date: 6 Aug 2008		5 of 9
Revised:	Date:		

’APIWellNo:43007500010000’



Legend

- Well - Proposed
- Well Pad
- Road - Proposed
- APC Lease
- Well - Existing
- Road - Existing

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

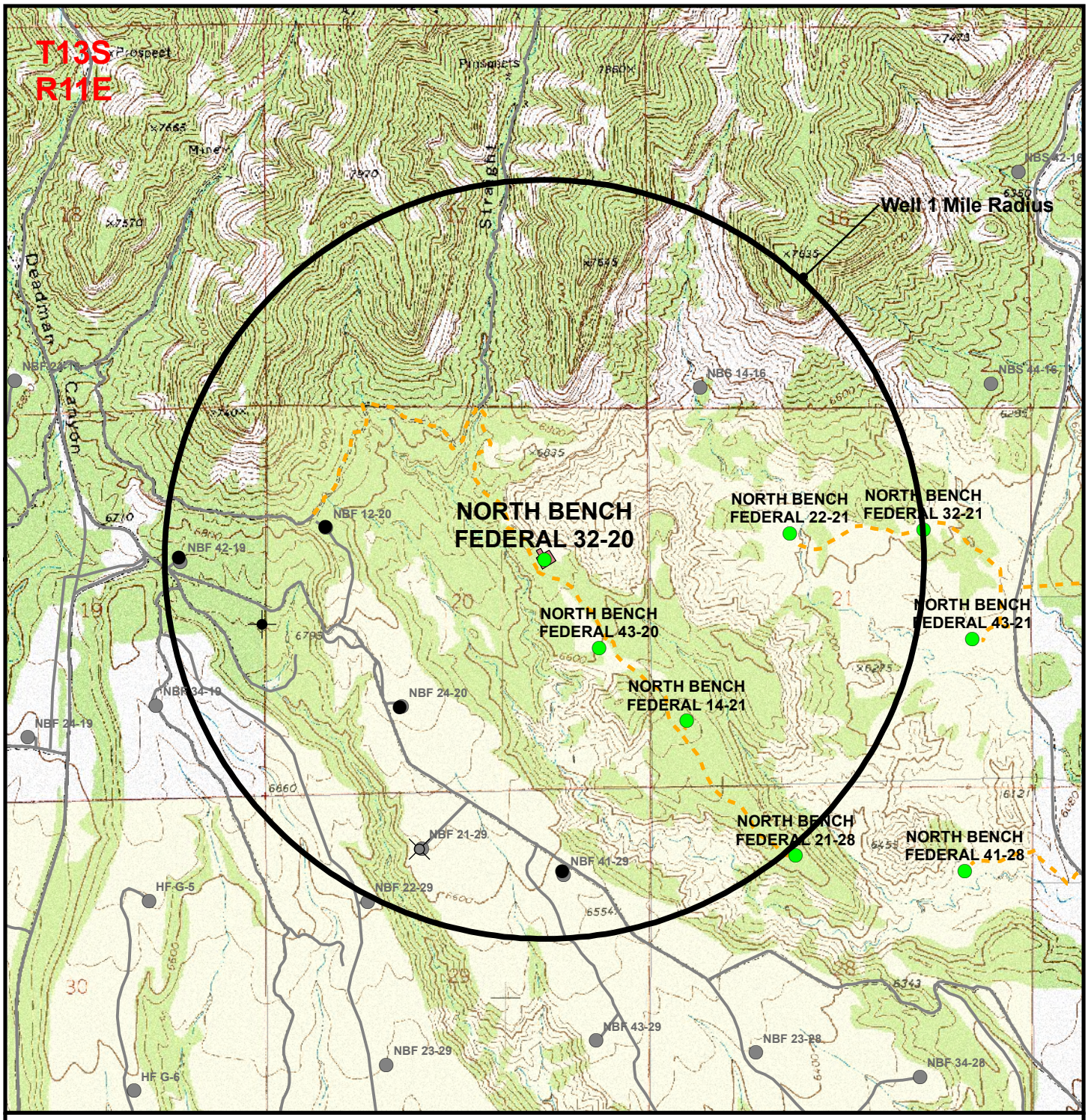
North Bench Federal 32-20
Topo B
2118' FNL, 1466' FEL
SW¼ NE¼, Section 20, T13S, R11E
S.L.M., Carbon County, Utah

609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

Scale: 1" = 2000ft	NAD83 USP Central	Sheet No: 6
Drawn: JELo	Date: 6 Aug 2008	6 of 9
Revised: JELo	Date: 4 Mar 2009	

’APIWellNo:43007500010000’



Legend

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

- Well - Proposed
- Well - Existing
- Well Pad
- Road - Proposed
- Road - Existing
- Private Surface Ownership
- BLM Surface Ownerhip
- State of Utah Surface Ownership
- Carbon County Surface Ownership
- Well - 1 Mile Radius
- Producing
- Location Abandoned
- Plugged and Abandoned

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

North Bench Federal 32-20
Topo C
2118' FNL, 1466' FEL
SW¼ NE¼, Section 20, T13S, R11E
S.L.M., Carbon County, Utah

609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

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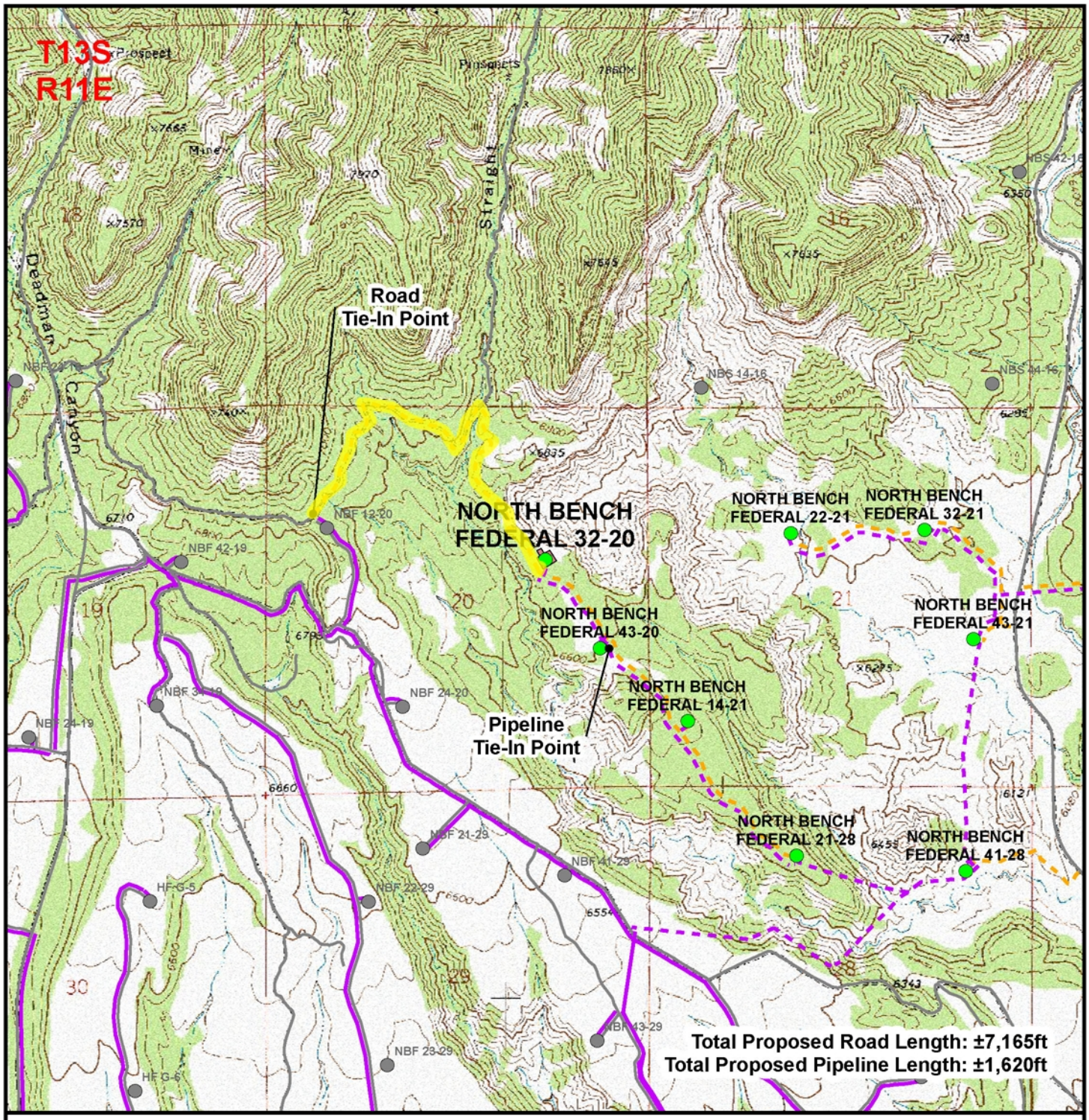
Scale: 1" = 2000ft	NAD83 USP Central	Sheet No: 7	7 of 9
Drawn: JELo	Date: 6 Aug 2008		
Revised: JELo	Date: 9 Mar 2009		

’APIWellNo:43007500010000’



Legend

- Well - Proposed
- Well Pad
- Pipeline - Proposed
- Road - Proposed
- Well - Existing
- Pipeline - Existing
- Road - Existing

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

North Bench Federal 32-20
Topo D
2118' FNL, 1466' FEL
SW¼ NE¼, Section 20, T13S, R11E
S.L.M., Carbon County, Utah

609 CONSULTING, LLC
371 Coffeen Avenue
Sheridan, WY 82801
Phone (307) 674-0609
Fax (307) 674-0182

N

Scale: 1" = 2000ft	NAD83 USP Central	Sheet No: 8	
Drawn: JELo	Date: 1 Aug 2008		
Revised: JELo	Date: 4 Mar 2009		8 of 9

Kerr-McGee Oil & Gas Onshore, LP
NORTH BENCH FEDERAL 32-20
SECTION 20, T13S, R11E, S.L.M.

PROCEED IN AN EASTERLY DIRECTION FROM PRICE, UTAH, ALONG U.S. HIGHWAY 6, GRADUALLY CHANGING TO SOUTHERLY, APPROXIMATELY 0.8 MILES TO THE JUNCTION OF AIRPORT ROAD; EXIT LEFT AND PROCEED IN AN EASTERLY DIRECTION, GRADUALLY CHANGING TO NORTHERLY, APPROXIMATELY 8.4 MILES TO THE JUNCTION OF AIRPORT ROAD AND AN EXISTING ROAD TO THE EAST; EXIT RIGHT AND PROCEED IN AN EASTERLY DIRECTION, GRADUALLY CHANGING TO NORTHERLY, APPROXIMATELY 0.2 MILES TO THE JUNCTION OF THIS EXISTING ROAD AND AN EXISTING ROAD TO THE EAST; TURN RIGHT AND PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 0.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTH; TURN LEFT AND PROCEED IN A NORTHERLY DIRECTION, GRADUALLY CHANGING TO NORTHWEST, APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND THE BEGINNING OF PROPOSED ACCESS ROAD TO THE NORTH BENCH FEDERAL 32-20, NORTH BENCH FEDERAL 43-20, NORTH BENCH FEDERAL 14-21 AND NORTH BENCH FEDERAL 21-28 TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY DIRECTION, FOLLOWING THE ROAD FLAGS APPROXIMATELY 0.7 MILES TO THE JUNCTION OF THIS ROAD AND THE PROPOSED ACCESS ROAD TO THE NORTH BENCH FEDERAL 32-20 TO THE SOUTH; TURN RIGHT AND PROCEED IN A SOUTHERLY DIRECTION, FOLLOWING THE ROAD FLAGS APPROXIMATELY 0.6 MILES TO THE JUNCTION OF THIS ROAD AND THE PROPOSED NORTH BENCH FEDERAL 32-20 WELL LOCATION.

TOTAL DISTANCE FROM PRICE, UTAH, TO THE PROPOSED NORTH BENCH FEDERAL 32-20 WELL LOCATION IS APPROXIMATELY 11.7 MILES.

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

A Wholly Owned Subsidiary of Anadarko Petroleum Corporation

2009 Cardinal Draw "Ferron" CBM Program
Federal Lease UTU-080554
NORTH BENCH FEDERAL 32-20
SW NE, Section 20: Township13 South-Range 11 East
SLB&M
Carbon County, Utah

SURFACE USE PLAN OF OPERATIONS

This Surface Use Plan of Operations (SUPO) is submitted as part of an 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. This SUPO covers the proposed location to be drilled by Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee) starting August 2009:

An on-site meeting was held with BLM on October 22-23, 2008, for each location with Federal involvement. The details of each on-site meeting will be discussed in each well's specific APD. Specific stipulations arising from the on-site meeting will be shown as starred. The following people attended the on-site meeting:

BLM-Price Field Office:	Jeffrey Brower, Karl Ivory, Connie Leschin, Don Stephens, Dana Truman, David Waller.
Utah Division of Wildlife Resources (UDWR):	Kyle Beagley
609 Consulting LLC (609):	Greg Hoechst, Rob Wilson
SWCA Environmental Consultants (SWCA):	Chuck Bollong
Grasslands Consulting, Inc. (Grasslands):	Nick Hall
OtterTail Environmental Inc.:	Thomas Ryon
Kerr-McGee:	Debby Black, Jim Hartley, Danielle Piernot

WELL LOCATION AND INTRODUCTION:
The proposed location is at 2118' FNL, 1466' FEL, Section 20: Township 13 South – Range 11 East, SLB&M. The well site was surveyed and staked at a geologically acceptable location by 609 Consulting, LLC.

DIRECTIONS TO LOCATION:

PROCEED IN AN EASTERLY DIRECTION FROM PRICE, UTAH, ALONG U.S. HIGHWAY 6, GRADUALLY CHANGING TO SOUTHERLY, APPROXIMATELY 0.8 MILES TO THE JUNCTION OF AIRPORT ROAD; EXIT LEFT AND PROCEED IN AN EASTERLY DIRECTION, GRADUALLY CHANGING TO NORTHERLY, APPROXIMATELY 8.4 MILES TO THE JUNCTION OF AIRPORT ROAD AND AN EXISTING ROAD TO THE EAST; EXIT RIGHT AND PROCEED IN AN EASTERLY DIRECTION, GRADUALLY CHANGING TO NORTHERLY, APPROXIMATELY 0.2

'APIWellNo:43007500010000'

MILES TO THE JUNCTION OF THIS EXISTING ROAD AND AN EXISTING ROAD TO THE EAST; TURN RIGHT AND PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 0.7 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTH; TURN LEFT AND PROCEED IN A NORTHERLY DIRECTION, GRADUALLY CHANGING TO NORTHWEST, APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND THE BEGINNING OF PROPOSED ACCESS ROAD TO THE NORTH BENCH FEDERAL 32-20, NORTH BENCH FEDERAL 43-20, NORTH BENCH FEDERAL 14-21 AND NORTH BENCH FEDERAL 21-28 TO THE NORTHEAST; TURN RIGHT AND PROCEED IN A NORTHEASTERLY DIRECTION, FOLLOWING THE ROAD FLAGS APPROXIMATELY 0.7 MILES TO THE JUNCTION OF THIS ROAD AND THE PROPOSED ACCESS ROAD TO THE NORTH BENCH FEDERAL 32-20 TO THE SOUTH; TURN RIGHT AND PROCEED IN A SOUTHERLY DIRECTION, FOLLOWING THE ROAD FLAGS APPROXIMATELY 0.6 MILES TO THE JUNCTION OF THIS ROAD AND THE PROPOSED NORTH BENCH FEDERAL 32-20 WELL LOCATION.

TOTAL DISTANCE FROM PRICE, UTAH, TO THE PROPOSED NORTH BENCH FEDERAL 32-20 WELL LOCATION IS APPROXIMATELY 11.7 MILES.

1) EXISTING ROADS

A) This well is a development well.

B) Typically, existing roads within 1 mile consist of oil field roads between 0.5 - 1 mile of each location. Specific existing road information will be discussed within each well's APD.

C) Plans for improvement and/or maintenance of existing roads are to be maintained in as good or better conditions then at present and said maintenance will continue until final abandonment and reclamation of each drilling location.

2) PLANNED ACCESS ROADS (See Sheet No. 5 (Topo A), 6 (Topo B), 7 (Topo C), and 8 (Topo D)).

±7,165' or 1.36 miles. Total new road construction (Topo D yellow highlighted access road), Section 20 – federal UTU-080554, on lease.

This Application for Permit to Drill (APD) can serve as a request for BLM to initiate a Right-of-Way (ROW) application for access roads and water haul routes, if necessary. This ROW can continue up to the wellhead.

A) Running surface will be crowned/ditched with a running surface ±16' and the total disturbed width to be 50'. Plans for improvement and/or maintenance of existing roads are to maintain in as good or better conditions than at present. A regular maintenance plan will include, but not be limited to blading, ditching, and surfacing.

B) Borrow ditches to be back sloped 3:1 or shallower.

C) Maximum grades will not exceed BLM standards.

D) Low-water crossings and culverts, if needed, will be installed prior to drilling. Drainage consist of borrow ditches on both sides and "wind ditches" as appropriate. Riprap will be placed at the inlet and outlet at the culvert adjacent to the well pad. Low water crossings may be used during drilling and upon completion if conditions dictate. Culverts will be installed prior to commencement of drilling operations. The borrow

'APIWellNo:43007500010000'

ditches along the proposed access road will be re-seeded if the well is completed as a producer. The reseeding of the borrow ditches will reduce the area utilized by each location.

E) Surfacing material to consist of native material from borrow ditches. Road will be gravel surfaced. Gravel will be hauled by truck from a licensed facility.

F) No major road cuts are necessary.

G) New fence cuts, gates and/or cattle guards will be discussed in each well's APD.

H) Upgrade and maintain access roads as necessary to prevent solid erosion and accommodate year-round traffic.

I) All equipment and vehicles will be confined to the access road, pad, and areas specified in the APD.

J) The proposed access road will be constructed in accordance with roading guidelines established for oil and gas exploration and development activities as referenced in the joint BLM/USFS publications: Surface Operating Standards for Oil & Gas Exploration and Development. Third Edition and/or BLM Manual Section 9113 concerning road construction activities on projects under federal jurisdiction. The qualified construction supervisor shall be an engineer, company superintendent or other representative who is competent and knowledgeable in oilfield road and drill site construction, and able to speak for the operator. The dirt contractor, or drilling /completion foremen, whose primary expertise is not in construction, do not qualify as construction supervisors.

K) Construction activity shall not be conducted using frozen or saturated solid material or during periods when significant watershed damage (e.g. rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur.

L) Vegetative debris is not permitted in or under fill embankments.

3) LOCATION OF EXISTING WELLS

Within a 1-mile radius (Sheet No. 7 – Topo C):

Proposed:	3
Drilling/injection:	None
Shut-In:	None
Producing:	4

4) NEW PRODUCTION FACILITIES PROPOSED

A) BLM will be contacted prior to construction of production facilities. A Sundry Notice (SN) will be filed if requested by BLM.

B) Meter houses are skid mounted. A pump house may be installed if needed. Flow lines will be buried alongside or under the access road. Electric power will be buried wires, also installed alongside the access road. Both will be within the corridor as surveyed by the archaeologist. Any changes from this plan will be submitted to the BLM Field Office by Sundry Notices. New flow lines will connect with existing flow lines, produced fluid will be piped to the existing tank battery.

C) Electric lines and pipelines will be placed in separate trenches, adjacent to each other and in the corridors surveyed by the archaeologist.

D) Dimension of Proposed Facility is typically 260' x 215' or less (55,900 ft^2) for drilling operations. Total disturbance for the entire pad, including reserve pit, topsoil and excess material spoil piles, and typical construction disturbance will be approximately 1.20 acres.

'APIWellNo:43007500010000'

E) Site preparation for production will be done with standard excavation equipment using native materials. Additional surface material will be obtained from commercial sources or the approved borrow area. Production facilities, if used, must be placed on the cut portion of the location and a minimum of 15 feet from the toe of the back cut.

F) Production equipment will be painted light reflective colors to limit evaporation and waste of liquid hydrocarbons, per BLM specifications.
All permanent above-the-ground structures, tank batteries, etc. if used, that will remain longer than six (6) months will be painted Olive Black, or as specified by BLM. The exception being that Utah Occupation Health and Safety Act Rules and Regulations are to be complied with where special safety colors are required.

G) Production facilities are planned on location, and may vary according to actual reservoir discovered and will be engineered upon completion of well tests. Production facilities will be clustered and placed away from cut slopes and fill slopes to allow the maximum recontouring of cut and fill slopes.
If the well is a producer, all production facilities not listed herein will be authorized by Sundry Notice.

H) No facilities will be constructed off location except as noted in paragraph A) above.

I) Rehabilitation of unneeded, previously disturbed areas will consist of backfilling and contouring the reserve pit area, back sloping and contouring all cut and fill slopes to the surrounding topography. No depressions will be left that trap water or form ponds. These areas will be re-seeded. Refer to plans for restoration of surface for additional details.

J) Pits which contain oil, if used, will be overhead flagged. None are planned at this time.

K) The pipeline ROW will be handled under separate cover, as previously arranged with the Realty Specialist at BLM-Price.

5) LOCATION OF WATER SUPPLY

A) Minimal water will be needed as these wells will be air-drilled. When water is needed, it will be obtained from the city of Price.

B) Anticipated water use is as follows:
Air drilling will be used, so the mud drilling water requirements will be minimal, if any.

6) SOURCE OF CONSTRUCTION MATERIALS

A) Construction materials will consist of native materials from borrow ditches and location areas.

B) Surfacing materials will be obtained form available permitted sources, if needed, and consist of pit gravel. Gravel will be hauled by truck from a licensed facility.

7) WASTE DISPOSAL

A) Drill cuttings will be buried in reserve pit when dry.

B) Drilling fluid will be evaporated and then buried in the reserve pit when dry.

C) Reserve pit layout is illustrated on Sheet 2 and 2A.

* D) Reserve pit will be lined with a synthetic liner 12 mil or thicker. The reserve pit liner shall be made of any manmade synthetic material of sufficient size and qualities to sustain a hydraulic conductivity no greater than 1×10^{-7} cm/sec after installation and which is sufficiently reinforced to withstand normal wear and tear associated with the installation and pit use thereof. The liner shall be chemically compatible with all substances that may be put into the pit.

'APIWellNo:43007500010000'

E) Reserve pit will be fenced on three sides during drilling operations and on fourth side at time of rig release. Pit will remain fenced until backfilled.

* F) If used, a flare pit for air drilling will be located minimum 100' from wellbore.

G) Produced fluid will be contained in test tanks during completion and testing.

* H) Sewage disposal facilities will be in accordance with Federal, State and Local Regulations. Sewage may not be buried on location or put in a borehole. Utah Department of Environmental Quality (UDEQ) Regulations prevent this unless a UDEQ Permit is obtained.

* I) Garbage and other waste - burnable waste will be contained in a portable trash cage which will be totally enclosed with small mesh wire. Cage and contents will be transported to and trash dumped at a WDEQ approved Sanitary Landfill upon completion of operations.

J) Trash will be picked up if scattered and contained in trash cage as soon as practical after rig is moved off.

K) Upon release of the drilling rig, rathole and mousehole will be filled. Debris and equipment not required for production will be removed.

L) Reserve pits will be closed and backfilled as soon as the pit contents are dry enough to do so, or no later than the end of the next full summer following rig release, whichever comes first, to allow sufficient time for the pit contents to dry. Reserve pits remaining open after this period will require written authorization of the Authorized Office (AO). Immediately upon well completion, any hydrocarbons or trash in the reserve and flare pits will be removed. Pits will be allowed to dry, be pumped dry or solidified in-situ prior to backfilling.

8) ANCILLARY FACILITIES

No ancillary facilities will be necessary.

9) WELLSITE LAYOUT (See Sheet 2 and 2A).

Note: Bureau of Land Management will be contacted prior to reserve pit construction and provided an opportunity to inspect the pit prior to filling with water.

A) See specific well's APD for the drill site plat and cut/fill diagram.

B) Roads and well production equipment, such as tanks, treaters, separators, vents, electrical boxes, and equipment associated with pipeline operation, will be placed on location so as to permit maximum interim reclamation of disturbed areas. If equipment is found to interfere with the proper interim reclamation of disturbed areas, the equipment may be moved so proper recontouring and revegetation can occur.

C) If there is snow on the ground when construction begins, the operator will remove it before the soil is disturbed, and pile it downhill from the topsoil stockpile location.

D) Both backslope and foreslope will be constructed no steeper than 1½:1.

E) Erosion control measures will be applied pursuant to Kerr-McGee's General Permit to Discharge Stormwater under the Utah Pollutant Discharge Elimination System and accompanying Stormwater Pollution Prevention Plan.

'APIWellNo:43007500010000'

10) SURFACE PREPARATION

(General)

A) Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet.

B) Earthwork for interim and final reclamation must be completed within six (6) months of well completion or plugging (weather permitting).

C) In areas that will not be drill-seeded, the seed mix will be applied and fertilized per BLM's Conditions of Approval (COAs).

D) No seeding will occur from May 15 to September 15. Fall seeding is preferred and will be conducted after September 15 and prior to ground freezing. Spring seeding will be conducted after the frost leaves the ground and no later that May 15.

E) Annual or noxious weeds shall be controlled on all disturbed areas as directed by the Field Office Manager. An intensive weed monitoring and control program will be implemented beginning the first growing season after interim and final reclamation. Noxious weeds that have been identified during monitoring will be promptly treated and controlled. A Pesticide Use Proposal (PUP) will be submitted to the BLM for approval prior to the use of herbicides. All reclamation equipment will be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species. The operator will coordinate all weed and insect control measures with state and/or local management agencies.

F) Reclaimed areas will be monitored annually. Actions will be taken to ensure that reclamation standards are met as quickly as reasonably practical.

G) Reclamation monitoring will be documented in an annual reclamation report submitted to the AO by December 31. The report will document compliance with all aspects of the reclamation objectives and standards, identify whether the reclamation objectives and standards are likely to be achieved in the near future without additional actions, and identify actions that have been or will be taken to meet the objectives and standards. The report will also include acreage figures for: Initial Disturbed Acres; Successful Interim Reclaimed Acres; Successful Final Reclaimed Acres. Annual reports will not be submitted for sites approved by the AO in writing as having met interim or final reclamation standards. Any time 30% or more of a reclaimed area is redisturbed, monitoring will be reinitiated.

H) The AO will be informed when reclamation has been completed, is successful, and the site is ready for final inspection.

INTERIM RESTORATION (Production)

A) Rehabilitation of unneeded, previously disturbed areas will consist of backfilling and contouring the reserve pit area, back sloping and contouring all cut and fill slopes. These areas will be re-seeded.

B) Well pad size will be reduced to minimum size necessary to conduct safe operations. Cuts and fills will be reduced to 3:1 or shallower.

C) Reserve pits will be closed and backfilled as soon as the pit contents are dry enough to do so, or no later than the end of the next full summer following rig release, whichever comes first, to allow sufficient time for the pit contents to dry. Reserve pits remaining open after this period will require written authorization of the Authorized Office (AO). Immediately upon well completion, any hydrocarbons or trash in the reserve and flare pits

'APIWellNo:43007500010000'

will be removed. Pits will be allowed to dry, be pumped dry or solidified in-situ prior to backfilling.

D) Following completion activities, pit liners will be buried to prevent their reemergence to the surface and interference with long-term successful revegetation. If it was necessary to line the pit with a synthetic liner, the pit will not be trenched (cut) or filled (squeezed) while containing fluids. When dry, the pit will be backfilled with a minimum of five (5) feet of soil material. In relatively flat areas, the pit area will be slightly mounded to allow for settling and to promote surface drainage away from the backfilled pit.

E) The portions of the cleared well site not needed for operational and safety purposes will be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Sufficient level area will remain for setup of a workover rig and to park equipment. In some cases, rig anchors may need to be pulled and reset after recontouring to allow for maximum interim reclamation.

* F) Topsoil will be evenly re-spread and aggressively re-vegetated over the disturbed area not needed for all-weather operations back to the rig anchors, including road cuts and fills and to within a few feet of the production facilities, unless an all-weather, surfaced, access route or small "teardrop" turnaround is needed on the well pad.

G) Initial seedbed preparation will consist of backfilling, leveling, and ripping all compacted areas. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix designed by BLM (shown below) to meet reclamation standards will be used. The seed mix will be used on all disturbed surfaces including pipelines and road cut and fill slopes.

H) To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, debris, and rock over recontoured cut and fill slopes.

* I) A proposed seed mixture for the wells in this area is as follows or as defined by BLM in each well's COAs.

Indian ricegrass (Nezpar)	*Achnatherum hymenoides*	2.0
Squirreltail	*Elymus elymoides*	2.0
Needle and thread grass	*Stipa Comata*	2.0
Western wheatgrass	*Pascopyrum smithi*	2.0
Gooseberryleaf globemallow	*Sphaeralcea grossulariifolia*	0.5
Palmer penstemon (cedar)	*Penstemon palmeri*	0.5
Wyoming big sagebrush	*Artemisia tridentata* ssp. *wyomingensis*	0.5
Antelope bitterbrush	*Purshia Tridentata*	1.0
		10.5

J) Reclamation will be considered successful if the following criteria are met, or as specified by BLM:
· 70 percent of predisturbance cover
· 90 percent dominate species *
· Erosion features equal to or less than surrounding area

* The vegetation will consist of species included in the seed mix and/or occurring in the surrounding natural vegetation.

'APIWellNo:43007500010000'

FINAL RESTORATION (P & A – Removal of equipment)

A) Flowlines on location will be removed before site reclamation and all flowlines between the wellsite and production facilities will remain in place and will be filled with water.

B) If necessary to ensure timely revegetation, the pad will be fenced to BLM standards to exclude livestock grazing for the first two growing seasons or until seeded species become firmly established, whichever comes later. Fencing will meet standards found on page 18 of the Gold Book, 4th Edition, or will be fenced with operational electric fencing.

C) Revegetation will be accomplished by planting mixed grasses as specified below. Revegetation is recommended for road area as well as around production site.

* D) A proposed seed mixture for the wells in this area is as follows or as defined by BLM in each well's COAs.

Indian ricegrass (Nezpar)	*Achnatherum hymenoides*	2.0
Squirreltail	*Elymus elymoides*	2.0
Needle and thread grass	*Stipa Comata*	2.0
Western wheatgrass	*Pascopyrum smithi*	2.0
Gooseberryleaf globemallow	*Sphaeralcea grossulariifolia*	0.5
Palmer penstemon (cedar)	*Penstemon palmeri*	0.5
Wyoming big sagebrush	*Artemisia tridentata* ssp. *wyomingensis*	0.5
Antelope bitterbrush	*Purshia Tridentata*	1.0
		10.5

E) Initial seedbed preparation will consist of backfilling, leveling, and ripping all compacted areas. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix designed by BLM (shown below) to meet reclamation standards will be used. The seed mix will be used on all disturbed surfaces including pipelines and road cut & fill slopes.

* F) Distribute topsoil, if any remains, evenly over the location, and seed according to the above seed mixture. If needed the access road and location shall be ripped or disked prior to seeding. Perennial vegetation must be established. Additional work shall be required in case of seeding failures, etc.

G) All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Resalvaged topsoil will be spread evenly over the entire disturbed site to ensure successful revegetation. To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, woody debris, and large rocks over recontoured cut and fill slopes.

H) BLM will not release the operator's bond until the area has been successfully reclaimed (evaluation will be made after the first growing season) to the standards of the surface owner or surface management agency.

I) An above-round tubular metal dry-hole marker will be erected over the drill-hole upon cessation of drilling and/or testing operations. The marker will be inscribed with the operator's name, well number, well location, and federal lease number. Upon request of the surface owner, the casing may be cut off three (3) feet below reclaimed ground surface (or below plow depth) with a metal plate affixed to the top providing the same

'APIWellNo:43007500010000'

well information as stated above. This must consist of a piece of pipe not less than four inches in diameter and ten fee in length, of which four feet shall be above the general ground level and the remainder being imbedded in cement. The tope of the pipe must be closed by a welded or screw cap, cement or other means.

J) The Area Manager, Bureau of Land Management, Price Field Office, will be contacted if there are any questions concerning the above rehabilitation stipulations (435) 636-3600 is the BLM contact for this location. All rehabilitation work, including seeding, will be completed by a certified contractor if the well is a dry hole.

11) SURFACE OWNERSHIP

Surface Owner

Drillsite/Access

Bureau of Land Management
Price Field Office
125 South 600 West
Price, UT 84501 Phone: 435-636-3600

12) GENERAL INFORMATION

A) The project area is situated within the Colorado Plateau physiograhic province, in the lowlands that encircle the northern edge of the San Rafael Swell. The Price River drainage (Castle Valley) is located to the west and south of the project area; the Coal Creek drainage is located to the east of the project area, and confluences with the Price River south of the project area near the town of Wellington.

B) Topographic and geologic features – poorly bedded mixture of silt, sand, pebbles, cobbles, and boulders derived from adjacent uplands formed by the Book Cliffs.

C) Soil characteristics – clay loam.

D) Flora is likely to consist of: Big sagebrush, Juniper, Mormon tea, Four-wing saltbrush, Broom snakeweed (Matchbrush), Crested wheatgrass, Western wheatgrass and Cheatgrass.

E) Fauna – none observed. Typically present: deer, elk, antelope, coyotes, rabbits, birds, and rodents.

F) Concurrent surface use – grazing and hunting.

G) Mineral Lessor - Bureau of Land Management
Price Field Office
125 South 600 West
Price, UT 84501 Phone: 435-636-3600

H) Proximity of water, occupied dwellings or other features: to be detailed in each well's APD.

I) Archaeological, cultural and historical information: to be detailed in each well's APD.

J) Construction activity shall not be conducted using frozen or saturated solid material or during periods when significant watershed damage (e.g. rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur.

K) The operator shall be responsible for the prevention and suppression of fires on public lands caused by its employees, contractors or sub-contractors. During conditions of extreme fire danger, surface use operations may be limited or suspended in specific areas.

L) Unless otherwise exempted, free and unrestricted public access shall be maintained on the lease and associated rights-of-way.

'APIWellNo:43007500010000'

M) Facilities approved by the Application for Permit to Drill that are no longer included within the lease, due to a change in the lease or unit boundary, shall be authorized with a right-of-way.

N) Historic, Cultural, and Paleontological Resources

The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five (5) working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in site preservation is not necessary); and,
- a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the finds of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of the mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible fro mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed the operator will then be allowed to resume construction.

"The holder of this authorization shall immediately bring any paleontological resources or fossils discovered as a result of operations under this authorization to the attention of the authorized officer. The holder shall suspend all activities in the vicinity of such discovery until notified to proceed by the authorized officer. The authorized officer will evaluate, or will have evaluated, such discoveries not later than five (5) working days after being notified, and will determine what action shall be taken with respect to such discoveries. The decision as to the appropriate measures to mitigate adverse effects to significant paleontological resources will be made by the authorized officer after consulting with the holder. The holder may be responsible for the cost of any investigations necessary for the evaluation, and for any mitigative measures."

O) Kerr-McGee Oil & Gas Onshore LP maintains a file, per 29 CFR 1910.1200(g) containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, and/or substances which are used during the course of construction, drilling, completion, and production operations for this project. Hazardous materials (substances) which may be transported across these lands may include drilling mud and cementing products which are primarily inhalation hazards, fuels (flammable and/or combustible), materials that may be necessary for well completion/stimulation activities such as flammable or combustible substances and acids/gels (corrosives). The opportunity for Superfund Amendments and Reauthorization Act (SARA) listed Extremely Hazardous Substances (EHS) at the site is generally limited to proprietary treating chemicals. All hazardous substances, EHS, and commercial preparations will be handled in an appropriate manner to minimize the potential for leaks or spills to the environment.

'APIWellNo:43007500010000'

LESSEE'S OR OPERATOR'S REPRESENTATIVE(S):

Operator

Rockies Corporate Office:

Kerr-McGee Oil & Gas Onshore, L. P.
Granite Towers at 1099 18th Street, Suite 1800, Denver, CO 80202 (Physical Address)
Post Office Box 173779, Denver, CO 80217-3779 (Mailing Address)
(720) 929-6000

Jim Kleckner, Vice President, Operations
Reed Scott, General Manager - Permitting and Regulatory Affairs
Ann Puchalski, Senior Geologist
Emile Goodwin, Drilling Engineer
Debby Black, Staff Regulatory Analyst **

Price Field Office:

60 South 700 East, Unit #1
Price, UT 84501
(435) 636-2402

Jim Hartley, Production Superintendent

** Contact with any questions regarding this application

CERTIFICATION:

I hereby certify that Kerr-McGee Oil & Gas Onshore LP and its contractors and sub-contractors are responsible for the operations conducted under this application subject to the terms and conditions of the mineral lease. Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Kerr-McGee Oil & Gas Onshore LP under their nationwide bond, BLM Bond No. WYB000291.

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which 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 that 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.

Date: April 14, 2009

Debby J. Black
Debby J. Black
Staff Regulatory Analyst

'APIWellNo:43007500010000'

2009 Cardinal Draw Plan of Development

Carbon County, Utah

OPERATOR: KERR-McGEE OIL & GAS ONSHORE, L. P.

Federal Lease: UTU-080554

North Bench Federal 32-20

SW NE Section 20: Township 13 South - Range 11 East

Carbon County, Utah

	Setting Depth-KB	Sacks of Cement	Top of Ferron	Total Depth	Anticipated Bottom Hole Pressure
8-5/8", 24#, J-55 ST&C	**454**	**194**			
5-1/2", 15.5#, J-55 LT&C	**4536**	**397**	**4086**	**4536**	**1950**

MASTER DRILLING PLANS (Northern Cardinal Draw Wells)

1. ESTIMATED DEPTH OF ANTICIPATED WATER, OIL, GAS OR MINERAL FORMATIONS

Primary Objective: **Ferron** **Methane Gas**

Several coal seams may be tested for gas producing formations to total depth. All shallow water zones will be protected with casing and cement. Cement will be brought 700' above the Ferron unless water is encountered.

The casing and cementing programs shall be conducted as approved to protect and/or isolate all usable water zones and any prospectively valuable deposits of minerals. All indications of usable water shall be reported to the authorized officer prior to running the next string of casing or before plugging orders are requested, whichever occurs first.

2. MINIMUM BOP REQUIREMENTS: (Refer to attached schematics)

a) The BOPE shall be closed whenever the well is unattended.

b) The BOPE shall be pressure tested when initially installed, whenever any seal subject to pressure testing is broken, after repairs, or every 30 days.

c) Kerr-McGee shall notify the BLM Price Field Office 24 hours prior to the BOPE test.

d) All BOPE shall meet or exceed the requirements of a **2M** system as set forth in Onshore Order No. 2.

e) An accumulator unit will be used that has sufficient capacity to open the hydraulically-controlled choke line valve (if so equipped), close all rams plus the annular preventer and retain 200 psi above precharge on the closing manifold without the use of the closing pumps. The accumulator unit will be located at the master accumulator and on the rig floor. Hydraulic controls will be located at the master accumulator. Manual controls (hand wheels) will also be installed on the blind and pipe rams.

f) Ram type preventers and associated equipment shall be tested to approved stack working pressure if isolated by test plug or 70 percent of internal yield pressure of casing if BOP stack is not isolated from casing. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer.

g) Annular type preventers shall be tested to 50 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

h) Accessories to BOP's include upper and lower Kelly cock valves with handle , floor safety valve and wireline-retrievable float valves.

3. SUPPLEMENTARY INFORMATION

As this is a normally pressured coal bed methane play, no gas is anticipated to surface during drilling operations. Surface casing will be preset with a water-well drilling rig (3D) and production casing will be set with a turnkey operator (Pense). Kerr-McGee will have a company hand on location for all operations. This is done to minimize rig time on location.

Formation	Measured	SubSea	Lithology
Mancos	Surf		
Ferron	4086	2660	Sandstone, shale, minor coal
Tunnunk	4386	2285	Shale, minor sandstone
Lower Tunnunk	4486	2185	Shale, minor siltstone
TD	**4536**		

4. CASING PROGRAM:

Hole Size	Casing Size	Weight	Grade	Joint	Depth Set	New/Used	Collapse	Burst	Tension
17-1/2"	13-3/8"	54.5	J-55	ST&C	40	New	1,130	2,730	514,000
11"	8-5/8"	24.0	J-55	ST&C	454	New	1,370	2,950	244,000
7-7/8”	5-1/2"	15.5	J-55	LT&C	4540	New	4,040	4,810	217,000

Calculations are the minimum safety factor encountered at the deepest Cardinal Draw North Bench Wells

Surface Casing:

a) Burst = 0.052 * MW * TVD
= 0.052 * 8.33 ppg * 4540'
= 1967 psi
Safety Factor = Rating/Burst
= 2950/1967
= 2

b) Collapse = [0.052 * MW * TVD(shoe)]
= [0.052 * 9.0 ppg * 454’]
= 212 psi
Safety Factor = Rating/Collapse
= 1370/212
= 6

c) Tension = Weight * TVD * [1 – (MW/65.5ppg)] + Margin of Overpull
= 24 * 454’ * [1 - 9.0/65.5] + 50,000
= 59399 lbf
Safety Factor = Rating/Tension
= 244,000/59,399
= 4

Surface casing shall have a centralizer on every joint.

Production Casing:

a) Burst = 0.052 * 8.33 ppg * 4540'
= 1967 psi
Burst = (1.45 psi/ft - 0.44 psi/ft) * TVD (Fracture Pressure)
= 4585.4 psi
Safety Factor = Rating/Burst
= 4810/1967
= 2
= 4810/4585
= 1

b) Collapse = [0.052 * 8.33 ppg * 4540']
= 1967 psi
Safety Factor = Rating/Collapse
= 4040/1967
= 2

c) Tension Weight = 15.5 lbs/ft * 4540’* [1-(8.33 ppg/65.5 ppg)] + Margin of Overpull
= 15.5 lbs/ft * 4540’* 0.873+50,000
= 111421 lbf
Safety Factor = Rating/Tension
= 217,000/111,421
= 2

5. DRILLING FLUIDS PROGRAM:

Surface:
Kerr-McGee intends to drill the surface casing through to 10% of total depth using fresh water and gel sweeps.
No gas or water zones will be encountered and as such BOPE will not be used.

Production:
Drilling of the production hole to casing setting depth will be done with air as the drilling fluid. While drilling in an under balanced state, Kerr-McGee and/or its rig contractor will maintain sufficient barite and lost-circulation materials on the location kill water flows and contain gas production, if deemed necessary. These material will not be pre-mixed, but the ability to mix and pump them will be present on location.

Kerr-McGee requests a variance from Onshore Order 2 with regards to the 100 foot blooey line. The length of the blooey line will be sufficient to reach the middle of the reserve pit. Since gas flow is not anticipated to surface, there will not be an ignition devise. In the event that gas does flow to surface, a continuous ignition system will be installed and utilized on all remaining subsequent wells drilled. Air flow line is 8" Schedule 80 pipes that runs 90 º from the well bore to the reserve pit. The last 7" of flow line is 14" pipe with three (3), 45º, 8" Schedule 80 pipes to disperse cuttings to reserve pit. Dust will be suppressed by injecting water into the blooey line. Whip-checks will also be utilized on all pressurized compressors, blooey lines and hoses to maintain physical control. Fire extinguishers will be placed around location.

The open hole will be loaded with water and a micro-emulsion agent prior to tripping out of the hole to run wire line logs and case.

6. CEMENTING PROGRAM:

8-5/8" Surface Casing:
Tail: Class "G" Cement + 2% $CaCl_2$, mixed at 15.6 ppg, 1.19 cuft/sk yield with 100% excess by volume.

The surface casing shall be cemented back to surface. In the event cement does not circulate to surface or fall back of the cement column occurs, remedial cementing shall be done to cement the casing back to surface.

5-1/2" Production Casing:
Tail: Class "G" Cement + 2% $CaCl_2$, mixed at 15.8 ppg, 1.2 cuft/sk yield with 10% excess.
Volumes calculated to circulate cement from TD to 700' above the Ferron formation with 10% excess by caliper log.

Centralizers will used to maintain a minimum of 70% Casing-Sidewall Standoff

7. LOGGING PROGRAM

Well completion and stimulation procedures will be determined following the evaluation of the drilling results and open hole logs. A "Sundry Notice" will be submitted for approval outlining the planned completion procedure at that time.

Cores: None DSTs: None

Logs:	From	To
GR	TD	Surface - if needed
Resistivity	Surface Casing	TD
Neutron-Density-Cal	Surface Casing	TD
High Res Pass	Surface Casing	TD

8. PRESSURE DATA, POTENTIAL HAZARDS

Bottom hole is anticipated to be normally pressured.
There is no history of hydrogen sulfide gas in the area and none is anticipated.

9. ANTICIPATED STARTING DATES AND NOTIFICATION OF OPERATIONS:

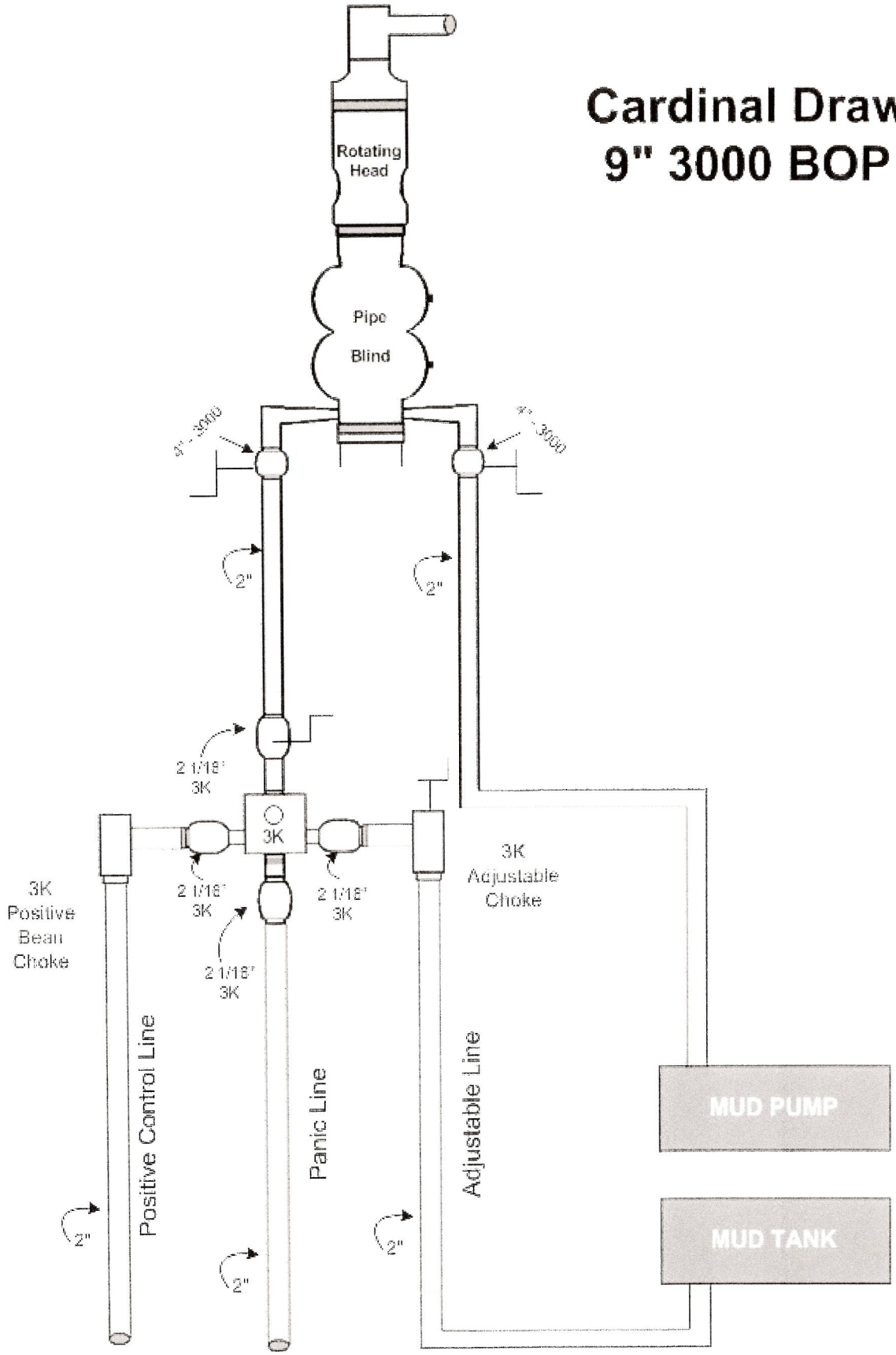
a) Anticipated Days:

Drilling Days:	Approximately 4 Days/Well
Completion Days:	Approximately 2 Days/Well
Testing Days:	Approximately 7-14 Days/Well

b) Notification of Operations:

Bureau of Land Management - BLM Price Field Office Utah
125 South 600 West
Price, UT 84501
435-636-3600
Attn: Mr. Kyle Beagley - NRS 435-636-3668

Cardinal Draw
9" 3000 BOP



'APIWellNo:43007500010000'

CERTIFICATION STATEMENT

WELL NAME: **North Bench Federal 32-20**

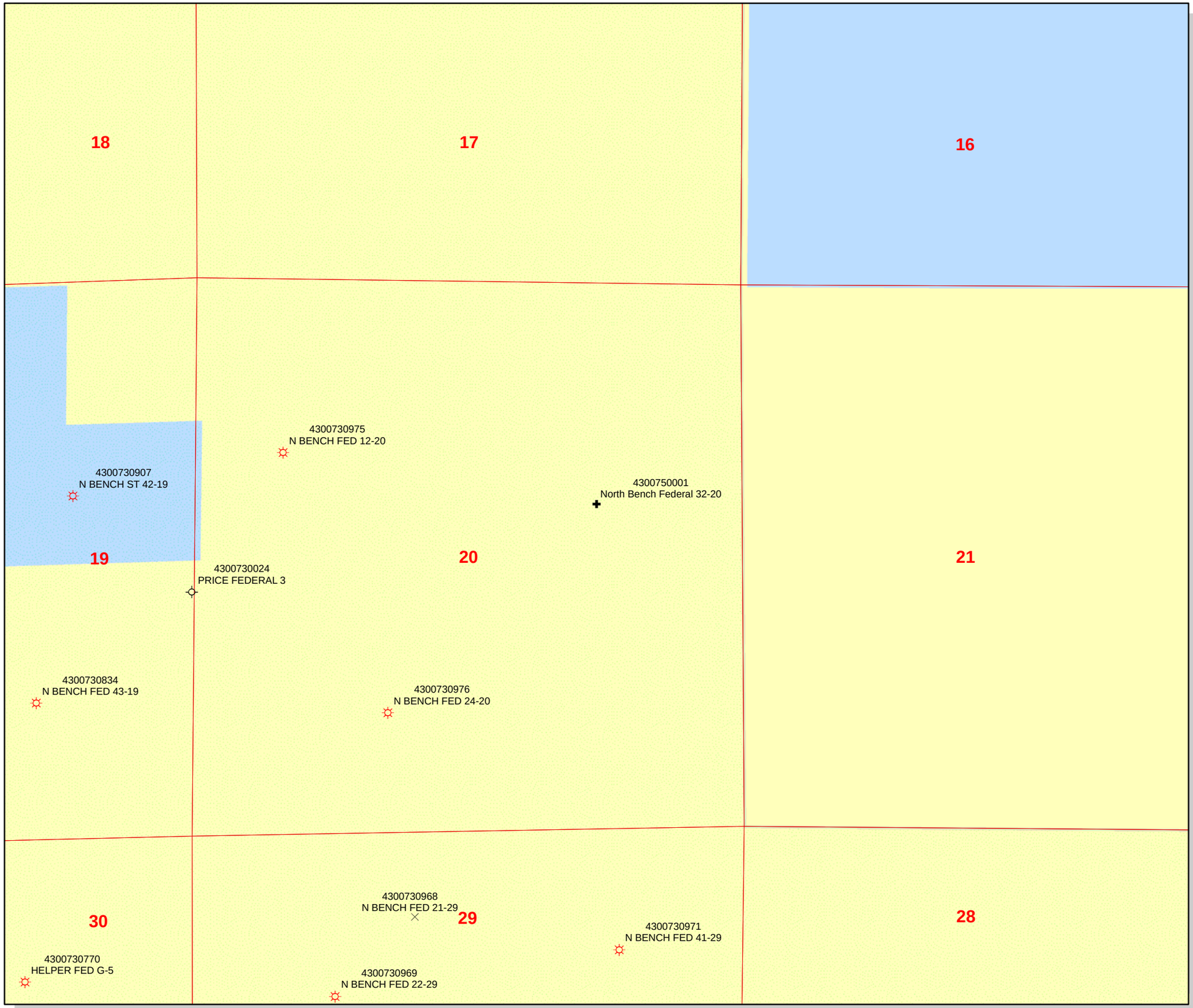
LEASE No.: **UTU-080554**

I hereby certify that I, or person under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in the plan are, to the best of my knowledge, true and correct; and that the work associated with the operations herein will be performed by Nelco, Inc., construction contractor, Pense Brothers Drilling Company, Nabors Wells Service Rig #808, and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C 1001 for the filing of a false statement.

Emile Goodwin, Drilling Engineer

Dated this 20th day of March, 2009.

'APIWellNo:43007500010000'



API Number: 4300750001

Well Name: North Bench Federal 32-20

Township 13.0 S Range 11.0 E Section 20

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>

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

1,200 600 0 1,200 Feet

1:12,000

'API WellNo:4300750001 0000'

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 4/28/2009 **API NO. ASSIGNED:** 43007500010000

WELL NAME: North Bench Federal 32-20

OPERATOR: KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995) **PHONE NUMBER:** 720 929-6472

CONTACT: Debby Black

PROPOSED LOCATION: SWNE 20 130S 110E **Permit Tech Review:** ☑

SURFACE: 2118 FNL 1466 FEL **Engineering Review:** ☐

BOTTOM: 2118 FNL 1466 FEL **Geology Review:** ☑

COUNTY: CARBON

LATITUDE: 39.68334 **LONGITUDE:** -110.70621

UTM SURF EASTINGS: 525194.00 **NORTHINGS:** 4392443.00

FIELD NAME: HELPER

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU080554 **PROPOSED PRODUCING FORMATION(S):** FERRON SANDSTONE

SURFACE OWNER: 1 - Federal **COALBED METHANE:** YES

RECEIVED AND/OR REVIEWED:

- ☑ **PLAT**
- ☑ **Bond:** FEDERAL - WYB000291
- ☐ **Potash**
- ☐ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ☑ **Water Permit:** Air Drilling-Water from City of Price UT
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ☐ **Intent to Commingle**

Commingling Approved

LOCATION AND SITING:

- ☐ **R649-2-3.**

Unit:

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

Board Cause No: Cause 241-04

Effective Date: 9/26/2000

Siting: 460' Fr outer bdry u & 920' fr other wells

- ☐ **R649-3-11. Directional Drill**

Comments: Presite Completed

Stipulations: 4 - Federal Approval - 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: North Bench Federal 32-20
API Well Number: 43007500010000
Lease Number: UTU080554
Surface Owner: FEDERAL
Approval Date: 5/13/2009

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 241-04 . The expected producing formation or pool is the FERRON SANDSTONE 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

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.

Notification Requirements:
Notify the Division with 24 hours of spudding the well.
- Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.
- Contact Dustin Doucet at (801) 538-5281 office (801) 733-0983 home

Reporting Requirements:
All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7),

API Well No: 43007500010000

Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

Approved By:

Gil Hunt
Associate Director, Oil & Gas

API Well No: 43007500010000

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

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU080554

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:

1. TYPE OF WELL: Gas Well

8. WELL NAME and NUMBER: North Bench Federal 32-20

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

9. API NUMBER: 43007500010000

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: HELPER

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
2118 FNL 1466 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWNE Section: 20 Township: 13.0S Range: 11.0E Meridian: S

COUNTY: CARBON

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: 5/12/2010	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

Kerr-McGee wishes to extend this APD. Nothing has changed since original filing.

Approved by the Utah Division of Oil, Gas and Mining

Date: May 03, 2010

By:

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

SIGNATURE	DATE
N/A	4/27/2010

RECEIVED April 27, 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 43007500010000

API: 43007500010000
Well Name: North Bench Federal 32-20
Location: 2118 FNL 1466 FEL QTR SWNE SEC 20 TWNP 130S RNG 110E MER S
Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.
Date Original Permit Issued: 5/13/2009

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: Gina Becker **Date:** 4/27/2010
Title: Regulatory Analyst II **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

Date: May 03, 2010
By:

RECEIVED April 27, 2010

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

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU080554

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:

1. TYPE OF WELL
Gas Well

8. WELL NAME and NUMBER:
NORTH BENCH FED 32-20

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

9. API NUMBER:
43007500010000

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:
HELPER

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
2118 FNL 1466 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWNE Section: 20 Township: 13.0S Range: 11.0E Meridian: S

COUNTY:
CARBON

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: 5/9/2011	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

Kerr-McGee Oil & Gas Onshore, L.P. request to extend this APD for another year.

Approved by the Utah Division of Oil, Gas and Mining

Date: 05/09/2011

By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Raleen White	720 929-6666	Sr. Regulatory Analyst

SIGNATURE	DATE
N/A	5/9/2011

RECEIVED May. 09, 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 43007500010000

API: 43007500010000
Well Name: NORTH BENCH FED 32-20
Location: 2118 FNL 1466 FEL QTR SWNE SEC 20 TWNP 130S RNG 110E MER S
Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.
Date Original Permit Issued: 5/13/2009

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**

Signature: Raleen White **Date:** 5/9/2011
Title: Sr. Regulatory Analyst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED May. 09, 2011

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU080554

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:

1. TYPE OF WELL
Gas Well

8. WELL NAME and NUMBER:
NORTH BENCH FED 32-20

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

9. API NUMBER:
43007500010000

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

PHONE NUMBER:
720 929-6515

9. FIELD and POOL or WILDCAT:
HELPER

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
2118 FNL 1466 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWNE Section: 20 Township: 13.0S Range: 11.0E Meridian: S

COUNTY:
CARBON

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: 5/9/2012	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

The APD for the above captioned well is due to expire on 5/9/2012. Kerr-McGee respectfully requests to extend the APD for one year from the expiration date.

Approved by the Utah Division of Oil, Gas and Mining

Date: May 07, 2012

By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Lauren Christiansen	720 929-6107	Regulatory Anayst

SIGNATURE	DATE
N/A	5/2/2012

RECEIVED: May. 02, 2012

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 43007500010000

API: 43007500010000
Well Name: NORTH BENCH FED 32-20
Location: 2118 FNL 1466 FEL QTR SWNE SEC 20 TWNP 130S RNG 110E MER S
Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.
Date Original Permit Issued: 5/13/2009

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**

Signature: Lauren Christiansen **Date:** 5/2/2012
Title: Regulatory Anayst **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED: May. 02, 2012

FORM 9

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

5.LEASE DESIGNATION AND SERIAL NUMBER: UTU080554

SUNDRY NOTICES AND REPORTS ON WELLS

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6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL
Gas Well

8. WELL NAME and NUMBER:
NORTH BENCH FED 32-20

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

9. API NUMBER:
43007500010000

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

PHONE NUMBER:
720 929-6515

9. FIELD and POOL or WILDCAT:
HILL CREEK

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
2118 FNL 1466 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWNE Section: 20 Township: 13.0S Range: 11.0E Meridian: S

COUNTY:
CARBON

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: 5/13/2013	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

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

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: April 17, 2013

By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Teena Paulo	720 929-6236	Staff Regulatory Specialist

SIGNATURE	DATE
N/A	4/16/2013

RECEIVED: Apr. 16, 2013

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 43007500010000

API: 43007500010000
Well Name: NORTH BENCH FED 32-20
Location: 2118 FNL 1466 FEL QTR SWNE SEC 20 TWNP 130S RNG 110E MER S
Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.
Date Original Permit Issued: 5/13/2009

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**

Signature: Teena Paulo **Date:** 4/16/2013
Title: Staff Regulatory Specialist **Representing:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

RECEIVED: Apr. 16, 2013

Diana Mason <dianawhitney@utah.gov>

Kerr-McGee APDs to Rescind

Paulo, Teena <Teena.Paulo@anadarko.com> Fri, May 31, 2013 at 7:43 AM
To: Diana Mason <dianawhitney@utah.gov>

Good Morning Diana,

Please see the below list of wells for the APD's that Kerr-McGee requests to rescind with UDOGM.

4300750002	NORTH BENCH FED 43-20
4300750004	NORTH BENCH FED 22-21
4300750005	NORTH BENCH FED 32-21
4300750006	NORTH BENCH FED 43-21
4300750007	NORTH BENCH FED 12-22
4300750001	NORTH BENCH FED 32-20
4300750012	WELLINGTON FED 23-20
4300750015	WELLINGTON FED 32-30
4300750017	WELLINGTON FED 41-25

Thank you,

Teena Paulo
Staff Regulatory Specialist
Anadarko Petroleum
1099 18th Street, Suite 600
Denver, CO 80202

Click here for Anadarko's Electronic Mail Disclaimer

GARY R. HERBERT
Governor

GREGORY S. BELL
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

June 11, 2013

Teena Paulo
Kerr-McGee Oil & Gas Onshore, L.P
1099 18TH Street, Suite 600
Denver, CO 80202

Re: APDs Rescinded for Kerr-McGee Oil & Gas Onshore, L.P
Carbon and Uintah County

Dear Ms. Paulo:

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 31, 2013.

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

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

43-007-50002	North Bench Fed 43-20
43-007-50004	North Bench Fed 22-21
43-007-50005	North Bench Fed 32-21
43-007-50006	North Bench Fed 43-21
43-007-50007	North Bench Fed 12-22
43-007-50001	North Bench Fed 32-20
43-007-50012	Wellington Fed 23 -20
43-007-50015	Wellington Fed 32-30
43-007-50017	Wellington Fed 41-25
43-047-40120	NBU 920-15FT
43-047-40124	HATCH 923-25K
43-047-40144	HATCH 923-14I
43-047-40145	HATCH 923-25E
43-047-39370	NBU 922-18I
43-047-38308	BONANZA 1023-10N3DS

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. Lease Serial No.: UTU-080554

6. If Indian, Allottee or Tribe Name: N/A

7. If Unit or CA Agreement, Name and No.: N/A

8. Lease Name and Well No.: North Bench Federal 32-20

1a. Type of Work: [X] DRILL [ ] REENTER

1b. Type of Well: [ ] Oil Well [ ] Gas Well [X] Other CBM [X] Single Zone [ ] Multiple Zone

2. Name of Operator: Kerr-McGee Oil & Gas Onshore LP
Contact: Emile Goodwin, Drilling Engineer
E-mail: Emile.Goodwin@anadarako.com

9. API Well No.: 43-007-50001

3a. Address: 1099 18th Street, Suite 1800, Denver, CO 80202
Mailing: PO Box 173779, Denver, CO 80217-3779

3b. Phone No. (include area code): 720-929-6000

10. Field and Pool, or Exploratory: Helper / Ferron

4. Location of Well (Report location clearly and in accordance with any State Requirements.*)
At surface: 2118' FNL, 1466' FEL SW /4 NE /4 Lot:
Lat: 39.683351°N Long: -110.706929°W
At proposed production zone: Same as above

11. Sec., T., R., M., or Blk. and Survey or Area: Sec. 20 T13S-R11E S.L.B.&M.

14. Distance in miles and direction from nearest town or post office. *: Approximately 11.7 miles from Price, Utah

12. County or parish: Carbon County

13. State: UT

15. Distance from proposed location to nearest property or lease line, ft. (Also nearest Drig, unit line, if any): Unit= N/A Lease= 1466' FEL

16. No. of acres in lease: 1,520 ac.

17. Spacing Unit dedicated to this well: 160 acres

18. Distance from proposed location to nearest well, drilling, completed or applied for, on this lease, ft.: North Bench Federal 43-20 +\- 1513'

19. Proposed depth: 4536' TVD

20. BLM/BIA Bond No. on file: BLM Bond: WYB000291

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 6671' Ungraded Ground Level

22. Approximate date work will start *: Upon APD Approval

23. Estimated duration: 4 days drilling, 7-14 days complete / test

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature: Debby J. Black
Name (Printed/Typed): Debby J. Black (Debby.Black@anadarko.com)
Date: April 14, 2009
Title: Staff Regulatory Analyst
720-929-6472 (Direct Line)
303-868-8485 (Cell)

Approved by (Signature): [signature]
Name (Printed/Typed): Jerry Kenczka
Date: 1/7/2010
Title: ACTING FIELD MANAGER
Office: PRICE FIELD OFFICE

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

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

COPY

RECEIVED
JAN 12 2010
DIV. OF OIL, GAS & MINING

CONDITIONS OF APPROVAL ATTACHED

2009 APR 17 AM 10:

UDOGM

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
PRICE FIELD OFFICE
125 SOUTH 600 WEST PRICE, UT 84501 (435) 636-3600

CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company:	**Kerr-McGee Oil & Gas Onshore LP**	**Location:**	**SWNE-Sec. 20-T13S-R11E**
Well No:	**North Bench Federal 32-20**	**Lease No:**	**UTU-80554**
API No:	**43-007-50001**	**Agreement:**	**N/A**

Title	**Name**	**Office Phone Number**	**Cell Phone Number**
Acting Field Manager & Authorized Officer:	Jerry Kenczka	(435) 636-3633	(435) 828-7378
Petroleum Engineer:	Marvin Hendricks	(435) 636-3661	(435) 650-9136
Petroleum Engineering Technician	Walton Willis (Primary)	(435) 636-3662	(435) 650-9140
Petroleum Engineering Technician	Randy Knight (Alt.)	(435) 636-3615	(435) 650-9143
NRS/Enviro Scientist:	Kyle Beagley (Primary)	(435) 636-3668	
NRS/Enviro Scientist:	Don Stephens (Alt.)	(435) 636-3608	

Fax: (435) 636-3657

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

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

NOTIFICATION REQUIREMENTS

Location Construction (Notify NRS)	- Forty-Eight (48) hours prior to construction of location and access roads.
Location Completion (Notify NRS)	- Prior to moving on the drilling rig.
Spud Notice (Notify Petroleum Engineer)	- Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify Petroleum Eng. Technician)	- Twenty-Four (24) hours prior to running casing and cementing all casing strings.
BOP & Related Equipment Tests (Notify Petroleum Eng. Technician)	- Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify Petroleum Engineer)	- Within Five (5) business days after new well begins, or production resumes after well has been off production for more than ninety (90) days.

DRILLING PROGRAM
CONDITIONS OF APPROVAL (COAs)

SITE SPECIFIC DRILLING & PRODUCTION COAs

- Permitting approval from the State of Utah Division of Oil, Gas & Mining (DOGM) is required before conducting any surface disturbance activities.

- A copy of the approved Application for Permit to Drill (APD) for this well shall be on location at all times once drilling operations have commenced.

- While drilling with an air package, the requirements of Onshore Order #2 Part III.E Special Drilling Operations shall apply with the exception of the criteria below where a variance is requested.

- Top of cement behind the 5 1/2" casing is designed to be 700' above the Ferron sandstone. Should water be encountered above this depth while drilling, the cement job design shall be adjusted to bring cement 100' above the topmost water zone.

- A cement bond log (CBL) shall be run to determine the top of cement behind the production casing, and a field copy sent to the Price Field Office.

VARIANCES GRANTED

- Kerr-McGee's request for variance to not install a 100' blooie line (Onshore Order #2 Part III.E Special Drilling Operations) is granted, however a blooie line having a minimum length of 80' at the discharge point shall be used.

- Kerr-McGee's request for variance to not install an ignition device (Onshore Order #2 Part III.E Special Drilling Operations) is granted, as free natural gas is not expected while drilling. Should natural gas be encountered, the operator will ensure that a continuous ignition system is installed and used for the remainder of the well.

STANDARD OPERATING REQUIREMENTS

- The Price Field Office petroleum engineer will be notified 24 hours verbally prior to spudding the well.

- Notify the Price Field Office petroleum engineering technician at least 24 hours in advance of casing cementing operations, BOPE tests and casing pressure or mud weight equivalency tests.

- The requirements included in Onshore Order #2 Drilling Operations shall be followed.

- Should H_2S be encountered in concentrations greater than 100 ppm, the requirements of Onshore Order #6 Hydrogen Sulfide Operations shall be followed.

STANDARD OPERATING REQUIREMENTS (cont.)

- Any deviation from the permitted APD's proposed drilling program shall have prior approval from the petroleum engineer. Changes may be requested verbally (to be followed by a written sundry sent to this office), or submitted by written sundry if time warrants.

- Blowout prevention equipment (BOPE) shall remain in use until the well is completed. The closing unit controls shall remain unobstructed and readily accessible at all times, and choke manifolds shall be located outside of the rig substructure.

- BOP testing shall be conducted within 24 hours of drilling out from under the surface casing, and weekly thereafter as specified in Onshore Order #2.

- All BOPE components shall be inspected daily, and the inspections recorded in the daily drilling report. Components shall be operated and tested, as required by Onshore Order #2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder, and not by the rig pumps. Test results shall be reported in the driller's log.

- All casing strings below the conductor pipe shall be pressure tested to .22 psi/foot or 1500 psi (whichever is greater), but not to exceed 70% of the internal yield pressure.

- No aggressive/fresh hard-banded drill pipe shall be used in the casing design. The proposed use of non-API standard casing must be approved in advance by the petroleum engineer.

- During drilling operations, daily drilling reports shall be emailed to the Price Field Office petroleum engineer and petroleum engineering technicians. Within 30 days of: 1) finishing drilling operations, and 2) finishing well completion operations, a chronological daily operations history shall be submitted by sundry to this office.

- A copy of all logs run on this well shall be submitted digitally (in PDF or TIFF format) to the Price Field Office, or alternatively by hard copy.

- The venting or flaring of gas while initially testing the well shall be done in accordance with the requirements specified in Notice to Lessees (NTL) 4A, and shall not exceed a period of 30 days or the production of 50 MMCF of gas, whichever occurs first. Additional time needed to vent or flare gas during production operations requires prior approval from the Price Field Office.

- Proposed production operations that involve: 1) the commingling of production from wells located on-lease or off-lease, 2) off-lease measurement, or 3) off-lease storage shall have prior written approval from the Price Field Office.

- Should this well be successfully completed as a producing well, the Price Field Office must be notified within 5 business days following the date the well has first sales.

STANDARD OPERATING REQUIREMENTS (cont.)

- Operators shall meet the requirements listed in Onshore Order #4 Measurement of Oil and Onshore Order #5 Measurement of Gas. New oil and gas meters shall be calibrated prior to initial product sales. The operator (or its contractors) is responsible for providing the date and time of the initial meter calibration (and all future meter proving schedules) to the petroleum engineering technician. Copies of all meter calibration reports that are performed shall be submitted to the Price Field Office.

- In accordance with 43 CFR 3162.4-3, this well's production data shall be reported on the "Monthly Report of Operations" starting with the month in which operations commence and continue each month until the well is plugged and abandoned.

- The operator is responsible for submitting the information required in 43 CFR 3162.4-1 Well Records and Reports, including BLM Form 3160-4, Well Completion and Recompletion Report and Log which must be submitted to the Price Field Office within 30 days of completing the well.

- Onshore Order #7 authorizes the disposal of water produced from this well in the reserve pit for a period of 90 days after the date of initial production. A permanent disposal method must be submitted and approved by this office, and in operation prior to the end of this 90-day period.

- The requirements of Onshore Order #3 Site Security shall be implemented, and include (as applicable): 1) all lines entering and leaving hydrocarbon storage tanks shall be effectively sealed and seal records maintained, 2) no by-passes are allowed to be constructed around gas meters, 3) a site facility diagram shall be submitted to the Price Field Office within 60 days following construction of the facilities.

- Additional construction that is proposed, or the proposed alteration of existing facilities (including roads, gathering lines, batteries, etc.), which will result in the disturbance of new ground, requires prior approval of the Price Field Office natural resource specialist.

- This well and its associated facilities shall have identifying signs on location in accordance with 43 CFR 3162.6 requirements.

- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the Price Field Office natural resource specialist.

- The Price Field Office petroleum engineer shall be notified 24 hours in advance of the plugging of the well (unless the plugging is to take place immediately upon receipt of oral approval), so that a technician may have sufficient time to schedule and witness the plugging operations.

- If operations are to be suspended on a well for more than 30 days, prior approval of the Price Field Office shall be obtained, and notification also given before operations resume.

SURFACE USE
CONDITIONS OF APPROVAL

Project Name: Kerr-McGee Application for Permit to Drill (19 APDs)

Operator: Kerr-McGee Oil and Gas Onshore, L.P.

List of Wells Covered by This COA:

Name	Section	TWP/RNG	Lease Number
North Bench Federal 12-22	22	13S/11E	UTU-80554
North Bench Federal 14-21	21	13S/11E	UTU-80554
North Bench Federal 21-28	28	13S/11E	UTU-80557
North Bench Federal 22-21	21	13S/11E	UTU-80554
North Bench Federal 32-20	20	13S/11E	UTU-80554
North Bench Federal 32-21	21	13S/11E	UTU-80554
North Bench Federal 41-28	28	13S/11E	UTU-80557
North Bench Federal 43-20	20	13S/11E	UTU-80554
North Bench Federal 43-21	21	13S/11E	UTU-80554

I Site Specific Conditions of Approval

- A pre-construction field meeting may be conducted prior to beginning any dirt work approved under this APD. The operator shall contact Kyle Beagley at the Price BLM office @ 435-636-3668 at least 48-hours prior to beginning operations so that the meeting can be scheduled. The operator is responsible for having all contractors present (dirt contractors, drilling contractor, pipeline contractor, project oversight personnel, etc.) including the overall field operations superintendent, and for providing all contractors copies of the approved APD(s), project map and BLM Conditions of Approval (COA) pertinent to the work that each will be doing.

- Kerr-McGee will comply with all Applicant-committed Environmental Protection Measures presented in Attachment 1.

- Kerr-McGee will comply with the Revegetation Plan for the Cardinal Draw II Coal Bed Methane Project (Appendix B in the Cardinal Draw II EA.) This plan is included as Attachment 2.

- Kerr-McGee will measure gas production on the well pad unless permission is granted for measurement at another place.

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NO_x per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.

- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO_x per horsepower-hour.

- As required by the Approved RMP, if cultural resources are uncovered during surface-disturbing activities, Kerr-McGee will suspend operations at the site and immediately contact the Authorized Officer, who will arrange for a determination of eligibility in consultation with the State Historic Preservation Officer (SHPO), and, if necessary, recommend a recovery or avoidance plan.

- As required under 40 CFR 112.3(e), Kerr-McGee will maintain a copy of the SPCC plan at each facility, if the facility is normally attended at least 8 hours per day, or at the nearest field office if the facility is not so attended. Kerr-McGee will also implement and adhere to SPCC plans in a manner such that any spill or accidental discharge of oil will be reported and remediated.

- All equipment and personnel used during drilling and construction activities will be restricted to only approved access roads.

- These wells and associated above-ground structures (e.g., production equipment, tanks, etc.), not subject to safety requirements, shall be painted Beetle (as simulated in the Standard Environmental Colors); or shall be painted the same color as Kerr-McGee's Wellington Federal 41-09 well that exists within the proximity of these wells. These wells shall be painted within 6 months of being located on site.

- No oil, lubricants, or toxic substances may be drained onto the ground surface.

- Kerr-McGee will not allow any open burning of garbage or refuse at well sites or other facilities.

- Kerr-McGee will repair or replace to current BLM standards any fences, cattleguards, gates, drift fences, and natural barriers that are damaged as a result of the Proposed Action. Cattleguards will be used instead of gates for livestock control on most road ROWs.

- To minimize wildlife and vehicle collisions, Kerr-McGee will advise project personnel regarding appropriate speed limits in the Project Area. Employees and contractors will also be educated about anti-poaching laws.

- Please contact Kyle Beagley, Natural Resource Specialist, (435) 636-3668, Bureau of Land Management, Price Field Office, if there are any questions concerning these surface use COAs.

II Standard Conditions of Approval

General

- Kerr-McGee will provide geo-referenced spatial data depicting the as-built location of all facilities (well, road, etc) and any other related facilities to the BLM by November 1 of each year until completion of project construction activities has occurred.

- Kerr-McGee will inform their employees, contractors, and subcontractors about relevant Federal regulations intended to protect archaeological and cultural resources. All personnel will be informed that collecting artifacts, including arrowheads, is a violation of Federal law and that employees engaged in this activity will be subject to disciplinary action.

Construction

- Topsoil will be removed from constructed well locations including areas of cut and fill, and stockpile at the site. Topsoil will also be salvaged for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.). Clearly segregate topsoil from excess spoil material. Any topsoil stockpiled for one year or longer will be signed and stabilized with annual ryegrass or other suitable cover crop.

- The operator will not push soil material and overburden over side slopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved without creating additional unnecessary surface disturbance and where it does not impede watershed and drainage flows.

- Kerr-McGee will construct the backslope no steeper than 1½:1, and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM Authorized Officer.

- Kerr-McGee will maintain a minimum 20-foot undisturbed vegetative border between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by the BLM Authorized Officer.

- Reserve pits will be adequately fenced during and after drilling operations until the pit is reclaimed so as to effectively keep out wildlife and livestock. Adequate fencing is defined as follows: 1) Construction materials will consist of steel or wood posts. Three or four strand wire (smooth or barbed) fence or hog panel (16-foot length by 50-inch height) or plastic snow fence must be used with connectors such as fence staples, quick-connect clips, hog rings, hose clamps, twisted wire, etc. Electric fences will not be allowed; 2) Construction standards: Posts shall be firmly set in ground. If wire is used, it must be taut and evenly spaced, from ground level to top wire, to effectively keep out animals. Hog panels must be tied securely into posts and one another using fence staples, clamps, etc. Plastic snow fencing must be taut and sturdy. Fencing must be at least 2-feet from the edge of the pit. Three sides of the pit must be fenced before drilling begins. The fourth side of the pit must be fenced immediately upon completion of drilling and prior to rig

release. The fence must be left up and maintained in adequate condition until pit is closed.

- The reserve pit will be oriented to prevent collection of surface runoff. After the drilling rig is removed, the operator may need to construct a berm on the uphill side of the reserve pit to divert surface drainage around it. If constructed, the berm will be left intact until the pit is closed.

- The reserve pit will be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having a permeability less than 10^{-7} cm/sec. The liner will be installed so that it will not leak and will be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material will be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand will be used prior to installing the liner.

- Culverts will be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them, and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted.

- The minimum diameter for culverts will be 18 inches. However, all culverts will be appropriately sized in accordance with standards in BLM Manual 9113 and the Surface Operating Standards and Guidelines for Oil and Gas Development (The Gold Book).

- Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Pipelines shall not be run parallel in drainage bottoms. Suspended pipelines shall provide adequate clearance for maximum runoff.

- Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization and reclamation.

- The operator shall submit a Sundry Notice (Form 3160-5) to BLM for approval prior to construction of any new surface disturbing activities that are not specifically addressed in the approved APD.

- Surface disturbance will be limited to the approved location and access routes.

- No surface-disturbing activities will occur during muddy and wet periods (e.g., when soils are saturated and excessive rutting of more than 4 inches with multiple passes could occur).

- The edges of well pads will be feathered to blend with the surrounding landscape.

- Removal and disturbance of vegetation will be kept to a minimum through construction site management (e.g., using previously disturbed areas and existing easements where feasible, placing pipelines adjacent to roads, limiting well pad size, etc.).

- During the construction phase of the project, Kerr-McGee will implement reclamation and weed control program after each segment of project completion. Kerr-McGee will reseed all portions of the well pad and the ROW not utilized for vehicular traffic with the recommended seed mix (see attachment 2). Post-construction seeding application will continue until determined successful by the BLM (refer to attachment 3 "Green River District Reclamation Guidelines.") Weed control will be conducted through an Approved Pesticide Use and Weed Control Plan from the AO.

- To reduce the spread or introduction of noxious and invasive weed species into the Project Area via project-related vehicles and equipment, Kerr-McGee and its contractor's will power-wash all construction equipment prior to entering the Project Area.

- Areas used for spoil storage will be stripped of topsoil before spoil placement.

- Appropriate erosion control and revegetation measures will be employed. In areas with unstable soils where seeding alone may not adequately control erosion, grading will be used to minimize slopes and water bars will be installed on disturbed slopes. Erosion control efforts will be monitored by Kerr-McGee and necessary modifications would be made to control erosion.

- Sufficient topsoil or other suitable materials to facilitate revegetation will be segregated from subsoils during all construction operations requiring excavation and will be returned to the surface upon completion of operations. Soils compacted during construction will be ripped and tilled as necessary prior to reseeding. Cut and fill sections on all roads will be revegetated with the recommended seed mix (see attachment 2).

- During the activities of road maintenance, new road construction or the construction of the well pad, if any standing live or dead trees are damaged, cut down or knocked over by grading or construction equipment, actions would be taken to remove the vegetation from the road or pad edge. These materials would be distributed over the reclaimed areas as directed by the BLM.

Operations/Maintenance

- Rat and mouse holes shall be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location.

- Hydrocarbons shall be put in test tanks on location during completion work. Produced water will be put in the reserve pit during completion work per Onshore Order #7.

- The only fluids/waste materials which are authorized to go into the reserve pit are RCRA exempt exploration and production wastes. These include drilling muds and cuttings, rigwash, and excess cement and certain completion & stimulation fluids defined by EPA as exempt. It does not include drilling rig waste, such as spent hydraulic fluids, used engine oil, used oil filter, empty cement, drilling mud, or other product sacks, empty paint, pipe dope, chemical or other product containers, and excess chemicals or chemical rinsate. Any evidence of non-exempt wastes being put into the reserve pit may result in the BLM Authorized Officer requiring specific testing and closure requirements.

- If this well is drilled during the fire season (June-October), the operator shall institute all necessary precautions to ensure that fire hazard is minimized, including but not limited to mowing vegetation on the access route(s) and well location, and keeping firefighting equipment readily available when drilling, etc.

Dry Hole/Reclamation

- All disturbed lands associated with this project, access roads, well pad, etc. will be expediently reclaimed. Reclamation seeding will occur during the dormant fall season (typically October 1 through the first snowfall event) in accordance with the surface use plan and any pertinent site-specific COAs.

- Before the location has been reshaped and prior to redistributing the topsoil, the operator will rip or scarify the drilling platform and access road on the contour, to a depth of at least 12 inches. The rippers are to be no farther than 24 inches apart.

- Reserve pits will be closed within 90 days, unless the BLM Authorized Officer gives an extension. Squeezing of pit fluids and cuttings is prohibited. Pits must be dry of fluids or they must be removed via vac-truck or other environmentally acceptable method prior to backfilling, re-contouring and replacement of topsoil. Mud and cuttings left in pit must be buried at least 3-feet below re-contoured grade. The operator will be responsible for re-contouring any subsidence areas that develop from closing a pit before it is sufficiently dry.

- Kerr-McGee will distribute the topsoil evenly over the entire location and other disturbed areas; and prepare the seedbed by disking to a depth of 4-to-6 inches following the contour.

- Disturbed lands will be re-contoured back to conform to existing undisturbed topography within 60 days of the well going into production or being plugged. No depressions will be left that trap water or form ponds.

- The attached seed mixture is recommended for reclamation for these wells. If Kerr-McGee intends to use a different seed mixture, that mixture must be approved by the appropriate Authorized Officer.

- Any mulch utilized for reclamation must to be certified weed free.

- The reclamation objectives found in the Green River District Reclamation Guidelines (refer to attachment 3) and subsequent actions in order to reach those objectives shall be followed.

- A Notice of Intent to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.

- For performance bond release approval, a Final Abandonment Notice (with a surface owner release letter on split-estate) must be submitted prior to a final abandonment evaluation by the BLM.

- Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.

- Waterbars are to be constructed at least one (1) foot deep, on the contour with approximately two (2) feet of drop per 100 feet of waterbar to ensure drainage, and extended into established vegetation. All waterbars are to be constructed with the berm on the downhill side to prevent the soft material from silting in the trench. The initial waterbar should be constructed at the top of the backslope. Subsequent waterbars should follow the following general spacing guidelines:

Slope (percent)	Spacing Interval (feet)
≤ 2	200
2 – 4	100
4 – 5	75
≥ 5	50

Producing Well

- All internal combustion equipment will be kept in good working order.

- Landscape those areas not required for production to the surrounding topography as soon as possible.

- Reduce the backslope to 2:1 and the foreslope to 3:1, unless otherwise directed by the BLM Authorized Officer. Reduce slopes by pulling fill material up from foreslope into the toe of cut slopes.

- Production facilities (including dikes) must be placed on the cut portion of the location and a minimum of 15 feet from the toe of the back cut unless otherwise approved by the BLM Authorized Officer.

- Any spilled or leaked oil, produced water or treatment chemicals must be reported in accordance with NTL-3A and immediately cleaned up in accordance with BLM requirements. This includes clean-up and proper disposition of soils contaminated as a result of such spills/leaks.

- Distribute stockpiled topsoil evenly over those areas not required for production and reseed as recommended.
- Upgrade and maintain access roads and drainage control (e.g., culverts, drainage dips, ditching, crowning, surfacing, etc.) as necessary and as directed by the BLM Authorized Officer to prevent soil erosion and accommodate safe, environmentally-sound access.
- Prior to construction of production facilities not specifically addressed in the APD, the operator shall submit a Sundry Notice to the BLM Authorized Officer for approval.
- If not already required prior to constructing and drilling the well location, the operator shall immediately upgrade the entire access road to BLM standards (including topsoiling, crowning, ditching, drainage culverts, surfacing, etc.) to ensure safe, environmentally-sound, year-round access. This requirement does not supercede or apply where specific road requirements are addressed in the APD/POD surface use plan (e.g., two track road, spot upgrade, etc.)
- Waterbars shall be installed on all reclaimed pipeline corridors per the guidelines.

Roads and Pipelines

- New road construction and road reconstruction will comply with the BLM road and safety standards found in the BLM's 9113-Roads Manual except as modified by the BLM.
- To ensure public safety and the protection of Federal resources, roads will be constructed to an appropriate standard, no higher than necessary to accommodate the intended use. Please refer to the Gold Book, section "Road Design and Construction."
- Roads constructed on BLM lands shall be constructed to allow for drainage and erosion control. The operator is responsible for maintenance of all roads authorized through the lease or right-of-way. Construction and maintenance shall comply with BLM System Road Standards as described in BLM Manual Section 9113 and the BLM Gold Book standards, except as modified by BLM. Maintenance may include but is not limited to grading, applying gravel, snow removal, ditch cleaning, and headcut restoration/prevention.
- No road grades in excess of 10 percent will occur without written permission of the Authorized Officer.
- Topsoil from access roads and pipelines are to be wind rowed along the uphill side of the road or stored in an approved manner. When the road and pipeline is rehabilitated, this soil will then be used as a top coating for the seed bed.
- The operator shall provide an inspector under the direction of a registered professional engineer (PE) at all times during road construction. A PE shall certify (statement with PE stamp) that the road was constructed to the required BLM road standards.

- Erosion-control structures such as water bars, diversion channels, and terraces will be constructed to divert water and reduce soil erosion on the disturbed area. Road ditch turnouts shall be equipped with energy dissipaters as needed to avoid erosion. Where roads interrupt overland sheet-flow and convert this runoff to channel flow, ditch turnouts shall be designed to reconvert channel flow to sheet flow. Rock energy dissipaters and gravel dispersion fans may be used, or any other design which would accomplish the desired reconversion of flow regime. As necessary cut banks, road drainages, and road crossings shall be armored or otherwise engineered to prevent headcutting

Health and Safety

- In accordance with 29 CFR 1910.1200, a Material Safety Data Sheet (MSDS) for every chemical or hazardous material brought on-site will be kept on file in the Price Field Office.

- Kerr-McGee will transport and/or dispose of any hazardous wastes, as defined by RCRA, as amended, in accordance with all applicable Federal, State, and local regulations.

- All storage tanks that contain produced water, or other fluids which may constitute a hazard to public health or safety, will be surrounded by a secondary means of containment for the entire contents of the tank, plus freeboard for precipitation, or to contain 110 percent of the capacity of the tank. The appropriate containment and/or diversionary structures or equipment, including walls and floor, will be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not drain, infiltrate, or otherwise escape to groundwater or surface waters before cleanup is completed. A liner shall be used when the ground is permeable and would allow filtration of fluid to the subsurface strata.

- Notice of any spill or leakage, as defined in BLM NTL 3A, will be immediately reported by Kerr-McGee to the Authorized Officer and to other Federal and State officials as required by law. Oral notice will be given as soon as possible, but within no more than 24 hours, and those oral notices will be confirmed in writing within 72 hours of any such occurrence.

Attachments:

Attachment 1 – Cardinal Draw II EA – BLM Requirements and Applicant-committed Protection Measures

Attachment 2 – Cardinal Draw II EA Appendix B – Revegetation Plan For The Cardinal Draw II Coal Bed Methane Project

Attachment 3 - Green River District Reclamation Guidelines

Attachment 1

2.2.13 Applicant-Committed Environmental Protection Measures

In addition to the environmental protection measures that are required by law, the Price RMP (BLM 2008a), EORs lease, or other applicable regulatory authorities, the following Applicant-Committed Environmental Protection Measures (ACEPMs) would also be applied to all activities on Federal lands within the Project Area or off-lease ROW. Implementation of these measures would be incorporated into the DR, which then authorizes the BLM to enforce these measures to help avoid or minimize impacts to the environment.

2.2.13.1 Cultural Resources

- Under Alternative C, a Class III inventory would be conducted for the northern access route in all areas proposed for surface disturbance, both within the Project Area and along the northern off-lease ROW. This survey would be conducted on a site-specific basis prior to the initiation of construction activities. All prehistoric and historic sites documented during the Class III inventory as eligible for listing on the National Register of Historic Places (NRHP), as well as areas identified as having a high probability of significant subsurface materials, would be avoided by development. Specifically, the access road would be altered or rerouted as necessary to avoid impacting NRHP-eligible sites. If avoidance is not feasible or does not provide the required protection, adverse effects would be mitigated (e.g., data recovery through excavation).

- EOR would inform their employees, contractors, and subcontractors about relevant Federal regulations intended to protect archaeological and cultural resources. All personnel would be informed that collecting artifacts, including arrowheads, is a violation of Federal law and that employees engaged in this activity would be subject to disciplinary action.

- If previously undocumented sites of religious or cultural importance are identified within the Project Area or off-lease ROW during the construction phase of the project, EOR would review the potential impacts consistent with the Regulatory Requirements cited in **Section 2.2.13** to verify they are sufficient to minimize any impacts. Therefore, documented and undocumented cultural resources would be protected during construction, operations, and maintenance operations and no unmitigated cultural resources that are eligible for listing on the NRHP would be impacted by the Proposed Action.

2.2.13.2 Vegetation (Including Special Status Plant Species; Invasive and Noxious Species; and Wetlands/Riparian Zones)

- Prior to the initiation of construction activities, a noxious weed inventory would be conducted at the proposed well pad and along the proposed access road. Results of the inventory would be submitted to the BLM and attached to the associated APD.

- Prior to the initiation of construction activities, a Creutzfeld cryptantha (*Cryptantha creutzfeldii*) habitat assessment and plant inventory would be conducted in all areas proposed for surface disturbance. All plants documented during the inventory would be avoided by development. Specifically, the well pad location and access road would be altered or rerouted as necessary to avoid impacting identified plants.

2.2.13.3 Water Resources

- EOR would inform their employees, contractors, and subcontractors of the appropriate actions to take, based on the SPCC, if an accidental spill were to occur, as well as the potential impacts that could result from such a spill.

2.2.13.4 Rangeland Management

- EOR would repair or replace to current BLM standards any fences, cattle guards, gates, drift fences, and natural barriers that are damaged as a result of the Proposed Action along with private property stipulations. Cattle guards would be used instead of gates for livestock control along the road ROWs with the exception of those requests stated by fee land owners.

2.2.13.5 Fish and Wildlife (Including Special Status Species)

- To minimize wildlife mortality due to vehicle collisions, EOR would direct project personnel regarding appropriate speed limits in the Project Area and along the access road. The Utah Division of Wildlife Resources (UDWR) would be contacted regarding the presence of carrion within or along roadways.

- Employees and contractors would be educated about anti-poaching laws. If wildlife law violations are discovered, the offending employee would be subject to disciplinary action by local law enforcement and by EOR.

- Raptor management would be guided by "*Best Management Practices for Raptors and Their Associated Habitats in Utah*" (BLM 2008a, Appendix A). As such, prior to any surface-disturbing activities between January 1 and September 31, a BLM-approved contractor would survey all areas within 1-mile of proposed surface disturbance for the presence of raptor nests. If occupied/active raptor nests are found, construction would

not occur during the nesting season for that species within the species-specific buffer described in guidelines above. In addition, as specified in these guidelines, modifications of these spatial and seasonal buffers for BLM-authorized actions would be allowed, so long as protection of nesting raptors was ensured.

- Prior to the initiation of construction activities, a prairie dog colony survey would be conducted in all areas proposed for surface disturbance. All active colonies documented during the inventory would be avoided by development. Specifically, the well pad location and access road would be altered or rerouted as necessary to avoid impacting identified active colonies.

2.2.13.6 Soils

- Areas used for spoil storage would be stripped of topsoil before spoil placement.

- Appropriate erosion control and revegetation measures would be employed. In areas with unstable soils where seeding alone may not adequately control erosion, grading would be used to minimize slopes and water bars would be installed on disturbed slopes. Erosion control efforts would be monitored by EOR and necessary modifications would be made to control erosion.

- Sufficient topsoil or other suitable materials to facilitate revegetation would be segregated from subsoils during all construction operations requiring excavation, and would be returned to the surface upon completion of operations. Soils compacted during construction would be ripped and tilled as necessary prior to reseeding.

Attachment 2

Cardinal Draw II EA Appendix B

Revegetation Plan For The Cardinal Draw II Coal Bed Methane Project

1.0 INTRODUCTION

Kerr-McGee Oil & Gas Onshore LP (KMG) proposes to develop coal bed methane resources within the Ferron coals and sands in Carbon County, Utah. KMG will implement the following revegetation plan to reclaim the proposed disturbances associated with the Cardinal Draw Coal Bed Methane Project. All disturbances proposed will be reclaimed including the well pads, salt-water disposal wells, and pipeline and utility corridors. All upgraded and newly constructed roads will be decommissioned and reclaimed except those the BLM or private landowner requests be kept open. Well pad and salt-water disposal well facilities will be dismantled and scrapped or moved to another site for use on future projects.

Revegetation activities at each disturbed site will begin as soon as possible given operational requirements. On all areas not needed for production, interim reclamation will be conducted as soon as possible after completion of construction to reduce the potential for erosion. This includes utility corridors and any portions of the well pads, salt-water disposal wells, and road travel surfaces disturbed during construction, but not needed during production. Interim reclamation and revegetation will be completed the first planting season following the conclusion of topsoil re-spreading and well pad grading.

Final reclamation and revegetation of the well pads, salt-water disposal wells, and road travel surfaces will be conducted the first planting season following project element decommissioning. All revegetation materials, methods, and techniques to be employed will be acceptable to the BLM and State of Utah.

2.0 RECLAMATION

KMG also plans to employ mechanical site stabilization measures at well pad sites and within road corridors as a part of this project. Both interim and final reclamation of individual facilities would involve three primary components. They are backfilling, grading, redistributing soils, and installing structures to control erosion. Additional information is provided for each of these activities *Chapter 2.0: Description of Alternatives, Including Proposed Action.* A summary of these actions is provided below.

Prior to grading and construction, soil will be stripped from the site to an average depth of 0.6 inches and stockpiled along the outer boundary of the proposed disturbance. The stockpile(s) will be protected from operational disturbances to maintain facility integrity. The stockpiles will assume as low a profile as possible to decrease wind erosion potential and be oriented, along the longitudinal axis, perpendicular to the prevailing wind direction, if possible, to reduce wind erosion. Stockpiles will be clearly identified with signs to distinguish them from subgrade or other construction materials.

Interim Reclamation
On areas previously disturbed and no longer needed for production, including portions of the wellpads not needed for operational and safety purposes, and reserve pits, interim reclamation will be conducted. Wellpad size will be reduced to the minimum size necessary to conduct safe operations. Cuts and fills will be reduced to a contour of 3:1 or shallower. Reserve pits will be closed and backfilled as soon as pit contents are dry, or by the end of the next full summer following rig release, whichever is first. Immediately upon well completion, any hydrocarbons or trash in the reserve and flare pits will be removed. Pits will be allowed to dry, be pumped dry, or solidified in-situ prior to backfilling. Pit liners will be buried after completion activities. If the pit liner was synthetic, the pit will not trenched or filled while containing fluids. The pit will then be backfilled with a minimum of five feet of soil material when it dries out. In flat areas, to account for settling, and to promote surface drainage away from the backfilled pit, the pit area will be slightly mounded.

Interim reclamation will consist of backfilling and contouring the reserve pit area, back sloping and contouring all cut and fill slopes to an interim contour that blends with the surrounding topography as much as possible. Once contouring is complete, topsoil stockpiles will be then be re-spread over the disturbed area to preserve the topsoil as a growth medium for final reclamation. The re-spread topsoil will be revegetated with an interim reclamation certified weed-free seed mix designed by the BLM (See Tables 1 through 4). Prior to seeding, the seedbeds will be prepared by backfilling, leveling, and ripping all compacted areas. Contour cultivating to a depth of 4 to 6 inches will be conducted within 24 hours prior to seeding. To mitigate the contrast of recontoured slopes, cleared lines of vegetation will be feathered, and cleared trees, debris and rock will be saved and redistributed over recontoured cut and fill slopes.

Criteria for successful reclamation will include 70 percent of predisturbance cover, 90 percent of dominate species consisting of species in the seed mix and/or found in the surrounding natural undisturbed vegetation, and erosion features equal to or less than surrounding area or any criteria specified by the BLM.

Final Reclamation
For final reclamation facility structures would be removed and drill holes would be plugged and abandoned in accordance with Onshore Oil and Gas Order No. 2. Following the removal of the surface facility, reclamation would begin with backfilling, if necessary, and grading of the sites to approximate natural contours. The area would then be ripped to a depth of 12 inches to eliminate any compaction that may have occurred during final grading. The surface will be left in a slightly roughened condition to decrease erosion and promote site stability. Water bars and physical barricades may be implemented to promote site stabilization following grading.

Pipelines and subsurface power lines would be abandoned in place to avoid renewed surface disturbance. Pipelines will be cleaned by filling with water or nitrogen and pigging to remove the water or nitrogen. Reclamation and abandonment of pipelines and flowlines would require backfilling original cuts, reducing and grading cut and fill slopes to conform to the adjacent terrain, replacement of surface soil materials, water barring, and revegetation. All access roads constructed by the operator would be closed and reclaimed after well plugging and abandonment unless the landowner's and/or land managers request to keep any roads, and accept responsibility for future road maintenance. When the roads are decommissioned, the existing gravel surfacing will be removed and disposed of in an approved manner. Any unnecessary culverts or similar such improvements will also be excavated and disposed of. Natural drainage patterns will be restored along the road and constructed road crossings removed. Road reclamation may include ripping, scarifying, water barring, and barricading.

All final grading will be completed along the contour, where safety conditions permit, to minimize erosion and maximize site stability. Soil samples will then be taken for laboratory analysis. All surface equipment operations will be completed perpendicular to the slope angle where aerial and safety conditions permit.

For final reclamation, salvaged soil will be applied on areas to be revegetated within 30 to 60 days prior to seeding. Salvaged soil will be redistributed to an average depth of 0.5 feet in a manner that: (1) achieves an approximate uniform thickness consistent with safety requirements, post-disturbance land use objectives, and surface water drainage systems; (2) minimizes compaction and erosion of the soil resource; and (3) minimizes deterioration of the biological, physical, and chemical properties of the soil to the degree possible. Soil will be applied in a single operation to minimize equipment passes over the resoiled area. Following soil redistribution, the disturbed area will be left in a roughened condition.

Final Revegetation

The primary objectives of revegetation are to stabilize the disturbed soils of the project area; establish adapted, self-sustaining, productive vegetation communities capable of supporting the planned post-disturbance land uses on disturbed areas, and; create useful wildlife habitat in terms of cover and food sources. To this end, a variety of grass, forb, and shrub species have been selected for planting based, variably, on their rapid establishment potentials, soil/hydrologic adaptations, and wildlife habitat values. In addition, the forb species selected for planting exhibit flowering characteristics valuable with respect to esthetic concerns. Seeding and/or planting would be repeated until satisfactory revegetation to pre-disturbance conditions is accomplished, as determined by the BLM or other landowner.

Final revegetation would occur after final grading and soil redistribution as described above. Final revegetation involves seedbed preparation, fertilization if necessary, seeding, and mulching. Seedbed preparation would be conducted immediately after grading, and soil redistribution. The seedbed will be harrowed or otherwise roughened to incorporate the fertilizer into the applied soil and prepare the area for seeding. Fertilizer will be broadcast over the seedbed at rates specified as a result of the laboratory analysis conducted as described above.

Seeding would be coordinated with other reclamation activities to occur as soon after seedbed preparation as possible. The seed mixtures to be planted, depending upon vegetation type disturbed, are depicted in **Tables 1 through 3.** Disturbance areas would be seeded using the appropriate revegetation mixture. Seeding would occur from October 1 to November 15 and from February 1 to March 31. Fall seeding is recommended based on local soil moisture conditions, germination requirements of selected species, and adaptation of seed to soil temperature. Spring seeding would be utilized if areas are ready for revegetation and access is possible. Mixed seedings, one seeding to plant cool season plants in early fall and one seeding to plant warm season plants in spring, would be timed to avoid competition between species and avoid seed distribution problems. Drill seeding would be used on most of the disturbed well site areas. Broadcast seeding would be employed on rocky areas, on steeper slopes, and on small disturbances. Where practical, broadcast seeding areas would be chained, harrowed or cultipacked to cover the seed. Where slope conditions allow, broadcast seeded areas would be dozer-tracked perpendicular to the slope. On small, isolated, or inaccessible sites, hand raking would be used to cover seed and ensure contact between the soil and the seed.

The planted area will then be mulched with the equivalent of 2 tons of certified weed-free hay or straw mulch per acre and the mulch anchored by crimping. Mulch should be evenly spread over

the seeded area at rates dependent on seeding method and slope, as needed. Hydromulch at a rate of 0.5 to 0.75 tons per acre can be used in lieu of straw mulching as long as the seed is not applied simultaneously with the mulch.

Livestock grazing can occur on revegetated areas during the reclamation liability period as long as appropriate levels of grazing are maintained. As an adjunct planting operation, shrub seedlings will be planted on all well and facility site disturbed areas with slopes exceeding 2H:1V. The shrubs will be planted on 10-foot centers. The species to be planted and the areas within which planting will occur will be determined at the time of grading and resoiling.

Recommended Seed Mix

Table 1. Seed Mixture For the Pinyon-Juniper Areas

Common Name	Scientific Name	Pounds per acres (PLS)[1]
Grasses		
Indian ricegrass	*Achnatherum hymenoides*	4
Needle and thread grass	*Stipa comata*	3
Western wheatgrass	*Pascopyrum smithii*	4
Forbs		
Gooseberryleaf globemallow	*Sphaeralcea grossulariifolia*	1
Palmer's penstemon	*Penstemon palmeri*	2
Shrubs[2]		
Fourwing saltbush	*Atriplex canescens*	3
Birchleaf mountain mahogany	*Cercocarpus montanus*	3
Antelope bitterbrush	*Purshia tridentata*	3
	Total	23

[1] Seeding rate is listed as pounds per acre of pure live seed (PLS) drilled. Rate is increased by 50 percent if broadcast seeded (PLS = % seed purity x % seed germination)

[2] Shrub seed to be broadcast simultaneously with drilling. The seeding rate for herbaceous species will be doubled where broadcast seeding methods are used.

Rate of plantings per linear feet of disturbed stream bank is as follows: sedge and rush root mass plugs, one 4-inch diameter plug per 5 linear feet; willows, one cutting per linear foot; and cottonwood stock, one cluster planting of 7 trees per 25 linear feet. Individual cottonwood stock, within a planting cluster would be spaced two feet apart. The willows and cottonwoods would be planted adjacent to the stream bank in moist soil, yet above the normal water line.

Shrub seed sources would be from the states of Colorado and Utah and from areas above elevation of 4,000 feet above sea level. Seed from these sources would provide more winter tolerant plants, thus, increasing over-winter survival rates.

3.0 REVEGETATION SCHEDULE

Excavation and grading may ordinarily occur during any month of the year. However, revegetation activities are more limited with respect to the time of year in which they should be completed and should be timed to coincide with a recognized planting season. The following tables depict the Fall and Spring revegetation schedules, on a monthly basis, to be followed to achieve the revegetation objectives set for this project. Site conditions and/or climatic variations may require that these schedules be modified somewhat to achieve reclamation success.

Table 2. Fall Revegetation Schedule

Reclamation Technique	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Excavation/Grading						Any month						
Resoiling and/or Ripping (if necessary)									XXX			
Seedbed Material Sampling									XXX			
Fertilization										XXX		
Seedbed Preparation										XXX		
Seeding										XX		
Mulching										XX		
Seedling Planting (following year)			XX									

Table 3. Spring Revegetation Schedule

Reclamation Technique	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Excavation/Grading						Any month						
Resoiling and/or Ripping (if necessary)		XXX										
Seedbed Material Sampling		XXX										
Fertilization			XX									
Seedbed Preparation			XX									
Seeding			XX									
Mulching			XX									
Seedling Planting			XX									

Note: Weather and surface conditions permitting, the earlier in the season planting is completed the higher the potential for revegetation success.

Green River District Reclamation Guidelines

The Green River District Office Guidelines applies to all surface disturbing activities upon BLM administered surface lands. These activities include all actions authorized, conducted, or funded by the BLM, and that disturb the soil resources on the public lands. This policy is intended to be compatible with other BLM program objectives.

A reclamation plan shall be developed for all surface disturbing activities. The level of detail for the reclamation plan shall reflect: the complexity of the project, the environmental concerns generated during project review, and the reclamation potential for the site. These plans shall also incorporate any program or regulatory specific requirements for reclamation. The reclamation plan will address short term stabilization to facilitate long term reclamation. The reclamation plan is considered complete when all the reclamation requirements described below have been addressed, the techniques needed to meet the reclamation standards are described in detail, and the BLM concurs with the reclamation plan.

Compliance with the requirements of this document will be a Surface Use Condition of Approval (COA) and approved mitigation actions for all future BLM authorizations within the jurisdiction of the Green River District Office.

A. RECLAMATION GOAL

1. The long term goal for reclamation is to facilitate eventual ecosystem reconstruction by returning the land to a safe, stable, and proper functioning condition.

2. The short-term reclamation goal is to immediately stabilize disturbed areas and to provide the necessary conditions to achieve the long term goal.

B. RECLAMATION OBJECTIVES

1. Establish a desired self-perpetuating diverse plant community. The objective is to attain **75% basal cover** based on similar undisturbed adjacent native vegetative community, and comprised of desired species and/or seeded species within 5 years of initial reclamation action. However if after three (3) growing seasons there is less than **30%** of the basal cover based on similar undisturbed native vegetative community, then the Authorized Officer may require additional seeding efforts.

2. Establish slope stability and desired topographic diversity.

3. Reconstruct and stabilize altered water courses and drainage features.

4. Ensure the biological, chemical, and physical integrity of the topsoil resource during all phases of construction, operation, and reclamation. BMP's designed to minimize and

prevent erosion, compaction, and contamination of the topsoil resource should be used to maintain the topsoil resource.

5. Re-establish the visual composition and characteristics to blend with the natural surroundings.

6. Control the occurrences of noxious weeds and undesirable invasive species by utilizing principles of integrated weed management including prevention, mechanical, chemical, and biological control methods.

7. Manage all waste materials.

8. Conduct monitoring that is able to assess the attainment or failure of reclamation actions.

C. RECLAMATION ACTIONS

The following Reclamation Actions are intended to facilitate the achievement of the Reclamation Objectives. These actions shall be adhered to during reclamation activities. Changes/alterations to the Reclamation Actions should be detailed in the submitted reclamation plan as to why the changes/alterations are necessary and approved by the Authorized Officer.

Objective 1. Establish a desired self-perpetuating plant community.

Action 1a. Use of non native plant species is allowed, however, selected non native species should be selected that will not displace or offer long-term competition to the native plants.

Action 1b. Drill Seeding is the preferred method of seed application unless site conditions preclude the use of drill seeding equipment. Drill seeds at the rate of 45 Pure Live Seeds (PLS) per linear foot. Seeds should be drilled to a depth of .25.to .50 inches. Some plant seeds should not be drilled and if incorporated the application method should fit the seed type requirements.

Action 1c. Areas in excess of 40% slope or are excessively rocky will be broadcast seeded at 80-90 PLS and covered to a maximum of 0.25 inches by harrowing, drag bar, or roller.

Action 1d. Seeding efforts must be conducted between August15 and prior to winter freezing of the soil.

Action 1e. All seed utilized will be tested prior to application to ensure BLM specifications for PLS, purity, noxious weeds, etc. have been met. Seed tags will be provided to the Authorized Officer prior to initiation of seeding activities.

Action 1f. As determined in cooperation with the Authorized Officer, fencing may be required to exclude livestock/big game grazing until seeded species have become established. Fencing would be constructed to BLM standards.

Action 1g. As determined in cooperation with the Authorized Officer mulching may be required. Mulch should be applied within 24 hours following completion of seeding. Mulching should consist of crimping certified weed-free straw or certified weed-free native grass hay into the soil. Hydro-mulching may be used in areas where crimping is impracticable, in areas of interim reclamation that were hydro-seeded, and in areas of temporary seeding regardless of seeding method.

Objective 2. Ensure slope stability and topographic diversity

Action 2a. Reconstruct the landscape to approximate the original contour and topographic diversity.

Action 2b. Identify necessary erosion controls designed to prevent sediment transport from the reclaimed areas.

Objective 3. Reconstruct and stabilize altered water courses and drainage features.

Action 3a. Reconstruct drainage basins to have similar features found in nearby properly functioning basins, including: basin relief ratios, valley gradients, sinuosity, and drainage densities for all reclaimed basins.

Action 3b. Reconstruct drainages to have similar hydraulic characteristics found in properly functioning drainages, including: flow depth, water surface top width, cross-section area of flow, water surface slope, mean channel velocity, desired vegetation, and channel roughness.

Objective 4. Ensure the biological, chemical, and physical integrity of the topsoil resource during all phases of construction, operation, and reclamation. BMP's designed to minimize and prevent erosion, compaction, and contamination of the topsoil resource should be used to maintain the topsoil resource.

Action 4a. Segregate topsoil from subsoil without mixing them, based on site specific conditions.

Action 4b. Where possible, integrate stored topsoil into existing production landscape.

Action 4c. Stabilize all stored topsoil from erosion, and seed topsoil stored beyond one growing season with an approved seed mixture.

Action 4d. Identify topsoil storage with appropriate signage, to prevent improper use of the stored topsoil.

Action 4e. Redistribute the topsoil to pre-disturbance depth.

Action 4f. Reduce soil/subsoil compaction to the anticipated root depth of the desired plant species. Compaction relief typically should be designed for 18-24 inches in depth. Compaction relief should be designed to create a cross hatch pattern, and distance between furrows should not be greater than 2 feet.

Action 4g. If the topsoil to be re spread is greater than 6" in depth, then topsoil should be applied and then compaction relief implemented. If the topsoil to be re spread is less than 6" , then compaction relief should be implemented prior to top soil application. Avoid leaving large clumps/clods, if this exists, discing may be necessary.

Objective 5. Re-establish the visual composition and characteristics to blend with the natural surroundings.

Action 5a. Ensure the overall location, landform, scale, shape, color, and orientation of major landscape features blends into the adjacent area and meets the needs of the planned post disturbance land use.

Objective 6. Control the occurrences of noxious weeds and undesirable invasive species by utilizing principles of integrated weed management including prevention, mechanical, chemical, and biological control methods.

Action 6a. Inventory and document noxious and invasive plant infestations before reclamation actions begin.

Action 6b. Control and manage Invasive and Noxious weed infestations using principles of integrated weed management including chemical, mechanical, and biological control methods. An approved Pesticide Use Proposal PUP) is required for all planned herbicide applications. Herbicides must be applied by a certified applicator with a current Utah Pesticide Applicators License. A Biological Use Proposal is required for new biocontrol agents in the Field Office area.

Objective 7. Manage all waste materials.

Action 7a. Segregate all waste materials from the subsoil and topsoil.

Action 7b. All waste materials transported and disposed of off-site, must be placed in an authorized disposal facility in accordance with all local, State and Federal requirements.

Objective 8. Conduct monitoring that is able to assess the attainment or failure of reclamation actions.

Action 8a. Monitoring methodology should be an approved BLM method designed to monitor basal vegetative cover.

Action 8b. In cooperation with the Authorized Officer, an undisturbed reference site should be selected prior to monitoring. One reference site may be used for multiple reclamation sites as long the site potentials are similar.

Action 8c. Evaluate monitoring data for compliance with the reclamation plan objectives

Action 8d. Document and report monitoring data and recommend revised reclamation strategies, if necessary. Each applicant will submit an annual reclamation report to the Authorized Officer by March 31st. The report will document compliance with all aspects of the reclamation objectives and standards.

Action 8e. Implement revised reclamation strategies as needed.

Action 8f. Repeat the process of monitoring, evaluating, documenting/reporting, and implementing, until reclamation goals are achieved, as determined by the Authorized Officer.

GLOSSARY

Surface Disturbing Activities – An action that alters the mineral soil resource, and/or surface geologic features, beyond natural site conditions and on a scale that affects other Public Land values. Examples of surface disturbing activities may include: operation of heavy equipment to construct well pads, roads, pits and reservoirs; installation of pipelines and power lines; and the conduct of several types of vegetation treatments. Surface disturbing activities may be either authorized or prohibited.

Federal Action - Approval of specific projects, such as construction or management activities located in a defined geographic area. Projects include actions approved by permit or other regulatory decision as well as federal and federally assisted activities.
National Environmental Policy Act (NEPA) [42 U.S.C. 4321 et seq.]

Invasive Species - A species that is not native (or is alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.
Executive Order 13112

Reclamation Plan – A written document that addresses the reconstruction of disturbed ecosystems by returning the land to a condition approximate or equal to that which existed prior to disturbance, or to a stable and productive condition compatible with the land use plan.

Waste materials – Any material that can interfere with successful reclamation, safety, and long term stability of a site (contaminated soil or water, drilling muds, solid waste).
Adapted from various sources

Contamination - The presence of man-made chemicals or other alterations in the natural soil or water environment (pesticides, hazardous substances, petroleum, salts).
Adapted from various sources