

## OGX RESOURCES, LLC.

HYDROGEN SULFIDE CONTINGENCY PLAN  
FOR DRILLING/WORKOVER/FACILITY

This well and its 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. OGX RESOURCES, LLC. Will have a company representative available to rig personnel throughout drilling or production operations. If Hydrogen Sulfide is detected or suspected, monitoring equipment will be acquired for monitoring and/or testing.

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### GENERAL H2S EMERGENCY ACTIONS:

In the event of an H2S emergency, the following plan will be initiated.

- 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 co-ordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and 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.  
(will assist in general public evacuation/safety while maintaining roadblocks)
- 7) Call the NMOCD & or BLM

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 necessary steps to contact the following:

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

	<u>OFFICE</u>	<u>MOBILE</u>	<u>HOME</u>
Jeff Birkelbach	432-685-1287	432-694-7880	432-553-0391
Donny Leak		432-634-4862	432-399-4489
Silver Oak Drilling Co.	575-748-1288	575-748-8622 Mark Eldridge	Cell 575-748-8605
Rig Phone	575-513-1745		

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police	575-392-5588
Lea County Sheriff	575-396-3611
Emergency Medical Service (Ambulance)	911 or 575-393-2677
State Emergency Response Center (SERC)	575-476-9620
Hobbs Police Department	575-397-9265
Hobbs Fire Department	575-393-2677
Lovington Police Department	575-396-3144
Lovington Fire Department	575-396-2359
Loco Hills Fire Department	575-677-2349
Maljamar Fire Department	575-676-4100
(NMOCD) New Mexico Oil Conservation Division, District I (Lea, Roosevelt, Chaves, Curry)	575-393-6161
District II (Eddy, Chaves)	575-748-1283
American Safety	575-746-1096
Indian Fire & Safety	575-746-4660 or 800-530-8693
Callaway Safety	575-746-2847
BJ Services	575-746-3569

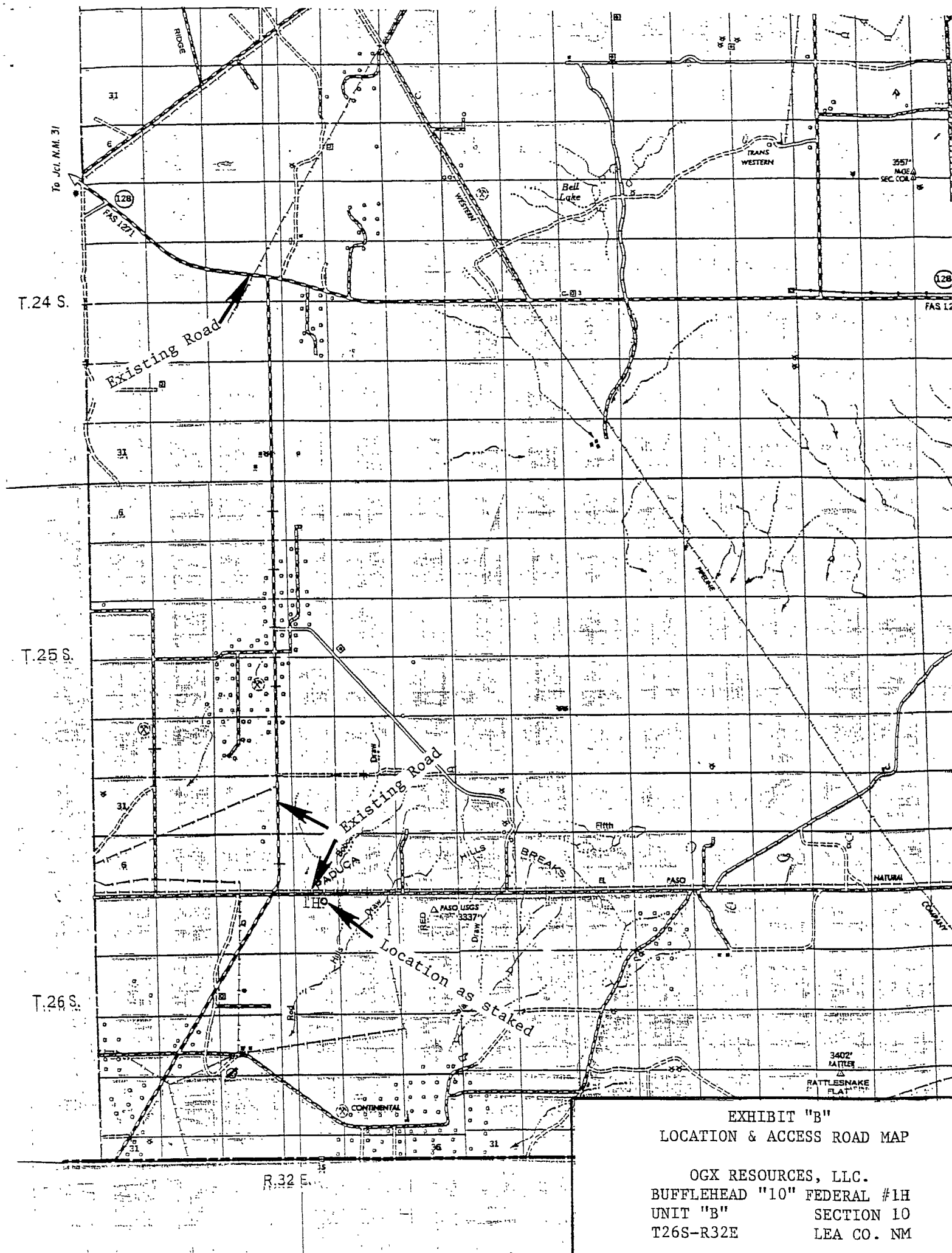


EXHIBIT "B"  
LOCATION & ACCESS ROAD MAP

OGX RESOURCES, LLC.  
BUFFLEHEAD "10" FEDERAL #1H  
UNIT "B" SECTION 10  
T26S-R32E LEA CO. NM

### PROTECTION OF THE GENERAL PUBLIC/ROE:

In the event greater than 100 ppm H<sub>2</sub>S is present, the ROE (Radius Of Exposure) calculations will be done to determine if the following is warranted:

- 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 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture.

#### **Calculation for the 100 ppm ROE:**

$$X = [(1.589) (\text{concentration}) (Q)]^{(0.6258)}$$

#### **Calculation for the 500 ppm ROE:**

$$X = [(0.4546) (\text{concentration}) (Q)]^{(0.6258)}$$

EXAMPLE: If a well/facility has been determined to have 150 ppm H<sub>2</sub>S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

$$\begin{aligned} 100 \text{ PPM} \quad X &= [(1.589)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 7' \end{aligned}$$

$$\begin{aligned} 500 \text{ PPM} \quad X &= [(0.4546)(150/1,000,000)(100,000)]^{0.6258} \\ X &= 3' \end{aligned}$$

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

### PUBLIC EVACUATION PLAN:

(When the supervisor has determined that the General Public will be involved, the following plan will be implemented)

- 1) Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- 2) A trained person in H<sub>2</sub>S safety, shall monitor with detection equipment the H<sub>2</sub>S concentration, wind and area of 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 I groups A,B,C, & D, Division I, hazardous locations. All monitors will have a minimum capability of measuring H<sub>2</sub>S values.)**
- 3) 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.
- 4) The company supervising personnel shall stay in communications 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:

The decision to ignite a well should be a last resort and one if not both of the following pertain.

- 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.

#### INSTRUCTIONS 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 a qualified safety person who will test the atmosphere for H<sub>2</sub>S, 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 25mm flare gun shall be used, with a  $\pm 500'$  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.

#### 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 reflecting the possible conditions at the site.
  - A Colored Condition flag will be on display, reflecting the condition at the site at that 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 and Alarm: The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The 3 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' of 5/8" OSHA approved rope
  - 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 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 & FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H<sub>2</sub>S) POISONING

Do not panic.

Remain calm & think.

Get on the breathing apparatus.

Remove the victim to the safe breathing area as quickly as possible. Upwind an uphill from source of 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 (2) personnel on location shall be trained in CPR and First Aid.

### H2S 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 46.0%. By volume hydrogen sulfide (H2S) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

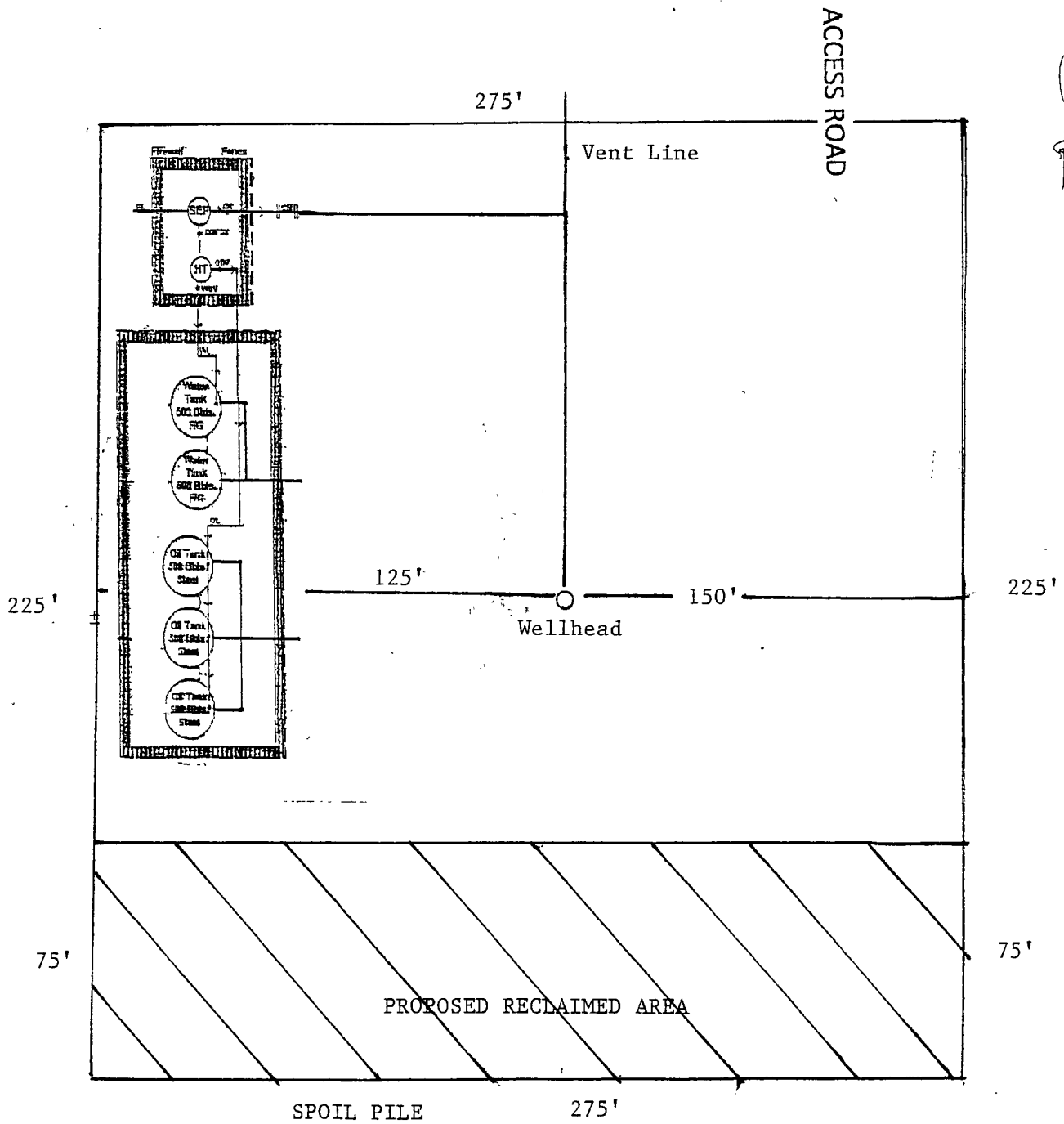
### Various Gases

Common Name	Chemical Abbrev.	Sp. Gr.	Threshold Limits	Hazardous Limits	Lethal Concentration
Hydrogen Sulfide	H2S	1.19	10 ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO2	2.21	2 ppm	N/A	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	Combustible @ 5%	N/A

1. Threshold limit – Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.
2. Hazardous limit – Concentration that may cause death.
3. Lethal concentration – Concentration that will cause death with short-term exposure.
4. Threshold limit – 10 ppm – NIOSH guide to chemical hazards.
5. Short-term threshold limit.

### PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATIONS		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 eyes and throat.
.02%	200 ppm	Kills the sense of smell rapidly. Severely irritates 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.



PROPOSED RECLAIM AREA

OGX RESOURCES, LLC.  
BUFFLEHEAD "10" FEDERAL #1H  
UNIT "B" SECTION 10  
T26S-R32E lea co. nm

OGX RESOURCES, LLC.  
BUFFLEHEAD "10" FEDERAL #1  
UNIT "B" SECTION 10  
T26S-R32E LEA CO. NM

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1. EXISTING AND PROPOSED ROADS:

- A. Exhibit "B" is a reproduction of a County General Hi-way map showing roads. Exhibit "C" is a reproduction of a USGS Topographic map showing existing roads and proposed roads and proposed flowline and powerline routes if they are needed. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed according to BLM specifications.
- B. Exhibit "A" shows the proposed well location as staked.
- C. Directions to location: From Hobbs, New Mexico take U.S. Hi-way 62-180 West toward Carlsbad, go 38± miles to CR-29, turn Left (South) go 21.5 miles to State Hi-way 128, turn Left (East) go 5.6 miles to CR-1 (Orla Road) turn right (South) go 10 miles±, turn East on El Paso Pipeline Road, go .9 miles to location on the South side of road approximately 200'
- D. Exhibit "C" is a topographic map showing existing roads, proposed roads, tank battery and production facilities will be constructed on location.

2. PLANNED ACCESS ROADS: Approximately 200' of new road will be constructed.

- A. The access roads will be crowned and ditched to a 14' travel surface within a 30' R-O-W.
- B. Gradient of all roads will be less than 5%.
- C. Turn-outs will be constructed where necessary.
- D. If required all new roads will be surfaced with a minimum of 4-6" of caliche which will be obtained from a local source.
- E. The centerline of new roads will be flagged, road construction will be done as field conditions require.
- F. Culverts will be placed in the access roads as drainage conditions require. Roads will be constructed to use low water crossings where topographic conditions dictate.

3. LOCATION OF EXISTING WELLS WITHIN A ONE MILE RADIUS:

- A. Water wells - water well one approximately 6 miles Northeast.
- B. Disposal wells - None known
- C. Drilling wells - None known
- D. Producing wells - AS shown on Exhibit "A-1"
- E. Abandoned wells. - As shown on Exhibit "A-1"

## SURFACE USE PLAN

OGX RESOURCES, LLC.  
BUFFLEHEAD "10" FEDERAL #1  
UNIT "B" SECTION 10  
T26S-R32E LEA CO. NM

4. If on completion this well is a success the operator will complete it as a producer. The operator will construct production facilities and tank battery on location. If power lines will be required to produce this well they may be constructed along existing R-O-W's as shown on Exhibit "C".

5. LOCATION AND TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and transported by transport or piped to location by flexible flowlines laid on top of the ground.

6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the leveling of the drill site. If additional material will be required it will be obtained from a local source and transported over access roads shown on Exhibit "C".

7. METHODS OF HANDLING WASTE MATERIAL:

- A. In case this well is drilled using a closed mud system the cuttings will be collected in containers and disposed of in a state approved disposal site. Drilling fluids likewise will be contained in tanks and disposed of in state approved disposal sites.
- B. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When job is complete all contents will be taken from location and disposed of in a state approved disposal site.
- C. Salts and other mud material remaining after completion of the well will be collected by the supplier and be removed from the location.
- D. Waste water from living quarters will be directed into an onsite sewage treatment unit and when well is completed residue will be removed and disposed of in a state approved disposal site. Porto-johns will be on location for rig crews, completion crews and other contract personnel, this equipment will be properly maintained during drilling and completion. When all operations are complete the residue will be removed and disposed of in a state approved disposal site and the equipment removed by supplier.
- E. Any fluids produced during the completion phase will be separated and the oil sold and water will be disposed of in an approved disposal site.

8. ANCILLARY FACILITIES:

- A. No camps, airstrips, or staging areas will be constructed on location.

## SURFACE USE PLAN

OGX RESOURCES, LLC.  
BUFFLEHEAD "10" FEDERAL #1  
UNIT "B" SECTION 10  
T26S-R32E LEA CO. NM

### 9. WELL SITE LAYOUT:

A. Exhibit 'd' shows a generic well site layout for a well drilled using a closed mud system.

### 10. PLANS FOR RESTORATION OF THE SURFACE:

Rehabilitation of the surface will commence after the well has been completed. In the case of this well tank battery will not be necessary as the product will be transported via a flowline to an existing tank battery on the lease. The area that is not required to maintain production will be reclaimed as shown on the attached plat. The surface will be reseeded and returned as near as possible to the original grade.

In case this well is non productive the drilling pad and access road will be reclaimed according to specifications provided by The Bureau of Land Management. Caliche or other road and pad material will be removed for use on another location or deposited in an approved reclamation site.

Drill cuttings and mud used to drill this well will be removed and disposed of at an approved disposal site. All trash and any other debris will be collected and disposed of at an official disposal site.

### 11. ADDITIONAL INFORMATION:

Topography consists of relatively gentle dip to the South with low lying sand dunes with shallow deposits of caliche. Vegetation consists of mesquite broom weed and native grasses. The surface is used to graze livestock and for the production of oil and gas. The surface and minerals are owned by The U. S. Department of Interior and is administered by The Bureau of Land Management. This location and road will be covered by The Permian Basin MOA.

## Operator Certification

HOBBS OCD

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I hereby certify that I or someone under my direct supervision have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and federal laws applicable to this operation; that the statements made in the APD package are, to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I or, the company that I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

### OPERATORS REPRESENTATIVES

#### BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC.

P.O. BOX 2188

HOBBS, NEW MEXICO 88241

JOE JANICA 575-391-850

CELL 575-390-1598

NAME Joe T. Janica

TITLE Permit Eng.

#### DURING AND AFTER CONSTRUCTION

OGX RESOURCES, LLC.

P. O. BOX 2064

MIDLAND, TEXAS 79702

JEFF BIRKELBACH 432-685-1287

CELL 432-553-0391

DATE 10/26/11