

30-025-40168

GREAT WESTERN DRILLING COMPANY
Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

This well and it's anticipated facility are not expected to have Hydrogen Sulfide releases. However, there may be Hydrogen Sulfide production in the nearby area. There are no private residences in the area but a contingency plan has been orchestrated. GREAT WESTERN DRILLING COMPANY will have a company representative available to the rig personnel through out the drilling of this well. If Hydrogen Sulfide is detected or suspected, monitoring equipment will be employed to assure the safety of all personnel.

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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 and 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

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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 has been contacted)

	OFFICE	MOBILE	HOME
RICHARD CHOATE	575-396-5538	575-631-1813	575-396-4131
SAM ROBERTS	432-682-5241	432-553-2502	

EMERGENCY RESPONSE NUMBERS:

State Police	Eddy County		575 -748-9718
State Police	Lea County		575-392-5588
Sheriff	Eddy County		575-746-2701
Sheriff	Lea County		
Emergency Medical Service (Ambulance)	Eddy County		911 or 505-746-2701
	Lea County	Eunice	911 or 505-394-3258
Emergency Response	Eddy County SERC		575-476-9620
	Lea County		
Artesia Police Dept			575--746-5001
Artesia Fire Dept			575--746-5001
Carlsbad Police Dept			575-885-2111
Carlsbad Fire Dept			575--885-3125

EMERGENCY CALL LIST (CONT.)

Loco Hills Police Dept		575- 677-2349
Jal Police Dept		575--395-2501
Jal Fire Dept		575--395-2221
Jal Ambulance		575--395-2221
Eunice Police Dept		575- 394-0112
Eunice Fire Dept		575--394-3258
Eunice Ambulance		575--394-3258
Hobbs Police Dept		575- 397-3365
Hobbs Fire Dept		575--397-9308
NMOCD	District 1 (Lea, Roosevelt, Curry)	575- 393-6161
	District 2 (Eddy, Chavez)	575--748-1283
Lea County Information		575--393-8203
Callaway Safety	Eddy/Lea Counties	575--392-2973
BJ Services	Artesia	575--746-3140
	Hobbs	575--392-5556
Halliburton	Artesia	1-800-523-2482
	Hobbs	1-800-523-2482
Wild Well Control	Midland	432-550-6202
	Mobile	432-553-1166

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- 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 UNCONTROLABLE 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 and 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 \pm 500 ft. range to ignite the gas.
4. Prior to ignition, make a final check with combustible gases.
5. Following ignition, continue with the emergency actions & procedures as before.

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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/Escapes packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity
 - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
2. **Signage & Flagging:**
 - One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - A colored conditioned 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 windsocks will be placed in strategic locations, visible from all angles.
5. **H2S Detectors & Alarms:**
 - The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible at 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
 - Rig Floor
 - Bell Nipple
 - End of flow line or where well bore fluid are being discharged.
6. **Auxiliary Rescue Equipment:**
 - Stretcher
 - Two OSHA full body harness
 - 100 ft. 5/8 inch OSHA approved rope.
 - 1 – 20# class ABC fire extinguisher
 - Communication via cell phones on location and vehicles on location.

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USING SELF CONTAINED BREATHING AIR EQUIPMENT (SCBA):

- (SCBA) SHOULD BE WORN WHEN ANY OF THE FOLLOWING ARE PERFORMED:
 - Working near the top or on the top of a tank
 - Disconnecting any line where H₂S can reasonably be expected
 - Sampling air in the area to determine if toxic concentration of H₂S can 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 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 and think
- Get on the breathing apparatus

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- Remove the victim to the safe breathing area as quickly as possible. Up wind and 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.

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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.

COMMON NAME	CHEMICAL ABBREV.	SPECIFIC GRVTY.	THRESHOLD LIMITS	HAZARDOUS LIMITS	LETHAL CONCENTRATIONS
Hydrogen Sulfide	H ₂ S	1.19	10 ppm 15 ppm	100 ppm/hr	600ppm
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.

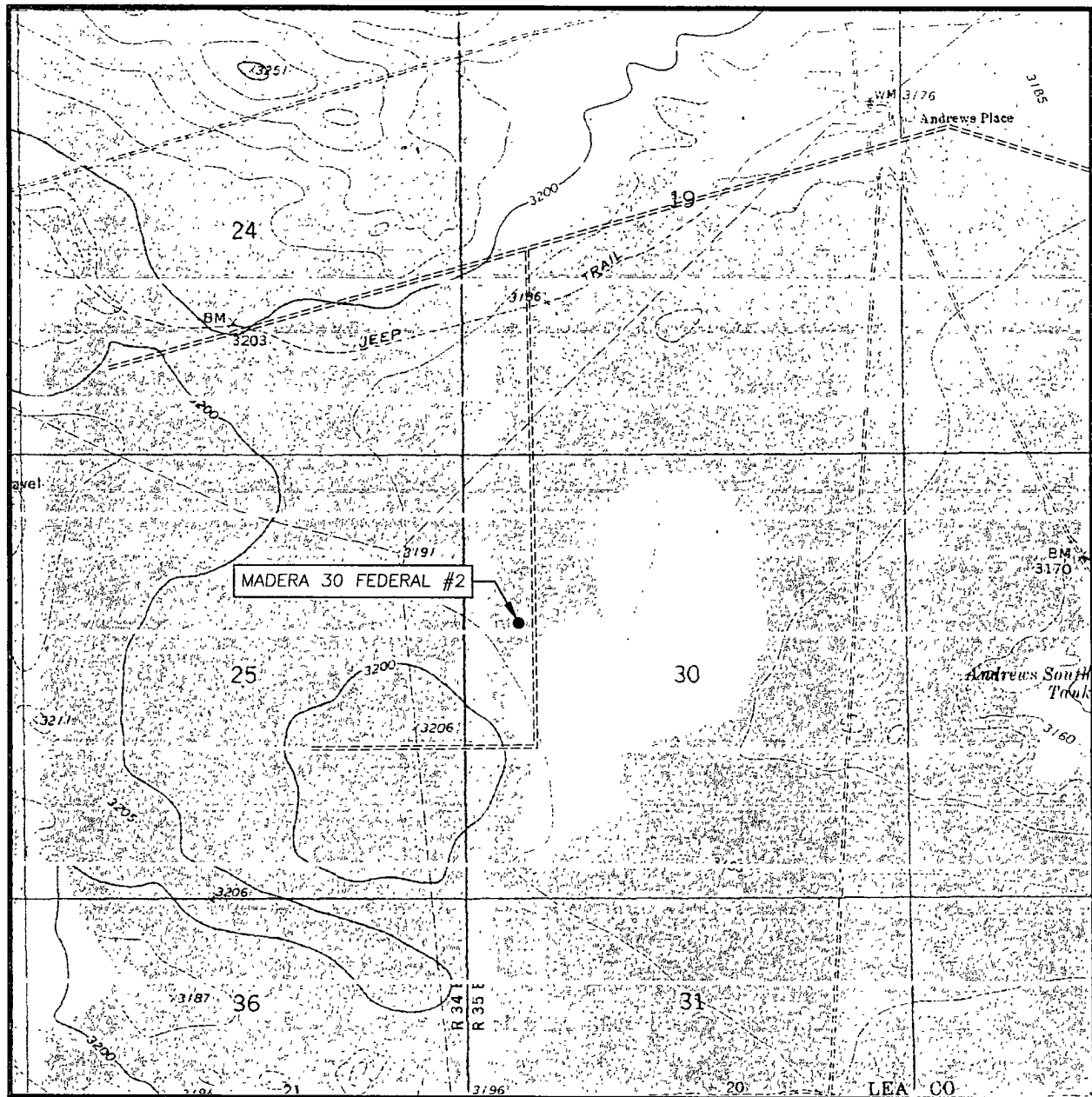
Concentrations: Concentrations that will cause death with short term exposure.

Threshold Limit: NIOSH guide to chemical hazards
(10 ppm)

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. Severely irritates the eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and or death.
.06% 600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
ANDREWS PLACE, N.M. - 10'

SEC. 30 TWP. 26-S RGE. 35-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

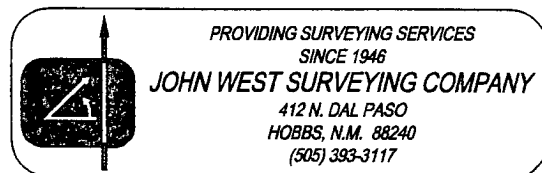
DESCRIPTION 2000' FNL & 660' FWL

ELEVATION 3189'

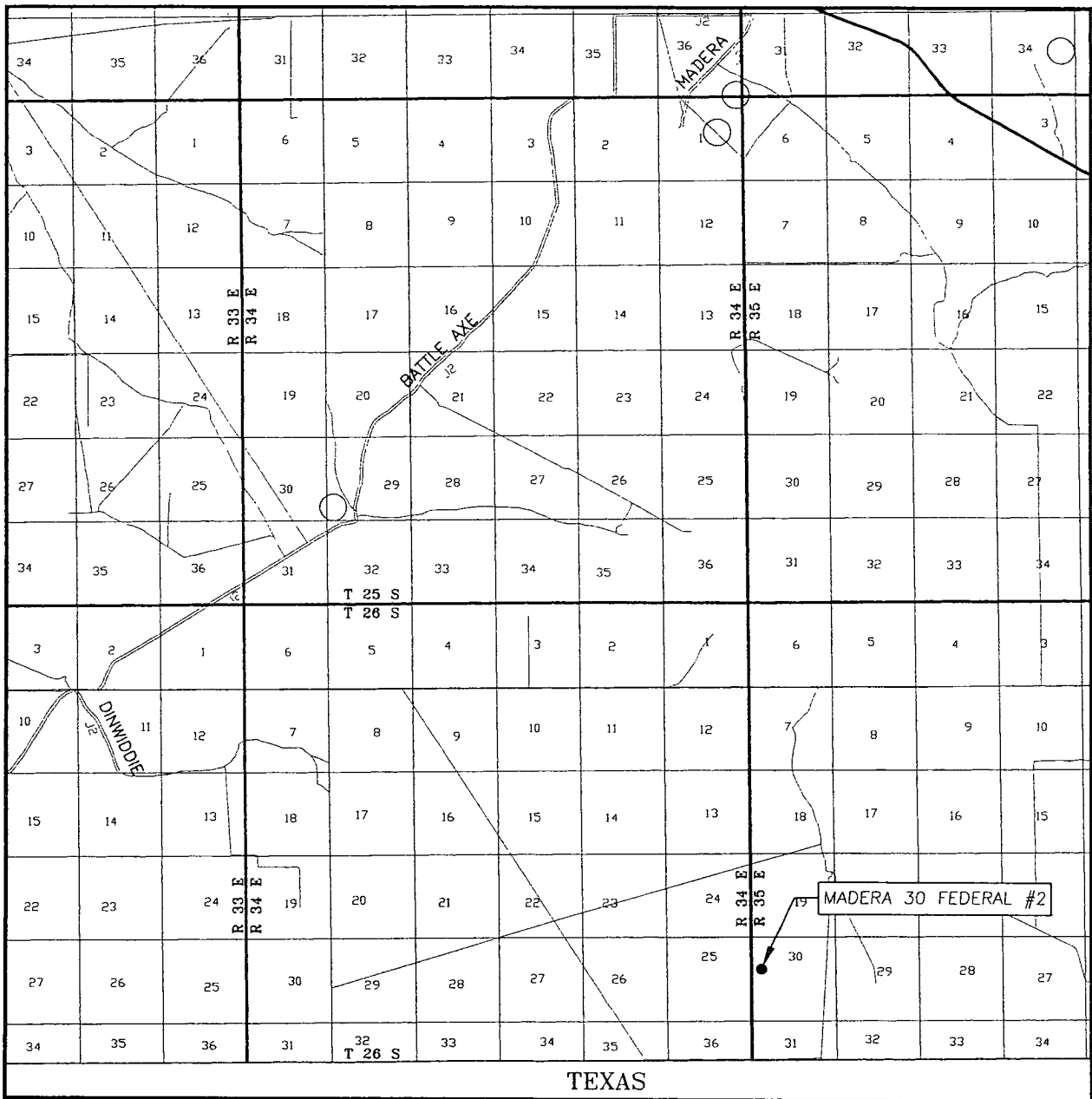
OPERATOR GREAT WESTERN
DRILLING CO.

LEASE MADERA 30 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
ANDREWS PLACE, N.M.

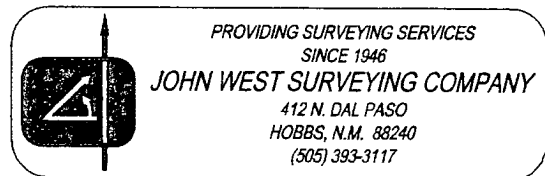


VICINITY MAP

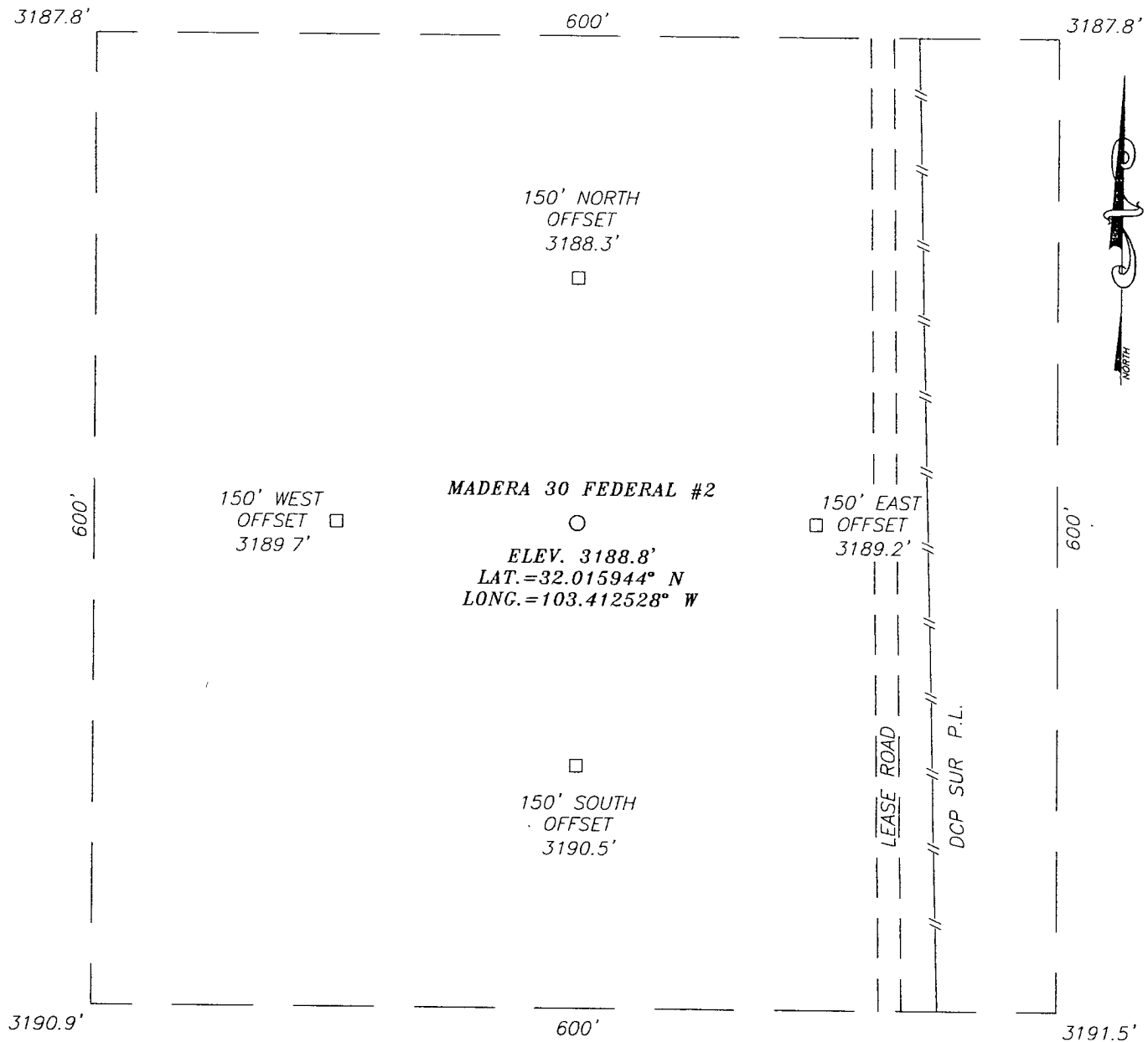


SCALE: 1" = 2 MILES

SEC. 30 TWP. 26-S RGE. 35-E
 SURVEY N.M.P.M.
 COUNTY LEA STATE NEW MEXICO
 DESCRIPTION 2000' FNL & 660' FWL
 ELEVATION 3189'
 OPERATOR GREAT WESTERN DRILLING CO.
 LEASE MADERA 30 FEDERAL

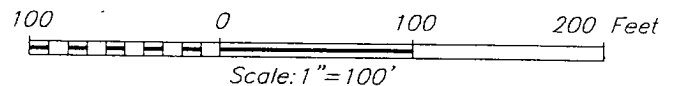


SECTION 30, TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.,
 LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

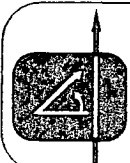
FROM THE INTERSECTION OF CO. RD. #205
 (FRYING PAN RD.) AND BECKHAM RD., GO WEST
 ON BECKHAM RD. APPROX. 2.2 MILES. TURN LEFT
 AT "Y" INTERSECTION AND CONTINUE WEST
 APPROX. 3 MILES. TURN RIGHT AND GO NORTH
 NORTHWEST APPROX. 0.4 MILES. TURN LEFT AND
 GO NORTHWEST APPROX. 2.9 MILES. TURN RIGHT
 AT "Y" INTERSECTION AND GO WEST THROUGH
 CATTLE GUARD APPROX. 0.5 MILES. TURN LEFT AT
 INTERSECTION AND GO SOUTH APPROX. 0.85
 MILES. THIS LOCATION IS WEST APPROX. 180 FEET



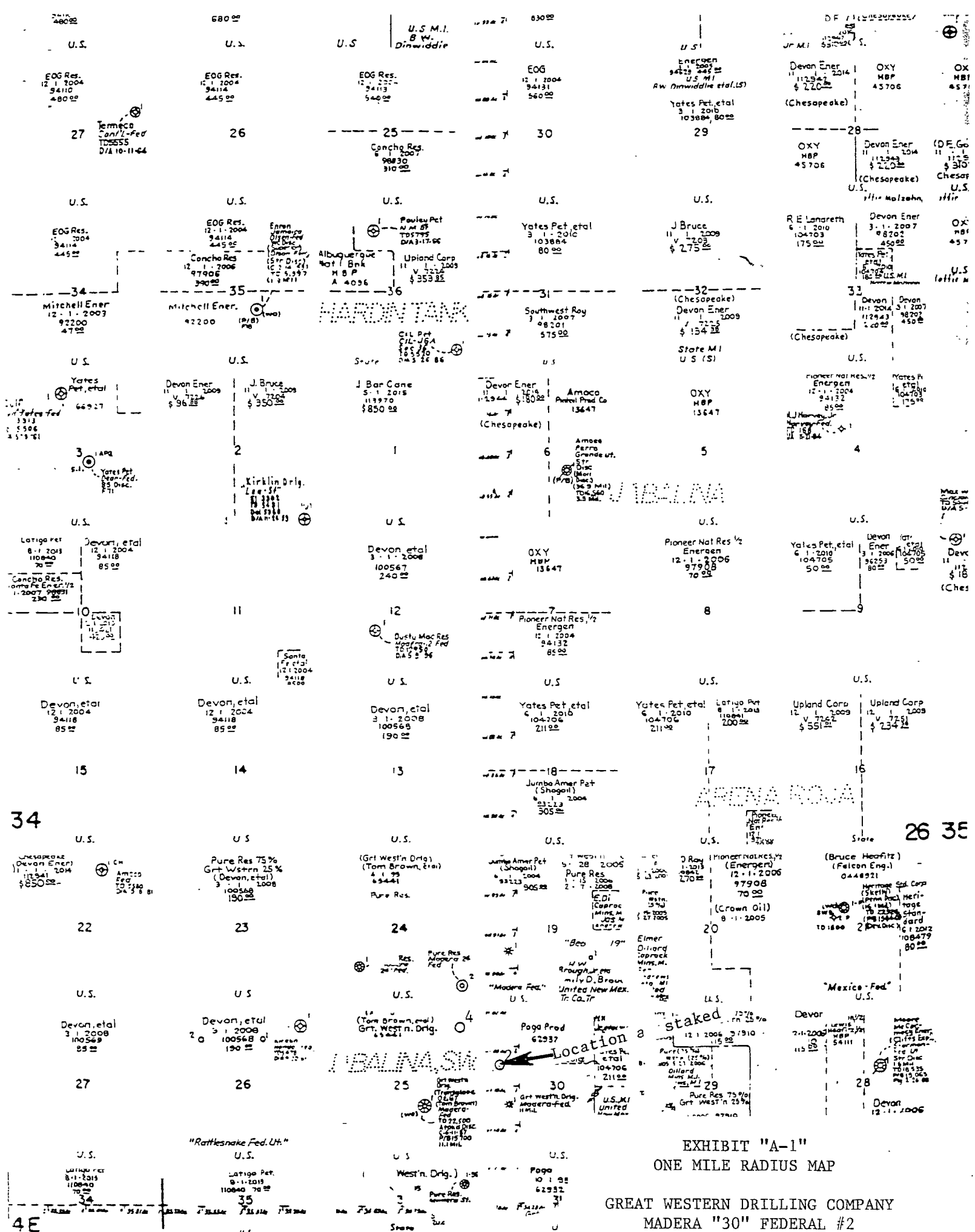
GREAT WESTERN DRILLING CO.

MADERA 30 FEDERAL #2 WELL
 LOCATED 2000 FEET FROM THE NORTH LINE
 AND 660 FEET FROM THE WEST LINE OF SECTION 30,
 TOWNSHIP 26 SOUTH, RANGE 35 EAST, N.M.P.M.,
 LEA COUNTY, NEW MEXICO.

Survey Date: 6/27/08	Sheet 1 of 1 Sheets
W.O. Number: 08.11.1027	Dr By: AR
Date: 7/07/08	Disk.
08111027	Scale: 1"=100'



PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (505) 393-3117



GREAT WESTERN DRILLING COMPANY
MADERA "30" FEDERAL #2
LOT #2 SECTION 30
T26S-R35E LEA CO. NM

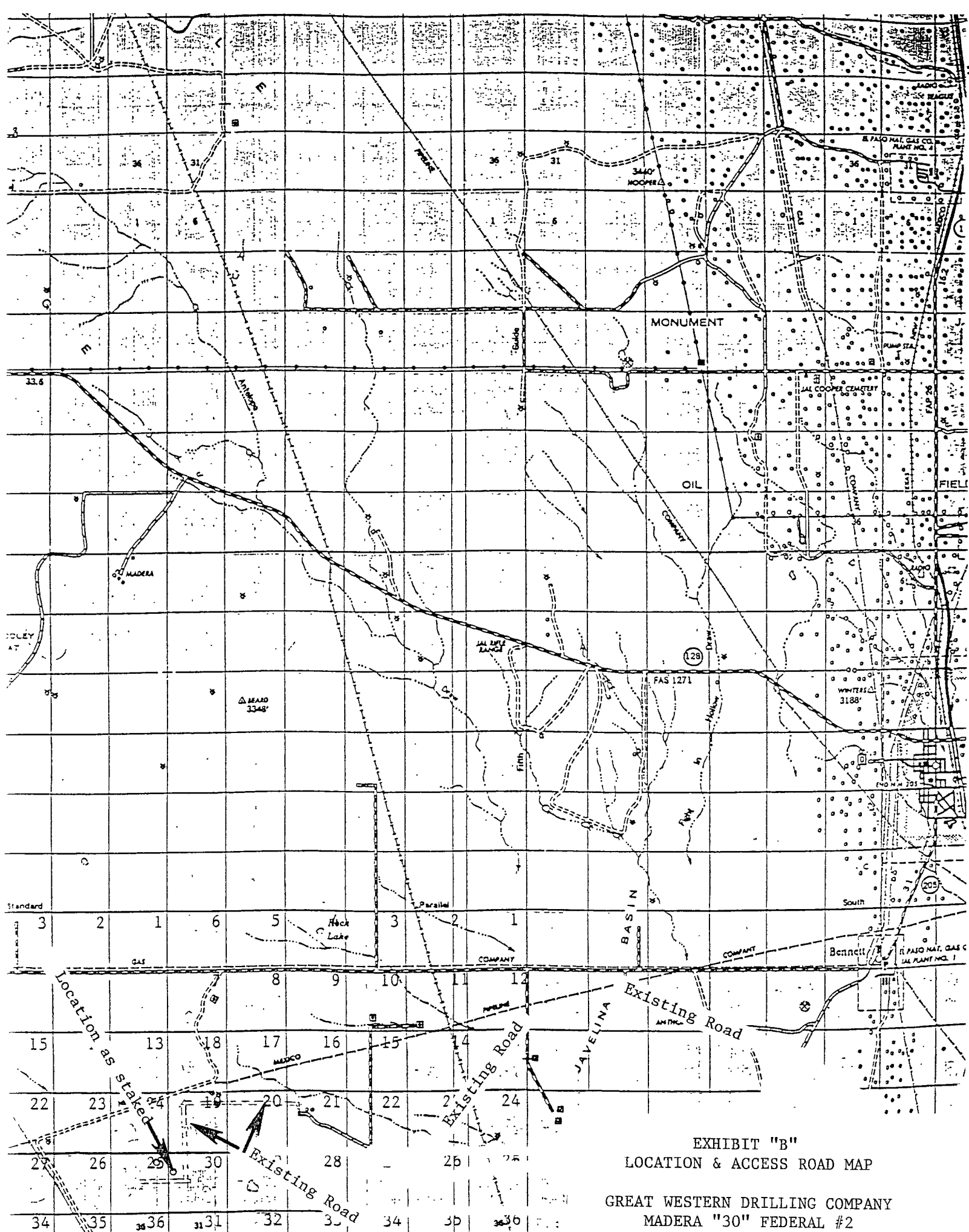


EXHIBIT "B"
LOCATION & ACCESS ROAD MAP

GREAT WESTERN DRILLING COMPANY
MADERA "30" FEDERAL #2
LOT #2 SECTION 30
T26S-R35E LEA CO. NM

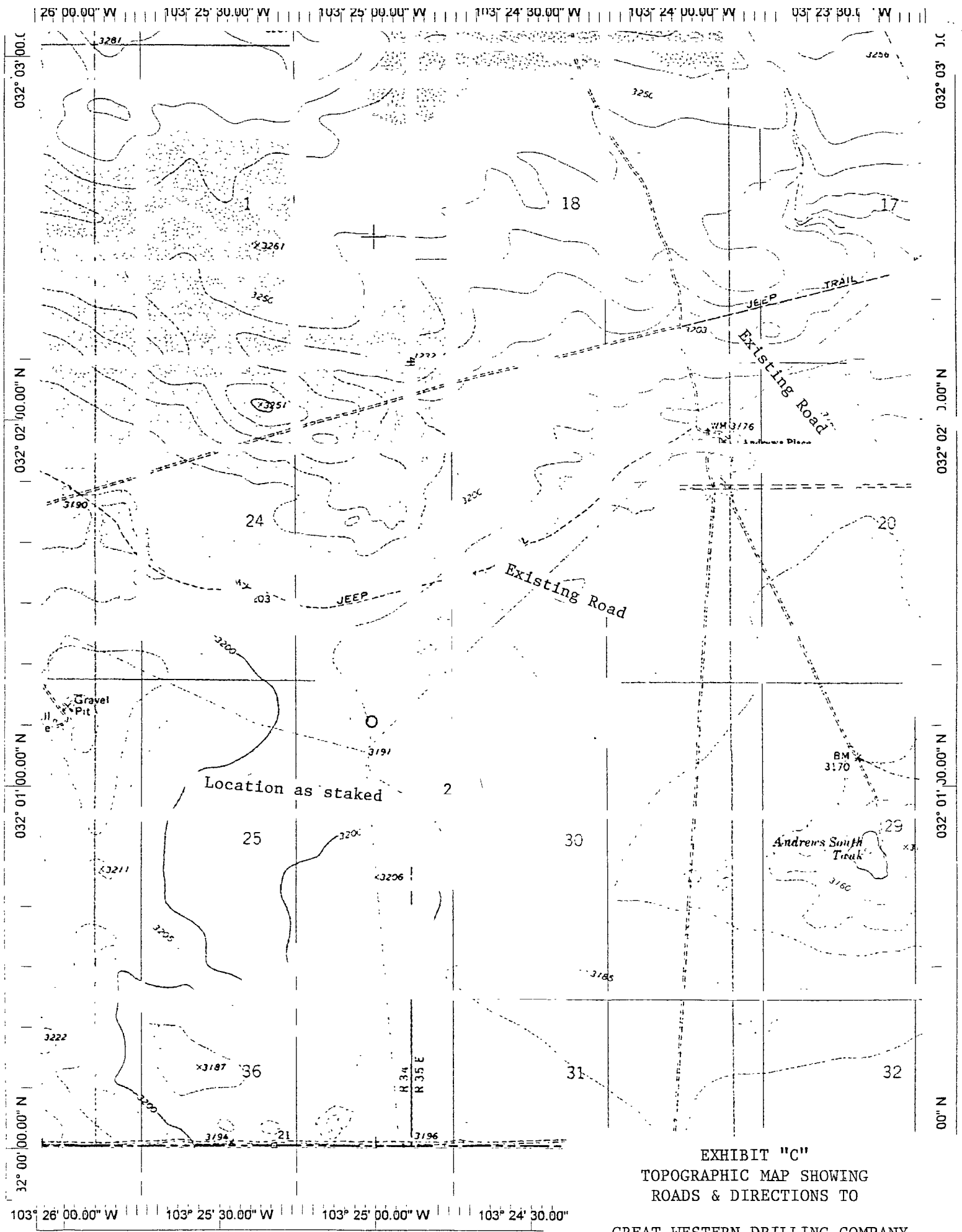


EXHIBIT "C"
 TOPOGRAPHIC MAP SHOWING
 ROADS & DIRECTIONS TO

GREAT WESTERN DRILLING COMPANY
 MADERA "30" FEDERAL #2
 LOT #2 SECTION 30
 T26S-R35E LEA CO. NM