

HOBBS OCD

APR 16 2019

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM136233
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator AMEREDEV OPERATING LLC (372224)		8. Lease Name and Well No. JUNIPER FED COM 25 36 34 081H (325376)
3a. Address 5707 Southwest Parkway, Building 1, Suite 275 Austin TX	3b. Phone No. (include area code) (737)300-4700	9. API Well No. 30-025-44816
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface LOT D / 230 FNL / 310 FWL / LAT 32.07894 / LONG -103.26055 At proposed prod. zone LOT D / 50 FNL / 200 FWL / LAT 32.10845 / LONG -103.26091		10. Field and Pool, or Exploratory WC-025 G-08 S263620C / LWR BONE SI (98150)
11. Sec., T. R. M. or Blk. and Survey or Area SEC 3 / T26S / R36E / NMP		
14. Distance in miles and direction from nearest town or post office* 5 miles		12. County or Parish LEA
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 230 feet	16. No of acres in lease 1280	17. Spacing Unit dedicated to this well 640
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 8556 feet	19. Proposed Depth 10300 feet / 21274 feet	20. BLM/BIA Bond No. in file FED: NMB001478
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2991 feet	22. Approximate date work will start* 03/01/2019	23. Estimated duration 90 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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Christie Hanna / Ph: (737)300-4723	Date 08/03/2018
Title Senior Engineering Technician		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 03/22/2019
Title Assistant Field Manager Lands & Minerals Office 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.

GCP Rec 04/16/19

APPROVED WITH CONDITIONS

Ka
04/16/19

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

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

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

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

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

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 well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

I. SHL: LOT D / 230 FNL / 310 FWL / TWSP: 26S / RANGE: 36E / SECTION: 3 / LAT: 32.07894 / LONG: -103.26055 (TVD: 0 feet, MD: 0 feet)

PPP: SWSW / 0 FSL / 145 FWL / TWSP: 25S / RANGE: 36E / SECTION: 27 / LAT: 32.09408 / LONG: -103.26156 (TVD: 10300 feet, MD: 16046 feet)

PPP: SWSW / 0 FSL / 202 FWL / TWSP: 25S / RANGE: 36E / SECTION: 34 / LAT: 32.07967 / LONG: -103.26155 (TVD: 10299 feet, MD: 10801 feet)

BHL: LOT D / 50 FNL / 200 FWL / TWSP: 25S / RANGE: 36E / SECTION: 27 / LAT: 32.10845 / LONG: -103.26091 (TVD: 10300 feet, MD: 21274 feet)

BLM Point of Contact

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@blm.gov

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:	Ameredev Operating, LLC
LEASE NO.:	NMNM-136233
WELL NAME & NO.:	Juniper Fed Com 25 36 34 81H
SURFACE HOLE FOOTAGE:	0230' FNL & 0310' FWL
BOTTOM HOLE FOOTAGE	0050' FNL & 0200' FWL Sec. 27, T. 25 S., R 36 E.
LOCATION:	Section 03, T. 26 S., R 36 E., NMPM
COUNTY:	County, New Mexico

Operator to submit sundry for 4 string contingency casing design option after receiving approved permit.

Communitization Agreement

• The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

• If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

• In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

A. DRILLING OPERATIONS REQUIREMENTS

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

- Spudding well (minimum of 24 hours)
- Setting and/or Cementing of all casing strings (minimum of 4 hours)
- BOPE tests (minimum of 4 hours)

☐ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,

(575) 3933612

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. **Alternative when using skid/walking rig**
The operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other wells.
4. **Option – Setting surface casing with Surface Rig**
 - a. Notify the BLM when removing the Surface Services Rig.
 - b. Notify the BLM when moving in the H&P Flex Rig. Rig to be moved in within 60 days of notification that Surface Rig has left the location. Failure to notify or have rig on location within 60 days will result in an Incident of Non-Compliance.
 - c. Once the H&P Flex Rig is on location, it shall not be removed from over the hole without prior approval unless the production casing has been run and cemented or the well has been properly plugged. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
 - d. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as H&P Flex Rig is rigged up on well. CIT for the surface casing shall be performed and results recorded on subsequent sundry – pressure to be 1200 psi.
5. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

6. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

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

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

Wait on cement (WOC) for 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.

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

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

Capitan Reef

Possible water flows in the Castile, Salado, and Capitan Reef.

Possible lost circulation in the Rustler, Red Beds, and Delaware.

Abnormal pressures may be encountered within the 3rd Bone Spring and Wolfcamp Formations.

1. The 13-3/8 inch surface casing shall be set at approximately 1888 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order

2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

Special Capitan Reef requirements:

If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following in addition to switching to their four string contingency design:

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

9-5/8" Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

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

Operator has proposed DV tool at depth of 5013', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

- a. First stage to DV tool: _____

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

- b. Second stage above DV tool:

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

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to

prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required through the curve and a minimum of one every other joint.

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

- ☐ Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 3734'). Operator shall provide method of verification.

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

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.**
 - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
- e. Operator shall perform the 9-5/8" and 7-5/8" casing integrity tests to 70% of the casing burst. This will test the multi-bowl seals.
- f. 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.

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

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

- 4. The appropriate BLM office shall be notified a minimum of 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).
 - a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer.**
 - b. 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.

- c. The results of the test shall be reported to the appropriate BLM office.
- d. 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.**
- e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

JAM 031519

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	AMEREDEV OPERATING LLC
LEASE NO.:	NMNM 137804
WELL NAME & NO.:	JUNIPER FED 25 36 34 081H
SURFACE HOLE FOOTAGE:	230'/N & 330'/W
BOTTOM HOLE FOOTAGE	200'/N & 426'/W
LOCATION:	SECTION 27, T25S, R36E, NMPM
COUNTY:	LEA

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☐ **Special Requirements**
 - Hydrology
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult

with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

Approval Date: 03/22/2019

V. SPECIAL REQUIREMENT(S)

Hydrology:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Electric Lines: Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the 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 .

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.

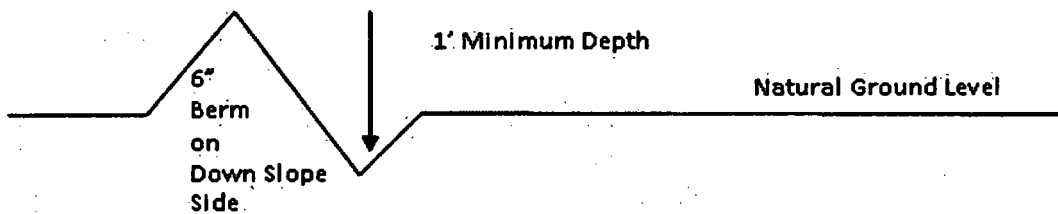
Turnouts

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 outslowing and insloping, leadoff 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.



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 %);

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.

Public Access

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

Approval Date: 03/22/2019

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

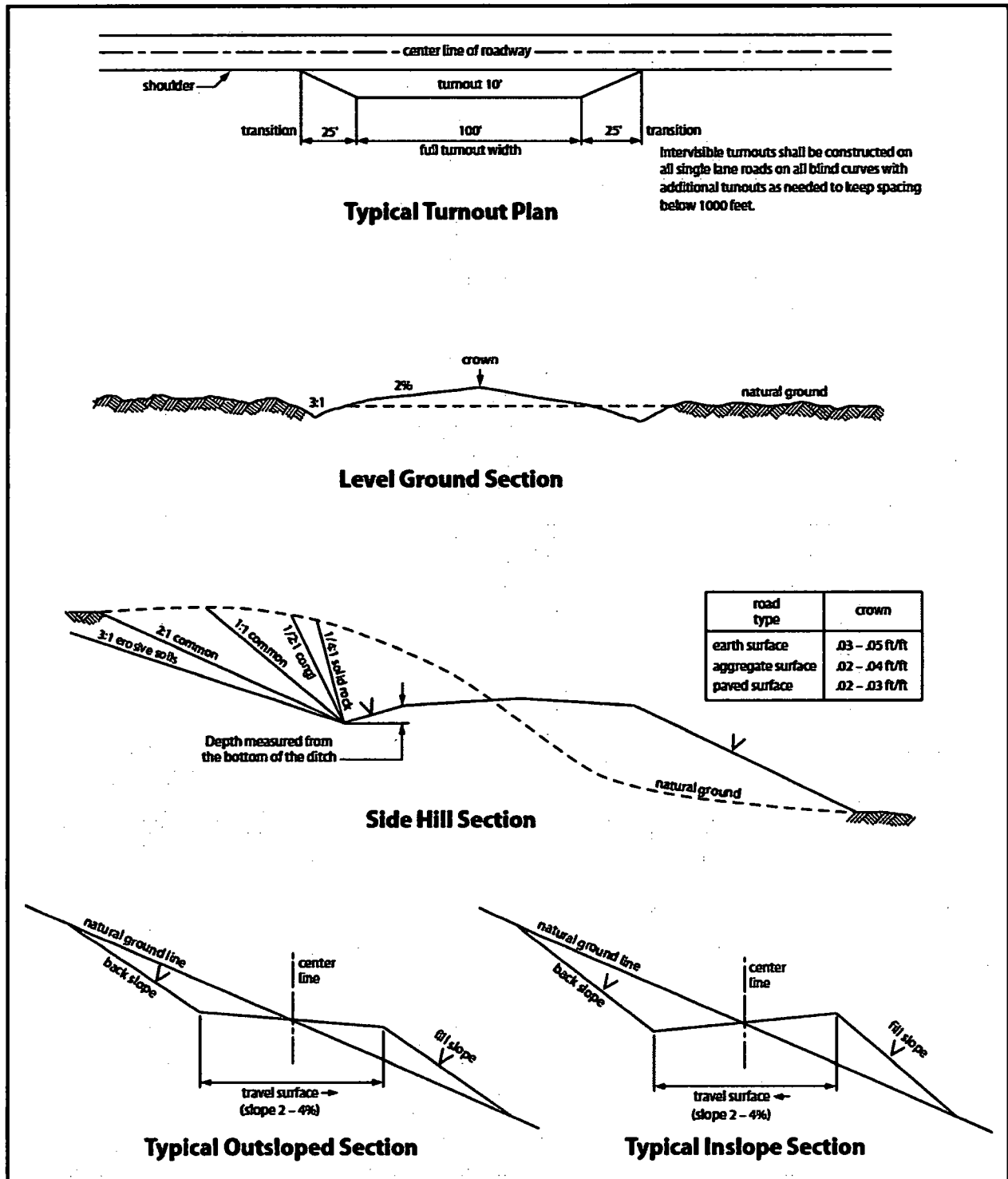


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

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

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

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way.

This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.
5. All construction and maintenance activity will be confined to the authorized right-of-way.
6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.
7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:
 - Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
 - Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
 - The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

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

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

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

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- | | |
|--|--|
| <input type="checkbox"/> seed mixture 1 | <input type="checkbox"/> seed mixture 3 |
| <input checked="" type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4 |
| <input type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

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

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

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

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

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

Approval Date: 03/22/2019

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.)

Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

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

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

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

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

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The

holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

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

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

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

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

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

VIII. INTERIM RECLAMATION

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

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

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

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

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

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).

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed

will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

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

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

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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



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

Operator Certification Data Report

03/25/2019

Operator Certification

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

NAME: Christie Hanna

Signed on: 02/05/2019

Title: Senior Engineering Technician

Street Address: 5707 Southwest Parkway, Building 1, Suite 275

City: Austin

State: TX

Zip: 78735

Phone: (737)300-4723

Email address: channa@ameredev.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



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

Application Data Report

03/25/2019

APD ID: 10400031765

Submission Date: 08/03/2018

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - General

APD ID: 10400031765

Tie to previous NOS? 10400024490

Submission Date: 08/03/2018

BLM Office: CARLSBAD

User: Christie Hanna

Title: Senior Engineering Technician

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM136233

Lease Acres: 1280

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: AMEREDEV OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: AMEREDEV OPERATING LLC

Operator Address: 5707 Southwest Parkway, Building 1, Suite 275

Zip: 78735

Operator PO Box:

Operator City: Austin

State: TX

Operator Phone: (737)300-4700

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-025 G-08
S263620C

Pool Name: LWR BONE
SPRING

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,CO2,OIL

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Describe other minerals:

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

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 081H

Well Class: HORIZONTAL

JUNIPER

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 5 Miles

Distance to nearest well: 8556 FT

Distance to lease line: 230 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: JUNIPER_FED_COM_25_36_34_081H__GAS_CAPTURE_PLAN_20180629103946.pdf

JUNIPER_FED_COM_25_36_34_081H__BLM_LEASE_MAP_20190205143212.pdf

JUNIPER_FED_COM_25_36_34_081H__C_102_REV_SIG_20190205143213.pdf

JUNIPER_FED_COM_25_36_34_081H__VICINITY_MAP_20190205143215.pdf

JUNIPER_FED_COM_25_36_34_081H__EXH_2AB_20190205143214.pdf

Well work start Date: 03/01/2019

Duration: 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: 19642

	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	230	FNL	310	FWL	26S	36E	3	Lot D	32.07894	- 103.2605 5	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 137804	299 1	0	0

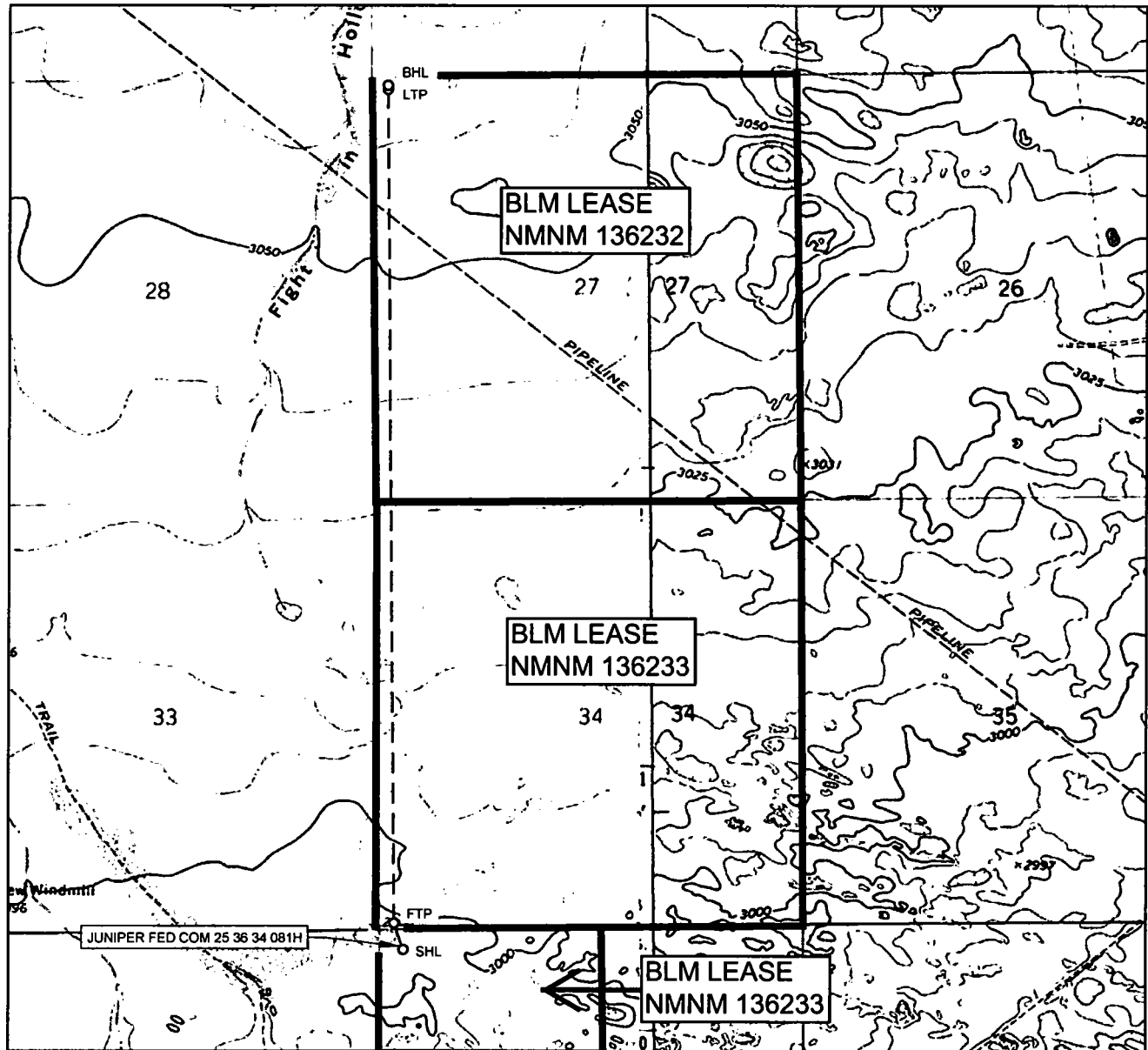
Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

	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
KOP Leg #1	590	FNL	526	FWL	26S	36E	3	Aliquot NWN W	32.07795	- 103.2598 7	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 137804	- 680 9	982 2	980 0
PPP Leg #1	0	FSL	202	FWL	25S	36E	34	Aliquot SWS W	32.07967	- 103.2615 5	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 136233	- 730 8	108 01	102 99
PPP Leg #1	0	FSL	145	FWL	25S	36E	27	Aliquot SWS W	32.09408	- 103.2615 6	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 136232	- 730 9	160 46	103 00
EXIT Leg #1	50	FNL	200	FWL	25S	36E	27	Aliquot SWS W	32.10845	- 103.2609 1	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 136232	- 730 9	212 74	103 00
BHL Leg #1	50	FNL	200	FWL	25S	36E	27	Lot D	32.10845	- 103.2609 1	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 136232	- 730 9	212 74	103 00

LOCATION & ELEVATION VERIFICATION MAP



AMEREDEV

AMEREDEV OPERATING, LLC

LEASE NAME & WELL NO.: JUNIPER FED COM 25 36 34 081H

SECTION 3 TWP 26-S RGE 36-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM ELEVATION 2991'
 DESCRIPTION 230' FNL & 310' FWL

LATITUDE N 32.0789483 LONGITUDE W 103.2605585



SCALE: 1" = 2000'
 0' 1000' 2000'

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AMEREDEV OPERATING LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET.

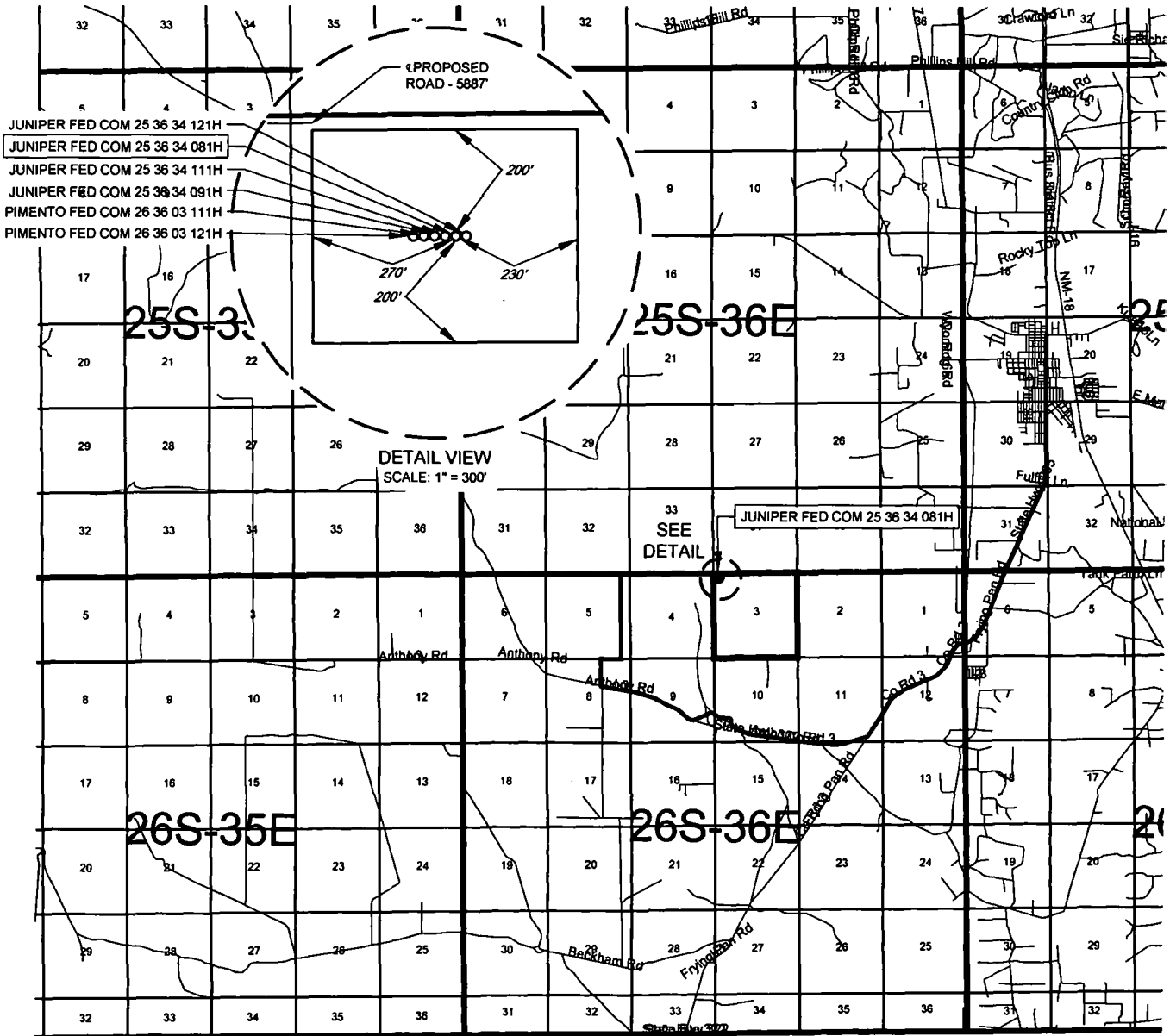


TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
 2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

EXHIBIT 2

VICINITY MAP



AMEREDEV

AMEREDEV OPERATING, LLC

LEASE NAME & WELL NO.: JUNIPER FED COM 25 36 34 081H

SECTION 3 TWP 26-S RGE 36-E SURVEY N.M.P.M.
COUNTY LEA STATE NM
DESCRIPTION 230' FNL & 310' FWL

DISTANCE & DIRECTION


FROM INT. OF 3RD ST./NM-205/FRYING PAN RD. & NM-128, HEAD SOUTH ON
3RD ST./NM-205/FRYING PAN RD. ±5.6 MILES, THENCE WEST (RIGHT) ON
ANTHONY RD ±3.4 MILES, THENCE NORTH (RIGHT) TO CONTINUE ON
ANTHONY RD. ±0.3 MILES, THENCE EAST (RIGHT) ON PIPELINE RD. ±0.3
MILES, THENCE NORTH (LEFT) ON A LEASE RD. ±1.0 MILES, THENCE EAST
(RIGHT) ON A PROPOSED RD. ±1.1 MILES TO A POINT ±345 FEET NORTHWEST
OF THE LOCATION.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AMERREDEV OPERATING LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM of 1983, EAST ZONE, U.S. SURVEY FEET.



SCALE: 1" = 10000'



0' 5000' 10000'



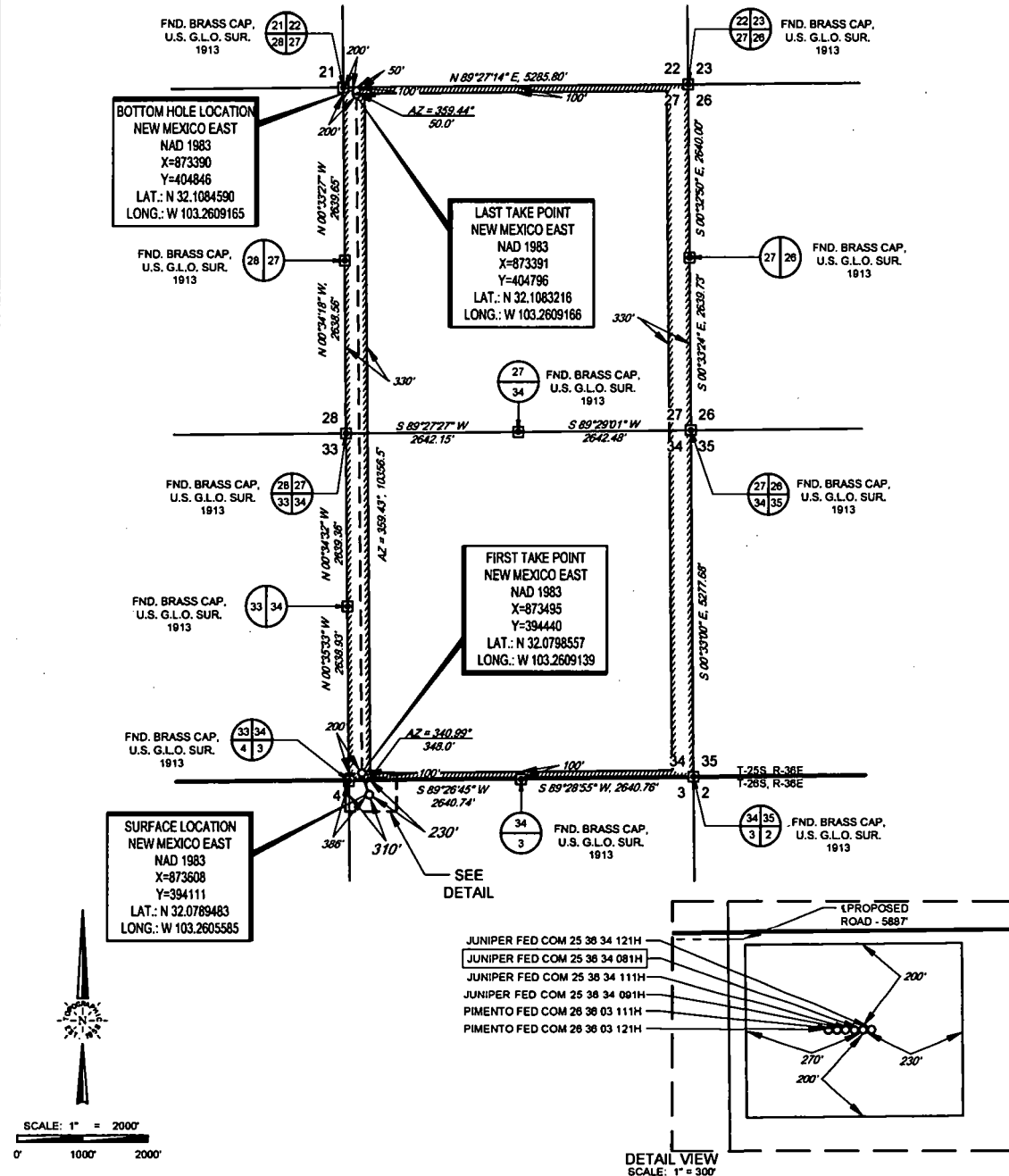
TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Sta. 148 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705.
TELEPHONE: (432) 682-1853 OR (800) 787-1853 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

AMEREDEV

AMEREDEV OPERATING, LLC EXHIBIT 2A

SECTION 3, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



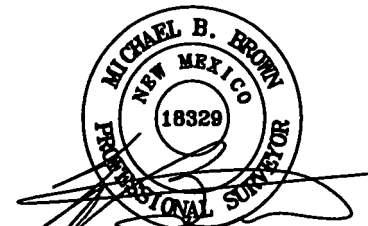
LEASE NAME & WELL NO.: JUNIPER FED COM 25 36 34 081H

SECTION 3 TWP 26-S RGE 36-E SURVEY N.M.P.M.
COUNTY LEA STATE NM
DESCRIPTION 230' FNL & 310' FWL

DISTANCE & DIRECTION
FROM INT. OF 3RD ST./NM-205/FRYING PAN RD. & NM-128, HEAD SOUTH ON
3RD ST./NM-205/FRYING PAN RD. ±5.6 MILES, THENCE WEST (RIGHT) ON
ANTHONY RD ±3.4 MILES, THENCE NORTH (RIGHT) TO CONTINUE ON
ANTHONY RD ±0.3 MILES, THENCE EAST (RIGHT) ON PIPELINE RD. ±0.3
MILES, THENCE NORTH (LEFT) ON A LEASE RD. ±1.0 MILES, THENCE EAST
(RIGHT) ON A PROPOSED RD. ±1.1 MILES TO A POINT ±345 FEET NORTHWEST
OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID
BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY
FEET

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND
UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF
SURVEY, AND DATA PROVIDED BY AMEREDEV OPERATING, LLC. THIS CERTIFICATION IS MADE AND
LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS
NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.



Michael Blake Brown, P.S. No. 18329
NOVEMBER 30, 2018

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 787-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

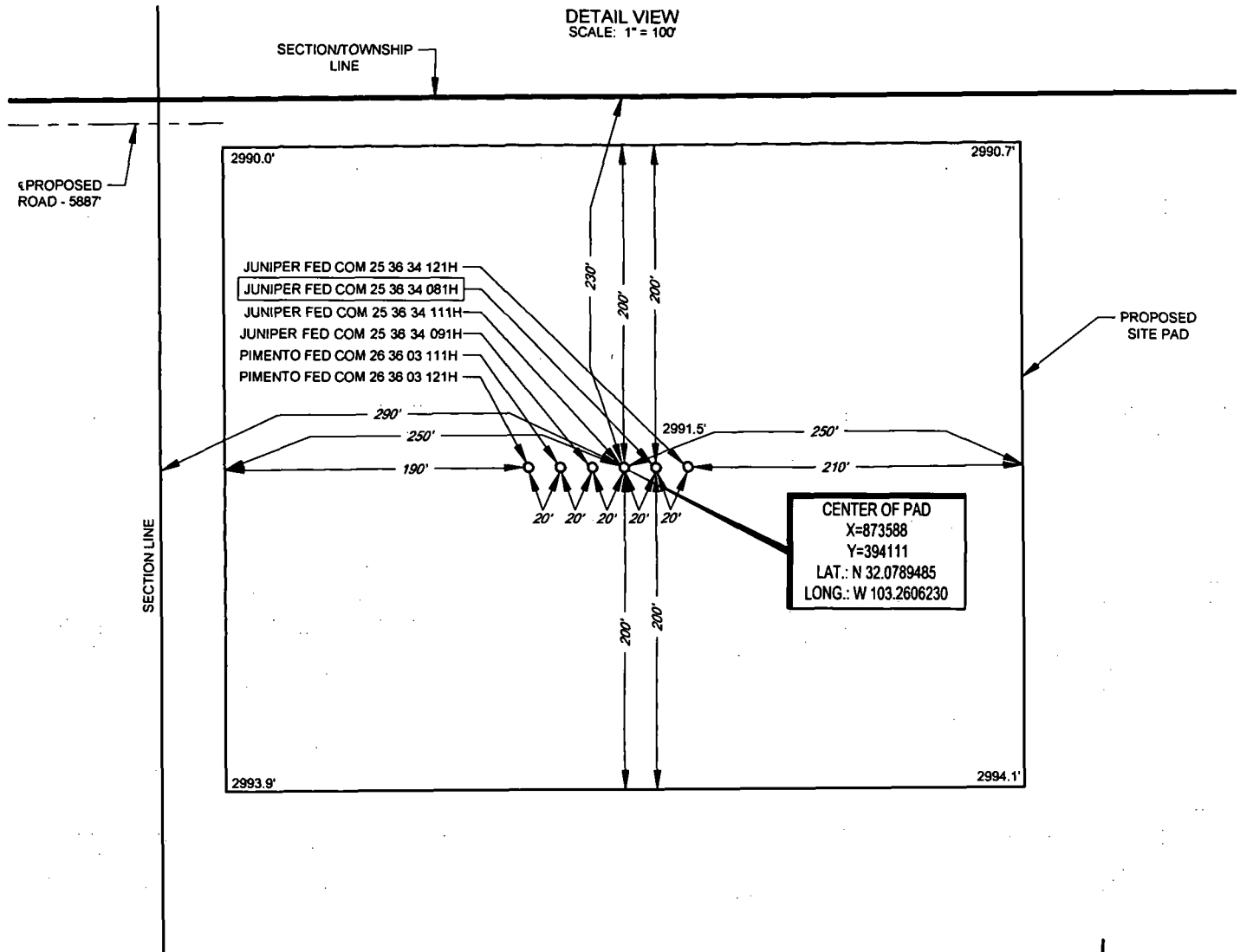
EXHIBIT 2B

AMEREDEV

AMEREDEV OPERATING, LLC

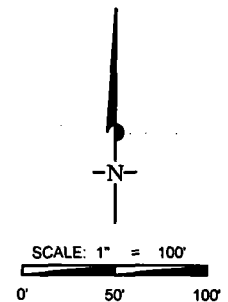
SECTION 3, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: JUNIPER FED COM 25 36 34 081H
081H LATITUDE N 32.0789483 081H LONGITUDE W 103.2605585

CENTER OF PAD IS 230' FNL 290' FWL



ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AMEREDEV OPERATING LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 187 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM



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

Drilling Plan Data Report

03/25/2019

APD ID: 10400031765

Submission Date: 08/03/2018

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	1254	1763	1763	ANHYDRITE	NONE	No
2	SALADO	-731	1985	1985	SALT	NONE	No
3	TANSILL	-2008	3262	3262	LIMESTONE	NONE	No
4	CAPITAN REEF	-2553	3807	3807	LIMESTONE	USEABLE WATER	No
5	LAMAR	-3709	4963	4963	LIMESTONE	NONE	No
6	BELL CANYON	-3905	5159	5159	SANDSTONE	NATURAL GAS,OIL	No
7	BRUSHY CANYON	-5450	6704	6704	SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRING LIME	-6434	7688	7688	LIMESTONE	NONE	No
9	BONE SPRING 1ST	-8046	9300	9300	SANDSTONE	NATURAL GAS,OIL	No
10	BONE SPRING 2ND	-8631	9885	9885	SANDSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 15000

Equipment: 10M BOPE SYSTEM WILL BE USED AFTER THE SURFACE CASING IS SET. A KELLY COCK WILL BE KEPT IN THE DRILL STRING AT ALL TIMES. A FULL OPENING DRILL PIPE STABBING VALVE WITH PROPER DRILL PIPE CONNECTIONS WILL BE ON THE RIG FLOOR AT ALL TIMES.

Requesting Variance? YES

Variance request: Co-Flex Choke Line, 5M Annular Preventer

Testing Procedure: See Attachment

Choke Diagram Attachment:

10M_Choke_Manifold_REV_20190205144233.pdf

BOP Diagram Attachment:

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

10M_Choke_Manifold_REV_20190205144233.pdf

5M_Annular_Preventer_Variance_and_Well_Control_Plan_20190205144256.pdf

5M_BOP_System_20190205144256.pdf

Pressure_Control_Plan_Single_Well_MB4_3String_Big_Hole_BLM_20190205144256.pdf

4_String_MB_Ameredev_Wellhead_Drawing_net_REV_20190205144307.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1888	0	1888	2991		1888	J-55	54.5	OTHER - BTC	4.86	0.57	DRY	8.89	DRY	8.29
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	9821	0	9821			9821	HCL-80	40	OTHER - BTC	1.4	1.26	DRY	2.38	DRY	2.39
3	PRODUCTION	8.5	5.5	NEW	API	N	0	21274	0	10300			21274	OTHER	20	OTHER - BTC	1.79	1.92	DRY	3.18	DRY	3.53

Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

13.375_54.50_J55_SEAH_20190205144436.pdf

JUNIPER_FED_COM_25_36_34_081H_WELLBORE_DIAGRAM_AND_CDA_20190207144543.pdf

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

9625_40_SeAH80HC_4100_Collapse_20190205144620.pdf

JUNIPER_FED_COM_25_36_34_081H_WELLBORE_DIAGRAM_AND_CDA_20190207144601.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JUNIPER_FED_COM_25_36_34_081H_WELLBORE_DIAGRAM_AND_CDA_20190207144615.pdf

5.50_20_USS_P110_HC_BTC_API_20190207144636.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1502	965	1.76	13.5	1697.63	50	Class C	Bentonite, Accelerator, Kolseal, Defoamer, Celloflake
SURFACE	Tail		1502	1888	200	1.34	14.8	268	100	Class C	Slat
INTERMEDIATE	Lead	5013	0	4163	686	2.47	11.9	1694.94	25	CLASS C	Salt, Bentonite, Kolseal, Defoamer, Celloflake, Anti-Settling Expansion

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Additive
INTERMEDIATE	Tail		4163	5013	200	1.33	14.8	266	25	CLASS C	RETARDER
INTERMEDIATE	Lead	5013	5013	8565	1396	2.47	11.9	3448.69	25	Class H	Bentonite, Salt, Kolseal, Defoamer, Celloflake, Retarder, Anti-Settling Expansion Additive
INTERMEDIATE	Tail		8565	9821	300	1.24	14.5	371.1	25	Class H	Salt, Bentonite, Retarder, Dispersant, Fluid Loss
PRODUCTION	Lead		0	21274	4542	1.34	14.2	6086.77	25	Class H	Salt, Bentonite, Fluid Loss, Dispersant, Retarder, Defoamer

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: All necessary supplies (e.g. bentonite, cedar bark) for fluid control will be on site.

Describe the mud monitoring system utilized: An electronic pit volume totalizer (PVT) will be utilized on the circulating system to monitor pit volume, flow rate, pump pressure, and pump rate.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1888	WATER-BASED MUD	8.4	8.6							

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

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
1888	9821	OTHER : Diesel Brine Emulsion	8.5	9.4							
9821	10300	OIL-BASED MUD	10.5	14							

Section 6 - Test, Logging, Coring

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

A directional survey, measurement while drilling and a mudlog/geologic lithology log will all be run from surface to TD.

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

DS,MWD,MUDLOG

Coring operation description for the well:

No coring will be done on this well.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5000

Anticipated Surface Pressure: 2734

Anticipated Bottom Hole Temperature(F): 160

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Plan_20180629084022.pdf

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Jun081_DR_20190205145554.pdf

Jun081_LLR_20190205145554.pdf

5M_Annular_Preventer_Variance_and_Well_Control_Plan_20190205145615.pdf

Pressure_Control_Plan_Single_Well_MB4_3String_Big_Hole_BLM_20190205145615.pdf

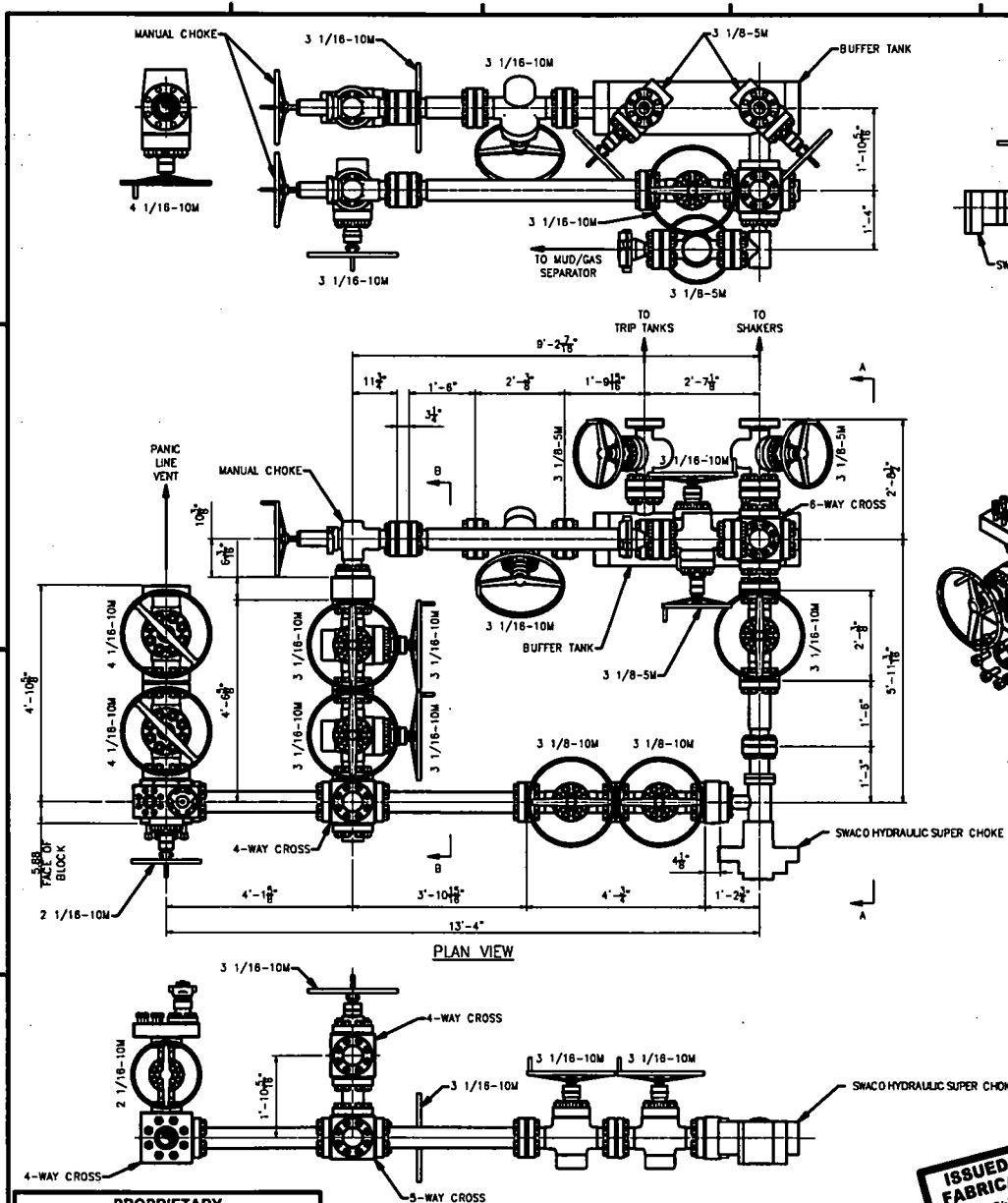
Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

R616__CoC_for_hoses_12_18_17_20180629084119.pdf

Requested_Exceptions__3_String_Revised_01312019_20190205145629.pdf



ISSUED FOR FABRICATION
February-10-2014
DRAFTSMAN
ENGINEER

STANDARD TOLERANCES (UNLESS NOTED)			
1. FABRICATION DIMENSIONS:	A-6" TO 34"	± .125"	
	34" TO 130"	± .156"	
	COVER 130"	± .187"	
2. MACHINED DIMENSIONS	ALL ANGLES	± .062"	
	ALL DIMENSIONS	± .062"	
	LINEAR (EXCEPTED TO TWO DECIMALS)	± .015"	
	LINEAR (EXCEPTED TO THREE DECIMALS)	± .005"	

HELMERICH & PAYNE INTERNATIONAL DRILLING CO.	
TITLE: 3 CHOKE, 3 LEVEL, 10M CHOKE MANIFOLD G.A.	
CUSTOMER: H&P	
PROJECT:	
DRAWN: MWL	DATE: 2/10/2014
SCALE: 3/4"=1'-0"	SHEET: 1 OF 1
REV:	HP-D1254

PROPRIETARY
THIS DRAWING AND THE IDEAS AND INFORMATION INCLUDED IN THIS DRAWING ARE PROPRIETARY AND ARE NOT TO BE REPRODUCED, DISTRIBUTED OR DISCLOSED IN ANY MANNER WITHOUT THE PRIOR WRITTEN CONSENT OF A DULY AUTHORIZED OFFICER OF HELMERICH & PAYNE INTL. DRILLING CO.

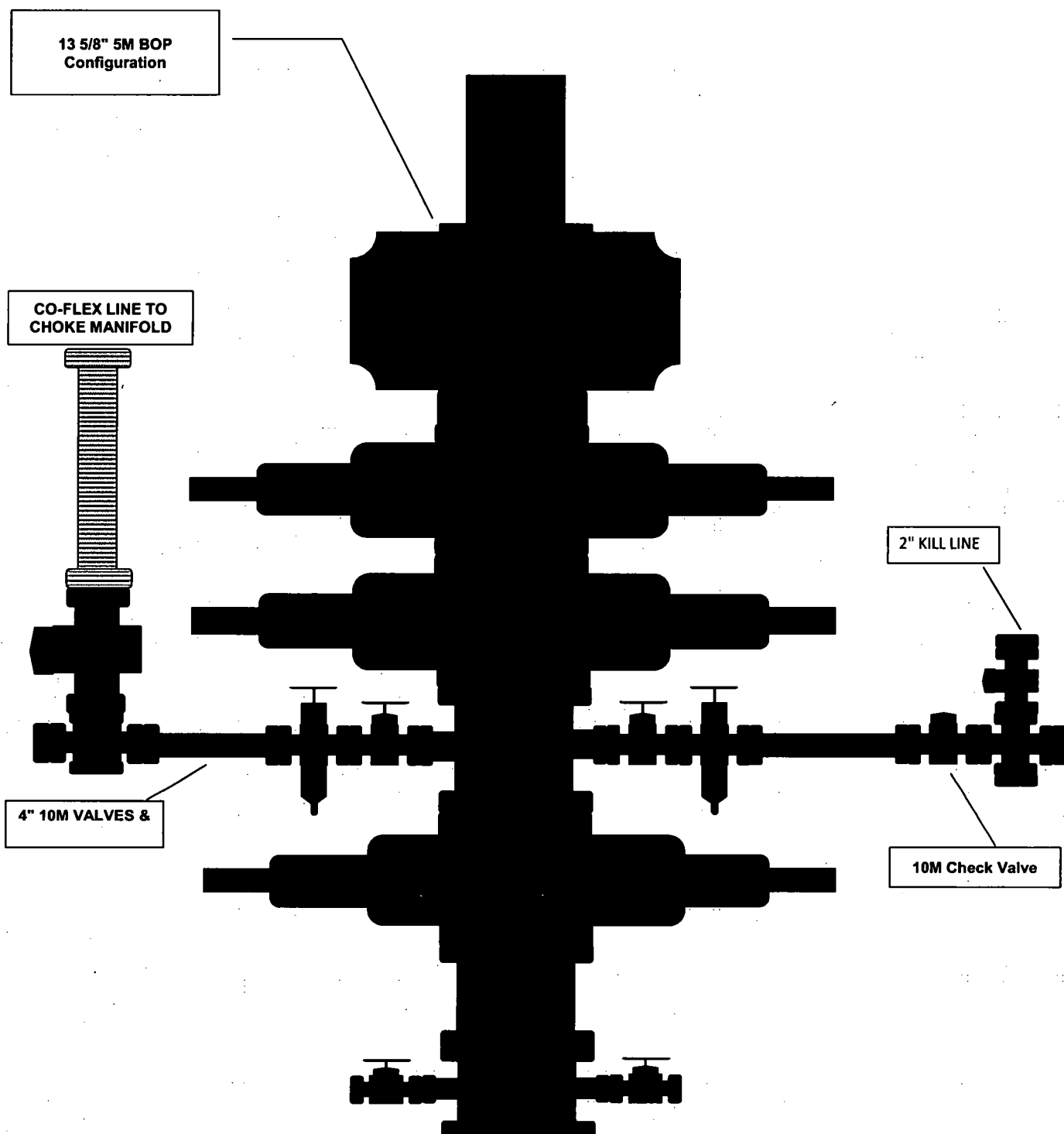
13 5/8" 5M BOP
Configuration

CO-FLEX LINE TO
CHOKE MANIFOLD

2" KILL LINE

4" 10M VALVES &

10M Check Valve



5M Annular Preventer Variance Request and Well Control Procedures

Note: A copy of the Well Control Plan must be available at multiple locations on the rig for review by rig personnel, as well as review by the BLM PET/PE, and a copy must be maintained on the rig floor.

Dual Isolation Design for 5M Annular Exception

Ameredev will utilize 13-5/8" 10M (5M Annular) BOPE System consisting of:

- 13-5/8" 5M Annular
- 13-5/8" 10M Upper Pipe Rams
 - 3-1/2" – 5-1/2" Variable Bore Ram
- 13-5/8" 10M Blind Rams
- 13-5/8" 10M Drilling Spool /w 2 - 4" 10M Outlets Double 10M Isolation Valves
- 13-5/8" 10M Lower Blind Rams
 - 3-1/2" – 5-1/2" Variable Bore Ram

All drilling components and casing associated to exposure > 5000 psi BHP requiring a 10M system will have a double isolation (secondary barrier) below the 5M Annular that would provide a barrier to flow. The mud system will always be primary barrier, it will be maintained by adjusting values based on tourly mud tests and monitoring a PVT System to maintain static wellbore conditions, displacement procedures will be followed and recorded on daily drilling reports during tripping operations. Surge and swab pressure values will be calculated and maintained and static flow check will be monitored at previous casing shoe and verified static well conditions prior to tripping out of hole and again prior to pulling last joint of drill pipe through BOPE. The below table, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

Drill Components	Size	Primary Barrier	Secondary Barrier	Third Barrier
Drillpipe	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
HWDP Drillpipe	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Drill Collars	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Production Casing	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Open Hole	13-5/8	Drilling Fluid	Blind Rams	
All Drilling Components in 10M Environment will have OD that will allow full Operational RATED WORKING PRESSURE for system design. Kill line with minimum 2" ID will be available outside substructure with 10M Check Valve for OOH Kill Operations				

Well Control Procedures

Proper well control procedures are dependent to differentiating well conditions, to cover the basic well control operations there are will be standard drilling ahead, tripping pipe, tripping BHA, running casing, and pipe out of the hole/open hole scenarios that will be defined by procedures below. Initial Shut In Pressure can be taken against the Uppermost BOPE component the 5M Annular, pressure control can be transferred from the lesser 5M Annular to the 10M Upper Pipe Rams if needed. Shut In Pressures may be equal to or less than the Rated Working Pressure but at no time will the pressure on the annular preventer exceed the Rated Working Pressure of the annular. The annular will be tested to 5,000 psi. This will be the Rated Working Pressure of the annular preventer. All scenarios will be written such as shut in will be performed by closing the 10,000 psi Upper Pipe Rams for faster Accumulator pressure recovery to allow safer reaction to controlling wellbore pressure.

Shutting In While Drilling

1. Sound alarm signaling well control event to Rig Crew
2. Space out drill string to allow FOSV installation
3. Shut down pumps
4. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
5. Install open, full open safety valve and close valve, Close Chokes
6. Verify well is shut-in and flow has stopped
7. Notify supervisory personnel
8. Record data (SIDP, SICP, Pit Gain, and Time)
9. Hold pre-job safety meeting and discuss kill procedure

Shutting In While Tripping

1. Sound alarm signaling well control event to Rig Crew
2. Space out drill string to allow FOSV installation
3. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
4. Install open, full open safety valve and close valve, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

Shutting In While Running Casing

1. Sound alarm signaling well control event to Rig Crew
2. Space out casing to allow circulating swedge installation
3. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
4. Install circulating swedge, Close high pressure, low torque valves, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold Pre-job safety meeting and discuss kill procedure

Shutting In while out of hole

1. Sound alarm signaling well control event to Rig Crew
2. Shut-in well: close blind rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
3. Close Chokes, Verify well is shut-in and monitor pressures
4. Notify supervisory personnel
5. Record data (SIDP, SICP, Pit Gain, and Time)
6. Hold Pre-job safety meeting and discuss kill procedure

Shutting In prior to pulling BHA through stack

Prior to pulling last joint of drill pipe thru the stack space out and check flow
If flowing see steps below.

1. Sound alarm signaling well control event to Rig Crew
2. Shut in upper pipe ram and open HCR against Open Chokes and Valves Open
to working pressure gauge
3. Install open, full open safety valve and close valve, Close Chokes
4. Verify well is shut-in and flow has stopped
5. Notify supervisory personnel
6. Record data (SIDP, SICP, Pit Gain, and Time)
7. Hold pre-job safety meeting and discuss kill procedure

Shutting in while BHA is in the stack and ram preventer and combo immediately available

1. Sound alarm signaling well control event to Rig Crew
2. Space out BHA with upset just beneath the compatible pipe ram
3. Shut in upper compatible pipe ram and open HCR against Open Chokes and Valves Open to working pressure gauge
4. Install open, full open safety valve and close valve, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

*FOSV will be on rig floor in open position with operating handle for each type of connection utilized and tested to 10,000 psi

Shutting in while BHA is in the stack and no ram preventer or combo immediately available

1. Sound alarm signaling well control event to Rig Crew
2. If possible pick up high enough, to pull string clear and follow "Open Hole" scenario

If not possible to pick up high enough:

3. Stab Crossover, make up one joint/stand of drill pipe, and install open, full open safety valve (Leave Open)
4. Space out drill string with upset just beneath the compatible pipe ram.
5. Shut in upper compatible pipe ram and open HCR against Open Chokes and Valves Open to working pressure gauge
6. Close FOSV, Close Chokes, Verify well is shut-in and flow has stopped
7. Notify supervisory personnel
8. Record data (SIDP, SICP, Pit Gain, and Time)
9. Hold pre-job safety meeting and discuss kill procedure

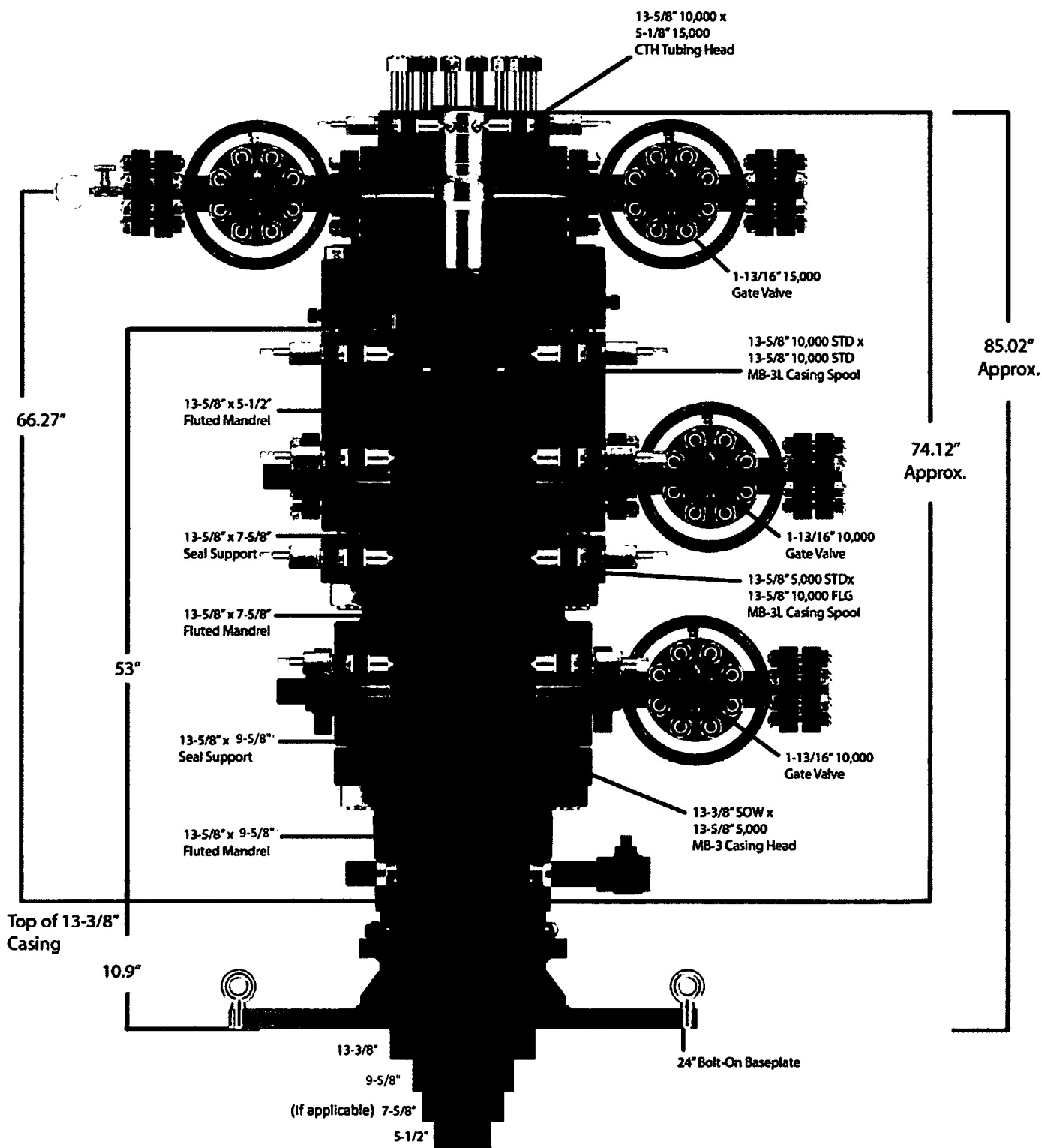
Pressure Control Plan

Pressure Control Equipment

- Following setting of 13-3/8" Surface Casing Ameredev will install 13-5/8 MB4 Multi Bowl Casing Head by welding on a 13-5/8 SOW x 13-5/8" 5M in combination with 13-5/8 5M x 13-5/8 10M B-Sec to Land Intm #1 and a 13-5/8 10M x 13-5/8 10M shouldered to land C-Sec to Land Intm #2 (Installation procedure witnessed and verified by a manufacturer's representative).
- Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Ameredev will install a 5M System Blowout Preventer (BOPE) with a 5M Annular Preventer and related equipment (BOPE). Full testing will be performed utilizing a full isolation test plug and limited to 5,000 psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 50% of approved working pressure (2,500 psi). Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Setting of 9-5/8" Intermediate will be done by landing a wellhead hanger in the 13-5/8" 5M Bowl, Cementing and setting Well Head Packing seals and testing same. (Installation procedure witnessed and verified by a manufacturer's representative) Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Full testing will be performed utilizing a full isolation test plug to 10,000 psi MOP of MB4 Multi Bowl B-Section. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 100% of approved working pressure (5,000 psi).
- Before drilling >20ft of new formation under the 9-5/8" Casing Shoe a pressure integrity test of the Casing Shoe will be performed to minimum of the MWE anticipated to control formation pressure to the next casing depth.
- Following setting of 5-1/2" Production Casing and adequate WOC time Ameredev will break 10M System Blowout Preventer (BOP) from 10M DOL-2 Casing Head, install annulus casing slips and test same (Installation procedure witnessed and verified by a manufacturer's representative) and install 11" 10M x 5-1/8" 15M Tubing Head (Installation procedure witnessed and verified by a manufacturer's representative). Ameredev will test head to 70% casing design and install Dry Hole cap with needle valve and pressure gauge to monitor well awaiting completion.

Pressure Control Plan

- Slow pump speeds will be taken daily by each crew and recorded on Daily Drilling Report after mudding up.
- A choke manifold and accumulator with floor and remote operating stations will be functional and in place after installation of BOPE, as well as full functioning mud gas separator.
- Weekly BOPE pit level drills will be conducted by each crew and recorded on Daily Drilling Report.
- BOP will be fully operated when out of hole and will be documented on the daily drilling log.
- All B.O.P.s and associated equipment will be tested in accordance with Onshore Order #2
- All B.O.P. testing will be done by an independent service company.
- The B.O.P. will be tested within 21 days of the original test if drilling takes more time than planned.
- Amerdev requests a variance to connect the B.O.P. choke outlet to the choke manifold using a co-flex hose with a 10,000 psi working pressure that has been tested to 15,000psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps. (certifications will be sent to Carlsbad BLM Office prior to install)
- Amerdev requests a variance to install a 5M Annular Preventer on the 10M System to drill the Production Hole below the 9-5/8" Intermediate Section. 5M Annular will be tested to 100% working pressure (5,000 psi). A full well control procedure will be included to isolate well bore.



Quotation

Downing Wellhead Equipment

Oklahoma City,
Oklahoma - USA

Reference Data:

16925 AMEREDEV

Proprietary and Confidential

The information contained in this drawing is the sole property of Downing Wellhead Equipment, any reproduction in part or in whole without the written permission of Downing Wellhead Equipment is prohibited.

TITLE:

AMEREDEV

DRAWN

CHECKED

APPROVED

SIZE

A

DWG. NO.

Scale:

Weight:

REV.

Sheet:

Wellbore Schematic

Well: Juniper Fed Com 25-36-34 081H
SHL: Sec. 03 26S-36E 230' FNL & 310' FWL
BHL: Sec. 27 25S-36E 50' FNL & 200' FWL
 Lea, NM

Wellhead: A - 13-5/8" 10M x 13-5/8" SOW
 B - 13-5/8" 10M x 13-5/8" 10M
 C - 13-5/8" 10M x 13-5/8" 10M
 Tubing Spool - 5-1/8" 15M x 13-3/8" 10M

Xmas Tree: 2-9/16" 10M

Tubing: 2-7/8" L-80 6.5# 8rd EUE

Co. Well ID: xxxxxx
AFE No.: xxxx-xxx
API No.: xxxxxxxxxxxx
GL: 2,991'

Field: Delaware
Objective: 2nd Bone Spg

TVD: 10,300'

MD: 21,274'

Rig: TBD **KB:** 27'

E-Mail: Wellsite2@ameredev.com

Hole Size	Formation Tops	Logs Cement	Mud Weight
17.5"	Rustler 1,763'	1,165 Sacks TOC 0'	8.4-8.6 ppg WBM
	13.375" 54.5# J-55 BTC 1,888'		
12.25"	Salado 1,985'		
	Tansill 3,262'		
	Capitan Reef 3,807'		
	Lamar 4,963'	886 Sacks TOC 0'	50% Excess
	DV Tool 5,013'		
	Bell Canyon 5,159'		
	Brushy Canyon 6,704'		
	Bone Spring Lime 7,688'		
	First Bone Spring 9,300'		
	9.625" 40# L-80HC BTC 9,821'	1,723 Sacks TOC 0'	50% Excess
8.5"	Second Bone Spring 9,885'		
12" Build @ 9,821' MD thru 10,868' MD	5.5" 20# P-110CYHP BTC 21,274'	4,542 Sacks TOC 0'	25% Excess
	Target 2nd Bone Spg 10300 TVD // 21274 MD		
			8.5 - 9.4 ppg Diesel Brine Emulsion
			10.5 - 14 ppg OBM

Casing Design and Safety Factor Check

Casing Specifications						
Segment	Hole ID	Depth	OD	Weight	Grade	Coupling
Surface	17.5	1,888'	13.375	54.5	J-55	BTC
Intermediate	12.25	9,821'	9.625	40	HCL-80	BTC
Prod Segment A	8.5	9,821'	5.5	20	CYHP-110	BTC
Prod Segment B	8.5	21,274'	5.5	20	CYHP-110	BTC

Check Surface Casing				
OD Cplg	Body	Joint	Collapse	Burst
<i>inches</i>	<i>1000 lbs</i>	<i>1000 lbs</i>	<i>psi</i>	<i>psi</i>
14.375	853	915	4,100	2,730
Safety Factors				
1.56	8.29	8.89	4.86	0.57
Check Intermediate Casing				
OD Cplg	Body	Joint	Collapse	Burst
<i>inches</i>	<i>1000 lbs</i>	<i>1000 lbs</i>	<i>psi</i>	<i>psi</i>
7.625	940	558	6700	9460
Safety Factors				
2.31	2.39	2.44	1.40	1.26
Check Prod Casing, Segment A				
OD Cplg	Body	Joint	Collapse	Burst
<i>inches</i>	<i>1000 lbs</i>	<i>1000 lbs</i>	<i>psi</i>	<i>psi</i>
5.777	728	655	12780	14360
Safety Factors				
1.36	3.53	3.18	1.79	1.92
Check Prod Casing, Segment B				
OD Cplg	Body	Joint	Collapse	Burst
<i>inches</i>	<i>1000 lbs</i>	<i>1000 lbs</i>	<i>psi</i>	<i>psi</i>
5.777	728	655	12780	14360
Safety Factors				
1.36	75.99	68.37	1.71	1.92

U.S. Steel Tubular Products
Product Information
5.5 in. 20 lb/ft (0.361 in. wall) P-110 HC Casing
STAR SEAL - CDC™

Grade(s)		P-110 HC	
MECHANICAL PROPERTIES			
	Yield Strength		
	Minimum	110	ksi
	Maximum	140	ksi
	Tensile Strength		
	Minimum	125	ksi
PIPE PROPERTIES			
Dimensions, Nominal	Pipe Outside Diameter	5.500	in.
	Wall	0.361	in.
	Pipe Inside Diameter	4.778	in.
	Pipe Drift		
	API	4.653	in.
	Special (If Applicable)	N/A	in.
	Weight, T&C	20.00	lbs/ft
	Weight, Plain End	19.83	lbs/ft
	Pipe Cross Sectional Area	5.828	sq. in.
Performance Properties	Minimum Pipe Body Yield Strength	641	1,000 lbs
	Minimum Collapse Pressure	12,200	psi
	Minimum Internal Yield Pressure	12,640	psi
CONNECTION PROPERTIES			
Dimensions, Nominal	Connection Outside Diameter	6.050	in.
	Connection Inside Diameter	4.778	in.
	Connection Drift		
	API	4.653	in.
	Special (If Applicable)	N/A	in.
	Makeup Loss	4.63	in.
	Critical Area	5.828	in.
	Joint Efficiency	100	%
Performance Properties	Joint Strength	667	1,000 lbs
	Compression Rating	400	1,000 lbs
	API Collapse Pressure Rating	12,200	psi
	API Internal Pressure Resistance	12,360	psi
	Maximum Uniaxial Bend Rating	57.2	deg/100 ft
Recommended Torque Values	Minimum Shoulder Torque	5,000	ft-lbs
	Maximum Shoulder Torque	7,500	ft-lbs
	Connection Yield Torque	16,100	ft-lbs

* STAR SEAL - CDC (Casing Drilling Connection) is a Modified API Buttress threaded and coupled connection designed for field proven in drilling with casing applications. Star Seal is a registered trademark of U. S. Steel Corporation. All material contained in this publication is for general information only. This material should not therefore, be used or relied upon for any specific application without independent competent professional examination and verification of its accuracy, suitability and applicability. Anyone making use of this material does so at their own risk and assumes any and all liability resulting from such use. U. S. Steel disclaims any and all expressed or implied warranties of fitness for any general or particular application.



U.S. Steel Tubular Products, Inc.
600 Grant Street
Pittsburgh, PA 15219

SeAH

9.625" 40# .395" **SEAH-80 HIGH COLLAPSE**

(SEAH-80 IS A NON HEAT TREATED PRODUCT)

Dimensions (Nominal)

Outside Diameter	9.625	in.
Wall	0.395	in.
Inside Diameter	8.835	in.
Drift	8.750	in.
Weight, T&C	40.000	lbs./ft.
Weight, PE	38.970	lbs./ft.

Performance Properties

Collapse	4100	psi
Internal Yield Pressure at Minimum Yield		
PE	5750	psi
LTC	5750	psi
BTC	5750	psi
Yield Strength, Pipe Body	916	1000 lbs.
Joint Strength		
LTC	717	1000 lbs.
BTC	915	1000 lbs.

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.

SeAH

13-3/8" 54.50# .380 J-55

Dimensions (Nominal)

Outside Diameter	13.375	in.
Wall	0.380	in.
Inside Diameter	12.615	in.
Drift	12.459	in.

Weight, T&C	54.500	lbs/ft
Weight, PE	52.790	lbs/ft

Performance Ratings, Minimum

Collapse, PE	1130	psi
Internal Yields Pressure		
PE	2730	psi
STC	2730	PSI
BTC	2730	psi
Yield Strength, Pipe Body	853	1000 lbs
Joint Strength, STC	514	1000 lbs
Joint Strength, BTC	909	1000 lbs

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.

H₂S Drilling Operation Plan

1. **All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:**
 - a. Characteristics of H₂S
 - b. Physical effects and hazards
 - c. Principal and operation of H₂S detectors, warning system and briefing areas
 - d. Evacuation procedure, routes and first aid
 - e. Proper use of safety equipment and life support systems
 - f. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.
2. **Briefing Area:**
 - a. Two perpendicular areas will be designated by signs and readily accessible.
 - b. Upon location entry there will be a designated area to establish all safety compliance criteria (1.) has been met.
3. **H₂S Detection and Alarm Systems:**
 - a. H₂S sensors/detectors shall be located on the drilling rig floor, in the base of the sub structure/cellar area, and on the mud pits in the shale shaker area. Additional H₂S detectors may be placed as deemed necessary. All detectors will be set to initiate visual alarm at 10 ppm and visual with audible at 14 ppm and all equipment will be calibrated every 30 days or as needed.
 - b. An audio alarm will be installed on the derrick floor and in the top doghouse.
4. **Protective Equipment for Essential Personnel:**
 - a. **Breathing Apparatus:**
 - i. Rescue Packs (SCBA) - 1 Unit shall be placed at each briefing area.
 - ii. Two (SCBA) Units will be stored in safety trailer on location.
 - iii. Work/Escapes packs - 1 Unit will be available on rig floor in doghouse for emergency evacuation for driller.
 - b. **Auxiliary Rescue Equipment:**
 - i. Stretcher
 - ii. 2 - OSHA full body harnesses
 - iii. 100 ft. 5/8" OSHA approved rope
 - iv. 1 - 20# class ABC fire extinguisher
5. **Windsock and/or Wind Streamers:**
 - a. Windsock at mud pit area should be high enough to be visible.
 - b. Windsock on the rig floor should be high enough to be visible.
6. **Communication:**
 - a. While working under mask scripting boards will be used for communication where applicable.
 - b. Hand signals will be used when script boards are not applicable.

H₂S Drilling Operation Plan

- c. Two way radios will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at Drilling Foreman's Office.

7. **Drill Stem Testing:** - No Planned DST at this time.

8. **Mud program:**

- a. If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

9. **Metallurgy:**

- a. All drill strings, casing, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
- b. Drilling Contractor supervisor will be required to be familiar with the effect H₂S has on tubular goods and other mechanical equipment provided through contractor.

H₂S Contingency Plan

Emergency Procedures

In the event of a release of H₂S, the first responder(s) must:

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response.
- Take precautions to avoid personal injury during this operation.
- Contact Operator and/or local officials the aid in operation. See list of phone numbers attached.
- Have received training in the:
 - Detection of H₂S and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Amerdev Operating LLC personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including direction to site. The following call list of essential and potential responders has been prepared for use during a release. Amerdev Operating LLC's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER)



American Resource Development LLC

H₂S Contingency Plan

Ameredev Operating LLC – Emergency Phone 737-300-4799			
Key Personnel:			
Name	Title	Office	Mobile
Floyd Hammond	Chief Operating officer	737-300-4724	512-783-6810
Zachary Boyd	Operations Superintendent	737-300-4725	432-385-6996
Blake Estrada	Construction Foreman		432-385-5831

<u>Artesia</u>			
Ambulance			911
State Police			575-746-2703
City Police			575-746-2703
Sheriff's Office			575-746-9888
Fire Department			575-746-2701
Local Emergency Planning Committee			575-746-2122
New Mexico Oil Conservation Division			575-748-1283
<u>Carlsbad</u>			
Ambulance			911
State Police			575-885-3137
City Police			575-885-2111
Sheriff's Office			575-887-7551
Fire Department			575-887-3798
Local Emergency Planning Committee			575-887-6544
US Bureau of Land Management			575-887-6544
<u>Santa Fe</u>			
New Mexico Emergency Response Commission (Santa Fe)			505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs			505-827-9126
New Mexico State Emergency Operations Center			505-476-9635
<u>National</u>			
National Emergency Response Center (Washington, D.C.)			800-424-8802
<u>Medical</u>			
Flight for Life - 4000 24th St.; Lubbock, TX			806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX			806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM			505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM			505-842-4949

AMEREDEV

Ameredev Operating, LLC.

JUN/PIM

JUN/PIM #1S

Juniper 081H

Wellbore #1

Plan: Design #1

Standard Planning Report

14 January, 2019

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project JUN/PIM

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site JUN/PIM #1S

Site Position:	Northing:	394,110.55 usft	Latitude:	32° 4' 44.214 N
From: Lat/Long	Easting:	873,588.15 usft	Longitude:	103° 15' 38.243 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.57 °

Well Juniper 081H

Well Position	+N/-S	0.2 usft	Northing:	394,110.71 usft	Latitude:	32° 4' 44.214 N
	+E/-W	20.0 usft	Easting:	873,608.16 usft	Longitude:	103° 15' 38.011 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	2,991.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/11/2019	6.63	59.96	47,725.93145103

Design Design #1

Audit Notes:

Version: **Phase:** PROTOTYPE **Tie On Depth:** 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	358.84

Plan Survey Tool Program **Date** 1/11/2019

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	21,274.3	Design #1 (Wellbore #1)	MWD
				OWSG MWD - Standard

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,300.0	6.00	149.00	2,299.5	-13.5	8.1	2.00	2.00	0.00	149.00	
6,020.9	6.00	149.00	6,000.0	-346.8	208.4	0.00	0.00	0.00	0.00	
6,320.9	0.00	0.00	6,299.5	-360.3	216.5	2.00	-2.00	0.00	180.00	
9,821.5	0.00	0.00	9,800.0	-360.3	216.5	0.00	0.00	0.00	0.00	
10,517.4	83.51	329.56	10,274.4	4.8	1.9	12.00	12.00	0.00	329.56	
10,613.7	83.51	329.56	10,285.3	87.4	-46.5	0.00	0.00	0.00	0.00	
10,867.9	90.00	359.43	10,300.0	329.0	-113.4	12.00	2.55	11.75	78.86	Jun081 FTP
21,274.3	90.00	359.43	10,300.0	10,734.9	-217.7	0.00	0.00	0.00	0.00	Jun081 BHL

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	2.00	149.00	2,100.0	-1.5	0.9	-1.5	2.00	2.00	0.00
2,200.0	4.00	149.00	2,199.8	-6.0	3.6	-6.1	2.00	2.00	0.00
2,300.0	6.00	149.00	2,299.5	-13.5	8.1	-13.6	2.00	2.00	0.00
2,400.0	6.00	149.00	2,398.9	-22.4	13.5	-22.7	0.00	0.00	0.00
2,500.0	6.00	149.00	2,498.4	-31.4	18.9	-31.7	0.00	0.00	0.00
2,600.0	6.00	149.00	2,597.8	-40.3	24.2	-40.8	0.00	0.00	0.00
2,700.0	6.00	149.00	2,697.3	-49.3	29.6	-49.9	0.00	0.00	0.00
2,800.0	6.00	149.00	2,796.7	-58.3	35.0	-58.9	0.00	0.00	0.00
2,900.0	6.00	149.00	2,896.2	-67.2	40.4	-68.0	0.00	0.00	0.00
3,000.0	6.00	149.00	2,995.6	-76.2	45.8	-77.1	0.00	0.00	0.00
3,100.0	6.00	149.00	3,095.1	-85.1	51.2	-86.2	0.00	0.00	0.00
3,200.0	6.00	149.00	3,194.5	-94.1	56.5	-95.2	0.00	0.00	0.00
3,300.0	6.00	149.00	3,294.0	-103.1	61.9	-104.3	0.00	0.00	0.00
3,400.0	6.00	149.00	3,393.4	-112.0	67.3	-113.4	0.00	0.00	0.00
3,500.0	6.00	149.00	3,492.9	-121.0	72.7	-122.4	0.00	0.00	0.00
3,600.0	6.00	149.00	3,592.3	-129.9	78.1	-131.5	0.00	0.00	0.00
3,700.0	6.00	149.00	3,691.8	-138.9	83.5	-140.6	0.00	0.00	0.00
3,800.0	6.00	149.00	3,791.2	-147.8	88.8	-149.6	0.00	0.00	0.00
3,900.0	6.00	149.00	3,890.7	-156.8	94.2	-158.7	0.00	0.00	0.00
4,000.0	6.00	149.00	3,990.1	-165.8	99.6	-167.8	0.00	0.00	0.00
4,100.0	6.00	149.00	4,089.6	-174.7	105.0	-176.8	0.00	0.00	0.00
4,200.0	6.00	149.00	4,189.0	-183.7	110.4	-185.9	0.00	0.00	0.00
4,300.0	6.00	149.00	4,288.5	-192.6	115.8	-195.0	0.00	0.00	0.00
4,400.0	6.00	149.00	4,387.9	-201.6	121.1	-204.0	0.00	0.00	0.00
4,500.0	6.00	149.00	4,487.4	-210.6	126.5	-213.1	0.00	0.00	0.00
4,600.0	6.00	149.00	4,586.9	-219.5	131.9	-222.2	0.00	0.00	0.00
4,700.0	6.00	149.00	4,686.3	-228.5	137.3	-231.2	0.00	0.00	0.00
4,800.0	6.00	149.00	4,785.8	-237.4	142.7	-240.3	0.00	0.00	0.00
4,900.0	6.00	149.00	4,885.2	-246.4	148.1	-249.4	0.00	0.00	0.00
5,000.0	6.00	149.00	4,984.7	-255.4	153.4	-258.4	0.00	0.00	0.00
5,100.0	6.00	149.00	5,084.1	-264.3	158.8	-267.5	0.00	0.00	0.00
5,200.0	6.00	149.00	5,183.6	-273.3	164.2	-276.6	0.00	0.00	0.00
5,300.0	6.00	149.00	5,283.0	-282.2	169.6	-285.6	0.00	0.00	0.00

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	6.00	149.00	5,382.5	-291.2	175.0	-294.7	0.00	0.00	0.00
5,500.0	6.00	149.00	5,481.9	-300.2	180.4	-303.8	0.00	0.00	0.00
5,600.0	6.00	149.00	5,581.4	-309.1	185.7	-312.8	0.00	0.00	0.00
5,700.0	6.00	149.00	5,680.8	-318.1	191.1	-321.9	0.00	0.00	0.00
5,800.0	6.00	149.00	5,780.3	-327.0	196.5	-331.0	0.00	0.00	0.00
5,900.0	6.00	149.00	5,879.7	-336.0	201.9	-340.0	0.00	0.00	0.00
6,000.0	6.00	149.00	5,979.2	-345.0	207.3	-349.1	0.00	0.00	0.00
6,020.9	6.00	149.00	6,000.0	-346.8	208.4	-351.0	0.00	0.00	0.00
6,100.0	4.42	149.00	6,078.7	-353.0	212.1	-357.2	2.00	-2.00	0.00
6,200.0	2.42	149.00	6,178.6	-358.1	215.2	-362.4	2.00	-2.00	0.00
6,300.0	0.42	149.00	6,278.5	-360.2	216.4	-364.5	2.00	-2.00	0.00
6,320.9	0.00	0.00	6,299.5	-360.3	216.5	-364.6	2.00	-2.00	0.00
6,400.0	0.00	0.00	6,378.5	-360.3	216.5	-364.6	0.00	0.00	0.00
6,500.0	0.00	0.00	6,478.5	-360.3	216.5	-364.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,578.5	-360.3	216.5	-364.6	0.00	0.00	0.00
6,700.0	0.00	0.00	6,678.5	-360.3	216.5	-364.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,778.5	-360.3	216.5	-364.6	0.00	0.00	0.00
6,900.0	0.00	0.00	6,878.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,978.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,100.0	0.00	0.00	7,078.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,178.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,300.0	0.00	0.00	7,278.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,378.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,500.0	0.00	0.00	7,478.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,578.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,700.0	0.00	0.00	7,678.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,778.5	-360.3	216.5	-364.6	0.00	0.00	0.00
7,900.0	0.00	0.00	7,878.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,000.0	0.00	0.00	7,978.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,100.0	0.00	0.00	8,078.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,200.0	0.00	0.00	8,178.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,300.0	0.00	0.00	8,278.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,400.0	0.00	0.00	8,378.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,500.0	0.00	0.00	8,478.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,600.0	0.00	0.00	8,578.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,700.0	0.00	0.00	8,678.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,800.0	0.00	0.00	8,778.5	-360.3	216.5	-364.6	0.00	0.00	0.00
8,900.0	0.00	0.00	8,878.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,000.0	0.00	0.00	8,978.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,100.0	0.00	0.00	9,078.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,200.0	0.00	0.00	9,178.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,300.0	0.00	0.00	9,278.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,400.0	0.00	0.00	9,378.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,500.0	0.00	0.00	9,478.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,600.0	0.00	0.00	9,578.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,700.0	0.00	0.00	9,678.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,800.0	0.00	0.00	9,778.5	-360.3	216.5	-364.6	0.00	0.00	0.00
9,821.5	0.00	0.00	9,800.0	-360.3	216.5	-364.6	0.00	0.00	0.00
Jun081 KOP									
9,900.0	9.42	329.56	9,878.2	-354.7	213.2	-359.0	12.00	12.00	0.00
10,000.0	21.42	329.56	9,974.4	-331.9	199.8	-335.8	12.00	12.00	0.00
Sec 03									
10,100.0	33.42	329.56	10,063.0	-292.2	176.5	-295.7	12.00	12.00	0.00

Database:	EDM5000	Local Co-ordinate Reference:	Well Juniper 081H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3018.0usft
Project:	JUN/PIM	MD Reference:	KB @ 3018.0usft
Site:	JUN/PIM #1S	North Reference:	Grid
Well:	Juniper 081H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Buid Rate (°/100usft)	Turn Rate (°/100usft)
10,200.0	45.42	329.56	10,140.1	-237.6	144.4	-240.4	12.00	12.00	0.00
10,300.0	57.42	329.56	10,202.3	-170.3	104.8	-172.4	12.00	12.00	0.00
10,400.0	69.42	329.56	10,247.0	-93.3	59.6	-94.5	12.00	12.00	0.00
10,500.0	81.42	329.56	10,272.1	-10.0	10.7	-10.2	12.00	12.00	0.00
10,517.4	83.51	329.56	10,274.4	4.8	1.9	4.8	12.00	12.00	0.00
10,600.0	83.51	329.56	10,283.7	75.6	-39.6	76.4	0.00	0.00	0.00
10,613.7	83.51	329.56	10,285.3	87.4	-46.5	88.3	0.00	0.00	0.00
10,700.0	85.60	339.75	10,293.5	164.9	-83.2	166.5	12.00	2.42	11.81
10,800.0	88.19	351.48	10,298.9	261.4	-108.0	263.6	12.00	2.59	11.74
10,800.5	88.20	351.54	10,298.9	261.9	-108.1	264.0	12.00	2.65	11.71
Sec 34									
10,867.9	90.00	359.43	10,300.0	329.0	-113.4	331.2	12.00	2.66	11.70
Jun081 FTP									
10,900.0	90.00	359.43	10,300.0	361.1	-113.7	363.4	0.00	0.00	0.00
11,000.0	90.00	359.43	10,300.0	461.1	-114.7	463.4	0.00	0.00	0.00
11,100.0	90.00	359.43	10,300.0	561.1	-115.7	563.4	0.00	0.00	0.00
11,200.0	90.00	359.43	10,300.0	661.1	-116.7	663.4	0.00	0.00	0.00
11,300.0	90.00	359.43	10,300.0	761.1	-117.7	763.4	0.00	0.00	0.00
11,400.0	90.00	359.43	10,300.0	861.1	-118.7	863.3	0.00	0.00	0.00
11,500.0	90.00	359.43	10,300.0	961.1	-119.7	963.3	0.00	0.00	0.00
11,600.0	90.00	359.43	10,300.0	1,061.1	-120.7	1,063.3	0.00	0.00	0.00
11,700.0	90.00	359.43	10,300.0	1,161.1	-121.7	1,163.3	0.00	0.00	0.00
11,800.0	90.00	359.43	10,300.0	1,261.1	-122.7	1,263.3	0.00	0.00	0.00
11,900.0	90.00	359.43	10,300.0	1,361.1	-123.7	1,363.3	0.00	0.00	0.00
12,000.0	90.00	359.43	10,300.0	1,461.1	-124.7	1,463.3	0.00	0.00	0.00
12,100.0	90.00	359.43	10,300.0	1,561.1	-125.7	1,563.3	0.00	0.00	0.00
12,200.0	90.00	359.43	10,300.0	1,661.1	-126.7	1,663.3	0.00	0.00	0.00
12,300.0	90.00	359.43	10,300.0	1,761.1	-127.7	1,763.3	0.00	0.00	0.00
12,400.0	90.00	359.43	10,300.0	1,861.1	-128.7	1,863.3	0.00	0.00	0.00
12,500.0	90.00	359.43	10,300.0	1,961.1	-129.7	1,963.3	0.00	0.00	0.00
12,600.0	90.00	359.43	10,300.0	2,061.1	-130.7	2,063.3	0.00	0.00	0.00
12,700.0	90.00	359.43	10,300.0	2,161.1	-131.7	2,163.3	0.00	0.00	0.00
12,800.0	90.00	359.43	10,300.0	2,261.0	-132.7	2,263.3	0.00	0.00	0.00
12,900.0	90.00	359.43	10,300.0	2,361.0	-133.7	2,363.3	0.00	0.00	0.00
13,000.0	90.00	359.43	10,300.0	2,461.0	-134.7	2,463.3	0.00	0.00	0.00
13,100.0	90.00	359.43	10,300.0	2,561.0	-135.7	2,563.3	0.00	0.00	0.00
13,200.0	90.00	359.43	10,300.0	2,661.0	-136.7	2,663.3	0.00	0.00	0.00
13,300.0	90.00	359.43	10,300.0	2,761.0	-137.7	2,763.2	0.00	0.00	0.00
13,400.0	90.00	359.43	10,300.0	2,861.0	-138.7	2,863.2	0.00	0.00	0.00
13,500.0	90.00	359.43	10,300.0	2,961.0	-139.7	2,963.2	0.00	0.00	0.00
13,600.0	90.00	359.43	10,300.0	3,061.0	-140.7	3,063.2	0.00	0.00	0.00
13,700.0	90.00	359.43	10,300.0	3,161.0	-141.8	3,163.2	0.00	0.00	0.00
13,800.0	90.00	359.43	10,300.0	3,261.0	-142.8	3,263.2	0.00	0.00	0.00
13,900.0	90.00	359.43	10,300.0	3,361.0	-143.8	3,363.2	0.00	0.00	0.00
14,000.0	90.00	359.43	10,300.0	3,461.0	-144.8	3,463.2	0.00	0.00	0.00
14,100.0	90.00	359.43	10,300.0	3,561.0	-145.8	3,563.2	0.00	0.00	0.00
14,200.0	90.00	359.43	10,300.0	3,661.0	-146.8	3,663.2	0.00	0.00	0.00
14,300.0	90.00	359.43	10,300.0	3,761.0	-147.8	3,763.2	0.00	0.00	0.00
14,400.0	90.00	359.43	10,300.0	3,861.0	-148.8	3,863.2	0.00	0.00	0.00
14,500.0	90.00	359.43	10,300.0	3,961.0	-149.8	3,963.2	0.00	0.00	0.00
14,600.0	90.00	359.43	10,300.0	4,061.0	-150.8	4,063.2	0.00	0.00	0.00
14,700.0	90.00	359.43	10,300.0	4,161.0	-151.8	4,163.2	0.00	0.00	0.00
14,800.0	90.00	359.43	10,300.0	4,260.9	-152.8	4,263.2	0.00	0.00	0.00
14,900.0	90.00	359.43	10,300.0	4,360.9	-153.8	4,363.2	0.00	0.00	0.00

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Buid Rate (°/100usft)	Turn Rate (°/100usft)
15,000.0	90.00	359.43	10,300.0	4,460.9	-154.8	4,463.2	0.00	0.00	0.00
15,100.0	90.00	359.43	10,300.0	4,560.9	-155.8	4,563.2	0.00	0.00	0.00
15,200.0	90.00	359.43	10,300.0	4,660.9	-156.8	4,663.1	0.00	0.00	0.00
15,300.0	90.00	359.43	10,300.0	4,760.9	-157.8	4,763.1	0.00	0.00	0.00
15,400.0	90.00	359.43	10,300.0	4,860.9	-158.8	4,863.1	0.00	0.00	0.00
15,500.0	90.00	359.43	10,300.0	4,960.9	-159.8	4,963.1	0.00	0.00	0.00
15,600.0	90.00	359.43	10,300.0	5,060.9	-160.8	5,063.1	0.00	0.00	0.00
15,700.0	90.00	359.43	10,300.0	5,160.9	-161.8	5,163.1	0.00	0.00	0.00
15,800.0	90.00	359.43	10,300.0	5,260.9	-162.8	5,263.1	0.00	0.00	0.00
15,900.0	90.00	359.43	10,300.0	5,360.9	-163.8	5,363.1	0.00	0.00	0.00
16,000.0	90.00	359.43	10,300.0	5,460.9	-164.8	5,463.1	0.00	0.00	0.00
16,046.2	90.00	359.43	10,300.0	5,507.1	-165.3	5,509.3	0.00	0.00	0.00
Sec 27									
16,100.0	90.00	359.43	10,300.0	5,560.9	-165.8	5,563.1	0.00	0.00	0.00
16,200.0	90.00	359.43	10,300.0	5,660.9	-166.8	5,663.1	0.00	0.00	0.00
16,300.0	90.00	359.43	10,300.0	5,760.9	-167.8	5,763.1	0.00	0.00	0.00
16,400.0	90.00	359.43	10,300.0	5,860.9	-168.8	5,863.1	0.00	0.00	0.00
16,500.0	90.00	359.43	10,300.0	5,960.9	-169.8	5,963.1	0.00	0.00	0.00
16,600.0	90.00	359.43	10,300.0	6,060.9	-170.8	6,063.1	0.00	0.00	0.00
16,700.0	90.00	359.43	10,300.0	6,160.9	-171.8	6,163.1	0.00	0.00	0.00
16,800.0	90.00	359.43	10,300.0	6,260.8	-172.8	6,263.1	0.00	0.00	0.00
16,900.0	90.00	359.43	10,300.0	6,360.8	-173.8	6,363.1	0.00	0.00	0.00
17,000.0	90.00	359.43	10,300.0	6,460.8	-174.8	6,463.1	0.00	0.00	0.00
17,100.0	90.00	359.43	10,300.0	6,560.8	-175.8	6,563.0	0.00	0.00	0.00
17,200.0	90.00	359.43	10,300.0	6,660.8	-176.8	6,663.0	0.00	0.00	0.00
17,300.0	90.00	359.43	10,300.0	6,760.8	-177.8	6,763.0	0.00	0.00	0.00
17,400.0	90.00	359.43	10,300.0	6,860.8	-178.8	6,863.0	0.00	0.00	0.00
17,500.0	90.00	359.43	10,300.0	6,960.8	-179.8	6,963.0	0.00	0.00	0.00
17,600.0	90.00	359.43	10,300.0	7,060.8	-180.8	7,063.0	0.00	0.00	0.00
17,700.0	90.00	359.43	10,300.0	7,160.8	-181.8	7,163.0	0.00	0.00	0.00
17,800.0	90.00	359.43	10,300.0	7,260.8	-182.8	7,263.0	0.00	0.00	0.00
17,900.0	90.00	359.43	10,300.0	7,360.8	-183.8	7,363.0	0.00	0.00	0.00
18,000.0	90.00	359.43	10,300.0	7,460.8	-184.8	7,463.0	0.00	0.00	0.00
18,100.0	90.00	359.43	10,300.0	7,560.8	-185.9	7,563.0	0.00	0.00	0.00
18,200.0	90.00	359.43	10,300.0	7,660.8	-186.9	7,663.0	0.00	0.00	0.00
18,300.0	90.00	359.43	10,300.0	7,760.8	-187.9	7,763.0	0.00	0.00	0.00
18,400.0	90.00	359.43	10,300.0	7,860.8	-188.9	7,863.0	0.00	0.00	0.00
18,500.0	90.00	359.43	10,300.0	7,960.8	-189.9	7,963.0	0.00	0.00	0.00
18,600.0	90.00	359.43	10,300.0	8,060.8	-190.9	8,063.0	0.00	0.00	0.00
18,700.0	90.00	359.43	10,300.0	8,160.8	-191.9	8,163.0	0.00	0.00	0.00
18,800.0	90.00	359.43	10,300.0	8,260.7	-192.9	8,263.0	0.00	0.00	0.00
18,900.0	90.00	359.43	10,300.0	8,360.7	-193.9	8,363.0	0.00	0.00	0.00
19,000.0	90.00	359.43	10,300.0	8,460.7	-194.9	8,462.9	0.00	0.00	0.00
19,100.0	90.00	359.43	10,300.0	8,560.7	-195.9	8,562.9	0.00	0.00	0.00
19,200.0	90.00	359.43	10,300.0	8,660.7	-196.9	8,662.9	0.00	0.00	0.00
19,300.0	90.00	359.43	10,300.0	8,760.7	-197.9	8,762.9	0.00	0.00	0.00
19,400.0	90.00	359.43	10,300.0	8,860.7	-198.9	8,862.9	0.00	0.00	0.00
19,500.0	90.00	359.43	10,300.0	8,960.7	-199.9	8,962.9	0.00	0.00	0.00
19,600.0	90.00	359.43	10,300.0	9,060.7	-200.9	9,062.9	0.00	0.00	0.00
19,700.0	90.00	359.43	10,300.0	9,160.7	-201.9	9,162.9	0.00	0.00	0.00
19,800.0	90.00	359.43	10,300.0	9,260.7	-202.9	9,262.9	0.00	0.00	0.00
19,900.0	90.00	359.43	10,300.0	9,360.7	-203.9	9,362.9	0.00	0.00	0.00
20,000.0	90.00	359.43	10,300.0	9,460.7	-204.9	9,462.9	0.00	0.00	0.00
20,100.0	90.00	359.43	10,300.0	9,560.7	-205.9	9,562.9	0.00	0.00	0.00

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,200.0	90.00	359.43	10,300.0	9,660.7	-206.9	9,662.9	0.00	0.00	0.00
20,300.0	90.00	359.43	10,300.0	9,760.7	-207.9	9,762.9	0.00	0.00	0.00
20,400.0	90.00	359.43	10,300.0	9,860.7	-208.9	9,862.9	0.00	0.00	0.00
20,500.0	90.00	359.43	10,300.0	9,960.7	-209.9	9,962.9	0.00	0.00	0.00
20,600.0	90.00	359.43	10,300.0	10,060.7	-210.9	10,062.9	0.00	0.00	0.00
20,700.0	90.00	359.43	10,300.0	10,160.7	-211.9	10,162.9	0.00	0.00	0.00
20,800.0	90.00	359.43	10,300.0	10,260.6	-212.9	10,262.9	0.00	0.00	0.00
20,900.0	90.00	359.43	10,300.0	10,360.6	-213.9	10,362.8	0.00	0.00	0.00
21,000.0	90.00	359.43	10,300.0	10,460.6	-214.9	10,462.8	0.00	0.00	0.00
21,100.0	90.00	359.43	10,300.0	10,560.6	-215.9	10,562.8	0.00	0.00	0.00
21,200.0	90.00	359.43	10,300.0	10,660.6	-216.9	10,662.8	0.00	0.00	0.00
Jun081 LTP									
21,274.3	90.00	359.43	10,300.0	10,734.9	-217.7	10,737.1	0.00	0.00	0.00
Jun081 BHL									

Database:	EDM5000	Local Co-ordinate Reference:	Well Juniper 081H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3018.0usft
Project:	JUN/PIM	MD Reference:	KB @ 3018.0usft
Site:	JUN/PIM #1S	North Reference:	Grid
Well:	Juniper 081H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Jun081 KOP - plan hits target center - Point	0.00	0.01	9,800.0	-360.3	216.5	393,750.42	873,824.65	32° 4' 40.628 N	103° 15' 35.536 W
Jun081 BHL - plan hits target center - Point	0.00	0.00	10,300.0	10,734.9	-217.7	404,845.65	873,390.50	32° 6' 30.452 N	103° 15' 39.299 W
Jun081 LTP - plan misses target center by 24.3usft at 21200.0usft MD (10300.0 TVD, 10660.6 N, -216.9 E) - Point	0.00	0.00	10,300.0	10,684.9	-217.2	404,795.66	873,390.96	32° 6' 29.958 N	103° 15' 39.300 W
Jun081 FTP - plan hits target center - Point	0.00	0.00	10,300.0	329.0	-113.4	394,439.73	873,494.80	32° 4' 47.481 N	103° 15' 39.290 W
Sec 03 - plan misses target center by 4974.7usft at 10000.0usft MD (9974.4 TVD, -331.9 N, 199.8 E) - Polygon	0.00	0.00	11,470.0	-5,054.2	-259.0	389,056.56	873,349.16	32° 3' 54.231 N	103° 15' 41.604 W
Point 1			11,470.0	0.0	0.0	389,056.56	873,349.16		
Point 2			11,470.0	5,281.2	-53.3	394,337.76	873,295.86		
Point 3			11,470.0	5,330.6	5,227.9	394,387.16	878,577.06		
Point 4			11,470.0	47.9	5,279.4	389,104.46	878,628.56		
Sec 34 - plan misses target center by 1189.2usft at 10800.5usft MD (10298.9 TVD, 261.9 N, -108.1 E) - Polygon	0.00	0.00	11,470.0	227.1	-312.3	394,337.79	873,295.83	32° 4' 46.491 N	103° 15' 41.614 W
Point 1			11,470.0	0.0	0.0	394,337.79	873,295.83		
Point 2			11,470.0	5,278.0	-53.8	399,615.79	873,242.03		
Point 3			11,470.0	5,326.9	5,230.6	399,664.69	878,526.43		
Point 4			11,470.0	49.4	5,281.3	394,387.19	878,577.13		
Sec 27 - plan misses target center by 1256.2usft at 16046.2usft MD (10300.0 TVD, 5507.1 N, -165.3 E) - Polygon	0.00	0.00	11,540.0	5,505.1	-366.1	399,615.80	873,242.02	32° 5' 38.720 N	103° 15' 41.630 W
Point 1			11,540.0	0.0	0.0	399,615.80	873,242.02		
Point 2			11,540.0	5,278.0	-52.0	404,893.80	873,190.02		
Point 3			11,540.0	5,328.3	5,215.5	404,944.10	878,457.52		
Point 4			11,540.0	48.8	5,284.4	399,664.60	878,526.42		

The logo for AmeredeDev, featuring the word "AMEREDEV" in a bold, italicized, sans-serif font. The letters are white and set against a solid black rectangular background.

AMEREDEV

AmeredeDev Operating, LLC.

JUN/PIM

JUN/PIM #1S

Juniper 081H

Wellbore #1

Plan: Design #1

Lease Penetration Section Line Footages

14 January, 2019

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Project JUN/PIM

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site JUN/PIM #1S

Site Position:	Northing:	394,110.55 usft	Latitude:	32° 4' 44.214 N
From: Lat/Long	Easting:	873,588.15 usft	Longitude:	103° 15' 38.243 W
Position Uncertainty: 0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well Juniper 081H

Well Position	+N/-S	0.0 usft	Northing:	394,110.71 usft	Latitude:	32° 4' 44.214 N
	+E/-W	0.0 usft	Easting:	873,608.16 usft	Longitude:	103° 15' 38.011 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	2,991.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/11/2019	6.63	59.96	47,725.93145102

Design Design #1

Audit Notes:

Version: Phase: PROTOTYPE Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	358.84

Survey Tool Program Date 1/11/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	21,274.3	Design #1 (Wellbore #1)	MWD	OWSG MWD - Standard

Ameredev Operating, LLC Lease Penetration Section Line Footages

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
0.0	0.00	0.00	0.0	-229.8	310.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	-229.8	310.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	-229.8	310.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	-229.8	310.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	-229.8	310.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	-229.8	310.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	-229.8	310.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	-229.8	310.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	-229.8	310.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	-229.8	310.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	-229.8	310.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	-229.8	310.0	0.0	0.00	0.00	0.00
2,100.0	2.00	149.00	2,100.0	-231.3	310.9	-1.5	2.00	2.00	0.00
2,200.0	4.00	149.00	2,199.8	-235.8	313.6	-6.1	2.00	2.00	0.00
2,300.0	6.00	149.00	2,299.5	-243.3	318.1	-13.6	2.00	2.00	0.00
2,400.0	6.00	149.00	2,398.9	-252.2	323.5	-22.7	0.00	0.00	0.00
2,500.0	6.00	149.00	2,498.4	-261.2	328.9	-31.7	0.00	0.00	0.00
2,600.0	6.00	149.00	2,597.8	-270.2	334.2	-40.8	0.00	0.00	0.00

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
2,700.0	6.00	149.00	2,697.3	-279.1	339.6	-49.9	0.00	0.00	0.00
2,800.0	6.00	149.00	2,796.7	-288.1	345.0	-58.9	0.00	0.00	0.00
2,900.0	6.00	149.00	2,896.2	-297.0	350.4	-68.0	0.00	0.00	0.00
3,000.0	6.00	149.00	2,995.6	-306.0	355.8	-77.1	0.00	0.00	0.00
3,100.0	6.00	149.00	3,095.1	-315.0	361.2	-86.2	0.00	0.00	0.00
3,200.0	6.00	149.00	3,194.5	-323.9	366.5	-95.2	0.00	0.00	0.00
3,300.0	6.00	149.00	3,294.0	-332.9	371.9	-104.3	0.00	0.00	0.00
3,400.0	6.00	149.00	3,393.4	-341.8	377.3	-113.4	0.00	0.00	0.00
3,500.0	6.00	149.00	3,492.9	-350.8	382.7	-122.4	0.00	0.00	0.00
3,600.0	6.00	149.00	3,592.3	-359.8	388.1	-131.5	0.00	0.00	0.00
3,700.0	6.00	149.00	3,691.8	-368.7	393.5	-140.6	0.00	0.00	0.00
3,800.0	6.00	149.00	3,791.2	-377.7	398.8	-149.6	0.00	0.00	0.00
3,900.0	6.00	149.00	3,890.7	-386.6	404.2	-158.7	0.00	0.00	0.00
4,000.0	6.00	149.00	3,990.1	-395.6	409.6	-167.8	0.00	0.00	0.00
4,100.0	6.00	149.00	4,089.6	-404.6	415.0	-176.8	0.00	0.00	0.00
4,200.0	6.00	149.00	4,189.0	-413.5	420.4	-185.9	0.00	0.00	0.00
4,300.0	6.00	149.00	4,288.5	-422.5	425.8	-195.0	0.00	0.00	0.00
4,400.0	6.00	149.00	4,387.9	-431.4	431.1	-204.0	0.00	0.00	0.00
4,500.0	6.00	149.00	4,487.4	-440.4	436.5	-213.1	0.00	0.00	0.00
4,600.0	6.00	149.00	4,586.9	-449.4	441.9	-222.2	0.00	0.00	0.00
4,700.0	6.00	149.00	4,686.3	-458.3	447.3	-231.2	0.00	0.00	0.00
4,800.0	6.00	149.00	4,785.8	-467.3	452.7	-240.3	0.00	0.00	0.00
4,900.0	6.00	149.00	4,885.2	-476.2	458.1	-249.4	0.00	0.00	0.00
5,000.0	6.00	149.00	4,984.7	-485.2	463.5	-258.4	0.00	0.00	0.00
5,100.0	6.00	149.00	5,084.1	-494.2	468.8	-267.5	0.00	0.00	0.00
5,200.0	6.00	149.00	5,183.6	-503.1	474.2	-276.6	0.00	0.00	0.00
5,300.0	6.00	149.00	5,283.0	-512.1	479.6	-285.6	0.00	0.00	0.00

Company: Ameredev Operating, LLC.
 Project: JUN/PIM
 Site: JUN/PIM #1S
 Well: Juniper 081H
 Wellbore: Wellbore #1
 Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
 TVD Reference: KB @ 3018.0usft
 MD Reference: KB @ 3018.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
5,400.0	6.00	149.00	5,382.5	-521.0	485.0	-294.7	0.00	0.00	0.00
5,500.0	6.00	149.00	5,481.9	-530.0	490.4	-303.8	0.00	0.00	0.00
5,600.0	6.00	149.00	5,581.4	-539.0	495.8	-312.8	0.00	0.00	0.00
5,700.0	6.00	149.00	5,680.8	-547.9	501.1	-321.9	0.00	0.00	0.00
5,800.0	6.00	149.00	5,780.3	-556.9	506.5	-331.0	0.00	0.00	0.00
5,900.0	6.00	149.00	5,879.7	-565.8	511.9	-340.0	0.00	0.00	0.00
6,000.0	6.00	149.00	5,979.2	-574.8	517.3	-349.1	0.00	0.00	0.00
6,020.9	6.00	149.00	6,000.0	-576.7	518.4	-351.0	0.00	0.00	0.00
6,100.0	4.42	149.00	6,078.7	-582.8	522.1	-357.2	2.00	-2.00	0.00
6,200.0	2.42	149.00	6,178.6	-587.9	525.2	-362.4	2.00	-2.00	0.00
6,300.0	0.42	149.00	6,278.5	-590.1	526.5	-364.5	2.00	-2.00	0.00
6,320.9	0.00	0.00	6,299.5	-590.1	526.5	-364.6	2.00	-2.00	0.00
6,400.0	0.00	0.00	6,378.5	-590.1	526.5	-364.6	0.00	0.00	0.00
6,500.0	0.00	0.00	6,478.5	-590.1	526.5	-364.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,578.5	-590.1	526.5	-364.6	0.00	0.00	0.00
6,700.0	0.00	0.00	6,678.5	-590.1	526.5	-364.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,778.5	-590.1	526.5	-364.6	0.00	0.00	0.00
6,900.0	0.00	0.00	6,878.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,978.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,100.0	0.00	0.00	7,078.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,178.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,300.0	0.00	0.00	7,278.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,378.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,500.0	0.00	0.00	7,478.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,578.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,700.0	0.00	0.00	7,678.5	-590.1	526.5	-364.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,778.5	-590.1	526.5	-364.6	0.00	0.00	0.00

Ameredev Operating, LLC Lease Penetration Section Line Footages

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
7,900.0	0.00	0.00	7,878.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,000.0	0.00	0.00	7,978.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,100.0	0.00	0.00	8,078.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,200.0	0.00	0.00	8,178.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,300.0	0.00	0.00	8,278.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,400.0	0.00	0.00	8,378.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,500.0	0.00	0.00	8,478.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,600.0	0.00	0.00	8,578.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,700.0	0.00	0.00	8,678.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,800.0	0.00	0.00	8,778.5	-590.1	526.5	-364.6	0.00	0.00	0.00
8,900.0	0.00	0.00	8,878.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,000.0	0.00	0.00	8,978.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,100.0	0.00	0.00	9,078.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,200.0	0.00	0.00	9,178.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,300.0	0.00	0.00	9,278.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,400.0	0.00	0.00	9,378.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,500.0	0.00	0.00	9,478.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,600.0	0.00	0.00	9,578.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,700.0	0.00	0.00	9,678.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,800.0	0.00	0.00	9,778.5	-590.1	526.5	-364.6	0.00	0.00	0.00
9,821.5	0.00	0.00	9,800.0	-590.1	526.5	-364.6	0.00	0.00	0.00
Jun081 KOP									
9,900.0	9.42	329.56	9,878.2	-584.6	523.2	-359.0	12.00	12.00	0.00
10,000.0	21.42	329.56	9,974.4	-561.7	509.8	-335.8	12.00	12.00	0.00
Sec 03									
10,100.0	33.42	329.56	10,063.0	-522.1	486.5	-295.7	12.00	12.00	0.00
10,200.0	45.42	329.56	10,140.1	-467.4	454.4	-240.4	12.00	12.00	0.00

Ameredev Operating, LLC Lease Penetration Section Line Footages

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
10,300.0	57.42	329.56	10,202.3	-400.1	414.9	-172.4	12.00	12.00	0.00
10,400.0	69.42	329.56	10,247.0	-323.2	369.6	-94.5	12.00	12.00	0.00
10,500.0	81.42	329.56	10,272.1	-239.9	320.7	-10.2	12.00	12.00	0.00
10,517.4	83.51	329.56	10,274.4	-225.0	312.0	4.8	12.00	12.00	0.00
10,600.0	83.51	329.56	10,283.7	-154.2	270.4	76.4	0.00	0.00	0.00
10,613.7	83.51	329.56	10,285.3	-142.5	263.5	88.3	0.00	0.00	0.00
10,700.0	85.60	339.75	10,293.5	-65.0	226.8	166.5	12.00	2.42	11.81
10,800.0	88.19	351.48	10,298.9	31.6	202.0	263.6	12.00	2.59	11.74
10,800.5	88.20	351.54	10,298.9	32.1	201.9	264.0	12.00	2.65	11.71
Sec 34									
10,867.9	90.00	359.43	10,300.0	99.2	196.6	331.2	12.00	2.66	11.70
Jun081 FTP									
10,900.0	90.00	359.43	10,300.0	131.3	196.3	363.4	0.00	0.00	0.00
11,000.0	90.00	359.43	10,300.0	231.3	195.3	463.4	0.00	0.00	0.00
11,100.0	90.00	359.43	10,300.0	331.3	194.3	563.4	0.00	0.00	0.00
11,200.0	90.00	359.43	10,300.0	431.3	193.3	663.4	0.00	0.00	0.00
11,300.0	90.00	359.43	10,300.0	531.3	192.3	763.4	0.00	0.00	0.00
11,400.0	90.00	359.43	10,300.0	631.3	191.3	863.3	0.00	0.00	0.00
11,500.0	90.00	359.43	10,300.0	731.3	190.3	963.3	0.00	0.00	0.00
11,600.0	90.00	359.43	10,300.0	831.3	189.3	1,063.3	0.00	0.00	0.00
11,700.0	90.00	359.43	10,300.0	931.3	188.3	1,163.3	0.00	0.00	0.00
11,800.0	90.00	359.43	10,300.0	1,031.3	187.3	1,263.3	0.00	0.00	0.00
11,900.0	90.00	359.43	10,300.0	1,131.3	186.3	1,363.3	0.00	0.00	0.00
12,000.0	90.00	359.43	10,300.0	1,231.3	185.3	1,463.3	0.00	0.00	0.00
12,100.0	90.00	359.43	10,300.0	1,331.2	184.3	1,563.3	0.00	0.00	0.00
12,200.0	90.00	359.43	10,300.0	1,431.2	183.3	1,663.3	0.00	0.00	0.00
12,300.0	90.00	359.43	10,300.0	1,531.2	182.3	1,763.3	0.00	0.00	0.00

Ameredev Operating, LLC Lease Penetration Section Line Footages

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
12,400.0	90.00	359.43	10,300.0	1,631.2	181.3	1,863.3	0.00	0.00	0.00
12,500.0	90.00	359.43	10,300.0	1,731.2	180.3	1,963.3	0.00	0.00	0.00
12,600.0	90.00	359.43	10,300.0	1,831.2	179.3	2,063.3	0.00	0.00	0.00
12,700.0	90.00	359.43	10,300.0	1,931.2	178.3	2,163.3	0.00	0.00	0.00
12,800.0	90.00	359.43	10,300.0	2,031.2	177.3	2,263.3	0.00	0.00	0.00
12,900.0	90.00	359.43	10,300.0	2,131.2	176.3	2,363.3	0.00	0.00	0.00
13,000.0	90.00	359.43	10,300.0	2,231.2	175.3	2,463.3	0.00	0.00	0.00
13,100.0	90.00	359.43	10,300.0	2,331.2	174.3	2,563.3	0.00	0.00	0.00
13,200.0	90.00	359.43	10,300.0	2,431.2	173.3	2,663.3	0.00	0.00	0.00
13,300.0	90.00	359.43	10,300.0	2,531.2	172.3	2,763.2	0.00	0.00	0.00
13,400.0	90.00	359.43	10,300.0	2,631.2	171.3	2,863.2	0.00	0.00	0.00
13,500.0	90.00	359.43	10,300.0	2,731.2	170.3	2,963.2	0.00	0.00	0.00
13,600.0	90.00	359.43	10,300.0	2,831.2	169.3	3,063.2	0.00	0.00	0.00
13,700.0	90.00	359.43	10,300.0	2,931.2	168.3	3,163.2	0.00	0.00	0.00
13,800.0	90.00	359.43	10,300.0	3,031.2	167.3	3,263.2	0.00	0.00	0.00
13,900.0	90.00	359.43	10,300.0	3,131.2	166.3	3,363.2	0.00	0.00	0.00
14,000.0	90.00	359.43	10,300.0	3,231.2	165.3	3,463.2	0.00	0.00	0.00
14,100.0	90.00	359.43	10,300.0	3,331.1	164.2	3,563.2	0.00	0.00	0.00
14,200.0	90.00	359.43	10,300.0	3,431.1	163.2	3,663.2	0.00	0.00	0.00
14,300.0	90.00	359.43	10,300.0	3,531.1	162.2	3,763.2	0.00	0.00	0.00
14,400.0	90.00	359.43	10,300.0	3,631.1	161.2	3,863.2	0.00	0.00	0.00
14,500.0	90.00	359.43	10,300.0	3,731.1	160.2	3,963.2	0.00	0.00	0.00
14,600.0	90.00	359.43	10,300.0	3,831.1	159.2	4,063.2	0.00	0.00	0.00
14,700.0	90.00	359.43	10,300.0	3,931.1	158.2	4,163.2	0.00	0.00	0.00
14,800.0	90.00	359.43	10,300.0	4,031.1	157.2	4,263.2	0.00	0.00	0.00
14,900.0	90.00	359.43	10,300.0	4,131.1	156.2	4,363.2	0.00	0.00	0.00
15,000.0	90.00	359.43	10,300.0	4,231.1	155.2	4,463.2	0.00	0.00	0.00

Ameredev Operating, LLC Lease Penetration Section Line Footages

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
15,100.0	90.00	359.43	10,300.0	4,331.1	154.2	4,563.2	0.00	0.00	0.00
15,200.0	90.00	359.43	10,300.0	4,431.1	153.2	4,663.1	0.00	0.00	0.00
15,300.0	90.00	359.43	10,300.0	4,531.1	152.2	4,763.1	0.00	0.00	0.00
15,400.0	90.00	359.43	10,300.0	4,631.1	151.2	4,863.1	0.00	0.00	0.00
15,500.0	90.00	359.43	10,300.0	4,731.1	150.2	4,963.1	0.00	0.00	0.00
15,600.0	90.00	359.43	10,300.0	4,831.1	149.2	5,063.1	0.00	0.00	0.00
15,700.0	90.00	359.43	10,300.0	4,931.1	148.2	5,163.1	0.00	0.00	0.00
15,800.0	90.00	359.43	10,300.0	5,031.1	147.2	5,263.1	0.00	0.00	0.00
15,900.0	90.00	359.43	10,300.0	5,131.1	146.2	5,363.1	0.00	0.00	0.00
16,000.0	90.00	359.43	10,300.0	5,231.1	145.2	5,463.1	0.00	0.00	0.00
16,046.2	90.00	359.43	10,300.0	5,277.3	144.7	5,509.3	0.00	0.00	0.00
Sec 27									
16,100.0	90.00	359.43	10,300.0	5,331.0	144.2	5,563.1	0.00	0.00	0.00
16,200.0	90.00	359.43	10,300.0	5,431.0	143.2	5,663.1	0.00	0.00	0.00
16,300.0	90.00	359.43	10,300.0	5,531.0	142.2	5,763.1	0.00	0.00	0.00
16,400.0	90.00	359.43	10,300.0	5,631.0	141.2	5,863.1	0.00	0.00	0.00
16,500.0	90.00	359.43	10,300.0	5,731.0	140.2	5,963.1	0.00	0.00	0.00
16,600.0	90.00	359.43	10,300.0	5,831.0	139.2	6,063.1	0.00	0.00	0.00
16,700.0	90.00	359.43	10,300.0	5,931.0	138.2	6,163.1	0.00	0.00	0.00
16,800.0	90.00	359.43	10,300.0	6,031.0	137.2	6,263.1	0.00	0.00	0.00
16,900.0	90.00	359.43	10,300.0	6,131.0	136.2	6,363.1	0.00	0.00	0.00
17,000.0	90.00	359.43	10,300.0	6,231.0	135.2	6,463.1	0.00	0.00	0.00
17,100.0	90.00	359.43	10,300.0	6,331.0	134.2	6,563.0	0.00	0.00	0.00
17,200.0	90.00	359.43	10,300.0	6,431.0	133.2	6,663.0	0.00	0.00	0.00
17,300.0	90.00	359.43	10,300.0	6,531.0	132.2	6,763.0	0.00	0.00	0.00
17,400.0	90.00	359.43	10,300.0	6,631.0	131.2	6,863.0	0.00	0.00	0.00
17,500.0	90.00	359.43	10,300.0	6,731.0	130.2	6,963.0	0.00	0.00	0.00

Ameredev Operating, LLC Lease Penetration Section Line Footages

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
17,600.0	90.00	359.43	10,300.0	6,831.0	129.2	7,063.0	0.00	0.00	0.00
17,700.0	90.00	359.43	10,300.0	6,931.0	128.2	7,163.0	0.00	0.00	0.00
17,800.0	90.00	359.43	10,300.0	7,031.0	127.2	7,263.0	0.00	0.00	0.00
17,900.0	90.00	359.43	10,300.0	7,131.0	126.2	7,363.0	0.00	0.00	0.00
18,000.0	90.00	359.43	10,300.0	7,231.0	125.2	7,463.0	0.00	0.00	0.00
18,100.0	90.00	359.43	10,300.0	7,330.9	124.2	7,563.0	0.00	0.00	0.00
18,200.0	90.00	359.43	10,300.0	7,430.9	123.2	7,663.0	0.00	0.00	0.00
18,300.0	90.00	359.43	10,300.0	7,530.9	122.2	7,763.0	0.00	0.00	0.00
18,400.0	90.00	359.43	10,300.0	7,630.9	121.2	7,863.0	0.00	0.00	0.00
18,500.0	90.00	359.43	10,300.0	7,730.9	120.1	7,963.0	0.00	0.00	0.00
18,600.0	90.00	359.43	10,300.0	7,830.9	119.1	8,063.0	0.00	0.00	0.00
18,700.0	90.00	359.43	10,300.0	7,930.9	118.1	8,163.0	0.00	0.00	0.00
18,800.0	90.00	359.43	10,300.0	8,030.9	117.1	8,263.0	0.00	0.00	0.00
18,900.0	90.00	359.43	10,300.0	8,130.9	116.1	8,363.0	0.00	0.00	0.00
19,000.0	90.00	359.43	10,300.0	8,230.9	115.1	8,462.9	0.00	0.00	0.00
19,100.0	90.00	359.43	10,300.0	8,330.9	114.1	8,562.9	0.00	0.00	0.00
19,200.0	90.00	359.43	10,300.0	8,430.9	113.1	8,662.9	0.00	0.00	0.00
19,300.0	90.00	359.43	10,300.0	8,530.9	112.1	8,762.9	0.00	0.00	0.00
19,400.0	90.00	359.43	10,300.0	8,630.9	111.1	8,862.9	0.00	0.00	0.00
19,500.0	90.00	359.43	10,300.0	8,730.9	110.1	8,962.9	0.00	0.00	0.00
19,600.0	90.00	359.43	10,300.0	8,830.9	109.1	9,062.9	0.00	0.00	0.00
19,700.0	90.00	359.43	10,300.0	8,930.9	108.1	9,162.9	0.00	0.00	0.00
19,800.0	90.00	359.43	10,300.0	9,030.9	107.1	9,262.9	0.00	0.00	0.00
19,900.0	90.00	359.43	10,300.0	9,130.9	106.1	9,362.9	0.00	0.00	0.00
20,000.0	90.00	359.43	10,300.0	9,230.8	105.1	9,462.9	0.00	0.00	0.00
20,100.0	90.00	359.43	10,300.0	9,330.8	104.1	9,562.9	0.00	0.00	0.00
20,200.0	90.00	359.43	10,300.0	9,430.8	103.1	9,662.9	0.00	0.00	0.00

Ameredev Operating, LLC
Lease Penetration Section Line Footages

Company: Ameredev Operating, LLC.
Project: JUN/PIM
Site: JUN/PIM #1S
Well: Juniper 081H
Wellbore: Wellbore #1
Design: Design #1

Local Co-ordinate Reference: Well Juniper 081H
TVD Reference: KB @ 3018.0usft
MD Reference: KB @ 3018.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	V. Sec (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
20,300.0	90.00	359.43	10,300.0	9,530.8	102.1	9,762.9	0.00	0.00	0.00
20,400.0	90.00	359.43	10,300.0	9,630.8	101.1	9,862.9	0.00	0.00	0.00
20,500.0	90.00	359.43	10,300.0	9,730.8	100.1	9,962.9	0.00	0.00	0.00
20,600.0	90.00	359.43	10,300.0	9,830.8	99.1	10,062.9	0.00	0.00	0.00
20,700.0	90.00	359.43	10,300.0	9,930.8	98.1	10,162.9	0.00	0.00	0.00
20,800.0	90.00	359.43	10,300.0	10,030.8	97.1	10,262.9	0.00	0.00	0.00
20,900.0	90.00	359.43	10,300.0	10,130.8	96.1	10,362.8	0.00	0.00	0.00
21,000.0	90.00	359.43	10,300.0	10,230.8	95.1	10,462.8	0.00	0.00	0.00
21,100.0	90.00	359.43	10,300.0	10,330.8	94.1	10,562.8	0.00	0.00	0.00
21,200.0	90.00	359.43	10,300.0	10,430.8	93.1	10,662.8	0.00	0.00	0.00
Jun081 LTP 21,274.3	90.00	359.43	10,300.0	10,505.1	92.3	10,737.1	0.00	0.00	0.00
Jun081 BHL									

5M Annular Preventer Variance Request and Well Control Procedures

Note: A copy of the Well Control Plan must be available at multiple locations on the rig for review by rig personnel, as well as review by the BLM PET/PE, and a copy must be maintained on the rig floor.

Dual Isolation Design for 5M Annular Exception

Ameredev will utilize 13-5/8" 10M (5M Annular) BOPE System consisting of:

- 13-5/8" 5M Annular
- 13-5/8" 10M Upper Pipe Rams
 - 3-1/2" – 5-1/2" Variable Bore Ram
- 13-5/8" 10M Blind Rams
- 13-5/8" 10M Drilling Spool /w 2 - 4" 10M Outlets Double 10M Isolation Valves
- 13-5/8" 10M Lower Blind Rams
 - 3-1/2" – 5-1/2" Variable Bore Ram

All drilling components and casing associated to exposure > 5000 psi BHP requiring a 10M system will have a double isolation (secondary barrier) below the 5M Annular that would provide a barrier to flow. The mud system will always be primary barrier, it will be maintained by adjusting values based on tourly mud tests and monitoring a PVT System to maintain static wellbore conditions, displacement procedures will be followed and recorded on daily drilling reports during tripping operations. Surge and swab pressure values will be calculated and maintained and static flow check will be monitored at previous casing shoe and verified static well conditions prior to tripping out of hole and again prior to pulling last joint of drill pipe through BOPE. The below table, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

Drill Components	Size	Primary Barrier	Secondary Barrier	Thirld Barrier
Drillpipe	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
HWDP Drillpipe	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Drill Collars	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Production Casing	3-1/2"-5-1/2"	Drilling Fluid	Upper Pipe Rams	Lower Pipe Rams
Open Hole	13-5/8	Drilling Fluid	Blind Rams	
All Drilling Components in 10M Environment will have OD that will allow full Operational RATED WORKING PRESSURE for system design. Kill line with minimum 2" ID will be available outside substructure with 10M Check Valve for OOH Kill Operations				

Well Control Procedures

Proper well control procedures are dependent to differentiating well conditions, to cover the basic well control operations there are will be standard drilling ahead, tripping pipe, tripping BHA, running casing, and pipe out of the hole/open hole scenarios that will be defined by procedures below. Initial Shut In Pressure can be taken against the Uppermost BOPE component the 5M Annular, pressure control can be transferred from the lesser 5M Annular to the 10M Upper Pipe Rams if needed. Shut In Pressures may be equal to or less than the Rated Working Pressure but at no time will the pressure on the annular preventer exceed the Rated Working Pressure of the annular. The annular will be tested to 5,000 psi. This will be the Rated Working Pressure of the annular preventer. All scenarios will be written such as shut in will be performed by closing the 10,000 psi Upper Pipe Rams for faster Accumulator pressure recovery to allow safer reaction to controlling wellbore pressure.

Shutting In While Drilling

1. Sound alarm signaling well control event to Rig Crew
2. Space out drill string to allow FOSV installation
3. Shut down pumps
4. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
5. Install open, full open safety valve and close valve, Close Chokes
6. Verify well is shut-in and flow has stopped
7. Notify supervisory personnel
8. Record data (SIDP, SICP, Pit Gain, and Time)
9. Hold pre-job safety meeting and discuss kill procedure

Shutting In While Tripping

1. Sound alarm signaling well control event to Rig Crew
2. Space out drill string to allow FOSV installation
3. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
4. Install open, full open safety valve and close valve, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

Shutting In While Running Casing

1. Sound alarm signaling well control event to Rig Crew
2. Space out casing to allow circulating swedge installation
3. Shut in Upper Pipe Rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
4. Install circulating swedge, Close high pressure, low torque valves, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold Pre-job safety meeting and discuss kill procedure

Shutting In while out of hole

1. Sound alarm signaling well control event to Rig Crew
2. Shut-in well: close blind rams and open HCR against Open Chokes and Valves
Open to working pressure gauge
3. Close Chokes, Verify well is shut-in and monitor pressures
4. Notify supervisory personnel
5. Record data (SIDP, SICP, Pit Gain, and Time)
6. Hold Pre-job safety meeting and discuss kill procedure

Shutting In prior to pulling BHA through stack

Prior to pulling last joint of drill pipe thru the stack space out and check flow
If flowing see steps below.

1. Sound alarm signaling well control event to Rig Crew
2. Shut in upper pipe ram and open HCR against Open Chokes and Valves Open
to working pressure gauge
3. Install open, full open safety valve and close valve, Close Chokes
4. Verify well is shut-in and flow has stopped
5. Notify supervisory personnel
6. Record data (SIDP, SICP, Pit Gain, and Time)
7. Hold pre-job safety meeting and discuss kill procedure

Shutting in while BHA is in the stack and ram preventer and combo immediately available

1. Sound alarm signaling well control event to Rig Crew
2. Space out BHA with upset just beneath the compatible pipe ram
3. Shut in upper compatible pipe ram and open HCR against Open Chokes and Valves Open to working pressure gauge
4. Install open, full open safety valve and close valve, Close Chokes
5. Verify well is shut-in and flow has stopped
6. Notify supervisory personnel
7. Record data (SIDP, SICP, Pit Gain, and Time)
8. Hold pre-job safety meeting and discuss kill procedure

*FOSV will be on rig floor in open position with operating handle for each type of connection utilized and tested to 10,000 psi

Shutting in while BHA is in the stack and no ram preventer or combo immediately available

1. Sound alarm signaling well control event to Rig Crew
2. If possible pick up high enough, to pull string clear and follow "Open Hole" scenario

If not possible to pick up high enough:

3. Stab Crossover, make up one joint/stand of drill pipe, and install open, full open safety valve (Leave Open)
4. Space out drill string with upset just beneath the compatible pipe ram.
5. Shut in upper compatible pipe ram and open HCR against Open Chokes and Valves Open to working pressure gauge
6. Close FOSV, Close Chokes, Verify well is shut-in and flow has stopped
7. Notify supervisory personnel
8. Record data (SIDP, SICP, Pit Gain, and Time)
9. Hold pre-job safety meeting and discuss kill procedure

Pressure Control Plan

Pressure Control Equipment

- Following setting of 13-3/8" Surface Casing Ameredev will install 13-5/8 MB4 Multi Bowl Casing Head by welding on a 13-5/8 SOW x 13-5/8" 5M in combination with 13-5/8 5M x 13-5/8 10M B-Sec to Land Intm #1 and a 13-5/8 10M x 13-5/8 10M shouldered to land C-Sec to Land Intm #2 (Installation procedure witnessed and verified by a manufacturer's representative).
- Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Ameredev will install a 5M System Blowout Preventer (BOPE) with a 5M Annular Preventer and related equipment (BOPE). Full testing will be performed utilizing a full isolation test plug and limited to 5,000 psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 50% of approved working pressure (2,500 psi). Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Setting of 9-5/8" Intermediate will be done by landing a wellhead hanger in the 13-5/8" 5M Bowl, Cementing and setting Well Head Packing seals and testing same. (Installation procedure witnessed and verified by a manufacturer's representative) Casing will be tested to 1500 psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.
- Full testing will be performed utilizing a full isolation test plug to 10,000 psi MOP of MB4 Multi Bowl B-Section. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 100% of approved working pressure (5,000 psi).
- Before drilling >20ft of new formation under the 9-5/8" Casing Shoe a pressure integrity test of the Casing Shoe will be performed to minimum of the MWE anticipated to control formation pressure to the next casing depth.
- Following setting of 5-1/2" Production Casing and adequate WOC time Ameredev will break 10M System Blowout Preventer (BOP) from 10M DOL-2 Casing Head, install annulus casing slips and test same (Installation procedure witnessed and verified by a manufacturer's representative) and install 11" 10M x 5-1/8" 15M Tubing Head (Installation procedure witnessed and verified by a manufacturer's representative). Ameredev will test head to 70% casing design and install Dry Hole cap with needle valve and pressure gauge to monitor well awaiting completion.

Pressure Control Plan

- Slow pump speeds will be taken daily by each crew and recorded on Daily Drilling Report after mudding up.
- A choke manifold and accumulator with floor and remote operating stations will be functional and in place after installation of BOPE, as well as full functioning mud gas separator.
- Weekly BOPE pit level drills will be conducted by each crew and recorded on Daily Drilling Report.
- BOP will be fully operated when out of hole and will be documented on the daily drilling log.
- All B.O.P.s and associated equipment will be tested in accordance with Onshore Order #2
- All B.O.P. testing will be done by an independent service company.
- The B.O.P. will be tested within 21 days of the original test if drilling takes more time than planned.
- Ameredev requests a variance to connect the B.O.P. choke outlet to the choke manifold using a co-flex hose with a 10,000 psi working pressure that has been tested to 15,000psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps. (certifications will be sent to Carlsbad BLM Office prior to install)
- Ameredev requests a variance to install a 5M Annular Preventer on the 10M System to drill the Production Hole below the 9-5/8" Intermediate Section. 5M Annular will be tested to 100% working pressure (5,000 psi). A full well control procedure will be included to isolate well bore.

QUALITY CONTROL	No.: QC-DB- 651 / 2013
	Page : 1 / 44
Hose No.: 66551, 66552, 66553, 66554	Revision : 0
	Date: 14. November 2013.
	Prepared by : <i>Sealsi Linder</i>
	Appr. by: <i>Sealsi Linder</i>

CHOKE AND KILL HOSES

id.: 3" 69 MPa x 35 ft (10,67 m)

DATA BOOK

Purchaser: H&P STOCK

Purchaser Order No.:


ContiTech Rubber Order No.: 537587

ContiTech Oil & Marine Corp. Order No.:
4500370505

NOT DESIGNED FOR WELL TESTING

CONTENT

	<u>Page</u>
1. API QMS Certificate (No.: 0760)	3.
2. American Petroleum Institute Certificate of Authority To Use the Official API Monogram (No.: 16C-0004)	4.
3. Quality Control Inspection and Test Certificates (No.: 1905, 1906, 1907, 1908)	5-8.
4. Hose Data Sheet	9.
5. Metal Parts	
5.1. Raw Material Quality Certificates (No.: TR070687, EUR-265844, 86989/13-0)	10-13.
5.2. Hardness Test Reports (No.: 561/13, 562/13)	14-15.
5.3. Ultrasonic Test Reports (No.: 513/13, 514/13, 515/13)	16-18.
5.4. NDT Examiner Certificate (Name: Tóth Ákos József)	19-20.
5.5. Welding Procedure Specification (No.: 140-71)	21-24.
5.6. Welding Procedure Qualification Record (No.: BUD 0700002/1)	25-26.
5.7. Welder's Approval Test Certificate (No.: RK1825997.R1)	27-28.
5.8. Welding Log Sheet (No.: 2013/2898)	29.
5.9. Visual Examination Record (No.: 813/13)	30.
5.10. NDT Examiner Certificate (Name: Kis Gábor Balázs)	31-32.
5.11. Radiographic Test Certificates (No.: 2431/13, 2430/13)	33-34.
5.12. NDT Examiner Certificate (Name: Ménesi István)	35-36.
5.13. MP Examination Record (No.: 1222/13)	37.
5.14. NDT Examiner Certificate (Name: Oravecz Gábor)	38-39.
6. Steel Cord	
6.1. Inspection Certificate (No.: 4046181212)	40.
7. Outside Stripwound Tube	
7.1. Inspection Certificate (No.: 63892/2012)	41.
8. Certificate of Calibration (Manometer Serial No.: 1518086)	42-44.



ContiTech Rubber
Industrial Kft.
Quality Control Dept.
(2)



Certificate of Registration

APIQR® REGISTRATION NUMBER

0760

This certifies that the quality management system of

**CONTITECH RUBBER INDUSTRIAL LTD.
Budapesti ut 10
Szeged
Hungary**

*has been assessed by the American Petroleum Institute Quality Registrar (APIQR®) and
found it to be in conformance with the following standard:*

ISO 9001:2008

The scope of this registration and the approved quality management system applies to the
Design and Manufacture of High Pressure Hoses

APIQR® approves the organization's justification for excluding:
No Exclusions Identified as Applicable

**Effective Date: October 15, 2013
Expiration Date: October 15, 2016
Registered Since: October 15, 2007**

W. Dan Whittaker
Manager of Operations, APIQR

Accredited by Member of
the International
Accreditation Forum
Multilateral Recognition
Arrangement for Quality
Management Systems



This certificate is valid for the period specified herein. The registered organization must continually meet all requirements of APIQR's Registration Program and the requirements of the Registration Agreement. Registration is maintained and regularly monitored through annual full system audits. Further clarifications regarding the scope of this certificate and the applicability of ISO 9001 standard requirements may be obtained by consulting the registered organization. This certificate has been issued from APIQR offices located at 1220 I Street, N.W., Washington, D.C. 20005-4070, U.S.A. It is the property of APIQR, and must be returned upon request. To verify the authenticity of this certificate, go to www.api.org/companies.



Certificate of Authority to use the Official API Monogram

License Number: 16C-0004

ORIGINAL

The American Petroleum Institute hereby grants to

CONTITECH RUBBER INDUSTRIAL LTD.

Budapesti ut 10

Szeged

Hungary

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and API Spec 16C and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram should be used in conjunction with this certificate number: 16C-0004

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following product: Flexible Choke and Kill Lines

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: OCTOBER 16, 2013

Expiration Date: OCTOBER 15, 2015

To verify the authenticity of this license, go to www.api.org/compositionalist.

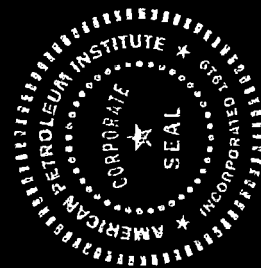
American Petroleum Institute



Director of Global Industry Services



American
Petroleum
Institute



2011112

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1905	
PURCHASER: ContiTech Oil & Marine Corp.				P.O. N°: 4500370505	
CONTITECH RUBBER order N°: 537587		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 66551		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,75 m			
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature					
See attachment. (1 page)					
<p>↑ 10 mm = 10 Min. → 10 mm = 25 MPa</p>					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		8084 8083		AISI 4130	
4 1/16" 10K API Flange end				AISI 4130	
				Heat N°	
				24613	
				034939	
NOT DESIGNED FOR WELL TESTING				API Spec 16 C	
				Temperature rate:"B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date:		Inspector		Quality Control	
13. November 2013.				ContiTech Rubber Industrial Kft. Quality Control Dept.	

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1906																
PURCHASER: ContiTech Oil & Marine Corp.				P.O. N°: 4500370505																
CONTITECH RUBBER order N°: 537587		HOSE TYPE: 3" ID Choke and Kill Hose																		
HOSE SERIAL N°: 66552		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,73 m																		
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.																
<p>Pressure test with water at ambient temperature</p> <p style="text-align: center;">See attachment. (1 page)</p> <p>↑ 10 mm = 10 Min. → 10 mm = 25 MPa</p> <table border="1"> <thead> <tr> <th>COUPLINGS Type</th> <th>Serial N°</th> <th>Quality</th> <th>Heat N°</th> </tr> </thead> <tbody> <tr> <td>3" coupling with</td> <td>8088 8085</td> <td>AISI 4130</td> <td>24613</td> </tr> <tr> <td>4 1/16" 10K API Flange end</td> <td></td> <td>AISI 4130</td> <td>034939</td> </tr> </tbody> </table> <p style="text-align: center;">NOT DESIGNED FOR WELL TESTING API Spec 16 C</p> <p style="text-align: right;">Temperature rate: "B"</p> <p>All metal parts are flawless</p> <p>WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.</p> <p>STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.</p> <p style="text-align: center;">COUNTRY OF ORIGIN HUNGARY/EU</p> <table border="1"> <tr> <td>Date: 13. November 2013.</td> <td>Inspector</td> <td>Quality Control ContiTech Rubber Industrial Kft. Quality Control Dept. <i>[Signature]</i></td> </tr> </table>						COUPLINGS Type	Serial N°	Quality	Heat N°	3" coupling with	8088 8085	AISI 4130	24613	4 1/16" 10K API Flange end		AISI 4130	034939	Date: 13. November 2013.	Inspector	Quality Control ContiTech Rubber Industrial Kft. Quality Control Dept. <i>[Signature]</i>
COUPLINGS Type	Serial N°	Quality	Heat N°																	
3" coupling with	8088 8085	AISI 4130	24613																	
4 1/16" 10K API Flange end		AISI 4130	034939																	
Date: 13. November 2013.	Inspector	Quality Control ContiTech Rubber Industrial Kft. Quality Control Dept. <i>[Signature]</i>																		

Bank data
Commercial and Creditbank
Szeged
10402805-28014250-00000000

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1908	
PURCHASER: ContiTech Oil & Marine Corp.				P.O. N°: 4500370505	
CONTITECH RUBBER order N°: 537587		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 66554		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,71 m			
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
<p>Pressure test with water at ambient temperature</p> <p style="text-align: center;">See attachment. (1 page)</p> <p>↑ 10 mm = 10 Min. → 10 mm = 25 MPa</p>					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		8090 8086		AISI 4130	
4 1/16" 10K API Flange end				AISI 4130	
				Heat N°	
				23171 24613	
				034939	
NOT DESIGNED FOR WELL TESTING				API Spec 16 C	
				Temperature rate:"B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date:		Inspector		Quality Control	
13. November 2013.				<p>ContiTech Rubber Industrial Kft. Quality Control Dept.</p> <p><i>[Signature]</i></p>	



Hose Data Sheet

CRI Order No.	537587
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500370505
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10KPSI API SPEC 6A TYPE 6BX FLANGE C/W BX155STANDARD RING GROOVE
Type of coupling other end	FLANGE 4.1/16" 10KPSI API SPEC 6A TYPE 6BX FLANGE C/W BX155 STANDARD RING GROOVE
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL RESISTANT
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

Customer: ContiTech Rubber Industrial Kft
Order Number: 32258500
Part Number: 4205160045
Our Ref: SO64201
Date: 11th February 2013
Certificate Number: TR070687 (Rev. 18/06/2013)
Approved Signatories:
R M Greaves A Cocking J Jarvis A Pears S Selman

Body

8083-8088

TM
steels

3451-3466

42 0516 0045

Description		CERTIFICATE OF CONFORMITY		Heat Treatment							
<p>AISI 4130 BLACK ROLLED BAR, HEAT TREATED & TESTED TO 197-238 BHN, 855MPa MIN TENSILE, 517MPa MIN YIELD, 18% MIN ELONGATION, CHARPY IMPACT TESTING 27J MIN @ -30C (OR COLDER) LATERAL EXPANSION 0.38 MIN, ROLLING REDUCTION 3:1 MIN, NI 1% MAX & CE 0.82 MAX, TESTS MAY BE TAKEN FROM A 4" SQ R QTC AS PER API 8A/PSL 3 QTC SIZE. MECHANICAL TEST SPECIMEN TO ASTM A370 NACE MR0175/ISO 15156 APPLIES</p> <p>APPROX 20 TONNES 210 MM DIA</p> <p>CERTS TO EN10204 3.1</p>		<p>HARDENED FROM 880°C FOR 5.30 HOURS (WATER QUENCH) TEMPERED AT 670°C FOR 10 HOURS (AIR COOL) WATER TEMPERATURE BEFORE QUENCH, 28°C, AFTER, 35°C TEMP. MEASUREMENT, FURNACE ATMOSPHERE THERMOCOUPLE COMPONENT HARDNESS E10 - 211 HBW10/3000 TEST COUPON - 4" SQ X 8" LONG, TESTED AT 1/2 T LOCATION REDUCTION RATIO - 6.2 REDUCTION RATIO & HT APPLY TO BOTH JOB & TEST PIECE FURNACE CALIBRATION: API 8A 20th ed, annex M C/E = 0.693</p>									
CAST 24613											
C	Si	Mn	S	P	Ni	Cr	Mo	Al	Cu	Sn	Nb
0.3200	0.2590	0.5680	0.0090	0.0100	0.1660	1.0580	0.2350	0.0200	0.1420	0.0070	0.0010
V	Ta	Ti	Nb+Ta	Co	N	B	W	Ce	Fe	As	Sb
0.0010		0.0010			0.0079	0.0001					
Pb	Ca	H (ppm)	CEV								
		1.20	0.69								
TEST SPECIFICATION 517 N/mm2 MIN YIELD											
Temperature RT		Re	Rp 0.2	Rm	A %	Z %	Impact		Temp.	Hardness	
		N/mm2	N/mm2	N/mm2	%	%					
TEST RESULTS											
Test Number	Dir./Temp.	Re	Rp	Rm	A %	Z %	Joules	Charpy Direction			
ST22561N	20.0°C		524.000	698.000	27.60	67.70	KCV -48°C 60 50 78	LONG		HBW10/3000 211	
Specimen Ø 12.500mm							KCV 80°C 50 50 46	LONG			
							% Shear Surface				
							62.0% 52.0% 60.0%				
							Lateral Expansion (mm)				
							0.840 0.740 1.020		LONG		
<p>For and on Behalf of TM Steels Ltd. <i>A. Cocking</i></p> <p>ContiTech Rubber Industrial Kft. CERTIFICATE ACCEPTABLE</p> <p><i>[Signature]</i> QC INSPECTOR DATE: 14.06.21.</p>											
<p>TM Steels Ltd Foxwood Way Foxwood Road Cheshamfield S41 9RA</p> <p>Steel for the Oil and Engineering Industries Machining and Boring Facilities</p> <p>Co Reg No: 3523526 Vat No: GB 706 2614 57</p>											

Tel: +44 (0)1246 268312

Sales Fax: +44 (0)1246 268313

Production Fax: +44 (0)1246 268841

email: sales@tmsteels.co.uk



Carbrook Street
Sheffield S9 2JN
Telephone: +44 114 244 6711
Facsimile: +44 114 244 7469



Cert No. 65293

Results quoted only refer to the items tested.

Material Specification		AISI4130		Test Spec		517N/MM2MIN.YLD		Test Spec						
Heat Treatment Spec		197-237BHN		Test Spec		517N/MM2MIN.YLD		Test Spec						
Melt Practice		E/FND		Production Method		FORGED								
Heat Treatment	Temp(°C)	Soak	Coolant	Charge Ref.	Init	Max(°C)	Batch	Temp recorded using	CONTACT THERMOCOUPLE					
HARDEN	860	3 HRS	WATER QUENCH	SHF-158284	20	30	0912091308	Nature of T/P	Separate					
TEMPER	650	4 HRS	TABLE COOL	SHF-158284			1012091319	Qto size	4inch SQ X 6inch LONG					
								Req. Min/Max	Achieved					
								Hardness on T/P	197	237	HBW	229	229	HBW
								Hardness on Material	197	237	HBW	218	235	HBW

Tensile -						Impacts -					
Location	Direction	Rp 0.20%	Rm	A%	Z%	Location	Direction	CVN	Lat. Exp. (mm)	% Shear	
1/4T	LONGITUDINAL	517 Min	655 to 800	18 Min (4d)	0 Min	1/4T	LONGITUDINAL	27 Min Ave	0.380 Min	0	
Results (N/mm2)		580	785	25 (50.0mm)	64.0 (12.56mm)	Results (Joules)	-30 Centigrade	106 104 102	1.44 1.42 1.4	40 40 40	
Results						Results					

Corrosion			
Pitting Resistance	Ferrite	Microstructure	
Carbon Equivalent	.871	Grain Size	Min 6 Max 6
C	Si	Mn	P
0.2940	0.2920	0.5370	0.0110
		0.0050	1.0620
		0.2290	0.1860
			0.2430

Certs to BSEN10204.2004 3.1		CONDTECH RUBBER Industrial Kft. CERTIFICATE ACCEPTABLE		All furnace Calibration conforms to API8A 20th Edition ANNEX M. Hardness load/penetration depth - HBW 10 diameter (mm)/3000 kgf test force per ASTM E10.	
NACE MR-01-75		QC INSPECTOR		Third party inspection :	
FE = BAL		DATE: 12.10.04			
REDUCTION RATIO 6.5:1					

Names of Approved Signatories : S.Maxted G.Smith S.Suter P.Rogers M.Brown
This report is not to be reproduced without written approval.

Signature

M. Max

Page 1 of 1

Test Certificate

8089-8090

To:
CONTITECH RUBBER INDUSTRIAL KFT
H-8728,
SZEGED,
BUDAPESTI UT 10, K-1562-K-1575
HUNGARY,
HUNGARY
420516 0045

Customer Order Number	32252183 - 01	Test Number	402483
Customer Order Date	27Feb12	Part Number	4205160045
Sales Order Number	EUR-352087-1	Cast Number	23171
Report Date	25Sep12	Cert Number	EUR-265844
Quantity	14 Pcs 17402 Kgs 210 mm Dia		
Description	AISI 4130 76KSI .2% PS API QTC	Steel Type	ALLOY 4130

CONTITECH RUBBER
Industrial Kft.

No:QC-DB-651/2013
Page: 11 / 44

HAMOR zRt.

FORGING, MACHINING, HEAT-TREATING

Flange

8083-8090

3386

4205140284

EMI-TÜV
ISO9001

H-3531 Miskolc, Kiss Ernő u. 17. Phone: 36/46/401-033 Fax: 36/46/379-199

INSPECTION CERTIFICATE

ACCEPTANCE ACCORDING EN 10204-05/3.1

Certificate No.: 86989/13-0

Date of issue: 2013.03.27 | Hámor No.: 98-39B5263 | Order No.: 32259784/13/2

Customer: Contitech Rubber Industrial Kft.
6728 Szeged Budapesti út 10

Quality: AISI 4130/CONTI Spec.No.: API 6A PSL3 315/131 x 182
Dimension: MSO-100597-002/A/H mm
Final dim.:MSO-100597-002/A(4 1/16") Heat-treatment:Quenched & tempered

Quantity: 30 pcs | Weight: 73.0 kg/pc | Total weight: 2190.00 kg

nomination of product: Forged,machined disc

Chemical analysis %

Heat No.: 034939

Steelmaker: CELSA Hutaostrowiec POLA

Test No.	Spec. value Min. Max.	C	MN	SI	P	S	CR	MO	V	Ce
		0.45	1.80	1.00	0.025	0.025	2.75	1.500	0.300	0.82
	Result	0.28	0.56	0.20	0.006	0.003	0.99	0.170	0.003	0.62

Mechanical properties:

Test No.	Spec. value Min. Max.	HB	Rp0.2 MPa	Rm MPa	A5 %	KV-J -30°C
		197 238	517	655	18	27
L13314	Result	235 238				
	Result		525	662	19.50	35 52 82



Test bar from product.

Dimensional and visual control: passed

Ultrasonic test acc. to SEP 1921-84 spec. is satisfactory C/c

Steel making (melting) process: UHP-ASEA vacuum-treated.

NACE MR 0175/ISO 15156+API 17K + API 6A PSL3.

HB-E10, Mechanika: ASTM A370 acc.

Grade Of forging: 9.81

30 pc/series.

Executive

Hámor zRt.
minőség ellenőrzé-
osztály

Expert

MÜ-4-10/1/96
HÁMOR zRt.
FIALKA



MISKOLC Kiss Ernő u. 17. sz. H-3531

tel:36/46/401-033

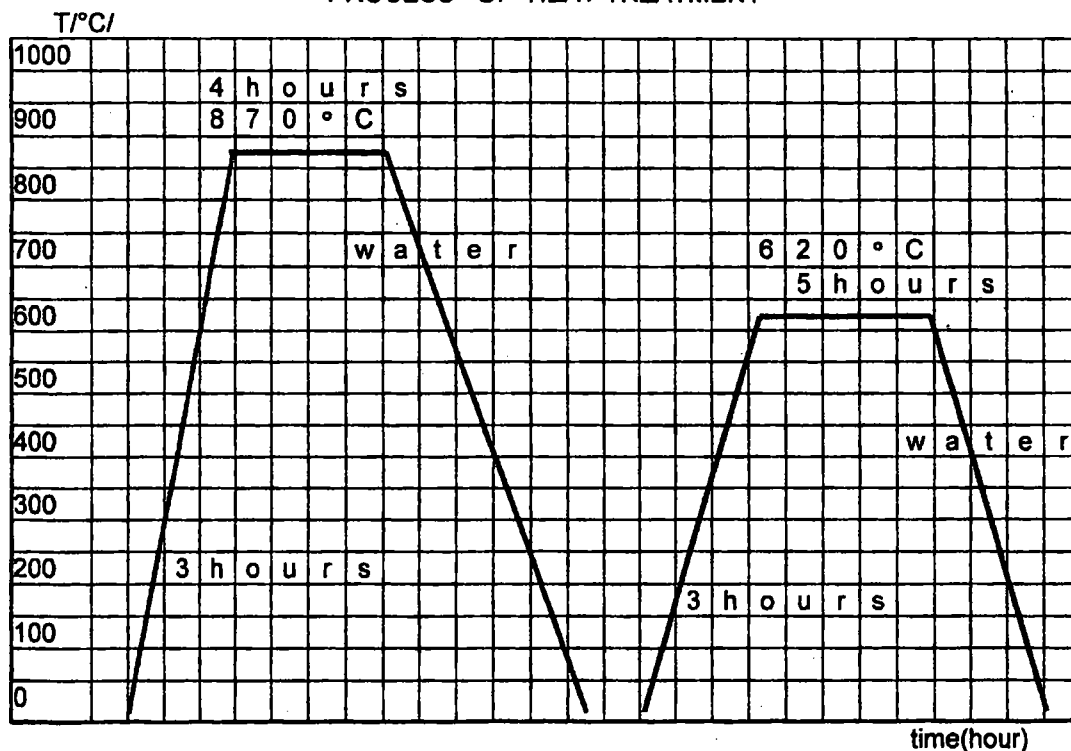
fax:36/46/379-199

e-mail: hamor@t-online.hu

PROTOCOL NUMMER: 98-39B5263

HEAT-TREATMENT PROTOCOL		
BUYER: CONTITECH RUBBER INDUSTRIAL Kft. Szeged Budapesti út 10. sz.	Order No. of Buyer: 32259784/13/2	
	Work No. of Buyer:	
PRODUCT: forged	QUANTITY: PIECE 30	No. of drawing: MSO-100597-002/A/H
MATERIAL QUALITY: AISI 4130 CONTI API 6A PSL3	Charge No.: 34939	Test No.:
<u>HEAT-TREATMENT:</u> quenching and tempering Typ of furnace: electric furnace Hardening medium: water		

PROCESS OF HEAT-TREATMENT



Miskolc, Hámor ZRt. 2013-03-26.

Kandó
head of heat-treatment


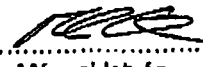
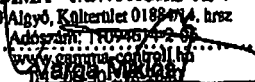
Hámor ZRt.
minőség ellenőrzés
osztály

Felado :

61344

gamma controll kft

19/10/13 12:54 Lap: 2

		HARDNESS TEST REPORT		Report No: 561/13.
CLIENT: JE-ZO KFT. SZEGED, KÜLTÉRÜLET, 01408/22.				
TEST EQUIPMENT: TH 160-D Hardness tester				
PROCEDURE: QCP-45-R1				
DESCRIPTION OF COUPLING: coupling(s) after PWHT				
DRAWING NUMBER: MT-3121-3000				
SERIAL NUMBER: 8083; 8084; 8085; 8086				
BRINELL HARDNESS REQUIREMENT	SERIAL NO OF COUPLING	PART OF THE COUPLING	ACTUAL HARDNESS RESULT (HB)	
Min HB 197 Max HB 238	✓ 8083	body	224	
		weld	222	
		flange	236	
		connection face	238	
	✓ 8084	body	213	
		weld	208	
		flange	220	
		connection face	238	
	✓ 8085	body	214	
		weld	214	
		flange	219	
		connection face	222	
	✓ 8086	body	232	
		weld	237	
		flange	238	
		connection face	197	
The coupling(s) conform to API Spec 6A requirements.				
DATE: 2013. október 30.		PREPARED:  Ménési István		APPROVED:  GAMMA-CONTROLL KFT. 6750 Algyó, Kültérület 0189/14. hrsz Adószám: 18044572-2-0 www.gamma-controll.hu Ménési István


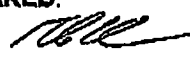
QCP-03 HB/11

Felado :


61344

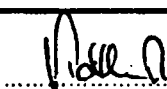
gamma controll kft

19/10/13 12:54 Lap: 3


		HARDNESS TEST REPORT		Report No: 562/13.
CLIENT: JE-ZO KFT. SZEGED, KÜLTERÜLET, 01408/22.				
TEST EQUIPMENT: TH 160-D Hardness tester				
PROCEDURE: QCP-45-R1				
DESCRIPTION OF COUPLING: coupling(s) after PWHT				
DRAWING NUMBER: MT-3121-3000				
SERIAL NUMBER: 8087; 8088; 8089; 8090				
BRINELL HARDNESS REQUIREMENT	SERIAL NO OF COUPLING	PART OF THE COUPLING	ACTUAL HARDNESS RESULT (HB)	
Min HB 197 Max HB 238	✓ 8087	body	213	
		weld	216	
		flange	220	
		connection face	225	
	✓ 8088	body	229	
		weld	212	
		flange	223	
		connection face	213	
	✓ 8089	body	219	
		weld	229	
		flange	231	
		connection face	238	
	✓ 8090	body	207	
		weld	210	
		flange	226	
		connection face	234	
The coupling(s) conform to API Spec 6A requirements.				
DATE: 2013. október 30.	PREPARED:  Ménési István		APPROVED: GAMMA-CONTROL KFT. 6750 Alföld, Kültérület 01408/14. Irsz. Adószám: 1105-0114-0-06 www.gamma-controll.hu Vargha Péter	

QCP-03 HB/11

 GAMMA-CONTROL <small>77 16 12301 17 ES VILÁG SZERELVÉNYEK KFT.</small> <small>www.gamma-control.hu</small> <small>6750 Algyó, külterület 01884/14. hrsz.</small> <small>Tel./Fax.: +36 82/617-400 / 61344</small> <small>A NAT által NAT-9-1142/2010 sz.útván akkreditált vizsgálólaboratórium</small>	ULTRAHANG VIZSGÁLATI JEGYZŐKÖNYV ULTRASONIC EXAMINATION REPORT	Vizsgálati szám: Report No.: 513/13


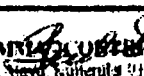
Vizsgálat tárgya / Object of test				Coupling (Body)	
Gyártó Manufacturer		Megrendelő Customer JE-ZO Kft. Szeged			
Gyáriszám Serial-No.		Rendelési szám Order-No. ---			
Azonosító jel Identification 8083-8088		Követelmény Requirement ASTM A388			
Geometria kialakítás / Rajzszám Geometric configuration / Drawing-No. MT-3121-3000 ø200xø70x491		Vizsgálati hőkezelés Test heat treatment előtt prior			
Anyagminőség Material AISI 4130 /		Létezési irányok Direction of scanning axiális és radiális			
Adagszám Heat-No. 24613 /					
Vizsgálati felület állapota Surface condition forgácsolt machined		Vizsgálati terjedelem Exted of Test 100%			
Vizsgált darabszám Testing pieces 6 db					
Vizsgálati adatok / Examination data					
Készülék típusa Type of US-equipment USM25		Készülék gyári száma Serial-No. Of US-equipment 7875f			
Vizsgálófeje(ek) Searc unit(s) SEB-2, SEB4H		Frekvencia(k) Frequency(ies) 2 MHz 4 MHz MHz MHz			
Kalibrációs blokk Calibration standard identification ET1,ET2		Erősítés(ek) Gain axiálisan 18 dB dB radiálisan 6 dB			
Csatoló közeg Couplant olaj oil		Hanggyengülés Attenuation dB/m			
Értékelés / észlelt kijelzések / Evaluation / recordable indications					
Értékelés Evaluation		X		megfelelő satisfactory	
Megjegyzés(ek) Remark(s)		nem megfelelő / not acceptable			
Hely / kelt Place / date Gamma-Controll Kft. Algyó, 2013.10.17		 Vizsgálatot végezte Tested by Tóth Ákos UT20103090307		GAMMA-CONTROL KFT. 6750 Algyó, külterület 01884/14. hrsz. Adószám: 11094614-2-06..... www.gamma-control.hu Tel.: 06-30-218-2640 Approved by Benkő Péter - Felelős vezetőh.	

Ez a jegyzőkönyv részleteiben nem másolható! / Copying details is prohibited!

 <p>GAMMA-CONTROLL www.gamma-controll.hu 6750 Algyő, Költérut 01894/14. hrsz. Tel./Fax.: +36 62/517-400 / 81344 A NKT által NUT-1-1140/2010 sz.úttal előírt vizsgálati követelmények szerint</p>	<p>ULTRAHANG VIZSGÁLATI JEGYZŐKÖNYV</p> <p>ULTRASONIC EXAMINATION REPORT</p>	<p>Vizsgálati szám: Report No.: 514/13</p>
--	--	--

Vizsgálat tárgya / Object of test		Coupling (Body)	
Gyártó Manufacturer		Megrendelő Customer	JE-ZO Kft. Szeged
Gyáriszám Serial-No.		Rendelési szám Order-No.	---
Azonosító jel Identification	8089-8090	Követelmény Requirement	ASTM A388
Geometria kialakítás / Rajzsám Geometric configuration / Drawing-No.	MT-3121-3000 ø200xø70x491	Vizsgálati hőkezelés Test heat treatment	előtt prior
Anyagminőség Material	AISI 4130 /	Letapogatási irányok Direction of scanning	axiális és radiális
Adagszám Heat-No.	23171 /		
Vizsgálati felület állapota Surface condition	forgácsozott machined	Vizsgálati terjedelem Exted of Test	100%
Vizsgált darabszám Testing pieces	2 db		
Vizsgálati adatok / Examination data			
Készülék típusa Type of US-equipment	USM25	Készülék gyári száma Serial-No. Of US-equipment	7875f
Vizsgálófeje(ek) Searc unit(s)	SEB-2, SEB4H	Frekvencia(k) Frequency(ies)	2 MHz 4 MHz MHz MHz
Kalibrációs blokk Calibration standard identification	ET1,ET2	Erősítés(ek) Gain	axiálisan 18 dB dB dB radiálisan 6 dB
Csatoló közeg Couplant	olaj oil	Hanggyengülés Attenuation	dB/m
Értékelés / észlelt jelzések / Evaluation / recordable indications			
Értékelés Evaluation	X	megfelelő satisfactory	nem megfelelő / not acceptable
Megjegyzés(ek) Remark(s)			
Hely / kelt Place / date	<p>Gamma-Controll Kft. Algyő, 2013.10.17</p>		<p>GAMMA - CONTROLL KFT. 6750 Algyő, Költérut 01894/14. hrsz. Adatszám: 21094614-2-06 www.gamma-controll.hu Tel.: 06-501148-2640</p>
	<p>Vizsgálatot végezte Tested by Tóth Ákos UT20103090307</p>		<p>Approved by Benkő Péter - Felelős vezető</p>

Ez a jegyzőkönyv részleteiben nem másolható! / Copying details is prohibited!

Vizsgálat tárgya / Object of test		Flange	
Gyártó Manufacturer		Megrendelő Customer	JE-ZO Kft. Szeged
Gyári szám Serial-No.		Rendelési szám Order-No.	---
Azonosító jel Identification	8083-8090	Követelmény Requirement	ASTM A388
Geometria kialakítás / Rajzsám Geometric configuration / Drawing-No.	MT-3121-3000	Vizsgálati hőkezelés Test heat treatment	előtt prior
Anyagminőség Material	AISI 4130 /	Letapogatási irányok Direction of scanning	axiális és radiális
Adagszám Heat-No	034939 /		
Vizsgálati felület állapota Surface condition	forgácsolttal machined	Vizsgálati terjedelem Extent of Test	100%
Vizsgált darabszám Testing pieces	8 db		
Vizsgálati adatok / Examination data			
Készülék típusa Type of US-equipment	USM25	Készülék gyári száma Serial-No. Of US-equipment	78751
Vizsgálófej(ek) Searc unit(s)	SEB-2, SEB4H	Frekvencia(k) Frequency(ies)	2 MHz 4 MHz 10kHz 10kHz
Kalibrációs blokk Calibration standard identification	ET1,ET2	Erősítés(ek) Gain	axiálisan 6 dB 0dB 0dB radiálisan 6 dB
Csatoló kódjeg Couplant	olaj oil	Hanggyengülés Attenuation	dB/m
Ertékelés / észlelt hiányosságok / Evaluation / recordable indications			
Ertékelés Evaluation	X	megfelelő satisfactory	nem megfelelő / not acceptable
Megjegyzés(ek) Remark(s)			
Hely / kelt Place / date	 Vizsgálatot végezte Tested by Tóth Ákos UT20103090307		 GAMMA-CONTROL Kft. 6520 Nagykőrös, Kőrös u. 33-35. 14. sz. Adószám: 11296142-2-00 www.gamma-control.hu Jóváhagyta / Approved by: Benkő Péter - Felelős vezető



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

RONCSOLÁSMENTES ANYAGVIZSGÁLÓ TANÚSÍTVÁNY

(Certificate of NDT personnel)

Azonosító szám: UT20103090307
(Identification No.)

A tanúsított neve:
(The name and forename of
the certificated individual):

Tóth Ákos József

Születési hely/idő:
(Place and date of birth):

**Hódmezővásárhely, 1987. 09.
19.**

A tanúsított személy aláírása
(The signature of the certificated individual)

Vizsgálati eljárás(ok):
(The NDT method(s)):

Ultraszagos anyagvizsgálat
(Ultrasonic testing)

Ipari terület:
(Industrial sector):

Készülékek, berendezések, létesítmények vizsgálata EM
(Pre and in-service testing of equipment, plant and structure)

Termék terület(ek):
(Product sector(s)):

(c)+Fv, (w)+Fv, (wp)+Fv, (f)+Fv

A minősítés fokozata:
(The level of certification):

UT2

A tanúsítás és kiadásának időpontja:
(The date of certification and its issue):

Budapest, 2009. 12. 07.

A tanúsítás érvényes:
(The date upon which certification expires):

2014. 12. 06.

Tanúsító Testület nevében
(On behalf of certifying body)

Az ipari és/vagy termék terület érvényesség kiterjesztve:
(The industrial and/or product sector has been expanded to):

9/2001 GM, 97/23 EC

Dátum (Date): **2009. 12. 07.**

A tanúsítás érvényessége
(Renewed the validity of the certification until (MSZ EN 473 9.):)

-ig megújítva (MSZ EN 473 9.):

Dátum (Date):

Tanúsító Testület nevében
(On behalf of certification body)



AKKREDITÁLT
NAT-5-0013/2006

A Magyar Hegesztéstechnikai és Anyagvizsgálati Egyesülés, mint a Nemzeti Akkreditáló Testület által a NAT-5-0013/2006 számon akkreditált tanúsító testület az MSZ EN 473 számú szabvány szerint eredményes vizsgálata alapján a nevezett személyt tanúsítja a fentiek szerint:
(The Hungarian Association of Welding Technology and Material Testing as an accredited by the National Accreditation Board (under No. NAT-5-0013/2006) certification body, on the basis of his/her successful examination under the standard MSZ EN 473, hereby certifies the named individual according to the above.)

* c - öntvények (castings); f - kovácsolt termékek (forgings); w - hegesztett kötések-termékek (welded products); t - csövek (tubes); wp - alakított termékek (wrought products); p - műanyag termékek (plastics products); k - kompozitok (composites products).

UT20103090307



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

Meghatalmazzuk a tanúsítvány tulajdonosát, hogy vizsgálatokat végezzen és azok eredményéért felelősséget vállaljon.
(MSZ EN 473 3.21)

(The holder of this certificate has been authorised to perform tests and take responsibility for the test results. (MSZ EN 473 3.21))


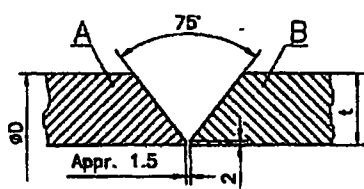
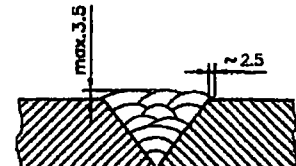
GAMMA - CONTROLL KFT
6722 Szeged, Gyertyános u. 14-16/A

Munkáltató aláírása: Adorján Tibor
(Signature of the employer) OTT Bank: 117 38003 20406154
www.gamma-controll.hu
Tel.: 06 30 218-2640

Dátum: 2009.12.07.
(Date)










Folyamatos munkavégzés igazolása (MSZ EN 473 9.) (Evidence of continued work activity (MSZ EN 473 9.))			
Sorsz.:	Munkáltató aláírása (Signature of the employer)	GAMMA-CONTROLL Anyagvizsgáló Kft. Minőségellenőrző Kft.	Dátum (Date)
1.		GAMMA-CONTROLL	2010.01.04.
2.		GAMMA-CONTROLL	2011.01.06.
3.		GAMMA-CONTROLL	2012.01.09.
4.		GAMMA-CONTROLL	2013.01.09.
5.		GAMMA-CONTROLL	
6.			
7.			
8.			
9.			
10.			

Kiegészítések:
(Additional remarks.)

		TECHNICAL DATA SHEET		TDS	Page
WELDING PROCEDURE SPECIFICATION		WPS		Nº 1 of 2	
CLIENT IDENTITY CODE		THIS SPECIFICATION IS BASED ON ASME CODE SECTION IX		WPS Nº 140-71 REV 4 SUPPORTING PQR Nº BUD 0700002/1	
ITEM Qty DATA FOR ACCEPTANCE		WELDING PROCESS: GTAW-SMAW TYPES: MANUAL		PERFORMED BY: WELDER'S STAMP	
JOINTS (QW-402)					
					
JOINT DESIGN BACKING: YES/NO			WELD SEQUENCE		
BASE METALS (QW-403)			PART „A”		PART „B”
DRW Nº			PART „A”		PART „B”
GRADE: WNo.:1.7220			ASTM A 322-91: AISI 4130 / 34CrMo4 (MSZ EN 10083-1) *		
CARBON EQUIVALENT max. C _e =			0.82		0.82
MECHANICAL PROPERTIES:			655		655
TENSILE STRENGTH N/mm ² min.			18		18
DUCTILITY % min.			238		238
HARDNESS HB max.			27		27
IMPACT TEST -30°C J Average			27		27
THICKNESS: t = 5-38 mm			OUTSIDE DIAMETER : ØD = 60-280 mm		
FILLER METALS (QW-404)					
WELD MATERIAL	DIAMETER	BRAND	STANDARD	SUPPLIER	
Rod	2.4 mm	EML 5	AWS A5.18-01: ER70S-3	Böhler	
Electrode	3.2; 4.0	T-PUT NiMo 100**	AWS A 5.5-96: E 10018-D2 (mod.)	Böhler	
LAPSE BETWEEN OF PASSES MIN./min			MIN./min		
POSITIONS (QW-405)			PREHEAT (QW-406)		
POSITIONS: 1G Rotated (horizontal)			PREHEAT TEMP.: 300-330 °C		
WELDING PROGRESSION: Weld flat at or near to the top			INTERPASS TEMP.: max. 350 °C		
POSITION OF FILLET			PREHEAT MAINTENANCE: Till the begining of postweld heat threating		
OTHER			METHOD OF PREHEATING: Furnace		

CONTINUATION OF WPS N° 140-71 Rev.4						Page N° 2 of 2	
POSTWELD HEAT TREATMENT (QW-407)				GAS (QW-408)			
HOLDING TEMP. RANG		620 +20 / -0 C°		SHIELDING GAS		Argon for root	
HOLDING TEMP. TIME		4 HR		PERCENTAGE COMPOSITION (MIXTURE)		99.995 %	
HEATING RATE MAX.:				FLOW RATE		10-12 LITRES/min.	
COOLING RATE MAX.:		80 °C/HR		GAS BACKING: Argon (for 1st and 2nd passes)			
LOCATION OF THERMOCOUPLE				FLOW RATE		7-9 Litres/min	
FURNACE ATMOSPHERE		Air		TRAILING SHIELDING GAS COMP.			
TYPE:							
ELECTRICAL CHARACTERISTICS (QW-409)				1st		pass: -	
CURRENT		DC		ELECTRODE POLARITY : 2nd-28th		passes: +	
TUNGSTEN ELEKTRODE SIZE/TYPE: Ø3.2 mm thoriated tungsten							
MODE OF TRANSFER FOR GMAW							
ELECTRODE / WIRE FEED SPEED RANGE							
WELD LAYERS	PROCESS	FILLER METAL CLASS	DIAMETER	CURRENT TYPE POLAR.	AMP. RANGE	VOLT RANGE	HEAT INPUT (KJ/cm)
1	GTAW	EML 5	2.4 mm	-	110-130	11-12	5-8.4
2-3	SMAW	T-PUT NiMo 100	3.2 mm	+	120-140	24-26	12-19.6
4-28	SMAW	T-PUT NiMo 100	4.0 mm	+	150-170	26-30	16.2-27.5
TRAVEL SPEED RANGE				100-130 mm/min			
TECHNIQUE (QW-410)							
STRING OR WEAWE BEAD				ORIFACE OR GAS CUP SIZE Ø9mm			
INITIAL/INTERPASS CLEANING: Brushing, Grinding							
EQUIPMENTS FOR WELDING:							
OTHER:							
EXAMINATION - Acc. to the acceptance instruction N° MIO-FB 2 Based on ASME IX.				REMARKS - * Formerly CMo3 (MSZ 61) - ** Ni content less than 1 % - Before welding bake electrodes for 2 hours at 350 °C			
BY	DATE	TECHNICAL DATA SHEET				HOSE TECHNICAL DEPARTMENT WPS N° 140-71 Rev.4	
Desig.	14.06.2007	WELDING PROCEDURE SPECIFICATION					
Appr.	14.06.2007	SUBJECT: Butt weld of hose coupling for H2S service;					
Chek'd		Strenght 75K					

PHOENIX RUBBER Industrial Ltd. Hose Division	N°:	WPS 140-71 Addendum
	Revision:	4
ADDENDUM for the approved wall thickness range 5-38 mm Based on WPS 140-71 Rev.4, PQR No.: BUD 0700002/1	Page N°:	1/2
	Date:	2007-06-12
	Designed:	<i>Budai</i>
	Checked:	
	Approval:	<i>Selcuk</i>

No.	Wall thickness [mm]	Weld layers	Electrode Ø [mm]
1.	5-7	 1 2	3,2 3,2
2.	7-9	 1 2-3	3,2 3,2
3.	9-11	 1 2-3 4-5	3,2 3,2 4,0
4.	11-13	 1 2-3 4-6	3,2 3,2 4,0
5.	13-15	 1 2-3 4-8	3,2 3,2 4,0
6.	15-18	 1 2-3 4-10	3,2 3,2 4,0
7.	18-20	 1 2-3 4-11	3,2 3,2 4,0
8.	20-22,22	 1 2-3 4-15	3,2 3,2 4,0
9.	22,2-26	 1 2-3 4-19	3,2 3,2 4,0

Remarks: - Process for layer No1 GTAW with Ø3,2 mm thoriated tungsten electrode and Ø2,4 mm Rod EML 5;
for the others: SMAW with electrode T-PUT NiMo 100

PHOENIX RUBBER Industrial Ltd.

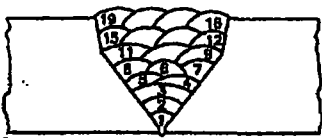
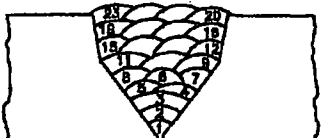
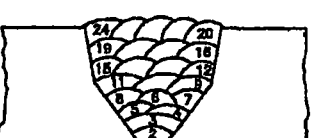
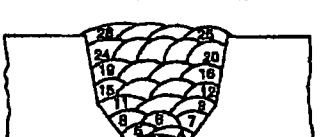
ADDENDUM

for the approved wall thickness range 5-38 mm
Based on WPS 140-71Rev.4, PQR No.: BUD 0700002/1

Nº: WPS 140-71 Addendum

Revision: 4

Page Nº: 2/2

No.	Wall thickness [mm]	Weld layers	Electrode Ø [mm]
10.	26-29		1 2-3 4-19 3,2 3,2 4,0
11.	29-32		1 2-3 4-23 3,2 3,2 4,0
12.	32-35		1 2-3 4-24 3,2 3,2 4,0
13.	35-38		1 2-3 4-28 3,2 3,2 4,0

Remarks: - Process for layer No1 GTAW with Ø3,2 mm thoriated tungsten electrode and Ø2,4 mm wire EML 5;
for the others: SMAW with electrode T-PUT NiMo 100

Certificate no: BUD 0700002/1
Page 1 of 2



Welding Procedure Qualification Record (PQR) ASME IX Energy and Transportation

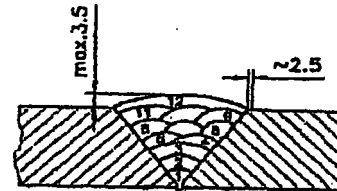
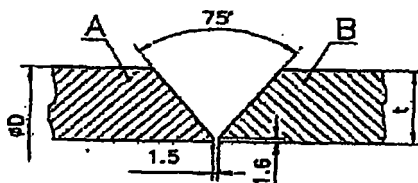
Company Name: Phoenix Rubber Gumilpari Kft, SZEGED
Procedure Qualification Record No. BUD 0700002/1

WPS No. 140-71

Date 28 February 2007

Welding Process(es) GTAW/SMAW

Types (Manual, Automatic, Semi-Auto.) Manual



Groove Design for Test Coupon

(For combination qualifications, the deposited weld metal thickness shall be recorded for each filler metal or process used.)

Base Metals (QW-403)

Material Spec: ASTM A 322-91, AISI 4130

Type or Grade: AISI 4130

P.No. AISI 4130 to P.No. AISI 4130

Thickness of Test Coupon 19 mm

Diameter of Test Coupon 72 mm

Other

Postweld Heat Treatment (QW-407)

Temperature 620 +20-0 °C

Time 4 hours

Other

Gas (QW-406)

Percent Composition

Shielding	Gas(es)	(Mixture)	Flow Rate
Shielding	Ar 99.95%		10-12 l/min
Tailing			
Backing	Ar 99.95%		7-9 l/min

Electrical Characteristics (QW-409)

Current	DC
Polarity	GTAW DCEN, SMAW DCEP
Amps.	Layer 1 128, Layer 2-3 127, Layer 4-12 136
Tungsten Electrode Size	3.2 mm
Other	

Technique (QW-410)

Travel Speed	Layer 1-11 100-130 Layer 12 non/min
String or Weave Bead	Layer 1-11 String Layer 12 Weave

	GTAW	SMAW
Multipass or Single Pass (per side)	S	M
Single or Multiple Electrodes	S	M

Heat Input	Layer 1 6.0-8.6 kJ/cm, Layer 2-3 14.1-19.8 kJ/cm, Layer 4-12 18.7-28.1 kJ/cm
------------	--

Filler Metals (QW-404)

	GTAW	SMAW
SFA Specification	ER 70S-3	E 10018-G
AWS Classification	A5.18	A5.5
Filler Metal F-No.	6	4
Weld Metal Analysis A-No.	1	2
Size of Filler Metal	2.4 mm	3.2, 4.0 mm
Other		

Weld Metal Thickness

3 mm 16 mm

Position (QW-405)

Position of Groove 1G rotated

Weld Progression (Uphill, Downhill)

Other

Preheat (QW-406)

Preheat Temp. 300-330 °C

Interpass Temp max 350 °C

Other

Lloyd's Register, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the "Lloyd's Register Group". The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

CONTITECH RUBBER
Industrial Kft.

No:QC-DB- 651 /2013

Page: 26 / 44

Certificate no: BUD 0700002/1
Page 2 of 2

Tensile Test (QW150)							PQR No.	BUD 0700002/1
Specimen No.	Width mm	Thickness mm	Area mm ²	Ultimate Total Load kN	Ultimate Unit Stress MPa	Type of Failure & Location		
39/1	18.9	15.8			657	Base material		
39/2	18.9	15.7			664	Base material		

Guided Bend Test (QW160)

Type and Figure No.

180° Bend roller dia. 36 mm 2+2 pts.

Results

Satisfactory

Toughness Tests (QW170)

Specimen No.	Notch Location	Specimen Size mm	Test Temp. °C	Impact Value J	% Shear	Mils	Drop Weight Break (Y/N)
39	S	10x10x55	-30	33			
39	S	10x10x55	-30	49			
39	S	10x10x55	-30	41			
39	HAZ	10x10x55	-30	38			
39	HAZ	10x10x55	-30	97			
39	HAZ	10x10x55	-30	62			

Comments:

Macro Test (QW180)

Result- Satisfactory: Yes ☐ No ☐ Penetration Into Parent Metal: Yes ☐ No ☐

Macro - Results

Other Tests

Type of Test Hardness test

Deposit Analysis

Other:

Macro - Satisfactory

X-ray - Satisfactory

Welder's Name Tivadar Szabo DC-IL 378258

Clock No. (BC 15)

Stamp No.

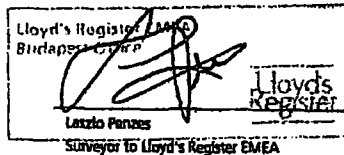
Test Conducted By: DKG EAST Anyagvizsgalati Labor.

Laboratory Test No: TMO 007-7/07 VJK 1207/2007

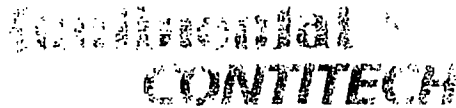
We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Date issued: 28 February 2007

Manufacturer's Representative *Beez*
László Bajusz
Manufacturer Phoenix Rubber Gumipari Kft, SZEGED



A member of the Lloyd's Register Group



Fluid Technology

WELDER'S APPROVAL TEST CERTIFICATE - ASME CODE IX

Examiner or test body: ABS


Registration No.: RK1825997.R1

Designation ASME IX: GTAW / SMAW Pipe BW s19 1G

Welder's name: Tivadar Szabó (BC15)

Identification card No: 517278EA

Date and place of birth: 19. August 1949; SZEGED

		Weld test details	Range of approval	Photo (if required)
Welding process		GTAW/SMAW		
Filler metal	Type	Rod / Electrode		
	Designation	AWS 5.18: ER70S-3 AWS 5.5: E9018		
Parent metal group(s)		ASTM A 322-91; AISI 4130	ASTM A 322-91; AISI 4130	
Plate or pipe		Pipe	Pipe/Plate	
Welding position		1G	1G/Flat	
Outside diameter (mm)		72 mm	> 25 mm	Identification of test pieces:
Test piece thickness (mm)		19	Max to be welded	
Single/ both side welding		Single		WPS No.: 140-60 Rev.4
Gouging/ backing				
Joint type		Groove	Groove / Fillet	Testing standard: ASME IX
Shielding/ backing gas(es)		Argon (99,95%)		
Welding carried out, place: Szeged			Date: 29 April 2010	
			Welding Engineer: László Bajusz <i>Beater</i>	
Type of test	Performed and accepted	Not required		Place and date:
Visual	Accepted (Vjk-1739/10)			Szeged, 18-Jun-2010
Radiography	Accepted (Vjk-1739/10)			Surveyor:
Ultrasonic		+		Péter Szabó
Magnetic particle		+		Stamp and signature:
Penetrant		+		
Macro		+		
Fracture		+		
Bend		+		
Additional tests		+		
See attached page(s) for prolongation by employer every 6 months				



Registration No.: RK1825997.R1

Date and place of birth: 19. August 1949; SZEGED

[illegible]

CONTITECH RUBBER
Industrial Kft.

No:QC-DB- 651 /2013
Page: 29 / 44

JE-ZO KFT. 6728 Szeged, Külterület 01408/22 hrsz. Adószám: 13341039-2-06 Bankszámlaszám: 12067001-00157077-00100001		WELDING LOG SHEET HEGESZTÉSI MUNKALAP		WLS N ^o . Száma: 2013. / 2898.	
CLIENT Megrendelő: CONTITECH RUBBER Industrial Kft.		PURCH. ORDER N ^o . Rendeletszám: 32261598			
CONTRACT N ^o . Kötésszám:		SPOOL/JOB N ^o . Üzemi m.szám: 2898 - 2905		WPS N ^o . Heg. ut. száma: 140 - 71. Rev. 4. / 7	
NAME OF WEDED PARTS Heg. alkatrész megnevezése: Body + Flange		DRWG N ^o . Rajzszám: 41 3121 - 3000			
NAME/ N ^o . OF WELDER Hegesztő neve és száma: Szabó László. B.C. 15.		LOCATION/SHOP Munkavégzés helye: Szeged. Tőpé Széle 6.			
DATE Dátum: 2013. 10. 25		QUANTITY Darabszám: 8		SERIAL NUMBERS Sorszámok: 8083 - 8090	
1. MATERIAL CONTROL Anyag megfelelés azonosítása	SUBJECT 1 Tárgy 1: body		MATERIAL Anyag: AISI. 4130.		CAST N ^o . Adagszám: 24613, 8093-8098
	SUBJECT 2 Tárgy 2: Flange		MATERIAL Anyag: AISI. 4130.		CAST N ^o . Adagszám: 034939
2. FILLER METAL Elektroda minőség és méret	WELD LAYERS Varratszám		1.		2-3.
	TYPE Típus		Ew. 5.		NIMO. 100.
	DIAMETER Átmérő		2.4.		3.2.
	FILLER CAST N ^o . Elektr. adagszám		800303.		1124075
3. ELECTRICAL CHARACTERISTICS Elektromos adatok	TYPE POLAR Polaritás		-		+
	VOLT (V)		12.		24.
	AMPERE (A)		180.		140.
4. PRE HEAT TREATMENT OF ELECTRODES Elektroda felhasználást megelőző hőkezelése			300.		8. Hours
5. APPLIED SHIELDING GAS Alkalmazott védőgáz		TYPE Típus: Argon.		Percentage Composition Tisztaság: 99.95. %	
6. HEAT TREATMENT (pre-weld) Előmelegítés		300.		7. POSITION Helyzet: Forgatott.	
8. SPEED OF TRAVELS Hegesztési sebesség		100 ÷ 130. mm/min		9. LAPSE BETWEEN OF PASSES Varratfelrakási szünetek: 8. min	
10. POSTWELD HEAT TREATMENT Utóhőkezelési adatok		Time Idő: 240. min		Temperature Hőmérséklet: 620. °C	
11. RADIOGRAPHIC TEST CERT. N ^o . Radiográfiai vizsg. biz. száma		2430/13, 2431/13			
REPAIR Javítás	YES/ Igen		X NO/ Nem		
	PLACE OF DEFECT Hiba helye		TYPE OF DEFECT Hiba típusa		
	METHOD OF REPAIR Javítási módszer				
VISUAL INSPECTION Szemrevételezés: Megfelelő / Satisfactory.					
REMARKS Megjegyzés: Fronius. Magic. Wave. 2600.					
Date, end of cooling down time Dátum, kihűlés vége: 2013. 10. 26. - 13. óra		WELDING LOG SHEET HEGESZTÉSI MUNKALAP Készítette: Szeged, Tőpé széle 6. Lev.: 6728 Szeged, Heller köz 1. Adószám: 13341039-2-06		INSPECTOR Ellenőrző: 2013 NOV 04 DATE Dátum	

Feladó : 61344

gamma controll kft

19/10/13 12:58 Lap: 1

 GAMMA-CONTROL <small>6750 Algyó, Kővárosi út 113/A/14. nyrt. Tel/Fax: +36 82/617-400 / 61344 A NAT 420 NAT-1-11(2010) sz. rendelet szerinti vizsgálati eljárás</small>	SZEMREVÉTELEZÉSES VIZSGÁLATI JEGYZŐKÖNYV VISUAL EXAMINATION REPORT	Record No. Jegyzőkönyv száma: 813/13
--	---	--

Object Tárgy	Coupling welding Csatlakozó hegesztés	Serial No. Gyári szám	8083-8090
Customer Megrendel	JE-20 Kft. Szeged	Drawing No. Rajzszám	MT-3121-3000
Job Nr. Munkaszám	002/13	Material / Dimension Anyagminőség/méret	AISI 4130 115/77
Quantity Mennyiség	8 db	Extent of examination Vizsgálat terjedelme	100%
Requirements Követelmények	ASME code VIII/1	Heat treatment Hőkezelés	after PWHT
Written Procedure No. Vizsgálati eljárás száma	QCP-09-1	Welder Hegesztő	BC15

Visual examination / Szemrevételezéses vizsgálat

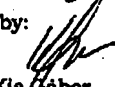
Technique Módszer	Direct visual	-
Instrument Készülék	-	-
Visual aids Segédesszközök	3x magnifying lens	-

Measurement / Mérés

Equipment Készülék	-	-
Instrument Készülék	-	-
Surface temperature A felület hőmérséklete	20 °C	Surface condition Felület állapota
Test results Eredmények :	SATISFACTORY megfelelő.....8	Lighting intensity Megvilágítás

pc(s)/db

not accepted
nem megfelelő.....0 pc(s)/db

Vizsgálat helye és ideje: Place and date of test: Gamma-Controll Kft. Algyó, 2013.10.30. (10h)	Vizsgálatot végezte: Tested by:  K. János VT20103130102	Áttekintette és jóváhagyta: Reviewed and approved by: GAMMA-CONTROL KFT. 6750 Algyó, Kővárosi út 113/A/14. nyrt. Adószám: 11094612-09 www.gamma-controll.hu Tel: +36 82 617 400
---	--	---



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

RONCSOLÁSMENTES ANYAGVIZSGÁLÓ TANÚSÍTVÁNY
(Certificate of NDT personnel)

A tanúsított neve:
(The name and forename of
the certificated individual):

Kis Gábor Balázs

Születési hely/ideje:
(Place and date of birth):

Szeged, 1980. 02. 29.

Azonosító szám:
(Identification No.): **VT20103130102**

A tanúsított személy aláírása
(The signature of the certificated individual)

Vizsgálati eljárás(ok):
(The NDT method(s)):

Szemrevételezéses anyagvizsgáló
(Visual testing)

Ipari terület:
(Industrial sector):

Készülékek, berendezések, létesítmények vizsgálata EM
(Pre and in-service testing of equipment, plant and structure)

Termék terület(ek):
(Product sector(s)):

(c), (w), (wp), (j)

A minősítés fokozata:
(The level of certification):

VT2

A tanúsítás és kiadásának időpontja:
(The date of certification and its issue):

Budapest, 2013. 02. 19.

A tanúsítás érvényes:
(The date upon which certification expires):

2018. 02. 18.

Tanúsító Testület nevében
(On behalf of certifying body)



Vizsgáztató
(Examiner)

Az ipari és/vagy termék terület érvényessége kiterjesztve:
(The industrial and/or product sector has been expanded to):

Dátum (Date):

Tanúsító Testület nevében
(On behalf of certifying body)

A tanúsítás érvényessége

(Renewed the validity of the certification until (MSZ EN ISO 9712 10.):)

-ig megújítva (MSZ EN ISO 9712 10.):

Dátum
(Date):

Tanúsító Testület nevében
(On behalf of certification body)

c - öntvények (castings); f - kovacsolt termékek (forgings); w - hegesztett és forrasztott termékek (welded products); t - csövek és csővezetékek (tubes); wp - alakított termékek (wrought products); k - kompozit anyagok (composites products).

VT20103130102



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

Meghatalmazzuk a tanúsítvány tulajdonosát, hogy vizsgálatokat végezzen és azok eredményéért felelősséget vállaljon.
(MSZ EN ISO 9712 3.21)

(The holder of this certificate has been authorized to perform tests and take responsibility for the test results. (MSZ EN ISO 9712 3.21))

6726 Szeged, Tüzok u. 8/A
Munkáltató aláírása: Adószám: 11094614-2-067
(Signature of the employer) Bank: 11335003-20000134
www.gamma-control.hu
Tel.: 06-30-215-8000

Dátum: 2013.02.06.
(Date:)

Egyesített munkavégzés igazolása (MSZ EN ISO 9712 10.) (Evidence of continued work activity (MSZ EN ISO 9712 10.))			
Sorsz.: (No.)	Munkáltató aláírása (Signature of the employer)	Ph. "GAMMA-CONTROL" Anyagvizsgáló és Minőségellenőrző Kft.	Dátum (Date)
1.			2013.02.06.
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			


Kiegészítések:
(Additional remarks)

A tanúsítvány a munkáltató aláírásával érvényes
(This certificate is valid with the signature of the employer.)

Feladó : 61344

gamma controll kft

19/10/13 12:54 Lap: 1

 GAMMA-CONTROL www.gamma-control.hu 6750 Algyő, Kálterutca 01884/14. hrsz. Tel./Fax: +36 62/517 400 / 51844 A KFT által kiadott és a 19/2013. évi jogszabályok szerinti szabványok szerinti	RADIOGRÁFIAI VIZSGÁLATI JEGYZŐKÖNYV RADIOGRAPHIC EXAMINATION REPORT	Jegyzőkönyv szám: Report No.: 2431/13 Kiállítás dátuma: Date of report: 2013.10.30
---	--	---

Vizsgálat tárgya: Object:	Coupling	Megrendelő: Client:	JE-ZO Kft. Szeged																																																																																																																																	
Munkaszám: Job No.:	—	Rendelési szám: Order No.:	—																																																																																																																																	
Rajzsám: Drawing No.:	MT-3121-3000	Anyagminőség: Material:	AISI 4130																																																																																																																																	
Vizsgálati szabvány: Testing standard:	QCP-13-1	Vizsgálati terjedelme: Extent of testing:	100%																																																																																																																																	
Arvíteli követelmény: Acceptance criteria:	ASTM E94	Hőkezelés: Heat treatment condition:	After PWHT																																																																																																																																	
Kód: Code:	MSZ EN ISO 6520-1	Hegesztési jelek: Welder stamp:	BC15																																																																																																																																	
Berendezés típusa: Type of equipment:	GAMMAMAT	Képmínőségjelző típusa: Type of IQI:	ASTM set B type																																																																																																																																	
Sugárforrás: Source:	Ir192	Képmínőség jelző helye: Placement of IQI:	F																																																																																																																																	
Sugárforrás mérete: Source size:	3x1,5mm	Előírt képmínőség: Required IQI:	2% (2-2T)																																																																																																																																	
Aktivitás: Activity:	0,4 TBq	Film típusa: Film Type:	FOMA R5																																																																																																																																	
Filmszerkezet: Film processing:	Kézi: Manual:	Automata: Automatic:	X																																																																																																																																	
			Fóliafajta és vastagság: Screen type and thick:																																																																																																																																	
			Pb 0,027																																																																																																																																	
<table border="1"> <thead> <tr> <th rowspan="2">Megnevezés Designation</th> <th rowspan="2">Méret Size</th> <th rowspan="2">Férvetés száma: Number of radiographs</th> <th rowspan="2">Jegyzőkönyv mérete: Recorded thickness</th> <th rowspan="2">Sugárforrás film vastagság: Source-to-film distance</th> <th rowspan="2">Film és a tárgy méretei közötti távolság: Distance from source size of object to film</th> <th rowspan="2">Félsűrűség: Density</th> <th rowspan="2">Mégállagási idő: Expos. Time</th> <th rowspan="2">Vizsgáló: Inspector</th> <th rowspan="2">Eredmény: Result</th> <th colspan="6">Hibák/Defects</th> </tr> <tr> <th>Ciáz Porosity A</th> <th>Salak Slag B</th> <th>Kötés Lack of fusion C</th> <th>Gyök Lack of penetration D</th> <th>Repedés Crack E</th> <th>Felület Surface F</th> </tr> </thead> <tbody> <tr> <td>8083</td> <td>115/77</td> <td>4</td> <td>19</td> <td>96</td> <td>19</td> <td>2,4</td> <td>0,5</td> <td>A</td> <td>10,30 10b</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8084</td> <td>115/77</td> <td>4</td> <td>19</td> <td>96</td> <td>19</td> <td>2,4</td> <td>0,5</td> <td>A</td> <td>10,30 10b</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8085</td> <td>115/77</td> <td>4</td> <td>19</td> <td>96</td> <td>19</td> <td>2,4</td> <td>0,5</td> <td>A</td> <td>10,30 10b</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8086</td> <td>115/77</td> <td>4</td> <td>19</td> <td>96</td> <td>19</td> <td>2,4</td> <td>0,5</td> <td>A</td> <td>10,30 10b</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8087</td> <td>115/77</td> <td>4</td> <td>19</td> <td>96</td> <td>19</td> <td>2,4</td> <td>0,5</td> <td>A</td> <td>10,30 10b</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8088</td> <td>115/77</td> <td>4</td> <td>19</td> <td>96</td> <td>19</td> <td>2,4</td> <td>0,5</td> <td>A</td> <td>10,30 10b</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									Megnevezés Designation	Méret Size	Férvetés száma: Number of radiographs	Jegyzőkönyv mérete: Recorded thickness	Sugárforrás film vastagság: Source-to-film distance	Film és a tárgy méretei közötti távolság: Distance from source size of object to film	Félsűrűség: Density	Mégállagási idő: Expos. Time	Vizsgáló: Inspector	Eredmény: Result	Hibák/Defects						Ciáz Porosity A	Salak Slag B	Kötés Lack of fusion C	Gyök Lack of penetration D	Repedés Crack E	Felület Surface F	8083	115/77	4	19	96	19	2,4	0,5	A	10,30 10b								8084	115/77	4	19	96	19	2,4	0,5	A	10,30 10b								8085	115/77	4	19	96	19	2,4	0,5	A	10,30 10b								8086	115/77	4	19	96	19	2,4	0,5	A	10,30 10b								8087	115/77	4	19	96	19	2,4	0,5	A	10,30 10b								8088	115/77	4	19	96	19	2,4	0,5	A	10,30 10b							
Megnevezés Designation	Méret Size	Férvetés száma: Number of radiographs	Jegyzőkönyv mérete: Recorded thickness	Sugárforrás film vastagság: Source-to-film distance	Film és a tárgy méretei közötti távolság: Distance from source size of object to film	Félsűrűség: Density	Mégállagási idő: Expos. Time	Vizsgáló: Inspector											Eredmény: Result	Hibák/Defects																																																																																																																
									Ciáz Porosity A	Salak Slag B	Kötés Lack of fusion C	Gyök Lack of penetration D	Repedés Crack E	Felület Surface F																																																																																																																						
8083	115/77	4	19	96	19	2,4	0,5	A	10,30 10b																																																																																																																											
8084	115/77	4	19	96	19	2,4	0,5	A	10,30 10b																																																																																																																											
8085	115/77	4	19	96	19	2,4	0,5	A	10,30 10b																																																																																																																											
8086	115/77	4	19	96	19	2,4	0,5	A	10,30 10b																																																																																																																											
8087	115/77	4	19	96	19	2,4	0,5	A	10,30 10b																																																																																																																											
8088	115/77	4	19	96	19	2,4	0,5	A	10,30 10b																																																																																																																											

A filmszámok és varratszámok azonosak, beazonosításuk a megrendelőt terheli.
The numbers of the films and welds are identical, their identification is the task of the customer.


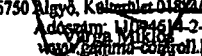
Vizsgálatot végezte:
Performed by: Ménesi L. - Szabó T.

Vizsgálat helye: Place of test:	Értékelté: Evaluated by:	Jóváhagyó: Approved by:
6750 Algyő, Gamma-Control Kft. Telephely	Ménesi István RT20101120107	GAMMA - CONTROL KFT. 6750 Algyő, Kálterutca 01884/14. hrsz. Adószám: 14946142-04 www.gamma-control.hu Tel: 06-30-2182640 Félőrs Vezér

Ez a jegyzőkönyv másolatban nem érvényes / Copying details is prohibited

8. változat.2013.07.16

19/10/13 12:48 Lap: 1

<p>A filmszámok és varratszámok azonosak, beazonosításuk a megrendelőt terheli. The numbers of the films and welds are identical, their identification is the task of the costumer.</p>		
<p>Vizsgálatot végezte: Performed by: Ménesi I. - Szabó T.</p>		
<p>Vizsgálat helye: Place of test:</p>	<p>Értékelte: Evaluated by:</p>	<p>Jóváhagyta: Approved by:</p>
<p>6750 Algyő, Gamma-Controll Kft. Telephely</p>	<p> Ménesi István RT20101120107</p>	<p> 6750 Algyő, Kelenhegyi út 14/A. hszr/2 Adószám: 1184514-2-06 www.gamma-controll.hu TEL: 06 30 270 2640</p>

Én a jegyzék anyv másolatán nem tesztelhet! / Copying details is prohibited!



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

RONCSOLÁSMENTES ANYAGVIZSGÁLÓ TANÚSÍTVÁNY
(Certificate of NDT personnel)

A tanúsított neve:
(The name and forename of the certificated individual):

Ménesi István

Születési hely/idő:
(Place and date of birth):

Szentes, 1988. 09. 06.

Azonosító szám: **RT20101120107**
(Identification No.):

A tanúsított személy aláírása
(The signature of the certificated individual)

Vizsgálati eljárás(ok):
(The NDT method(s)):

Radiográfiai anyagvizsgálat
(Radiographic testing)

Ipari terület:
(Industrial sector):

Készülékek, berendezések, létesítmények vizsgálata EM
(Pre and in-service testing of equipment, plant and structure)

Termék terület(ek):
(Product sector(s)):

(c), (w)

A minősítés fokozata:
(The level of certification):

RT2

A tanúsítás és kiadásának időpontja:
(The date of certification and its issue):

Budapest, 2012. 03. 28.

A tanúsítás érvényes:
(The date upon which certification expires):

2017. 03. 27.

Tanúsító Testület nevében
(On behalf of certifying body)

Vizsgáló
(Examiner)

Az ipari és/vagy termék terület érvényesség kiterjesztve:
(The industrial and/or product sector has been expanded to):

Dátum (Date):

A tanúsítás érvényessége
(Renewed the validity of the certification until (MSZ EN 473 9.):)

-ig megújítva (MSZ EN 473 9.):

Dátum (Date):

Tanúsító Testület nevében
(On behalf of certification body)

A Magyar Hegesztéstechnikai és Anyagvizsgáló Egyesülés, mint „a Nemzeti Akkreditáló Testület által a NAT-5-0013/2010 számon akkreditált személytanúsító szervezet” a nevezett személyt tanúsítja az MSZ EN 473 szerint eredményes vizsgálata alapján a fentiek szerint:
(The Hungarian Association of Welding Technology and Material Testing as an “accredited certification body for person” by National Accreditation Board (under No. NAT-5-013/2010”, on the basis of his/her successful examination under the standard MSZ EN 473, hereby certifies the named individual according to the above:)

* c - öntvények (castings); f - kovácsolt termékek (forgings); w - hegesztett kötések-termékek (welded products); t - csövek (tubes); wp - alakított termékek (wrought products); p - műanyag termékek (plastics products); k - kompozitok (composites products).

RT20101120107



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

Meghatalmazzuk a tanúsítvány tulajdonosát, hogy vizsgálatokat végezzen és azok eredményéért felelősséget vállaljon.
(MSZ EN 473 3.21)

(The holder of this certificate has been authorized to perform tests and take responsibility for the test results. (MSZ EN 473 3.21))

Munkáltató aláírása:
(Signature of the employer:)

GAMMA CONTROLL Kft.
6126 Szeged, Tüzér utca 1-2-06
Adószám: 11094614-2-06
OTP Bank: 11735005-20406154
www.gamma-control.hu
Tel: 06-30-218-2640

Dátum:
(Date:)

2012. 09. 19.

Folyamatos munkavégzés igazolása (MSZ EN 473 9.) (Evidence of continued work activity (MSZ EN 473 9.))			
Sorsz.	Munkáltató aláírása (Signature of the employer)	Ph. "GAMMA CONTROLL" Anyagvizsgáló és Minőségirányítási Kft. "GAMMA" Anyagvizsgáló és Minőségirányítási Kft.	Dátum (Date)
1.			2012. 09. 19.
2.			2013. 01. 09.
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Kiegészítések:
(Additional remarks:)

ContiTech Rubber Industrial Kft. Szeged/Hungary		Examination record Vizsgálati jegyzőkönyv Liquid penetrant examination Festékdifúziós vizsgálat <input checked="" type="checkbox"/> Magnetic particle examination Mágneses repedésvizsgálat		Record No. Jegyzőkönyv száma : 1222/13	
Manufacturer Gyártó		JE-ZO Kft.		Serial No. Gyári szám	
Customer Megrendelő		ContiTech Rubber Industrial Kft.		8083-8090	
Object Tárgy		coupling(s)		Drawing No. Rajzszám	
Quantity Mennyiség		8 pc(s)		MT 3121-3000	
Requirements Követelmények		ASTM E 709		Material Anyagminőség	
Written Procedure No. Vizsgálati eljárás száma		QCP-11-1		AISI 4130	
				Extent of examination Vizsgálat terjedelme	
				100 % outside	
				Heat treatment Hőkezelés	
				yes	
				Welder: Hegesztő:	
				Szabó T.	
Liquid penetrant examination /Folyadékbehatolósos vizsgálat					
Penetrant Behatoló anyag		Remover Tisztító		Developer Előhívó	
Dwell time Behatolási idő		Drying Szárítás		Developing time Előhívási idő	
Surface temperature A felület hőmérséklete		Surface condition Felület állapota		Lighting intensity Megvilágítás	
Magnetic particle examination/Mágnesezhető poros vizsgálat					
Equipment type Készülék típusa		TSW 1000		Testing material Vizsgáló anyag	
Black light type UV-A lámpa típusa		Superlight C 10A-HE		MR 76F	
Surface temperature A felület hőmérséklete		23 °C		Magnetizing current Mágnesező áram	
				1000 A	
				Field strength checking Téroró mérő	
				Berthold disc	
				Field strength Téroró	
				4,2 kA/m	
				Lighting intensity Megvilágítás	
				1000 µW/cm²	
Test results Eredmények :					
satisfactory megfelelő.....8..... pc(s)/db					
not accepted nem megfelelő.....-..... pc(s)/db					
Performed by NDE Level II. Vizsgálatot végezte			Revised by Q.C. manager Ellenőrizte – MEO vezető		
Signature Aláírás			Signature Aláírás		
Place/Date Kelt			Place/Date Kelt		
Szeged, 04.11.2013.			Szeged, 04.11.2013.		



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

RONCSOLÁSMENTES ANYAGVIZSGÁLÓ TANÚSÍTVÁNY
(Certificate of NDT personnel)

Azonosító szám: **MT20103010506Ú**
(Identification No.):

A tanúsított neve:
(The name and forename of
the certificated individual):
Születési hely/ideje:
(Place and date of birth):

Oravec Gábor

Szeged, 1958. 07. 07.

A tanúsított személy aláírása
(The signature of the certificated individual)

Vizsgálati eljárás(ok):
(The NDT method(s)):

**Mágnesezhető poros anyagvizsgáló
(Magnetic particle testing)**

Ipari terület:
(Industrial sector):

**Fémfeldolgozás MM
(Metal manufacturing)**

Termék terület(ek):
(Product sector(s)):

(c), (f), (w), (wp)

A minősítés szintje:
(The level of certification):

MT2

A tanúsítás és kiadásának időpontja:
(The date of certification and its issue):

Budapest, 2012. 02. 21.

A tanúsítás érvényes:
(The date upon which certification expires):

2017. 02. 20.

Tanúsító Testület nevében
(On behalf of certifying body)

Vizsgáztató
(Examiner)

Az ipari és/vagy termék terület érvényesség kiterjesztve:
(The industrial and/or product sector has been expanded to):

Dátum (Date):

Tanúsító Testület nevében
(On behalf of certifying body)

A tanúsítás érvényessége
(Renewed the validity of the certification until (MSZ EN 473 9.):)

-ig megújítva (MSZ EN 473 9.):

Dátum (Date):

Tanúsító Testület nevében
(On behalf of certification body)

A Magyar Hegesztéstechnikai és Anyagvizsgáló Egyesülés, mint „a Nemzeti Akkreditáló Testület által a NAT-5-0013/2010 számon akkreditált személytanúsító szervezet” a nevezett személyt tanúsítja az MSZ EN 473 szerint eredményes vizsgálja alapján a fentiek szerint:
(The Hungarian Association of Welding Technology and Material Testing as an “accredited certification body for person an by National Accreditation Board (under No. NAT-5-013/2010”, on the basis of his/her successful examination under the standard MSZ EN 473, hereby certifies the named individual according to the above:)

* c - öntvények (castings); f - kovácsolt termékek (forgings); w - hegesztett kötések-termékek (welded products); t - csövek (tubes); wp - alakított termékek (wrought products); p - műanyag termékek (plastics products); k - kompozitok (composites products).

MT20103010506U



MAGYAR HEGESZTÉSTECHNIKAI ÉS ANYAGVIZSGÁLATI EGYESÜLÉS
(HUNGARIAN ASSOCIATION OF WELDING TECHNOLOGY AND MATERIAL TESTING)
(Certification Body)

* Meghatalmazzuk a tanúsítvány tulajdonosát, hogy vizsgálatokat végezzen és azok eredményéért felelősséget vállaljon.
(MSZ EN 473 3.21)
(The holder of this certificate has been authorised to perform tests and take responsibility for the test results. (MSZ EN 473 3.21))

Munkáltató aláírása:
(Signature of the employer:)

[Handwritten signature]

Dátum: 2012. 02. 21.
(Date:)

Folyamatos munkavégzés igazolása (MSZ EN 473 9.) (Evidence of continued work activity (MSZ EN 473 9.))			
Sorsz.:	Munkáltató aláírása (Signature of the employer)	Ph. CONTITECH RUBBER Industrial Kft. Quality Control Dept. (1)	Dátum (Date)
1.	<i>[Handwritten signature]</i>		2013. 01. 24.
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Kiegészítések:
(Additional remarks:)

Bekaert Hlohovec a.s.
Mierová 2317
92028 Hlohovec / Slovakia
Tel.: 00421337363111
Fax: 00421337422742

505760

STEELCORD
MANUFACTURER : BKHL

Page : 1 / 1

Certificate of Analysis

Delivery No. : 4046181212

Contitech Rubber Industrial Kft.
CONTITECH RUBBER IND SZEGED
Budapesti út 10
H-6728 SZEGED

Sales Order 3046059220/10
Purchase Order 32260330
Inspection lot 090000200865/000001
Batch 3500245379
Date produced 01.07.2013
Date COA 09.08.2013
Spools 32 delivered from a batch of 32 produced
Units 18 delivered from a batch of 18 produced
Delivery net Qty. 10517 KG
Material Description Zinc coated steelcord 1X24DW/3.8 NT 20/36 ZZ B850
5000 M
Lay direction ZZ
Lay length 20/36

Spec customer Contitech Rubber Industrial Kft.
Your code 14-18-07/1
Your spec REV.3 / 15.01.2002
Our Spec H207297 / 26.10.2012

Tests			Specs		Results		
Test	Procedure	Unit	Min	Max	Avg. N	Min ind Max ind	
Cord diameter	RA12-100	mm	3,6000	3,4200 3,7800	3,6845 6	3,6840 3,8930	
Linear density	RA30-110	g/m	65,000	61,700 68,300	65,632 6	65,300 65,870	
Cord breaking strength	RA30-203	N		17900,0	19337,0 6	19087,0 18584,0	
Cord elongation at break	RA30-203	%		2,50	2,98 6	2,80 3,15	
Zinc D1	RA40-741	g/m2		32,000	40,057 6	37,870 44,630	
Zinc D2	RA40-741	g/m2		44,000	48,788 6	45,350 55,100	
Residual torsions	RA30-150	Nt	0,000	-3,000 3,000	-0,250 6	-0,500 0,000	

Comments :

D1: 0,54

D2: 0,73

Nominal Chemical composition of High Grade Oxysteel:

%Carbon : 0.70-0.90

%Manganese: 0.40-0.60

%Silicon: <0.230

%S: <0.011

%P: <0.012

Microstructure/Texture: Metallurgically the texture is known as a highly drawn, fine ferritic structure.



Terninox S.p.A. con Unico Socio
 11111. Società del gruppo ThyssenKrupp Acciai Speciali
 P.IVA 00092070355



Azienda con sistema di
 gestione certificato da IGQ
 secondo ISO: 9001

PAG 1/1

Specifica/Specification:

EN 10088-2

Destinatario/Receiver:

ACCIAI VENDER S.P.A.

VIA A. NOBEL, 3/A

43100 PARMA

Cliente/Customer: ACCIAI VENDER S.P.A.

VIA A. NOBEL, 4/A Q.RE IND.LE S.P.I.P

43100 PARMA

Acciaio/Steel: 304PS

Conforme a EN.10204/ 3.1

n°: 63892/2012

DDT/DEL. NOTE: 16753 DEL/OF: 24/05/2012 Ordine/order Terninox: P04249 Ord. Cliente/Customer:

Matricola Serial Number	Pos Item	Tipo Prodotto Product Type	Fin	Descrizione Description	Dimensioni(mm) Dimensions(mm)	Pezzi Pieces	Weight (Kg)	Rif. Cli. Cust. Ref.	Colata Heat	NIM
C47997 <i>713882</i>	22	COIL	2B		0.60 x 460.0	1	6040		0431359	310727
C54489 <i>713887</i>	27	NASTRI STRETTI	BA		0.79 x 284.7	1	1290		0431741	324612

IL MATERIALE SOPRA ELENCATO E' STATO DIMENSIONALMENTE E/O SUPERFICIALMENTE TRASFORMATO DA TERNINOX SENZA ALTERARNE LE CARATTERISTICHE MECCANICHE E CHIMICHE
 THE MATERIAL DESCRIBED ABOVE HAS BEEN DIMENSIONALLY AND/OR SUPERFICIALLY TRANSFORMED BY TERNINOX WITHOUT CHANGING THE MECHANICAL AND CHEMICAL FEATURES

Analisi di colata/Chemical Composition

Colata/Heat	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	N %	Ti %	Cu %	Nb %	B %	Al %	Co %
0431359	0.045	0.300	1.290	0.027	0.001	18.000	9.040	0.260	0.024		0.310				
0431741	0.048	0.310	1.420	0.029	0.001	18.090	9.050	0.320	0.019		0.370				

Risultati delle prove/Test Result (1N/mm²=1 M Pa)

NIM	PRELIEVO IN SERRA DO	Caric. unit. snervamento Yield strenght		Caric. unit. Rottura Tensile strength	Allungamento a rottura Ultimate elongation (%)			Durezza Hardness	Piega a Bend To 180°	Trat. termico Risc. di solub./ heat treatment of annealing for solubiliz.	Resistenza alla corrosione intergranulare secondo / Resistance to corrosion intergranulare	Grano Grain
		Rp02% N/mm²	Rp1% N/mm²	Rm N/mm²	Lo =2"	Lo =80	Lo =A5	HRB				
310727	T	245	271	607		60.7		70.5		1050	EN ISO 3651-2	
	C	230	261	604		62.8		66.0				
324612	T	235	262	588		62.4		70.5		1050	EN ISO 3651-2	
	C	237	267	605		62.1		72.0				

I dati chimici e fisici sopra riportati sono tratti dal certificato di qualità del nostro fornitore qualificato e ad originale o in via, possibile a disposizione su richiesta.
 Chemical and physical data reported above are extracted from quality certificate emitted from our qualified supplier; the original document is in our posses and it is available upon your request.

Certifichiamo che i prodotti sopra elencati sono conformi alle prescrizioni e forniamo/We certify that products listed above are compliant to order prescriptions

(1) Sampling
 T = Teste - Top
 C = Code - Bottom

(2) Sens
 T = Transversale - Transverse
 L = Longitudinale - Longitudinal

ITAL INOX
 HUNGARIA KFT.
 1104 Budapest, Lakatos út 42/A.
 Tel: 0671-1050, 201-4230 Fax: 250-5067
 Add: tel: 12141537-2-43
 BAKI SA. 10000080-00000005-01301111

COMPLIES WITH ED 2000/53/EC

Certificato emesso automaticamente

Data/Date 24/05/2012

R. GOVONI

25 mq. c. m. m.

OUTSIDE STRIPWOUND TUBE

CONTITECH RUBBER
 Industrial Kft.

No: QC-DB- 651 /2013
 Page: 41 / 44

500/124
 506320



MKEH
Metrológiai Hatóság/Metrology Authority
Mechanikai Mérések Osztály
Section of Mechanical Measurements
BUDAPEST XII., NÉMETVÖLGYI ÚT 37-39.
1535 Budapest, Pf. 919
Telefon: 458-5800
Telefax: 458-5927

Ügyiratszám / File No.: MKEH-MH/00287-003/2013/NY
Bizonyítványszám / Certificate No.: NYO - 0008/2013
Hivatkozási szám / Reference No.: 32259470
Page 1/3 oldal
Kiadva / Issued
Budapest, 2013. 01. 28. / 28 01 2013

KALIBRÁLÁSI BIZONYÍTVÁNY
CALIBRATION CERTIFICATE

A kalibrálás tárgya: villamos kimenőjelű nyomásmérő
Object of calibration: electrical-output manometer
Gyártó / Manufacturer: AFRISO-EURO-INDEX GmbH
Típus / Type: DMU03 HD
Azonosító szám / Serial No.: 1518086
Műszaki adatok / Technical data: (0...2500) bar méréstartomány / measuring range (0...2500) bar
(4...20) mA kimenőjel tartomány / output signal range (4...20) mA

Kalibrálásra bemutatta: ContiTech Rubber Industrial Kft.
Customer: 6728 Szeged, Budapesti út 10.

A kalibrálás helye és ideje: Magyar Kereskedelmi Engedélyezési Hivatal
Place and date of calibration: Hungarian Trade Licensing Office
Metrológiai Hatóság, Mechanikai Mérések Osztály
Metrology Authority, Section of Mechanical Measurements
Budapest, 2013.01.24.

A kalibrálást végezte:
Calibrated by: Szaulich Dénes
metrológus / metrologist

A kalibrálásnál alkalmazott etalonok:
Standards used for the calibration:

Megnevezés: Designation:	Gyártó: Manufacturer:	Típus: Type:	Gyártási szám: Serial No.:	Bizonyítvány szám: Certificate No.:
tűlnyomás etalon / pressure standard	Budenberg	283	20603	NYO-0001/2013
digitális multiméter / digital multimeter	Keithley	2000	0597910	ELD-0014/2012
normál ellenállás / resistance standard	ZIP	P 331	117530	ELD-0021/2012
hőmérő / temperature measuring instr.	GANZ MM	DTH1	33656	Hőm-0296/2012

A mérési eredmények a nemzeti (nemzetközi) etalonra visszavezetettek.
The measuring results are traceable to national standards.

A kalibrálás módja:
Calibration method:

A kalibrálást a KE NYO-3-2002 számú kalibrálás eljárás alapján végeztük.
The calibration was done according to the calibration procedure No.: KE NYO-3-2002.



This certificate is consistent with Calibration and Measurement Capabilities (CMCs) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures (CIPM). Under the MRA, all participating institutes recognize the validity of each other's calibration and measurement certificates for the quantities, ranges and measurement uncertainties specified in Appendix C (for details see <http://www.bipm.org>).

A bizonyítvány az MKEH írásbeli engedélye nélkül csak teljes formájában és terjedelmében másolható!
The calibration certificate shall not be reproduced except in full, without written approval of MKEH!



MKEH

Metrológiai Hatóság/Metrology Authority
Mechanikai Mérések Osztály
Section of Mechanical Measurements

Ügyiratszám / File No.:

MKEH-MH/00287-003/2013/NY

Bizonyítványszám / Certificate No.:

NYO - 0008/2013

Page 2/3 oldal

A kalibrálás körülményei:**Calibration conditions:**

környezeti hőmérséklet / Ambient temperature

21,1 °C

a kalibrált eszköz helyzete / Position of the calibrated manometer

függőleges / vertical

a kalibrált eszköz tápfeszültsége / Supply voltage of the calibrated manometer

24V DC

nyomóközeg / Pressure transfer medium

olaj / oil

Mérési eredmények a (0...2500) bar nyomástartományban:**Results of the measurements in the pressure range of (0...2500) bar:**

Nyomás, névleges érték <i>Pressure, nominal value</i> bar	Áram-kimenőjel, névleges érték <i>Current-Output, nominal value</i> mA	Áram-kimenőjel, mért eltérés a helyes értéktől <i>Current-Output, measured deviation from the reference value</i> mA	Nyomás, mért eltérés a helyes értéktől <i>Pressure, measured deviation from the reference value</i> bar	Eredő mérési bizonytalanság <i>Expanded uncertainty of the measurement</i> bar
0	4,0	-0,0042	-0,7	2,6
250	5,6	-0,0002	0,0	
500	7,2	0,0029	0,5	
750	8,8	0,0050	0,8	
1000	10,4	0,0063	1,0	
1250	12,0	0,0053	0,8	
1500	13,6	0,0033	0,5	
1750	15,2	-0,0003	-0,1	
2000	16,8	-0,0052	-0,8	
2250	18,4	-0,0117	-1,8	
2500	20,0	-0,0192	-3,0	

Mérési bizonytalanság: A mérési eredmény(ek) mellett közölve.*Uncertainty of measurement:* See next to the results of the measurements.

A közölt kiterjesztett mérési bizonytalanság a standard bizonytalanságnak k kiterjesztési tényezővel szorzott értéke ($k = 2$), amely normális (Gauss) eloszlás feltételezésével közelítőleg 95%-os fedési valószínűségnek felel meg.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to coverage probability of approximately 95 %.

A mérési bizonytalanság tartalmazza az etalonból, a kalibrálás módszeréből, a környezeti feltételekből, a kalibrált mérőeszközből stb. eredő részbizonytalanságokat.

It contains the uncertainties of the standards, calibration method, environmental conditions, calibrated device etc.

A standard bizonytalanság meghatározása az EA-4/02 (Expression of the Uncertainty of Measurement in Calibration) kiadványnak megfelelően történt.

The standard uncertainty of measurement has been determined in accordance with the EA Publication EA 4/02 (Expression of the Uncertainty of Measurement in Calibration).

A bizonyítvány az MKEH írásbeli engedélye nélkül csak teljes formájában és terjedelmében másolható!
The calibration certificate shall not be reproduced except in full, without written approval of MKEH!



MKEH

Metrológiai Hatóság/Metrology Authority
Mechanikai Mérések Osztály
Section of Mechanical Measurements

Ügyiratszám / File No.:

MKEH-MH/00287-003/2013/NY

Bizonyítványszám / Certificate No.:

NYO - 0008/2013

Page 3/3 oldal

Bélyegzés:

Calibration mark:

A kalibrált mérőeszközön **K067662** azonosító számú kalibrálási bélyeget helyeztünk el.

We have placed a calibration stamp No.: K067662 on the calibrated instrument.

Megjegyzések:

Additional remarks:

Jelen bizonyítvány összhangban van a Nemzetközi Súly és Mértékügyi Bizottság (CIPM) Kölsönös Elismerési Megegyezése (MRA) C függeléke által tartalmazott kalibrálási és mérési képességekkel (CMCs). Az MRA minden aláíró intézete elismeri egymás kalibrálási és mérési bizonyítványait a C függelék szerinti mennyiségfajtákra, azok értéktartományaival és mérési bizonytalanságaival (közelebbit lásd: <http://www.bipm.org>)

This certificate is consistent with Calibration and Measurement Capabilities (CMCs) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures (CIPM). Under the MRA, all participating institutes recognize the validity of each other's calibration and measurement certificates for the quantities, ranges and measurement uncertainties specified in Appendix C (for details see <http://www.bipm.org>)

A kalibrálási bizonyítványban megadott értékek a mérőeszköznek a kalibrálás idejére és körülményeire jellemző adatai.

The measurement results show the metrological properties of the device during the time of the calibration under the environmental conditions listed above.

Az újrakalibrálás időpontját a felhasználó dönti el a mérőeszköz használatának és állapotának függvényében.

The date of the next calibration is decided by the user. It depends on the usage and the condition of the device.

A bizonyítvány kiadható / Approved by:



Kálóczi László
osztályvezető / Head of Section

Requested Exceptions

- Variance is requested to connect the BOP choke outlet to the choke manifold using a co-flex line (instead of using a 4" OD steel line) with a 10,000 psi working pressure that has been tested to 15,000 psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps.
- Variance is requested to allow Option of rig not capable of reaching TD presetting Surface, Drilling Plan will be same using Fresh Water fluid system.
- Variance is requested to wave any centralizer requirements on the 5-1/2" casing. Ameredev will utilize cement expansion additives in the cement slurry to maximize cement bond and zonal isolation.
- Variance is requested to wave any centralizer requirements on the 9-5/8" casing. Ameredev will utilize cement expansion additives in the cement slurry to maximize cement bond and zonal isolation.
- Variance is requested to allow Temporary Postponement of Operations on well to skid to adjacent well if multiple wells on drilling pad are drilled.
- Variance is requested to allow use of Multi-Bowl Well Head System.
- Variance is requested to allow adjustment of Casing Design Safety Factor on conditions that Ameredev keeps minimum of 1/3 casing capacity filled with OMW drilling fluids.
- Variance is requested to allow 5M Annular Preventer on 10M BOPE System to drill Production Interval. (Supporting Documentation Attached)



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

SUPO Data Report

03/25/2019

APD ID: 10400031765

Submission Date: 08/03/2018

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

JUNIPER_FED_COM_25_36_34_081H__WELL_PAD_ACCESS_MAP_REV_20190205145713.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

JUNIPER_FED_COM_25_36_34_081H__WELL_PAD_ACCESS_MAP_REV_20190205145733.pdf

Juniper_Pimento_Road_20190205145743.pdf

New road type: RESOURCE

Length: 4442

Feet

Width (ft.): 30

Max slope (%): 2

Max grade (%): 2

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: Crowned and Ditched

New road access plan or profile prepared? NO

New road access plan attachment:

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Grader

Access other construction information: NM One Call (811) will be notified before construction starts.

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Crowned and Ditched

Road Drainage Control Structures (DCS) description: Crowned and Ditched

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

JUNIPER_FED_COM_25_36_34_081H__ONE_MI_RAD_EXIST_WELLS_20190205145828.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: A multiple well pad will be located on section 3, and will measure 400'x500'. The top 6" of soil and brush will be stockpiled south of the well pad. A buried 4" poly flowline (750 psi maximum) will be run approximately 570' from the Juniper Fed Com 25 36 34 081H to the Juniper/Pimento CTB north of the well pad. A 20' pipeline ROW containing three buried 12" poly water lines (200 psi maximum) will be run from the Juniper/Pimento CTB to tie into existing water lines at the Firethorn CTB. The overall length of disturbance for the new water lines will be approximately 4,857'. A power line will be run parallel to the water line and will connect into the power line at the Firethorn CTB. The power

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

line will be approximately 4,857'. The Juniper/Pimento CTB will be 500'x525' and will include a separator, heat exchanger, VRU, VRT, meter run and a tank battery. The new production facility will have a secondary containment structure that is constructed to hold the capacity of 1-1/2 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Production Facilities map:

JUNIPER_FED_COM_25_36_34_081H__FACILITIES_MAP_REV_20190205145908.pdf

BO_JUNIPER_FED_COM_BATTERY_SITE_REV1_20190205145920.pdf

EP_JUN_PIM_1S_FLOWLINE_SEC_3_S_20190205145921.pdf

EP_JUN_PIM_1S_FLOWLINE_SEC_34_S_20190205145921.pdf

Juniper_CTB_Water_20190205145924.pdf

Juniper_CTB_Electric_20190205145923.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL,
INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE
CASING

Water source type: GW WELL

Describe type:

Source longitude:

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 20000

Source volume (acre-feet): 2.577862

Source volume (gal): 840000

Water source and transportation map:

JUNIPER_FED_COM_25_36_34_081H__WATER_WELLS_LIST_20190205150010.pdf

JUNIPER_FED_COM_25_36_34_081H__WATER_WELLS_MAP_REV_20190205150011.pdf

Water source comments: Water will be trucked or surface piped from existing water wells on private land. See attached list of available wells.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

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:

Section 6 - Construction Materials

Construction Materials description: NM One Call (811) will be notified before construction start. Top 6" of soil and brush will be stockpiled south of the pad. V-door will face west. Closed loop drilling system will be used. Caliche will be hauled from an existing caliche pit on private (EOG) land in N2NE4 29-25S-36E or an existing caliche pit on private (Beckham) land in S2SW4 19-25S-36E or a proposed caliche pit on state land in S2SE4 11-26S-36E.

Construction Materials source location attachment:

JUNIPER_FED_COM_25_36_34_081H__CALICHE_MAP_REV_20190205150040.pdf

JUNIPER_FED_COM_25_36_34_081H__WELL_SITE_DIAGRAM_20190205150041.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill cuttings, mud, salts, and other chemicals

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel tanks

Safe containmant attachment:

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

Disposal type description:

Disposal location description: R360's state approved (NM-01-0006) disposal site at Halfway, NM

Reserve Pit

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.)

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Steel tanks on pad

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

JUNIPER_FED_COM_25_36_34_081H__WELL_SITE_DIAGRAM_20190205150131.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: JUNIPER

Multiple Well Pad Number: 081H

Recontouring attachment:

JUNIPER_FED_COM_25_36_34_081H__WELL_SITE_DIAGRAM_20190205150144.pdf

Drainage/Erosion control construction: Crowned and ditched

Drainage/Erosion control reclamation: Harrowed on the contour

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Well pad proposed disturbance (acres): 4.59
Road proposed disturbance (acres): 3.06
Powerline proposed disturbance (acres): 2.23
Pipeline proposed disturbance (acres): 0.39
Other proposed disturbance (acres): 6.03
Total proposed disturbance: 16.3

Well pad interim reclamation (acres): 0.79
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 0.79

Well pad long term disturbance (acres): 3.8
Road long term disturbance (acres): 3.06
Powerline long term disturbance (acres): 2.23
Pipeline long term disturbance (acres): 0.39
Other long term disturbance (acres): 6.03
Total long term disturbance: 15.51

Disturbance Comments:

Reconstruction method: Interim reclamation will be completed within 6 months of completing the well. Interim reclamation will consist of shrinking the pad 17% (.79 acre) by removing caliche and reclaiming 40' wide swaths on the south and west sides of the pad. This will leave 3.8 acres for producing three wells, with tractor-trailer turn around. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owner's requirements.

Topsoil redistribution: Enough stockpiled topsoil will be retained to cover the remainder of the pad when the well is plugged. New road will be similarly reclaimed within 6 months of plugging. Noxious weeds will be controlled.

Soil treatment: None

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

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: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: To BLM standards

Weed treatment plan attachment:

Monitoring plan description: To BLM standards

Monitoring plan attachment:

Success standards: To BLM satisfaction

Pit closure description: No pit

Pit closure attachment:

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: PIPELINE

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: OTHER

Describe: Powerline

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: AMEREDEV OPERATING LLC

Well Name: JUNIPER FED COM 25 36 34

Well Number: 081H

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: On-site inspection was held with Jeff Robertson (BLM) on 11/28/17. Ameredev made a donation with the MOU fund in lieu of an archaeology report.

Other SUPO Attachment

JUNIPER_FED_COM_25_36_24_081H__Owner_Agreement_Letter_20180629125254.pdf

JUNIPER_FED_COM_25_36_34_081H__SUPO_REV_20190204_20190205150328.pdf

SECTION 4, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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

P.O.B. LINE A
X=868011.75
Y=394270.01

LEGEND

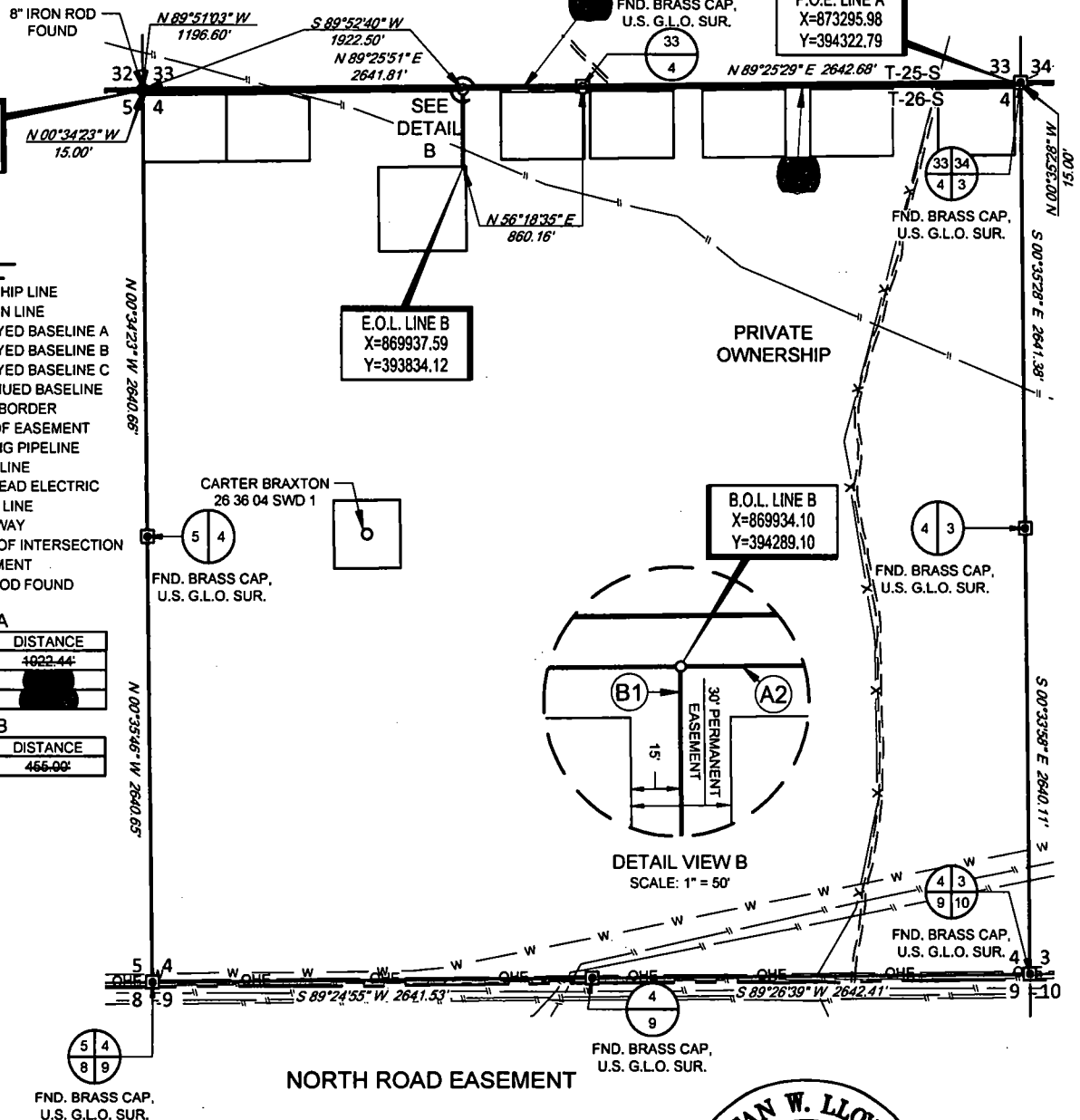
- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE A
- SURVEYED BASELINE B
- SURVEYED BASELINE C
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- EXISTING PIPELINE
- FENCE LINE
- OHE OVERHEAD ELECTRIC
- W WATER LINE
- ROAD WAY
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

LINE TABLE A

LINE	BEARING	DISTANCE
A4	N 89°26'54" E	4022.44'

LINE TABLE B

LINE	BEARING	DISTANCE
B4	S 89°26'34" E	466.99'



Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 6194.49 feet or 375.42 rods, containing 4.27 acres more or less.

AMEREDEV
AMEREDEV OPERATING, LLC



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX: (817) 744-7554
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 787-1853 • FAX: (432) 682-1743
WWW.TOPOGRAPHIC.COM



Stan W. Lloyd, P.S. No. 19642
JULY 13, 2018

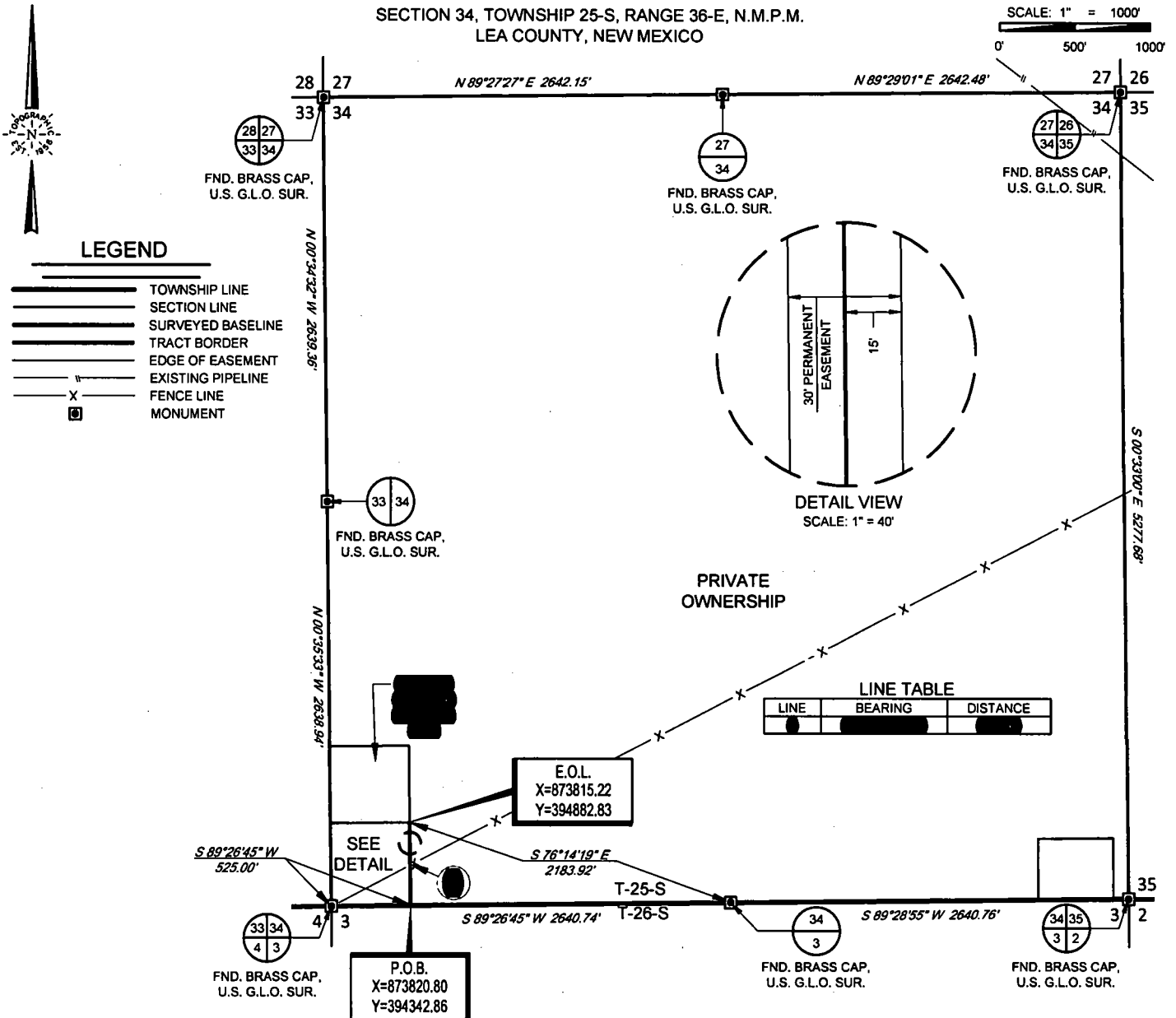
NORTH ROAD EASEMENT	REVISION:	
	MML	08/10/17
	MEH	08/15/17
DATE: 07/20/17	MML	11/03/17
FILE: EP_NORTH_ROAD_EASEMENT_SEC_4_REV7	ACC	02/19/18
DRAWN BY: MML	EAH	05/07/18
SHEET: 1 OF 1	BKG	07/13/18

NOTES:

1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING
6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT

SECTION 34, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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

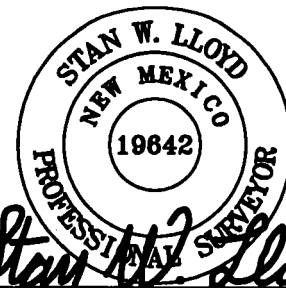


NORTH ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 540.00 feet or 32.73 rods, containing 0.37 acres more or less.

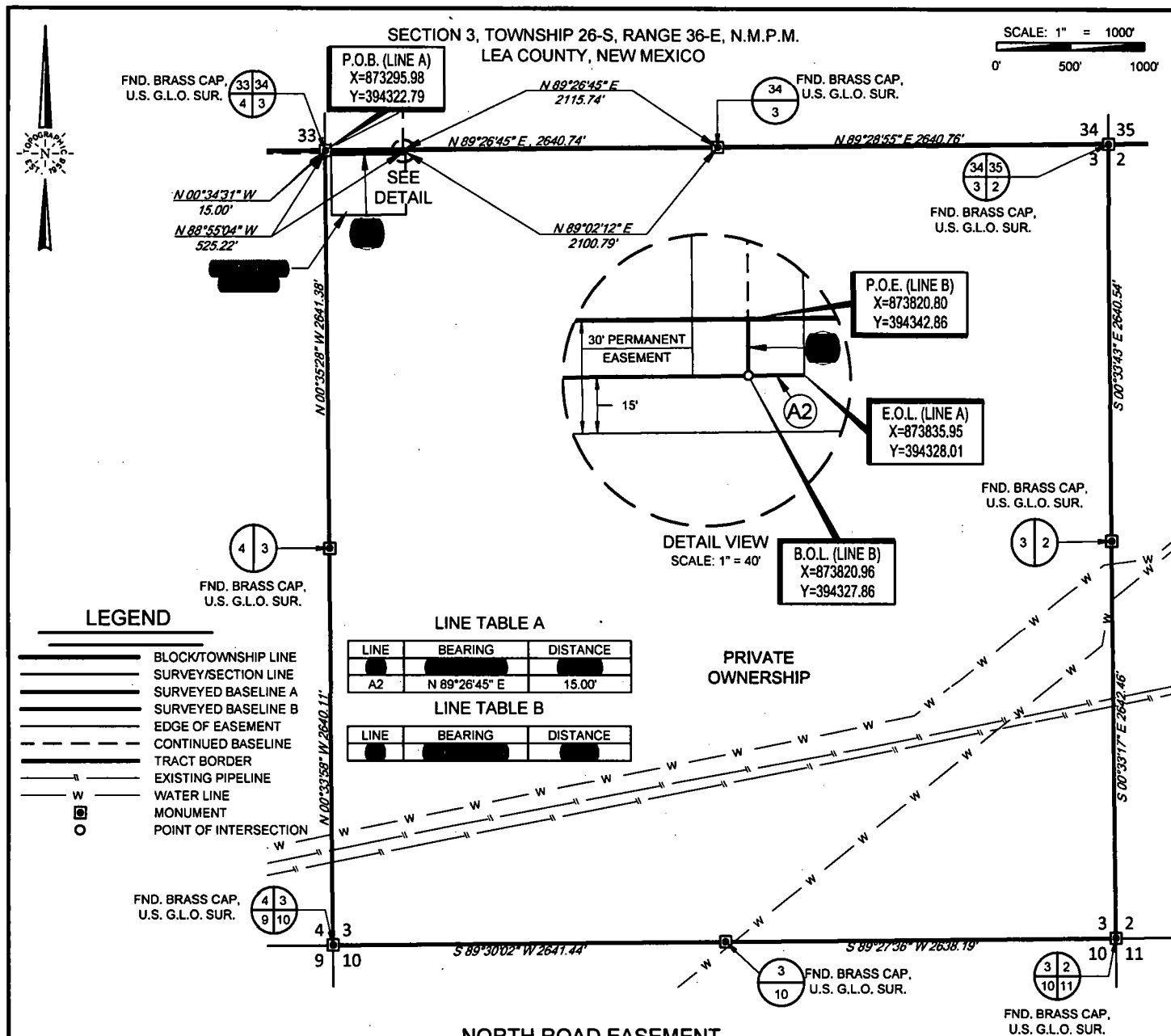
AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 787-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM



Stan W. Lloyd, P.S. No. 19642
MAY 09, 2018

NORTH ROAD EASEMENT	REVISION:		NOTES:
	IMU	05/09/2018	
DATE: 05/07/18			<p>1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"</p> <p>2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.</p> <p>3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.</p> <p>5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING</p> <p>6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT</p>
FILE: EP_NORTH_ROAD_EASEMENT_SEC_34_REV1			
DRAWN BY: EAH			
SHEET: 1 OF 1			



Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 555.00 feet or 33.64 rods, containing 0.38 acres more or less.

AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2603 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

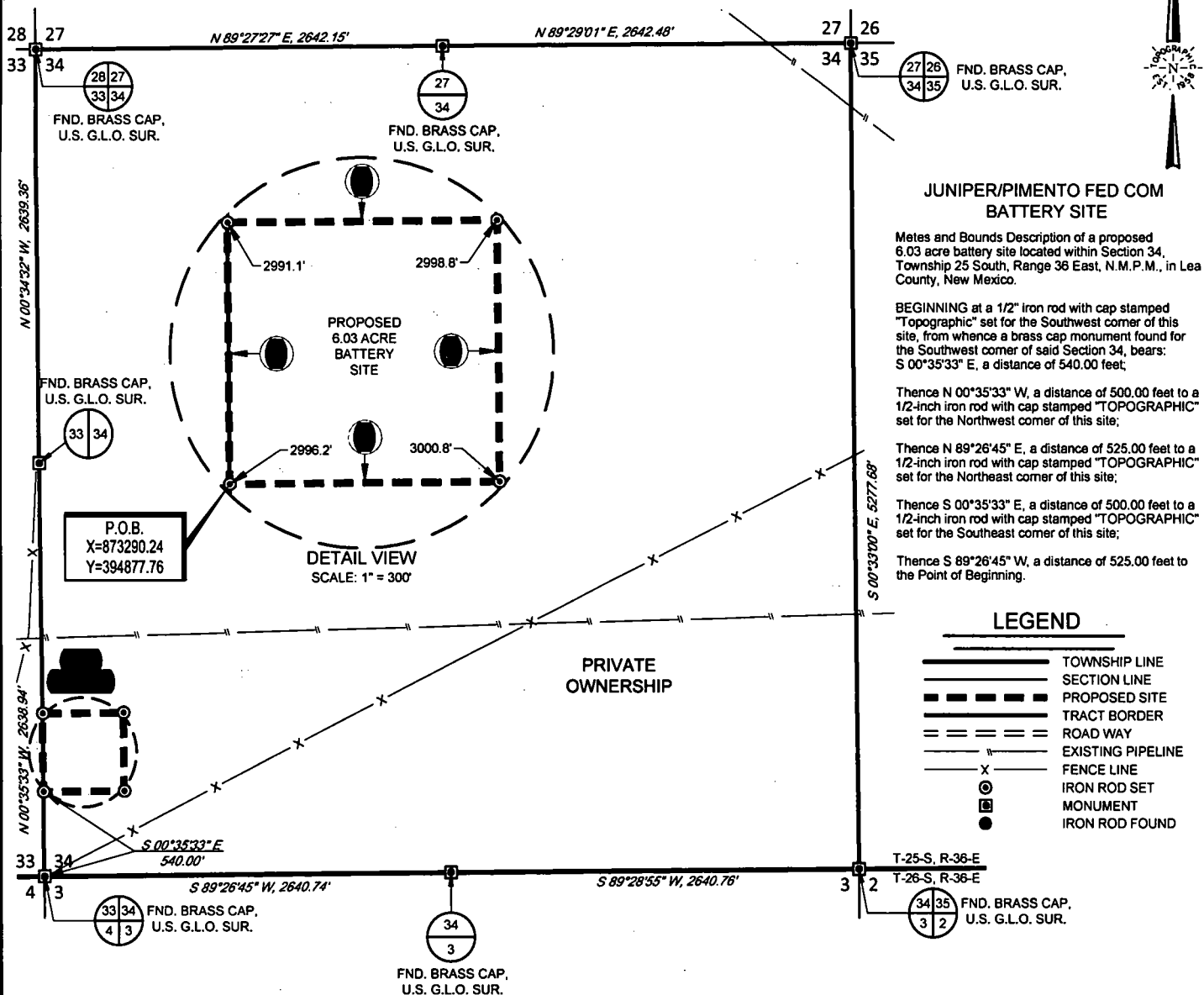


Stan W. Lloyd, P.S. No. 19642
JULY 12, 2018

NORTH ROAD EASEMENT	REVISION:		NOTES:
	IMU	05/09/2018	
DATE: 04/03/18	AMD	07/12/2018	1. ORIGINAL DOCUMENT SIZE: 8.5" X 11" 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET. 3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY. 4. P.O.B. = POINT OF BEGINNING 5. E.O.L. = END OF LINE
FILE: EP_NORTH_ROAD_EASEMENT_SEC_3_REV2			
DRAWN BY: GJU			
SHEET: 1 OF 1			

SCALE: 1" = 1000'

SECTION 34, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



JUNIPER/PIMENTO FED COM
BATTERY SITE

Metes and Bounds Description of a proposed 6.03 acre battery site located within Section 34, Township 25 South, Range 36 East, N.M.P.M., in Lea County, New Mexico.

BEGINNING at a 1/2" iron rod with cap stamped "Topographic" set for the Southwest corner of this site, from whence a brass cap monument found for the Southwest corner of said Section 34, bears: S 00°35'33" E, a distance of 540.00 feet;

Thence N 00°35'33" W, a distance of 500.00 feet to a 1/2-inch iron rod with cap stamped "TOPOGRAPHIC" set for the Northwest corner of this site;

Thence N 89°26'45" E, a distance of 525.00 feet to a 1/2-inch iron rod with cap stamped "TOPOGRAPHIC" set for the Northeast corner of this site;

Thence S 00°35'33" E, a distance of 500.00 feet to a 1/2-inch iron rod with cap stamped "TOPOGRAPHIC" set for the Southeast corner of this site;

Thence S 89°26'45" W, a distance of 525.00 feet to the Point of Beginning.

LEGEND

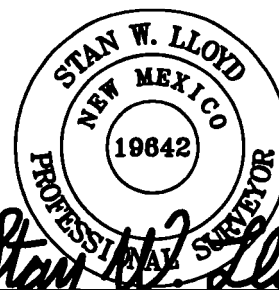
- TOWNSHIP LINE
- SECTION LINE
- PROPOSED SITE
- == TRACT BORDER
- == ROAD WAY
- EXISTING PIPELINE
- X FENCE LINE
- IRON ROD SET
- MONUMENT
- IRON ROD FOUND

LINE TABLE

LINE	BEARING	DISTANCE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		
91		
92		
93		
94		
95		
96		
97		
98		
99		
100		

AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM



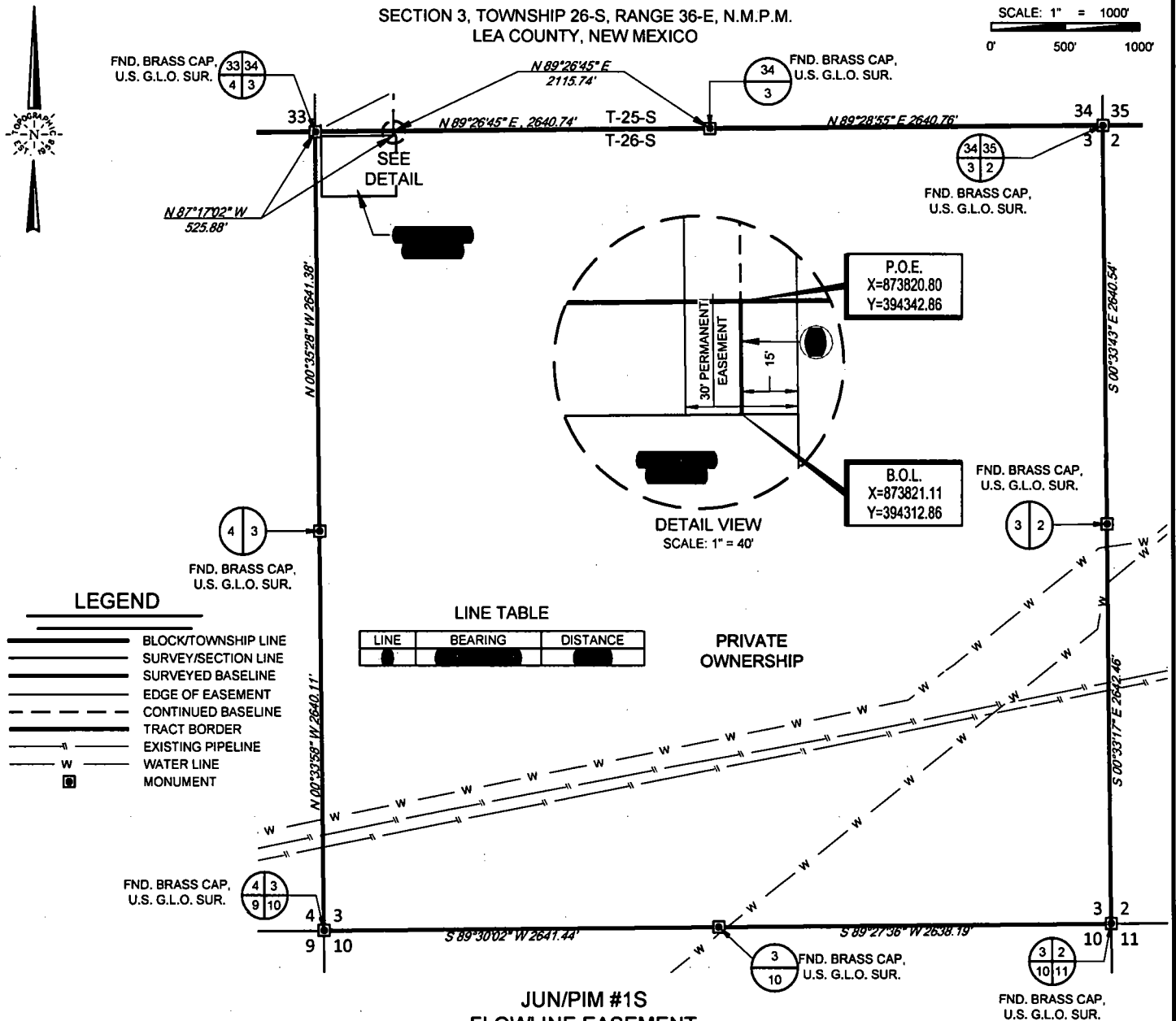
Stan W. Lloyd, P.S. No. 19842
MAY 09, 2018

JUNIPER/PIMENTO FED COM BATTERY SITE	REVISION:	
	IMU	05/09/2018
DATE: 11/16/2017		
FILE: 80_JUNIPER_FED_COM_BATTERY_SITE_REV1		
DRAWN BY: GJU		
SHEET: 1 OF 1		

- NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
 3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
 4. P.O.B. = POINT OF BEGINNING

SECTION 3, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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

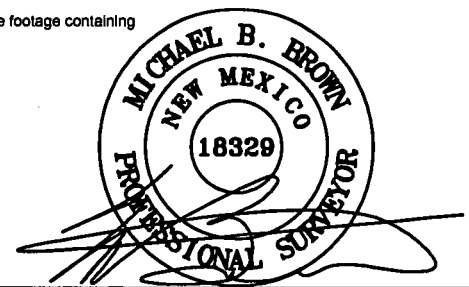


JUN/PIM #1S
FLOWLINE EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 30.00 feet or 1.82 rods, containing 0.02 acres more or less.

AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

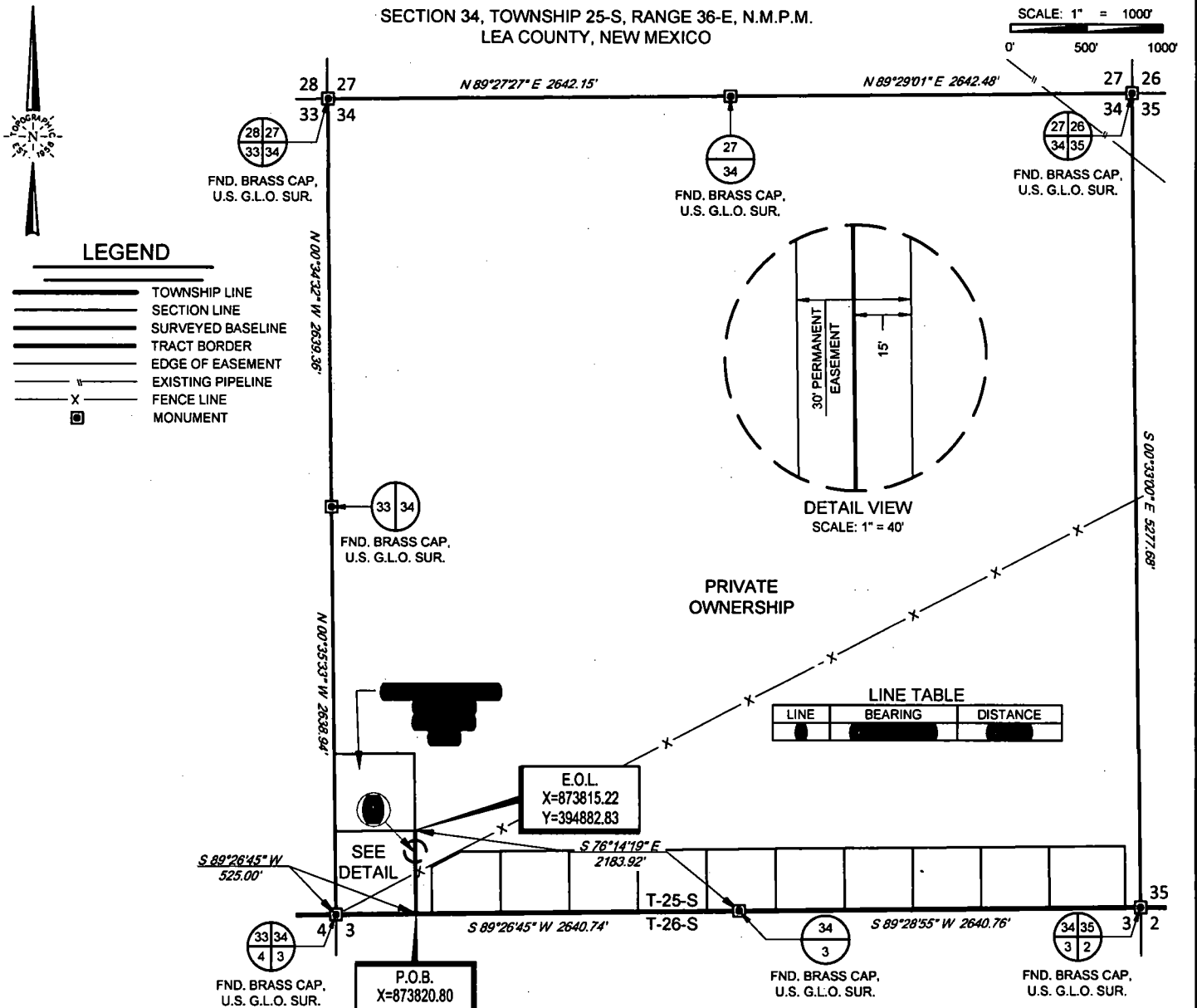


Michael Blake Brown, R.P.L.S. No 18329
JANUARY 2, 2019

JUN/PIM #1S FLOWLINE EASEMENT	REVISION:		NOTES:
	INT	DATE	
DATE: 01/02/19			<p>1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"</p> <p>2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.</p> <p>3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.</p> <p>4. P.O.B. = POINT OF BEGINNING</p> <p>5. E.O.L. = END OF LINE</p>
FILE:EP_JUN_PIM_1S_FLOWLINE_SEC_3			
DRAWN BY: ACC			
SHEET: 1 OF 1			

SECTION 34, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SCALE: 1" = 1000'

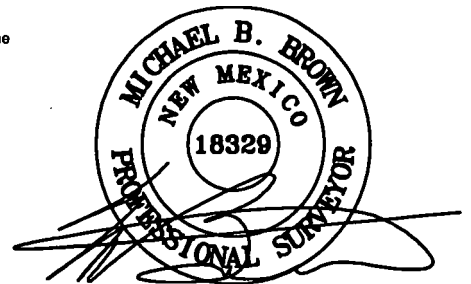


**JUN/PIM #1S
FLOWLINE EASEMENT**

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 540.00 feet or 32.73 rods, containing 0.37 acres more or less.

AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 787-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM



Michael Blake Brown, R.P.L.S. No 18329
JANUARY 2, 2019

JUN/PIM #1S FLOWLINE EASEMENT	REVISION:		NOTES:
	INT	DATE	
DATE: 01/02/19			<p>1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"</p> <p>2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.</p> <p>3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.</p> <p>5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING</p> <p>6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT</p>
FILE: EP_JUN_PIM_1S_FLOWLINE_SEC_34			
DRAWN BY: ACC			
SHEET: 1 OF 1			

SECTION 4, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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

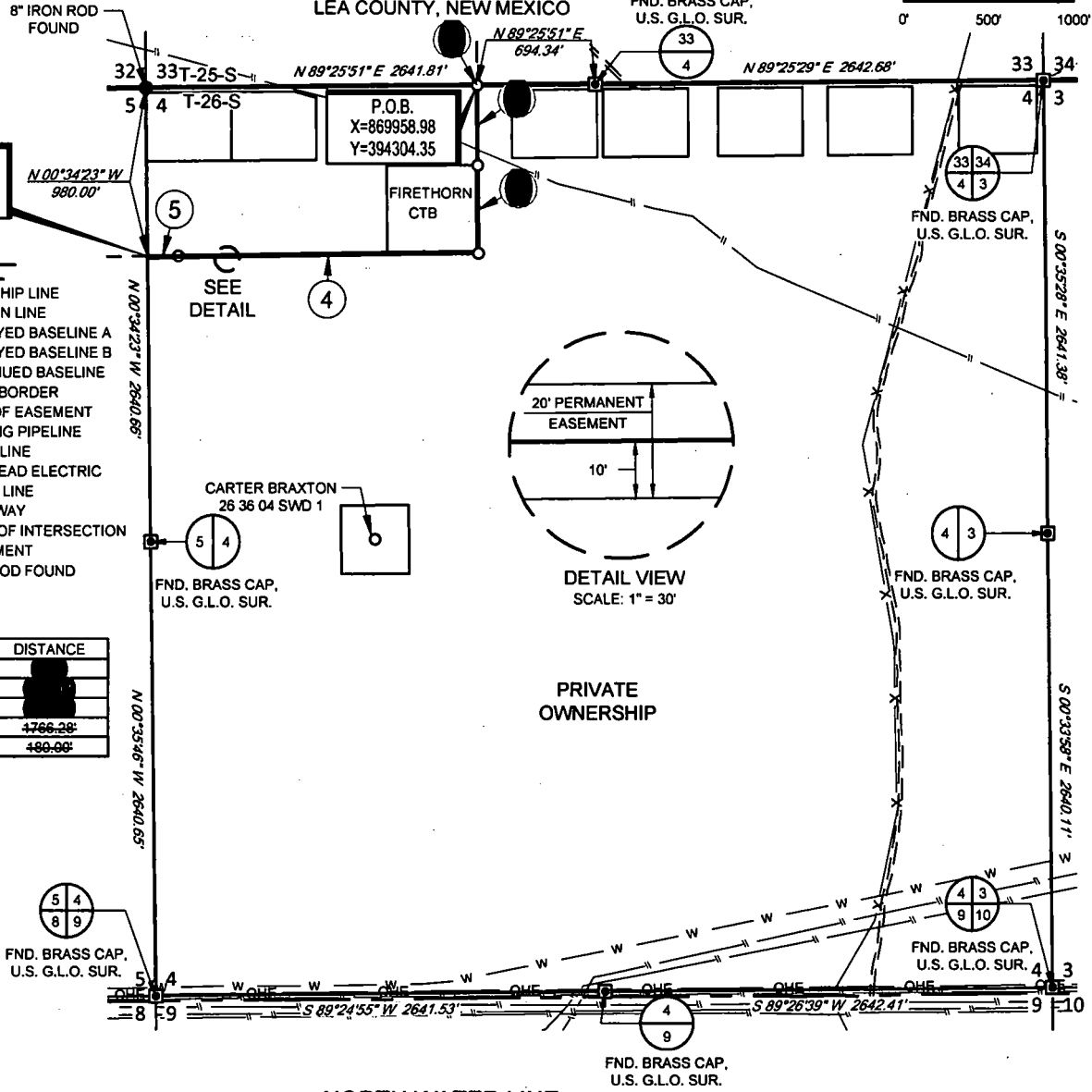
P.O.E.
X=868021.40
Y=393305.05

LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE A
- SURVEYED BASELINE B
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- EXISTING PIPELINE
- FENCE LINE
- OHE OVERHEAD ELECTRIC
- W WATER LINE
- ROAD WAY
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

LINE TABLE

LINE	BEARING	DISTANCE
4	S 89°26'54" W	4766.28'
5	S 89°26'54" W	480.00'



Being a proposed water line easement being 20 feet in width, 10 feet left and right of the above platted centerline total line footage containing 2928.28 feet or 177.35 rods, containing 1.34 acres more or less.

AMEREDEV

AMEREDEV OPERATING, LLC



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

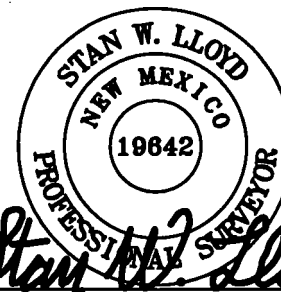
1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140

TELEPHONE: (817) 744-7512 • FAX (817) 744-7554

2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705

TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743

WWW.TOPOGRAPHIC.COM



Stan W. Lloyd, P.S. No. 19642

MAY 7, 2018

NORTH WATER LINE	REVISION:		NOTES:
	MML	07/28/17	
	MML	09/11/17	<p>1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"</p> <p>2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.</p> <p>3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.</p> <p>5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING</p> <p>6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT</p>
DATE: 07/20/17	AMD	11/04/17	
FILE: EP_NORTH_WATER_SEC_4_REV5	GJU	11/10/17	
DRAWN BY: MML	EAH	05/07/18	
SHEET: 1 OF 1			

SECTION 33, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

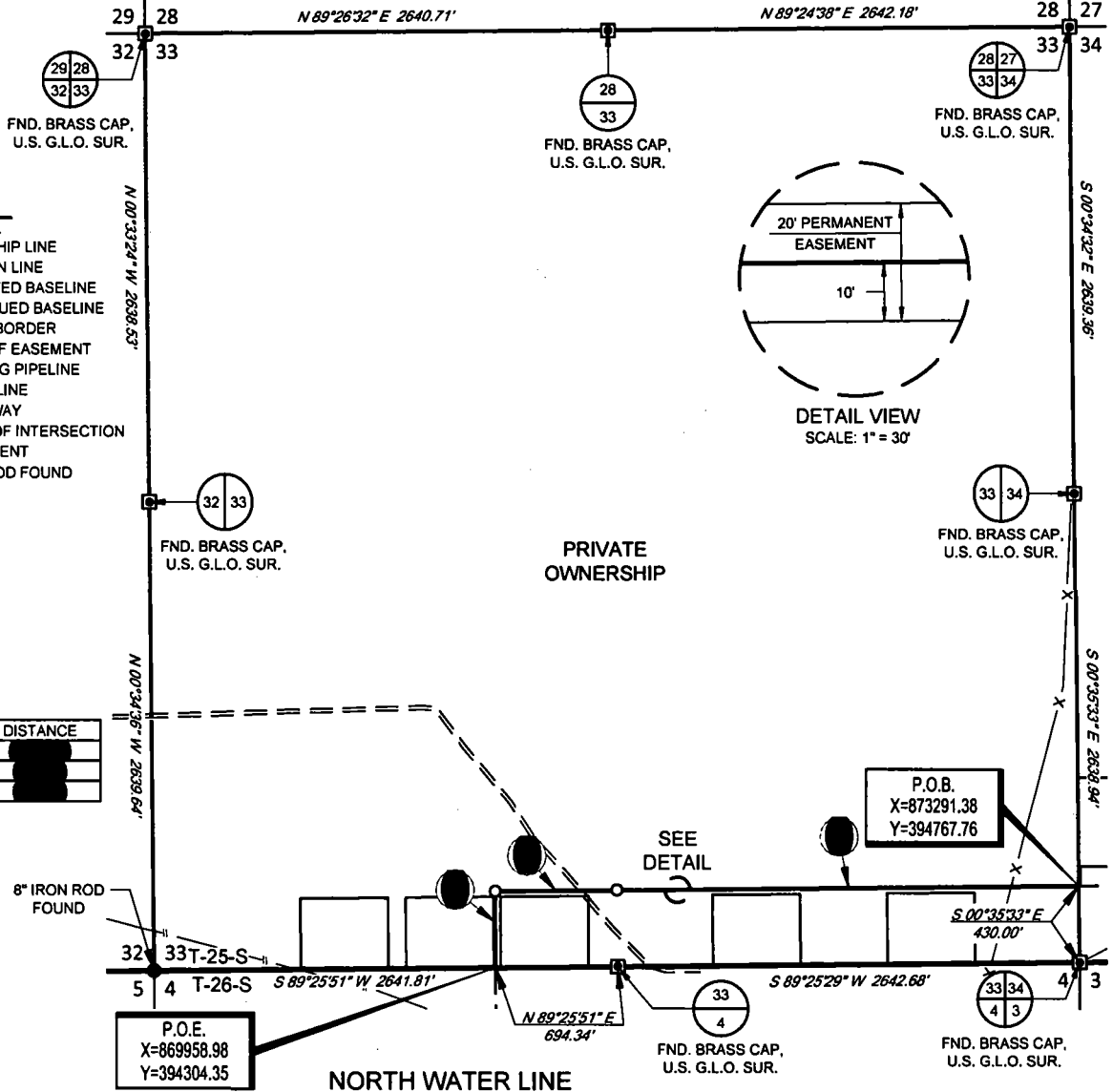
SCALE: 1" = 1000'
0' 500' 1000'



LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- EXISTING PIPELINE
- FENCE LINE
- ROAD WAY
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

LINE TABLE		
LINE	BEARING	DISTANCE



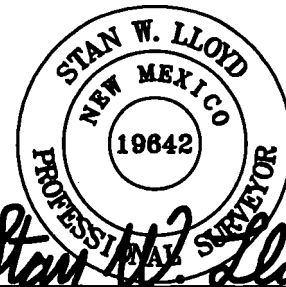
Being a proposed water line easement being 20 feet in width, 10 feet left and right of the above platted centerline total line footage containing 3766.78 feet or 228.29 rods, containing 1.73 acres more or less.

AMEREDEV
AMEREDEV OPERATING, LLC



TOPOGRAPHIC
LOYALTY. INNOVATION. LEGACY

1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX: (817) 744-7554
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

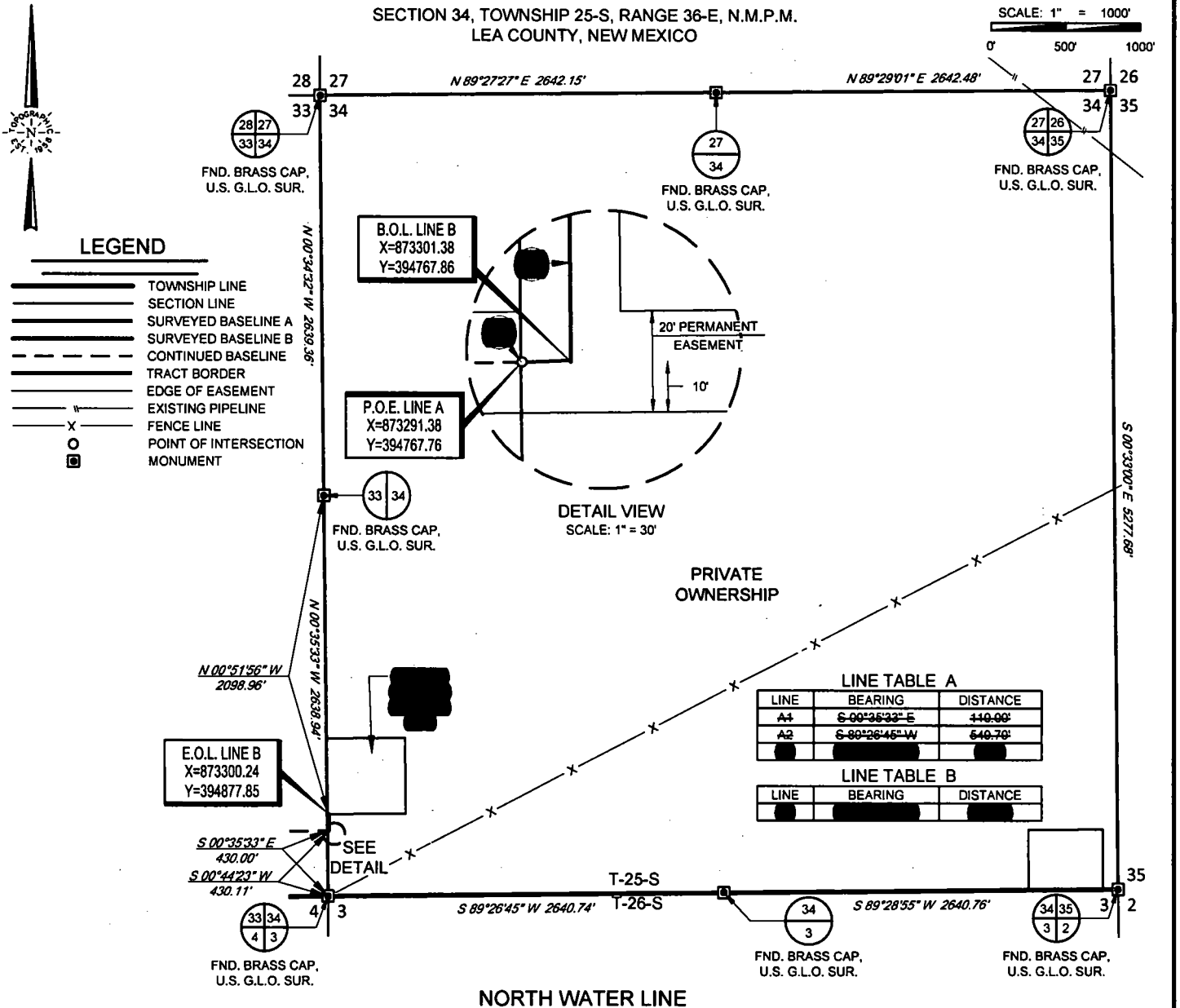


Stan W. Lloyd, P.S. No. 19842
MAY 7, 2018

NORTH WATER LINE	REVISION:		NOTES:
	INT	DATE	
DATE: 05/07/18			<p>1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"</p> <p>2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.</p> <p>3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.</p> <p>5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING</p> <p>6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT</p>
FILE:EP_NORTH_WATER_SEC_33			
DRAWN BY: EAH			
SHEET: 1 OF 1			

SECTION 34, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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



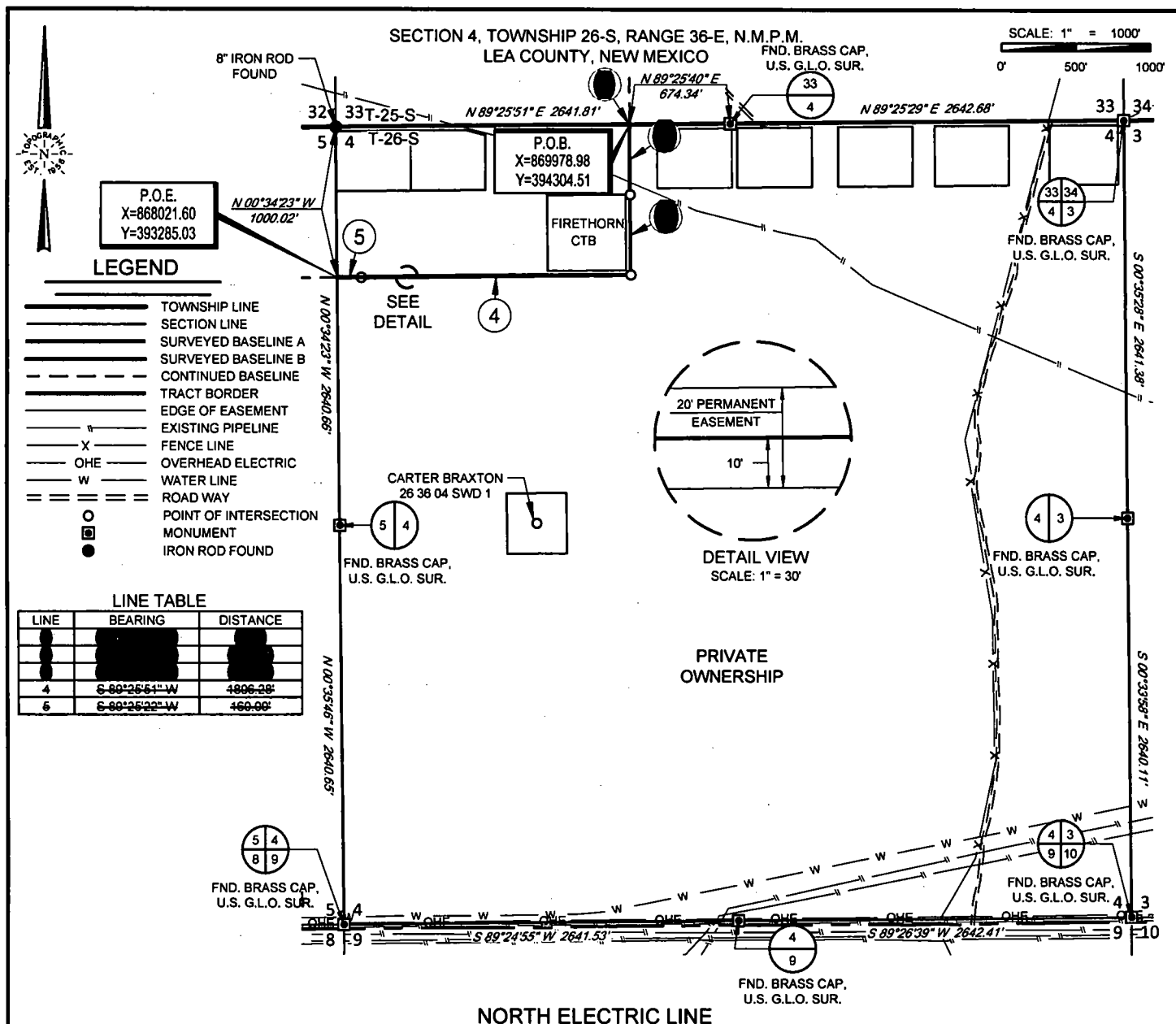
AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX: (817) 744-7554
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 787-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM



Stan W. Lloyd, P.S. No. 19642
MAY 7, 2018

NORTH WATER LINE	REVISION:		NOTES:
	INT	DATE	
DATE: 05/07/18			<p>1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"</p> <p>2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.</p> <p>3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.</p> <p>5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING</p> <p>6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT</p>
FILE: EP_NORTH_WATER_SEC_34			
DRAWN BY: EAH			
SHEET: 1 OF 1			



AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 787-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

STAN W. LLOYD
NEW MEXICO
19842
PROFESSIONAL SURVEYOR
Stan W. Lloyd
Stan W. Lloyd, P.S. No. 19642
MAY 7, 2018

NORTH ELECTRIC LINE		REVISION:		NOTES:
		MML	07/28/17	
		MML	09/11/17	1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
DATE:	07/20/17	AMD	11/03/17	2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
FILE:	EP_NORTH_ELECTRIC_SEC_4_REV5	GJU	11/10/17	3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
DRAWN BY:	MML	EAH	05/07/18	5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING
SHEET:	1 OF 1			6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT

SECTION 33, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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

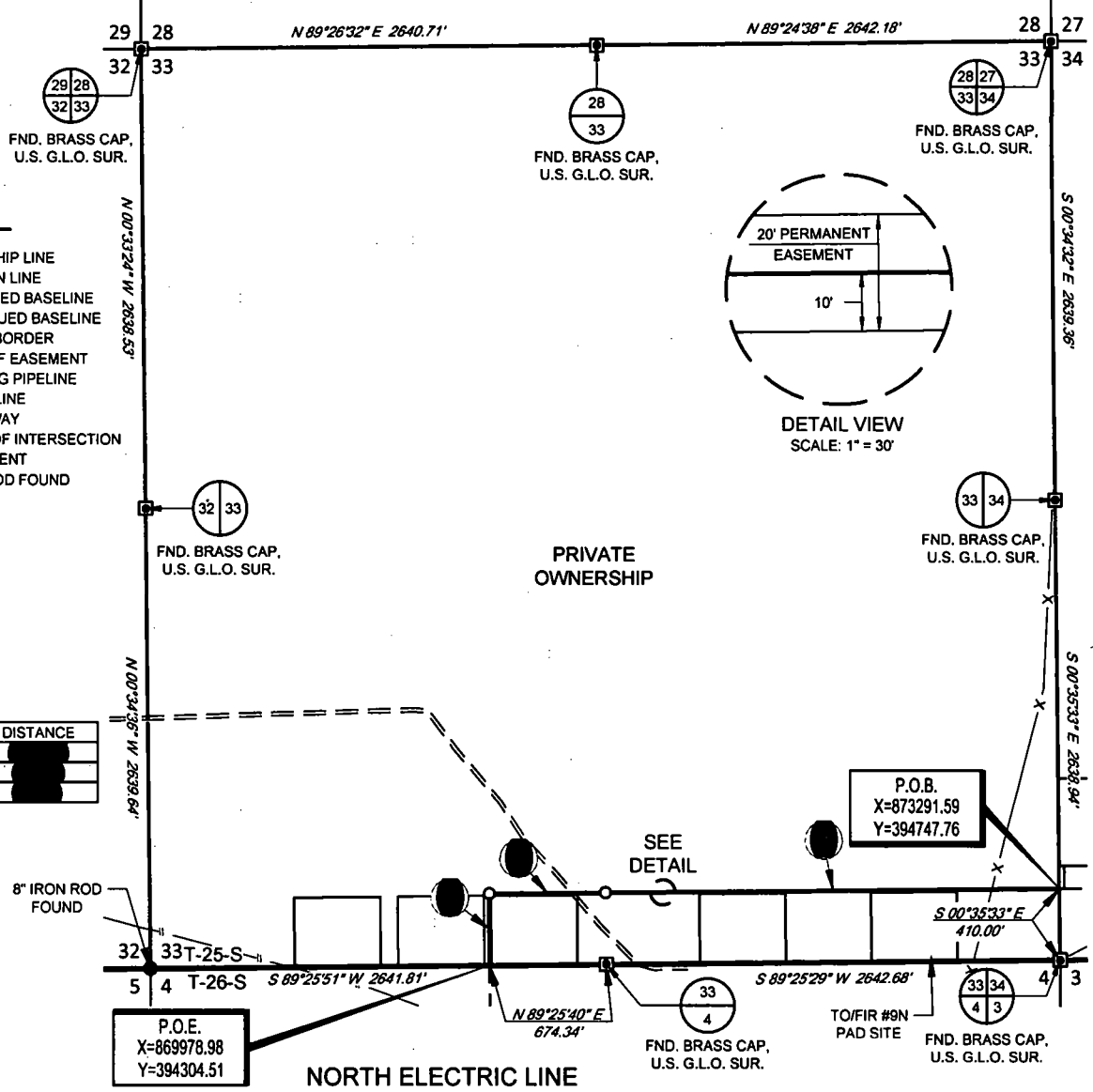


LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- EXISTING PIPELINE
- X- FENCE LINE
- == ROAD WAY
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

LINE TABLE

LINE	BEARING	DISTANCE
1	N 00° 34' 32" E	2639.53'
2	N 89° 26' 32" E	2640.71'
3	N 89° 24' 38" E	2642.18'
4	S 00° 35' 33" E	2639.94'
5	S 89° 25' 51" W	2641.81'
6	N 89° 25' 40" E	674.34'
7	S 89° 25' 29" W	2642.68'
8	S 00° 35' 33" E	410.00'



Being a proposed electric line easement being 20 feet in width, 10 feet left and right of the above platted centerline total line footage containing 3726.79 feet or 225.87 rods, containing 1.71 acres more or less.

AMEREDEV
AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 148 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1853 OR (800) 787-1853 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR
Stan W. Lloyd
Stan W. Lloyd, P.S. No. 19642
MAY 7, 2018

NORTH ELECTRIC LINE	REVISION:	
	INT	DATE
DATE: 05/07/18		
FILE:EP_NORTH_ELECTRIC_SEC_33		
DRAWN BY: EAH		
SHEET: 1 OF 1		

- NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
 3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
 5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING
 6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT

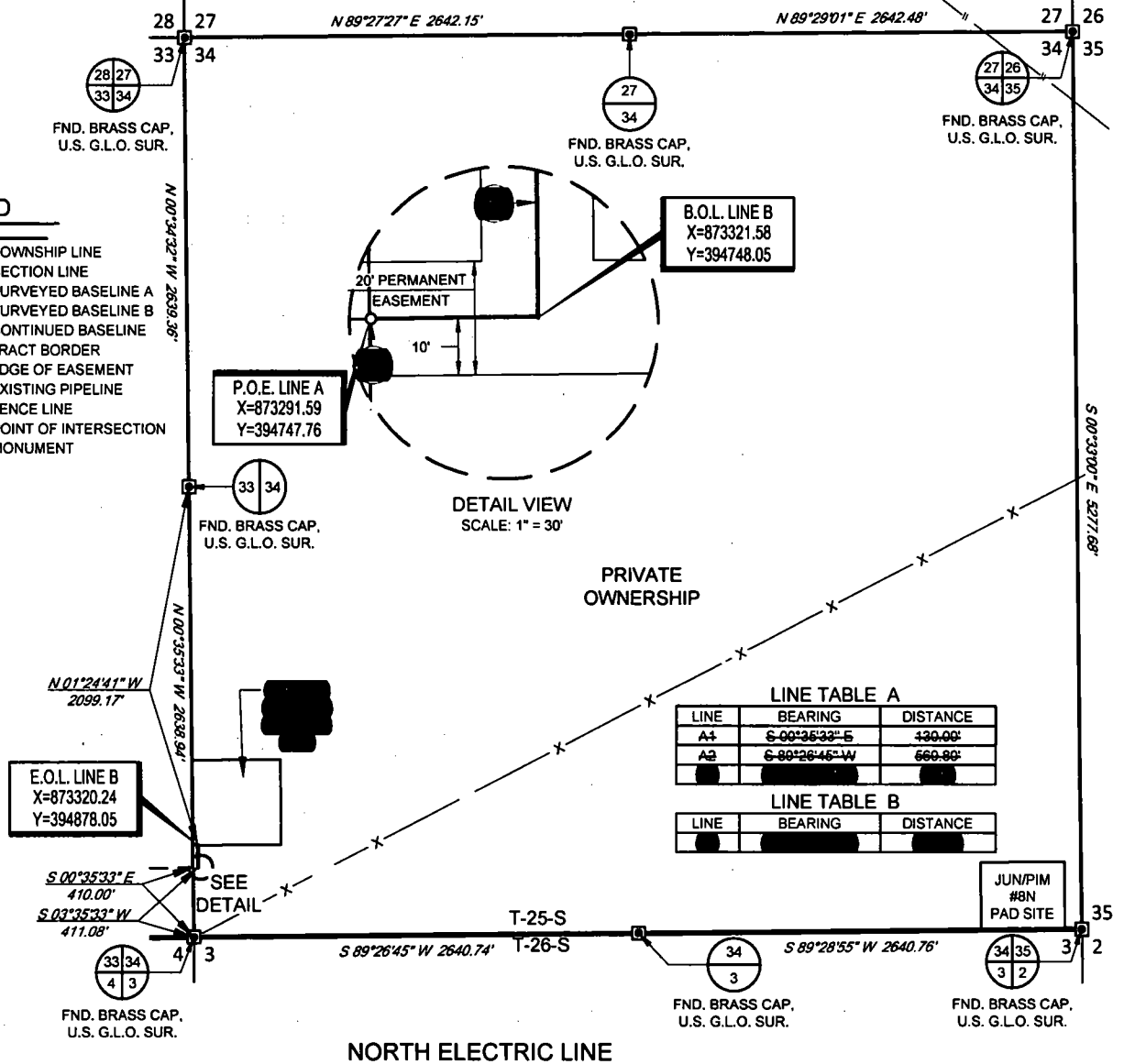
SECTION 34, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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



LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE A
- SURVEYED BASELINE B
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- EXISTING PIPELINE
- FENCE LINE
- POINT OF INTERSECTION
- MONUMENT



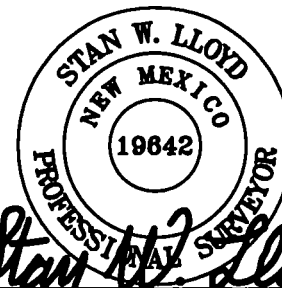
Being a proposed electric line easement being 20 feet in width, 10 feet left and right of the above platted centerline total line footage containing 830.00 feet or 50.30 rods, containing 0.38 acres more or less.

AMEREDEV
AMEREDEV OPERATING, LLC



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 787-1853 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM



Stan W. Lloyd, P.S. No. 19642
MAY 7, 2018

NORTH ELECTRIC LINE	REVISION:		NOTES:
	INT	DATE	
DATE: 05/07/18			1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
FILE:EP_NORTH_ELECTRIC_SEC_34			2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
DRAWN BY: EAH			3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
SHEET: 1 OF 1			5. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING
			6. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT

Ameredev Operating, LLC
Juniper Fed Com 25 36 34 081H
Section 34, Township 25S, Range 36E
Lea County, New Mexico

AMEREDEV

Ameredev, LLC

PERMIT #	WELL NAME	LOCATION (LAT/LON)
CP 1049 POD 2	Bennett	32°04'14.32" N, 103°12'32.30" W
CP 1378	S. Eppenour	32°05'40.62" N, 103°13' 35.26" W
CP 1285	Sec. 5	32°03'56.50" N, 103°17'37.04" W
CP 857	Capped	32°04'39.70" N, 103°16'51.13" W
C 2287	#1	32°03'59.0" N, 103°33'16.8" W
C 2286	#2	32°03'59.2" N, 103°33'15.2" W
C 2290	#3	32°04'1.0" N, 103°33' 12.6" W
C 2285	#4	32°04'3.7" N, 103°33'9.7" W
C 2288	#5	32°04'0.5" N, 103°33'8.4" W
C 2294	Garden	32°03'3.2" N, 103°32'38.1" W
C 2293	House	32°03'2.3" N, 103°32'36.8" W
J-11-S-3	Farm Well #2	32°03'08.4" N, 103°16'35.2" W
J-11-S-2	Farm Well #3	32°03'11.5" N, 103°17'02.0" W
J-11-S	Farm Well #4	32°03'24.6" N, 103°17'02.1" W
CP 1170 POD 1	CB 1	32°03'57.2" N, 103°18'45.3" W
CP 1170 POD 5		32°07'17.1" N, 103°17'48.0" W
CP 1263 POD 5	CB 2	32°03'56.27" N, 103°18'27.4" W
CP 1263 POD 3	CB 3	32°03'54.90" N, 103°18'16.74" W
CP 1351 POD 1	CB 4	32°03'57.16" N, 103°17'45.13" W
CP 1351 POD 2	CB 5	32°03'30.70" N, 103°17'45.70" W
J 26	Ryan	32°01'20.41" N, 103°15'49.46" W
J 3		32°02'41.5" N, 103°18'55.8" W

Exhibit 4 – Water Wells

AMEREDEV

Ameredev Operating, LLC
Juniper Fed Com 25 36 34 081H
Section 34, Township 25S, Range 36E
Lea County, New Mexico

AMEREDEV

Ameredev O. LLC

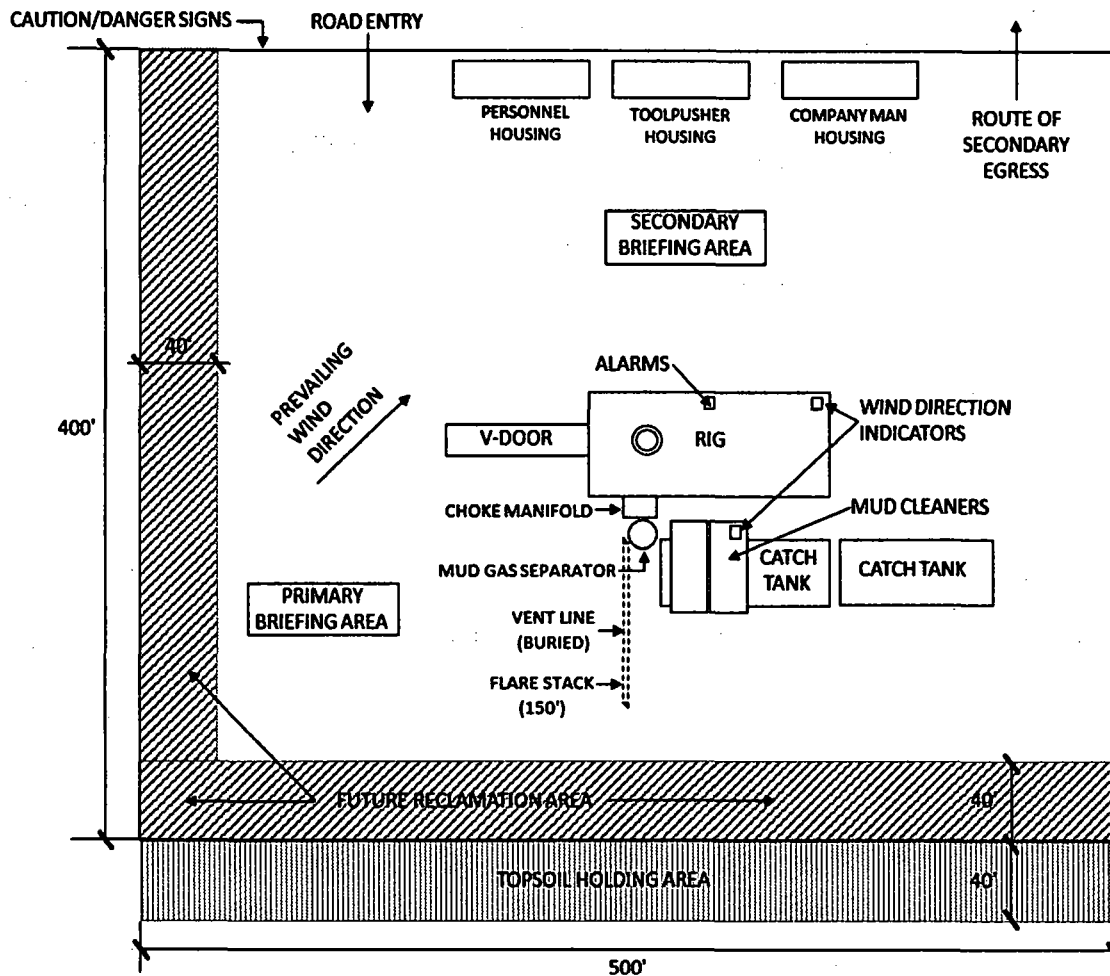


Exhibit 5 – Enlarged Well Site Diagram

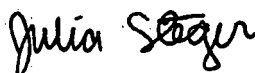
AMEREDEV

6/20/2018

To whom it may concern:

Ameredev Operating, LLC is negotiating a private surface owner agreement with EOG Resources Inc. (P.O. Box 267 Midland, TX 79702; 432-425-1204) for a power line, flowline, saltwater disposal line, roads, central production facility, and pad for the Juniper Fed Com 25-36-34 081H well in section 3 of T26S, R36E.

Thank you,



Julia Steger
Engineer

Surface Use Plan of Operations

Introduction

The following Surface Use Plan of Operations will be implemented by Ameredev Operating, LLC (Ameredev), after APD approval. No disturbance will be created other than those described in this surface use plan. If any additional surface disturbance becomes necessary after APD approval, the appropriate BLM approved sundry notice or right of way application will be acquired prior to such disturbance. This Surface Use Plan includes Ameredev's well pad, battery site, electrical, water and flow lines, and access roads.

Before any surface disturbance is created, stakes or flagging will be installed to mark boundaries of permitted areas of disturbance, including soil storage areas. As necessary, slope, grade, and other construction control stakes will be placed to ensure construction is in accordance with the surface use plan. All boundary markers will be maintained in place until final construction cleanup is completed. If disturbance boundary markers are displaced, they will be replaced before construction proceeds. Adjacent operators will be contacted before construction starts to mark adjacent pipelines.

Directions to proposed pad:

At the intersection of 3rd St/NM-205/Frying Pan Rd & NM-128, head south on 3rd St/NM-205/Frying Pan Road approximately 5.6 miles. Turn right on Anthony Road and proceed west approximately 3.4 miles. Continue North (right) on Anthony Road and proceed north approximately 0.3 miles. Turn right on Pipeline Road and proceed east approximately 0.3 miles. Turn left on lease road and proceed north approximately 1 mile. Turn right on unnamed lease road and proceed east for approximately 1.1 miles to the north side of the location.

See *Exhibit 1 – Well Pad Access* for a map of the route.

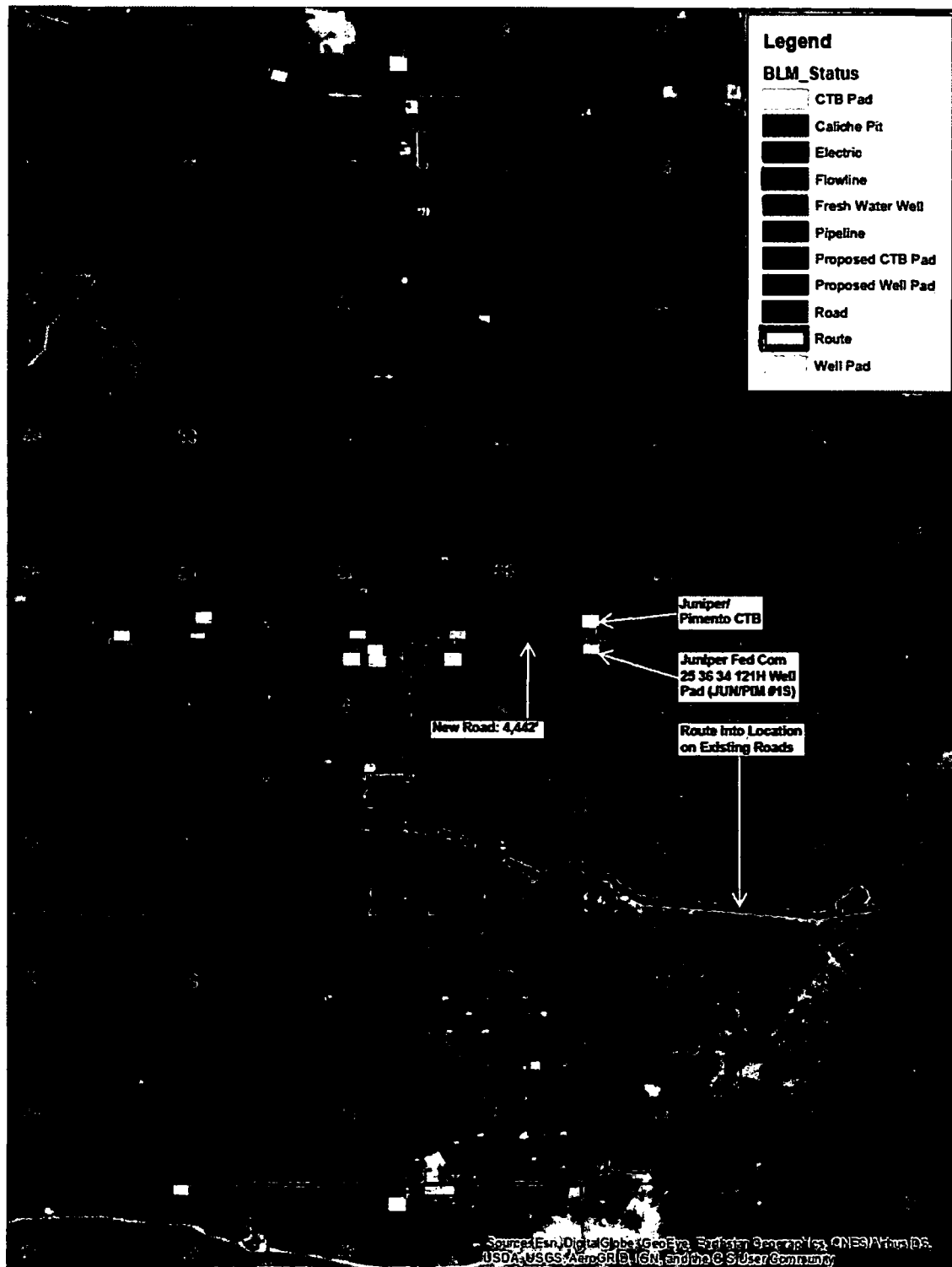


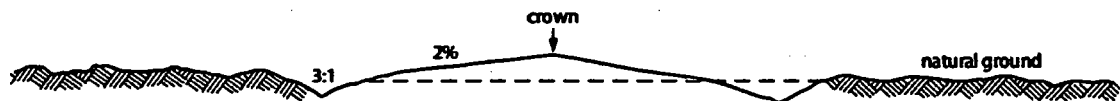
Exhibit 1 – Well Pad Access

Section 1 – Existing Roads

- A. The existing access road route to the proposed project is depicted on *Exhibit 1 – Well Pad Access*. Improvements to the driving surface will be done where necessary. No new surface disturbance will be done, unless otherwise noted in the New or Reconstructed Access Roads section of this surface use plan.
- B. Right-Of-Way will be acquired before construction begins.
- C. The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use.
- D. Operator will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

Section 2 – New or Reconstructed Access Roads

- A. A section of new access road will be needed for this proposed project. See *Exhibit 1 – Well Pad Access*, for locations.
- B. The length of new access road needed to be constructed for this proposed project is approximately 4,442 feet.
- C. New access road will be constructed with 6 inches of compacted caliche.
- D. The maximum driving width of the access road will be 20 feet. The maximum width of surface disturbance when constructing the access road will not exceed 30 feet. All areas outside of the driving surface will be revegetated.
- E. When the road travels on fairly level ground, the road will be crowned and ditched with a maximum 2% slope from the tip of the road crown to the edge of the driving surface. Ditches will be constructed on each side of the road. The ditches will be 3 feet wide with 3:1 slopes. See road cross section diagram below:



- F. No turnouts will be constructed on the new portions of access road.
- G. No cattle guards will be installed on the new portions of access road.
- H. Right-Of-Way will be acquired before construction begins.
- I. No culverts or low water crossings will be constructed for the new portions of access road.
- J. Since the access road is on level ground, no lead-off ditches will be constructed for the new portions of access road.
- K. Any sharp turns in the in the new road will be rounded to facilitate turning by trucks.

- L. Newly constructed or reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management, will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road.
- M. All topsoil and fragmented rock removed in excavation will be used as directed in approved plan.

Section 3 – Location of Existing Wells

Exhibit 2 – One Mile Radius Existing Wells depicts all known wells within a one mile radius of the Juniper Fed Com 25 36 34 081H. See *Exhibit 2a – One Mile Radius Wells List* for a list of wells depicted.

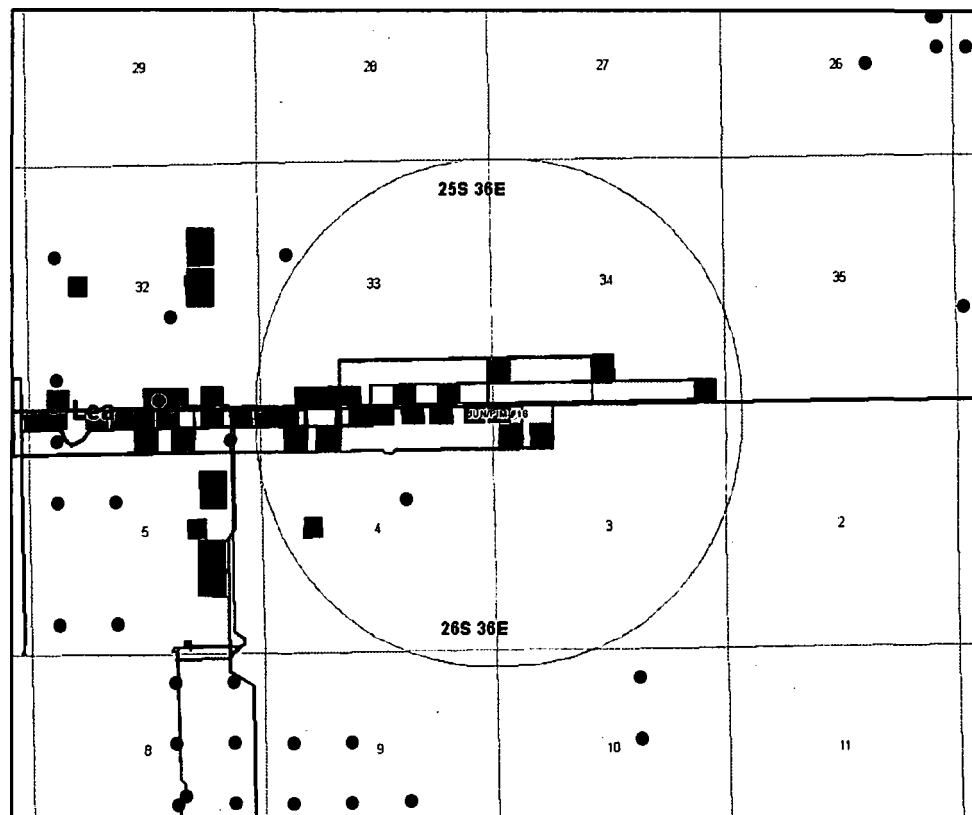


Exhibit 2 – One Mile Radius Existing Wells

API	WELL NAME	STATUS	TD
30025208430000	SOUTHWEST JALIT-FED 1	PLUGGED	13505

Exhibit 2a – One Mile Radius Existing Wells List

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

- A. The multiple well pad will be located on Section 3, and will measure 400'x500'. Should any type of production facilities be located on the well pad, they will be strategically placed to allow for maximum interim reclamation, re-contouring, and revegetation of the well location.
- B. Production from the proposed well will be transported to a new production facility named Juniper/Pimento CTB, north of the well pad.
- C. A buried 4" poly flowline (750 psi maximum) will be run approximately 570' from the Juniper Fed Com 25 36 34 081H to the Juniper/Pimento CTB north of the well pad. A 20' pipeline ROW containing three buried 12" poly water lines (200 psi maximum) will be run from the Juniper/Pimento CTB to tie into existing water lines at the Firethorn CTB. The overall length of disturbance for the new water lines will be approximately 4,857'. A power line will be run parallel to the water line and will connect into the power line at the Firethorn CTB. The power line will be approximately 4,857'. The Juniper/Pimento CTB will be 500'x525' and will include a separator, heat exchanger, VRU, VRT, meter run and a tank battery. The new production facility will have a secondary containment structure that is constructed to hold the capacity of 1-1/2 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.
- D. All permanent (lasting more than six months) above ground structures including but not limited to pump jacks, storage tanks, barrels, pipeline risers, meter housing, etc., that are not subject to safety requirements will be painted a non-reflective paint color, Shale Green, from the BLM Standard Environmental Colors chart, unless another color is required in the APD Conditions of Approval.
- E. If any plans change regarding the production facility or other infrastructure (pipeline, electrical lines, etc.), Ameredev will submit a sundry notice or right-of-way (if applicable) prior to installation or construction.

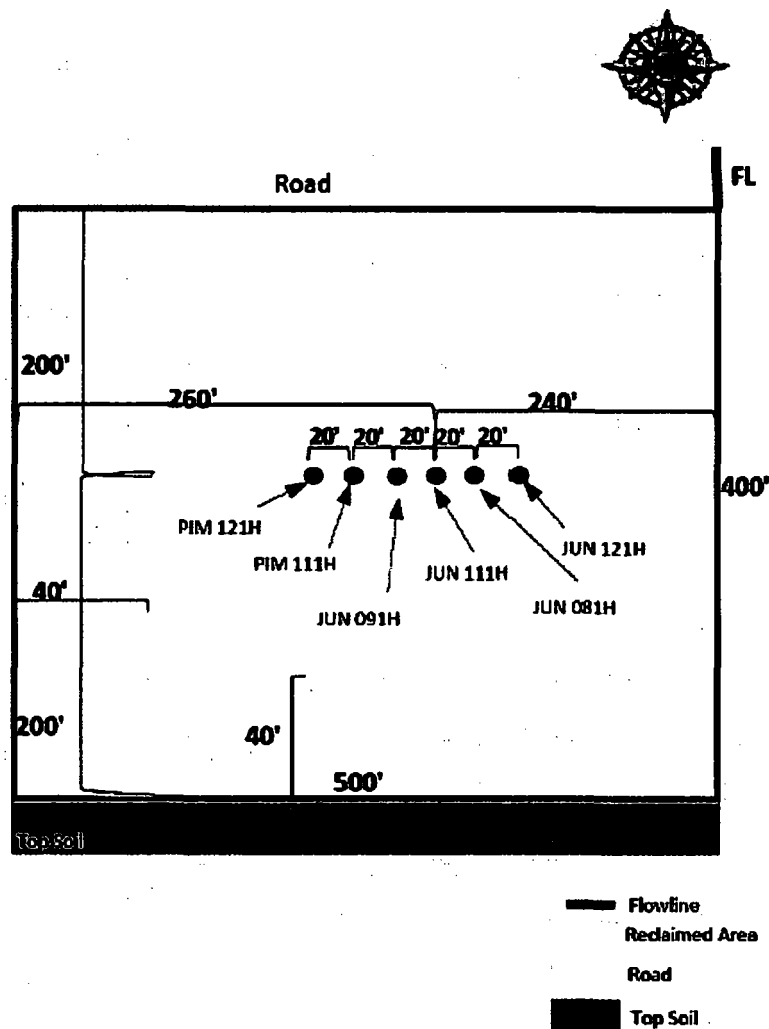


Exhibit 3 – Well Site Diagram

Section 5 - Location and Types of Water Supply

- A. This location will be drilled using a combination of water and mud systems (outlined in the Drilling Program). The water will be obtained from preexisting water wells, by running a pump directly to the drilling rig. See *Exhibit 4 - Water Wells*, for a list of available water wells. In cases where a polyline is used to transport water for drilling or completion purposes, the existing and proposed roads into location will be utilized.

Ameredev Operating, LLC
 Juniper Fed Com 25 36 34 081H
 Section 34, Township 25S, Range 36E
 Lea County, New Mexico

AMEREDEV

Ameredev, LLC

<u>Permit #</u>	<u>Well Name</u>	<u>Location (Lat/Lon)</u>
CP 1049 POD 2	Bennett	32°04'14.32" N, 103°12'32.30" W
CP 1378	S. Eppenour	32°05'40.62" N, 103°13' 35.26" W
CP 1285	Sec. 5	32°03'56.50" N, 103°17'37.04" W
CP 857	Capped	32°04'39.70" N, 103°16'51.13" W
C 2287	#1	32°03'59.0" N, 103°33'16.8" W
C 2286	#2	32°03'59.2" N, 103°33'15.2" W
C 2290	#3	32°04'1.0" N, 103°33' 12.6" W
C 2285	#4	32°04'3.7" N, 103°33'9.7" W
C 2288	#5	32°04'0.5" N, 103°33'8.4" W
C 2294	Garden	32°03'3.2" N, 103°32'38.1" W
C 2293	House	32°03'2.3" N, 103°32'36.8" W
J-11-S-3	Farm Well #2	32°03'08.4" N, 103°16'35.2" W
J-11-S-2	Farm Well #3	32°03'11.5" N, 103°17'02.0" W
J-11-S	Farm Well #4	32°03'24.6" N, 103°17'02.1" W
CP 1170 POD 1	CB 1	32°03'57.2" N, 103°18'45.3" W
CP 1170 POD 5		32°07'17.1" N, 103°17'48.0" W
CP 1263 POD 5	CB 2	32°03'56.27" N, 103°18'27.4" W
CP 1263 POD 3	CB 3	32°03'54.90" N, 103°18'16.74" W
CP 1351 POD 1	CB 4	32°03'57.16" N, 103°17'45.13" W
CP 1351 POD 2	CB 5	32°03'30.70" N, 103°17'45.70" W
J 26	Ryan	32°01'20.41" N, 103°15'49.46" W
J 3		32°02'41.5" N, 103°18'55.8" W

Exhibit 4 – Water Wells

Section 6 – Construction/Construction Materials

- A. Caliche will be obtained from the caliche pit located at Lat: 32° 6'28.78"N, Long: 103°16'58.77"W or the caliche pit at Lat: 32° 6'33.14"N, Long: 103°18'44.16"W or the caliche pit at Lat: 32° 3'8.30"N, Long: 103°13'57.00"W.
- B. Caliche utilized for the drilling pad will be obtained either from the locations listed above, an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by "flipping" the well location. A mineral material permit will be obtained from the BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad. The procedure for "flipping" a well location is as follows:
1. An adequate amount of topsoil/root zone (usually top 6 inches of soil) will be stripped from the proposed well location and stockpiled along the side of the well location as depicted on the *Exhibit 3 - Well Site Diagram*.
 2. An area will be used within the proposed well site dimensions to excavate caliche.
 3. Subsoil will be removed and stockpiled within the surveyed well pad dimensions.
 4. Once caliche/surfacing mineral is found, the mineral material will be excavated and stock piled within the approved drilling pad dimensions.
 5. Subsoil will then be pushed back in the excavated hole and caliche will be spread accordingly across the entire well pad and road (if available).
 6. Neither caliche, nor subsoil will be stockpiled outside of the well pad dimensions. Topsoil will be stockpiled along the edge of the pad as depicted in *Exhibit 5 – Enlarged Well Site Diagram*.
 7. In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or federal land.

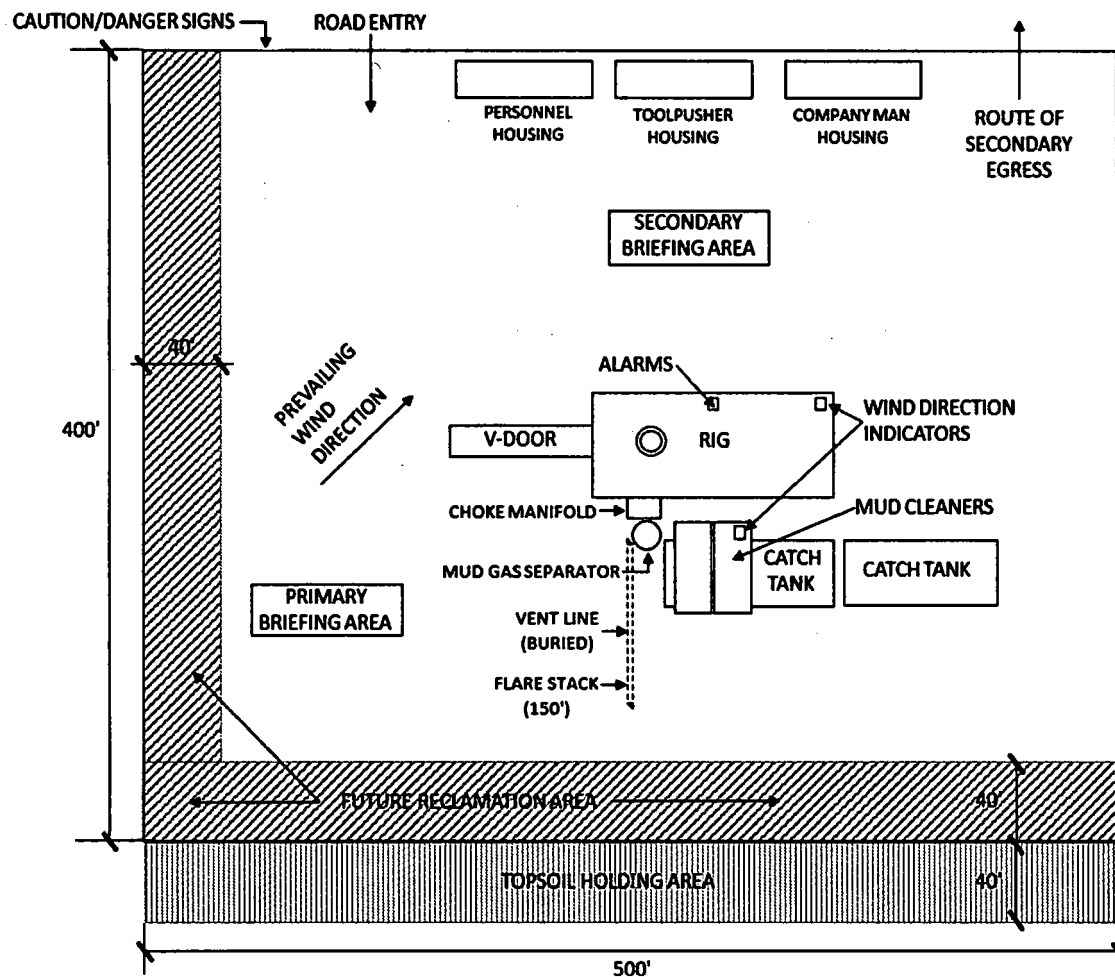


Exhibit 5 – Enlarged Well Site Diagram

Section 7 - Methods of Handling Waste

- A. Drill cuttings, mud, salts and other chemicals will be properly disposed of into steel tanks on site and hauled to a State approved commercial disposal facility.
- B. Garbage and trash produced during drilling and completion operations will be collected in a portable metal trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.
- C. Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.
- D. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at a state approved disposal facility.

Section 8 - Ancillary Facilities

- A. No ancillary facilities will be needed for the proposed project.

Section 9 - Well Site Layout

- A. See *Exhibit 3 - Well Site Diagram* and *Exhibit 5 – Enlarged Well Site Diagram*. The following information is presented:
1. Reasonable scale
 2. Well pad dimensions/orientation
 3. Drilling rig components/layout
 4. Proposed access road
 5. Topsoil stockpile
- B. The proposed drilling pad was staked and surveyed by a professional surveyor. The attached survey plat of the well site depicts the drilling pad layout as staked.
- C. Topsoil salvaging
1. Grass, forbs, and small woody vegetation such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and re-spread evenly on the site following topsoil re-spreading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the top 6 inches of soil material will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

Section 10 - Plans for Final Surface Reclamation

Reclamation Objectives

- A. The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil, to control erosion, and to minimize habitat and forage loss, visual impact, and weed infestation during the life of the well or facilities.
- B. The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

- C. The BLM will be notified at least 3 days prior to the commencement of any reclamation procedures.
- D. If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on location has been completed or plugged. Ameredev will gain written permission from the BLM if more time is needed.
- E. Interim reclamation will be performed on the well site after the well is drilled and completed. *Exhibit 3 – Well Site Diagram* and *Exhibit 5 – Enlarged Well Site Diagram* depict the location and dimension of the planned interim reclamation for the well site.

Interim Reclamation Procedures (if performed)

- A. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.
- B. In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- C. The areas planned for interim reclamation will then be contoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 Ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be re-contoured to the above ratios during interim reclamation.
- D. Topsoil will be evenly re-spread and aggressively revegetated over the entire disturbed area not needed for all-weather operations, including cuts and fills. To seed the area, the proper BLM mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting, in order to break the soil crust and create seed germination micro-sites.
- E. Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.
- F. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

Final Reclamation Procedures (well pad, buried pipelines, etc.)

- A. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.
- B. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- C. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be re-contoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to re-contouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

- D. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BLM seed mixture, free of noxious weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting, in order to break the soil crust and create seed germination micro-sites.
- E. Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.
- F. All unused equipment and structures including pipelines, electric line poles, tanks, etc. that serviced the well will be removed.
- G. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not re-disturbed, and that erosion is controlled.

Section 11 - Surface Ownership

- A. EOG has surface ownership for proposed project area.

Section 12 - Other Information

- A. There are no dwellings within 1 mile of this location.
- B. An on-site meeting for the Juniper Fed Com 25 36 34 081H well was held on Nov. 28, 2017.
- C. The well pad described in this document - Juniper/Pimento (JUN/PIM #1S) - will contain 6 wells that produce into a central tank battery (CTB) located north of the well pad. The wells share a common pad access road, and the six total flowlines from the individual wells will share a common corridor that terminates into the CTB. The CTB will be tied into a shared pipeline and electrical corridor. The wells that share the pad are:
 - Juniper Fed Com 25 36 34 081H, APD ID# 10400031765
 - Juniper Fed Com 25 36 34 091H, APD ID# 10400031762
 - Juniper Fed Com 25 36 34 111H, APD ID# 10400031759
 - Juniper Fed Com 25 36 34 121H, APD ID# 10400031755
 - Pimento Fed Com 26 36 03 111H, APD ID# 10400031732
 - Pimento Fed Com 26 36 03 121H, APD ID# 10400031733

Ameredev field representative:

Zac Boyd, Operations Supervisor

Cell: (432) 385-6996

Email: zboyd@amerdev.com

Ameredev office contact:

Christie Hanna, Regulatory Coordinator

Direct: (737) 300-4723

Email: channa@amerdev.com

Ameredev Operating, LLC Address: 5707 Southwest Parkway Building 1, Suite 275 Austin, Texas 78735



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

PWD Data Report

03/25/2019

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

Bond Info Data Report

03/25/2019

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001478

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: