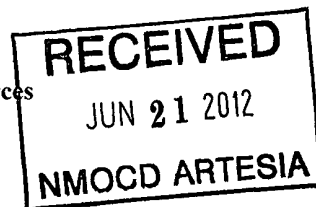


District I  
1625 N French Dr, Hobbs, NM 88240  
Phone (575) 393-6161 Fax (575) 393-0720  
District II  
811 S First St, Artesia, NM 88210  
Phone (575) 748-1283 Fax (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone (505) 334-6178 Fax (505) 334-6170  
District IV  
1220 S St Francis Dr, Santa Fe, NM 87505  
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505



Form C-101  
Revised August 1, 2011  
Permit

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

<sup>1</sup> Operator Name and Address RKI Exploration & Production, LLC. 3817 NW Expressway, Suite 950, Oklahoma City, Oklahoma 73112		<sup>2</sup> OGRID Number 246289
<sup>4</sup> Property Code 36900		<sup>3</sup> API Number 30-015-40922
<sup>5</sup> Property Name RDX 16		<sup>6</sup> Well No 12

**<sup>7</sup> Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
N	16	26S	30E		940	S	1750	W	Eddy

**<sup>8</sup> Pool Information**

Brushy Draw Delaware East	8090
---------------------------	------

**Additional Well Information**

<sup>9</sup> Work Type N	<sup>10</sup> Well Type 0	<sup>11</sup> Cable/Rotary R	<sup>12</sup> Lease Type S	<sup>13</sup> Ground Level Elevation 3037'
<sup>14</sup> Multiple No	<sup>15</sup> Proposed Depth 7500'	<sup>16</sup> Formation Delaware	<sup>17</sup> Contractor Silver Oak	<sup>18</sup> Spud Date
Depth to Ground water 400'		Distance from nearest fresh water well		Distance to nearest surface water 6 miles

**<sup>19</sup> Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
	17 1/2"	13 3/8"	54.5#	450	404	Surface
	12 1/2"	9 5/8"	40#	3350	1028	Surface
	7 7/8"	5 1/2"	17#	7500	667	3050'

**Casing/Cement Program: Additional Comments**

H2S levels are not expected to be high enough to require a H2S program. See attached Drilling Plan & BOP
--

**Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer
13 5/8" Double Ram 2FZ35-35	3,000#	3,000#	Guanghan

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOC D guidelines <input type="checkbox"/> , a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input checked="" type="checkbox"/> . Closed Loop. Signature:		<b>OIL CONSERVATION DIVISION</b>	
Printed name: Charles K. Ahn		Approved By:	
Title: EH&S/Regulatory Manager		Title:	
E-mail Address: cahn@rkixp.com		Approved Date: 6/21/2012      Expiration Date: 6/21/2014	
Date: 06/20/2012	Phone (405) 996-5771	Conditions of Approval Attached	

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State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

RECEIVED

JUN 21 2012

NMOC D ARTESIA

Form C-102

Revised August 1, 2011

Submit one copy to appropriate  
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-40422</b>	Pool Code <b>8090</b>	Pool Name <b>BRUSHY DRAW DELAWARE EAST</b>
Property Code <b>36900</b>	Property Name <b>RDX 16</b>	Well Number <b>12</b>
OGRID No <b>246289</b>	Operator Name <b>RKI EXPLORATION &amp; PRODUCTION</b>	Elevation <b>3037'</b>

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>N</b>	<b>16</b>	<b>26 S</b>	<b>30 E</b>		<b>940</b>	<b>SOUTH</b>	<b>1750</b>	<b>WEST</b>	<b>EDDY</b>

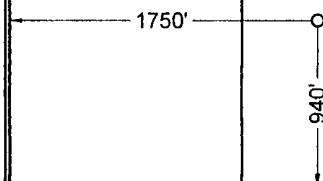
Bottom Hole Location If Different From Surface

UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidated Code	Order No
<b>40</b>			

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.

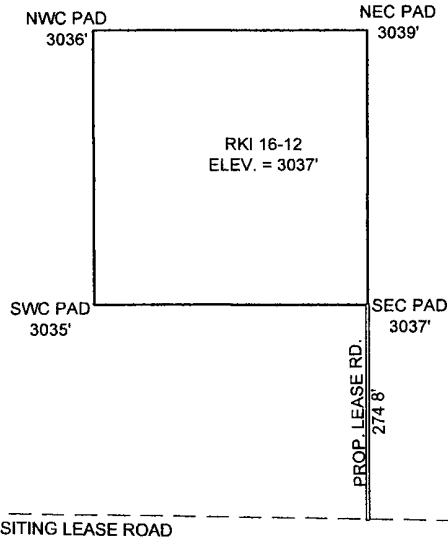
				<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or 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 voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature <i>Barry W. Hunt</i> Date <b>6/1/12</b></p> <p>Print Name <b>Barry W. Hunt</b></p> <p>E-mail Address</p>
				<p><b>SURVEYORS CERTIFICATION</b></p> <p>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</p> <p>April 25, 2012 Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p> <p><i>James E. Tompkins</i></p> <p>Job No. <b>WTC48507</b> JAMES E. TOMPKINS 14729 Certificate Number</p>



# SITE LOCATION

NMSP-E (NAD 83)  
Y = 377792.0' N  
X = 678936.9' E  
N LAT. = 32° 02' 16.27"  
W LONG. = -103° 53' 21 36"

NMSP-E (NAD 27)  
Y = 377734.5' N  
X = 637750 8' E  
N LAT = 32.03772756°  
W LONG. = -103.88878710°



SCALE: 1" = 200'

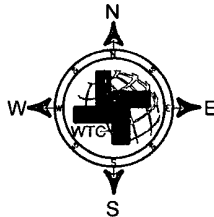
SECTION 16, T-26-S, R-30-E, N.M.P.M

COUNTY: EDDY STATE: NM

DESCRIPTION: 940' FSL & 1,750' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-12



## DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go Northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go Northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y" Take left fork going Northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go South on lease road for approx. 2.1 miles from which the location flag is ± 500 feet north.



WEST TEXAS CONSULTANTS, INC.  
ENGINEERS PLANNERS SURVEYORS  
405 S W 1st STREET  
ANDREWS, TEXAS 79714  
(432) 523-2181  
TEXAS REGISTERED ENGINEERING FIRM F-2746  
TEXAS REGISTERED SURVEYOR FIRM #100792-00

**RKI EXPLORATION & PRODUCTION**

JOB No WTC48507

# AERIAL MAP



SCALE: 1" = 2000'

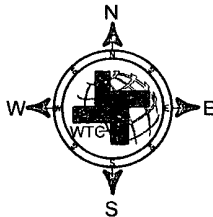
SECTION 16, T-26-S, R-30-E, N.M.P.M.

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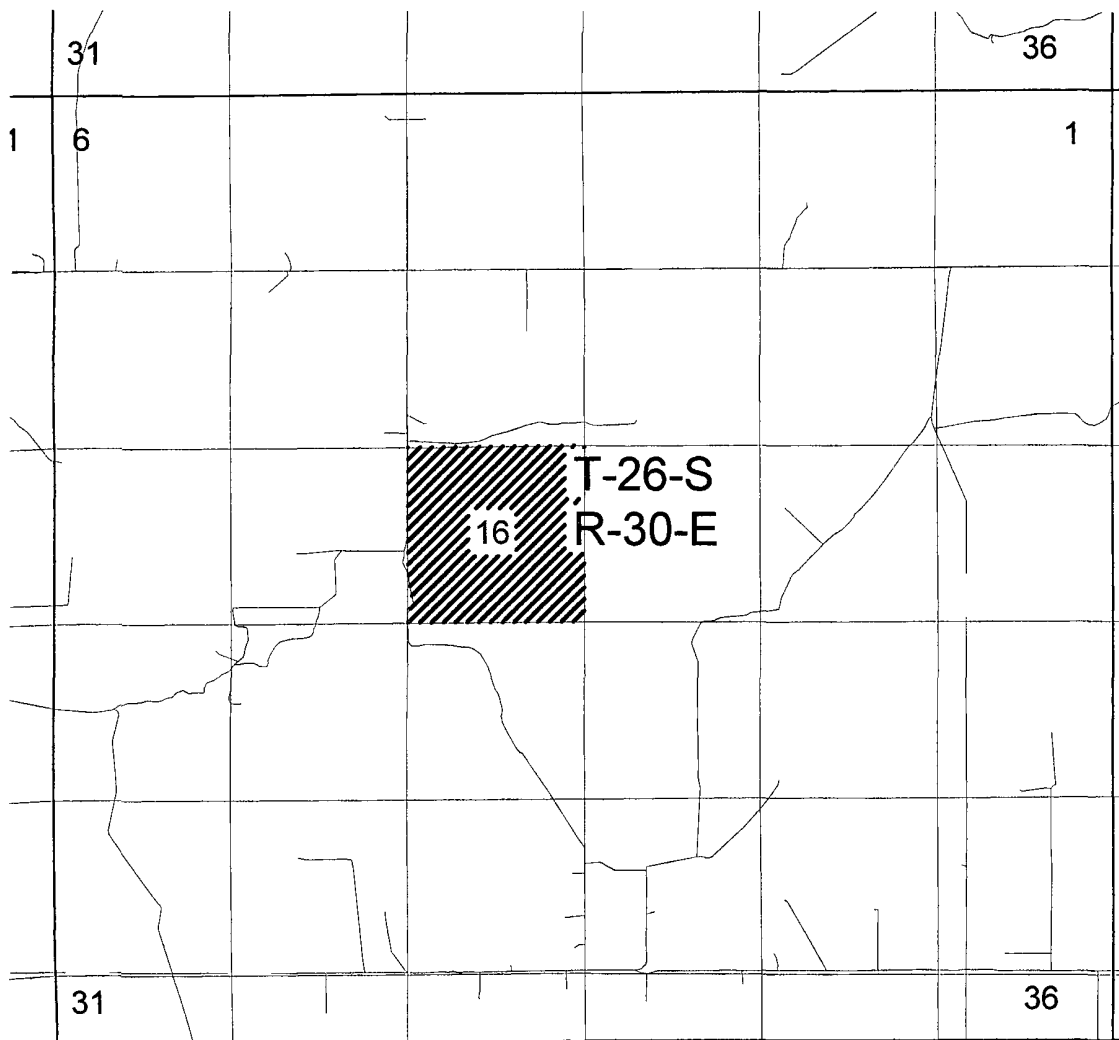


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**RKI EXPLORATION & PRODUCTION**

JOB No WTC48507

# VICINITY MAP



GRAPHIC SCALE OF MILES 1" = 1 MILE

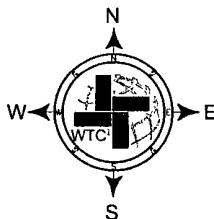
SECTION 16, T-26-S, R-30-E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 940' FSL & 1,750' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-12



## DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go Northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go Northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going Northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go South on lease road for approx. 2.1 miles from which the location flag is  $\pm$  500 feet north.

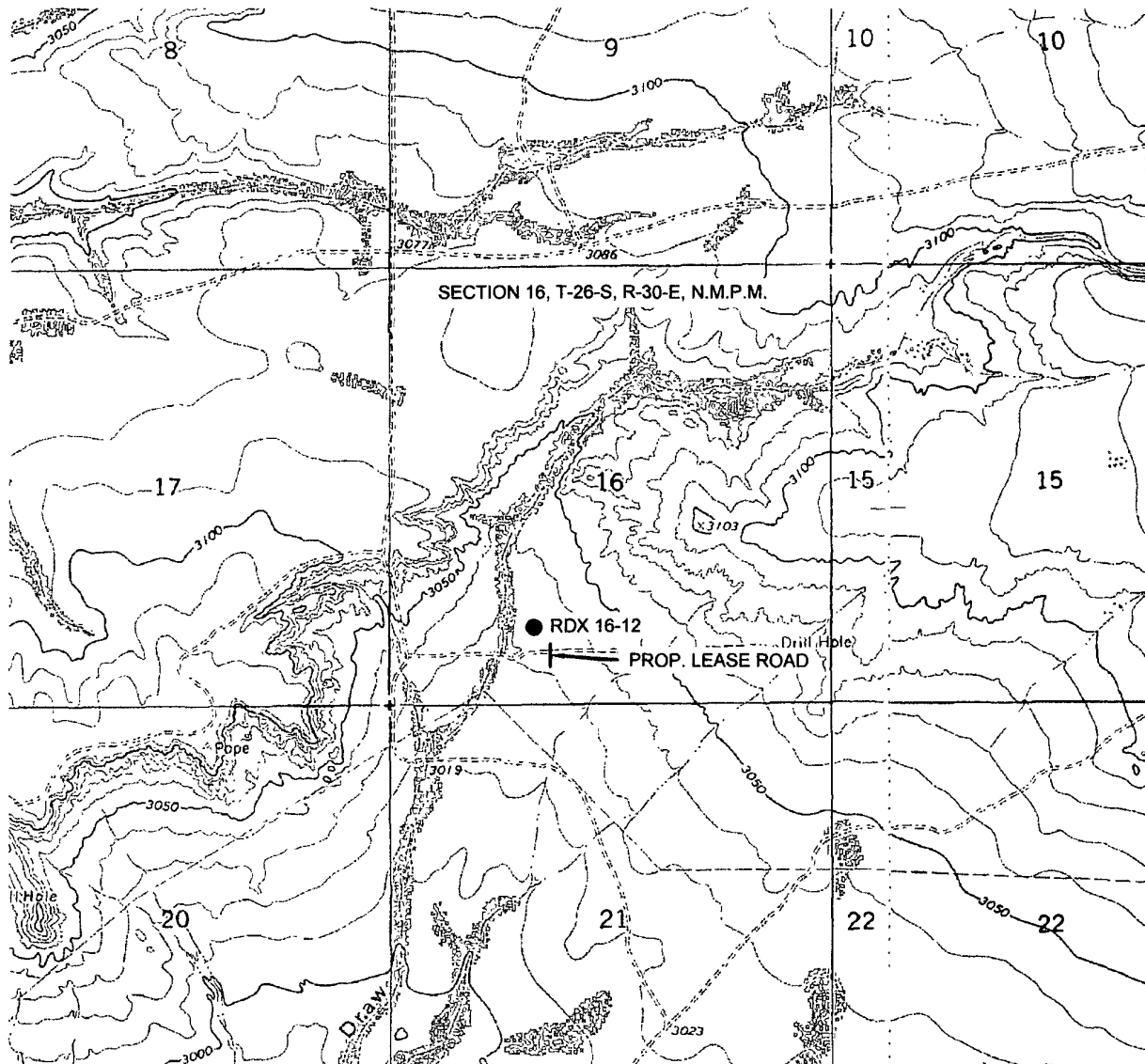


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TEXAS REGISTERED SURVEYOR FIRM #100792-00

**RKI EXPLORATION & PRODUCTION**

JOB No WTC48507

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

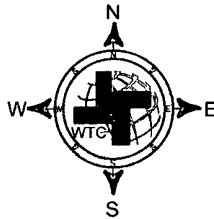
SECTION 16, T-26-S, R-30-E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 940' FSL & 1,750' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-12



## DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go Northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go Northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going Northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go South on lease road for approx. 2.1 miles from which the location flag is  $\pm 500$  feet north.



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TEXAS REGISTERED SURVEYOR FIRM #100792-00

**RKI EXPLORATION & PRODUCTION**

JOB No WTC48507

DRILLING PLAN

Well RDX 16-12  
 Location 940 FSL 1,750 FWL  
 Section 16-26S-30E  
 County Eddy  
 State New Mexico

- 1) The elevation of the unprepared ground is 3,037 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 7,500 feet and run casing.  
 This equipment will then be rigged down and the well will be completed with a workover rig.
- 4) Proposed depth is 7,500 feet.

5) Estimated tops:

Alluvium	*		
Rustler	708		
Salado	1,165		
Castile	1,640		
Lamar Lime	3,298		
Base of Lime	3,497		
Delaware Top	3,536		
Bell Canyon Sand	3,536	Oil	1,531 psi
Cherry Canyon Sand	4,609	Oil	1,996 psi
Brushy Canyon Sand	5,684	Oil	2,461 psi
Bone Spring Lime	7,337		
TD	7,500		146 degree F

The Bone Spring will be penetrated as rathole to enable the entire Brushy Canyon to be logged.

\* Water possible above the Rustler

6) Casing program: All new casing

Hole Size	Top	Bottom	OD Csg	Wt/Grade	Connection	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0	450	13 3/8"	54.5#/J-55	ST&C	5.80	11.79	20.96
12 1/2"	0	3,350	9 5/8"	40#/J-55	LT&C	1.39	5.54	3.88
7 7/8"	0	7,500	5 1/2"	17#/N-80	LT&C	1.93	1.55	2.73

7) Cement program:

<b>Surface</b>	17 1/2" hole	
Pipe OD	13 3/8"	
Setting Depth	450 ft	
Annular Volume	0.69462 cf/ft	
Excess	1	100 %

Lead	204 sx	1.75 cf/sk	13.5 ppg
Tail	200 sx	1.34 cf/sk	14.8 ppg

Lead: "C" + 4% PF20 + 2% PF1 + .125 pps PF29 + .2% PF46

Tail: "C" + 1% PF1

Top of cement: Surface

<b>Intermediate</b>	12 1/2" hole	
Pipe OD	9 5/8"	
Setting Depth	3,350 ft	
Annular Volume	0.31318 cf/ft	0.3627 cf/ft
Excess	1	100 %
Total Annular Volume	1071 cf	
With Excess	2143 cf	

Lead	828 sx	2.07 cf/sk	12.6 ppg
Tail	200 sx	1.33 cf/sk	14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 + 6% PF20 + 3 pps PF42 + .125 pps PF29 + .2% PF46 +1% PF1

Tail: "C" + .2% PF13

Top of cement: Surface

<b>Production</b>	7 7/8" hole		
Pipe OD	5 1/2"		
Setting Depth	7,500 ft		
Annular Volume	0.1733 cf/ft	0.26074 cf/ft	300 ft
Excess	0.35	35 %	
Total Annular Volume	797 cf		
With Excess	1,077 cf		
DV Tool Depth	5,000 ft		

Stage 1

Lead:	398 sx	1.47 cf/sk	13.0 ppg
-------	--------	------------	----------

Lead: PVL + 2% PF174 + .3% PF167 + .1% PF65 + .2% PF13 + .25 pps PF46

Top of cement: DV tool

Stage 2

Lead:	169 sx	2.04 cf/sk	12.6 ppg
Tail:	100 sx	1.47 cf/sk	13.0 ppg

Lead: 35/65 Poz "C" + 5% PF44 + 6% PF20 + 3 pps PF42 + .2% PF13 + .125 pps PF130 + .25 pps PF46

Tail: PVL + 2% PF174 + .3% PF167 + .1% PF65 + .2% PF13 + .25 pps PF46

Top of cement: 3,050 ft



8) Pressure control equipment:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram type (3,000 psi WP) preventer, a bag-type annular preventer (3,000 psi WP), and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and pipe rams (sized to accommodate the drill pipe size being utilized) on bottom. A 13 3/8" SOW x 13 5/8" 3M casing head will be installed on the 13 3/8" casing and utilized until total depth is reached. All BOP and associated equipment will be tested to 3,000 psi and the annular will be tested to 1,500 psi after setting the 13 3/8" string. The 13 3/8" and 9 5/8" casing will be tested to .22 psi per ft of casing string length or 1,500 psi whichever is greater, but not to exceed 70% of the minimum yield.

The 9 5/8" casing will be hung in the casing head and the stack will not be nipped down at this point.

The stack will not be isolated and tested after running the 9 5/8" casing, but will be tested along with the 9 5/8" casing. Pipe rams will be operated and checked each 24 hour period and each time the drill string is out of the hole. These function test will be documented on the daily driller's log.

A drilling spool or blowout preventer with 2 side outlets (choke side shall be 3" minimum diameter, kill side shall be at least 2" diameter).

2 kill line valves, one of which will be a check valve.

2 chokes on the manifold along with a pressure gauge.

Upper kelly cock valve with handle available.

Safety valve and subs to fit all drill string connections in use.

All BOP equipment connections subjected to pressure will be flanged, welded, or clamped.

Fill up line above the upper most preventer.

9) Mud program:

Top	Bottom	Mud Wt.	Vis	PV	YP	Fluid Loss	Type System
0	450	8.5 to 8.9	32 to 36	6 - 12	2 - 8	NC	Fresh Water
450	3,350	9.8 to 10.0	28 to 30	1 - 6	1 - 6	NC	Brine
3,350	7,500	8.9 to 9.1	28 to 36	1 - 6	1 - 6	NC	Fresh Water

10) Logging, coring, and testing program:

No drillstem test are planned

Total depth to intermediate: CNL, Caliper, GR, DLL,

Intermediate to surface: CNL, GR

No coring is planned

11) Potential hazards:

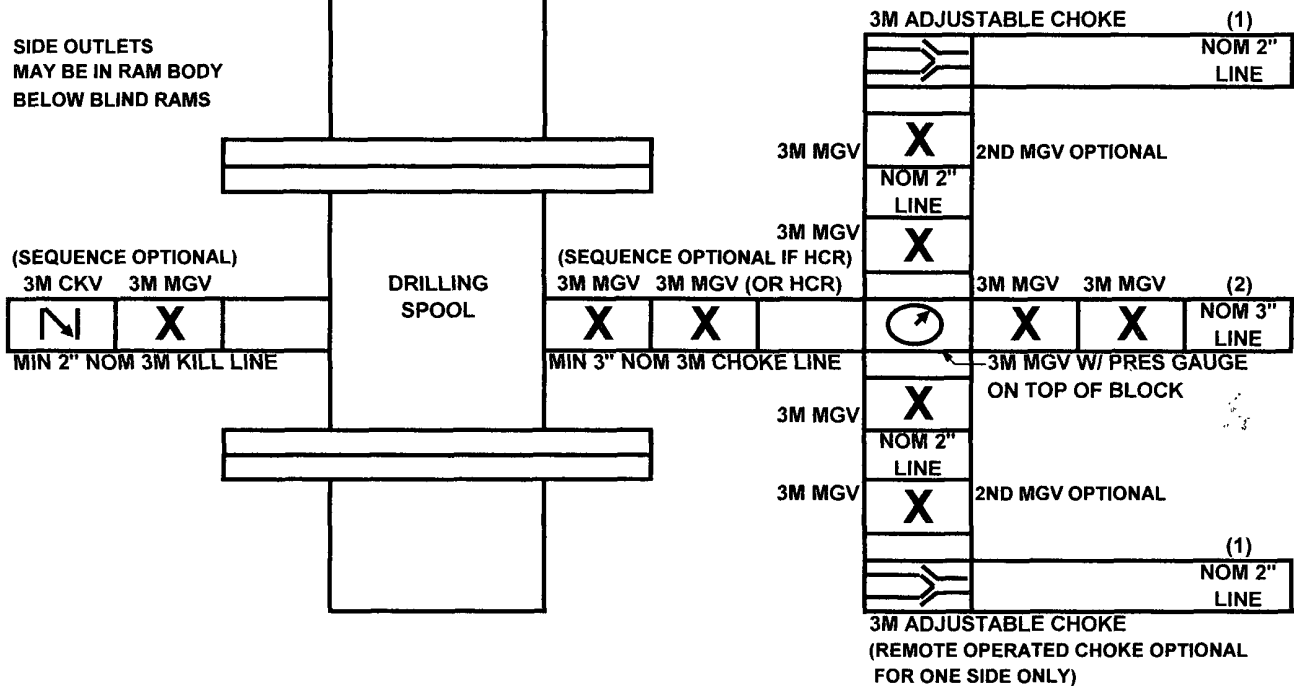
No abnormal pressure or temperature is expected. No H2S is known to exist in the area.

No lost circulation is anticipated.

12) Anticipated Start Date      June '12  
Duration                              15 days

[illegible]

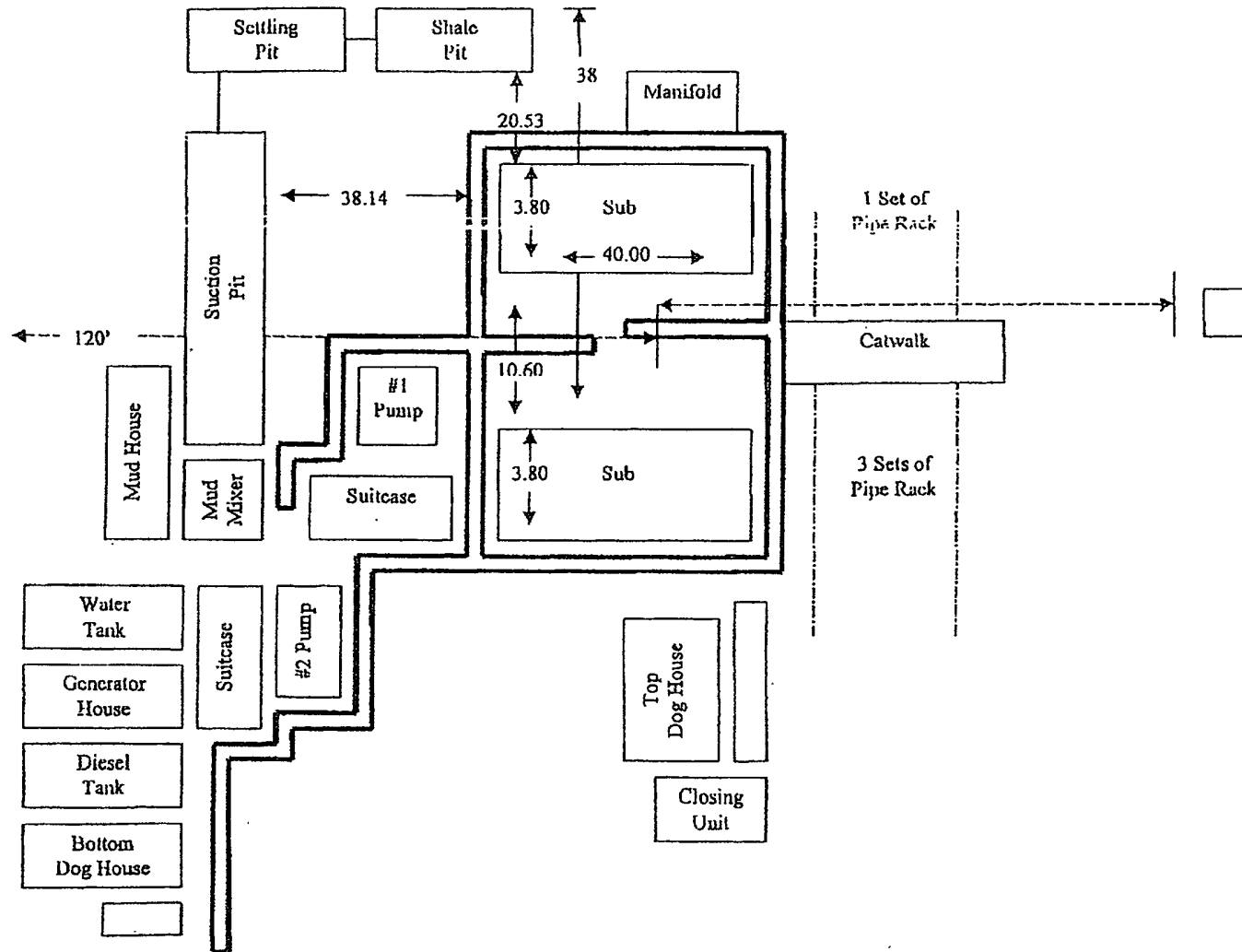
**COMPONENT PRESSURE RATINGS  
MAY EXCEED 3M (E.G. 5M)**



- (1) Line to mud gas separator and/or pit  
(2) Bleed line to pit

**MGV - Manual Gate Valve**  
**CKV - Check Valve**  
**HCR - Hydraulically Controlled Remote Valve**

# Plat for Closed Loop System



RKI Exploration and Production  
3817 N. W. Expressway, Suite 950  
Oklahoma City, OK. 73112

## **Closed Loop System**

### Design Plan

#### *Equipment List*

- 2 – 414 Swaco Centrifuges
- 2 – 4 screen Mongoose shale shakers
- 2 – 250 bbl. tanks to hold fluid
- 2 – CRI Bins with track system
- 2 – 500 bbl. frac tanks for fresh water
- 2 – 500 bbl. frac tanks for brine water

### Operation and Maintenance

- Closed Loop equipment will be inspected daily by each tour and any necessary maintenance performed
- Any leak in system will be repaired and/or contained immediately
- OCD notified within 48 hours
- Remediation process started

### Closure Plan

During drilling operations, all liquids, drilling fluids and cuttings will be hauled off via CRI (Controlled Recovery Incorporated). Permit #: R-9166.