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Form 8160-3 SEP 06 2012  
(March 2012)

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SECRETARY'S POTASH

ATS-12-858

EA-12-1134

FORM APPROVED  
OMB No 1004-0137  
Expires October 31, 2014

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	5. Lease Serial No. NM-61349 (BHL) NM191078 (SH)
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" 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 705 9/9/2012
2. Name of Operator RKI EXPLORATION & PRODUCTION, LLC.	7. If Unit or CA Agreement, Name and No.
3a. Address 3817 NW Expressway, Suite 950 Oklahoma City, Ok. 73112	8. Lease Name and Well No. Longview Deep Federal 6-22 <38863>
3b. Phone No. (include area code) 405-996-5750 (Bill Aubrey)	9. API Well No. 30015-40650
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1880 FNL & 200 FEL, Section 1, T. 23 S., R. 28 E. At proposed prod. zone 1400 FNL & 700 FWL, Section 6, T. 23 S., R. 29 E.	10. Field and Pool, or Exploratory Undesignated Morrow LAGUNA SA 1900; mbe
14. Distance in miles and direction from nearest town or post office* Approximately 5 miles northeast of Loving, NM.	11. Sec., T. R. M. or Blk. and Survey or Area SHL: Section 1, T. 23 S., R. 28 E. BHL: Section 6, T. 23 S., R. 29 E.
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any)	12. County or Parish Eddy
16. No. of acres in lease 937.86 798.38	13. State NM
17. Spacing Unit dedicated to this well 320 314.17	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 50 ft. to the 6-21 P&A	19. Proposed Depth TVD: 13,500 ft. MD: 13,648 ft.
20. BLM/BIA Bond No. on file NLM-NMB-000460	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3088' GL	22. Approximate date work will start*
23. Estimated duration 30 days	

24. Attachments

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

- |   |   |
|---|---|
| 1. Well plat certified by a registered surveyor.  | 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 must be filed with the appropriate Forest Service Office) | 6. Such other site specific information and/or plans as may be required by the BLM              |

25. Signature Barry W. Hunt	Name (Printed/Typed) BARRY W. HUNT	Date 6/18/12
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Title  
PERMIT AGENT FOR RKI EXPLORATION & PRODUCTION, LLC.

Approved by (Signature)	Name (Printed/Typed)	Date AUG 24 2012
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Title STATE DIRECTOR	Office NM STATE OFFICE
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Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

\*(Instructions on page 2)

Carlsbad Controlled Water Basin

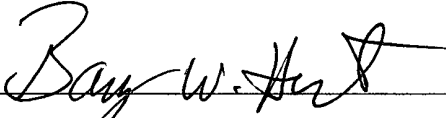
SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

## 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 14<sup>th</sup> day of June 2012.

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

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
Phone (575) 393-8161 Fax: (575) 393-0720

DISTRICT II  
811 S. First St., Artesia, NM 88210  
Phone (505) 748-1283 Fax: (505) 748-9720

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone (505) 334-6170 Fax: (505) 334-6170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone (505) 476-3480 Fax: (505) 476-3482

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised August 1, 2011

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 <b>30-015-40650</b>	Pool Code <b>96642</b>	Pool Name <b>Laguna Sabado Undesignated Morrow</b>
Property Code <b>38863</b>	Property Name <b>LONGVIEW DEEP FEDERAL</b>	Well Number <b>6-22</b>
OGRID No. <b>246289</b>	Operator Name <b>RKI EXPLORATION &amp; PRODUCTION LLC</b>	Elevation <b>3088'</b>

Surface Location

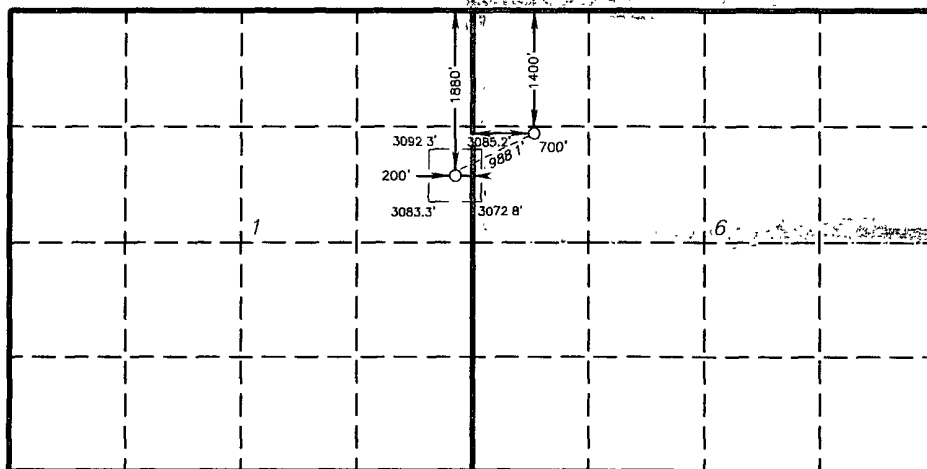
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	1	23 S	28 E		1880	NORTH	200	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	6	23 S	29 E		1400	NORTH	700	WEST	EDDY

Dedicated Acres <b>314.17</b>	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



**SURFACE LOCATION**  
Lat - N 32°20'12.79"  
Long - W 104°01'57.52"  
NMSPC- N 486420.8  
E 634207.6  
(NAD-83)

**PROPOSED BOTTOM HOLE LOCATION**  
Lat - N 32°20'17.27"  
Long - W 104°01'46.98"  
NMSPC- N 486876.671  
E 635108.606  
(NAD-83)

OPERATOR CERTIFICATION

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

**Barry W. Hunt** 7/16/12  
Signature Date

**Barry W. Hunt**  
Printed Name

Email Address

SURVEYOR CERTIFICATION

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

**GARY L. JONES**  
Date Surveyed  
Signature & Seal of Professional Surveyor  
Professional Surveyor  
No. 26606

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 26606

## DRILLING PLAN

Well Longview Deep Fed 6-22  
 Location 1,880 FNL 200 FEL  
 Section 1-23S-28E  
 BHL 1,400 FNL 700 FWL  
 Section 6-23S-29E  
 County Eddy  
 State New Mexico

1) The elevation of the unprepared ground is 3,088 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 13,500 feet and run casing. *1 cement same.*  
 This equipment will then be rigged down and the well will be completed with a workover rig.

4) Proposed depth is 13,500 feet.

		BHP	Anticipated MW
5) Estimated tops:			
Rustler	203		
Top of Salt	400		
Base of Salt	2,555		
Base of Lime	2,775		
Delaware Top	2,820 Oil	1,221 psi	8.33 ppg
Bone Spring	6,355 Oil	2,752 psi	8.33 ppg
Wolfcamp	9,680 Gas	4,191 psi	8.33 ppg
Strawn	11,405 Gas	5,703 psi	9.62 ppg
Atoka	11,770 Gas	5,885 psi	9.62 ppg
Morrow	12,240 Gas	7,099 psi	11.15 ppg
Lower Morrow	12,725 Gas	7,381 psi	11.15 ppg
Barnett	12,885	7,473 psi	11.15 ppg
TD	13,500	7,830 psi	11.15 ppg
		175 degree F	

6) Casing program:

						Safety Factors		
Hole Size	Top	Bottom	OD Csg	Wt/Grade	Connection	1.125 Collapse Design Factor	1 Burst Design Factor	1.8 Tension Design Factor
17 1/2"	0	235	13 3/8"	54.5#/J-55	ST&C	11.11	54.54	42.71
12 1/2"	0	4,000	9 5/8"	40#/J-55	LT&C	1.48	4.64	3.25
8 3/4"	0	11,700	7"	29#/HCP-110	LT&C	1.68	2.66	2.35
6 1/8"	11,400	13,500	4 1/2"	11.6#/HCP-110	LT&C	1.12	1.55	9.75

All new pipe

7) Cement program:

<b>Surface</b>	17 1/2" hole		
Pipe OD	13 3/8"		
Setting Depth	235 ft		
Annular Volume	0.69462 cf/ft		
Excess	1	100 %	

Lead: 244 sx 1.34 cf/sk 13.5 ppg  
 Lead: "C" + 4% PF20 (gel) + 2% PF1 (CC) + .125 pps PF29 (CelloFlake) + .2% PF46 (antifoam)  
 Top of cement: Surface

<b>Intermediate</b>	12 1/2" hole		
Pipe OD	9 5/8"		
Setting Depth	4,000 ft		
Annular Volume	0.31318 cf/ft	0.3627 cf/ft	
Excess	1	100 %	
DV Tool Depth	2000 ft		

Stage 1  
 Lead: 477 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 (salt) + 6% PF20 (gel) + 3 pps PF42 (KoalSeal) + .125 pps PF29 (CelloFlake) + .25 pps PF 46 (antifoam)  
 Tail: "C" + .2% PF13 (retarder)  
 Top of cement: DV tool

Stage 2  
 Lead: 580 sx 1.97 cf/sk 12.9 ppg  
 Tail: 100 sx 1.33 cf/sk 14.8 ppg  
 Lead: 35/65 Poz "C" + 4% PF20 (gel) + 2% PF1 (CC) + .125 pps PF29 (CelloFlake) + .25 pps PF46 (antifoam)  
 Tail: "C" + .1% PF13 (retarder)  
 Top of cement: Surface

<b>Production/Inter.</b>	8 3/4" hole		
Pipe OD	7"		
Setting Depth	11,700 ft		
Annular Volume	0.15033 cf/ft	0.15848 cf/ft	500 ft
Excess	0.35	35 %	
DV Tool Depth	5500 ft		

Stage 1  
 Lead: 856 sx 1.47 cf/sk 13.0 ppg  
 Lead: PVL (C) + 2% PF174 (expanding agent) + .3% PF167 (UNIFLAC) + .1% PF65 (dispersant) + .2% PF13 (retarder) + .25 pps PF46 (antifoam)  
 Top of cement: DV tool

Stage 2  
 Lead: 130 sx 2.04 cf/sk 12.6 ppg  
 Tail: 100 sx 1.47 cf/sk 13.0 ppg  
 Lead: 35/65 Poz "C" + 4% PF20 (gel) + 2% PF1(CC) + .125 pps PF29 (CelloFlake) + .25 pps PF46 (antifoam)  
 Tail: "C" + .1% PF13 (retarder)  
 Top of cement: 3,500 ft

<b>Liner</b>	6 1/8" hole		
Pipe OD	4 1/2"		
Setting Depth	13,500 ft	Top of Liner	11,400
Annular Volume	0.09417 cf/ft	0.09813 cf/ft	300 ft
Excess	0.35	35 %	

Stage 1  
 Lead: 206 sx 1.21 cf/sk 14.6 ppg  
 Lead: 50:50 Poz "H" + 2% PF20 (gel) + .25 pps PF46 (antifoam) + .7% 606A (gel supressing agent) + .2% PF65 (dispersant)  
 Top of cement: Liner top

8) Pressure control equipment:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram type (5,000 psi WP) preventer, a bag-type annular preventer (5,000 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" 5M casing head will be installed on the 13 3/8" casing and utilized until total depth is reached.

The 13 3/8" casing and BOP equipment will be tested to .22 psi per ft of length or 1,500 psi whichever is greater, but not exceeding 70% burst rating of the casing.

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

The BOP equipment will be isolated with a test plug and tested to 250 psi / 5,000 psi.

The annular will be tested to 250 psi / 2,500 psi.

The 9 5/8" casing will be tested to .22 psi per ft of length or 1,500 psi whichever is greater, but not exceeding 70% of the burst rating of the casing.

The 7" intermediate casing will be hung in the casing head and the BOP stack will not be nipped down.

The BOP equipment will be isolated with a cup test plug and tested to 250 psi / 5,000 psi.

The annular will be tested to 250 psi / 2,500 psi.

The 7" casing will be tested to .22 psi per ft of length or 1,500 psi whichever is greater, but not exceeding 70% of the burst rating of the casing.

Based on a 11.2 ppg formation gradient for the Morrow (from offset data) the BOP pressure rating requirement is calculated as:  $(11.2 \text{ ppg})(.052)(13,500 \text{ ft}) = 7,862 \text{ psi}$

Assuming a partially evacuated hole with a .22 psi/ft gradient:  $7,862 \text{ psi} - (.22 \text{ psi/ft})(13,500 \text{ ft}) = 4,892 \text{ psi}$

After drilling approximately 10 feet of new formation below the 7" intermediate the shoe will be tested to an 11.5 ppg equivalent mud weight.

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.

See COA  
10M or  
additional ram  
required

9) Mud program:

Top	Bottom	Mud Wt.	Vis	PV	YP	Fluid Loss	Type System
0	235	8.5 to 8.9	32 to 36	6 - 12	2 - 8	NC	Fresh Water
235	4,000	9.8 to 10.0	28 to 30	1 - 6	1 - 6	NC	Brine
4,000	11,700	8.9 to 9.1	28 to 36	1 - 6	1 - 6	NC	Cut Brine/Fresh Water
11,700	13,500	9.5 to 11.2	36 to 45	15 - 25	12 - 20	6 - 8	Cut Brine/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.

Though lost circulation is not anticipated, lost circulation material will be available on location.

12) Anticipated Start Date

June '12

Duration

35 days

# 4

COA

Spread sheet showing Morrow wells in the area and the mud weights the wells were TD'd with. The averaged calculated surface pressure based on the mud weights and assuming a partially evacuated hole and a .22 psi/ft gradient is 4,358 psi. The highest mud weight was the Longview Fed Deep 31-31 which was 11.5 ppg at TD, this was not required due to gas but was caused due to a buildup of solids in the mud.

The average of 4,358 psi is within the requirements for a 5,000 psi rated BOP equipment. RKL is proposing 5,000 psi BOP equipment be used, which is within Onshore Order #2 requirements. *An average does not fit this situation as well is deeper than all of these.*

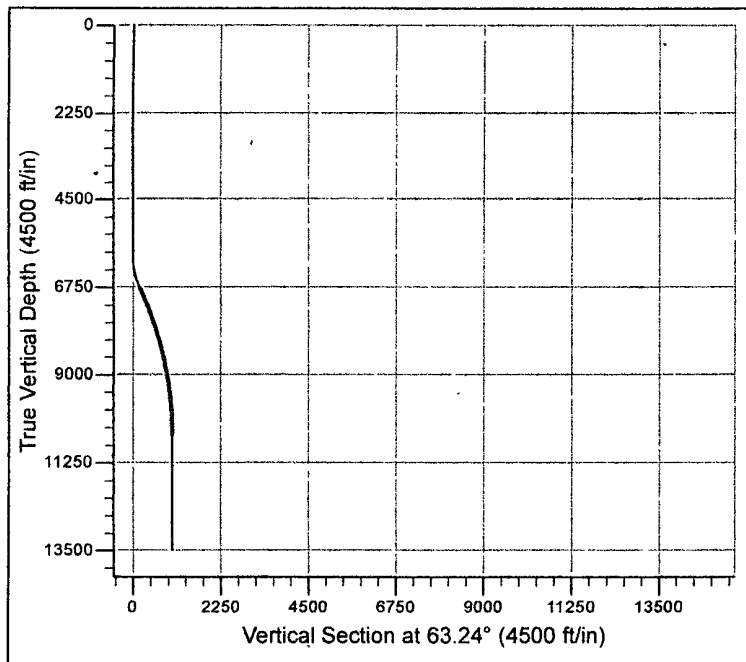
Well	Sec	Township	Range	Wt at TD	Depth	Calculated BOP Rating Required
Indian Draw 6 Fee Com 1	6	22S	28E	10.1	12300	3,754
Big Eddy 77	9	22S	28E	10.9	12500	4,335
Big Eddy 159	9	22S	28E	9.9	12591	3,712
Big Chief Fee 9	15	22S	28E	11.4	12800	4,772
Dinero 16 State 4	16	22S	28E	9.9	12560	3,703
Foal 17 Fed 1	17	22S	28E	10.1	12440	3,797
Faulk 12 Com 1	32	22S	28E	11.7	12584	4,888 *
Atemis Fed Com 1	33	22S	28E	11.3	12700	4,669
Santa Fe Deep 35-1	35	22S	28E	11.0	13000	4,576
Longview Fed Deep 6-41	6	23S	29E	11.2	13200	4,784
Longview Fed Deep 31-31	31	23S	29E	11.5	13108	4,955 **

\* lost mud due to seepage

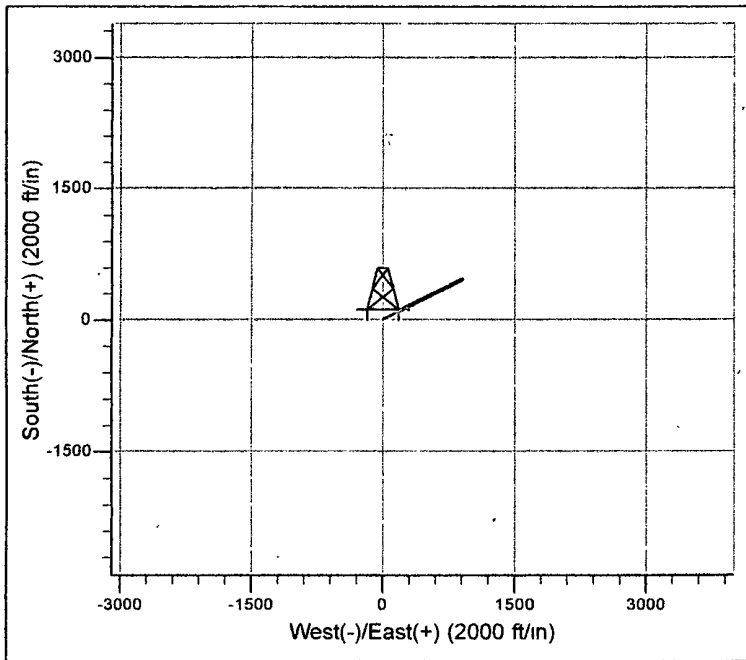
\*\* This wt was not needed due to gas, but was because of solids build up in the mud system

*should have had additional run & 10th, This well is deeper.*





6-22  
Longview Deep Fed 6-24-22  
Sec 1 - 23S - 28E  
Eddy County, NM



Bottom Hole Location  
1400' FNL & 700' FWL  
Sec 6 - 23S - 29E

Surface Location  
1880' FNL & 200' FEL  
Sec 1 - 23S - 28E

#### 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	6000	0.00	0.00	6000.0	0.0	0.0	0.00	0.00	0.0	
3	6833	25.00	63.24	6807.1	80.6	159.8	3.00	63.24	178.9	
4	10709	0.00	0.00	10561.4	455.3	903.0	0.64	180.00	1011.2	
5	13648	0.00	0.00	13500.0	455.3	903.0	0.00	0.00	1011.2	Longview Deep

6-22  
6-24-22

H HEADER INFORMATION -----  
H COMPANY : RKI 2  
H FIELD : Eddy County, NM  
H SITE : Section 1-23S-28E  
H WELL : Longview Deep 6-22  
H WELLPATH: Wellbore #1  
H DEPTHUNT: ft  
H SURVDATE: 1/1/1990  
H-----

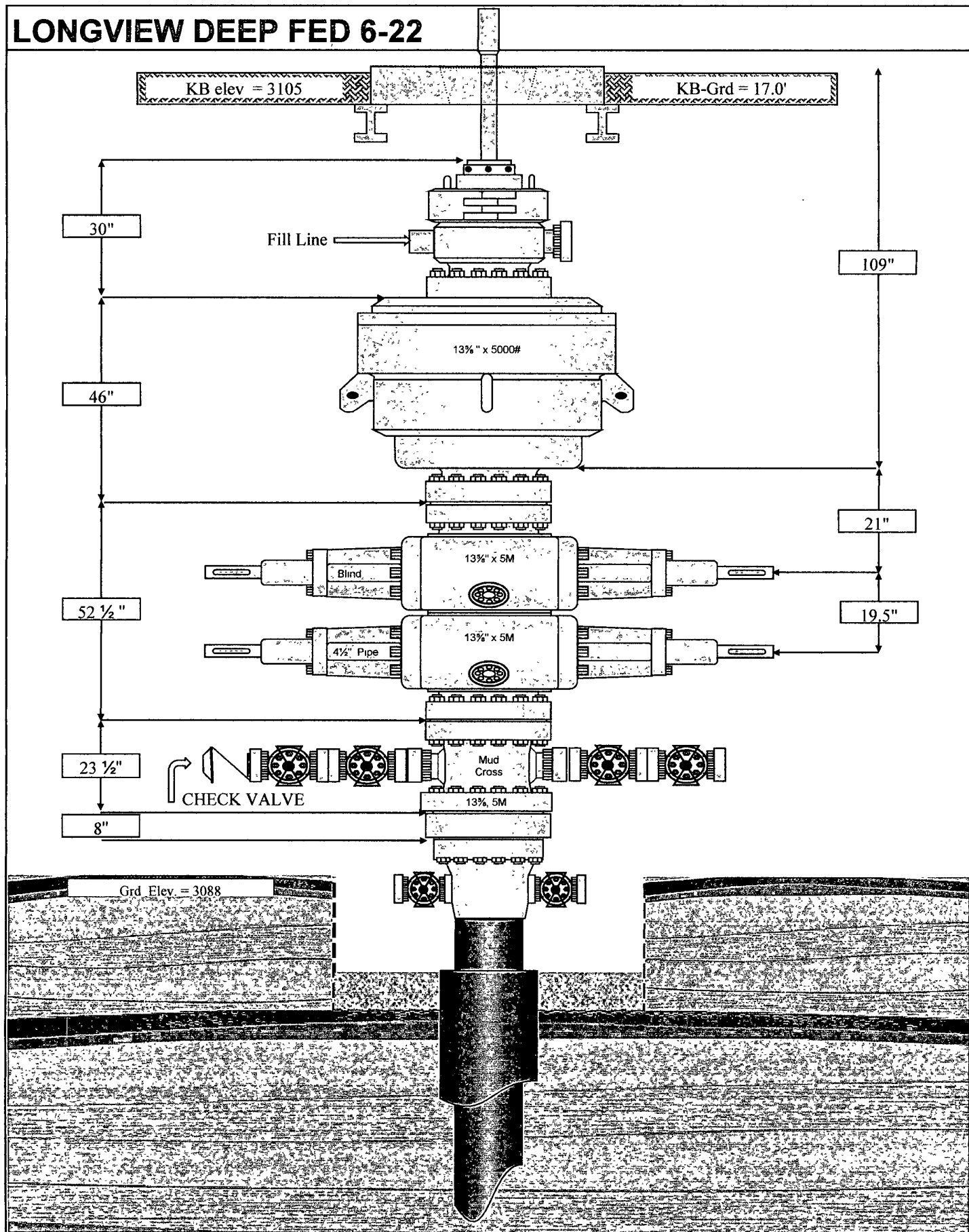
H SURVEY LIST

H MD	INC	AZI	TVD	NS	EW
0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00
1000.00	0.00	0.00	1000.00	0.00	0.00
1100.00	0.00	0.00	1100.00	0.00	0.00
1200.00	0.00	0.00	1200.00	0.00	0.00
1300.00	0.00	0.00	1300.00	0.00	0.00
1400.00	0.00	0.00	1400.00	0.00	0.00
1500.00	0.00	0.00	1500.00	0.00	0.00
1600.00	0.00	0.00	1600.00	0.00	0.00
1700.00	0.00	0.00	1700.00	0.00	0.00
1800.00	0.00	0.00	1800.00	0.00	0.00
1900.00	0.00	0.00	1900.00	0.00	0.00
2000.00	0.00	0.00	2000.00	0.00	0.00
2100.00	0.00	0.00	2100.00	0.00	0.00
2200.00	0.00	0.00	2200.00	0.00	0.00
2300.00	0.00	0.00	2300.00	0.00	0.00
2400.00	0.00	0.00	2400.00	0.00	0.00
2500.00	0.00	0.00	2500.00	0.00	0.00
2600.00	0.00	0.00	2600.00	0.00	0.00
2700.00	0.00	0.00	2700.00	0.00	0.00
2800.00	0.00	0.00	2800.00	0.00	0.00
2900.00	0.00	0.00	2900.00	0.00	0.00
3000.00	0.00	0.00	3000.00	0.00	0.00
3100.00	0.00	0.00	3100.00	0.00	0.00
3200.00	0.00	0.00	3200.00	0.00	0.00
3300.00	0.00	0.00	3300.00	0.00	0.00
3400.00	0.00	0.00	3400.00	0.00	0.00
3500.00	0.00	0.00	3500.00	0.00	0.00
3600.00	0.00	0.00	3600.00	0.00	0.00
3700.00	0.00	0.00	3700.00	0.00	0.00
3800.00	0.00	0.00	3800.00	0.00	0.00
3900.00	0.00	0.00	3900.00	0.00	0.00
4000.00	0.00	0.00	4000.00	0.00	0.00
4100.00	0.00	0.00	4100.00	0.00	0.00
4200.00	0.00	0.00	4200.00	0.00	0.00
4300.00	0.00	0.00	4300.00	0.00	0.00
4400.00	0.00	0.00	4400.00	0.00	0.00

4500.00	0.00	0.00	4500.00	0.00	0.00
4600.00	0.00	0.00	4600.00	0.00	0.00
4700.00	0.00	0.00	4700.00	0.00	0.00
4800.00	0.00	0.00	4800.00	0.00	0.00
4900.00	0.00	0.00	4900.00	0.00	0.00
5000.00	0.00	0.00	5000.00	0.00	0.00
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6200.00	6.00	63.24	6199.63	4.71	9.34
6300.00	9.00	63.24	6298.77	10.59	21.00
6400.00	12.00	63.24	6397.08	18.79	37.27
6500.00	15.00	63.24	6494.31	29.30	58.11
6600.00	18.00	63.24	6590.18	42.08	83.47
6700.00	21.00	63.24	6684.43	57.11	113.27
6800.00	24.00	63.24	6776.81	74.34	147.44
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6900.00	24.57	63.24	6867.67	93.14	184.73
7000.00	23.93	63.24	6958.84	111.63	221.40
7100.00	23.28	63.24	7050.48	129.66	257.16
7200.00	22.64	63.24	7142.56	147.22	291.98
7300.00	21.99	63.24	7235.07	164.31	325.89
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7500.00	20.70	63.24	7421.35	197.08	390.89
7600.00	20.06	63.24	7515.09	212.76	421.98
7700.00	19.41	63.24	7609.22	227.96	452.13
7800.00	18.77	63.24	7703.72	242.68	481.33
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8200.00	16.19	63.24	8085.22	296.75	588.57
8300.00	15.54	63.24	8181.41	309.06	612.98
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8500.00	14.25	63.24	8374.69	332.20	658.88
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8700.00	12.96	63.24	8569.07	353.38	700.89
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8900.00	11.67	63.24	8764.47	372.59	738.98
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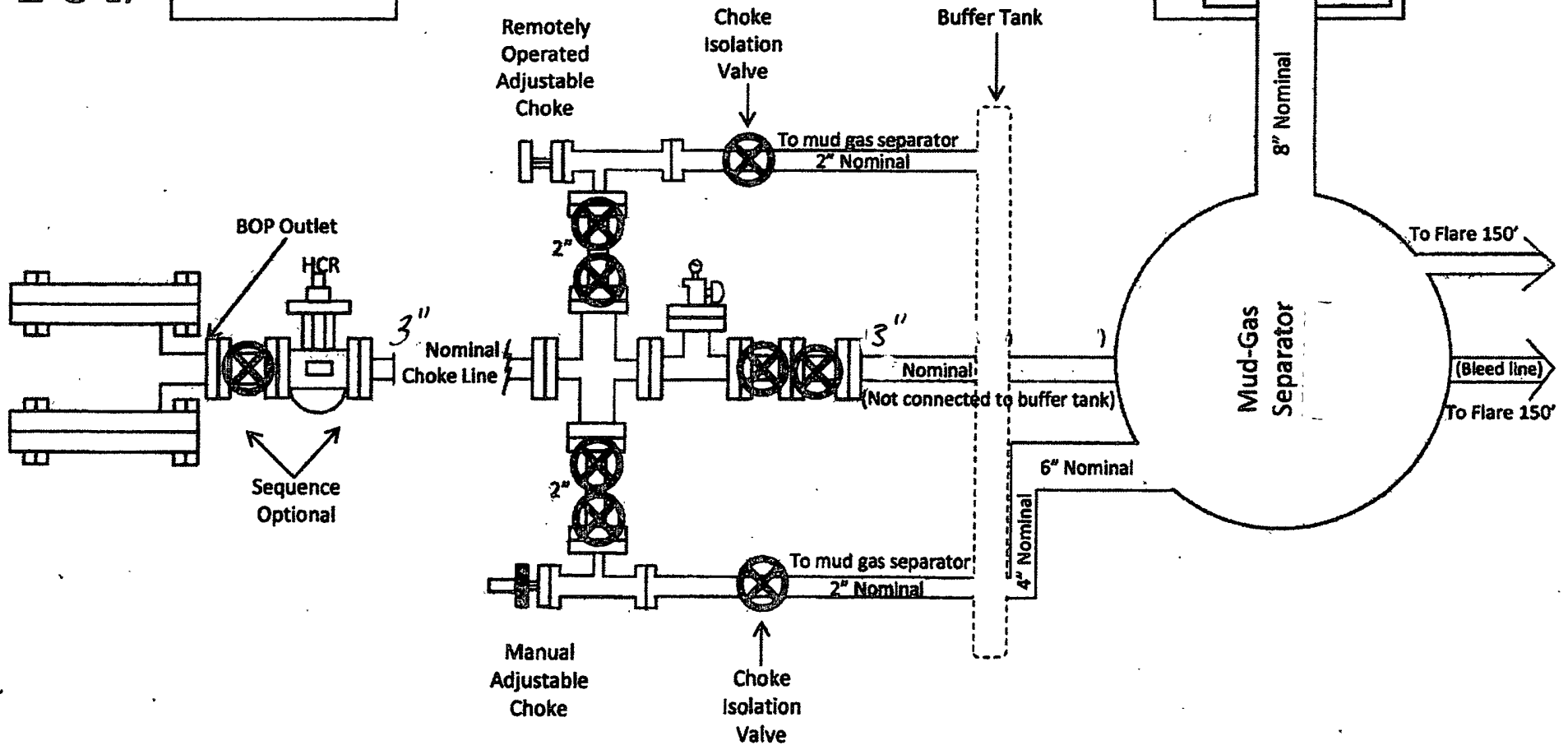
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11600.00	0.00	0.00	11451.98	455.27	902.97
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11900.00	0.00	0.00	11751.98	455.27	902.97
12000.00	0.00	0.00	11851.98	455.27	902.97
12100.00	0.00	0.00	11951.98	455.27	902.97
12200.00	0.00	0.00	12051.98	455.27	902.97
12300.00	0.00	0.00	12151.98	455.27	902.97
12400.00	0.00	0.00	12251.98	455.27	902.97
12500.00	0.00	0.00	12351.98	455.27	902.97
12600.00	0.00	0.00	12451.98	455.27	902.97
12700.00	0.00	0.00	12551.98	455.27	902.97
12800.00	0.00	0.00	12651.98	455.27	902.97
12900.00	0.00	0.00	12751.98	455.27	902.97
13000.00	0.00	0.00	12851.98	455.27	902.97
13100.00	0.00	0.00	12951.98	455.27	902.97
13200.00	0.00	0.00	13051.98	455.27	902.97
13300.00	0.00	0.00	13151.98	455.27	902.97
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13600.00	0.00	0.00	13451.98	455.27	902.97
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# LONGVIEW DEEP FED 6-22

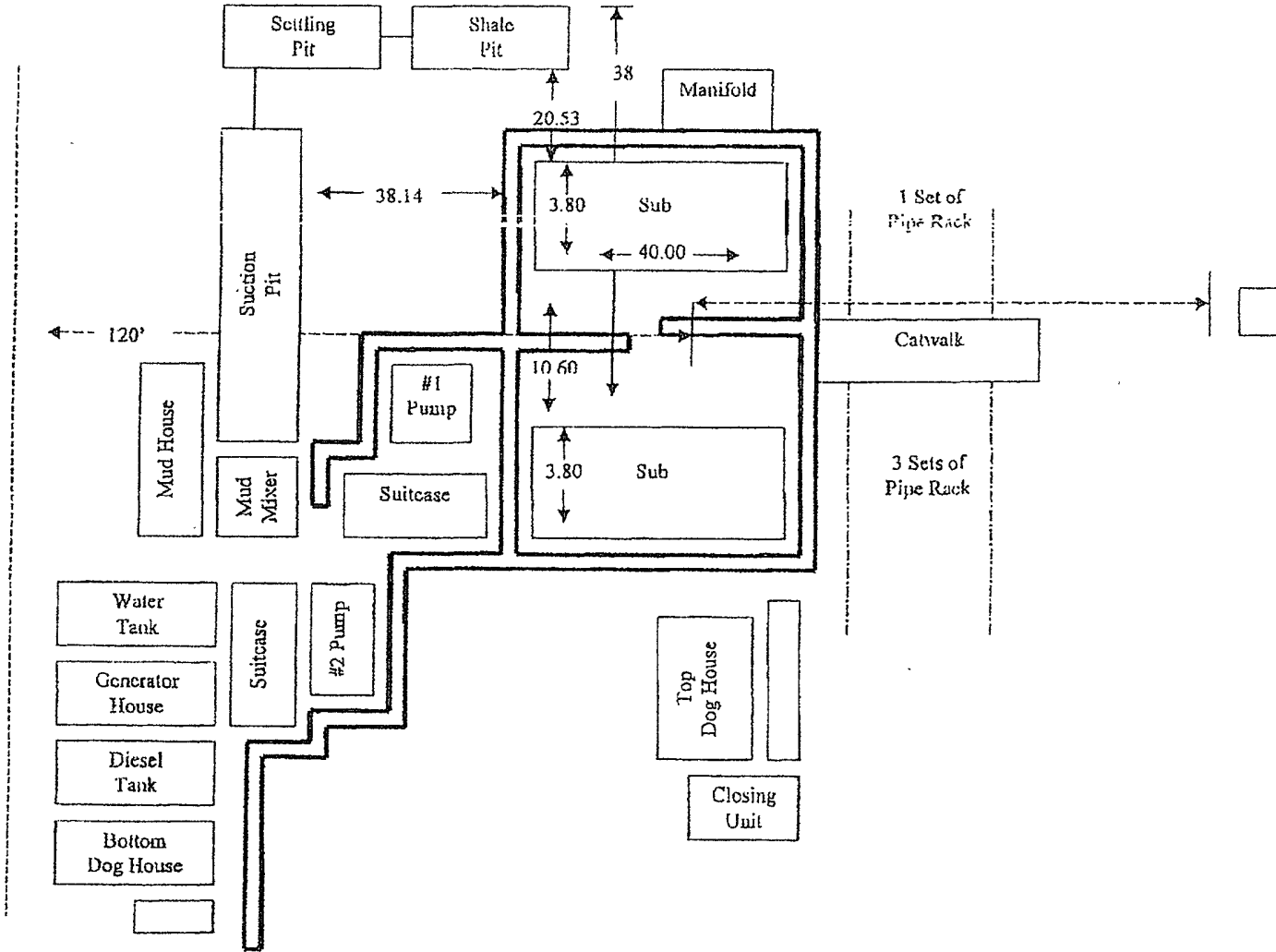


**Drilling Operations  
Choke Manifold  
5M Service**

Exhibit E-1 -- Choke Manifold Diagram



# 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.



# **RKI Exploration & Production**

## **HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY DRILLING PLAN**

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 & Production will have a company representative available to rig personnel throughout the drilling and production operations. If hydrogen sulfide is detected or suspected, monitoring equipment will be acquired for monitoring and or testing.

### **GENERAL H<sub>2</sub>S 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)

All communication will be via two-way radio or cell phone.

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 H<sub>2</sub>S**

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 an upwind "safe area". Maintain strict security and safety procedures while dealing with the source.
5. No entry to any unauthorized personnel
6. Notify the appropriate agencies.
7. Call NMOCD

If at this time the supervising person determines the release of the H<sub>2</sub>S cannot be contained to the site location and the general public is in danger 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)**

RKI Exploration & Production	1-800-667-6958
Frank Collins	575-725-9334
Gene Simer	575-706-3225
Lonnie Catt	575-202-1444
Brent Umberham	405-623-5080
Tim Haddican	405-823-2872

**EMERGENCY RESPONSE NUMBERS**

State Police	Eddy County	575-748-9718
State Police	Lea County	575-392-5588
Sheriff	Eddy County	575-746-2701
Emergency Medical	Eddy County	911 or 505-746-2701
Ambulance	Lea County	911 or 505-394-3258
Emergency Response	Eddy County SERC	575-476-2701
Carlsbad Police Dept		575-885-2111
Carlsbad Fire Dept		575-885-3125
Loco Hills Police Dept		575-677-2349
Jal Police Dept		575-395-2501
Jal Fire Dept		575-394-3258
Jal Abulance		575-395-2221
NMOCD	District 1 (Lea, Roosevelt, Curry)	575-393-6161
	District 2 (Eddy, Chavez)	575-392-2973
Baker	Artesia	575-746-3140
Halliburton	Artesia	1-800-523-2482
	Hobbs	1-800-523-2482
ParFive	Artesia	575-748-1288
Wild Well Control	Midland	432-550-6202

## **PROTECTION OF THE GENERAL PUBLIC**

1. 100 ppm at any public area (any place not associated with this site)
2. 500 ppm at any public road (any road the general public may travel)
3. 100 ppm radius of ¼ mile in New Mexico will be assumed if there is insufficient data to calculate radius of exposure and there is reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture.

## **CALCULATION FOR THE 100 PPM (ROE) "PASQUILL-GIFFFORD EQUATION**

$$X = ((1.589)(\text{mole fraction})(Q - \text{volume in scf}))^{0.6258}$$

## **CALCULATION FOR THE 500 PPM (ROE)**

$$X = ((.4546)(\text{mole fraction})(Q - \text{volume in scf}))^{0.6258}$$

Example:

A well is 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 mcf/d

150 ppm

$$X = ((1.589)(150/100,000)(100,000))^{0.6258} = 7 \text{ ft}$$

500 ppm

$$X = ((.4546)(500/100,000)(100,000))^{0.6258} = 3.3 \text{ ft}$$

These calculations will be forwarded to the appropriate NMOCD office when applicable

## **PUBLIC EVACUATION PLAN**

1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
2. 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 of exposure. This person will determine the outer perimeter of the hazardous area. The extent of the evaluation area will be determined from the data being collected.
3. 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 supervisor shall stay in communications with all agencies through the duration of the situation and inform them when the situation has been contained and the affected area(s) is safe to enter.

## **IGNITION OF THE GAS**

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
3. Two people are required. They must be equipped with positive pressure, self-contained breathing apparatus and "D" ring style full body, OSHA approved safety harness. Non-flammable rope will be attached.
4. 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.
5. Ignite up wind from a distance no closer than necessary. Before igniting, make a final check of combustible gases.
6. Following ignition, continue with the emergency actions and procedures as before.

## Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air= 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air= 1	2ppm	N/A	1000 ppm

### **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 with radio communications.

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 and Flagging

One color cod condition sign will be placed at the entrance to the site indicating possible conditions at the site

A colored conditions flag will be on display, indicating the conditions at the site at the time

#### 3. Briefing Area (see attachment)

#### 4. Wind Socks

Two windsocks will be placed in strategic locations, visible from all angles

#### 5. H<sub>2</sub>S 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 is being discharged

#### 6. Auxiliary Rescue Equipment and misc.

Stretcher  
Two OSHA full body harnesses  
100 ft. 5/8" OSHA approved rope  
1 – 20# class ABC fire extinguisher  
Communication via cell phones on location and vehicles on location  
Flare gun/flares

## **Well Control Equipment**

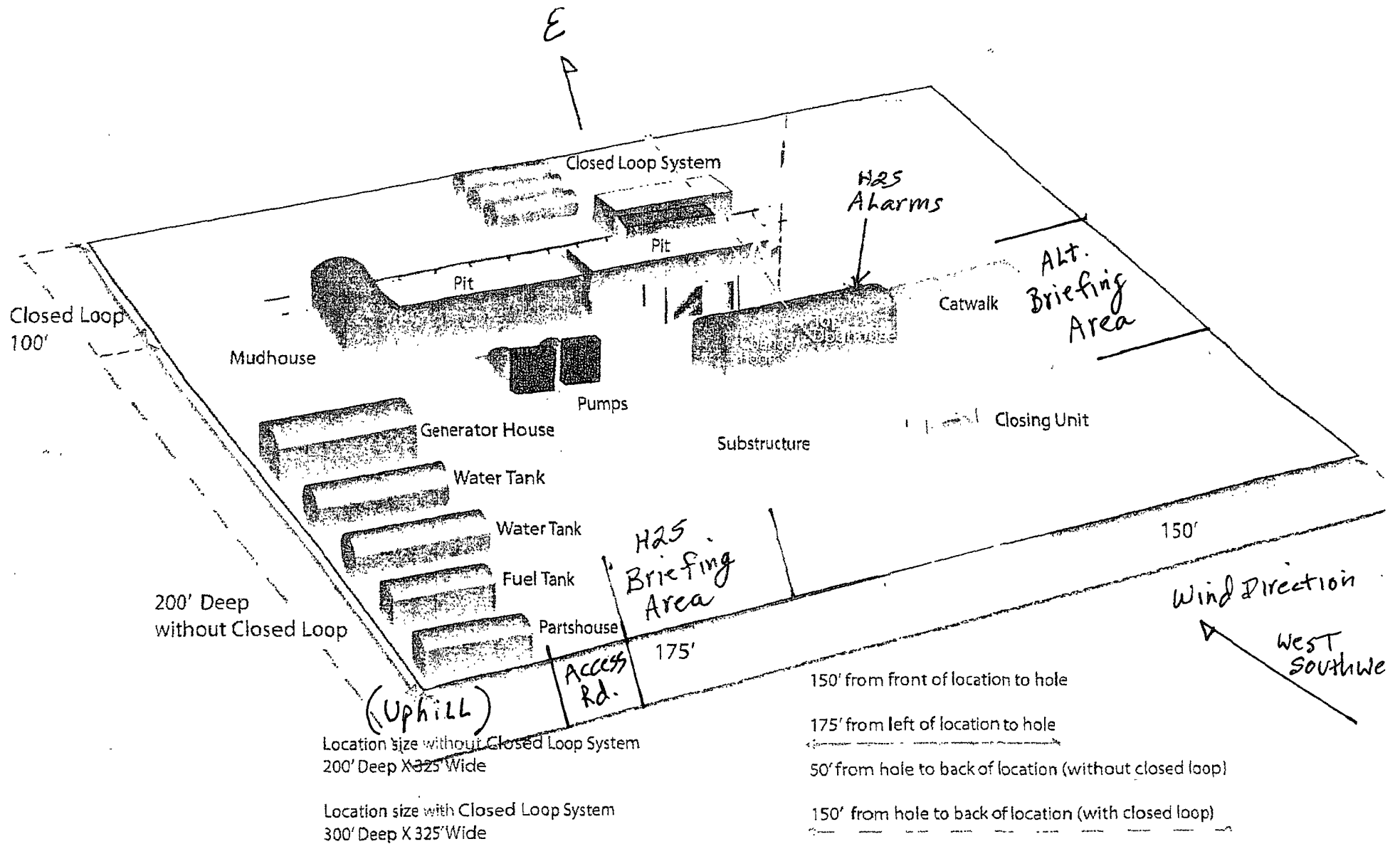
### **1. BOP Equipment**

- . 5,000 psi blowout preventer (pipe and blind rams)
- 5,000 psi annular preventer
- 5,000 psi rotating head
- 5,000 choke manifold (equipped with hydraulic choke)
- Mud/gas separator
- Flare stack with solar powered igniter (with battery backup igniter) 150' from the well

## **Mud info and H2S Operating Mud Conditions**

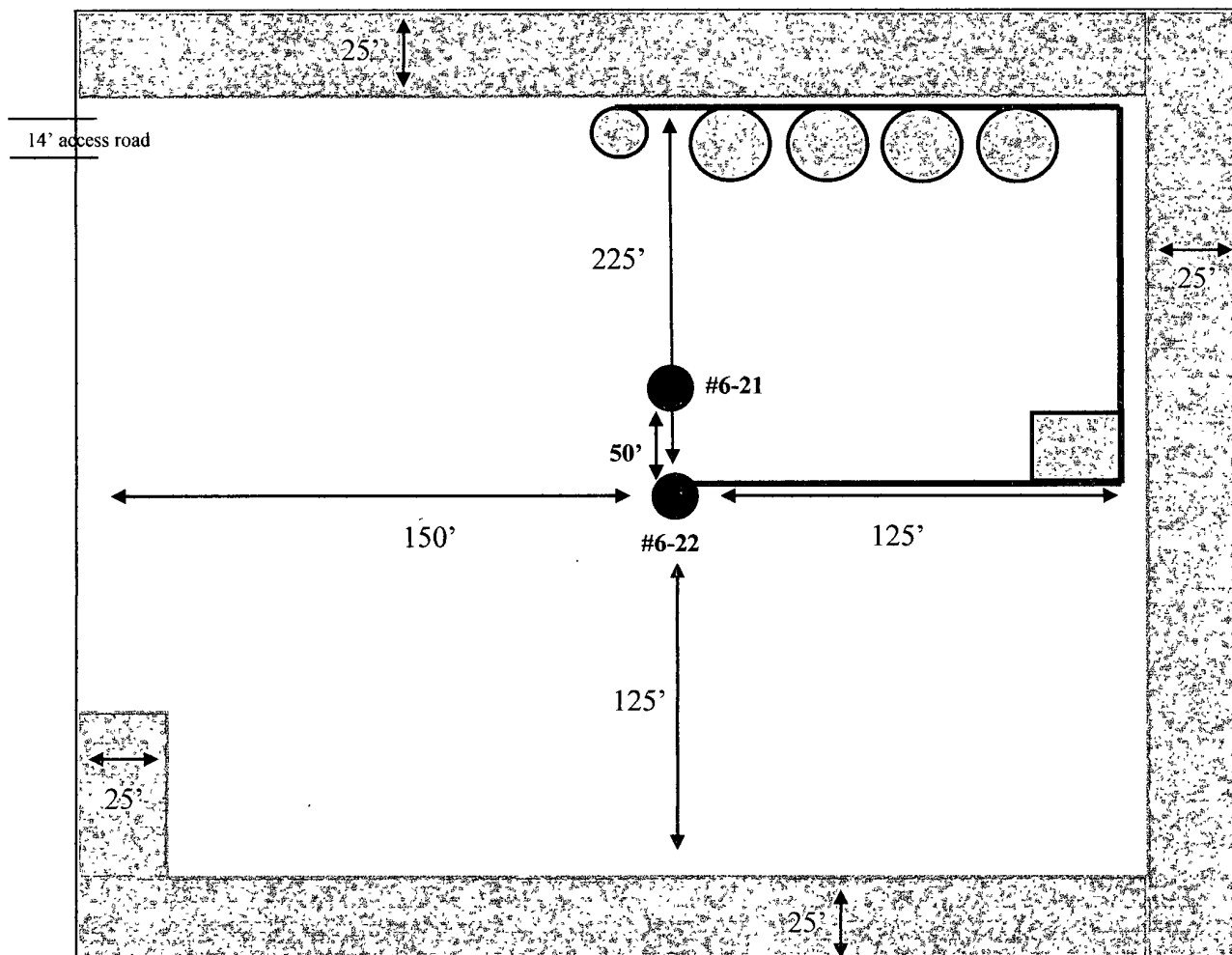
Though no H<sub>2</sub>S is anticipated during the drilling operation, this contingency plan will provide for methods to ensure the well is kept under control in the event an H<sub>2</sub>S reading of 100 ppm or more are encountered. Once personnel are safe and the proper protective gear is in place and on personnel, the operator and rig crew essential personnel will ensure the well is under control, suspend drilling operations and shut-in the well (unless pressure build up or other operational situations dictate suspending operations will prevent well control), increase the mud weight and circulate all gas from the hole utilizing the mud/gas separator downstream of the choke, the choke manifold and the emergency flare system located 150' from the well. Bring the mud system into compliance and the H<sub>2</sub>S level below 10 ppm, then notify all emergency officers that drilling ahead is practical and safe. Proceed with drilling ahead only after all provisions of Onshore Order 6, Section III.C. have been satisfied. Mud will be a fresh water/brine system with the proper H<sub>2</sub>S scavengers on location and utilized when necessary. Mud pH will also be kept at a level to minimize sulfide stress cracking and embrittlement when H<sub>2</sub>S is present in the mud system.

# H2S Briefing Areas & Alarm Locations



# EXHIBIT C

## Interim Reclamation & Production Facilities LONGVIEW DEEP FEDERAL 6-22 V-DOOR SOUTH



### LEGEND



Well Bore



Topsoil



Interim Reclamation



Berm



Production Facilities



NORTH

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI EXPLORATION
LEASE NO.:	NM61349
WELL NAME & NO.:	22-LONGVIEW DEEP FEDERAL 6
SURFACE HOLE FOOTAGE:	1880' FNL & 0200' FEL, Sec. 1, T. 23 S., R. 28 E.
BOTTOM HOLE FOOTAGE:	1400' FNL & 0700' FEL Sec. 6, T. 23 S., R. 29 E.
LOCATION:	Section 1, T. 23 S., R 28 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.

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- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Pad restrictions
  - Berming
- ☐ **Construction**
  - Notification
  - V-Door Direction
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
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- ☒ **Drilling**
  - Casing Depth Change
  - H2S Requirements
  - Logging Requirements
  - Secretary's Potash
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☒ **Interim Reclamation**
- ☒ **Final Abandonment & Reclamation**