

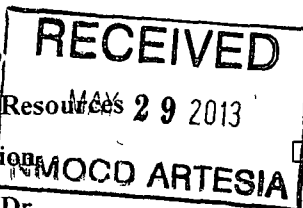
District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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



Form C-101
Revised November 14, 2012

☐ AMENDED REPORT

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

¹ Operator Name and Address CAZA OPERATING, LLC. 200 NORTH LORLAINE SUITE 1550 MIDLAND, TEXAS 79701		² OGRID Number 249099
³ Property Code 39924	⁴ Property Name MAD RIVER "13" STATE	⁵ API Number 30-015-41407
		⁶ Well No. 1H

⁷ Surface Location									
UL - Lot N	Section 13	Township 24S	Range 27E	Lot Idn	Feet from 330'	N/S Line SOUTH	Feet From 2310	E/W Line WEST	County EDDY

⁸ Proposed Bottom Hole Location									
UL - Lot C	Section 13	Township 24S	Range 27E	Lot Idn	Feet from 330'	N/S Line NORTH	Feet From 1980'	E/W Line WEST	County EDDY

⁹ Pool Information	
Pool Name WILLOW LAKE-BONE SPRING WEST	Pool Code 96415

Additional Well Information				
¹¹ Work Type N	¹² Well Type O	¹³ Cable/Rotary ROTARY	¹⁴ Lease Type S	¹⁵ Ground Level Elevation 3129' GL
¹⁶ Multiple NO	¹⁷ Proposed Depth MD-13,568'	¹⁸ Formation Bone Spring	¹⁹ Contractor UNKNOWN	²⁰ Spud Date WHEN APPROVED
Depth to Ground water 31'		Distance from nearest fresh water well .5 Miles		Distance to nearest surface water 1.25 Miles Black River

²¹ Proposed Casing and Cement Program						
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	17 1/2"	13 3/8"	48#	500'	355 Sx.	Surface
Inter.	12 1/4"	9 5/8"	36#	2400'	600 Sx.	Surface
Prod	8 3/4"	5 1/2"	17#	13,568'	2214 Sx.	Est. 1900 FFS

²² Casing/Cement Program: Additional Comments SEE ATTACHED SHEET
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²² Proposed Blowout Prevention Program			
Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000 PSI	1500 PSI	Cameron or Schaffer

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐ if applicable.

Signature: Joe T. Janica

Printed name: Joe T. Janica

Title: Permit Eng.

E-mail Address: joejanica@valornet.com

Date: 05/28/13

Phone: 575-391-8503

OIL CONSERVATION DIVISION

Approved By:

Title:

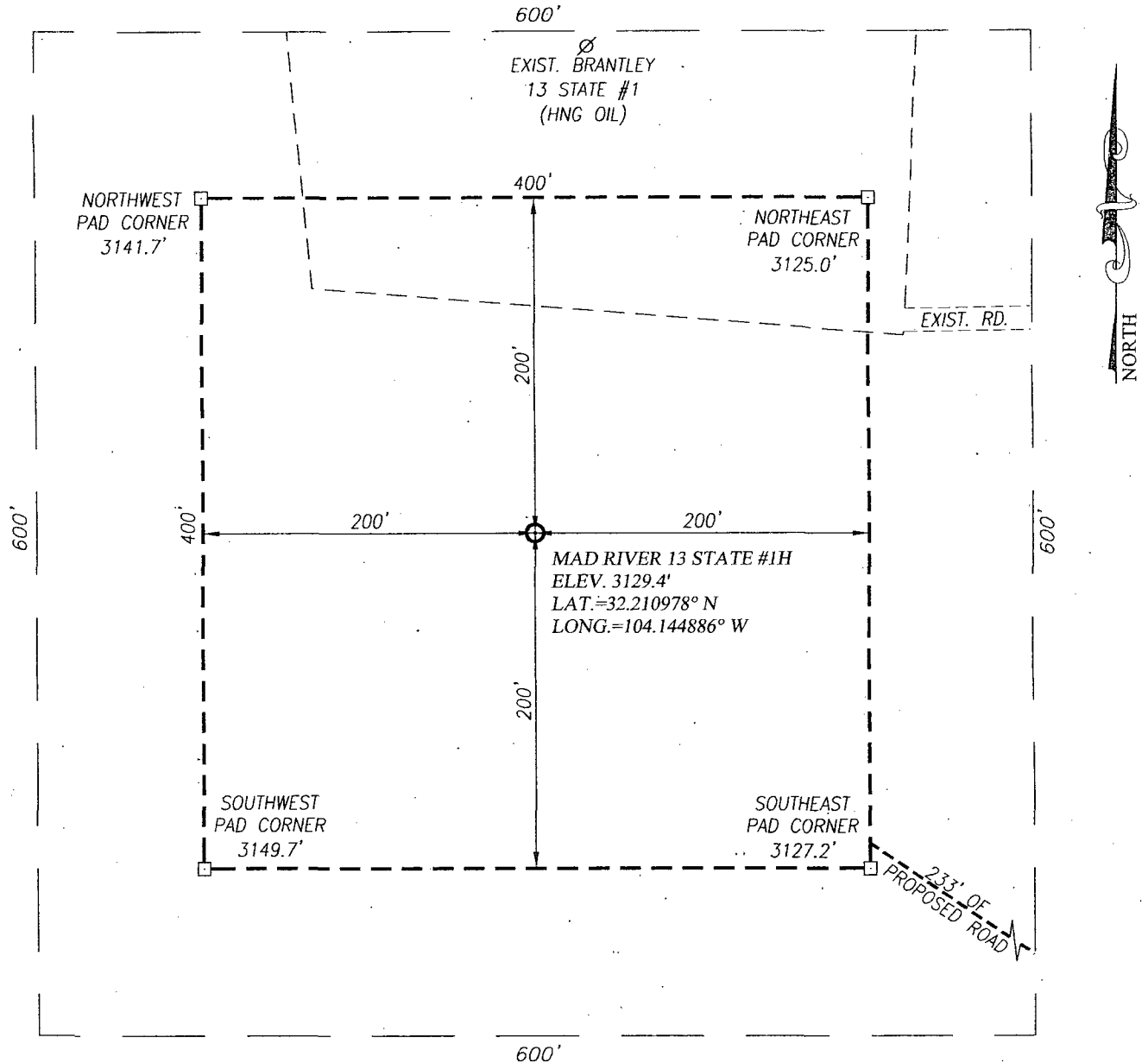
Approved Date:

Expiration Date:

Conditions of Approval Attached

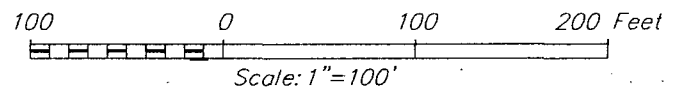
BKL JWSC W.O.: 13.1

SECTION 13, TOWNSHIP 24 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY **NEW MEXICO**



DIRECTIONS TO MAD RIVER 13 STATE #1H:

FROM THE INTERSECTION OF BLACK RIVER VILLAGE (CO. RD. 720) AND ROAD RUNNER (CO. RD. 774) GO SOUTHWEST ON ROAD RUNNER APPROX. 2.2 MILES; TURN RIGHT AND GO WEST APPROX. 0.15 MILES; VEER RIGHT AND CONTINUE NORTHWEST APPROX. 320 FEET; VEER RIGHT AND GO NORTH APPROX. 0.1 MILES. TURN LEFT AND GO WEST APPROX. 0.4 MILES TO A PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY NORTHWEST APPROX. 0.1 MILE TO THIS LOCATION.



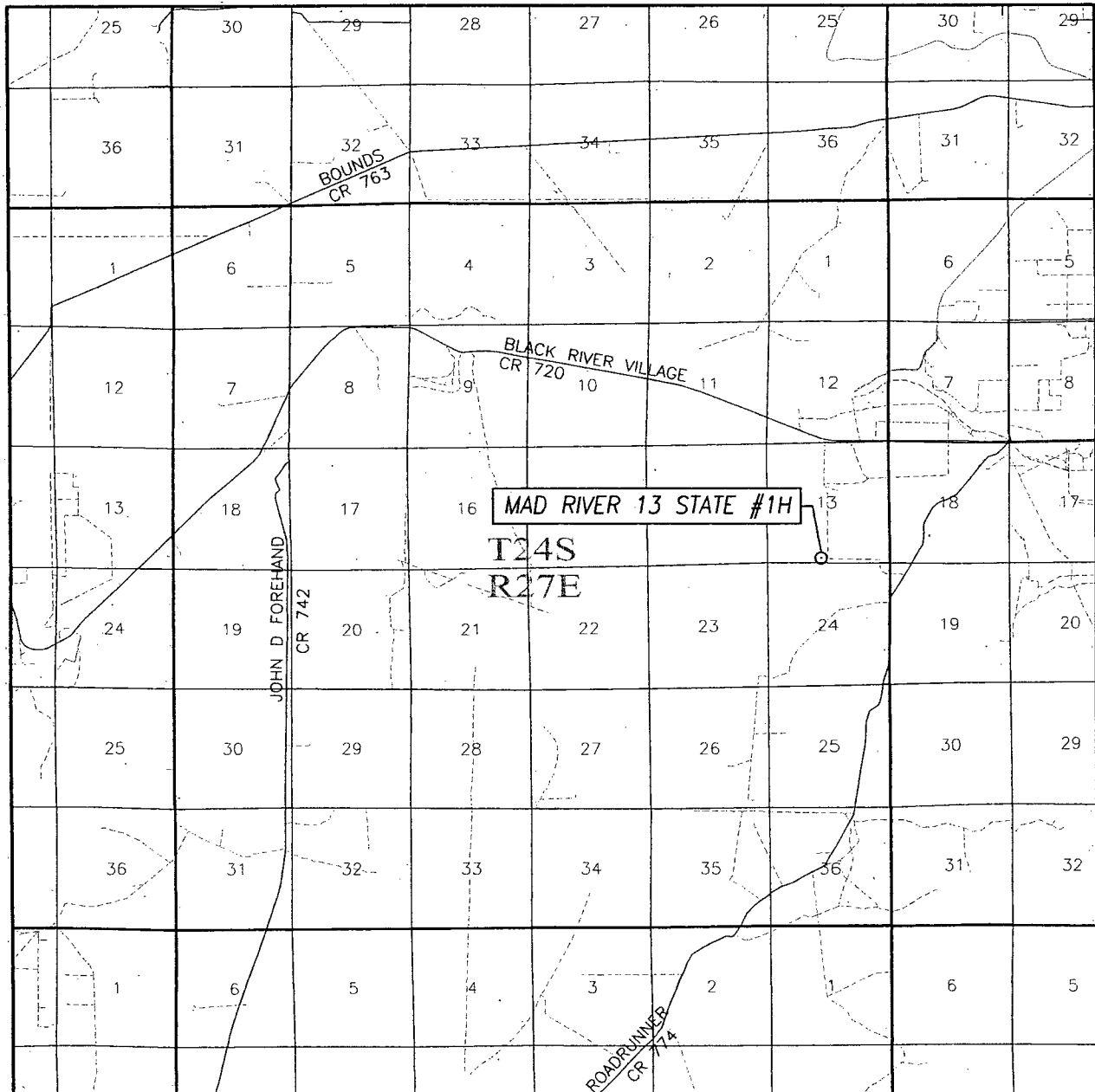
CAZA OPERATING, LLC

MAD RIVER 13 STATE #1H WELL
 LOCATED 330 FEET FROM THE SOUTH LINE
 AND 2310 FEET FROM THE WEST LINE OF SECTION 13,
 TOWNSHIP 24 SOUTH, RANGE 27 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (575) 393-3117 www.jwsc.biz

Survey Date: 4/24/13	CAD Date: 5/10/13	Drawn By: BKL
W.O. No.: 13110420	Rev: .	Rel. W.O.:
		Sheet 1 of 1

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 13 TWP. 24-S RGE. 27-E

SURVEY N.M.P.M.

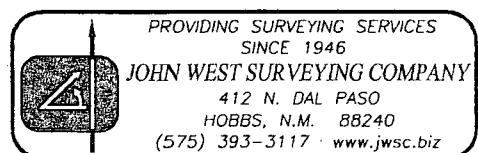
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FSL & 2310' FWL

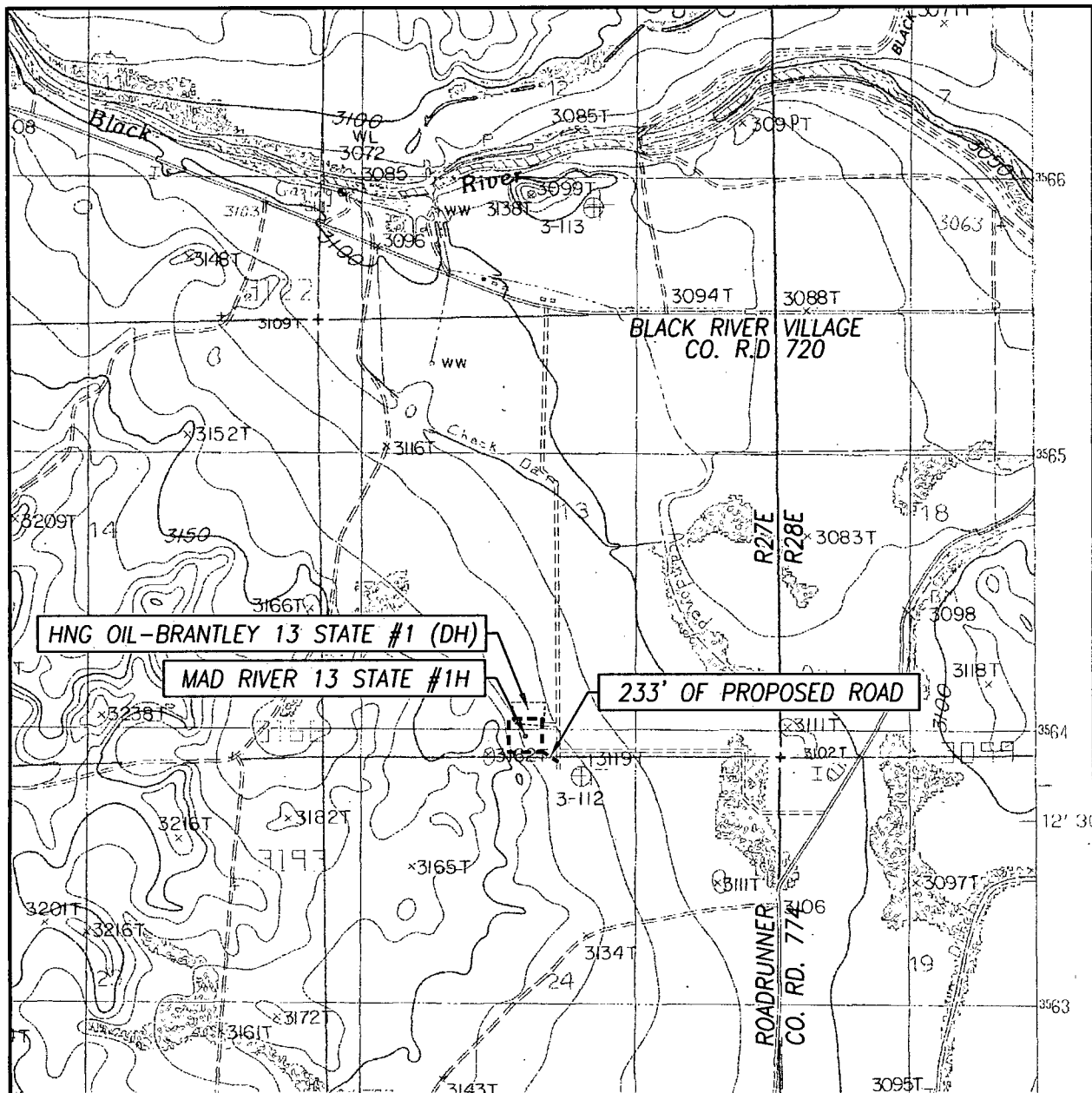
ELEVATION 3129'

OPERATOR CAZA OPERATING, LLC

LEASE MAD RIVER 13 STATE



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
BOND DRAW, N.M. - 10'

SEC. 13 TWP. 24-S RGE. 27-E

SURVEY _____ N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FSL & 2310' FWL

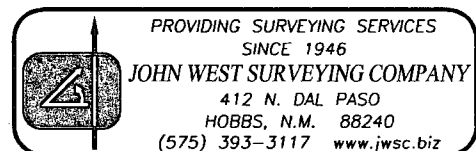
ELEVATION 3129'

OPERATOR CAZA OPERATING, LLC

LEASE MAD RIVER 13 STATE

U.S.G.S. TOPOGRAPHIC MAP

BOND DRAW, N.M.



CAZA OPERATING, LLC.
MAD RIVER "13" STATE #1H
UNIT "N" SECTION 13
T24S-R27E EDDY CO. NM

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17½" hole to 500'. Run and set 500' of 13 3/8" 48# H-40 ST&C casing. Cement with 205 Sx. of Class "C" cement + 4% Gel, + 2% CaCl, Yield 1.75, tail in with 150 Sx. of Class "C" cement + 2% CaCl, Yield 1.32, circulate cement to surface.
3. Drill 12¼" hole to 2400'. Run and set 2400' of 9 5/8" 36# J-55 LT&C casing. Cement with 400 Sx. of 35/65 Class "C" POZ-cement + 5% Salt, + 6% Gel, Yield 2.09, tail in with 200 Sx. of Class "C" cement + 1% CaCl, Yield 1.32. Circulate cement to surface.
4. Drill 8 3/4" hole to 8300'. Run open hole correlation logs. Run Gyro continue drilling 8 3/4" hole to to end of curve estimated at 9073±', change bit to 7 7/8" and drill to 13,568' (MD). Run and set 13,568' of 5½" 17# P-110 casing. Cement with 1730 Sx. of 50/50 Class "H" POZ cement + 5# Gilsonite/Sx, + 0.125% Cello Flakes/Sx. 0.25% Econolite, Yield 1.3, tail in with 484 Sx. of Class "H" SoluGem cement + fluid loss control + Defoamer "Acid soluble, Yield 2.61. Estimated top of cement 1900' from surface.

Mad River 13 State Com # 1H "Cement Program"

Section 13, T24S, R27E, Eddy County, New Mexico

1. **Surface hole depth = 500 ft. TOC @surface w/ 50% W/O**

Surface hole = 17.5 inch

Surface casing = 13.375" 48# H-40 STC

Float Collar 1 jts up.

Hardware needed = 8 spring centralizers

1 Guide shoe "Tx Pattern"

1 Insert float valve (1 jt Up)

1 thread lock compound

1 collar stop

Engineering Data "Surface":

500 ft 17.5 inch hole x 13.375" csg = .6946 cu ft X 500 X 1.5 excess = 521 cu ft

40 ft 13.375" 48 # casing volume= .8817 X 40 ft = 36 cu ft

Total Cement volume required = 557 cu ft.

Lead slurry = 359 cu ft "C" w/ 4% Gel & 2% CaCl₂ .25pps CelloFlake 13.5 ppg yield 1.75 cu ft/sk = **(205 sks)**

Tail Slurry = 198 cu ft Class "C" w/ 2% CaCl₂ 14.8 ppg yield 1.32 cu ft / sk = **(150 sks)**

2. **Intermediate hole depth= 2400 ft. TOC @Surface w/ 50% W/O**

Intermediate hole = 12.25 inch

Intermediate Casing = 9.625" 36# J-55 LTC

Float Collar 1 jts up.

Hardware needed = 12 spring centralizers

1 Guide Shoe

1 float collar (1 jt up)

1 thread lock compound

Engineering Data "Intermediate":

1900 ft 12.25 inch open hole x 9.625 csg = .3132 cu ft X 1900 X 1.5 excess = 893 cu ft

500 ft 9.625 x 13.375" casing = .3765 cu ft/ft X 500 = 188 cu ft

40 ft 9.625"36 # casing volume= .434 X 40 ft = 18 cu ft

Total Cement volume required = 1099 cu ft.

Lead = 835 cu ft 35:65 poz "C" w/ 5% salt & 6% gel 12.4 ppg yield 2.09 cu ft/sk = **(400sks)**

Tail Slurry = 264 cu ft Class "C" w/ 1% CaCl₂ 14.8 ppg yield 1.32 cu ft / sk = **(200 sks)**

3. **Production Hole depth= 13,568 ft. TOC @ 1900 ft w/ 35% W/O**

Production Hole = 8.75 inch to EOC @ 9390' MD

Production Hole Casing = 5.5 inch 17# P-110 LTC

Hardware Needed = 25 spring Centralizers

PDC Drillable Float Collar (1 jt up)

PDC Drillable Float Shoe

TOC calculated to 1900 ft w/ 35% Washout.

Engineering Data "Production":

Lead Slurry coverage= (8600 ft to 1,900 ft)

6200 ft 8.75 inch open hole x 5.5" casing = $6200 \times .2526 \times 1.35\%$ excess = 2114 cu ft.

500 ft 9-5/8" x 5.5" csg. = $.2691 \times 500' = 135$ cu ft.

Total Cement volume required Lead Slurry = 2249 cu ft.

Slurry = **Lead 2249 cu ft** 50/50 Poz/"H" mixed @ 14.1 ppg w/ yield 1.3 cu ft/sk 5 lb/sk
gilsonite + 1/8 lb/sk cello Flake + 1/4% = **(1730 sks)**

Tail Slurry Coverage = (13,568 ft to 8,600 ft) TVD 9120 ft.

9390-8600 _790 ft 8.75 inch open hole x 5.5" "Curve" = $790 \times .2526 \times 1.35\%$ excess =
269 cu ft.

13,568'-9390 ft 7-875 inch hole x 5.5" "Lateral" = $.1733 \times 4178' \times 1.35\%$ excess = **977 cu**
ft.

40 ft 5.5" 17# casing volume = $.1305 \times 120$ ft = **16 cu ft**

Total Cement volume required Tail Slurry = 1262 cu ft.

Slurry = **Tail 1262 cu ft** "H" SoluCem mixed 15.0 ppg w/ yield of 2.61 cu ft/sk w/ fluid
loss control + Defoamer "Acid soluble" = **484 sks**

LONG's METHOD OF SURVEY COMPUTATION

OBLIQUE CIRCULAR ARC INTERPOLATION

6000	MD OF INTERPOLATION DEPTH,(feet)
#N/A	TVD COORDINATE OF THE DEPTH (feet)
#N/A	N/S COORDINATE OF DEPTH (feet)
#N/A	E/W COORDINATE OF DEPTH (feet)

3 D DISTANCE BETWEEN STATION A AND STATION B

DISTANCE TABLE

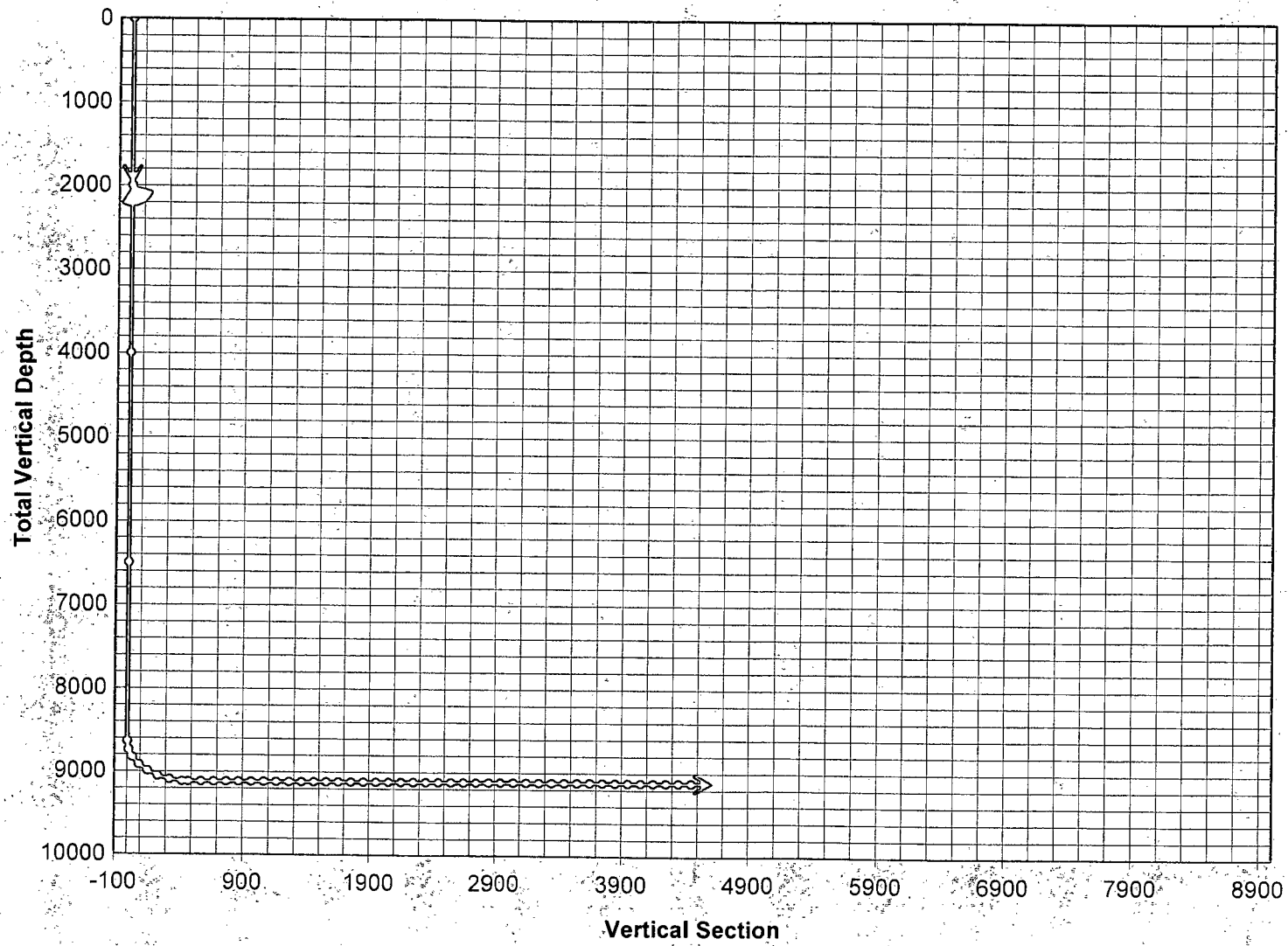
STATION A	STATION B
400.00	600.00
300.00	400.00
100.00	300.00
300.00	ft

TABLE OF SURVEY STATIONS

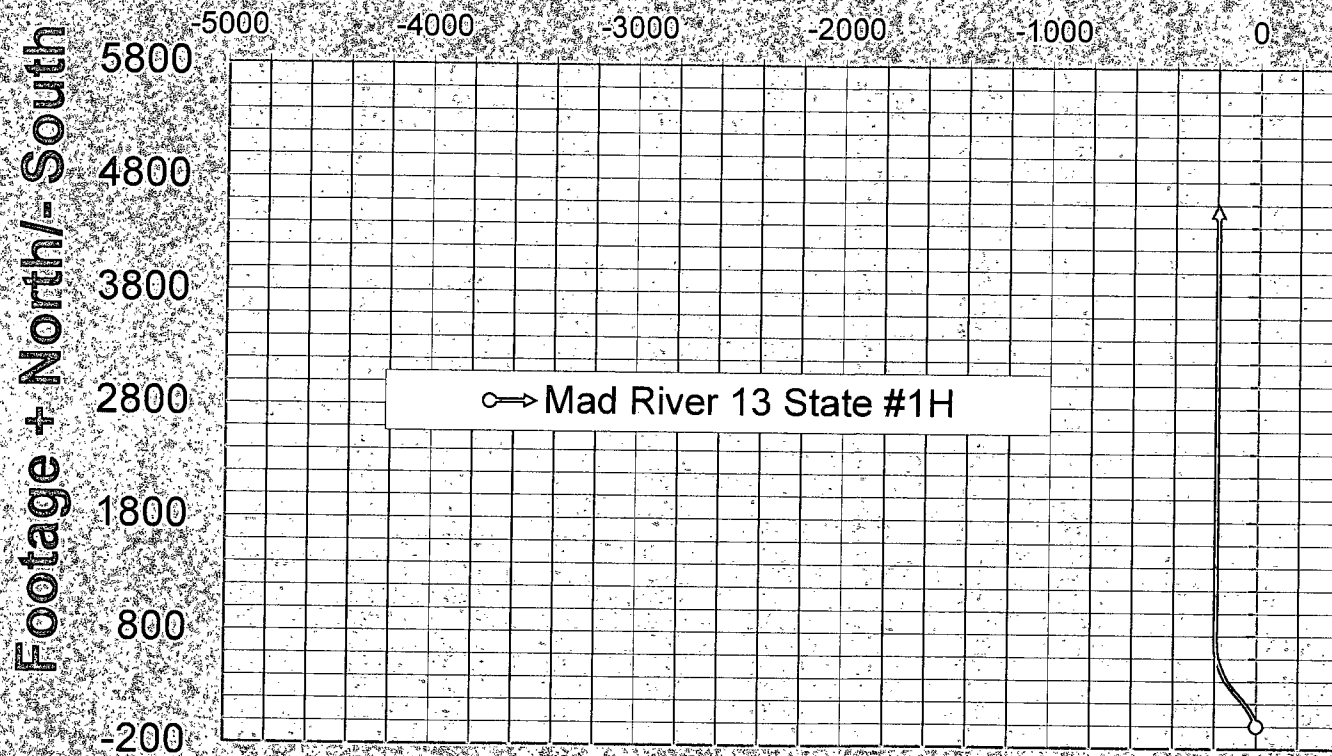
Calculator =

STA #	ΔMD ft	INCL deg	AZIM deg	MD ft	TVD ft	N+S- ft	E+W- ft	DLS deg/100FT
1	TIE POINT =>	0	0	8643.00	8643.00	0.00	0.00	-
2	100	12	355	8743.00	8742.27	10.39	-0.91	12.00
3	100	24	350	8843.00	8837.21	40.89	-5.36	12.09
4	100	36	345	8943.00	8923.67	89.49	-16.54	12.25
5	100	48	340	9043.00	8997.86	153.05	-36.94	12.45
6	100	60	335	9143.00	9056.56	227.51	-68.07	12.66
7	100	72	335	9243.00	9097.16	310.15	-106.61	12.00
8	100	84	340	9343.00	9117.93	400.36	-143.87	12.95
9	50	90	345	9393.00	9120.54	447.95	-158.87	15.61
10	100	90	350	9493.00	9120.54	545.55	-180.51	5.00
11	100	90	355	9593.00	9120.54	644.66	-193.56	5.00
12	100	90	0	9693.00	9120.54	744.53	-197.92	5.00
13	100	90	0	9793.00	9120.54	844.53	-197.92	0.00
14	100	90	0	9893.00	9120.54	944.53	-197.92	0.00
15	100	90	0	9993.00	9120.54	1044.53	-197.92	0.00
16	100	90	0	10093.00	9120.54	1144.53	-197.92	0.00
17	100	90	0	10193.00	9120.54	1244.53	-197.92	0.00
18	100	90	0	10293.00	9120.54	1344.53	-197.92	0.00
19	100	90	0	10393.00	9120.54	1444.53	-197.92	0.00
20	100	90	0	10493.00	9120.54	1544.53	-197.92	0.00
21	100	90	0	10593.00	9120.54	1644.53	-197.92	0.00
22	100	90	0	10693.00	9120.54	1744.53	-197.92	0.00
23	100	90	0	10793.00	9120.54	1844.53	-197.92	0.00
24	100	90	0	10893.00	9120.54	1944.53	-197.92	0.00
25	100	90	0	10993.00	9120.54	2044.53	-197.92	0.00
26	100	90	0	11093.00	9120.54	2144.53	-197.92	0.00
27	100	90	0	11193.00	9120.54	2244.53	-197.92	0.00
28	100	90	0	11293.00	9120.54	2344.53	-197.92	0.00
29	100	90	0	11393.00	9120.54	2444.53	-197.92	0.00
30	100	90	0	11493.00	9120.54	2544.53	-197.92	0.00
31	100	90	0	11593.00	9120.54	2644.53	-197.92	0.00
32	100	90	0	11693.00	9120.54	2744.53	-197.92	0.00
33	100	90	0	11793.00	9120.54	2844.53	-197.92	0.00
34	100	90	0	11893.00	9120.54	2944.53	-197.92	0.00
35	100	90	0	11993.00	9120.54	3044.53	-197.92	0.00
36	100	90	0	12093.00	9120.54	3144.53	-197.92	0.00
37	100	90	0	12193.00	9120.54	3244.53	-197.92	0.00
38	100	90	0	12293.00	9120.54	3344.53	-197.92	0.00
39	100	90	0	12393.00	9120.54	3444.53	-197.92	0.00
40	100	90	0	12493.00	9120.54	3544.53	-197.92	0.00
41	100	90	0	12593.00	9120.54	3644.53	-197.92	0.00
42	100	90	0	12693.00	9120.54	3744.53	-197.92	0.00
43	100	90	0	12793.00	9120.54	3844.53	-197.92	0.00
44	100	90	0	12893.00	9120.54	3944.53	-197.92	0.00
45	100	90	0	12993.00	9120.54	4044.53	-197.92	0.00
46	100	90	0	13093.00	9120.54	4144.53	-197.92	0.00
47	100	90	0	13193.00	9120.54	4244.53	-197.92	0.00
48	100	90	0	13293.00	9120.54	4344.53	-197.92	0.00
49	100	90	0	13393.00	9120.54	4444.53	-197.92	0.00
50	100	90	0	13493.00	9120.54	4544.53	-197.92	0.00
51	75	90	0	13568.00	9120.54	4619.53	-197.92	0.00
52								

Mad River 13 State # 1H

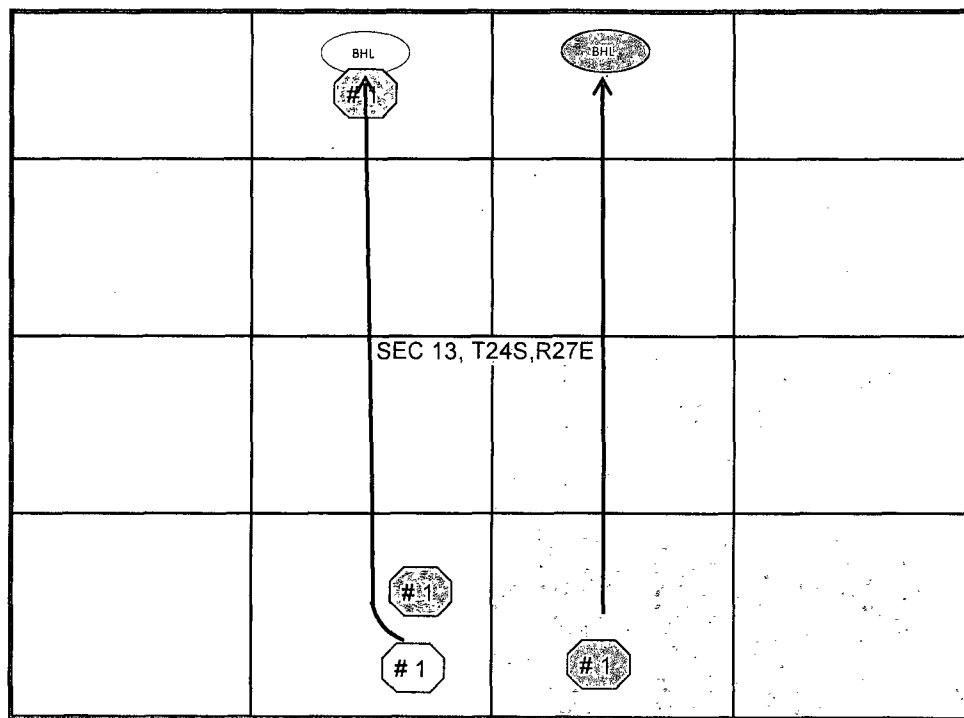


Horizontal Plane Footage +East/-West



Mad River 13 St. # 1H_2nd Bones Springs Horizontal

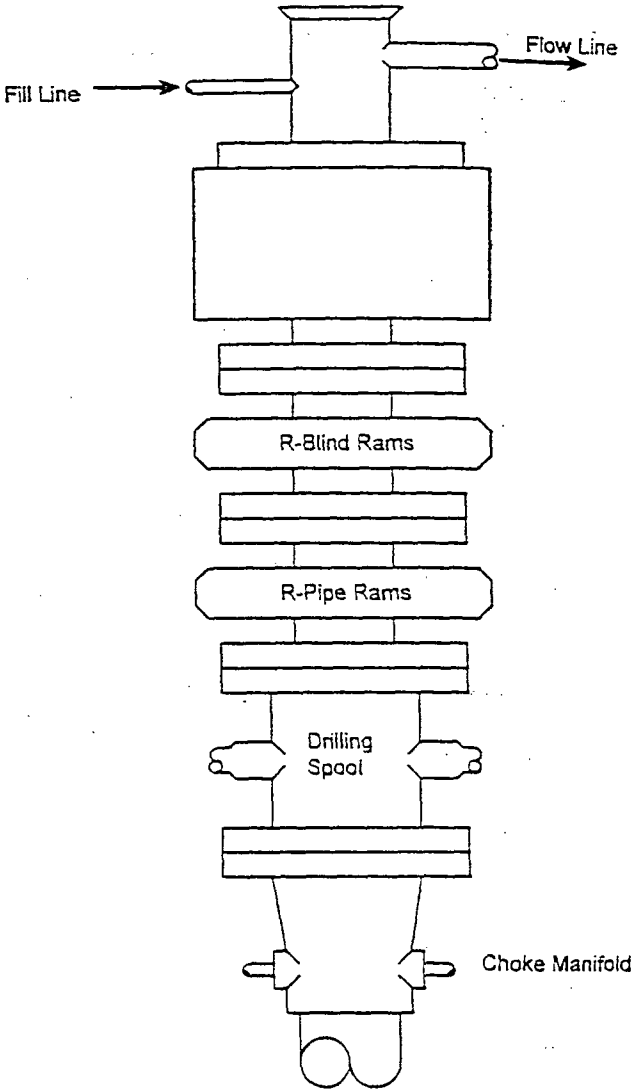
330 FSL & 1980 FWL, Sec 13, T-24-S, R-27-E, Eddy County, New Mexico



Well Name	Surface Location	Depth and Strata	Current Prod Zone	Bottom Hole Location	
Mad River 13 State # 1H	330 FSL & 1980 FWL	TD = 7200 2nd BS Horz	Not Drilled	330 FSL & 1900 FEL	± 9120 TVI
Bongo Fee #1H	330 FSL & 1980 FEL	TD = 7200 2nd BS Horz	Not Drilled	330 FSL & 1980 FEL	COG Perm
Brantley 13 State # 1	660 FSL & 2310 FWL	TD = 12,900'	P&A	Same	HNG ReEn
Beeman 13 # 1	1980 FNL & 1980 FWL	TD=2565'	P&A	Same	Cable tool

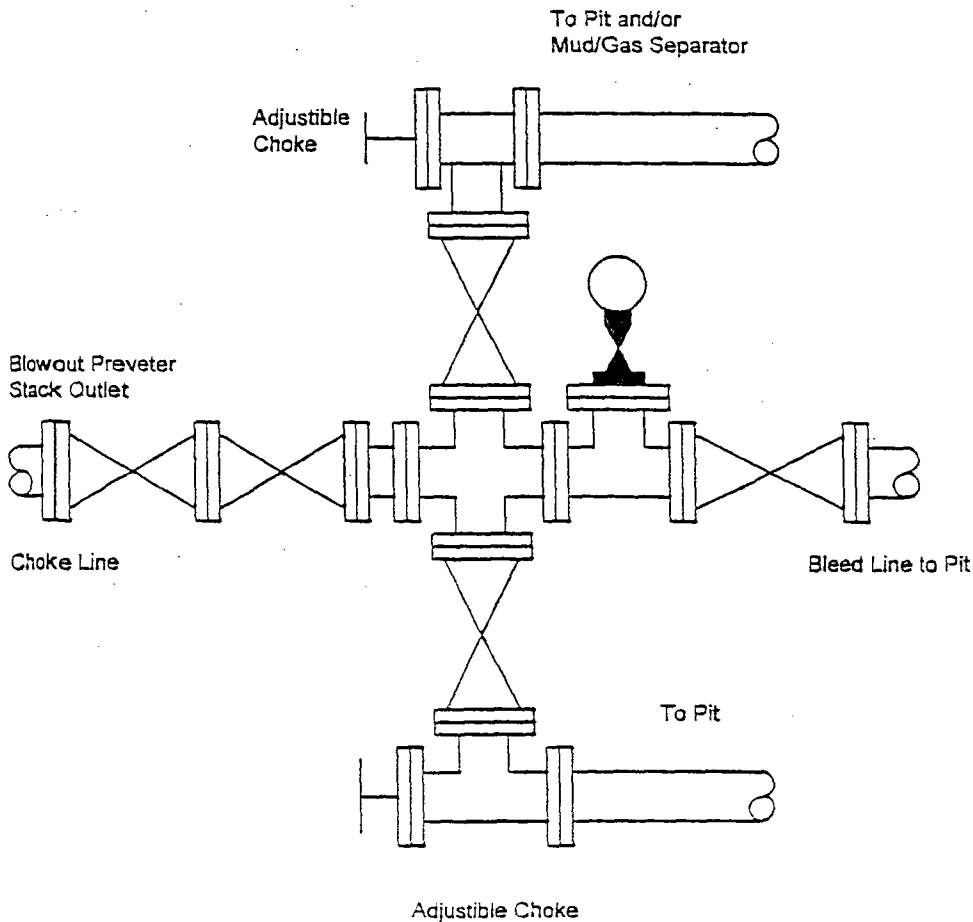
BLOWOUT PREVENTER SYSTEM

5000 PSI



Type 1500 SERIES
5000 psi WP

Choke Manifold Assembly for 5M WP System



Permit Conditions of Approval

API: 30-015-41407

OCD Reviewer	Condition
CSHAPARD	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string