

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

Form C-101
March 4, 2004

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

RECEIVED
Submit to appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies
FEB 02 2005

COUNTY OF ARTESIA ☐ AMENDED REPORT

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

¹ Operator Name and Address Pogo Producing Company P.O. Box 10340 Midland, TX 79702-7340		² OGRID Number 017891
		³ API Number 30 - 015-33935
⁴ Property Code	⁵ Property Name Lake Wood "10"	⁶ Well No. 1

⁷ Surface Location

UL or lot no. P	Section 10	Township 19S	Range 26E	Lot Idn	Feet from the 760'	North/South line South	Feet from the 1190'	East/West line East	County Eddy
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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
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⁹ Proposed Pool 1

Undes Four Mile Draw - Morrow (76960)

¹⁰ Proposed Pool 2

Drilling Pit Location and Other Information

UL or lot no. P	Section 10	Township 19S	Range 26E	Lot Idn	Feet from the 760'	North/South line South	Feet from the 1190'	East/West line East	County Eddy
Depth to ground water +80'				Distance from nearest fresh water well 1 mile		Distance from nearest surface water Lake McMillan 2.5 miles + Southeast			
¹¹ Work Type Code N		¹² Well Type Code G		¹³ Cable/Rotary Rotary		¹⁴ Lease Type Code P		¹⁵ Ground Level Elevation 3318'	
¹⁶ Multiple No		¹⁷ Proposed Depth 9900'		¹⁸ Formation Morrow		¹⁹ Contractor Unknown		²⁰ Spud Date When approved	

²¹ Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
25	20	NA	40	Redi-mix	Surface
17-1/2	13-3/8	48	500	550 sks	Circulate
12-1/4	9-5/8	36	1050	600 sks	Circulate
8-1/2 - 7-7/8	5-1/2	17	9900	1800 sks	1000' FS

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.

See Attached

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 ☐.

Signature:

Cathy Wright

Printed name: Cathy Wright

Title: Sr Eng Tech

E-mail Address: wrightc@pogoproducing.com

Date: 2/1/05

Phone: 432-685-8100

OIL CONSERVATION DIVISION

Approved by:

TIM W. GUM

DISTRICT II SUPERVISOR

Approval Date:

FEB 08 2005

Expiration Date:

FEB 08 2006

Conditions of Approval:

Attached ☐

NOTIFY OCD OF SPUD & TIME TO WITNESS CEMENTING OF SURFACE & INTERMEDIATE CASING

State of New Mexico

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Revised JUNE 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 76960	Pool Name UNDES FOUR MILE DRAW-MORROW
Property Code	Property Name LAKEWOOD 10	Well Number 1
GRID No. 17891	Operator Name POGO PRODUCING COMPANY	Elevation 3318'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	10	19-S	26-E		760	SOUTH	1190	EAST	EDDY

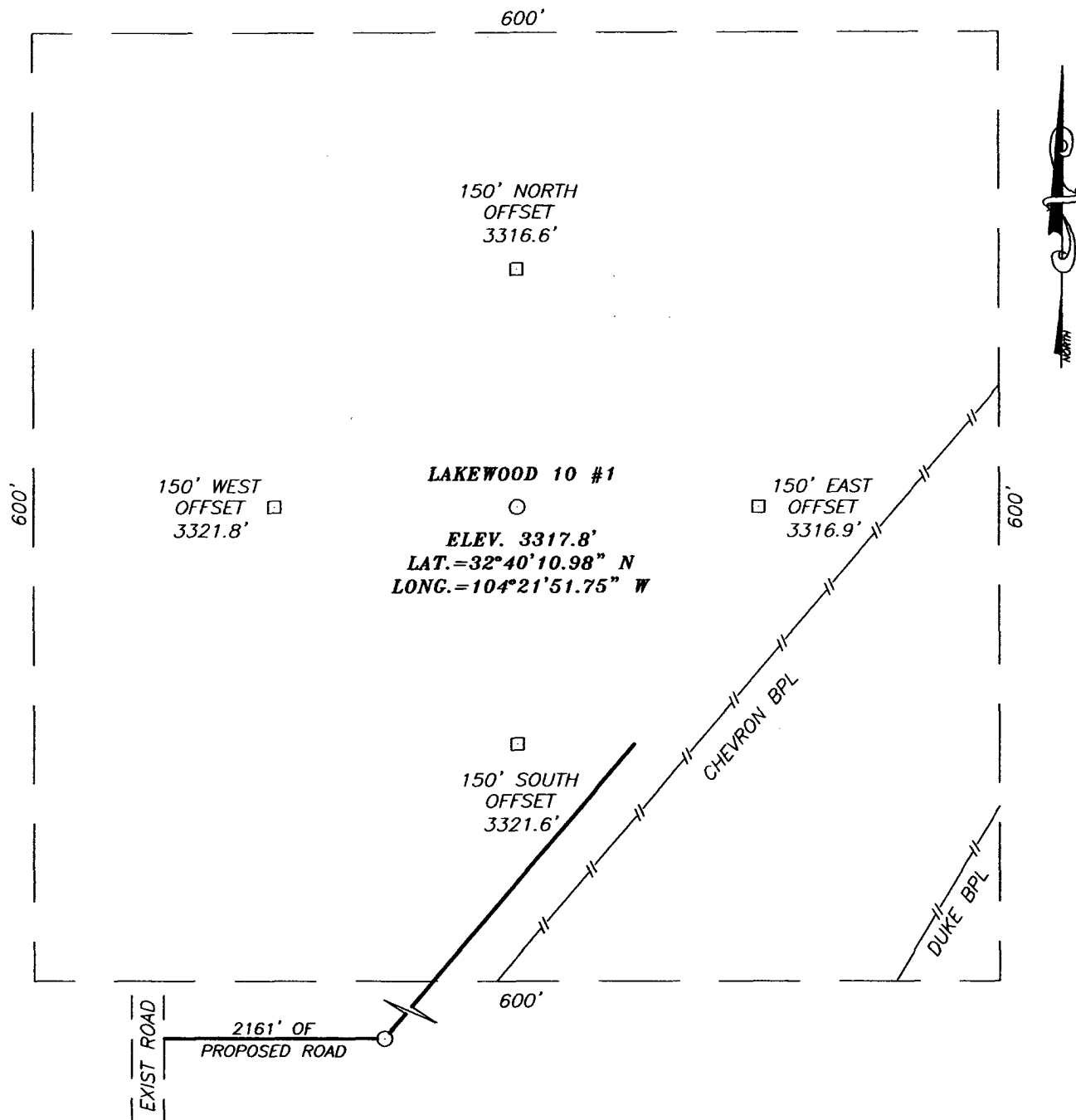
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

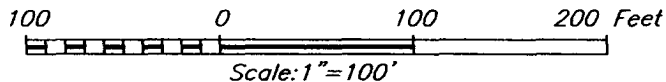
<p>GEODETTIC COORDINATES NAD 27 NME</p> <p>Y=60735.8 N X=49048.1 E</p> <p>LAT.=32°40' 0.98" N LONG.=104°2' 51.75" W</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Joe T. Janica</i> Signature</p> <p>Joe T. Janica Printed Name</p> <p>Agent</p> <p>Title</p> <p>01/21/05 Date</p>
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>JANUARY 17, 2005</p> <p>Date Surveyed</p> <p>Signature & Seal of Professional Surveyor</p> <p>GARY E. EDSON 1/19/05 05.11.0077</p> <p>Certificate No. GARY E. EDSON 12641</p>
	<p>1190'</p> <p>760'</p>

SECTION 10, TOWNSHIP 19 SOUTH, RANGE 26 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

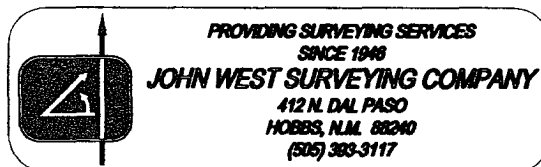
FROM THE INTERSECTION OF CO. RD. #37
 (FORREST LEE RD.) AND CO. RD. #34 (LAKE RD.)
 GO TO THE NORTH SIDE OF CO. RD. #37 TO A
 CATTLEGUARD FACING E-W. GO THRU CATTLEGUARD
 AND TURN LEFT. FOLLOW CHEVRON P/L R.O.W.
 FOR APPROX. 2200' TO PROPOSED LOCATION.



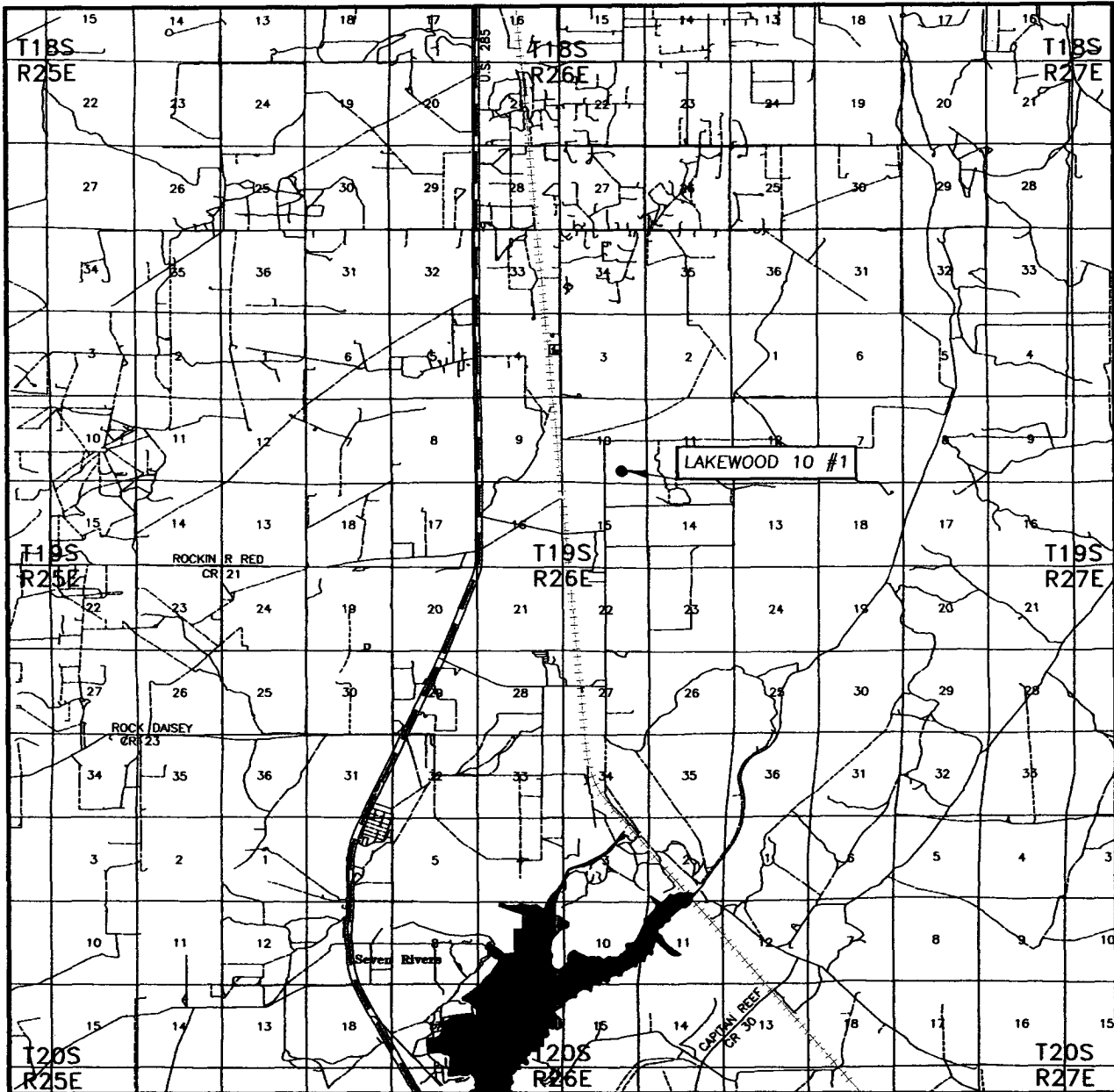
POGO PRODUCING COMPANY

LAKEWOOD 10 #1 WELL
 LOCATED 760 FEET FROM THE SOUTH LINE
 AND 1190 FEET FROM THE EAST LINE OF SECTION 10,
 TOWNSHIP 19 SOUTH, RANGE 26 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO.

Survey Date: 1/17/05	Sheet 1 of 1 Sheets
W.O. Number: 05.11.0077	Dr By: J.R.
Date: 1/18/04	Disk: CD#5
05110077	Scale: 1"=100'



VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 10 TWP. 19-S RGE. 26-E

SURVEY N.M.P.M.

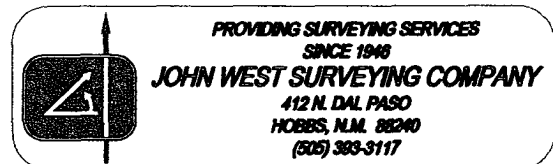
COUNTY EDDY

DESCRIPTION 760' FSL & 1190' FEL

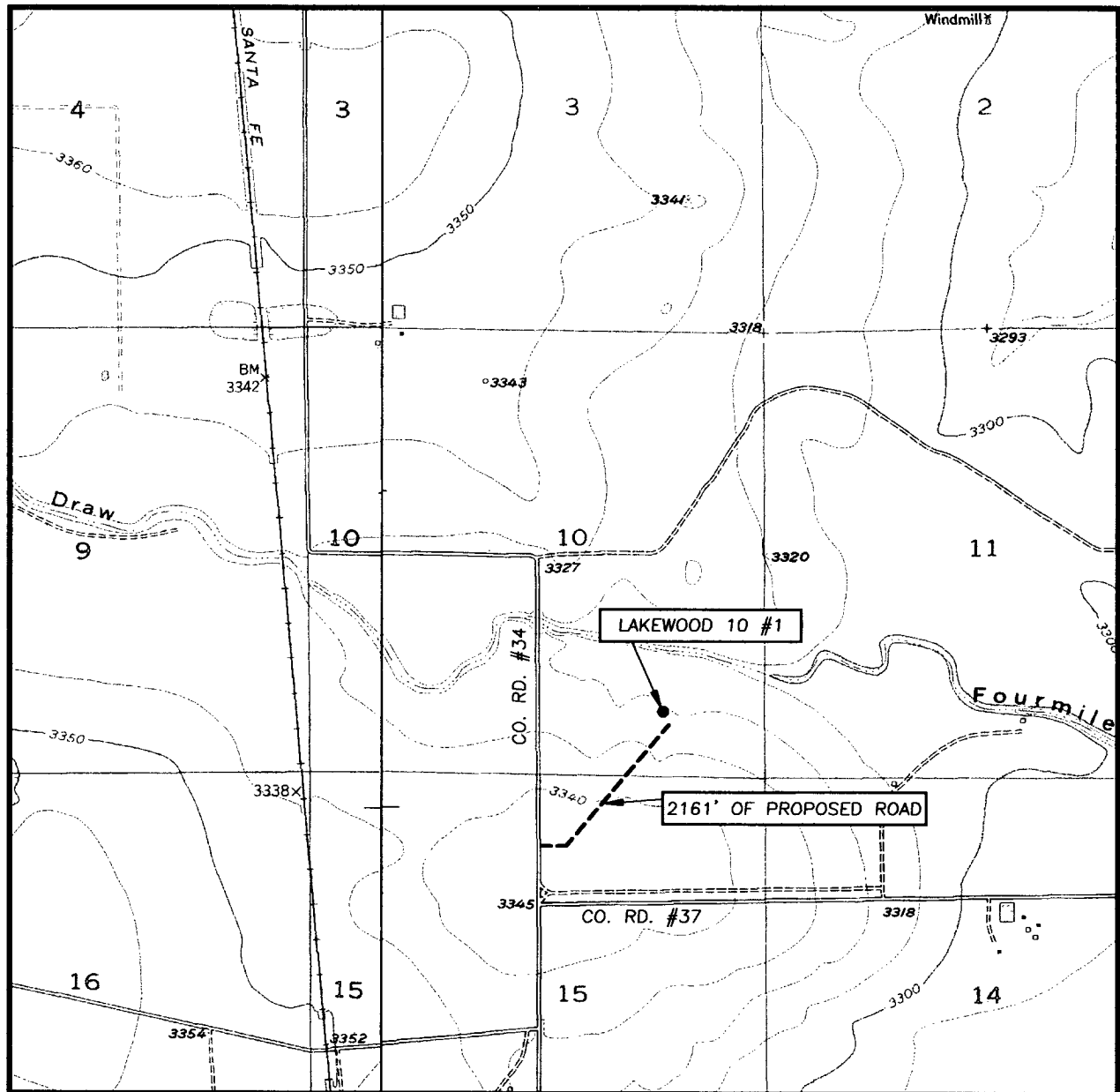
ELEVATION 3318'

OPERATOR POGO PRODUCING COMPANY

LEASE LAKEWOOD 10



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
LAKE McMILLAN NORTH, N.M. - 10'

SEC. 10 TWP. 19-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY EDDY

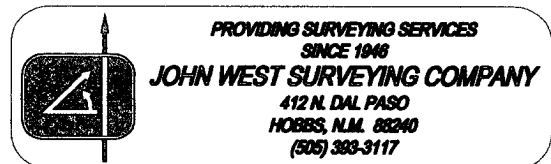
DESCRIPTION 760' FSL & 1190' FEL

ELEVATION 3318'

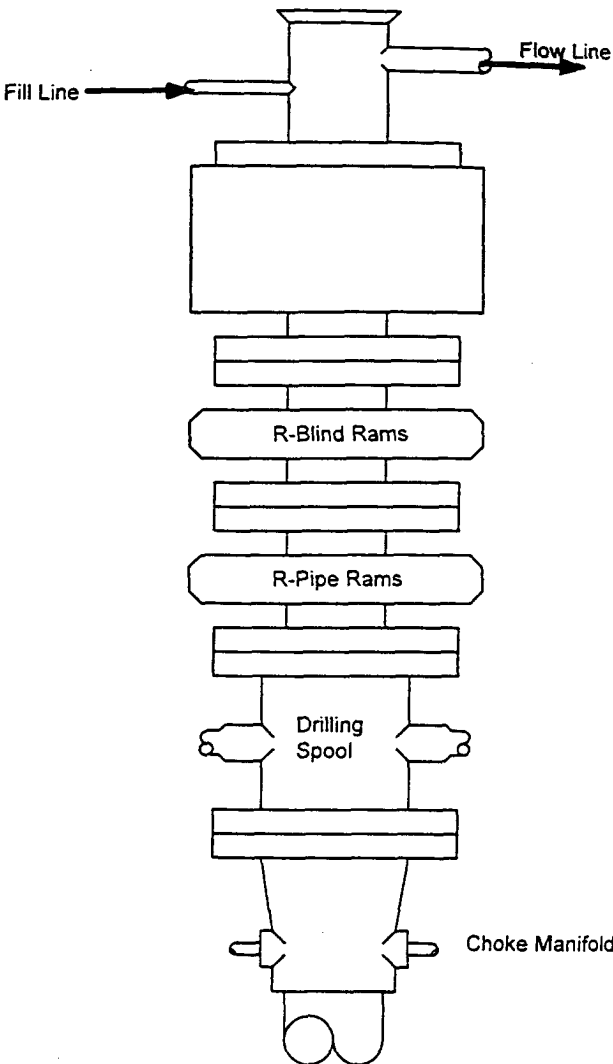
OPERATOR POGO PRODUCING COMPANY

LEASE LAKEWOOD 10

U.S.G.S. TOPOGRAPHIC MAP
LAKE McMILLAN NORTH, N.M.

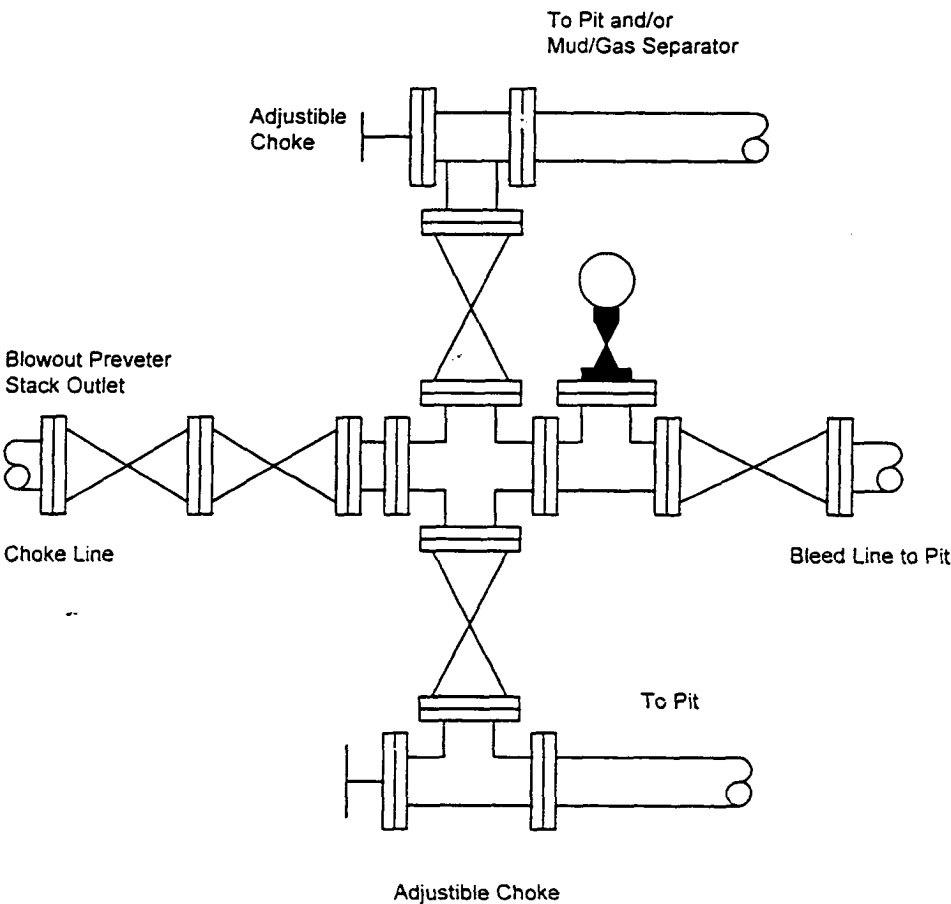


BLOWOUT PREVENTER SYSTEM



Type 900 Series
3000 psi WP

Choke Manifold Assembly for 3M WP System



Pogo Producing Company
Lake Wood 10 #1
760 FSL & 1190 FEL,
Sec 10, T19S, R26E,
Eddy County, New Mexico

1. Drill 26" hole w/ auger to 40' below ground level. Set 40' of 20" 1/4" wall conductor and grout cement to surface with redi mix.
2. Drill 17 1/2" hole w/ fresh water mud and sweeps to a total depth of 500'. Set 500' 13 3/8" 48# H-40 STC casing and cement w/ 225 sks minimum "C" 35:65: 6 lite cement mixed @ 12.4 ppg. Tail w/ 200 sks "C" w/ 2% calcium Chloride mixed @ 14.8 ppg. Adjust lead slurry if more than 100% wash out is realized. Nipple up 11" 2m double bop & test w/ rig pump to 1000 psi using rig pump.
3. Drill 12 1/4" hole to a total depth of 1050' using Fresh water mud and sweeps. Set 1050' 9 5/8" 36 J-55 STC casing and cement same with 250 sks "C" lite 35:65:6 poz/cement/gel mixed @ 12.4 ppg. Tail w/ 200 sks "C" w/ 2% calcium chloride mixed @ 14.8 ppg. Cement should be circulated. Recommend running fluid caliper and adjusting lead slurry accordingly. Nipple up 11" 3M Bop's and test to 1500 psi w/ rig pump. **R/U Mud Logger and Hydrogen sulfide monitoring equipment. " Un Manned". Make sure all Rig employee's are H2S certified.**
4. Drill 8 1/2" hole to a total depth of 8000' using fresh water and mud sweeps. Change hole size on bit trip below 8000 to 7 7/8". If chronic lost returns are experienced in the Cisco formation, a 7" 26# L-80 protective casing will be run after logging. Casing will be cemented per log volume + 35% excess ± 1000 sks "C" w/ 8pps gilsonite mixed @ 14.1 ppg. Stage tool will be used @ ± 7000'. If we do not encounter lost returns we will finish drilling hole to a total depth of 9900'. Well will be logged and a 5 1/2" L-80 string of casing will be run. We will stage cement casing with log volume + 35% excess. Stage tools will be placed @ ± 6000' & 3500'. Cement should circulate or tie in to 9 5/8" casing. We will use class "H" on first string mixed @ 15.7 ppg and follow with two stages of "C" 35:65:6 cement mixed @ 12.4 ppg. Tools will all be closed with 100 sks "C" neat cement.

Pogo Producing Company
Lake Wood 10 #1
 760 FSL & 1190 FEL,
 Sec 10, T19S, R26E,
 Eddy County, New Mexico

Mud Property Summary

Since Pogo Producing Company has not selected a Mud Retail Company for this project at the time of writing this procedure, the following summary should be enough for NMOCD review.

Depth (FEET)	Weight (PPG)	Viscosity (SEC/QRT)	Fluid Loss (CC/30 MIN)	PV (CPS)	YP (LB/100'2)	LCM (PPB)	MUD TYPE
0-500'	8.5-8.8	28-36	NC	6-8	8-10	sweeps	Native/premix gel/Ph control 9.0
500-1050	8.4 – 8.5	28-29	NC	0	0	sweeps	Clear Water/ paper sweeps
1050-8000'	8.6-8.8	29	NC	0	0	sweeps	Clear Water/Paper sweeps/ PH & corrosion control. Weight may increase due to formation water influx.
8000-9900'	8.8	55	<12	6-8	5-10	sweeps	Cut Brine Base Prehydrate gel/starch/ PH & corrosion control. Possible shale inhibition needed and polymer for vis and WL control.

5 ½ 17# L-80 Casing Strength and Load

Depth (feet)	Burst Load (PSI)	Burst Strength (PSI)	Collapse Load (PSI)	Collapse Strength (PSI)	Tensile load (1000lbs)	Tensile Strength (1000lbs)
9900	4125	7740	5148	6280	168.3	348

- All factor of Burst in excess of 1.8 note: casing frac shows load/strength ratio @ 1.3 minimum.
- Design of collapse factor in excess of 1.2
- Tensile factor design in excess of 1.2

Design parameters =

- Design property of Burst = 8.3 ppg pore pressure " Normal" pressure.
- Design property of Collapse = 10 ppg Brine water as produced in some Delaware formations
- No Abnormal pressure is expected in this area
- Frac gradient @ 9900' expected 12.5 ppg. Calculate ± 2500 isip + friction of casing during frac.
- Stage tools have comparable strength of 5 ½" P-110 17# casing because of thickness.

Pogo Producing Company
Lake Wood 10 #1
760 FSL & 1190 FEL,
Sec 10, T19S, R26E,
Eddy County, New Mexico

Formation tops as per Spencer Trust in section 15:

Queen = 600 ft
Grayburg = 910 ft
San Andres = 1310 ft
Yeso = 2928
Bone Spring Lm = 4630 ft
3rd Bone Spring Sd. = 6570 ft
Wolfcamp Lime = 7020 ft
Cisco = 7850 ft
Strawn = 8316
Atoka = 9042
Morrow = 9197
Morrow Clastics = 9446
Chester = 9768

**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

This well and its anticipated facility are not expected to have Hydrogen Sulfide releases. Pogo Producing Company has had no known H₂S problems in this area, however, there is always a possibility of Hydrogen Sulfide production or releases in the Delaware Basin. Due to the subject well's proximity to a private residence the following contingency plan has been orchestrated. Pogo Producing Company will have a Company Representative living on location throughout the drilling of this well. An un-man H₂S safety trailer and monitoring equipment will also be station on location during the drilling operation below the shallow Intermediate Casing depth of \pm 1050 ft. until the completion of the subject well at \pm 9,900 ft.

**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

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**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

General H2S Emergency Actions:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area"
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (Self Contained Breathing Apparatus)
3. Always use the "buddy system"
4. Isolate the well/problem if possible
5. Account for all personnel
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the Company personnel as soon as possible if not at the location. (use the enclosed call list as instructed

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of the emergency response agencies and nearby residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will don the self contained breathing apparatus.
2. Remove all personnel to the "safe area". (always use the buddy system).
3. Contact company personnel if not on location.
4. Set in motion the steps to protect and or remove the general public to an upwind "safe area". Maintain strict security & safety procedures while dealing with the source.
5. No entry to any unauthorized personnel.
6. Notify the appropriate agencies: City Police-City Street (s)
State Police- State Rd
County Sheriff – County Rd.
7. Call the NMOCD

**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take the necessary steps to protect the workers and the public.

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been contacted)

	<u>OFFICE</u>	<u>MOBILE</u>	<u>HOME</u>
POGO Producing Co.	432 685 8100		
Richard Wright	432 685 8140	432 556 7595	432 699 7108
Barrett Smith	432 685 8141	432 425 0149	432 520 7337
Rex Jasper	432 685 8143	432 631 0127	432 694 1839
Donny Davis	pgr 432 563 6944	432 556 5927	432 570 9555
Jerry Cooper	432 685 8101		432 697 4629

EMERGENCY RESPONSE NUMBERS:

State Police:	Eddy County		505 748 9718
State Police:	Lea County		505 392 5588
Sheriff	Eddy County		505 746 2701
Sheriff	Lea County		
Emergency Medical Ser	Eddy County		911 or 505 746 2701
(Ambulance)	Lea County	Eunice	911 or 505 394 3258
Emergency Response	Eddy County SERC		505 476 9620

**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

Lea County

Artesia Police Dept		505 746 5001
Artesia Fire Dept		505 746 5001
Carlsbad Police Dept		505 885 2111
Carlsbad Fire Dept		505 885 3125
Loco Hills Police Dept		505 677 2349
Jal Police Dept		505 395 2501
Jal Fire Dept		505 395 2221
Jal ambulance		505 395 2221
Eunice Police Dept		505 394 0112
Eunice Fire Dept		505 394 3258
Eunice Ambulance		505 394 3258
Hobbs Police Dept		
NMOCD	District 1 (Lea, Roosevelt, Curry)	505 393 6161
	District 2 (Eddy Chavez)	505 748 1283
Lea County Information		505 393 8203
Callaway Safety	Lea/Eddy County	505 392 2973
BJ Services	Artesia	505 746 3140
	Hobbs	505 392 5556
Halliburton	Artesia	1 800 523 2482
	Hobbs	1 800 523 2482
Wild Well Control	Midland	432 550 6202
	Mobile	432 553 1166

**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

PROTECTION OF THE GENERAL PUBLIC (Radius Of Exposure) ROE:

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of ¼ mile in New Mexico will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H₂S could be present in concentrations greater than 100 ppm in the gas mixture

CALCULATIONS FOR THE 100 PPM (ROE) "Pasquill-Gifford equation"

X = [(1.589) (mole fraction) (Q- volume in std cu ft)] to the power of (0.6258)

CALCULATION FOR THE 500 PPM ROE:

X = [(.4546) (mole fraction) (Q- volume in std cu ft)] to the power of (0.6258)

Example:

If a well/facility has been determined to have 150 / 500 ppm H₂S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

150 ppm X = [(1.589) (.00015) (100,000 cfd)] to the power of (.6258)
X = 7 ft

500 ppm X = [(.4546) (.0005) (100,000 cfd)] to the power of (.6258)
X = 3.3 ft.

(These calculations will be forwarded to the appropriate District NMOCD office when Applicable)

PUBLIC EVACUATION PLAN:

- 1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- A trained person in H₂S safety, shall monitor with detection equipment the H₂S concentration, wind and area exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class 1

**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

- **groups A,B,C &D, Division 1, hazardous locations. All monitor will have a minimum capability of measuring H₂S , oxygen, and flammable values).**
- Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

- 1. Human life and/or property are in danger
- 2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

INSTRUCTION FOR IGNITION:

- 1. Two people are required. They must be equipped with positive pressure, self contained breathing apparatus and a "D" ring style full body, OSHA approved safety harness. Non flammable rope will be attached.
- 2. One of the people will be qualified safety person who will test the atmosphere for H₂S, Oxygen & LFL. The other person will be the company supervisor; he is responsible for igniting the well.
- 3. Ignite up wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25 mm flare gun shall be used, with a ± 500 ft. range to ignite the gas.
- 4. Prior to ignition, make a final check for combustible gases.
- 5. Following ignition, continue with the emergency actions & procedures as before.

Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

REQUIRED EMERGENCY EQUIPMENT:

- **1. Breathing apparatus:**
 - Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
 - Work/Escape packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
 - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

- **2. Signage & Flagging:**
 - One color code condition sign will be placed at the entrance to the site reflection the possible conditions at the site.
 - A colored condition flag will be on display, reflecting the condition at the site at the time.

- **3. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.**

- **4. Wind Socks: Two wind socks will be placed in strategic locations, visible from all angles.**

- **5. H2S detectors and alarms: The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)**
 - Rig Floor
 - Bell Nipple
 - End of Flow line or where well bore fluid are being discharged.

- **6. Auxiliary Rescue Equipment:**
 - Stretcher
 - Two OSHA full body harness
 - 100 ft 5/8 inch OSHA approved rope

Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

- 1-20# class ABC fire extinguisher
- Communication via cell phones on location and vehicles on location.

USING SELF CONTAINED BREATHING AIR EQUIPMENT (SCBA):

- (SCBA) SHOULD BE WORN WHEN ANY OF THE FOLLOWING ARE PERFORMED:
 - Working near the top or on top of a tank
 - Disconnecting any line where H₂S can reasonably be expected
 - Sampling air in the area to determine if toxic concentrations of H₂S exist.
 - Working in areas where over 10 ppm on H₂S has been detected.
 - At any time there is a doubt as the level of H₂S in the area.
- All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
- Facial hair and standard eyeglasses are not allowed with SCBA.
- Contact lenses are never allowed with SCBA.
- Air quality shall be continuously be checked during the entire operation.
- After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected
- All SCBA shall be inspected monthly.

RESCUE AND FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H₂S) POISONING:

- Do not panic
- Remain Calm & think
- Get on the breathing apparatus

**Pogo Producing Company
Lakewood 10 # 1
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility**

760 FSL & 1190 FWL, SEC 10, T19S, R26E, EDDY COUNTY, NEW MEXICO

- Remove the victim to the safe breathing area as quickly as possible. Up wind an uphill from source or cross wind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and or CPR, as necessary
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two personnel on location shall be trained in CPR and First Aid.

HYDROGEN SULFIDE TOXIC EFFECTS

H₂S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H₂S is approximately 20% heavier than air (Sp. Gr= 1.19)(Air = 1) and colorless. It forms an explosive mixture with air between 4.3% and 46%. By volume hydrogen sulfide is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

Various Gases

COMMON NAME	CHEMICAL ABBREV.	SPECIFIC GRVTY.	THRESHOLD LIMITS	HAZARDOUS LIMITS	LETHAL CONCENTRATIONS
Hydrogen Sulfide	H ₂ S	1.19	10ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO ₂	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL ₂	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO ₂	1.52	5000 ppm	5%	10%
Methane	CH ₄	0.55	90,000	Combustible @ 5%	N/A

Threshold limit: Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.

Hazardous Limit: Concentrations that may cause death

Lethal

Concentrations: Concentrations that will cause death with short term exposure

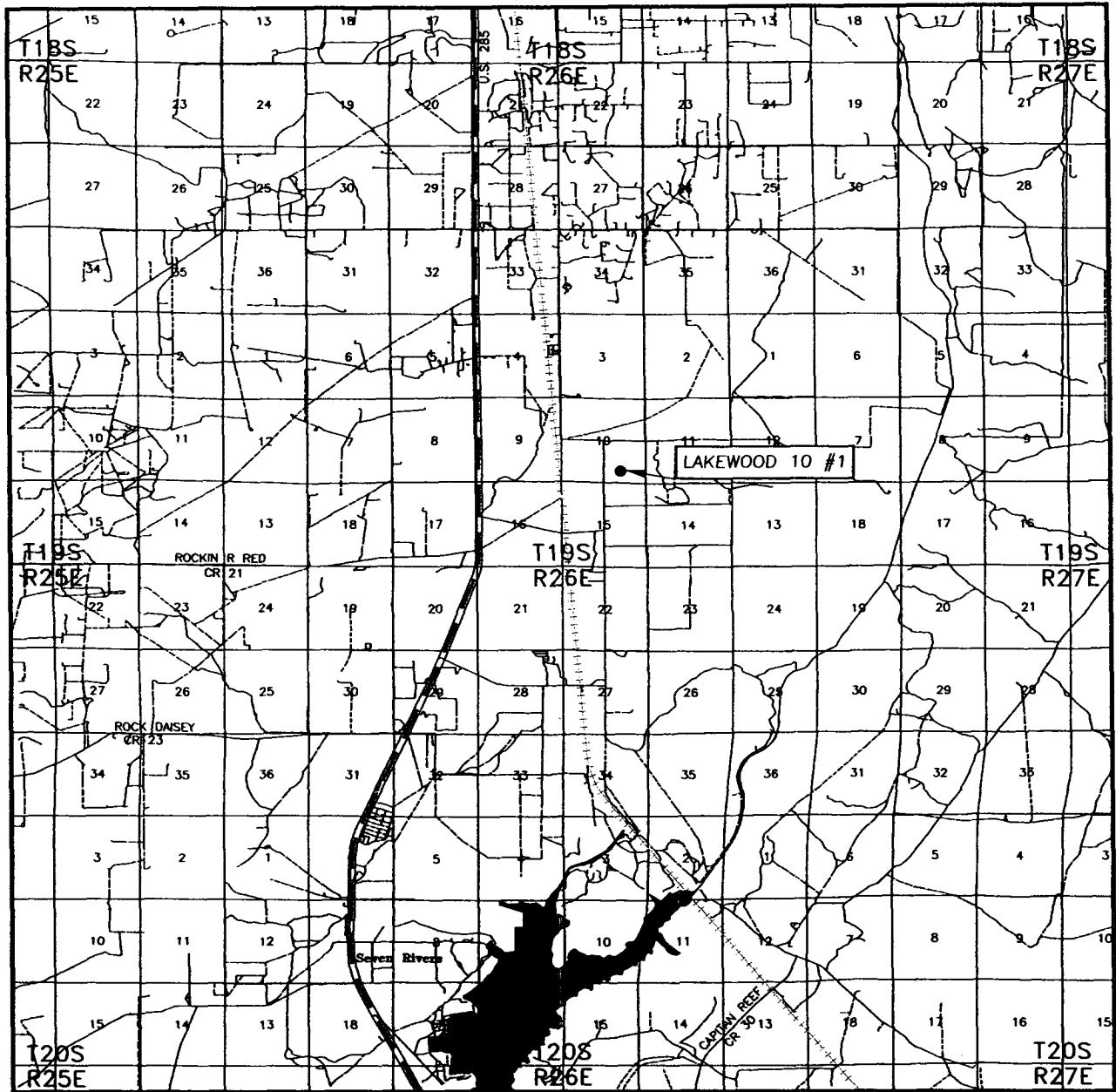
Threshold limit -

10 ppm: NIOSH guide to chemical hazards

PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

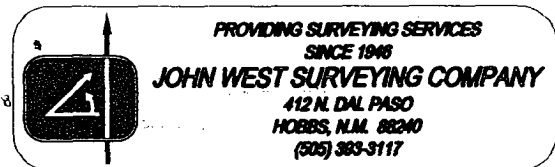
CONCENTRATION	PHYSICAL EFFECTS
.001% 10 PPM	Obvious and unpleasant odor. Safe for 8 hr exposure
.005% 50 ppm	Can cause some flu like symptoms and can cause pneumonia
.01% 100 ppm	Kills the sense of smell in 3-15 minutes. May irritate the eyes and throat.
.02% 200 ppm	Kills the sense of smell rapidly. Severly irritates the eyes and throat. Severe flu like symptoms after 4 or more ours. May cause lung damage and or death.
.06% 600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.

VICINITY MAP



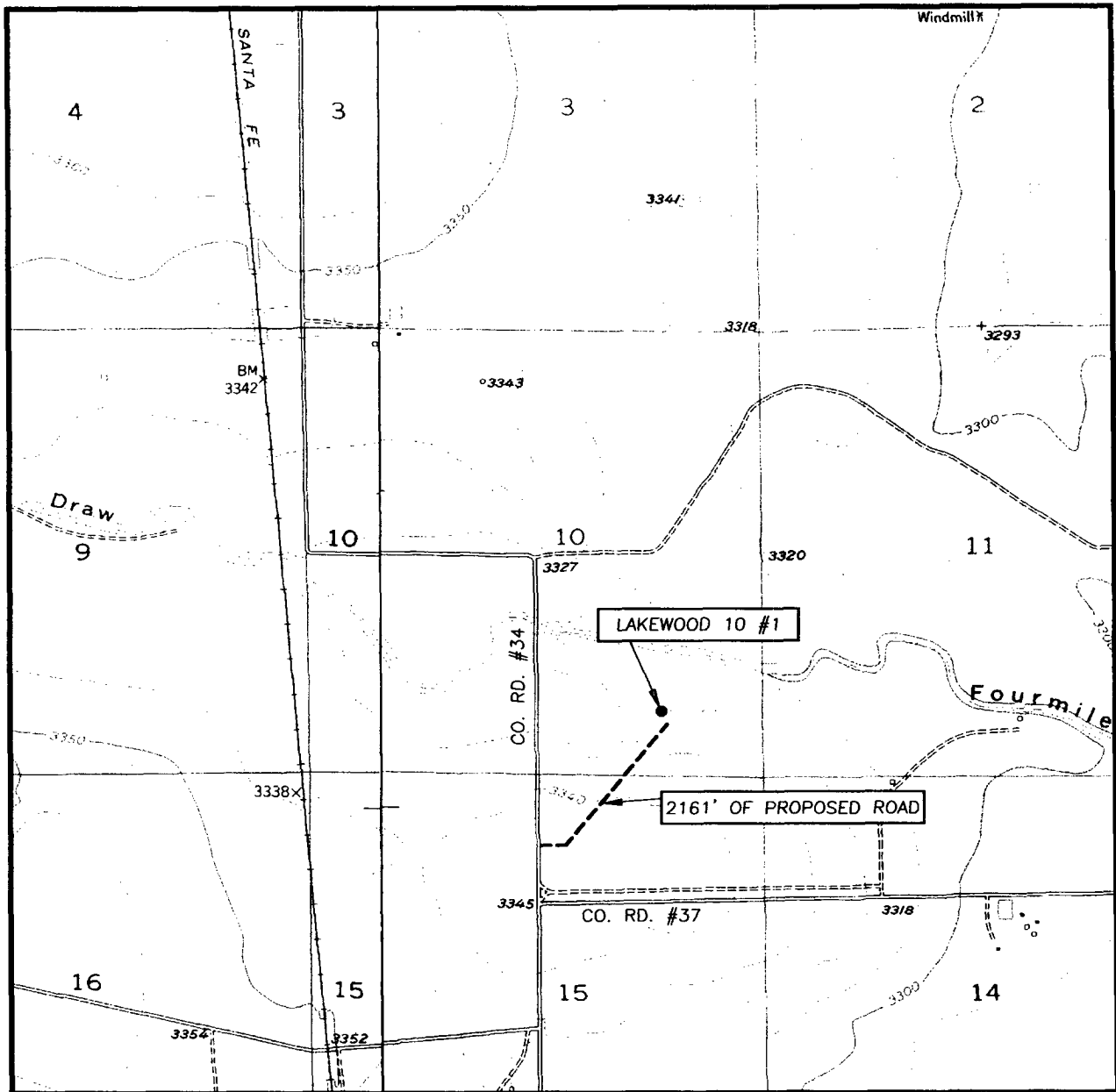
SCALE: 1" = 2 MILES

SEC. 10 TWP. 19-S RGE. 26-E
 SURVEY N.M.P.M.
 COUNTY EDDY
 DESCRIPTION 760' FSL & 1190' FEL
 ELEVATION 3318'
 OPERATOR POGO PRODUCING COMPANY
 LEASE LAKEWOOD 10



Pg 12

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
LAKE McMILLAN NORTH, N.M. - 10'

SEC. 10 TWP. 19-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 760' FSL & 1190' FEL

ELEVATION 3318'

OPERATOR POGO PRODUCING COMPANY

LEASE LAKEWOOD 10

U.S.G.S. TOPOGRAPHIC MAP
LAKE McMILLAN NORTH, N.M.

