

10-698

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NM-480904B	
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No. Ross Draw Unit	
8. Lease Name and Well No. RDU Federal 22-1H <i>38361</i>	
9. AP Well No. <i>30-015-38240</i>	
3a. Address <i>3817 NW Expressway, Suite 950 Oklahoma City, Ok. 73112</i>	3b. Phone No. (include area code) 405-996-5748
10. Field and Pool, or Exploratory <i>Ross Draw</i> Undesignated Bone Spring <i>(84300)</i>	
11. Sec., T. R. M. or Blk. and Survey or Area Section 22, T. 26 S., R. 30 E.	
12. County or Parish Eddy	13. State NM
14. Distance in miles and direction from nearest town or post office* Approximately 14 miles southeast of Malaga, NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 ft.	16. No. of acres in lease 640
17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1320 ft.	19. Proposed Depth 8400 ft. <i>VD 12809 FT MD</i>
20. BLM/BIA Bond No. on file NLM-NMB-000460	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3086' GL	22. Approximate date work will start* 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:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- 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 <i>8/27/10</i>
Title Permitting Agent for RKI Exploration & Production, LLC.		
Approved by (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) <i>/s/ Don Peterson</i>	Date <i>OCT 07 2010</i>
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)

*KZ 10/27/10*

Carlsbad Controlled Water Basin

RECEIVED  
OCT 12 2010  
NMOCD ARTESIA

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

*dm*

DISTRICT I  
1626 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 30-016-38240	Pool Code 84300	Pool Name ROSS <del>BLAW</del> UNDESIGNATED, BONE SPRING
Property Code 38361	Property Name RDU 22 FEDERAL	Well Number 1H
OGRID No. 246289	Operator Name RKI EXPLORATION & PRODUCTION LLC	Elevation 3086'

Surface Location

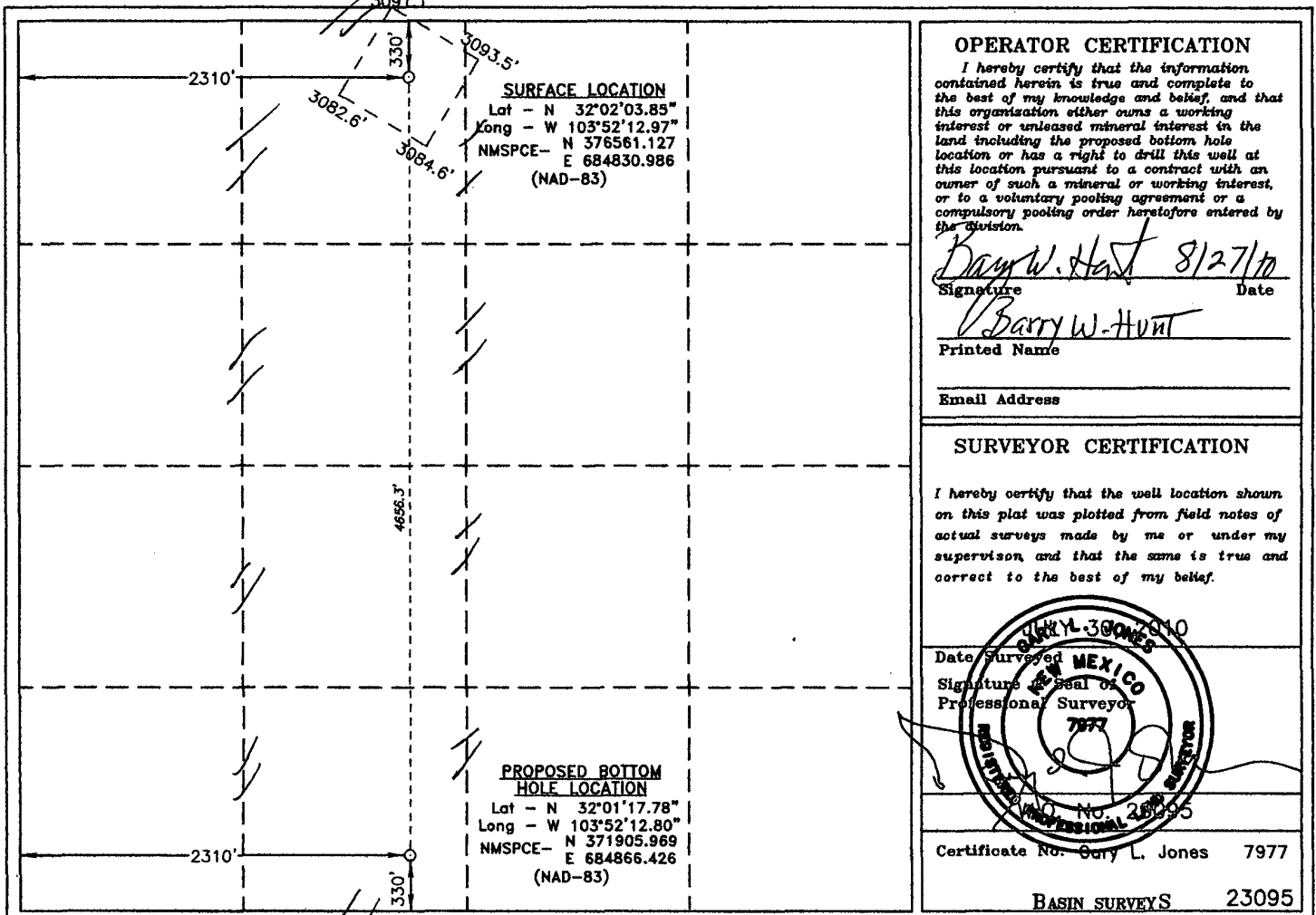
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	22	26 S	30 E		330	NORTH	2310	WEST	EDDY

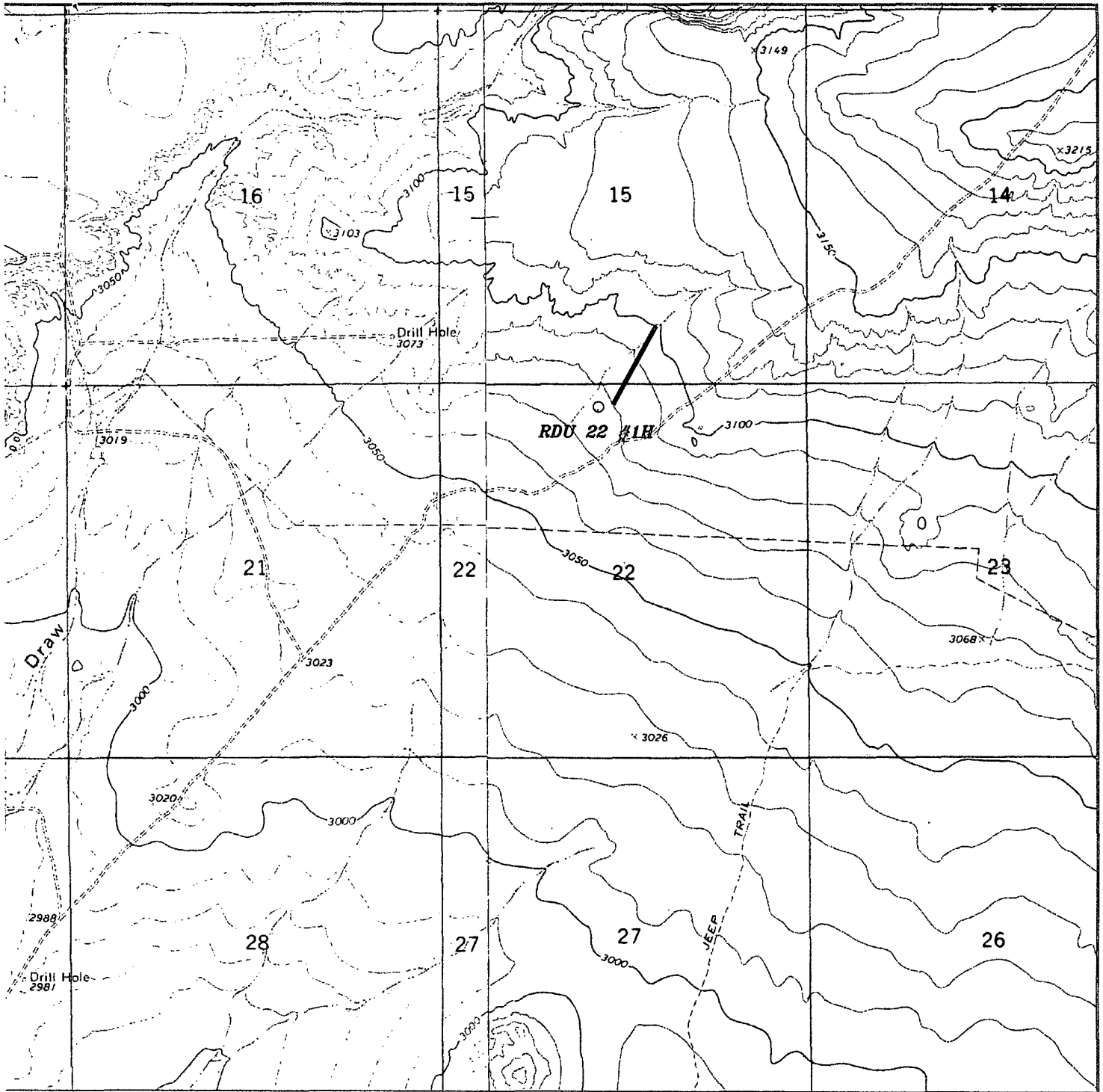
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	22	26 S	30 E		330	SOUTH	2310	WEST	EDDY

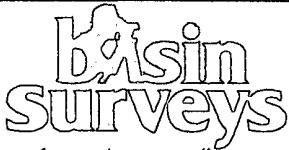

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
------------------------	-----------------	--------------------	-----------

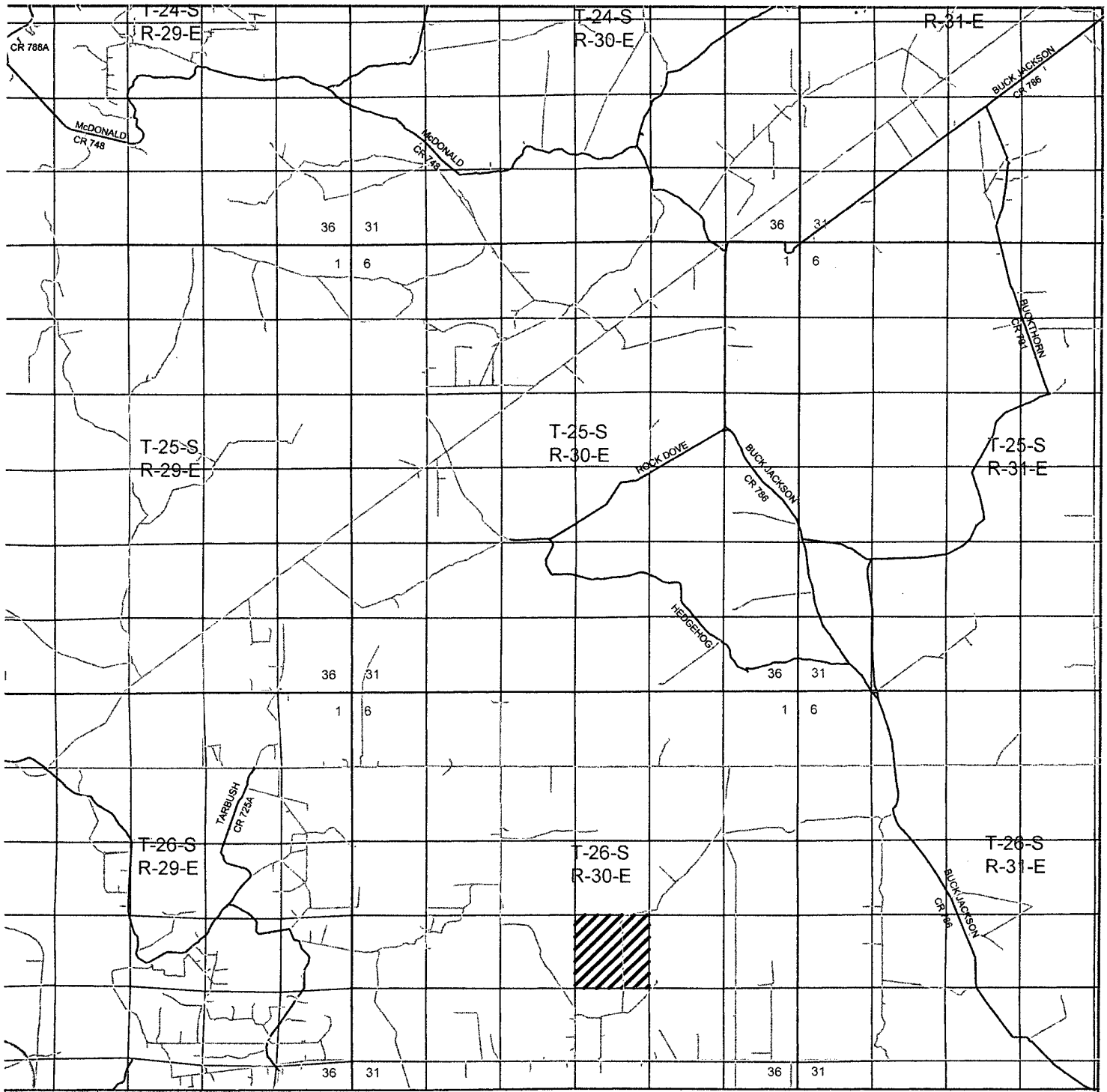
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION





**RDU 22 #1H**  
 Located 330' FNL and 2310' FEL  
 Section 22, Township 26 South, Range 30 East,  
 N.M.P.M., Eddy County, New Mexico.

 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 23095	 <b>RKI EXPLORATION          &amp; PRODUCTION          LLC</b>
		Survey Date: 07-30-2010	
		Scale: 1" = 2000'	
		Date: 07-30-2010	



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Located 330' FNL and 2310' FEL

Section 22, Township 26 South, Range 30 East,  
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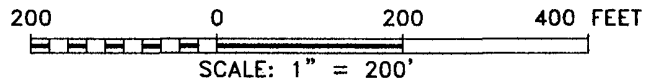
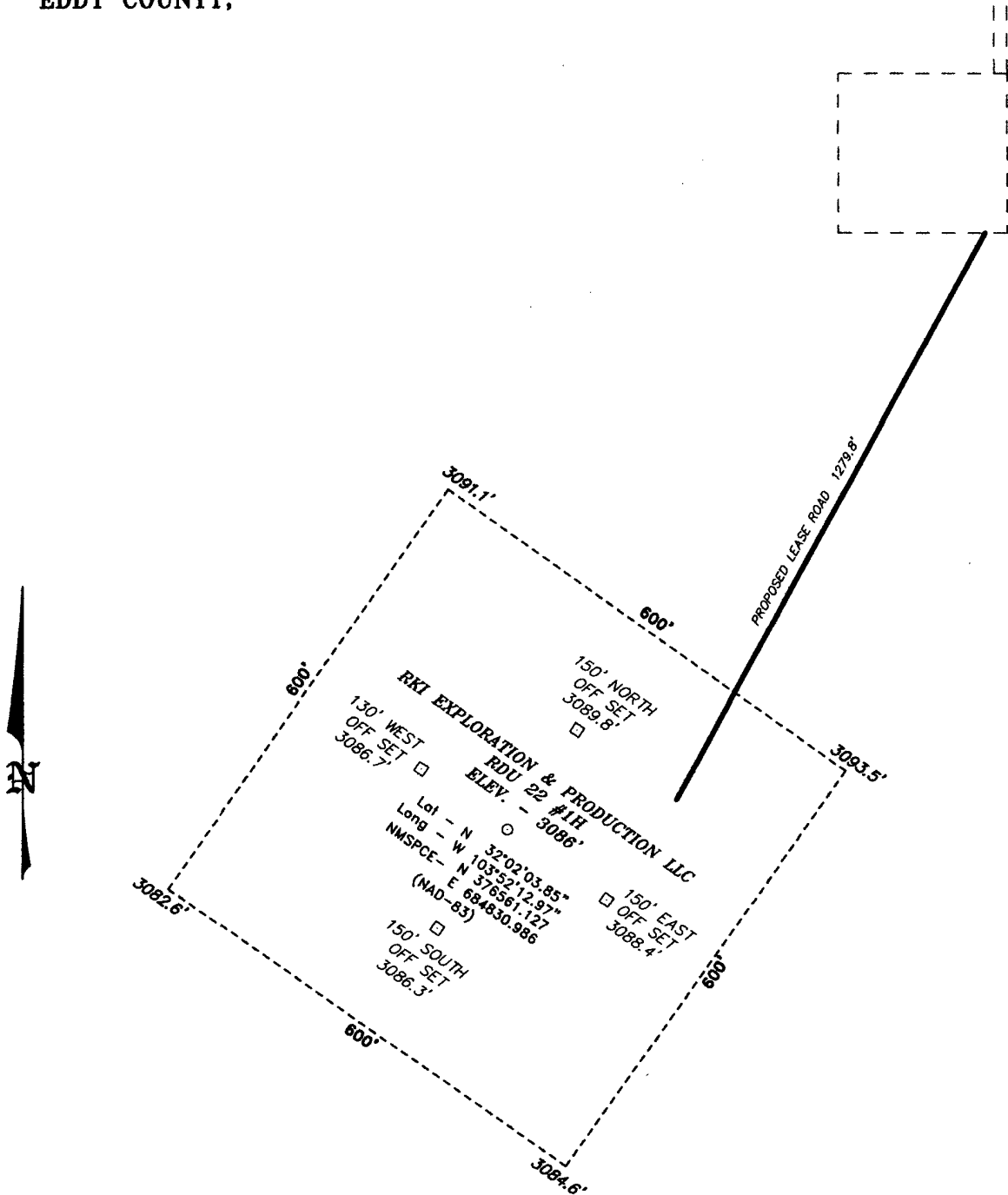
**basin**  
**surveys**  
focused on excellence  
in the oilfield

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 23095
Survey Date: 07-30-2010
Scale: 1" = 2 Miles
Date: 07-30-2010

**RKI EXPLORATION  
& PRODUCTION  
LLC**

SECTION 1, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF TAR BRUSH AND LONGHORN,  
 GO NORTHEAST 2.3 MILES TO A "Y", GO 2.1 MILES TO  
 LEASE ROAD, ON LEASE ROAD GO SOUTH 0.2 MILES  
 THENCE NORTHEAST 0.8 MILES TO LEASE ROAD, ON  
 LEASE ROAD GO EAST 0.3 MILES THENCE NORTHEAST 0.1  
 MILES THENCE EAST 0.4 MILE TO LEASE ROAD, ON  
 LEASE ROAD GO SOUTH 0.1 MILES TO WELL PAD AND  
 PROPOSED LEASE ROAD.

**RKI EXPLORATION & PRODUCTION LLC**

REF: RDU 22 #1H / WELL PAD TOPO

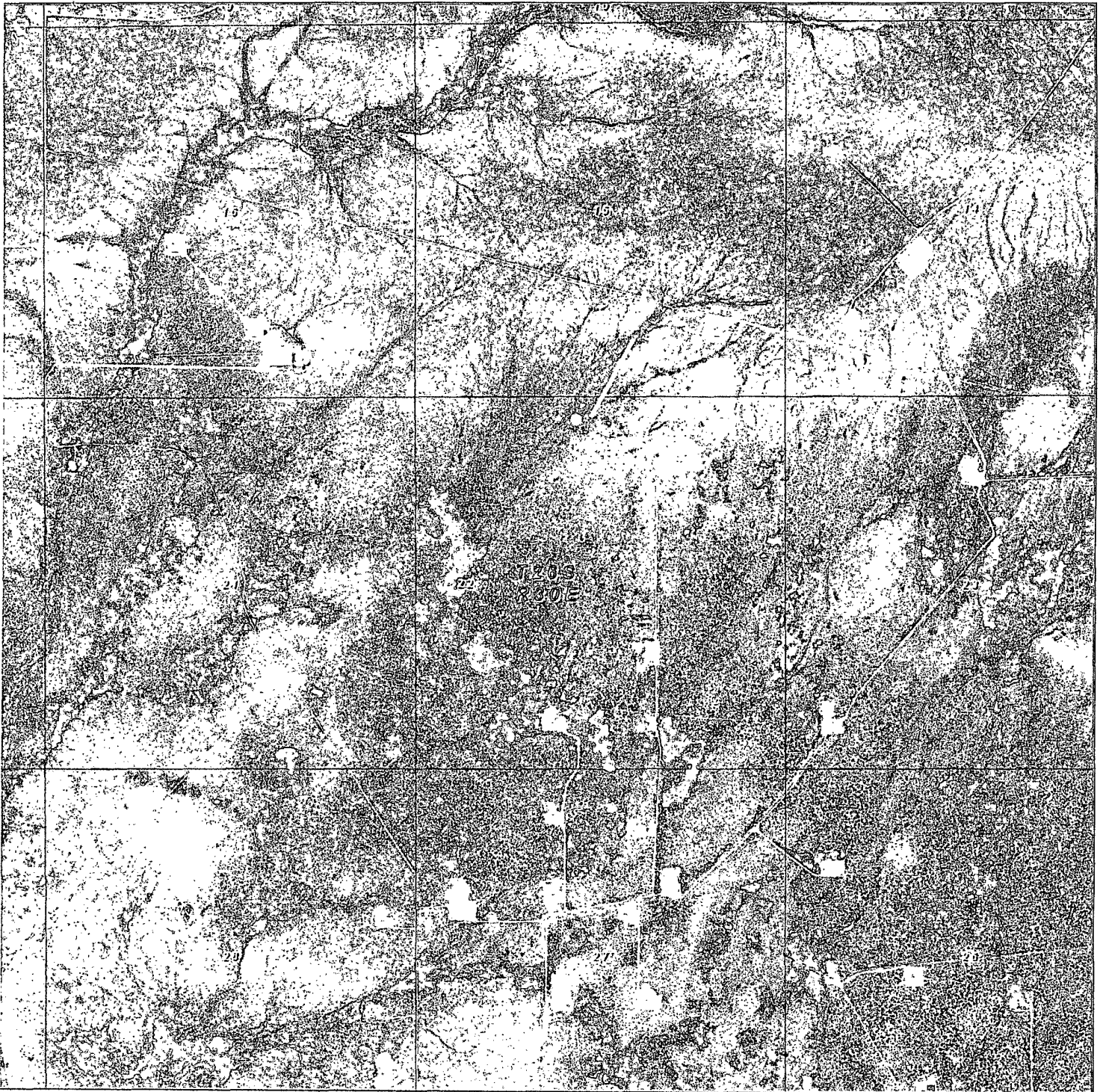
THE RDU 22 #1H LOCATED 330'  
 FROM THE NORTH LINE AND 2310' FROM THE WEST LINE OF  
 SECTION 22, TOWNSHIP 26 SOUTH, RANGE 29 EAST,  
 N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

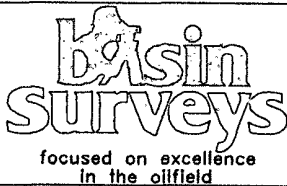
W.O. Number: 23095 Drawn By: J. SMALL

Date: 07-30-2010 Disk: JMS 23095

Survey Date: 07-30-2010 Sheet 1 of 1 Sheets



RDU 22 #1H  
 Located 330' FNL and 2310' FEL  
 Section 22, Township 26 South, Range 30 East,  
 N.M.P.M., Eddy County, New Mexico.



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

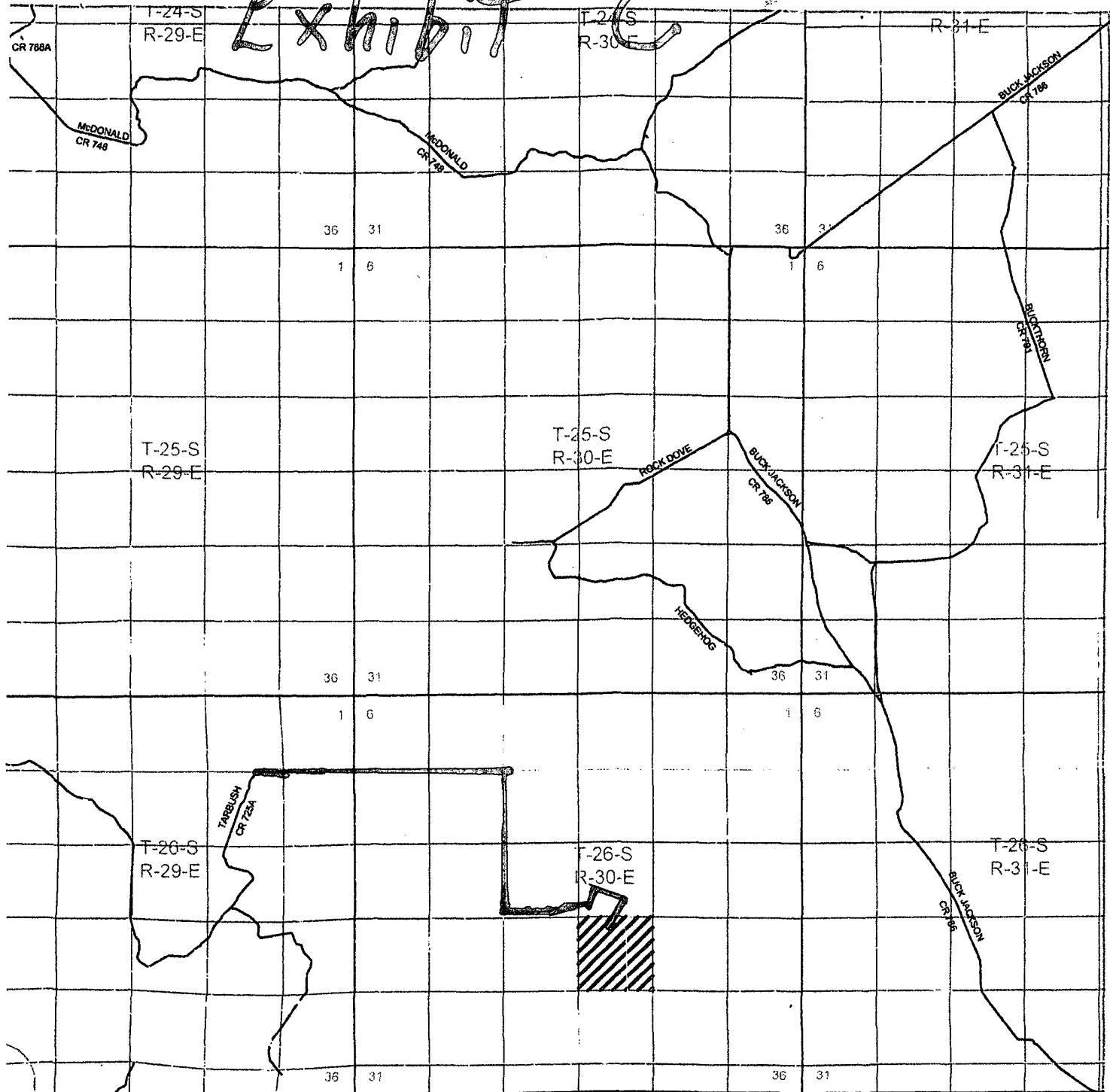
W.O. Number: JMS 23095

Scale: 1" = 2000'

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

RKI EXPLORATION  
 & PRODUCTION  
 LLC

# Exhibit C



**RDU 22 #1H**  
 Located 330' FNL and 2310' FEL  
 Section 22, Township 26 South, Range 30 East,  
 N.M.P.M., Eddy County, New Mexico.



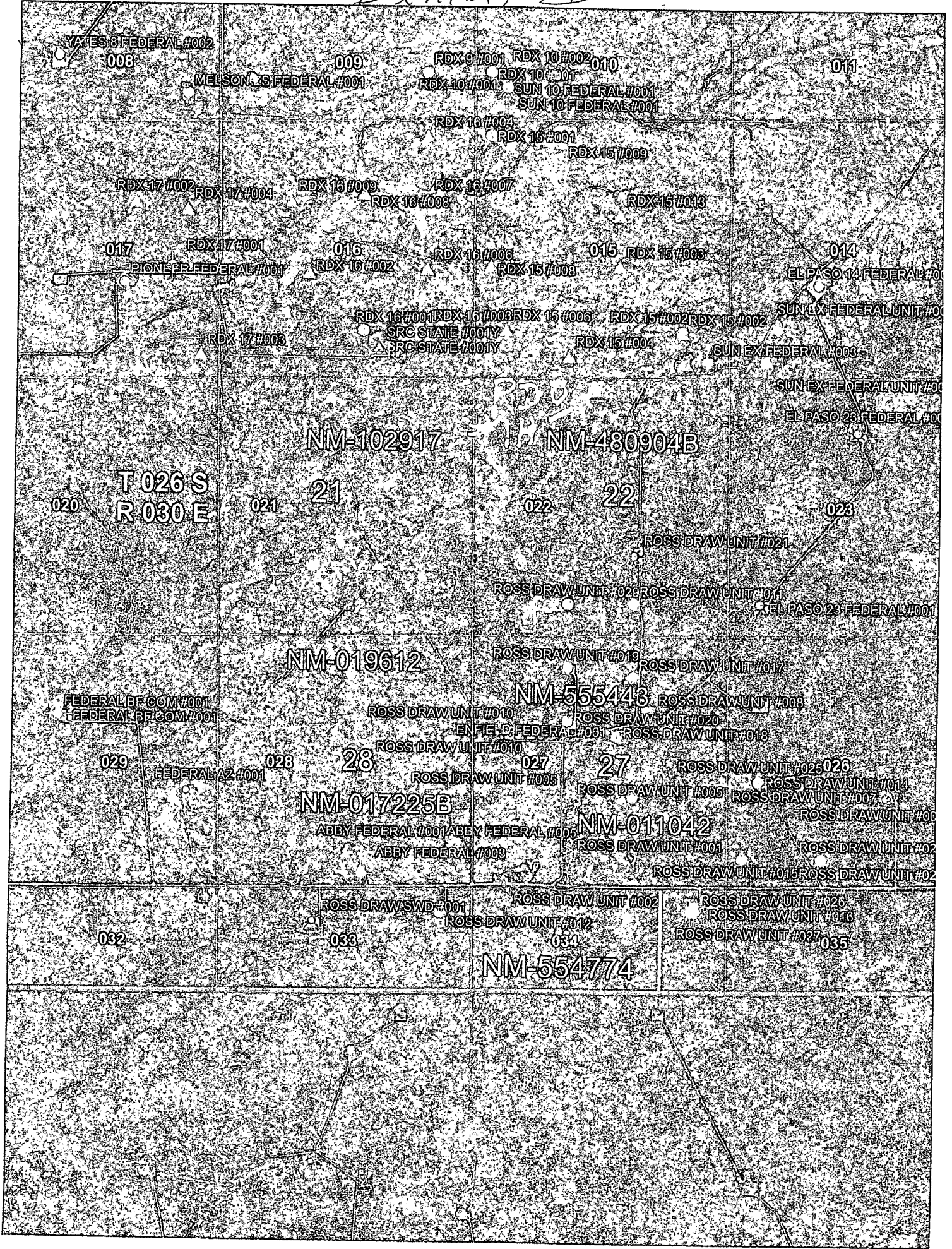
 <p>focused on excellence in the oilfield</p>	P.O. Box 1786 1120 N. West County Rd. Hobbs, New Mexico 88241 (575) 393-7316 - Office (575) 392-2206 - Fax basinsurveys.com	W.O. Number: JMS 23095	 <p><b>RKI EXPLORATION &amp; PRODUCTION LLC</b></p>
		Survey Date: 07-30-2010	
		Scale: 1" = 2 Miles	
		Date: 07-30-2010	



Exhibit D



008

009

010

011

017

016

015

014

020

021

022

023

T 026 S  
R 030 E

21

22

NM-102917

NM-480904B

NM-019612

NM-555443

029

028

28

027

27

026

NM-017225B

NM-011042

032

033

034

035

NM-554774



RKI EXPLORATION & PRODUCTION, LLC.  
DRILLING PLAN

RDU 22-1H

Surface Location: 330' FNL & 2,310' FWL

Bottom Hole Location: 330' FSE & 2,310' FWL

Section 22, T26S, R30E

Eddy County, NM

1. The elevation of the unprepared ground is 3,086' 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 12,809' 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 12,809' MD, 8,400' TVD.
5. Estimated tops of important geologic markers:

Rustler	800'
Salado	1,100'
Castile	1,640'
Lamar Lime	3,560'
Base of Lime	3,582'
Delaware Top	3,615'
Bell Canyon Sand	3,615'
Cherry Canyon Sand	4,690'
Brushy Canyon Sand	5,750'
KOP	7,827'
Bone Spring	7,440'
TVD	8,400' (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 (1,565 psi)
Cherry Canyon	Oil (2,030 psi)
Brushy Canyon	Oil (2,489 psi)
Bone Spring	Oil (3,221 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'~~ 900'

Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

See CDA

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' - 12,809'  
Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

8. Casing setting depth and cementing program:

- a. 13-3/8" surface casing set at <sup>900' see COA</sup> 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 Class C with .2% D13 mixed 14.8 ppg (1.33 cf/sk).   
*200 sx per operator*
- 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:** 1,711 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'

9. Pressure Control Equipment

*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' - <del>950'</del>     | 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. |
| <del>950'</del> - 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' - 12,800'<br>9    | 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.                         |

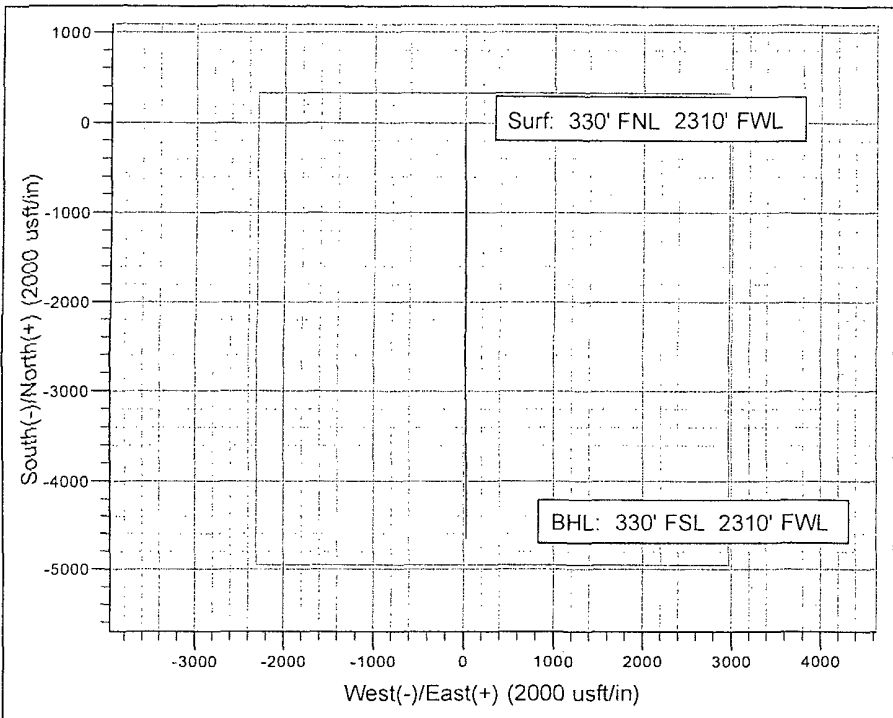
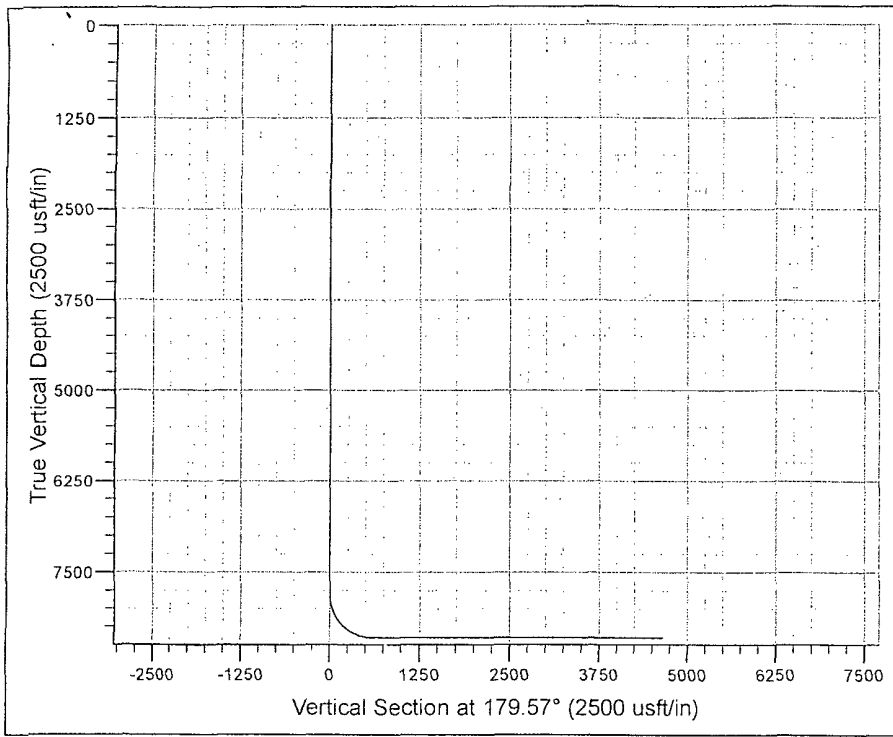
11. Testing, Logging and Coring Program:

Testing program: No drillstem tests are anticipated.

See COA - 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 3221 psi and estimated BHT 135.



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7827.0	0.00	0.00	7827.0	0.0	0.0	0.00	0.00	0.0	
3	8727.0	90.00	179.57	8400.0	-572.9	4.3	10.00	179.57	573.0	
4	12809.4	90.00	179.57	8400.0	-4655.2	34.9	0.00	0.00	4655.4	T1

# **RKI Exploration & Production**

**RDU 22-1H**

**22-26S-30E**

**Eddy County, NM**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**25 August, 2010**



# Halliburton Planning Report

<b>Database:</b>	ahrtodm1	<b>Local Co-ordinate Reference:</b>	Site 22-26S-30E
<b>Company:</b>	RKI Exploration & Production	<b>TVD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Project:</b>	RDU 22-1H	<b>MD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Site:</b>	22-26S-30E	<b>North Reference:</b>	Grid
<b>Well:</b>	Eddy County, NM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project:</b>	RDU 22-1H		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site:</b>	22-26S-30E		
<b>Site Position:</b>	<b>Northing:</b>	376,561.77 usft	<b>Latitude:</b> 32° 2' 3.850 N
<b>From:</b> Lat/Long	<b>Easting:</b>	684,828.84 usft	<b>Longitude:</b> 103° 52' 12.970 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b> 0.25 °

<b>Well:</b>	Eddy County, NM		
<b>Well Position</b>	<b>+N-S</b>	0.0 usft	<b>Northing:</b> 376,561.77 usft
	<b>+E-W</b>	0.0 usft	<b>Easting:</b> 684,828.84 usft
			<b>Latitude:</b> 32° 2' 3.850 N
			<b>Longitude:</b> 103° 52' 12.970 W
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 0.0 usft

<b>Wellbore:</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF200510	8/22/2010	(°) 7.80	(°) 60.00	(nT) 48,609

<b>Design:</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b> 0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N-S</b>	<b>+E-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	179.57

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,827.0	0.00	0.00	7,827.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,727.0	90.00	179.57	8,400.0	-572.9	4.3	10.00	10.00	0.00	179.57	
12,809.4	90.00	179.57	8,400.0	-4,655.2	34.9	0.00	0.00	0.00	0.00	T1

# Halliburton Planning Report

<b>Database:</b>	ahrtoedm1	<b>Local Co-ordinate Reference:</b>	Site 22-26S-30E
<b>Company:</b>	RKI Exploration & Production	<b>TVD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Project:</b>	RDU 22-1H	<b>MD Reference:</b>	WELL @ 0.0usft (Original Well Elev)
<b>Site:</b>	22-26S-30E	<b>North Reference:</b>	Grid
<b>Well:</b>	Eddy County, NM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,827.0	0.00	0.00	7,827.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,850.0	2.30	179.57	7,850.0	-0.5	0.0	0.5	10.00	10.00	0.00	
7,900.0	7.30	179.57	7,899.8	-4.6	0.0	4.6	10.00	10.00	0.00	
7,950.0	12.30	179.57	7,949.1	-13.2	0.1	13.2	10.00	10.00	0.00	
8,000.0	17.30	179.57	7,997.4	-25.9	0.2	25.9	10.00	10.00	0.00	
8,050.0	22.30	179.57	8,044.4	-42.9	0.3	42.9	10.00	10.00	0.00	
8,100.0	27.30	179.57	8,089.8	-63.8	0.5	63.8	10.00	10.00	0.00	
8,150.0	32.30	179.57	8,133.2	-88.7	0.7	88.7	10.00	10.00	0.00	
8,200.0	37.30	179.57	8,174.2	-117.2	0.9	117.2	10.00	10.00	0.00	
8,250.0	42.30	179.57	8,212.6	-149.2	1.1	149.2	10.00	10.00	0.00	
8,300.0	47.30	179.57	8,248.1	-184.4	1.4	184.4	10.00	10.00	0.00	
8,350.0	52.30	179.57	8,280.3	-222.6	1.7	222.6	10.00	10.00	0.00	
8,400.0	57.30	179.57	8,309.2	-263.4	2.0	263.4	10.00	10.00	0.00	
8,450.0	62.30	179.57	8,334.3	-306.6	2.3	306.6	10.00	10.00	0.00	
8,500.0	67.30	179.57	8,355.6	-351.8	2.6	351.8	10.00	10.00	0.00	
8,550.0	72.30	179.57	8,372.8	-398.7	3.0	398.8	10.00	10.00	0.00	
8,600.0	77.30	179.57	8,385.9	-447.0	3.4	447.0	10.00	10.00	0.00	
8,650.0	82.30	179.57	8,394.8	-496.2	3.7	496.2	10.00	10.00	0.00	
8,700.0	87.30	179.57	8,399.3	-546.0	4.1	546.0	10.00	10.00	0.00	
8,727.0	90.00	179.57	8,400.0	-572.9	4.3	573.0	10.00	10.00	0.00	
8,800.0	90.00	179.57	8,400.0	-645.9	4.8	646.0	0.00	0.00	0.00	
8,900.0	90.00	179.57	8,400.0	-745.9	5.6	746.0	0.00	0.00	0.00	
9,000.0	90.00	179.57	8,400.0	-845.9	6.3	846.0	0.00	0.00	0.00	
9,100.0	90.00	179.57	8,400.0	-945.9	7.1	946.0	0.00	0.00	0.00	
9,200.0	90.00	179.57	8,400.0	-1,045.9	7.8	1,046.0	0.00	0.00	0.00	
9,300.0	90.00	179.57	8,400.0	-1,145.9	8.6	1,146.0	0.00	0.00	0.00	
9,400.0	90.00	179.57	8,400.0	-1,245.9	9.4	1,246.0	0.00	0.00	0.00	
9,500.0	90.00	179.57	8,400.0	-1,345.9	10.1	1,346.0	0.00	0.00	0.00	
9,600.0	90.00	179.57	8,400.0	-1,445.9	10.9	1,446.0	0.00	0.00	0.00	
9,700.0	90.00	179.57	8,400.0	-1,545.9	11.6	1,546.0	0.00	0.00	0.00	
9,800.0	90.00	179.57	8,400.0	-1,645.9	12.4	1,646.0	0.00	0.00	0.00	
9,900.0	90.00	179.57	8,400.0	-1,745.9	13.1	1,746.0	0.00	0.00	0.00	
10,000.0	90.00	179.57	8,400.0	-1,845.9	13.9	1,846.0	0.00	0.00	0.00	
10,100.0	90.00	179.57	8,400.0	-1,945.9	14.6	1,946.0	0.00	0.00	0.00	
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10,600.0	90.00	179.57	8,400.0	-2,445.9	18.4	2,446.0	0.00	0.00	0.00	
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10,800.0	90.00	179.57	8,400.0	-2,645.9	19.9	2,646.0	0.00	0.00	0.00	
10,900.0	90.00	179.57	8,400.0	-2,745.9	20.6	2,746.0	0.00	0.00	0.00	
11,000.0	90.00	179.57	8,400.0	-2,845.9	21.4	2,846.0	0.00	0.00	0.00	
11,100.0	90.00	179.57	8,400.0	-2,945.9	22.1	2,946.0	0.00	0.00	0.00	
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11,300.0	90.00	179.57	8,400.0	-3,145.9	23.6	3,146.0	0.00	0.00	0.00	
11,400.0	90.00	179.57	8,400.0	-3,245.9	24.4	3,246.0	0.00	0.00	0.00	
11,500.0	90.00	179.57	8,400.0	-3,345.9	25.1	3,346.0	0.00	0.00	0.00	
11,600.0	90.00	179.57	8,400.0	-3,445.9	25.9	3,446.0	0.00	0.00	0.00	
11,700.0	90.00	179.57	8,400.0	-3,545.9	26.6	3,546.0	0.00	0.00	0.00	

# Halliburton

## Planning Report

<b>Database:</b> ahrtoedm1	<b>Local Co-ordinate Reference:</b> Site 22-26S-30E
<b>Company:</b> RKI Exploration & Production	<b>TVD Reference:</b> WELL @ 0.0usft (Original Well Elev)
<b>Project:</b> RDU 22-1H	<b>MD Reference:</b> WELL @ 0.0usft (Original Well Elev)
<b>Site:</b> 22-26S-30E	<b>North Reference:</b> Grid
<b>Well:</b> Eddy County, NM	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> Wellbore #1	
<b>Design:</b> Design #1	

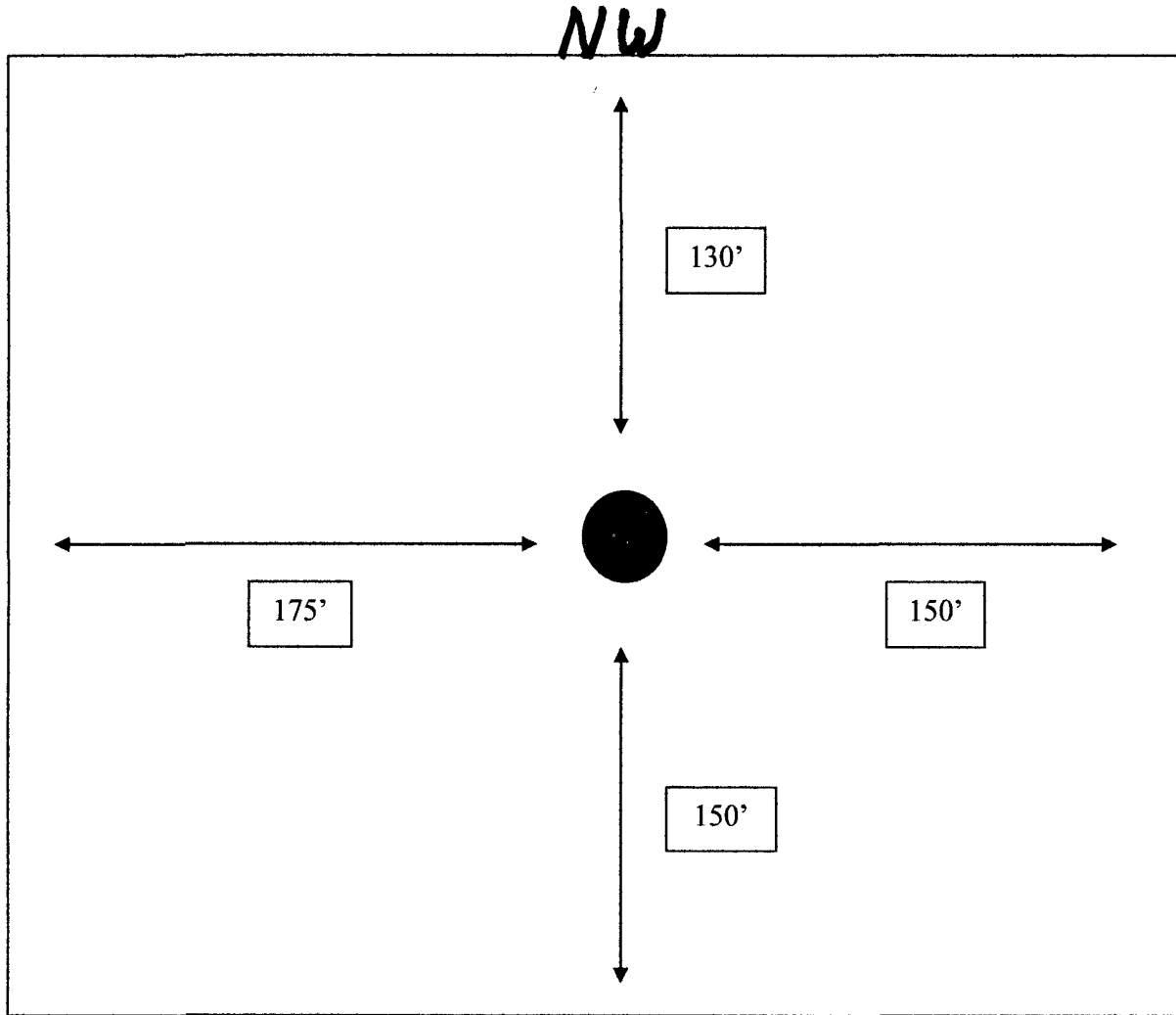
### Planned Survey

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)
11,800.0	90.00	179.57	8,400.0	-3,645.9	27.4	3,646.0	0.00	0.00	0.00
11,900.0	90.00	179.57	8,400.0	-3,745.9	28.1	3,746.0	0.00	0.00	0.00
12,000.0	90.00	179.57	8,400.0	-3,845.8	28.9	3,846.0	0.00	0.00	0.00
12,100.0	90.00	179.57	8,400.0	-3,945.8	29.6	3,946.0	0.00	0.00	0.00
12,200.0	90.00	179.57	8,400.0	-4,045.8	30.4	4,046.0	0.00	0.00	0.00
12,300.0	90.00	179.57	8,400.0	-4,145.8	31.1	4,146.0	0.00	0.00	0.00
12,400.0	90.00	179.57	8,400.0	-4,245.8	31.9	4,246.0	0.00	0.00	0.00
12,500.0	90.00	179.57	8,400.0	-4,345.8	32.6	4,346.0	0.00	0.00	0.00
12,600.0	90.00	179.57	8,400.0	-4,445.8	33.4	4,446.0	0.00	0.00	0.00
12,700.0	90.00	179.57	8,400.0	-4,545.8	34.1	4,546.0	0.00	0.00	0.00
12,809.4	90.00	179.57	8,400.0	-4,655.2	34.9	4,655.4	0.00	0.00	0.00

EXHIBIT 'A'

(V-DOOR NORTHEAST)

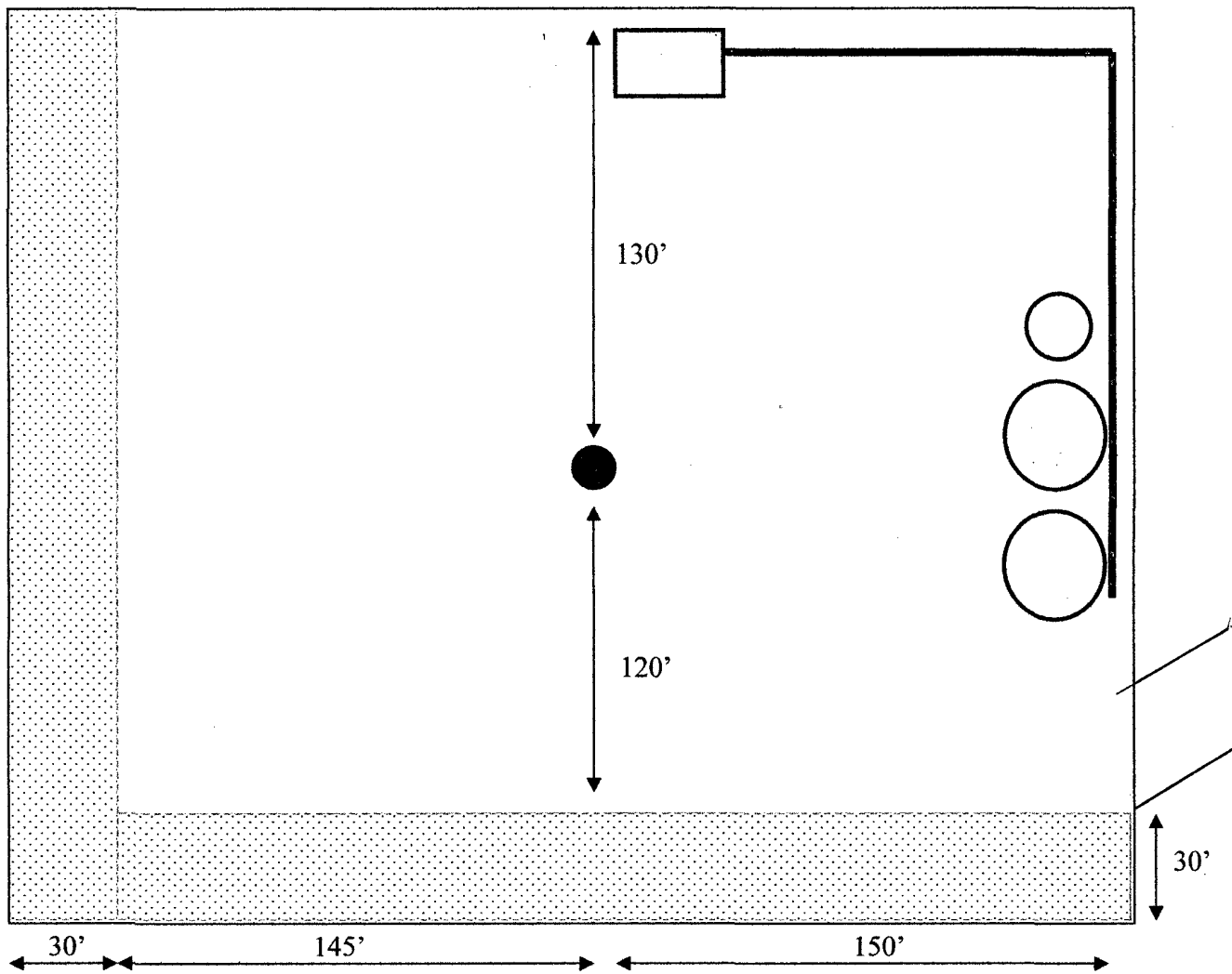
Rig Plat Only  
Silver Oak Drilling, LLC  
Rig #6, #7 & #9



**EXHIBIT 'B'**

**Interim Reclamation & Production Facilities**

**V-DOOR NORTHEAST**



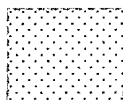
**LEGEND**



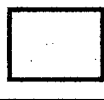
Well Bore



Production Facilities



Interim Reclamation

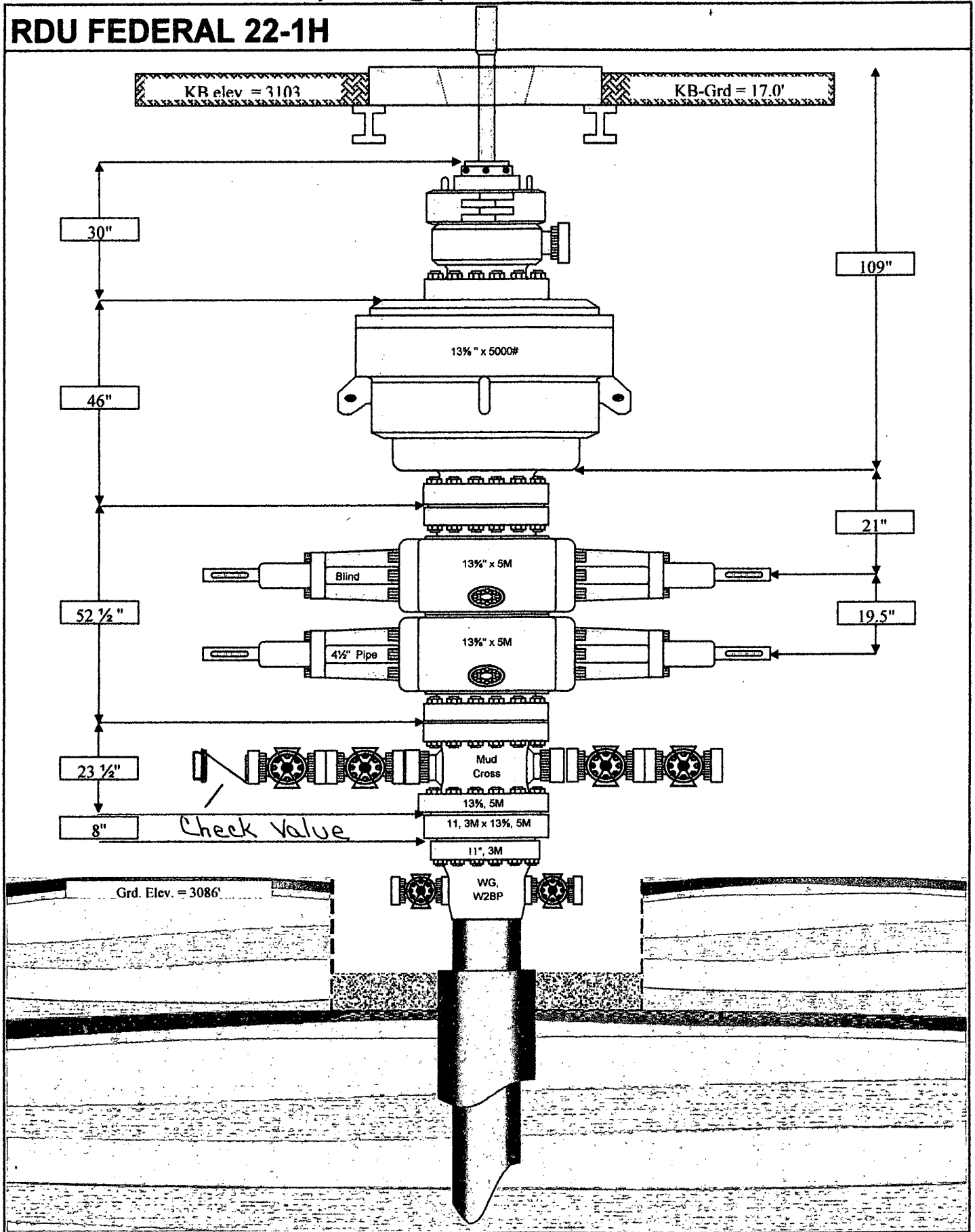


NW



# Exhibit #1

## RDU FEDERAL 22-1H



# Choke Manifold

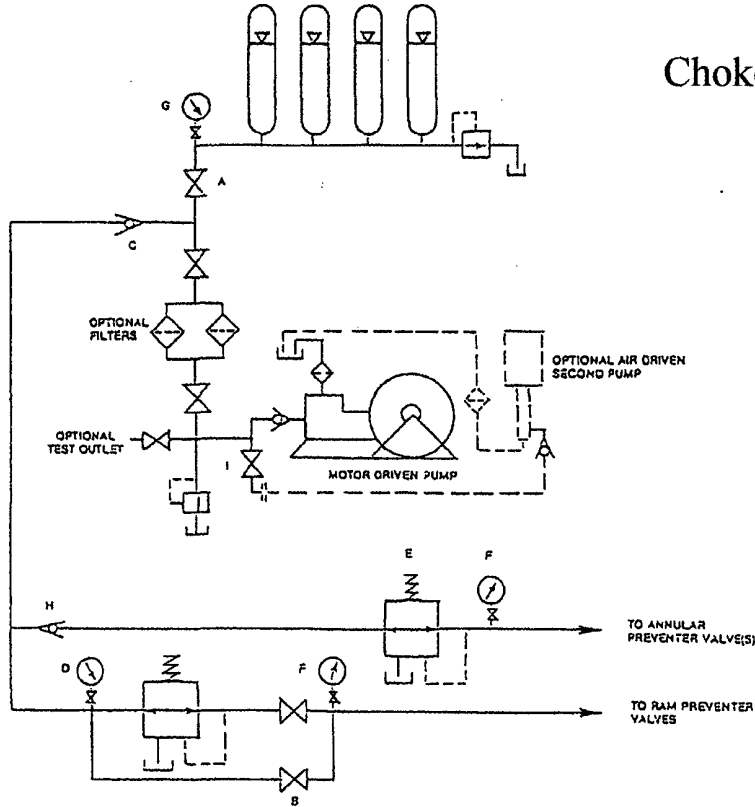


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

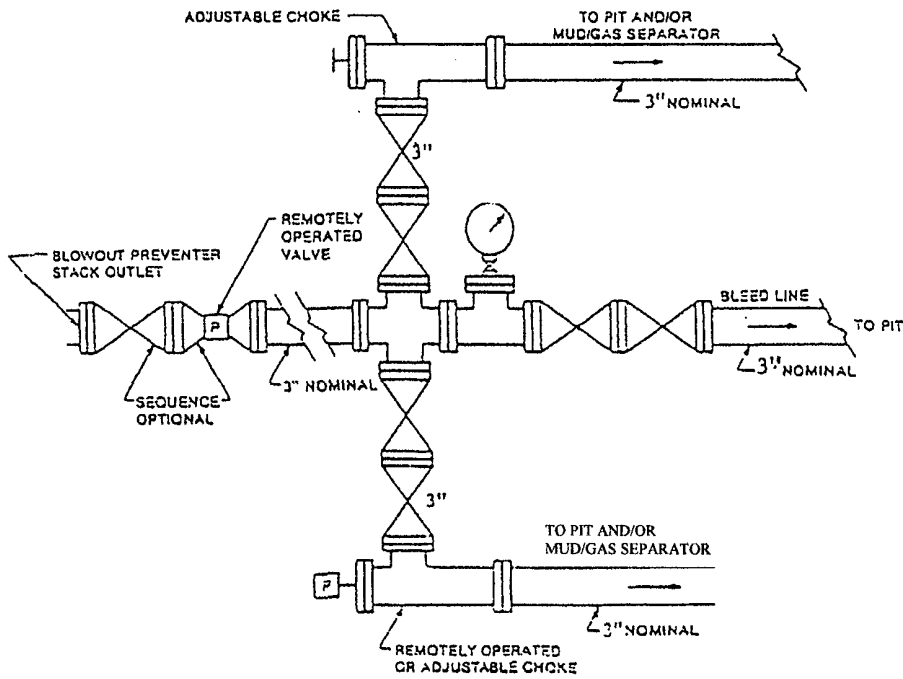
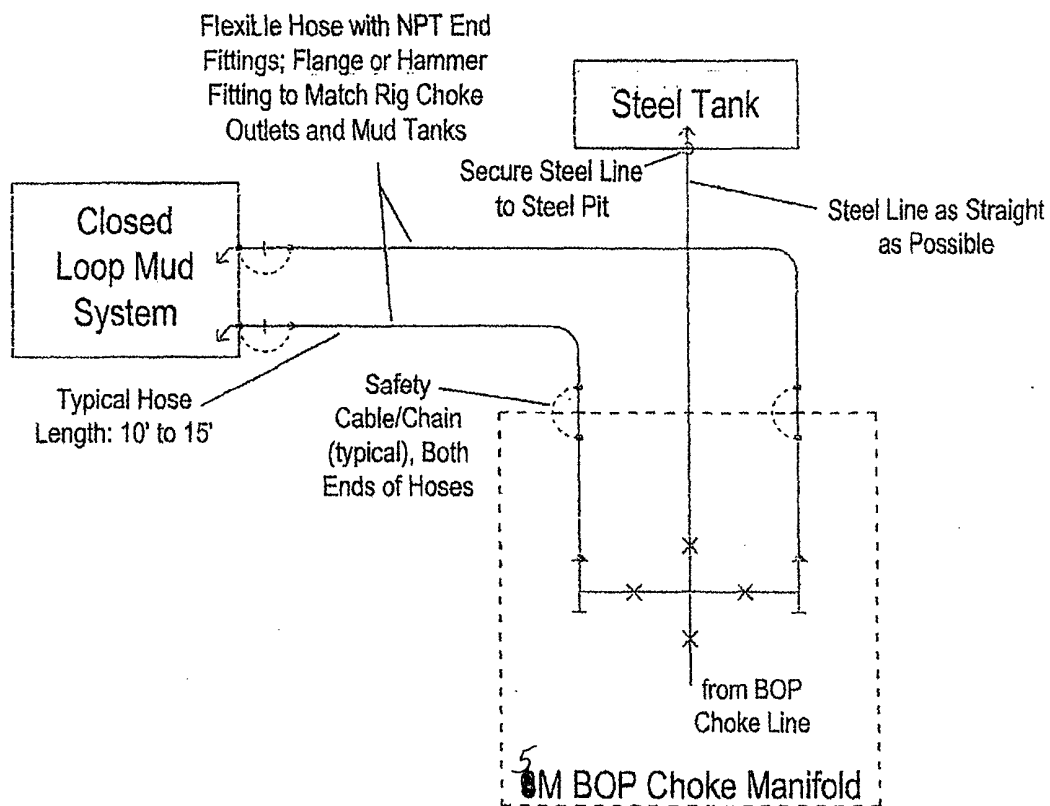
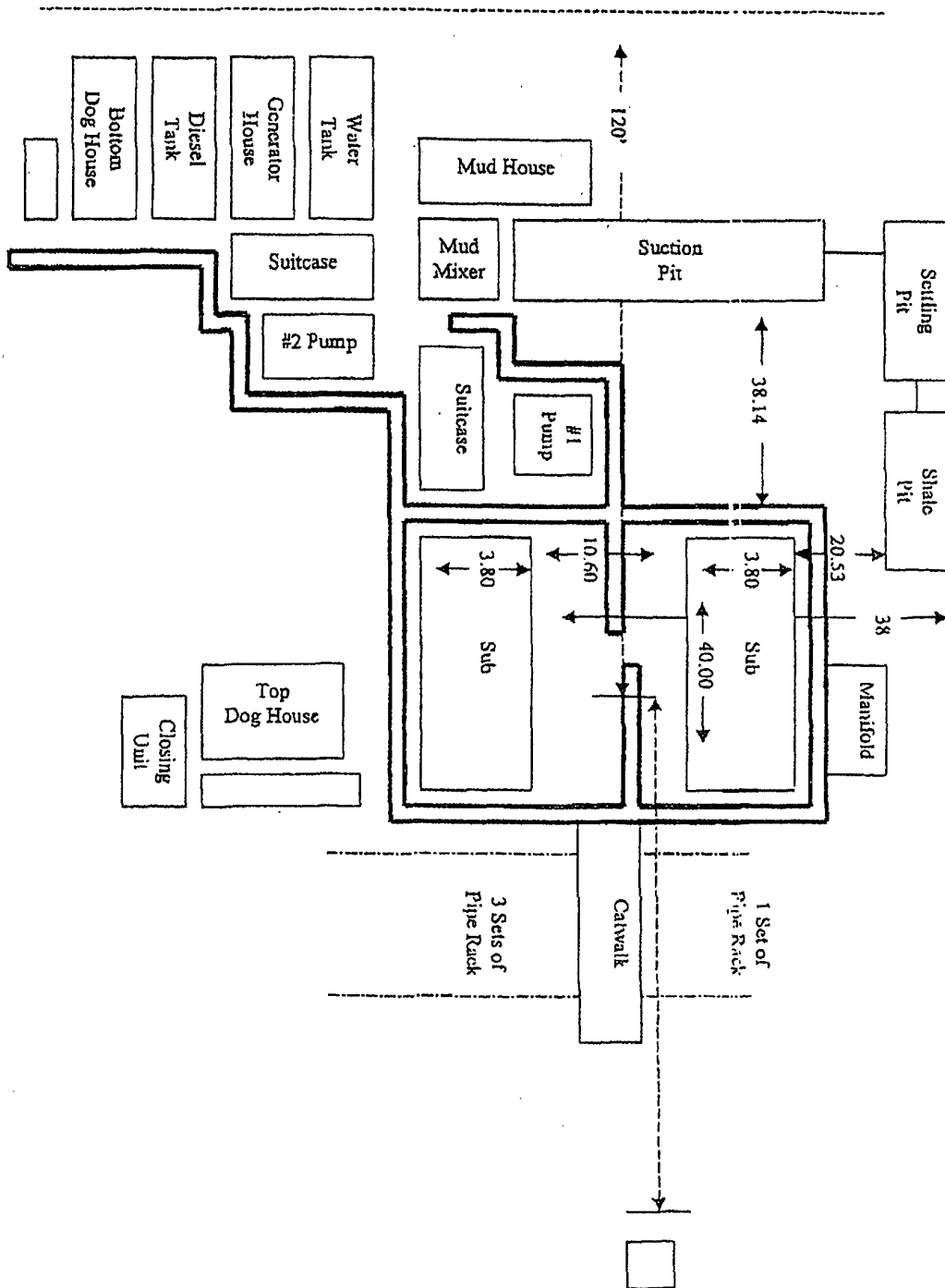


FIGURE K4-2. Typical choke manifold assembly for 5M rated working pressure service - surface installation.



# Plat for Closed Loop System



**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**

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<b>H<sub>2</sub>S TOXIC EFFECTS</b>	<b>Page 11</b>
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**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 Service (Ambulance)	Eddy County		911 or 505-746-2701
	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 H<sub>2</sub>S 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 H<sub>2</sub>S 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 H<sub>2</sub>S safety shall monitor with detection equipment the H<sub>2</sub>S 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 H<sub>2</sub>S, 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 UNCONTROLABLE 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 H<sub>2</sub>S, 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 ± 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.

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 22 #1H Well in the E ½ of the W ½, Sec. 22, 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

Ralph E. Williamson

(Unit Operator)

Ralph E. Williamson, ~~COO~~ agent for  
J.C. Williamson estate, unit operator

By: \_\_\_\_\_

Authorized Officer

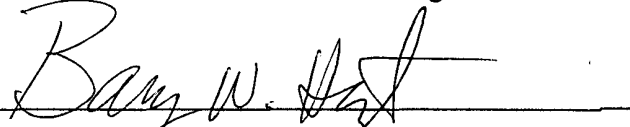
\_\_\_\_\_  
Date



## 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 20<sup>th</sup> 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](mailto:specialtpermitting@gmail.com)

Field Representative: Gene Simer

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

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

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI EXPLORATION & PRODUCTION, LLC
LEASE NO.:	NM480904B
WELL NAME & NO.:	RDU 22 # 1H
SURFACE HOLE FOOTAGE:	0330' FNL & 2310' FWL
BOTTOM HOLE FOOTAGE:	0330' FSL & 2310' FWL
LOCATION:	Section 22, T. 26 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

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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
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Drilling**
  - Surface Casing Depth Change
  - Medium cave/karst
  - Waste Material and Fluids
  - Logging Requirement
- 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.

## **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: Northeast**

### **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 12 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.

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.

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
Sand 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