

COG OPERATING LLC**HYDROGEN SULFIDE DRILLING OPERATIONS PLAN****I. HYDROGEN SULFIDE TRAINING**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- A. The hazards and characteristics of hydrogen sulfide (H₂S).
- B. The proper use and maintenance of personal protective equipment and life support systems.
- C. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- D. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- A. The effects of H₂S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
- B. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- C. The contents and requirements of the H₂S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H₂S SAFETY EQUIPMENT AND SYSTEMS

JUN 29 2011

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

A. Well Control Equipment:

Flare line.

Choke manifold.

Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

B. Protective equipment for essential personnel:

Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

C. H₂S detection and monitoring equipment:

2 - portable H₂S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H₂S levels of 20 ppm are reached.

D. Visual warning systems:

Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

E. Mud Program:

The mud program has been designed to minimize the volume of H₂S circulated to the surface.

F. Metallurgy:

All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.

G. Communication:

Company vehicles equipped with cellular telephone.

COG Operating LLC has conducted a review to determine if an H₂S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H₂S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H₂S contingency plan is necessary.

W A R N I N G

**YOU ARE ENTERING AN H₂S AREA
AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED***
- 2. HARD HATS REQUIRED***
- 3. SMOKING IN DESIGNATED AREAS ONLY***
- 4. BE WIND CONSCIOUS AT ALL TIMES***
- 5. CK WITH COG OPERATING LLC FOREMAN AT MAIN OFFICE***

COG OPERATING LLC

1-575-748-6940

EMERGENCY CALL LIST

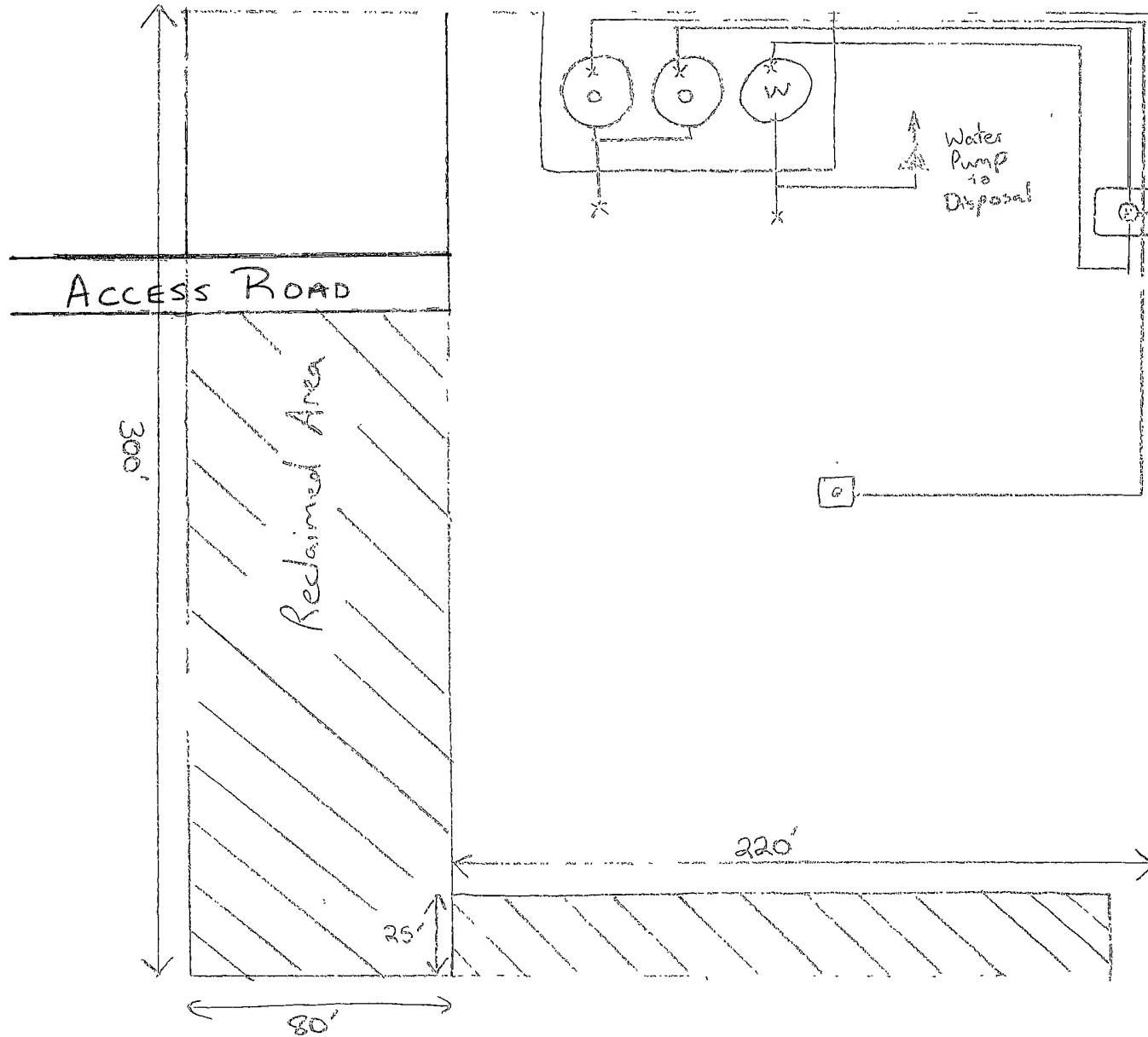
	<u>Office</u>	<u>Mobile</u>	<u>Home</u>
COG West Ofc	575-748-6940		
Sheryl Baker	575-748-6940	432-934-1873	575-748-2396
Ron Beasley	575-746-2010	432-254-9883	
Seth Wild	575-748-6940	432-528-3633	
Dean Chumbley	575-748-3303	575-748-5988	575-748-2426

EMERGENCY RESPONSE NUMBERS **Eddy County, New Mexico**

State Police	575-748-9718
Eddy County Sheriff	575-746-2701
Emergency Medical Services (Ambulance)	911 or 575-746-2701
Eddy County Emergency Management (Harry Burgess)	575-887-9511
State Emergency Response Center (SERC)	575-476-9620
Carlsbad Police Department	575-885-2111
Carlsbad Fire Department	575-885-3125
New Mexico Oil Conservation Division	575-748-1283
Indian Fire & Safety	800-530-8693
Halliburton Services	800-844-8451

Production Facility Layout

Airbonita 12 Federal #2H

Scale

□ = 5'x5'

LEGEND

○ = 500 BBL steel oil tank

⊙ = 500 BBL steel water tank

⊞ = 6'x20' Heater

COG OPERATING LLC
MULTI-POINT SURFACE USE AND OPERATIONS PLAN

Airbonita 12 Federal #2H
SHL: 375' FSL & 1980' FEL
BHL: 375' FNL & 1980' FEL
Section 12 T22S R32E
Lea County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

- a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by John West Surveying Company.
- b. Exhibit 2 is a portion of a topo map showing the well and roads in the vicinity of the proposed location. The proposed wellsite and the access route to the location are indicated in red on Exhibit 2. Right of way using this proposed route is being requested if necessary.
- c. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

DIRECTIONS:

From the intersection of U.S. Highway #176 and Marathon Road, go west on U.S. Highway #176 approx. 6.0 miles. Turn left and go south approx. 2.2 miles. Turn left and go southeast approx. 0.8 miles. Veer right and go southeast approx. 0.3 miles. Veer right and go south approx. 4.8 miles. Turn right and go west approx. 0.9 miles. Turn left and go south approx. 0.2 miles. Turn left and go east approx. 0.2 miles to the existing Prohibition 12 Federal #12 well. Follow proposed road survey stakes east approx. 1045 feet. This location stake is approx. 212 feet southeast.

PLANNED ACCESS ROAD:

COG will be using a proposed access road of 1045' coming in from the west side of the pad.

2. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

In the event the well is found productive, the Airbonita 12 Federal #2H

- A. tank battery would be utilized and the necessary production equipment will be installed at the well site. See Exhibit #4.
- B. All flowlines will adhere to API standards
- C. If electricity is needed, power will be obtained from Central Valley Electric. Central Valley Electric will apply for ROW for their power lines.
- D. If the well is productive, rehabilitation plans are as follows:
 - i. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

3. LOCATION AND TYPES OF WATER SUPPLY:

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in Exhibit #2. On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drill rig. In these cases where a poly pipeline is used to transport water for drilling purposes, the existing and proposed road shown in Exhibit "2" will be utilized.

5. CONSTRUCTION MATERIALS:

All Caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by for roads, if available.

6. METHODS OF HANDLING WASTE MATERIAL:

- a. All trash, junk and other waste material will be removed from the wellsite within 30 days after finishing drilling and/or completion operations. All waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.
- b. The supplier, including broken sacks, will pick up slats remaining after completion of well.
- c. A porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- d. Disposal of fluids to be transported by an approved disposal company.

6. ANCILLARY FACILITIES:

No campsite or other facilities will be constructed as a result of this well.

7. WELLSITE LAYOUT:

- a. Exhibit 1 shows the proposed well site layout with dimensions of the pad layout.
- b. This exhibit indicates proposed location of reserve and sump pits if utilized and living facilities.

- c. Mud pits in the active circulating system will be steel pits and a closed loop system will be utilized.

8. PLANS FOR SURFACE RECLAMATION:

- a. After finishing drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original state.
- b. The location and road will be rehabilitated as recommended by the BLM.
- c. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

9. SURFACE OWNERSHIP:

The surface is owned by the US Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas. The proposed road routes and the surface location will be restored as directed by the BLM.

10. OTHER INFORMATION:

- a. The area surrounding the well site is grassland. The vegetation is moderately sparse with native prairie grass and mesquite bushes. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
- b. There is no permanent or live water in the general proximity of the location.
- c. If the well is deemed commercially productive, caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography. Reserve pit will not be used on this location therefore no reclamation is needed.
- d. Topsoil will be stockpiled on the SOUTH SIDE of the location until it is needed for interim reclamation described in paragraph above.

12. OPERATOR'S REPRESENTATIVE:

A. Through A.P.D. Approval:

Rand French, Regulatory Supervisor
COG Operating LLC
Artesia, NM 88210
Phone (575)748-6940
Cell (432) 254-5556

B. Through Drilling Operations

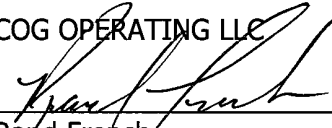
Sheryl Baker, Drilling Supervisor
COG Operating LLC
Artesia, NM 88210
Phone (575)748-6940
Cell (432)934-7873

CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by COG Operating LLC and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

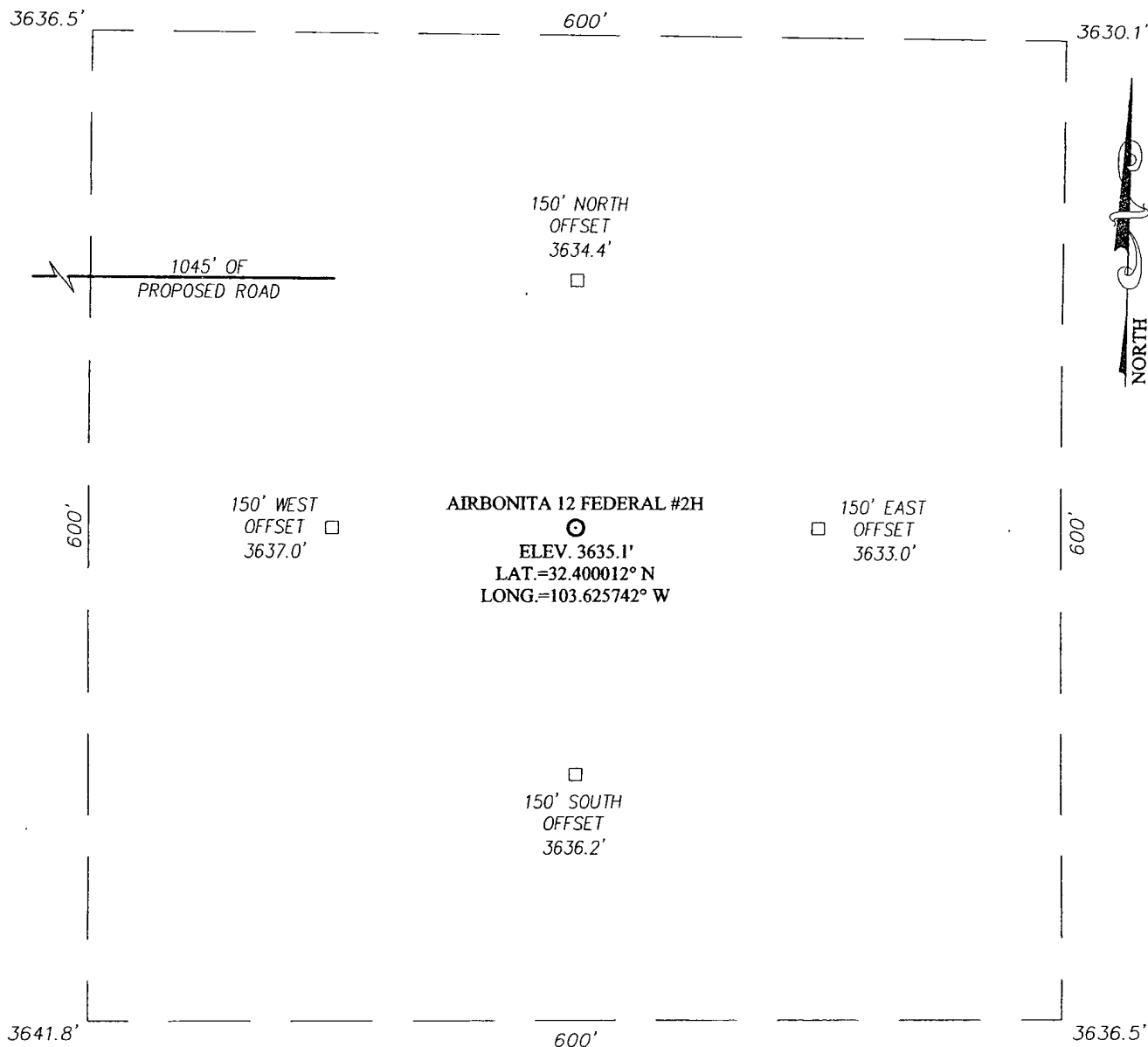
4-13-11
Date

COG OPERATING LLC



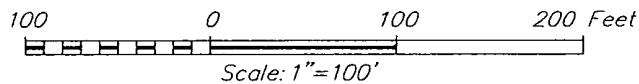
Rand French
Regulatory Supervisor

SECTION 12, TOWNSHIP 22 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY NEW MEXICO



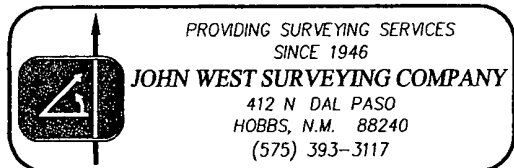
DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HIGHWAY #176 AND MARATHON ROAD, GO WEST ON U.S. HIGHWAY #176 APPROX. 6.0 MILES. TURN LEFT AND GO SOUTH APPROX. 2.2 MILES. TURN LEFT AND GO SOUTHEAST APPROX. 0.8 MILES. VEER RIGHT AND GO SOUTHEAST APPROX. 0.3 MILES. VEER RIGHT AND GO SOUTH APPROX. 4.8 MILES. TURN RIGHT AND GO WEST APPROX. 0.9 MILES. TURN LEFT AND GO SOUTH APPROX. 0.2 MILES. TURN LEFT AND GO EAST APPROX. 0.2 MILES TO THE EXISTING PROHIBITION 12 FEDERAL #12 WELL. FOLLOW PROPOSED ROAD SURVEY STAKES EAST APPROX. 1045 FEET. THIS LOCATION STAKE IS APPROX. 212 FEET SOUTHEAST



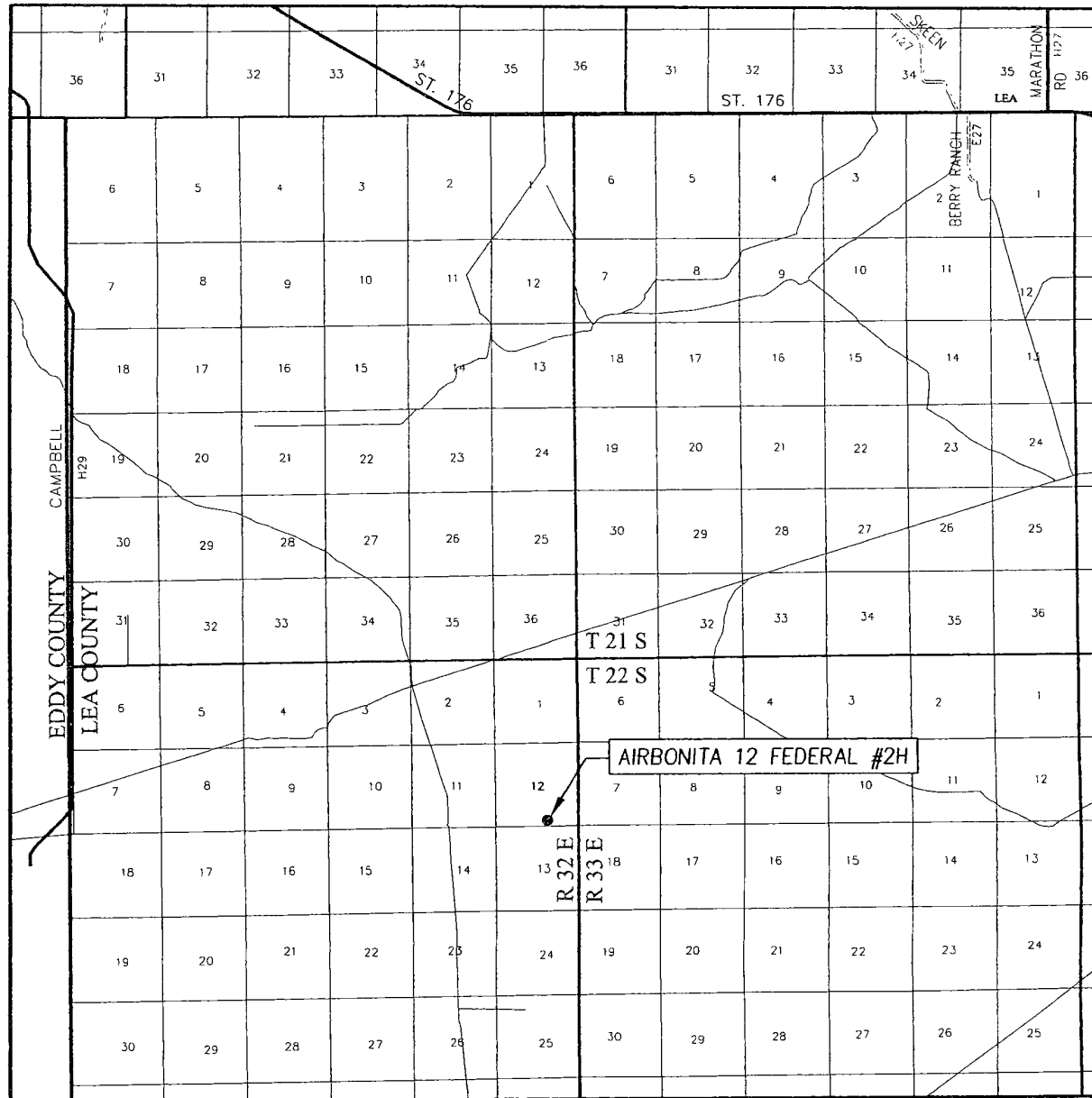
COG OPERATING, LLC

AIRBONITA 12 FEDERAL #2H WELL
LOCATED 375 FEET FROM THE SOUTH LINE
AND 1980 FEET FROM THE EAST LINE OF SECTION 12,
TOWNSHIP 22 SOUTH, RANGE 32 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO



Survey Date: 12/22/10	Sheet 1 of 1 Sheets
W.O. Number: 10.11.1903	Dr. By: DSS
Date: 1/3/11	Rel. W.O.: 10111903
	Scale: 1"=100'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 12 TWP. 22-S RGE. 32-E

SURVEY N.M.P.M.

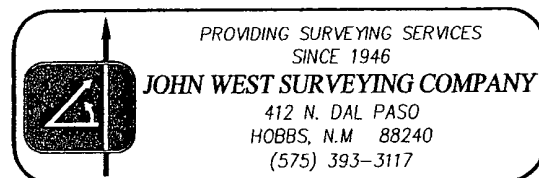
COUNTY LEA STATE NEW MEXICO

DESCRIPTION 375' FSL & 1980' FEL

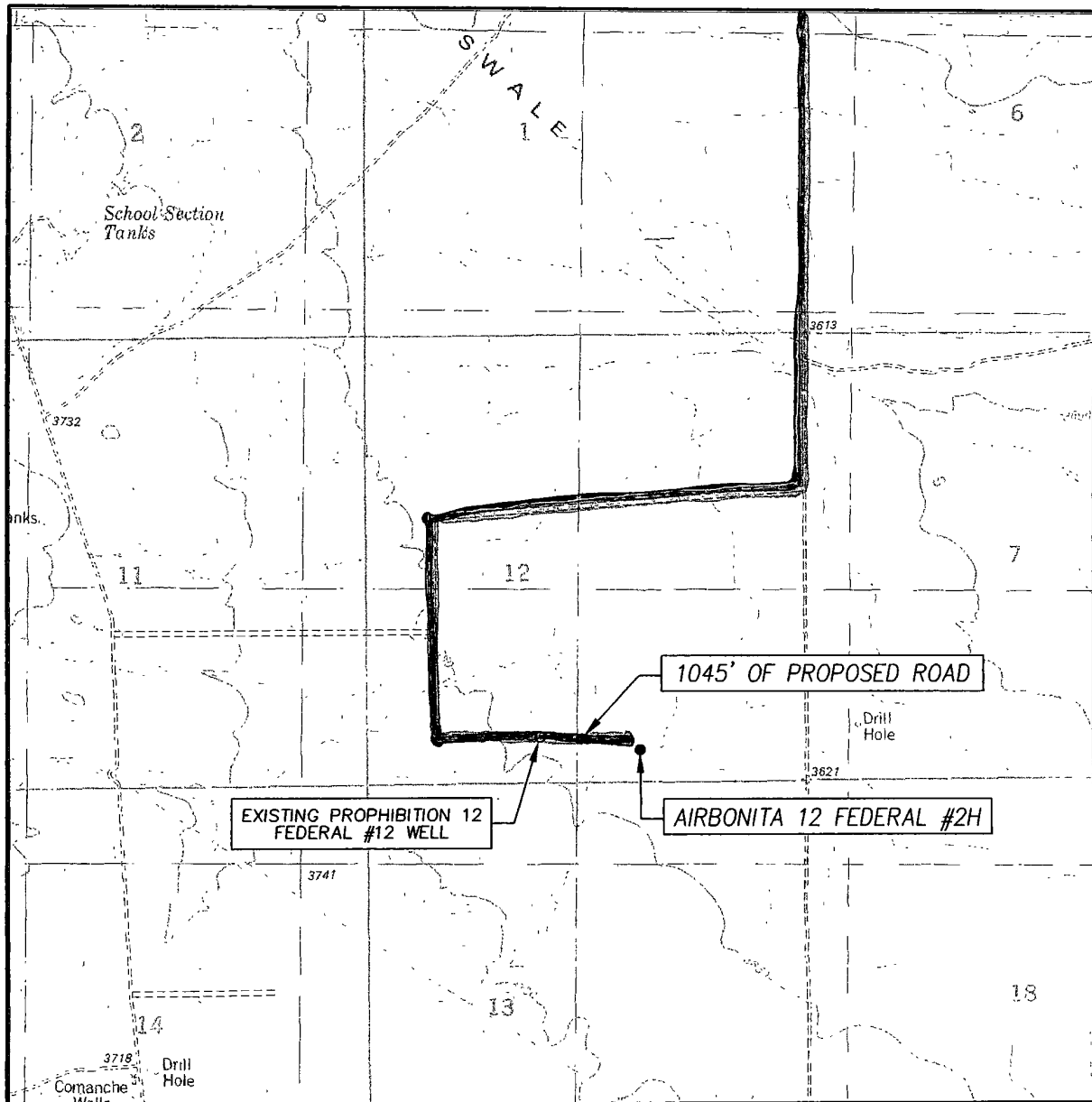
ELEVATION 3635'

OPERATOR COG OPERATING, LLC

LEASE AIRBONITA 12 FEDERAL



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

 CONTOUR INTERVAL:
 THE DIVIDE, N.M. - 10'
 GRAMA RIDGE, N.M. - 10'

SEC. 12 TWP. 22-S RGE. 32-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 375' FSL & 1980' FEL

ELEVATION 3635'

OPERATOR COG OPERATING, LLC

LEASE AIRBONITA 12 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP

THE DIVIDE, N.M.

