

OCD-ARTESIA

10-695
FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010 EA 10-1138

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-555443, NM-011042, NM-554774
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator RKI Exploration & Production, LLC. (246289)		7. If Unit or CA Agreement, Name and No. Ross Draw Unit
3a. Address 3817 NW Expressway, Suite 950 Oklahoma City, Ok. 73112		8. Lease Name and Well No. RDU Federal 271H (38362)
3b. Phone No. (include area code) 405-996-5748		9. APN Well No. 30-015-38241
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 330 FNL & 2060 FEL, Section 27 Unit B At proposed prod. zone 330 FSL & 2310 FEL, Section 34 Lot 2		10. Field and Pool, or Exploratory Undesignated Bone Spring (8430)
14. Distance in miles and direction from nearest town or post office* Approximately 15 miles southeast of Malaga, NM		11. Sec., T. R. M. or Blk. and Survey or Area SHL: Section 27, T. 26 S., R. 30 E. BHL: Section 34, T. 26 S., R. 30 E.
15. Distance from proposed* 330 ft. location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)		12. County or Parish Eddy
16. No. of acres in lease 160 each		13. State NM
17. Spacing Unit dedicated to this well 224.93		
18. Distance from proposed location* 330 ft. to nearest well, drilling, completed, applied for, on this lease, ft.		20. BLM/BIA Bond No. on file NLM-NMB-000460
19. Proposed Depth 8350 ft. TD 14813' MD		
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3033' GL		22. Approximate date work will start*
		23. Estimated duration 30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature <i>Barry W. Hunt</i>	Name (Printed/Typed) BARRY W. HUNT	Date 8/27/10
Title Permitting Agent for RKI Exploration & Production, LLC.		
Approved by (Signature) <i>J. Matthews</i>	Name (Printed/Typed)	Date OCT 13 2010
Title FIELD MANAGER		
Office CARLSBAD 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.

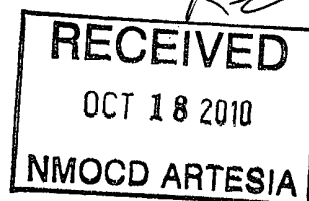
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, 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.

(Continued on page 2)

*(Instructions on page 2)



Carlsbad Controlled Water Basin

dm

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised July 16, 2010

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-38241	Pool Code 84300	Pool Name ROSS DRAW BONE SPRING
Property Code 38362	Property Name RDU FEDERAL (27)	Well Number 1H
OGRID No. 246289	Operator Name RKI EXPLORATION & PRODUCTION LLC	Elevation 3033'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	27	26 S	30 E		330	NORTH	2060	EAST	EDDY

Bottom Hole Location If Different From Surface

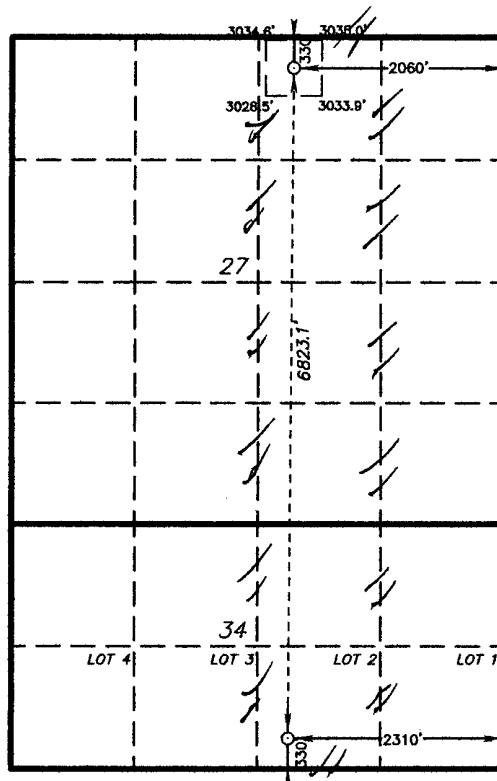
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 2	34	26 S	30 E		330	SOUTH	2310	EAST	EDDY

Dedicated Acres 224.93	Joint or Infill	Consolidation Code	Order No.
----------------------------------	-----------------	--------------------	-----------

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION
Lat - N 32°01'11.27"
Long - W 103°52'01.67"
NMSPCE- N 371251.698
E 685826.335
(NAD-83)

**PROPOSED BOTTOM
HOLE LOCATION**
Lat - N 32°00'03.81"
Long - W 103°52'04.63"
NMSPCE- N 364433.747
E 685600.954
(NAD-83)



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.

Barry W. Hunt 8/12/10
Signature Date

Barry W. Hunt
Printed Name

Email Address

SURVEYOR CERTIFICATION

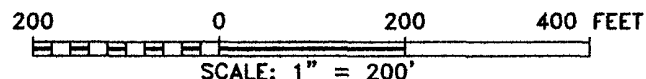
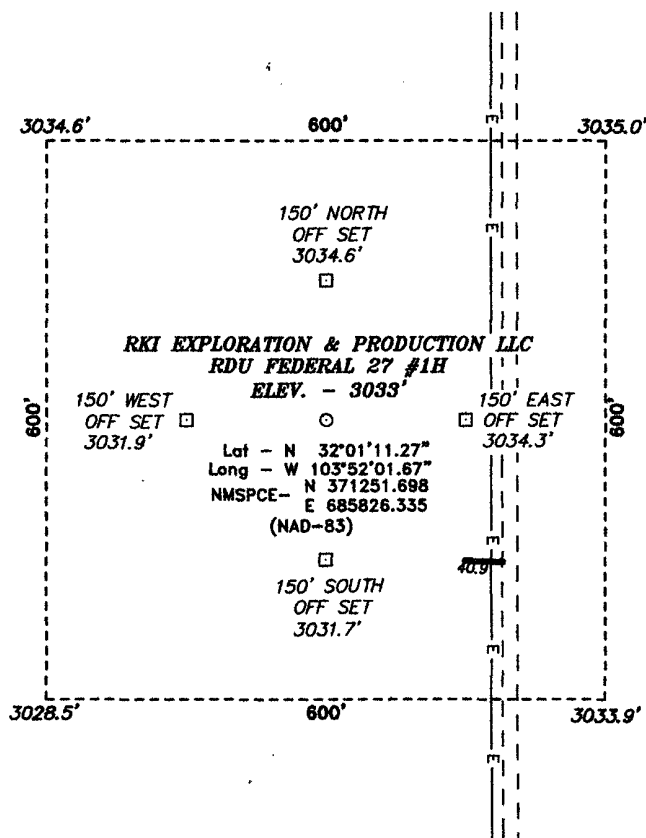
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

GARY L. JONES
Date Surveyed
Signature & Seal of
Professional Surveyor
W. C. JONES

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 23093

SECTION 27, TOWNSHIP 26 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF TARBRUSH AND LONGHORN, GO EAST 2.3 MILES TO A "Y" GO RIGHT FOR 1.6 MILES TO END OF ROAD, GO EAST 2.6 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH 0.6 MILES THENCE EAST 0.3 MILES TURNING NORTH 0.2 MILES TO WELL PAD AND PROPOSED LEASE ROAD.

RKI EXPLORATION & PRODUCTION LLC

REF: RDU FEDERAL 27 #1H / WELL PAD TOPO

THE RDU FEDERAL 27 #1H LOCATED 330'

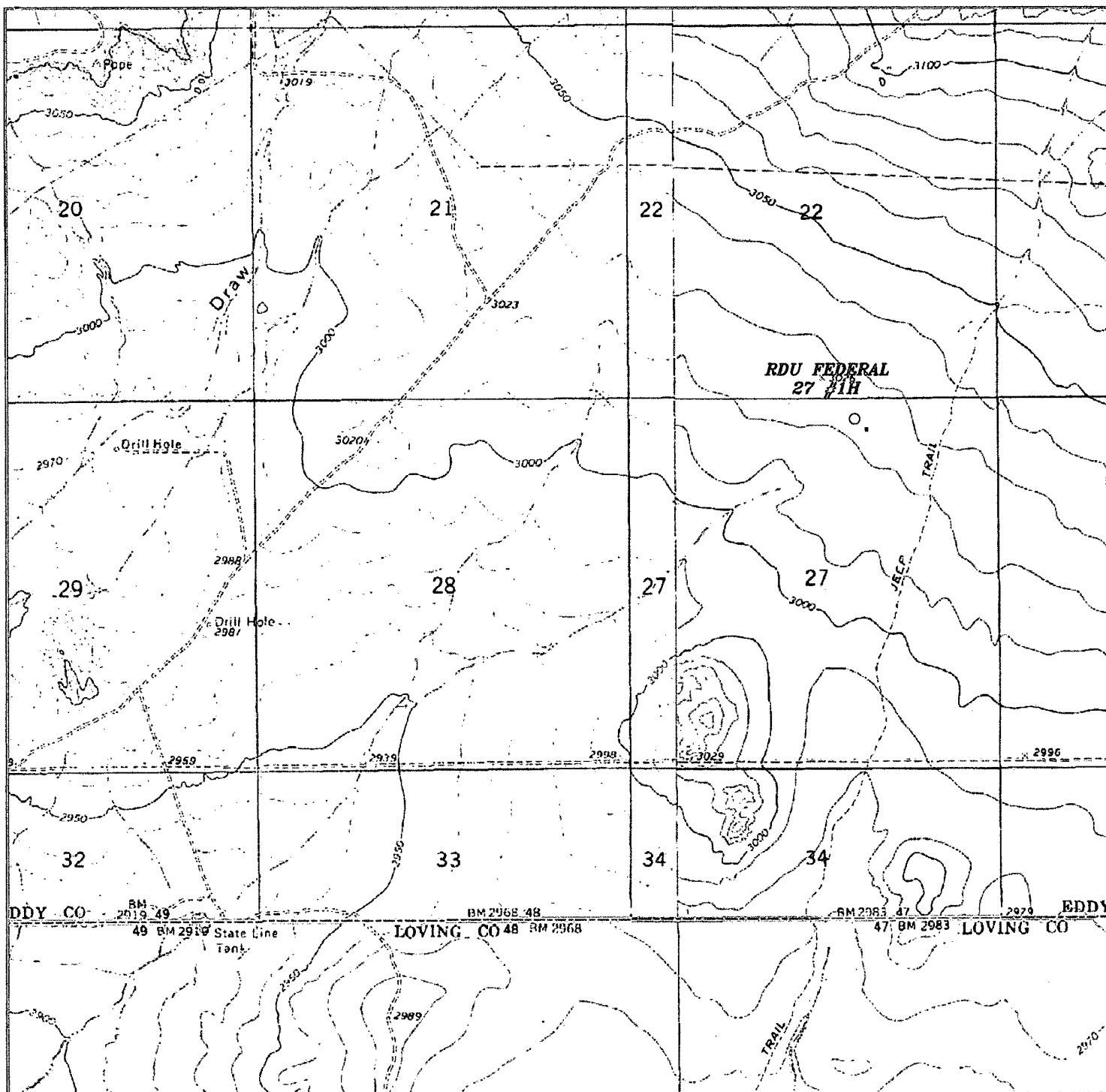
FROM THE NORTH LINE AND 2060' FROM THE EAST LINE OF
SECTION 27, TOWNSHIP 26 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 23094 Drawn By: J. SMALL

Date: 08-13-2010 Disk: JMS 23094

Survey Date: 08-12-2010 Sheet 1 of 1 Sheets



RDU FEDERAL 27 #1H
 Located 330' FNL and 2060' FEL
 Section 27, Township 26 South, Range 30 East,
 N.M.P.M., Eddy County, New Mexico.

basin
surveys
 focused on excellence
 in the oilfield

P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basinsurveys.com

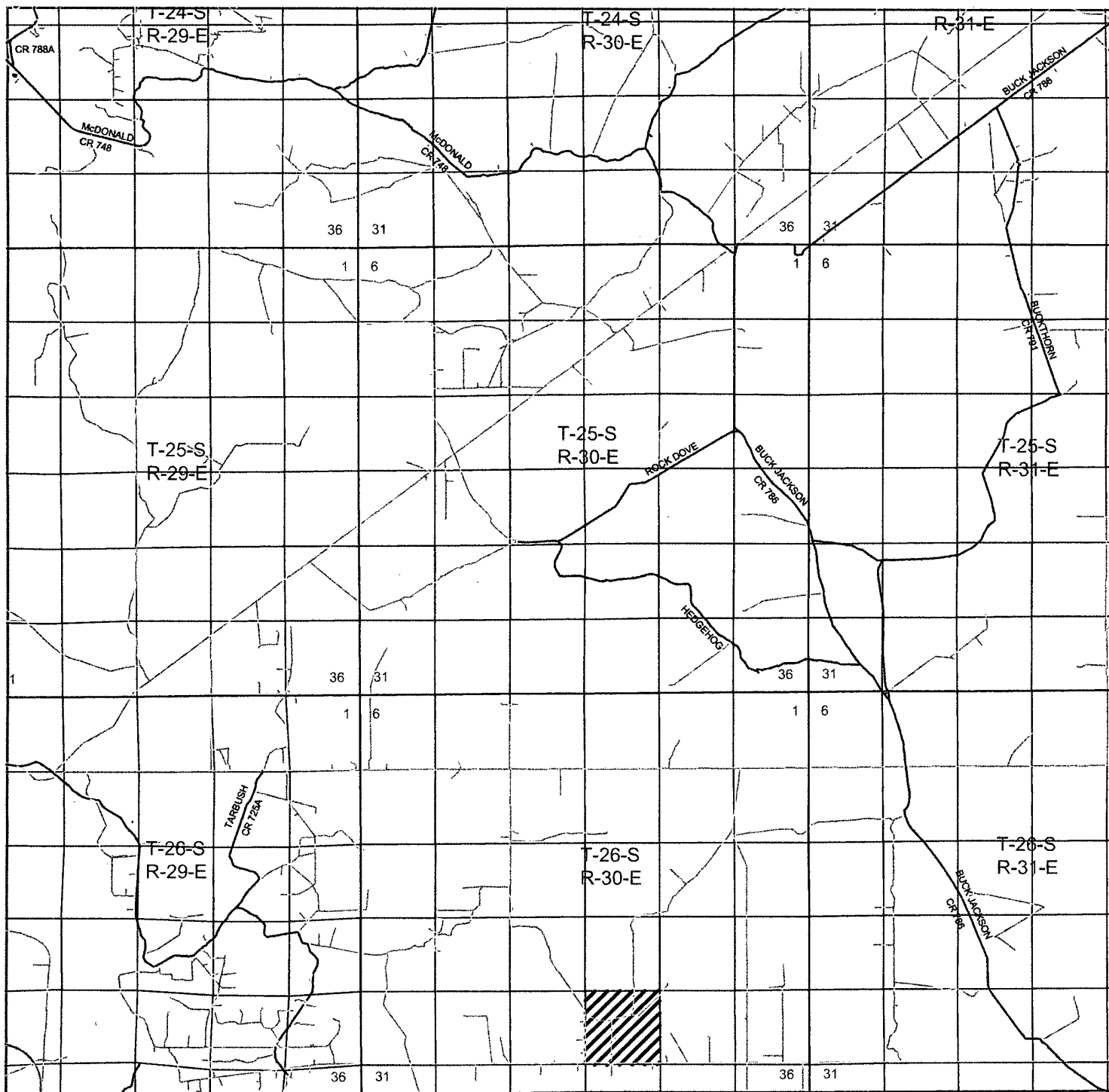
W.O. Number: JMS 23094

Survey Date: 08-12-2010

Scale: 1" = 2000'

Date: 08-13-2010

RKI EXPLORATION
& PRODUCTION
LLC



RDU FEDERAL 27 #1H

Located 330' FNL and 2060' FEL

**Section 27, Township 26 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.**

**basin
surveys**
focused on excellence
in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

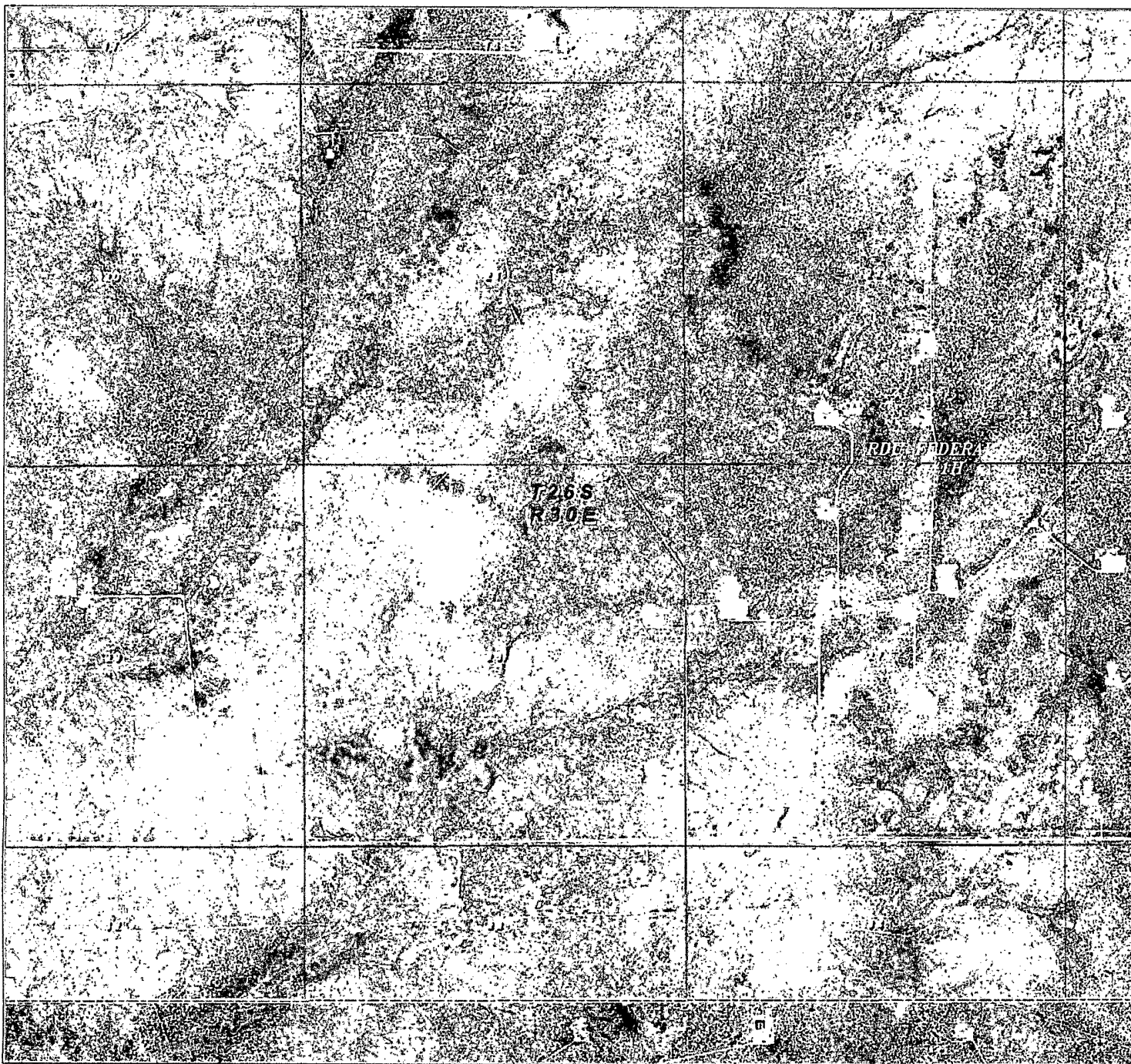
W.O. Number: JMS 23094

Survey Date: 08-12-2010

Scale: 1" = 2 Miles

Date: 08-13-2010

**RKI EXPLORATION
& PRODUCTION
LLC**



RDU FEDERAL 27 #1H
Located 330' FNL and 2060' FEL
Section 27, Township 26 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

basin
surveys
focused on excellence
in the oilfield

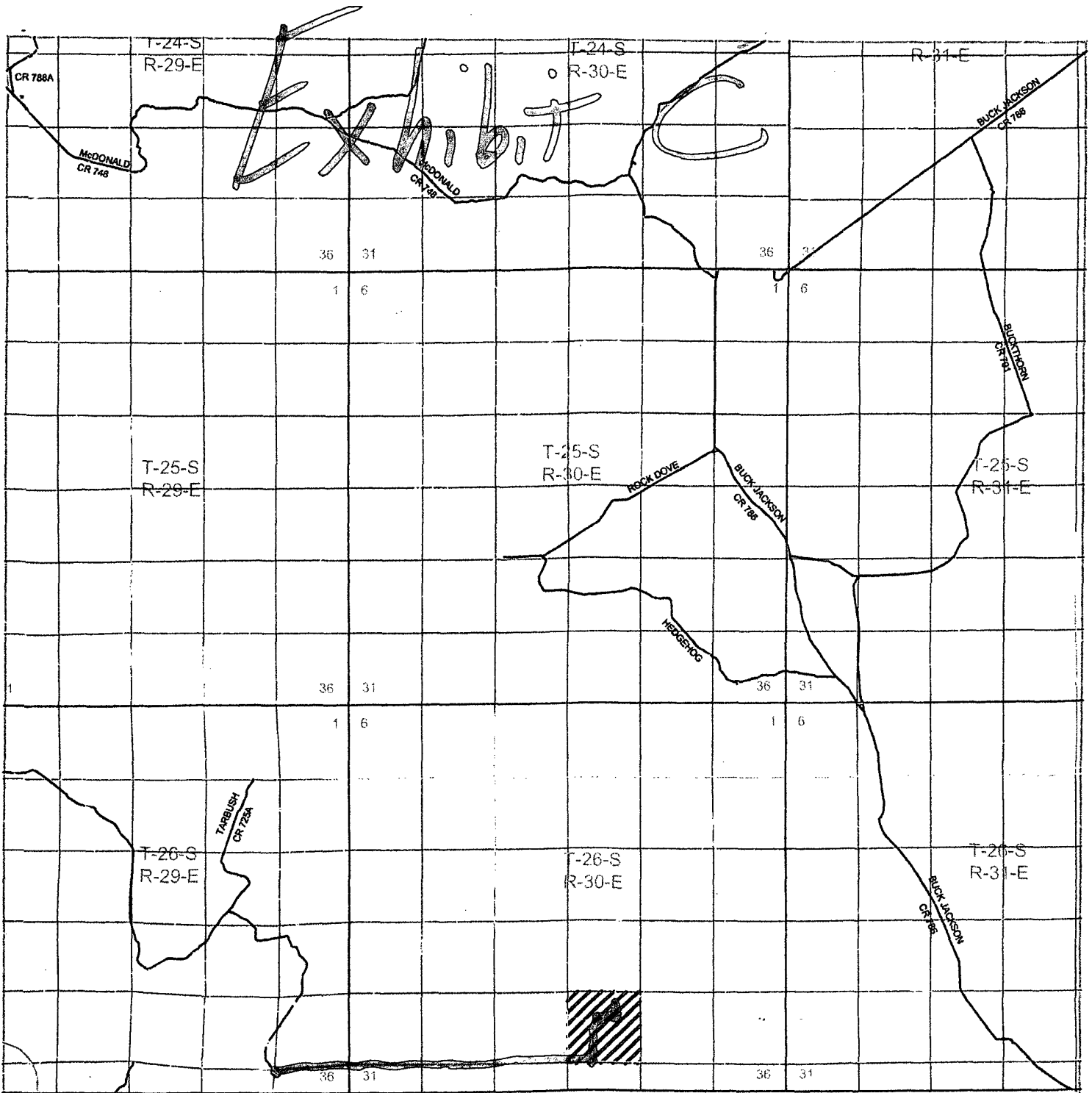
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JMS 23094

Scale: 1" = 2000'

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

**RKI EXPLORATION
& PRODUCTION
LLC**



RDU FEDERAL 27 #1H

Located 330' FNL and 2060' FEL

Section 27, Township 26 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

basin
surveys

focused on excellence
in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W O Number: JMS 23094

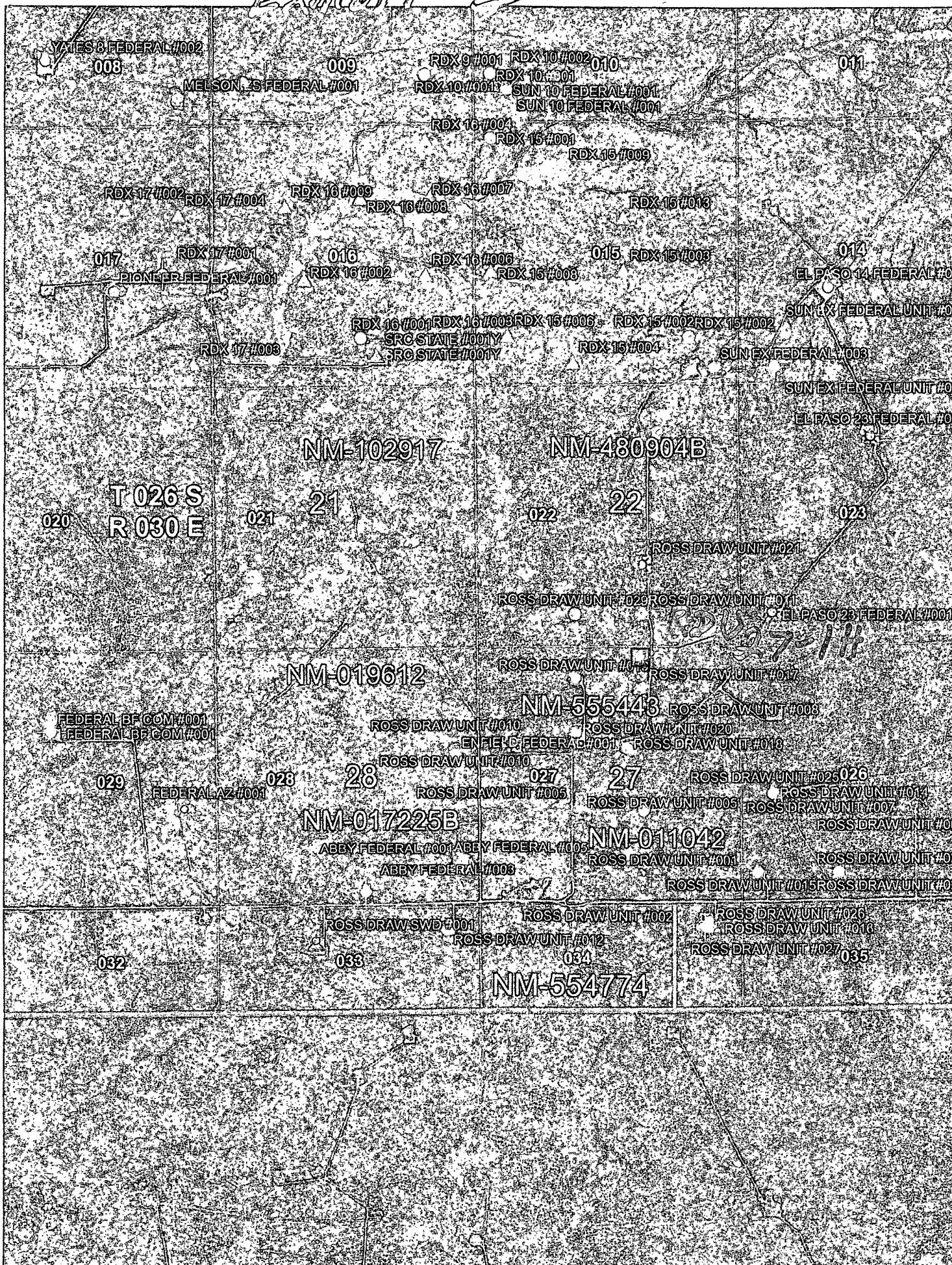
Survey Date: 08-12-2010

Scale: 1" = 2 Miles

Date: 08-13-2010

**RKI EXPLORATION
& PRODUCTION
LLC**

Exhibit 7D



RKI EXPLORATION & PRODUCTION, LLC.
DRILLING PLAN

RDU 27-1H

Surface Location: 330' FNL & 2,060' FEL of 27-26S-30E

Bottom Hole Location: 330' FSL & 2,310' FEL of 34-26S-30E

Eddy County, NM

1. The elevation of the unprepared ground is 3,033' feet above sea level.
2. The geologic name of the surface formation is Quaternary - Alluvium.
3. A rotary rig will be utilized to drill the well to 14,260' MD and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
4. Proposed total depth is ~~14,260'~~ MD, 8,350' TVD.
14,898 per Drilling Plan
5. Estimated tops of important geologic markers:

Rustler	800'
Salado	1,100'
Castile	1,640'
Lamar Lime	3,425'
Base of Lime	3,455'
Delaware Top	3,485'
Bell Canyon Sand	3,485'
Cherry Canyon Sand	4,610'
Brushy Canyon Sand	5,645'
KOP	7,777'
Bone Spring	7,350'
TVD	8,350' (135 degree F)

6. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Bell Canyon	Oil (1,509 psi)
Cherry Canyon	Oil (1,996 psi)
Brushy Canyon	Oil (2,444 psi)
Bone Spring	Oil (3,182 psi)

7. The proposed casing program is as follows:

Surface: 13-3/8" 54.5# J-55 ST&C new casing set from 0' - 950'
Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

Intermediate: 9-5/8" 40# J-55 LT&C new casing set from 0' - 3,300'
Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

Production: 5-1/2" 17# P-110 LT&C new casing set from 0' - 14,260'
Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8. 14,898

See COA

8. Casing setting depth and cementing program:

- a. 13-3/8" surface casing set at 950' in 17-1/2" hole. Circulate cement to surface with 560 sx "C" with 4% D20, 2% S1, .2% D46, .125 pps D130 mixed at 12.9 ppg (1.97 cf/sk) followed by 200 sx "C" with 1% S1, .125 pps D130 mixed at 14.8 ppg (1.34 cf/sk).
- b. 9-5/8" intermediate casing set at 3,300' in 12 1/4" hole. A fluid caliper will be run to determine exact cement volume required. Cement will be circulated to surface with 950 sx 35:65 Poz "C" with 6% D20, 5% D44, .2% D46, .2% D13, .125 pps D130 mixed at 12.6 ppg (2.06 cf/sk) followed by 1 Class C with .2% D13 mixed 14.8 ppg (1.33 cf/sk). 200 sx
- c. 5-1/2" production casing set at 12,809' in 8 3/4" hole. Cement will be calculated to bring TOC to 3,000'. The well will be cemented in two stages as follows: **Stage 1:** 2,000 sx PVL with 3% D174, .3% D167, .1% D65, .2% D46, .5% D800 mixed at 13.0 ppg (1.44 cf/sk). **Stage 2:** 375 sx 35:65 Poz C with 6% D20, 5% D44, .2% D46, .1% D13, 2 pps D42, .125 pps D130 mixed at 12.6 ppg (2.05 cf/sk). DV tool at approximately 5000' 14,898

9. Pressure Control Equipment

See COA

See COA The blowout preventor equipment (BOP) will consist of a 5000 psi double ram type preventor, a 1500 psi bag-type (Hydril) preventor, and rotating head. Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and 4-1/2" drill pipe rams on bottom. A 5M BOP will be installed on the 13-3/8" surface casing and utilized continuously until total depth is reached. After setting the 13-3/8" casing all BOP's and associated equipment will be tested to rated pressure and before drilling out the 13-3/8" casing shoe the casing will be tested to 1000 psi. After setting the 9-5/8" casing all BOP's and associated equipment will be tested to rated pressure and before drilling out the 9-5/8" casing shoe the casing will be tested to 1000 psi. *See COA*

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will

include a Kelly cock, floor safety valve, choke lines and choke manifold having 5000 psi rating.

10. Mud Program:

0' - 950'	Bentonite/Lime mud. Paper for losses and seepage. 8.4 to 9.0 ppg, 32 to 36 vis, PV 1 to 3, YP 1 to 3, WL NC.
950' - 3,300'	Brine. As needed LCM for losses and seepage. 10.0 to 10.1 ppg, 28 to 30 vis, PV 1 to 3, YP 1 to 3, WL NC.
3,300' - 14,260' 14,898'	Drill out with cut brine. 9.1 to 9.3 ppg, 28 to 30 vis, PV 1 to 3, YP 1 to 3, WL NC.

11. Testing, Logging and Coring Program: *See COA*

Testing program: No drillstem tests are anticipated.

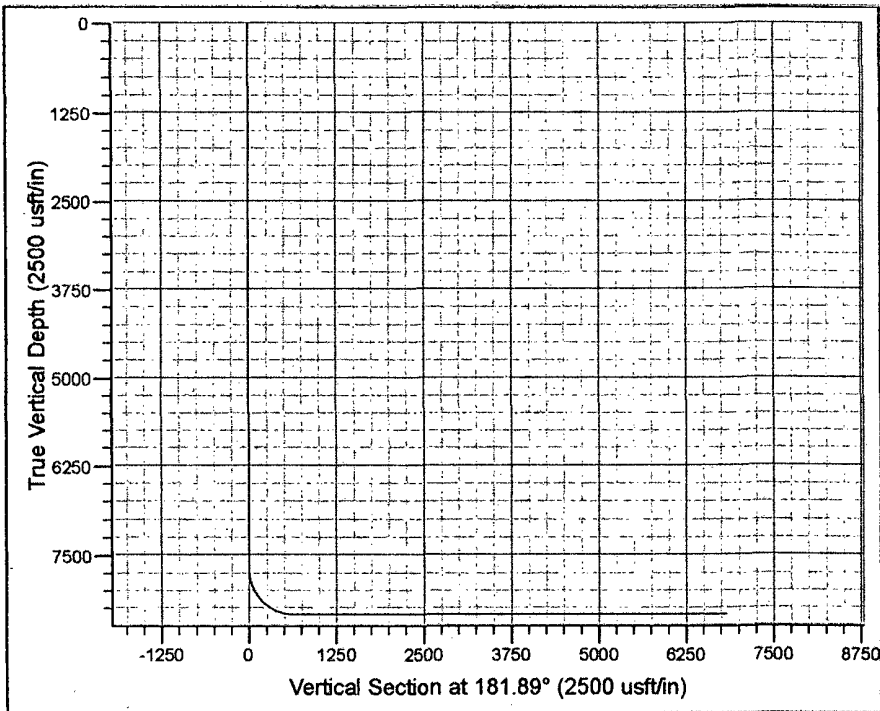
Electric logging program: CNL/CAL/GR, DLL/CAL/GR. From 9 5/8" casing to kick off point. A gyro survey will also be ran at kick off point.

Coring program: None.

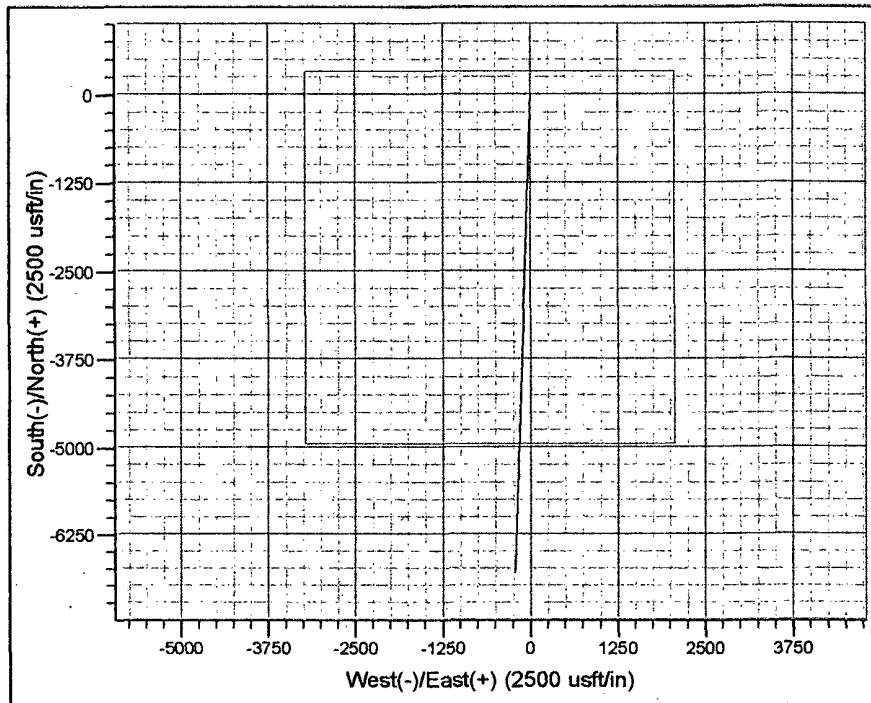
12. Potential Hazards:

No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3182 psi and estimated BHT 135.

RDU 27-1H



Surf: 330' FNL 2060' FEL
27-26S-30E



BHL: 330' FSL 2310' FEL
34-26S-30E

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7713.4	0.00	0.00	7713.4	0.0	0.0	0.00	0.00	0.0	
3	8713.4	90.00	181.89	8350.0	-636.3	-21.0	9.00	181.89	636.6	
4	14898.3	90.00	181.89	8350.0	-6817.8	-225.0	0.00	0.00	6821.5	T1

RKI Exploration & Production

RDU 27-1H

27-26S-30E

Eddy County, NM

Wellbore #1

Plan: Design #1

Standard Planning Report

25 August, 2010

Halliburton

Planning Report

Database:	ahrtoedm1	Local Co-ordinate Reference:	Site 27-26S-30E
Company:	RKI Exploration & Production	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	RDU-27-1H	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	27-26S-30E	North Reference:	Grid
Well:	Eddy County, NM	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project:	RDU 27-1H		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site 27-26S-30E					
Site Position:		Northing:	371,252.82 usft	Latitude:	32° 1' 11.270 N
From:	Lat/Long	Easting:	685,824.44 usft	Longitude:	103° 52' 1.670 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.25

Well	Eddy County, NM					
Well Position	+N/-S	0.0 usft	Northing:	371,252.82 usft	Latitude:	32° 1' 11.270 N
	+E/-W	0.0 usft	Easting:	685,824.44 usft	Longitude:	103° 52' 1.670 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	0.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	8/25/2010	7.79	59.98	48,600

Design:	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	181.89

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,713.4	0.00	0.00	7,713.4	0.0	0.0	0.00	0.00	0.00	0.00	
8,713.4	90.00	181.89	8,350.0	-636.3	-21.0	9.00	9.00	0.00	181.89	
14,898.3	90.00	181.89	8,350.0	-6,817.8	-225.0	0.00	0.00	0.00	0.00 T1	

Halliburton

Planning Report

Database:	ahrtoedm1	Local Co-ordinate Reference:	Site 27-26S-30E
Company:	RKI Exploration & Production	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	RDU 27-1H	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	27-26S-30E	North Reference:	Grid
Well:	Eddy County, NM	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,713.4	0.00	0.00	7,713.4	0.0	0.0	0.0	0.00	0.00	0.00	
7,750.0	3.29	181.89	7,750.0	-1.1	0.0	1.1	9.00	9.00	0.00	
7,800.0	7.79	181.89	7,799.7	-5.9	-0.2	5.9	9.00	9.00	0.00	
7,850.0	12.29	181.89	7,849.0	-14.6	-0.5	14.6	9.00	9.00	0.00	
7,900.0	16.79	181.89	7,897.3	-27.1	-0.9	27.2	9.00	9.00	0.00	
7,950.0	21.29	181.89	7,944.6	-43.4	-1.4	43.5	9.00	9.00	0.00	
8,000.0	25.79	181.89	7,990.4	-63.4	-2.1	63.4	9.00	9.00	0.00	
8,050.0	30.29	181.89	8,034.5	-86.9	-2.9	86.9	9.00	9.00	0.00	
8,100.0	34.79	181.89	8,076.7	-113.8	-3.8	113.8	9.00	9.00	0.00	
8,150.0	39.29	181.89	8,116.6	-143.9	-4.7	143.9	9.00	9.00	0.00	
8,200.0	43.79	181.89	8,154.0	-177.0	-5.8	177.1	9.00	9.00	0.00	
8,250.0	48.29	181.89	8,188.7	-213.0	-7.0	213.1	9.00	9.00	0.00	
8,300.0	52.79	181.89	8,220.4	-251.5	-8.3	251.7	9.00	9.00	0.00	
8,350.0	57.29	181.89	8,249.1	-292.5	-9.7	292.6	9.00	9.00	0.00	
8,400.0	61.79	181.89	8,274.4	-335.5	-11.1	335.7	9.00	9.00	0.00	
8,450.0	66.29	181.89	8,296.3	-380.5	-12.6	380.7	9.00	9.00	0.00	
8,500.0	70.79	181.89	8,314.6	-427.0	-14.1	427.2	9.00	9.00	0.00	
8,550.0	75.29	181.89	8,329.2	-474.7	-15.7	475.0	9.00	9.00	0.00	
8,600.0	79.79	181.89	8,339.9	-523.5	-17.3	523.8	9.00	9.00	0.00	
8,650.0	84.29	181.89	8,346.9	-573.0	-18.9	573.3	9.00	9.00	0.00	
8,700.0	88.79	181.89	8,349.9	-622.9	-20.6	623.2	9.00	9.00	0.00	
8,713.4	90.00	181.89	8,350.0	-636.3	-21.0	636.6	9.00	9.00	0.00	
8,800.0	90.00	181.89	8,350.0	-722.8	-23.9	723.2	0.00	0.00	0.00	
8,900.0	90.00	181.89	8,350.0	-822.8	-27.2	823.2	0.00	0.00	0.00	
9,000.0	90.00	181.89	8,350.0	-922.7	-30.4	923.2	0.00	0.00	0.00	
9,100.0	90.00	181.89	8,350.0	-1,022.7	-33.7	1,023.2	0.00	0.00	0.00	
9,200.0	90.00	181.89	8,350.0	-1,122.6	-37.0	1,123.2	0.00	0.00	0.00	
9,300.0	90.00	181.89	8,350.0	-1,222.6	-40.3	1,223.2	0.00	0.00	0.00	
9,400.0	90.00	181.89	8,350.0	-1,322.5	-43.6	1,323.2	0.00	0.00	0.00	
9,500.0	90.00	181.89	8,350.0	-1,422.4	-46.9	1,423.2	0.00	0.00	0.00	
9,600.0	90.00	181.89	8,350.0	-1,522.4	-50.2	1,523.2	0.00	0.00	0.00	
9,700.0	90.00	181.89	8,350.0	-1,622.3	-53.5	1,623.2	0.00	0.00	0.00	
9,800.0	90.00	181.89	8,350.0	-1,722.3	-56.8	1,723.2	0.00	0.00	0.00	
9,900.0	90.00	181.89	8,350.0	-1,822.2	-60.1	1,823.2	0.00	0.00	0.00	
10,000.0	90.00	181.89	8,350.0	-1,922.2	-63.4	1,923.2	0.00	0.00	0.00	
10,100.0	90.00	181.89	8,350.0	-2,022.1	-66.7	2,023.2	0.00	0.00	0.00	
10,200.0	90.00	181.89	8,350.0	-2,122.1	-70.0	2,123.2	0.00	0.00	0.00	
10,300.0	90.00	181.89	8,350.0	-2,222.0	-73.3	2,223.2	0.00	0.00	0.00	
10,400.0	90.00	181.89	8,350.0	-2,322.0	-76.6	2,323.2	0.00	0.00	0.00	
10,500.0	90.00	181.89	8,350.0	-2,421.9	-79.9	2,423.2	0.00	0.00	0.00	
10,600.0	90.00	181.89	8,350.0	-2,521.8	-83.2	2,523.2	0.00	0.00	0.00	
10,700.0	90.00	181.89	8,350.0	-2,621.8	-86.5	2,623.2	0.00	0.00	0.00	
10,800.0	90.00	181.89	8,350.0	-2,721.7	-89.8	2,723.2	0.00	0.00	0.00	
10,900.0	90.00	181.89	8,350.0	-2,821.7	-93.1	2,823.2	0.00	0.00	0.00	
11,000.0	90.00	181.89	8,350.0	-2,921.6	-96.4	2,923.2	0.00	0.00	0.00	
11,100.0	90.00	181.89	8,350.0	-3,021.6	-99.7	3,023.2	0.00	0.00	0.00	
11,200.0	90.00	181.89	8,350.0	-3,121.5	-103.0	3,123.2	0.00	0.00	0.00	
11,300.0	90.00	181.89	8,350.0	-3,221.5	-106.3	3,223.2	0.00	0.00	0.00	
11,400.0	90.00	181.89	8,350.0	-3,321.4	-109.6	3,323.2	0.00	0.00	0.00	
11,500.0	90.00	181.89	8,350.0	-3,421.4	-112.9	3,423.2	0.00	0.00	0.00	
11,600.0	90.00	181.89	8,350.0	-3,521.3	-116.2	3,523.2	0.00	0.00	0.00	

Halliburton

Planning Report

Database:	ahrtoedm1	Local Co-ordinate Reference:	Site 27-26S-30E
Company:	RKI Exploration & Production	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	RDU 27-1H	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	27-26S-30E	North Reference:	Grid
Well:	Eddy County, NM	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,700.0	90.00	181.89	8,350.0	-3,621.2	-119.5	3,623.2	0.00	0.00	0.00	
11,800.0	90.00	181.89	8,350.0	-3,721.2	-122.8	3,723.2	0.00	0.00	0.00	
11,900.0	90.00	181.89	8,350.0	-3,821.1	-126.1	3,823.2	0.00	0.00	0.00	
12,000.0	90.00	181.89	8,350.0	-3,921.1	-129.4	3,923.2	0.00	0.00	0.00	
12,100.0	90.00	181.89	8,350.0	-4,021.0	-132.7	4,023.2	0.00	0.00	0.00	
12,200.0	90.00	181.89	8,350.0	-4,121.0	-136.0	4,123.2	0.00	0.00	0.00	
12,300.0	90.00	181.89	8,350.0	-4,220.9	-139.3	4,223.2	0.00	0.00	0.00	
12,400.0	90.00	181.89	8,350.0	-4,320.9	-142.6	4,323.2	0.00	0.00	0.00	
12,500.0	90.00	181.89	8,350.0	-4,420.8	-145.9	4,423.2	0.00	0.00	0.00	
12,600.0	90.00	181.89	8,350.0	-4,520.8	-149.2	4,523.2	0.00	0.00	0.00	
12,700.0	90.00	181.89	8,350.0	-4,620.7	-152.5	4,623.2	0.00	0.00	0.00	
12,800.0	90.00	181.89	8,350.0	-4,720.7	-155.8	4,723.2	0.00	0.00	0.00	
12,900.0	90.00	181.89	8,350.0	-4,820.6	-159.1	4,823.2	0.00	0.00	0.00	
13,000.0	90.00	181.89	8,350.0	-4,920.5	-162.4	4,923.2	0.00	0.00	0.00	
13,100.0	90.00	181.89	8,350.0	-5,020.5	-165.7	5,023.2	0.00	0.00	0.00	
13,200.0	90.00	181.89	8,350.0	-5,120.4	-169.0	5,123.2	0.00	0.00	0.00	
13,300.0	90.00	181.89	8,350.0	-5,220.4	-172.3	5,223.2	0.00	0.00	0.00	
13,400.0	90.00	181.89	8,350.0	-5,320.3	-175.6	5,323.2	0.00	0.00	0.00	
13,500.0	90.00	181.89	8,350.0	-5,420.3	-178.9	5,423.2	0.00	0.00	0.00	
13,600.0	90.00	181.89	8,350.0	-5,520.2	-182.2	5,523.2	0.00	0.00	0.00	
13,700.0	90.00	181.89	8,350.0	-5,620.2	-185.5	5,623.2	0.00	0.00	0.00	
13,800.0	90.00	181.89	8,350.0	-5,720.1	-188.8	5,723.2	0.00	0.00	0.00	
13,900.0	90.00	181.89	8,350.0	-5,820.1	-192.1	5,823.2	0.00	0.00	0.00	
14,000.0	90.00	181.89	8,350.0	-5,920.0	-195.4	5,923.2	0.00	0.00	0.00	
14,100.0	90.00	181.89	8,350.0	-6,019.9	-198.7	6,023.2	0.00	0.00	0.00	
14,200.0	90.00	181.89	8,350.0	-6,119.9	-201.9	6,123.2	0.00	0.00	0.00	
14,300.0	90.00	181.89	8,350.0	-6,219.8	-205.2	6,223.2	0.00	0.00	0.00	
14,400.0	90.00	181.89	8,350.0	-6,319.8	-208.5	6,323.2	0.00	0.00	0.00	
14,500.0	90.00	181.89	8,350.0	-6,419.7	-211.8	6,423.2	0.00	0.00	0.00	
14,600.0	90.00	181.89	8,350.0	-6,519.7	-215.1	6,523.2	0.00	0.00	0.00	
14,700.0	90.00	181.89	8,350.0	-6,619.6	-218.4	6,623.2	0.00	0.00	0.00	
14,800.0	90.00	181.89	8,350.0	-6,719.6	-221.7	6,723.2	0.00	0.00	0.00	
14,898.3	90.00	181.89	8,350.0	-6,817.8	-225.0	6,821.5	0.00	0.00	0.00	

EXHIBIT 'A'
V-DOOR:
(NORTH)

Rig Plat Only
Silver Oak Drilling, LLC
Rig #6, #7 & #9

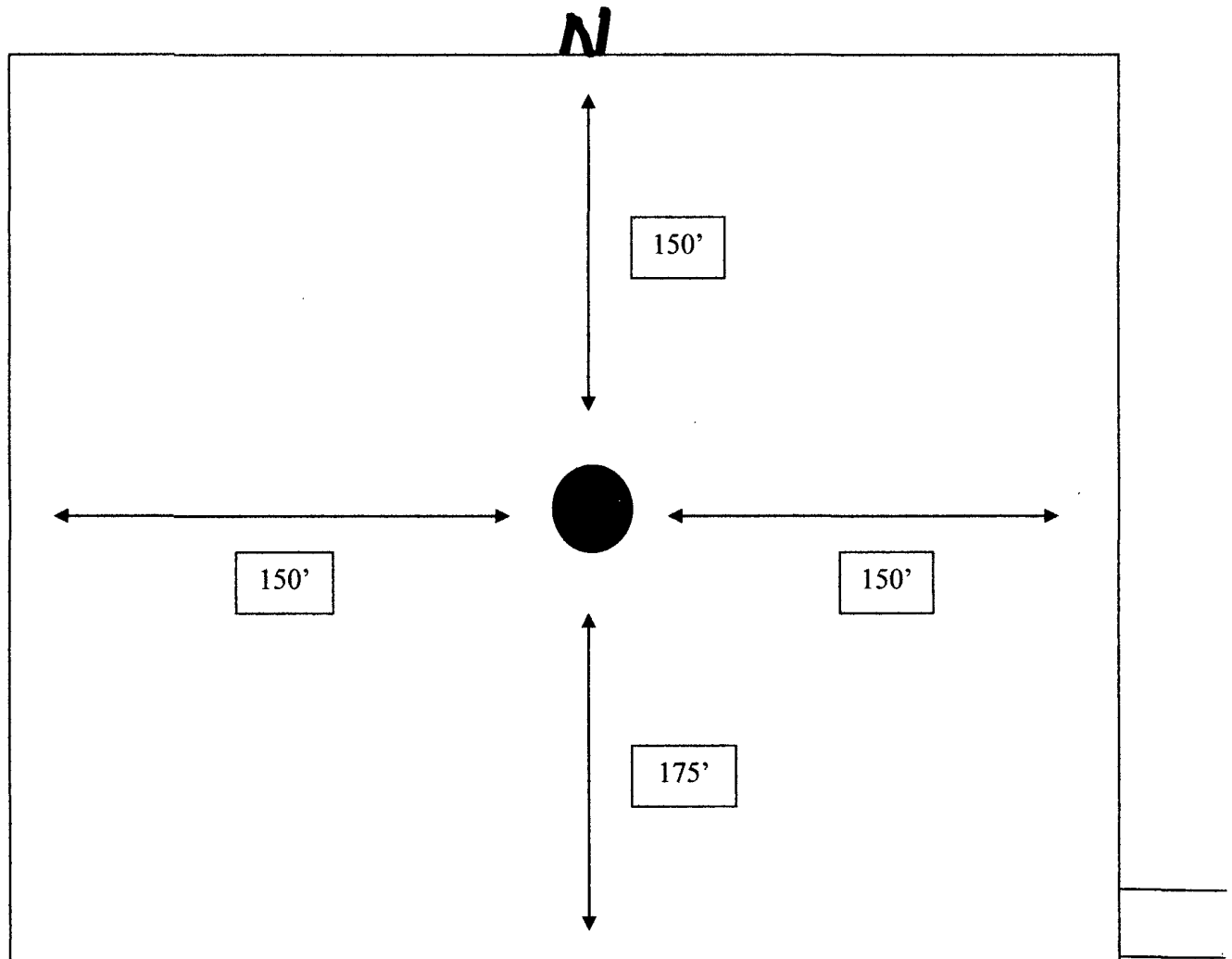
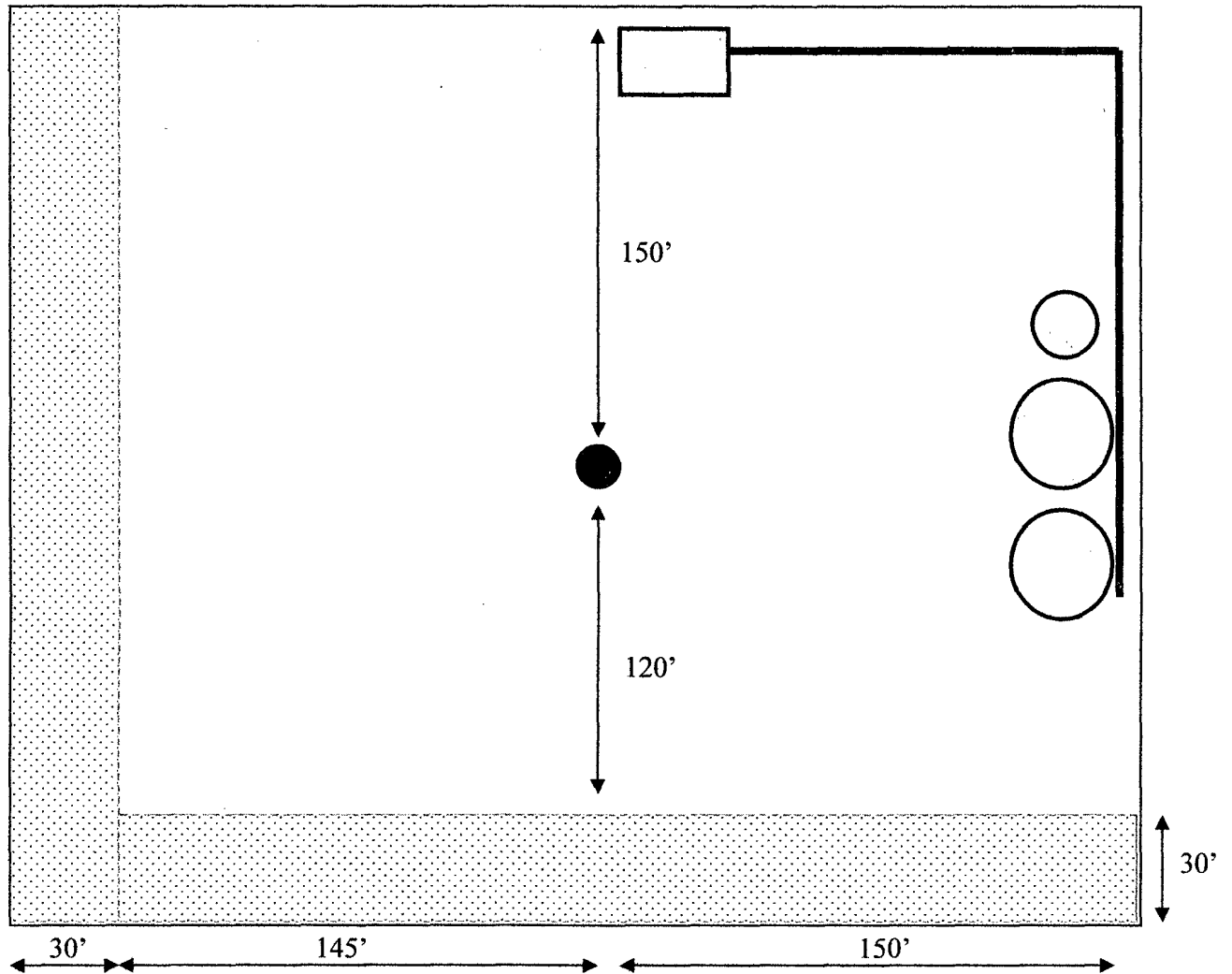


EXHIBIT 'B'

Interim Reclamation & Production Facilities

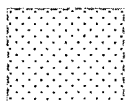
V-DOOR NORTH



LEGEND



Well Bore



Interim Reclamation



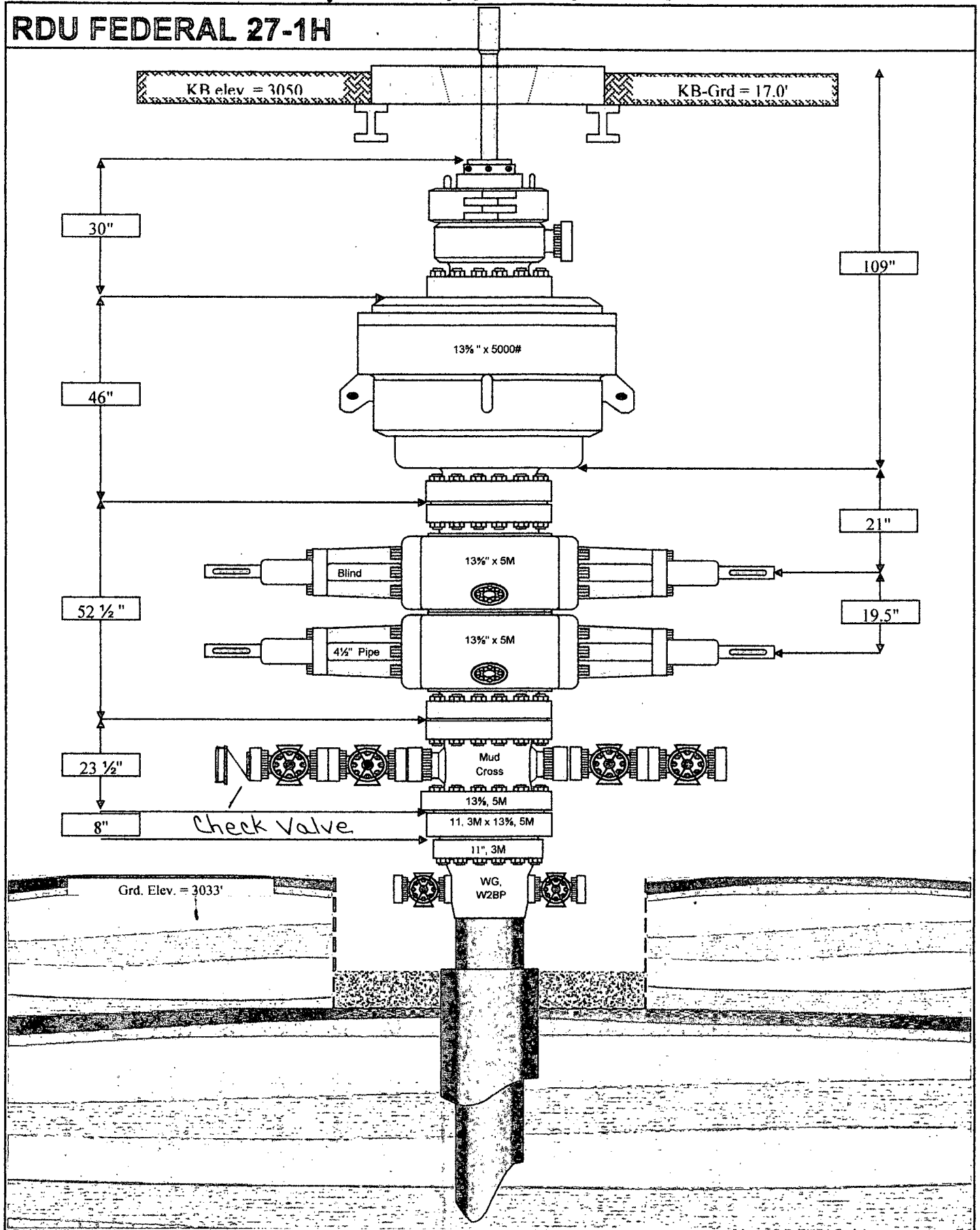
Production Facilities



WEST

Exhibit #1

RDU FEDERAL 27-1H



Choke Manifold

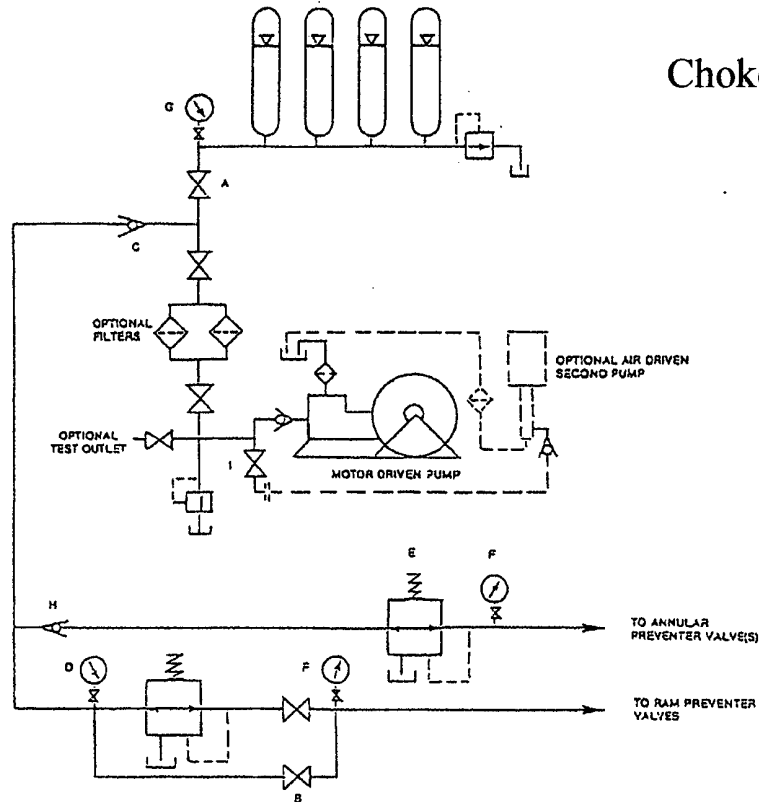


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

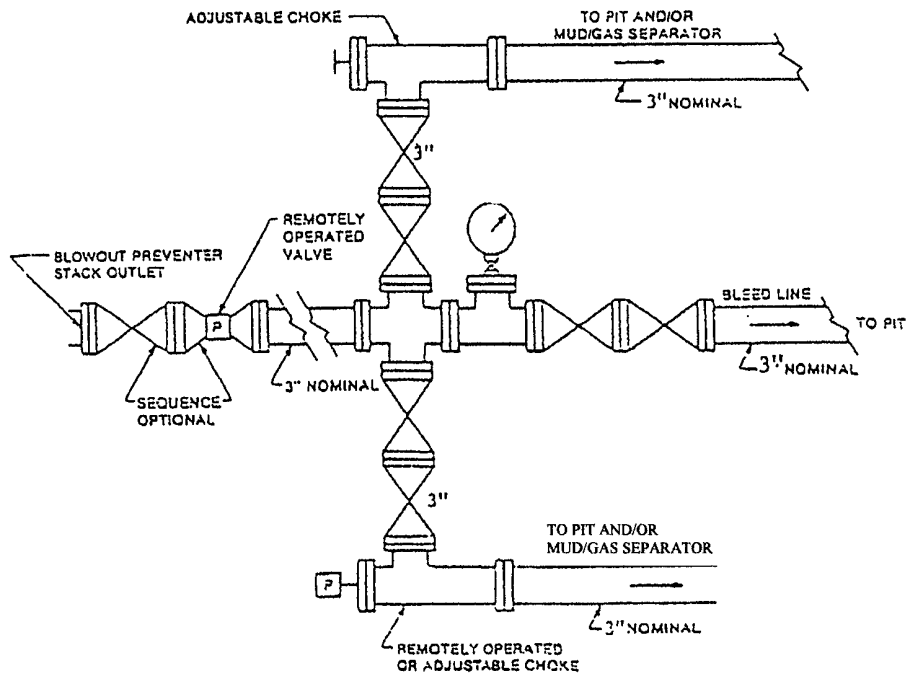
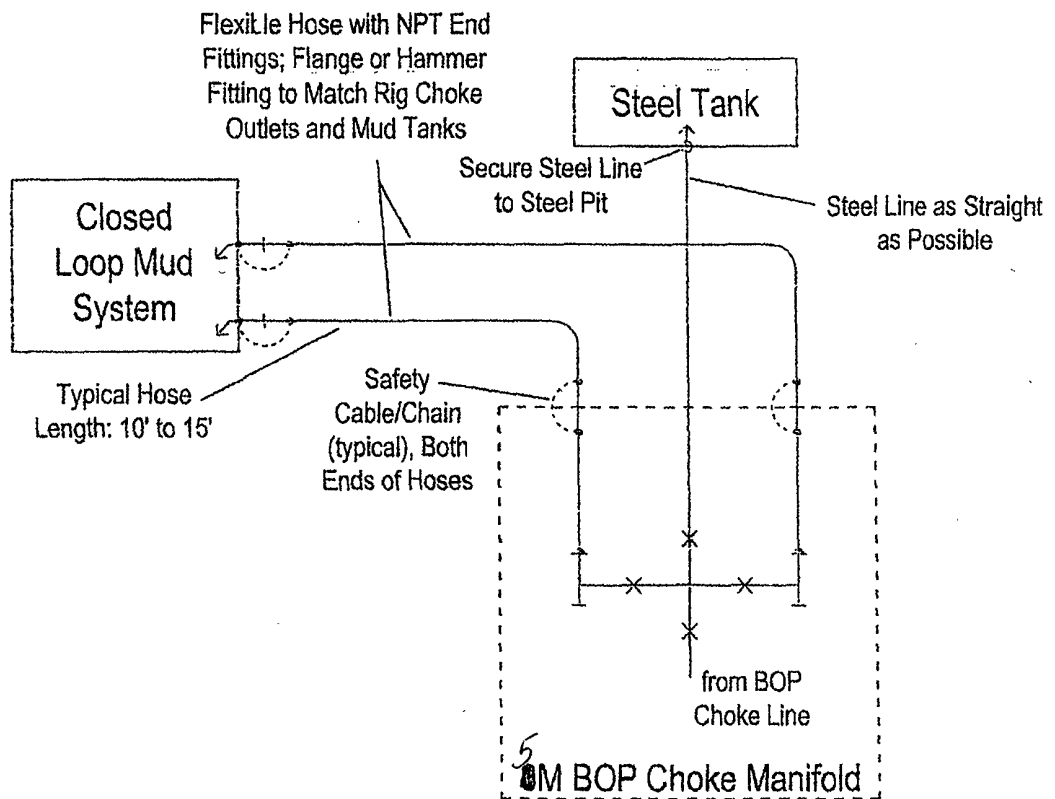


FIGURE K4-2. Typical choke manifold assembly for 5M rated working pressure service - surface installation.



RKI Exploration & Production
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

This well and its anticipated facility are not expected to have Hydrogen Sulfide releases. However, there may be Hydrogen Sulfide production in the nearby area. There are no private Residences in the area but a contingency plan has been orchestrated. RKI Exploration and Production will have a Company Representative available to rig personnel through out drilling or production operations. If hydrogen sulfide is detected or suspected, monitoring equipment will be acquired for monitoring and/or testing.

RKI Exploration & Production
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

TABLE OF CONTENTS

COVER PAGE AND REASONING	Page 1
GENERAL EMERGENCY PLAN	Page 3
EMERGENCY PROCEDURE FOR UNCONTROLLED RELEASES OF H₂S	Page 3-4
EMERGENCY NUMBERS	Page 4-5
PRODUCTION OF THE GENERAL RADIUS OF EXPOSURE RADIUS OF EXPOSURE (ROE)	Page 6
PUBLIC EVACUATION PLAN	Page 6-7
PROCEDURE FOR IGNITING AN UNCONTROLLABLE:	
PROCEDURE FOR IGNITION	Page 7
REQUIRED EMERGENCY EQUIPMENT	Page 8
USING SELF CONTAINED BREATHING AIR EQUIPMENT (SCBA)	Page 9
RESCUE & FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H₂S) POISONING	Page 9-10
H₂S TOXIC EFFECTS	Page 11
H₂S PHYSICAL EFFECTS	Page 11

RKI Exploration & Production
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

General H2S Emergency Actions:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (Self Contained Breathing Apparatus).
3. Always use the "buddy system"
4. Isolate the well/problem if possible
5. Account for all personnel
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the Company personnel as soon as possible if not at the location (use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of the emergency response agencies and nearby residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will don the self contained breathing apparatus
2. Remove all personnel to the "safe area" (always use the buddy system)
3. Contact company personnel if not on location]
4. Set in motion the steps to protect and or remove the general public to and upwind "safe area" Maintain strict security & safety procedures while dealing with the source.
5. No entry to any unauthorized personnel
6. Notify the appropriate agencies: City Police -- City Street(s)
 State Police -- State Rd.
 County Sheriff -- County Rd.
7. Call the NMOCD

RKI Exploration & Production LLC

Hydrogen Sulfide Contingency Plan For Drilling/Workover/Facility

If at this time the supervising person determines the release of H₂S cannot be contained to the site location and the general public is in harms way he will take the necessary steps to protect the workers and the public.

EMERGENCY CALL LIST: (Start and continue until ONE of these people has been contacted)

	OFFICE	MOBILE	HOME
RKI E&P	1-800-667-6958		
Gene Simer	575-885-1313	575-706-3225	575-885-6302
Tim Haddican	405-949-2329	405-823-2872	405-348-5515

EMERGENCY RESPONSE NUMBERS:

State Police	Eddy County		575 -748-9718
State Police	Lea County		575-392-5588
Sheriff	Eddy County		575-746-2701
Sheriff	Lea County		
Emergency Medical	Eddy County		911 or 505-746-2701
Service (Ambulance)	Lea County	Eunice	911 or 505-394-3258
Emergency Response	Eddy County SERC		575--476-9620
	Lea County		
Artesia Police Dept			575--746-5001
Artesia Fire Dept			575--746-5001
Carlsbad Police Dept			575-885-2111
Carlsbad Fire Dept			575--885-3125

EMERGENCY CALL LIST (CONT.)

Loco Hills Police Dept		575- 677-2349
Jal Police Dept		575- 395-2501
Jal Fire Dept		575- 395-2221
Jal Ambulance		575- 395-2221
Eunice Police Dept		575- 394-0112
Eunice Fire Dept		575- 394-3258
Eunice Ambulance		575- 394-3258
Hobbs Police Dept		575- 397-3365
Hobbs Fire Dept		575- 397-9308
NMOCD	District 1 (Lea, Roosevelt, Curry)	575- 393-6161
	District 2 (Eddy, Chavez)	575- 748-1283
Lea County Information		575- 393-8203
Callaway Safety	Eddy/Lea Counties	575- 392-2973
BJ Services	Artesia	575- 746-3140
	Hobbs	575- 392-5556
Halliburton	Artesia	1-800-523-2482
	Hobbs	1-800-523-2482
Wild Well Control	Midland	432-550-6202
	Mobile	432-553-1166

RKI Exploration & Production
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

PROTECTION OF THE GENERAL PUBLIC (ROE)

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road with the general public may travel)
- 100 ppm radius of ¼ mile in New Mexico will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H₂S could be present in concentrations greater than 100 ppm in the gas mixture

CALCULATIONS FOR THE 100 PPM (ROE) "PASQUILL-GIFFORD EQUATION"

$X = [(1.589) (\text{mole fraction}) (Q\text{-volume in std cu ft})] \text{ to the power of } (0.6258)$

CALCULATION FOR THE 500 PPM ROE:

$X = [(.4546) (\text{mole fraction}) (Q\text{-volume in std cu ft})] \text{ to the power of } (0.6258)$

Example:

If a well/facility has been determined to have 150 / 500 ppm H₂S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

150 ppm $X = [(1.589) (.00015) (100,000 \text{ cfd})] \text{ to the power of } (.6258)$
 $X = 7 \text{ ft.}$

500 ppm $X = [(.4546) (.0005) (100,000 \text{ cfd})] \text{ to the power of } (.6258)$
 $X = 3.3 \text{ ft.}$

(These calculations will be forwarded to the appropriate District NMOCD office when Applicable)

PUBLIC EVACUATION PLAN:

- Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- A trained person in H₂S safety shall monitor with detection equipment the H₂S concentration, wind and area exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class 1 groups A, B, C & D, Division 1, hazardous locations. All monitor will have a minimum capability of measuring H₂S, oxygen and flammable values.)

RKI Exploration & Production
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

- Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

1. Human life and/or property are in danger.
2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

INSTRUCTION FOR IGNITION:

1. Two people are required. They must be equipped with positive pressure, self contained breathing apparatus and a "D" ring style full body, OSHA approved safety harness. Non flammable rope will be attached.
2. One of the people will be qualified safety person who will test the atmosphere for H₂S, oxygen and LFL. The other person will be the company supervisor; he is responsible for igniting the well.
3. Ignite up wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25 mm flare gun shall be used, with a \pm 500 ft. range to ignite the gas.
4. Prior to ignition, make a final check with combustible gases.
5. Following ignition, continue with the emergency actions & procedures as before.

RKI Exploration & Production
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

REQUIRED EMERGENCY EQUIPMENT:

1. **Breathing apparatus:**
 - Rescue packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
 - Work/Escape packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity
 - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
2. **Signage & Flagging:**
 - One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - A colored conditioned flag will be on display, reflecting the condition at the site at the time.
3. **Briefing Area:**
 - Two perpendicular areas will be designated by signs and readily accessible.
4. **Wind Socks:**
 - Two windsocks will be placed in strategic locations, visible from all angles.
5. **H2S Detectors & Alarms:**
 - The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible at 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
 - Rig Floor
 - Bell Nipple
 - End of flow line or where well bore fluid are being discharged.
6. **Auxiliary Rescue Equipment:**
 - Stretcher
 - Two OSHA full body harness
 - 100 ft. 5/8 inch OSHA approved rope.
 - 1 – 20# class ABC fire extinguisher
 - Communication via cell phones on location and vehicles on location.

RKI Exploration & Production
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

USING SELF CONTAINED BREATHING AIR EQUIPMENT (SCBA):

- (SCBA) SHOULD BE WORN WHEN ANY OF THE FOLLOWING ARE PERFORMED:
 - Working near the top or on the top of a tank
 - Disconnecting any line where H₂S can reasonably be expected
 - Sampling air in the area to determine if toxic concentration of H₂S can exist.
 - Working in areas where over 10 ppm on H₂S has been detected.
 - At any time there is a doubt as the level of H₂S in the area.
- All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
- Facial hair and standard eyeglasses are not allowed with SCBA.
- Contact lenses are never allowed with SCBA.
- Air quality shall be continuously checked during the entire operation.
- After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
- All SCBA shall be inspected monthly.

RESCUE AND FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H₂S) POISONING:

- Do not panic
- Remain calm and think
- Get on the breathing apparatus

RKI Exploration & Production

Hydrogen Sulfide Contingency Plan For Drilling/Workover/Facility

- Remove the victim to the safe breathing area as quickly as possible. Up wind and uphill from source or cross wind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and or CPR, as necessary.
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two personnel on location shall be trained in CPR and First Aid.

RKI Exploration & Production

Hydrogen Sulfide Contingency Plan For Drilling/Workover/Facility

H₂S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H₂S is approximately 20% heavier than air (Sp. Gr = 1.19) (Air = 1) and colorless. It forms an explosive mixture with air between 4.3% and 46%. By volume hydrogen sulfide is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

COMMON NAME	CHEMICAL ABBREV.	SPECIFIC GRVTY.	THRESHOLD LIMITS	HAZARDOUS LIMITS	LETHAL CONCENTRATIONS
Hydrogen Sulfide	H ₂ S	1.19	10 ppm 15 ppm	100 ppm/hr	600ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO ₂	2.21	2 ppm	N/A	1000 ppm
Chlorine	Cl ₂	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO ₂	1.52	5000 ppm	5%	10%
Methane	CH ₄	0.55	90,000	Combustible @ 5%	N/A

Threshold Limit: Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.

Hazardous Limit: Concentrations that may cause death.

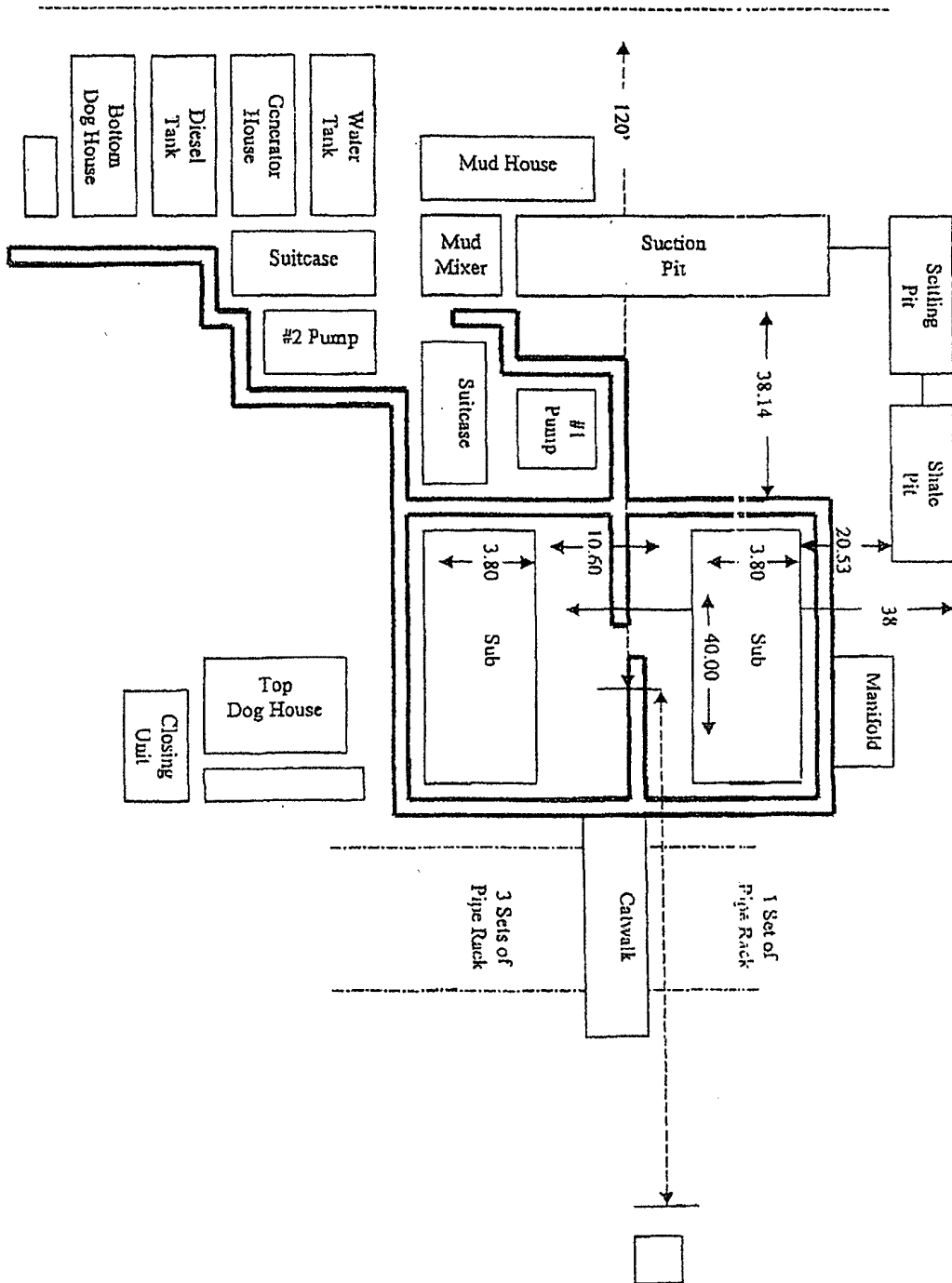
Concentrations: Concentrations that will cause death with short term exposure.

Threshold Limit: NIOSH guide to chemical hazards
(10 ppm)

PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATION	PHYSICAL EFFECTS
.001% 10 ppm	Obvious and unpleasant odor. Safe for 8 hr. exposure
.005% 50 ppm	Can cause some flu like symptoms and can cause pneumonia.
.01% 100 ppm	Kills the sense of smell in 3-15 minutes. May irritate the eyes and throat.
.02% 200 ppm	Kills the sense of smell rapidly. Severely irritates the eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and or death.
.06% 600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.

Plat for Closed Loop System



SURFACE USE PLAN

RKI Exploration & Production, LLC
RDU Federal 27-1H
Surface Hole: 330' FNL & 2060' FEL
Section 27, T. 26 S., R. 30 E.
Bottom Hole: 330 FSL & 2310 FEL
Section 34, T. 26 S., R. 30 E
Eddy County, New Mexico

This plan is submitted with form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

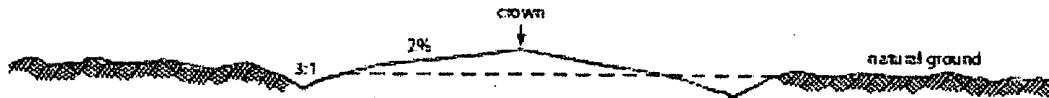
- A. **DIRECTIONS:** Go south of Carlsbad, NM, on Highway 285, for 24 miles. Turn east onto the Whitethorn Road (County Road 725) for 10.3 miles. From the junction of Tarbrush and Longhorn roads, go east 2.3 miles to a "Y" and go right for 1.6 miles to the end of County Road 725, go east for 2.6 miles to lease road, on lease road go north 0.6 miles then east 0.3 miles turning north for 0.2 miles to the proposed new road of 41 ft. to the proposed well.

All existing roads are either paved or a caliche lease road.

- B. See attached plats and maps provided by Basin Surveys.
- C. The access route from Eddy County Road 725 to the well location is depicted on Exhibit C.
- D. Existing roads on the access route will be improved and maintained to the standard set forth in Section 2 of this Surface Use Plan of Operations.
- E. A right-of-way (ROW) is required to access the well, on the existing road system, since the access route crosses out of the unit boundary, and no previous ROW has been applied for to cover the existing roadway back to C.R. 725.. RKI Exploration & Production LLC. is currently applying for a ROW grant from the BLM.

2. NEW OR RECONSTRUCTED ACCESS ROADS:

- A. The new access road will begin at the southeast corner of the proposed well location, running east, to an existing north/south lease road, for 40.9 ft. This portion of new road construction is all within the unit boundary and will not require a ROW permit.
- B. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.



Level Ground Section

- C. Surface material will be native caliche. The average grade of the entire road will be approximately 3%.
- D. Fence Cuts: No
- E. Cattle guards: No
- F. Turnouts: No
- G. Culverts: No
- H. Cuts and Fills: Not significant
- I. Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.
- J. The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along the access road route.
- K. The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

3. LOCATION OF EXISTING WELLS:

See attached map (Exhibit D) showing all wells within a one-mile radius.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. In the event the well is found productive, production equipment will be installed on the well site. See Production Facilities Layout diagram (Exhibit B) for the proposed production facility layout and the areas of the well pad not required for production that will be reclaimed.
- B. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted to BLM specifications.
- C. Containment berms will be constructed completely around production facilities designed to hold fluids. The containment berms will be constructed or compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas.

5. LOCATION AND TYPE OF WATER SUPPLY:

The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from commercial water stations in the area and hauled to the location by transport truck using the existing and proposed roads shown in the attached survey plats. If a commercial water well is nearby, a temporary, surface poly line,

will be laid along existing roads or other ROW easements and the water pumped to the well. No water well will be drilled on the location.

6. SOURCE OF CONSTRUCTION MATERIALS:

Any construction material that may be required for surfacing of the drill pad and access road will be from a contractor having a permitted source of materials within the general area. No construction materials will be removed from Federal lands without prior approval from the appropriate surface management agency. All roads will be constructed of 6" rolled and compacted caliche.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.
- B. Drilling fluids will be contained in steel mud pits.
- C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.
- D. Oil produced during operations will be stored in tanks until sold.
- E. Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- F. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location, not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.

8. ANCILLARY FACILITIES:

No campsite, airstrip, or other facilities will be built as a result of the operation of this well. No staging areas are needed.

9. WELL SITE LAYOUT:

- A. Exhibit A shows the dimensions of the proposed well pad.
- B. The proposed well pad size will be 300' x 325' (See Exhibit A). There will be no reserve pit due to the well being drilled utilizing a closed loop mud system. The closed loop system will meet the NMOCD requirements 19.15.17.
- C. The Basin Surveyor's plat, Form C-102 and Exhibit A, shows how the well will be turned to a V-Door North.
- D. A 600' x 600' area has been staked and flagged.
- E. All equipment and vehicles will be confined to the approved disturbed areas of this APD (i.e., access road, well pad, and topsoil storage areas)

10. PLANS FOR SURFACE RECLAMATION:

- A. After concluding the drilling and/or completion operations, if the well is found non-commercial, all the equipment will be removed, the surface material, caliche, will be

removed from the well pad and road and transported to the original caliche pit or used for other roads. The original stock piled top soil will be returned to the pad and contoured, as close as possible, to the original topography. The access road will have the caliche removed and the road ripped, barricaded and seeded as directed by the BLM.

- B. If the well is a producer, the portions of the location not essential to production facilities or space required for workover operations, will be reclaimed and seeded as per BLM requirements.

C. Reclamation Objectives:

The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.

The long-term objective of final reclamation is to return the land to a condition approximating that which existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydro logical functioning, and vegetative productivity.

D. Reclamation Performance Standards

The following reclamation performance standards will be met:

Interim Reclamation – Includes disturbed areas that may be redisturbed during operations and will be redisturbed at final reclamation to achieve restoration of the original landform and a natural vegetative community.

- Disturbed areas not needed for active, long-term production operations or vehicle travel will be recontoured, protected from erosion, and revegetated with a self-sustaining, vigorous, diverse, native (or as otherwise approved) plant community sufficient to minimize visual impacts, provide forage, stabilize soils, and impede the invasion of noxious, invasive, and non-native weeds.

Final Reclamation – Includes disturbed areas where the original landform and a natural vegetative community will be restored and it is anticipated the site will not be redisturbed for future development.

- The original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors.
- A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community will be established on the site, with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation.
- No single species will account for more than 30% total vegetative composition unless it is evident at higher levels in the adjacent landscape. Permanent vegetative cover will be determined successful when the basal cover of desirable perennial species is at least 80% of the basal cover on adjacent or nearby undisturbed areas where

vegetation is in a healthy condition

- Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gully, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.
- The site will be free of State- or county-listed noxious weeds, oil field debris and equipment, and contaminated soil. Invasive and non-native weeds are controlled.

E. Reclamation Actions

Earthwork for interim and final reclamation will be completed within 6 months of well completion or plugging unless a delay is approved in writing by the BLM authorized officer.

The following minimum reclamation actions will be taken to ensure that the reclamation objectives and standards are met. It may be necessary to take additional reclamation actions beyond the minimum in order to achieve the Reclamation Standards.

Reclamation – General

Notification:

- The BLM will be notified at least 3 days prior to commencement of any reclamation operations.

Housekeeping:

- Within 30 days of well completion, the well location and surrounding areas(s) will be cleared of, and maintained free of, all debris, materials, trash, and equipment not required for production.
- No hazardous substances, trash, or litter will be buried or placed in pits.

Vegetation Clearing:

- Grass, forbs, and small woody vegetation, such as shinnery oak (if present) will be excavated as the topsoil is removed.
- Large woody vegetation, such as mesquite will be stripped and stored separately and re-spread evenly on the site following topsoil re-spreading.

Topsoil Management:

- Operations will disturb the minimum amount of surface area necessary to conduct safe and efficient operations.
- Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the topsoil will be stripped and stockpiled around the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil will include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils.
- On sites where there is not at least an average of 6 inches of topsoil across the site available for stockpiling, soil amendments will be used to augment the available topsoil and improve plant germination and growth. Soil amendments will be agreed to by both the operator and the BLM prior to disturbing the site.

- Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment or so dry that dust clouds greater than 30 feet tall are created. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet.
- No major depressions will be left that would trap water and cause ponding unless the intended purpose is to trap runoff and sediment.

Seeding:

- Seedbed Preparation. Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4 – 6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.
- If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- Seed Application. Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used.
- If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.

Erosion Control and Mulching:

- Where applicable, the mitigation techniques such as surface roughening and mulching will be used to keep water on site, thereby enhancing re-vegetation of the site and controlling erosion and runoff.
- All erosion control devices and materials will be installed and maintained to be fully functional until revegetation is determined successful by the BLM.
- Silt fencing, waddles, hay bales, and other erosion control devices will be used where necessary to prevent soil movement from water erosion.
- Mulch will be used if necessary to control wind and water erosion, create vegetation micro-sites, and retain soil moisture on site. Mulches may include native grass hay, wood fiber, live mulch, cotton or jute. Mulch will be certified free of noxious or invasive weed seeds and free from mold and fungi.
- If loose hay mulch is used, it will be crimped into the soil to prevent blowing.
- All reclamation equipment will be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species.
- Each site where the BLM has not approved interim or final reclamation success will be monitored annually between Mid-May and July to determine the presence of any invasive, noxious, and non-native species. Invasive, noxious, and non-native species that have been identified during monitoring will be promptly treated and controlled, prior to the production of seed heads. A Pesticide Use Proposal (PUP) will be submitted to the BLM for approval prior to the use of herbicides.

F. Interim Reclamation Procedures

Recontouring:

- Interim reclamation action will be completed no later than 6 months from when the final well on the location has been completed, weather permitting.
- All portions of the well pad not needed for daily production operations will be stripped of surfacing material before further reclamation begins.
- The portions of the cleared well site not needed for active 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. (See attached Interim Reclamation Diagram)
- If the well is a producer, the interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
- 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 will be moved so proper recontouring and revegetation can occur.

Application of Topsoil & Revegetation:

- Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including road cuts & fills.
- In order to inspect and operate the well or complete workover operations, it may be necessary to drive, park, and operate equipment on restored, interim vegetation within the previously disturbed area. Damage to soils and interim vegetation will be repaired and reclaimed following use. To prevent soil compaction, under some situations, such as the presence of moist, clay soils, the vegetation and topsoil will be removed prior to workover operations and restored and reclaimed following workover operations.

Visual Resources Mitigation:

- Trees, if present, and tall vegetation will be left along the edges of the pads whenever feasible to provide screening.
- To help mitigate the contrast between the established perimeter vegetation and the newly established vegetation, sites will be seeded five feet further outside the disturbed area.
- To reduce the view of production facilities from visibility corridors and private residences, facilities will not be placed in visually exposed locations (such as ridgelines and hilltops).
- Production facilities will be clustered and placed away from cut slopes and fill slopes to allow the maximum recontouring of the cut and fill slopes.

G. Final Reclamation Procedures

- Final reclamation actions will be completed within 6 months of well plugging, weather permitting.
- All surfacing material will be removed from the well pad and roads before any

further reclamation begins.

- 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. Salvaged topsoil in the interim reclaimed areas will be respread evenly over the entire disturbed site to ensure successful revegetation.
- If necessary to ensure timely revegetation, the pad will be fenced to the BLM's 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.
- Final abandonment of pipelines and flowlines will involve flushing and properly disposing of any fluids in the lines. All surface lines and any lines that are buried close to the surface that may become exposed in the foreseeable future due to water or wind erosion, soil movement, or anticipated subsequent use, must be removed. Deeply buried lines may remain in place unless otherwise directed by the authorized officer.

11. SURFACE OWNERSHIP:

- A. The surface is owned by the U. S. Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
- B. The grazing lessee is J & S Cattle Company (Lower Tucker Draw Grazing Allotment).

12. OTHER INFORMATION:

- A. The area surrounding the well site is in a very flat, shallow gravelly loam, rolling hills type area. The vegetation consists of Mesquite, Creosote, White-Thorn Acacia with three-awns and some dropseed species.
- B. There is no permanent or live water in the immediate area.
- C. There are no dwellings within 2 miles of this location.
- D. A Class III Cultural Resources Examination has been completed by Boone Archaeological Services and the results will be forwarded to the BLM office.

13. BOND COVERAGE:

Bond Coverage is Nationwide; Bond Number NMB-000460.

OPERATORS REPRESENTATIVE:

The RKI Exploration and Production, LLC representatives responsible for ensuring compliance of the surface use plan are listed below:

Surface:

Barry W. Hunt – Permitting Agent
1403 Springs Farm Place
Carlsbad, NM 88220
(575) 885-1417 (Home)
(575) 361-4078 (Cell)

Drilling & Production:

Bill Aubrey – RKI Exploration and Production, LLC.
3817 NW Expressway, Suite 950
Oklahoma City, Ok. 73112
(405) 996-5748 (Office)
(405) 625-7838 (Cell)

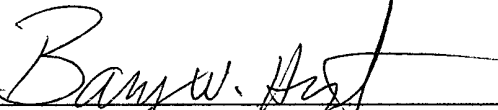
ON-SITE PERFORMED ON 7/21/10 RESULTED IN PROPOSED WELL LOCATION BEING MOVED 250 FT. TO THE EAST. THE ORIGINAL LOCATION WAS 330 FNL & 2310 FEL. DUE TO THE CLOSE PROXIMITY OF A DRAINAGE SYSTEM, THE LOCATION WAS MOVED TO THE PRESENT FOOTAGES OF 330 FNL & 2060 FEL. IT WAS AGREED THAT THE LOCATION WOULD BE TURNED TO A V-DOOR NORTH.

PRESENT AT ON-SITE:

**BARRY HUNT – PERMITTING AGENT FOR RKI EXPLORATION & PRODUCTION
RANDY RUST – BLM
JEFF PANGBURN – BOONE ARCHAEOLOGICAL SERVICES
BASIN SURVEYORS**

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package 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 RKI Exploration and Production, LLC am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 20th day of January 2010.

Signed: _____

Printed Name: Barry Hunt

Position: Agent for RKI Exploration & Production, LLC.

Address: 1403 Springs Farm Place, Carlsbad, NM 88220

Telephone: (575) 361-4078

E-mail: specialtpermitting@gmail.com

Field Representative: Gene Simer

Address: P. O. Box 370, Carlsbad, NM 88221

Telephone: Office: (575) 885-1313, Cell: (575) 706-3225

RKI Exploration & Production LLC

P.O. Box 370, Carlsbad, NM 88221
Office 505-885-1313 Fax 505-885-3509

July 17, 2009

To Whom It May Concern:

Mr. Barry Hunt is employed by RKI Exploration & Production to sign as their agent for APD's and Right of Ways in the states of New Mexico and Texas.

If you have any questions, please contact me at my office at 575-885-1313.

Sincerely,

RKI Exploration & Production, LLC

A handwritten signature in cursive script, appearing to read "Gene Simer".

Gene Simer
Production Superintendent

DESIGNATION OF AGENT

The undersigned is, on the records of the Bureau of Land Management, Unit Operator under the Ross Draw unit agreement, Eddy County, New Mexico, No. 14-08-0001-13810 approved and effective on December 21, 1973 and hereby designates

NAME: RKI Exploration & Production, LLC
ADDRESS: 3817 NW Expressway, Suite 950
Oklahoma City, OK 73112

as its agent, with full authority to act on its behalf in complying with the terms of the unit agreement and regulations applicable thereto and on whom the Authorized Officer or his representative may serve written or oral instructions in securing compliance with the Oil and Gas Operating Regulations with respect to drilling, testing and completing the RDU 27 #1H Well in the W ½ of the E ½, Sec. 27, T. 26S R. 30E, Eddy County, New Mexico. Bond coverage will be provided under Statewide Bond No. NMB000460.

It is understood that this Designation of Agent does not relieve the Unit Operator of responsibility for compliance with the terms of the unit agreement and the oil and gas operating regulations. It is also understood that this Designation of Agent does not constitute an assignment of any interest under the unit agreement of any lease committed thereto.

In case of default on the part of the designated agent, the Unit Operator will make full and prompt compliance with all regulations, lease terms, or orders of the Secretary of the Interior or his duly authorized representative.

The unit operator agrees promptly to notify the Authorized Officer of any change in the designated agent.

This Designation of Agent is deemed to be temporary and in no manner a permanent arrangement, and a designated agent may not designate another party as agent.

This designation is given only to enable the agent herein designated to drill the above specified well. It is understood that this Designation of Agent is limited to the field operations performed while drilling and completing the specified well and does not include administrative actions requiring specific authorization of the Unit Operator. This designation in no way will serve as authorization for the agent to conduct field operations for the specified well after it has been completed for production. Unless sooner terminated, this designation shall terminate when there is filed in the appropriate office of the Bureau of Land Management all reports and a Well Completion Report and Log (Form 3160-4) as required by the approved Application for Permit to Drill for the specified well.

In the event the above specified well is completed as a non-paying unit well, the authority for the designated agent to operate this well shall be established by completion of the Delegation of Authority to Operate Non-paying Unit Well form and submittal of the form to the appropriate office of the Authorized Officer.

8/23/2010

Date

J.C. Williamson

J.C. Williamson

(Unit Operator)

Ralph E. Williamson, COO *yes*
J.C. Williamson, unit operator

By:

Authorized Officer

Date

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI Exploration & Production, LLC.
LEASE NO.:	NM554774
WELL NAME & NO.:	RDU Federal 27 #1H
SURFACE HOLE FOOTAGE:	330' FNL & 2060' FEL, Sec 27, T.26S., R. 30E
BOTTOM HOLE FOOTAGE:	330' FSL & 2310' FEL, Sec. 34, T. 26 S., R. 30 E.
LOCATION:	Section 27, T. 26 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Phantom Banks Heronries
 - Commercial Well Determination
- ☐ **Construction**
 - Notification
 - V-Door Direction - North
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Medium Cave/Karst
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Phantom Banks Heronries

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Commercial Well Determination

A commercial well determination will need to be submitted after production has been established for at least six months.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. V-DOOR DIRECTION: North

C. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 8 inches in depth. The topsoil will be used for interim and final reclamation.

D. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

E. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

F. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

G. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

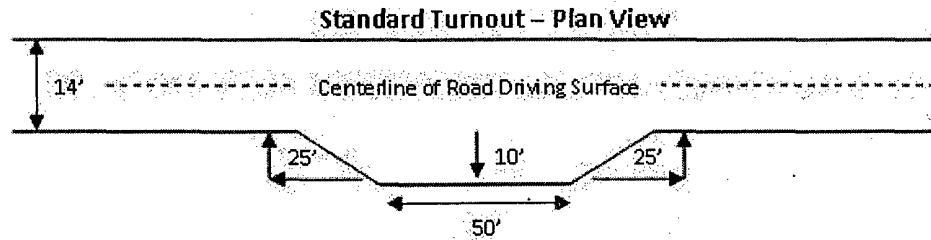
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

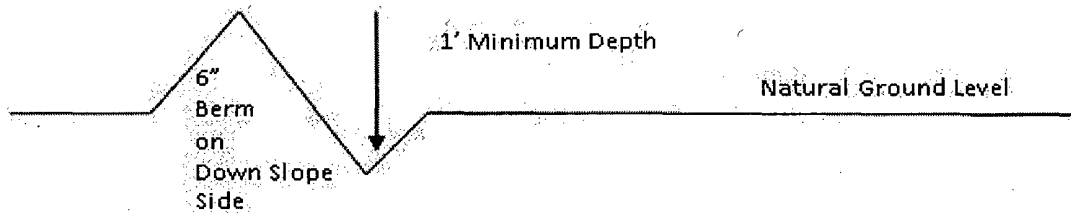


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

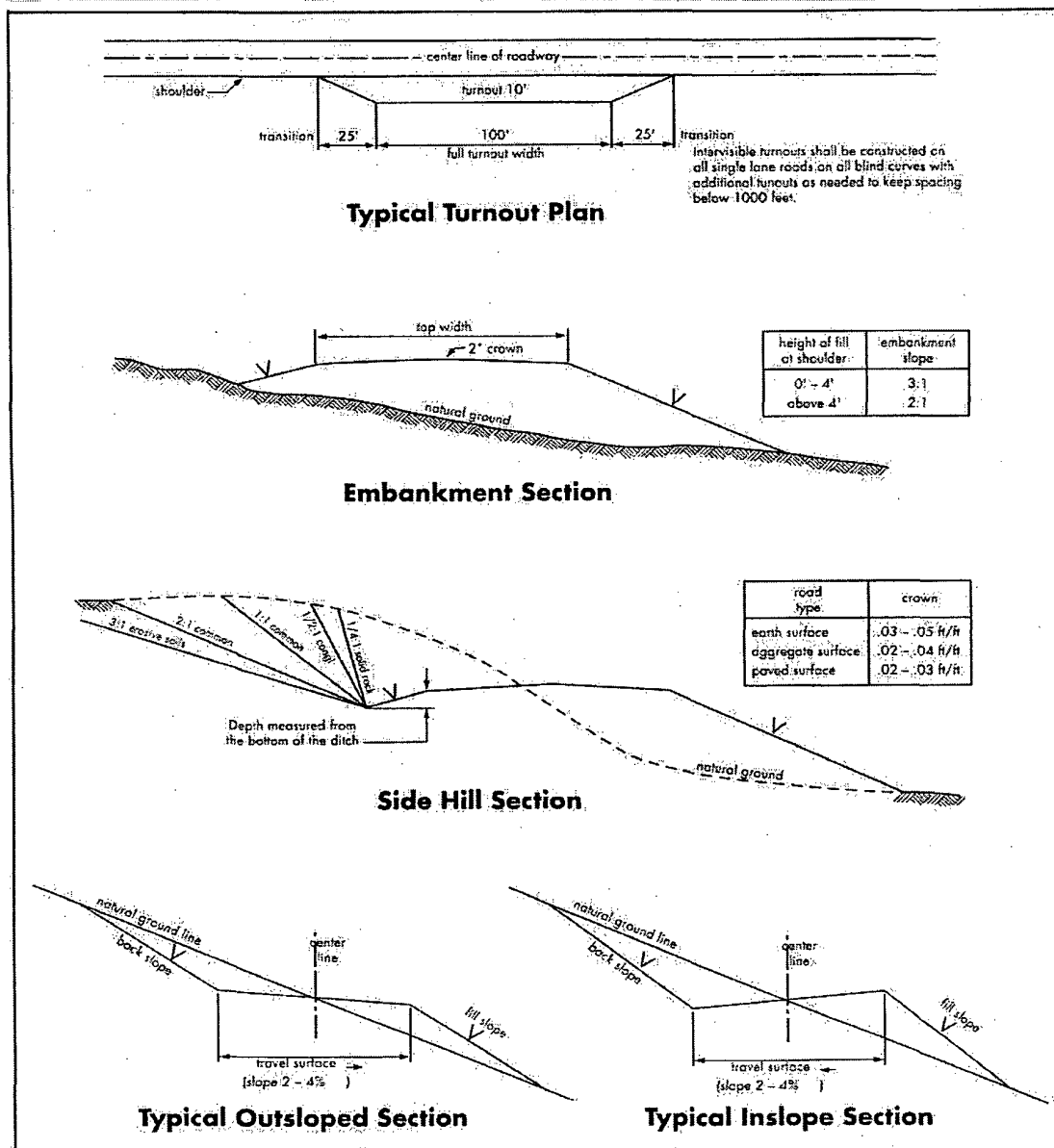
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Medium cave/karst

Possible lost circulation in the Red Beds/Evaporites and Delaware Mountain Group.

1. The 13-3/8 inch surface casing shall be set at approximately 950 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - a. First stage to DV tool, cement shall:
 - ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
 - b. Second stage above DV tool, cement shall:
 - ☒ Cement should tie-back at least **300** feet into previous casing string. Operator shall provide method of verification.
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi. 5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips or where the float does not hold, the minimum wait time before cut-off is eight hours after bumping the plug or when the cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. BOP/BOPE testing can begin after the above conditions are satisfied.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) prior to initiating the test.
 - c. The results of the test shall be reported to the appropriate BLM office.
 - d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
 - f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

EGF 100710

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES – not requested in APD

C. ELECTRIC LINES – not requested in APD

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
and dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed: Pounds of seed x percent purity x percent germination = pounds pure live seed