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Form 100-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

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

5. Lease Serial No.
NM 932230

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
Madera 19 Fed Com 4H (40212)

9. API Well No.
20-025-41492 (97597)
10. Field and Pool or Exploratory
JABALINA; DELAWARE, SW

11. Sec., T. R. M. or Blk. and Survey or Area
Sec. 19, T-26S, R-35E

12. County or Parish
Lea County

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator RMR Operating LLC

3a. Address 2515 McKinney Avenue Suite 900
Dallas, TX 75201

3b. Phone No. (include area code)
214-871-0400

4. Location of Well (Report location clearly and in accordance with any State requirements*)

At surface 330' FSL & 1980' FWL of Sec.19, T-26S, R-35E (N)

At proposed prod. zone 2310' FSL & 1980' FWL of Sec.18, T-26S, R-35E (K)

14. Distance in miles and direction from nearest town or post office*
18 miles southwest of Jal, New Mexico

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)
SHL 330'
BHL 2310'

16. No. of acres in lease
960 acres

17. Spacing Unit dedicated to this well
240 acres

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

19. Proposed Depth
TVD: 9098' MD: 18130'
16112

20. BLM/BIA Bond No. on file
Closed
NMB 000780 NMB 800818
NMB 8001053

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3190.0 GL, 3213.0 KB

22. Approximate date work will start*
Oct 1, 2013

23. Estimated duration
35 days

24. Attachments

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

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

25. Signature

Name (Printed/Typed)
Tommy W. Folsom

Date
07/25/2013

Title

Exec. VP and Director of E&P

Approved by (Signature)

/S/ STEPHEN J. CAFFEY

Name (Printed/Typed)

Date
NOV - 1 2013

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

NOV 07 2013

**RMR Operating, LLC
Drilling Program
Madera 19 Federal Com #4H**

Surface Location: 330' FNL & 1980' FWL, Unit N
Section 19, T-26S, R-35E

Bottom Hole Target: 2310' FSL & 1980' FWL, Unit K
Section 18, T-26-S, R-35-E
Lea County, New Mexico

Planned AFE Total Depth: no pilot hole Kick Off at 8,620'
9098' TVD / 16,130' MD

Geologic Name of Surface Formation - Quaternary

ESTIMATED RIG ELEVATION: 3207' KB (3184' GL) (23' KB-GL)

ESTIMATED FORMATION TOPS:

<u>FORMATION</u>	<u>TVD</u>	<u>SUBSEA</u>
Quaternary	20'	3200'
Surface Fresh Water	230'	2990'
Rustler	1082'	2131'
Salado Salt	1250'	1970'
Base Salt	5077'	-1857'
Delaware	5369'	-2156'
Bell Canyon	5410'	-2197'
Cherry Canyon	6630'	-3417'
Brushy Canyon	7857'	-4644'
Brushy Canyon "B"	8790'	-5577'
Brushy Canyon "D"	8943'	-5730'
Approx. Landing Depth "D" TVD	9098'	-5914'
Pilot Hole TD		
Total Measured Depth in Lateral, MD	16112'	

All of the Delaware from 5,369' to the proposed TVD and to the end of the lateral at 16,130' is potentially hydrocarbon producing formation.

CASING PROGRAM:

- CONDUCTOR Hole Size 26"

SIZE	WEIGHT	GRADE	CONN	MD/RKB	COLL Design factor	INT YLD Design factor	TENS Design Factor
20"	LP	N/A		100'	0-----	0-----	0-----

- SURFACE CASING Hole Size 17 1/2"

See COA

SIZE	WEIGHT	GRADE	CONN	MD	COLL Design factor	INT YLD Design factor	TENS Design factor
13-3/8"	54.5 ppf	J-55	ST&C	1140' 0' - 1162'	1.87	4.51	7.59

- INTERMEDIATE CASING Hole Size 12 1/4"

See COA

SIZE	WEIGHT	GRADE	CONN	MD	COLL Design factor	INT YLD Design Factor	TENS Design Factor
9-5/8"	40.0 ppf	N-80	LT&C	532A' 0' - 5,369'	1.18	2.06	4.2

- PRODUCTION CASING Hole Size 8 3/4"

SIZE	WEIGHT	GRADE	CONN	MD	COLL Design factor	INT YLD Design factor	TENS Design Factor
5 1/2"	17 ppf	HCP-110	GBCD	0' - 16,112'	2.18	2.28	3.55

The 5 1/2" 17# HPC 110 casing has drift of 4.767 – Collapse Pressure is 8,580 psi, Internal Yield is 10,640 psi, It yield strength 725,000 (lbs/ft), Body yield strength 568,000 (lbs/ft), Yield Torque 17.031 (ft/lbs), Bending Strength (°/100 ft/ 83.3). The casing will be set off bottom of the lateral.

All casing used and listed on this project is new casing.

MUD PROGRAM:

Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %
0-1,162'	SPUD	8.4-9.6	32-34	N/C	10.0	3-6K	3-8

Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %
1,162- 5,369 1	BR	10	28	N/C	10	186K	.5-.75

Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %
5,369- 16,000 16112	CB	8.6-9.0	28	N/C	10	40-100K	.5-.75

Per the BLM, mud system monitoring equipment (PVT), with rig floor indicators and visual and audio alarms, must be in operation and must remain in use until the production casing is ran

The necessary mud products for weight control and fluid loss control will be on location at all times.

MUD LOGGING:

Mud logging unit (two-man) rigged up and logging before 4000' to pick the Delaware for casing point. Collect one set of washed samples each 10 ft. all the way to TD unless directed differently by Geologist Jack Bradley.

LOGGING PROGRAM:

Cased hole GR Neutron from 8900' to surface

DRILLSTEM TESTS / CORES:

N/A

Cement Program

1. All cement volumes exceed 25% excess

13-3/8" Surface: **Lead:** 705 sacks ExtendaCem-CZ, mixed at 13.50 Weight, 1.75 Yield, 9.20 gps mixing water
Tail: 370 sacks HalCem - C + 2% CaCl, mixed at 14.80 Weight, 1.35 Yield, 6.39 gps mixing water.

9-5/8" 1st Intermediate: **Lead:** 1500 sacks EconCem – HLC + 5% salt + 5 pps Gilsonite, mixed at 12.90 Weight, 1.88 Yield, 9.61 gps mixing water.
Tail: 250 sacks HalCem –C, mixed at 14.80 Weight, 1.33 Yield, 6.34 gps mixing water

5 1/2" Production **1st Stage** 8800' MD, Hydraulic stage tool. Lead cement 475 sks EconoCem –HLH 3% salt, 2 lbm/sk Kol-Seal (lost Circulation Additive) Weight 12.9, Slurry 1.84, 9.68 gps mixing water.
Tail in with 255 sks VersaCem – H, 6% Halad – 9 (Low Fluid Loss Control), 2.87 lbm/sk KCL, .2% HR-800 (Retarder)

See
COA

2nd Stage 5700' MD, Mechanical stage tool. Lead cement 280 sks EconoCem – HCL, Weight 12.6, Slurry 1.89, 10.31 gps mixing water,

2000' calculated fill.

Tail in with 120 Sks HalCem – C, Weight 14.8, Slurry 1.33, 6.34 gpm mixing water. Calculated fill 500'

The 5 1/2" production string will be cemented from 8800' the lower DV tool up to 5,700' the upper DV tool and then cemented from that stage to 3,200' in a two stage cementing job. The casing will be set off bottom of horizontal to allow for first stage. The Lateral will not be cemented, and will be completed as a packer isolation, ported open hole completion system. The DV tools and cement will be drilled out and the hole cleaned out before completing and fracing the open hole completion system.

Top of cement ALL casing strings

1. Surface 0'
2. Intermediate 0'
3. Production 3,200'
4. Actual cement volumes will be adjusted based on fluid caliper

PRESSURE CONTROL EQUIPMENT

8-3/4" VERTICAL HOLE SECTION 5,329' to 8,571'

8 -3/4" CURVE AND LATERAL HOLE SECTION 8,571' to 15,776' 16,112

Nipple up 13-5/8" 5M BOP equipment with DSA back to 11" 5M wellhead. Use one 24" spool (verify height required) below mud cross to add height required for installing C-section later. Test BOP and choke manifold to 250 psi low, 5000 psi high with 3rd party tester (per the BLM). Test annular to 250 psi low, ~~2500~~ ²⁵⁰⁰ psi high. Hold tests for 10 minutes if a test plug is used, 30 minutes if no test plug is used. If pressure drops more than 10%, test will be considered a failure and corrective action will be required.

Minimum Specifications for Pressure Control Equipment

BLOWOUT PREVENTION DESIGN: The blow out prevention (BOP) system will consist of a bag type annular preventer, a double ram preventer and a rotating head. Both the Annular and Ram stack will be hydraulically operated. Both BOP systems will be rated at 5000 psi. The double ram preventer will be equipped with blind rams on top and pipe rams on bottom. The mentioned 5000 psi BOP systems will be installed on 13-3/8" casing and will be tested with independent testers before drilling out the associated casing shoe. Prior to drilling out the 9-5/8" shoe the BOP's and Annular will be tested as per BLM Drilling Operations Order #2.

The rams system will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into a drilling spool below the BOP. In addition to the rams and annular, other BOP accessories include a Kelly cock, floor safety valve, choke lines and choke manifold rated at 5000 psi.

Auxiliary Well Control and Monitoring Equipment

- a) A Kelly cock will be in a drill string at all times
- b) A full opening drill pipe stabbing valve having the appropriate connections will be on rig floor at all times
- c) Hydrogen Sulfide detection equipment will be in operation after drilling out 13-3/8" casing shoe until the 5-1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13-3/8" shoe until total depth is reached.

Potential Hazards

No abnormal pressures or temperatures are expected. There is no 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 3900 psi and estimated BHT 135°, No H₂S is anticipated to be encountered.

ANTICIPATED STARTING DATE AND DURATION OF OPERATION

Road and location construction will begin after BLM has approved the APD. Anticipated spud date will be as soon as BLM approval and as soon as rig will be available. Move in operations and drilling is expected to take 55 days. If production casing is run then an additional 90 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

The path of this proposed Lateral is 980' from the Madera 19 Federal #1 surface hole location at Sec. 19, T-26S, R-35E 1980' FSL and 1,000' FWL, and a gyro will not be required on this well.

Drilling Fluids Program

Madera 19 Federal Com #4H

Sec. 19, T-26-S, R-34-E,
Lea County, NM

RMR Operating, LLC

2515 McKinney Ave., Ste. 900
Dallas, TX 75201

Mr. Tommy Folsom

Executive VP & Director of E&P

"The Nova Difference"



Recommended Drilling Fluids Program

RMR Operating, LLC * Madera 19 Federal Com # 4H * Sec. 19, T-26-S, R-34-E, Lea County, NM

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
0' - 1,082'	Surface Conglomerates	Red Bed, Red sandstone, FW sands	Swelling, mud rings, differential sticking
1,082' - 1,162'	Rustler	Anhydrite	Casing seat
1,162' - 1,250'	Rustler	Anhydrite w/sand stringers, Limestone	
1,250' - 5,077'	Salt	Salt	Hole dissolution, key seats, hole cleaning, deviation
5,077' - 5,369'	Salt, Base	Salt, limestone base	
5,369' - 5,410'	Delaware	Sand	Seepage
5,410' - 6,630'	Bell Canyon	Sand	Seepage
6,630' - 7,857'	Cherry Canyon	Sand	
7,857' - 8,620'	Brushy Canyon	Sand	
8,620' - 8,790'	Brushy Canyon	Sand	KOP
8,790' - 9,013'	Brushy Canyon B	Sand	
9,013' - 9,098'	Brushy Canyon D	Sand	Horizontal Target

Recommended Drilling Fluids Program

RMR Operating, LLC * Madera 19 Federal Com # 4H * Sec. 19, T-26-S, R-34-E,
Lea County, NM

Projected Mud Properties

INTERVAL: 0 - 1,162'									
1,162' TVD		17.5" hole				13.375" csg			
Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
0-1,162'	SPUD	8.4-9.6	32-34	N/C	10.0	3-6K	3-8		
INTERVAL: 1,162 - 5,369'									
5,369' TVD		12.25" hole				9.625" csg			
Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
1,162-5,369'	BR	10.0	28	N/C	10.0	186K	.5-.75		
INTERVAL: 5,369 - 8,620'									
8,620' TVD		8.75" hole							
Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
5,369-8,620'	CB	8.6-9.0	28	N/C	10.0	40-90K	.5-.75		
INTERVAL: 8,620 - 16,130'									
9,098' TVD		8.75" hole				5.5" csg			
Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
8,620-9,050'	CB	8.6-9.0	28	N/C	10.0	40-100K	.5-.75		
9,050-16,130'	CB/POLY	8.7-9.3	36-40	15-12cc	10.0	40-100K	.75-3.0		

INTERVAL: 0 - 1,162'		17.5" hole	2 days	13.375" csg	1 drill bits	
Product	Function	Treatment	Unit Size	Usage	Unit Price	Total Price
Fiber Seal	LCM, sealant	As needed	40 #	10	\$15.95	\$159.50
Fresh Gel	Viscosifier	10-12 ppb	50 #	120	\$5.17	\$620.40
Ground Paper	Seepage and sweeps	1-3 sacks per 100 feet	30 #	15	\$10.56	\$158.40
Lime	pH additive	.5 ppb	50 #	10	\$7.15	\$71.50
Pallets	Storage aid		1 each	5	\$18.00	\$90.00
Plastic	Storage aid	1 roll for tarp	1 roll	1	\$63.75	\$63.75
Shrink Wrap	Storage aid	Cover mud	1 each	45	\$22.00	\$990.00
Soda Ash	Calcium remover	1 sack per 15 sacks of	50 #	10	\$15.20	\$152.00
Interval Total:					\$2,305.55	

Projected Mud Properties

Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
0-1,162'	SPUD	8.4-9.6	32-34	N/C	10.0	3-6K	3-8		

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
0' - 1,082'	Surface Conglomerates	Red Bed, Red sandstone, FW sands	Swelling, mud rings, differential sticking
1,082' - 1,162'	Rustler	Anhydrite	Casing seat

Interval Notes for 0 - 1,162

Spud with a conventional Fresh Gel/Soda Ash/Caustic slurry using Fresh Water.

Maintain the viscosity as needed to clean the hole.

Use the jet and dilute method of solids control to keep the weight below 9.4 ppg.

Use Ground Paper sweeps periodically to control seepage and aid in hole cleaning.

Should losses occur add 6-12 ppb of various LCM's to the system or mix viscous (40-50) Fresh Gel pills containing LCM to regain returns.

Should several attempts fail we would recommend dry drilling to total depth and sweeping the hole with viscous pills or polymers.

NOTE: A comprehensive corrosion program is recommended on this project. Nova Mud, Inc. carries a full line of chemicals and can provide coupons and service.

NOTE 2: For closed systems we recommend lower initial volumes to allow for dilution. The reduction of sweeps to necessary only, lowering of equipment discharges to below fluid level to reduce foaming and tandem shakers to accommodate volumes and increase productivity of solids control equipment.

RMR Operating, LLC * Madera 19 Federal Com # 4H * Sec. 19, T-26-S, R-34-E, Lea County, NM

INTERVAL: 1,162 - 5,369'		12.25" hole	5 days	9.625" csg	1 drill bits	
Product	Function	Treatment	Unit Size	Usage	Unit Price	Total Price
Fiber Seal		As needed	40 #	20	\$15.95	\$319.00
Ground Paper		1-3 sacks per 200 feet	30 #	10	\$10.56	\$105.60
Lime		.5 ppb	50 #	30	\$7.15	\$214.50
PHPA/MF-55		1 gal. slug as needed for sweep	5 gal.	10	\$106.75	\$1,067.50
Salt Gel		18-20 ppb in sweeps	50 #	250	\$10.56	\$2,640.00
Interval Total:						\$4,346.60

Projected Mud Properties

Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
1,162-5,369'	BR	10.0	28	N/C	10.0	186K	.5-.75		

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
1,162' - 1,250'	Rustler	Anhydrite w/sand stringers, Limestone	Hole dissolution, key seats, hole cleaning, deviation
1,250' - 5,077'	Salt	Salt	
5,077' - 5,369'	Salt, Base	Salt, limestone base	

Interval Notes for 1,162 - 5,369

Drill out from surface with Brine.

Adjust the pH to 10.0 with Lime.

Use Ground Paper sweeps periodically to control seepage and enhance hole cleaning.

Viscous (50-60) Salt Gel pills may be necessary to clean the hole.

Small amounts of PHPA should be used as needed to flocculate fine drill solids and to clean the hole.

Add 6-10 ppb of various fibrous LCM's to the viscous pills to control more severe losses.

At total depth sweep and spot viscous (50-60) Salt Gel pills to ensure a clean hole for logging and/or casing operations.

INTERVAL: 5,369 - 8,620'		8.75" hole	8 days	1 drill bits		
Product	Function	Treatment	Unit Size	Usage	Unit Price	Total Price
CSF/Fiber Fluid	LCM, sealant	6-15 ppb	25 #	20	\$34.32	\$686.40
Fiber Seal	LCM, sealant	6-15 ppb	40 #	20	\$15.95	\$319.00
Ground Paper	Seepage and sweeps	1-3 sacks per 200 feet	30 #	40	\$10.56	\$422.40
Lime	pH additive	.5 ppb	50 #	50	\$7.15	\$357.50
PHPA/MF-55	Hole sweep, flocculant	1 gal. slug as needed for sweep	5 gal.	15	\$106.75	\$1,601.25
Salt Gel	Hole sweep	18-20 ppb in sweeps	50 #	220	\$10.56	\$2,323.20
Interval Total:					\$5,709.75	

Projected Mud Properties

Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
5,369-8,620'	CB	8.6-9.0	28	N/C	10.0	40-90K	.5-.75		

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
5,369' - 5,410'	Delaware	Sand	Seepage
5,410' - 6,630'	Bell Canyon	Sand	Seepage
6,630' - 7,857'	Cherry Canyon	Sand	
7,857' - 8,620'	Brushy Canyon	Sand	

Interval Notes for 5,369 - 8,620

Drill out from intermediate casing with Cut Brine.

Adjust the pH to 10.0 with Lime.

Maintain the weight with additions of Brine and/or Fresh Water.

Continue to use Ground Paper pills to clean the hole and control seepage.

Small amounts of PHPA may be used for sweeps and to flocculate fine drill solids.

Use viscous (50-60) Salt Gel pills as needed to clean the hole.

Should losses occur add 6-15 ppb of various LCM's to the pills to regain returns.

KOP for lateral hole is 8,620'.

INTERVAL: 8,620 - 16,130'		8.75" hole	22 days	5.5" csg	4 drill bits	
Product	Function	Treatment	Unit Size	Usage	Unit Price	Total Price
Caustic Soda	pH additive	.25 ppb	50 #	50	\$38.50	\$1,925.00
Defoamer	Defoamer	As needed	5 gal.	10	\$70.30	\$703.00
Flozan	Hole sweep, viscosifier	.75 -1.0 ppb in pills	25 #	80	\$199.92	\$15,993.60
Graphite	Lubricant	1-4 ppb in sweeps	50 #	100	\$43.92	\$4,392.00
INC-9001	Biocide	As needed	5 gal.	15	\$151.20	\$2,268.00
KCL-2%	Inhibitive Mud System	As needed	1 bbl	600	\$18.00	\$10,800.00
PAC-R	Filtrate control	.5 ppb or as needed	50 #	30	\$210.00	\$6,300.00
Slicker 555	Lubricant	As needed	55 gal.	10	\$1,000.00	\$10,000.00
Soda Ash	Calcium remover	As needed	50 #	100	\$15.20	\$1,520.00
STC (biocide)	Biocide	As needed	5 gal.	20	\$106.40	\$2,128.00

Interval Total: **\$56,029.60**

Projected Mud Properties

Depth	Mud Type	M W - ppg	Vis	Fil	pH	Cl - ppm	Sol %		
8,620-9,050'	CB	8.6-9.0	28	N/C	10.0	40-100K	.5-.75		
9,050-16,130'	CB/POLY	8.7-9.3	36-40	15-12cc	10.0	40-100K	.75-3.0		

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
8,620' - 8,790'	Brushy Canyon	Sand	KOP
8,790' - 9,013'	Brushy Canyon B	Sand	
9,013' - 9,098'	Brushy Canyon D	Sand	Horizontal Target

Interval Notes for 8,620 - 16,130

Kick off with the existing system.

Begin the curve at a build rate of 12 degrees/100' to be lateral by 9,098' TVD and 9,335' MD.

Adjust the pH to 10.0 with Caustic.

Use viscous Xanthan Gum pills to clean the hole and add lubricity.

Continue to use PHPA to flocculate fine solids and aid in hole cleaning.

At 65 degrees of inclination or 9,050 MD begin the mud up.

Reduce total hardness to below 200 ppm with Soda Ash.

Add biocide as needed to prevent bacteria growth.

Add Xanthan Gum to achieve a 36-40 viscosity and use PAC to lower the filtrate to 15-12cc or less.

Adjust the viscosity and filtrate as needed.

Some Defoamer may be needed to prevent aeration of the pumps.

Periodically use higher viscosity pills built from the active system to aid in hole cleaning.

To aid in torque reduction, we suggest adding 1-3% by volume of a metal plating lubricant and 1-4 ppb of graphite to the pills.

Should torqued become excessive, it may be necessary to increase the concentration of lubrication in the entire system.

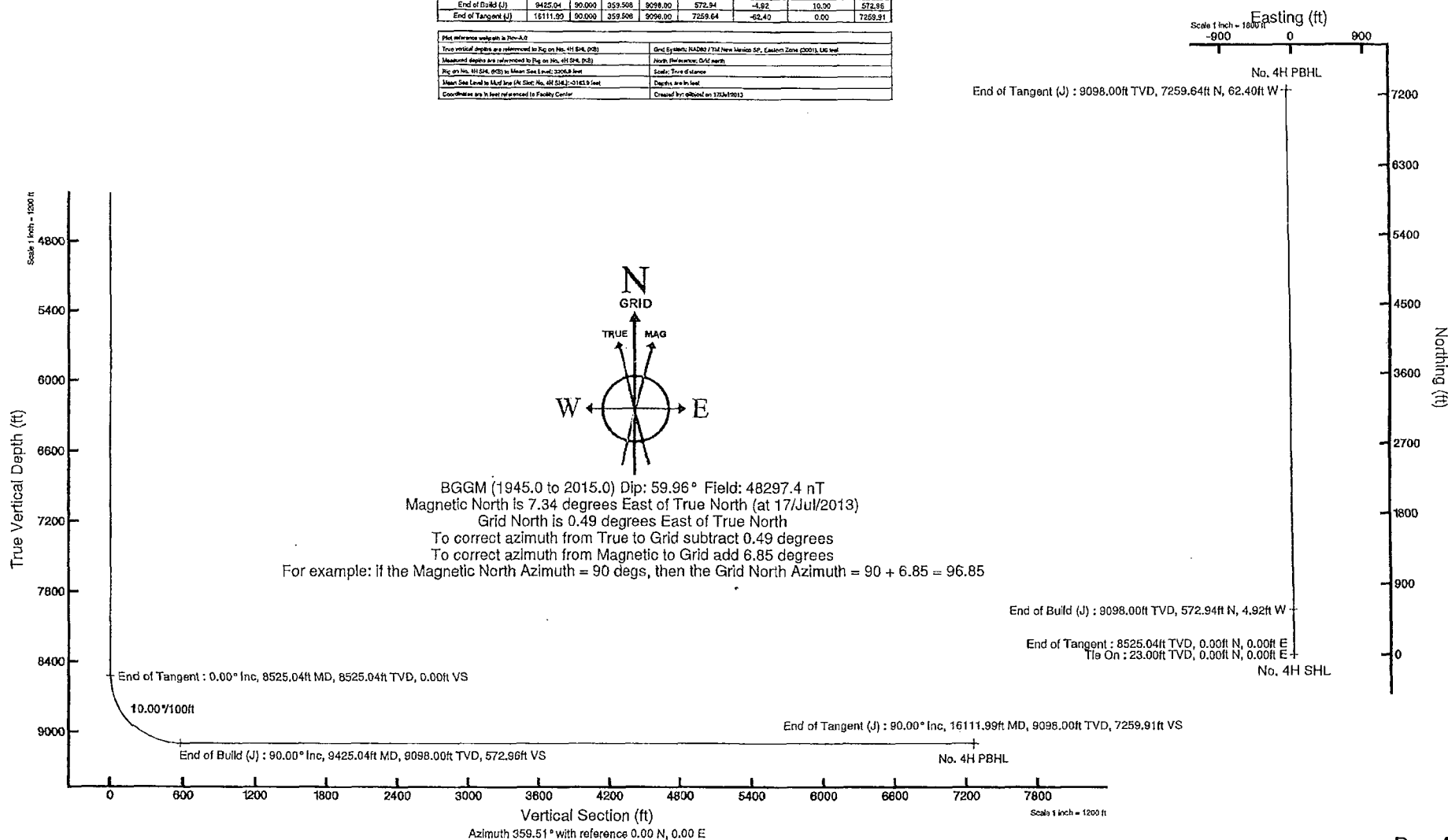
Continue with viscous pills as needed and use high rpm, high gpm clean out cycles to

Slot: No. 4H SHL
Well: No. 4H
Wellbore: No. 4H PWB



Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (ft/100ft)	VS (ft)
Tile On	23.00	0.000	359.508	23.00	0.00	0.00	0.00	0.00
End of Tangent	8525.04	0.000	359.508	8525.04	0.00	0.00	0.00	0.00
End of Build (J)	9425.04	90.000	359.508	9098.00	572.94	-4.92	10.00	572.95
End of Tangent (J)	16111.00	90.000	359.508	9098.00	7259.64	-62.40	0.00	7259.93

Plot reference number is 700-A-2	Grid System: NAD83 / TM 83 NAD83 SP, Eastern Zone (2001), UTM
True vertical depths are referenced to Peg on No. 41 (S4, D3)	North reference: Grid north
Measured depths are referenced to Peg on No. 41 (S4, D3)	Scale: True distance
Peg on No. 41 (S4, D3) is Mean Sea Level; 3206.8 feet	Depths are in feet
Mean Sea Level to Muddy line (at Site No. 41 S4-3) - 3183.9 feet	Created by software on 1/21/2009 11:15
Coordinates are in feet and reported in English format	



Rev-A.0

☒ No Operator
logo

Planned Wellpath Report

Rev-A.0

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REFERENCE WELLPATH IDENTIFICATION

Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gilbjosl
Scale	1	Report Generated	17/Jul/2013 at 9:58:18 AM
Convergence at slot	0.49° East	Database/Source file	WA Midland/No._4H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W
Facility Reference Pt			827888.47	373138.66	32°01'20.884"N	103°24'31.435"W
Field Reference Pt			823834.56	372454.20	32°01'14.452"N	103°25'18.587"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 4H SHL (KB) to Facility Vertical Datum	23.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 4H SHL (KB) to Mean Sea Level	3206.90ft
Vertical Reference Pt	Rig on No. 4H SHL (KB)	Rig on No. 4H SHL (KB) to Mud Line at Slot (No. 4H SHL)	23.00ft
MD Reference Pt	Rig on No. 4H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.51°

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REFERENCE WELLPATH IDENTIFICATION

Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	359.508	0.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
23.00	0.000	359.508	23.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Tie On
123.00†	0.000	359.508	123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
223.00†	0.000	359.508	223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
323.00†	0.000	359.508	323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
423.00†	0.000	359.508	423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
523.00†	0.000	359.508	523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
623.00†	0.000	359.508	623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
723.00†	0.000	359.508	723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
823.00†	0.000	359.508	823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
923.00†	0.000	359.508	923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1023.00†	0.000	359.508	1023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1082.00†	0.000	359.508	1082.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Rustler
1123.00†	0.000	359.508	1123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1162.00†	0.000	359.508	1162.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Surface casing
1223.00†	0.000	359.508	1223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1323.00†	0.000	359.508	1323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1423.00†	0.000	359.508	1423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1523.00†	0.000	359.508	1523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1623.00†	0.000	359.508	1623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1723.00†	0.000	359.508	1723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1823.00†	0.000	359.508	1823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
1923.00†	0.000	359.508	1923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2023.00†	0.000	359.508	2023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2123.00†	0.000	359.508	2123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2223.00†	0.000	359.508	2223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2323.00†	0.000	359.508	2323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2423.00†	0.000	359.508	2423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2523.00†	0.000	359.508	2523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2623.00†	0.000	359.508	2623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION

Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2723.00†	0.000	359.508	2723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2823.00†	0.000	359.508	2823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
2923.00†	0.000	359.508	2923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3023.00†	0.000	359.508	3023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3123.00†	0.000	359.508	3123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3223.00†	0.000	359.508	3223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3323.00†	0.000	359.508	3323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3423.00†	0.000	359.508	3423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3523.00†	0.000	359.508	3523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3623.00†	0.000	359.508	3623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3723.00†	0.000	359.508	3723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3823.00†	0.000	359.508	3823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
3923.00†	0.000	359.508	3923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4023.00†	0.000	359.508	4023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4123.00†	0.000	359.508	4123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4223.00†	0.000	359.508	4223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4323.00†	0.000	359.508	4323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4423.00†	0.000	359.508	4423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4523.00†	0.000	359.508	4523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4623.00†	0.000	359.508	4623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4723.00†	0.000	359.508	4723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4823.00†	0.000	359.508	4823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
4923.00†	0.000	359.508	4923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5023.00†	0.000	359.508	5023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5123.00†	0.000	359.508	5123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5223.00†	0.000	359.508	5223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5323.00†	0.000	359.508	5323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5369.00†	0.000	359.508	5369.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Lamar Lime (Intermediate Casing Point)
5410.00†	0.000	359.508	5410.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Delaware Sand
5423.00†	0.000	359.508	5423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5523.00†	0.000	359.508	5523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5623.00†	0.000	359.508	5623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5723.00†	0.000	359.508	5723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5823.00†	0.000	359.508	5823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
5923.00†	0.000	359.508	5923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6023.00†	0.000	359.508	6023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6123.00†	0.000	359.508	6123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6223.00†	0.000	359.508	6223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6323.00†	0.000	359.508	6323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6423.00†	0.000	359.508	6423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6523.00†	0.000	359.508	6523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6623.00†	0.000	359.508	6623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6630.00†	0.000	359.508	6630.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Cherry Canyon
6723.00†	0.000	359.508	6723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6823.00†	0.000	359.508	6823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
6923.00†	0.000	359.508	6923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7023.00†	0.000	359.508	7023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7123.00†	0.000	359.508	7123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7223.00†	0.000	359.508	7223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7323.00†	0.000	359.508	7323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7423.00†	0.000	359.508	7423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7523.00†	0.000	359.508	7523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7623.00†	0.000	359.508	7623.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7723.00†	0.000	359.508	7723.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7823.00†	0.000	359.508	7823.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
7857.00†	0.000	359.508	7857.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Brushy Canyon
7923.00†	0.000	359.508	7923.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
8023.00†	0.000	359.508	8023.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
8123.00†	0.000	359.508	8123.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
8223.00†	0.000	359.508	8223.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION

Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8323.00†	0.000	359.508	8323.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
8423.00†	0.000	359.508	8423.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
8493.00†	0.000	359.508	8493.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	Brushy Canyon "C" Sandstone Pay
8523.00†	0.000	359.508	8523.00	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	
8525.01†	0.000	359.508	8525.01	0.00	0.00	0.00	827888.47	373138.66	32°01'20.884"N	103°24'31.435"W	0.00	End of Run (J)
8623.00†	9.796	359.508	8622.52	8.35	8.35	-0.07	827888.40	373147.01	32°01'20.967"N	103°24'31.435"W	10.00	
8723.00†	19.796	359.508	8719.09	33.86	33.86	-0.29	827888.18	373172.52	32°01'21.219"N	103°24'31.435"W	10.00	
8800.49†	27.545	359.508	8790.00	64.94	64.94	-0.56	827887.91	373203.60	32°01'21.527"N	103°24'31.435"W	10.00	Brushy Canyon "B" Sandstone Pay
8823.00†	29.796	359.508	8809.75	75.74	75.74	-0.65	827887.82	373214.40	32°01'21.634"N	103°24'31.435"W	10.00	
8923.00†	49.796	359.508	8891.57	192.74	192.74	-4.14	827886.72	373341.76	32°01'22.894"N	103°24'31.435"W	10.00	
9023.00†	49.796	359.508	8962.64	203.11	203.10	-1.75	827886.72	373341.76	32°01'22.894"N	103°24'31.435"W	10.00	
9108.95†	58.391	359.508	9013.00	272.66	272.65	-2.34	827886.13	373411.31	32°01'23.582"N	103°24'31.435"W	10.00	Brushy Canyon "D" Sandstone Pay (Main OBJ)
9123.00†	59.796	359.508	9020.21	284.71	284.70	-2.45	827886.02	373423.36	32°01'23.701"N	103°24'31.435"W	10.00	
9223.00†	69.796	359.508	9062.74	375.08	375.06	-3.22	827885.25	373513.72	32°01'24.596"N	103°24'31.435"W	10.00	
9323.00†	70.796	359.508	9088.04	475.15	475.14	-4.05	827884.22	373610.10	32°01'25.400"N	103°24'31.435"W	10.00	
9423.00†	89.796	359.508	9098.00	570.92	570.89	-4.91	827883.56	373709.55	32°01'26.533"N	103°24'31.435"W	10.00	
9425.04	90.000	359.508	9098.00	572.96	572.94	-4.92	827883.54	373711.60	32°01'26.554"N	103°24'31.435"W	10.00	End of Build (J)
9523.00†	90.000	359.508	9098.00	670.92	670.89	-5.77	827882.70	373809.55	32°01'27.523"N	103°24'31.435"W	0.00	
9623.00†	90.000	359.508	9098.00	770.92	770.89	-6.63	827881.84	373909.55	32°01'28.513"N	103°24'31.435"W	0.00	
9723.00†	90.000	359.508	9098.00	870.92	870.88	-7.49	827880.98	374009.54	32°01'29.502"N	103°24'31.435"W	0.00	
9823.00†	90.000	359.508	9098.00	970.92	970.88	-8.35	827880.12	374109.54	32°01'30.492"N	103°24'31.435"W	0.00	
9923.00†	90.000	359.508	9098.00	1070.92	1070.88	-9.20	827879.26	374209.54	32°01'31.481"N	103°24'31.435"W	0.00	
10023.00†	90.000	359.508	9098.00	1170.92	1170.87	-10.06	827878.40	374309.53	32°01'32.471"N	103°24'31.436"W	0.00	
10123.00†	90.000	359.508	9098.00	1270.92	1270.87	-10.92	827877.55	374409.53	32°01'33.460"N	103°24'31.436"W	0.00	
10223.00†	90.000	359.508	9098.00	1370.92	1370.86	-11.78	827876.69	374509.53	32°01'34.450"N	103°24'31.436"W	0.00	
10323.00†	90.000	359.508	9098.00	1470.92	1470.86	-12.64	827875.83	374609.52	32°01'35.439"N	103°24'31.436"W	0.00	
10423.00†	90.000	359.508	9098.00	1570.92	1570.86	-13.50	827874.97	374709.52	32°01'36.429"N	103°24'31.436"W	0.00	
10523.00†	90.000	359.508	9098.00	1670.92	1670.85	-14.36	827874.11	374809.51	32°01'37.418"N	103°24'31.436"W	0.00	
10623.00†	90.000	359.508	9098.00	1770.92	1770.85	-15.22	827873.25	374909.51	32°01'38.408"N	103°24'31.436"W	0.00	
10723.00†	90.000	359.508	9098.00	1870.92	1870.85	-16.08	827872.39	375009.51	32°01'39.397"N	103°24'31.436"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION

Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10823.00†	90.000	359.508	9098.00	1970.92	1970.84	-16.94	827871.53	375109.50	32°01'40.387"N	103°24'31.436"W	0.00	
10923.00†	90.000	359.508	9098.00	2070.92	2070.84	-17.80	827870.67	375209.50	32°01'41.377"N	103°24'31.436"W	0.00	
11023.00†	90.000	359.508	9098.00	2170.92	2170.84	-18.66	827869.81	375309.50	32°01'42.366"N	103°24'31.436"W	0.00	
11123.00†	90.000	359.508	9098.00	2270.92	2270.83	-19.52	827868.95	375409.49	32°01'43.356"N	103°24'31.436"W	0.00	
11223.00†	90.000	359.508	9098.00	2370.92	2370.83	-20.38	827868.09	375509.49	32°01'44.345"N	103°24'31.436"W	0.00	
11323.00†	90.000	359.508	9098.00	2470.92	2470.82	-21.24	827867.23	375609.49	32°01'45.335"N	103°24'31.436"W	0.00	
11423.00†	90.000	359.508	9098.00	2570.92	2570.82	-22.10	827866.37	375709.48	32°01'46.324"N	103°24'31.436"W	0.00	
11523.00†	90.000	359.508	9098.00	2670.92	2670.82	-22.96	827865.51	375809.48	32°01'47.314"N	103°24'31.436"W	0.00	
11623.00†	90.000	359.508	9098.00	2770.92	2770.81	-23.82	827864.65	375909.48	32°01'48.303"N	103°24'31.436"W	0.00	
11723.00†	90.000	359.508	9098.00	2870.92	2870.81	-24.68	827863.79	376009.47	32°01'49.293"N	103°24'31.436"W	0.00	
11823.00†	90.000	359.508	9098.00	2970.92	2970.81	-25.54	827862.93	376109.47	32°01'50.283"N	103°24'31.436"W	0.00	
11923.00†	90.000	359.508	9098.00	3070.92	3070.80	-26.40	827862.07	376209.46	32°01'51.272"N	103°24'31.436"W	0.00	
12023.00†	90.000	359.508	9098.00	3170.92	3170.80	-27.25	827861.21	376309.46	32°01'52.262"N	103°24'31.436"W	0.00	
12123.00†	90.000	359.508	9098.00	3270.92	3270.79	-28.11	827860.35	376409.46	32°01'53.251"N	103°24'31.436"W	0.00	
12223.00†	90.000	359.508	9098.00	3370.92	3370.79	-28.97	827859.50	376509.45	32°01'54.241"N	103°24'31.436"W	0.00	
12323.00†	90.000	359.508	9098.00	3470.92	3470.79	-29.83	827858.64	376609.45	32°01'55.230"N	103°24'31.436"W	0.00	
12423.00†	90.000	359.508	9098.00	3570.92	3570.78	-30.69	827857.78	376709.45	32°01'56.220"N	103°24'31.437"W	0.00	
12523.00†	90.000	359.508	9098.00	3670.92	3670.78	-31.55	827856.92	376809.44	32°01'57.209"N	103°24'31.437"W	0.00	
12623.00†	90.000	359.508	9098.00	3770.92	3770.78	-32.41	827856.06	376909.44	32°01'58.199"N	103°24'31.437"W	0.00	
12723.00†	90.000	359.508	9098.00	3870.92	3870.77	-33.27	827855.20	377009.44	32°01'59.188"N	103°24'31.437"W	0.00	
12823.00†	90.000	359.508	9098.00	3970.92	3970.77	-34.13	827854.34	377109.43	32°02'00.178"N	103°24'31.437"W	0.00	
12923.00†	90.000	359.508	9098.00	4070.92	4070.77	-34.99	827853.48	377209.43	32°02'01.168"N	103°24'31.437"W	0.00	
13023.00†	90.000	359.508	9098.00	4170.92	4170.76	-35.85	827852.62	377309.43	32°02'02.157"N	103°24'31.437"W	0.00	
13123.00†	90.000	359.508	9098.00	4270.92	4270.76	-36.71	827851.76	377409.42	32°02'03.147"N	103°24'31.437"W	0.00	
13223.00†	90.000	359.508	9098.00	4370.92	4370.75	-37.57	827850.90	377509.42	32°02'04.136"N	103°24'31.437"W	0.00	
13323.00†	90.000	359.508	9098.00	4470.92	4470.75	-38.43	827850.04	377609.41	32°02'05.126"N	103°24'31.437"W	0.00	
13423.00†	90.000	359.508	9098.00	4570.92	4570.75	-39.29	827849.18	377709.41	32°02'06.115"N	103°24'31.437"W	0.00	
13523.00†	90.000	359.508	9098.00	4670.92	4670.74	-40.15	827848.32	377809.41	32°02'07.105"N	103°24'31.437"W	0.00	
13623.00†	90.000	359.508	9098.00	4770.92	4770.74	-41.01	827847.46	377909.40	32°02'08.094"N	103°24'31.437"W	0.00	
13723.00†	90.000	359.508	9098.00	4870.92	4870.74	-41.87	827846.60	378009.40	32°02'09.084"N	103°24'31.437"W	0.00	

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REFERENCE WELLPATH IDENTIFICATION

Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

WELLPATH DATA (174 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13823.00†	90.000	359.508	9098.00	4970.92	4970.73	-42.73	827845.74	378109.40	32°02'10.073"N	103°24'31.437"W	0.00	
13923.00†	90.000	359.508	9098.00	5070.92	5070.73	-43.59	827844.88	378209.39	32°02'11.063"N	103°24'31.437"W	0.00	
14023.00†	90.000	359.508	9098.00	5170.92	5170.72	-44.45	827844.02	378309.39	32°02'12.053"N	103°24'31.437"W	0.00	
14123.00†	90.000	359.508	9098.00	5270.92	5270.72	-45.30	827843.16	378409.39	32°02'13.042"N	103°24'31.437"W	0.00	
14223.00†	90.000	359.508	9098.00	5370.92	5370.72	-46.16	827842.30	378509.38	32°02'14.032"N	103°24'31.437"W	0.00	
14323.00†	90.000	359.508	9098.00	5470.92	5470.71	-47.02	827841.45	378609.38	32°02'15.021"N	103°24'31.437"W	0.00	
14423.00†	90.000	359.508	9098.00	5570.92	5570.71	-47.88	827840.59	378709.37	32°02'16.011"N	103°24'31.437"W	0.00	
14523.00†	90.000	359.508	9098.00	5670.92	5670.71	-48.74	827839.73	378809.37	32°02'17.000"N	103°24'31.437"W	0.00	
14623.00†	90.000	359.508	9098.00	5770.92	5770.70	-49.60	827838.87	378909.37	32°02'17.990"N	103°24'31.437"W	0.00	
14723.00†	90.000	359.508	9098.00	5870.92	5870.70	-50.46	827838.01	379009.36	32°02'18.979"N	103°24'31.437"W	0.00	
14823.00†	90.000	359.508	9098.00	5970.92	5970.70	-51.32	827837.15	379109.36	32°02'19.969"N	103°24'31.437"W	0.00	
14923.00†	90.000	359.508	9098.00	6070.92	6070.69	-52.18	827836.29	379209.36	32°02'20.958"N	103°24'31.438"W	0.00	
15023.00†	90.000	359.508	9098.00	6170.92	6170.69	-53.04	827835.43	379309.35	32°02'21.948"N	103°24'31.438"W	0.00	
15123.00†	90.000	359.508	9098.00	6270.92	6270.68	-53.90	827834.57	379409.35	32°02'22.938"N	103°24'31.438"W	0.00	
15223.00†	90.000	359.508	9098.00	6370.92	6370.68	-54.76	827833.71	379509.35	32°02'23.927"N	103°24'31.438"W	0.00	
15323.00†	90.000	359.508	9098.00	6470.92	6470.68	-55.62	827832.85	379609.34	32°02'24.917"N	103°24'31.438"W	0.00	
15423.00†	90.000	359.508	9098.00	6570.92	6570.67	-56.48	827831.99	379709.34	32°02'25.906"N	103°24'31.438"W	0.00	
15523.00†	90.000	359.508	9098.00	6670.92	6670.67	-57.34	827831.13	379809.34	32°02'26.896"N	103°24'31.438"W	0.00	
15623.00†	90.000	359.508	9098.00	6770.92	6770.67	-58.20	827830.27	379909.33	32°02'27.885"N	103°24'31.438"W	0.00	
15723.00†	90.000	359.508	9098.00	6870.92	6870.66	-59.06	827829.41	380009.33	32°02'28.875"N	103°24'31.438"W	0.00	
15823.00†	90.000	359.508	9098.00	6970.92	6970.66	-59.92	827828.55	380109.32	32°02'29.864"N	103°24'31.438"W	0.00	
15923.00†	90.000	359.508	9098.00	7070.92	7070.65	-60.78	827827.69	380209.32	32°02'30.854"N	103°24'31.438"W	0.00	
16023.00†	90.000	359.508	9098.00	7170.92	7170.65	-61.64	827826.83	380309.32	32°02'31.843"N	103°24'31.438"W	0.00	
16111.99	90.000	359.508	9098.00†	7259.91	7259.64	-62.40	827826.07	380398.30	32°02'32.724"N	103°24'31.438"W	0.00	End of Tangent (J)

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Planned Wellpath Report

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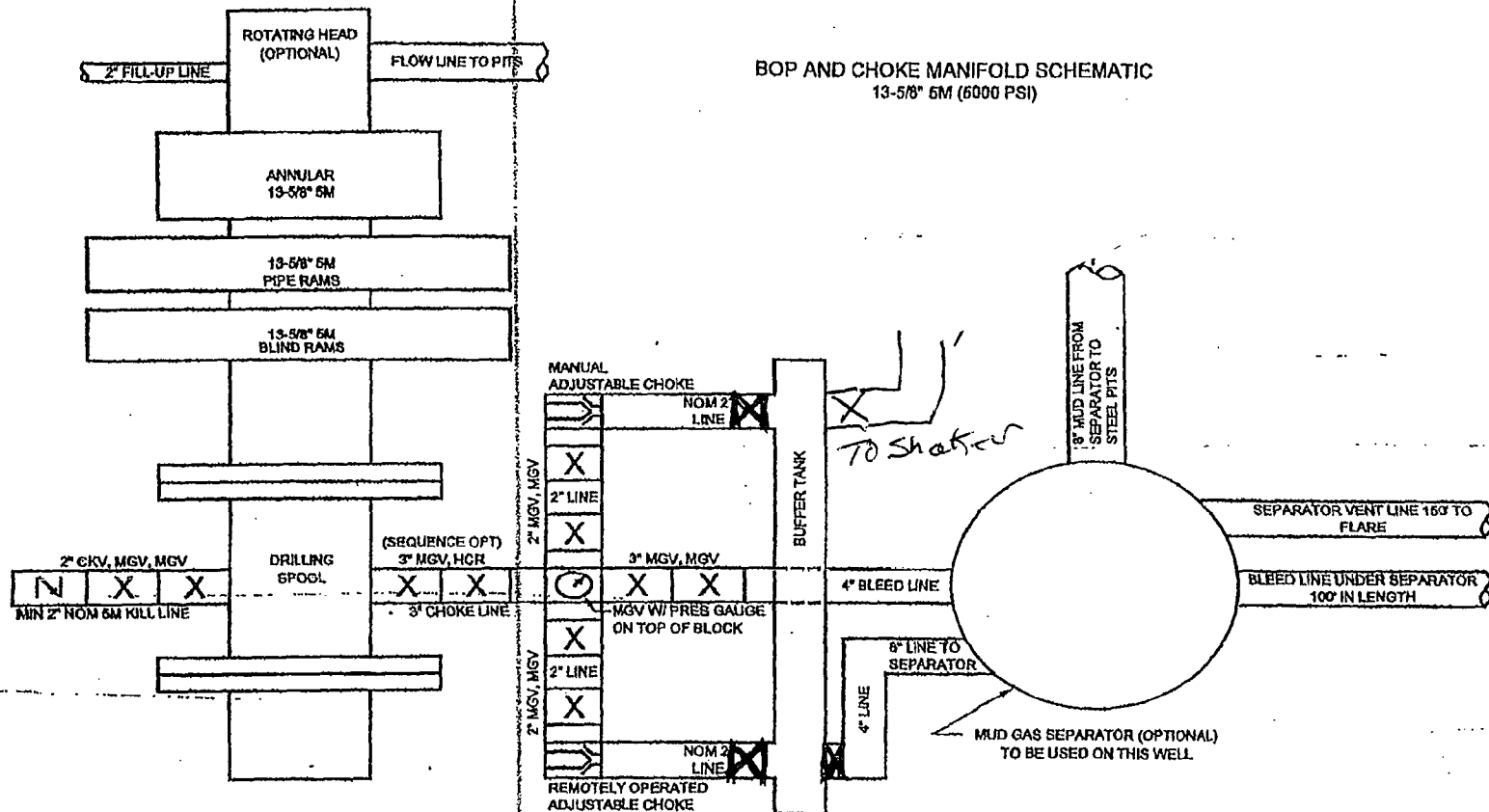
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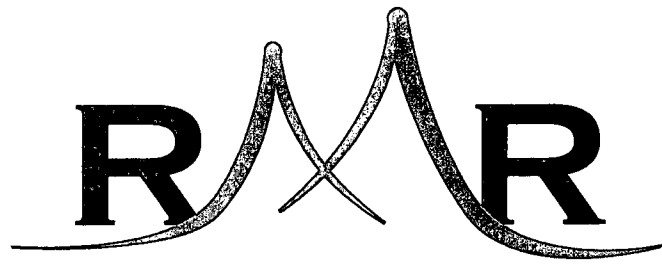
REFERENCE WELLPATH IDENTIFICATION			
Operator	Red Mountain Resources	Slot	No. 4H SHL
Area	Lea County, NM	Well	No. 4H
Field	(Madera)	Wellbore	No. 4H PWB
Facility	Madera 19 Federal 4H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No. 4H PBHL	16111.99	59098.00	725964	69240	827826.07	380598.50	32°02'32.724"N	103°24'51.498"W	point

SURVEY PROGRAM - Ref Wellbore: No. 4H PWB Ref Wellpath: Rev-A.0				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
23.00	16111.99	NaviTrak (Standard)		No. 4H PWB



NOTES
 MG - MANUAL GATE VALVE
 HCR - REMOTELY OPERATED HIGH CLOSING RATIO VALVE
 CKV - CHECK VALVE
 LINE SIZES GIVEN IN NOMINAL DIMENSIONS



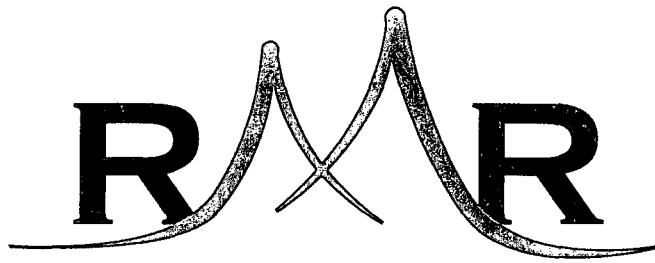
Closed Loop Mud System- RMR Operating, LLC

Madera "19" Federal Com #4H
Section 19, T26S, R35E
Lea County, New Mexico

Design

Drilling mud will circulate through a closed system consisting of steel pits on the surface, mud pumps, piping on the surface to the rotating head and return piping from the bell nipple back to the steel pits. Solids will be removed from the mud in the steel pits using for the following equipment:

1. 2 shale shakers will be installed with 110-250 mesh screens. These shale shakers should remove solids down to 65 micron diameter. All returning drilling mud will flow across the shale shakers.
2. A 6T4 mud cleaner will be installed to further remove solids to the 25 micron level. Drilling mud will be circulated through the mud cleaner using a 5x6x12 75 hp pump. This pump will generate the optimal pressure for the mud cleaner cones to process the solids.
3. A 518 centrifuge will pick up a portion of the effluent from the mud cleaner. The centrifuge will remove solids to the 10 micron level. The centrifuge will remove solids down to the 1 micron level after adding the dewatering unit, as discussed below.
4. A dewatering unit will add polymer to the flow stream entering the centrifuge to flocculate the solids. Flocculation increases the effective particle size of the solids enhancing the performance of the centrifuge to remove solids down to the 1 micron level.
5. Roll-off bins (20 cubic yards per bin) and rails will be installed next to the steel pits so that the solids removed from the shale shakers, mud cleaner and centrifuge fall directly into a bin. Once a bin is full it is picked up by a truck and hauled to disposal. An empty bin is moved under the solids control equipment along the rail so that the solids control equipment can operate continuously.



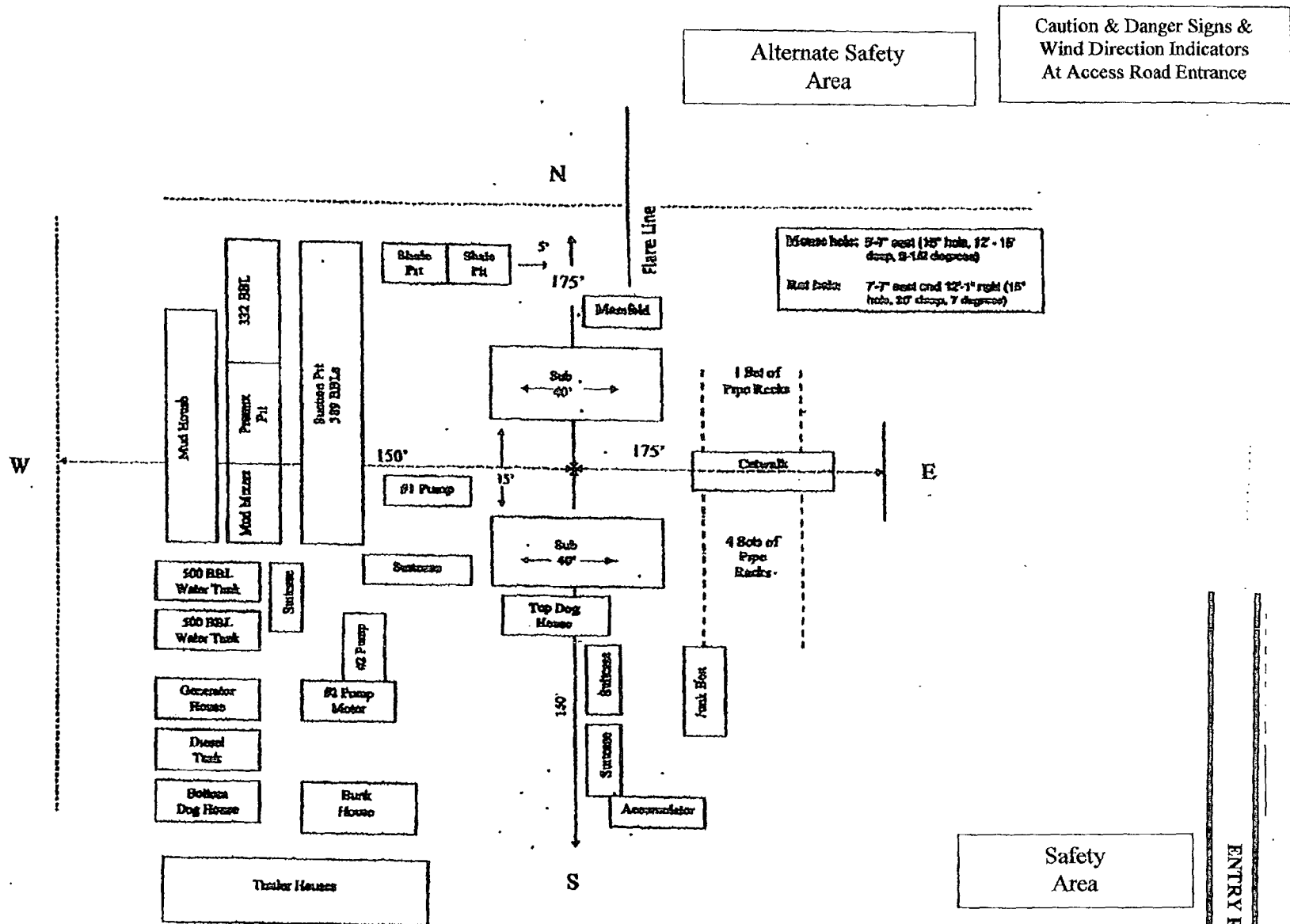
Operation and Maintenance

Personnel dedicated exclusively to operating and maintaining the solids control equipment will be on site 24 hours per day while drilling. The solids control personnel will monitor the shale shakers, mud cleaner, centrifuge, dewatering unit and all associated pumps and piping to make sure the equipment is functioning correctly. If equipment problems are identified, the solids control personnel will coordinate repair or replacement of the equipment. The solids control personnel will also monitor the level of solids in the roll-off bins and arrange for trucks to pick up the bins when they are filled.

Closure Plan

Cuttings and other solid will be hauled off to a permitted landfill according to OCD guidelines. Liquids will be re-used to the extent possible, but if liquids need to be disposed they will also be hauled to a permitted disposal facility. Liquids to be temporarily stored on site will be placed in 500 BBL "frac" tanks.

For the Madera "19" Federal Com #4H well, both solid waste and liquid waste will be taken to the Controlled Recovery, Inc. (CRI) "Halfway Facility" between Carlsbad and Hobbs NM-01-0006.



MADERA 19 FED COM #4H

*All personnel shall receive proper H2S training in
 Accordance with BLM 43 CFR 3160 Onshore Oil &
 Gas Order 6; Hydrogen Sulfide Operations,
 Section III. C.3.a.

Prevailing Winds from Northwest

ENTRY ROAD