Form 3160-3
(June 2015)

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 11 2019
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM104965

6. If Indian, Allotee or Tribe Name:

1a. Type of work: [✓] DRILL [ ] REENTER

1b. Type of Well: [✓] Oil Well [ ] Gas Well [ ] Other

1c. Type of Completion: [ ] Hydraulic Fracturing [✓] Single Zone [ ] Multiple Zone

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

8. Lease Name and Well No.: FORTY NINER RIDGE UNIT 18H 28510

2. Name of Operator: STRATA PRODUCTION COMPANY 21712

9. API Well No.: 30-015-45789

3a. Address: 1301 N Sycamore Roswell NM 88202

3b. Phone No. *(include area code)*: (575)622-1127

10. Field and Pool, or Exploratory: FORTY NINER RIDGE / DELAWARE

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: LOT E / 2470 FNL / 410 FWL / LAT 32.305605 / LONG -103.8935295

At proposed prod. zone: LOT M / 330 FSL / 400 FWL / LAT 32.2841543 / LONG -103.8936535

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 16 / T23S / R30E / NMP

14. Distance in miles and direction from nearest town or post office*: 14 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): 410 feet

16. No of acres in lease: 2160.95

17. Spacing Unit dedicated to this well: 280

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1578 feet

19. Proposed Depth: 7366 feet / 14910 feet

20. BLM/BIA Bond No. in file: FED: NM1538

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3180 feet

22. Approximate date work will start*: 10/01/2018

23. Estimated duration: 30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Shammy Dennis / Ph: (575)622-1127	07/26/2018

Title: Administrative Support

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	02/20/2019

Title	Office
Assistant Field Manager Lands & Minerals	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.

APPROVED WITH CONDITIONS

Approval Date: 02/20/2019

(Continued on page 2)

*(Instructions on page 2)

RJP 3-18-19

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 I: 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 wen, 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 directionany 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.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

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 wen 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 win 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 conects this information to anow 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 Conection 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: LOT E / 2470 FNL / 410 FWL / TWSP: 23S / RANGE: 30E / SECTION: 16 / LAT: 32.305605 / LONG: -103.8935295 (TVD: 0 feet, MD: 0 feet)
   PPP: LOT M / 1320 FSL / 400 FWL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2868951 / LONG: -103.8936376 (TVD: 7368 feet, MD: 13877 feet)
   PPP: LOT L / 2640 FSL / 410 FWL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2905427 / LONG: -103.8936166 (TVD: 7382 feet, MD: 12557 feet)
   PPP: LOT D / 0 FNL / 400 FWL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2978422 / LONG: -103.8935744 (TVD: 7369 feet, MD: 9917 feet)
   BHL: LOT M / 330 FSL / 400 FWL / TWSP: 23S / RANGE: 30E / SECTION: 21 / LAT: 32.2841543 / LONG: -103.8936535 (TVD: 7366 feet, MD: 14910 feet)

BLM Point of Contact

Name: Priscilla Perez
Title: Legal Instruments Examiner
Phone: 5752345934
Email: pperez@blm.gov

Approval Date: 02/20/2019

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:	STRATA PRODUCTION COMPANY
LEASE NO.:	NMNM104965
WELL NAME & NO.:	18H- FORTY NINER RIDGE UNIT
SURFACE HOLE FOOTAGE:	2470'/N & 410'/W
BOTTOM HOLE FOOTAGE	330'/S & 400'/W
LOCATION:	Section. 16.,T23S.,R.30E., NMP
COUNTY:	EDDY County, New Mexico

COA

H2S	(•) Yes	( ) No	
Potash	( ) None	( ) Secretary	(•) R-111-P
Cave/Karst Potential	( ) Low	( ) Medium	(•) High
Variance	(•) None	( ) Flex Hose	( ) Other
Wellhead	(•) Conventional	( ) Multibowl	( ) Both
Other	[ ] 4 String Area	[ ] Capitan Reef	[ ] WIPP

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Cherry and Brushy Canyon** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Primary Casing Design/Alternate Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **330** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    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 will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

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.

❖ In **High Cave/Karst Areas** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

2. The minimum required fill of cement behind the **9-5/8** inch production casing is:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

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

3. 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. **Excess calculates to negative 57% - additional cement might be required.**

C. PRESSURE CONTROL

1. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

D. SPECIAL REQUIREMENT(S)

Commercial Well Determination

A commercial well determination will need to be submitted after production has been established for at least six months.

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit

designation, but will replace the unit number with the participating area number when the sign is replaced.

GENERAL 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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. 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.
   a. In the event 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 well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) 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.

A. CASING

1. 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.

2. 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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: 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 at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. 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.

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

6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. 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.

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. 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.

3. 5M or higher 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.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    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. 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.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

d. 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.

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. 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.

C. 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.

D. 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

NMK1312019

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	STRATA PRODUCTION COMPANY
LEASE NO.:	NMNM104965
WELL NAME & NO.:	18H- FORTY NINER RIDGE UNIT
SURFACE HOLE FOOTAGE:	2470'/N & 410'/W
BOTTOM HOLE FOOTAGE	330'/S & 400'/W
LOCATION:	Section. 16.,T23S.,R.30E., NMP
COUNTY:	EDDY County, New Mexico

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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: 02/20/2019

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)

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.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

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, or equivalent, 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 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:
The operator will perform annual pressure monitoring 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.

FLOWLINES (SURFACE):
- Flowlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize the possibility of leaks and spills from entering karst systems.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.

- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

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.

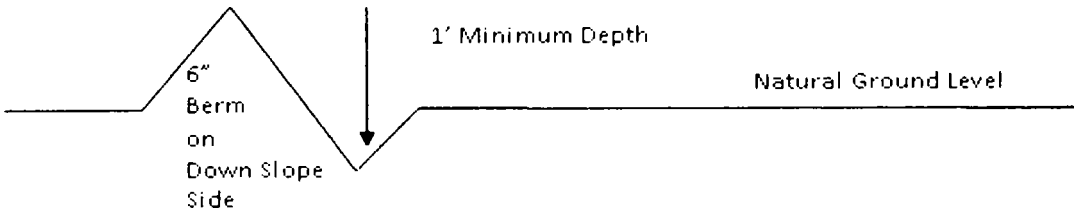
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards 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 cattle guards 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.

Livestock Watering Requirement
Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

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

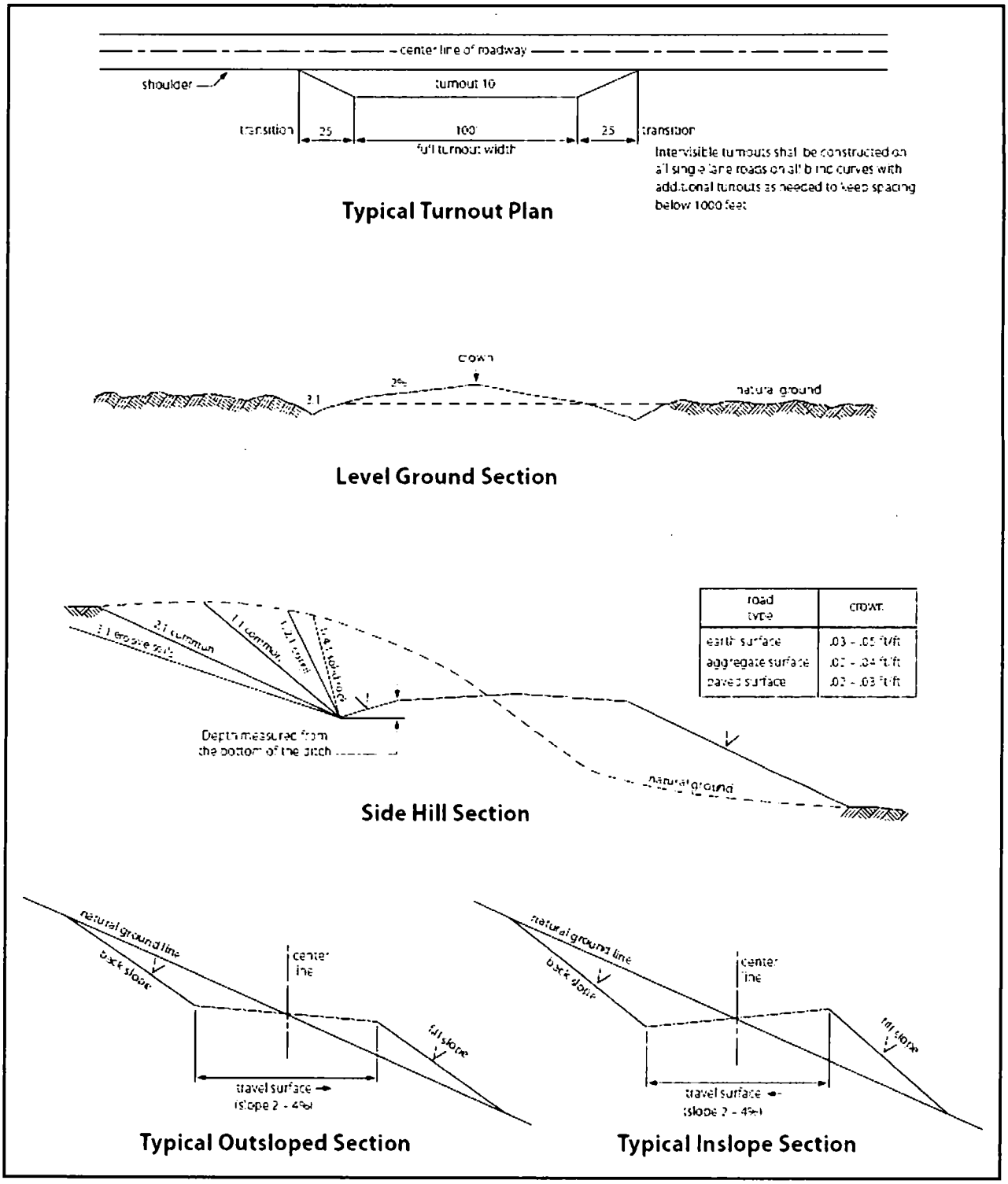


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

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).

IX. 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).

(Insert Seed Mixture Here)

AFMSS

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

Operator Certification Data Report

02/21/2019

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: Shammy Dennis **Signed on:** 07/12/2018

Title: Administrative Support

Street Address: 1301 N Sycamore Ave

City: Rosewell **State:** NM **Zip:** 88202

Phone: (575)622-1127

Email address: sdennis@stratanm.com

Representative Name: Paul Ragsdale

Street Address: 1301 N Sycamore Ave

City: Roswell **State:** NM **Zip:** 88202

Phone: (575)622-1127

Email address: pragsdale@stratanm.com

AFMSS

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

Application Data Report

02/21/2019

APD ID: 10400028153 **Submission Date:** 07/26/2018

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

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

Highlighted data reflects the most recent changes

Show Final Text

APD ID: 10400028153 **Tie to previous NOS?** 10400026043 **Submission Date:** 07/26/2018

BLM Office: CARLSBAD **User:** Shammy Dennis **Title:** Administrative Support

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

Lease number: NMNM104965 **Lease Acres:** 2160.95

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:** STRATA PRODUCTION COMPANY

Operator letter of designation:

Operator Organization Name: STRATA PRODUCTION COMPANY

Operator Address: 1301 N Sycamore **Zip:** 88202

Operator PO Box: PO Box 1030

Operator City: Roswell **State:** NM

Operator Phone: (575)622-1127

Operator Internet Address: pragsdale@stratanm.com

Well in Master Development Plan? NO **Mater Development Plan name:**

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

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

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** FORTY NINER RIDGE **Pool Name:** DELAWARE

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

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

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: SINGLE WELL **Multiple Well Pad Name:** **Number:**

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 14 Miles **Distance to nearest well:** 1578 FT **Distance to lease line:** 410 FT

Reservoir well spacing assigned acres Measurement: 280 Acres

Well plat: FNRU__18H___PPP_Long___Lat_20180727130017.pdf

FNRU__18H__Survey_Plat_signed_20180727130019.pdf

Well work start Date: 10/01/2018 **Duration:** 30 DAYS

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: ls1801030

	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	2470	FNL	410	FWL	23S	30E	16	Lot E	32.305605	-103.8935295	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	3180	0	0
KOP Leg #1	2470	FNL	410	FWL	23S	30E	16	Lot E	32.305605	-103.8935295	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	-3600	6780	6780
PPP Leg #1	0	FNL	400	FWL	23S	30E	21	Lot D	32.2978422	-103.8935744	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 104965	-4189	9917	7369

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

	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	2640	FSL	410	FWL	23S	30E	21	Lot L	32.2905427	-103.8936166	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 018996	-4202	12557	7382
PPP Leg #1	1320	FSL	400	FWL	23S	30E	21	Lot M	32.2868951	-103.8936376	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 018996	-4188	13877	7368
EXIT Leg #1	330	FSL	400	FWL	23S	30E	21	Lot M	32.2841543	-103.8936535	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 086441	-4186	14910	7366
BHL Leg #1	330	FSL	400	FWL	23S	30E	21	Lot M	32.2841543	-103.8936535	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 086441	-4186	14910	7366

Drilling Plan Data Report
02/21/2019

APD ID: 10400028153 **Submission Date:** 07/26/2018

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

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

Highlighted data reflects the most recent changes

Show Final Text

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3180	0	0	ANHYDRITE	USEABLE WATER	No
2	TOP SALT	2480	700	700	SALT	NONE	No
3	DELAWARE	-690	3870	3870	LIMESTONE,SANDSTONE	NATURAL GAS,OIL	Yes
4	BONE SPRING	-4552	7732	7732	LIMESTONE,SANDSTONE	NATURAL GAS,OIL	No

Pressure Rating (PSI): 3M **Rating Depth:** 10000

Equipment: Shaffer Double Ram BOP

Requesting Variance? NO

Variance request:

Testing Procedure: THE BLOWOUT PREVENTER EQUIPMENT (BOP) SHOWN IN BOP ATTACHMENT WILL CONSIST OF A DOUBLE RAM-TYPE (3000 PSI WP) PREVENTER AND A BAG-TYPE (HYDRIL) PREVENTER (3000 PSI WP). BOTH UNITS WILL BE HYDRAULICALLY OPERATED AND THE RAM-TYPE PREVENTER WILL BE EQUIPPED WITH BLIND RAMS ON TOP AND 4 1/2" DRILL PIPE RAMS ON BOTTOM. BOTH BOP'S WILL BE NIPPLED UP ON THE 13 3/8" SURFACE CASING AND USED CONTINUOUSLY UNTIL TD IS REACHED. BEFORE DRILLING OUT OF SURFACE CASING, THE RAM-TYPE BOP AND ACCESSORY EQUIPMENT WILL BE TESTED TO 250 PSI LOW AND 3000 PSI HIGH AND THE HYDRIL 250 PSI LOW AND 70% OF RATED WORKING PRESSURE (2100 PSI). 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. A 2" KILL LINE AND 3" CHOKE LINE WILL BE INCLUDED IN THE DRILLING SPOOL LOCATED BELOW THE RAM-TYPE BOP. OTHER ACCESSORIES TO THE BOP EQUIPMENT WILL INCLUDE A KELLY COCK AND FLOOR SAFETY VALVE (INSIDE BOP) AND CHOCK LINES AND CHOKE MANIFOLD WITH 3000 PSI WP RATING. BOP./BOPE will be tested by an independent serivce 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 e 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.

Choke Diagram Attachment:

FNRU_18H_CHOKE_DIAGRAM_20180710132811.pdf

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

FNRU_18H_CHOKE_DIAGRAM_20180710132811.pdf

BOP Diagram Attachment:

FNRU_18H_BOP_DIAGRAM_20180710132827.pdf

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	17.5	13.375	NEW	API	N	0	330	0	330	3180	2850	330	H-40	48	STC	1.125	1	DRY	1.8	DRY	1.8
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3494	0	3494	3180	-314	3494	J-55	40	STC	1.125	1	DRY	1.8	DRY	1.8
3	PRODUCTION	8.75	5.5	NEW	API	N	0	14298	0	7345	3180	-4165	14298	HCP-110	20	LTC	1.125	1	DRY	1.8	DRY	1.8

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

FNRU_18H_Casing_Assumptions_Worksheet_20180710134244.pdf

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

FNRU_18H_Casing_Assumptions_Worksheet_20180710134341.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

FNRU_18H_Casing_Assumptions_Worksheet_20180710134352.pdf

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead	330	0	330	341	1.34	14.8	456.94	100	Class C	2% CACL + 1 gal/100 sack FP-6L + 56.3% Fresh Water
INTERMEDIATE	Lead	2000	0	2000	450	2.06	14.8	927	100	35/65 POZ/C	5% PF44, 6% PF20, 3#/skPF42, 1%PF1, .125#/skPF29, .25#/skPF46
INTERMEDIATE	Tail		0	2000	200	1.33	14.8	266	100	CLASS C	2%PF13

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead	2000	2000	3860	575	2.07	12.6	1190.25	100	35/65 POZ/C	5% PF44, 6% PF20, 3#skPF42, 1%PF1, .125#/skPF29, .25#/skPF46
INTERMEDIATE	Tail		2000	3860	100	1.33	14.8	133	100	CLASS C	2%PF13
PRODUCTION	Lead	14298	0	14298	621	2.12	12.5	1316.12	50	35/65 POZ/H	4% BENTONITE, 5% MPA5, 0.2% FL52, 0.3% Sodium Chloride, 5#/skCM1, 0.125#/sk Cello Flake, 1 gal/100 skFP6L
PRODUCTION	Tail		0	14298	200	1.18	15.6	236	50	CLASS H	.3%FL52, 0.005#/sk Static Free, 1 gal/100skFP6L, 46.2% Fresh H2O

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: BLOWOUT PREVENTOR AND SUFFICIENT MUD MATERIALS TO MAINTAIN WEIGHT, VISCOSITY AND COMBAT LOSS CIRCULATION.

Describe the mud monitoring system utilized: SHALL INCLUDE EQUIPMENT TO MONITOR THE CIRCULATION SYSTEM WHICH SHALL INCLUDE BUT NOT BE LIMITED TO DAILY RECORDS OF PUMP SPEEDS, VISUAL MUD MONITORING EQUIPMENT TO DETECT VOLUME CHANGES SUCH AS PIT VOLUMES, ELECTRONIC/MECHANICAL MONITORING EQUIPMENT FOR PIT VOLUME TOTALIZERS, STROKE COUNTERS AND FLOW SENSORS. DAILY MUD TESTS TO DETERMINE, AS APPLICABLE, DENSITY, VISCOSITY, GEL STRENGTH, FILTRATION AND PH SHALL BE CONDUCTED. GAS DETECTING EQUIPMENT WILL BE UTILIZED BELOW THE INTERMEDIATE CASING. GAS FLARE LINES AND MUD-GAS SEPARATORS WILL BE UTILIZED AS NECESSARY.

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

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

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
330	3494	WATER-BASED MUD	9.7	10.1	1	0.1	10	5	160000	0	
3494	7345	WATER-BASED MUD	8.8	9.2	2	0.25	10	10	60000	10	
0	330	SPUD MUD	8.33	8.7	4	0	9	0	0	0	
7345	14298	POLYMER	9.1	9.5	9	0.1	10	25	60000	10	

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

TWO MAN MUDLOGGING UNIT FROM 9 5/8" INTERMEDIATE CASING TO TD AND DLL-MSFL, CNL-DENSITY, GAMMA RAY, CALIPER. MUDLOGGING UNIT WILL BE EMPLOYED FROM APPROXIMATELY 3494' TO TD. THE DUAL LATEROLOG WILL BE RUN FROM TD BACK TO THE INTERMEDIATE CASING AND THE COMPENSATED NEUTRON/DENSITY AND GAMMA RAY LOGS WILL BE RUN FROM TD BACK TO SURFACE.

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

CALIPER,CBL,CDL,CNL,DLL,GR,MUDLOG,SP

Coring operation description for the well:

IN SOME CASES, STRATA ELECTS TO RUN ROTARY SIDEWALL CORES FROM SELECTED INTERVALS DEPENDENT UPON LOGGING RESULTS.

Anticipated Bottom Hole Pressure: 3000 **Anticipated Surface Pressure:** 1375.96

Anticipated Bottom Hole Temperature(F): 120

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:

FNRU_18H_H2S_Drilling_Plan_20180710134525.pdf

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Proposed horizontal/directional/multi-lateral plan submission:

49er__18h_path_20180711152254.ppt

FNRU__18H_horizontal_target_and_values_20180712142916.pdf

FNRU__18H_Directional_Plan_rev1__10627__20180727131151.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

FNRU__18H_Gas_Capture_Plan_20180727131342.docx

Other Variance attachment:

Drilling Operations
Choke Manifold

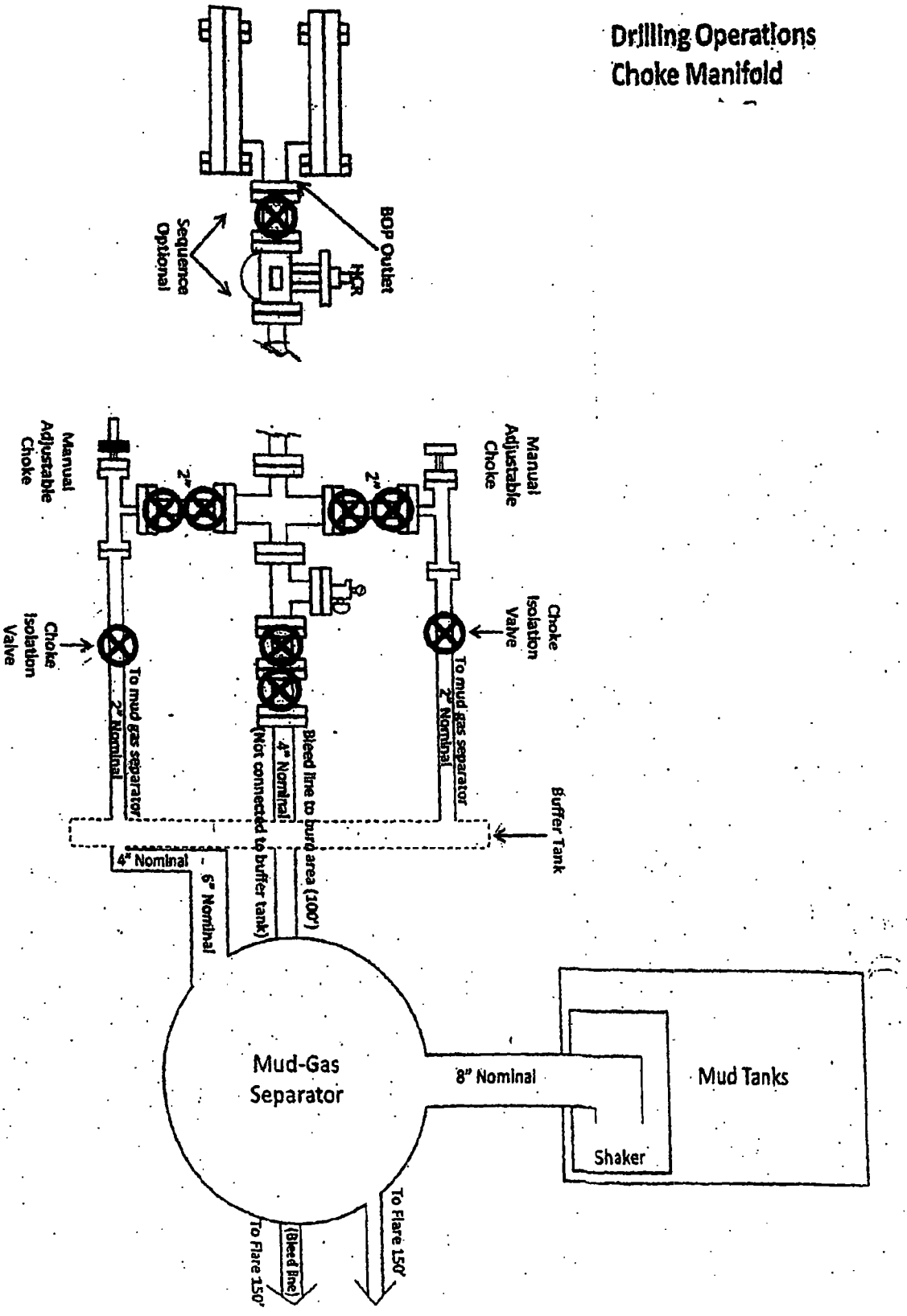


EXHIBIT "A"

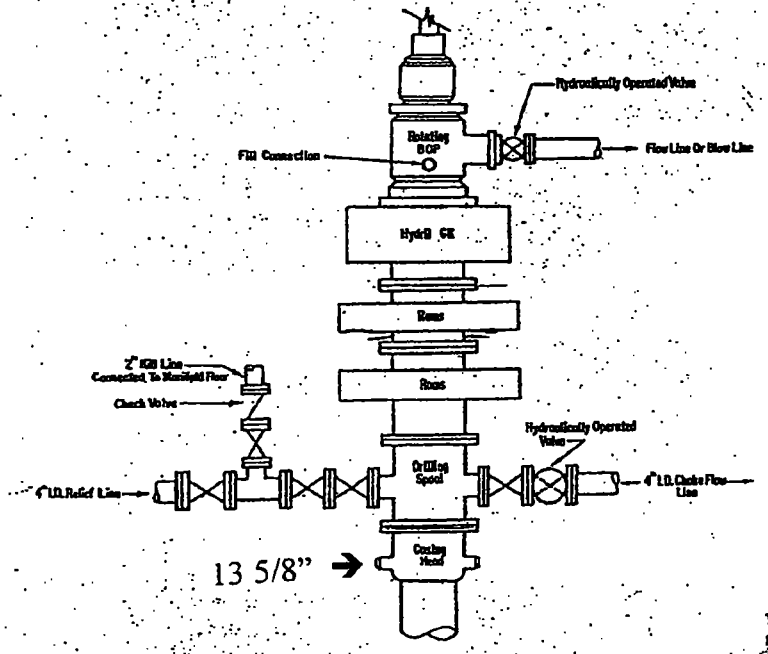
BLOWOUT PREVENTER EQUIPMENT DESCRIPTION

All equipment should be at least 3,000 psi WP or higher unless otherwise specified.

1. Bell nipple
2. Hydril bag type preventer
3. Ram type pressure operated blowout preventer with blind rams.
4. Flanged spool with one 3"and one 2"(minimum) outlet.
5. 2"(minimum) flanged plug or gate valve.
6. 2"x 2"x 2"(minimum) flanged.
7. 3"gate valve.
8. Ram type pressure operated blowout preventer with pipe rams.
9. Flanged type casing head with one side outlet.
10. 2" threaded (or flanged) plug or gate valve. Flanged on 5000# WP, threaded on 3000# WP or less.
11. 3" flanged spacer spool.
12. 3"x 2"x 2"x 2" flanged cross.
13. 2" flanged plug or gate valve.
14. 2" flanged adjustable choke.
15. 2" threaded flange.
16. 2" XXH nipple.
17. 2" forged steel 90° Ell.
18. Cameron (or equal) threaded pressure gauge.
19. Threaded flange.
20. 2" flanged tee.
21. 2" flanged plug or gate valve.
22. 2 1/2" pipe, 300' to pit, anchored.
23. 2 1/2" SE valve.
24. 2 1/2" line to steel pit or separator.

NOTES:

1). Items 3,4 and 8 may be replaced with double ram type preventer with side outlets between the rams.
2). The two valves next tho the stack on the fill and kill line to be closed unless drill string is being pulled.
3). Kill line is for emergency use only. This connection shall not be used for filling.
4). Replacement pipe rams and blind rams shall be on location at all times.
5). Only type U, LSW and QRC ram type preventers with secondary seals are acceptable for 5000 psi WP and higher BOP stacks.
6). Type E ram-type BOP's with factory modified side outlets may be used on 3000 psi or lower WP BOP stacks.



3000# PSI WORKING PRESSURE BLOWOUT PREVENTER HOOK-UP

The blowout preventer assembly shall consist of one single type blind ram preventer and one single type pipe ram preventer, both hydraulically operated; a Hydril "GK" preventer; a rotating blowout preventer; valves; chokes and connections, as illustrated. If a tapered drill string is used, a ram preventer must be provided for each size of drill pipe. Casing and tubing rams to fit the preventers are to be available as needed. If correct in size, the flanged outlets of the ram preventer may be used for connecting to the 4-inch I.D. choke flow line and 4-inch I.D. relief line, except when air or gas drilling. All preventer connections are to be open-face flanged.

Minimum operating equipment for the preventers and hydraulically operated valves shall be as follows: (1) Multiple pumps, driven by a continuous source of power, capable of fluid charging the total accumulator volume from the nitrogen precharge pressure to its rated pressure within_____ minutes. Also, the pumps are to be connected to the hydraulic operating system which is to be a closed system. (2) Accumulators with a precharge of nitrogen of not less than 750 PSI and connected so as to receive the aforementioned fluid charge. With the charging pumps shut down, the pressurized fluid volume stored in the accumulators must be sufficient to close all the pressure-operated devices simultaneously within_____ seconds; after closure, the remaining accumulator pressure shall be not less than 1000 PSI with the remaining accumulator fluid volume at least_____ percent of the original. (3) When requested, an additional source of power, remote and equivalent, is to be available to operate the above pumps; or there shall be additional pumps operated by separate power and equal in performance capabilities.

The closing manifold and remote closing manifold shall have a separate control for each pressure-operated device. Controls are to be labeled, with control handles indicating open and closed positions. A pressure reducer and regulator must be provided for operating the Hydril preventer. When requested, a second pressure reducer shall be available to limit operating fluid pressures to ram preventers. Gulf Legion No. 38 hydraulic oil, an equivalent or better, is to be used as the fluid to operate the hydraulic equipment.

The choke manifold, choke flow line, relief line, and choke lines are to be supported by metal stands and adequately anchored. The choke flow line, relief line, and choke lines shall be constructed as straight as possible and without sharp bends. Easy and safe access is to be maintained to the choke manifold. If deemed necessary, walkways and stairways shall be erected in and around the choke manifold. All valves are to be selected for operation in the presence of oil, gas, and drilling fluids. The choke flow line valves and relief line valves connected to the drilling spool and all ram type preventers must be equipped with stem extensions, universal joints if needed, and hand wheels which are to extend beyond the edge of the derrick substructure. All other valves are to be equipped with handles.

* To include derrick floor mounted controls.

FARUL 18 - CASING ASSUMPTIONS WORKSHEET

CASING ID	String Type	Hole Size (IN)	Top Set MD	Top Set TVD	Top Set MSL	Bottom Set MD	Bottom Set TVD	Bottom Set MSL	Calculated Csg Length MD	Casing Size	Grade	Weight	Joint Type	Condition	Standard	Tapered String	Collapse Safety Factor	Burst Safety Factor	Jt Tensile SF Type	Jt Tensile SF	Body Tensile SF Type	Body Tensile SF
1	SURFACE	17.5	0	0	3180	330	330	2850	330	13.375	H-40	48	STC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8
2	INTERMEDIATE	12.25	0	0	3180	3494	3494	-314	3494	9.625	J-55	40	STC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8
3	PRODUCTION	8.75	0	0	3180	14298	7345	-4165	14298	5.5	HCP-110	20	LTC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8

ENKUL 8H CASING ASSUMPTIONS WORKSHEET

CASING ID	String Type	Hole Size (IN)	Top Set MD	Top Set TVD	Top Set MSL	Bottom Set MD	Bottom Set TVD	Bottom Set MSL	Calculated Csg Length MD	Casing Size	Grade	Weight	Joint Type	Condition	Standard	Tapered String	Collapse Safety Factor	Burst Safety Factor	Jt Tensile SF Type	Jt Tensile SF	Body Tensile SF Type	Body Tensile SF
1	SURFACE	17.5	0	0	3180	330	330	2850	330	13.375	H-40	48	STC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8
2	INTERMEDIATE	12.25	0	0	3180	3494	3494	-314	3494	9.625	J-55	40	STC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8
3	PRODUCTION	8.75	0	0	3180	14298	7345	-4165	14298	5.5	HCP-110	20	LTC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8

ENKU 8H CASING ASSUMPTIONS WORKSHEET

CASING ID	String Type	Hole Size (IN)	Top Set MD	Top Set TVD	Top Set MSL	Bottom Set MD	Bottom Set TVD	Bottom Set MSL	Calculated Csg Length MD	Casing Size	Grade	Weight	Joint Type	Condition	Standard	Tapered String	Collapse Safety Factor	Burst Safety Factor	Jt Tensile SF Type	Jt Tensile SF	Body Tensile SF Type	Body Tensile SF
1	SURFACE	17.5	0	0	3180	330	330	2850	330	13.375	H-40	48	STC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8
2	INTERMEDIATE	12.25	0	0	3180	3494	3494	-314	3494	9.625	J-55	40	STC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8
3	PRODUCTION	8.75	0	0	3180	14298	7345	-4165	14298	5.5	HCP-110	20	LTC	NEW	API	N	1.125	1	DRY	1.8	DRY	1.8

STRATA PRODUCTION COMPANY

H_2S DRILLING OPERATIONS PLAN

I. HYDROGEN SULFIDE TRAINING

A. All contractors and subcontractors employed by Strata Production Company will receive or have received training from a qualified instructor within the last twelve months in the following areas prior to commencing drilling operations on the well.

1. The hazards and characteristics of hydrogen sulfide (H_2S).
2. Safety precautions.
3. Operations of safety equipment and life support systems.

B. In addition, contractor supervisory personnel will be trained or prepared in the following areas:

1. The effect of H_2S on metal components in the system. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-down procedures when drilling or reworking a well, blowout prevention and well control procedures, if the nature of work performed involves these items.
3. The contents and requirements of the contingency plan when such plan is required.

C. All personnel will be required to carry documentation of the above training on their person.

II. H_2S EQUIPMENT AND SYSTEMS

A. SAFETY EQUIPMENT

The following safety equipment will be on location.

1. Wind direction indicators as seen in attached diagram.
2. Automatic H_2S detection alarm equipment both audio and visual.

3. Clearly visible warning signs as seen on the attached diagram. Signs will use the words "POISON GAS" and "CAUTION" with a strong color contrast.
4. Protective breathing equipment will be located in the dog house and at briefing areas as seen in the attached Diagram.

B. WELL CONTROL SYSTEMS

1. Blowout Prevention Equipment

Equipment includes but is not limited to:

a. Pipe rams to accommodate all pipe sizes.
b. Blind rams.
c. Choke manifold.
d. Closing unit.

2. Communication

a. The rig contractor will be required to have two-way communication capability. Strata Production Company will have either land-line or mobile telephone capabilities.

3. Mud Program

a. The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers, when appropriate, will minimize hazards when penetrating H_2S bearing zones.

4. Drill Stem Test intervals are as follows:

a. None planned

STRATA PRODUCTION COMPANY
Emergency Contact List

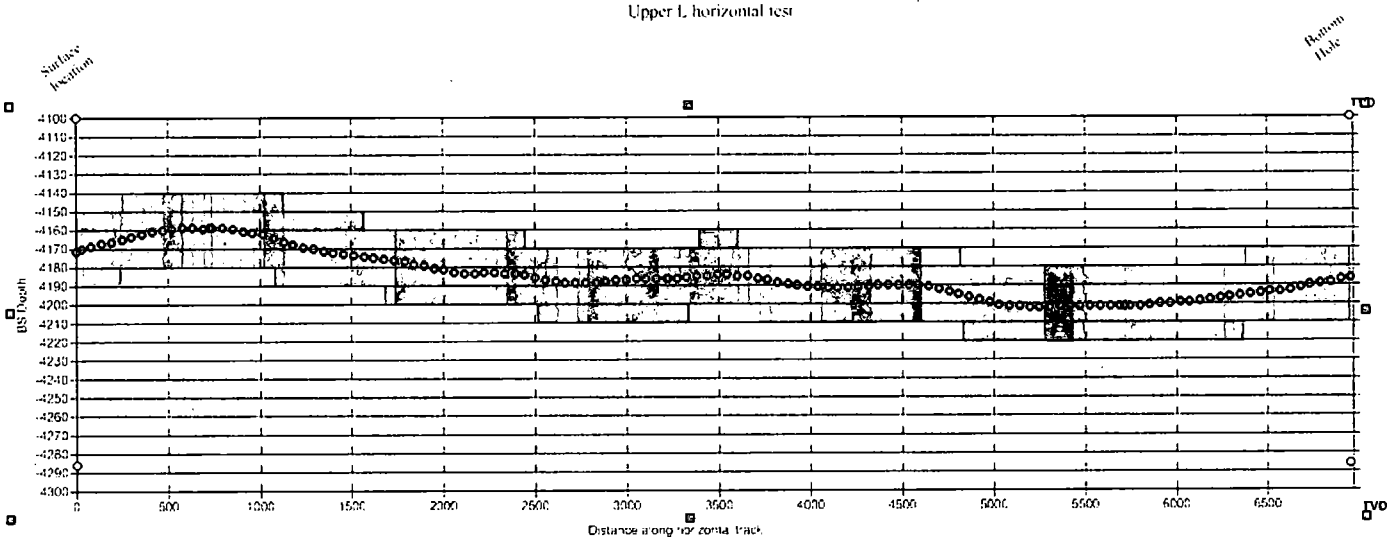
Sheriff's Departments:	
Eddy County Emergency #	575-616-7155
Eddy County Sheriff	575-887-7551
Lea County Sheriff	575-396-3611
New Mexico State Police (Hobbs)	575-392-5588
New Mexico State Police (Roswell)	575-622-7200
Fire Departments:	**911**
Carlsbad	575-885-3125
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359
Hospitals:	**911**
Carlsbad Hospital	575-887-4100
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lea Regional Hospital (Hobbs)	575-492-5000
Lovington Medical Emergency	575-396-2359
Eastern NM Medical Center (Roswell)	575-622-8170
Ambulance Service	575-885-2111
Agent Notifications:	
Bureau of Land Management (Carlsbad)	575-234-5972
Bureau of Land Management (Hobbs)	575-393-3612
New Mexico Oil Conservation Division	575-393-6161
Mosaic Potash - Carlsbad	575-887-2871
Strata Personnel:	575-622-1127
Paul Ragsdale, Operations Manager	575-626-7903
Dwight Adamson, Field Supervisor	575-626-8657
Leroy Clark	575-703-4479
Richard Marr	575-626-1479
Woody Woodrum	575-626-7220
Ron Crenshaw	575-626-9211

FORTY NINER RIDGE UNIT #18H

CONFIDENTIAL

CONFIDENTIAL

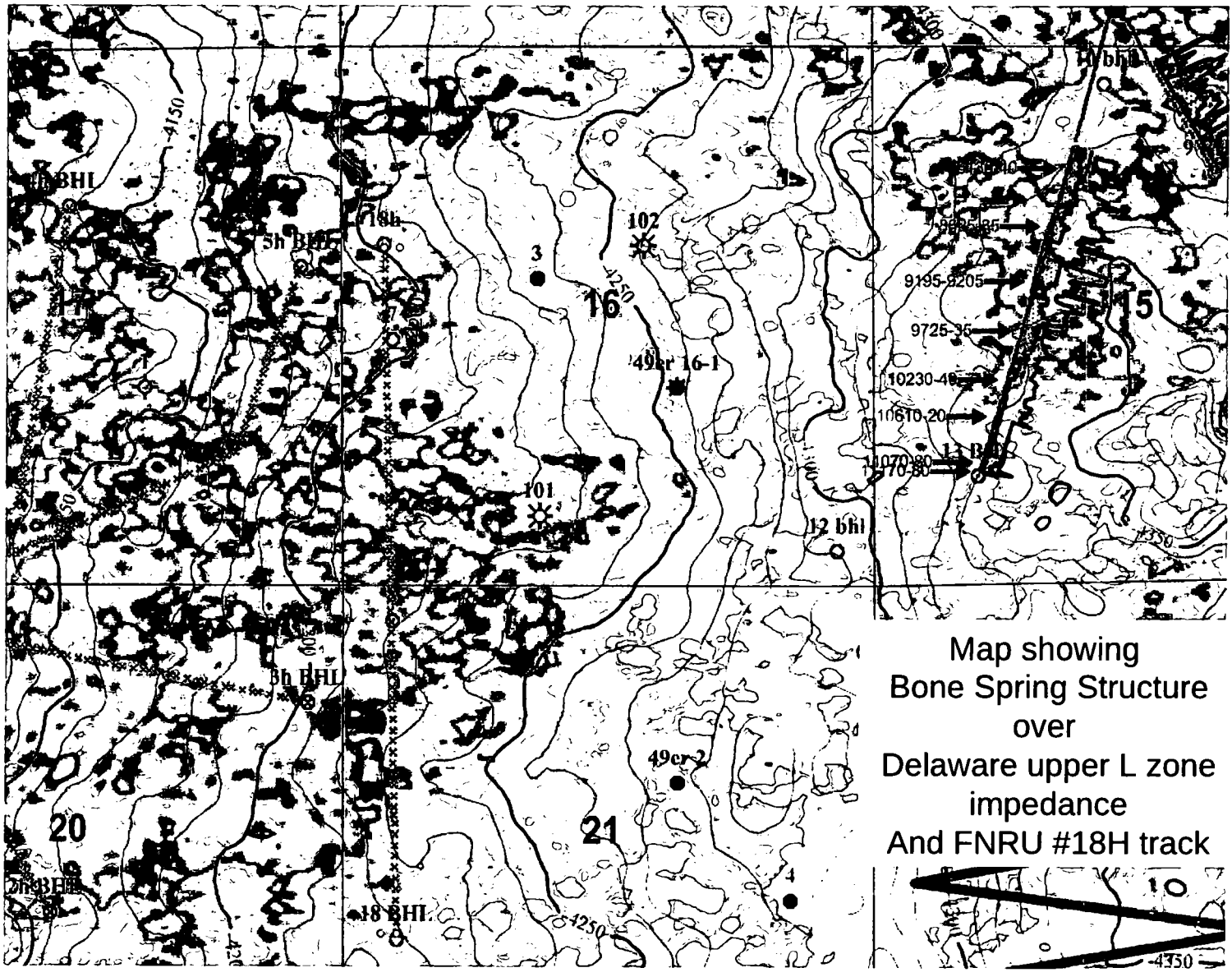
Horizontal FNRU #18h Slice



1": 500ft horizontal
10:1 vertical exaggeration

Horizontal slice
Inversion Impedance
10:1 Vertical exaggeration
Cultreri 12/21/2017 TD Elevation at L sand

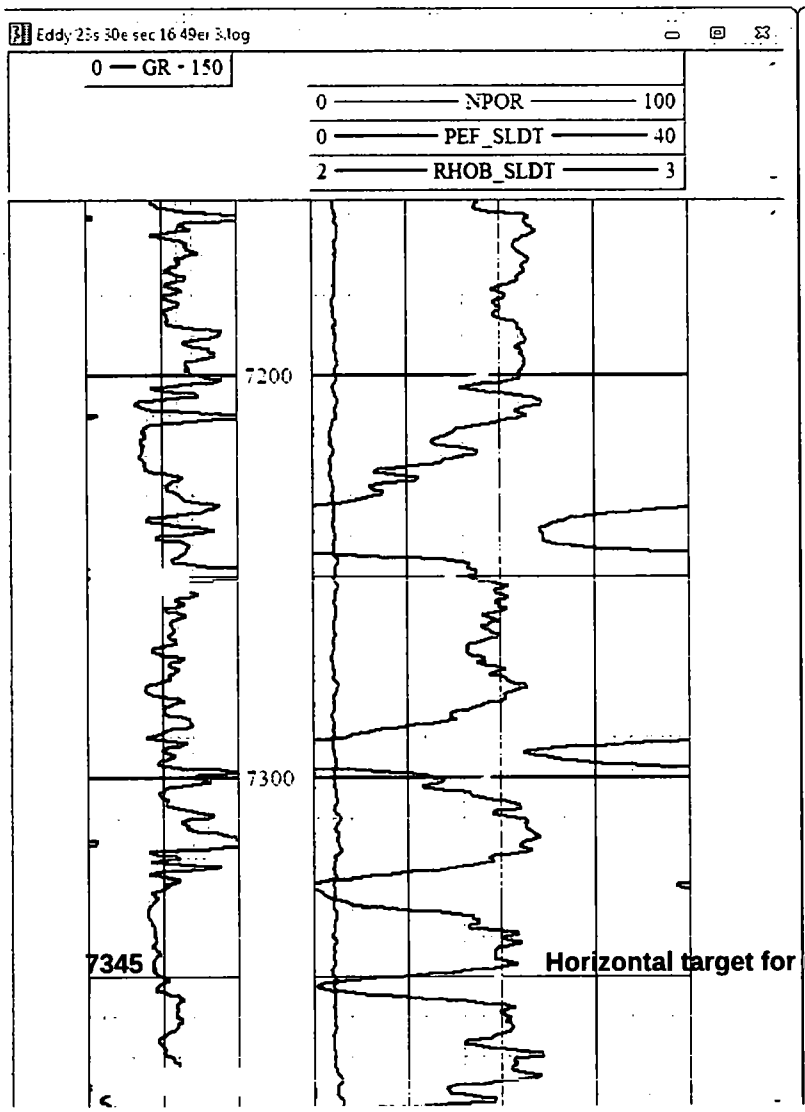
Horizontal 18h track s1

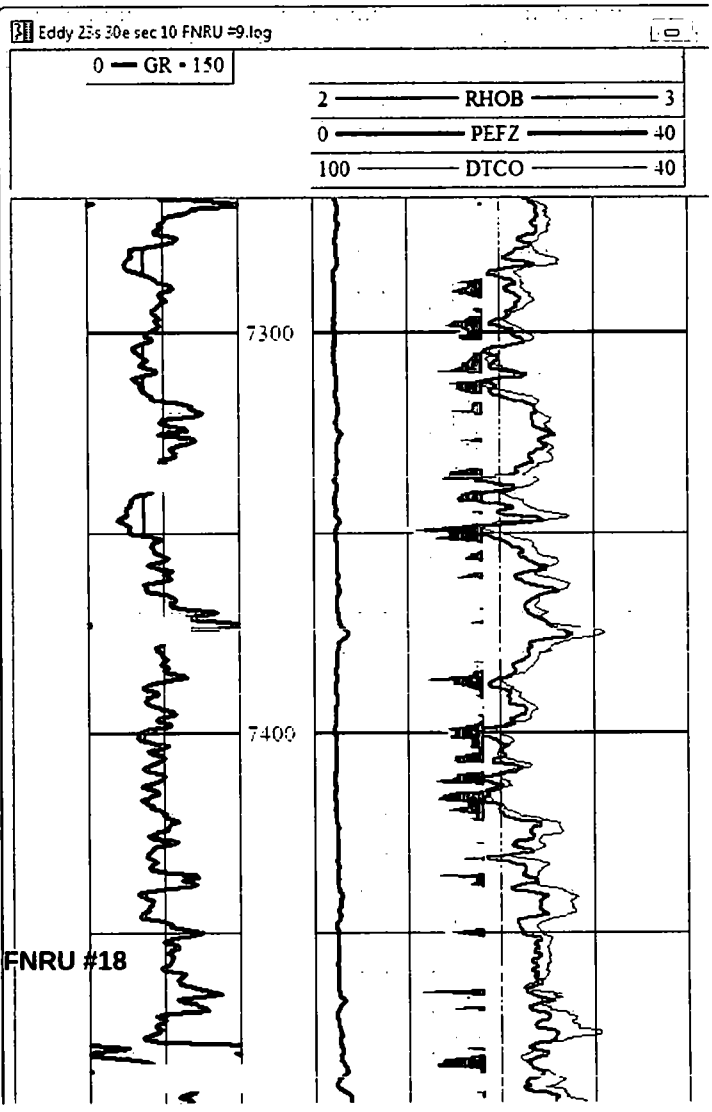


Map showing
Bone Spring Structure
over
Delaware upper L zone
impedance
And FNRU #18H track

Target lower L sand in FNRU #3 for FNRU #18H

31 ft above BS lime





FORTY NINER RIDGE UNIT #18H

Section 16-T23S-R30E

Eddy County, NM

Revised 4/11/2014 for BLM Surface Location at 1980 FNL

X	Y	Bone Spring	Distance From Surface	Target L Sand	L Inversion	Target L Sand	L Inversion
636030	475625	-4202	0	-4171	28621	-4171	28621
636030.6	475597.9	-4201	27	-4170	28576	-4170	28576
636031.8	475542.9	-4200	82	-4169	29089	-4169	29089
636033	475487.9	-4198	137	-4167	29439	-4167	29439
636034.2	475433	-4197	192	-4166	29283	-4166	29283
636035.4	475378	-4196	247	-4165	28843	-4165	28843
636036.6	475323	-4195	302	-4164	28531	-4164	28531
636037.9	475268	-4193	357	-4162	28278	-4162	28278
636039.1	475213.1	-4192	412	-4161	28221	-4161	28221
636040.3	475158.1	-4191	467	-4160	28187	-4160	28187
636041.5	475103.1	-4190	522	-4159	27716	-4159	27716
636042.7	475048.2	-4190	577	-4159	27163	-4159	27163
636043.9	474993.2	-4190	632	-4159	26456	-4159	26456
636045.1	474938.2	-4190	687	-4159	25814	-4159	25814
636045.9	474902.3	-4190	723	-4159	25800	-4159	25800
636046.3	474883.3	-4190	742	-4159	25816	-4159	25816
636047.5	474828.3	-4190	797	-4159	26400	-4159	26400
636048.7	474773.3	-4191	852	-4160	26694	-4160	26694
636050	474718.4	-4192	907	-4161	26686	-4161	26686
636051.2	474663.4	-4193	962	-4162	26852	-4162	26852
636052.4	474608.4	-4194	1017	-4163	27378	-4163	27378
636053.6	474553.4	-4195	1072	-4164	28008	-4164	28008
636054.8	474498.5	-4197	1127	-4166	28185	-4166	28185
636056	474443.5	-4199	1182	-4168	28375	-4168	28375
636057.2	474388.5	-4201	1237	-4170	28469	-4170	28469
636058.4	474333.6	-4202	1292	-4171	28437	-4171	28437
636059.6	474278.6	-4203	1347	-4172	28597	-4172	28597
636060.8	474223.6	-4204	1402	-4173	28735	-4173	28735
636062.1	474168.7	-4204	1457	-4173	28952	-4173	28952
636063.3	474113.7	-4205	1512	-4174	29175	-4174	29175
636064.5	474058.7	-4205	1567	-4174	29133	-4174	29133
636065.7	474003.8	-4206	1622	-4175	28761	-4175	28761
636066.9	473948.8	-4207	1677	-4176	28483	-4176	28483
636068.1	473893.8	-4207	1732	-4176	28323	-4176	28323
636069.3	473838.8	-4208	1787	-4177	27759	-4177	27759
636070.5	473783.9	-4209	1842	-4178	27299	-4178	27299
636071.7	473728.9	-4210	1897	-4179	27235	-4179	27235
636072.9	473673.9	-4212	1952	-4181	27180	-4181	27180
636074.2	473619	-4212	2007	-4181	26947	-4181	26947
636075.4	473564	-4214	2061	-4183	26639	-4183	26639
636076.6	473509	-4215	2116	-4184	26427	-4184	26427
636077.8	473454.1	-4214	2171	-4183	26685	-4183	26685
636079	473399.1	-4214	2226	-4183	27013	-4183	27013
636080.2	473344.1	-4214	2281	-4183	27017	-4183	27017
636081.4	473289.2	-4214	2336	-4183	27364	-4183	27364
636082.6	473234.2	-4215	2391	-4184	27985	-4184	27985
636083.8	473179.2	-4216	2446	-4185	28188	-4185	28188
636085	473124.2	-4217	2501	-4186	28071	-4186	28071
636086.3	473069.3	-4218	2556	-4187	28056	-4187	28056
636087.5	473014.3	-4219	2611	-4188	28271	-4188	28271
636088.7	472959.3	-4219	2666	-4188	28455	-4188	28455
636089.9	472904.4	-4220	2721	-4189	28345	-4189	28345
636091.1	472849.4	-4220	2776	-4189	28115	-4189	28115
636092.3	472794.4	-4219	2831	-4188	27797	-4188	27797
636093.5	472739.5	-4219	2886	-4188	27314	-4188	27314
636094.7	472684.5	-4219	2941	-4188	27363	-4188	27363
636095.9	472629.5	-4218	2996	-4187	27463	-4187	27463
636097.1	472574.6	-4218	3051	-4187	27502	-4187	27502
636098.4	472519.6	-4218	3106	-4187	27619	-4187	27619
636099.6	472464.6	-4218	3161	-4187	28003	-4187	28003
636100.8	472409.6	-4218	3216	-4187	28147	-4187	28147
636100.9	472404.9	-4218	3221	-4187	28156	-4187	28156
636102	472354.7	-4217	3271	-4186	28242	-4186	28242
636103.2	472299.7	-4217	3326	-4186	28097	-4186	28097
636104.4	472244.7	-4216	3381	-4185	27715	-4185	27715
636105.6	472189.8	-4216	3436	-4185	27623	-4185	27623
636106.8	472134.8	-4216	3491	-4185	27638	-4185	27638
636108	472079.8	-4216	3546	-4185	27524	-4185	27524
636109.2	472024.9	-4216	3601	-4185	27233	-4185	27233
636110.5	471969.9	-4216	3656	-4185	26714	-4185	26714

FORTY NINER RIDGE UNIT #18H

Section 16-T23S-R30E

Eddy County, NM

Revised 4/11/2014 for BLM Surface Location at 1980 FNL

X	Y	Bone Spring	Distance From Surface	Target L Sand	L Inversion	Target L Sand	L Inversion
636111.7	471914.9	-4217	3711	-4186	26087	-4186	26087
636112.9	471860	-4218	3766	-4187	25823	-4187	25823
636114.1	471805	-4219	3821	-4188	26145	-4188	26145
636115.3	471750	-4220	3876	-4189	26565	-4189	26565
636116.5	471695	-4221	3931	-4190	26655	-4190	26655
636117.7	471640.1	-4222	3986	-4191	26779	-4191	26779
636118.9	471585.1	-4222	4041	-4191	27225	-4191	27225
636120.1	471530.1	-4222	4096	-4191	27665	-4191	27665
636121.3	471475.2	-4222	4151	-4191	27606	-4191	27606
636122.6	471420.2	-4222	4206	-4191	27646	-4191	27646
636123.8	471365.2	-4222	4261	-4191	27949	-4191	27949
636125	471310.3	-4222	4316	-4191	27660	-4191	27660
636126.2	471255.3	-4221	4371	-4190	27111	-4190	27111
636127.4	471200.3	-4221	4426	-4190	27124	-4190	27124
636128.6	471145.4	-4221	4481	-4190	27318	-4190	27318
636129.8	471090.4	-4221	4536	-4190	27510	-4190	27510
636131	471035.4	-4221	4591	-4190	27994	-4190	27994
636132.2	470980.4	-4222	4646	-4191	28553	-4191	28553
636133.4	470925.5	-4223	4701	-4192	28693	-4192	28693
636134.7	470870.5	-4224	4756	-4193	28588	-4193	28588
636135.9	470815.5	-4226	4811	-4195	28620	-4195	28620
636137.1	470760.6	-4227	4866	-4196	28780	-4196	28780
636138.3	470705.6	-4229	4921	-4198	29084	-4198	29084
636139.5	470650.6	-4230	4976	-4199	29210	-4199	29210
636140.7	470595.7	-4232	5031	-4201	29124	-4201	29124
636141.9	470540.7	-4232	5086	-4201	29034	-4201	29034
636143.1	470485.7	-4233	5141	-4202	28904	-4202	28904
636144.3	470430.8	-4233	5196	-4202	28687	-4202	28687
636145.5	470375.8	-4233	5250	-4202	28249	-4202	28249
636146.8	470320.8	-4233	5305	-4202	27865	-4202	27865
636148	470265.8	-4233	5360	-4202	27774	-4202	27774
636149.2	470210.9	-4232	5415	-4201	27863	-4201	27863
636150.4	470155.9	-4232	5470	-4201	28115	-4201	28115
636151.6	470100.9	-4232	5525	-4201	28387	-4201	28387
636152.8	470046	-4232	5580	-4201	28382	-4201	28382
636154	469991	-4232	5635	-4201	28266	-4201	28266
636155.2	469936	-4233	5690	-4202	28623	-4202	28623
636155.9	469907.5	-4232	5719	-4201	28885	-4201	28885
636156.4	469881.1	-4232	5745	-4201	29138	-4201	29138
636157.6	469826.1	-4232	5800	-4201	29216	-4201	29216
636158.9	469771.1	-4232	5855	-4201	29218	-4201	29218
636160.1	469716.1	-4231	5910	-4200	29493	-4200	29493
636161.3	469661.2	-4231	5965	-4200	29787	-4200	29787
636162.5	469606.2	-4230	6020	-4199	30029	-4199	30029
636163.7	469551.2	-4230	6075	-4199	30159	-4199	30159
636164.9	469496.3	-4229	6130	-4198	30033	-4198	30033
636166.1	469441.3	-4229	6185	-4198	29838	-4198	29838
636167.3	469386.3	-4228	6240	-4197	29674	-4197	29674
636168.5	469331.4	-4227	6295	-4196	29147	-4196	29147
636169.7	469276.4	-4227	6350	-4196	28638	-4196	28638
636171	469221.4	-4226	6405	-4195	28518	-4195	28518
636172.2	469166.5	-4226	6460	-4195	28847	-4195	28847
636173.4	469111.5	-4225	6515	-4194	29527	-4194	29527
636174.6	469056.5	-4225	6570	-4194	30107	-4194	30107
636175.8	469001.5	-4224	6625	-4193	30255	-4193	30255
636177	468946.6	-4222	6680	-4191	29968	-4191	29968
636178.2	468891.6	-4221	6735	-4190	29523	-4190	29523
636179.4	468836.6	-4220	6790	-4189	29314	-4189	29314
636180.6	468781.7	-4219	6845	-4188	29061	-4188	29061
636181.8	468726.7	-4219	6900	-4188	28749	-4188	28749
636183	468673.2	-4217	6953	-4186	28876	-4186	28876

FORTY NINER RIDGE UNIT #18H
Section 16-T23S-R30E
Eddy County, NM
Revised 10/10/2011 for straight borehole two sections long.

X	Y	Bone Spring	Distance From Surface Location
635936	477272	-4209.116047	0
635936.7	477246.9	-4208.837871	25.06596157
635938.3	477192	-4208.319149	80.05794304
635939.9	477137	-4208.209813	135.0499245
635941.5	477082	-4207.7426	190.041906
635943	477027.1	-4207.724813	245.0338874
635944.6	476972.1	-4207.781029	300.0258689
635946.2	476917.1	-4207.904254	355.0178504
635947.8	476862.2	-4208.024673	410.0098319
635949.4	476807.2	-4208.142222	465.0018133
635950.9	476752.2	-4208.165308	519.9937948
635952.5	476697.3	-4207.865792	574.9857763
635954.1	476642.3	-4207.6188	629.9777577
635955.7	476587.3	-4206.974488	684.9697392
635957.2	476532.3	-4205.893546	739.9617207
635958.8	476477.4	-4204.7566	794.9537021
635960.4	476422.4	-4204.596026	849.9456836
635962	476367.4	-4204.563598	904.9376651
635963.6	476312.5	-4204.177811	959.9296466
635965.1	476257.5	-4204.648553	1014.921628
635966.7	476202.5	-4206.001503	1069.913609
635968.3	476147.6	-4207.372357	1124.905591
635969.9	476092.6	-4208.731228	1179.897572
635971.5	476037.6	-4209.206687	1234.889554
635973	475982.7	-4209.913874	1289.881535
635974.6	475927.7	-4210.337392	1344.873517
635976.2	475872.7	-4210.328636	1399.865498
635977.8	475817.7	-4208.653902	1454.85748
635979.4	475762.8	-4206.61669	1509.849461
635980.9	475707.8	-4204.973889	1564.841443
635982.5	475652.8	-4202.939922	1619.833424
635984.1	475597.9	-4200.861315	1674.825406
635985.7	475542.9	-4199.223924	1729.817387
635987.3	475487.9	-4197.785614	1784.809369
635988.8	475433	-4196.389458	1839.80135
635990.4	475378	-4194.919577	1894.793332
635990.9	475359.7	-4194.293341	1913.122213
635992	475323	-4193.049955	1949.785313
635993.6	475268	-4192.056996	2004.777294
635995.1	475213.1	-4190.76441	2059.769276
635996.7	475158.1	-4189.523363	2114.761257
635998.3	475103.1	-4188.731313	2169.753239
635999.9	475048.2	-4188.230123	2224.74522
636001.5	474993.2	-4188.646455	2279.737202
636003	474938.2	-4188.841272	2334.729183
636004.6	474883.3	-4188.784305	2389.721165
636006.2	474828.3	-4188.851296	2444.713146
636007.8	474773.3	-4189.5858	2499.705128
636009.4	474718.4	-4190.565961	2554.697109
636010.9	474663.4	-4191.45402	2609.689091
636012.5	474608.4	-4192.624832	2664.681072
636014.1	474553.4	-4194.165018	2719.673054
636015.7	474498.5	-4196.281473	2774.665035
636017.3	474443.5	-4198.411701	2829.657017
636018.8	474388.5	-4199.881355	2884.648998
636020.4	474333.6	-4200.82189	2939.640979
636022	474278.6	-4202.09267	2994.632961

FORTY NINER RIDGE UNIT #18H
Section 16-T23S-R30E
Eddy County, NM
Revised 10/10/2011 for straight borehole two sections long.

X	Y	Bone Spring	Distance From Surface Location
636023.6	474223.6	-4203.151977	3049.624942
636025.2	474168.7	-4203.958144	3104.616924
636026.7	474113.7	-4204.845771	3159.608905
636028.3	474058.7	-4205.557597	3214.600887
636029.9	474003.8	-4206.241046	3269.592868
636031.5	473948.8	-4206.932153	3324.58485
636033	473893.8	-4207.627947	3379.576831
636034.6	473838.8	-4208.429686	3434.568813
636036.2	473783.9	-4209.666657	3489.560794
636037.8	473728.9	-4210.614394	3544.552776
636039.4	473673.9	-4211.782297	3599.544757
636040.9	473619	-4212.711783	3654.536739
636042.5	473564	-4214.007031	3709.52872
636044.1	473509	-4215.073187	3764.520702
636045.7	473454.1	-4214.64616	3819.512683
636045.9	473446.1	-4214.622035	3827.484385
636047.3	473399.1	-4214.47876	3874.504664
636048.8	473344.1	-4214.448008	3929.496646
636050.4	473289.2	-4214.902161	3984.488627
636052	473234.2	-4215.056715	4039.480609
636053.6	473179.2	-4215.705911	4094.47259
636055.2	473124.2	-4216.579782	4149.464572
636056.7	473069.3	-4217.880604	4204.456553
636058.3	473014.3	-4219.010736	4259.448535
636059.9	472959.3	-4219.331659	4314.440516
636061.5	472904.4	-4219.69958	4369.432498
636063	472849.4	-4219.653075	4424.424479
636064.6	472794.4	-4219.227609	4479.416461
636066.2	472739.5	-4218.875548	4534.408442
636067.8	472684.5	-4218.384639	4589.400424
636069.4	472629.5	-4217.785206	4644.392405
636070.9	472574.6	-4217.659177	4699.384386
636072.5	472519.6	-4217.685789	4754.376368
636074.1	472464.6	-4217.878325	4809.368349
636075.7	472409.6	-4217.583037	4864.360331
636077.3	472354.7	-4216.986936	4919.352312
636078.8	472299.7	-4216.819105	4974.344294
636080.4	472244.7	-4216.431944	5029.336275
636082	472189.8	-4216.100333	5084.328257
636083.6	472134.8	-4215.539513	5139.320238
636085.2	472079.8	-4215.468181	5194.31222
636086.7	472024.9	-4215.578289	5249.304201
636088.3	471969.9	-4216.225529	5304.296183
636089.9	471914.9	-4217.018748	5359.288164
636091.5	471860	-4217.861892	5414.280146
636093.1	471805	-4219.092754	5469.272127
636094.6	471750	-4219.956498	5524.264109
636096.2	471695	-4220.786586	5579.25609
636097.8	471640.1	-4221.473088	5634.248071
636099.4	471585.1	-4221.674979	5689.240053
636100.9	471532.5	-4221.728407	5741.846558
636100.9	471530.1	-4221.731482	5744.232034
636102.5	471475.2	-4221.804328	5799.224016
636104.1	471420.2	-4221.733092	5854.215997
636105.7	471365.2	-4221.256554	5909.207979
636107.3	471310.3	-4221.120407	5964.19996
636108.8	471255.3	-4220.67977	6019.191942

FORTY NINER RIDGE UNIT #18H
Section 16-T23S-R30E
Eddy County, NM
Revised 10/10/2011 for straight borehole two sections long.

X	Y	Bone Spring	Distance From Surface Location
636110.4	471200.3	-4220.636642	6074.183923
636112	471145.4	-4220.573398	6129.175905
636113.6	471090.4	-4220.612284	6184.167886
636115.2	471035.4	-4220.821459	6239.159868
636116.7	470980.4	-4221.618611	6294.151849
636118.3	470925.5	-4222.885344	6349.143831
636119.9	470870.5	-4224.377026	6404.135812
636121.5	470815.5	-4225.919615	6459.127794
636123.1	470760.6	-4227.389329	6514.119775
636124.6	470705.6	-4228.606576	6569.111756
636126.2	470650.6	-4230.07229	6624.103738
636127.8	470595.7	-4231.485368	6679.095719
636129.4	470540.7	-4232.286807	6734.087701
636131	470485.7	-4232.511238	6789.079682
636132.5	470430.8	-4232.87726	6844.071664
636134.1	470375.8	-4232.966054	6899.063645
636135.7	470320.8	-4232.711898	6954.055627
636137.3	470265.8	-4232.603571	7009.047608
636138.8	470210.9	-4232.105684	7064.03959
636140.4	470155.9	-4232.068827	7119.031571
636142	470100.9	-4232.098563	7174.023553
636143.6	470046	-4232.16915	7229.015534
636145.2	469991	-4232.250562	7284.007516
636146.7	469936	-4232.638446	7338.999497
636148.3	469881.1	-4232.273712	7393.991478
636149.9	469826.1	-4232.098409	7448.98346
636151.5	469771.1	-4231.561611	7503.975441
636153.1	469716.1	-4230.97963	7558.967423
636154.6	469661.2	-4230.800711	7613.959404
636155.9	469618.9	-4230.406486	7656.208731
636156.2	469606.2	-4230.286078	7668.951386
636157.8	469551.2	-4230.140456	7723.943367
636159.4	469496.3	-4229.546678	7778.935349
636161	469441.3	-4228.874592	7833.92733
636162.5	469386.3	-4228.167418	7888.919312
636164.1	469331.4	-4227.523521	7943.911293
636165.7	469276.4	-4227.212146	7998.903275
636167.3	469221.4	-4226.547876	8053.895256
636168.9	469166.5	-4225.859759	8108.887238
636170.4	469111.5	-4225.256308	8163.879219
636172	469056.5	-4225.001925	8218.871201
636173.6	469001.5	-4223.926724	8273.863182
636175.2	468946.6	-4222.588498	8328.855163
636176.7	468891.6	-4221.422066	8383.847145
636178.3	468836.6	-4220.468561	8438.839126
636179.9	468781.7	-4219.694737	8493.831108
636181.5	468726.7	-4218.901645	8548.823089
636183	468673.2	-4217.697507	8602.332854

Strata Production Company

Well: Forty Niner Ridge Unit Well No. 18H
Site: Section 16-T23S-R30E
Project: Eddy County, New Mexico NAD27 NM E
Design: rev1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6779.04	0.00	0.00	6779.04	0.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	7679.04	90.00	180.05	7352.00	-572.96	-0.50	10.00	180.05	572.96	Begin 90.00° lateral
4	8453.08	90.00	180.05	7352.00	-1347.00	-1.18	0.00	0.00	1347.00	Begin 2°/100' drop
5	8487.57	89.31	180.05	7352.21	-1381.49	-1.21	2.00	-180.00	1381.49	Begin 89.31° lateral
6	9882.18	89.31	180.05	7369.00	-2776.00	-2.42	0.00	0.00	2776.00	Begin 2°/100' build
7	9931.06	90.29	180.05	7369.17	-2824.87	-2.47	2.00	0.00	2824.87	Begin 90.29° lateral
8	10762.20	90.29	180.05	7365.00	-3656.00	-3.19	0.00	0.00	3656.00	Begin 2°/100' drop
9	10799.32	89.55	180.05	7365.05	-3693.12	-3.22	2.00	-180.00	3693.13	Begin 89.55° lateral
10	11422.22	89.55	180.05	7370.00	-4316.00	-3.77	0.00	0.00	4316.00	Begin 2°/100' build
11	11436.59	89.83	180.05	7370.08	-4330.38	-3.78	2.00	0.00	4330.38	Begin 89.83° lateral
12	11752.22	89.83	180.05	7371.00	-4646.00	-4.05	0.00	0.00	4646.00	Begin 2°/100' drop
13	11810.99	88.66	180.05	7371.77	-4704.76	-4.11	2.00	180.00	4704.77	Begin 88.66° lateral
14	12247.34	88.66	180.05	7382.00	-5141.00	-4.49	0.00	0.00	5141.00	Begin 2°/100' build
15	12322.44	90.16	180.05	7382.78	-5216.09	-4.55	2.00	0.00	5216.10	Begin 90.16° lateral
16	12961.35	90.16	180.05	7381.00	-5855.00	-5.11	0.00	0.00	5855.00	Begin 2°/100' build
17	12992.98	90.79	180.05	7380.74	-5886.62	-5.14	2.00	0.00	5886.63	Begin 90.79° lateral
18	14059.45	90.79	180.05	7366.00	-6953.00	-6.07	0.00	0.00	6953.00	Begin 2°/100' drop
19	14100.05	89.98	180.01	7365.73	-6993.59	-6.09	2.00	-177.52	6993.59	Begin 89.98° lateral
20	14910.17	89.98	180.01	7366.00	-7803.72	-6.30	0.00	0.00	7803.72	PBHL/TD 14910.17 MD/7366.00 TVD

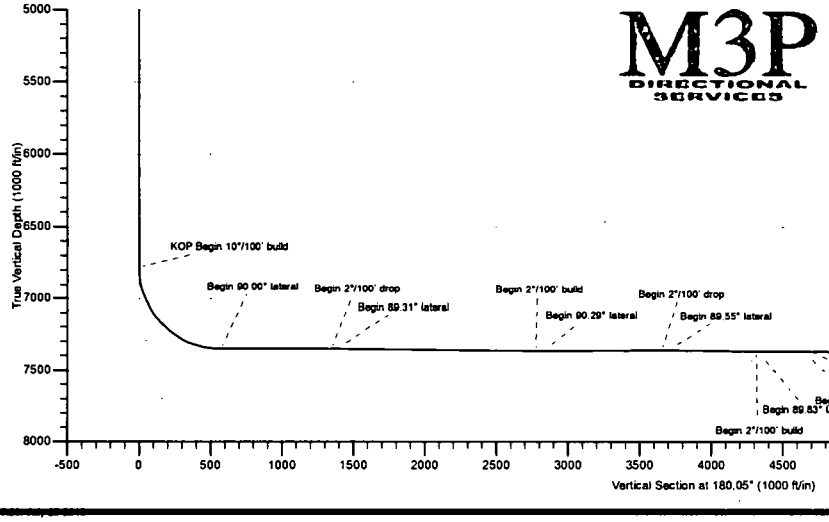
Azimuths to Grid North
True North: -0.31°
Magnetic North: 6.62°

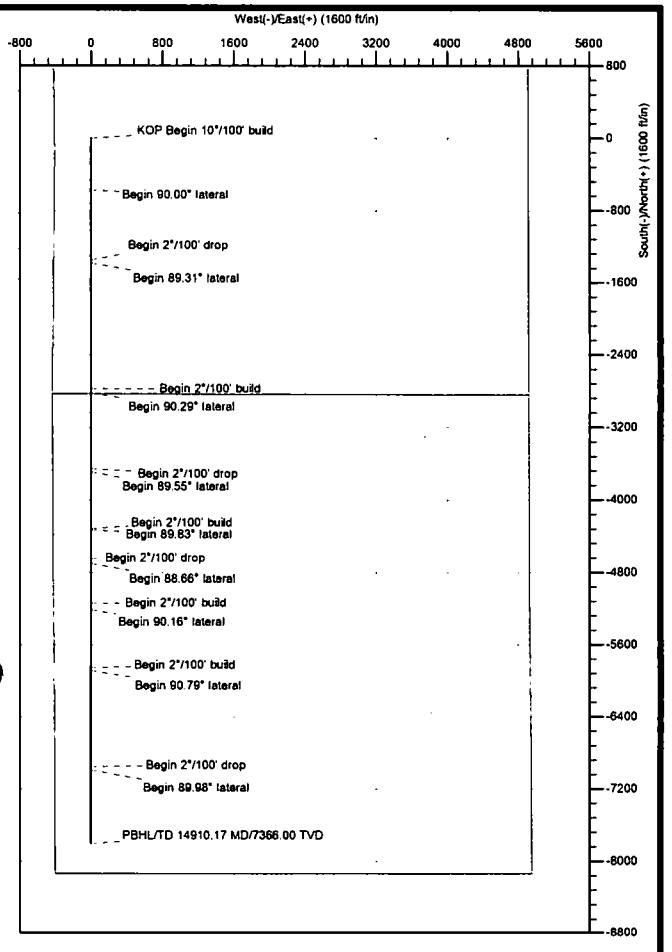
Magnetic Field
Strength: 47857.6snT
Dip Angle: 60.09°
Date: 7/15/2018
Model: IGRF2015

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level
Depth Reference: GL @ 3180.00ft
Surface location

Northing	Easting	Latitude	Longitude
475190.30	677217.90	32.30511132	-103.75974955





Standard_Report

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Project	Eddy County, New Mexico NAD27 NM E		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Section 16-T23S-R30E				
Site Position:		**Northing:**	475,005.70 usft	**Latitude:**	32.30457087
From:	Map	**Easting:**	679,448.71 usft	**Longitude:**	-103.75253286
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.31 °

Well	Forty Niner Ridge Unit Well No. 18H, Surf loc: 2470 FNL 410 FWL Section 16-T23S-R30E					
Well Position	**+N/-S**	0.00 ft	**Northing:**	475,190.30 usft	**Latitude:**	32.30511132
	+E/-W	0.00 ft	**Easting:**	677,217.90 usft	**Longitude:**	-103.75974955
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,180.00 ft

Wellbore	Original Hole				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	7/15/2018	6.93	60.09	47,857.63820563

Design	rev1				
Audit Notes:					
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00	
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.00	0.00	0.00	180.05	

Survey Tool Program	**Date** 7/25/2018			
From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	14,910.17	rev1 (Original Hole)		

Standard_Report

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)	Northing (usft)	Easting (usft)
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90

Standard_Report

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dl_v14

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)	Northing (usft)	Easting (usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	475,190.30	677,217.90
6,779.04	0.00	0.00	6,779.04	0.00	0.00	0.00	0.00	475,190.30	677,217.90
KOP Begin 10°/100' build									
6,800.00	2.10	180.05	6,800.00	-0.38	0.00	10.00	0.38	475,189.92	677,217.90
6,900.00	12.10	180.05	6,899.10	-12.72	-0.01	10.00	12.72	475,177.58	677,217.89
7,000.00	22.10	180.05	6,994.56	-42.08	-0.04	10.00	42.08	475,148.22	677,217.86
7,100.00	32.10	180.05	7,083.48	-87.57	-0.08	10.00	87.57	475,102.73	677,217.82
7,200.00	42.10	180.05	7,163.14	-147.81	-0.13	10.00	147.81	475,042.49	677,217.77
7,300.00	52.10	180.05	7,231.13	-220.97	-0.19	10.00	220.97	474,969.33	677,217.71
7,400.00	62.10	180.05	7,285.38	-304.82	-0.27	10.00	304.82	474,885.48	677,217.63
7,500.00	72.10	180.05	7,324.25	-396.82	-0.35	10.00	396.82	474,793.48	677,217.55
7,600.00	82.10	180.05	7,346.55	-494.17	-0.43	10.00	494.17	474,696.13	677,217.47
7,679.04	90.00	180.05	7,352.00	-572.96	-0.50	10.00	572.96	474,617.35	677,217.40
Begin 90.00° lateral									

Standard_Report

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)	Northing (usft)	Easting (usft)
7,700.00	90.00	180.05	7,352.00	-593.92	-0.52	0.00	593.92	474,596.38	677,217.38
7,800.00	90.00	180.05	7,352.00	-693.92	-0.61	0.00	693.92	474,496.38	677,217.29
7,900.00	90.00	180.05	7,352.00	-793.92	-0.69	0.00	793.92	474,396.38	677,217.21
8,000.00	90.00	180.05	7,352.00	-893.92	-0.78	0.00	893.92	474,296.38	677,217.12
8,100.00	90.00	180.05	7,352.00	-993.92	-0.87	0.00	993.92	474,196.38	677,217.03
8,200.00	90.00	180.05	7,352.00	-1,093.92	-0.95	0.00	1,093.92	474,096.38	677,216.95
8,300.00	90.00	180.05	7,352.00	-1,193.92	-1.04	0.00	1,193.92	473,996.39	677,216.86
8,400.00	90.00	180.05	7,352.00	-1,293.92	-1.13	0.00	1,293.92	473,896.39	677,216.77
8,453.08	90.00	180.05	7,352.00	-1,347.00	-1.18	0.00	1,347.00	473,843.30	677,216.72
Begin 2°/100' drop									
8,487.57	89.31	180.05	7,352.21	-1,381.49	-1.21	2.00	1,381.49	473,808.82	677,216.69
Begin 89.31° lateral									
8,500.00	89.31	180.05	7,352.36	-1,393.92	-1.22	0.00	1,393.92	473,796.39	677,216.68
8,600.00	89.31	180.05	7,353.56	-1,493.91	-1.30	0.00	1,493.91	473,696.39	677,216.60
8,700.00	89.31	180.05	7,354.77	-1,593.90	-1.39	0.00	1,593.90	473,596.40	677,216.51
8,800.00	89.31	180.05	7,355.97	-1,693.89	-1.48	0.00	1,693.89	473,496.41	677,216.42
8,900.00	89.31	180.05	7,357.17	-1,793.89	-1.57	0.00	1,793.89	473,396.42	677,216.33
9,000.00	89.31	180.05	7,358.38	-1,893.88	-1.65	0.00	1,893.88	473,296.42	677,216.25
9,100.00	89.31	180.05	7,359.58	-1,993.87	-1.74	0.00	1,993.87	473,196.43	677,216.16
9,200.00	89.31	180.05	7,360.79	-2,093.86	-1.83	0.00	2,093.87	473,096.44	677,216.07
9,300.00	89.31	180.05	7,361.99	-2,193.86	-1.91	0.00	2,193.86	472,996.45	677,215.99
9,400.00	89.31	180.05	7,363.19	-2,293.85	-2.00	0.00	2,293.85	472,896.45	677,215.90
9,500.00	89.31	180.05	7,364.40	-2,393.84	-2.09	0.00	2,393.84	472,796.46	677,215.81
9,600.00	89.31	180.05	7,365.60	-2,493.84	-2.18	0.00	2,493.84	472,696.47	677,215.72
9,700.00	89.31	180.05	7,366.81	-2,593.83	-2.26	0.00	2,593.83	472,596.48	677,215.64
9,800.00	89.31	180.05	7,368.01	-2,693.82	-2.35	0.00	2,693.82	472,496.48	677,215.55

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)	Northing (usft)	Easting (usft)
9,882.18	89.31	180.05	7,369.00	-2,776.00	-2.42	0.00	2,776.00	472,414.31	677,215.48
Begin 2°/100' build									
9,900.00	89.67	180.05	7,369.16	-2,793.81	-2.44	2.00	2,793.82	472,396.49	677,215.46
9,931.06	90.29	180.05	7,369.17	-2,824.87	-2.47	2.00	2,824.87	472,365.43	677,215.43
Begin 90.29° lateral									
10,000.00	90.29	180.05	7,368.83	-2,893.81	-2.53	0.00	2,893.81	472,296.49	677,215.37
10,100.00	90.29	180.05	7,368.32	-2,993.81	-2.61	0.00	2,993.81	472,196.49	677,215.29
10,200.00	90.29	180.05	7,367.82	-3,093.81	-2.70	0.00	3,093.81	472,096.50	677,215.20
10,300.00	90.29	180.05	7,367.32	-3,193.81	-2.79	0.00	3,193.81	471,996.50	677,215.11
10,400.00	90.29	180.05	7,366.82	-3,293.81	-2.87	0.00	3,293.81	471,896.50	677,215.03
10,500.00	90.29	180.05	7,366.32	-3,393.81	-2.96	0.00	3,393.81	471,796.50	677,214.94
10,600.00	90.29	180.05	7,365.81	-3,493.81	-3.05	0.00	3,493.81	471,696.50	677,214.85
10,700.00	90.29	180.05	7,365.31	-3,593.80	-3.14	0.00	3,593.81	471,596.50	677,214.76
10,762.20	90.29	180.05	7,365.00	-3,656.00	-3.19	0.00	3,656.00	471,534.31	677,214.71
Begin 2°/100' drop									
10,799.32	89.55	180.05	7,365.05	-3,693.12	-3.22	2.00	3,693.13	471,497.18	677,214.68
Begin 89.55° lateral									
10,800.00	89.55	180.05	7,365.06	-3,693.80	-3.22	0.00	3,693.80	471,496.50	677,214.68
10,900.00	89.55	180.05	7,365.85	-3,793.80	-3.31	0.00	3,793.80	471,396.51	677,214.59
11,000.00	89.55	180.05	7,366.65	-3,893.80	-3.40	0.00	3,893.80	471,296.51	677,214.50
11,100.00	89.55	180.05	7,367.44	-3,993.79	-3.49	0.00	3,993.79	471,196.51	677,214.41
11,200.00	89.55	180.05	7,368.24	-4,093.79	-3.57	0.00	4,093.79	471,096.52	677,214.33
11,300.00	89.55	180.05	7,369.03	-4,193.79	-3.66	0.00	4,193.79	470,996.52	677,214.24
11,400.00	89.55	180.05	7,369.82	-4,293.78	-3.75	0.00	4,293.79	470,896.52	677,214.15
11,422.22	89.55	180.05	7,370.00	-4,316.00	-3.77	0.00	4,316.00	470,874.31	677,214.13
Begin 2°/100' build									
11,436.59	89.83	180.05	7,370.08	-4,330.38	-3.78	2.00	4,330.38	470,859.93	677,214.12
Begin 89.83° lateral									

Standard_Report

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)	Northing (usft)	Easting (usft)
11,500.00	89.83	180.05	7,370.26	-4,393.78	-3.83	0.00	4,393.78	470,796.53	677,214.07
11,600.00	89.83	180.05	7,370.56	-4,493.78	-3.92	0.00	4,493.78	470,696.53	677,213.98
11,700.00	89.83	180.05	7,370.85	-4,593.78	-4.01	0.00	4,593.78	470,596.53	677,213.89
11,752.22	89.83	180.05	7,371.00	-4,646.00	-4.05	0.00	4,646.00	470,544.31	677,213.85
Begin 2°/100' drop									
11,800.00	88.88	180.05	7,371.54	-4,693.78	-4.10	2.00	4,693.78	470,496.53	677,213.80
11,810.99	88.66	180.05	7,371.77	-4,704.76	-4.11	2.00	4,704.77	470,485.55	677,213.79
Begin 88.66° lateral									
11,900.00	88.66	180.05	7,373.86	-4,793.75	-4.18	0.00	4,793.75	470,396.56	677,213.72
12,000.00	88.66	180.05	7,376.20	-4,893.72	-4.27	0.00	4,893.72	470,296.59	677,213.63
12,100.00	88.66	180.05	7,378.55	-4,993.70	-4.36	0.00	4,993.70	470,196.61	677,213.54
12,200.00	88.66	180.05	7,380.89	-5,093.67	-4.45	0.00	5,093.67	470,096.64	677,213.45
12,247.34	88.66	180.05	7,382.00	-5,141.00	-4.49	0.00	5,141.00	470,049.31	677,213.41
Begin 2°/100' build									
12,300.00	89.71	180.05	7,382.75	-5,193.65	-4.53	2.00	5,193.65	469,996.66	677,213.37
12,322.44	90.16	180.05	7,382.78	-5,216.09	-4.55	2.00	5,216.10	469,974.22	677,213.35
Begin 90.16° lateral									
12,400.00	90.16	180.05	7,382.56	-5,293.65	-4.62	0.00	5,293.65	469,896.66	677,213.28
12,500.00	90.16	180.05	7,382.28	-5,393.65	-4.71	0.00	5,393.65	469,796.66	677,213.19
12,600.00	90.16	180.05	7,382.00	-5,493.65	-4.79	0.00	5,493.65	469,696.66	677,213.11
12,700.00	90.16	180.05	7,381.73	-5,593.65	-4.88	0.00	5,593.65	469,596.66	677,213.02
12,800.00	90.16	180.05	7,381.45	-5,693.65	-4.97	0.00	5,693.65	469,496.66	677,212.93
12,900.00	90.16	180.05	7,381.17	-5,793.65	-5.06	0.00	5,793.65	469,396.67	677,212.84
12,961.35	90.16	180.05	7,381.00	-5,855.00	-5.11	0.00	5,855.00	469,335.31	677,212.79
Begin 2°/100' build									
12,992.98	90.79	180.05	7,380.74	-5,886.62	-5.14	2.00	5,886.63	469,303.69	677,212.76
Begin 90.79° lateral									
13,000.00	90.79	180.05	7,380.64	-5,893.64	-5.14	0.00	5,893.65	469,296.67	677,212.76

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)	Northing (usft)	Easting (usft)
13,100.00	90.79	180.05	7,379.26	-5,993.63	-5.23	0.00	5,993.64	469,196.68	677,212.67
13,200.00	90.79	180.05	7,377.88	-6,093.63	-5.32	0.00	6,093.63	469,096.69	677,212.58
13,300.00	90.79	180.05	7,376.49	-6,193.62	-5.40	0.00	6,193.62	468,996.70	677,212.50
13,400.00	90.79	180.05	7,375.11	-6,293.61	-5.49	0.00	6,293.61	468,896.71	677,212.41
13,500.00	90.79	180.05	7,373.73	-6,393.60	-5.58	0.00	6,393.60	468,796.72	677,212.32
13,600.00	90.79	180.05	7,372.35	-6,493.59	-5.67	0.00	6,493.59	468,696.73	677,212.23
13,700.00	90.79	180.05	7,370.97	-6,593.58	-5.75	0.00	6,593.58	468,596.74	677,212.15
13,800.00	90.79	180.05	7,369.59	-6,693.57	-5.84	0.00	6,693.57	468,496.75	677,212.06
13,900.00	90.79	180.05	7,368.20	-6,793.56	-5.93	0.00	6,793.56	468,396.76	677,211.97
14,000.00	90.79	180.05	7,366.82	-6,893.55	-6.02	0.00	6,893.55	468,296.77	677,211.88
14,059.45	90.79	180.05	7,366.00	-6,953.00	-6.07	0.00	6,953.00	468,237.32	677,211.83
Begin 2°/100' drop									
14,100.00	89.98	180.01	7,365.73	-6,993.54	-6.09	2.00	6,993.54	468,196.77	677,211.81
14,100.05	89.98	180.01	7,365.73	-6,993.59	-6.09	2.00	6,993.59	468,196.72	677,211.81
Begin 89.98° lateral									
14,200.00	89.98	180.01	7,365.76	-7,093.54	-6.12	0.00	7,093.54	468,096.77	677,211.78
14,300.00	89.98	180.01	7,365.79	-7,193.54	-6.14	0.00	7,193.54	467,996.77	677,211.76
14,400.00	89.98	180.01	7,365.83	-7,293.54	-6.17	0.00	7,293.54	467,896.77	677,211.73
14,500.00	89.98	180.01	7,365.86	-7,393.54	-6.19	0.00	7,393.54	467,796.77	677,211.71
14,600.00	89.98	180.01	7,365.90	-7,493.54	-6.22	0.00	7,493.54	467,696.77	677,211.68
14,700.00	89.98	180.01	7,365.93	-7,593.54	-6.25	0.00	7,593.54	467,596.77	677,211.65
14,800.00	89.98	180.01	7,365.96	-7,693.54	-6.27	0.00	7,693.54	467,496.77	677,211.63
14,900.00	89.98	180.01	7,366.00	-7,793.54	-6.30	0.00	7,793.54	467,396.77	677,211.60
14,910.17	89.98	180.01	7,366.00	-7,803.72	-6.30	0.00	7,803.72	467,386.60	677,211.60
PBHL/TD 14910.17 MD/7366.00 TVD									

Company:	Strata Production Company	**Local Co-ordinate Reference:**	Well Forty Niner Ridge Unit Well No. 18H
Project:	Eddy County, New Mexico NAD27 NM E	**TVD Reference:**	GL @ 3180.00ft
Site:	Section 16-T23S-R30E	**MD Reference:**	GL @ 3180.00ft
Well:	Forty Niner Ridge Unit Well No. 18H	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	rev1	**Database:**	DB_Jul2216dt_v14

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,779.04	6,779.04	0.00	0.00	KOP Begin 10°/100' build
7,679.04	7,352.00	-572.96	-0.50	Begin 90.00° lateral
8,453.08	7,352.00	-1,347.00	-1.18	Begin 2°/100' drop
8,487.57	7,352.21	-1,381.49	-1.21	Begin 89.31° lateral
9,882.18	7,369.00	-2,776.00	-2.42	Begin 2°/100' build
9,931.06	7,369.17	-2,824.87	-2.47	Begin 90.29° lateral
10,762.20	7,365.00	-3,656.00	-3.19	Begin 2°/100' drop
10,799.32	7,365.05	-3,693.12	-3.22	Begin 89.55° lateral
11,422.22	7,370.00	-4,316.00	-3.77	Begin 2°/100' build
11,436.59	7,370.08	-4,330.38	-3.78	Begin 89.83° lateral
11,752.22	7,371.00	-4,646.00	-4.05	Begin 2°/100' drop
11,810.99	7,371.77	-4,704.76	-4.11	Begin 88.66° lateral
12,247.34	7,382.00	-5,141.00	-4.49	Begin 2°/100' build
12,322.44	7,382.78	-5,216.09	-4.55	Begin 90.16° lateral
12,961.35	7,381.00	-5,855.00	-5.11	Begin 2°/100' build
12,992.98	7,380.74	-5,886.62	-5.14	Begin 90.79° lateral
14,059.45	7,366.00	-6,953.00	-6.07	Begin 2°/100' drop
14,100.05	7,365.73	-6,993.59	-6.09	Begin 89.98° lateral
14,910.17	7,366.00	-7,803.72	-6.30	PBHL/TD 14910.17 MD/7366.00 TVD

APD ID: 10400028153 **Submission Date:** 07/26/2018

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

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

Show Final Text

Will existing roads be used? YES

Existing Road Map:

FNRU18H_EXISTING_ROAD_MAP_20180719095021.pdf

[redacted] **Row(s) Exist?** NO

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Will new roads be needed? YES

New Road Map:

FNRU_18H_NEW_ROAD_MAP_with_legal_20181004111004.pdf

[redacted]

ACOE Permit Number(s):

[redacted]

New road access plan attachment:

[redacted]

Access road engineering design attachment:

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Access onsite topsoil source depth:

Onsite topsoil removal process:

Access other construction information:

Access miscellaneous information:

Access turnout map:

Road Drainage Control Structures (DCS) attachment:

Additional Attachment(s):

Will new roads be needed? YES

New Road Map:

FNRU_18H_NEW_ROAD_MAP_with_legal_20181004111004.pdf

ACOE Permit Number(s):

New road access plan attachment:

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

[redacted]

Access road engineering design attachment:

[redacted]

Access onsite topsoil source depth:

[redacted]

Onsite topsoil removal process:

Access other construction information:

Access miscellaneous information:

[redacted] **Access turnout map:**

[redacted]

Road Drainage Control Structures (DCS) attachment:

Additional Attachment(s):

Existing Wells Map? YES

Attach Well map:

FNRU_18H_Well_Location_Map___Table_20180710140715.pdf

FNRU_PA_MAP_20180712143203.pdf

Existing Wells description:

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Existing Tank Battery on Forty Niner Ridge Unit Fed #3. Sec 16-T23S-R30E

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Water source use type: DUST CONTROL **Water source type:** GW WELL

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: WATER WELL

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 1904.762 **Source volume (acre-feet):** 0.24551065

Source volume (gal): 80000

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

Describe type: COMMERCIAL WATER

Source latitude: **Source longitude:**

Source datum:

Water source permit type: TEMPORARY WATER USE PERMIT

Source land ownership: PRIVATE

Water source transport method: 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:

FNRU__18H_water_location_map_20180719095150.pdf

Water source comments:

New water well? NO

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

Well target aquifer:

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

Aquifer comments:

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Aquifer documentation:

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

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:

Construction Materials description: Strata will obtain caliche from a BLM owned pit located in the SE 1/4 SW 1/4 of Section 32 T23S R32E.
Construction Materials source location attachment:

Waste type: DRILLING

Waste content description: DRILL CUTTINGS

Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: CLOSED LOOP SYSTEM

Safe containmant attachment:

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

Disposal location description: GANDY MARLEY LANDFILL

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?

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

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

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Well Site Layout Diagram:

FNRU__3___BATTERY_SITE_PLAN_20180712145547.pdf
FNRU__18H_well_pad_set_up_20180712145627.pdf
Comments:

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:**

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: THE PAD WILL BE CONSTRUCTED TO DRAIN TO THE NATURAL DRAINAGE LOCATED WEST OF LOCATION.
Drainage/Erosion control reclamation: UPON ABANDONMENT, THE PAD WILL BE RIPPED AND SEEDED.

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Well pad proposed disturbance (acres): 3
Road proposed disturbance (acres): 5
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 0
Total proposed disturbance: 8

Well pad interim reclamation (acres): 1
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 1

Well pad long term disturbance (acres): 2
Road long term disturbance (acres): 5
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0
Total long term disturbance: 7

Disturbance Comments:

Reconstruction method: UPON ABANDONMENT THE PAD WILL BE RETURNED TO ITS ORIGINAL CONTOUR.

Topsoil redistribution: WILL BE STOCKPILED AND THEN RETURNED TO THE ORIGINAL SURFACE.

Soil treatment: CALICHE

Existing Vegetation at the well pad: PRAIRIE GRASS, CHOLLA, MESQUITE, AND OTHER DESERT PLANTS.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: GRAMMA GRASS AND OTHER DESERT PLANTS.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: NA

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: NA

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:

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

First Name: SHAMMY **Last Name:** DENNIS

Phone: (575)622-1127 **Email:** SDENNIS@STRATANM.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: WEED PREVENTATIVE SPRAY

Weed treatment plan attachment:

Monitoring plan description: DAILY VISITS BY THE PUMPER

Monitoring plan attachment:

Success standards: TOPSOIL REPLACED TO ORIGINAL LOCATION AND RE-VEGETATION

Pit closure description: AS PER OCD REGULATIONS

Pit closure attachment:

Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NM STATE LAND OFFICE

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

SUPO Additional Information:

Use a previously conducted onsite? NO

Previous Onsite information:

Drill_Island_Map_0602518_20180712145847.pdf
FNRU_Unit_Road_Faciilities_Map_20180712150053.pdf

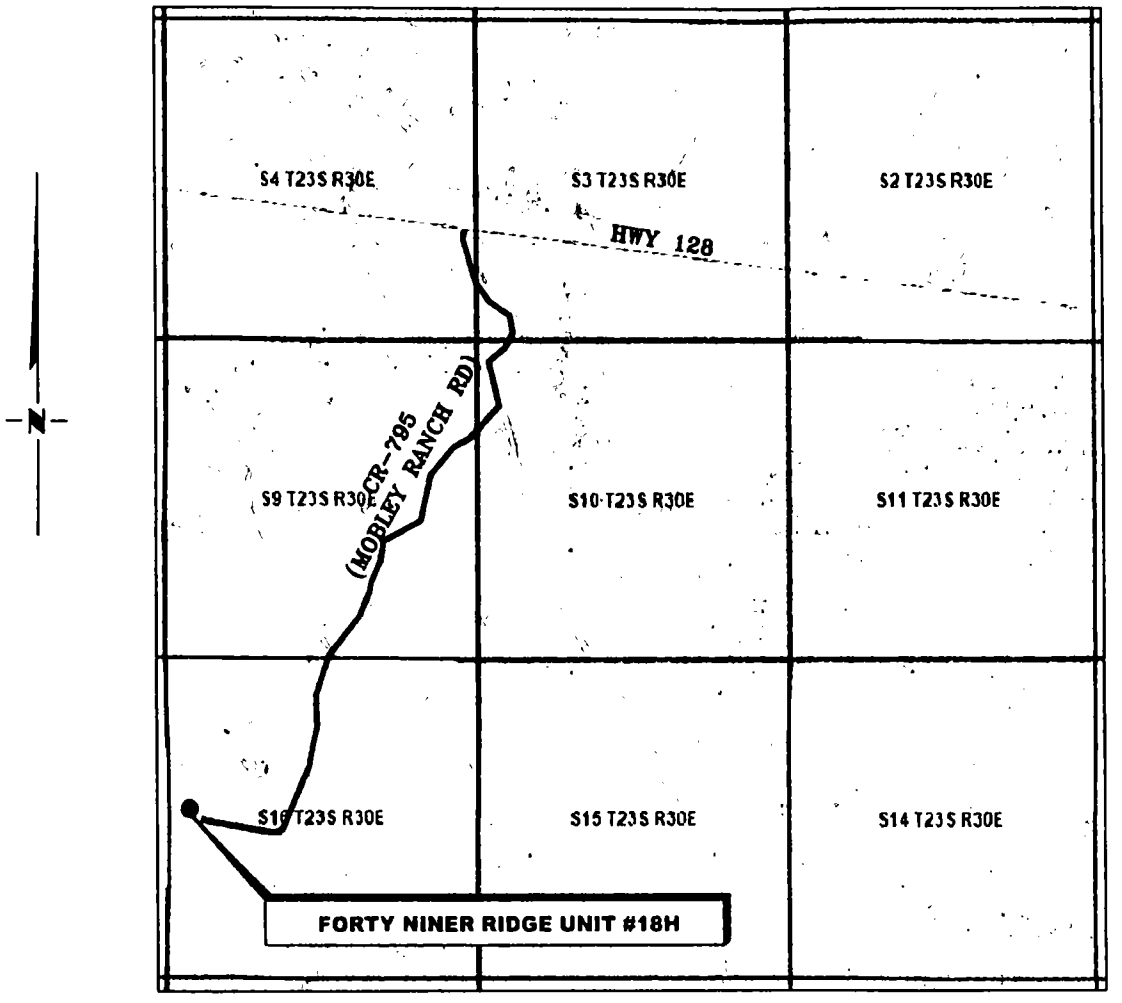
Operator Name: STRATA PRODUCTION COMPANY

Well Name: FORTY NINER RIDGE UNIT **Well Number:** 18H

Notification_Outline__Fortyniner_20180712150308.pdf

VICINITY MAP

NOT TO SCALE



SECTION 16, TWP. 23 SOUTH, RGE. 30 EAST, N. M. P. M., EDDY CO., NEW MEXICO

OPERATOR: Strata Production Company
LEASE: Forty Niner Ridge Unit
WELL NO.: 18H

LOCATION: 2470' FNL & 410' FWL
ELEVATION: 3180'

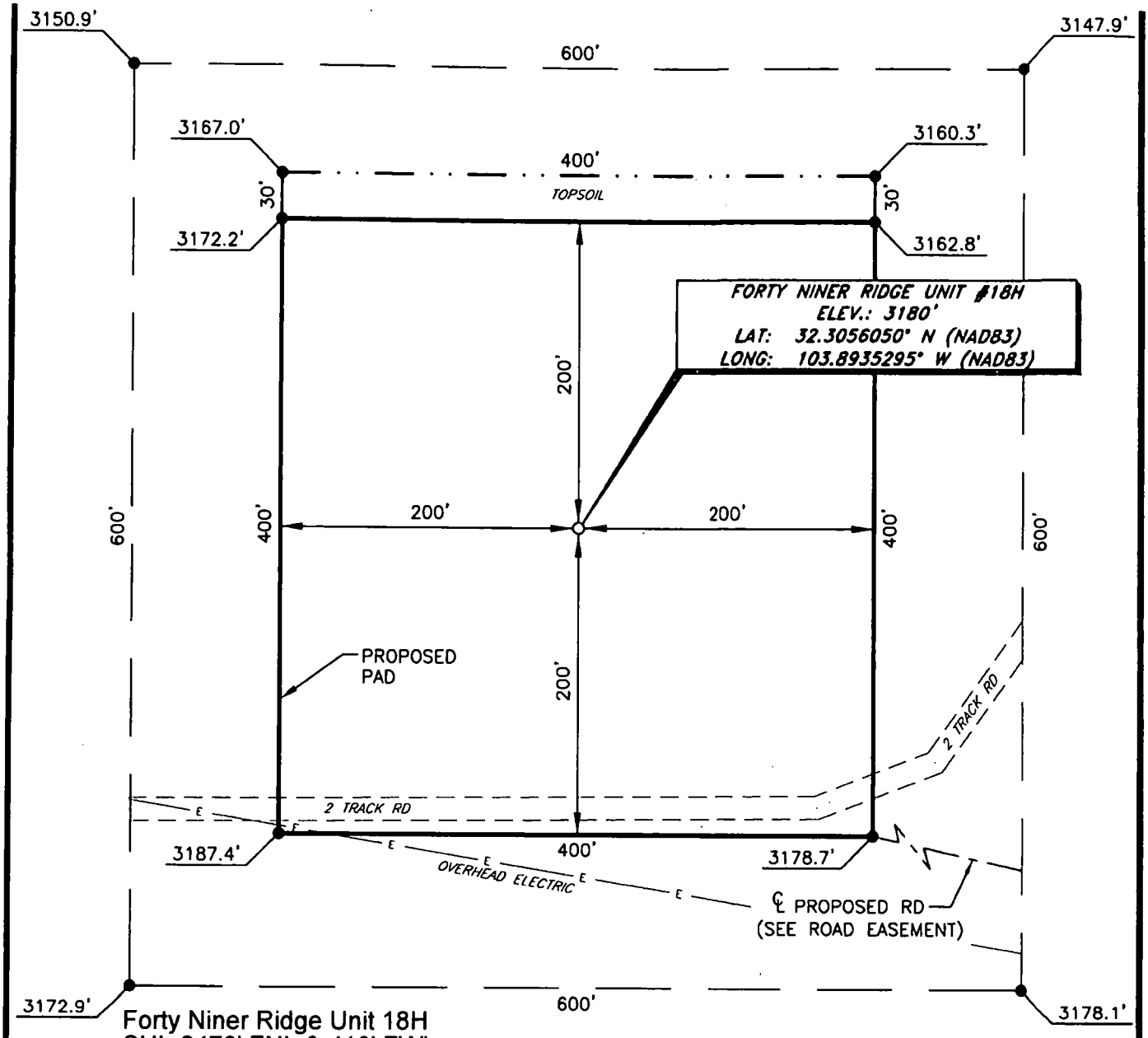
NO.	REVISION	DATE

JOB NO.: LS1801030
DWG. NO.: 1801030VM

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N. T. S.
DATE: 11-30-2017
SURVEYED BY: ML/TF
DRAWN BY: LPS
APPROVED BY: RMH
SHEET: 1 OF 1



Forty Niner Ridge Unit 18H
SHL-2470' FNL & 410' FWL
Sec. 16, T23S-R30E
BHL-330' FSL & 400' FWL
Sec. 21, T23S-R30E
Eddy County, NM

DIRECTIONS TO LOCATION

From the intersection of HWY 128 and CR-795 (Mobley Ranch Rd.)

Go Southwest on CR-795 approx. 2.2 miles to a proposed road on the right;

Turn right and go West approx. 0.2 miles to location on the right.

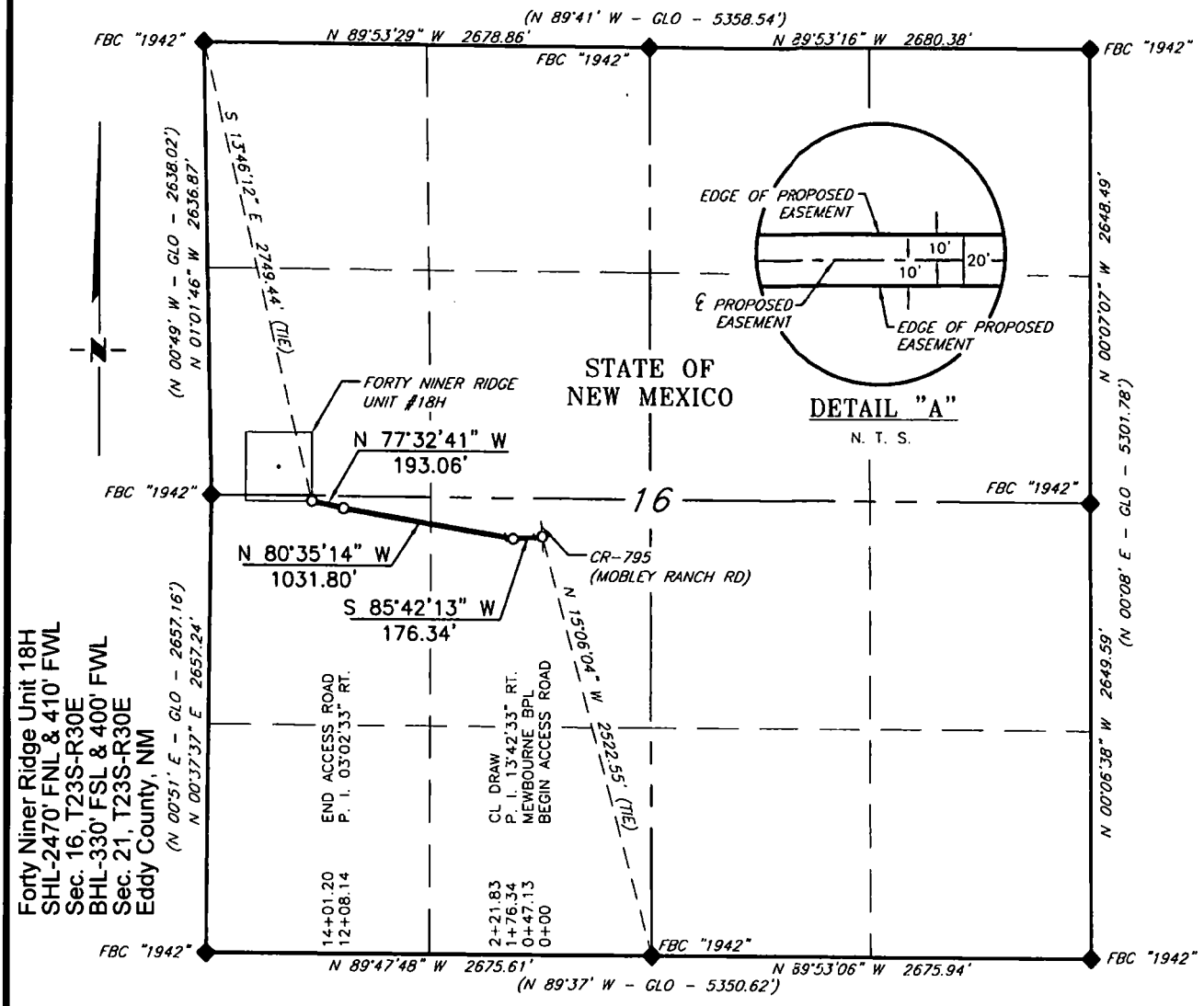
SCALE: 1" = 100'
0 50 100

BEARINGS ARE NAD 83 GRID - NM EAST
DISTANCES ARE GROUND

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett NM PS 19680

SCALE: 1" = 100'



Forty Niner Ridge Unit 18H
SHL-2470' FNL & 410' FWL
Sec. 16, T23S-R30E
BHL-330' FSL & 400' FWL
Sec. 21, T23S-R30E
Eddy County, NM

DESCRIPTION

A strip of land 20 feet wide, being 1,401.20 feet or 84.921 rods in length, lying in Section 16, Township 23 South, Range 30 East, N. M. P. M., Eddy County, New Mexico, being 10 feet left and 10 feet right of the following described survey of a centerline across State of New Mexico land:

BEGINNING at Engr. Sta. 0+00, a point in the Southwest quarter of Section 16, which bears N 15°06'04" W, 2,522.55 feet, from a brass cap, stamped "1942", found for the South quarter corner of Section 16;

Thence S 85°42'13" W, 176.34 feet, to Engr. Sta. 1+76.34, a P. I. of 13°42'33" right;

Thence N 80°35'14" W, 1,031.80 feet, to Engr. Sta. 12+08.14, a P. I. of 03°02'33" right;

Thence N 77°32'41" W, 193.06 feet, to Engr. Sta. 14+01.20, the End of Survey, a point in the Southwest quarter of Section 16, which bears S 13°46'12" E, 2,749.44 feet, from a brass cap, stamped "1942", found for the Northwest corner of Section 16.

Said strip of land contains 0.643 acres, more or less and is allocated by forties as follows:

NE 1/4 SW 1/4	41.074 Rods	0.311 Acres
NW 1/4 SW 1/4	43.847 Rods	0.332 Acres

SCALE: 1" = 1000'
0 500' 1000'

BEARINGS ARE GRID NAD 83 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND

( ) RECORD DATA - GLO

◆ FOUND MONUMENT AS NOTED

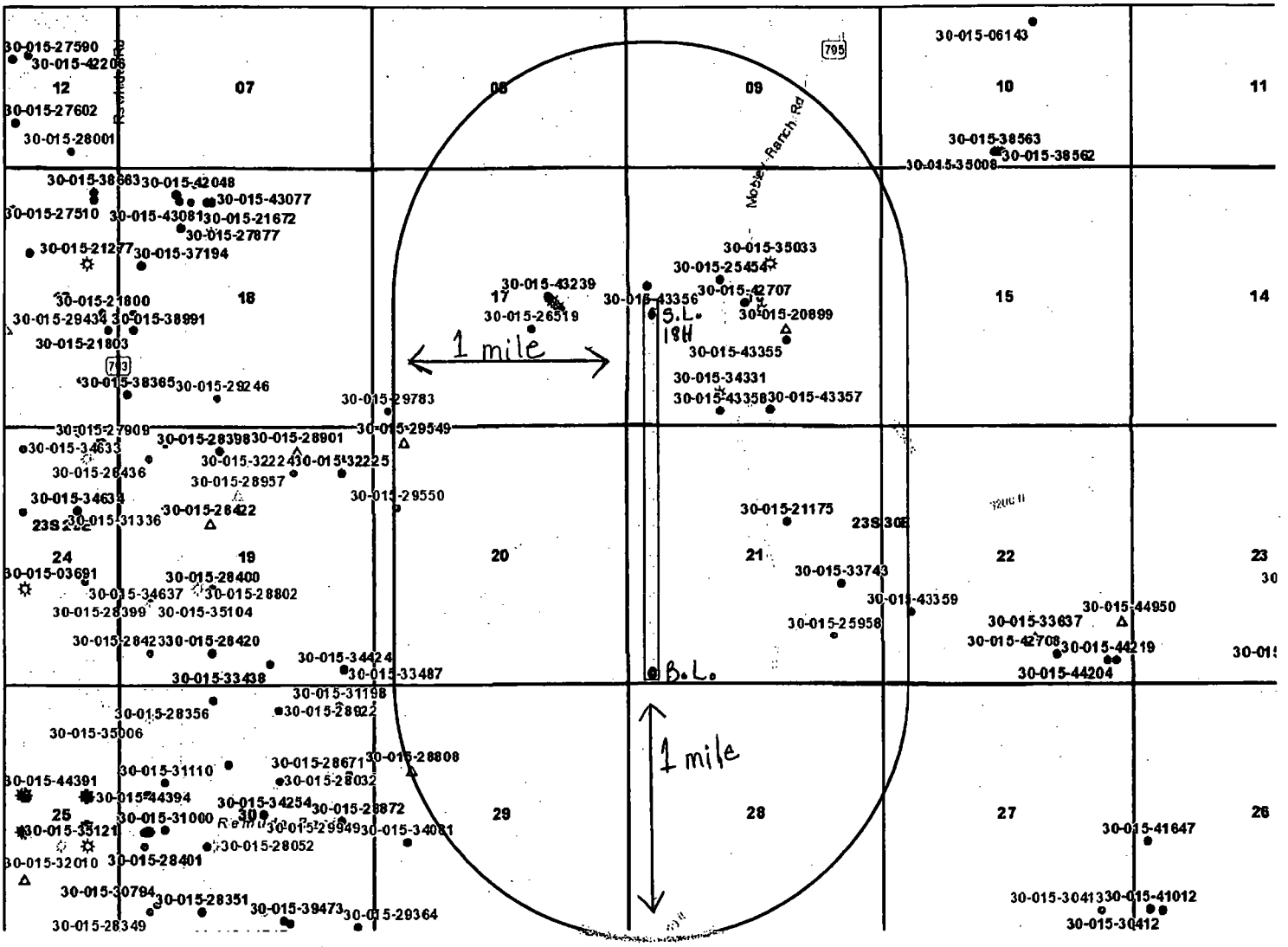
PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett NM PS 19680

SCALE: 1" = 1000'

OCD Well Locations



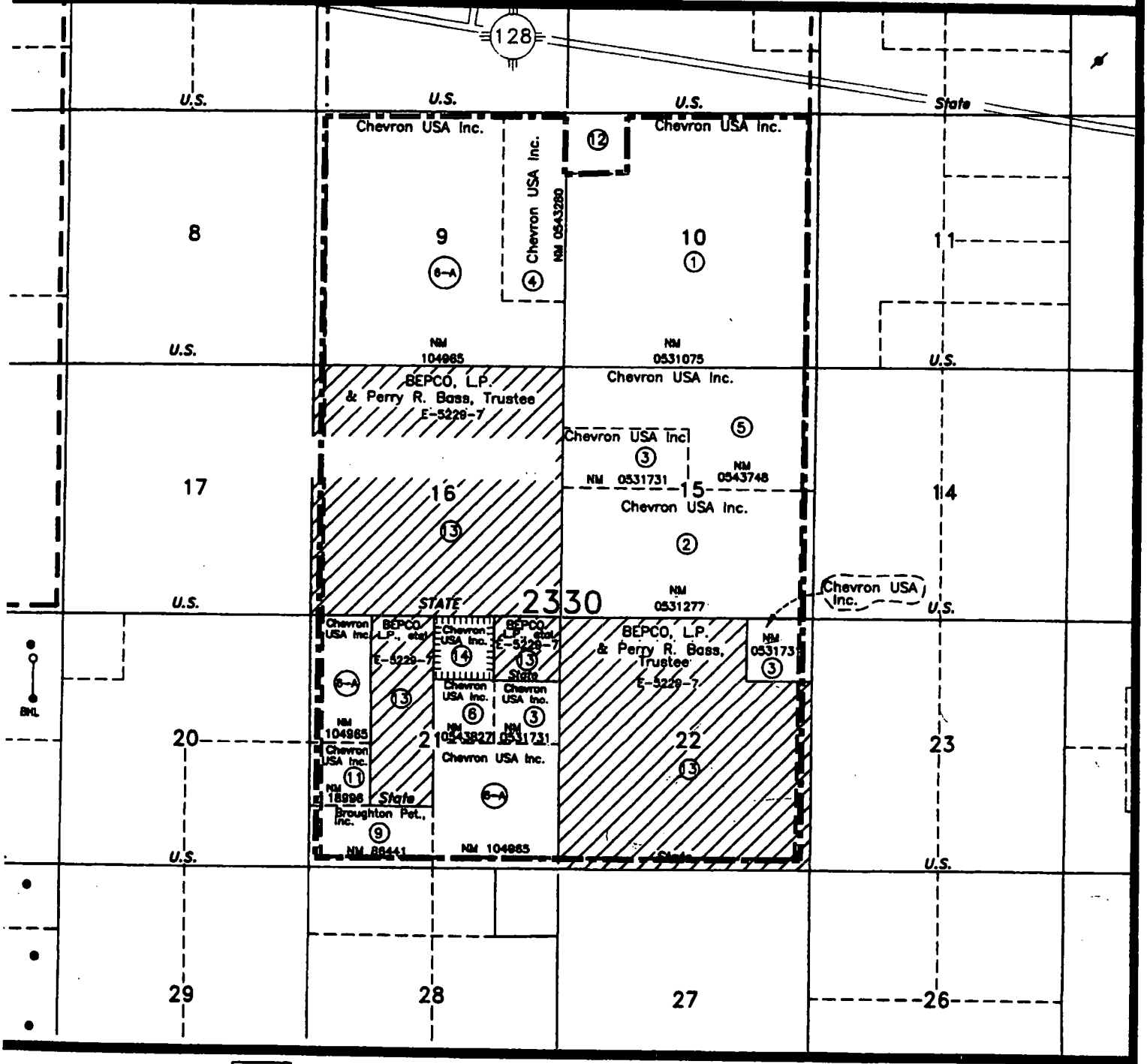
STATUS OF WELLS WITHIN ONE MILE RADIUS

"FORTY NINER RIDGE UNIT #18H
Section 16-23S-30E
2470' FNL & 410' FWL
Eddy County, NM

OPERATOR	WELL NAME	API	WELL TYPE	WELL STATUS	LOCATION	UNIT
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #001	30-015-20899	SWD	Active	SEC 16 23S 30E	J
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #003	30-015-25454	Oil	Active	SEC 16 23S 30E	F
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-26519	Oil	Plugged (Site Released)	SEC 17 23S 30E	J
DEVON ENERGY PRODUCTION COMPANY, LP	REMUDA BASIN SWD #001	30-015-29549	SWD	Active	SEC 20 23S 30E	D
MEWBOURNE OIL CO	FORTY NINER RIDGE UNIT #101	30-015-34331	Gas	Active	SEC 16 23S 30E	N
MEWBOURNE OIL CO	FORTY NINER RIDGE UNIT #102	30-015-35033	Gas	Active	SEC 16 23S 30E	G
MEWBOURNE OIL CO	FORTY NINER RIDGE UNIT #104H	30-015-42707	Oil	Active	SEC 16 23S 30E	K
MEWBOURNE OIL CO	FORTY NINER FEDERAL UNIT #001H	30-015-43239	Oil	Active	SEC 17 23S 30E	J
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #030	30-015-43355	Oil	New (Not Drilled/Completed)	SEC 16 23S 30E	J
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #031	30-015-43356	Oil	New (Not Drilled/Completed)	SEC 16 23S 30E	E
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #032	30-015-43357	Oil	New (Not Drilled/Completed)	SEC 16 23S 30E	O
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #033	30-015-43358	Oil	New (Not Drilled/Completed)	SEC 16 23S 30E	N
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #002	30-015-21175	Oil	Active	SEC 21 23S 30E	G
STRATA PRODUCTION CO	FORTY NINER RIDGE UNIT #004	30-015-33743	Oil	Active	SEC 21 23S 30E	I
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #004	30-015-25958	Oil	Cancelled APD	SEC 21 23S 30E	P

MAP OF DELAWARE FORMATION PARTICIPATING AREA

FORTY–NINER RIDGE UNIT AREA
DELAWARE PARTICIPATING AREA
T–23–S, R–30–E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

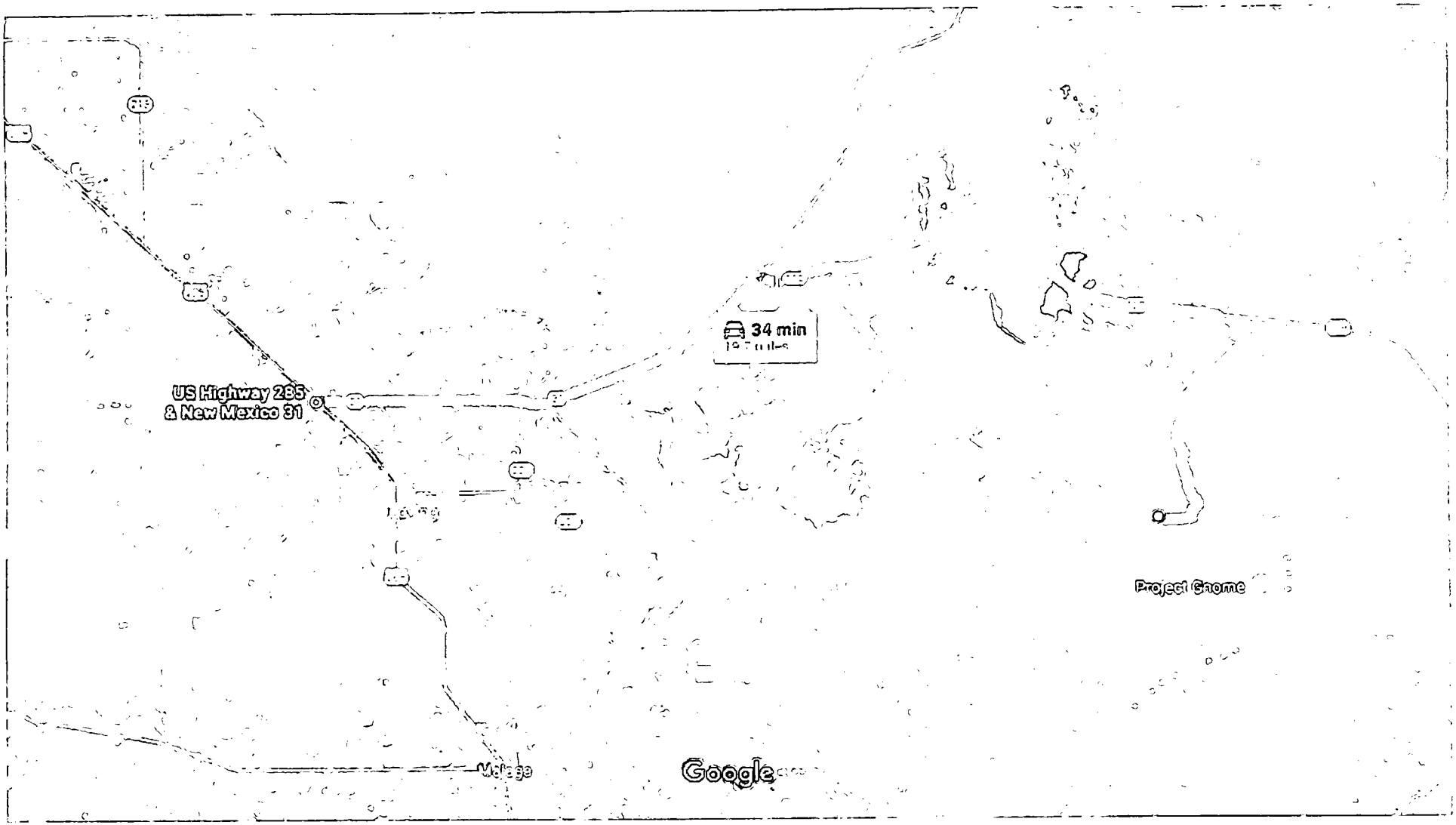


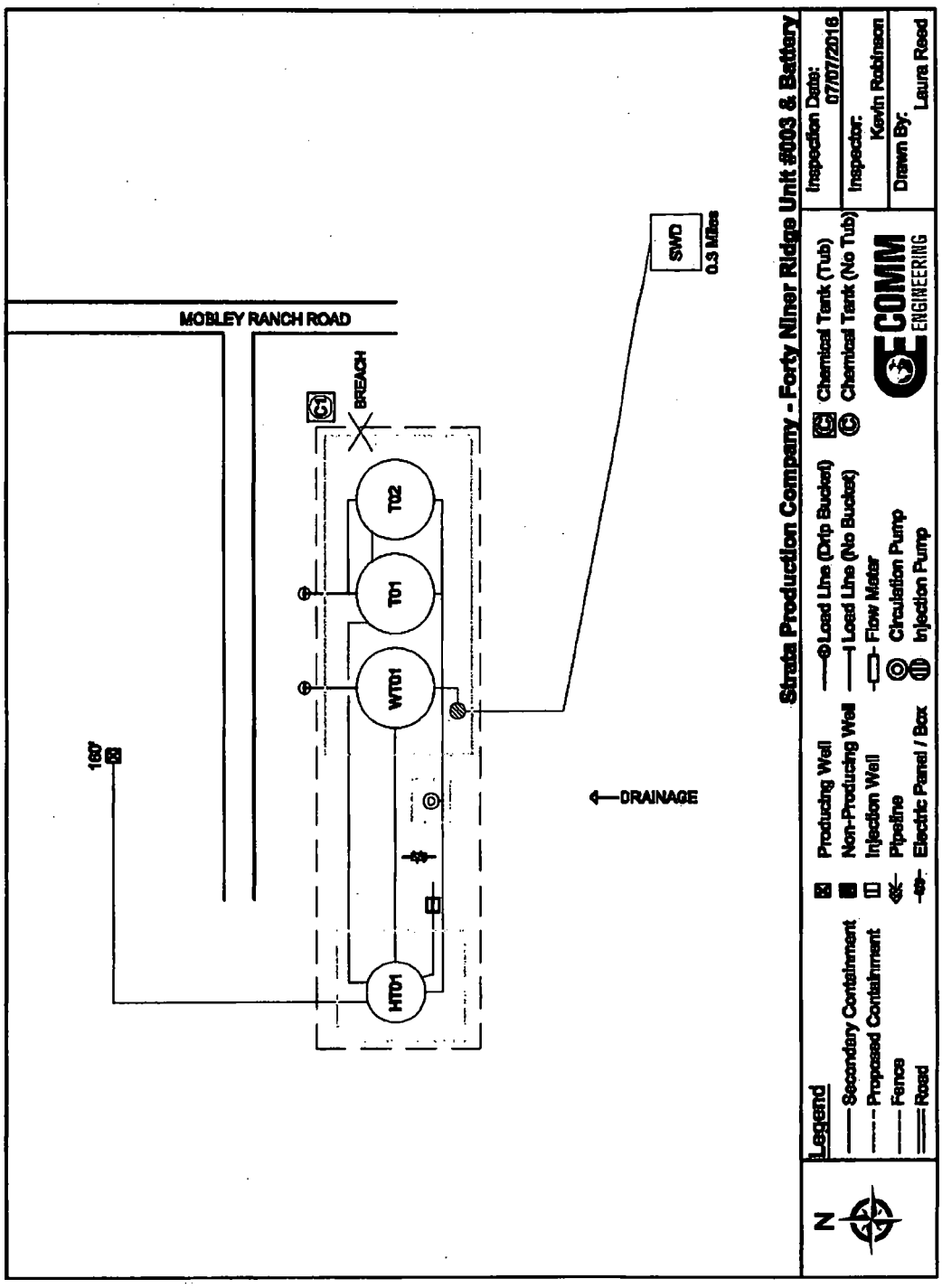
Google Maps

Unnamed Road, Loving, NM 88256 to US Hwy 285 & NM-31, Carlsbad, NM 88220

Drive 19.7 miles, 35 min

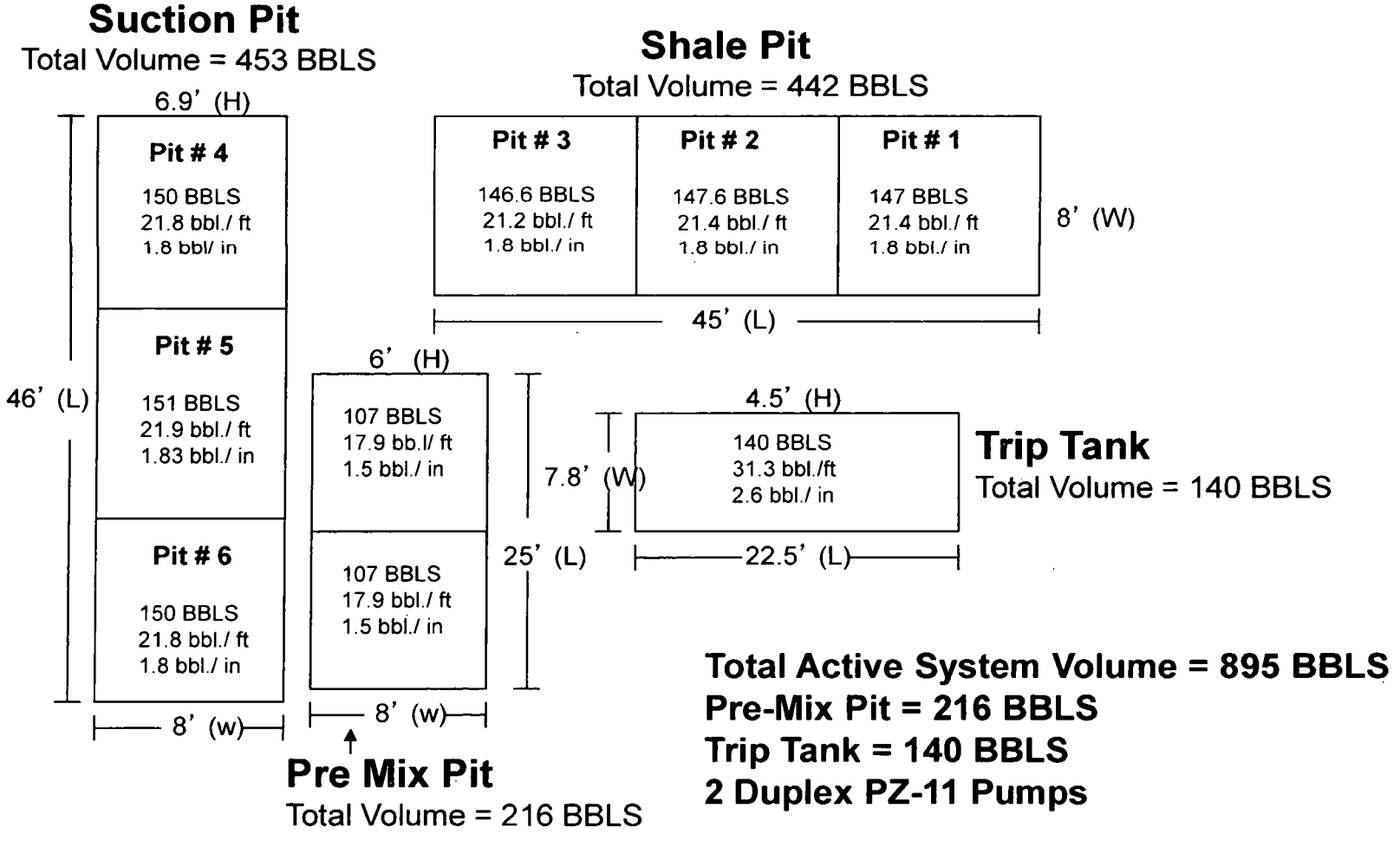
WATER TRANSPORT MAP - FNRU #18H, SEC 16-T23S-R30E, EDDY COUNTY, NM




Strata Production Company - Forty Niner Ridge Unit #003 & Battery
Inspection Date: 07/07/2016
Inspector: Kevin Robinson
Drawn By: Laura Reed
COMM ENGINEERING
Chemical Tank (Tub)
Chemical Tank (No Tub)
Load Line (Drip Bucket)
Load Line (No Bucket)
Flow Meter
Circulation Pump
Injection Pump
Producing Well
Non-Producing Well
Injection Well
Pipeline
Electric Panel / Box
Legend
Secondary Containment
Proposed Containment
Fence
Road
N
MOBLEY RANCH ROAD
BREACH
SWD
0.3 Miles
T02
T01
WT01
HT01
160'
DRAINAGE

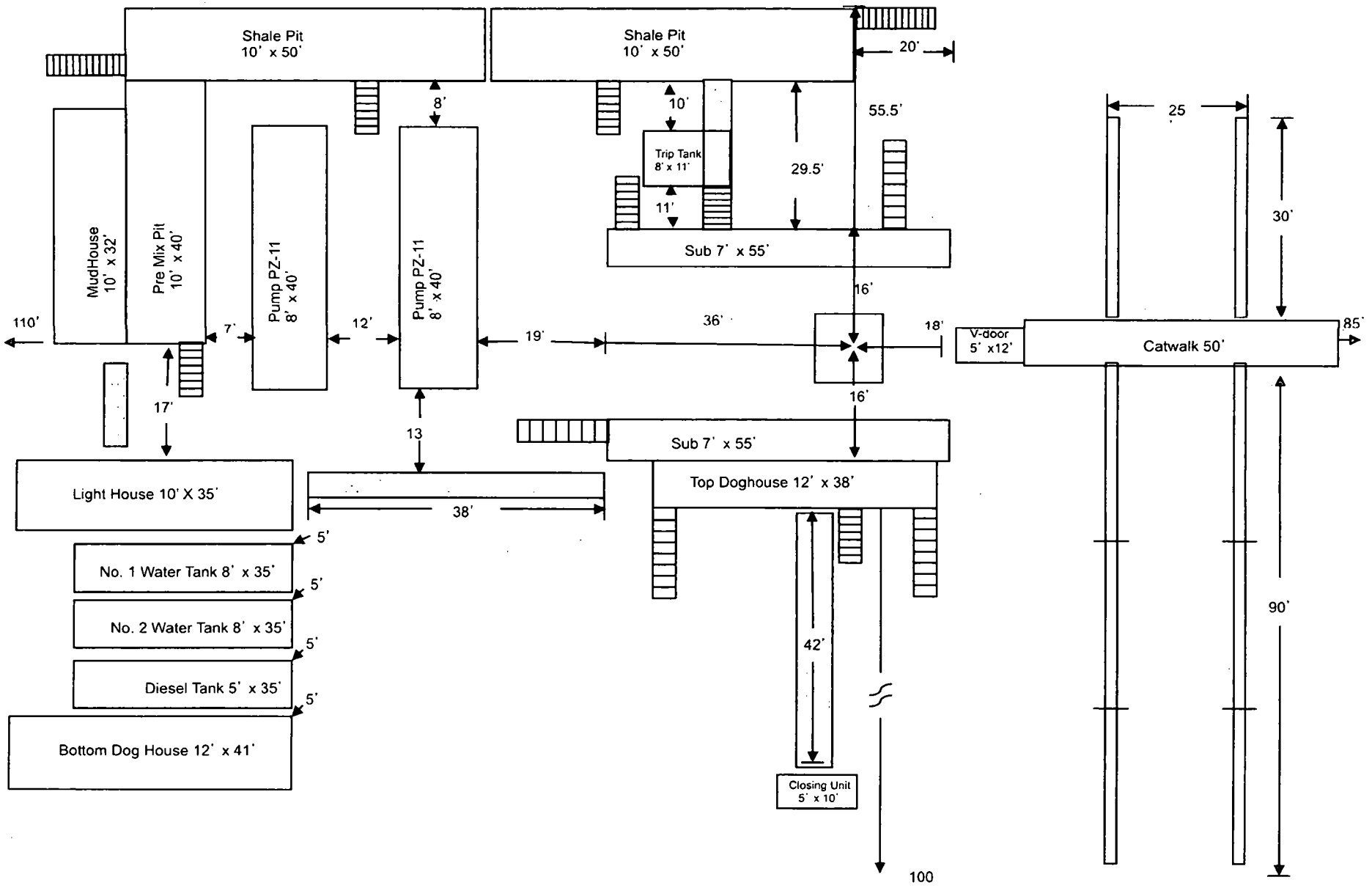
McVay Drilling Co.

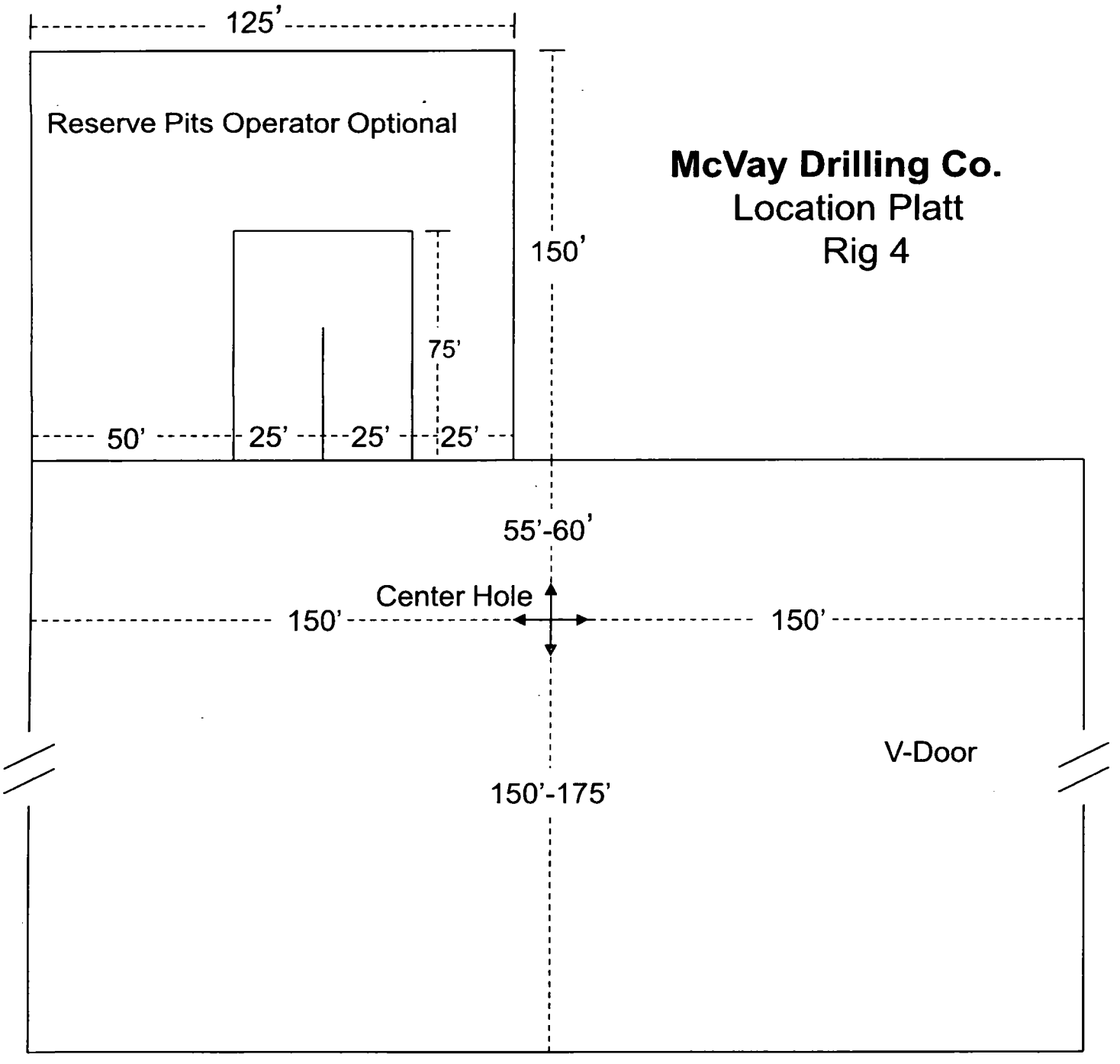
Rig # 4 – Pit System



Total Active System Volume = 895 BBLS
Pre-Mix Pit = 216 BBLS
Trip Tank = 140 BBLS
2 Duplex PZ-11 Pumps

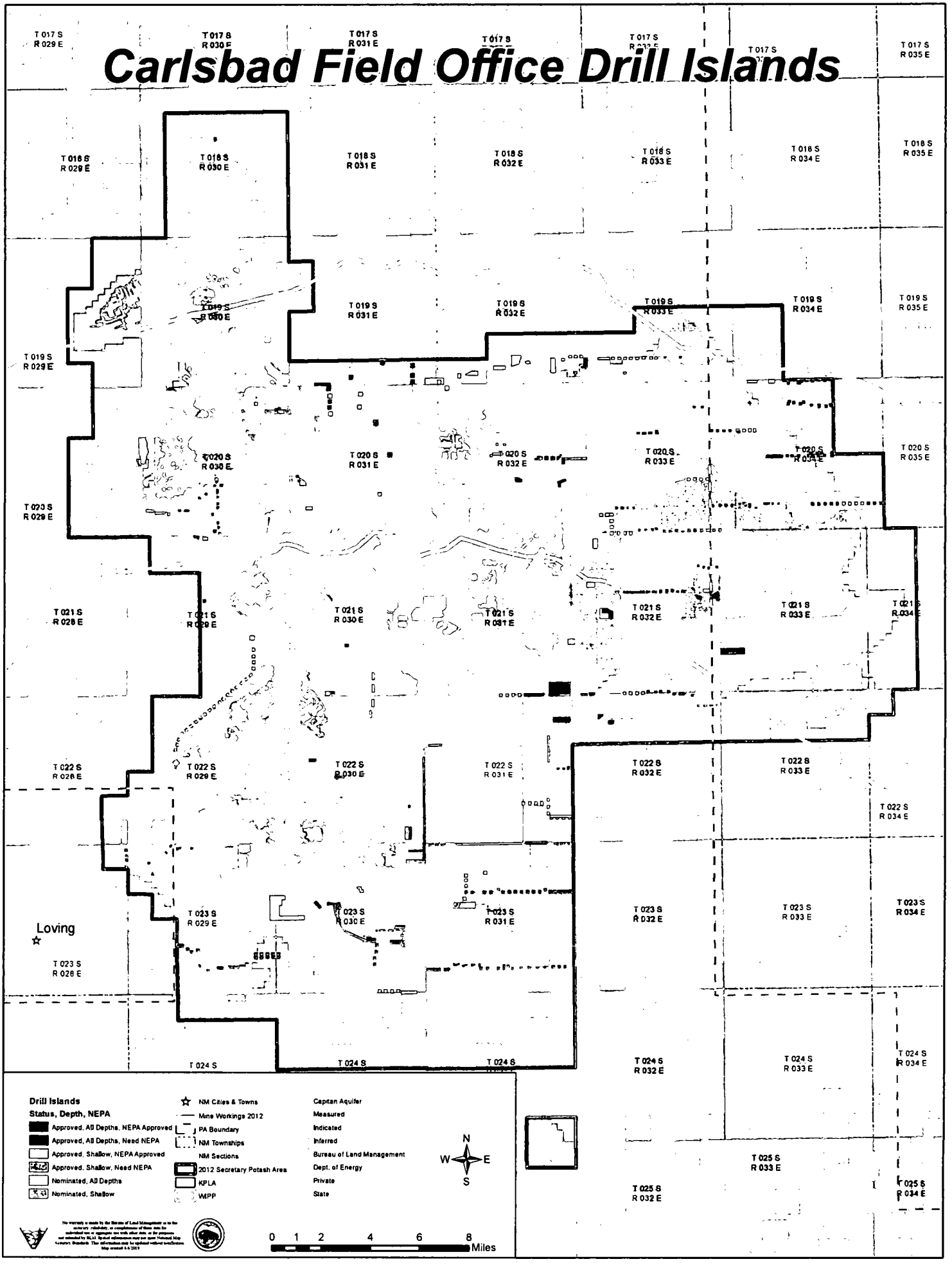
McVay Drilling Rig No. 4



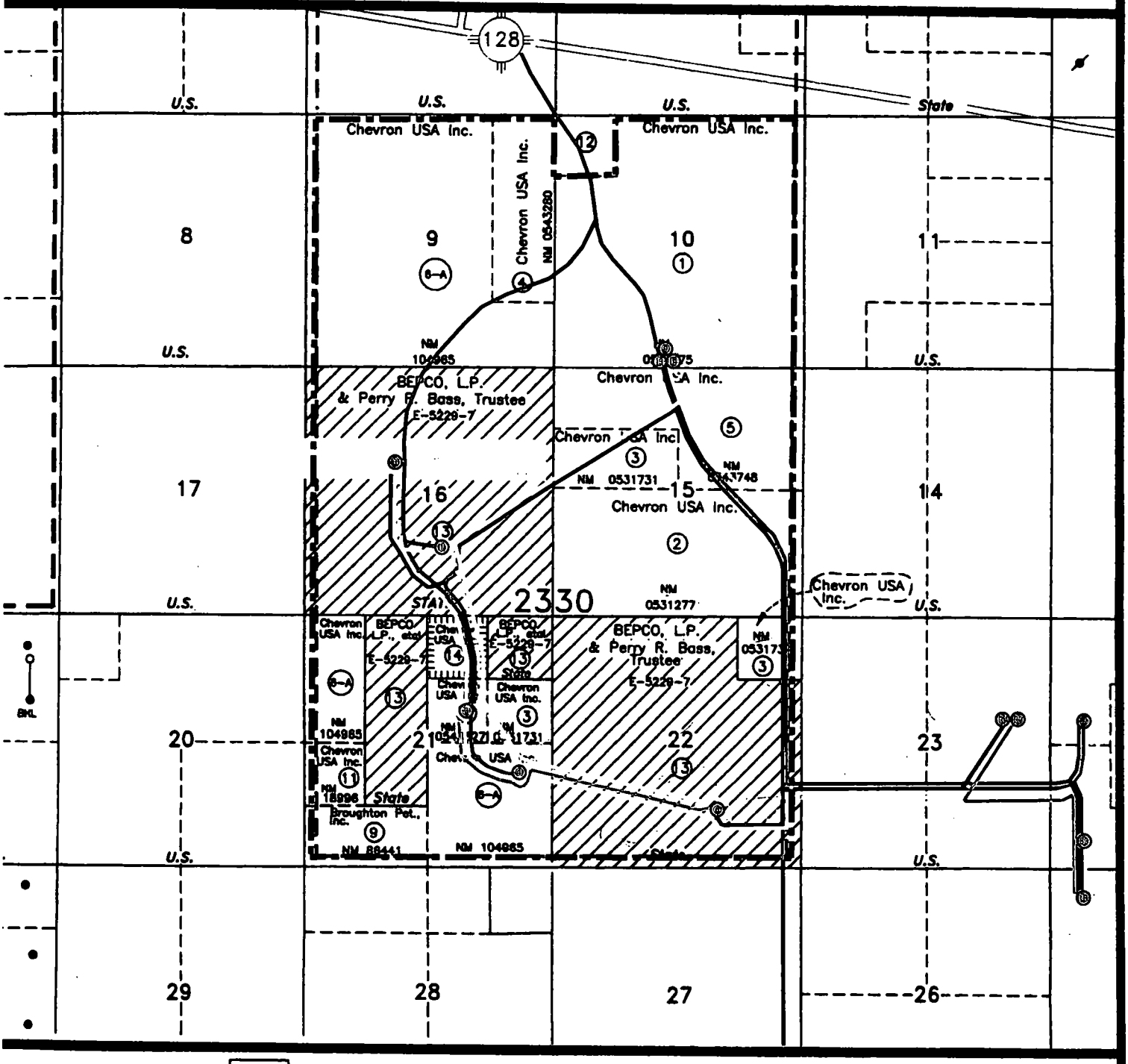


McVay Drilling Co.
Location Platt
Rig 4

Carlsbad Field Office Drill Islands



FORTY-NINER RIDGE UNIT AREA
DELAWARE PARTICIPATING AREA
T-23-S, R-30-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO



= FEDERAL LAND

= STATE LAND

= PATENTED LAND

= PARTICIPATING AREA FOR THE DELAWARE FORMATION

ROADS

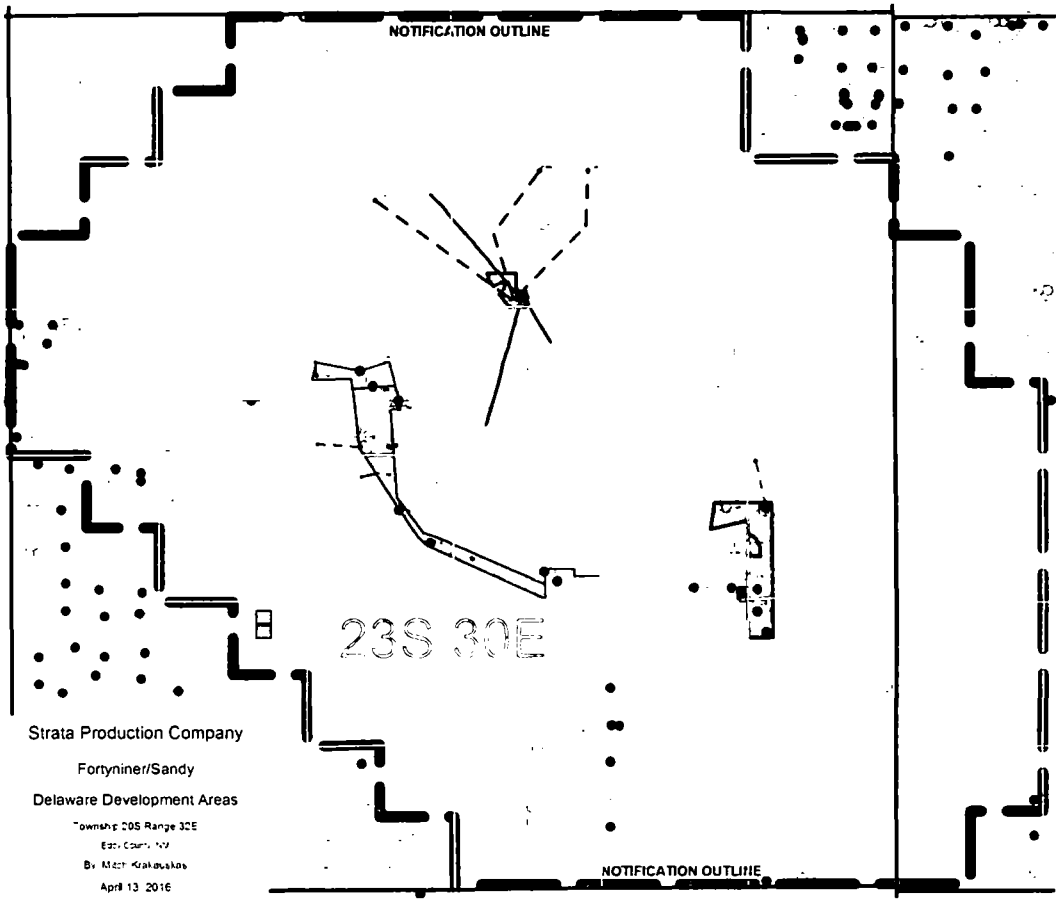
GAS FLOW LINE

PRODUCED WATER FLOW LINE

FLOW LINE

POWER LINE

WELL LOCATION


NOTIFICATION OUTLINE
23S 30E
Strata Production Company
Fortyniner/Sandy
Delaware Development Areas
Township 23S Range 30E
April 13, 2016
NOTIFICATION OUTLINE

Would you like to address long-term produced water disposal? NO

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:

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:

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:

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:

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

02/21/2019

Federal/Indian APD: FED

BLM Bond number: NM1538

BIA Bond number:

Do you have a reclamation bond? YES

Is the reclamation bond a rider under the BLM bond? YES

Is the reclamation bond BLM or Forest Service? BLM

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount: ¤ 50,000

Additional reclamation bond information attachment: