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NMOCD ARTESIA

R-111-POTASH

AS-10-100

RM

Form 3160-3
(April 2004)EA 10-198
FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

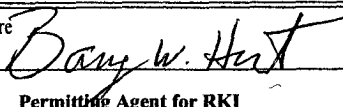
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. NM-61349
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 and Production, LLC.		7 If Unit or CA Agreement, Name and No
3a Address 3817 NW Expressway, Suite 950 Oklahoma City, Oklahoma 73112		8 Lease Name and Well No Longview 31 #31
3b Phone No. (include area code) 405-996-5748		9 API Well No. 3005-37604
4 Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1980 FSL & 990 FWL At proposed prod zone Same		10 Field and Pool, or Exploratory Bone Spring
11 Sec, T R M or Bk and Survey or Area Sec. 31, T. 22 S., R. 29 E.		12 County or Parish Eddy
13 State NM		14 Distance in miles and direction from nearest town or post office* Approximately 4 miles northeast of Loving, NM
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 990 ft.	16 No of acres in lease 960	17 Spacing Unit dedicated to this well 40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1320 ft.	19 Proposed Depth 9200 ft.	20 BLM/BIA Bond No. on file BLM-NMB-000460
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3137' GL	22 Approximate date work will start*	23 Estimated duration 28 days

24. Attachments

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

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

25 Signature 	Name (Printed/Typed) Barry W. Hunt	Date 11/23/07
Title Permitting Agent for RKI		
Approved by (Signature) /s/ Linda S.C. Rundell	Name (Printed/Typed)	Date FEB 5 2010
Title STATE DIRECTOR	Office NM STATE 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 USC Section 1001 and Title 43 USC 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

*(Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVALAPPROVAL 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 October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-37604	Pool Code	Pool Name Wildcat; Bone Spring
Property Code 38046	Property Name LONGVIEW "31"	Well Number 31
OGRID No. 246289	Operator Name RKI EXPLORATION & PRODUCTION LLC	Elevation 3137'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 3	31	22 S	29 E		1980	SOUTH	990	WEST	EDDY

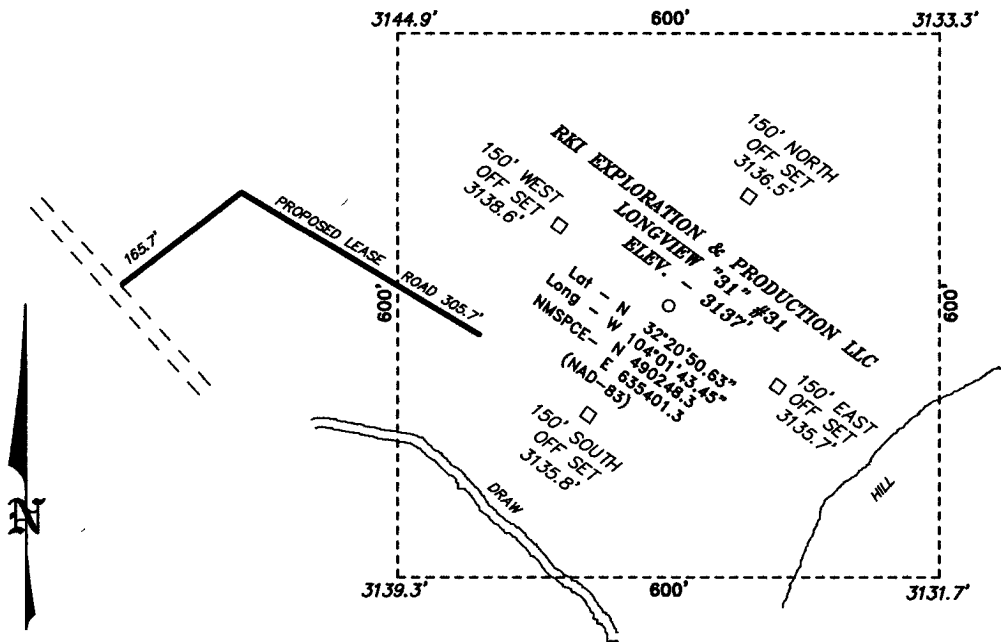
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	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

<p>LOT 1</p> <p>LOT 2</p> <p>LOT 3</p> <p>LOT 4</p>	<p>OPERATOR CERTIFICATION</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 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.</p> <p>Barry W. Hunt 11/23/09 Signature Date</p> <p>Barry W. Hunt Printed Name</p>
	<p>SURVEYOR CERTIFICATION</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>NOVEMBER 12 2009 Date Surveyed</p> <p>Signature & Seal of Professional Surveyor W.S. Jones</p>
	<p>Certificate No. Gary L. Jones 7977</p>
	<p>BASIN SURVEYS</p>

SECTION 31, TOWNSHIP 22 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM HWY 31 AND REFINERY ROAD, GO NORTHWEST
1.6 MILES TO LEASE ROAD, ON LEASE ROAD GO
EASTERLY FOR 1.1 MILES TO LEASE ROAD, ON LEASE
ROAD GO NORTHERLY 0.5 MILES TO PROPOSED
LEASE ROAD.

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

W.O. Number: 21949 Drawn By: J. SMALL

Date: 11-17-2009 Disk: JMS 21949

200 0 200 400 FEET
SCALE: 1" = 200'

RKI EXPLORATION & PRODUCTION LLC

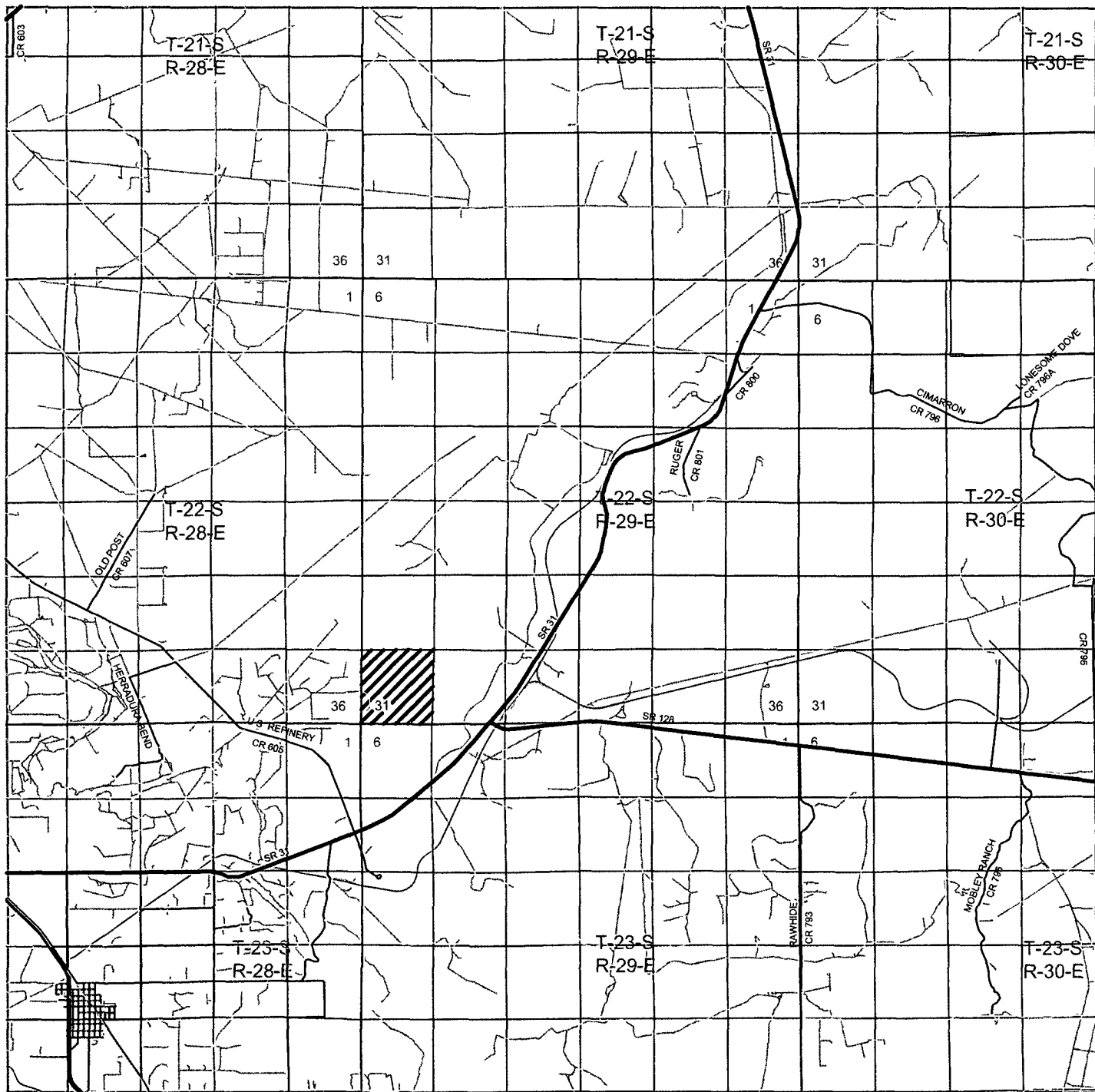
REF: LONGVIEW "31" #31 / WELL PAD TOPO

THE LONGVIEW "31" #31 LOCATED 1980'

FROM THE SOUTH LINE AND 990' FROM THE WEST LINE OF
SECTION 31, TOWNSHIP 22 SOUTH, RANGE 29 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

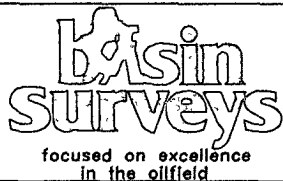
Survey Date: 11-12-2009 Sheet 1 of 1 Sheets

**RKI EXPLORATION
& PRODUCTION
LLC**



LONGVIEW "31" #31

Located 1980' FSL and 990' FWL
 Section 31, Township 22 South, Range 29 East,
 N.M.P.M., Eddy County, New Mexico.



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

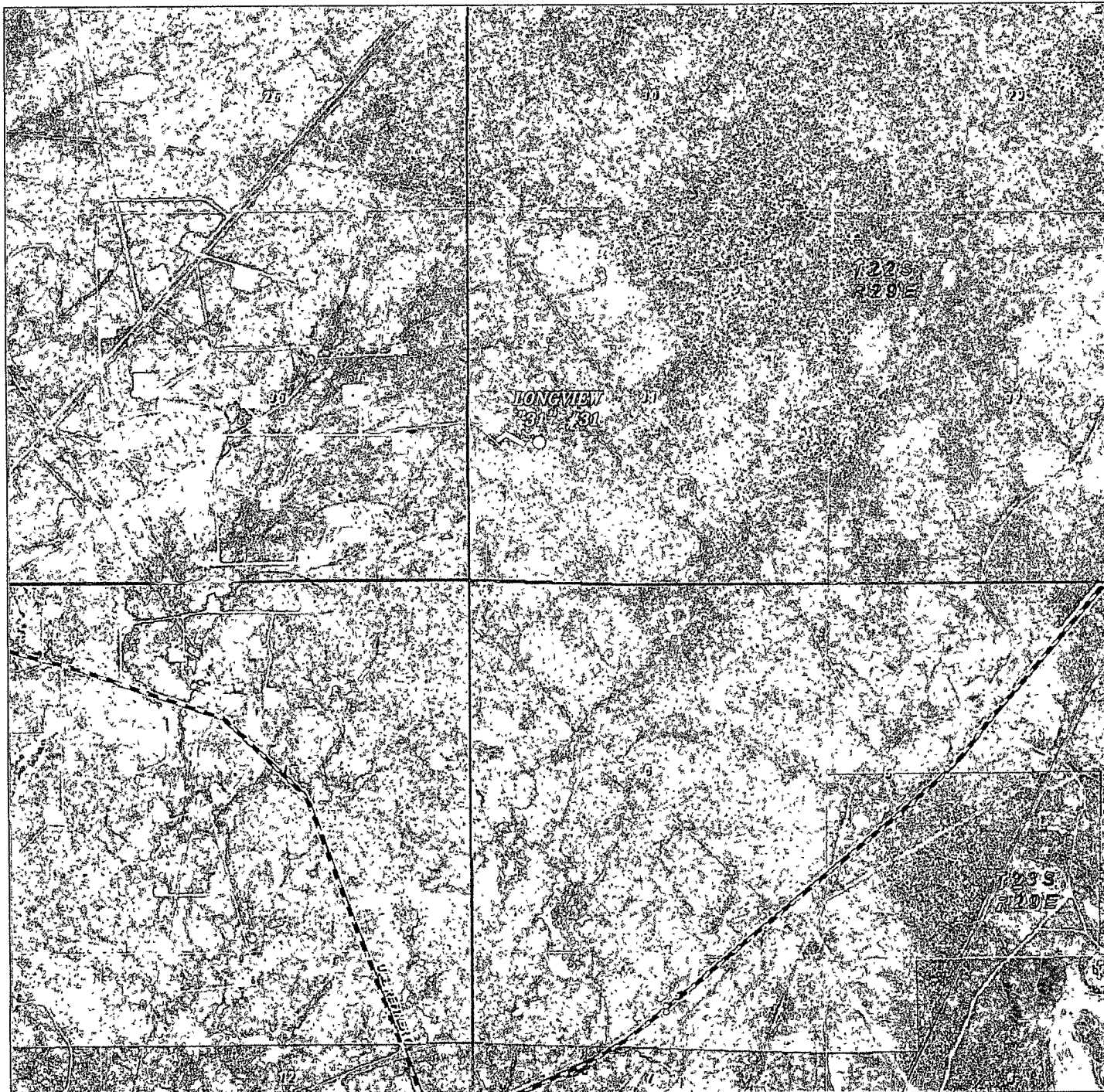
W.O. Number: JMS 21949

Survey Date: 11-12-2009

Scale: 1" = 2 Miles

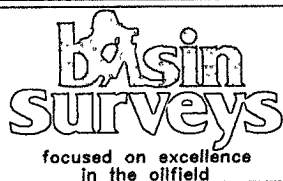
Date: 11-17-2009

**RKI EXPLORATION
 & PRODUCTION
 LLC**



LONGVIEW "31" #31

Located 1980' FSL and 990' FWL
 Section 31, Township 22 South, Range 29 East,
 N.M.P.M., Eddy County, New Mexico.



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 (575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JMS 21949

Scale: 1" = 2000'

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

RKI EXPLORATION
 & PRODUCTION
 LLC

ccn copy

RKI EXPLORATION & PRODUCTION, LLC.

LONGVIEW FEDERAL #31-31
1980' FSL & 990' FWL
UNIT "3" SEC. 31-22S-29E
EDDY CO., NM

1. The elevation of the unprepared ground is 3070 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 9,200' md. and run casing. This equipment will then be rigged down and the well will be completed with a pulling unit.
4. Proposed total depth is 9,200' md.
5. Estimated tops of important geologic markers:

Quaternary - Alluvium	Surface
Rustler	203' md.
Salado	245' md.
Top of Salt	512' md.
Base of Salt	2,635' md.
Base of Lime	2,780' md.
Delaware Top	2,840' md.
Bell Canyon Sand	2,840' md.
Cherry Canyon Sand	3,850' md.
Brushy Canyon Sand	4,815' md.
Bone Spring	6,400' md.
Bone Spring 1st Sand	7,510' md.
Bone Spring 2 nd Sand	8,280' md.
TD	9,200' md.

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

Bell Canyon	Oil	2,840' md.
Cherry Canyon	Oil	3,850' md.
Brushy Canyon	Oil	4,815' md.
Bone Spring	Oil	6,400' md.

7. The proposed new casing program is as follows:

Surface (New): 13-3/8" 68# J-55 ST&C casing set from 0' - 260'
Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

Intermediate (New): 8-5/8" 32# J-55 ST&C casing set from 0' - ~~3,530'~~ ^{2,900'} *see COA*
Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

Production (New): 5-1/2" 17# N-80 LT&C casing set from 0' - 9,200'
Tension SF 2.0, Collapse SF 1.125, Burst SF 1.8.

8. Casing setting depth and cementing program: *See COA*

- a. 13-3/8" surface casing set at 260' in 17-1/2" hole. Circulate cement to surface with 335 sx Class C + 2% S1 mixed at 14.8 ppg, yield – 1.34 cf/sk.
- b. *See COA* 8-5/8" 36# casing set at ^{2,900'}~~3,530'~~ in 12-1/4" hole. A fluid caliper will be performed to determine exact cement volume required. Cement will be circulated to surface with 750 sx 35:65 Poz Class C + 5% D44 + 6% D20 + .2% D46 + 0.125 pps D130 mixed at 12.6 ppg, yield – 2.05 cf/sk and 200 sks Class C + .2% D13 mixed at 14.8 ppg, yield – 1.33 cf/sk.
- c. 5-1/2" 17# J-55 casing set at 9,200' in 7-7/8" hole. Hole will be logged to determine exact cement volume to circulate cement surface. The well will be cemented in two stages as follows: **Stage 1:** 750 sx PVL with 3% D174, .3% D167, .1% D65, .2% D46, .4% D800 mixed at 13.00 ppg (1.43cf/sk). DV tool at approximately 4500'
Stage 2. 600 sx 35:65 Poz "C" with 5% D44, 6% D20, .2% D46, .3% D13, 2pps D42, .125 pps D130 mixed at 12.6 ppg (2.08 cf/sk).

These are estimates final volumes will be determined from caliper log.

9. Pressure Control Equipment

The blowout preventor equipment (BOP) shown in Exhibit #3 will consist of a (5M system) double ram type (5000 psi WP) preventor and a bag-type (Hydril) preventor (5000 psi WP) 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. The drilling head will be installed on the 13 3/8" surface casing and utilized continuously until total depth is reached. All BOP's and associated equipment will be tested before drilling out the 13 3/8" casing shoe (70% of 68#, J-55 casing). Prior to drilling out the 8 5/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

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 with a 2" check valve 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 WP rating.

10. Mud Program:

0' - 260'	Fresh water/native mud. Lime for pH control (9-10). Paper for seepage. Wt. 8.4 - 9.4 ppg, viscosity 32 - 34 cp.
260' - ^{2900'} 3.530'	Saturated brine. Sweep as necessary, weight 10.0 ppg.
3.530' - 4.000'	Fresh Water/mud, weight 8.4 - 9.3. Sweep as necessary.
4.000' - 9.200'	Brine/Fresh water mud system, weight 8.4 - 9.5 ppg viscosity 30 - 34 cp. Control fluid loss < 15cc.

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

Testing program: No drillstem tests are anticipated.
Electric logging program: CNL/CAL/GR, DLL/CAL/GR.
Coring program: None.

12. Potential Hazards:

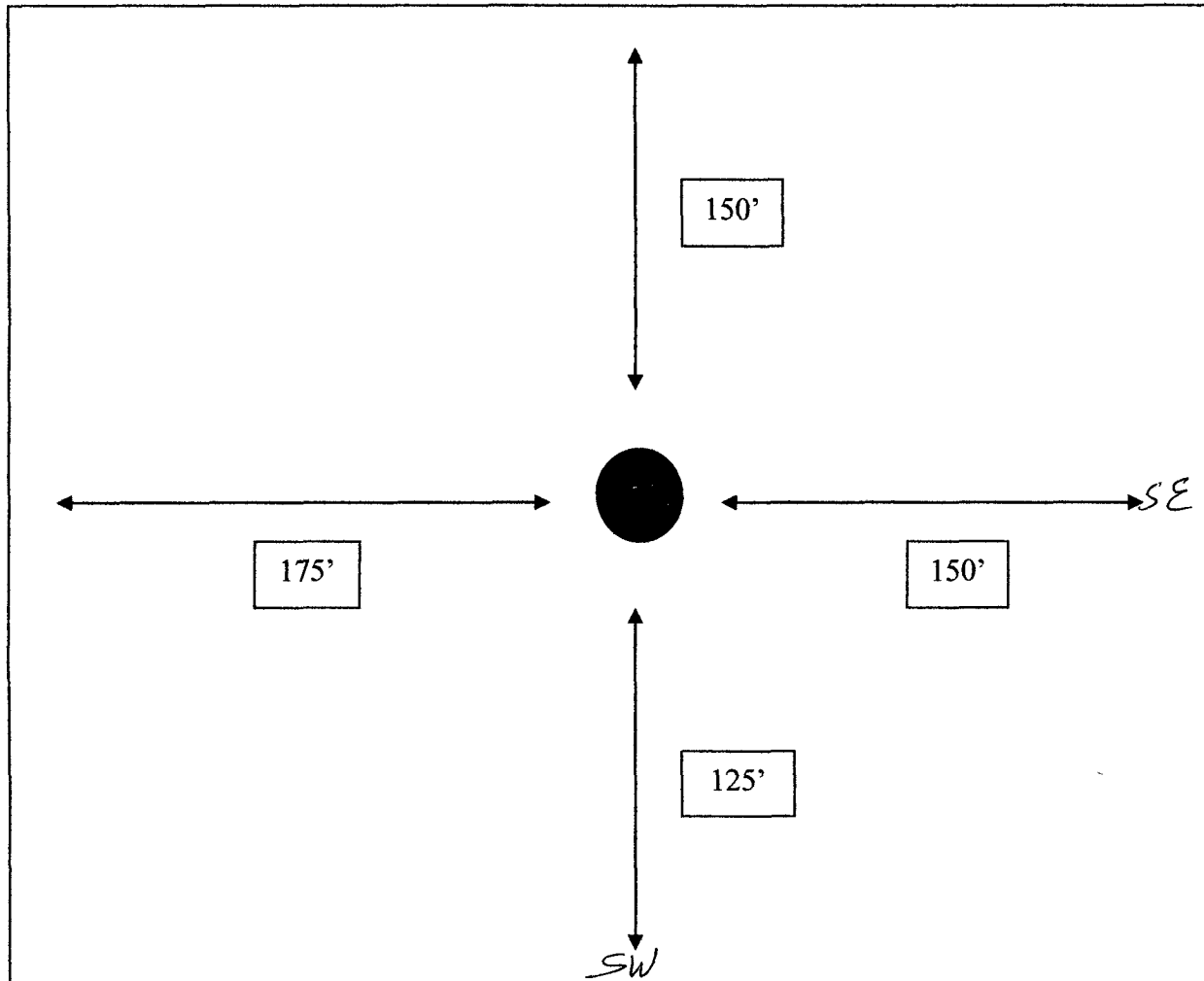
No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3500 psi and estimated BHT 135

13. Anticipated Starting Date and Duration of Operations:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be soon after BLM approval and as soon as a rig will be available, Move in operations and drilling is expected to take 32 days. If production casing is then an additional 30 days will be needed to complete the well and to construct surface facilities and/or lay flow lines in order to place well on production.

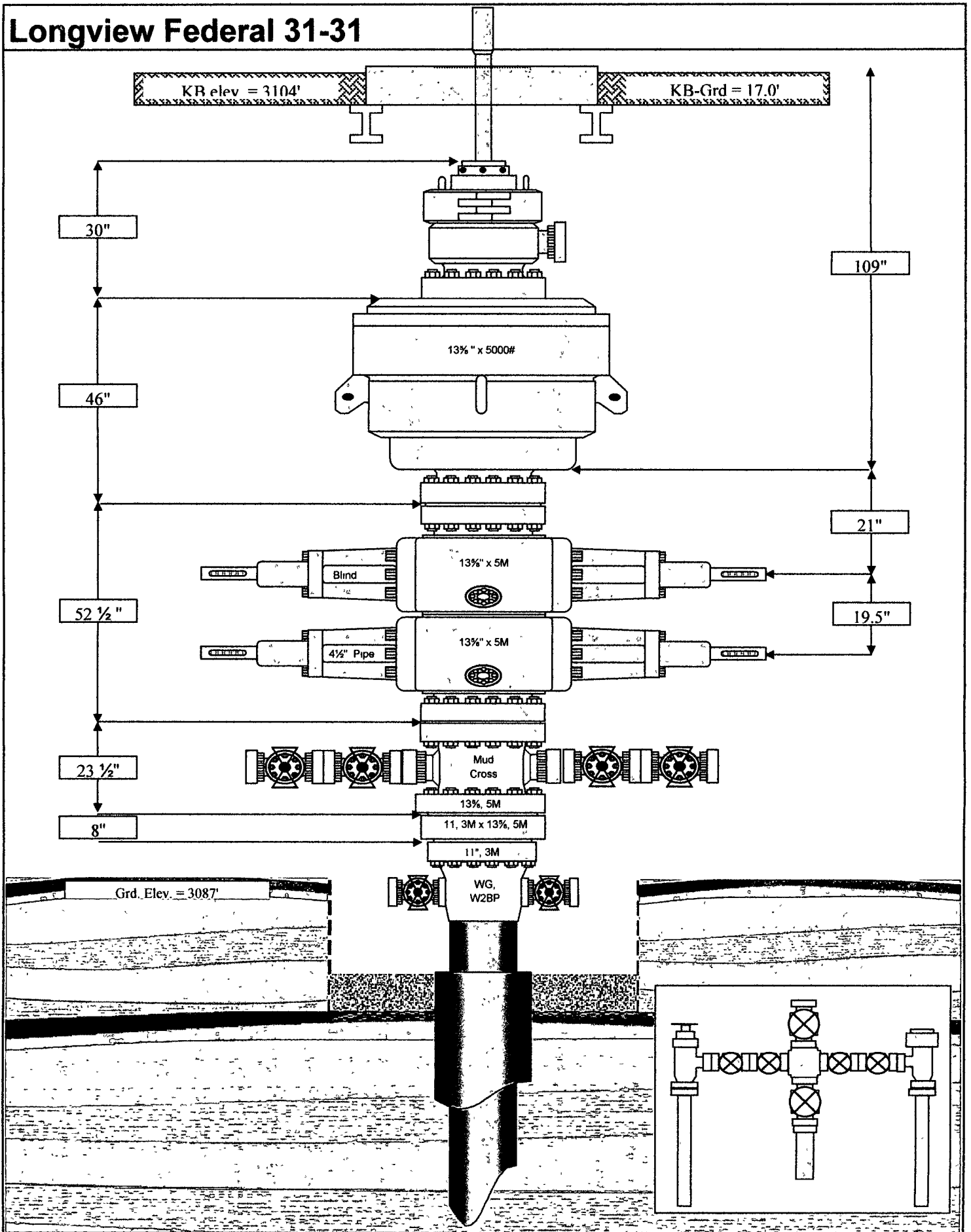
31[#]31

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



V-Door Southeast

Longview Federal 31-31



Choke Manifold

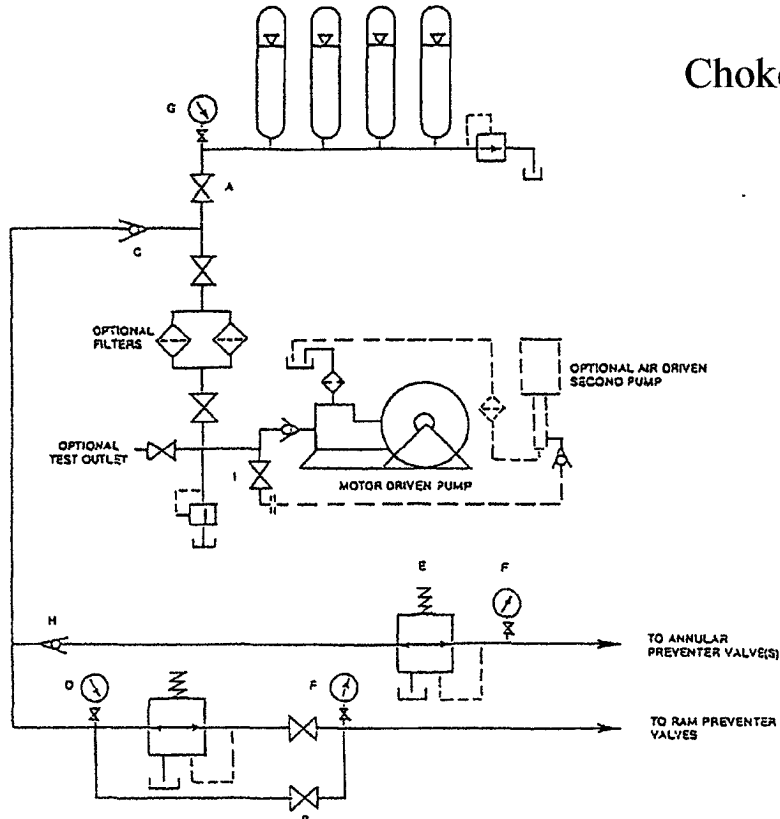


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

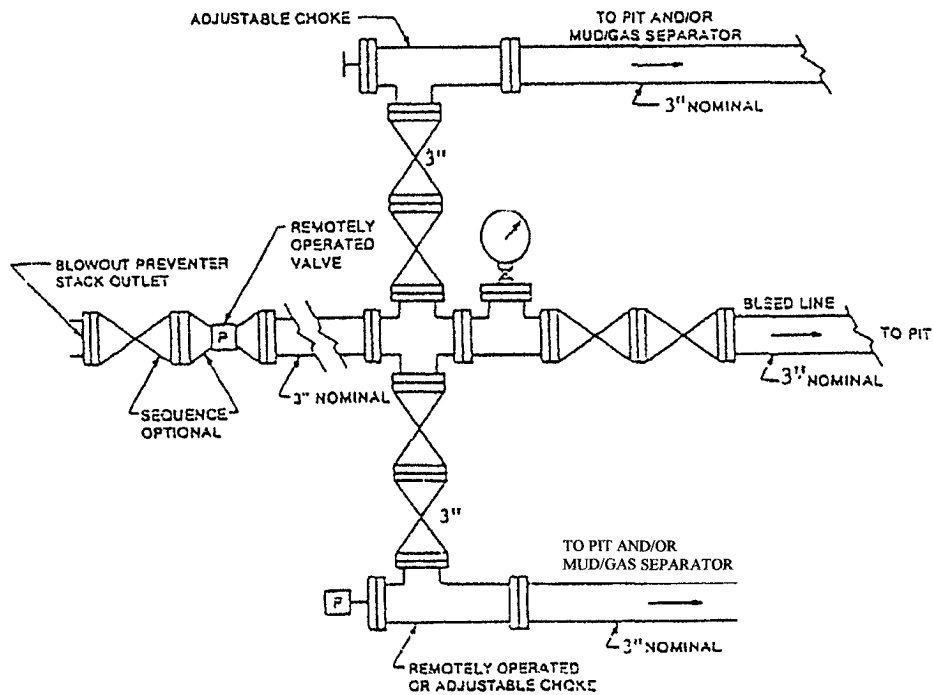


FIGURE K4-2 Typical choke manifold assembly for 5M rated working pressure service – surface installation

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

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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 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 NMOC D 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 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 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/Escapes 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.

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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.

SURFACE USE PLAN

RKI Exploration & Production, LLC

Longview Federal 31 #31

1980' FSL & 990' FWL

Section 31, T. 22 S., R. 29 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 east of Carlsbad, NM, on Highway 62/180, 1.2 miles. Turn southeast onto the Old Refinery Road for 10.3 miles. Turn north onto lease road and travel north and east for 1.1 miles. The new road will begin at the point where the Longview 1 #14 access road turns south. The new road will be upgrading an existing two-track road for 0.5 miles, east $\frac{1}{4}$ mile and then north $\frac{1}{4}$ mile, then utilize an existing lease road for 0.2 of a mile to the north, to a point where new construction of 471.4 ft. (total) will occur (northeast for 165.7 ft. then southeast for 305.7 ft.) to the southwest corner of the proposed well pad. All existing roads are either paved or a caliche lease road.

B. See attached plats and maps provided by Basin Surveys.

2. PROPOSED ACCESS ROAD:

- A. The new access road will begin at the southwest corner of the proposed well pad, northwest, to parallel a drainage for 305.7 ft., then southwest for 165.7 ft., to an existing lease road, in the NWSW1/4 of section 31, T. 22 S., R. 29 E. The total of new road construction will be 471.4 ft. The company also proposes to upgrade an existing two-track road, from the access road of the Longview Fed. 1 #14, in the NENE1/4 of section 1, T. 23 S., R. 28 E., east for a $\frac{1}{4}$ mile to the proposed Longview Fed. 6 #11, which was previously approved, then north for $\frac{1}{4}$ of a mile to an existing well and lease road, in the SWSW1/4 of section 31, T. 22 S., R. 29 E. The total of new two-track road to be upgraded will be 0.5 miles.
- B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
- C. The road will be surfaced with a 6" rolled and compacted caliche,
- D. No culverts, cattle guards or fence cuts will be necessary. The new road will be ditched on both sides of the road for proper drainage.

3. LOCATION OF EXISTING WELLS:

- A. There is an existing well 1/4 mile to the south. (SWSW1/4 of section 31).
- B. See attached lease map showing all the wells within a one mile radius around the proposed well.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. There are no production facilities on this lease at the present time.
- B. In the event that the well is productive, the necessary production facilities will be installed on the drilling pad.

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:

All caliche obtained for the proposed well pad and access road will be up to the dirt contractor to locate prior to construction.

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. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- 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.

8. ANCILLARY FACILITIES:

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

9. WELL SITE LAYOUT:

- A. Exhibit A shows the dimensions of the proposed well pad.
- B. The proposed well pad size will be 275' x 325'. 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 Southeast so as to parallel and thus avoid a drainage system to the southwest.
- D. A 600' x 600' area has been staked and flagged.

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.

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 H & K Farms (Brushy Knob Grazing Allotment).

12. OTHER INFORMATION:

- A. The area surrounding the well site is in a gentle sloped, shallow gravelly loam, rolling hills type area. The vegetation consists of White Thorn Acacia, Creosote, Mesquite, Four-Wing Saltbush, 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 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)

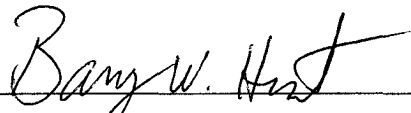
ON-SITE PERFORMED ON 11/12/09 RESULTED IN PROPOSED WELL BEING MOVED, FROM THE ORIGINAL FOOTAGE OF 1650 FSL & 990 FWL, 330 FT. TO THE NORTH, TO THE PRESENT FOOTAGE OF 1980 FSL & 990 FWL, DUE TO THE CLOSE PROXIMITY OF A LARGE DRAINAGE. IT WAS ALSO AGREED TO ROTATE THE PROPOSED WELL LOCATION TO A V-DOOR SOUTHEAST AND RESTRICT PAD TO 125 FT. TO THE SOUTHWEST, DUE TO THE CLOSE PROXIMITY OF THE DRAINAGE SYSTEM.

PRESENT AT ON-SITE:

**GENE SIMER – RKI EXPLORATION & PRODUCTION
BARRY HUNT – PERMITTING AGENT FOR RKI EXPLORATION & PRODUCTION
RANDY RUST & JOHN FAST – BLM
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 24th day of November 2009.

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

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI Exploration & Prod.
LEASE NO.:	NM91078
WELL NAME & NO.:	31 Longview 31
SURFACE HOLE FOOTAGE:	1980' FSL & 990' FWL
BOTTOM HOLE FOOTAGE	' F L & ' F L
LOCATION:	Section 31, T. 22 S., R 29 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**
 - Archaeological Monitoring
- ☒ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - R-111-P Potash
 - Medium Cave Karst
 - Logging Requirements
 - Casing Depth Change
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
- ☒ **Interim Reclamation & Reseeding Procedure**
- ☐ **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)

Bureau of Land Management, Carlsbad Field Office

620 E. Greene Street Carlsbad, NM 88220

Cultural and Archaeological Resources

Conditions of Approval

Historic properties in the vicinity of this project are protected by federal law. In order to ensure that they are not damaged or destroyed by construction activities, the project proponent and construction supervisors shall ensure that the following stipulations are implemented.

Date of Issue: **BLM Report No.: 10-0122**

Project Name: Longview 31 #31 loc & access

1. Professional archaeological monitoring. Contact your project archaeologist, or BLM's Cultural Resources Section at (575) 234-2228, 5917, 2236, or 5967, for assistance.

These stipulations must be given to your monitor at least 5 days prior to the start of construction. No construction, including vegetation removal or other site prep may begin prior to the arrival of the monitor.

2. The archaeological monitor shall:

Observe all ground-disturbing activities within 100 feet of cultural site no. LA:164439 and LA16440

Other:

Site Protection and Employee Education: It is the responsibility of the project proponent and his construction supervisor to inform all employees and subcontractors that cultural and archaeological sites are to be avoided by all personnel, vehicles, and equipment; and that it is illegal to collect, damage, or disturb cultural resources on Public Lands.

For assistance, contact BLM Cultural Resources:

Bruce Boeke	(575) 234-5917
Martin Stein	(575) 234-5967
George MacDonell	(575) 234-2228
Lynn Robinson	(575) 234-2236
Ian Young	
Jeremy Iliff	(575) 234-6231

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.

Restrict Pad on the Southwest Corner to 125 Feet and avoid large drainage. Pad to be no larger than 275 X 325 feet.

Surface with caliche. Removal at time of reclamation/interim reclamation.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 8 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits. V-Door Southeast.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (575) 234-5972.

E. 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.

F. 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

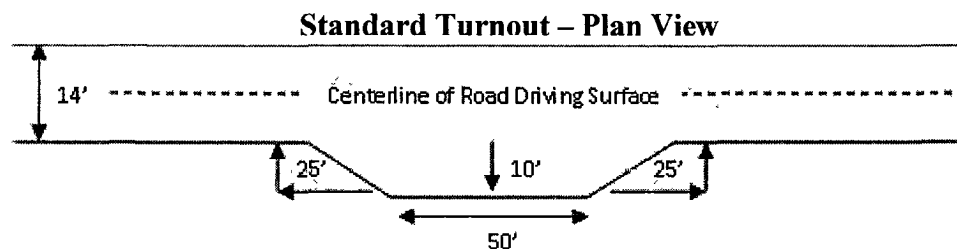
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

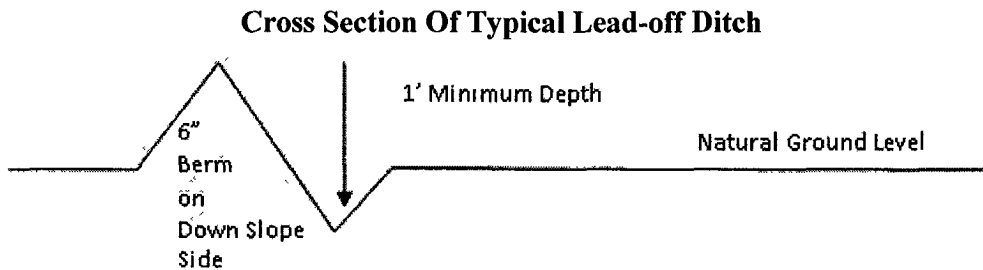
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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.



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:

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

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

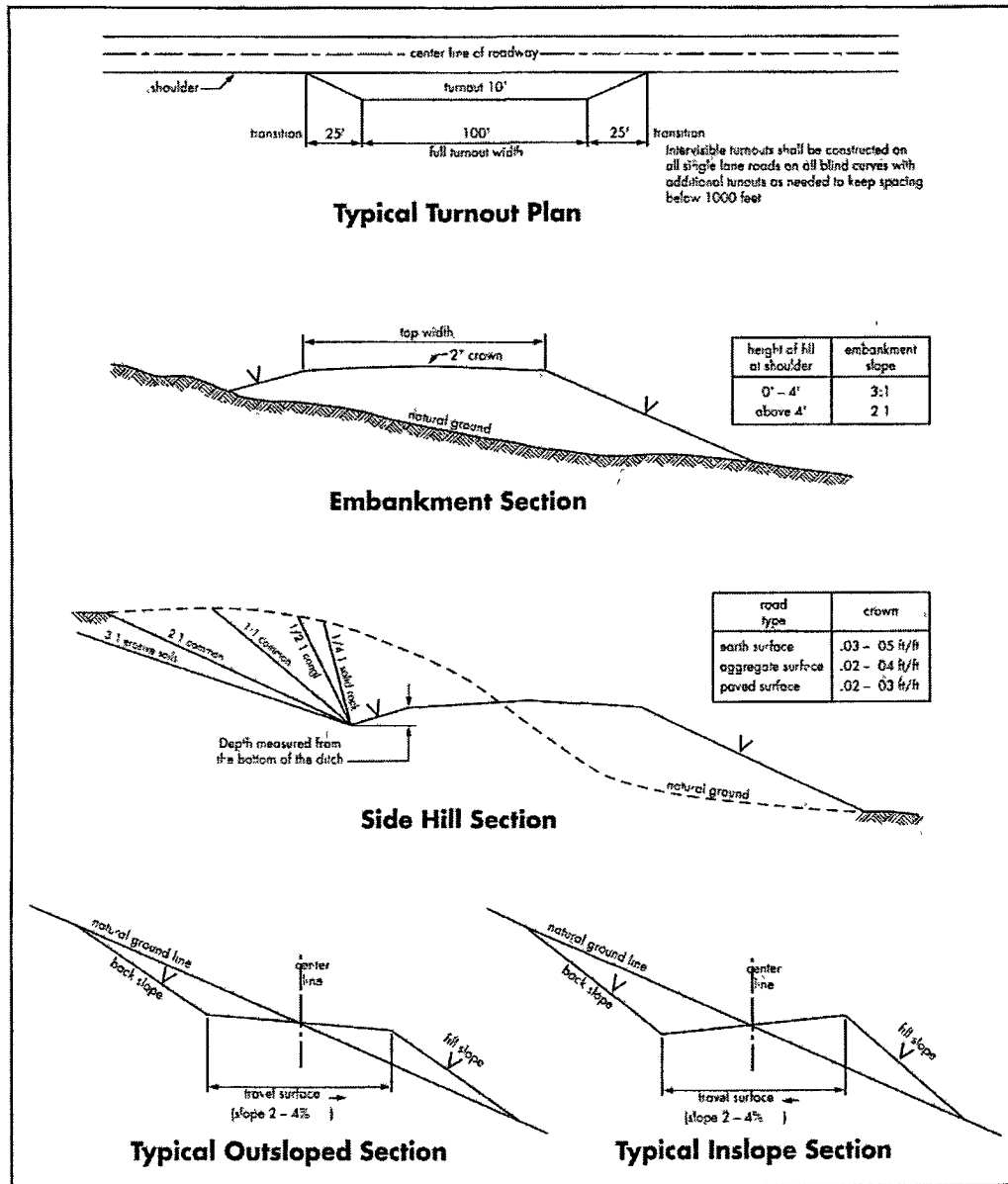
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 this section, 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.
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 are located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface 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. 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.

R-111-P Potash

Medium Cave/Karst

Possible lost circulation in the Delaware.

1. The 13-3/8 inch surface casing shall be set at **approximately 260 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If salt is penetrated, set casing shoe 25 feet above the salt.**
 - 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 a 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.
2. The minimum required fill of cement behind the 8-5/8 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 and potash. Set casing, 100' to 600' below the base of Salt, in Lamar Limestone at approximately 2900 feet.

Formation below the 8-5/8" 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.

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.

b. Second stage above DV tool, cement shall:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

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.

5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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 **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8 inch** intermediate 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.**

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. Casing cut-off and BOP installation will not be initiated until the cement has had 4-6 hours of setup time in a water basin and 12 hours in the potash areas. This time will start after the cement plug is bumped.
 - b. **Prior to testing a BOP/BOPE system against the casing; the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Testing the BOP/BOPE against a plug can commence after meeting the conditions in (a.) plus the BOP installation time.**
 - c. The tests shall be done by an independent service company.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. 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.**
 - f. 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.

D. DRILL STEM TEST

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

CRW 122309

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

IX. INTERIM RECLAMATION & RESEEDING PROCEDURE**A. INTERIM RECLAMATION**

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

B. RESEEDING PROCEDURE

Once the well is drilled, all completion procedures accomplished, and all trash removed, reseed the location and all surrounding disturbed areas as follows:

Seed Mixture 2, for Sandy 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 of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/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>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.