

7008 203  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
OCD-ARTESIA  
SECRETARY'S POTASH  
APPLICATION FOR PERMIT TO DRILL OR REENTER

ATS-08-204  
FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM 01159
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator EOG Resources, Inc.		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 2267 Midland, TX 79702	3b. Phone No. (include area code) 432-686-3642	8. Lease Name and Well No. Sand Tank 10 Fed 1
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 330' FNL & 2300' FWL (U/L C) At proposed prod. zone Capitán Controlled Water Basin		9. API Well No. 30-015-36071
14. Distance in miles and direction from nearest town or post office* Approx 3.5 miles SSE from Loco Hills, NM		10. Field and Pool, or Exploratory Sand Tank; Bone Spring
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease 640	11. Sec., T. R. M. or Blk. and Survey or Area Section 10, T18S-R30E, N.M.P.M.
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 8,300	12. County or Parish Eddy
21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL 3512'	22. Approximate date work will start* 01/15/2008	13. State NM
20. BLM/BIA Bond No. on file NM2308		
23. Estimated duration 30 days		

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature <i>Donny G. Glanton</i>	Name (Printed/Typed) Donny G. Glanton	Date 11/26/2007
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Title  
Sr. Lease Operations ROW Representative

Approved by (Signature) <i>/s/ Jesse J. Juen</i>	Name (Printed/Typed) /s/ Jesse J. Juen	Date JAN 23 2008
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Title STATE DIRECTOR	Office NM STATE OFFICE
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Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on page 2)

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

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-402  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease- 4 Copies  
Fee Lease- 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-</b>	Pool Code <b>96832</b>	Pool Name <b>Sand Tank ; Bone Springs</b>
Property Code <b>36970</b>	Property Name <b>SAND TANK 10 FED.</b>	Well Number <b>1</b>
OGRID No. <b>7377</b>	Operator Name <b>EOG RESOURCES INC.</b>	Elevation <b>3512'</b>

Surface Location

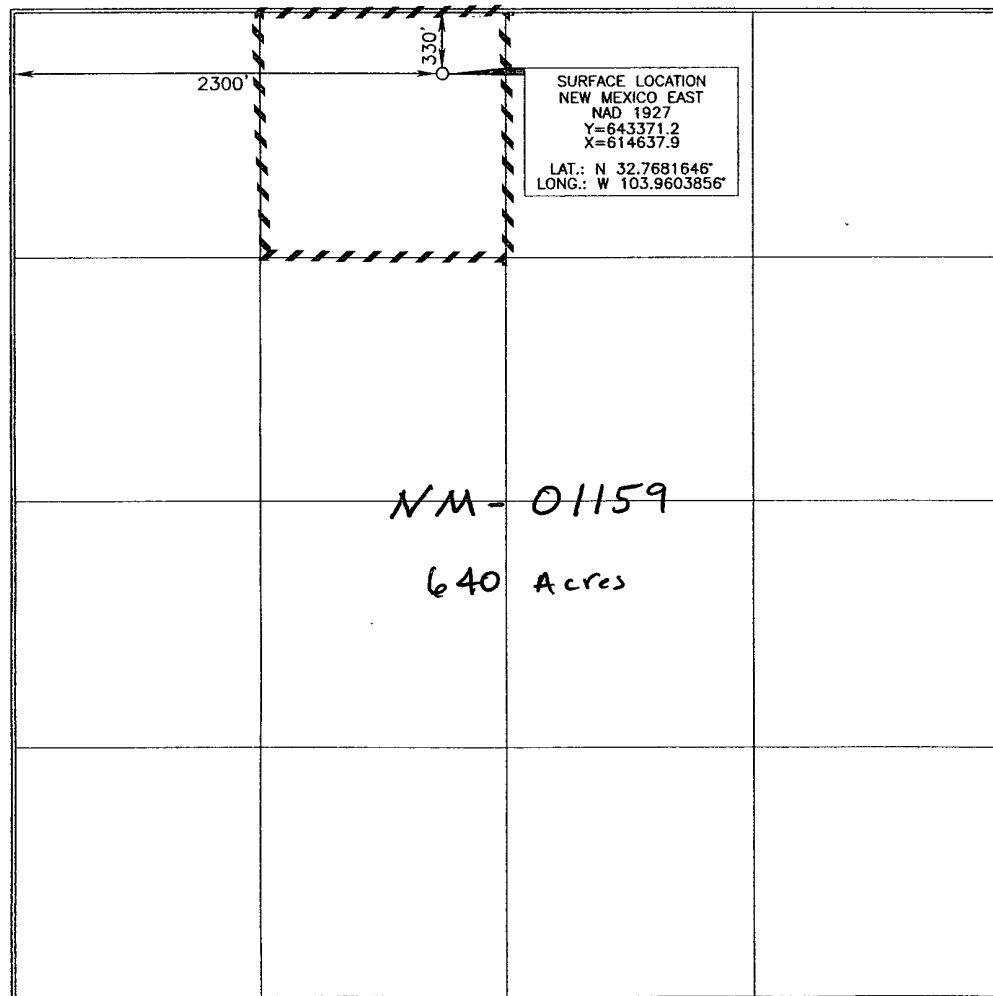
UL or lot no. <b>C</b>	Section <b>10</b>	Township <b>18 SOUTH</b>	Range <b>30 EAST, N.M.P.M.</b>	Lot Idn	Feet from the <b>330'</b>	North/South line <b>NORTH</b>	Feet from the <b>2300'</b>	East/West line <b>WEST</b>	County <b>EDDY</b>
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Bottom Hole Location 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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Dedicated Acres <b>40</b>	Joint or Infill	Consolidation Code	Order No.
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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.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Don J. Mita* 11/16/2007  
Signature Date

*Donny G. Glanton*  
Printed Name

SURVEYOR CERTIFICATION

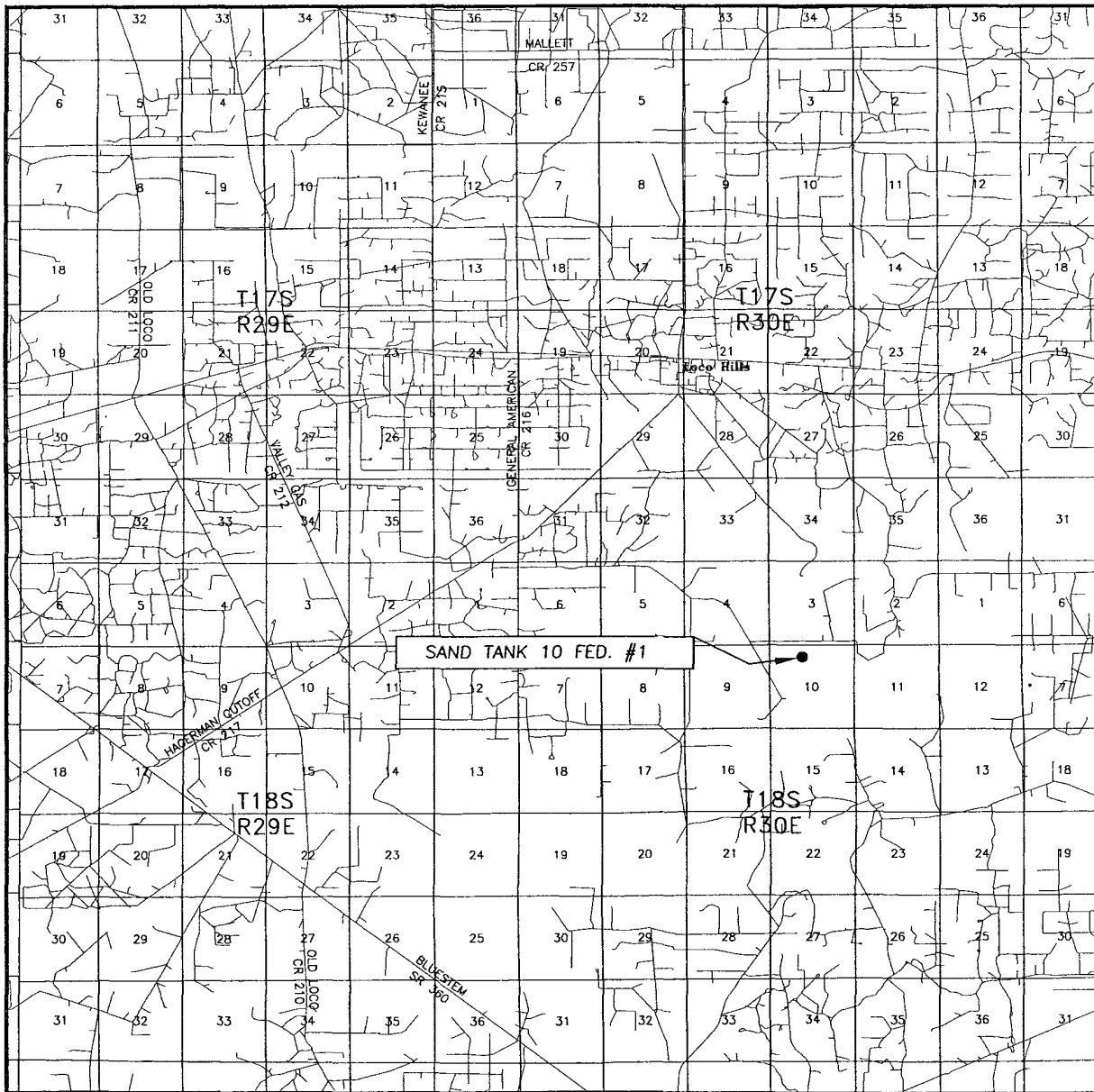
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

*15079*  
NOVEMBER 1, 2007  
Date of Survey

Signature and Seal of Professional Surveyor

*Terry J. Abel* 11/13/2007  
Certificate Number 15079

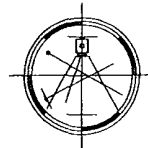
# VICINITY MAP



SEC. 10 TWP. 18-S RGE. 30-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY  
 DESCRIPTION 330' FNL & 2300' FWL  
 ELEVATION 3512'  
 OPERATOR EOG RESOURCES INC.  
 LEASE SAND TANK 10 FED. #1

SCALE: 1" = 2 MILES

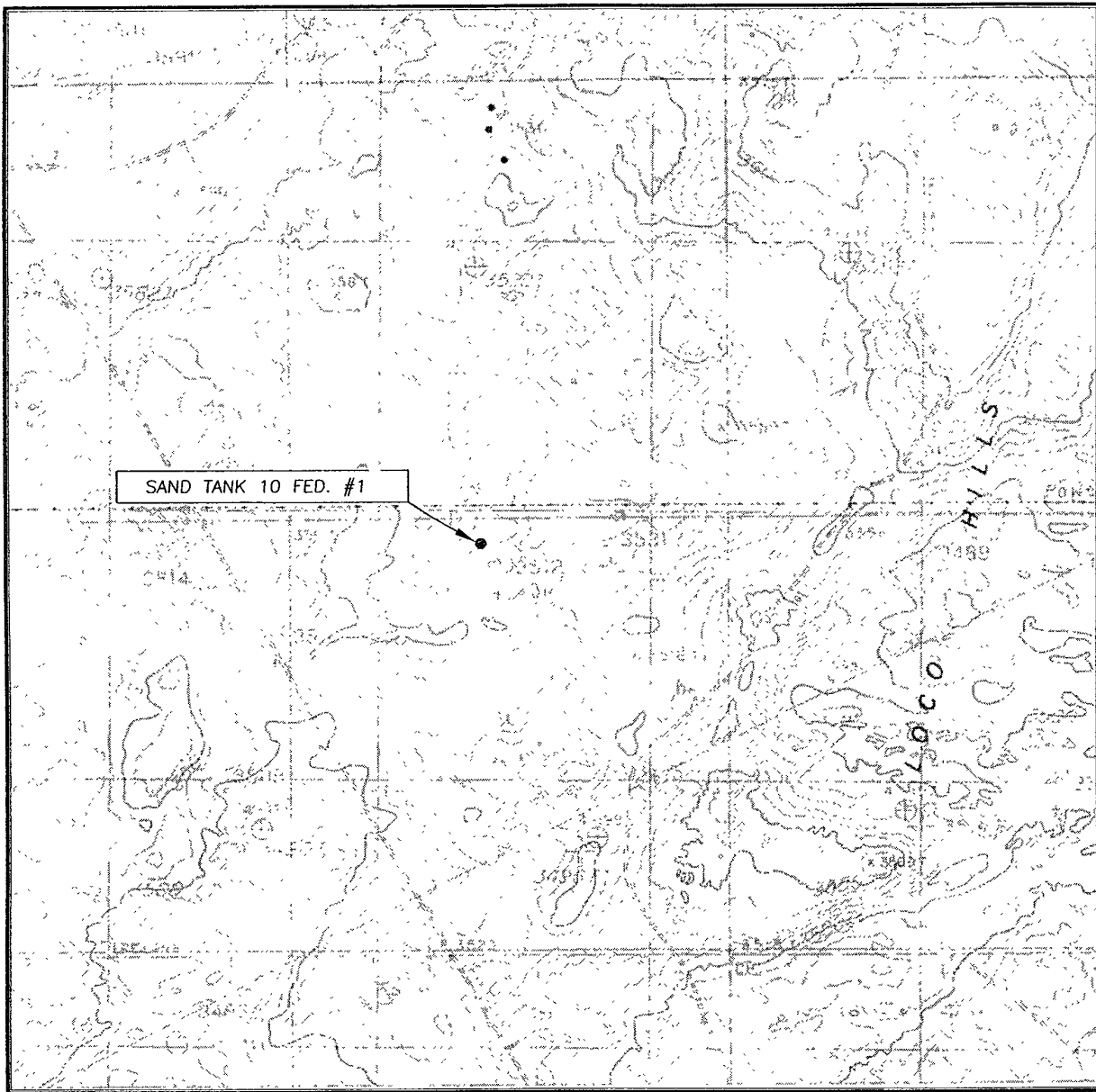
Asel Surveying



P.O. BOX 393 - 310 W. TAYLOR  
 HOBBS, NEW MEXICO - 505-393-9146

DIRECTIONS BEGINNING IN LOCO HILLS AT THE INTERSECTION OF U.S. HWY. #82 AND EDDY COUNTY ROAD #217, GO SOUTH SOUTHWEST ON EDDY CO. ROAD #217 FOR 3.0 MILES, TURN LEFT ON EDDY COUNTY ROAD #216 AND GO SOUTH FOR 0.3 MILES, TURN LEFT ON LEASE ROAD AND GO EAST SOUTHEAST FOR 3.2 MILES, TURN LEFT ON LEASE ROAD AND GO EAST FOR 0.7 MILES, TURN SOUTH FOR 0.1 MILES TO LOCATION.

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 10 TWP. 18-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 330' FNL & 2300' FWL

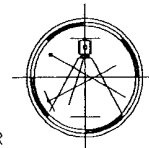
ELEVATION 3512'

OPERATOR EOG RESOURCES INC.

LEASE SAND TANK 10 FED. #1

U.S.G.S. TOPOGRAPHIC MAP  
LOCO HILLS, N.M

Asel Surveying



P.O. BOX 393 - 310 W. TAYLOR  
HOBBS, NEW MEXICO - 505-393-9146

EOG RESOURCES, INC.  
SAND TANK 10 FED #1

DRILLING PROGRAM

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	500'
San Andres	3,400'
1 <sup>st</sup> Bone Spring	7,700'
2 <sup>nd</sup> Bone Spring	8,000'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 250'	Fresh Water
Grayburg/ San Andres	3,000'	Oil
1 <sup>st</sup> Bone Spring	7,700'	Oil
2 <sup>nd</sup> Bone Spring	8,000'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 13.375" casing at 350' and circulating cement back to surface.

4. CASING PROGRAM

<u>Hole</u>	<u>Interval</u>	<u>OD Csg</u>	<u>Weight</u>	<u>Grade</u>	<u>Conn.</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
17.50"	0-350'	13.375"	48#	H-40	ST&C	4.52	1.71	5.29
12.25"	0-3,300'	9.625"	40#	J-55	LT&C	1.70	2.49	4.42
8.75"	0-8,300'	7"	26#	L-80	LT&C	1.33	1.39	2.27

Cementing Program:

13.375" Surface Casing: Cement to surface, 200 sx Premium Plus C + 0.005 pps Static Free + 2% CaCl<sub>2</sub> + 0.25 pps CelloFlake + 0.005 gps FP-6L, 14.8 ppg, 1.35 yield

9.625" Intermediate Casing: Cement to surface, Lead: 500 sx 50:50 Poz C + 0.005 pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5 pps LCM-1 + 0.005 gps FP-6L + 10% Bentonite, 11.8 ppg, 2.45 yield

**EOG RESOURCES, INC.**  
**SAND TANK 10 FED #1**

Tail: 200 sx Prem Plus C + 0.25 pps CelloFlake +  
0.005 FP-6L + 1% CaCl<sub>2</sub>, 14.8 ppg, 1.34 yield

7" Production Casing: Cement to 2,600', Lead: 450 sx 50:50 Poz C + 0.005  
pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5  
pps LCM-1 + 0.005 gpgs FP-6L + 10% Bentonite, 11.8  
ppg, 2.29 yield  
Tail: 200 sx 50:50 Poz H + 2% Bentonite + 0.005 gpgs  
FP-6L + 0.005 pps Static Free + 5% NaCl + 0.1% R-3  
+ 0.2% CD-32 + 0.3% FL-52A, 14.2 ppg, 1.30 yield

**5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:**

(SEE EXHIBIT #1)

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (5000 psi WP) preventer and an annular preventer (5000-psi WP). Units will be hydraulically operated and the ram-type will be equipped with blind rams on top and drill pipe rams on bottom. All BOP's and accessory equipment will be tested in accordance with Onshore Oil & Gas order No. 2. for a 2M system prior to drilling out of the surface casing shoe and while drilling the intermediate section. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 3500/ 250 psig.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

Hydraulically operated choke will not be installed prior to the setting and cementing of the intermediate casing string, but will be installed prior to drilling out of the intermediate casing shoe.

**6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:**

The well will be drilled to TD with a combination of brine, cut brine, and polymer mud system. The applicable depths and properties of this system are as follows:

<u>Depth</u>	<u>Type</u>	<u>Wt</u> <u>(PPG)</u>	<u>Viscosity</u> <u>(sec)</u>	<u>Waterloss</u> <u>(cc)</u>
0-350'	Fresh - Gel	8.6-8.8	28-34	N/c
350'-3,300'	Brine	10.0-10.2	28-34	N/c
3,300'-7,000'	Fresh water	8.4-8.6	28-34	N/c
7,000'-7,500'	Cut Brine	8.8-9.6	28-34	N/c
7,500'-8,300'	Cut Brine	8.8-9.6	28-34	10-15

**EOG RESOURCES, INC.  
SAND TANK 10 FED #1**

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

**7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:**

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

**8. LOGGING, TESTING AND CORING PROGRAM:**

Electric logging will consist of GR-Dual Laterlog and GR-Compensated Density-Neutron from TD to intermediate casing with a GR- Compensated Neutron run from intermediate casing to surface and optional Sonic from TD to intermediate casing.

Possible sidewall cores based on shows.

**9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:**

The estimated bottom hole temperature (BHT) at TD is 165 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3500 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

**10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:**

The drilling operation should be finished in approximately one month. If the well is productive, an additional 30-60 days will be required for completion and testing before a decision is made to install permanent facilities.

**Permit Information:**

Well Name: Sand Tank 10 Fed #1

Location:

SL 330' FNL &amp; 2300' FWL, Section 10, T-18-S, R-30-E, Eddy Co., N.M.

BHL Same

**Casing Program:**

Casing	Setting Depth	Hole Size	Casing Size	Casing Weight	Casing Grade	Desired TOC
Surface	350'	17-1/2"	13-3/8"	48#	H-40	Surface
Intermediate	3,300'	12-1/4"	9-5/8"	40#	J-55	Surface
Production	8,300'	8-3/4"	7"	26#	L-80	2,600'

**Cement Program:**

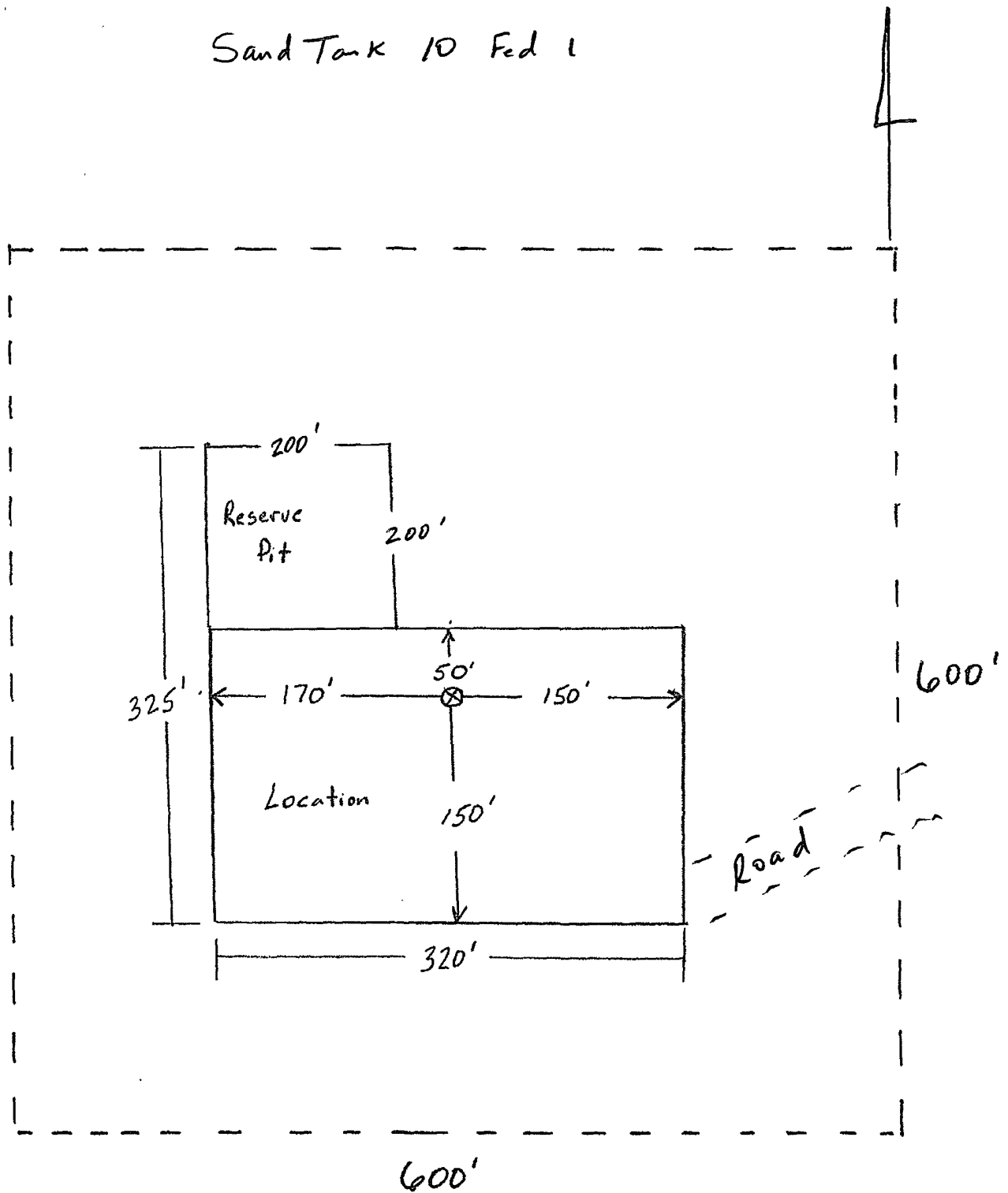
Depth	No. Sacks	Slurries:
350'	200	Premium Plus C + 0.005 pps Static Free + 2% CaCl <sub>2</sub> + 0.25 pps CelloFlake + 0.005 gps FP-6L
3,300'	500	Lead: 50:50 Poz C + 0.005 pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5 pps LCM-1 + 0.005 gps FP-6L + 10% Bentonite
	200	Tail: Premium Plus C + 0.005 pps Static Free + 1% CaCl <sub>2</sub> + 0.25 pps CelloFlake + 0.005 gps FP-6L
8,300'	450	Lead: 50:50 Poz C + 0.005 pps Static Free + 5% NaCl + 0.25 pps CelloFlake + 5 pps LCM-1 + 0.005 gps FP-6L + 10% Bentonite
	200	Tail: 50:50 Poz H + 2% Bentonite + 0.005 gps FP-6L + 0.005 pps Static Free + 5% NaCl + 0.1% R-3 + 0.2% CD-32 + 0.3% FL-52A

**Mud Program:**

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 350'	Fresh - Gel	8.6-8.8	28-34	N/c
350' – 3,300'	Brine	10.0-10.2	28-34	N/c
3,300' – 7,000'	Fresh Water	8.4 – 8.6	28-34	N/c
7,000' – 7,500'	Cut Brine	8.8-9.6	28-34	N/c
7,500' – 8,300'	Cut Brine	8.8-9.6	28-34	10-15



Sand Tank 10 Fed 1



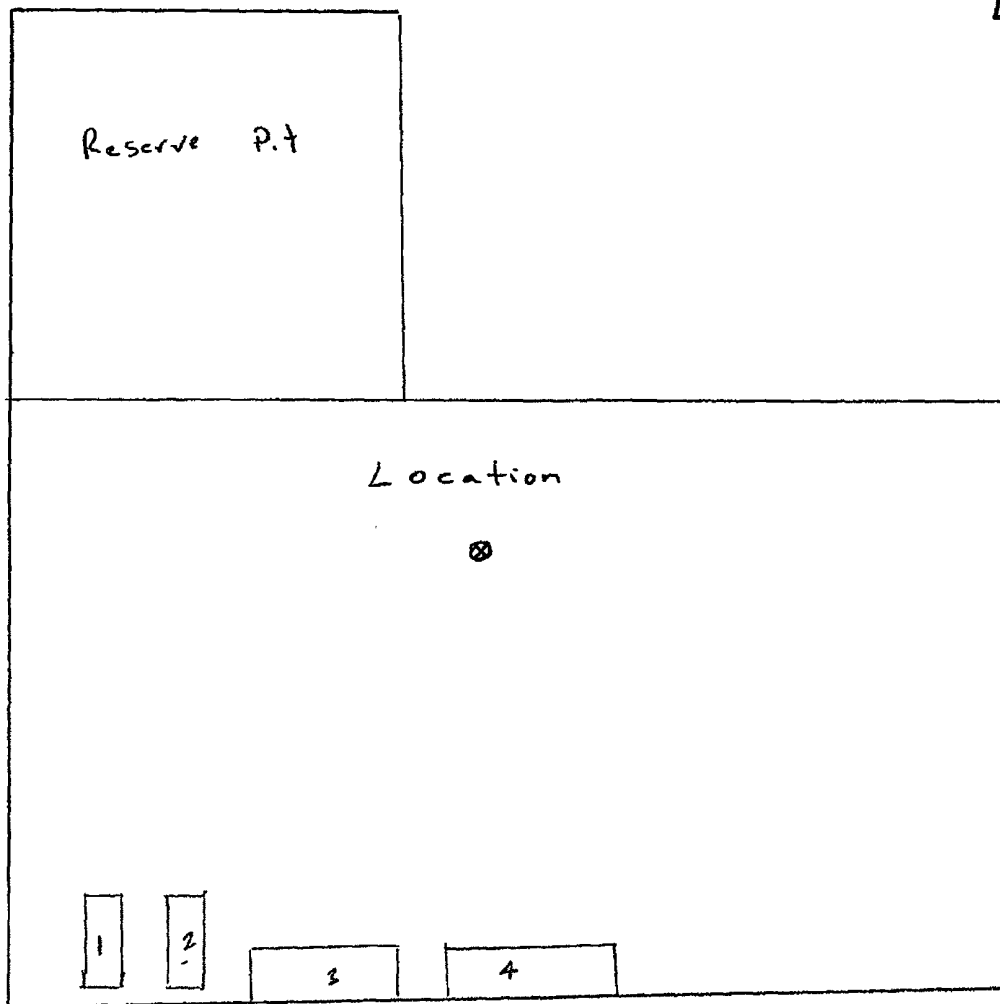
See COA

"Not To Scale"

# EXHIBIT 5

WELL NAME: Sand Tank 10 Fed 1

NW

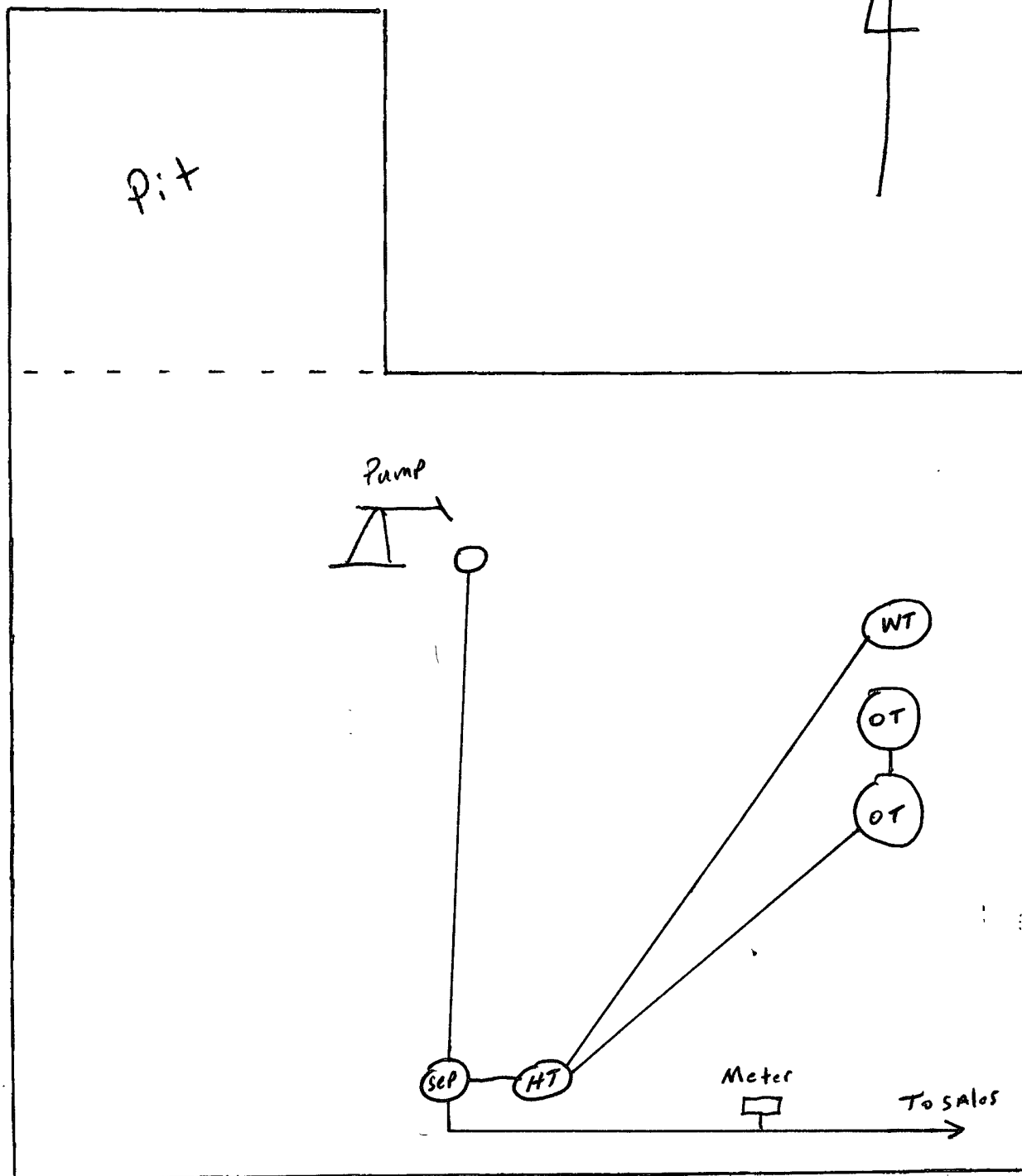


Items 1-4: Drilling Trailers

# Production Facility Layout

Sand Tank 10 Fed 1

NW



See COA

"Not To Scale"

**EOG RESOURCES, INC.**  
**SAND TANK 10 FED #1**

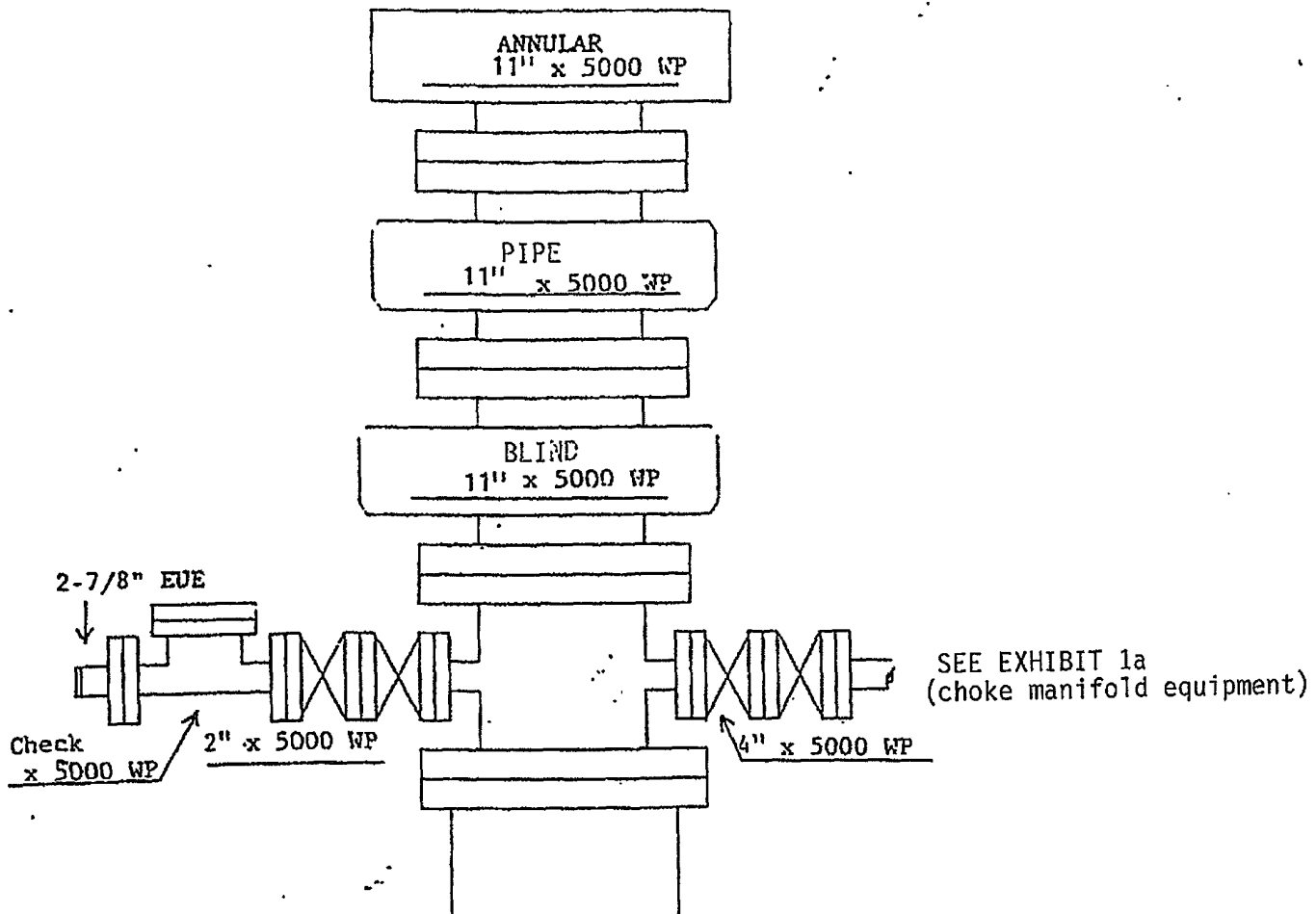
**ATTACHMENT TO EXHIBIT #1**

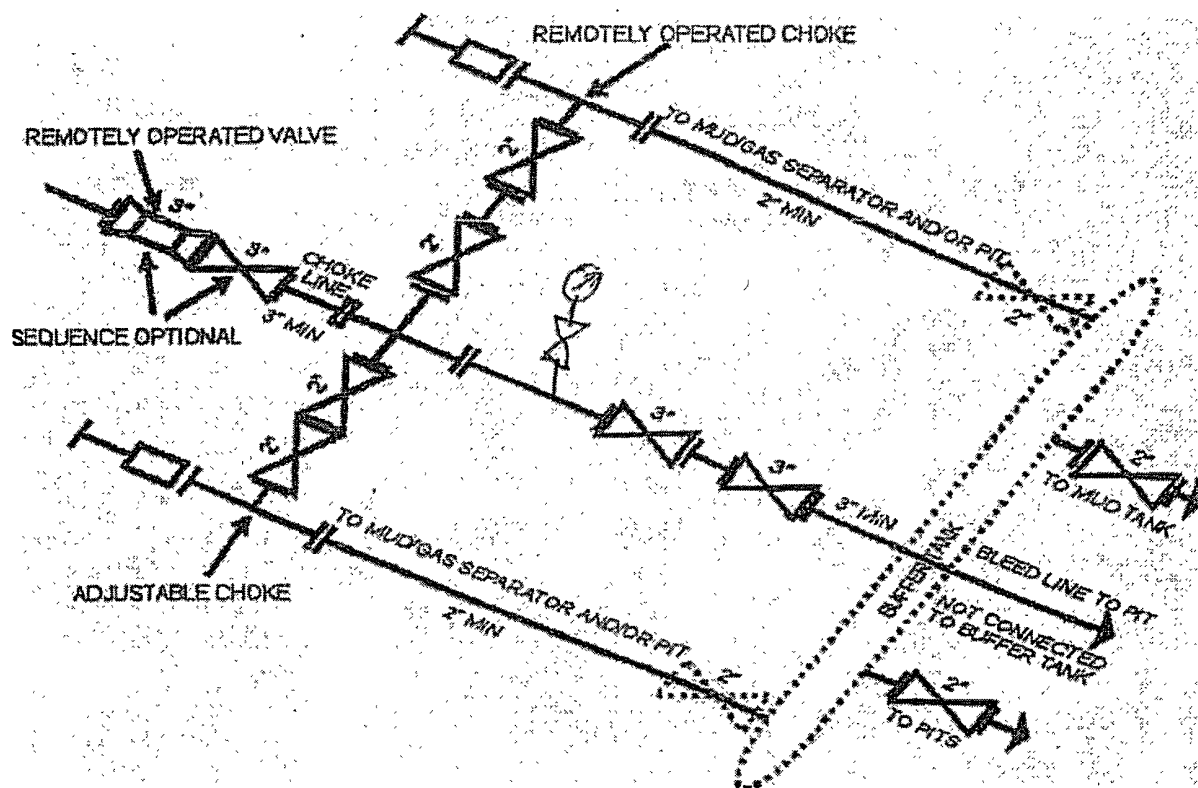
1. Wear ring to be properly installed in head.
2. Blow out preventer and all fittings must be in good condition, 3000 psi W.P. minimum. Exhibit #1.
3. All fittings to be flanged
4. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 3000 psi W.P. minimum.
5. All choke and fill lines to be securely anchored especially ends of choke lines.
6. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
7. Kelly cock on kelly.
8. Extension wrenches and hand wheels to be properly installed.
9. Blow out preventer control to be located as close to driller's position as feasible.
10. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.

EXHIBIT 1

EOG Resources, Inc.

Sand Tank 10<sup>Fed</sup> No. 1





#### 5M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifolding the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malfunction without interrupting flow control. Though not shown on 2M, 3M, 10M, OR 15M drawings, it would also be applicable to those situations.

[54 FR 39528, Sept. 27, 1989]

**EOG RESOURCES, INC.  
SAND TANK 10 FED #1**

**SURFACE USE PLAN OF OPERATION**

**SHL: 330' FNL & 2300' FWL, Unit C, Section 10, T18S-R30E, N.M.P.M., Eddy, NM**

**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 Terry Asel, RPL 15079.
- b. All roads into the location are depicted on Exhibit 2 & 2a.
- c. Directions to Locations: Beginning in Loco Hills, NM, From Jct. of Hwy 82 & Co. Road 217, Go Southwest on CR 217 for 3 miles, turn left on CR 216 and go south for 0.3 miles, turn left on lease road and go east south east for 3.2 miles, turn left on lease road and go east for 0.7 miles, turn south for 0.1 miles to location.

**2. NEW OR RECONSTRUCTED ACCESS ROAD:**

- a. The well site layout, Exhibit 2a shows the layout. The proposed access road, begins on CR 217 and trends ESE to the NE Side of the well pad. (See 1c above for driving directions).
- b. The maximum width of the road will be 15'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent soil erosion.
- c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.
- d. No cattleguards, gates or fence cuts will be required. No turnouts are planned.

**3. LOCATION OF EXISTING WELLS:**

Exhibit #3 shows all existing wells within a one-mile radius of this well.

**4. LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES:**

- a. In the event the well is found to be productive, the Sand Tank 10 Fed No. 1
- b. tank battery would be utilized and the necessary production equipment will be installed at the well site. See Production Facilities Layout diagram.
- c. As a proposed oil well, we will contact Central Valley Electric Coop to provide electrical service to the well.
- d. All flow lines will adhere to API standards.
- e. Refer to b above.
- f. If the well is productive, rehabilitation plans are as follows:

**EOG RESOURCES, INC.**  
**SAND TANK 10 FED #1**

- i. The reserve pit will be back filled after the contents of the pit are dry (within 120 days after completion, weather permitting).
- ii. The original topsoil from the well site will be returned to the location. The drill site will be contoured as close as possible to the original state.

**5. LOCATION AND TYPE 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 existing and proposed roads shown in Exhibit 2 & 2a. On occasion, water will be obtained from existing water wells. In these cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If poly pipeline is used to transport fresh water to the location, proper authorization will be secured by the contractor.

**6. 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 rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by roads, if available.

**7. METHODS OF HANDLING WASTE MATERIALS**

- a. Drill cuttings will be disposed of in the reserve pit.
- b. All trash, junk, and other waste material will be contained in trash cages or trash bins to prevent scattering. When a job is completed, all contents will be removed and disposed of in an approved landfill.
- c. The supplier, including broken sacks, will pick up salts remaining after completion of well.
- d. If necessary, 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.
- e. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken for further drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approved disposal site. Later pits will be broken out to speed dry. Water produced during completion will be put in reserve pits. Oil and condensate produced will be put in a storage tank and sold.
- f. Disposal of fluids to be transported by the following companies:
  - i. RGB TRUCKING
  - ii. LOBO TRUCKING
  - iii. I & W TRUCKING
  - iv. CRANE HOT OIL & TRANSPORT



**EOG RESOURCES, INC.**  
**SAND TANK 10 FED #1**

v. \_\_\_\_\_

**8. ANCILLARY FACILITIES:**

- a. No airstrip, campsite, or other facilities will be built.

**9. WELL SITE LAYOUT:**

- a. Exhibit 4 shows the proposed well site layout with dimensions of the pad layout.
- b. Exhibit 5 shows proposed location of reserve and sump pits and living facilities.
- c. Mud pits in the active circulating system will be steel pits and the reserve pits will be lined.
- d. If needed, the reserve pit is to be lined with polyethylene. The pit liner will be 12 mils thick. Pit liner will extend a minimum of two feet (2') over the reserve pit's dykes where the liner will be anchored down.
- e. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down after the pit contents have dried. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

**10. PLANS FOR SURFACE RECLAMATION:**

- a. After concluding the 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 reserve pit area will be broken out and leveled after drying to a condition where these are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography. The pit will be closed per OCD compliance regulations.
- b. The pit lining will be buried or hauled away in order to return the location and road to their pristine nature. All pits will be filled and the location leveled, weather permitting, within 120 days after abandonment.
- c. The location and road will be rehabilitated as recommended by the BLM.
- d. The reserve pit will be fenced on three sides throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will be in place until the pit is reclaimed.

**EOG RESOURCES, INC.**  
**SAND TANK 10 FED #1**

- e. If the well is deemed commercially productive, the reserve pit will be restored as described in 10(A) within 120 days subsequent to the completion date. 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.

**11. SURFACE OWNERSHIP**

The surface is owned by the Bureau of Land Management (BLM). 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 surface location will be restored as directed by the BLM.

**12. OTHER INFORMATION:**

- a. The area surrounding the well is grassland. The topsoil is sandy in nature. The vegetation is moderately sparse with native prairie grass, cactus and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, birds and rodents transverse the area.
- b. There are not dwellings within 2 miles of location.
- c. There is no permanent or live water within 1 miles of the location.
- d. A Cultural Resources Examination was assigned to Boone Archaeological Services and a report will be submitted to the BLM office in Carlsbad, New Mexico.

**13. BOND COVERAGE:**

- a. Bond Coverage is Nationwide; Bond No. NM 2308

**EOG RESOURCES, INC.  
SAND TANK 10 FED #1**

**COMPANY REPRESENTATIVES:**

Representatives responsible for ensuring compliance of the surface use plan are listed below:

**Permitting & Land**

Mr. Donny G. Glanton  
Senior Lease Operations ROW Representative  
EOG Resources, Inc.  
P.O. Box 2267  
Midland, TX 79702  
(432) 686-3642 Office  
(432) 770-0602 Cell

**Drilling**

Mr. Jason LaGrega  
Division Drilling Engineer  
EOG Resources, Inc.  
P.O. Box 2267  
Midland, TX 79702  
(432) 686-3633 Office  
(432) 894-1217 Cell

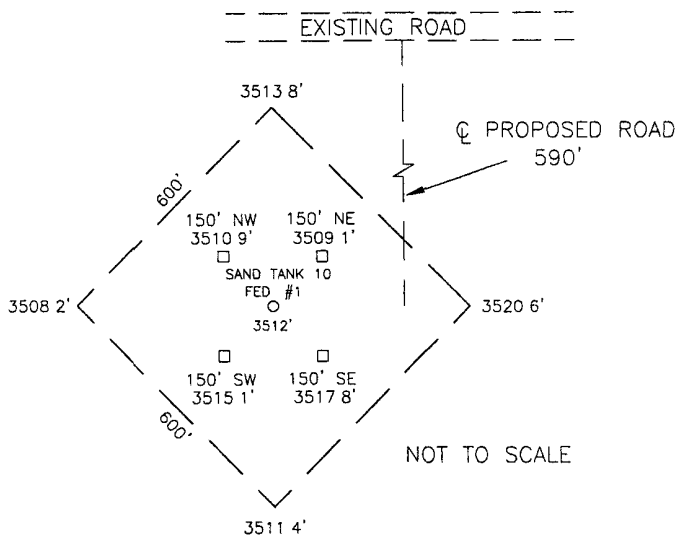
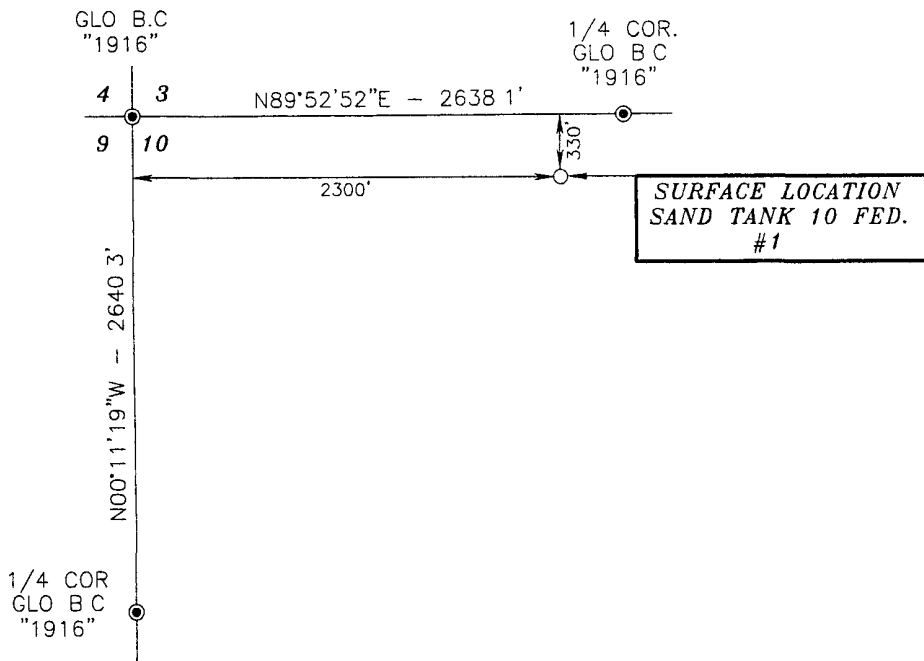
**Operations**

Mr. Howard Kemp  
Production Manager  
EOG Resources, Inc.  
P.O. Box 2267  
Midland, TX 79702  
(432) 686-3704 Office  
(432) 634-1001 Cell

SECTION 10, TOWNSHIP 18 SOUTH, RANGE 30 EAST, N.M.P.M.,  
EDDY COUNTY NEW MEXICO

EXHIBIT 2

Basis of Bearings - GPS Geodetic Measurements  
NM East Zone (83) North American Datum of 1983



DRIVING DIRECTIONS:  
BEGINNING IN LOCO HILLS AT THE INTERSECTION OF  
U.S. HWY #82 AND EDDY COUNTY ROAD #217, GO  
SOUTH SOUTHWEST ON EDDY CO ROAD #217 FOR  
3.0 MILES, TURN LEFT ON EDDY COUNTY ROAD  
#216 AND GO SOUTH FOR 0.3 MILES, TURN LEFT  
ON LEASE ROAD AND GO EAST SOUTHEAST FOR 3.2  
MILES, TURN LEFT ON LEASE ROAD AND GO EAST  
FOR 0.7 MILES, TURN SOUTH FOR 0.1 MILES TO  
LOCATION



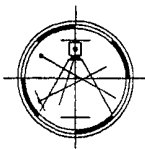
SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR  
NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM  
RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS  
TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND  
BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR  
SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW  
MEXICO STATE BOARD OF REGISTRATION FOR  
PROFESSIONAL ENGINEERS AND SURVEYORS.

*Terry J. Asel* 11/13/2007  
Terry J. Asel N.M. R.P.S. No. 15079

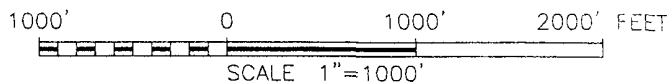
Asel Surveying

P.O. BOX 393 - 310 W TAYLOR  
HOBBS, NEW MEXICO - 505-393-9146



LEGEND

● - DENOTES FOUND MONUMENT AS NOTED

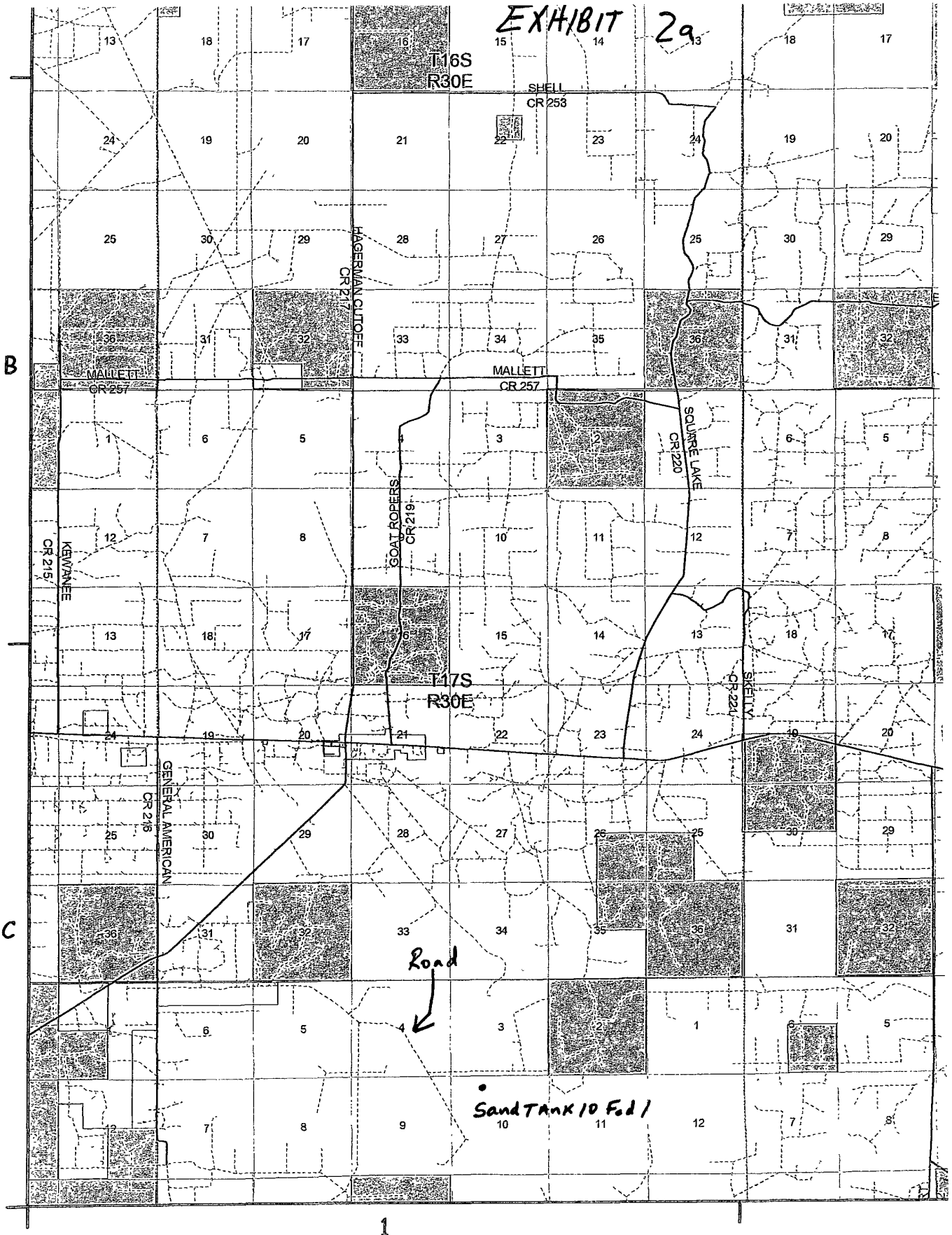


EOG RESOURCES INC.

SAND TANK 10 FED. #1  
IN SECTION 10, TOWNSHIP 18 SOUTH,  
RANGE 30 EAST, N.M.P.M., EDDY COUNTY,  
NEW MEXICO

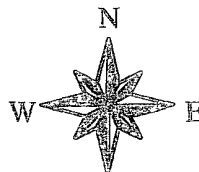
Survey Date: 11/01/07	Sheet 1 of 1 Sheets
W.O. Number: 071101WL (Rev. A)	Drawn By: KA Rev. A
Date: 11/12/07	071101WL Scale 1"=1000'

Continued on Page 11

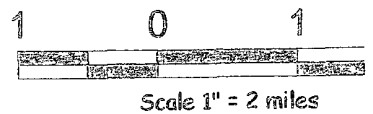


MAP LEGEND

- |  |          |  |                       |  |     |
|--|----------|--|-----------------------|--|-----|
|  | 2 LANE   |  | BLM                   |  | USA |
|  | 4 LANE   |  | BOR                   |  |     |
|  | CANAL    |  | DOE                   |  |     |
|  | PRIVATE  |  | Forest Service        |  |     |
|  | RAILROAD |  | National Park Service |  |     |
|  | TRAIL    |  | Private               |  |     |
|  | Township |  | State                 |  |     |



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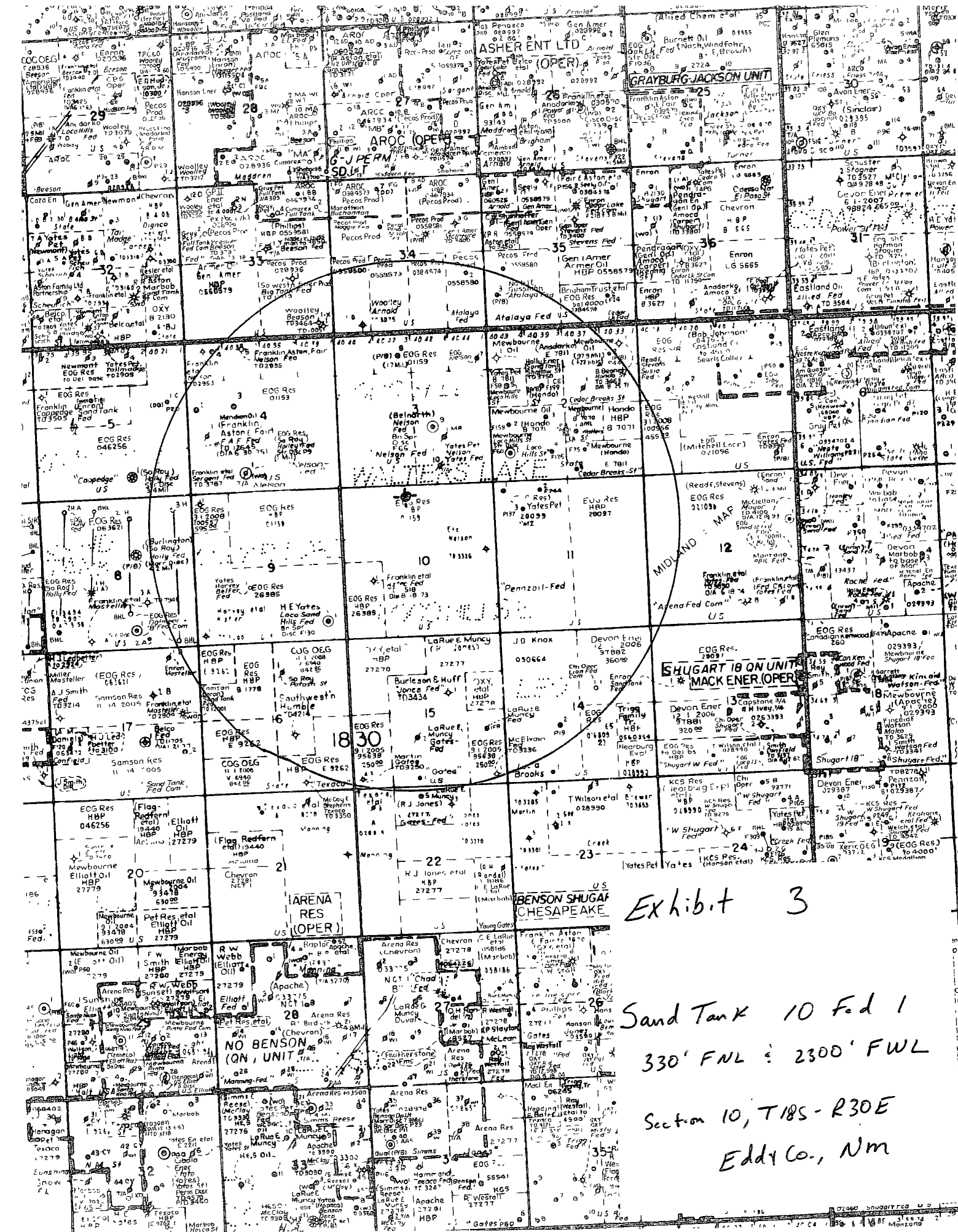


Exhibit 3

Sand Tank 10 Fed 1  
330' FNL : 2300' FWL

Section 10, T18S - R30E  
Eddy Co., Nm

## OPERATOR CERTIFICATION

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 that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this 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 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 false statements. Executed this 12 day of November, 2007.

Name: Donny G. Glanton

Position: Sr. Lease Operations ROW Representative

Address: P.O. BOX 2267 Midland, TX 79705

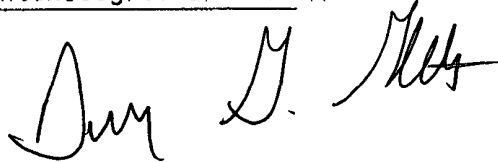
Telephone: 432-686-3642

Field Representative (if not above signatory): \_\_\_\_\_

Address (if different from above): \_\_\_\_\_

Telephone (if different from above): \_\_\_\_\_

E-mail (optional): donny\_glanton@eogresources.com



## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG Resources, Inc.
LEASE NO.:	NM-01159
WELL NAME & NO.:	1-Sand Tank 10 Federal
SURFACE HOLE FOOTAGE:	330' FNL & 2300' FWL
BOTTOM HOLE FOOTAGE:	
LOCATION:	Section 10, T. 18 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

### TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Lesser Prairie Chicken
- ☐ **Construction**
  - Notification
  - Topsoil
  - Reserve Pit
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
- ☐ **Reserve Pit Closure/Interim Reclamation**
- ☐ **Final Abandonment/Reclamation**



## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## **V. SPECIAL REQUIREMENT(S)**

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 15 through June 15 annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

### **C. RESERVE PITS**

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 200' X 200' on the Northwest side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

### **D. FEDERAL MINERAL MATERIALS PIT**

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 234-5972.

#### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

#### **F. ON LEASE ACCESS ROADS**

##### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

##### **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

##### **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

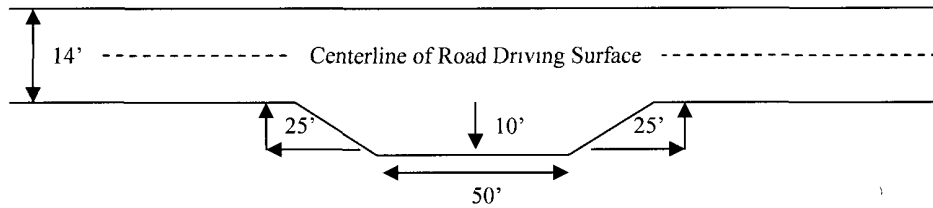
##### **Ditching**

Ditching shall be required on both sides of the road.

##### **Turnouts**

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

**Standard Turnout – Plan View**

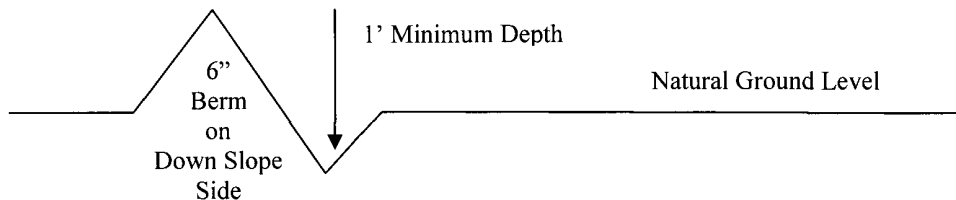


### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### **Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### **Culvert Installations**

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

### **Cattleguards**

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

### **Fence Requirement**

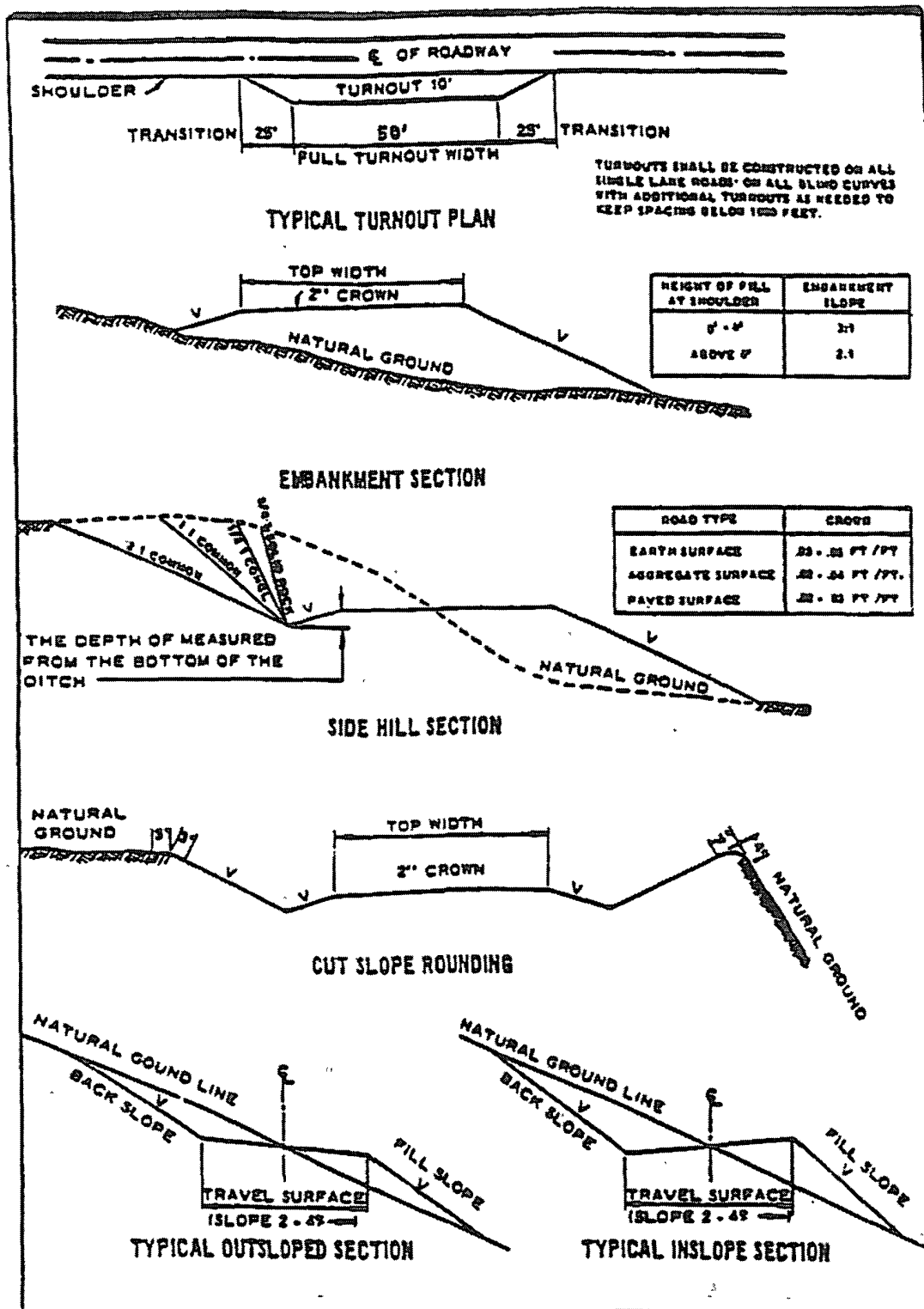
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

### **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the **Bone Spring** formation. **Hydrogen Sulfide has been measured from 150-380 ppm in gas streams.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### B. CASING

1. The 11-3/4 inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 350 feet** and cemented to the surface. **Additional cement may be needed.**
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement). **Please provide WOC times to inspector for cement slurries.**



- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial action will be done prior to drilling out that string.

**Possible water flows in the Salado Group and Premier member of the Grayburg formation.**

- 2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a-d above.

**Casing should be set just above the San Andres dolomite at approximately 3300' although this formation could be as deep as 3450'. Please provide WOC times to inspector for cement slurries.**

- 3. The minimum required fill of cement behind the 7 inch production casing is:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Tie-back of 500' required due to Secretary's Potash. Please provide WOC times to inspector for cement slurries.**

- 4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

**C. PRESSURE CONTROL**

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

- d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

**Engineer on call phone (after hours):      Carlsbad: (575) 706-2779**

**WWI 011008**

## **VIII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Containment Structures**

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color  
Shale Green, Munsell Soil Color Chart # 5Y 4/2

## **IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE**

### **A. INTERIM RECLAMATION**

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

### **B. RESERVE PIT CLOSURE**

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

### Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed  
(Insert Seed Mixture Here)

## **X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS**

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.