District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
May 27, 2004

Submit to appropriate District Office

☐ AMENDED REPORT

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

[1] Operator Name and Address	[2] OGRID Number
Harvey E Yates Co PO Box 1933, Roswell NM 88202-1933	010179
	[3] API Number 30 -015-25452

[3] Property Code	[5] Property Name	[6] Well No.
012964	Mesquite 2 State	# 3

[9] Proposed Pool 1	[10] Proposed Pool 2
Tamano-Bone Spring	

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	2	18S	31E		1,980'	South	1,980'	East	Eddy

[8] Proposed 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	2	18S	31E		1,375'	North	810'	West	Eddy

Additional Well Information

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
A	O	Rotary	S	3,780'
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
No	7,900'	Bone Spring 2nd Sand	Mesa Well Service	ASAP

Depth to Groundwater 485'	Distance from nearest fresh water well N/A	Distance from nearest surface water N/A

Pit: Liner: Synthetic ☐ ____mils thick Clay ☐ Pit Volume:_____bbls Drilling Method:
Closed-Loop System ☒ Fresh Water ☒ Brine ☐ Diesel/Oil-based ☐ Gas/Air ☐

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17 1/2"	13 3/8"	54#	350'	350	Surf. (In Place)
11"	8 5/8"	24#	2,250'	850	Surf. (In Place)
7 7/8"	5 1/2"	17#	9,100'	1,200	5,000' (In Place)
4 3/4"	3 1/2"	9.3#	11,422 MD	180	7,700' TVD

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Set whipstock in 5 1/2" casing @ 7,900'. Cut window in casing, build curve, and drill 3,150' of horizontal hole in Bone Spring 2nd sand. Set & cement 3 1/2' liner. Perforate, acidize & frac. See attached procedure.

RECEIVED
SEP 13 2005
OCD-ARTESIA

[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 the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.**

Printed name: Bob Williams Bob Williams
Title: Drilling Superintendent
E-mail Address: bwilliams@heyco.org
Date: 9-13-05 Phone: (505) 623-6601

OIL CONSERVATION DIVISION
Approved by: Jerry W. Sexton District II Supervisor
Title:
Approval Date: SEP 14 2005 Expiration Date: SEP 14 2006
Conditions of Approval Attached ☐

Oper. To submit C102 & site map per conditions of NMOCD Rule 118.

Heyco Energy
Mesquite 2 State #3

slot #1
UNKNOWN
Eddy County New Mexico

P R O P O S A L L I S T I N G

by
Baker Hughes INTEQ

Your ref : Plan 1
Our ref : prop4663
License :

Date printed : 29-Jul-2005
Date created : 28-Jul-2005
Last revised : 29-Jul-2005

Field is centred on n32 40 29.200,w103 55 30.8
Structure is centred on n32 46 30.250,w103 50 15.68

Slot location is n32 46 30.250,w103 50 15.680
Slot Grid coordinates are N 646037.933, E 652341.465
Slot local coordinates are 0.00 N 0.00 E

Projection type: mercator - New Mexico East (3001), Spheroid: Clarke - 1866

Reference North is Grid North

Heyco Energy
Mesquite 2 State #3,slot #1
UNKNOWN,Eddy County New Mexico

PROPOSAL LISTING Page 1
Your ref : Plan 1
Last revised : 29-Jul-2005

Measured Depth	Inclin Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES	Dogleg Deg/100ft	Vert Sect	GRID COORDS Easting	Northing
7900.00	0.00	0.00	7900.00	0.00N	0.00E	0.00	0.00	652341.46	646037.94
7960.08	5.25	307.71	7960.00	1.69N	2.18W	8.74	2.75	652339.29	646039.62
8000.00	8.74	307.71	7999.61	4.66N	6.02W	8.74	7.61	652335.44	646042.59
8089.63	16.57	307.71	8087.00	16.66N	21.55W	8.74	27.24	652319.92	646054.60
8100.00	17.48	307.71	8096.91	18.52N	23.95W	8.74	30.27	652317.52	646056.45
8184.88	24.90	307.71	8176.00	37.27N	48.21W	8.74	60.93	652293.26	646075.20
8200.00	26.22	307.71	8189.64	41.26N	53.37W	8.74	67.46	652288.10	646079.19
8300.00	34.96	307.71	8275.64	72.36N	93.59W	8.74	118.30	652247.88	646110.29
8327.70	37.38	307.71	8298.00	82.36N	106.52W	8.74	134.65	652234.94	646120.29
8400.00	43.70	307.71	8352.91	111.08N	143.68W	8.74	181.61	652197.78	646149.02
8500.00	52.44	307.71	8419.67	156.54N	202.48W	8.74	255.94	652138.98	646194.47
8600.00	61.18	307.71	8474.36	207.68N	268.63W	8.74	339.54	652072.84	646245.61
8627.26	63.56	307.71	8487.00	222.45N	287.73W	8.74	363.69	652053.73	646260.38
8700.00	69.92	307.71	8515.71	263.30N	340.58W	8.74	430.49	652000.89	646301.23
8800.00	78.66	307.71	8542.76	322.12N	416.66W	8.74	526.66	651924.80	646360.05
8900.00	87.40	307.71	8554.88	382.77N	495.11W	8.74	625.82	651846.35	646420.71
8937.80	90.70	307.71	8555.51	405.89N	525.01W	8.74	663.61	651816.45	646443.82
9000.00	90.70	307.71	8554.74	443.93N	574.22W	0.00	725.81	651767.25	646481.86
9500.00	90.70	307.71	8548.60	749.72N	969.76W	0.00	1225.77	651371.70	646787.65
10000.00	90.70	307.71	8542.46	1055.51N	1365.30W	0.00	1725.73	650976.16	647093.44
10500.00	90.70	307.71	8536.32	1361.30N	1760.85W	0.00	2225.69	650580.62	647399.23
11000.00	90.70	307.71	8530.18	1667.09N	2156.39W	0.00	2725.66	650185.07	647705.02
11421.71	90.70	307.71	8525.00	1925.00N	2490.00W	0.00	3147.34	649851.46	647962.93

All data in feet unless otherwise stated. Calculation uses minimum curvature method.
Coordinates from structure and TVD from rotary table.
Bottom hole distance is 3147.34 on azimuth 307.71 degrees from wellhead.
Vertical section is from N 0.00 E 0.00 on azimuth 307.70 degrees.
Grid is mercator - New Mexico East (3001).
Grid coordinates in FEET and computed using the Clarke - 1866 spheroid
Presented by Baker Hughes INTEQ

Comments in wellpath

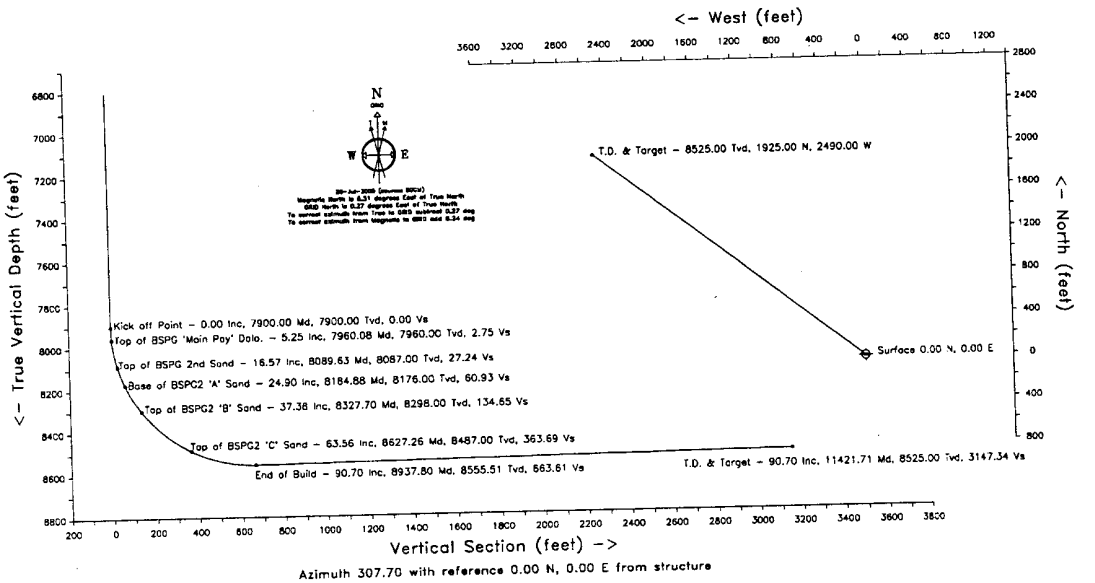
MD	TVD	Rectangular Coords.		Comment
7960.08	7960.00	1.69N	2.18W	Top of BSPG 'Main Pay' Dolo.
8089.63	8087.00	16.66N	21.55W	Top of BSPG 2nd Sand
8184.88	8176.00	37.27N	48.21W	Base of BSPG2 'A' Sand
8327.70	8298.00	82.36N	106.52W	Top of BSPG2 'B' Sand
8627.26	8487.00	222.45N	287.73W	Top of BSPG2 'C' Sand
8937.80	8555.51	405.89N	525.01W	End of Build
11421.71	8525.00	1925.00N	2490.00W	TD

Heyco Energy

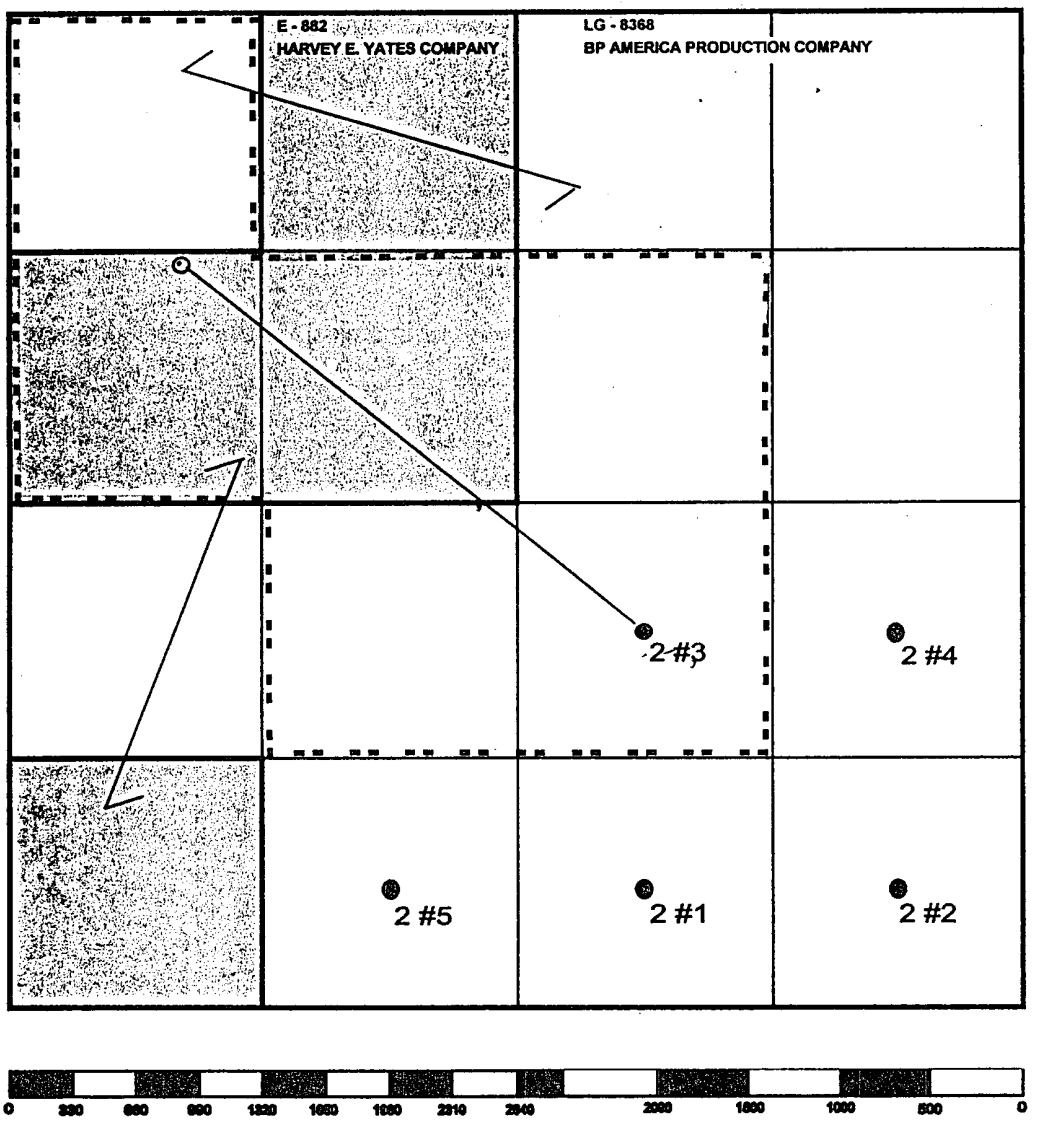
Structure : Mesquite 2 State #3 Slot : slot #1
Field : UNKNOWN Location : Eddy County New Mexico

WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP	7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	0.00
End of Build/Turn	8937.80	90.70	307.71	8555.51	405.89	-525.01	663.61	8.74
T.D. & Target TD	11421.71	90.70	307.71	8525.00	1925.00	-2490.00	3147.34	0.00



Azimuth 307.70 with reference 0.00 N, 0.00 E from structure



2 #1 660' FSL & 1980' FEL

2 #2 660' FSL & 660' FEL

2 #3 1980' FSL & 1980' FEL

2 #3 BHL 1375' FNL & 810' FWL

2 #4 1980' FSL & 660' FEL

2 #5 660' FSL & 1980' FWL

ACREAGE IN PRORATION UNIT = 240.00

ACREAGE IN LEASES:

E-882	=	160.00
LG - 8368	=	480.00
		640.00

Mesquite 2 State #3 – Horizontal Drilling Procedure

Prior to Drilling

1. GIH and set CIBP @7914'. PU jt of tbg on location and 4' pup-joint. Spot pup-joint in BOP, in order to test CIBP to 1500 psi. If ok, RD pulling unit and prepare to rig up drilling equipment.

Drilling Procedure

1. MIRU drilling contractor and equipment. Bring out 11,200' of 10.4# S-135 2-7/8" AOH DP, handling tools, subs, kelly valve, TIW valve and install stripper head.

2. RU Suttles Mudloggers and Pason digital geolograph.

3. Install wear bushing and NU the 7-1/16", 5M BOP Equipment and choke manifold as follows:
   - 7-1/16", 5M Annular Preventer
   - 7-1/16", 5M Blind Rams
   - 7-1/16", 5M Pipe Rams
   - 7-1/16", 5M x 7-1/16", 5M mudcross
   - RU 5M Choke Manifold

4. Test BOP Equipment:
   - Test BOP to 3000 psi (annular preventer to 1500 psi): with a low test of 250 psi, bleed off to 0 psi (test w/ independent BOP tester).

5. Rig up scientific drilling and run gyro survey to PBTD of 7914'.

6. Tally in hole w/ dummy mill and tag 79140' PBTD. POOH and lay down mill.

7. Prior to picking up whipstock assembly, ensure that the gyro will seat into the orienting lug. TIH w/ Weatherford's 4-1/2" OD whipstock. Stop 5' above 7914' PBTD and run gyro to determine the direction of the whipstock face. Rotate the pipe as needed to achieve the required direction (azimuth of 307.7 degrees). Lower the pipe to within one foot of PBTD and take another gyro reading. If necessary, rotate pipe to obtain required orientation. Confirm azimuth setting w/ 5 consistent readings.

8. Set whipstock w/ 3-5k. Keep gyro tool in orientation tool while lowering and adjust as necessary. After setting the slips, confirm settings with 5 consecutive readings. If the orientation is correct, shear the starting mills of the whipstock.

9. Pick up swivel and begin cutting window. Continue until the whole assembly has cleared the casing. Drill 5' of rathole, pumping sweeps as necessary. Circulate hole clean and TOH.

10. Inspect the mill on the surface. If mills are 1/8" or less out of gauge, run drilling assembly instead of making an extra mill run.

11. Rig up Inteq, Suttles Mudloggers and Pason Unit. TIH w/ Inteq's bottomhole assembly. RU and run gyro. Orient motor and drill w/ gyro until able to use MWD readings.

12. Build curve to estimated target depths and angles as follows:

True Vertical Depth	8,556'
Measured Depth	8,938'
Final Angle	90.7 degrees
Target Azimuth	307.7 degrees
Build Rate	8.74 degrees/100'

13. Drill the curve sliding as necessary to stay on target (Note: After each slide, pull back bit and wash through the slide). When the curve is built, rotate through the curve section and record tight spots and fill. Make at least one short trip prior to tripping out of hole.

14. TIH w/ Inteq's lateral assembly (4-3/4" bit, 3-3/4" motor, float sub/orienter combo, 2 – flexible monel collars and 2-7/8" drill pipe).

15. Drill 2484' +/- lateral. The end point will be 11,422' MD, 8525' TVD and 3147' of vertical section per the attached well plan. Azimuth will be held at 307.7 degrees and inclination at 90.7 degrees.

16. Sweep hole on connections with E-Z Mud as necessary for hole cleaning and lubricity. Use Bara-Lube or EPL-50 for torque reduction if necessary in lateral. Loss circulation material is not to be used.

17. Short trip above KOP for hole cleaning at any time as recommended by directional driller. Sweep and condition hole at TD of lateral and short trip to above KOP to insure that no cuttings remain. Circ lateral from TD until hole is clean.

18. TOH w/ drill string and LD all directional drilling tools, release Inteq equipment.

19. PU reamers and TIH. Ream lateral in preparation for running 3-1/2" liner. TOH.

20. PU and run 3-1/2" liner as described in liner and cementing schedules.

21. Retrieve wear bushing.

22. Rig down and release rig.

Liner & Cementing Schedules

Csg Size: **3-1/2", 9.3 ppf, P-110, ULT-FJ**
Depth: **7700' MD / 7700' TVD to 11,422' MD / 8525' TVD**

A. String Running Order From Bottom to Top

Item	Description	Approx. Length
1	3-1/2" Down Jet Guide Shoe, ULT-FJ	1'
2	1 jt 3-1/2" O.D., 9.3 ppf, P-110, ULT-FJ	31'
3	Float Shoe	5'
4	1 jt 3-1/2" O.D., 9.3 ppf, P-110, ULT-FJ	31'
5	All Catcher Sub (Landing Sub)	1'
6	3-1/2" O.D., 9.3 ppf, P-110, ULT-FJ	3621'
7	Weatherford X-Over Bushing	6'
8	5-1/2" X 3-1/2" Weatherford HCM Hydraulic Liner Hanger	10'
9	5-1/2" CSPH-15 Liner Top Packer w/ hold down slips and 15' tie back sleeve	16'

B. Casing Hardware Placement

Item	Description	Location
1	Rigid Rotating Centralizer	1 per jt f/ TD up to liner hanger

C. Casing Specifications: 3-1/2", 9.3 ppf, P-110, ULT-FJ

Make up Torque	Min = 2,700; Opt = 3,000; Max = 3,300
OD (Inches)	3.5
ID (Inches)	2.897

Drift ID (Inches)	2.867
Collapse (SF_C = 1.1)	12,300
Burst (SF_B = 1.25)	11,176
Tension (SF_T = 1.6)	123,000
Capacity (bbls/ft)	0.0087
Total String Weight in 8.3 ppg mud (BF = 0.8733)	22,000
Allowable Overpull (SF_T = 1.6)	101,000

D. Cement Specifications: 3-1/2" Liner

Cement Service	BJ Services
Excess Volume	30%
TOC	Liner Top – 7700'
Temp. Gradient	1
BHST (^{0}F)	131
BHCT (^{0}F)	125
Mud Weight (ppg)	8.3 to 8.8
Mud Type	Polymer
Frac Gradient @ Csg Point (EMW)	14.5 PPG
Fluid Loss (cc/30min)	130
Free Water (%) – 45^0 Slope Test	0
Gas Check Additive Required	NO
Strength Retrogression	NA
Pumping Time	5:00
48 HR Compressive Strength	1105 psi
Pump Rate Limits (bpm)	2.5
Temperature/CBL	NO
Cement Spacer	24 bbls of Mud Clean

E. Cement Slurries: 3-1/2" Liner

Stage	Description	Sacks	Weight	Cf/sx	H20/sx	TOC
	Class H Cmt + 1% bwoc FL-62 + 0.4% bwoc CD-32 + 0.2% bwoc Sodium Metasilicate + 45.7% Fresh Water	180	15.6	1.19	5.15	TOL

F. Cementing Procedure

1. Insure that all necessary items are on location and have been thoroughly checked.

2. Notify the NM OCD office in Artesia, NM (505-748-1283) twelve hours prior to running liner.

3. RU and run the 3-1/2" production liner as noted in Section "A" above. **(Drift all DP while running in hole w/ liner)**

4. Perform the following:
   a) RIH to 5-1/2" whipstock filling pipe and breaking circulation every 1000'. **(DO NOT exceed 500 psi. This may cause liner hanger to set)**
   b) Make up cementing head and stand back in derrick. RU cementing manifold. Circulate through liner. Get PU, SO, and rotating weights. **(DO NOT exceed 500 psi. This may cause liner hanger to set)**
   c) RIH to TD, filling pipe and breaking circulation every 1000'. If washing down is required in openhole, do not slack off more than theoretical liner weight.
   d) At TD, tag btm and mark pipe. Install cementing head. Note pick up and slack off weights. PU 5' +/- and circulate hole, limiting pressures to 500 psi..
   e) Test cementing lines to 5000 psi. When circulation is complete, drop the setting ball and pump at a slow rate to the Ball Seat Sub. **(Do not allow ball to slam into the seat, and do not exceed 500 psi.**
   f) When ball lands, slowly increase pressure to 2000 psi in 500 psi increments to set the liner hanger. Shut off pumps and slack off running string. The liner weight should be lost. When the liner is hung off, set down to the mark pipe.
   g) Bleed off pressure and pick up (leave 20,000 lbs. on the running tool). Release running tool w/ eight RH rotations and record torque. PU to check that tool is released. Do not pick up high enough to expose pkr setting dogs.
   h) After tool is released – apply 30,000 lbs. of drill pipe weight down. Pressure up to 2500 psi +/- to shear ball seat.
   i) Establish circulation and prepare to cmt.
   j) Cement as per the attached recommendation.

k) Release drill pipe dart. Displace w/ fresh wtr. Ensure that all displacement goes through the cement pump truck displacement tanks. Slow down pump rate while displacing the last 10 bbls to 1.0-1.2 bpm.
l) Do not over displace. When displacement is pumped, bleed off pressure and check for flow back.
m) If there is full circ. during cmt job, slowly pick up the pkr setting dogs out of the pkr setting sleeve. Slowly lower the string down to position the packer setting dog sub on top of the setting sleeve. Slack off a minimum of 50,000 lbs. at the pkr (a shear will occur at approximately 25,000 lbs.).
n) If returns are lost during the cmt job, contact the office.

Radius of Exposure Calculations

WELL NAME	GAS PRCHSR #		API #	LOCATION	Test Date	H2S/ppm	MCF/Day
Mesquite 2 #3	F	06435009	30-015-25452	J-02-18S-31E	10/23/02	1,200	11

R.O.E.			Includes any part of a public area except a public road	
500 ppm	300 ppm	100 ppm	100 ppm	500 ppm
3'	4'	7'	NO	NO

Mesquite 2 State #3
1,980' FSL & 1,980' FEL
Sec 2, T18S, R31E
Eddy County, NM

Emergency Contact Numbers:

Heyco Office	**505-623-6601**
Well Site Drilling Office	**505-626-8866**
Drilling Foreman...Keith Cannon	**505-746-7771**
Drilling Supt...Bob Williams	**505-390-9035 (Cellular)** **505-396-3235 (Home)**
Eddy County Sheriff's Office	**505-746-9888**
New Mexico State Police	**505-748-9718**

HYDROGEN SULFIDE CONTINGENCY PLAN

SCOPE

THIS CONTINGENCY PLAN ESTABLISHES GUIDELINES FOR THE PUBLIC, ALL COMPANY EMPLOYEES WHO'S WORK ACTIVITIES MAY INVOLVE EXPOSURE TO HYDROGEN SULFIDE (H2S) GAS.

OBJECTIVE

1. PREVENT ANY AND ALL ACCIDENTS, AND PREVENT THE UNCONTROLLED RELEASE OF HYDROGEN SULFIDE INTO THE ATMOSPHERE.

2. PROVIDE PROPER EVACUATION PROCEDURES TO COPE WITH EMERGENCIES.

3. PROVIDE IMMEDIATE AND ADEQUATE MEDICAL ATTENTION SHOULD AN INJURY OCCUR.

H2S CONTINGENCY PLAN

DISCUSSION

GEOLOGICAL PROGNOSIS

IMPLEMENTATION:	THIS PLAN WITH ALL DETAILS IS TO BE FULLY IMPLEMENTED AFTER DRILLING TO INTERMEDIATE CASING POINT.
EMERGENCY RESPONSE PROCEDURE:	THIS SECTION OUTLINES THE CONDITIONS AND DENOTES STEPS TO BE TAKEN IN THE EVENT OF AN EMERGENCY.
EMERGENCY EQUIPMENT PROCEDURE:	THIS SECTION OUTLINES THE SAFETY AND EMERGENCY EQUIPMENT THAT WILL BE REQUIRED FOR THE DRILLING OF THIS WELL.
TRAINING PROVISIONS:	THIS SECTION OUTLINES THE TRAINING PROVISIONS THAT MUST BE ADHERED TO PRIOR TO DRILLING TO INTERMEDIATE CASING POINT.
DRILLING EMERGENCY CALL LISTS:	INCLUDED ARE THE TELEPHONE NUMBERS OF ALL PERSONS TO BE CONTACTED SHOULD AN EMERGENCY EXIST.
BRIEFING:	THIS SECTION DEALS WITH THE BRIEFING OF ALL PEOPLE INVOLVED IN THE DRILLING OPERATION.
PUBLIC SAFETY:	PUBLIC SAFETY PERSONNEL WILL BE MADE AWARE OF THE DRILLING OF THIS WELL.
CHECK LISTS:	STATUS CHECK LISTS AND PROCEDURAL CHECK LISTS HAVE BEEN INCLUDED TO INSURE ADHERENCE TO THE PLAN.
GENERAL INFORMATION:	A GENERAL INFORMATION SECTION HAS BEEN INCLUDED TO SUPPLY SUPPORT INFORMATION.

H2S CONTINGENCY PLAN

EMERGENCY PROCEDURES

A. IN THE EVENT OF ANY EVIDENCE OF H2S LEVEL ABOVE 10 PPM, TAKE THE FOLLOWING STEPS:

1. SECURE BREATHING EQUIPMENT.

2. ORDER NON-ESSENTIAL PERSONNEL OUT OF DANGER ZONE.

3. TAKE STEPS TO DETERMINE IF THE H2S LEVEL CAN BE CORRECTED OR SUPPRESSED AND, IF SO, PROCEED IN NORMAL OPERATION.

B. IF UNCONTROLLABLE CONDITIONS OCCUR:

1. TAKE STEPS TO PROTECT AND/OR REMOVE ANY PUBLIC IN THE DOWN-WIND AREA FROM THE RIG – PARTIAL EVACUATION AND ISOLATION. NOTIFY NECESSARY PUBLIC SAFETY PERSONNEL AND THE BUREAU OF LAND MANAGEMENT OF THE SITUATION.

2. REMOVE ALL PERSONNEL TO SAFE BREATHING AREA.

3. NOTIFY PUBLIC SAFETY PERSONNEL TO SAFE BREATHING AREA.

4. PROCEED WITH BEST PLAN (AT THE TIME) TO REGAIN CONTROL OF THE WELL. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.

C. RESPONSIBILITY:

1. DESIGNATED PERSONNEL.

a. SHALL BE RESPONSIBLE FOR THE TOTAL IMPLEMENTATION OF THIS PLAN.

b. SHALL BE IN COMPLETE COMMAND DURING ANY EMERGENCY.

c. SHALL DESIGNATE A BACK-UP.

EMERGENCY PROCEDURES

*(Procedures are the same for both Drilling and Tripping)

ALL PERSONNEL:

1. ON ALARM, DON ESCAPE UNIT AND REPORT IN UP WIND BRIEFING AREA.
2. CHECK STATUS OF PERSONNEL (BUDDY SYSTEM).
3. SECURE BREATHING EQUIPMENT.
4. AWAIT ORDERS FROM SUPERVISOR.

DRILLING FOREMAN:

1. REPORT TO UP WIND BRIEFING AREA.
2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH TOOL PUSHER OR DRILLER (BUDDY SYSTEM).
3. DETERMINE H2S CONCENTRATIONS.
4. ASSESS SITUATION AND TAKE CONTROL MEASURES.

TOOL PUSHER:

1. REPORT TO UP WIND BRIEFING AREA.
2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH DRILLING FOREMAN OR DRILLER (BUDDY SYSTEM).
3. DETERMINE H2S CONCENTRATION.
4. ASSESS SITUATION AND TAKE CONTROL MEASURES.

DRILLER:

1. DON ESCAPE UNIT.
2. CHECK MONITOR FOR POINT OF RELEASE.
3. REPORT TO BRIEFING AREA.
4. CHECK STATUS OF PERSONNEL (IN AN ATTEMPT TO RESCUE, USE THE BUDDY SYSTEM).
5. ASSIGNS LEAST ESSENTIAL PERSON TO NOTIFY DRILLING FOREMAN AND TOOL PUSHER BY QUICKEST MEANS IN CASE OF THEIR ABSENCE.
6. ASSUMES THE RESPONSIBILITIES OF THE DRILLING FORMAN AND TOOL PUSHER UNTIL THEY ARRIVE SHOULD THEY BE ABSENT.

EMERGENCY PROCEDURES

DERRICK MAN FLOOR MAN #1 FLOOR MAN #2	1. WILL REMAIN IN BRIEFING AREA UNTIL INSTRUCTED BY SUPERVISOR.
MUD ENGINEER:	1. REPORT TO BRIEFING AREA. 2. WHEN INSTRUCTED, BEGIN CHECK OF MUD FOR PH AND H2S LEVEL. (GARETT GAS TRAIN.)
SAFETY PERSONNEL:	1. MASK UP AND CHECK STATUS OF ALL PERSONNEL AND SECURE OPERATIONS AS INSTRUCTED BY DRILLING FOREMAN AND REPORT TO BRIEFING AREA.

TAKING A KICK

WHEN TAKING A KICK DURING AN H2S EMERGENCY, ALL PERSONNEL WILL FOLLOW STANDARD BOP PROCEDURES AFTER REPORTING TO BRIEFING AREA AND MASKING UP.

OPEN-HOLE LOGGING

ALL UNNECESSARY PERSONNEL OFF FLOOR. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD MONITOR CONDITION, ADVISE STATUS AND DETERMINE NEED FOR USE OF AID EQUIPMENT.

RUNNING CASING OR PLUGGING

FOLLOWING THE SAME "TRIPPING" PROCEDURE AS ABOVE. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD DETERMINE IF ALL PERSONNEL HAVE ACCESS TO PROTECTIVE EQUIPMENT.

IGNITION PROCEDURES

THE DECISION TO IGNITE THE WELL IS THE RESPONSIBILITY OF COMPANY FOREMAN. IN THE EVENT HE IS INCAPACITATED, IT BECOMES THE RESPONSIBILITY OF THE CONTRACT RIG TOOL PUSHER. THE DECISION SHOULD BE MADE ONLY AS A LAST RESORT AND IN A SITUATION WHERE IT IS CLEAR THAT:

1. HUMAN LIFE AND PROPERTY ARE ENDANGERED.
2. THERE IS NO HOPE CONTROLLING THE BLOWOUT UNDER THE PREVAILING CONDITIONS AT THE WELL.

NOTIFY THE DISTRICT OFFICE IF TIME PERMITS, BUT DO NOT DELAY IF HUMAN LIFE IS IN DANGER.

INITIATE FIRST PHASE OF EVACUATION PLAN.

IGNITION PROCEDURES

INSTRUCTIONS FOR IGNITING THE WELL

1. TWO PEOPLE ARE REQUIRED FOR THE ACTUAL IGNITING OPERATION. THEY MUST WEAR SELF-CONTAINED BREATHING UNITS AND HAVE SAFETY ROPE ATTACHED. ONE MAN (TOOL PUSHER OR SAFETY ENGINEER) WILL CHECK THE ATMOSPHERE FOR EXPLOSIVE GASES WITH THE EXPLOSIMETER. THE OTHER MAN (DRILLING FOREMAN) IS RESPONSIBLE FOR IGNITING THE WELL.
2. PRIMARY METHOD TO IGNITE: 25 MM FLARE GUN WITH RANGE OF APPROXIMATELY 500 FEET.
3. IGNITE UP WIND AND DO NOT APPROACH ANY CLOSER THAN IS WARRANTED.
4. SELECT THE IGNITION SITE BEST FOR PROTECTION, AND WHICH OFFERS AN EASY ESCAPE ROUTE.
5. BEFORE FIRING, CHECK FOR PRESENCE OF COMBUSTIBLE GAS.
6. AFTER LIGHTING, CONTINUE EMERGENCY ACTION AND PROCEDURE AS BEFORE.
7. ALL UNASSIGNED PERSONNEL WILL LIMIT THEIR ACTIONS TO THOSE DIRECTED BY THE DRILLING FOREMAN.

REMEMBER: AFTER WELL IS IGNITED, BURNING HYDROGEN SULFIDE WILL CONVERT TO SULFUR DIOXIDE, WHICH IS ALSO HIGHLY TOXIC. DO NOT ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED.

TRAINING REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H2S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE WELL SITE WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING:

1. HAZARDS AND CHARACTERISTICS OF H2S.
2. PHYSICAL EFFECTS OF HYDROGEN SULFIDE ON THE HUMAN BODY.
3. TOXICITY OF HYDROGEN SULFIDE AND SULFUR DIOXIDE.
4. H2S DETECTION.
5. EMERGENCY RESCUE.
6. RESUSCITATORS.
7. FIRST AID AND ARTIFICIAL RESPIRATION.
8. EFFECTS OF H2S ON METALS.
9. LOCATION SAFETY.

SERVICE COMPANY AND VISITING PERSONNEL

A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H2S.

B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELL SITE.

C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A WELL SITE BRIEFING.

EMERGENCY EQUIPMENT REQUIREMENTS

1. SIGNS

   A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING LANGUAGE:

(LEASE)
CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

2. WIND SOCK – WIND STREAMERS

   A. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT PROTECTION CENTER, AT HEIGHT VISIBLE FROM RIG FLOOR.
   B. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT HEIGHT VISIBLE FROM PIT AREAS.

3. HYDROGEN SULFIDE DETECTOR AND ALARMS

   A. H2S MONITORS WITH ALARMS WILL BE LOCATED ON THE RIG FLOOR, AT THE BELL NIPPLE, AND AT THE FLOW LINE. THESE MONITORS WILL BE SET TO ALARM AT 10 PPM WITH RED LIGHT, AND TO ALARM AT 15 PPM WITH RED LIGHT AND AUDIBLE ALARM.
   B. HAND OPERATED DETECTORS WITH TUBES.
   C. H2S MONITOR TESTER.

4. CONDITION FLAGS

   A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE DISPLAYED TO DENOTE CONDITIONS.

GREEN – NORMAL CONDITIONS
YELLOW – POTENTIAL DANGER
RED – DANGER, H2S PRESENT

   B. CONDITION FLAG SHALL BE POSTED AT LOCATION SIGN ENTRANCE.

EMERGENCY EQUIPMENT REQUIREMENTS

5. AUXILIARY RESCUE EQUIPMENT

   A. STRETCHER
   B. 100' LENGTH OF 5/8" NYLON ROPE.

6. MUD INSPECTION DEVICES

   GARRETT GAS TRAIN OR HACH TESTER FOR INSPECTION OF SULFIDE CONCENTRATION IN MUD SYSTEM.

7. FIRE EXTINGUISHER

   ADEQUATE FIRE EXTINGUISHERS SHALL BE LOCATED AT STRATEGIC LOCATIONS.

8. BLOW OUT PREVENTION EQUIPMENT

   THE WELL SHALL HAVE HYDRAULIC BOP EQUIPMENT FOR THE ANTICIPATED BHP OF 1500 PSI. EQUIPMENT IS TO BE TESTED ON INSTALLATION.

9. COMBUSTIBLE GAS DETECTOR

   THERE SHALL BE ONE COMBUSTIBLE GAS DETECTOR ON LOCATION AT ALL TIMES.

10. BOP TESTING

    BOP AND CHOKE LINE AND KILL LINE WILL BE TESTED.

11. AUDIO SYSTEM

    RADIO COMMUNICATION WILL BE AVAILABLE AT THE RIG.
    A. RIG FLOOR OR TRAILER
    B. VEHICLE

12. SPECIAL CONTROL EQUIPMENT

    A. HYDRAULIC BOP EQUIPMENT WITH REMOTE CONTROL ON GROUND.
    B. ROTATING HEAD

EMERGENCY EQUIPMENT REQUIREMENTS

13. EVACUATION PLAN

EVACUATION ROUTES SHOULD BE ESTABLISHED PRIOR TO SPUDDING EACH WELL AND DISCUSSED WITH ALL RIG PERSONNEL.

14. DESIGNATED AREA

A. PARKING AND VISITOR AREA: ALL VEHICLES ARE TO BE PARKED AT A PREDETERMINED SAFE DISTANCE FROM THE WELLHEAD. THIS WILL BE THE DESIGNATED SMOKING AREA.

B. TWO BRIEFING AREAS ON EITHER SIDE OF THE LOCATION AT THE MAXIMUM ALLOWABLE DISTANCE FROM THE WELL BORE SO THEY OFFSET PREVAILING WINDS PERPENDICULARLY, OR AT A 45-DEGREE ANGLE IF WIND DIRECTION TENDS TO SHIFT IN THE AREA.

C. PROTECTION CENTERS OR IF A MOVABLE TRAILER IS USED, IT SHOULD BE DEPT UPWIND OF EXISTING WINDS. WHEN WIND IS FROM THE PREVAILING DIRECTIONS, BOTH PROTECTION CENTERS SHOULD BE ACCESSIBLE.

H2S CONTINGENCY PLAN

STATUS CHECK LIST

NOTE: ALL ITEMS ON THIS LIST MUST BE COMPLETED BEFORE DRILLING TO 2,000'.

1. SIGN AT LOCATION ENTRANCE.

2. TWO (2) WIND SOCKS LOCATED AS REQUIRED.

3. TWO (2) 30-MINUTE PRESSURE DEMAND AIR PACKS ON LOCATION FOR ALL RIG PERSONNEL AND MUD LOGGERS.

4. AIR PACK INSPECTED FOR READY USE.

5. CASCADE SYSTEM AND HOSE LINE HOOK-UP.

6. CASCADE SYSTEM FOR REFILLING AIR BOTTLES.

7. SAFE BREATHING AREAS SET UP.

8. CONDITION FLAG ON LOCATION AND READY FOR USE.

9. H2S DETECTION SYSTEM HOOKED UP.

10. H2S ALARM SYSTEM HOOKED UP AND READY.

11. OXYGEN RESUSCITATOR ON LOCATION AND TESTED FOR USE.

12. STRETCHER ON LOCATION AT SAFETY TRAILER.

13. 1 – 100' LENGTH OF NYLON ROPE ON LOCATION.

14. ALL RIG CREW AND SUPERVISORS TRAINED AS REQUIRED.

15. ALL OUTSIDE SERVICE CONTRACTORS ADVISED OF POTENTIAL H2S HAZARD ON WELL.

16. NO SMOKING SIGN POSTED.

17. HAND OPERATED H2S DETECTOR WITH TUBES ON LOCATION.

CHECKED BY:_____ DATE:_____

PROCEDURAL CHECK LIST

PERFORM EACH TOUR:

1. CHECK FIRE EXTINGUISHERS TO SEE THAT THEY HAVE THE PROPER CHARGE.

2. CHECK BREATHING EQUIPMENT TO ENSURE THAT IT HAS NOT BEEN TAMPERED WITH.

3. MAKE SURE ALL THE H2S DETECTION SYSTEM IS OPERATIVE.

PERFORM EACH WEEK:

1. CHECK EACH PIECE OF BREATHING EQUIPMENT TO MAKE SURE THAT DEMAND REGULATOR IS WORKING. THIS REQUIRES THAT THE BOTTLE BE OPENED AND THE MASK ASSEMBLY BE PUT ON TIGHT ENOUGH SO THAT WHEN YOU INHALE, YOU RECEIVE AIR.

2. BLOW OUT PREVENTER SKILLS.

3. CHECK SUPPLY PRESSURE ON BOP ACCUMULATOR STAND BY SOURCE.

4. CHECK ALL SKA-PAC UNITS FOR OPERATION: DEMAND REGULATOR, ESCAPE BOTTLE AIR VOLUMES, SUPPLY BOTTLE OF AIR VOLUME.

5. CHECK BREATHING EQUIPMENT MASK ASSEMBLY TO SEE THAT STRAPS ARE LOOSENED AND TURNED BACK, READY TO PUT ON.

6. CHECK PRESSURE ON BREATHING EQUIPMENT AIR BOTTLES TO MAKE SURE THEY ARE CHARGED TO FULL VOLUME.

7. CONFIRM PRESSURE ON ALL SUPPLY AIR BOTTLES.

8. PERFORM BREATHING EQUIPMENT DRILLS WITH ON-SITE PERSONNEL.

9. CHECK THE FOLLOWING SUPPLIES FOR AVAILABILITY.

   A. EMERGENCY TELEPHONE LIST.
   B. HAND OPERATED H2S DETECTORS AND TUBES.

H2S CONTINGENCY PLAN

GENERAL EVACUATION PLAN

THE DIRECT LINES OF ACTION PREPARED BY **INDIAN FIRE & SAFETY, INC.** TO PROTECT THE PUBLIC FROM HAZARDOUS GAS SITUATIONS ARE AS FOLLOWS:

1. WHEN THE COMPANY APPROVED SUPERVISOR (DRILLING FOREMAN, CONSULTANT, RIG PUSHER, OR DRILLER) DETERMINES THE H2S GAS CANNOT BE LIMITED TO THE WELL LOCATION AND THE PUBLIC WILL BE INVOLVED, HE WILL ACTIVATE THE EVACUATION PLAN. ESCAPE ROUTES ARE NOTED ON AREA MAP.

2. "COMPANY MAN" OR DESIGNEE WILL NOTIFY LOCAL GOVERNMENT AGENCY THAT A HAZARDOUS CONDITION EXISTS AND EVACUATION NEEDS TO BE IMPLEMENTED.

3. COMPANY SAFETY PERSONNEL THAT HAVE BEEN TRAINED IN THE USE OF H2S DETECTION EQUIPMENT AND SELF-CONTAINED BREATHING EQUIPMENT WILL MONITOR H2S CONCENTRATIONS, WIND DIRECTIONS, AND AREA OF EXPOSURE. THEY WILL DELINEATE THE OUTER PERIMETER OF THE HAZARDOUS GAS AREA. EXTENSION TO THE EVACUATION AREA WILL BE DETERMINED FROM INFORMATION GATHERED.

4. LAW ENFORCEMENT PERSONNEL (STATE POLICE, POLICE DEPT., FIRE DEPT., AND SHERIFF'S DEPT.) WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. ALSO, THEY WILL AID IN EVACUATION OF THE PUBLIC IF NECESSARY.

IMPORTANT: LAW ENFORCEMENT PERSONNEL WILL NOT BE ASKED TO COME INTO A CONTAMINATED AREA. THEIR ASSISTANCE WILL BE LIMITED TO UNCONTAMINATED AREAS. CONSTANT RADIO CONTACT WILL BE MAINTAINED WITH THEM.

5. AFTER THE DISCHARGE OF GAS HAS BEEN CONTROLLED, COMPANY SAFETY PERSONNEL WILL DETERMINE WHEN THE AREA IS SAFE FOR RE-ENTRY.

EMERGENCY ACTIONS

WELL BLOWOUT – IF EMERGENCY

1. EVACUATE ALL PERSONNEL IF POSSIBLE.

2. IF SOUR GAS – EVACUATE RIG PERSONNEL.

3. IF SOUR GAS – EVACUATE PUBLIC WITHIN 1 HOUR RADIUS OF EXPOSURE.

4. DON SCBA AND RESCUE.

5. CALL 911 FOR EMERGENCY HELP (FIRE DEPT AND AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.

6. GIVE FIRST AID.

PERSON DOWN LOCATION/FACILITY

1. IF IMMEDIATELY POSSIBLE, CONTACT 911. GIVE LOCATION AND WAIT FOR CONFIRMATION.

2. DON SCBA AND RESCUE.

TOXIC EFFECTS OF HYDROGEN SULFIDE

HYDROGEN SULFIDE IS EXTREMELY TOXIC. THE ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE IS 10 PPM, WHICH IS .001% BY VOLUME. HYDROGEN SULFIDE IS HEAVIER THAN AIR (SPECIFIC GRAVITY – 1.192) AND COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 AND 46.0 PERCENT BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE AND SIX TIMES MORE TOXIC THAN CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE SHOWN IN TABLE II.

TABLE I
TOXICITY OF VARIOUS GASES

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY (SC=1)	THRESHOLD LIMIT (1)	HAZARDOUS LIMIT (2)	LETHAL CONCENTRATION (3)
HYDROGEN CYANIDE	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
HYDROGEN SULFIDE	H2S	1.18	10 PPM	250 PPM/HR	600 PPM
SULFUR DIOXIDE	SO2	2.21	5 PPM	-	1000 PPM
CHLORINE	CL2	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON MONOXIDE	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
CARBON DIOXIDE	CO2	1.52	5000 PPM	5%	10%
METHANE	CH4	0.55	90,000 PPM	COMBUSTIBLE ABOVE 5% IN AIR	

1) THRESHOLD LIMIT – CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.

2) HAZARDOUS LIMIT – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

3) LETHAL CONCENTRATION – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

TOXIC EFFECTS OF HYDROGEN SULFIDE

TABLE II
PHYSICAL EFFECTS OF HYDROGEN SULFIDE

PERCENT (%)	PPM	CONCENTRATION GRAINS 100 STD. FT3*	PHYSICAL EFFECTS
0.001	10	00.65	Obvious and unpleasant odor.
0.002	20	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; Stings eyes and throat.
0.050	500	32.96	Dizziness; Breathing ceases in a few minutes; Needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; Death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; Followed by death within minutes.

*AT 15.00 PSIA AND 60'F.

USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE, WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA.

2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RANDOM TO INSURE THAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.

3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE-PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR THEM IN A TEST ATMOSPHERE. (NOTE: SUCH ITEMS AS FACIAL HAIR {BEARD OR SIDEBURNS} AND EYEGLASSES WILL NOT ALLOW PROPER SEAL.) ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WEAR EYEGLASSES OR CONTACT LENSES.

4. MAINTENANCE AND CARE OF SCBA'S:

   A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:
      1. INSPECTION FOR DEFECTS, INCLUDING LEAK CHECKS.
      2. CLEANING AND DISINFECTING.
      3. REPAIR.
      4. STORAGE.

   B. INSPECTION; SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY FOR THE FOLLOWING PERMANENT RECORDS KEPT OF THESE INSPECTIONS.
      1. FULLY CHARGED CYLINDERS.
      2. REGULATOR AND WARNING DEVICE OPERATION.
      3. CONDITION OF FACE PIECE AND CONNECTIONS.
      4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.

   C. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED. (22)

USE OF SELF-CONTAINED BREATHING EQUIPMENT

5. PERSONS ASSIGNED TASKS THAT REQUIRES USE OF SELF-CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.

6. SCBA'S SHOULD BE WORN WHEN:

   A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TEST REVEALS LESS THAN 10 PPM OF H2S.

   B. WHEN BREAKING OUT ANY LINE WHERE H2S CAN REASONABLY BE EXPECTED.

   C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H2S EXISTS.

   D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H2S HAS BEEN DETECTED.

   E. AT ANY TIME THERE IS A DOUBT AS TO THE H2S LEVEL IN THE AREA TO BE ENTERED.

RESCUE
FIRST AID FOR H2S POISONING

DO NOT PANIC!

REMAIN CALM – THINK!

1. HOLD YOUR BREATH. (DO NOT INHALE FIRST; STOP BREATHING.)

2. PUT ON BREATHING APPARATUS.

3. REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. (GO UP-WIND FROM SOURCE OR AT RIGHT ANGLE TO THE WIND. NOT DOWN WIND.)

4. BRIEFLY APPLY CHEST PRESSURE – ARM LIFT METHOD OF ARTIFICIAL RESPIRATION TO CLEAN THE VICTIM'S LUNGS AND TO AVOID INHALING ANY TOXIC GAS DIRECTLY FROM THE VICTIM'S LUNGS.

5. PROVIDE FOR PROMPT TRANSPORTATION TO THE HOSPITAL, AND CONTINUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.

6. HOSPITAL(S) OR MEDICAL FACILITIES NEED TO BE INFORMED, BEFORE-HAND, OF THE POSSIBILITY OF H2S GAS POISONING – NO MATTER HOW REMOTE THE POSSIBILITY IS.

7. NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIM(S) HAS BEEN EXPOSED TO H2S GAS.

BESIDES BASIC FIRST AID, EVERYONE ON LOCATION SHOULD HAVE A GOOD WORKING KNOWLEDGE OF ARTIFICIAL RESPIRATION, AS WELL AS FIRST AID FOR EYES AND SKIN CONTACT WITH LIQUID H2S. EVERYONE NEEDS TO MASTER THESE NECESSARY SKILLS.

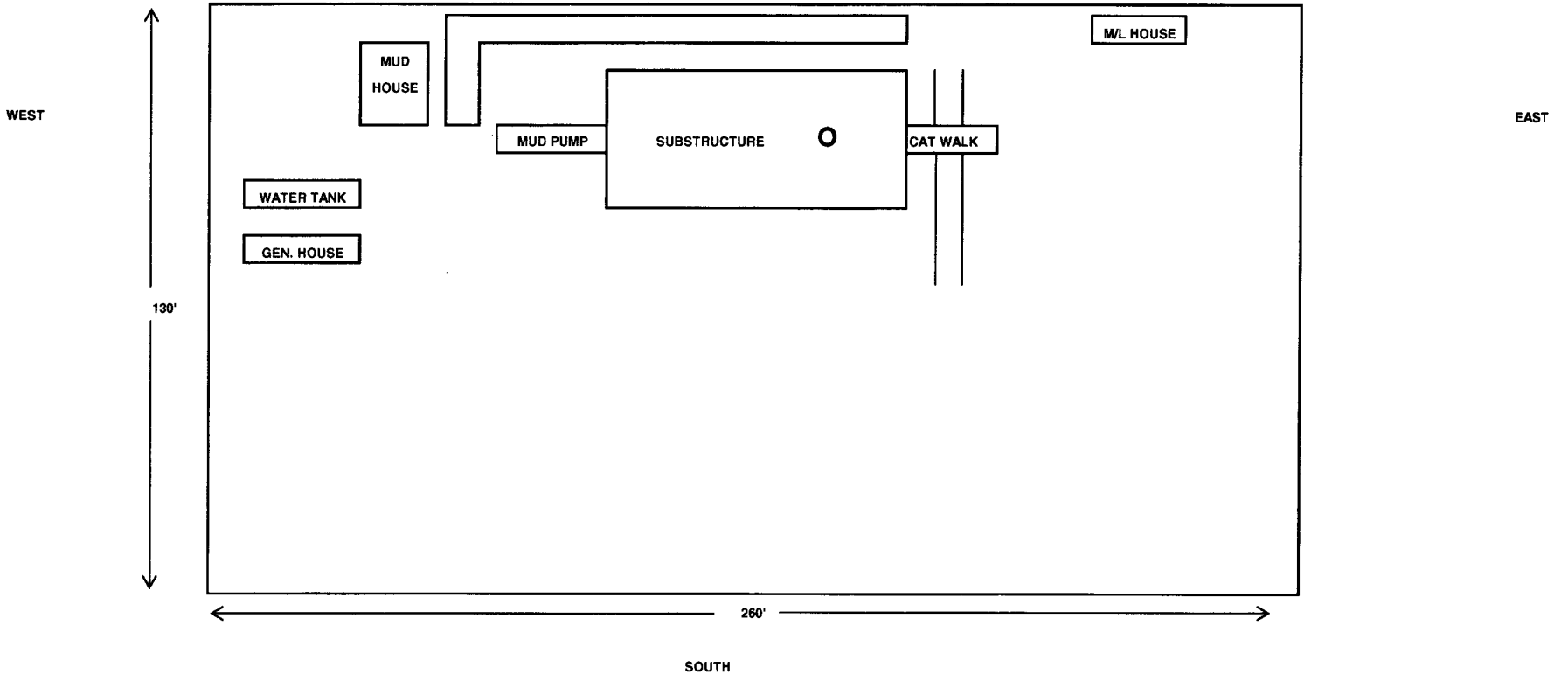
EXHIBIT "D" LOCATION DIAGRAM

Mesquite 2 State #3
1,980' FSL & 1,980' FEL
Sec 2, T18S, R31E
Eddy County, NM

NORTH

NO RESERVE PITS

WILL USE CLOSED LOOP SYSTEM



SOUTH

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-102
Revised June 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-25452	58040	Tamano-Bone Spring

4 Property Code	5 Property Name	6 Well Number
012984	Mesquite 2 State	3

7 OGRID No.	8 Operator Name	9 Elevation
010174	Harvey E. Yates Company	3,780'

10 Surface Location

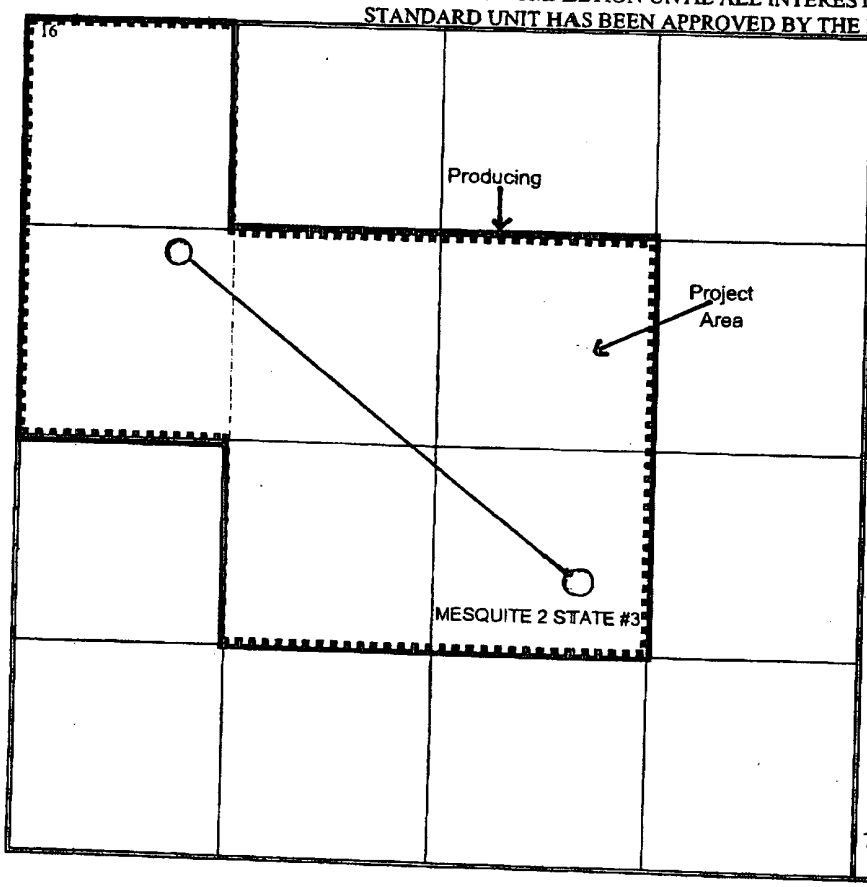
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	2	18 S	31E		1,980'	South	1,980'	East	Eddy

11 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	2	18S	31E		1,375'	North	810'	West	Eddy

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
240	Y	C	N/A

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



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Bob Williams
Signature

Bob Williams
Printed Name

Drilling Superintendent
Title and E-mail Address

9-14-05
Date

18 SURVEYOR CERTIFICATION

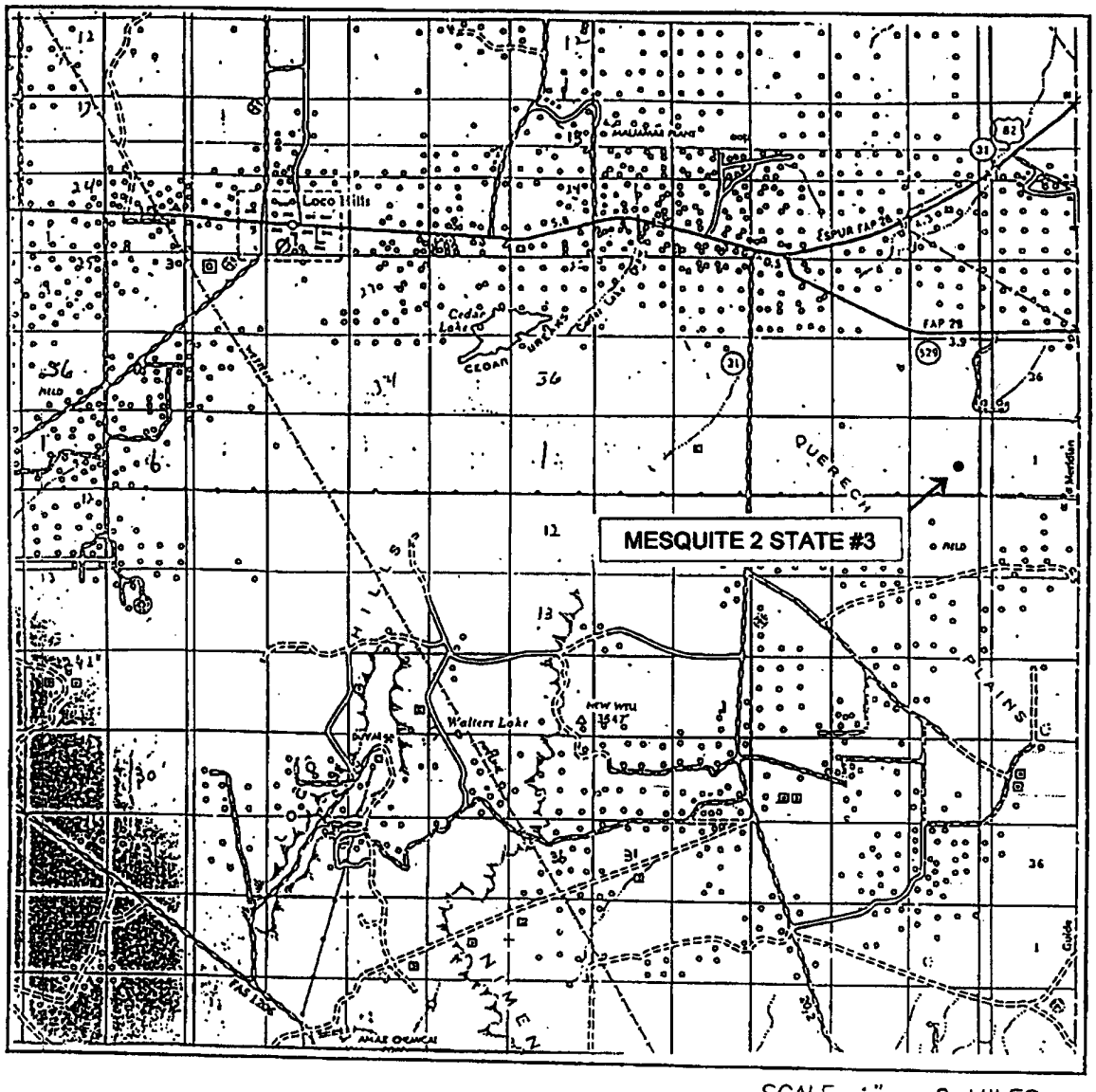
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

original - 11/5/1990
Date of Survey

Signature and Seal of Professional Surveyor:

orig by
Certificate Number

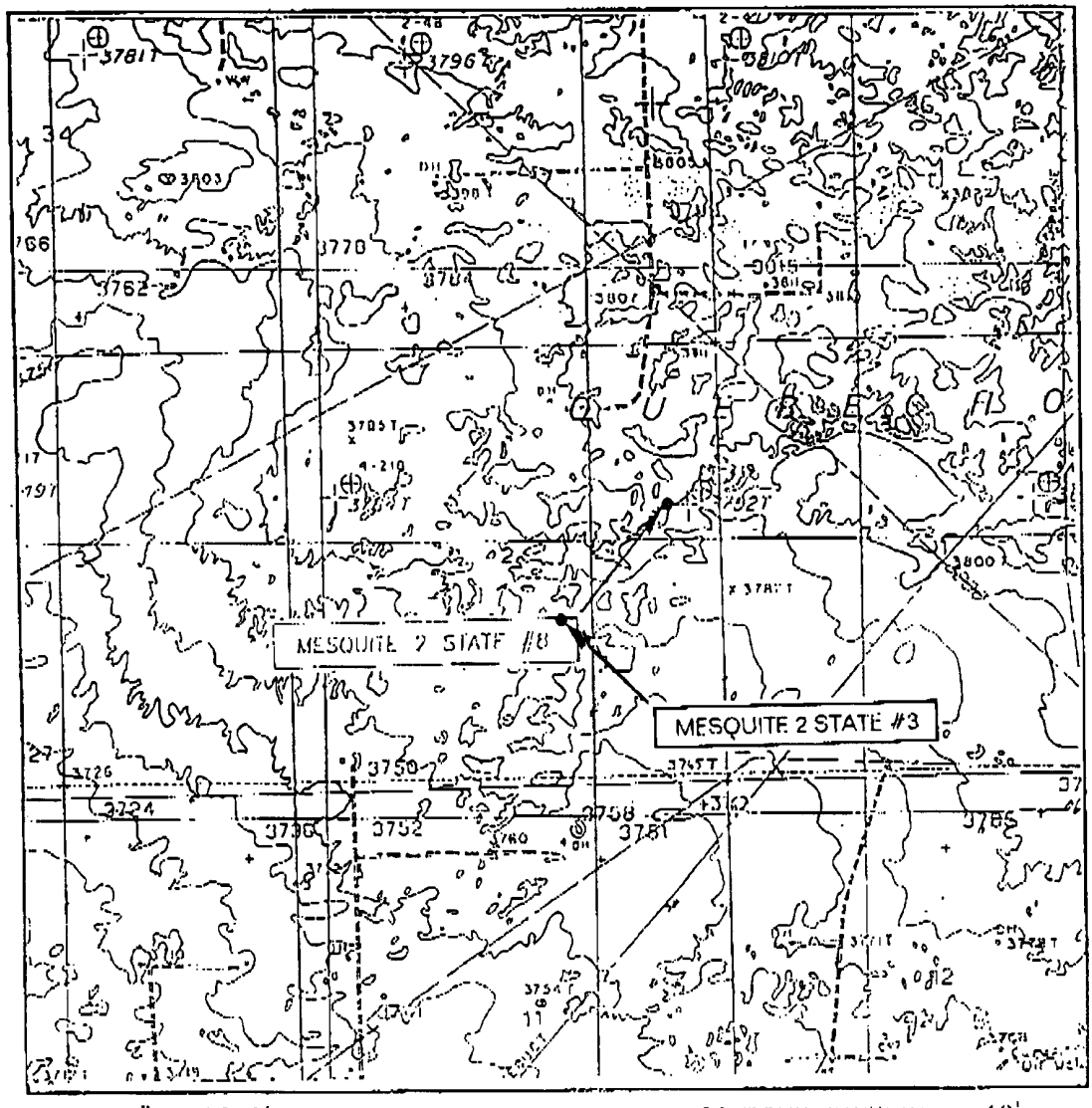
VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 2 TWP. 18-S RGE. 31-E
SURVEY N.M.P.M.
COUNTY EDDY
DESCRIPTION 1980' FSL & 1980' FEL
ELEVATION 3780'
OPERATOR HARVEY E. YATES COMPANY
LEASE MESQUITE 2 STATE

LOCATION VERIFICATION MAP



SCALE: 1" = 2000' CONTOUR INTERVAL: 10'
MALJAMAR, N.M.

SEC. 2 TWP. 18-S RGE. 31 E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1980' FSL & 1980' FEL

ELEVATION 3,780'

OPERATOR HARVEY E. YATES COMPANY

LEASE MESQUITE 2 STATE

U.S.G.S. TOPOGRAPHIC MAP
MALJAMAR, N.M.

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505) 393-3117

30-015-25452