Carlsbad Field Office
OCD Artesia

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM040659

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.:

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. com 321632
IRIDIUM MDP1 28-21 FEDER 171H

2. Name of Operator: OXY USA INCORPORATED 16696

9. API Well No.: 30-015-45076

3a. Address: 5 Greenway Plaza, Suite 110 Houston TX 770

3b. Phone No. (include area code): (713)366-5716

10. Field and Pool, or Exploratory: WILDCAT WOLFCAMP / WOLFCAMP 98236

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: SWSW / 430 FSL / 683 FWL / LAT 32.2693619 / LONG -103.7890828
At proposed prod. zone: NWNW / 180 FNL / 440 FWL / LAT 32.2967232 / LONG -103.7899064

11. Sec., T. R. M. or Blk. and Survey or Area: WC-015-G08-S233I 350
SEC 28 / T23S / R31E / NMP

14. Distance in miles and direction from nearest town or post office*: 8 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 50 feet

16. No. of acres in lease: 640

17. Spacing Unit dedicated to this well: 320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 35 feet

19. Proposed Depth: 11490 feet / 21602 feet

20. BLM/BIA Bond No. on file: FED: ESB000226

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3370 feet

22. Approximate date work will start*: 10/04/2018

23. Estimated duration: 25 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	Name (Printed/Typed)	Date
(Electronic Submission)	David Stewart / Ph: (713)366-5716	02/23/2018

Title: Sr. Regulatory Advisor

Approved by (Signature)	Name (Printed/Typed)	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	06/18/2018

Title	Office
Supervisor Multiple Resources	CARLSBAD

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.

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Approval Date: 06/18/2018

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 27 2018
RECEIVED

RWP 7-3-18

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

1. SHL: SWSW / 430 FSL / 683 FWL / TWSP: 23S / RANGE: 31E / SECTION: 28 / LAT: 32.2693619 / LONG: -103.7890828 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSW / 9 FSL / 439 FWL / TWSP: 23S / RANGE: 31E / SECTION: 21 / LAT: 32.282673 / LONG: -103.789887 (TVD: 11490 feet, MD: 16504 feet)
   PPP: SWSW / 340 FSL / 440 FWL / TWSP: 23S / RANGE: 31E / SECTION: 28 / LAT: 32.2691142 / LONG: -103.7898682 (TVD: 11490 feet, MD: 11840 feet)
   BHL: NWNW / 180 FNL / 440 FWL / TWSP: 23S / RANGE: 31E / SECTION: 21 / LAT: 32.2967232 / LONG: -103.7899064 (TVD: 11490 feet, MD: 21602 feet)

BLM Point of Contact

Name: Sipra Dahal
Title: Legal Instruments Examiner
Phone: 5752345983
Email: sdahal@blm.gov

Approval Date: 06/18/2018

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INC
LEASE NO.:	NMNM-040659
WELL NAME & NO.:	Iridium MDP1 28-21 Federal Com 171H
SURFACE HOLE FOOTAGE:	0430' FSL & 0683' FWL
BOTTOM HOLE FOOTAGE	0180' FNL & 0440' FWL Sec. 21, T. 23 S., R 31 E.
LOCATION:	Section 28, T. 23 S., R 31 E., NMPM
COUNTY:	County, New Mexico

Submit NMOCD Gas Capture Plan to the BLM.

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

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

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the**

Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. **The operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other wells.**

4. Option – Setting surface casing with Spudder Rig

   a. Notify the BLM when removing the Spudder Rig.

   b. Notify the BLM when moving in the H&P Flex Rig. Rig to be moved in within 60 days of notification that the Spudder Rig has left the location. Failure to notify or have rig on location within 60 days will result in an Incident of Non-Compliance.

   c. Once the H&P Flex Rig is on location, it shall not be removed from over the hole without prior approval unless the production casing has been run and cemented or the well has been properly plugged. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

   d. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as H&P Flex Rig is rigged up on well. CIT for the surface casing shall be performed and results recorded on subsequent sundry – pressure to be 1200 psi.

5. 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 is located, this does not include the dog house or stairway area.

6. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If**

available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Potash Areas:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

R-111-P Potash
Possible water flows in the Castile and Salado.
Possible lost circulation in the Red Beds, Rustler, and Delaware.

1. The **16** inch surface casing shall be set at approximately **590** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

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 cementing will be done prior to drilling out that string.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **10-3/4** inch 1st intermediate casing . is:

☐ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Formation below the 10-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

3. The minimum required fill of cement behind the **7-5/8** inch 2nd intermediate casing is:

Operator has proposed DV tool at depth of 5891', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous

shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:___

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☐ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Formation below the 7-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☐ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

5. 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.

6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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 53.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **10-3/4** 1st intermediate casing shoe shall be psi. **10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

If mulitbowl option is utilized:

5. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of**

the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.

a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
c. **Manufacturer representative shall install the test plug for the initial BOP test.**
d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

6. The appropriate BLM office shall be notified a minimum of hours in advance for a representative to witness the tests.

   a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

   b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

   c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

   d. The results of the test shall be reported to the appropriate BLM office.

   e. 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.**

f. 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. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 060718

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INCORPORATED
LEASE NO.:	NMNM 040659
WELL NAME & NO.:	171H-IRIDIUM MDP1 28-21 FED
SURFACE HOLE FOOTAGE:	430'/S & 683'/W
BOTTOM HOLE FOOTAGE	180'/N & 440'/W
LOCATION:	T-23S, R-31E, S-28. NMPM
COUNTY:	EDDY, NM

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.

Approval Date: 06/18/2018

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 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, 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 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

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 (575) 234-5909 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

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 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. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. 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 twenty-five (25) 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.

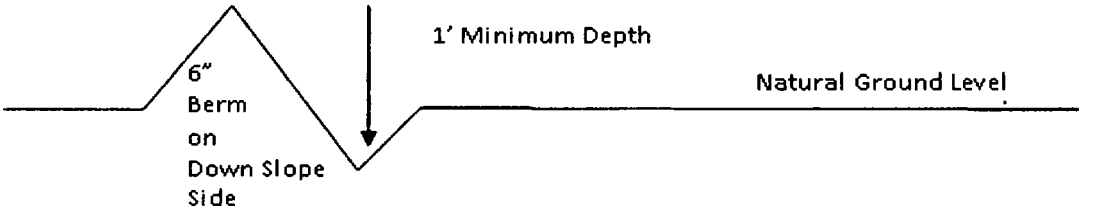
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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:

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

Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted 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 fences.

Public Access

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

Construction Steps 1. Salvage topsoil 2. Construct road 3. Redistribute topsoil 4. Revegetate slopes

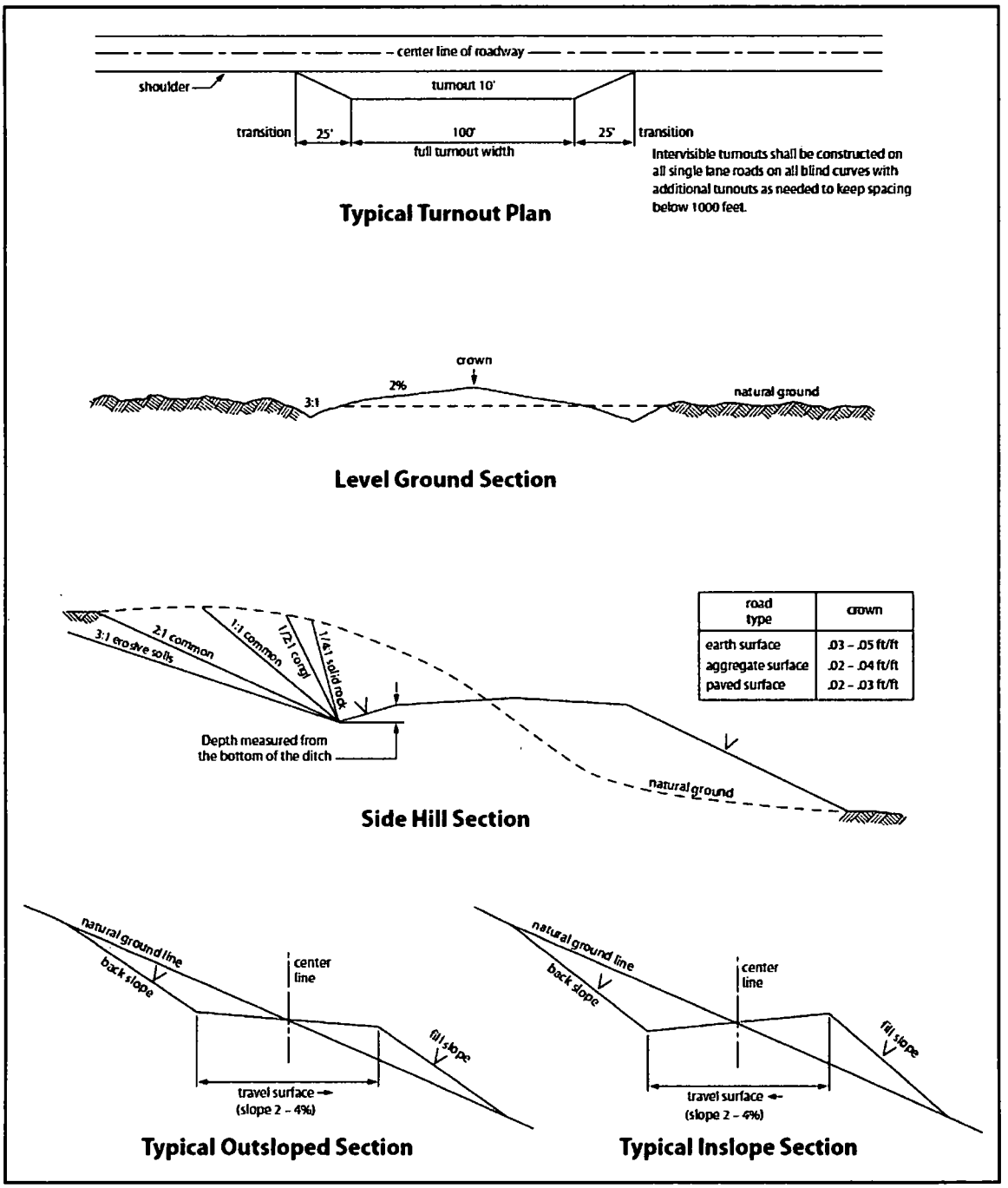


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 06/18/2018

VII. 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.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES
STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third

parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing

by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the

authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to

the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land

shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
    - For reclamation remove poles, lines, transformer, etc. and dispose of properly.
    - Fill in any holes from the poles removed.

VIII. 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.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation 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 that is free of contaminants 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.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

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:

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

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INCORPORATED
LEASE NO.:	NMNM 040659
WELL NAME & NO.:	171H-IRIDIUM MDP1 28-21 FED
SURFACE HOLE FOOTAGE:	430'/S & 683'/W
BOTTOM HOLE FOOTAGE	180'/N & 440'/W
LOCATION:	T-23S, R-31E, S-28. NMPM
COUNTY:	EDDY, NM

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.

Approval Date: 06/18/2018

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 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, 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 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

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 (575) 234-5909 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

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 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. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. 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 twenty-five (25) 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.

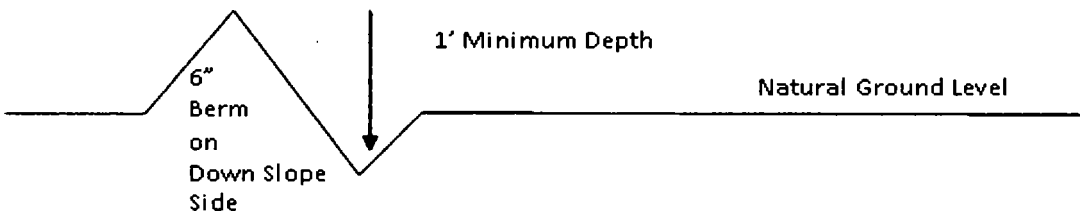
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

Cattleguards
An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route 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 cattleguards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted 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 fences.

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

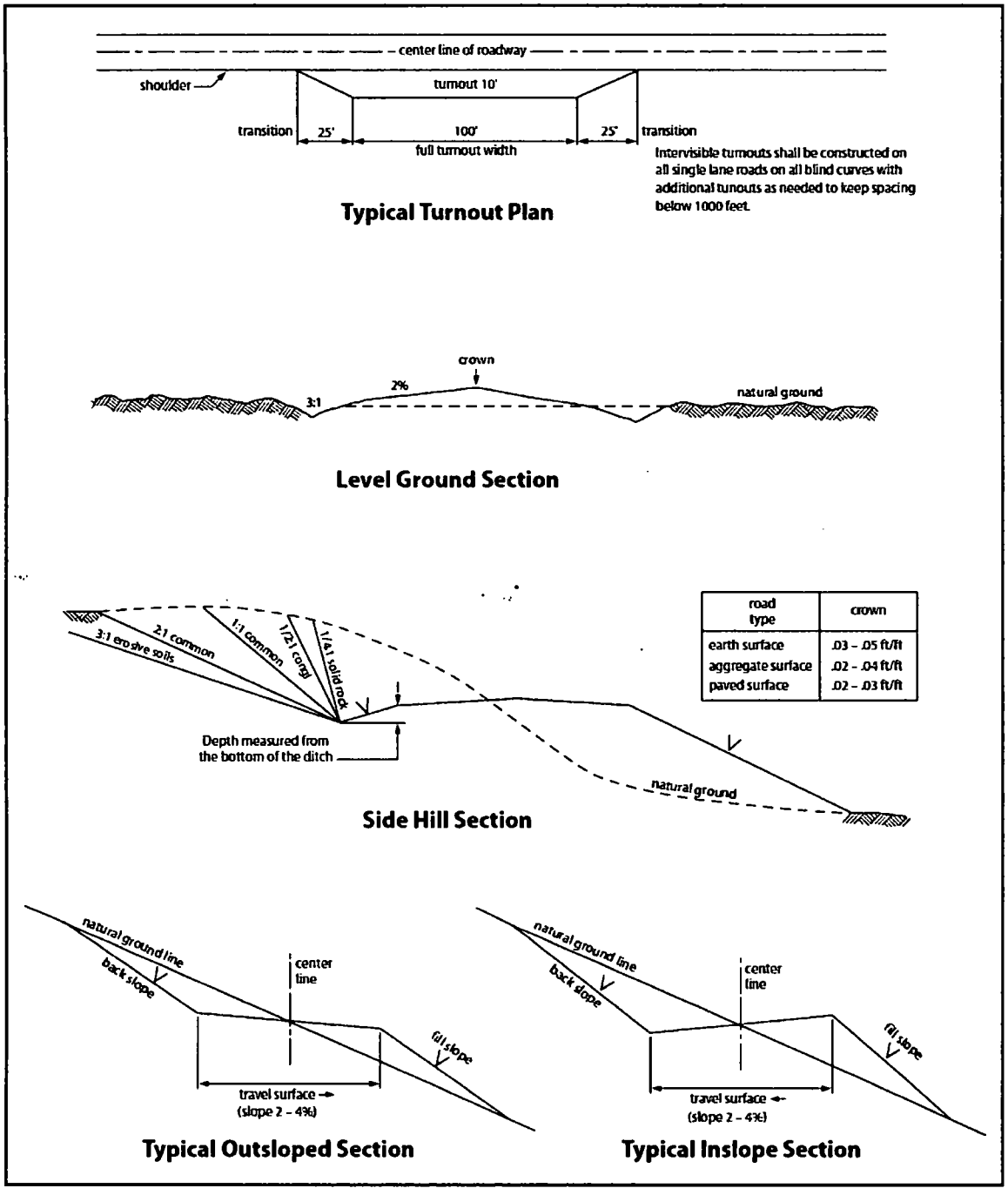


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 06/18/2018

VII. 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.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

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** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third

parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing

by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the

authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. 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, powerline 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.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to

the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land

shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
    - For reclamation remove poles, lines, transformer, etc. and dispose of properly.
    - Fill in any holes from the poles removed.

VIII. 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.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation 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 that is free of contaminants 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.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

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:

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

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

06/19/2018

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 which currently 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.

NAME: David Stewart **Signed on:** 02/23/2018

Title: Sr. Regulatory Advisor

Street Address: 5 Greenway Plaza, Suite 110

City: Houston **State:** TX **Zip:** 77046

Phone: (713)366-5716

Email address: David_stewart@oxy.com

Field Representative

Representative Name: Jim Wilson

Street Address: 6001 Deauville

City: Midland **State:** TX **Zip:** 79706

Phone: (575)631-2442

Email address: jim_wilson@oxy.com

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

06/19/2018

APD ID: 10400027338 **Submission Date:** 02/23/2018

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400027338 **Tie to previous NOS?** **Submission Date:** 02/23/2018

BLM Office: CARLSBAD **User:** David Stewart **Title:** Sr. Regulatory Advisor

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM040659 **Lease Acres:** 640

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO **APD Operator:** OXY USA INCORPORATED

Operator letter of designation:

Operator Info

Operator Organization Name: OXY USA INCORPORATED

Operator Address: 5 Greenway Plaza, Suite 110

Zip: 77046

Operator PO Box:

Operator City: Houston **State:** TX

Operator Phone: (713)366-5716

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? EXISTING **Mater Development Plan name:** Sand Dunes Area

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** WILDCAT WOLFCAMP **Pool Name:** WOLFCAMP

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** IRIDIUM MDP1 28-21 FEDERAL COM **Number:** 11H

Well Class: HORIZONTAL **Number of Legs:**

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 8 Miles **Distance to nearest well:** 35 FT **Distance to lease line:** 50 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: IridiumMDP1_28_21FdCom171H_C102_20180215082219.pdf

IridiumMDP1_28_21FdCom171H_SitePlan_20180215082232.pdf

Well work start Date: 10/04/2018 **Duration:** 25 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	430	FSL	683	FWL	23S	31E	28	Aliquot SWSW	32.2693619	-103.7890828	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 040659	3370	0	0
KOP Leg #1	50	FSL	440	FWL	23S	31E	28	Aliquot SWSW	32.268317	-103.7898671	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 040659	-7547	10940	10917

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	340	FSL	440	FWL	23S	31E	28	Aliquot SWSW	32.2691142	-103.7898682	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 040659	-8120	11840	11490
PPP Leg #1	9	FSL	439	FWL	23S	31E	21	Aliquot SWSW	32.282673	-103.789887	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 038464	-8120	16504	11490
EXIT Leg #1	340	FNL	440	FWL	23S	31E	21	Aliquot NWNW	32.2962834	-103.7899058	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 038464	-8120	21422	11490
BHL Leg #1	180	FNL	440	FWL	23S	31E	21	Aliquot NWNW	32.2967232	-103.7899064	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 038464	-8120	21602	11490

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 27 2018
RECEIVED

District I
1625 N French Dr., Hobbs, NM 8
Phone: (575) 393-6161 Fax: (575)
District II
811 S. First St., Artesia, NM 8821
Phone: (575) 748-1283 Fax: (575)
District III
1000 Rio Brazos Road, Aztec, NM
Phone: (505) 334-6178 Fax: (505)
District IV
1220 S. St. Francis Dr., Santa Fe, N
Phone: (505) 476-3460 Fax: (505)

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-		Wildcat Wolfcamp

Property Code	Property Name	Well Number
	IRIDIUM MDP1 "28-21" FEDERAL COM	171H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	3369.7'

Surface Location

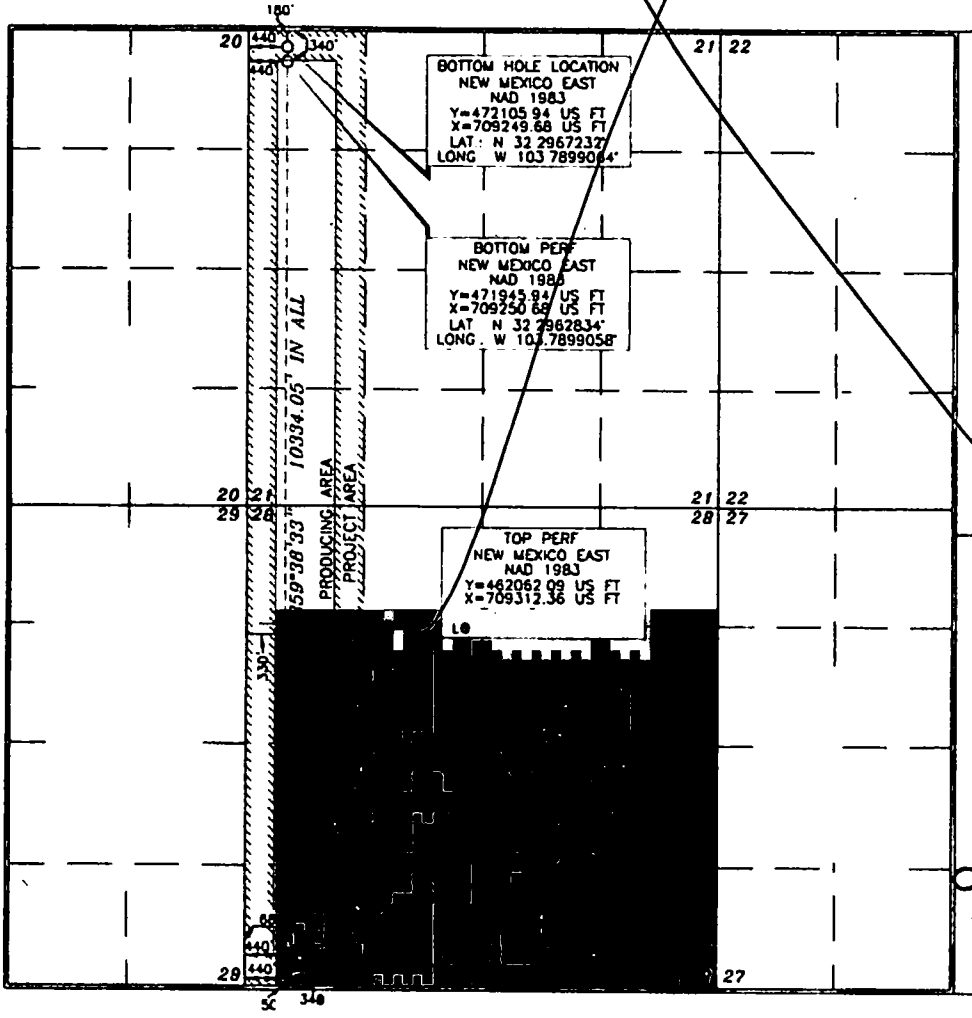
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	28	23 SOUTH	31 EAST, N.M.P.M		430'	SOUTH	683'	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	21	23 SOUTH	31 EAST, N.M.P.M		180'	NORTH	440'	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320	Y		

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.

Signature — Date: 12/14/18

David Stewart
Printed Name

david_stewart@oxy.com
Address

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.

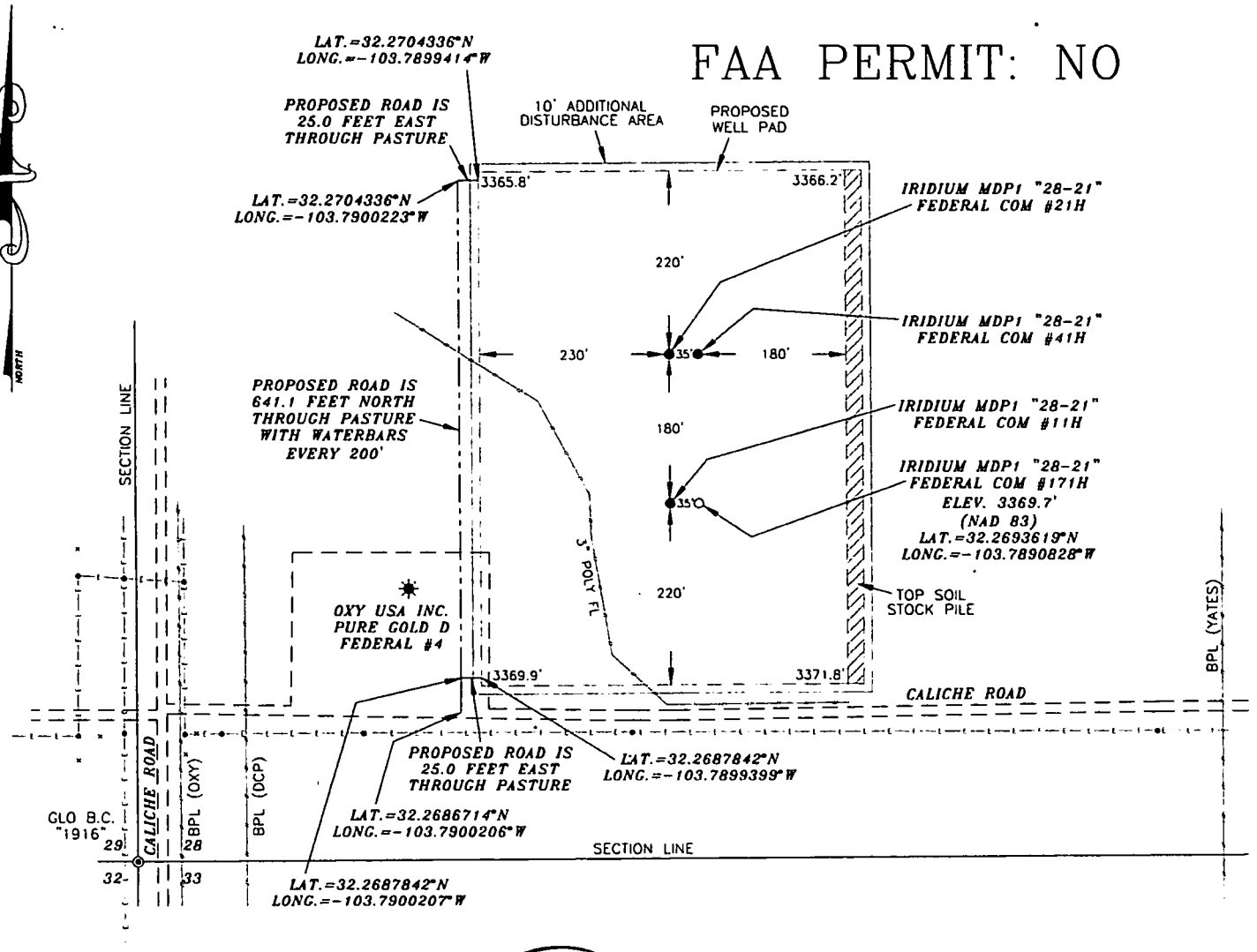
NEW MEXICO
15
PROFESSIONAL LAND SURVEYOR

Certificate Number

WO# 17

OXY USA INC.
IRIDIUM MDP1 "28-21" FEDERAL COM #171H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

- - - - - DENOTES PROPOSED WELL PAD
——— DENOTES PROPOSED ROAD
▨ DENOTES STOCK PILE AREA
✱ DENOTES EXISTING WELL

200' 0 200' 400' FEET

SCALE: 1"=200'

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 "MINIMIUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 10/31/2017

Terry J. Asel N.M. R.P.L.S. No. 15079

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

OXY USA INC.

IRIDIUM MDP1 "28-21" FEDERAL COM #171H
LOCATED AT 430' FSL & 683' FWL IN SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 09/20/17	Sheet 1 of 1 Sheets	
W.O. Number: 170920WL-a	Drawn By: KA	Rev:
Date: 10/27/17	170920WL-a	Scale: 1"=200'

APD ID: 10400027338 **Submission Date:** 02/23/2018

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3370	424	424	SHALE,DOLOMITE,ANHYDRITE	USEABLE WATER	No
2	SALADO	2588	782	782	SHALE,DOLOMITE,HALITE,ANHYDRITE	OTHER : SALT	No
3	CASTILE	654	2716	2716	ANHYDRITE	OTHER : salt	No
4	LAMAR	-832	4202	4202	LIMESTONE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL,OTHER : BRINE	No
5	BELL CANYON	-855	4225	4225	SANDSTONE,SILTSTONE	NATURAL GAS,OIL,OTHER : BRINE	No
6	CHERRY CANYON	-1731	5101	5101	SANDSTONE,SILTSTONE	NATURAL GAS,OIL,OTHER : BRINE	No
7	BRUSHY CANYON	-3021	6391	6396	LIMESTONE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL,OTHER : BRINE	No
8	BONE SPRING	-4647	8017	8030	LIMESTONE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL	No
9	BONE SPRING 1ST	-5704	9074	9093	LIMESTONE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL	No
10	BONE SPRING 2ND	-5935	9305	9326	LIMESTONE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 3RD	-6809	10179	10202	LIMESTONE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL	No
12	WOLFCAMP	-8000	11370	11478	SANDSTONE,SILTSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 11490

Equipment: 13-5/8" 2M Annular, Blind Ram, Double Ram 0-4302' 13-5/8" 5M Annular, Blind Ram, Double Ram 4302-10323' 13-5/8" 5M Annular, 10M Blind Ram, Double Ram 10323-12600' Pilot Hole 13-5/8" 5M Annular, Blind Ram, Double Ram 10323-21602' Lateral

Requesting Variance? YES

Variance request: Request for the use of a flexible choke line from the BOP to Choke Manifold. OXY requests to employ a 5M annular with a 10M BOPE stack in the pilot and lateral sections of the well and will ensure that two barriers to flow are maintained at all times, Well Control Plan attached.

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. 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. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. A multibowl wellhead or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system will be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. Due to the four string design, OXY plans to employ a 16" 3K sacrificial wellhead that will be employed to drill the 13.5" Intermediate Hole. Upon completion of drilling and cementing operations on the 13.5" Intermediate hole section (along with proper WOC time), the wellhead will be cut off and salvaged. At this point, a standard 11" 5x10x10 MNDS wellhead will be welded onto the 10.75" casing for the remainder of drilling operations on the pad. BOP Pressure Test - Because it is not possible to land a 16" test plug through 13.625" BOP, OXY is requesting permission to test the BOP against the lower pipe rams after N/U BOP on 16" wellhead. The lower pipe rams will serve as a test plug. A 2M, 10 minute test will be performed on all BOP components. Maximum Anticipated Surface Pressure for drilling the 13.5" hole section is: (4302' x 10 ppg x 0.052) – (0.1 psi/ft x 4302') = 1807 psi. Upper pipe rams will be tested against lower pipe rams Annular will also against the lower pipe rams Blind rams will be tested against casing with nothing in the hole. This will be a 30 minute test Lower pipe rams will be tested against casing after running the BHA in the hole. Test pressure will not exceed 70% burst of 16" casing. This test will also serve as a casing test, and will be held for 30 minutes. After cementing the 10.75" casing, subsequent tests on BOP will be performed using a traditional test plug.

Choke Diagram Attachment:

IridiumMDP1_28_21FdCom171H_ChkManifold_20180215081926.pdf

BOP Diagram Attachment:

IridiumMDP1_28_21FdCom171H_BOP_10M__20180215081859.pdf

IridiumMDP1_28_21FdCom171H_FlexHoseCert_20180215081915.pdf

IridiumMDP1_28_21FdCom171H_WellControlPlan_20180223092724.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	20	16.0	NEW	API	N	0	590	0	590			590	J-55	75	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
2	INTERMEDIATE	13.5	10.75	NEW	API	N	0	4302	0	4302			4302	J-55	45.5	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
3	OTHER	9.875	7.625	NEW	API	N	0	10323	0	10300			10323	L-80	29.7	BUTT	1.125	1.2	BUOY	1.4	BUOY	1.4
4	PRODUCTION	6.75	5.5	NEW	API	N	0	21602	0	11490			21602	P-110	20	OTHER - DQX	1.125	1.2	BUOY	1.4	BUOY	1.4

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

IridiumMDP1_28_21FdCom171H_CsgCriteria_20180223093213.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

IridiumMDP1_28_21FdCom171H_CsgCriteria_20180223093258.pdf

Casing ID: 3 **String Type:** OTHER - Intermediate 2

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

IridiumMDP1_28_21FdCom171H_CsgCriteria_20180223093429.pdf

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

IridiumMDP1_28_21FdCom171H_CsgCriteria_20180223093607.pdf

IridiumMDP1_28_21FdCom171H_5.5_20_P110_DQXCsg_20180223093823.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	590	697	1.36	14.8	948	100	Cl C	Accelerator
INTERMEDIATE	Lead		0	3802	1399	1.88	12.9	2630	75	Pozzolan/C	Extender, Accelerator, Retarder
INTERMEDIATE	Tail		3802	4302	164	1.33	14.8	218	20	Cl C	Retarder, Dispersant, Salt
OTHER	Lead		0	5891	995	1.67	13.6	1662	100	Cl C	Extender, Accelerator, Dispersant
OTHER	Lead	5891	5791	8017	324	2.58	10.2	836	75	LW cmt	Retarder, Extender, Dispersant
OTHER	Tail		8017	10323	360	1.65	13.2	594	20	Poz/H	Retarder, Dispersant, Salt
PRODUCTION	Lead		9823	21602	1067	1.78	12.9	1899	15	LW cmt	Retarder, Dispersant, Fluid Loss Control, Extender

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CaCl2. OXY proposes to drill out the 16" surface casing shoe with a saturated brine system from 590-4302', which is the intermediate casing point. The remainder of the intermediate will be water based mud. Water-based mud will be employed to also drill the pilot. After plugging back, will employ non aqueous fluids (OBM) to drill the curve and lateral to the TD of the well at 21602'.

Describe the mud monitoring system utilized: PVT/MD Totco/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
590	4302	OTHER : Water-Based (Saturated Brine) Mud	9.8	10.2							
4302	10323	WATER-BASED MUD	8.4	9.6							
10323	12623	WATER-BASED MUD	10	13.5							
0	590	WATER-BASED MUD	8.6	8.8							
10323	21602	OTHER : Water-Based and/or Oil-Based Mud	10	12.5							

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

GR from TD to surface (horizontal well – vertical portion of hole). Mud Log from surface shoe to TD. Triple Combo - Delaware to Top Bone Spring and 2nd Intermediate to Pilot Hole TD.

List of open and cased hole logs run in the well:

GR,MUDLOG

Coring operation description for the well:

No coring is planned at this time.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7469 **Anticipated Surface Pressure:** 4941.2

Anticipated Bottom Hole Temperature(F): 174

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

IridiumMDP1_28_21FdCom171H_H2S1_20180215085403.pdf

IridiumMDP1_28_21FdCom171H_H2S2_20180215085413.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

IridiumMDP1_28_21FdCom171H_DirectPlanLat_20180215085433.pdf

IridiumMDP1_28_21FdCom171H_DirectPlanPilot_20180215085444.pdf

IridiumMDP1_28_21FdCom171H_DirectPlot_20180215085456.pdf

Other proposed operations facets description:

OXY requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool will be run in case a contingency second stage is required for cement to reach surface. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

A Pilot Hole will be drilled to the Wolfcamp B @ 12623', run logs, PB w/ 3 cmt plugs from 12623-10222'. The first plug will be 174sx (218bbl) 50/50 H/Poz w/ additives @ 1.246 yield @ 14.4# and is designed to be 800' (12623-11822') in length to isolate the Wolfcamp from potential high pressure zones. The second plug will be 204sx (218bbl) Cl H w/ additives @ 1.07 yield @ 16.4# and is designed to be 800' (11822-11022') in length. The third plug will be 254sx (239bbl) Cl H w/ additives @ 0.94 yield @ 17.5# and is designed to be 800' (11022-10222') in length and bring cmt 100' inside 7.625" intermediate casing to provide a strong foundation to sidetrack at the KOP.

OXY requests a variance exception to run 5.5" 20# DQX in 7.625" 29.7# Casing. This equates to a 0.4125" clearance, 0.0095" below the Onshore Order 2 requirement.

Well will be drilled with a walking/skidding operation. Plan to drill the four well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.

OXY requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that OXY would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.

Other proposed operations facets attachment:

IridiumMDP1_28_21FdCom171H_SpudRigData_20180215085515.pdf

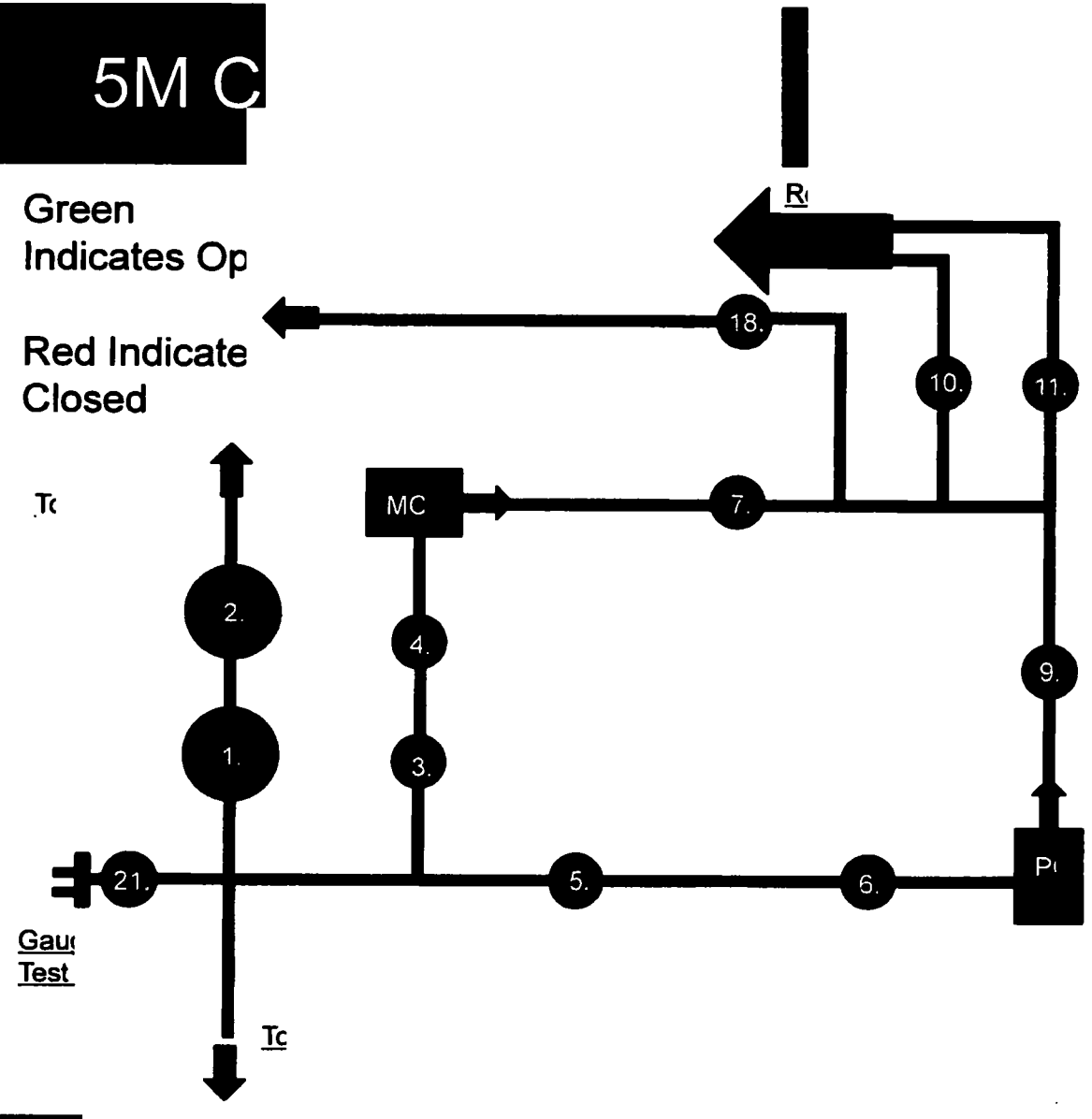
IridiumMDP1_28_21FdCom171H_DrillPlan_20180223094049.pdf

Other Variance attachment:

5M C

Green
Indicates Op

Red Indicate
Closed



1. 4" Choke Manifold Valve
2. 4" Choke Manifold Valve
3. 3" Choke Manifold Valve
4. 3" Choke Manifold Valve
5. 3" Choke Manifold Valve
6. 3" Choke Manifold Valve
7. 3" Choke Manifold Valve
8.
9. 3" Choke Manifold Valve
10. 3" Choke Manifold Valve
11. Choke Manifold Valve
12

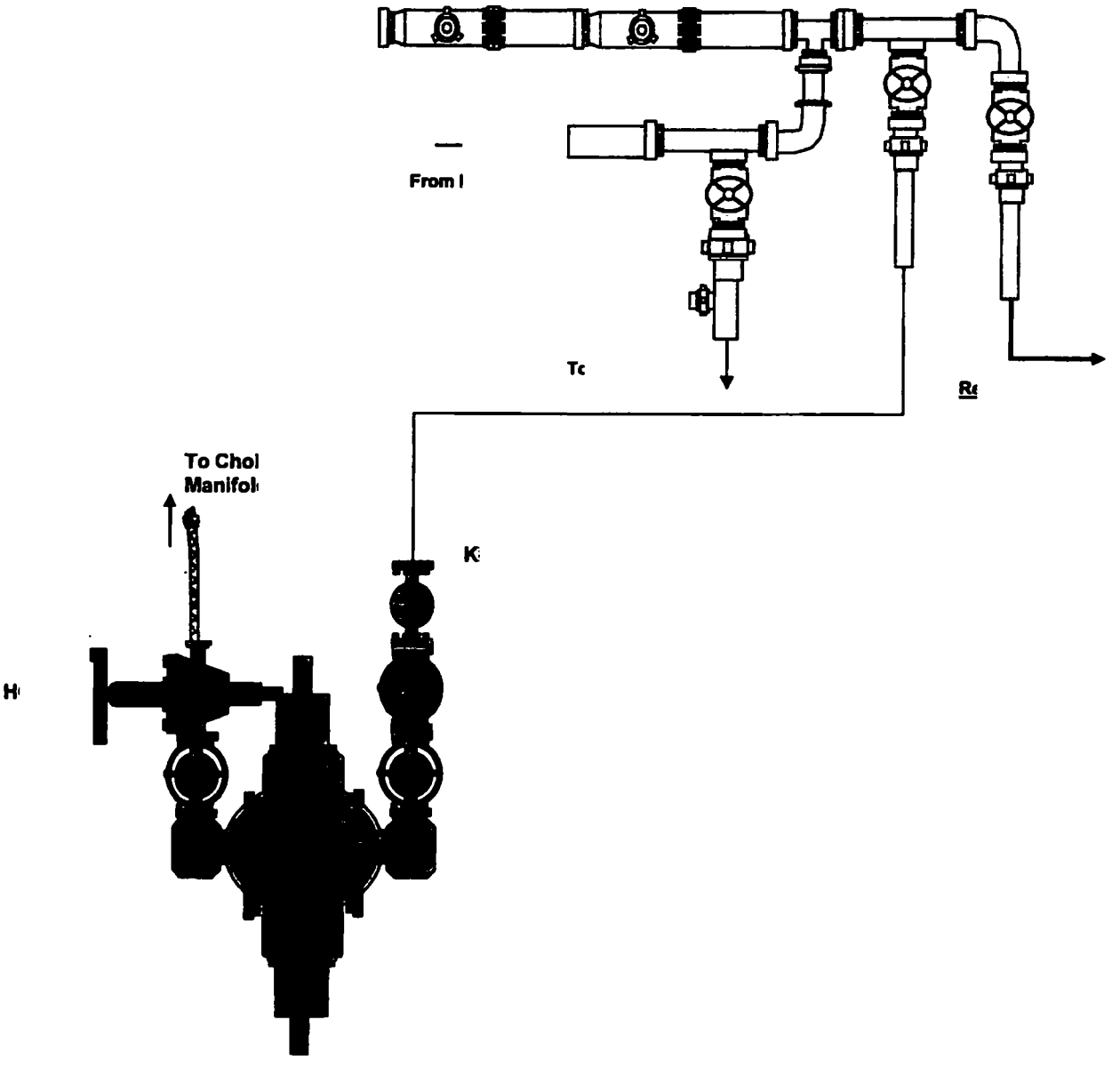
18. Choke Mar

21. Vertical Ch
Valve

***All Valves 3"**

10M F

KILL I



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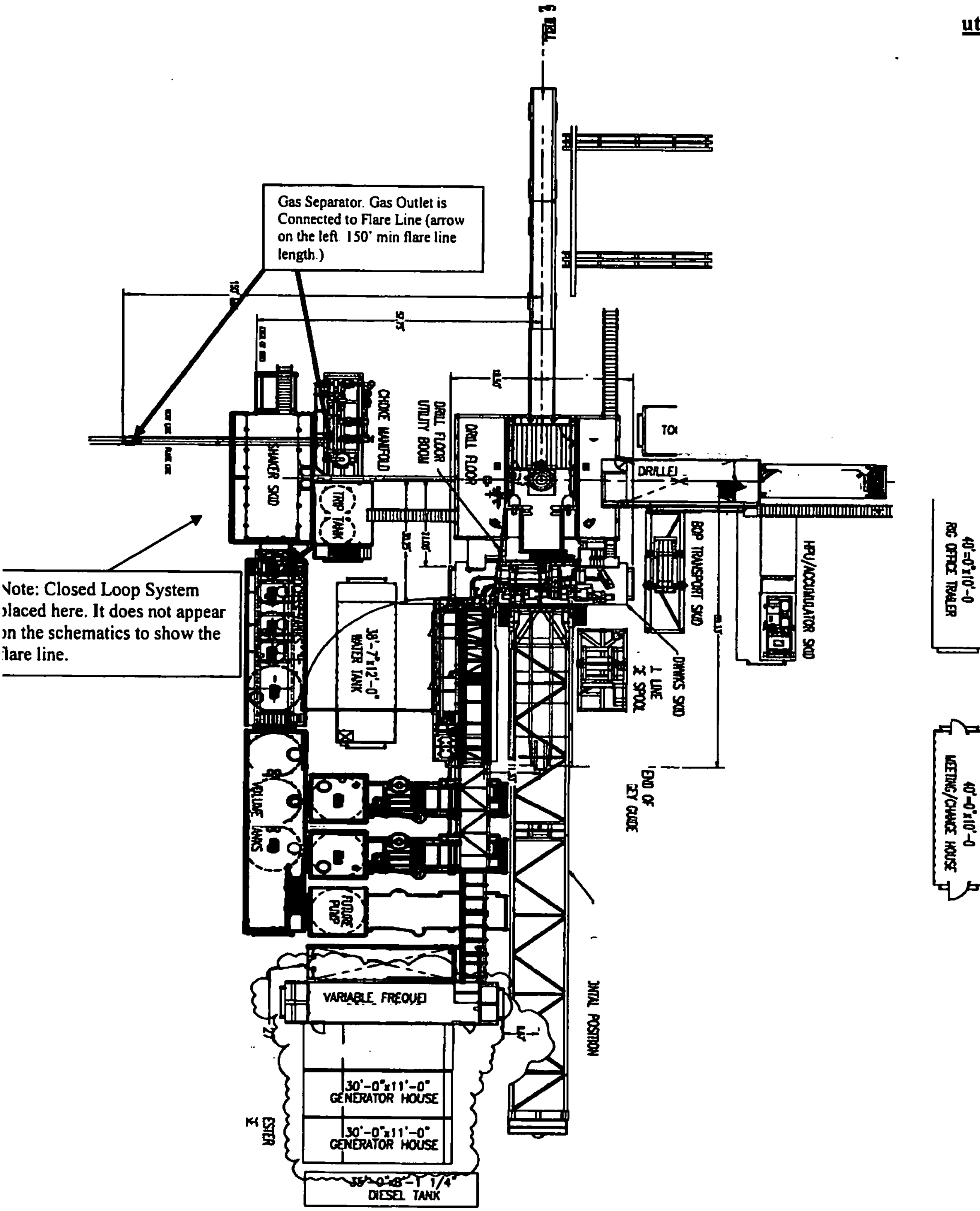
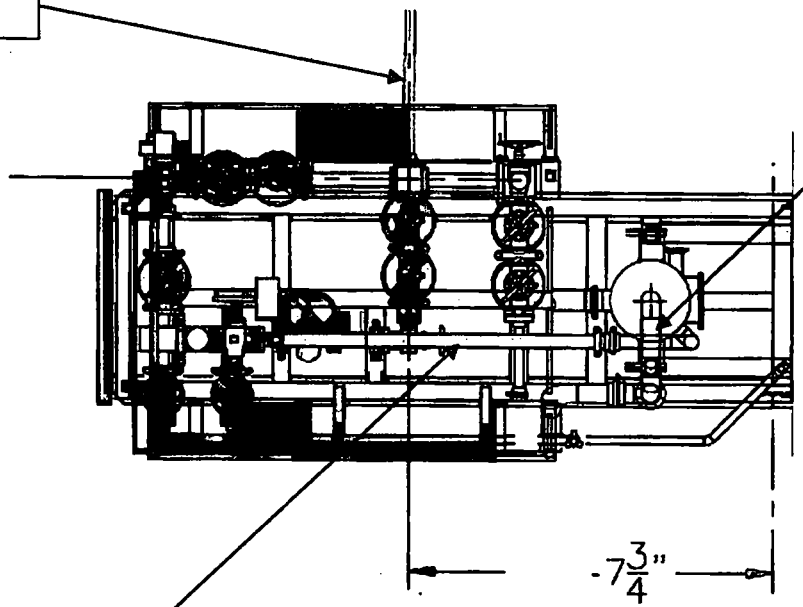

Gas Separator. Gas Outlet is Connected to Flare Line (arrow on the left. 150' min flare line length.)
Note: Closed Loop System placed here. It does not appear on the schematics to show the flare line.
CHOKE MANIFOLD
DRILL FLOOR UTILITY BOOM
DRILL FLOOR
SHAKER SKID
TRIP TANK
38'-7"x12'-0" WATER TANK
VOLUME TANKS
FUTURE PUMP
VARIABLE FREQUE
30'-0"x11'-0" GENERATOR HOUSE
30'-0"x11'-0" GENERATOR HOUSE
DIESEL TANK
INITIAL POSITION
BOP TRANSPORT SKID
DWKS SKID
HPU/ACCUMULATOR SKID
40'-0"x10'-0 RIG OFFICE TRAILER
40'-0"x10'-0 MEETING/CHANGE HOUSE

:w)

Line
:OP

Gas Outlet
to Flare Line



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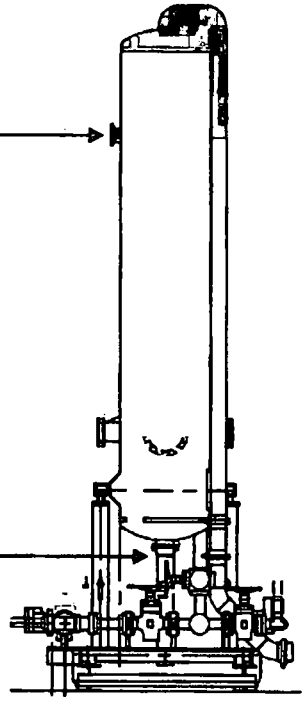
iew)

Gas Outlet
to Flare Line

:t from
ık in the
Manifold

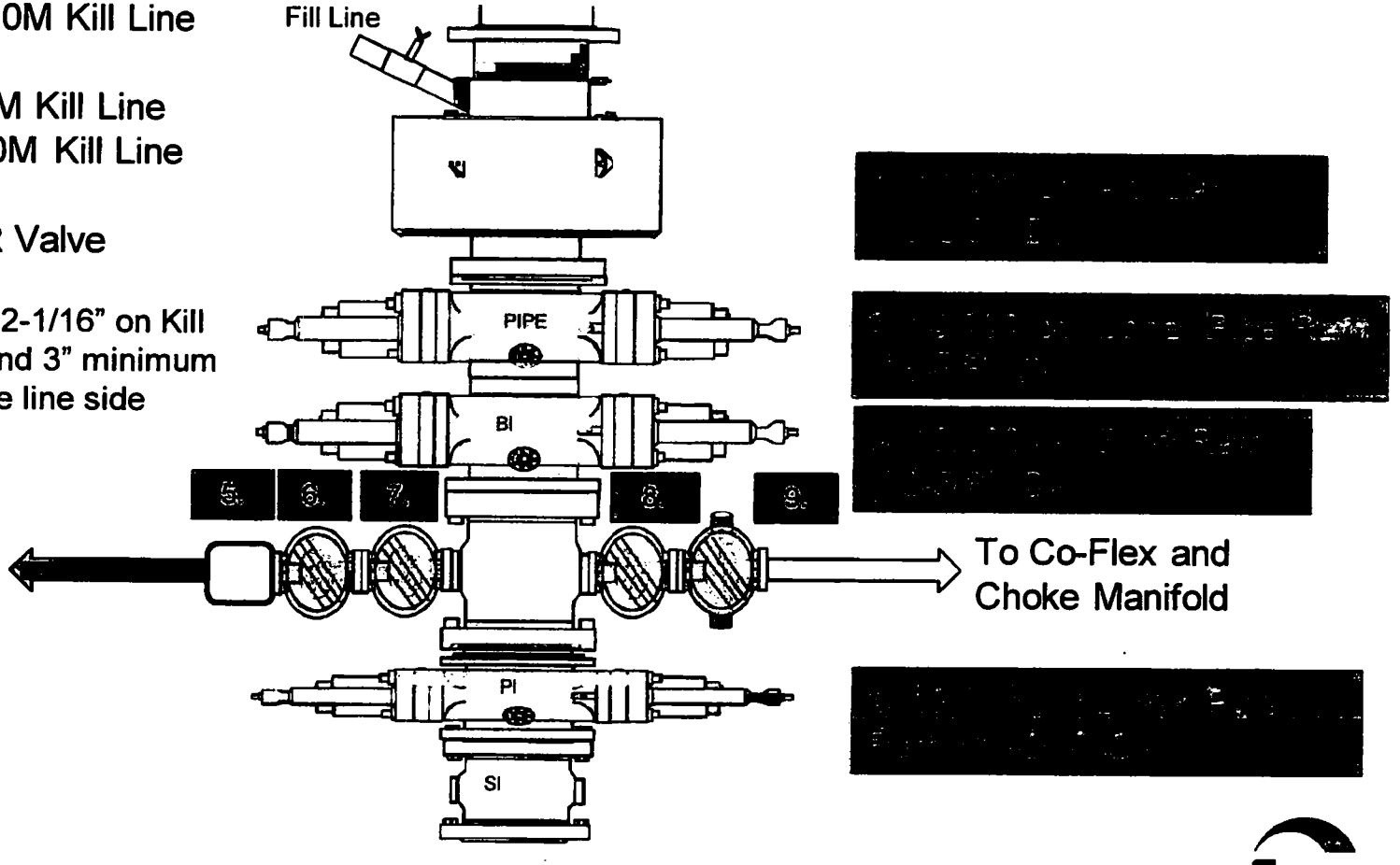


Mud Outlet to
Possum Belly or
Trip Tank

[redacted]

5. 10M Check Valve
6. Outside 10M Kill Line Valve
7. Inside 10M Kill Line
8. Outside10M Kill Line Valve
9. 10M HCR Valve

*Minimum ID = 2-1/16" on Kill Line side and 3" minimum ID on choke line side



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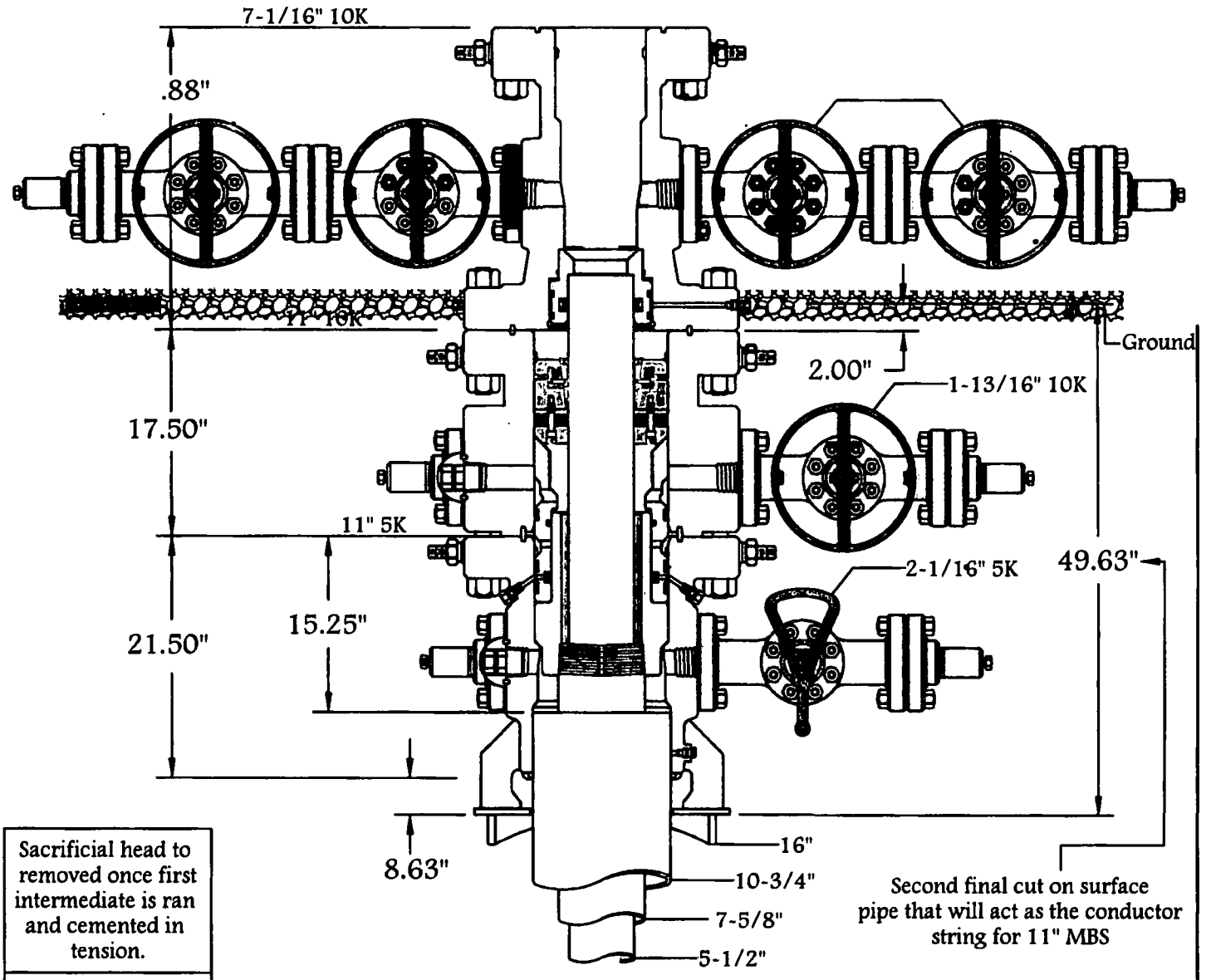
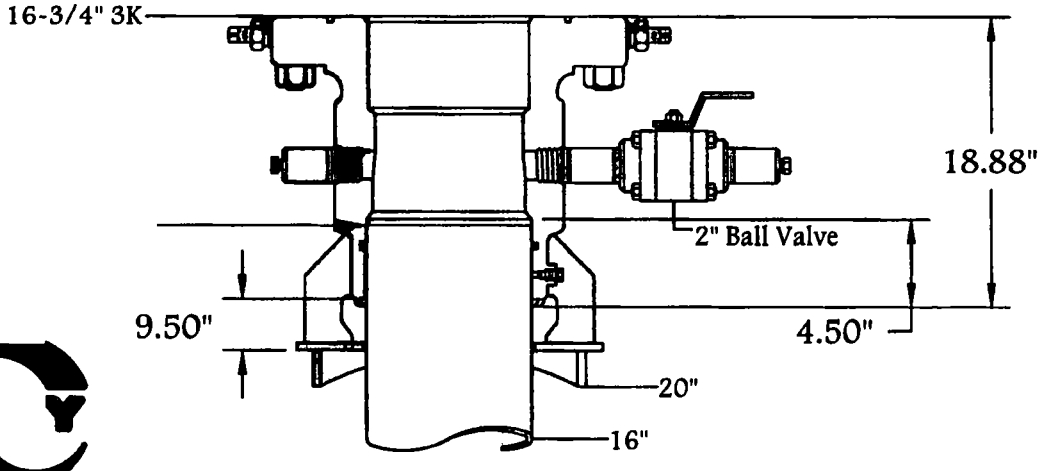


Sacrificial head to removed once first intermediate is ran and cemented in tension.
First final cut on surface pipe to be cut at 35.5"



11" 10K MBS 4-String

CAMERON
A Schlumberger Company

Name	Brandon	Date	7-18-17	Working Pressure	#	B-0116

Continental
TE

W.P. 68,95 MPa 10000 psi	T.P. 103,4 MPa 15000 psi	Duration: 60 ~ min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	917 913	AISI 4130	T7998A
4 1/16" Flange end		AISI 4130	26984

INFOCHIP INSTALLED

API Spec 16 C
Temperature rate:"B"

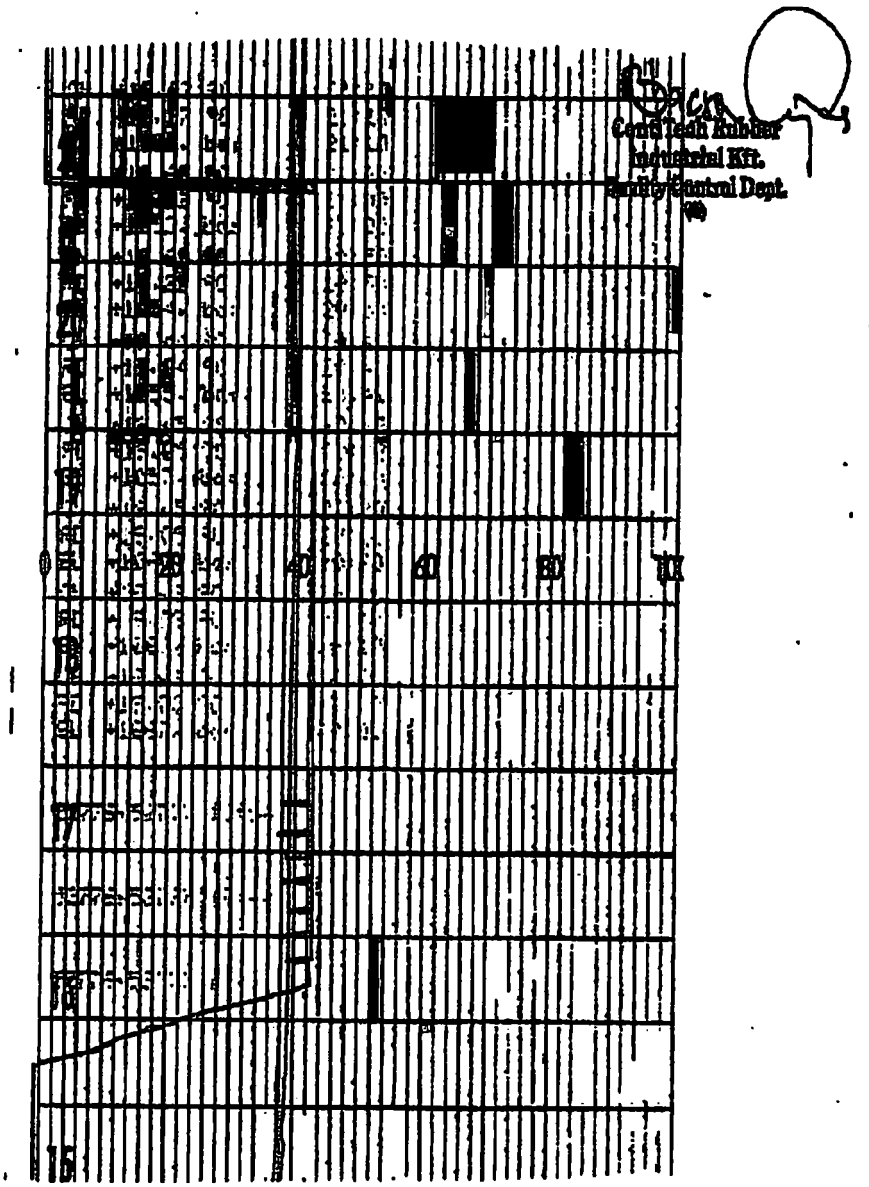
All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
04. April. 2008		ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

on

/1



PHOEN

Customer / Invoice Address	Delivery / Address
HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119	HELMERICH & PAYNE IDC ATTN: JOE STEPHENSON - RIG 370 13609 INDUSTRIAL ROAD HOUSTON, TX 77015

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
1	HP10CK3A-35-4F1 3" 10K 16C C&K HOSE x 35ft OAL CW 4.1/16" API SPEC FLANGE E/ End 1: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange End 2: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange c/w BX155 Standard ring groove at each end Suitable for H2S Service Working pressure: 10,000psi Test pressure: 15,000psi Standard: API 16C Full specification Armor Guarding: Included Fire Rating: Not Included Temperature rating: -20 Deg C to +100 Deg C	1	1	0
2	SECK3-HPF3 LIFTING & SAFETY EQUIPMENT TO SUIT HP10CK3-35-F1 2 x 160mm ID Safety Clamps 2 x 244mm ID Lifting Collars & element C's 2 x 7ft Stainless Steel wire rope 3/4" OD 4 x 7.75t Shackles	1	1	0
3	SC725-200CS SAFETY CLAMP 200MM 7.25T C/S GALVANISED	1	1	0

i days.

Form No 100/12

PHOENIX Beattie

Phoenix Beattie Corp
11535 Brittmoore Park Drive
Houston, TX 77041
Tel: (832) 327-0141
Fax: (832) 327-0148
E-mail mail@phoenixbeattie.com
www.phoenixbeattie.com

Delivery Note

Customer Order Number	370-369-001	Delivery Note Number	003078	Page	2
Customer / Invoice Address HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER TULSA, OK 74119		**Delivery / Address** HELMERICH & PAYNE IDC ATTN: JOE STEPHENSON - RIG 370 13609 INDUSTRIAL ROAD HOUSTON, TX 77015			

Customer Acc No	Phoenix Beattie Contract Manager	Phoenix Beattie Reference	Date
H01	JJL	006330	05/23/2008

Item No	Beattie Part Number / Description	Qty Ordered	Qty Sent	Qty To Follow
[redacted]	SC725-132CS SAFETY CLAMP 132MM 7.25T C/S GALVANIZED C/W BOLTS	1	1	0
	00CERT-HYDRO HYDROSTATIC PRESSURE TEST CERTIFICATE	1	1	0
	00CERT-LOAD LOAD TEST CERTIFICATES	1	1	0
	00FREIGHT INBOUND / OUTBOUND FREIGHT PRE-PAY & ADD TO FINAL INVOICE NOTE: MATERIAL MUST BE ACCOMPANIED BY PAPERWORK INCLUDING THE PURCHASE ORDER, RIG NUMBER TO ENSURE PROPER PAYMENT	1	1	0

on Signature :

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rem the Beattie ful. shortage ust advised within 6 days.
e handling

PHOENIX Beattie **Material Identification Certific**

PA No	006330•	Client	HELMERICH & PAYNE INT'L DRILLING	Client Ref	370-369-001

Part No	Description	Material Desc	Material Spec	Qty	WO No	Batch No
HP10CK3A-35-4F1	3" 10K 16C CBK HOSE x 35ft OAL			1	2491	52777/H884
SEDX3-HPF3	LIFTING & SAFETY EQUIPMENT TO			1	2440	032440
SC725-200CS	SAFETY CLAMP 200MM 7.25T	CARBON STEEL		1	2519	H565
SC725-132CS	SAFETY CLAMP 132MM 7.25T	CARBON STEEL		1	2242	H139

We hereby certify that these goods have been inspected by our Quality Management System, and to the relevant industry standards within the requirements of the purchase order as issued to Phoenix Beattie C

05/03/08.

Cntine al

Techno ogy

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above items/equipment supplied by us are in
conditions and specifications of the above
ɔse items/equipment were fabricated inspected
with the referenced standards, codes and
ıe relevant acceptance criteria and design

GARY/EU

..ontiTech Rubber
Industrial Kft.
Quality Control Dept.
(1)

Date: 04. April. 2008

OXY USA Inc. – Iridium MDP1 28-21 Federal Com 171H - Well Control Plan

A. Component and Preventer Compatibility Table

The table below, which covers the drilling and casing of the >5M MASP portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

6-3/4" Pilot hole and Lateral sections, 10M requirement

Component	OD	Preventer	RWP
Drillpipe	4-1/2"-5"	Lower 3-1/2 - 5-1/2" VBR Upper 3-1/2 - 5-1/2" VBR	10M
HWDP	4-1/2"-5"	Lower 3-1/2 - 5-1/2" VBR Upper 3-1/2 - 5-1/2" VBR	10M
Drill collars and MWD tools	4-3/4" – 5-1/2"	Lower 3-1/2 - 5-1/2" VBR Upper 3-1/2 - 5-1/2" VBR	10M
Mud Motor	4-3/4"	Lower 3-1/2 - 5-1/2" VBR Upper 3-1/2 - 5-1/2" VBR	10M
Production casing	5-1/2"	Lower 3-1/2 - 5-1/2" VBR Upper 3-1/2 - 5-1/2" VBR	10M
ALL	0" - 13-5/8"	Annular	5M
Open-hole	6-3/4"	Blind Rams	10M

VBR = Variable Bore Ram. Compatible range listed in chart.
HWDP = Heavy Weight Drill Pipe
MWD = Measurement While Drilling

B. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the Bottom Hole Assembly (BHA) through the Blowout Preventers (BOP). The pressure at which control is swapped from the annular to another compatible ram will occur when the anticipated pressure is approaching or envisioned to exceed 70% of the 5M annular Rated Working Pressure (RWP) or 3500 PSI.

<u>General Procedure While Drilling</u>

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. The Hydraulic Control Remote (HCR) valve and choke will already be in the closed position).
5. Confirm shut-in
6. Notify tool pusher/company representative
7. Read and record the following:
    a. SIDPP and SICP

   b. Pit gain
   c. Time
8. Regroup and identify forward plan
9. If pressure has built or expected to reach 70% of the annular RWP during kill operations, crew will reconfirm spacing and swap to the upper pipe ram

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. The HCR and choke will already be in the closed position)
5. Confirm shut-in
6. Notify tool pusher/company representative
7. Read and record the following
   a. SIDPP and SICP
   b. Pit gain
   c. Time
   d. Regroup and identify forward plan
   e. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram

General Procedure While Running Casing

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. The HCR and choke will already be in the closed position).
5. Confirm shut-in
6. Notify tool pusher/company representative
7. Read and record the following:
   a. SIDPP and SICP
   b. Pit gain
   c. Time
   d. Regroup and identify forward plan.
   e. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to compatible pipe ram.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams or BSR. (The HCR and choke will already be in the closed position)
3. Confirm shut-in
4. Notify tool pusher/company representative
5. Read and record the following:
   a. SICP

b. Pit gain
c. Time

6. Regroup and identify forward plan

General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling last joint of drill pipe thru the stack.
    a. Perform flow check, if flowing:
    b. Sound alarm (alert crew)
    c. Stab full opening safety valve and close
    d. Space out drill string with tool joint just beneath the upper pipe ram
    e. Shut-in using upper pipe ram. (The HCR and choke will already be in the closed position)
    f. Confirm shut-in
    g. Notify tool pusher/company representative
    h. Read and record the following:
        i. SIDPP and SICP
        ii. Pit gain
        iii. Time
        iv. Regroup and identify forward plan

2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
    a. Sound alarm (alert crew)
    b. Stab crossover and full opening safety valve and close
    c. Space out drill string with upset just beneath the compatible pipe ram
    d. Shut-in using compatible pipe ram. (The HCR and choke will already be in the closed position.)
    e. Confirm shut-in
    f. Notify tool pusher/company representative
    g. Read and record the following:
        i. SIDPP and SICP
        ii. Pit gain
        iii. Time
        iv. Regroup and identify forward plan

3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
    a. Sound alarm (alert crew)
    b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario
    c. If impossible to pick up high enough to pull the string clear of the stack
    d. Stab crossover, make up one joint/stand of drill pipe, and full opening safety valve and close
    e. Space out drill string with tool joint just beneath the upper pipe ram
    f. Shut-in using upper pipe ram. (The HCR and choke will already be in the closed position)

g. Confirm shut-in
h. Notify tool pusher/company representative
i. Read and record the following:
    i. SIDPP and SICP
    ii. Pit gain
    iii. Time
j. Regroup and identify forward plan

OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

1) Casing Design Assumptions

a) Burst Loads

CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both Onshore Oil and Gas Order No. 2 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of 0.02 X MD of the shoe to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Gas Kick (Intermediate)

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

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- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

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- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

Bullheading (Surface / Intermediate)

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- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Producing (Production)

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Tubing Leak Near Surface While Stimulating (Production)

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

Injection / Stimulation Down Casing (Production)

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

b) Collapse Loads

Lost Circulation (Surface / Intermediate)

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run.

Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

Full Evacuation (Production)

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

c) Tension Loads

Running Casing (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

Green Cement (Surface / Intermediate / Production)

- Axial: Buoyant weight of the string plus cement plug bump pressure load.

PERFORMANCE DATA

TMK UP DQX **5.500 in** **20.00 lbs/ft** **P-110**
Technical Data Sheet

Tubular Parameters

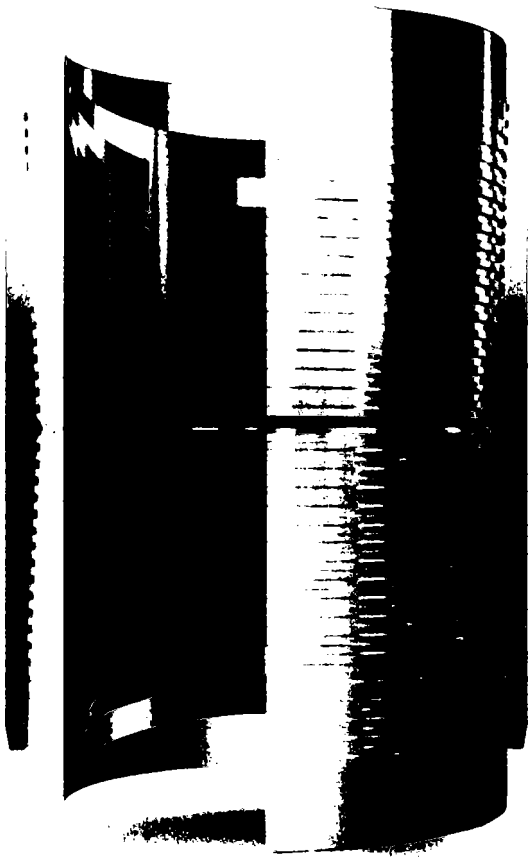
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,600	psi
Nominal ID	4.778	in	Collapse Pressure	11,100	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in²			

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.122	in
Critical Section Area	5.828	in²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,600	psi
Collapse Pressure	11,100	psi

Make-Up Torques

Min. Make-Up Torque	11,600	ft-lbs
Opt. Make-Up Torque	12,900	ft-lbs
Max. Make-Up Torque	14,100	ft-lbs
Yield Torque	20,600	ft-lbs



Printed on: July-29-2014

IPSCO

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Iridium MDP1 28-21 Federal Com 171H

Open drill site. No homes or buildings are near the proposed location.

1. Escape

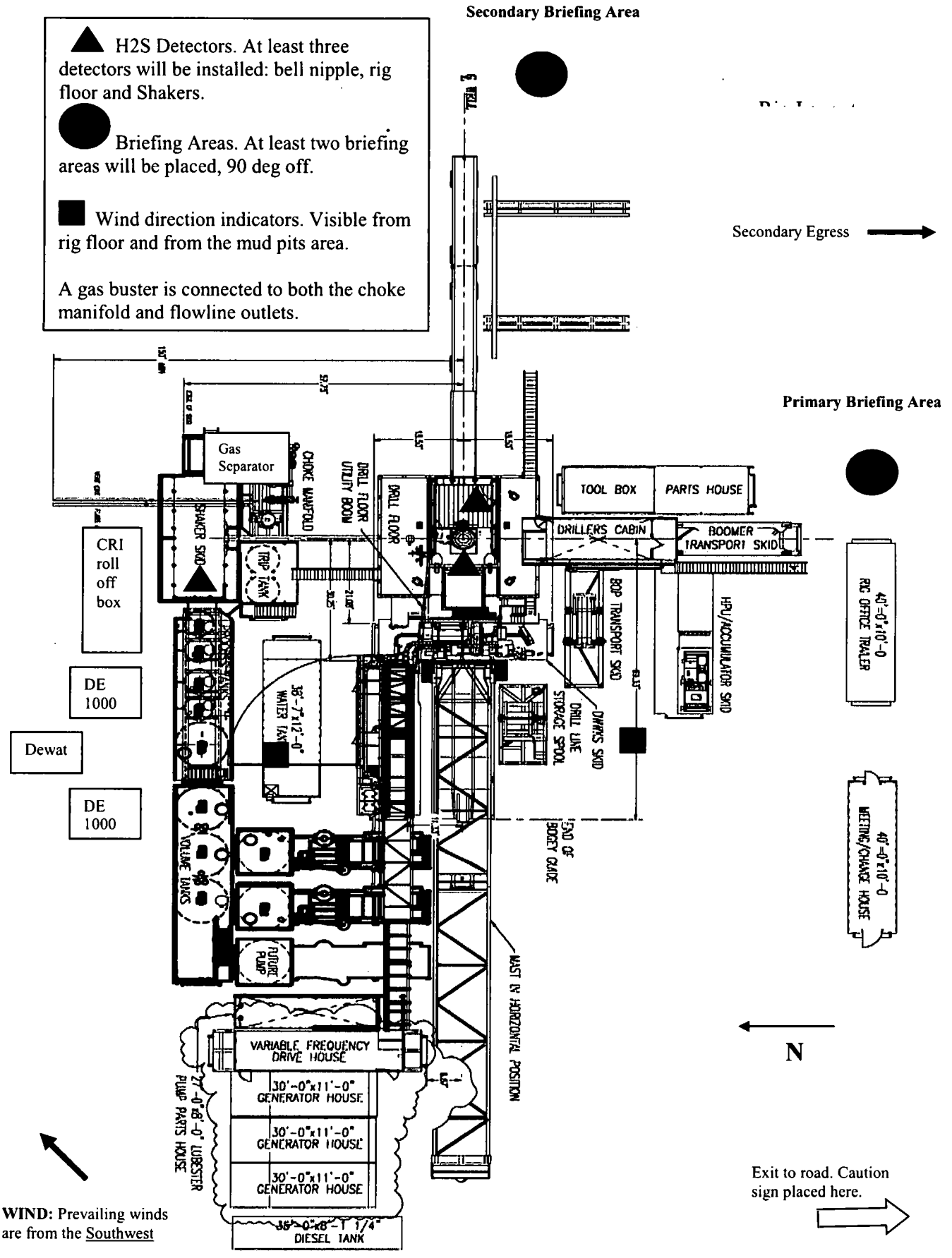
   Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.

▲ H2S Detectors. At least three detectors will be installed: bell nipple, rig floor and Shakers.

● Briefing Areas. At least two briefing areas will be placed, 90 deg off.

■ Wind direction indicators. Visible from rig floor and from the mud pits area.

A gas buster is connected to both the choke manifold and flowline outlets.



Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
New Mexico

Scope

This contingency plan establishes guidelines for the public, all company employees, and contract employees who's work activities may involve exposure to hydrogen sulfide (H2S) gas.
While drilling this well, it is possible to encounter H2S bearing formations. At all times, the first barrier to control H2S emissions will be the drilling fluid, which will have a density high enough to control influx.

Objective

1. Provide an immediate and predetermined response plan to any condition when H2S is detected. All H2S detections in excess of 10 parts per million (ppm) concentration are considered an Emergency.

2. Prevent any and all accidents, and prevent the uncontrolled release of hydrogen sulfide into the atmosphere.

3. Provide proper evacuation procedures to cope with emergencies.

4. Provide immediate and adequate medical attention should an injury occur.

Discussion

Implementation:	This plan with all details is to be fully implemented before drilling to commence.
Emergency response Procedure:	This section outlines the conditions and denotes steps to be taken in the event of an emergency.
Emergency equipment Procedure:	This section outlines the safety and emergency equipment that will be required for the drilling of this well.
Training provisions:	This section outlines the training provisions that must be adhered to prior to drilling.
Drilling emergency call lists:	Included are the telephone numbers of all persons to be contacted should an emergency exist.
Briefing:	This section deals with the briefing of all people involved in the drilling operation.
Public safety:	Public safety personnel will be made aware of any potential evacuation and any additional support needed.
Check lists:	Status check lists and procedural check lists have been included to insure adherence to the plan.
General information:	A general information section has been included to supply support information.

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 the well:

1. The hazards and characteristics of H2S.
2. Proper use and maintenance of personal protective equipment and life support systems.
3. H2S detection.
4. Proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
5. Proper techniques for first aid and rescue procedures.
6. Physical effects of hydrogen sulfide on the human body.
7. Toxicity of hydrogen sulfide and sulfur dioxide.
8. Use of SCBA and supplied air equipment.
9. First aid and artificial respiration.
10. Emergency rescue.

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

1. The effects of H2S on metal components. If high tensile strength tubular is to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling a well, blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan.

H2S training refresher must have been taken within one year prior to drilling the well. Specifics on the well to be drilled will be discussed during the pre-spud meeting. H2S and well control (choke) drills will be performed while drilling the well, at least on a weekly basis. This plan shall be available in the well site. All personnel will be required to carry the documentation proving that the H2S training has been taken.

Service company and visiting personnel

A. Each service company that will be on this well will be notified if the zone contains H2S.

B. Each service company must provide for the training and equipment of their employees before they arrive at the well site.

C. Each service company will be expected to attend a well site briefing

Emergency Equipment Requirements

1. Well control equipment

The well shall have hydraulic BOP equipment for the anticipated pressures. Equipment is to be tested on installation and follow Oxy Well Control standard, as well as BLM Onshore Order #2.

Special control equipment:

A. Hydraulic BOP equipment with remote control on ground. Remotely operated choke.
B. Rotating head
C. Gas buster equipment shall be installed before drilling out of surface pipe.

2. Protective equipment for personnel

A. Four (4) 30-minute positive pressure air packs (2 at each briefing area) on location.

B. Adequate fire extinguishers shall be located at strategic locations.

C. Radio / cell telephone communication will be available at the rig.

- Rig floor and trailers.
- Vehicle.

3. Hydrogen sulfide sensors and alarms

A. H2S sensor with alarms will be located on the rig floor, at the bell nipple, and at the flow line. These monitors will be set to alarm at 10 ppm with strobe light, and audible alarm.
B. Hand operated detectors with tubes.
C. H2S monitor tester (to be provided by contract Safety Company.)
D. There shall be one combustible gas detector on location at all times.

4. Visual Warning Systems

A. One sign located at each location entrance with the following language:

Caution – potential poison gas
Hydrogen sulfide
No admittance without authorization

Wind sock – wind streamers:

A. One 36" (in length) wind sock located at protection center, at height visible from rig floor.
B. One 36" (in length) wind sock located at height visible from pit areas.

Condition flags

A. One each condition flag to be displayed to denote conditions.

green – normal conditions
yellow – potential danger
red – danger, H2S present

B. Condition flag shall be posted at each location sign entrance.

5. Mud Program

The mud program is designed to minimize the risk of having H2S and other formation fluids at surface. Proper mud weight and safe drilling practices will be applied. H2S scavengers will be used to minimize the hazards while drilling. Below is a summary of the drilling program.

Mud inspection devices:

Garrett gas train or hatch tester for inspection of sulfide concentration in mud system.

6. Metallurgy

A. Drill string, casing, tubing, wellhead, blowout preventers, drilling spools or adapters, kill lines, choke manifold, lines and valves shall be suitable for the H2S service.
B. All the elastomers, packing, seals and ring gaskets shall be suitable for H2S service.

7. Well Testing

No drill stem test will be performed on this well.

8. Evacuation plan

Evacuation routes should be established prior to well spud for each well and discussed with all rig personnel.

9. Designated area

A. Parking and visitor area: all vehicles are to be parked at a predetermined safe distance from the wellhead.
B. There will be a designated smoking area.
C. Two briefing areas on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds perpendicularly, or at a 45-degree angle if wind direction tends to shift in the area.

Emergency procedures

A. In the event of any evidence of H2S level above 10 ppm, take the following steps:

1. The Driller will pick up off bottom, shut down the pumps, slow down the pipe rotation.

2. Secure and don escape breathing equipment, report to the upwind designated safe briefing / muster area.

3. All personnel on location will be accounted for and emergency search should begin for any missing, the Buddy System will be implemented.

4. Order non-essential personnel to leave the well site, order all essential personnel out of the danger zone and upwind to the nearest designated safe briefing / muster area.

5. Entrance to the location will be secured to a higher level than our usual "Meet and Greet" requirement, and the proper condition flag will be displayed at the entrance to the location.

6. Take steps to determine if the H2S level can be corrected or suppressed and, if so, proceed as required.

B. If uncontrollable conditions occur:

1. Take steps to protect and/or remove any public in the down-wind area from the rig – partial evacuation and isolation. Notify necessary public safety personnel and appropriate regulatory entities (i.e. BLM) of the situation.

2. Remove all personnel to the nearest upwind designated safe briefing / muster area or off location.

3. Notify public safety personnel of safe briefing / muster area.

4. An assigned crew member will blockade the entrance to the location. No unauthorized personnel will be allowed entry to the location.

5. Proceed with best plan (at the time) to regain control of the well. Maintain tight security and safety procedures.

C. Responsibility:

1. Designated personnel.

a. Shall be responsible for the total implementation of this plan.
b. Shall be in complete command during any emergency.
c. Shall designate a back-up.

All personnel:	1.	On alarm, don escape unit and report to the nearest upwind designated safe briefing / muster area upw
	2.	Check status of personnel (buddy system).
	3.	Secure breathing equipment.
	4.	Await orders from supervisor.
Drill site manager:	1.	Don escape unit if necessary and report to nearest upwind designated safe briefing / muster area.
	2.	Coordinate preparations of individuals to return to point of release with tool pusher and driller (using the buddy system).
	3.	Determine H2S concentrations.
	4.	Assess situation and take control measures.
Tool pusher:	1.	Don escape unit Report to up nearest upwind designated safe briefing / muster area.
	2.	Coordinate preparation of individuals to return to point of release with tool pusher drill site manager (using the buddy system).
	3.	Determine H2S concentration.
	4.	Assess situation and take control measures.
Driller:	1.	Don escape unit, shut down pumps, continue

		rotating DP.
	2.	Check monitor for point of release.
	3.	Report to nearest upwind designated safe briefing / muster area.
	4.	Check status of personnel (in an attempt to rescue, use the buddy system).
	5.	Assigns least essential person to notify Drill Site Manager and tool pusher by quickest means in case of their absence.
	6.	Assumes the responsibilities of the Drill Site Manager and tool pusher until they arrive should they be absent.
Derrick man Floor man #1 Floor man #2	1.	Will remain in briefing / muster area until instructed by supervisor.
Mud engineer:	1.	Report to nearest upwind designated safe briefing / muster area.
	2.	When instructed, begin check of mud for ph and H2S level. (Garett gas train.)
Safety personnel:	1.	Mask up and check status of all personnel and secure operations as instructed by drill site manager.

Taking a kick

When taking a kick during an H2S emergency, all personnel will follow standard Well control procedures after reporting to briefing area and masking up.

Open-hole logging

All unnecessary personnel off floor. Drill Site Manager and safety personnel should monitor condition, advise status and determine need for use of air equipment.

Running casing or plugging

Following the same "tripping" procedure as above. Drill Site Manager and safety personnel should determine if all personnel have access to protective equipment.

Ignition procedures

The decision to ignite the well is the responsibility of the operator (Oxy Drilling Management). The decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope controlling the blowout under the prevailing conditions at the well.

Instructions for igniting the well

1. Two people are required for the actual igniting operation. They must wear self-contained breathing units and have a safety rope attached. One man (tool pusher or safety engineer) will check the atmosphere for explosive gases with the gas monitor. The other man is responsible for igniting the well.
2. Primary method to ignite: 25 mm flare gun with range of approximately 500 feet.
3. Ignite upwind and do not approach any closer than is warranted.
4. Select the ignition site best for protection, and which offers an easy escape route.
5. Before firing, check for presence of combustible gas.
6. After lighting, continue emergency action and procedure as before.
7. All unassigned personnel will remain in briefing area until instructed by supervisor or directed by the Drill Site Manager.

Remember: After well is ignited, burning hydrogen sulfide will convert to sulfur dioxide, which is also highly toxic. **Do not assume the area is safe after the well is ignited.**

Status check list

Note: All items on this list must be completed before drilling to production casing point.

1. H2S sign at location entrance.
2. Two (2) wind socks located as required.
3. Four (4) 30-minute positive pressure air packs (2 at each Briefing area) on location for all rig personnel and mud loggers.
4. Air packs inspected and ready for use.
5. Cascade system and hose line hook-up as needed.
6. Cascade system for refilling air bottles as needed.
7. Condition flag on location and ready for use.
8. H2S detection system hooked up and tested.
9. H2S alarm system hooked up and tested.
10. Hand operated H2S detector with tubes on location.
11. 1 – 100' length of nylon rope on location.
12. All rig crew and supervisors trained as required.
13. All outside service contractors advised of potential H2S hazard on well.
14. No smoking sign posted and a designated smoking area identified.
15. Calibration of all H2S equipment shall be noted on the IADC report.

Checked by:_____ Date:_____

Procedural check list during H2S events

Perform each tour:

1. Check fire extinguishers to see that they have the proper charge.

2. Check breathing equipment to ensure that it in proper working order.

3. Make sure all the H2S detection system is operative.

Perform each week:

1. Check each piece of breathing equipment to make sure that demand or forced air regulator is working. This requires that the bottle be opened and the mask assembly be put on tight enough so that when you inhale, you receive air or feel air flow.

2. BOP skills (well control drills).

3. Check supply pressure on BOP accumulator stand by source.

4. Check breathing equipment mask assembly to see that straps are loosened and turned back, ready to put on.

5. Check pressure on breathing equipment air bottles to make sure they are charged to full volume. (Air quality checked for proper air grade "D" before bringing to location)

6. Confirm pressure on all supply air bottles.

7. Perform breathing equipment drills with on-site personnel.

8. Check the following supplies for availability.

   A. Emergency telephone list.
   B. Hand operated H2S detectors and tubes.

General evacuation plan

1. When the company approved supervisor (Drill Site Manager, consultant, rig pusher, or driller) determines the H2S gas cannot be limited to the well location and the public will be involved, he will activate the evacuation plan.

2. Drill Site Manager or designee will notify local government agency that a hazardous condition exists and evacuation needs to be implemented.

3. Company or contractor safety personnel that have been trained in the use of H2S detection equipment and self-contained breathing equipment will monitor H2S concentrations, wind directions, and area of exposure. They will delineate the outer perimeter of the hazardous gas area. Extension to the evacuation area will be determined from information gathered.

4. Law enforcement personnel (state police, police dept., fire dept., and sheriff's dept.) Will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

5. After the discharge of gas has been controlled, company safety personnel will determine when the area is safe for re-entry.

Important: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

Emergency actions

Well blowout – if emergency

1. Evacuate all personnel to "Safe Briefing / Muster Areas" or off location if needed.
2. If sour gas – evacuate rig personnel.
3. If sour gas – evacuate public within 3000 ft radius of exposure.
4. Don SCBA and shut well in if possible using the buddy system.
5. Notify Drilling Superintendent and call 911 for emergency help (fire dept and ambulance) if needed.
6. Implement the Blowout Contingency Plan, and Drilling Emergency Action Plan.
6. Give first aid as needed.

Person down location/facility

1. If immediately possible, contact 911. Give location and wait for confirmation.
2. Don SCBA and perform rescue operation using buddy system.

Toxic effects of hydrogen sulfide

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 ppm, which is .001% by volume. Hydrogen sulfide is heavier than air (specific gravity – 1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in table i. Physical effects at various hydrogen sulfide exposure levels are shown in table ii.

Table i
Toxicity of various gases

Common name	Chemical formula	Specific gravity (sc=1)	Threshold limit (1)	Hazardous limit (2)	Lethal concentration (3)
Hydrogen Cyanide	Hcn	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H2S	1.18	10 ppm	250 ppm/hr	600 ppm
Sulfur Dioxide	So2	2.21	5 ppm	-	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 ppm	Combustible above 5% in air	

1) threshold limit – concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects.

2) hazardous limit – concentration that will cause death with short-term exposure.

3) lethal concentration – concentration that will cause death with short-term exposure.

Toxic effects of hydrogen sulfide

Table ii
Physical effects of hydrogen sulfide

Concentration			Physical effects
Percent (%)	Ppm	Grains 100 std. Ft3*	
0.001	<10	00.65	Obvious and unpleasant odor.

0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; stings eyes and throat.
0.050	500	32.96	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; followed by death within minutes.

*at 15.00 psia and 60'f.

Use of self-contained breathing equipment (SCBA)

1. Written procedures shall be prepared covering safe use of SCBA's in dangerous atmosphere, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available SCBA.

2 SCBA's shall be inspected frequently at random to insure that they are properly used, cleaned, and maintained.

3. Anyone who may use the SCBA's shall be trained in how to insure proper face-piece to face seal. They shall wear SCBA's in normal air and then wear them in a test atmosphere. (note: such items as facial hair {beard or sideburns} and eyeglasses will not allow proper seal.) Anyone that may be reasonably expected to wear SCBA's should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses or contact lenses.

4. Maintenance and care of SCBA's:

    a. A program for maintenance and care of SCBA's shall include the following:
        1. Inspection for defects, including leak checks.
        2. Cleaning and disinfecting.
        3. Repair.
        4. Storage.

    b. Inspection, self-contained breathing apparatus for emergency use shall be inspected monthly.
        1. Fully charged cylinders.
        2. Regulator and warning device operation.
        3. Condition of face piece and connections.
        4. Rubber parts shall be maintained to keep them pliable and prevent deterioration.

    c. Routinely used SCBA's shall be collected, cleaned and disinfected as frequently as necessary to insure proper protection is provided.

5. Persons assigned tasks that requires use of self-contained breathing equipment shall be certified physically fit (medically cleared) for breathing equipment usage at least annually.

6. SCBA's should be worn when:

    A. Any employee works near the top or on top of any tank unless test reveals less than 10 ppm of H2S.

B. When breaking out any line where H2S can reasonably be expected.

C. When sampling air in areas to determine if toxic concentrations of H2S exists.

D. When working in areas where over 10 ppm H2S has been detected.

E. At any time there is a doubt as to the H2S level in the area to be entered.

Rescue
First aid for H2S poisoning

Do not panic!

Remain calm – think!

1. Don SCBA breathing equipment.

2. Remove victim(s) utilizing buddy system to fresh air as quickly as possible. (go up-wind from source or at right angle to the wind. Not down wind.)

3. Briefly apply chest pressure – arm lift method of artificial respiration to clean the victim's lungs and to avoid inhaling any toxic gas directly from the victim's lungs.

4. Provide for prompt transportation to the hospital, and continue giving artificial respiration if needed.

5. Hospital(s) or medical facilities need to be informed, before-hand, of the possibility of H2S gas poisoning – no matter how remote the possibility is.

6. Notify emergency room personnel that the victim(s) has been exposed to H2S gas.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration.

Revised CM 6/27/2012

Schlumberger

Oxy Iridium MDP1 28-21 Federal Com 171H ST01 REV0 LBN 30Nov17
Proposal Geodetic Report
(Def Plan)

Report Date:	November 30, 2017 - 11:09 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	358.245 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Iridium MDP1 28-21 Federal Com 171H / Oxy Iridium MDP1 28-21 Federal Com 171H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Iridium MDP1 28-21 Federal Com 171H	**TVD Reference Elevation:**	3396.200 ft above MSL
Borehole:	ST01	**Seabed / Ground Elevation:**	3369.700 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.972 °
Survey Name:	Oxy Iridium MDP1 28-21 Federal Com 171H ST01 REV0 LBN 30Nov17	**Total Gravity Field Strength:**	998.4514mgn (9.80665 Based)
Survey Date:	November 30, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	102.001 ° / 10785.570 ft / 6.316 / 0.939	**Total Magnetic Field Strength:**	48103.950 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.042 °
Location Lat / Long:	N 32° 16' 9.70294", W 103° 47' 20.69803"	**Declination Date:**	November 30, 2017
Location Grid N/E Y/X:	N 462153.450 ftUS, E 709554.680 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.2906 °	**North Reference:**	Grid North
Grid Scale Factor:	0.9999415	**Grid Convergence Used:**	0.2906 °
Version / Patch:	2.10.565.0	**Total Corr Mag North->Grid North:**	6.6810 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	100.00	0.00	212.24	100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	200.00	0.00	212.24	200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	300.00	0.00	212.24	300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	400.00	0.00	212.24	400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	500.00	0.00	212.24	500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	600.00	0.00	212.24	600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	700.00	0.00	212.24	700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	800.00	0.00	212.24	800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	900.00	0.00	212.24	900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1000.00	0.00	212.24	1000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1100.00	0.00	212.24	1100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1200.00	0.00	212.24	1200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1300.00	0.00	212.24	1300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1400.00	0.00	212.24	1400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1500.00	0.00	212.24	1500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1600.00	0.00	212.24	1600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1700.00	0.00	212.24	1700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1800.00	0.00	212.24	1800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1900.00	0.00	212.24	1900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2000.00	0.00	212.24	2000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2100.00	0.00	212.24	2100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2200.00	0.00	212.24	2200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2300.00	0.00	212.24	2300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2400.00	0.00	212.24	2400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2500.00	0.00	212.24	2500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2600.00	0.00	212.24	2600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2700.00	0.00	212.24	2700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2800.00	0.00	212.24	2800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2900.00	0.00	212.24	2900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3000.00	0.00	212.24	3000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3100.00	0.00	212.24	3100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3200.00	0.00	212.24	3200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3300.00	0.00	212.24	3300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3400.00	0.00	212.24	3400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3500.00	0.00	212.24	3500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3600.00	0.00	212.24	3600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3700.00	0.00	212.24	3700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3800.00	0.00	212.24	3800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3900.00	0.00	212.24	3900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4000.00	0.00	212.24	4000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4100.00	0.00	212.24	4100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4200.00	0.00	212.24	4200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4300.00	0.00	212.24	4300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4400.00	0.00	212.24	4400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4500.00	0.00	212.24	4500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4600.00	0.00	212.24	4600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4700.00	0.00	212.24	4700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4800.00	0.00	212.24	4800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4900.00	0.00	212.24	4900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5000.00	0.00	212.24	5000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5100.00	0.00	212.24	5100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5200.00	0.00	212.24	5200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5300.00	0.00	212.24	5300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
Build 1.5°/10'	5310.00	0.00	212.24	5310.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5400.00	1.35	212.24	5399.99	-0.88	-0.90	-0.57	1.50	462152.55	709554.11	N 32 16 9.69	W 103 47 20.70
	5500.00	2.85	212.24	5499.92	-3.92	-4.00	-2.52	1.50	462149.45	709552.16	N 32 16 9.66	W 103 47 20.73
	5600.00	4.35	212.24	5599.72	-9.12	-9.31	-5.87	1.50	462144.14	709548.81	N 32 16 9.61	W 103 47 20.77
	5700.00	5.85	212.24	5699.32	-16.49	-16.83	-10.61	1.50	462136.63	709544.07	N 32 16 9.54	W 103 47 20.82
Hold	5710.03	6.00	212.24	5709.30	-17.35	-17.70	-11.16	1.50	462135.75	709543.52	N 32 16 9.53	W 103 47 20.83
	5800.00	6.00	212.24	5798.78	-25.15	-25.66	-16.18	0.00	462127.79	709538.50	N 32 16 9.45	W 103 47 20.89
	5900.00	6.00	212.24	5898.23	-33.82	-34.50	-21.76	0.00	462118.95	709532.92	N 32 16 9.36	W 103 47 20.95
	6000.00	6.00	212.24	5997.68	-42.48	-43.34	-27.33	0.00	462110.11	709527.35	N 32 16 9.28	W 103 47 21.02
	6100.00	6.00	212.24	6097.13	-51.15	-52.18	-32.91	0.00	462101.27	709521.77	N 32 16 9.19	W 103 47 21.08
	6200.00	6.00	212.24	6196.58	-59.82	-61.03	-38.49	0.00	462092.43	709516.20	N 32 16 9.10	W 103 47 21.15
	6300.00	6.00	212.24	6296.04	-68.49	-69.87	-44.06	0.00	462083.59	709510.62	N 32 16 9.01	W 103 47 21.22
	6400.00	6.00	212.24	6395.49	-77.15	-78.71	-49.64	0.00	462074.74	709505.04	N 32 16 8.93	W 103 47 21.28
	6500.00	6.00	212.24	6494.94	-85.82	-87.55	-55.22	0.00	462065.90	709499.47	N 32 16 8.84	W 103 47 21.35
	6600.00	6.00	212.24	6594.39	-94.49	-96.39	-60.79	0.00	462057.06	709493.89	N 32 16 8.75	W 103 47 21.41
	6700.00	6.00	212.24	6693.85	-103.15	-105.24	-66.37	0.00	462048.22	709488.32	N 32 16 8.66	W 103 47 21.48
	6800.00	6.00	212.24	6793.30	-111.82	-114.08	-71.95	0.00	462039.38	709482.74	N 32 16 8.58	W 103 47 21.54
	6900.00	6.00	212.24	6892.75	-120.49	-122.92	-77.52	0.00	462030.54	709477.16	N 32 16 8.49	W 103 47 21.61
	7000.00	6.00	212.24	6992.20	-129.16	-131.76	-83.10	0.00	462021.70	709471.59	N 32 16 8.40	W 103 47 21.67
	7100.00	6.00	212.24	7091.65	-137.82	-140.61	-88.67	0.00	462012.85	709466.01	N 32 16 8.32	W 103 47 21.74
	7200.00	6.00	212.24	7191.11	-146.49	-149.45	-94.25	0.00	462004.01	709460.43	N 32 16 8.23	W 103 47 21.80
	7300.00	6.00	212.24	7290.56	-155.16	-158.29	-99.83	0.00	461995.17	709454.86	N 32 16 8.14	W 103 47 21.87
	7400.00	6.00	212.24	7390.01	-163.82	-167.13	-105.40	0.00	461986.33	709449.28	N 32 16 8.05	W 103 47 21.94

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7500.00	6.00	212.24	7489.46	-172.49	-175.97	-110.98	0.00	461977.49	709443.71	N 32 16 7.97	W 103 47 22.00
	7600.00	6.00	212.24	7588.91	-181.16	-184.82	-116.56	0.00	461968.65	709438.13	N 32 16 7.88	W 103 47 22.07
	7700.00	6.00	212.24	7688.37	-189.83	-193.66	-122.13	0.00	461959.80	709432.55	N 32 16 7.79	W 103 47 22.13
	7800.00	6.00	212.24	7787.82	-198.49	-202.50	-127.71	0.00	461950.96	709426.98	N 32 16 7.71	W 103 47 22.20
	7900.00	6.00	212.24	7887.27	-207.16	-211.34	-133.29	0.00	461942.12	709421.40	N 32 16 7.62	W 103 47 22.26
	8000.00	6.00	212.24	7986.72	-215.83	-220.18	-138.86	0.00	461933.28	709415.83	N 32 16 7.53	W 103 47 22.33
	8100.00	6.00	212.24	8086.17	-224.49	-229.03	-144.44	0.00	461924.44	709410.25	N 32 16 7.44	W 103 47 22.39
	8200.00	6.00	212.24	8185.63	-233.16	-237.87	-150.02	0.00	461915.60	709404.67	N 32 16 7.36	W 103 47 22.46
	8300.00	6.00	212.24	8285.08	-241.83	-246.71	-155.59	0.00	461906.75	709399.10	N 32 16 7.27	W 103 47 22.52
	8400.00	6.00	212.24	8384.53	-250.50	-255.55	-161.17	0.00	461897.91	709393.52	N 32 16 7.18	W 103 47 22.59
	8500.00	6.00	212.24	8483.98	-259.16	-264.40	-166.74	0.00	461889.07	709387.95	N 32 16 7.10	W 103 47 22.66
	8600.00	6.00	212.24	8583.43	-267.83	-273.24	-172.32	0.00	461880.23	709382.37	N 32 16 7.01	W 103 47 22.72
	8700.00	6.00	212.24	8682.89	-276.50	-282.08	-177.90	0.00	461871.39	709376.79	N 32 16 6.92	W 103 47 22.79
	8800.00	6.00	212.24	8782.34	-285.17	-290.92	-183.47	0.00	461862.55	709371.22	N 32 16 6.83	W 103 47 22.85
	8900.00	6.00	212.24	8881.79	-293.83	-299.76	-189.05	0.00	461853.70	709365.64	N 32 16 6.75	W 103 47 22.92
	9000.00	6.00	212.24	8981.24	-302.50	-308.61	-194.63	0.00	461844.86	709360.06	N 32 16 6.66	W 103 47 22.98
	9100.00	6.00	212.24	9080.70	-311.17	-317.45	-200.20	0.00	461836.02	709354.49	N 32 16 6.57	W 103 47 23.05
	9200.00	6.00	212.24	9180.15	-319.83	-326.29	-205.78	0.00	461827.18	709348.91	N 32 16 6.48	W 103 47 23.11
	9300.00	6.00	212.24	9279.60	-328.50	-335.13	-211.36	0.00	461818.34	709343.34	N 32 16 6.40	W 103 47 23.18
	9400.00	6.00	212.24	9379.05	-337.17	-343.97	-216.93	0.00	461809.50	709337.76	N 32 16 6.31	W 103 47 23.24
	9500.00	6.00	212.24	9478.50	-345.84	-352.82	-222.51	0.00	461800.65	709332.18	N 32 16 6.22	W 103 47 23.31
	9600.00	6.00	212.24	9577.96	-354.50	-361.66	-228.09	0.00	461791.81	709326.61	N 32 16 6.14	W 103 47 23.38
Drop 1.5°/100'	9622.87	6.00	212.24	9600.70	-356.48	-363.68	-229.36	0.00	461789.79	709325.33	N 32 16 6.12	W 103 47 23.39
	9700.00	4.84	212.24	9677.48	-362.53	-369.85	-233.25	1.50	461783.63	709321.45	N 32 16 6.06	W 103 47 23.44
	9800.00	3.34	212.24	9777.23	-368.45	-375.88	-237.06	1.50	461777.59	709317.64	N 32 16 6.00	W 103 47 23.48
	9900.00	1.84	212.24	9877.12	-372.20	-379.71	-239.47	1.50	461773.76	709315.22	N 32 16 5.96	W 103 47 23.51
	10000.00	0.34	212.24	9977.10	-373.78	-381.33	-240.49	1.50	461772.15	709314.21	N 32 16 5.94	W 103 47 23.52
Hold Vertical	10022.90	0.00	212.24	10000.00	-373.84	-381.38	-240.52	1.50	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10100.00	0.00	212.24	10077.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10200.00	0.00	212.24	10177.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10300.00	0.00	212.24	10277.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10400.00	0.00	212.24	10377.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10500.00	0.00	212.24	10477.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10600.00	0.00	212.24	10577.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10700.00	0.00	212.24	10677.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10800.00	0.00	212.24	10777.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10900.00	0.00	212.24	10877.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
Build 10°/100'	10939.94	0.00	212.24	10917.04	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11000.00	6.01	359.64	10976.99	-370.69	-378.24	-240.54	10.00	461775.23	709314.15	N 32 16 5.97	W 103 47 23.52
	11100.00	16.01	359.64	11075.03	-351.63	-359.17	-240.66	10.00	461794.30	709314.03	N 32 16 6.16	W 103 47 23.52
	11200.00	26.01	359.64	11168.26	-315.84	-323.37	-240.89	10.00	461830.10	709313.81	N 32 16 6.52	W 103 47 23.52
	11300.00	36.01	359.64	11253.86	-264.41	-271.93	-241.21	10.00	461881.54	709313.49	N 32 16 7.02	W 103 47 23.52
	11400.00	46.01	359.64	11329.23	-198.90	-206.40	-241.62	10.00	461947.07	709313.08	N 32 16 7.67	W 103 47 23.52
	11500.00	56.01	359.64	11392.08	-121.30	-128.78	-242.10	10.00	462024.68	709312.59	N 32 16 8.44	W 103 47 23.53
	11600.00	66.01	359.64	11440.49	-33.97	-41.42	-242.65	10.00	462112.03	709312.05	N 32 16 9.31	W 103 47 23.53
	11700.00	76.01	359.64	11472.99	60.44	53.01	-243.24	10.00	462206.46	709311.46	N 32 16 10.24	W 103 47 23.53
	11800.00	86.01	359.64	11488.61	159.05	151.65	-243.85	10.00	462305.10	709310.84	N 32 16 11.22	W 103 47 23.53
Landing Point	11839.94	90.00	359.64	11490.00	198.95	191.56	-244.10	10.00	462345.00	709310.59	N 32 16 11.61	W 103 47 23.53
	11900.00	90.00	359.64	11490.00	258.99	251.62	-244.47	0.00	462405.05	709310.22	N 32 16 12.20	W 103 47 23.53
	12000.00	90.00	359.64	11490.00	358.96	351.62	-245.10	0.00	462505.05	709309.60	N 32 16 13.19	W 103 47 23.53
	12100.00	90.00	359.64	11490.00	458.93	451.62	-245.72	0.00	462605.04	709308.97	N 32 16 14.18	W 103 47 23.53
	12200.00	90.00	359.64	11490.00	558.90	551.61	-246.35	0.00	462705.03	709308.35	N 32 16 15.17	W 103 47 23.53
	12300.00	90.00	359.64	11490.00	658.87	651.61	-246.97	0.00	462805.02	709307.72	N 32 16 16.16	W 103 47 23.54
	12400.00	90.00	359.64	11490.00	758.84	751.61	-247.60	0.00	462905.01	709307.10	N 32 16 17.15	W 103 47 23.54
	12500.00	90.00	359.64	11490.00	858.81	851.61	-248.22	0.00	463005.01	709306.48	N 32 16 18.14	W 103 47 23.54
	12600.00	90.00	359.64	11490.00	958.78	951.61	-248.84	0.00	463105.00	709305.85	N 32 16 19.13	W 103 47 23.54
	12700.00	90.00	359.64	11490.00	1058.75	1051.60	-249.47	0.00	463204.99	709305.23	N 32 16 20.12	W 103 47 23.54
	12800.00	90.00	359.64	11490.00	1158.72	1151.60	-250.09	0.00	463304.98	709304.60	N 32 16 21.11	W 103 47 23.54
	12900.00	90.00	359.64	11490.00	1258.69	1251.60	-250.72	0.00	463404.97	709303.98	N 32 16 22.10	W 103 47 23.54
	13000.00	90.00	359.64	11490.00	1358.66	1351.60	-251.34	0.00	463504.97	709303.36	N 32 16 23.09	W 103 47 23.55
	13100.00	90.00	359.64	11490.00	1458.63	1451.60	-251.96	0.00	463604.96	709302.73	N 32 16 24.08	W 103 47 23.55
	13200.00	90.00	359.64	11490.00	1558.60	1551.59	-252.59	0.00	463704.95	709302.11	N 32 16 25.07	W 103 47 23.55
	13300.00	90.00	359.64	11490.00	1658.57	1651.59	-253.21	0.00	463804.94	709301.48	N 32 16 26.06	W 103 47 23.55
	13400.00	90.00	359.64	11490.00	1758.54	1751.59	-253.84	0.00	463904.93	709300.86	N 32 16 27.05	W 103 47 23.55
	13500.00	90.00	359.64	11490.00	1858.51	1851.59	-254.46	0.00	464004.93	709300.24	N 32 16 28.04	W 103 47 23.55
	13600.00	90.00	359.64	11490.00	1958.48	1951.59	-255.08	0.00	464104.92	709299.61	N 32 16 29.03	W 103 47 23.55
	13700.00	90.00	359.64	11490.00	2058.45	2051.58	-255.71	0.00	464204.91	709298.99	N 32 16 30.02	W 103 47 23.56
	13800.00	90.00	359.64	11490.00	2158.43	2151.58	-256.33	0.00	464304.90	709298.36	N 32 16 31.01	W 103 47 23.56
	13900.00	90.00	359.64	11490.00	2258.40	2251.58	-256.96	0.00	464404.89	709297.74	N 32 16 32.00	W 103 47 23.56
	14000.00	90.00	359.64	11490.00	2358.37	2351.58	-257.58	0.00	464504.89	709297.12	N 32 16 32.98	W 103 47 23.56
	14100.00	90.00	359.64	11490.00	2458.34	2451.58	-258.20	0.00	464604.88	709296.49	N 32 16 33.97	W 103 47 23.56
	14200.00	90.00	359.64	11490.00	2558.31	2551.58	-258.83	0.00	464704.87	709295.87	N 32 16 34.96	W 103 47 23.56
	14300.00	90.00	359.64	11490.00	2658.28	2651.57	-259.45	0.00	464804.86	709295.24	N 32 16 35.95	W 103 47 23.56
	14400.00	90.00	359.64	11490.00	2758.25	2751.57	-260.08	0.00	464904.85	709294.62	N 32 16 36.94	W 103 47 23.56
	14500.00	90.00	359.64	11490.00	2858.22	2851.57	-260.70	0.00	465004.85	709294.00	N 32 16 37.93	W 103 47 23.57
	14600.00	90.00	359.64	11490.00	2958.19	2951.57	-261.32	0.00	465104.84	709293.37	N 32 16 38.92	W 103 47 23.57
	14700.00	90.00	359.64	11490.00	3058.16	3051.57	-261.95	0.00	465204.83	709292.75	N 32 16 39.91	W 103 47 23.57
	14800.00	90.00	359.64	11490.00	3158.13	3151.56	-262.57	0.00	465304.82	709292.12	N 32 16 40.90	W 103 47 23.57
	14900.00	90.00	359.64	11490.00	3258.10	3251.56	-263.20	0.00	465404.81	709291.50	N 32 16 41.89	W 103 47 23.57
	15000.00	90.00	359.64	11490.00	3358.07	3351.56	-263.82	0.00	465504.81	709290.88	N 32 16 42.88	W 103 47 23.57
	15100.00	90.00	359.64	11490.00	3458.04	3451.56	-264.44	0.00	465604.80	709290.25	N 32 16 43.87	W 103 47 23.57
	15200.00	90.00	359.64	11490.00	3558.01	3551.56	-265.07	0.00	465704.79	709289.63	N 32 16 44.86	W 103 47 23.58
	15300.00	90.00	359.64	11490.00	3657.98	3651.55	-265.69	0.00	465804.78	709289.00	N 32 16 45.85	W 103 47 23.58
	15400.00	90.00	359.64	11490.00	3757.95	3751.55	-266.32	0.00	465904.77	709288.38	N 32 16 46.84	W 103 47 23.58
	15500.00	90.00	359.64	11490.00	3857.92	3851.55	-266.94	0.00	466004.77	709287.76	N 32 16 47.83	W 103 47 23.58
	15600.00	90.00	359.64	11490.00	3957.89	3951.55	-267.56	0.00	466104.76	709287.13	N 32 16 48.82	W 103 47 23.58
	15700.00	90.00	359.64	11490.00	4057.86	4051.55	-268.19	0.00	466204.75	709286.51	N 32 16 49.81	W 103 47 23.58
	15800.00	90.00	359.64	11490.00	4157.83	4151.54	-268.81	0.00	466304.74	709285.88	N 32 16 50.80	W 103 47 23.58
	15900.00	90.00	359.64	11490.00	4257.80	4251.54	-269.44	0.00	466404.73	709285.26	N 32 16 51.79	W 103 47 23.59
	16000.00	90.00	359.64	11490.00	4357.77	4351.54	-270.06	0.00	466504.73	709284.64	N 32 16 52.77	W 103 47 23.59
	16100.00	90.00	359.64	11490.00	4457.74	4451.54	-270.69	0.00	466604.72	709284.01	N 32 16 53.76	W 103 47 23.59
	16200.00	90.00	359.64	11490.00	4557.71	4551.54	-271.31	0.00	466704.71	709283.39	N 32 16 54.75	W 103 47 23.59
	16300.00	90.00	359.64	11490.00	4657.68	4651.53	-271.93	0.00	466804.70	709282.76	N 32 16 55.74	W 103 47 23.59
	16400.00	90.00	359.64	11490.00	4757.65	4751.53	-272.56	0.00	466904.69	709282.14	N 32 16 56.73	W 103 47 23.59
	16500.00	90.00	359.64	11490.00	4857.62	4851.53	-273.18	0.00	467004.69	709281.52	N 32 16 57.72	W 103 47 23.59
	16600.00	90.00	359.64	11490.00	4957.59	4951.53	-273.81	0.00	467104.68	709280.89	N 32 16 58.71	W 103 47 23.59
	16700.00	90.00	359.64	11490.00	5057.56	5051.53	-274.43	0.00	467204.67	709280.27	N 32 16 59.70	W 103 47 23.60
	16800.00	90.00	359.64	11490.00	5157.53	5151.52	-275.05	0.00	467304.66	709279.64	N 32 17 0.69	W 103 47 23.60
	16900.00	90.00	359.64	11490.00	5257.50	5251.52	-275.68	0.00	467404.65	709279.02	N 32 17 1.68	W 103 47 23.60
	17000.00	90.00	359.64	11490.00	5357.47	5351.52	-276.30	0.00	467504.65	709278.40	N 32 17 2.67	W 103 47 23.60
	17100.00	90.00	359.64	11490.00	5457.44	5451.52	-276.93	0.00	467604.64	709277.77	N 32 17 3.66	W 103 47 23.60
	17200.00	90.00	359.64	11490.00	5557.41	5551.52	-277.55	0.00	467704.63	709277.15	N 32 17 4.65	W 103 47 23.60
	17300.00	90.00	359.64	11490.00	5657.38	5651.51	-278.17	0.00	467804.62	709276.52	N 32 17 5.64	W 103 47 23.60
	17400.00	90.00	359.64	11490.00	5757.35	5751.51	-278.80	0.00	467904.61	709275.90	N 32 17 6.63	W 103 47 23.61
	17500.00	90.00	359.64	11490.00	5857.32	5851.51	-279.42	0.00	468004.61	709275.28	N 32 17 7.62	W 103 47 23.61
	17600.00	90.00	359.64	11490.00	5957.29	5951.51	-280.05	0.00	468104.60	709274.65	N 32 17 8.61	W 103 47 23.61
	17700.00	90.00	359.64	11490.00	6057.26	6051.51	-280.67	0.00	468204.59	709274.03	N 32 17 9.60	W 103 47 23.61
	17800.00	90.00	359.64	11490.00	6157.23	6151.51	-281.29	0.00	468304.58	709273.40	N 32 17 10.59	W 103 47 23.61
	17900.00	90.00	359.64	11490.00	6257.21	6251.50	-281.92	0.00	468404.57	709272.78	N 32 17 11.58	W 103 47 23.61

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	18000.00	90.00	359.64	11490.00	6357.18	6351.50	-282.54	0.00	468504.57	709272.15	N 32 17 12.56	W 103 47 23.61
	18100.00	90.00	359.64	11490.00	6457.15	6451.50	-283.17	0.00	468604.56	709271.53	N 32 17 13.55	W 103 47 23.62
	18200.00	90.00	359.64	11490.00	6557.12	6551.50	-283.79	0.00	468704.55	709270.91	N 32 17 14.54	W 103 47 23.62
	18300.00	90.00	359.64	11490.00	6657.09	6651.50	-284.41	0.00	468804.54	709270.28	N 32 17 15.53	W 103 47 23.62
	18400.00	90.00	359.64	11490.00	6757.06	6751.49	-285.04	0.00	468904.53	709269.66	N 32 17 16.52	W 103 47 23.62
	18500.00	90.00	359.64	11490.00	6857.03	6851.49	-285.66	0.00	469004.53	709269.03	N 32 17 17.51	W 103 47 23.62
	18600.00	90.00	359.64	11490.00	6957.00	6951.49	-286.29	0.00	469104.52	709268.41	N 32 17 18.50	W 103 47 23.62
	18700.00	90.00	359.64	11490.00	7056.97	7051.49	-286.91	0.00	469204.51	709267.79	N 32 17 19.49	W 103 47 23.62
	18800.00	90.00	359.64	11490.00	7156.94	7151.49	-287.53	0.00	469304.50	709267.16	N 32 17 20.48	W 103 47 23.62
	18900.00	90.00	359.64	11490.00	7256.91	7251.48	-288.16	0.00	469404.49	709266.54	N 32 17 21.47	W 103 47 23.63
	19000.00	90.00	359.64	11490.00	7356.88	7351.48	-288.78	0.00	469504.49	709265.91	N 32 17 22.46	W 103 47 23.63
	19100.00	90.00	359.64	11490.00	7456.85	7451.48	-289.41	0.00	469604.48	709265.29	N 32 17 23.45	W 103 47 23.63
	19200.00	90.00	359.64	11490.00	7556.82	7551.48	-290.03	0.00	469704.47	709264.67	N 32 17 24.44	W 103 47 23.63
	19300.00	90.00	359.64	11490.00	7656.79	7651.48	-290.65	0.00	469804.46	709264.04	N 32 17 25.43	W 103 47 23.63
	19400.00	90.00	359.64	11490.00	7756.76	7751.47	-291.28	0.00	469904.45	709263.42	N 32 17 26.42	W 103 47 23.63
	19500.00	90.00	359.64	11490.00	7856.73	7851.47	-291.90	0.00	470004.45	709262.79	N 32 17 27.41	W 103 47 23.63
	19600.00	90.00	359.64	11490.00	7956.70	7951.47	-292.53	0.00	470104.44	709262.17	N 32 17 28.40	W 103 47 23.64
	19700.00	90.00	359.64	11490.00	8056.67	8051.47	-293.15	0.00	470204.43	709261.55	N 32 17 29.39	W 103 47 23.64
	19800.00	90.00	359.64	11490.00	8156.64	8151.47	-293.78	0.00	470304.42	709260.92	N 32 17 30.38	W 103 47 23.64
	19900.00	90.00	359.64	11490.00	8256.61	8251.46	-294.40	0.00	470404.41	709260.30	N 32 17 31.37	W 103 47 23.64
	20000.00	90.00	359.64	11490.00	8356.58	8351.46	-295.02	0.00	470504.41	709259.67	N 32 17 32.35	W 103 47 23.64
	20100.00	90.00	359.64	11490.00	8456.55	8451.46	-295.65	0.00	470604.40	709259.05	N 32 17 33.34	W 103 47 23.64
	20200.00	90.00	359.64	11490.00	8556.52	8551.46	-296.27	0.00	470704.39	709258.43	N 32 17 34.33	W 103 47 23.64
	20300.00	90.00	359.64	11490.00	8656.49	8651.46	-296.90	0.00	470804.38	709257.80	N 32 17 35.32	W 103 47 23.65
	20400.00	90.00	359.64	11490.00	8756.46	8751.45	-297.52	0.00	470904.37	709257.18	N 32 17 36.31	W 103 47 23.65
	20500.00	90.00	359.64	11490.00	8856.43	8851.45	-298.14	0.00	471004.37	709256.55	N 32 17 37.30	W 103 47 23.65
	20600.00	90.00	359.64	11490.00	8956.40	8951.45	-298.77	0.00	471104.36	709255.93	N 32 17 38.29	W 103 47 23.65
	20700.00	90.00	359.64	11490.00	9056.37	9051.45	-299.39	0.00	471204.35	709255.31	N 32 17 39.28	W 103 47 23.65
	20800.00	90.00	359.64	11490.00	9156.34	9151.45	-300.02	0.00	471304.34	709254.68	N 32 17 40.27	W 103 47 23.65
	20900.00	90.00	359.64	11490.00	9256.31	9251.44	-300.64	0.00	471404.33	709254.06	N 32 17 41.26	W 103 47 23.65
	21000.00	90.00	359.64	11490.00	9356.28	9351.44	-301.26	0.00	471504.33	709253.43	N 32 17 42.25	W 103 47 23.65
	21100.00	90.00	359.64	11490.00	9456.25	9451.44	-301.89	0.00	471604.32	709252.81	N 32 17 43.24	W 103 47 23.66
	21200.00	90.00	359.64	11490.00	9556.22	9551.44	-302.51	0.00	471704.31	709252.19	N 32 17 44.23	W 103 47 23.66
	21300.00	90.00	359.64	11490.00	9656.19	9651.44	-303.14	0.00	471804.30	709251.56	N 32 17 45.22	W 103 47 23.66
	21400.00	90.00	359.64	11490.00	9756.16	9751.43	-303.76	0.00	471904.29	709250.94	N 32 17 46.21	W 103 47 23.66
	21500.00	90.00	359.64	11490.00	9856.13	9851.43	-304.38	0.00	472004.29	709250.31	N 32 17 47.20	W 103 47 23.66
	21600.00	90.00	359.64	11490.00	9956.10	9951.43	-305.01	0.00	472104.28	709249.69	N 32 17 48.19	W 103 47 23.66
Iridium MDP1 28-21 Federal Com 171H PBHL	21601.66	90.00	359.64	11490.00	9957.76	9953.09	-305.02	0.00	472105.94	709249.68	N 32 17 48.20	W 103 47 23.66

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Hole Size Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG-Depth Only	ST01 / Oxy Iridium MDP1 28-21 Federal Com 171H ST01 REV0 LBN 30Nov17
	1	26.500	21601.661	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	ST01 / Oxy Iridium MDP1 28-21 Federal Com 171H ST01 REV0

Schlumberger

Oxy Iridium MDP1 28-21 Federal Com 171H Pilot Hole REV0 LBN 30Nov17
Proposal Geodetic Report
(Def Plan)

Report Date:	November 30, 2017 - 10:59 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	358.245 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Iridium MDP1 28-21 Federal Com 171H / Oxy Iridium MDP1 28-21 Federal Com 171H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Iridium MDP1 28-21 Federal Com 171H	**TVD Reference Elevation:**	3396.200 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3369.700 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.972 °
Survey Name:	Oxy Iridium MDP1 28-21 Federal Com 171H Pilot Hole REV0 LBN 30Nov17	**Total Gravity Field Strength:**	998.4514mgn (9.80665 Based)
Survey Date:	November 30, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	12.001 ° / 450.894 ft / 3.734 / 0.036	**Total Magnetic Field Strength:**	48103.950 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.042 °
Location Lat / Long:	N 32° 16' 9.70294", W 103° 47' 20.69803"	**Declination Date:**	November 30, 2017
Location Grid N/E Y/X:	N 462153.450 ftUS, E 709554.680 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.2906 °	**North Reference:**	Grid North
Grid Scale Factor:	0.9999415	**Grid Convergence Used:**	0.2906 °
Version / Patch:	2.10.565.0	**Total Corr Mag North->Grid North:**	6.6810 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	100.00	0.00	212.24	100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	200.00	0.00	212.24	200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	300.00	0.00	212.24	300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	400.00	0.00	212.24	400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	500.00	0.00	212.24	500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	600.00	0.00	212.24	600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	700.00	0.00	212.24	700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	800.00	0.00	212.24	800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	900.00	0.00	212.24	900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1000.00	0.00	212.24	1000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1100.00	0.00	212.24	1100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1200.00	0.00	212.24	1200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1300.00	0.00	212.24	1300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1400.00	0.00	212.24	1400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1500.00	0.00	212.24	1500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1600.00	0.00	212.24	1600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1700.00	0.00	212.24	1700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1800.00	0.00	212.24	1800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	1900.00	0.00	212.24	1900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2000.00	0.00	212.24	2000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2100.00	0.00	212.24	2100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2200.00	0.00	212.24	2200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2300.00	0.00	212.24	2300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2400.00	0.00	212.24	2400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2500.00	0.00	212.24	2500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2600.00	0.00	212.24	2600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2700.00	0.00	212.24	2700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2800.00	0.00	212.24	2800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	2900.00	0.00	212.24	2900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3000.00	0.00	212.24	3000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3100.00	0.00	212.24	3100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3200.00	0.00	212.24	3200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3300.00	0.00	212.24	3300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3400.00	0.00	212.24	3400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3500.00	0.00	212.24	3500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3600.00	0.00	212.24	3600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3700.00	0.00	212.24	3700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3800.00	0.00	212.24	3800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	3900.00	0.00	212.24	3900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4000.00	0.00	212.24	4000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4100.00	0.00	212.24	4100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4200.00	0.00	212.24	4200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4300.00	0.00	212.24	4300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4400.00	0.00	212.24	4400.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4500.00	0.00	212.24	4500.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4600.00	0.00	212.24	4600.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4700.00	0.00	212.24	4700.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4800.00	0.00	212.24	4800.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	4900.00	0.00	212.24	4900.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5000.00	0.00	212.24	5000.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5100.00	0.00	212.24	5100.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5200.00	0.00	212.24	5200.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5300.00	0.00	212.24	5300.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
Build 1.5°/100'	5310.00	0.00	212.24	5310.00	0.00	0.00	0.00	0.00	462153.45	709554.68	N 32 16 9.70	W 103 47 20.70
	5400.00	1.35	212.24	5399.99	-0.88	-0.90	-0.57	1.50	462152.55	709554.11	N 32 16 9.69	W 103 47 20.70
	5500.00	2.85	212.24	5499.92	-3.92	-4.00	-2.52	1.50	462149.45	709552.16	N 32 16 9.66	W 103 47 20.73
	5600.00	4.35	212.24	5599.72	-9.12	-9.31	-5.87	1.50	462144.14	709548.81	N 32 16 9.61	W 103 47 20.77
	5700.00	5.85	212.24	5699.32	-16.49	-16.83	-10.61	1.50	462136.63	709544.07	N 32 16 9.54	W 103 47 20.82
Hold	5710.03	6.00	212.24	5709.30	-17.35	-17.70	-11.16	1.50	462135.75	709543.52	N 32 16 9.53	W 103 47 20.83
	5800.00	6.00	212.24	5798.78	-25.15	-25.66	-16.18	0.00	462127.79	709538.50	N 32 16 9.45	W 103 47 20.89
	5900.00	6.00	212.24	5898.23	-33.82	-34.50	-21.76	0.00	462118.95	709532.92	N 32 16 9.36	W 103 47 20.95
	6000.00	6.00	212.24	5997.68	-42.48	-43.34	-27.33	0.00	462110.11	709527.35	N 32 16 9.28	W 103 47 21.02
	6100.00	6.00	212.24	6097.13	-51.15	-52.18	-32.91	0.00	462101.27	709521.77	N 32 16 9.19	W 103 47 21.08
	6200.00	6.00	212.24	6196.58	-59.82	-61.03	-38.49	0.00	462092.43	709516.20	N 32 16 9.10	W 103 47 21.15
	6300.00	6.00	212.24	6296.04	-68.49	-69.87	-44.06	0.00	462083.59	709510.62	N 32 16 9.01	W 103 47 21.22
	6400.00	6.00	212.24	6395.49	-77.15	-78.71	-49.64	0.00	462074.74	709505.04	N 32 16 8.93	W 103 47 21.28
	6500.00	6.00	212.24	6494.94	-85.82	-87.55	-55.22	0.00	462065.90	709499.47	N 32 16 8.84	W 103 47 21.35
	6600.00	6.00	212.24	6594.39	-94.49	-96.39	-60.79	0.00	462057.06	709493.89	N 32 16 8.75	W 103 47 21.41
	6700.00	6.00	212.24	6693.85	-103.15	-105.24	-66.37	0.00	462048.22	709488.32	N 32 16 8.66	W 103 47 21.48
	6800.00	6.00	212.24	6793.30	-111.82	-114.08	-71.95	0.00	462039.38	709482.74	N 32 16 8.58	W 103 47 21.54
	6900.00	6.00	212.24	6892.75	-120.49	-122.92	-77.52	0.00	462030.54	709477.16	N 32 16 8.49	W 103 47 21.61
	7000.00	6.00	212.24	6992.20	-129.16	-131.76	-83.10	0.00	462021.70	709471.59	N 32 16 8.40	W 103 47 21.67
	7100.00	6.00	212.24	7091.65	-137.82	-140.61	-88.67	0.00	462012.85	709466.01	N 32 16 8.32	W 103 47 21.74
	7200.00	6.00	212.24	7191.11	-146.49	-149.45	-94.25	0.00	462004.01	709460.43	N 32 16 8.23	W 103 47 21.80
	7300.00	6.00	212.24	7290.56	-155.16	-158.29	-99.83	0.00	461995.17	709454.86	N 32 16 8.14	W 103 47 21.87
	7400.00	6.00	212.24	7390.01	-163.82	-167.13	-105.40	0.00	461986.33	709449.28	N 32 16 8.05	W 103 47 21.94

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7500.00	6.00	212.24	7489.46	-172.49	-175.97	-110.98	0.00	461977.49	709443.71	N 32 16 7.97	W 103 47 22.00
	7600.00	6.00	212.24	7588.91	-181.16	-184.82	-116.56	0.00	461968.65	709438.13	N 32 16 7.88	W 103 47 22.07
	7700.00	6.00	212.24	7688.37	-189.83	-193.66	-122.13	0.00	461959.80	709432.55	N 32 16 7.79	W 103 47 22.13
	7800.00	6.00	212.24	7787.82	-198.49	-202.50	-127.71	0.00	461950.96	709426.98	N 32 16 7.71	W 103 47 22.20
	7900.00	6.00	212.24	7887.27	-207.16	-211.34	-133.29	0.00	461942.12	709421.40	N 32 16 7.62	W 103 47 22.26
	8000.00	6.00	212.24	7986.72	-215.83	-220.18	-138.86	0.00	461933.28	709415.83	N 32 16 7.53	W 103 47 22.33
	8100.00	6.00	212.24	8086.17	-224.49	-229.03	-144.44	0.00	461924.44	709410.25	N 32 16 7.44	W 103 47 22.39
	8200.00	6.00	212.24	8185.63	-233.16	-237.87	-150.02	0.00	461915.60	709404.67	N 32 16 7.36	W 103 47 22.46
	8300.00	6.00	212.24	8285.08	-241.83	-246.71	-155.59	0.00	461906.75	709399.10	N 32 16 7.27	W 103 47 22.52
	8400.00	6.00	212.24	8384.53	-250.50	-255.55	-161.17	0.00	461897.91	709393.52	N 32 16 7.18	W 103 47 22.59
	8500.00	6.00	212.24	8483.98	-259.16	-264.40	-166.74	0.00	461889.07	709387.95	N 32 16 7.10	W 103 47 22.66
	8600.00	6.00	212.24	8583.43	-267.83	-273.24	-172.32	0.00	461880.23	709382.37	N 32 16 7.01	W 103 47 22.72
	8700.00	6.00	212.24	8682.89	-276.50	-282.08	-177.90	0.00	461871.39	709376.79	N 32 16 6.92	W 103 47 22.79
	8800.00	6.00	212.24	8782.34	-285.17	-290.92	-183.47	0.00	461862.55	709371.22	N 32 16 6.83	W 103 47 22.85
	8900.00	6.00	212.24	8881.79	-293.83	-299.76	-189.05	0.00	461853.70	709365.64	N 32 16 6.75	W 103 47 22.92
	9000.00	6.00	212.24	8981.24	-302.50	-308.61	-194.63	0.00	461844.86	709360.06	N 32 16 6.66	W 103 47 22.98
	9100.00	6.00	212.24	9080.70	-311.17	-317.45	-200.20	0.00	461836.02	709354.49	N 32 16 6.57	W 103 47 23.05
	9200.00	6.00	212.24	9180.15	-319.83	-326.29	-205.78	0.00	461827.18	709348.91	N 32 16 6.48	W 103 47 23.11
	9300.00	6.00	212.24	9279.60	-328.50	-335.13	-211.36	0.00	461818.34	709343.34	N 32 16 6.40	W 103 47 23.18
	9400.00	6.00	212.24	9379.05	-337.17	-343.97	-216.93	0.00	461809.50	709337.76	N 32 16 6.31	W 103 47 23.24
	9500.00	6.00	212.24	9478.50	-345.84	-352.82	-222.51	0.00	461800.65	709332.18	N 32 16 6.22	W 103 47 23.31
	9600.00	6.00	212.24	9577.96	-354.50	-361.66	-228.09	0.00	461791.81	709326.61	N 32 16 6.14	W 103 47 23.38
Drop 1.5°/100'	9622.87	6.00	212.24	9600.70	-356.48	-363.68	-229.36	0.00	461789.79	709325.33	N 32 16 6.12	W 103 47 23.39
	9700.00	4.84	212.24	9677.48	-362.53	-369.85	-233.25	1.50	461783.63	709321.45	N 32 16 6.06	W 103 47 23.44
	9800.00	3.34	212.24	9777.23	-368.45	-375.88	-237.06	1.50	461777.59	709317.64	N 32 16 6.00	W 103 47 23.48
	9900.00	1.84	212.24	9877.12	-372.20	-379.71	-239.47	1.50	461773.76	709315.22	N 32 16 5.96	W 103 47 23.51
	10000.00	0.34	212.24	9977.10	-373.78	-381.33	-240.49	1.50	461772.15	709314.21	N 32 16 5.94	W 103 47 23.52
Vertical Point	10022.90	0.00	212.24	10000.00	-373.84	-381.38	-240.52	1.50	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10100.00	0.00	212.24	10077.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10200.00	0.00	212.24	10177.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10300.00	0.00	212.24	10277.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10400.00	0.00	212.24	10377.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10500.00	0.00	212.24	10477.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10600.00	0.00	212.24	10577.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10700.00	0.00	212.24	10677.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10800.00	0.00	212.24	10777.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	10900.00	0.00	212.24	10877.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11000.00	0.00	212.24	10977.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11100.00	0.00	212.24	11077.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11200.00	0.00	212.24	11177.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11300.00	0.00	212.24	11277.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11400.00	0.00	212.24	11377.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11500.00	0.00	212.24	11477.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11600.00	0.00	212.24	11577.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11700.00	0.00	212.24	11677.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11800.00	0.00	212.24	11777.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	11900.00	0.00	212.24	11877.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	12000.00	0.00	212.24	11977.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	12100.00	0.00	212.24	12077.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	12200.00	0.00	212.24	12177.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	12300.00	0.00	212.24	12277.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	12400.00	0.00	212.24	12377.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	12500.00	0.00	212.24	12477.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
	12600.00	0.00	212.24	12577.10	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52
TD Pilot Hole	12622.90	0.00	212.24	12600.00	-373.84	-381.38	-240.52	0.00	461772.09	709314.17	N 32 16 5.94	W 103 47 23.52

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 171H Pilot Hole REV0 LBN 30Nov17
	1	26.500	12622.900	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 171H

ST01 Rev0

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
ST01	Oxy Iridium MDP1 28-21 Federal Com 171H	NM Eddy County (NAD 83)	Oxy Iridium MDP1 28-21 Federal Com 171H

Gravity & Magnetic Parameters

Model:	HDGM 2017	Dip:	60.042°	Date:	30-Nov-2017				
MagDec:	6.972°	FS:	48103.85nT	Gravity FS:	998.451mgn (9.80665 Based)				

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet

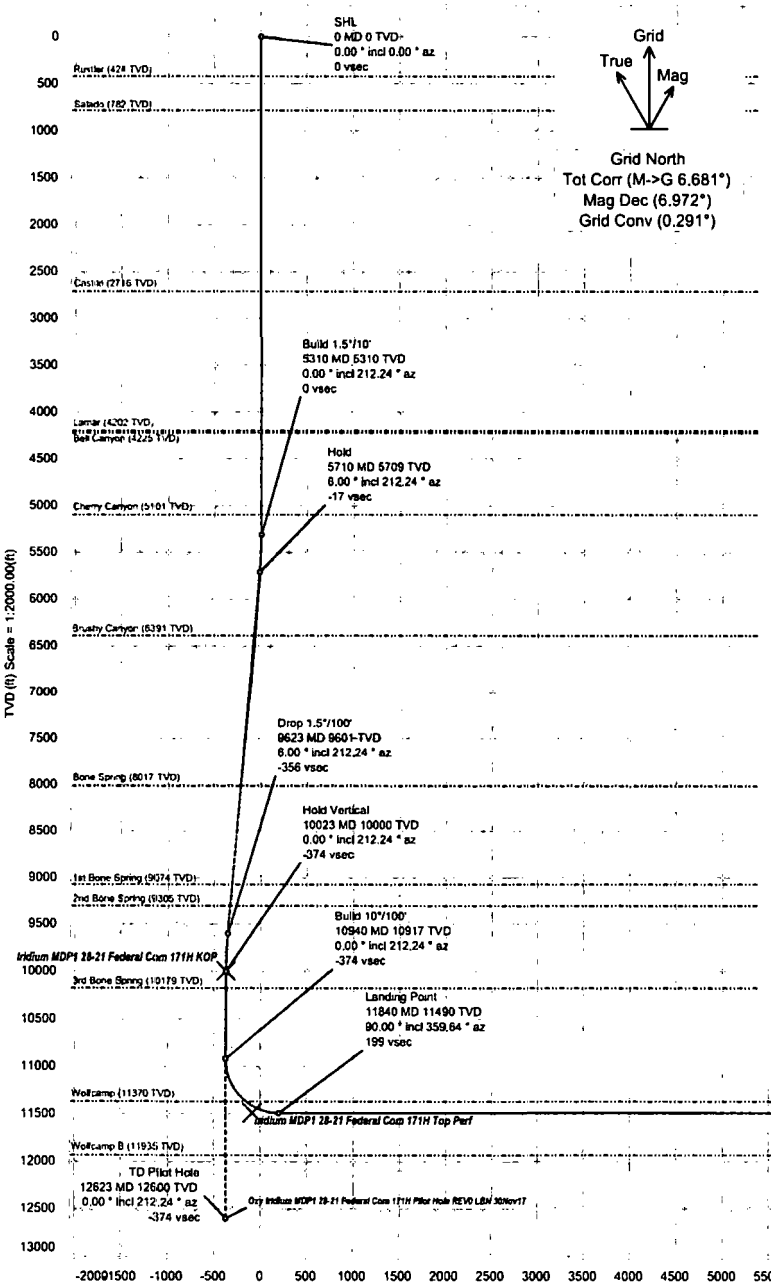
Lat:	N 32 18 9.70	Northing:	482153.45ftUS	Grid Conv:	0.290°	Slot:	Oxy Iridium MDP1 28-21 Federal Com 171H
Lon:	W 103 47 20.70	Easting:	709554.68ftUS	Scale Fact:	0.9999415	Plan:	Oxy Iridium MDP1 28-21 Federal Com 171H ST01 REV0 LBN 30Nov17

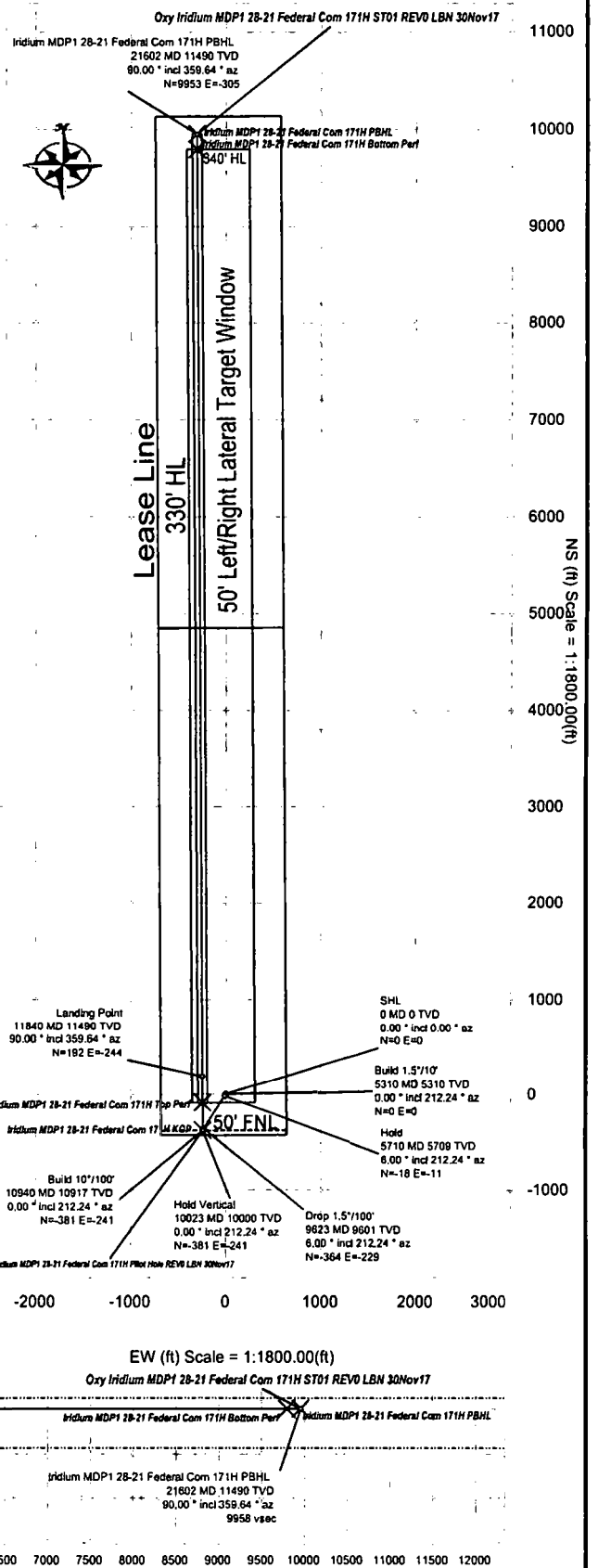
Miscellaneous

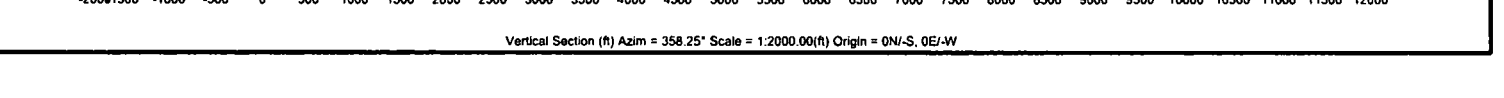
TVD Ref: RKB=26.5'(3396.2ft above MSL)

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	424.00	0.00	212.24	424.00	0.00	0.00	0.00	0.00
Salado	782.00	0.00	212.24	782.00	0.00	0.00	0.00	0.00
Castile	2716.00	0.00	212.24	2716.00	0.00	0.00	0.00	0.00
Lamar	4202.00	0.00	212.24	4202.00	0.00	0.00	0.00	0.00
Bell Canyon	4225.00	0.00	212.24	4225.00	0.00	0.00	0.00	0.00
Cherry Canyon	5101.00	0.00	212.24	5101.00	0.00	0.00	0.00	0.00
Build 1.5°/10'	5310.00	0.00	212.24	5310.00	0.00	0.00	0.00	0.00
Hold	5710.03	6.00	212.24	5709.30	-17.35	-17.70	-11.16	1.50
Brushy Canyon	6395.49	6.00	212.24	6391.00	-76.76	-78.31	-49.39	0.00
Bone Spring	8030.44	6.00	212.24	8017.00	-218.47	-222.88	-140.56	0.00
1st Bone Spring	9093.27	6.00	212.24	9074.00	-310.58	-316.85	-199.83	0.00
2nd Bone Spring	9325.54	6.00	212.24	9305.00	-330.71	-337.39	-212.78	0.00
Drop 1.5°/100'	9622.87	6.00	212.24	9600.70	-356.48	-363.68	-229.36	0.00
Hold Vertical	10022.90	0.00	212.24	10000.00	-373.84	-381.38	-240.52	1.50
3rd Bone Spring	10201.90	0.00	212.24	10179.00	-373.84	-381.38	-240.52	0.00
Build 10°/100'	10939.94	0.00	212.24	10917.04	-373.84	-381.38	-240.52	0.00
Wolfcamp	11462.32	52.24	359.64	11370.00	-151.82	-159.30	-241.91	10.00
Landing Point	11839.94	90.00	359.64	11490.00	198.95	191.56	-244.10	10.00
Iridium MDP1 28-21 Federal Com 171H PBHL	21601.66	90.00	359.64	11490.00	9957.76	9953.09	-305.02	0.00
Wolfcamp B	NaN			11935.00				







OXY USA Inc
APD ATTACHMENT: SPUDDER RIG DATA

OPERATOR NAME / NUMBER: OXY USA Inc

1. SUMMARY OF REQUEST:

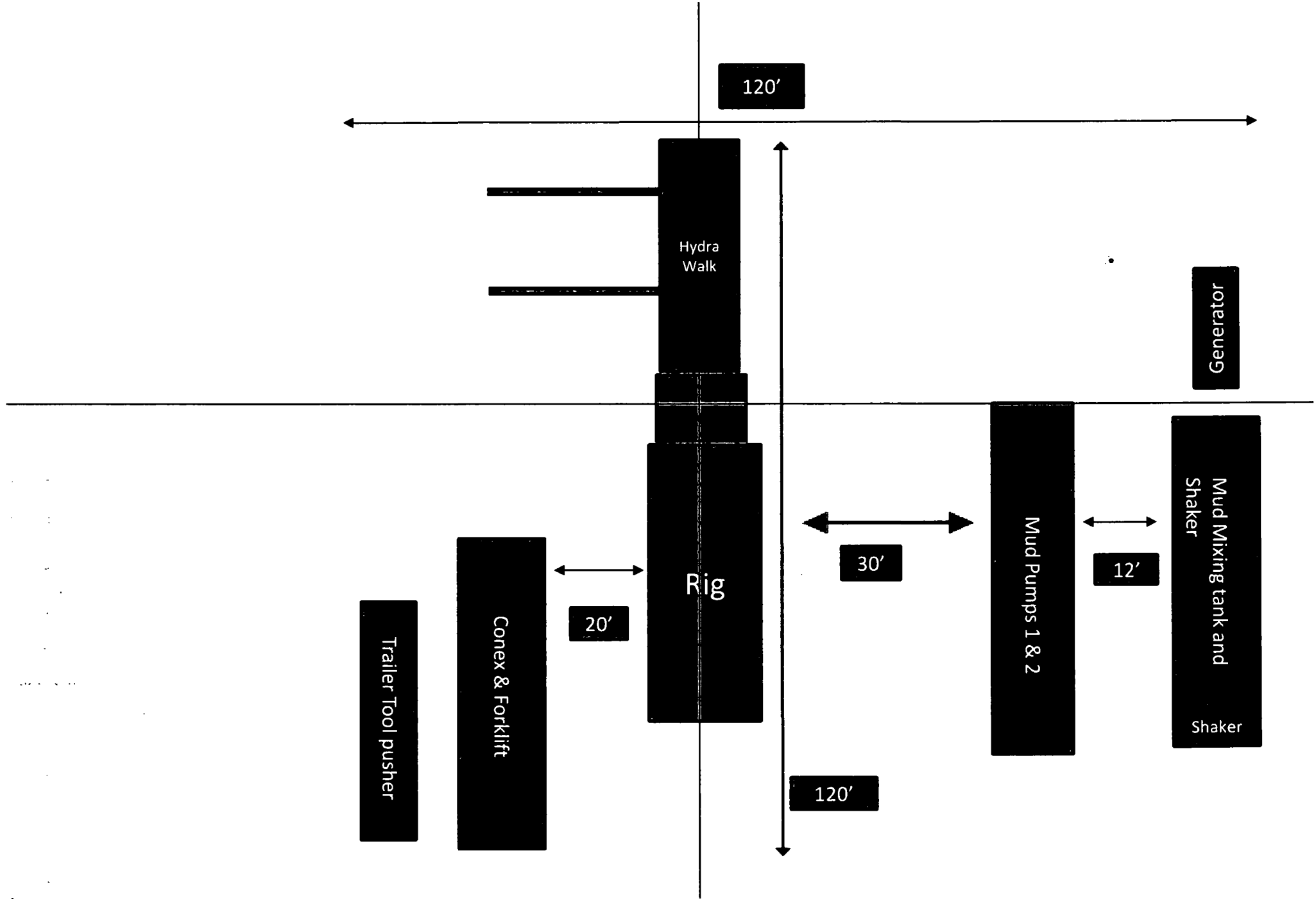
Oxy USA respectfully requests approval for the following operations for the surface hole in the drill plan:

1. Utilize a spudder rig to pre-set surface casing for time and cost savings.

2. Description of Operations

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
    a. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and tested as soon as the surface casing is cut off and the WOC time has been reached.
3. A blind flange at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nippled up and tested on the wellhead before drilling operations resume on each well.
    a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
    b. The BLM will be contacted / notified 24 hours before the larger rig moves back on the pre-set locations.
7. Oxy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, Oxy will secure the wellhead area by placing a guard rail around the cellar area.

Spudder Rig Layout



OXY USA Inc. – Iridium MDP1 28-21 Federal Com 171H – Drill Plan

1. Geologic Formations

TVD of target	11490'	Pilot Hole Depth (TVD)	12600'
MD at TD:	21602	Deepest Expected fresh water:	424'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	424	Brine
Salado	782	
Castile	2716	
Lamar/Delaware	4202	Losses
Bell Canyon	4225	Water
Cherry Canyon	5101	Oil/Gas/Water
Brushy Canyon	6391	Oil/Gas/Water
Bone Spring	8017	Oil/Gas/Water
1st Bone Spring	9074	Oil/Gas/Water
2nd Bone Spring	9305	Oil/Gas/Water
3rd Bone Spring	10179	Oil/Gas/Water
Wolfcamp	11370	Oil/Gas/Water
Wolfcamp B	**11935**	**Oil/Gas/Water**

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From (ft)	To (ft)							
20	0	590	16	75	J55	BTC	1.125	1.2	1.4
13.5	0	4302	10.75	45.5	J55	BTC	1.125	1.2	1.4
9.875	0	10323	7.625	29.7	L80	BTC	1.125	1.2	1.4
6.75	0	21602	5.5	20	P-110	DQX	1.125	1.2	1.4
							*SF values will meet or exceed		

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

*OXY requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool may be run in case hole conditions merit pumping a second stage cement job to comply with permitted top of cement. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

*OXY requests a variance exception to run 5.5" 20# DQX in 7.625" 29.7# Casing. This equates to a 0.4125" clearance, 0.0095" below the Onshore Order 2 requirement.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2nd string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	Slurry	# Sks	Wt. lb/gal	Yld ft3/sack	H20 gal/sack	500# Comp. Strength (HRS)	Slurry Description
Surface	Lead	697	14.8	1.36	6.55	6:30	Class C Cement, Accelerator)
Intermediate	Lead	1399	12.9	1.88	10.13	15:07	Class C: Poz cement blend, Extender, Accelerator, Retarder
	Tail	164	14.8	1.33	6.34	7:19	Class C Cement, Retarder, Dispersant, Salt
Intermediate II	ST 1 Lead	324	10.2	2.58	11.57	6:57	LW Cement, Retarder, Extender, Dispersant
	ST 1 Tail	360	13.2	1.65	8.37	8:12	Class H Poz Cement, Retarder, Dispersant, Salt
	DV/ECP Tool @ 5891' (Request the option to cancel the second stage if cement is circulated to surface during the first stage of operations)						
	ST 2 Tail	995	13.6	1.67	8.77	7:32	Class C Cement, Extender, Accelerator, Dispersant
Production	Tail	1067	12.9	1.78	9.1	4:55	LW Cement, Retarder, Dispersant, Fluid Loss Control, Extender

Casing String	Top of Lead (ft)	Bottom of Lead / Top of Tail (ft)	Bottom of Tail (ft)	% Excess Lead	% Excess Tail
Surface	N/A	0	590	N/A	100%
Intermediate Casing	0	3802	4302	75%	20%
Intermediate II Casing	5791	8017	10323	75%	20%
Intermediate II Casing	N/A	0	5891	N/A	100%
Production	N/A	0	21602	N/A	15%

Pilot Hole Cementing specs:
Pilot hole depth: 12623' MD
KOP: 10940' MD (Open Hole)

Plug	Plug top	Plug Bottom	% Excess	No. Sacks	Wt. lb/gal	Yld ft3/sack	Water gal/sk	Slurry Description and Cement Type
1	11822	12623	10	174	14.4	1.246	5.52	50% H Cement, 50% Poz, ~3.5% Bentonite, 0.3% Retarder
2	11022	11822	10	204	16.4	1.07	4.42	H Cement, Dispersant, Retarder
3	10222	11022	20	254	17.5	0.94	3.47	H Cement, Dispersant, Retarder

Note: The first plug is designed to be 800' in length to isolate the bottom Wolfcamp from potential high pressure zones. The second and third plugs will also be 800' in length. Plan to bring third plug 100' inside the 7-5/8" casing shoe.

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
13-1/2" Intermediate	13-5/8"	2M	Annular	✓	70% of working pressure
		2M	Blind Ram	✓	250/2,000 psi
			Upper Pipe Ram		
			Double Ram	✓	
			Lower Pipe Ram		
9-7/8" Intermediate II	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250/5,000 psi
			Upper Pipe Ram	✓	
			Double Ram	☐	
			Lower Pipe Ram	✓	
6-3/4" Pilot	13-5/8"	5M	Annular	✓	70% of working pressure
		10M	Blind Ram	✓	250/10,000 psi
			Upper Pipe Ram	✓	
			Double Ram	☐	
			Lower Pipe Ram	✓	
6-3/4" Lateral	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250/10,000 psi
			Upper Pipe Ram	✓	
			Double Ram	☐	
			Lower Pipe Ram	✓	

Per BLM's Memorandum No. NM-2017-008: *Decision and Rationale for a Variance Allowing the Use of a 5M Annular Preventer with a 10M BOP Stack*, Oxy requests to employ a 5M annular with a 10M BOPE stack in the pilot and lateral sections of the well and will ensure that two barriers to flow are maintained at all times. Please see attached Well Control Plan.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

- **BOP Pressure Test**
  - Because it is not possible to land a 16" test plug through 13-5/8" BOP, Oxy is requesting permission to test the BOP against the lower pipe rams after N/U BOP on 16" wellhead
    - The lower pipe rams will serve as a test plug
  - A 2M, 10 minute test will be performed on all BOP components
    - Maximum Anticipated Surface Pressure for drilling the 13.5" hole section is:
      - (4302' x 10 ppg x 0.052) – (0.1 psi/ft x 4302') = 1807 psi
  - Upper pipe rams will be tested against lower pipe rams
  - Annular will also against the lower pipe rams
  - Blind rams will be tested against casing with nothing in the hole
    - This will be a 30 minute test
  - Lower pipe rams will be tested against casing after running the BHA in the hole
    - Test pressure will not exceed 70% burst of 16" casing
    - This test will also serve as a casing test, and will be held for 30 minutes
  - After cementing the 10-3/4" casing, subsequent tests on BOP will be performed using a traditional test plug

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
	• A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. • Due to the four string design, Oxy plans to employ a 16" 3K sacrificial wellhead that will be employed to drill the 13.5" Intermediate Hole. Upon completion of drilling and cementing operations on the 13.5" Intermediate Hole section (along with proper WOC time), the wellhead will be cut off and salvaged. At this point, a standard 11" 5x10x10 MNDS wellhead will be welded onto the 10-3/4" casing for the remainder of drilling operations on the pad. See attached schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	590	Water-Based Mud	8.4-8.6	40-60	N/C
590	4302	Brine	9.8-10.0	35-45	N/C
4302	10323	Water-Based Mud	8.4-9.6	38-50	N/C
10323	Pilot TD (12623)	Water-Based Mud	10.0-13.5	42-48	<10cc
10323	21602	Oil-Based Mud	10-12.5	35-50	N/C

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

Oxy proposes to drill out the 16" surface casing shoe with a saturated brine system from 590' - 4302', which is the intermediate casing point. The remainder of the intermediate will be water based mud. Water-based mud will be employed to also drill the pilot. After plugging back, will employ non aqueous fluids (OBM) to drill the curve and lateral to the TD of the well at 21602'.

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing		
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.	
No	Logs are planned based on well control or offset log information.	
No	Drill stem test? If yes, explain	
No	Coring? If yes, explain	
Additional logs planned		**Interval**
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	Surface Shoe – TD
Yes	PEX	Triple Combo Delaware - Top Bone Spring and 2nd Intermediate - Pilot TD

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	8862 PSI (Pilot TD) & 7469 PSI (Lateral TD)
Abnormal Temperature	No

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately, weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facts of operation

	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe. • We plan to drill the two well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe. • Oxy requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that Oxy would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes

Total estimated cuttings volume: 2049.7 bbls.

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Philippe Haffner	Drilling Engineer	713-985-6379	832-767-9047
Diego Tellez	Drilling Engineer Supervisor	713-350-4602	713-303-4932
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
John Willis	Drilling Manager	713-366-5556	713-259-1417

APD ID: 10400027338 **Submission Date:** 02/23/2018

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

IridiumMDP1_28_21FdCom171H_ExistRoads_20180215084404.pdf

Existing Road Purpose: FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

IridiumMDP1_28_21FdCom171H_NewRoad_20180215084428.pdf

New road type: LOCAL

Length: 666 Feet **Width (ft.):** 25

Max slope (%): 0 **Max grade (%):** 0

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Watershed Diversion every 200' if needed.

New road access plan or profile prepared? YES

New road access plan attachment:

IridiumMDP1_28_21FdCom171H_NewRoad_20180215084442.pdf

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 0

Offsite topsoil source description:

Onsite topsoil removal process: If available

Access other construction information: None

Access miscellaneous information: The access road will run from an existing pad going 641.1' north, then 25' east through pasture to northwest corner of the pad.
Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: Watershed Diversion every 200' if needed.

Road Drainage Control Structures (DCS) description: Watershed Diversion every 200' if needed.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

IridiumMDP1_28_21FdCom171H_ExistWells_20180215084504.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: a. In the event the well is found productive, the Sand Dunes Gold Central Tank Battery would be utilized and the necessary production equipment will be installed at the well site. See proposed facilities layout diagram. b. All flow lines will adhere to API standards. They will consist of 3 – 4" composite flowlines operating 75% MAWP and 1 – 4" composite LP gas lift suction line operating 75% MAWP, surface to follow surveyed route. Survey of a strip of land 50' wide and 6749.8' in length crossing USA Land in Sections 28 & 29 T23S R31E, NMPM, Eddy County, NM and being 25' left and 25' right of the centerline survey. Two–8" gas lift line operating 1500 psig, buried, lines to follow surveyed route. Survey of a strip of land 30' wide and 2901.5' in length crossing USA Land in Sections 28 T23S R31E, NMPM, Eddy County,

NM and being 15' left and 15' right of the centerline survey, see attached. Surface Flowline Survey 18110639, dated 5/24/18 will replace Survey 1711073 dated 12/8/17. c. Electric line will follow a route approved by the BLM. Survey of a strip of land 30' wide and 358.8' in length crossing USA land in Sections 28 T23S R31E NMPM, Eddy County, NM and being 15' left and 15' right of the centerline survey, see attached. d. See attached for additional information on the Sand Dunes MDP1 North Corridor Surface Production Facilities.

Production Facilities map:

IridiumMDP1_28_21FdCom171H_FacilityPLEL_20180215084520.pdf

IridiumMDP1_28_21FdCom171H_LeaseFacilityInfo_20180215084532.pdf

IridiumMDP1_28_21FdCom171H_SurfFLAmd_20180530135233.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, OTHER, SURFACE CASING

Water source type: GW WELL

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: WATER WELL

Source land ownership: COMMERCIAL

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 2000

Source volume (acre-feet): 0.25778618

Source volume (gal): 84000

Water source and transportation map:

IridiumMDP1_28_21FdCom171H_GRRWtrSrc_20180215084647.pdf

IridiumMDP1_28_21FdCom171H_MesqWtrSrc_20180215084702.pdf

Water source comments: This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations (Gregory Rockhouse, Mesquite) in the area and will be hauled to location by transport truck using existing and proposed roads.

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Primary - All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM/State/Fee approved pit or from prevailing deposits found on the location. Will use BLM recommended extra caliche from other locations close by for roads, if available. Secondary - The secondary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cubic yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel: a. The top 6" of topsoil is pushed off and stockpiled along the side of the location. b. An approximate 120' X 120' area is used within the proposed well site to remove caliche. c. Subsoil is removed and piled alongside the 120' X 120' within the pad site. d. When caliche is found, material will be stockpiled within the pad site to build the location and road. e. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road. f. Once the well is drilled the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad. Caliche will be provided from a pit located in Section 7 T24S R31E. Water will be provided from a frac pond located in Sections 7 T24S R31E.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Water-Based Cuttings, Water-Based Mud, Oil-Based Cuttings, Oil-Based Mud, Produced Water

Amount of waste: 2049.7 barrels

Waste disposal frequency : Daily

Safe containment description: Haul-Off Bins

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: An approved facility that can process drill cuttings, drill fluids, flowback water, produced water, contaminated soils, and other non-hazardous wastes.

Reserve Pit

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins. Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

IridiumMDP1_28_21FdCom171H_WellSiteCL_20180215084858.pdf

Comments: V-Door-East - CL Tanks-North - 445' X 620' – 4 Well Pad

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** IRIDIUM MDP1 28-21 FEDERAL COM

Multiple Well Pad Number: 11H

Recontouring attachment:

Drainage/Erosion control construction: Reclamation to be wind rowed as needed to control erosion

Drainage/Erosion control reclamation: Reclamation to be wind rowed as needed to control erosion

Well pad proposed disturbance (acres): 6.33	**Well pad interim reclamation (acres):** 2.33	**Well pad long term disturbance (acres):** 4
Road proposed disturbance (acres): 0.46	**Road interim reclamation (acres):** 0.24	**Road long term disturbance (acres):** 0.21
Powerline proposed disturbance (acres): 0.25	**Powerline interim reclamation (acres):** 0.25	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 6.25	**Pipeline interim reclamation (acres):** 4.16	**Pipeline long term disturbance (acres):** 2.08
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0.33	**Other long term disturbance (acres):** 0
Total proposed disturbance: 13.29	**Total interim reclamation:** 7.31	**Total long term disturbance:** 6.29

Disturbance Comments: See Below

Reconstruction method: If the well is deemed commercially productive, caliche from the areas of the pad site not required for operations will be reclaimed. The original topsoil 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, and the area will be seeded with an approved BLM mixture to re-establish vegetation. 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 original topsoil will again be returned to the pad and contoured, as close as possible, to the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

Topsoil redistribution: The original topsoil will be returned to the area of the drill pad not necessary to operate the well.

Soil treatment: To be determined by the BLM.

Existing Vegetation at the well pad: To be determined by the BLM at Onsite.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: To be determined by the BLM at Onsite.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: To be determined by the BLM at Onsite.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: To be determined by the BLM at Onsite.

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: JIM

Last Name: WILSON

Phone: (575)631-2442

Email: jim_wilson@oxy.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: To be determined by the BLM.

Weed treatment plan attachment:

Monitoring plan description: To be determined by the BLM.

Monitoring plan attachment:

Success standards: To be determined by the BLM.

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

Operator Name: OXY USA INCORPORATED

Well Name: IRIDIUM MDP1 28-21 FEDERAL COM **Well Number:** 171H

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: OTHER

Describe: Electric Line

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,285003 ROW – POWER TRANS,288100 ROW – O&G Pipeline,289001 ROW- O&G Well Pad

ROW Applications

SUPO Additional Information: Permian Basin MOA - see attached SUPO and to be submitted after APD acceptance. GIS Shapefiles available for BLM download from shared FTP site after APD submittal.
Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

IridiumMDP1_28_21FdCom171H_GasCapPlan_20180215085026.pdf
IridiumMDP1_28_21FdCom171H_MiscSvyPlats_20180215085040.pdf
IridiumMDP1_28_21FdCom171H_StakeForm_20180215085052.pdf
IridiumMDP1_28_21FdCom171H_SUPO_20180215085104.pdf

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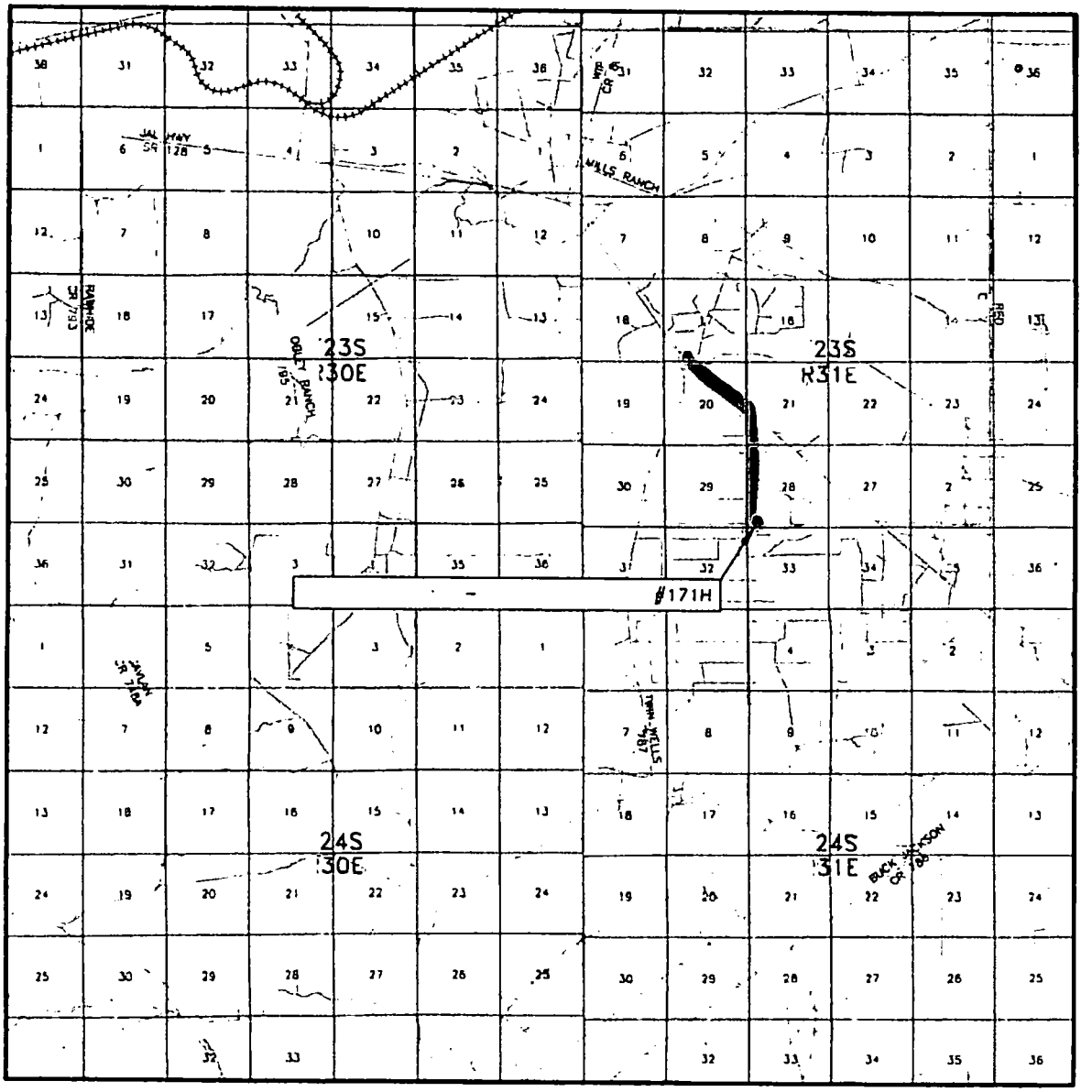


23-S R0E

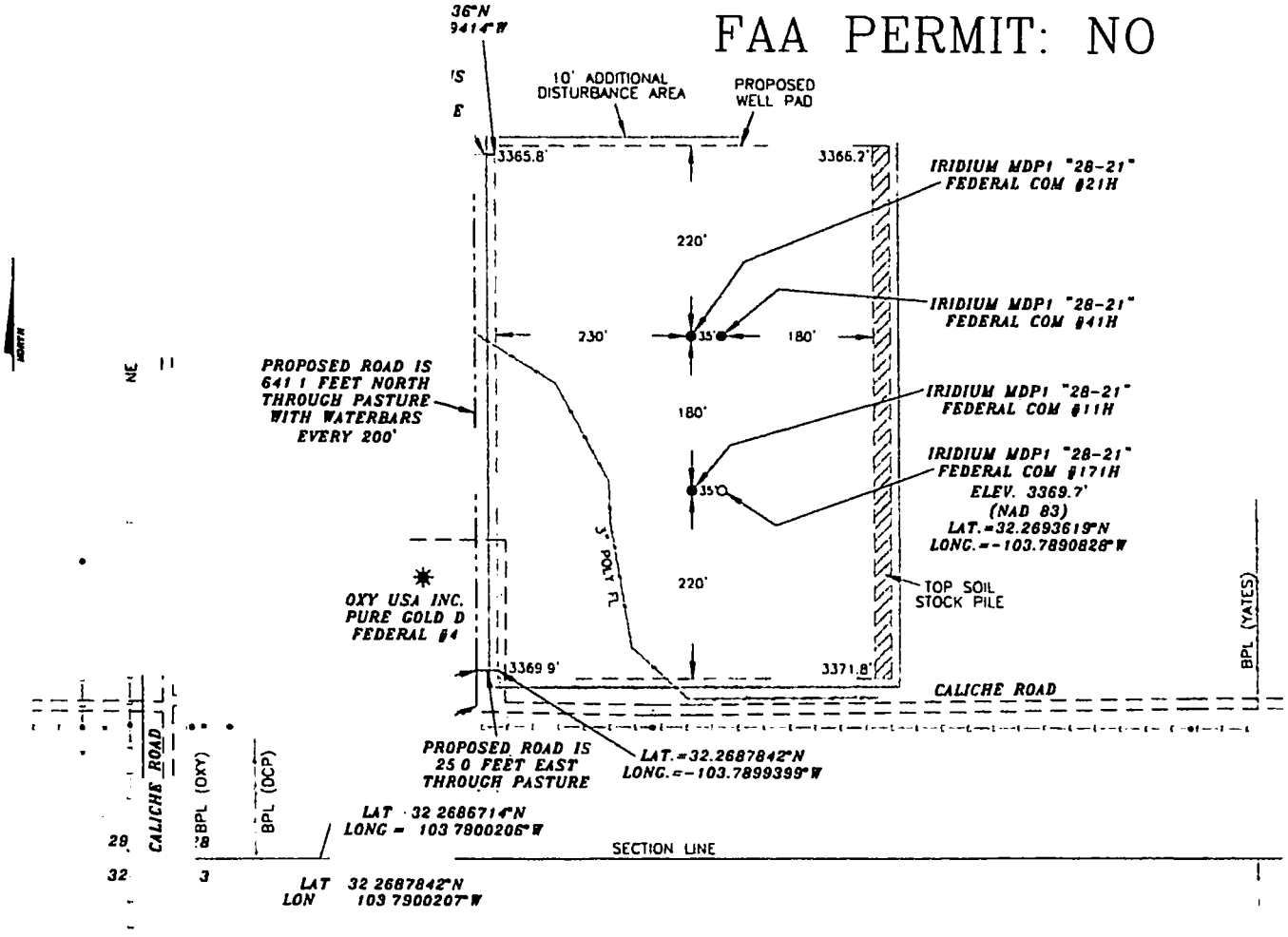
SCALE: 1" = 2 MILES

S eying
)X 393 - 310 W TAYLOR
.W MEXICO - 575-393-9146

.TE HWY. #128 AND EDDY COUNTY ROAD
HWY. #128 FOR 1.1 MILES, TURN RIGHT
.EFT AND GO EAST FOR 0.1 MILES, TURN
T, TURN RIGHT AND GO EAST FOR 25.0

OXY USA INC.
1 "28-21" FEDERAL COM #171H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

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 10/3/17

Terry J. Asel N.M. R.P.L.S. No 15079

LEGEND

- DENOTES PROPOSED WELL PAD
- DENOTES PROPOSED ROAD
- DENOTES STOCK PILE AREA
- DENOTES EXISTING WELL

10' 0 200' 400' FEET

SCALE: 1"=200'

A l ur ing

OR -9146

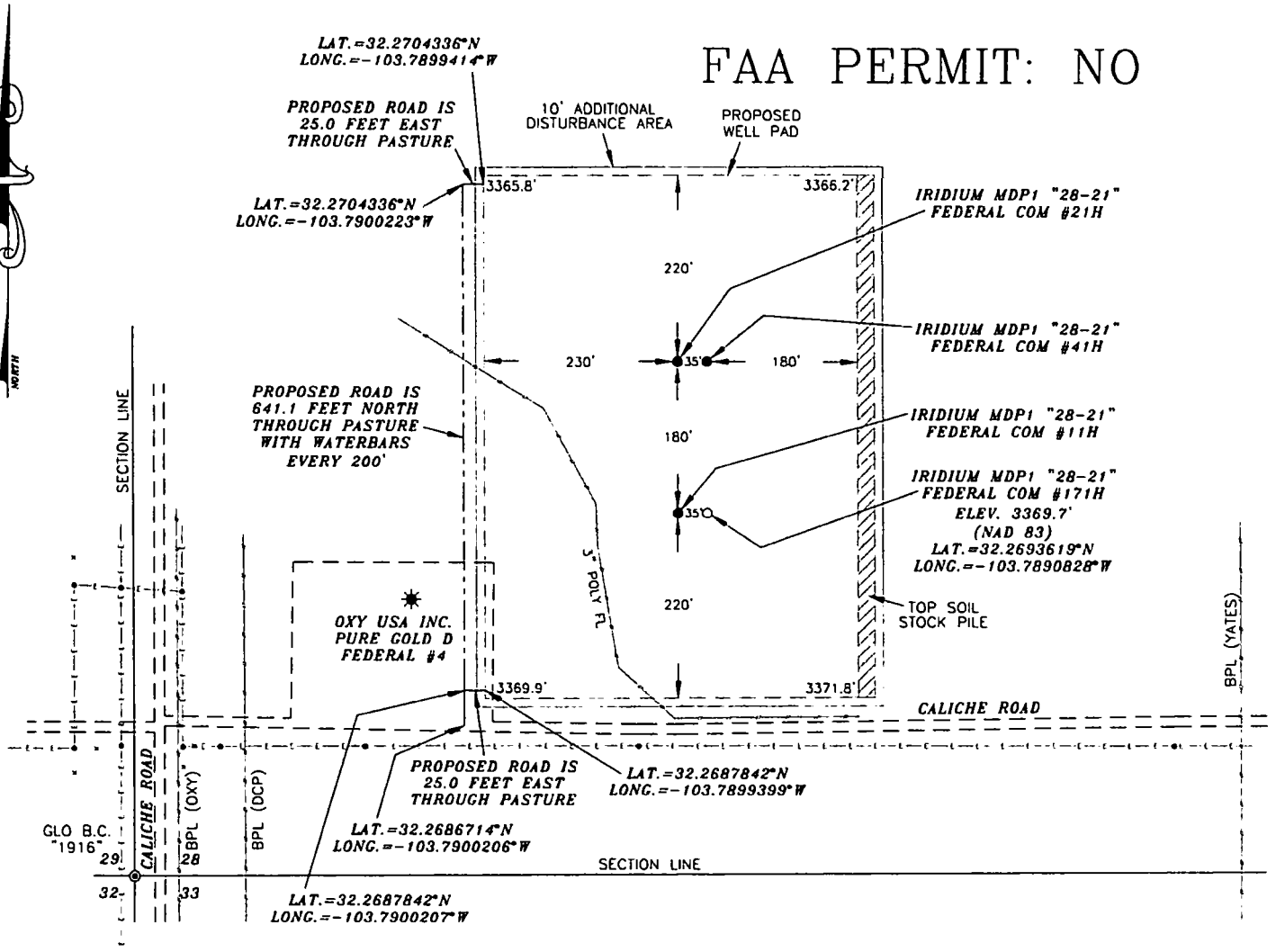
OXY USA INC.

1 MDP1 "28-21" FEDERAL COM #171H
D AT 430' FSL & 683' FWL IN SECTION
OWNSHIP 23 SOUTH, RANGE 31 EAST,
M.P.M., EDDY COUNTY, NEW MEXICO

vey Date: 09/20/17	Sheet 1 of 1 Sheets	
W. . Number: 170920WL-a	Drawn By: KA	Rev:
e: 10/27/17	170920WL-a	Scale:1"=200'

OXY USA INC.
IRIDIUM MDP1 "28-21" FEDERAL COM #171H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

- – – – – DENOTES PROPOSED WELL PAD
- —·—·— DENOTES PROPOSED ROAD
- ▨ DENOTES STOCK PILE AREA
- ✸ DENOTES EXISTING WELL

200' 0 200' 400' FEET

SCALE: 1"=200'

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 10/31/2017

Terry J. Asel N.M. R.P.L.S. No. 15079

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

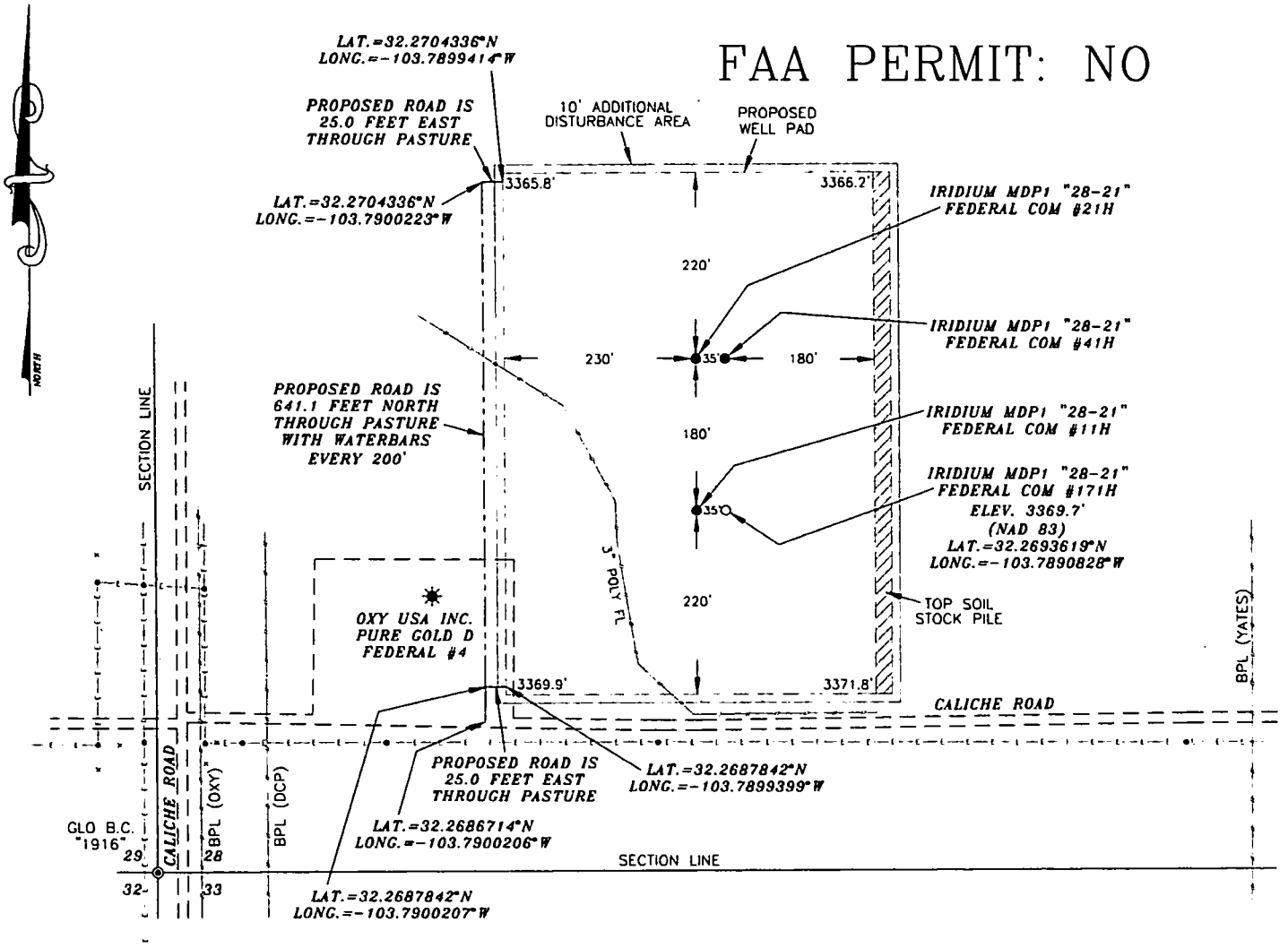
OXY USA INC.

IRIDIUM MDP1 "28-21" FEDERAL COM #171H
LOCATED AT 430' FSL & 683' FWL IN SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 09/20/17	Sheet 1 of 1 Sheets	
W.O. Number: 170920WL-a	Drawn By: KA	Rev:
Date: 10/27/17	170920WL-a	Scale: 1"=200'

OXY USA INC.
IRIDIUM MDP1 "28-21" FEDERAL COM #171H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

- – – – – DENOTES PROPOSED WELL PAD
- —·—·— DENOTES PROPOSED ROAD
- ▨ DENOTES STOCK PILE AREA
- ✷ DENOTES EXISTING WELL

200' 0 200' 400' FEET

SCALE: 1"=200'

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 10/31/2017

Terry J. Asel N.M. R.P.L.S. No. 15079

Asel Surveying

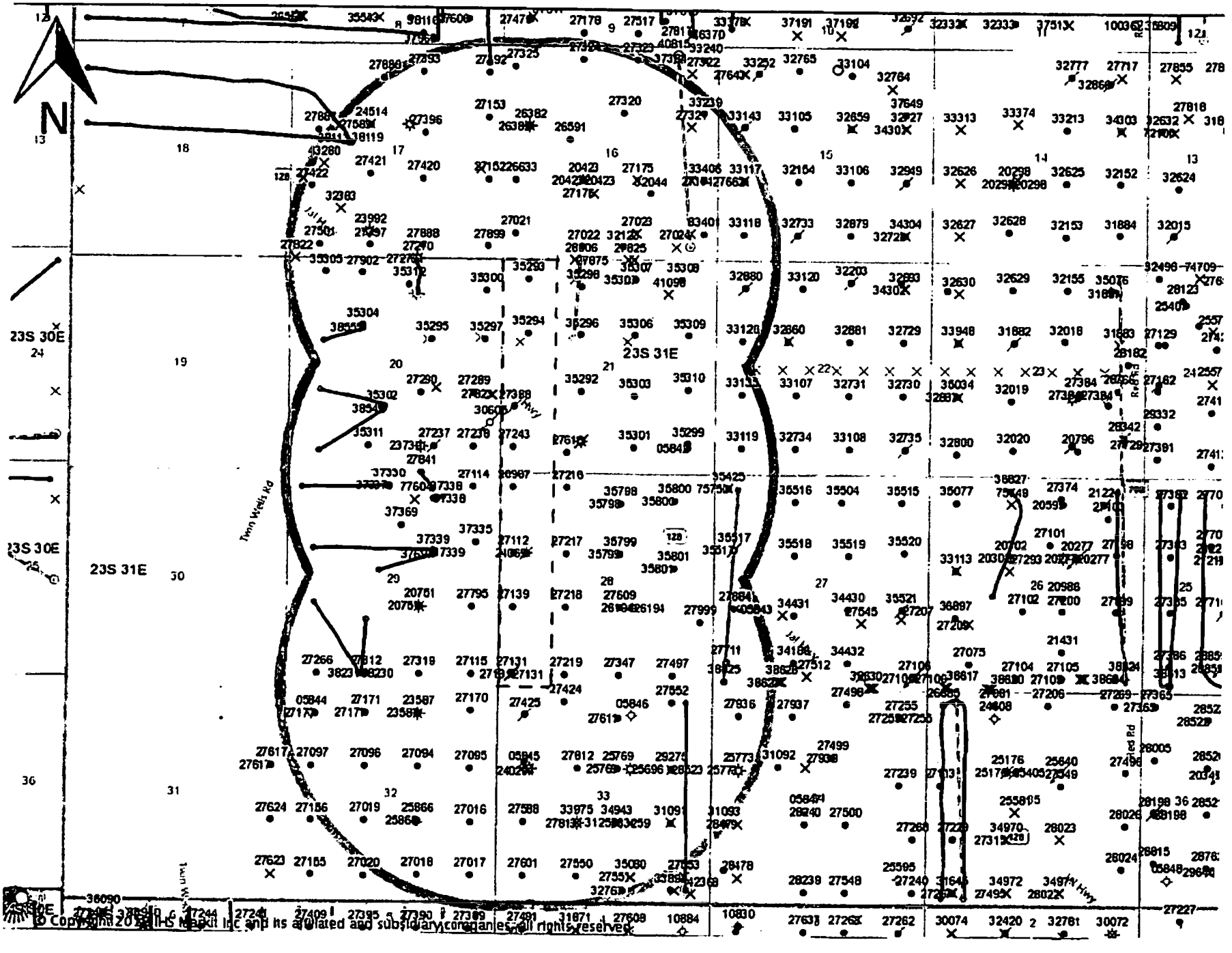
P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

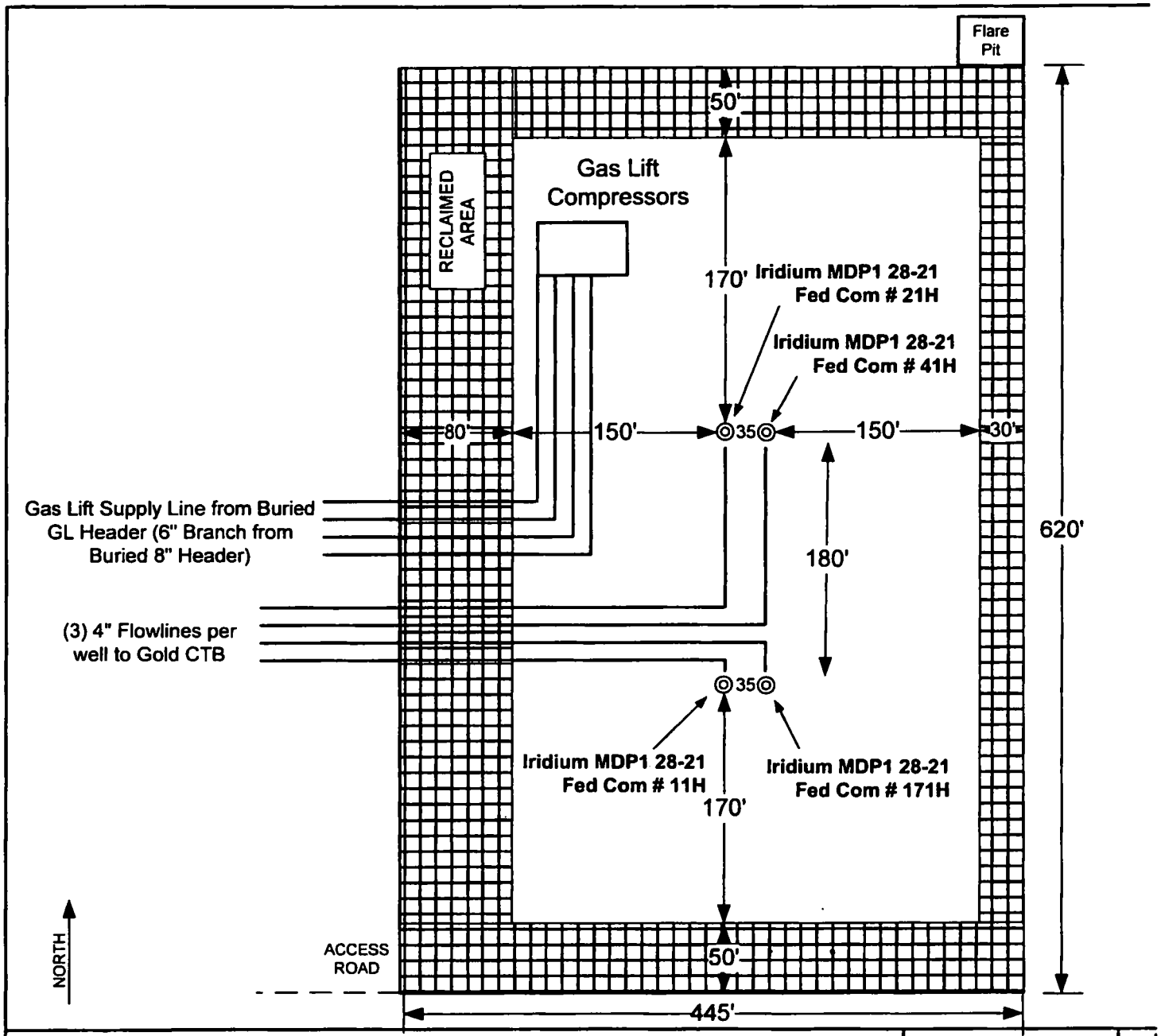
OXY USA INC.

IRIDIUM MDP1 "28-21" FEDERAL COM #171H
LOCATED AT 430' FSL & 683' FWL IN SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

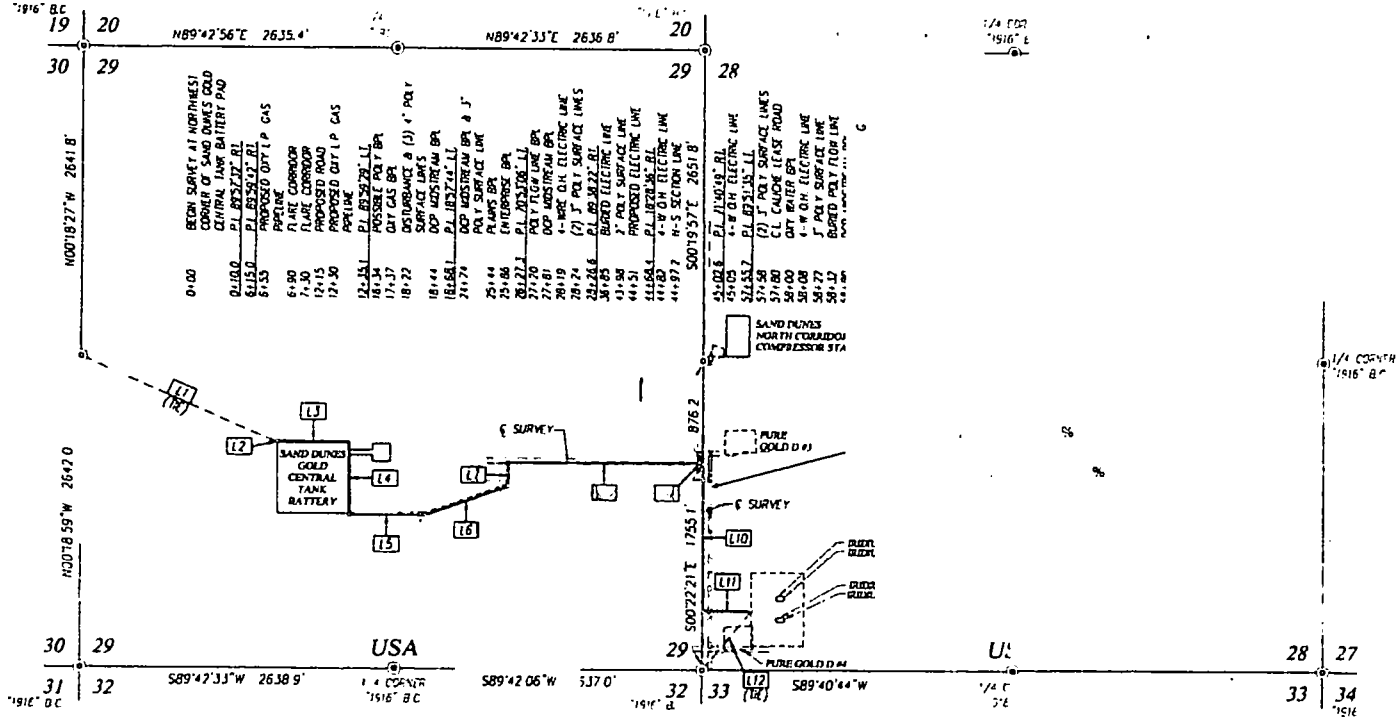
Survey Date: 09/20/17	Sheet 1 of 1 Sheets	
W.O. Number: 170920WL-a	Drawn By: KA	Rev:
Date: 10/27/17	170920WL-a	Scale:1"=200'

ridium MDP1 28-21 Federal Com - 1 Mile AOR





REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE



LINE	BEARING	DISTANCE
L1 (TIE)	S66°34'21"E	1800.7'
L2	N00°19'55"W	10.0'
L3	N89°37'37"E	605.0'
L4	S00°22'41"E	620.1'
L5	N89°37'50"E	633.0'
L6	N70°40'06"E	759.2'
L7	N00°13'00"W	199.3'
L8	N89°25'22"E	1641.8'
L9	S72°06'02"E	34.2'
L10	S00°25'13"E	1755.1'
L11	N89°43'12"E	412.0'
L12 (TIE)	N39°33'33"E	851.6'

LEGEND

(•) DENOTES FOUND CORNER

1000 0 1C 200

Scale: 1"=1000'

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR [illegible]39, SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UP[illegible]ICH OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE [illegible]HIS THE MINIMUM STANDARDS FOR [illegible]VEYING [illegible] NEW MEXICO, A[illegible] OF MY KNOWLEDGE AND BELIEF.

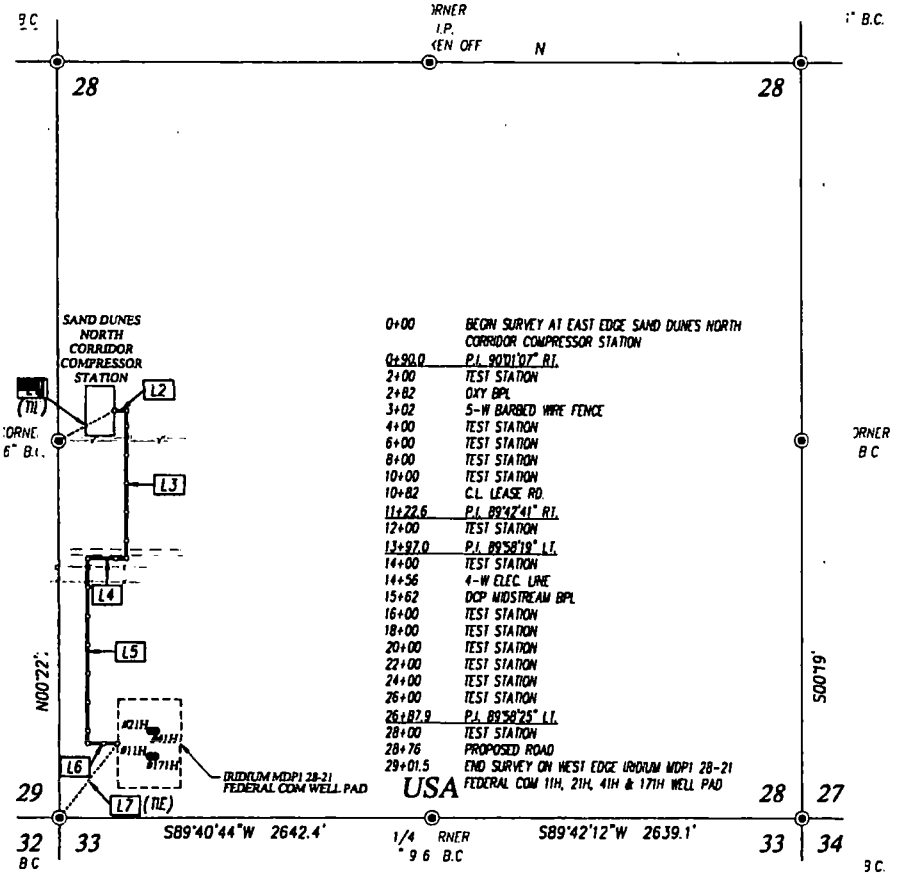
RONALD J. EIDSON [illegible] 12

OXY U.S.A [redacted]

SURVEY FOR A SURFACE FLO[illegible]
IRIDIUM MDP1 28-21 FED[illegible]
WELLS 11H, 171H, 41H[illegible]
CROSSING SECTIONS 28,
TOWNSHIP 23 SOUTH, RANGE 3[illegible]
EDDY COUNTY, NEW [illegible]

Survey Date: 11/07/17 | CAD Date: 12[illegible]

W.O. No.: 17111073 | Rev: . | Rel. W.[illegible]



0+00	BEGIN SURVEY AT EAST EDGE SAND DUNES NORTH CORRIDOR COMPRESSOR STATION
0+90.0	P.I. 90°01'07" RT.
2+00	TEST STATION
2+82	OXY BPL
3+02	5-W BARBED WIRE FENCE
4+00	TEST STATION
6+00	TEST STATION
8+00	TEST STATION
10+00	TEST STATION
10+82	C.L. LEASE RD.
11+22.6	P.I. 89°42'41" RT.
12+00	TEST STATION
13+97.0	P.I. 89°58'19" LT.
14+00	TEST STATION
14+56	4-W ELEC. LINE
15+62	DCP MIDSTREAM BPL
16+00	TEST STATION
18+00	TEST STATION
20+00	TEST STATION
22+00	TEST STATION
24+00	TEST STATION
26+00	TEST STATION
26+87.9	P.I. 89°58'25" LT.
28+00	TEST STATION
28+76	PROPOSED ROAD
29+01.5	END SURVEY ON WEST EDGE IRIDIUM MDP1 28-21 FEDERAL COM 11H, 21H, 41H & 171H WELL PAD

LINE	BEARING	DISTANCE
L1 (TIE)	N61°27'23"E	449.8'
L2	N89°56'13"E	90.0'
L3	S00°02'40"E	1032.6'
L4	S89°40'01"W	274.4'
L5	S00°18'18"E	1290.9'
L6	N89°43'17"E	213.6'
L7 (TIE)	N38°27'34"E	667.0'

DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 2901.5 FEET OR 0.549 MILES IN LENGTH CROSSING USA LAND IN SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM, "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY AT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson

DATE: _____ 2018

RONALD J. EIDSON NEW MEXICO 3239 PROFESSIONAL SURVEYOR

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 FEET

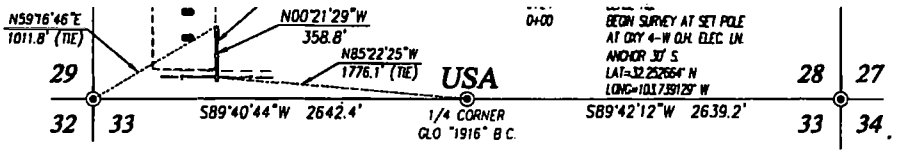
Scale 1" = 1000'

OXY U.S.A. INC.

SURVEY FOR A BURIED GAS PIPELINE TO IRIDIUM MDP1 28-21 FEDERAL COM 11H, 21H, 41H & 171H WELLS CROSSING SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 11/7/17	CAD Date: 11/27/17	Drawn By: DSS	
W.O. No.: 17111044	Rev: 02/14/18	Rel. W.O.:	Sheet 1 of 1

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000



DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 358.8 FEET OR 0.068 MILES IN LENGTH CROSSING USA LAND IN SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983. (NAD83).

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson

DATE: 12/2018

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

OXY U.S.A. INC.

SURVEY FOR AN ELECTRIC LINE TO THE IRIDIUM MDP1 28-21 FEDERAL COM #11H, #21H, #41H & #171H WELLS CROSSING SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 12/11/17	CAD Date: 1/15/18	Drawn By: ACK
W.O. No.: 17111152	Rev: .	Rel. W.O.:	Sheet 1 of 1

Oil Gathering CTB Site

Oil will be pumped into (1) 8" buried pipeline operating less than 750 psig. This will be routed to the Silver CTB (Sand Dunes North Corridor CTB) where it will be sold via pipeline through Centurion oil sales (3rd Party Processor).

Reference Plats:

(4) John West Surveying Company W.O. No: 17110262 Survey: 4/7/17 CAD: 4/18/17
(2) John West Surveying Company W.O. No: 17111174 Survey: 12/13/17 CAD: 2/5/18

Production Flowlines

Each well will have (3) surface laid flowlines operating at less than 75% of the MAWP of the flowline per the survey plats from the well site to the CTB following access roads.

Reference plats per well APD package - FacilityPLEL

Gas Lift Compressor Site, Suction, and Injection Lines

Wells with gas lift as their artificial lift mechanism in the North Corridor development will be supported by a pair of centralized gas lift compressor stations. This gas lift compressor stations will be located on a 360'x260' pad in Section 28 Township 23 South Range 31 East, and Section 34 Township 23 South Range 31 East. Each will be fed by a buried 20" HDPE line from the Gold CTB operating at less than 125 PSIG. The discharge of the compressors will feed into (1) 8" gas injection trunk line operating < 1,500 PSIG connecting to each well pad.

Reference Plats:

(1) John West Surveying Company W.O. No: 17111197 Survey: 1/3/18 CAD: 2/5/18
(1) John West Surveying Company W.O. No: 17111198 Survey: 1/3/18 CAD: 1/29/18 REV: 2/2/18
(1) John West Surveying Company W.O. No: 17111044 Survey: 11/7/17 CAD: 11/27/17
(1) John West Surveying Company W.O. No: 17111023 Survey: 10/31/17 CAD: 11/13/17
(1) John West Surveying Company W.O. No: 17111063 Survey: 11/6/17 CAD: 12/6/17

Salt Water Disposal

Produced water will be pumped into (3) 16" HDPE buried lines operating at less than 300 PSIG. This produced water line will also connect to the OXY water treatment facility in Section 4 Township 24S Range 31E and will connect to the rest of the Sand Dunes disposal system. An additional (1) 16" HDPE buried line will be required to transfer treated water from treatment disposal water from treatment systems to ponds.

Reference Plats:

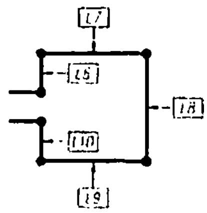
(2) John West Surveying Company W.O. No: 17111174 Survey: 12/13/17 CAD: 2/5/18

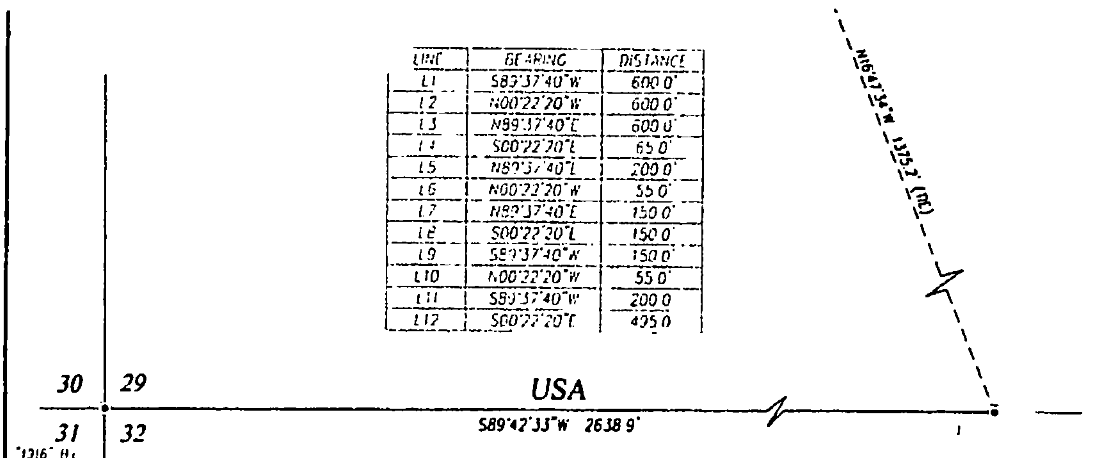
than 125 PSIG. This gas line will
e (3rd Party Processor) tie-in point per the

vey: 11/1/17 CAD: 11/13/17

ing electrical infrastructure to connect to the
mpressor sites, and water treatment facility.

ey: 12/11/17 CAD: 1/16/18
ey: 12/08/17 CAD: 1/16/18
ey: 12/08/17 CAD: 1/16/18
ey: 12/12/17 CAD: 1/16/18





LINE	BEARING	DISTANCE
L1	S89°37'40"W	600.0'
L2	N00°22'20"W	600.0'
L3	N89°37'40"E	600.0'
L4	S00°22'20"E	65.0'
L5	N89°37'40"E	200.0'
L6	N00°22'20"W	55.0'
L7	N89°37'40"E	150.0'
L8	S00°22'20"E	150.0'
L9	S89°37'40"W	150.0'
L10	N00°22'20"W	55.0'
L11	S89°37'40"W	200.0
L12	S00°22'20"E	495.0

DESCRIPTION

SURVEY OF A TRACT OF LAND SITUATED IN SECTION 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS.

BEGINNING AT THE SOUTHEAST CORNER OF THIS TRACT, WHICH LIES N16°47'34"W 1375.2 FEET FROM THE SOUTH QUARTER CORNER THEN S89°37'40"W 600.0 FEET; THEN N00°22'20"W 600.0 FEET, THEN N89°37'40"E 600.0 FEET, THEN S00°22'20"E 65.0 FEET; THEN N89°37'40"E 200.0 FEET; THEN N00°22'20"W 55.0 FEET; THEN N89°37'40"E 150.0 FEET; THEN S00°22'20"E 150.0 FEET; THEN S89°37'40"W 150.0 FEET; THEN N00°22'20"W 55.0 FEET; THEN S89°37'40"W 200.0 FEET, THEN S00°22'20"E 495.0 FEET TO THE POINT OF BEGINNING, CONTAINING 8.96 ACRES MORE OR LESS

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

LEGEND

- ⦿ DENOTES FOUND CORNER AS NOTED
- ● DENOTES SET SPIKE NAIL

200 0 200 400 FEET

Scale: 1"=200'

I, RONALD J EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF

RONALD J EIDSON *[signature]*

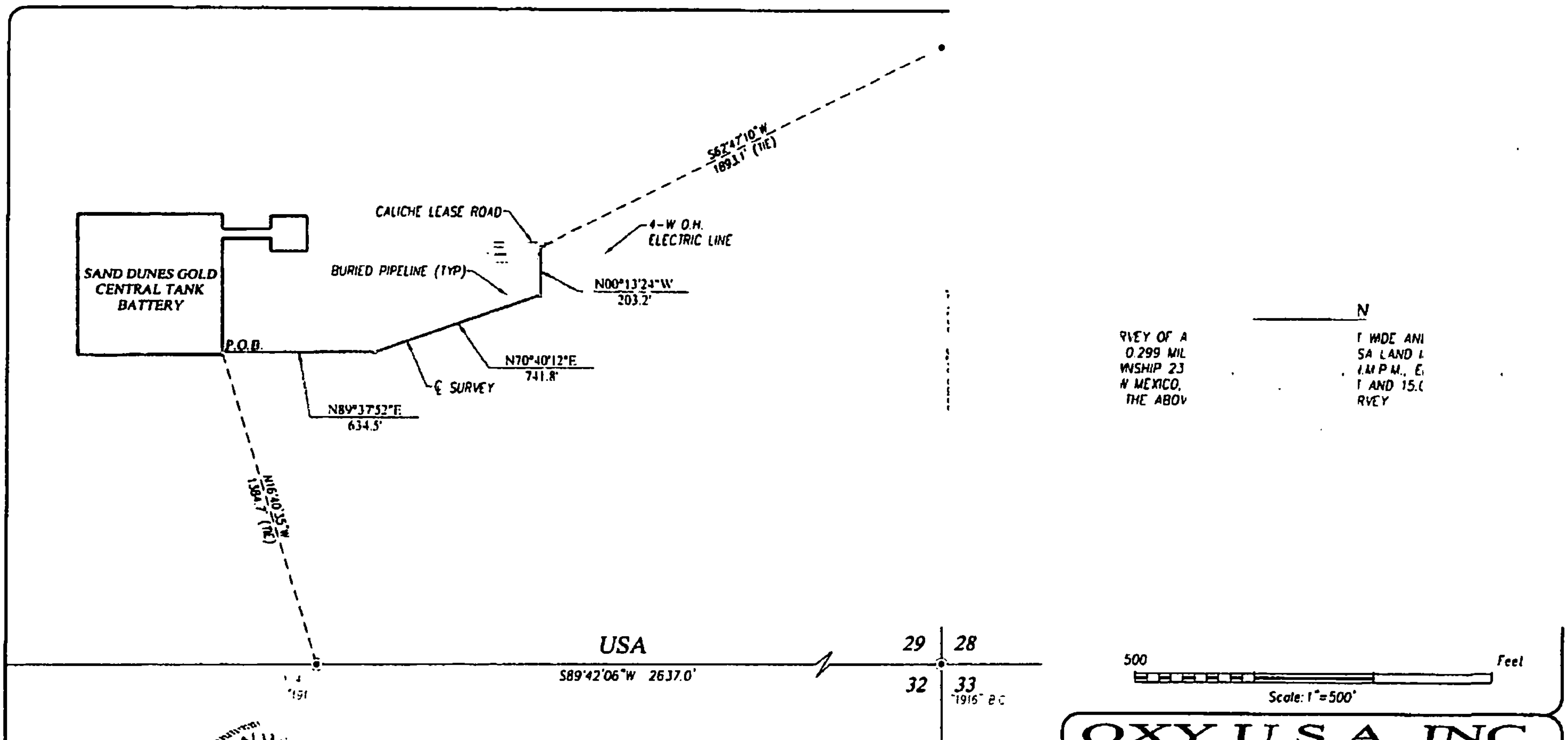
DATE 11/16/2017

OXY U.S.A. INC.

SURVEY FOR SAND DUNES GOLD CENTRAL TANK BATTERY LOCATED IN SECTION 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

Survey Date: 11/1/17	CAD Date: 11/14/17	Drawn By: DSS	
W.O. No.: 17111039	Rev.:	Rel. W.O.:	Sheet 1 of 1



RVEY OF A ... T WIDE AN
0.299 MIL ... SA LAND
WNSHIP 23 ... I.M.P.M., E
W MEXICO, ... T AND 15.
THE ABOV ... RVEY

OXY U.S.A. INC

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IT IS TRUE AND CORRE TO THE BEST OF MY KNOWLEDGE AND BELIEF

RONALD J. EIDSON ____

DATE: 11/16/1 ____

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AN THE NEW MEXICO COORDINATE SYSTEM "NEW MEXIC NORTH AMERICAN DATUM 1983. DISTANCES ARE SU

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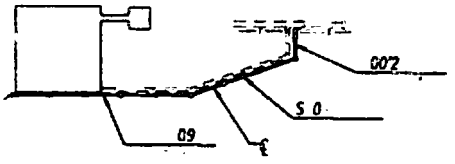
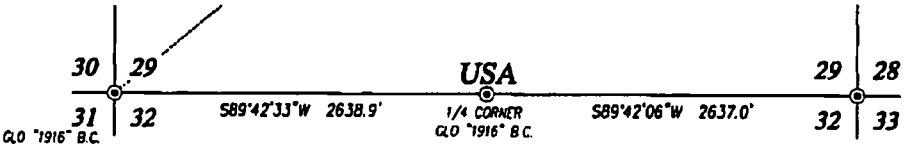
TBPLS# 10021000





DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AN 2246.9 FEET OR 0.425 MILES IN LENGTH CROSSING USA LAND IN SECTION 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET R T F THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CON ORM THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VAL .S

2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE R A VE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR N 3239, DO HEREBY CER FY THAT THIS SURVEY PLAT AND THE ACTUA SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS OR SURVEYING IN NEW MEXICO AND THAT IT IS TRUE AND CORR CT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson

DATE: 12018

RONALD J. EIDSON NEW MEXICO 3239 PROFESSIONAL SURVEYOR

LEGEND

◉ DENOTE FOUND CORNER AS NOTED

1000 E 0 1000 2000 FEET

Scale: 1"=1000'

OXY U.S.A. INC.

SURVEY FOR AN ELECTRIC LINE TO THE SAND DUNES NORTH CORRIDOR GOLD CTB CROSSING SECTION 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

urvey Date: 12/12/17	CAD Date: 1/16/18		Drawn By: ACK
W.O. No.: 17111176	Rev: .	Rel. W.O.:	Sheet 1 of 1

GOLD CTB Sec 29, T23S, R31E

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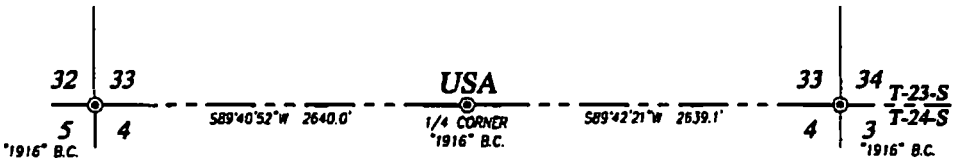

DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 160.0 FEET OR 0.030 MILES IN LENGTH CROSSING USA LAND IN SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: ___ _ 2017

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

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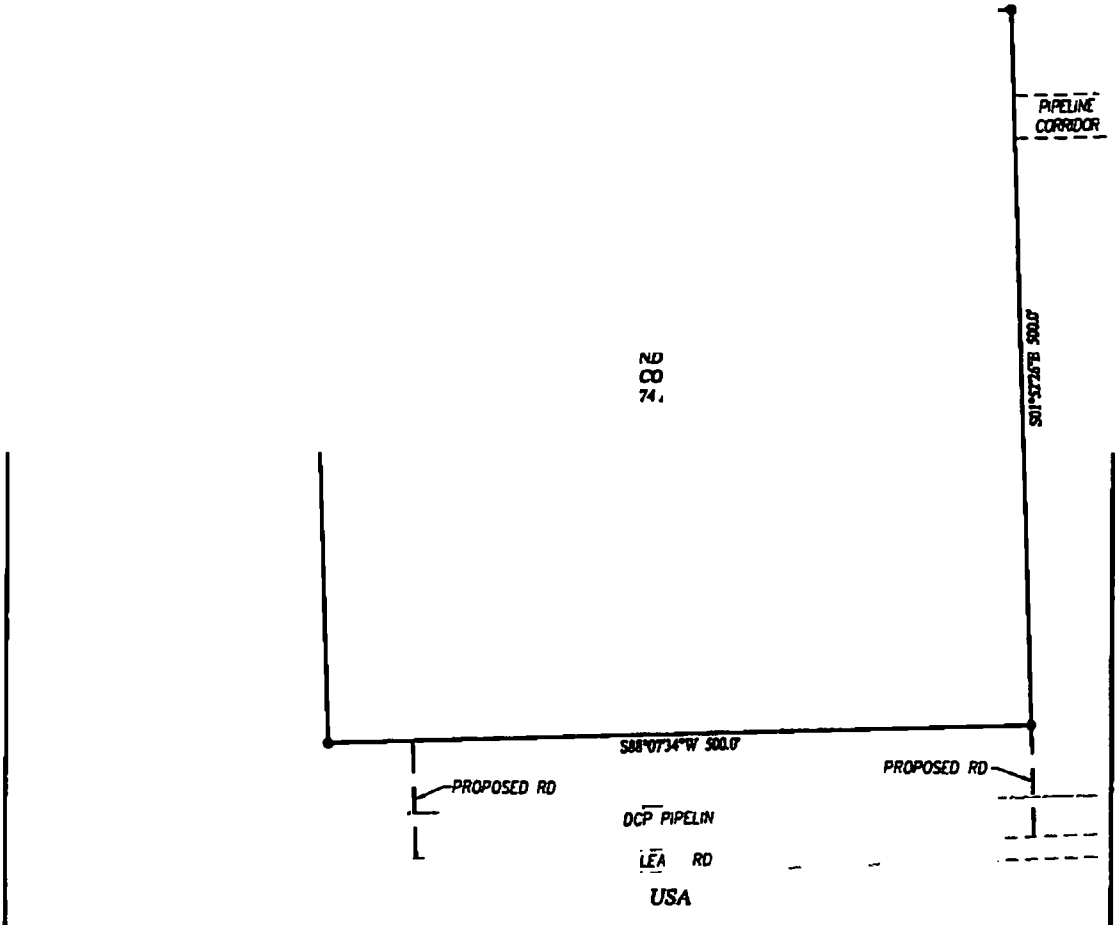
OXY U.S.A. INC.

SURVEY FOR TWO PROPOSED ROADS TO THE SAND DUNES NORTH CORRIDOR CTB CROSSING SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 4/7/17	CAD Date: 4/18/17	Drawn By: ACK
W.O. No.: 17110262	Rev. .	Rel. W.O.:	Sheet 1 of 1



LEGEND

- ◉ DENOTES FOUND CORNER AS NOTED
- ● DENOTES SET SPIKE NAIL

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATES "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald Eidson

DATE: 12017

DESCRIPTION:

A TRACT SITUATED IN THE NORTHWEST QUARTER OF SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER WHICH LIES S00°19'16"E 1251.9 FEET AND N89°40'44"E 1918.5 FEET FROM THE NORTHWEST CORNER; THEN N88°07'34"E 500.0 FEET; THEN S01°52'26"E 500.0 FEET; THEN S88°07'34"W 500.0 FEET; THEN N01°52'26"W 500.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 5.74 ACRES MORE OR LESS.

100 0 100 200 Feet

Scale: 1" = 100'

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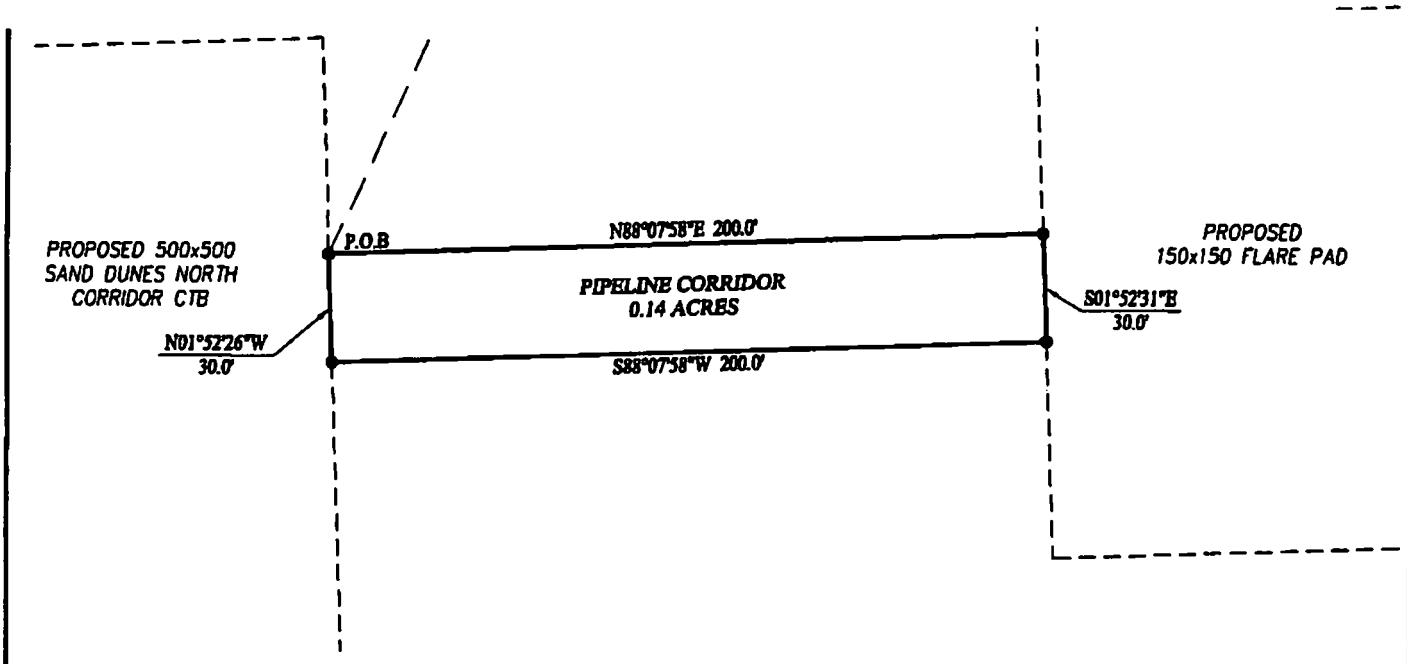
OXY U.S.A. INC.

SURVEY FOR A 500 x 500 SAND DUNES NORTH CORRIDOR CTB SITUATED IN THE NW/4 OF SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 4/7/17	CAD Date: 4/18/17	Drawn By: ACK
W.O. No.: 17110262	Rev: .	Rel. W.O.:	Sheet 1 of 1



USA

LEGEND

- ◉ DENOTES FOUND CORNER AS NOTED
- ● DENOTES SET SPIKE NAIL

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM, "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, A NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NEW MEXICO 3239 PROFESSIONAL SURVEYOR

RONALD J. EIDSON Ronald J. Eidson

DATE: 04/ 2017

DESCRIPTION:

A TRACT SITUATED IN THE NORTH HALF OF SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER WHICH LIES S09°24'10"W 1317.3 FEET FROM THE NORTH QUARTER CORNER; THEN N88°07'58"E 200.0 FEET; THEN S01°52'31"E 30.0 FEET; THEN S88°07'58"W 200.0 FEET; THEN N01°52'26"W 30.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 0.14 ACRES MORE OR LESS.

50 0 50 100 Feet

Scale: 1"=50'

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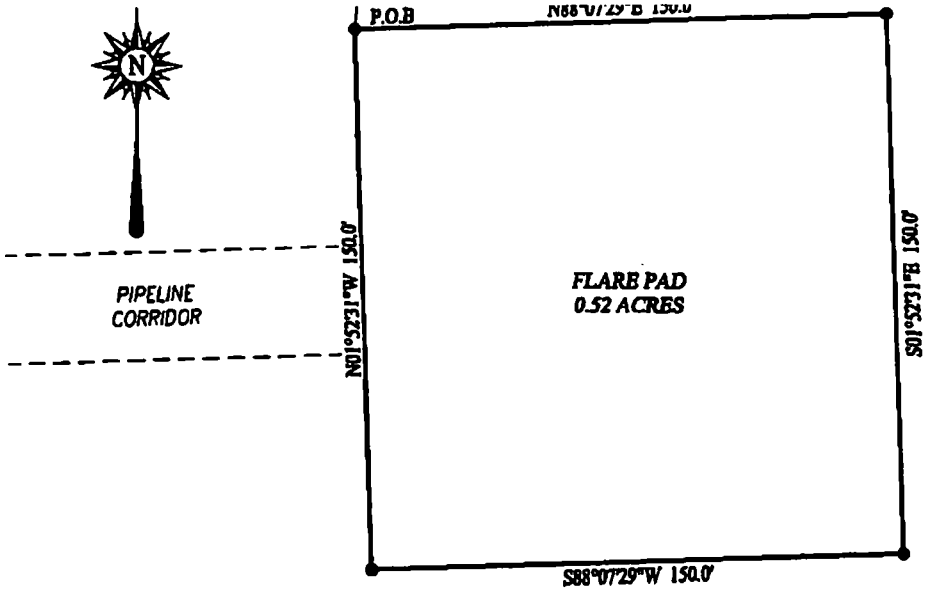
OXY U.S.A. INC.

SURVEY FOR A 200 x 30 PIPELINE CORRIDOR SITUATED IN THE NORTH HALF OF SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 4/7/14	CAD Date: 4/18/17	Drawn By: ACK
W.O. No.: 17110262	Rev: .	Rel. W.O.:	Sheet 1 of 1

28	27
33	34



USA

LEGEND

- ◉ DENOTES FOUND CORNER AS NOTED
- ● DENOTES SET SPIKE NAIL

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM, "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. ALL DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY AT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH 3239 BASE WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO AND THAT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 04/ 2017

RONALD J. EIDSON NEW MEXICO 3239 PROFESSIONAL SURVEYOR

DESCRIPTION:

A TRACT SITUATED IN THE NORTH HALF OF SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER WHICH LIES S00°48'07"W 1233.2 FEET FROM THE NORTH QUARTER CORNER; THEN N88°07'29"E 150.0 FEET; THEN S01°52'31"E 150.0 FEET; THEN S88°07'29"W 150.0 FEET; THEN N01°52'31"W 150.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 0.52 ACRES MORE OR LESS.

50 0 50 100 Feet

Scale: 1"=50'

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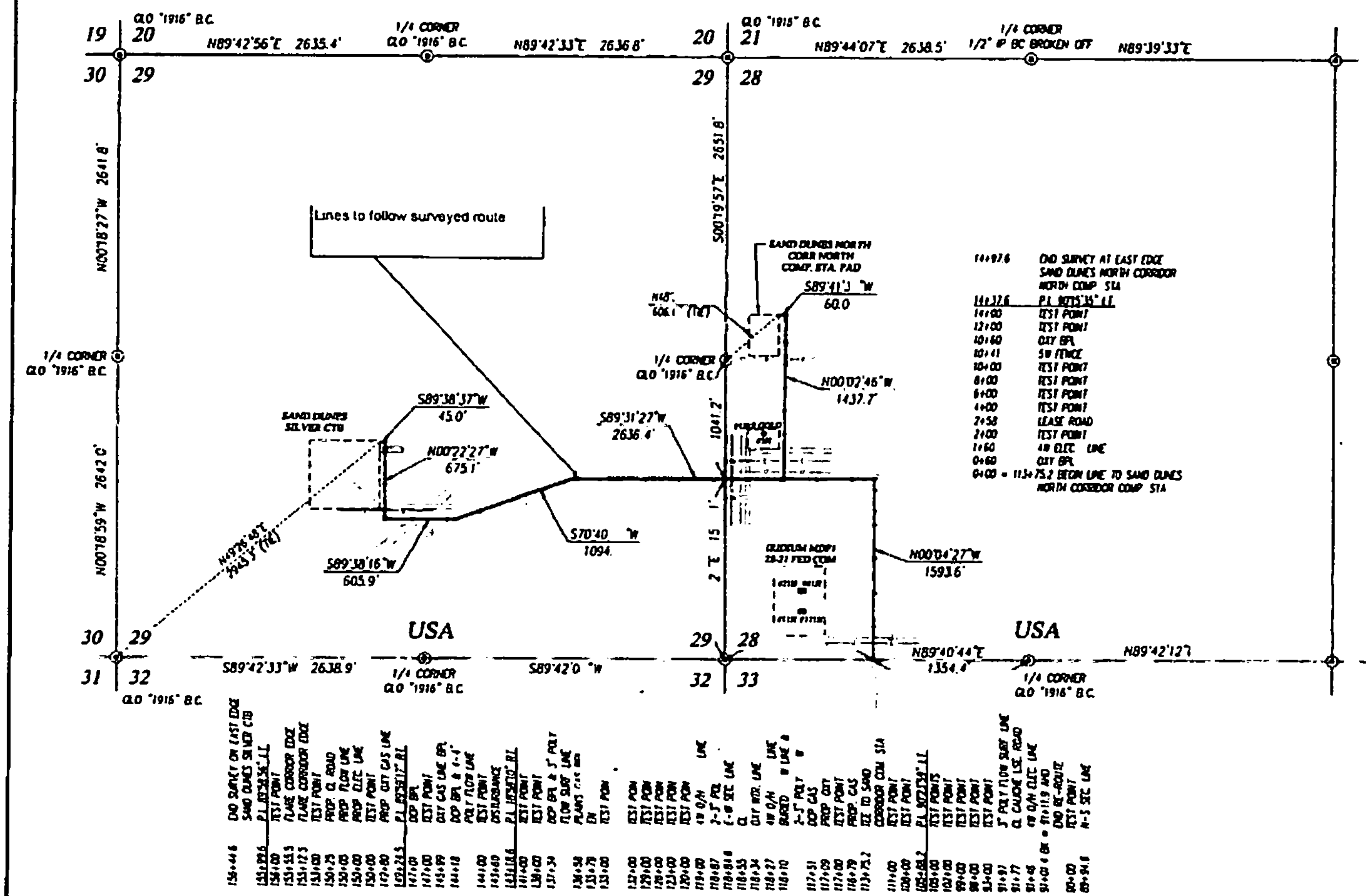
OXY U.S.A. INC.

SURVEY FOR A 150 x 150 FLARE PAD SITUATED IN THE NORTH HALF OF SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 4/7/14	CAD Date: 4/18/17	Drawn By: ACK
W.O. No.: 17110262	Rev: .	Rel. W.O.:	Sheet 1 of 1



I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON [signature] DATE: 02/07/2018

RONALD J. EIDSON NEW MEXICO 3239 PROFESSIONAL SURVEYOR

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO NORTH AMERICAN DATUM 1983. DISTANCES ARE SUR

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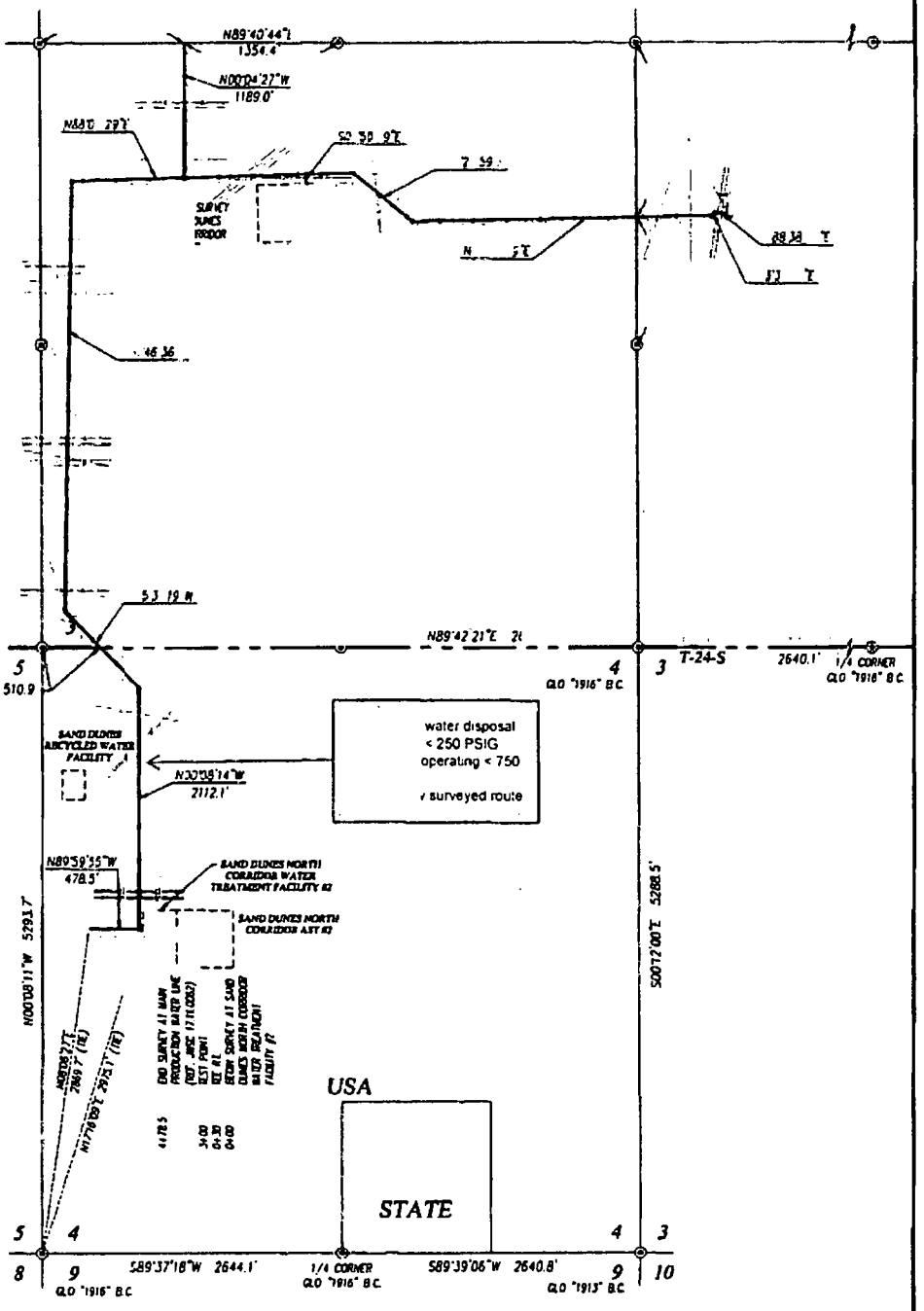
TBPLS# 10021000

(C) Lorenzo\2018\OXY U.S.A. INC\PIPELINES\17111174 BURIED WATER LINE TO THE MAIN PRODUCED WATER LINE IN SECTION 4 & 33, T24S, R31E



30+38.1	P.I. 45°17'55" RT
30+00	TEST POINT
27+00	TEST POINT
26+02.3	E-W SECTION LINE
26+01.5	4W B.W. FENCE
24+00	TEST POINT
21+12.1	P.I. 45°33'05" LT
21+00	TEST POINT
18+85	3" POLY SURF. LINE
18+00	TEST POINT
16+79	2" POLY SURF. LINE
16+03	2" POLY SURF. LINE
15+00	TEST POINT
12+00	TEST POINT
9+00	TEST POINT
6+00	TEST POINT
3+43	CITY WTR. LINE EPL
3+35	NO NAME EPL
3+25	MULTIPLE FLOW SURF. LINE
3+05	CALICHE LSE. ROAD
3+00	TEST POINT
2+93	2-3" POLY SURF. LINE
2+78	4W O/H ELEC. LINE
2+70	EPL CITY WTR. LINE
0+00 = 0+30.0	BEGIN SURVEY

DESCRIPTION

SURVEY FOR A STRIP OF LAND 50.0 FEET WIDE AND 14,520.9 FEET OR 2.750 MILES IN LENGTH CROSSING USA LAND IN SECTION 4, TOWNSHIP 24 SOUTH, RANGE 31 EAST AND SECTIONS 33 & 34, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

FOUND ORNE A N D

1000 0 2000 Feet

ale: 1"=1

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 12239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 02/07/2018

RONALD J. EIDSON — NEW MEXICO — 12239 — PROFESSIONAL SURVEYOR

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117 www.jwsc.biz

TBPLS# 10021000

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

OXY U.S.A. INC.

SURVEY FOR A BURIED WATER LINE TO THE MAIN PRODUCED WATER LINE, THE NORTH CORRIDOR SILVER CTB, SAND DUNES SILVER CTB AND SAND DUNES NORTH CORRIDOR COMPRESSOR SITE CROSSING SECTION 4, TOWNSHIP 24 SOUTH, RANGE 31 EAST, SECTION 33 & 34, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 12/13/17	CAD Date: 2/5/18		LSL
W.O. No.: 17111174	Rev.:	Rel. W.O.:	1 of 1

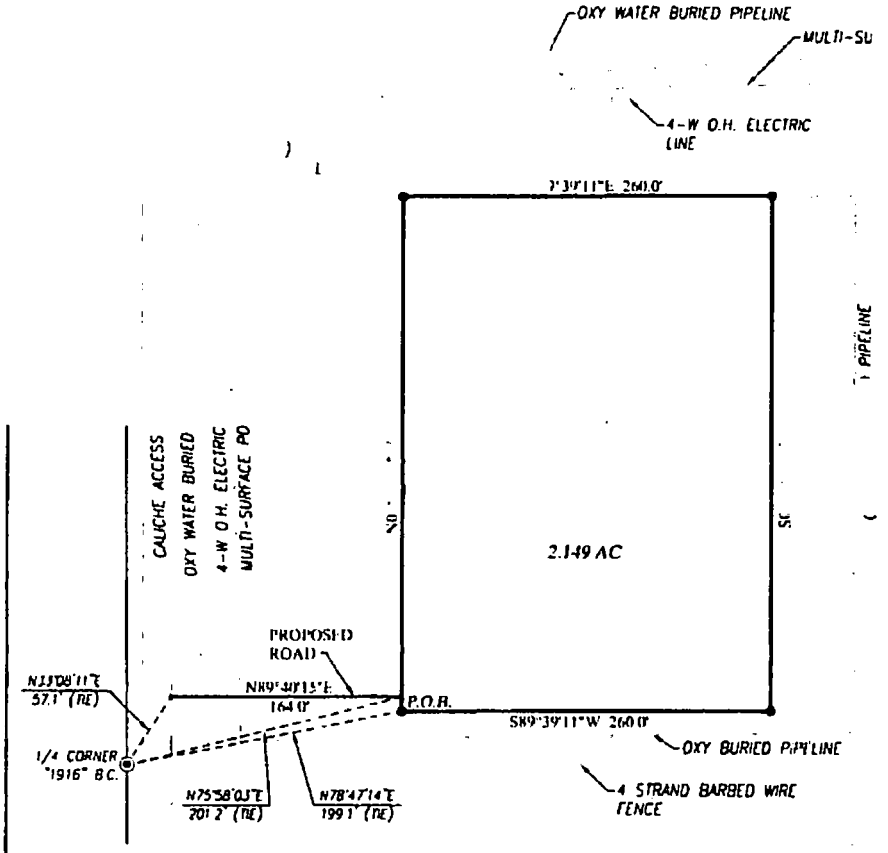
L:\Lovato\2018\OXY U.S.A. INC\PIPELINES\17111174 BURIED WATER LINE TO THE MAIN PRODUCED WATER LINE IN SECTION 4 & 33, T24S, R31E

"1916" B.C.

RNER
I.P

℄ 1.5'

USA



TRACT DESCRIPTION

SURVEY OF A TRACT OF LAND SITUATED IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS. BEGINNING AT THE SOUTHWEST CORNER OF THIS TRACT, WHICH LIES N78°45'14"E 199.1 FEET FROM THE WEST QUARTER CORNER; THEN N00°02'34"W 360.0 FEET; THEN N89°39'11"E 260.0 FEET; THEN S00°02'34"E 360.0 FEET; THEN S89°39'11"W 260.00 FEET TO THE POINT OF BEGINNING, CONTAINING 2.149 ACRES MORE OR LESS

PROPOSED ROAD DESCRIPTION

SURVEY OF A STRIP OF LAND SITUATED IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT IN THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER, WHICH LIES N33°08'11"E 57.1 FEET FROM THE WEST QUARTER CORNER; THEN N89°40'15"E 164.0 FEET TO A POINT ON THE WEST LINE OF THE SAND DUNES NORTH CORRIDOR NORTH COMPRESSOR STATION TRACT, WHICH LIES N75°58'03"E 201.2 FEET FROM SAID WEST QUARTER CORNER.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J EIDSON, A NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF

RONALD J EIDSON Ronald J Eidson

DATE: 2/7/2018

LEGEND

- ◉ DENOTES FOUND CORNER AS NOTED
- ● DENOTES SET SPIKE NAIL

100 0 100 200 FEET
Scale: 1" = 100'

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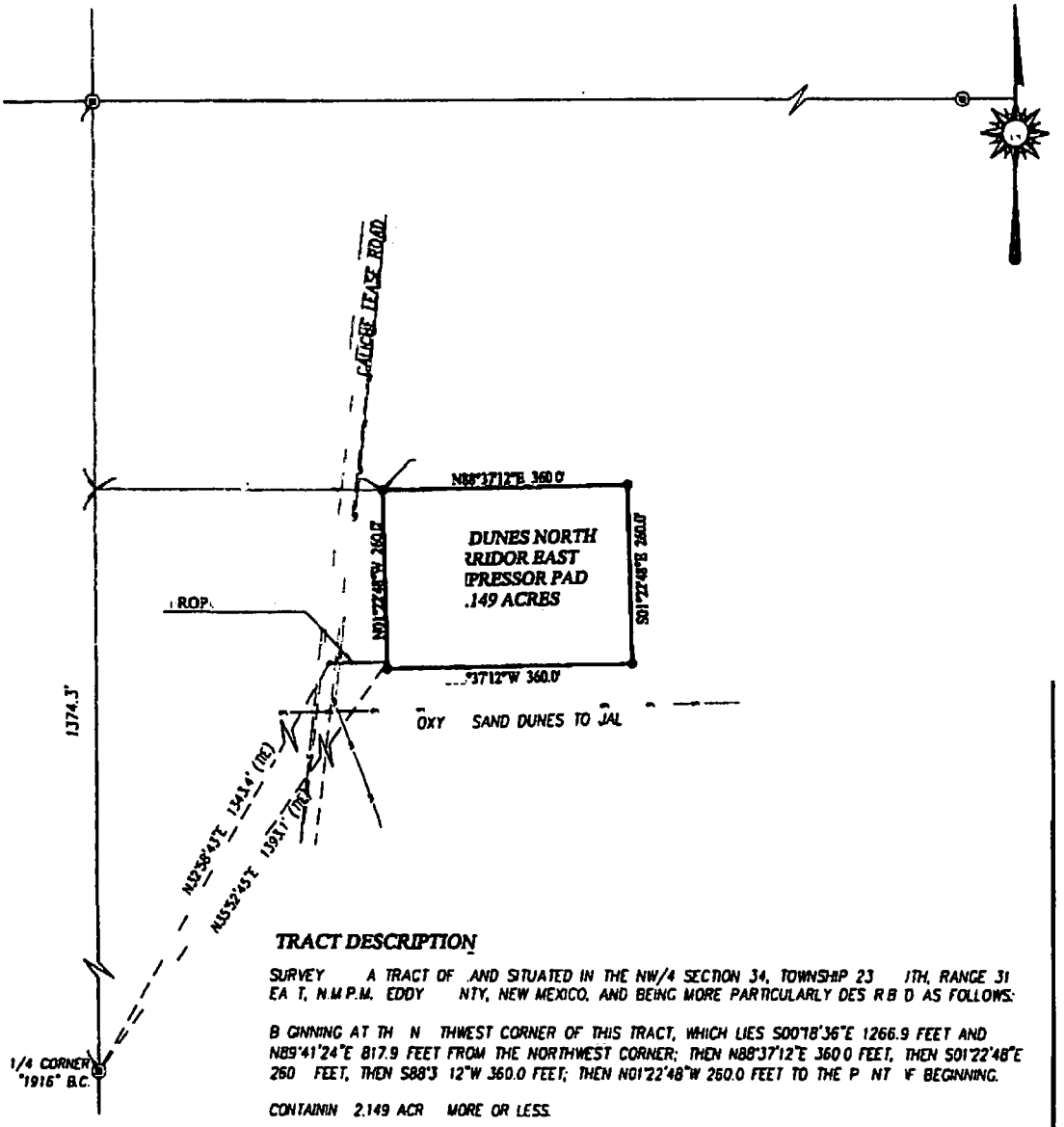
OXY U.S.A. INC.

SURVEY FOR SAND DUNES NORTH CORRIDOR NORTH COMPRESSOR STATION LOCATED IN SW/4 NW/4 SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 01/03/18		CAD Date: 02/05/18	Drawn By: LSL
W.O. No.: 17111197	Rev:	Rel. W.O.: 17111056	Sheet 1 of 1



TRACT DESCRIPTION

SURVEY A TRACT OF AND SITUATED IN THE NW/4 SECTION 34, TOWNSHIP 23 ITH, RANGE 31 EA T, N.M.P.M. EDDY NTY, NEW MEXICO, AND BEING MORE PARTICULARLY DES R B D AS FOLLOWS:

B GINNING AT TH N THWEST CORNER OF THIS TRACT, WHICH LIES S00°18'36"E 1266.9 FEET AND N89°41'24"E 817.9 FEET FROM THE NORTHWEST CORNER; THEN N88°37'12"E 360.0 FEET, THEN S01°22'48"E 260 FEET, THEN S88°3 12"W 360.0 FEET; THEN N01°22'48"W 260.0 FEET TO THE P NT F BEGINNING.

CONTAININ 2.149 ACR MORE OR LESS.

PROPOSED ROAD DESCRIPTION

RVEY A AN SI A N TION 34, TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM., Y NTY, N W M X , AN B NG MORE PARTICULARLY DESCRIBED AS FOLLOWS:

B NNIN A A NT N TH N THWE T QUARTER OF SECTION 34, WHICH LIES N32°58'43"E 1343.4 OM TH WE QUARTER N ; THEN N88°48'03"E 85.2 FEET TO A POINT ON THE WE T LIN THE SAN DUN N C EAST COMPRESSOR PAD TRACT, WHICH LIES N35°5 '4 "E 1393.1 T FROM WEST QUAR R CORNER OF SECTION 34.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GR AN ON M TO THE NEW MEXICO COORDINATE L NEW MEXI EA ZON " NORTH AMERICAN DATUM 1983. ALSO ARE S RFAC VA .

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL VEYOR N 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE A TUA URVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY M UNDER MY DIRECT SUPERVISION; THAT I AM RESPON LE THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM TAN AR SURVEYING IN NEW MEXICO; AND THAT IT IS TRU AN T T THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald Eidson

DATE: 02/02/2018

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

0 200 400 Feet

Scale: 1"=200'

PROVIDING SURVEYING SERVICES SINCE 1946

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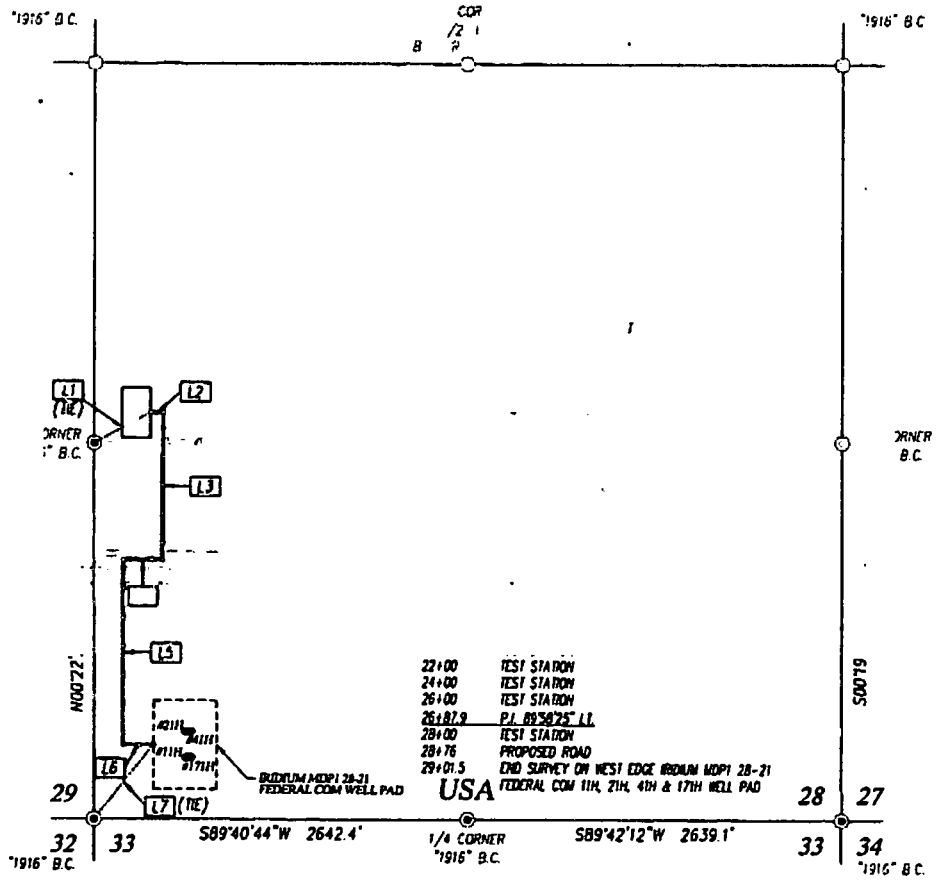
TBPLS# 10021000

OXY U.S.A. INC.

SURVEY FOR SAND DUNES NORTH CORRIDOR EAST COMPRESSOR PAD AND ACCESS ROAD LOCATED IN SECTION 34, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 1/3/18	CAD Date: 1/29/18	Drawn By: LSL
W No.: 17111198	v.: /02/18	Rel. W O.:	Sheet 1 of 1

© DRAFTING\Lorenzo\2018\OXY U.S.A. INC\TRACT\17111198 SAND DUNES NORTH CORRIDOR EAST COMP PAD



LINE	BEARING	DISTANCE
L1 (TIE)	N61°27'23"E	449.8'
L2	N89°56'13"E	90.0'
L3	S00°02'40"E	1032.6'
L4	S89°40'01"W	274.4'
L5	S00°18'18"E	1290.9'
L6	N89°43'17"E	213.6'
L7 (TIE)	N38°27'34"E	667.0'

DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 2901.5 FEET OR 0.549 MILES IN LENGTH CROSSING USA LAND IN SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH 3239 BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson

DATE: 2/14/201

LEGEND

◉ DENOTES F N CORNER AS N

1000 0 1000 2000 FEET

Scale: 1"=1000'

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JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117 www.jwsc.biz

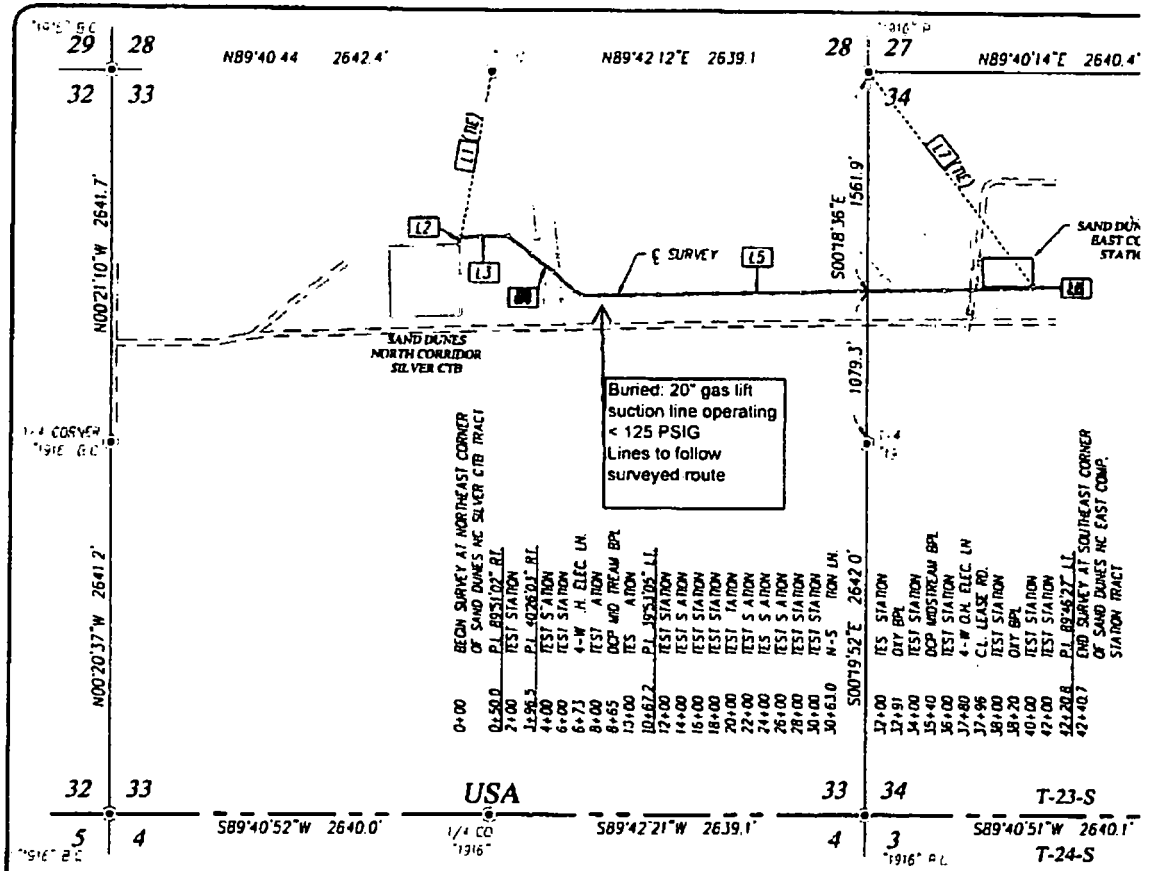
TBPLS# 10021000

OXY U.S.A. INC.

SURVEY FOR A BURIED GAS PIPELINE TO IRIDIUM MDP1 28-21 FEDERAL COM 11H, 21H, 41H & 171H WELLS CROSSING SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 11/7/17	CAD Date: 11/27/17	Drawn By: DSS
W.O. No.: 17111044	Rev: 02/14/18	Rel. W.O.:	Sheet 1 of 1

©DanaS\Easements\2017\OXY U.S.A. Inc\17111044 Buried Gas Pipeline to Iridium MDP 1 28-21 Fed Com Wells 11H 21H 41H 171H Sec28 T23 R32



I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 11/14/20

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AN
THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICC
NORTH AMERICAN DATUM 1983. DISTANCES ARE SU

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SINCE 1946
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412 N. DAL PASO HOBBS, N.M
(575) 393-3117 www.jwsc
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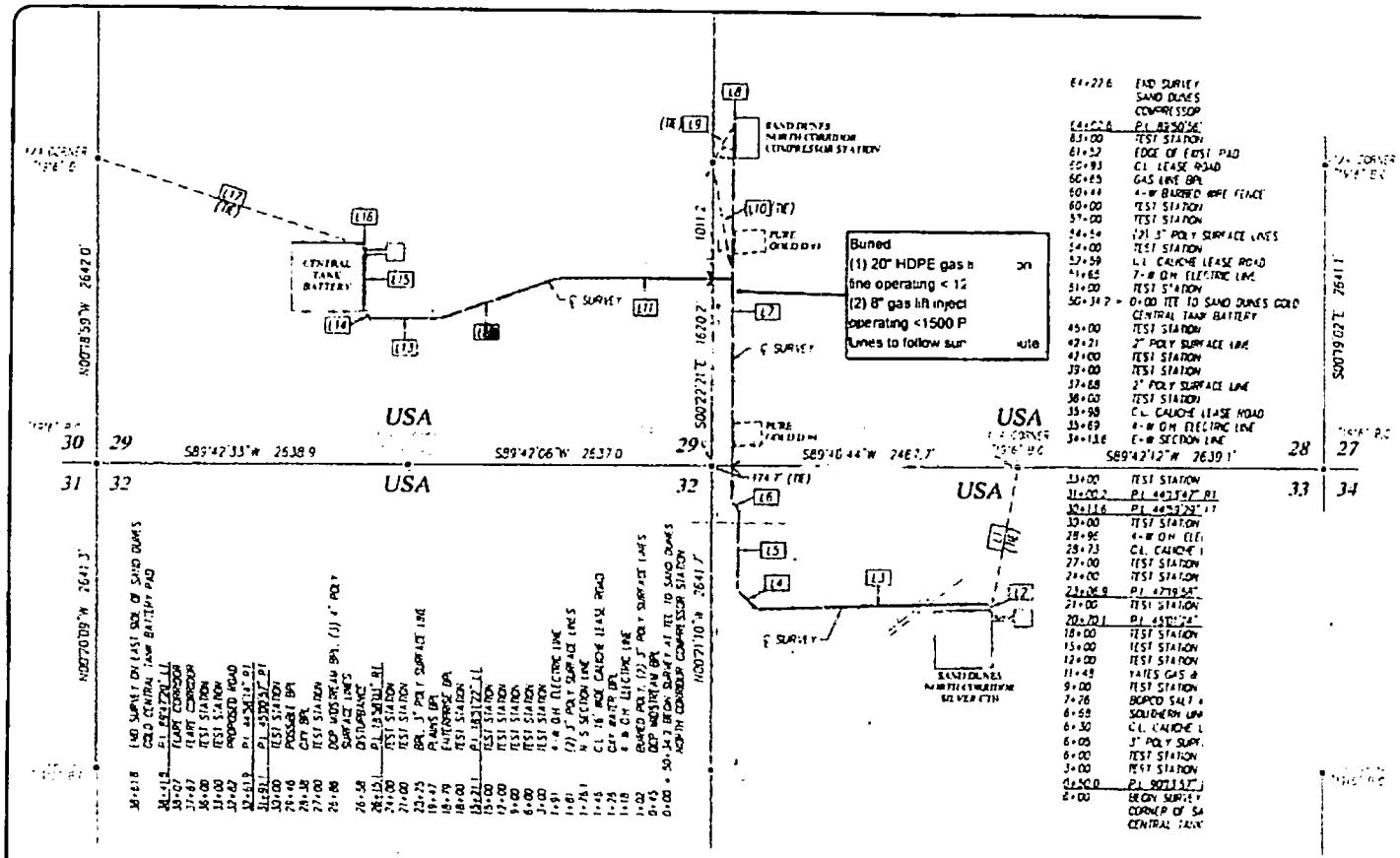


L1		
L3	S88°04'34"W	2070.1'
L4	N46°53'42"W	236.8'
L5	N00°26'16"E	708.7'
L6	N44°33'13"W	86.6'
L7	N00°19'26"W	3302.4'
L8	N89°31'30"E	20.0'
L9 (TIE)	N28°30'56"E	408.4'
L10 (TIE)	S10°15'16"E	1026.1'
L11	S89°31'25"W	1521.1'
L12	S70°40'07"W	1094.0'
L13	S89°38'10"W	576.0'
L14	N45°20'53"W	70.8'
L15	N00°22'59"E	579.9'
L16	S89°50'01"E	20.0'
L17 (TIE)	S21°45'56"E	2371.8'

DESCRIPTION

SURVEY OF A STRIP OF LAND 50.0 FEET WIDE AND 10,284.4 FEET OR 1.948 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 28, 29 AND 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

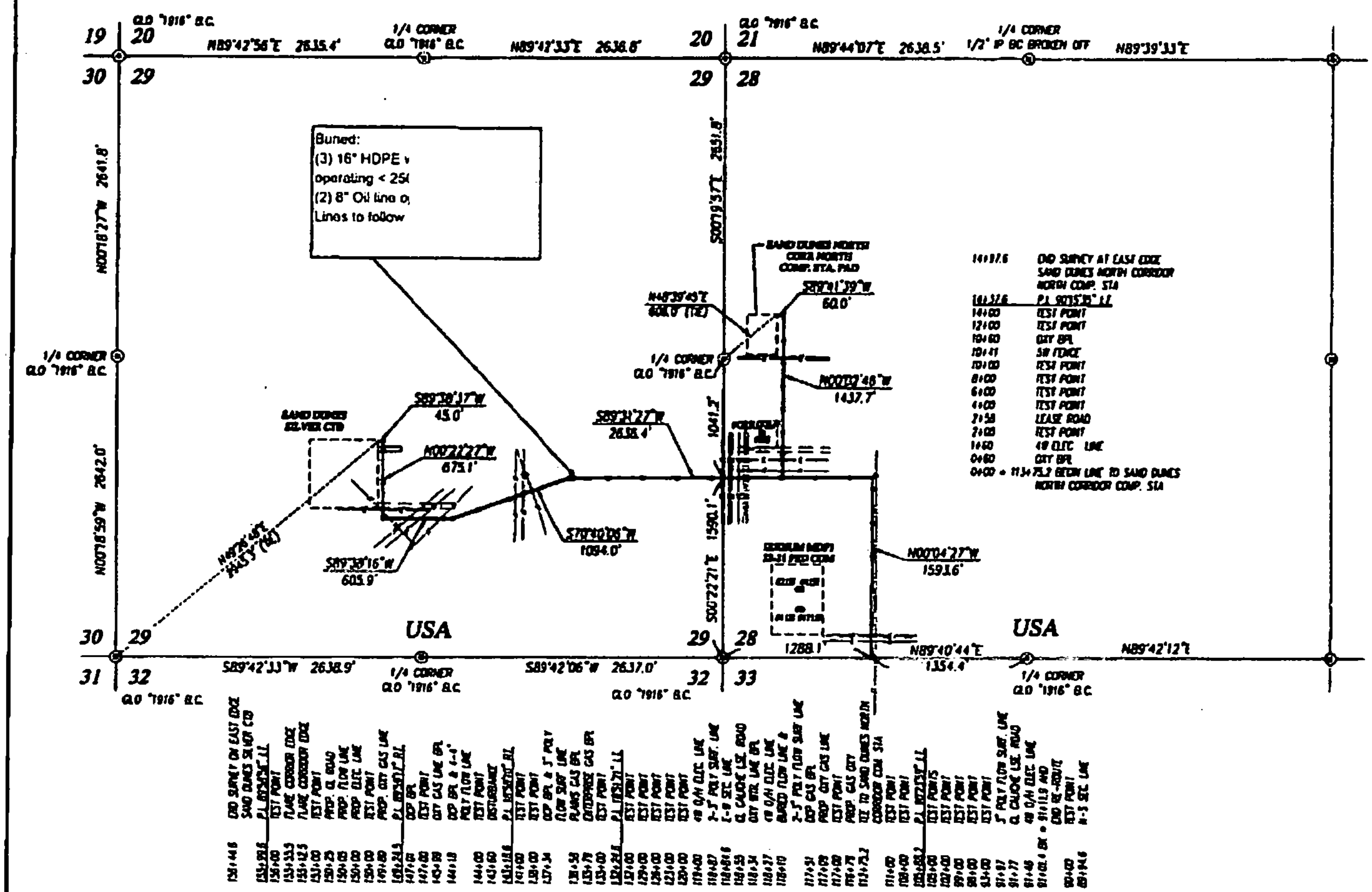
NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO NORTH AMERICAN DATUM 1983. DISTANCES ARE SURF

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON 3239 DATE

PROVIDING SURVEYING SERVICE SINCE 1946
JOHN WEST SURVEYING C
412 N. DAL PASO HOBBS, N.M.
(575) 393-3117
NMPLS# 10013000



I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR NO. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON ____________ DATE: 02/07/2018

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO NORTH AMERICAN DATUM 1983. DISTANCES ARE SUR

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412 N. DAL PASO HOBBS, N.M.
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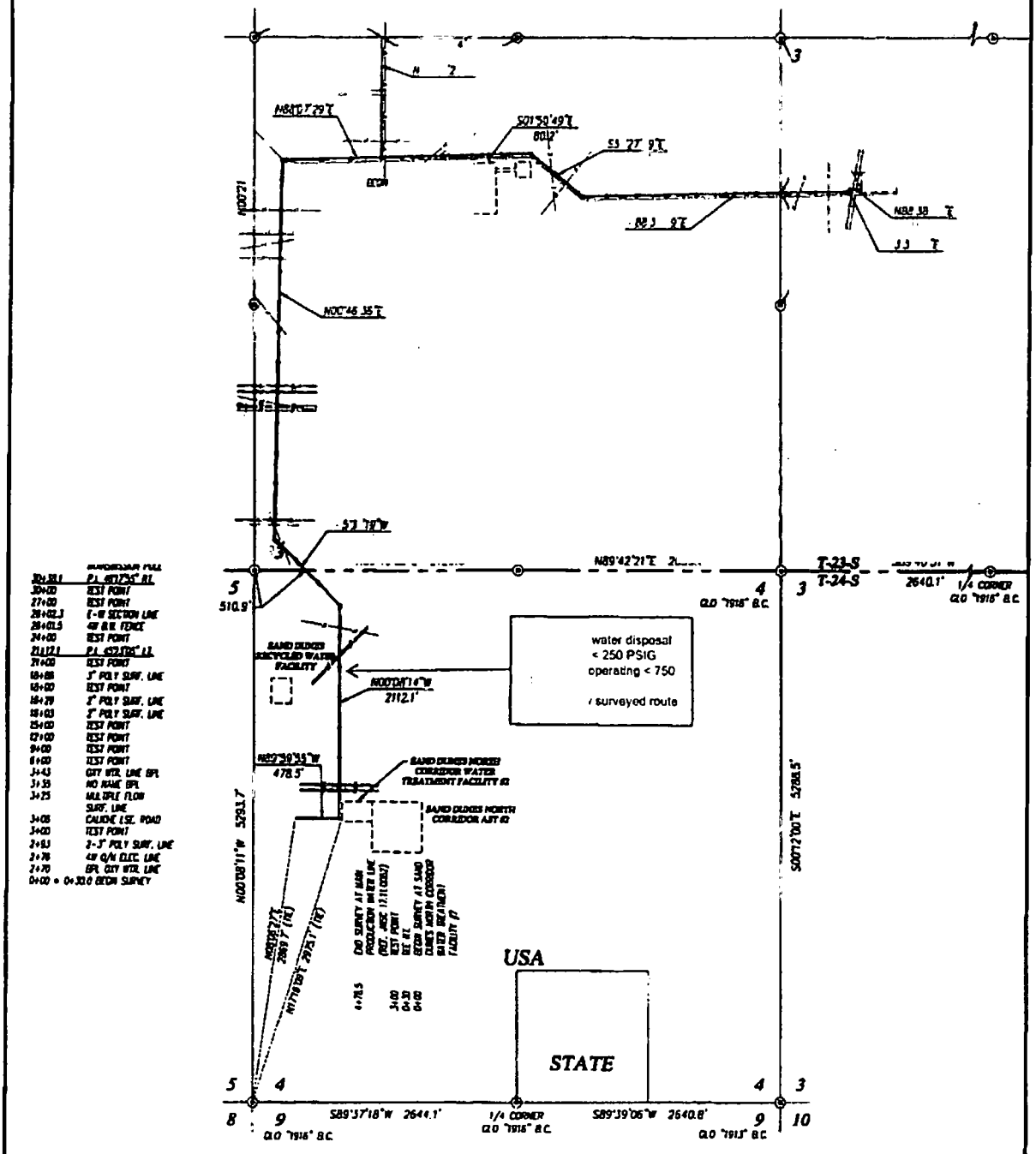
TBPLS# 10021000

©Lorenzo\2018\OXY U.S.A. INC\PIPELINES\17111174 BURIED WATER LINE TO THE MAIN PRODUCED WATER LINE IN SECTION 4 & 33, T24S, R31E



DESCRIPTION

SURVEY FOR A STRIP OF LAND 50.0 FEET WIDE AND 14,520.9 FEET OR 2.750 MILES IN LENGTH CROSSING USA LAND IN SECTION 4, TOWNSHIP 24 SOUTH, RANGE 31 EAST AND SECTIONS 33 & 34, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

⊕ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 Feet

Scale: 1" = 1000'

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 02/07/2018

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JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117 www.jwsc.biz

TBPLS# 10001000

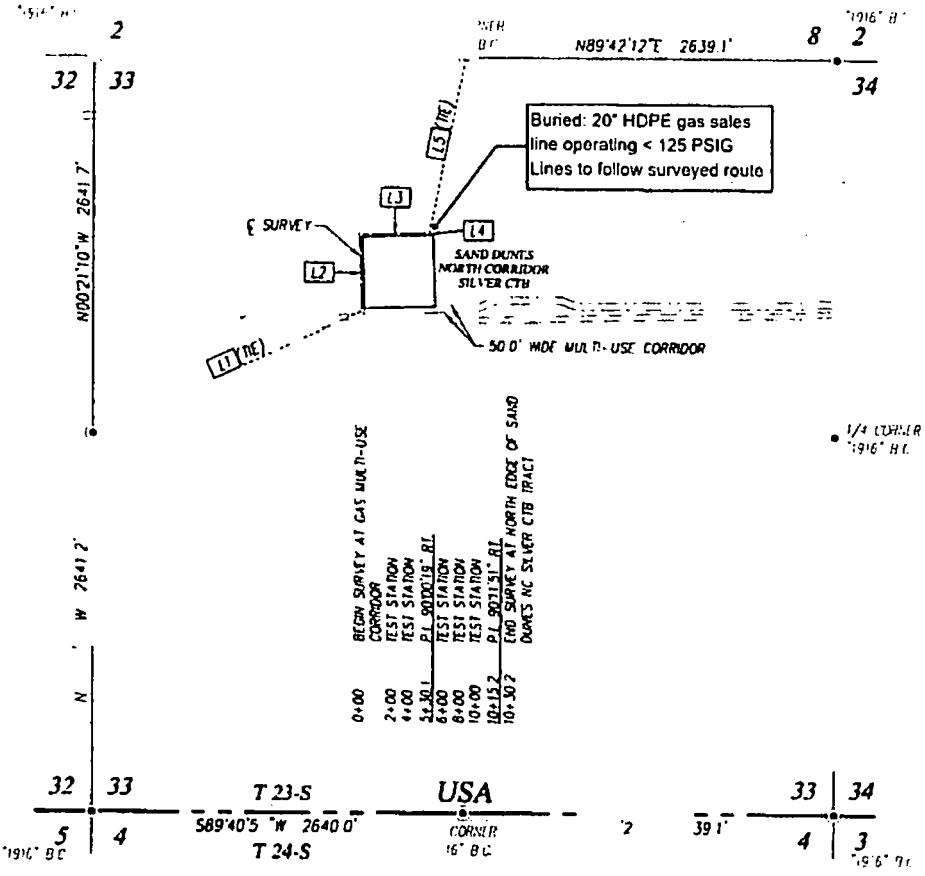
NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

OXY U.S.A. INC.

SURVEY FOR A BURIED WATER LINE TO THE MAIN PRODUCED WATER LINE, THE NORTH CORRIDOR SILVER CTB, SAND DUNES SILVER CTB AND SAND DUNES NORTH CORRIDOR COMPRESSOR SITE CROSSING SECTION 4, TOWNSHIP 24 SOUTH, RANGE 31 EAST, SECTION 33 & 34, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 12/13/17	CAD Date: 2/5/18	Drawn By: LSL
W.O. No.: 17111174	Rev: .	Rel. W.O.:	Sheet 1 of 1



LINE	BEARING	DISTANCE
L TIE	N65°08'42"E	2106.1'
L2	N01°51 "W	530.1'
L3	N88°08'20"E	485.1'
L4	S01°39'49"E	15.0'
L5 TIE	117°55'58"W	1265.0'

DESCRIPTION

TRIP AN) 30.0 FEET WIDE AN I M USA
33 T WN HIP 23 SOUTH, RANGE 31 A N.M. M D BEING
ND 1 F ET RIGHT OF THE AB VE A

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J EIDSON

DATE 11/17

LEGEND

• IND CORNER AS NOTED

1000 2000 FEET

SCALE: 1"=1000'

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412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

OXY U.S.A. INC.

SURVEY FOR A BURIED GAS PIPELINE TO THE SAND DUNES NORTH CORRIDOR SILVER CTB FROM THE CALMONT TO ENTERPRISE GAS PIPELINE, CROSSING SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 11/1/17	CAD Date: 11/13/17	Drawn By: DSS
W.O. No. 17111024	Rev.	Rel. W.O.:	Sheet 1 of 1

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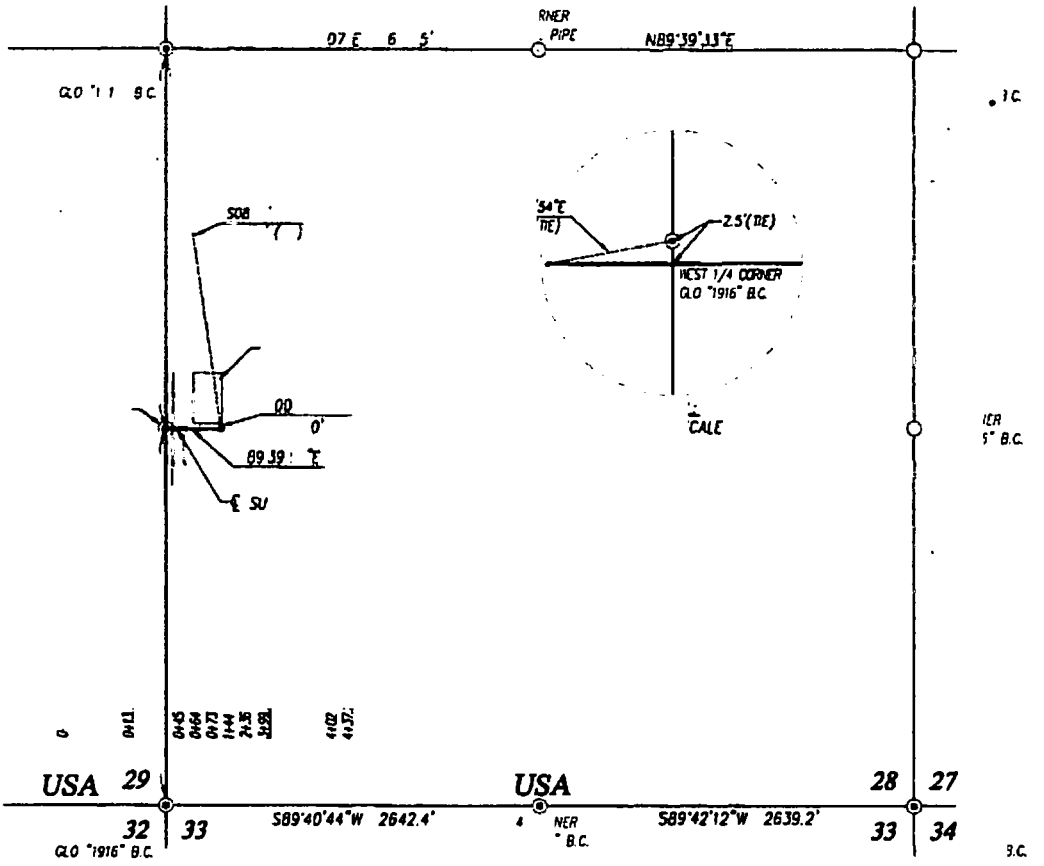

DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WI AND 437.2 FEET OR 0.083 MILES IN LENGTH CROSSING USA LAND IN SECTION 28 & 29, TOWN H 2 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LE T AND 15 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AN CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SUR ACE VALUES.

2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

I, RONALD J. EIDSON NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE A TUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPON BLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDA DS FOR SURVEYING IN NEW MEXICO AND THAT IT IS TRUE AND C RRECT TO THE BEST OF MY KNOWLEDGE. 12/18/2017

RONALD J. EIDSON Ronald J Eidson

DATE: 1/17/2018

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

OXY U.S.A. INC.

SURVEY FOR AN ELECTRIC LINE TO CONNECT THE SAND DUNES NORTH CORRIDOR-NORTH COMPRESSOR STATION CROSSING SECTION 28 & 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 12/11/17	CAD Date: 1/16/18	Drawn By: ACK
.O. No.: 17111130	Rev: .	Rel. W.O.:	Sheet 1 of 1

PROVIDING SURVEYING SERVICES SINCE 1946

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TBPLS# 10021000

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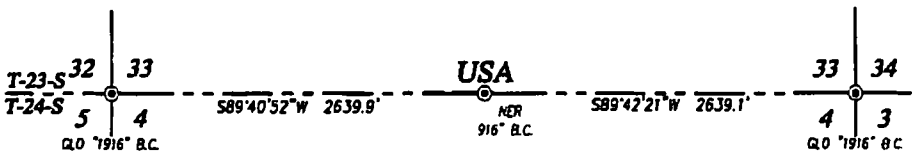
or North Comp in Sec 28, T23S, R31°E



DESCRIPTION

SURVEY OF A TR LAND 30.0 FEET WIDE AND 71.9 FEET OR 0.014 MILES IN LENGTH CROSSING USA LAND IN SECTION 33, T WN 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR I AND CON M TO THE NEW MEXICO COORDINATE SYSTEM "NEW M_X.C. _A_. ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson

DATE: 12018

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(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

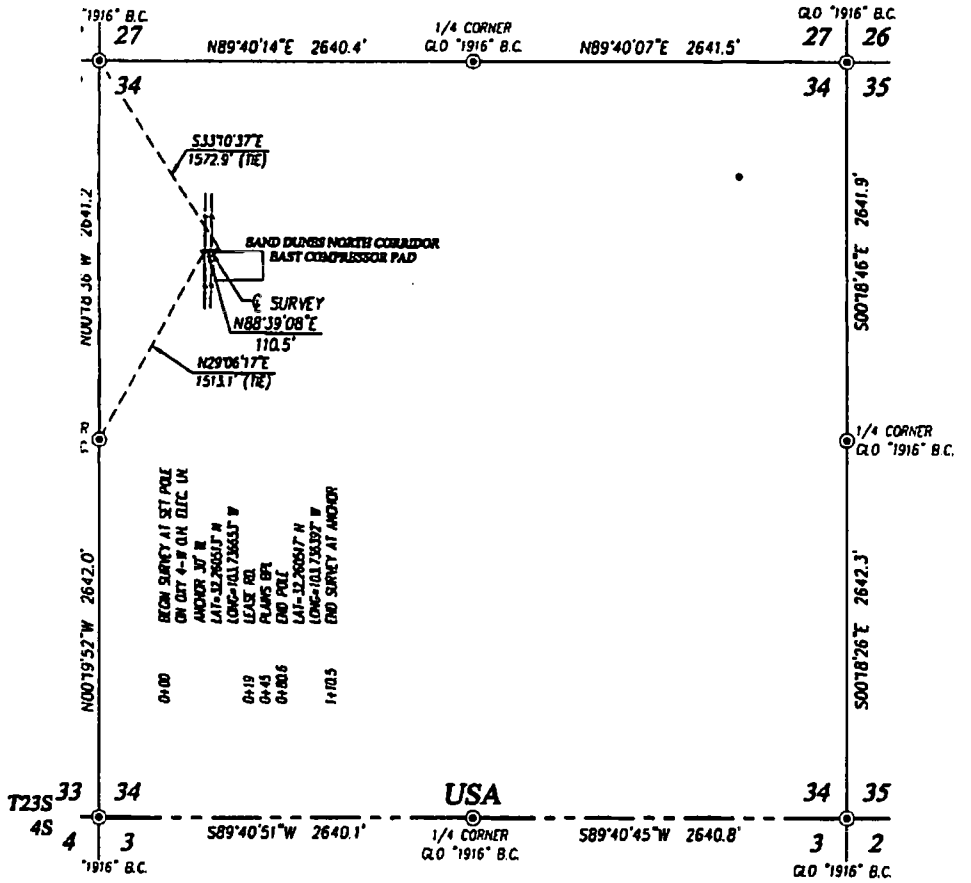
Scale: 1"=1000'

OXY U.S.A. INC.

SURVEY FOR AN ELECTRIC LINE TO THE SAND DUNES NORTH CORRIDOR "SILVER" CTB CROSSING SECTION 33, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 12/08/17	CAD Date: 1/16/18	Drawn By: ACK
W.O. No.: 17111148	Rev: .	Rel. W.O.:	Sheet 1 of 1

ASEMENT\17111148 Elec Ln to the Sand Dunes North Corridor Silver CTB in Sec 33, T23S, R31E



DESCRIPTION

RVEY A STRIP OF LAND 30.0 FEET WIDE AND 110.5 FEET OR 0.021 MILES IN LENGTH CROSSING USA LAN N SECTION 34, TOWNSH 23 OUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

1) BEARINGS SHOWN HEREON A 1E MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

I, RONALD J. EIDSON, N W MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson

DATE: 2/17/2018

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

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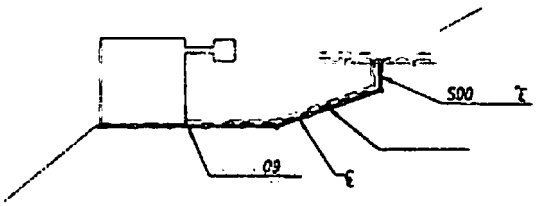
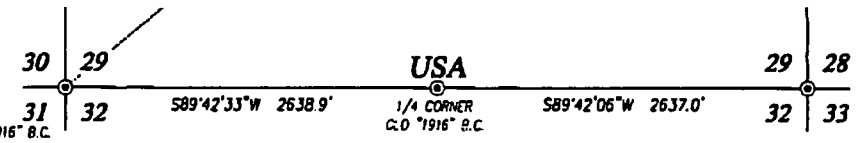
TBPLS# 10021000

OXY U.S.A. INC.

SURVEY FOR AN ELECTRIC LINE TO THE SAND DUNES NORTH CORRIDOR EAST COMPRESSOR STATION CROSSING SECTION 34, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date: 12/08/17	CAD Date: 1/16/18	Drawn By: ACK
W O N : 17111150	Rev: .	Rel. W.O.:	Sheet 1 of 1





DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 2246.9 FEET (0.425 MILES) IN LENGTH CROSSING USA LAND IN SECTION 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson

DATE: 1/7/2018

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

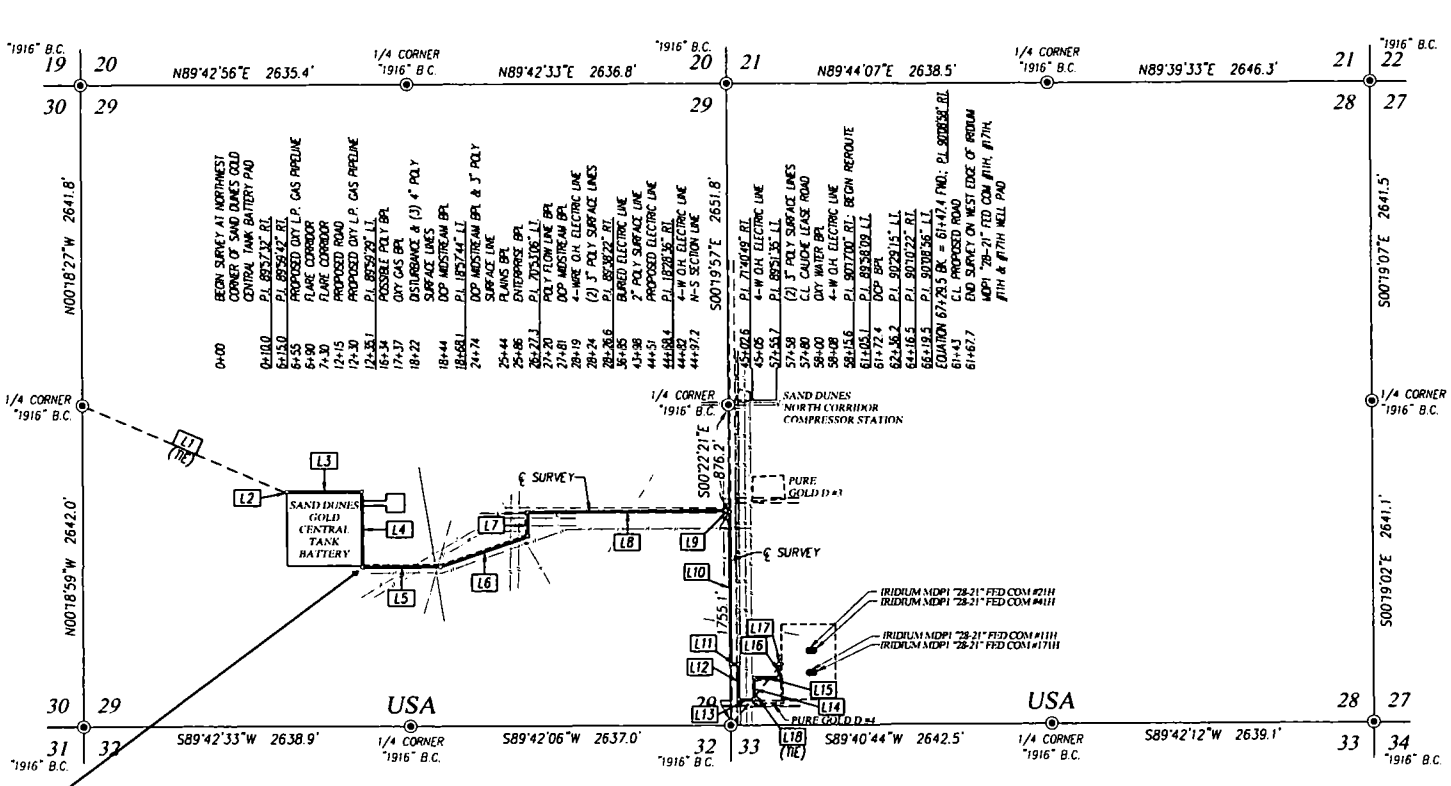
OXY U.S.A. INC.

SURVEY FOR AN ELECTRIC LINE TO THE SAND DUNES NORTH CORRIDOR GOLD CTB CROSSING SECTION 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M. EDDY COUNTY, NEW MEXICO

Survey Date 12/12/17	CAD Date: 1/16/18	Drawn By: ACK
W.O. No 17111176	Rev: .	Rel. W.O.:	Sheet 1 of 1

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

M N \17111176 Elec Ln to the Sand Dunes North Corridor 29, T23S, R31E



LINE	BEARING	DISTANCE
L1 (TIE)	S66°34'21"E	1800.7'
L2	N00°19'55"W	10.0'
L3	N89°37'37"E	605.0'
L4	S00°22'41"E	620.1'
L5	N89°37'50"E	633.0'
L6	N70°40'06"E	759.2'
L7	N00°13'00"W	199.3'
L8	N89°25'22"E	1641.8'
L9	S72°06'02"E	34.2'
L10	S00°25'13"E	1253.1'
L11	N89°43'12"E	59.9'
L12	S00°00'12"W	289.5'
L13	S89°57'57"E	131.1'
L14	N00°27'12"W	180.3'
L15	N89°43'10"E	203.0'
L16	N00°25'46"W	110.0'
L17	N89°43'12"E	20.3'
L18 (TIE)	N39°35'33"E	651.6'

Surface:
(3) 4" Composite Production Flowlines per well, operating < 75% MAWP
Lines to follow surveyed route

DESCRIPTION

SURVEY OF A STRIP OF LAND 50.0 FEET WIDE AND 6749.8 FEET OR 1.278 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 28 AND 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 25.0 FEET LEFT AND 25.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 Feet

Scale: 1"=1000'

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J Eidson DATE: 05/25/2018

RONALD J. EIDSON NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

OXY U.S.A. INC.

SURVEY FOR A SURFACE FLOW LINE TO THE IRIDIUM MDP1 28-21 FEDERAL COM WELLS 11H, 171H, 41H & 21H CROSSING SECTIONS 28 AND 29, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 11/07/17	CAD Date: 5/24/18	Drawn By: ACK
W.O. No.: 18110639	Rev: 5/25/18	Rel. W.O.: 17111073	Sheet 1 of 1

© Anjelica\2018\Oxy USA Inc\Easements\18110639 Re-route Flow Ln to the Iridium MDP1 Federal Com #11H, #21H, #41H & #171H Wells in Sec 28, T23S, R31E

ıter Source2	Water Source3	Water Source4
C-3478	C-2772	
C-1361	C-3358	
C-3478	C-2772	
C-2574	J-27	—
C-3200	SP-55 & SP-1279 A	C-100

	GRF ME		ION
	ill shack		104.254317°
	n		1856° -104.254443°
			2315° -104.254812°
			5949°-104.374371°
° C-1246			5978°-104.271212°
			9316° -104.312930°
			904° -104.16979°
			7845-104.177410
C-1360	ENG#1	PRIVATE	32.064922° -103.908818°
C-1361	ENG#2	PRIVATE	32.064908° -103.906266°
C-1573	Cooksey	PRIVATE	32.113463° -104.108092°
C-1575	ROCKHOUSE Ranch Well - Wildcat	BLM	32.493190° -104.444163°
C-2270	CW#1 (Oliver Kiehne)	PRIVATE	32.021440° -103.559208°
C-2242	Walterscheid	PRIVATE	32.39199° -104.17694°
C-2492POD2	Stacy Mills	PRIVATE	32.324203° -103.812472°
C-2569	Paduca well #2	BLM	32.160588 -103.742051
C-2569POD2	Paduca well replacement	BLM	32.160588 -103.742051
C-2570	Paduca (tank) well #4	BLM	32.15668 -103.74114
C-2571	Paduca (road) well	BLM	32.163993° -103.745457°
C-2572	Paduca well #6	BLM	32.163985 -103.7412
C-2573	Paduca (in the bush) well	BLM	32.16229 -103.74363
C-2574	Paduca well (on grid power)	BLM	32.165777° -103.747590°
C-2701	401 Water Station	BLM	32.458767° -104.528097°
C-2772	Mobley Alternate	BLM	32.305220° -103.852360°
C-3011	ROCKY ARROYO - MIDDLE	BLM	32.409046° -104.452045°
C-3060	Max Vasquez	PRIVATE	32.31291° -104.17033°
C-3095	ROCKHOUSE Ranch Well - North of Rockcrusher	PRIVATE	32.486794° -104.426227°
C-3200	Beard East	PRIVATE	32.168720 -104.276600
C-3260	Hayhurst	PRIVATE	32.227110° -104.150925
C-3350	Winston Barn	PRIVATE	32.511871° -104.139094
C-3358	Branson	PRIVATE	32.19214° -104.06201
C-3363	Watts#2	PRIVATE	32.444637° -103.931313
C-3453	ROCKY ARROYO - FIELD	PRIVATE	32.458657° -104.460804
C-3478	Mobley Private	PRIVATE	32.294937° -103.888656
C-3483pod1	ENG#3	BLM	32.065556° -103.894722
C-3483pod3	ENG#5	BLM	32.06614° -103.89231
C-3483POD4	CW#4 (Oliver Kiehne)	PRIVATE	32.021803° -103.559030
C-3483POD5	CW#5 (Oliver Kiehne)	PRIVATE	32.021692° -103.560158
C-3554	Jesse Baker #1 well	PRIVATE	32.071937° -103.723030
C-3577	CW#3 (Oliver Kiehne)	PRIVATE	32.021773° -103.559738
C-3581	ENG#4	BLM	32.066083° -103.895024
C-3595	Oliver Kiehne house well #2	PRIVATE	32.025484° -103.682529
C-3596	CW#2 (Oliver Kiehne)	PRIVATE	32.021793° -103.559018°

GRR

	AME	LAND OWNERSHIP	GPS LOCATION
		PRIVATE	32.449290° -104.214500°
	ll	PRIVATE	32.073692° -103.727121°
		PRIVATE	32.215790° -103.537690°
	th	PRIVATE	32.511504° -104.139073°
	n	PRIVATE	32.458551° -104.144219°
		PRIVATE	32.443360° -103.942890°
		BLM	32.023434°-103.321968°
	ıg	PRIVATE	32.34636° -104.21355
		PRIVATE	32.224053° -104.090129°
C-3829	Jesse Baker #3 well	PRIVATE	32.072545°-103.722258°
C-3830	Paduca	BLM	32.156400° -103.742060°
C-3836	Granger	PRIVATE	32.10073° -104.10284°
C-384	ROCKHOUSE Ranch Well - Rockcrusher	PRIVATE	32.481275° -104.420706°
C-459	Walker	PRIVATE	32.3379° -104.1498°
C-496pod2	Munoz #3 Trash Pit Well	PRIVATE	32.34224° -104.15365°
C-496pod3&4	Munoz #2 Corner of Porter & Derrick	PRIVATE	32.34182° -104.15272°
C-552	Dale Hood #1 well	PRIVATE	32.448720° -104.214330°
C-764	Mike Vasquez	PRIVATE	32.230553° -104.083518°
C-766(old)	Grandi	PRIVATE	32.32352° -104.16941°
C-93-S	Don Kidd well	PRIVATE	32.344876 -104.151793
C-987	ROCKY ARROYO - HOUSE	PRIVATE	32.457049° -104.461506°
C-98-A	Bindel well	PRIVATE	32.335125° -104.187255°
CP-1170POD1	Beckham#1	PRIVATE	32.065889° -103.312583°
CP-1201	Winston Ballard	BLM	32.580380° -104.115980°
CP-1202	Winston Ballard	BLM	32.538178° -104.046024°
CP-1231	Winston Ballard	PRIVATE	32.618968° -104.122690°
CP-1263POD5	Beckham#5	PRIVATE	32.065670° -103.307530°
CP-1414	Crawford #1	PRIVATE	32.238380° -103.260890°
CP-1414 POD 1	RRR	PRIVATE	32.23911° -103.25988°
CP-1414 POD 2	RRR	PRIVATE	32.23914° -103.25981°
CP-519	Bond_Private	PRIVATE	32.485546 -104.117583
CP-556	Jimmy Mills (Stacy)	STATE	32.317170° -103.495080°
CP-626	Ol Loco (W)	STATE	32.692660° -104.068064°
CP-626-S	Beach Exploration/ Ol Loco (E)	STATE	32.694229° -104.064759°
CP-73	Laguna #1	BLM	32.615015°-103.747615°
CP-74	Laguna #2	BLM	32.615255°-103.747688°
CP-741	Jimmy Richardson	BLM	32.61913° -104.06101°
CP-742	Jimmy Richardson	BLM	32.614061° -104.017211°
CP-742	Hidden Well	BLM	32.614061 -104.017211
CP-745	Leaning Tower of Pisa	BLM	32.584619° -104.037179°
CP-75	Laguna #3	BLM	32.615499°-103.747715°
CP-924	Winston Ballard	BLM	32.545888° -104.110114°
CP-926	Winchester well (Winston)	BLM	32.601125° -104.128358°

GRR Inc.

WELL NUMBER	WELL COMMON NAME	LAND OWNERSHIP	GPS LOCATION
	Beckham	PRIVATE	32.020403° -103.299333°
	EPNG Jal Well	PRIVATE	32.050232° -103.313117°
	Beckham	PRIVATE	32.016443° -103.297714°
	Beckham	PRIVATE	32.016443° -103.297714°
	Beckham	PRIVATE	32.016443° -103.297714°
	Angell Ranch well	PRIVATE	32.785847° -103.644705
L-10613	Northcutt3 (2nd House well)	PRIVATE	32.687922°-103.472452
L-11281	Northcutt4	PRIVATE	32.687675°-103.471512
L-12459	Northcutt1 (House well)	PRIVATE	32.689498°-103.472697
L-12462	Northcutt8 Private Well	PRIVATE	32.686238°-103.435409
L-13049	EPNG Maljamar well	PRIVATE	32.81274° -103.67730
L-13129	Pearce State	STATE	32.726305°-103.553172
L-13179	Pearce Trust	STATE	32.731304°-103.548461
L-13384	Northcutt7 (State) CAZA	STATE	32.694651°-103.434997
L-1880S-2	HB Intrepid well #7	PRIVATE	32.842212° -103.621299°
L-1880S-3	HB Intrepid well #8	PRIVATE	32.852415° -103.620405°
L-1881	HB Intrepid well #1	PRIVATE	32.829124° -103.624139°
L-1883	HB Intrepid well #4	PRIVATE	32.828041° -103.607654°
L-3887	Northcutt2 (Tower or Pond well)	PRIVATE	32.689036°-103.472437°
L-5434	Northcutt5 (State)	STATE	32.694074°-103.405111°
L-5434-S	Northcutt6 (State)	STATE	32.693355°-103.407004°
RA-14	Horner Can	PRIVATE	32.89348° -104.37208°
RA-1474	Irvin Smith	PRIVATE	32.705773° -104.393043°
RA-1474-B	NLake WS / Jack Clayton	PRIVATE	32.561221°-104.293095°
RA-9193	Angell Ranch North Hummingbird	PRIVATE	32.885162° -103.676376°
SP-55 & SP-1279-A	Blue Springs Surface POD	PRIVATE	32.181358° -104.294009°
SP-55 & SP-1279 (Bounds)	Bounds Surface POD	PRIVATE	32.203875° -104.247076°
SP-55 & SP-1279 (Wilson)	Wilson Surface POD	PRIVATE	32.243010° -104.052197°
City Treated Effluent	City of Carlsbad Waste Treatment Plant	PRIVATE	32.411122° -104.177030°
Mine Industrial	Mosaic Industrial Water	PRIVATE	32.370286° -103.947839°
Mobley State Well (NO OSE)	Mobley Ranch	STATE	32.308859° -103.891806°
EPNG Industrial	Monument Water Well Pipeline (Oil Center, Eunice)	PRIVATE	32.512943° -103.290300°
MCOX Commercial	Matt Cox Commercial	PRIVATE	32.529431° -104.188017°
AMAX Mine Industrial	Mosaic Industrial Water	N/A	VARIOUS TAPS
WAG Mine Industrial	Mosaic Industrial Water	N/A	VARIOUS TAPS
HB Mine Industrial	Intrepid Industrial Water	N/A	VARIOUS TAPS

Mesquite

Cedar Canyon

Major Source: C464 (McDonald) Sec. 13 T24S R28E
Secondary Source: C-00738 (McDonald/Faulk) Sec. 12 T24S R28E

Corral Fly – South of Cedar Canyon

Major Source: C464 (McDonald) Sec. 13 T24S R28E
Secondary Source: C-00738 (McDonald/Faulk) Sec. 12 T24S R28E

Cypress – North of Cedar Canyon

Major Source: Caviness B: C-501-AS2 Sec 23 T28S R15E
Secondary Source: George Arnis; C-1303

Sand Dunes – new frac pond

Major Source: 128 Fresh Water Pond (Mesquite/Mosaic) – located at MM 4 on 128; 240,000 bbl pond
Secondary Source: George Arnis; C-1303

Mesa Verde – east of Sand Dunes

Major Source: 128 Fresh Water Pond (Mesquite/Mosaic) – located at MM 4 on 128; 240,000 bbl pond
Secondary Source: Unknown at this time; needs coordinates to determine secondary source

Smokey Bits/Ivore/Misty – had posiden tanks before

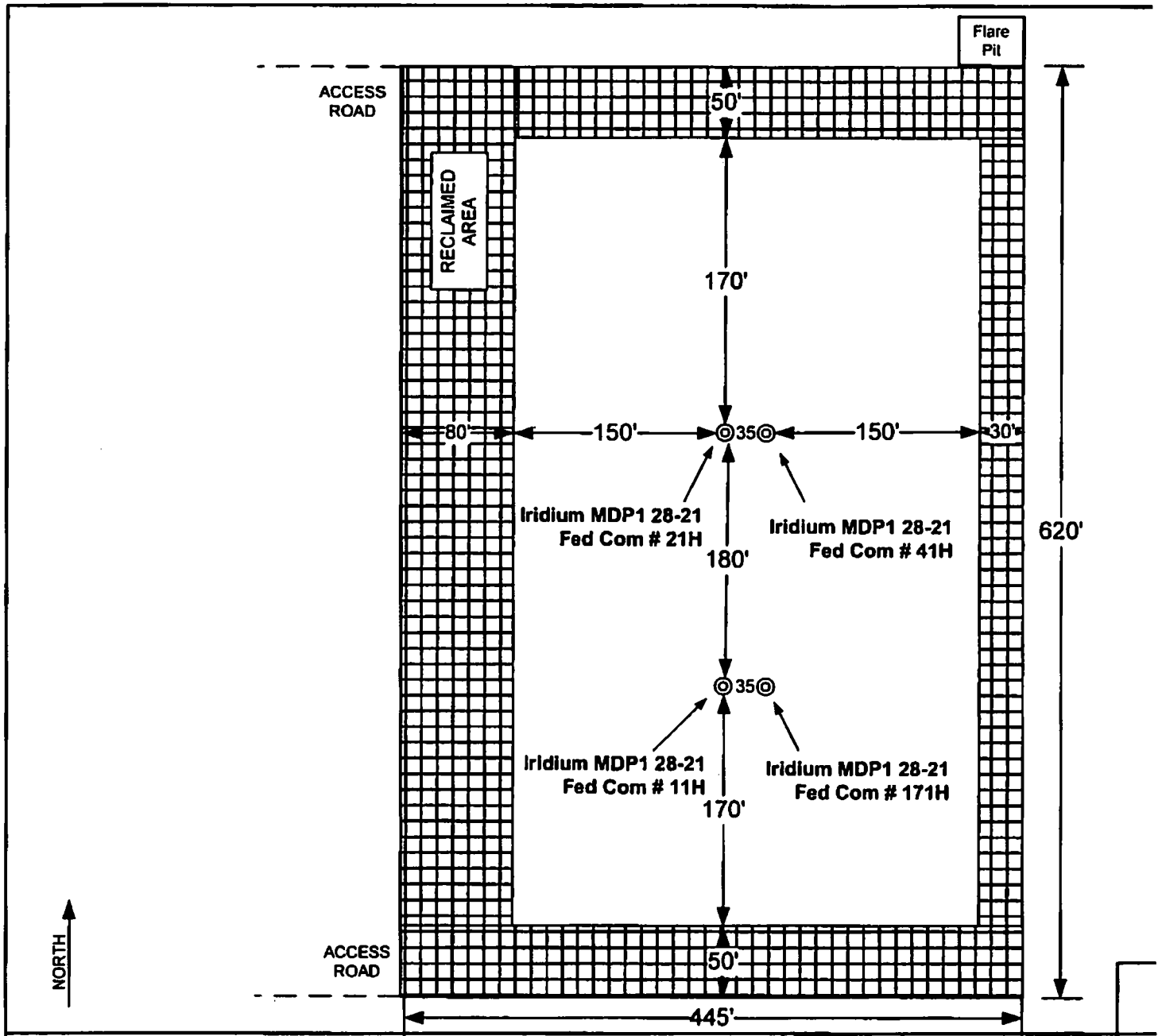
Major Source: Unknown at this time; need coordinates to determine major source
Secondary Source: Unknown at this time; needs coordinates to determine secondary source

Red Tank/Lost Tank

Major Source: Unknown at this time; need coordinates to determine major source
Secondary Source: Unknown at this time; needs coordinates to determine secondary source

Peaches

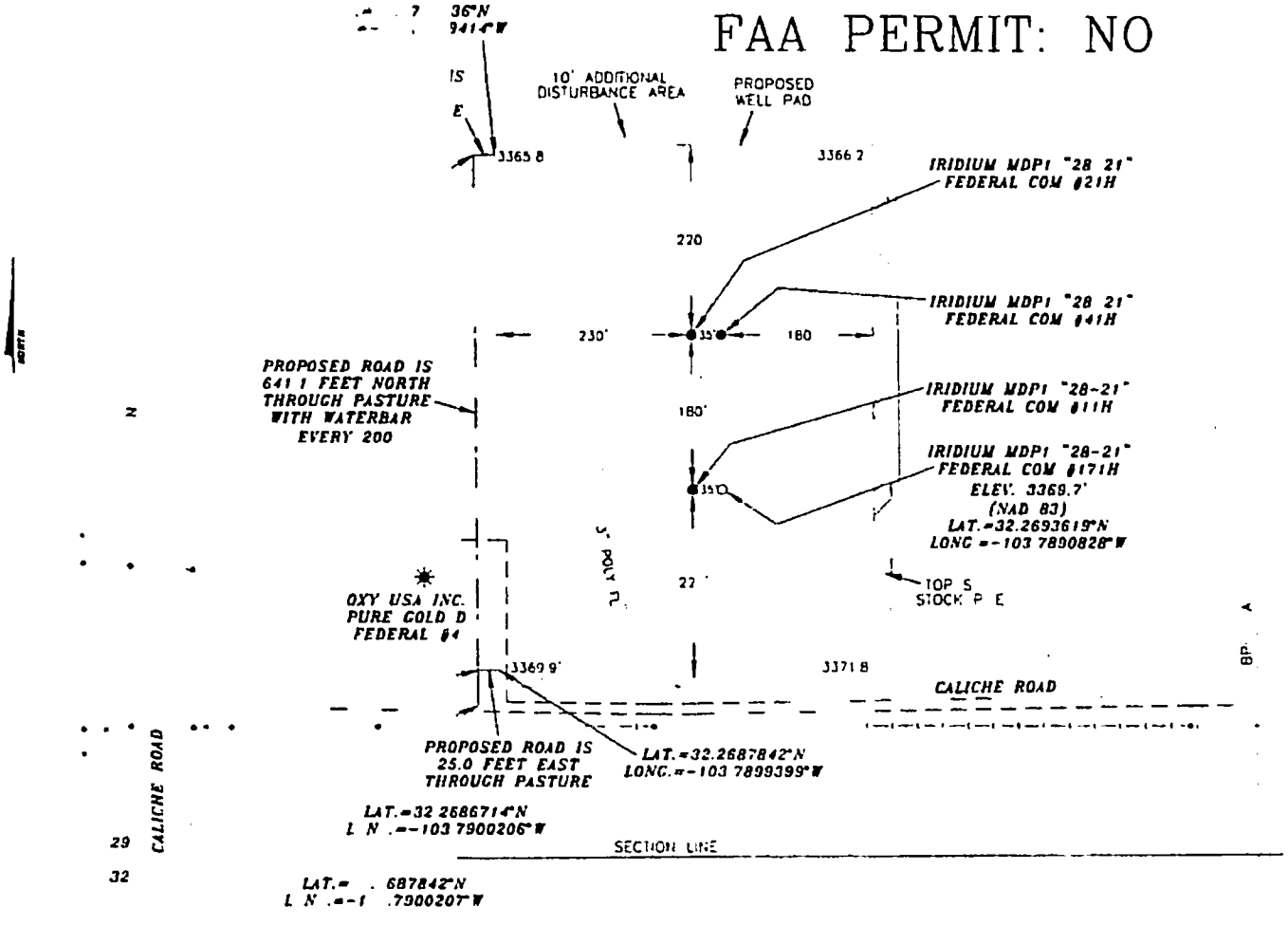
Major Source: Unknown at this time; need coordinates to determine major source
Secondary Source: Unknown at this time; needs coordinates to determine secondary source



REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE

OXY USA INC.
1 "28-21" FEDERAL COM #171H
SITE PLAN

FAA PERMIT: NO



TERRY J ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

VD
- DENOTES PROPOSED WELL PAD
- DENOTES PROPOSED ROAD
- DENOTES STOCK PILE AREA
- DENOTES EXISTING WELL

200' 0 200' 400' FEET
SCALE 1"=200'

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

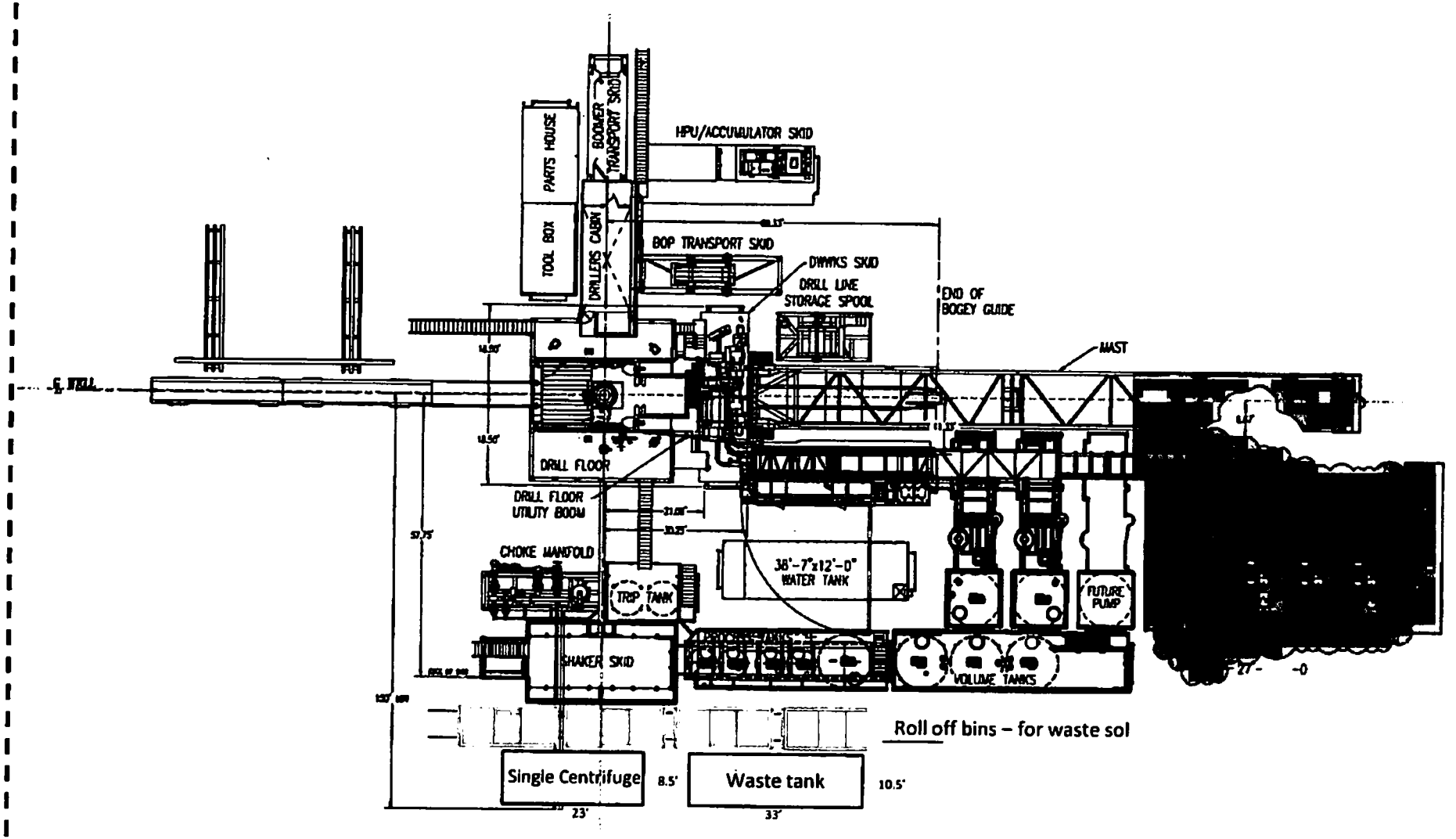
Terry J. Asel N.M. R.P.L.S. No. 15079 9/5/17

A eying
10 W TAYLOR
- 575-393-9146

OXY USA INC.		
IRIDIUM MDP1 "28-21" FEDERAL COM #171H LOCATED AT 430' FSL & 683' FWL IN SECTION 28, TOWNSHIP 23 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO		
vey Date: 09/20/17	Sheet 1 of 1 Sheets	
W. Number: 170920WL a	Drawn By: KA	Rev.
te. 10/27/17	170920WL a	Scale: 1"=200'

Oxy Single Centrifuge Closed Loop System – New Mexico Flex III

May 28, 2013



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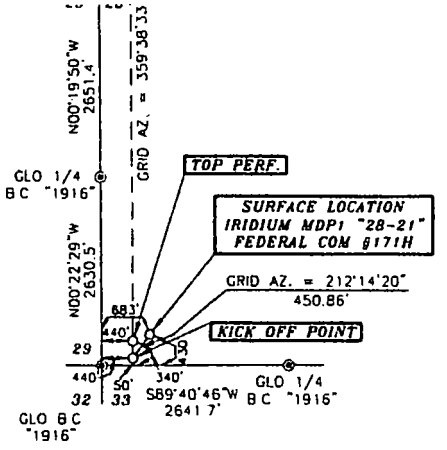
I

Basis of Bearings - GPS Geodetic
NM East Zone (83) North Americ

RSECTION OF HWY.
D #787 (TWIN WELLS
ON HWY. #128 FOR
ON CALICHE ROAD
4 MILES, TURN LEFT
MILES, TURN LEFT ON
O NORTH FOR 641 1
GO EAST FOR 25 0



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Terry J. Asel 9/21/2017

Terry J. Asel N.M. R.P.L.S. No. 15079

A urv ing

TAYLOR
393-9146

LEGEND

◉ – DENOTES FOUND MONUMENT AS NOTED

00' 0 2000' 4000' FEET

SCALE: 1"=2000'

OXY USA INC.

MDP1 "28-21" FEDERAL COM #171H
AT 430' FSL & 683' FWL IN SECTION
NNSHIP 23 SOUTH, RANGE 31 EAST,
P.M., EDDY COUNTY, NEW MEXICO

urvey Date: 09/20/17	Sheet 1 of 1 Sheets		
W Number 70920WL-a	Drawn By: KA	Rev:	
Date /17	170920WL-a	Scale:1"=2000'	

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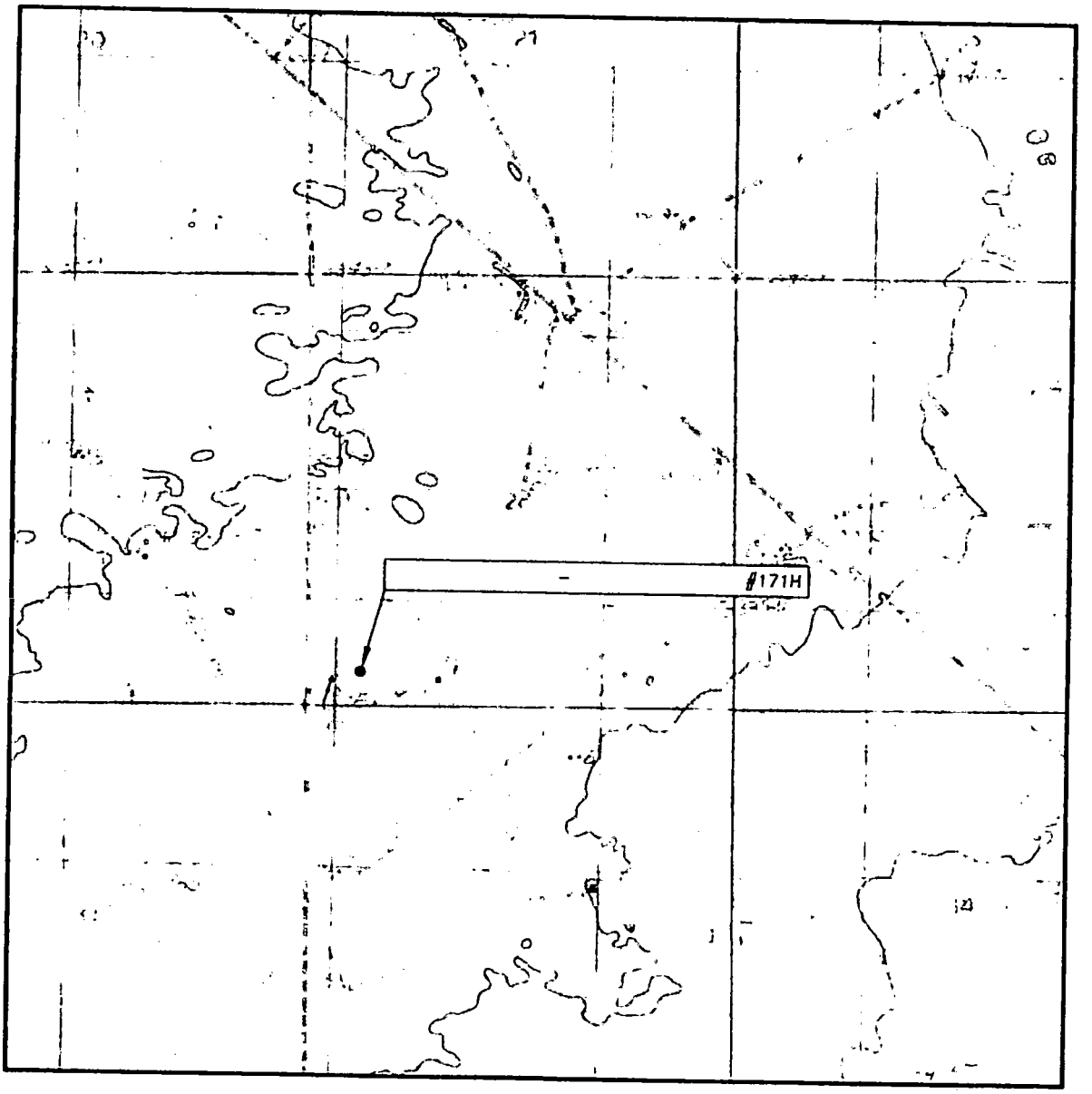

CONTOUR INTERVAL: 10'

Ase S ing

P O BOX 393 - 310 W TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

#171H

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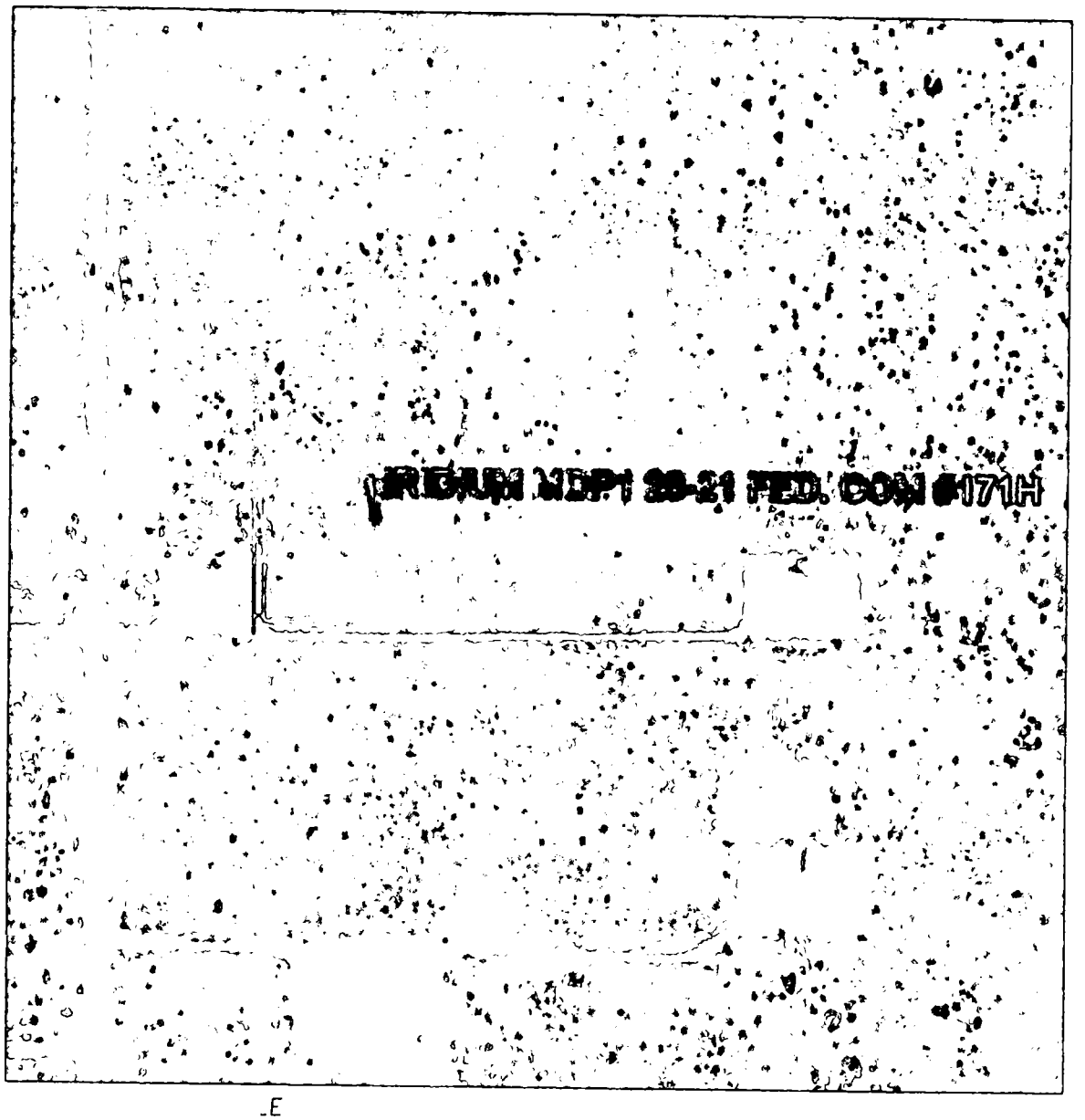

E

sel Surveying

P.O BOX 393 - 310 W TAYLOR
OBBS, NEW MEXICO - 575-393-9146

465 x 620

OXY U.S.A. INC.

NEW MEXICO STAKING FORM

Date Staked: 9-20-17

Lease / Well Name: Iridium MDP1 28-21 Fed Com #171H

Legal Description: 653' FWL 430' FSL Sec 28 T23S R31E

Latitude: 32° 16' 09.70" NAD 83

Longitude: -103° 47' 20.70" NAD 83

X: 709554.68 NAD 83

Y: 462153.45 NAD 83

Elevation: 3369.7 NAD 83

Move information:

County: Eddy

Surface Owner

Nearest Residence:

Nearest Water Well:

V-Door: EAST

Top soil: EAST

Road Description: SW Cor From SOUTH

New Road: 100'

Upgrade Existing Road:

Interim Reclamation: 30' EAST 50' SOUTH

Source of Caliche:

Onsite Attendees: 10-6-17 JESSIE BASSETT - BLM, SWCA
Jim Wilson - Oxy Asel Survey

Surface Use Plan of Operations

Operator Name/Number: OXY USA Inc. – 16696
Lease Name/Number: Iridium MDP1 28-21 Federal Com #171H
Pool Name/Number: Wildcat Wolfcamp
Surface Location: 430 FSL 683 FWL SWSW (M) Sec 28 T23S R31E – NMNM040659
Bottom Hole Location: 180 FNL 440 FWL NWNW (D) Sec 21 T23S R31E – NMNM038464

1. Existing Roads

a. A copy of the USGS "Los Medanos, NM" quadrangle map is attached showing the proposed location. The well location is spotted on the map, which shows the existing road system.

b. The well was staked by Terry J. Asel, Certificate No. 15079 on 9/20/17, certified 10/31/17.

c. Directions to Location: From the intersection of NM State Hwy 128 and CR 787 (Twin Wells Rd), go southeast on SH 128 for 1.1 miles. Turn right on caliche road and go south for 1.4 miles. Turn left and go east for 0.1 miles. Turn left on proposed road and go north for 641.1 feet, turn right and go east for 25 feet to location.

2. New or Reconstructed Access Roads:

a. A new access road will be built. The access road will run from an existing pad going 641.1' north, then 25' east through pasture to northwest corner of the pad.

b. The maximum width of the road will be 14'. It will be crowned and made up of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface 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 cattle guards, grates or fence cuts will be required. Turnouts every 1000' as needed.

e. Blade, water and repair existing caliche roads as needed.

f. Water Bars will be incorporated every 200' during the construction of the road.

3. Location of Existing Wells:

Existing wells within a one mile radius of the proposed well are shown on attached plat.

4. Location of Existing and/or Proposed Facilities:

a. In the event the well is found productive, the Sand Dunes Gold Central Tank Battery would be utilized and the necessary production equipment will be installed at the well site. See proposed facilities layout diagram.

b. All flow lines will adhere to API standards. They will consist of 3 – 4" composite flowlines operating < 75% MAWP and 1 – 4" composite LP gas lift suction line operating <75% MAWP, surface to follow surveyed route. Survey of a strip of land 50' wide and 6167.7' in length crossing USA Land in Sections 28 & 29 T23S R31E, NMPM, Eddy County, NM and being 25' left and 25' right of the centerline survey. Two–8" gas lift line operating <1500 psig, buried, lines to follow surveyed route. Survey of a strip of land 30' wide and 2901.5' in length crossing USA Land in Sections 28 T23S R31E, NMPM, Eddy County, NM and being 15' left and 15' right of the centerline survey, see attached.

c. Electric line will follow a route approved by the BLM. Survey of a strip of land 30' wide and 358.8' in length crossing USA land in Sections 28 T23S R31E NMPM, Eddy County, NM and being 15' left and 15' right of the centerline survey, see attached.

d. See attached for additional information on the Sand Dunes MDP1 North Corridor Surface Production Facilities.

5. Location and types of Water Supply

This well will be drilled using a combination of water mud systems. It will be obtained from commercial water stations in the area and will be hauled to location by transport truck using existing and proposed roads.

6. Construction Materials:

Primary
All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM/State/Fee approved pit or from prevailing deposits found on the location. Will use BLM recommended extra caliche from other locations close by for roads, if available.

Secondary
The secondary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cubic yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

a. The top 6" of topsoil is pushed off and stockpiled along the side of the location.
b. An approximate 120' X 120' area is used within the proposed well site to remove caliche.
c. Subsoil is removed and piled alongside the 120' X 120' within the pad site.
d. When caliche is found, material will be stockpiled within the pad site to build the location and road.
e. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
f. Once the well is drilled the stockpiled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stockpiled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the attached plat.

7. Methods of Handling Waste Material:

a. A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins. Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility. Solids-CRI, Liquids-Laguna

b. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.

c. The supplier, including broken sacks, will pickup slats remaining after completion of well.

d. 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. Disposal of fluids to be transported will be by the following companies. TFH Ltd, Laguna SWD Facility

8. Ancillary Facilities: None needed.

9. Well Site Layout:

The proposed well site layout with dimensions of the pad layout and equipment location.

V-Door – East CL Tanks – North Pad – 445' X 620' – 4 Well Pad

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 original topsoil will again be returned to the pad and contoured, as close as possible, to the original topography, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

b. If the well is deemed commercially productive, caliche from the areas of the pad site not required for operations will be reclaimed. The original topsoil 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, and the area will be seeded with an approved BLM mixture to re-establish vegetation.

11. Surface Ownership:

The surface is owned by the U.S. Government and is administered by the 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 surface is leased to: Richardson Cattle Co., P.O. Box 487, Carlsbad, NM 88221. They will be notified of our intention to drill prior to any activity.

12. Other Information:

a. The vegetation cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial native range grass. The topsoil is sandy in nature. Wildlife in the area is also sparse consisting of deer, coyotes, rabbits, rodents, reptiles, dove and quail.

b. There is no permanent or live water in the general proximity of the location.

c. There are no dwellings within one mile of the proposed well site.

d. Cultural Resources Examination–This well is located in the Permian Basin PA. Payment to be determined by BLM. This well shares the same pad as the Iridium MDP1 28-21 Federal Com #11H, 21H, 41H.

e. Copy of this application will be furnished to SWCA Environmental Consultants, 5647 Jefferson St. NE, Albuquerque, NM 87109. Potash lessee within one mile of surface location, Mosiaic Potash Carlsbad, Inc., 370 WIPP Rd., Carlsbad, NM 88220.

13. Bond Coverage:

Bond coverage is Individual-NMB000862, Nationwide-ESB00226.

14. Operators Representatives:

The OXY Permian representatives responsible for ensuring compliance of the surface use plan are listed below:

Van Barton
Supt. Operations
1502 West Commerce Dr.
Carlsbad, NM 88220
Office – 575-628-4111
Cellular – 575-706-7671

Jim Wilson
Operation Specialist
P.O. Box 50250
Midland, TX 79710
Cellular – 575-631-2442

Corrie Hartman
Manager Asset
P.O. Box 4294
Houston, TX Carlsbad, NM 88220
Office – 713-215-7084
Cellular – 832-541-3190

Cuong Q. Phan
RMT Leader
P.O. Box 4294
Houston, TX 77210
Office – 713-513-6645
Cellular – 281-832-0978

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

06/19/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: ESB000226

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

M reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: