Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No. 30-039-31452

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

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

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 12/05/2023

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

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

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

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

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

Approval Date: 12/05/2023

Additional Operator Remarks

Location of Well

0. SHL: SWNW / 1713 FNL / 303 FWL / TWSP: 23N / RANGE: 6W / SECTION: 3 / LAT: 36.256175 / LONG: -107.46463 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 2 / 380 FNL / 1910 FEL / TWSP: 23N / RANGE: 6W / SECTION: 4 / LAT: 36.259678 / LONG: -107.472004 (TVD: 5539 feet, MD: 6945 feet)

PPP: LOT 4 / 380 FNL / 0 FWL / TWSP: 23N / RANGE: 6W / SECTION: 3 / LAT: 36.25982 / LONG: -107.465525 (TVD: 5552 feet, MD: 8856 feet)

PPP: LOT 4 / 380 FNL / 0 FWL / TWSP: 23N / RANGE: 6W / SECTION: 2 / LAT: 36.260215 / LONG: -107.447337 (TVD: 5589 feet, MD: 14221 feet)

BHL: LOT 3 / 380 FNL / 2580 FWL / TWSP: 23N / RANGE: 6W / SECTION: 2 / LAT: 36.260404 / LONG: -107.438585 (TVD: 5607 feet, MD: 16802 feet)

BLM Point of Contact

Name: CHRISTOPHER P WENMAN
Title: Natural Resource Specialist
Phone: (505) 564-7727
Email: cwenman@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.

Conditions of Approval

Operator:	Enduring Resources IV, LLC
Well Names:	Haynes Canyon Unit 428H Pad: HCU 428H, 430H, 440H, 442H Haynes Canyon Unit 432H Pad: HCU 432H, 434H, 436H, 438H, Northeast Lybrook COM 176H Pad: NELCA 262H and 263H
Legal Location:	Sec 3 & Sec 6 Township 23N, Range 6W, Rio Arriba County
NEPA Log Number:	DOI-BLM-NM-F010-2023-0067-EA
Inspection Date:	June 27, 2023
Lease Number:	NMNM-028733, NMNM-142111X, NMSF-078362, NMNM-132829

The following conditions of approval will apply to Haynes Canyon Unit 428H, 432H, and NE Lybrook Com 176H Reoccupation (NELCA 262H) Oil and Gas Wells Project, and other associated facilities, unless a particular Surface Managing Agency or private surface owner has supplied to Bureau of Land Management and the operator a contradictory environmental stipulation. The failure of the operator to comply with these requirements may result in an assessment or civil penalties pursuant to 43 CFR 3163.1 or 3163.2.

Disclaimers: BLM's approval of the APD does not relieve the lessee and operator from obtaining any other authorizations that may be required by the BIA, Navajo Tribe, State, or other jurisdictional entities.

Copy of Plans: A complete copy of the APD package, including Surface Use Plan of Operations, Bare Soil Reclamation Plan, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

Review of NEPA documents: It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in the Environmental Assessment DOI-BLM-NM-F010-2023-0067-EA, which contains additional design features and best management practices that must be followed. Copies of the EA, Decision Record, and Finding of No Significant Impact may be obtained from the BLM FFO public room, or online at: EplanningUi (blm.gov).

Best Management Practices (BMPs): Farmington Field Office established environmental Best Management Practices (BMP's) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMP's are found in the Gold Book, Fourth Edition-Revised 2007 and at http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html. Farmington Field Office BMPs are integrated into the Environmental Assessment, Surface Use Plan of Operations, Bare Soil Reclamation Plan, and COAs.

Construction, Production, Facilities, Reclamation & Maintenance

Construction & Reclamation Notification: The operator or their contractor will contact the Bureau of Land Management, Farmington Field Office Environmental Protection Staff (505) 564-7600 or by email, at least 48 hours prior to any construction or reclamation on this project.

Production Facilities: design and layout of facilities will be deferred until an onsite with BLM-FFO surface protection staff is conducted to determine the best location. Enduring Resources or their contractor will contact the Bureau of Land Management, Farmington Field Office, Surface, and Environmental Protection Staff (505) 564-7600 to schedule a facility layout onsite.

Staking: The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.

Weather: No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts more than 6 inches deep, the soil shall be deemed too wet.

Stockpile of Soil: The top 6 inches of soil material will be stripped and stockpiled in the construction zones around the pad [construction zones may be restricted or deleted to provide resource avoidance]. The stockpiled soil will be free of brush and tree limbs, trunks, and roots. The stockpiled soil material will be spread on the reclaimed portions of the pad [including the reserve pit, cut and fill slopes] prior to re-seeding. Spreading shall not be done when the ground or topsoil is frozen or wet.

Painting of Equipment: Within 90 days of installation, all above ground structures not subject to safety requirements shall be painted by the Holder to blend with the natural color of the landscape. A reflective material may be used to reduce hazards that may occur when such structures are near roads. Otherwise, the paint use shall be a non-glare, non-reflective, non-chalking color of: Federal 595a-34127 (Juniper Green).

Storage Tanks: All open top permanent production or storage tanks regardless of diameter made of fiberglass, steel, or other material used for the containment of oil, condensate, produced water and or other production waste shall be screened, netted, or otherwise covered to protect migratory birds and other wildlife from access.

Compressors: Compressor units on this well location not equipped with a drip pan for containment of fluids shall be lined with an impervious material at least 8 mils thick and a 12-inch berm. The compressor will be painted to match the well facilities. Any variance to this will be approved by the Authorized Officer (AO). Noise mitigation may be required at the time of compressor installation.

Culverts: Silt Traps/Bell Holes will be built upstream of all culvert locations.

Driving Surface Area: All activities associated within the construction, operation, maintenance, and abandonment of the well location is limited to areas approved in the APD or ROW permit. During the production of the well, vehicular traffic is limited to the daily driving surface area established during interim reclamation construction operations. This area typically forms a keyhole or teardrop driving surface from which all production facilities may be serviced or inspected. A v-type ditch will be constructed on the outside of the driving surface to further define the driving surface and to deter vehicular traffic from entering onto the interim reclamation areas.

Contouring of Cut and Fill Slopes: The interim cut and fill slope grade shall be as close to the original contour as possible. To obtain this ratio, pits and slopes shall be back sloped into the pad during interim reclamation. Only subsurface soil and material shall be utilized in the contouring of the cut and fill slopes. Under no circumstances shall topsoil be utilized as substrate material for contouring of cut and fill slopes.

Maintenance: In order to perform subsequent well operations, right-of-way (ROW) operations, or install new/additional equipment, it may be necessary to drive, park, and operate on restored, interim vegetation within the previously disturbed area. This is generally acceptable provided damage is promptly repaired and reclaimed following use. Where vehicular travel has occurred as a "convenience" and interim reclamation/vegetation has been compromised, immediate remediation of the affected areas is required. Additionally, where erosion has occurred and compromised the reclamation of the well location, the affected area must be promptly remediated so that future erosion is prevented, and the landform is stabilized.

Layflat Lines: Layflat lines used for development of the wells may be on the ground for a maximum of 6 months and shall be retrieved immediately following completion operations. If the layflat lines are needed for longer than 6 months a Sundry NOI shall be submitted to the BLM FFO for review and decision that includes a rationale for the time extension.

The holder or its contractors will notify the BLM of any fires and comply with all rules and regulations administered by the BLM concerning the use, prevention and suppression of fires on federal lands, including any fire prevention orders that may be in effect at the time of the permitted activity. The holder or its contractors may be held liable for the cost of fire suppression, stabilization and rehabilitation. In the event of a fire, personal safety will be the first priority of the holder or its contractors.

"Hotwork" and Construction Affecting Fire Safety: The holder or its contractors shall:

1. Operate all internal and external combustion engines (including off-highway vehicles, chainsaws, generators, heavy equipment, etc.) with a qualified spark arrester. Qualified spark arresters are maintained and not modified, and meet the Society of Automotive Engineers (SAE) Recommended Practices J335 or J350. Refer to 43 CFR §8343.1.
    a. *Refueling of any combustible engine equipment must be minimum of 3 meters away from any ignition source (open flame, smoking, etc.).*
2. Maintain and clean all equipment regularly to remove flammable debris buildup and prevent fluid leaks that can lead to ignitions.

3. Carry at least one shovel or wildland fire hand tool (combi, Pulaski, McLeod) per person working, minimum 5 gallons of water, and a fire extinguisher rated at a minimum as ABC - 10 pound on each piece of equipment and each vehicle.
4. When conducting "hotwork" such as, but not limited to welding, grinding, cutting, spark-producing work with metal, work that creates hot material or slag; choose an area large enough to contain all hot material that is naturally free of all flammable vegetation or remove the flammable vegetation in a manner compliant with the permitted activity. If adequate clearance cannot be made, wet an area large enough to contain all hot material prior to the activity and periodically throughout the activity to reduce the risk of wildfire ignition. Regardless of clearance, maintain readiness to respond to an ignition at all times. In addition, keep one hand tool per person and at least one fire extinguisher ready, minimum, as specified earlier (#3) during this activity.
5. Keep apprised of current and forecasted weather at https://www.weather.gov/abq/forecasts-fireweather-links and fire conditions at www.wfas.net and take additional fire precautions when fire danger is rated High or greater. Red Flag Warnings are issued by the National Weather Service when fire conditions are most dangerous, and ignitions escape control quickly. Extra precautions are required during these warnings such as additional water, designate a fire watch/patrol and tools. If work is being conducted in an area that is not clear of vegetation within 50 feet of work area; then, when fire danger is rated High or greater and 1. There is a predicted Red Flag warning for your area or 2. If winds are predicted to be greater than 10 mph, stop all hotwork activities for the day at 10 am.
6. In the event of an ignition, initiate fire suppression actions in the work area to prevent fire spread to or on federally administered lands. If a fire spreads beyond the capability of workers with the stipulated tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.
7. Call **911** or the **Taos Interagency Fire Dispatch Center (575-758-6208)** immediately of the location and status of any fire.

   AND

   Notify the respective BLM field office for which the permit or contract was issued immediately of the incident.

   Farmington Field Office at 505-564-7600

   Taos Field Office at 575-758-8851

Noxious Weeds

Inventory the proposed site for the presence of noxious and invasive weeds. Noxious weeds are those listed on the New Mexico Noxious Weed List and USDA's Federal Noxious Weed List. The New Mexico Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly check for any changes. Invasive species may or may not be listed as a noxious weed but have been identified to likely cause economic or environmental harm or harm to human health. The following noxious weeds have been identified as occurring

on lands within the boundaries of the Farmington Field Office (FFO). There are numerous invasive species on the FFO such as Russian thistle (*Salsola spp.)* and field bindweed (*Convolvulus arvensis*).

Russian Knapweed (*Centaurea repens*)	Musk Thistle (*Carduss nutans*)
Bull Thistle (*Cirsium vulgare*)	Canada Thistle (*Cirsium arvense*)
Scotch Thistle (*Onopordum acanthium)*	Hoary Cress (*Cardaria draba*)
Perennial Pepperweed (*Lepdium latiofolfium*)	Halogeton (*Halogeton glomeratus*)
Spotted Knapweed (*Centaurea maculosa*)	Dalmation Toadflax (*Linaria genistifolia*)
Yellow Toadflax (*Linaria vulgaris*)	Camelthorn (*Alhagi pseudalhagi*)
African Rue (*Penganum harmala*)	Salt Cedar (*Tamarix spp*.)
Diffuse Knapweed (*Centaurea diffusa*)	Leafy Spurge (*Euphorbia esula*)

a. Identified weeds will be treated prior to new surface disturbance if determined by the FFO Noxious Weed Coordinator. A Pesticide Use Proposal (PUP) must be submitted to and approved by the FFO Noxious Weed Coordinator prior to application of pesticide. The FFO Noxious Weeds Coordinator (505-564-7600) can provide assistance in the development of the PUP.
b. Construction equipment should be inspected and cleaned prior to coming onto the work site. This is especially important on vehicles from out of state or if coming from a weed-infested site.
c. Fill dirt or gravel may be needed for excavation, road construction/repair, or for spill remediation. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the FFO Noxious Weed Coordinator.
d. The site shall be monitored for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found the FFO Coordinator shall be notified at (505) 564-7600 and provided with a Weed Management Plan and if necessary, a Pesticide Use Proposal (PUP) . The FFO Coordinator can provide assistance developing the Weed Management Plan and/or the Pesticide Use Proposal.
e. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. (Company Name)'s weed-control contractor would contact the BLM-FFO prior to using these chemicals.
f. Noxious/invasive weed treatments must be reported to the FFO Noxious Weed Coordinator. A Pesticide Application Record (PAR) is required to report any mechanical, chemical, biological or cultural treatments used to eradicate, and/or control noxious or invasive species. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

Bare ground vegetation trim-out: If bare ground vegetation treatment (trim-out) is desired around facility structures, the operator will submit a bare ground/trim-out design included in their Surface Use Plan of Operations (SUPO). The design will address vegetation safety concerns of the operator and BLM while minimizing impacts to interim reclamation efforts. The design must include what structures to be treated and buffer distances of trim-out. Pesticide use

for vegetation control around anchor structures is not approved. If pesticides are used for bare ground trim-out, the trim-out will not exceed three feet from the edge of any eligible permanent structure (i.e., well heads, fences, tanks). Additional distance/areas may be requested and must be approved by the FFO authorized officer. The additional information below must also be provided to the FFO:

a. Pesticide use for trim out will require a Pesticide Use Proposal (PUP). A PUP is required ***prior*** to any treatment and must be approved by the FFO Noxious Weed Coordinator. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Enduring Resources' weed-control contractor would contact the BLM-FFO prior to using these chemicals and provide Pesticide Use Reports (PURs) post treatment.
b. A Pesticide Use Report (PUR) or a Biological Use Report (BUR) is required to report any chemical, or biological treatments used to eradicate, or control vegetation on site. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

Paleontology

Any paleontological resource discovered by the Operator, 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 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.

Visual Resources

Dark Sky COAs need to be applied to existing lighting, which is not dark sky friendly and to any additional lights added as part of pad expansion. All permanent lighting will use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the lowest part of the light source). All permanent lighting will be pointed straight down at the ground in order to prevent light spill to the sides. All permanent lighting will be 4000° Kelvin or less with 3000° Kelvin preferred. Warmer light colors are less noticeable by humans and cause less impact to wildlife. All permanent lighting will be controlled by a switch and/or timer which allows the lights to be turned on when workers are on location during dark periods but will keep the lights off the majority of the time.

Wildlife Resources

Wildlife: The proposed project intersects a known mule deer migration route. Big game habitat areas and hunting activities are valuable land uses which support BLM's multiple-use land management objectives. To maintain reasonable concurrence with surface use closure

requirements in other recognized mule deer migration areas in the BLM FFO, no surface use will take place December 1 – March 1.

Hazards: Wildlife hazards associated with the proposed project would be fenced, covered, and/or contained in storage tanks, as necessary.

Migratory Bird: Migratory nest survey stipulations. Once drilling and completion activities are complete, any open water that could be harmful to birds and wildlife. must be covered, screened, or netted to prevent entry.

Threatened, Endangered or Sensitive Species: If, in operations the operator/holder discovers any Threatened, Endangered, or Sensitive species, work in the vicinity of the discovery will be suspended and the discovery promptly reported to the BLM-FFO T&E specialist at (505) 564-7600. The BLM-FFO will then specify what action is to be taken. Failure to notify the BLM-FFO about a discovery may result in civil or criminal penalties in accordance with The Endangered Species Act (as amended).

Noise: This well is located within a designated Noise Sensitive Area (NSA). Once proposed project activities are complete, noise from pumpjack, compressor or other facilities cannot exceed 48.6 db at edge of Bald eagle ACEC core area. Any compressor that emits noise > 48.6db may require a 'noise wall' to deflect sound away from ACEC…

Nesting: If a bird nest containing eggs or young is encountered in the path of construction the operator will cease construction and consult with BLM to determine appropriate actions.

Livestock Grazing: Cattle are in allotment between 5/1 and 10/31. Industry may need to coordinate with permittee if concerns of livestock in area during construction.

Soil, Air, Water

Land Farming: No excavation, remediation or closure activities will be authorized without prior approval, on any federal or Indian mineral estate, federal surface, or federal ROW. A Sundry Notice (DOI, BLM Form 3160-5) must be submitted with an explanation of the remediation or closure plan for on-lease actions.

Emission Control Standard: Compressor engines 300 horsepower or less used during well production must be rated by the manufacturer as emitting NOx at 2 grams per horsepower hour or less to comply with the New Mexico Environmental Department, Air Quality Bureau's guidance.

Waste Disposal: All fluids (i.e., scrubber cleaners) used during washing of production equipment, including compressors, will be properly disposed of to avoid ground contamination, or hazard to livestock or wildlife.

Cultural Resources

Non-Permitted Disturbance: Construction, construction maintenance or any other activity outside the areas permitted by the APD will require additional approval and may require a new cultural survey and clearance.

Employee Education: All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles, and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

Discovery of Cultural Resources in the Absence of Monitoring: Discovery of Cultural Resources in the Absence of Monitoring: If, in its operations, operator/holder discovers any previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the discovery promptly reported to BLM Field Manager. BLM will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property, **or in accordance with an approved program alternative.** Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive **archaeological or alternative mitigation,** likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any **mitigations determined appropriate through the agency's Section 106 consultation are completed**. Failure to notify the BLM about a discovery may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, **the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws**.

Discovery of Cultural Resources during Monitoring: If monitoring confirms the presence of previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the monitor will promptly report the discovery to the BLM Field Manager. BLM will then specify what action is to be taken. **If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property, or in accordance with an approved program alternative. Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive archaeological or alternative mitigation, likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to**

allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any mitigations determined appropriate through the agency's Section 106 consultation are completed.

Damage to Sites: If, in its operations, operator/holder damages, or is found to have damaged any previously documented or undocumented historic or prehistoric cultural resources, excluding "discoveries" as noted above, the operator/holder agrees at his/her expense to have a permitted cultural resources consultant prepare a BLM approved damage assessment and/or data recovery plan. The operator/holder agrees at his/her expense to implement a **mitigation** that the agency finds appropriate given the significance of the site, which the agency determines in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property. **This mitigation may entail execution of the data recovery plan by a permitted cultural resources consultant and/or alternative mitigations.** Damage to cultural resources may result in **civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws.**

See below additional cultural stipulations.

IN-HOUSE ARCHEOLOGICAL SURVEY DETERMINATION NM-210-2024-003
FARMINGTON FIELD OFFICE

Case No./Name: Haynes Canyon 428H Well Pad Date Submitted: 10/17/2023.
Company: Enduring
Type of Case: Well Pad

IS A CULTURAL RESOURCE INVENTORY REQUIRED?

☐ Proposal involves non-Federal lands.
☐ Proposal is within an existing right-of-way.
☒ Proposal is along an existing road.
☐ Proposal is within an existing disturbed area.
☐ The well pad is to be expanded feet to the .
☐ Other: This new well pad will be re-permitted and drilled on an existing location.
Please see the attached base map.

Submitted by: Kim A. on behalf of Chris W.

CULTURAL RESOURCE SPECIALIST RECOMMENDATIONS

☐ Inventory for cultural resources **is** required.

☒ Inventory for cultural resources **is not** required for the reason(s) indicated below.

☐ Previous natural ground disturbance has modified the surface so extensively that the likelihood of finding cultural properties is negligible (e.g., within a floodplain), or

☒ Human activity has created a new land surface to such an extent as to eradicate traces of cultural properties, or

☐ Existing Class II or equivalent inventory or environmental data are sufficient to indicate that there is no likelihood of finding a National Register or eligible property, or

☒ Inventory at the Class III level of intensity has previously been performed and records adequately documenting the location, methods, and results of the inventory are available in report no. NMCRIS No 130650
or

☐ Natural environmental characteristics are unfavorable to the presence of cultural properties (such as recent landslide or rock falls), or

☐ The nature of the proposed action is such that no impact can be expected on significant cultural resources (e.g. land use will not require any surface disturbing action, e.g., aerial spraying, hand application of chemicals, travel on existing roads, etc.), or

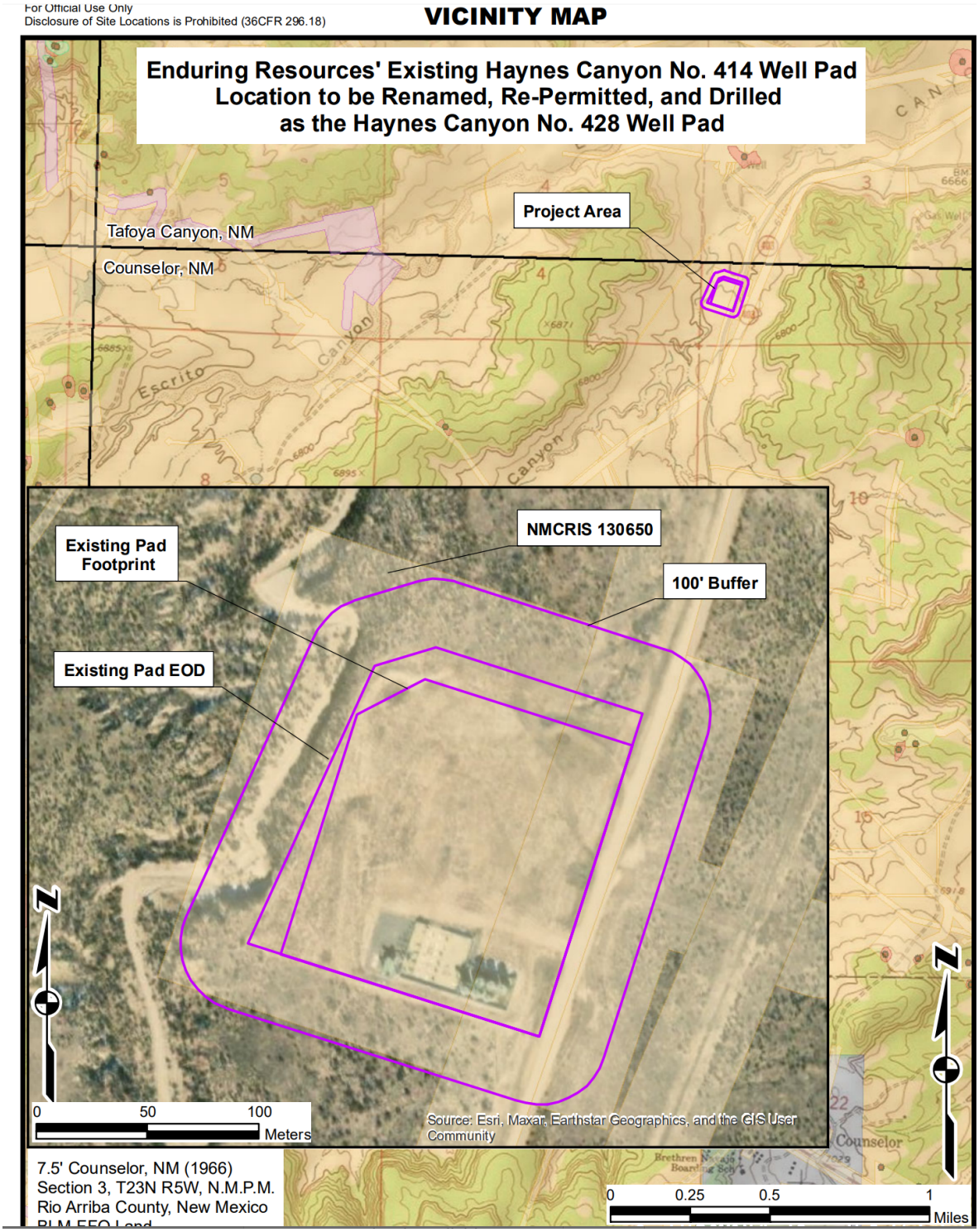
☐ Other:

Recommended by: Kim Adams Date: 10/17/2023
Archaeologist
Cultural Notes (if any, e.g., conditions, stipulations, etc.):

Approval Date: 12/05/2023

For Official Use Only
Disclosure of Site Locations is Prohibited (36CFR 296.18)

VICINITY MAP



Approval Date: 12/05/2023

BLM Report Number: 2024(I)002F
USGS Map: Counselor & Tafoya Canyon, NM
Activity Code: 1310
NMCRIS No: 153816

CULTURAL RESOURCE RECORD OF REVIEW

BUREAU OF LAND MANAGEMENT
FARMINGTON FIELD OFFICE

1. Description of Report/Project:

Project Name: Haynes Canyon Unit 432H Reoccupation Well Pad, Access Road Upgrade, Pipeline, Layflat, and Temporary Use Areas.
Project Sponsor: Enduring Resources.
Arch. Firm & Report No.: Division of Conservation Archaeology; DCA Report No. 23-DCA-027.
Location: T23N R6W Section 3.

Well Footages: 1,773' FNL, 303' FWL.

Split Estate: No.
Project Dimensions: 400 ft x 400 ft – well pad (500 ft x 500 ft w/ a 50 ft construction zone).
1,571 ft x 30 ft - access road upgrade.
3,384 ft x 40 ft – pipeline/layflat.
248 ft x 25 ft – TUA.
323 ft x 25 ft – TUA.
Sites Located: LA39919/NM-01-31536 (NRHP- Eligible; Avoided).

Determination: No Effect to Historic Properties.

2. **Field Check:** No
3. **Cultural ACEC:** No.
4. **Sensitive Cultural Area:** No.
5. **Recommendation:** *PROCEED WITH ACTION:* _X_ *STIPULATIONS ATTACHED*: X
6. **Reviewer /Archaeologist:** Kim Adams **Date**: 10/23/2023

Note: Part of this project was previously inventoried.

Report Summary	BLM	Other	Total
Acres Inventoried	14.93	0.00	14.93
Sites Recorded	0	0	0
Prev. Recorded Sites	1	0	1
Sites Avoided	1	0	1
Sites Treated	0	0	0

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov. Or Geoffrey Haymes (BLM) at 505.564.7684 or ghaymes@blm.gov

CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2024(I)002F

Project Name: Haynes Canyon Unit 432H Reoccupation Well Pad, Access Road Upgrade, Pipeline, Layflat, and Temporary Use Area.
Project Sponsor: Enduring Resources.

1. SITE PROTECTION AND EMPLOYEE EDUCATION:
All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

2. ARCHAEOLOGICAL MONITORING IS REQUIRED:
A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.
The monitor will:

- Ensure that the site protection barrier is located as indicated on the attached map in the vicinity of LA39919.
- Inform BLM-FFO archaeologists that monitoring will be occurring within 24 hours of the scheduled monitoring.
- Observe all construction activities within 100'of LA39919.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

3. SITE PROTECTION BARRIER:

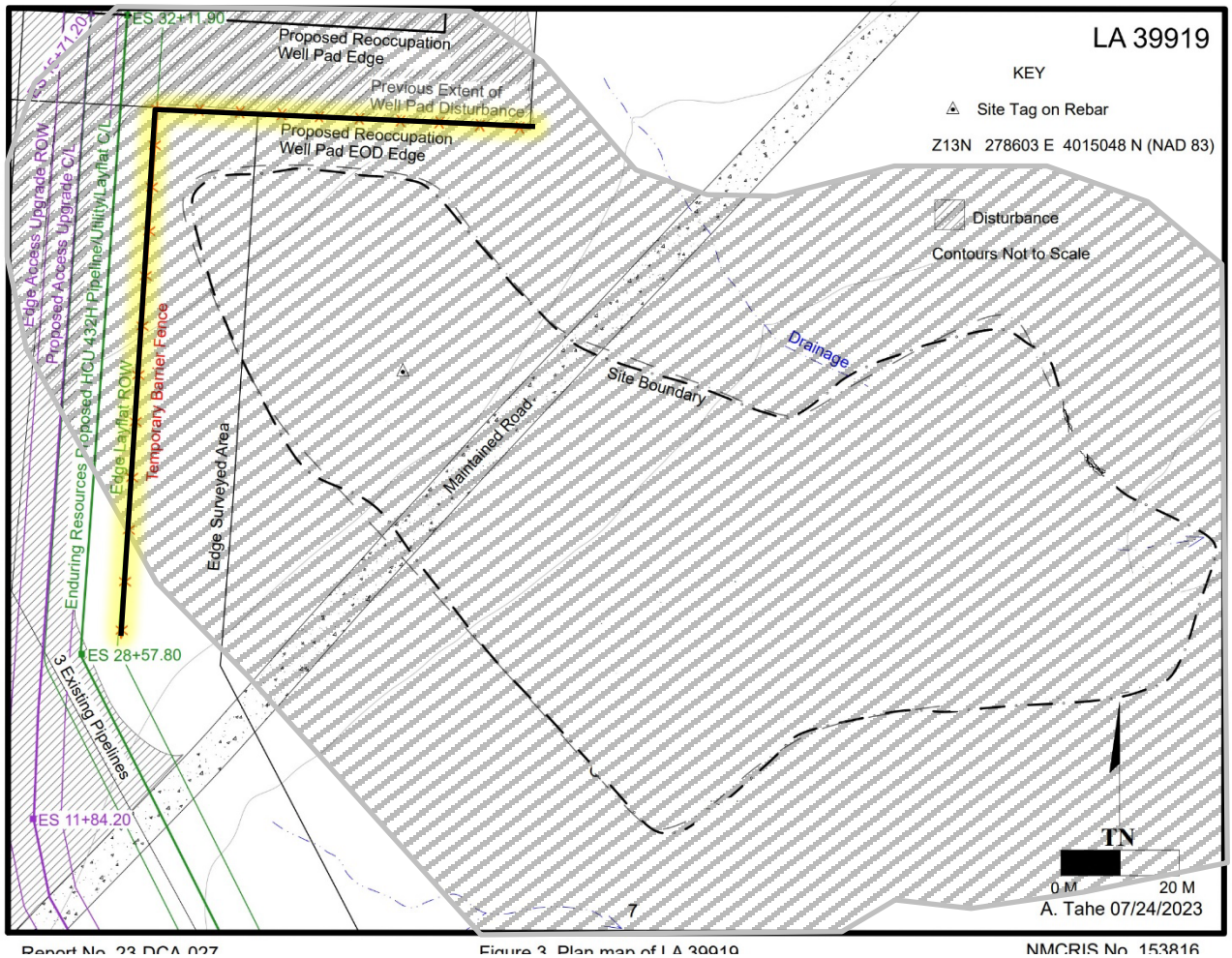
- The temporary site protection barrier will be erected prior to the start of construction. The barrier will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barrier will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.
- The barrier will be placed as indicated on the attached map.
- There will be no surface-disturbing activities or vehicle traffic past the barrier.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)
CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2024(I)002F

Project Name: Haynes Canyon Unit 432H Reoccupation Well Pad, Access Road Upgrade, Pipeline, Layflat, and Temporary Use Area.
Project Sponsor: Enduring Resources.

MONITOR CONSTRUCTION = TEMPORARY FENCING =



Report No. 23 DCA-027 Figure 3. Plan map of LA 39919 NMCRIS No. 153816

BLM Report Number: 2024(I)005F
USGS Map: Crow Mesa West, NM
Activity Code: 1310
NMCRIS No: 154100

CULTURAL RESOURCE RECORD OF REVIEW

BUREAU OF LAND MANAGEMENT
FARMINGTON FIELD OFFICE

1. Description of Report/Project:

Project Name: Northeast Lybrook Com No 262H **Reoccupation Well**.
Project Sponsor: Enduring Resources.
Arch. Firm & Report No.: Division of Conservation Archaeology; DCA Report No. 22-DCA-060.
Location: T23N R6W Section 6.

Well Footages: See plats

Split Estate: No.
Project Dimensions: 300 ft x 500 ft – well pad (400 ft x 600 ft w/ a 50 ft construction zone).

Sites Located: LA64876/NM-01-34748 (NRHP- Eligible; Update; Avoided; No Further Work).
LA175265/NM-210-47840 (NRHP- Eligible; Update; Avoided).
LA178266/NM-210-48243 (NRHP- Eligible; Update; Avoided).
Determination: No Effect to Historic Properties.

2. Field Check: No
3. Cultural ACEC: No.
4. Sensitive Cultural Area: No.
5. Recommendation: *PROCEED WITH ACTION:* _X_ *STIPULATIONS ATTACHED*: X
6. Reviewer /Archaeologist: Kim Adams **Date**: 11/6/2023

Note: The majority of this project was previously inventoried (see NMCRIS No 129798).

Report Summary	BLM	Other	Total
Acres Inventoried	0.74	0.00	0.74
Sites Recorded	0	0	0
Prev. Recorded Sites	3	0	3
Sites Avoided	3	0	3
Sites Treated	0	0	0

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2024(I)005F

Project Name: Northeast Lybrook Com No 262H **Reoccupation Well**.
Project Sponsor: Enduring Resources.

1. SITE PROTECTION AND EMPLOYEE EDUCATION:
All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

2. ARCHAEOLOGICAL MONITORING IS REQUIRED:
A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.
The monitor will:

- Ensure that the site protection barriers are located as indicated on the attached maps in the vicinity of LA175265, & LA178266.
- Inform BLM-FFO archaeologists that monitoring will be occurring within 24 hours of the scheduled monitoring.
- Observe all construction activities within 100'of LA175265, & LA178266.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

3. SITE PROTECTION BARRIER:

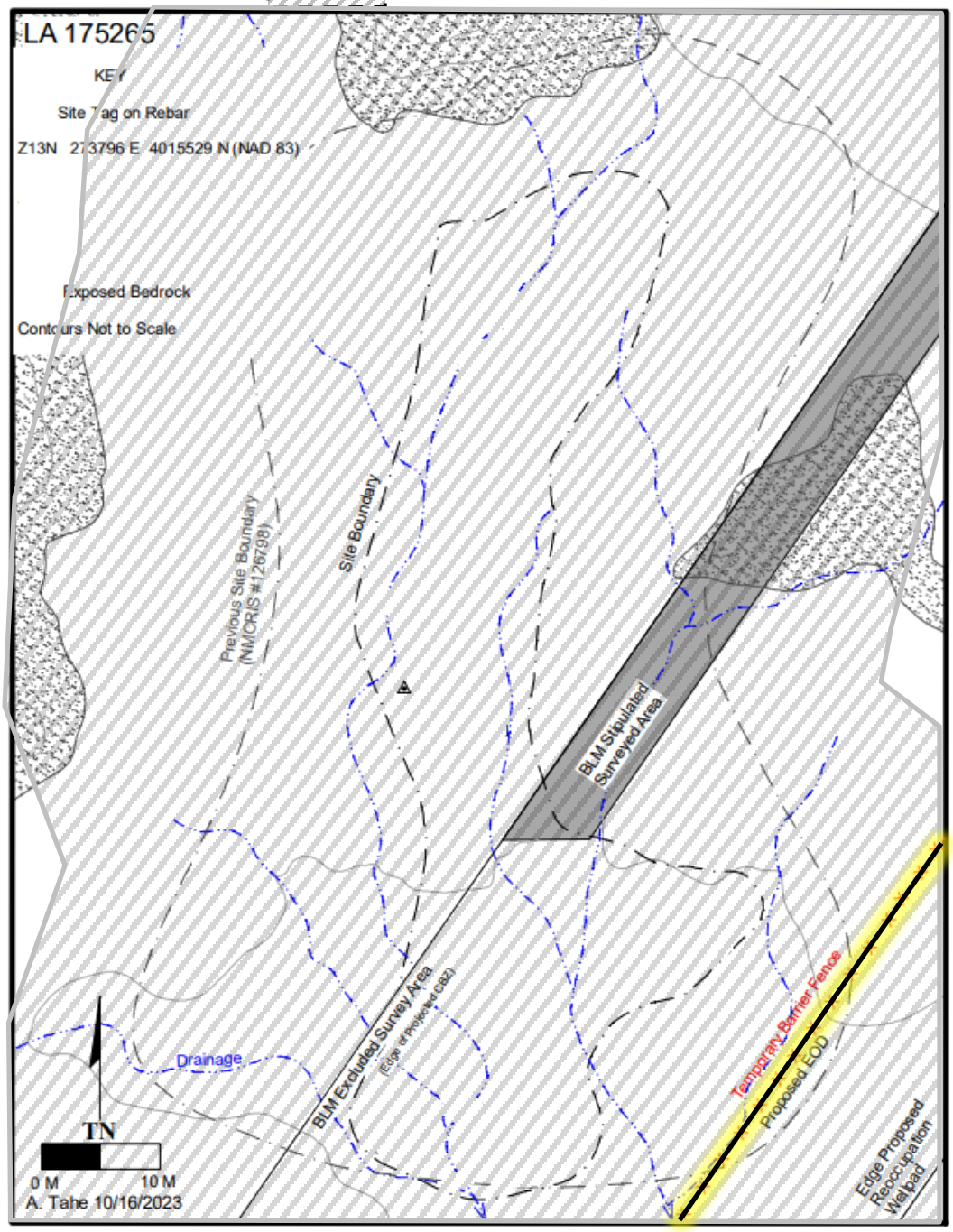
- The temporary site protection barriers will be erected prior to the start of construction. The barriers will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barriers will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.
- The barriers will be placed as indicated on the attached map.
- There will be no surface-disturbing activities or vehicle traffic past the barriers.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)
CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2024(I)005F

Project Name: Northeast Lybrook Com No 262H **Reoccupation Well**.
Project Sponsor: Enduring Resources.

MONITOR CONSTRUCTION = TEMPORARY FENCING =



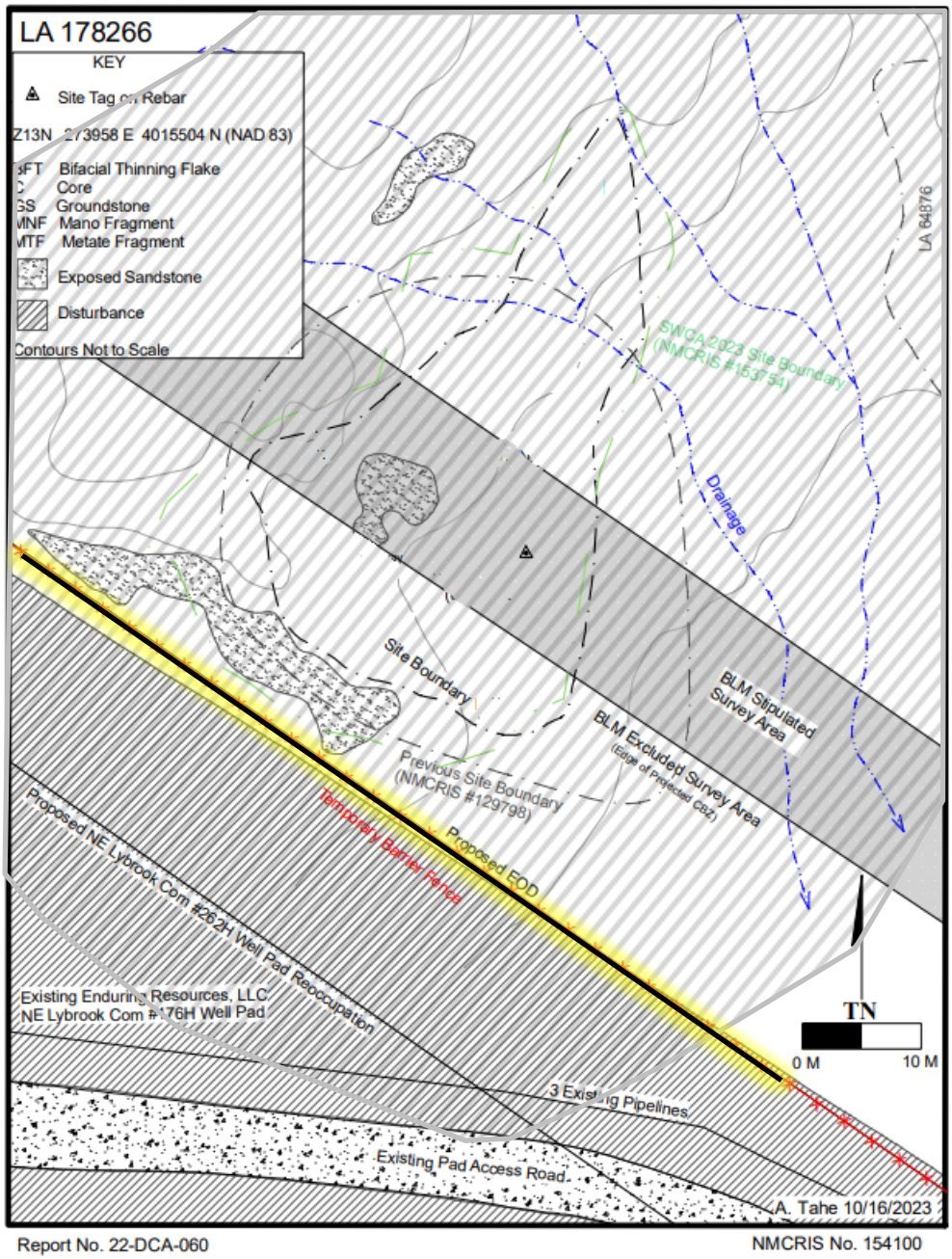
Report No. 22-DCA-060 NMCRIS No. 154100

3

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)
CULTURAL RESOURCE STIPULATIONS
Farmington Field Office
BLM Report Number: 2024(I)005F

Project Name: Northeast Lybrook Com No 262H **Reoccupation Well**.
Project Sponsor: Enduring Resources.

MONITOR CONSTRUCTION = TEMPORARY FENCING =



4

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington District Office
6251 College Blvd, Suite A
Farmington, New Mexico 87402

In Reply Refer To:
3162.3-1(NMF0110)

* ENDURING RESOURCES LLC

#438H HAYNES CANYON UNIT

Lease: NMNM130875 Agreement: NMNM105770949

SH: SW¼SW¼ Section 3, T. 23N., R. 6W.
Rio Arriba County, New Mexico
BH: Lot 3 Section 2, T. 23N., R. 6W.
Rio Arriba County, New Mexico
***Above Data Required on Well Sign**

GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when **checked**:

A. ☒ Note all surface/drilling conditions of approval attached.

B. ☒ The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated

C. ☒ Test all casing strings below the conductor casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield (burst) for a minimum of 30 minutes. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

D. ☐ Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, New Mexico State Office, Reservoir Management Group, 301 Dinosaur Trail, Santa Fe, New Mexico 87508.
The effective date of the agreement must be **prior** to any sales.

E. ☐ The use of co-flex hose is authorized contingent upon the following:
1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.
3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

I. GENERAL

A. Full compliance with all applicable laws and regulations, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.

B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).

C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.

D. For Wildcat wells only, a drilling operations progress report is to be submitted, to the BLM-Field Office, weekly from the spud date until the well is completed and the Well Completion Report is filed. The report should be on 8-1/2 x 11 inch paper, and each page should identify the well by; operator's name, well number, location and lease number.

E. As soon as practical, notice is required of all blowouts, fires and accidents involving life-threatening injuries or loss of life. (See NTL-3A).

F. BOP equipment (except the annular preventer) shall be tested utilizing a test plug to full working pressure for 10 minutes. No bleed-off of pressure is acceptable. (See 43 CFR 3172.6(b)(9)(ii)).

G. The operator shall have sufficient weighting materials and lost circulation materials on location in the event of a pressure kick or in the event of lost circulation. (See 43 CFR 3172.8(a)).

H. The flare line(s) discharge shall be located not less than 100 feet from the well head, having straight lines unless turns are targeted with running tees, and shall be positioned downwind of the prevailing wind direction and shall be anchored. The flare system shall have an effective method for ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and to maintain a continuous flare. (See 43 CFR 3172.8(b)(7)).

I. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work, casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a Notice of Intent sundry within three business days. **Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to Virgil Lucero at 505-793-1836.**

J. The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.

K. Unless drilling operations are commenced within two years, approval of the Application for Permit to Drill will expire. A written request for a two-year extension may be granted if submitted prior to expiration.

L. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all times, unless the well is secured with blowout preventers or cement plugs.

M. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.

N. **Commingling**: No production (oil, gas, and water) from the subject well should start until Sundry Notices (if necessary) granting variances from applicable regulations as related to commingling and off-lease measurement are approved by this office.

II. REPORTING REQUIREMENTS

A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.

B. The following reports shall be filed with the BLM-Authorized Officer online through AFMSS 2 within 30 days after the work is completed.

1. Provide complete information concerning.

   a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.

   b. Intervals tested, perforated (include size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.

   c. Subsequent Report of Abandonment, show the way the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.

2. Well Completion Report will be submitted with 30 days after well has been completed.

   a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.

3. Submit a cement evaluation log if cement is not circulated to surface.

C. Production Startup Notification is required no later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site or resumes production in the case of a well which has been off production for more than 90 days. The operator shall notify the Authorized Officer by letter or Sundry Notice, Form 3160-5, or orally to be followed

by a letter or Sundry Notice, of the date on which such production has begun or resumed. CFR 43 3162.4-1(c).

III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results, 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results, and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of * Days or 50 MMCF following its (completion)(recompletion), whichever first occurs, without the prior, written approval of the authorized officer. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the first gas to surface.

V. SAFETY

A. All rig heating stoves are to be of the explosion-proof type.

B. Rig safety lines are to be installed.

C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

VI. CHANGE OF PLANS OR ABANDONMENT

A. Any changes of plans required to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.F.

B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.F. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.

C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

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

Operator Certification Data Report

12/05/2023

Operator

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: KAYLA WHITE **Signed on:** 09/28/2023

Title: Staff Engineer

Street Address: PO BOX 4190

City: PARKER **State:** CO **Zip:** 80134

Phone: (720)768-3575

Email address: KWHITE@CDHCONSULT.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

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

Application Data
12/05/2023

APD ID: 10400093995
Submission Date: 09/29/2023
Operator Name: ENDURING RESOURCES LLC
Well Name: HAYNES CANYON UNIT
Well Number: 438H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400093995
Tie to previous NOS? Y
Submission Date: 09/29/2023
BLM Office: Farmington
User: KAYLA WHITE
Title: Staff Engineer
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM130875
Lease Acres:
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? YES
Federal or Indian agreement: FEDERAL
Agreement number: NMNM105770949
Agreement name: Haynes Canyon Unit
Keep application confidential? Y
Permitting Agent? YES
APD Operator: ENDURING RESOURCES LLC
Operator letter of
Operator_Certification_09062023_20230911113657.pdf

Operator Info

Operator Organization Name: ENDURING RESOURCES LLC
Operator Address: 200 ENERGY COURT
Zip: 87401
Operator PO Box:
Operator City: FARMINGTON
State: NM
Operator Phone: (505)497-8574
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: HAYNES CANYON UNIT
Well Number: 438H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: COUNSELOR GALLUP-DAKOTA
Pool Name: COUNSELORS GALLUP DAKOTA

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

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

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** Y **New surface disturbance?** N

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** Haynes Canyon Unit **Number:** 412

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: **Distance to nearest well:** 20 FT **Distance to lease line:** 303 FT

Reservoir well spacing assigned acres Measurement: 322.44 Acres

Well plat: HCU_438H_C102_Signed_092823_20230928144130.pdf

Well work start Date: 01/01/2024 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 15269 **Reference Datum:** GROUND LEVEL

Wellbore	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	Will this well produce from this
SHL Leg #1	1713	FNL	303	FWL	23N	6W	3	Aliquot SWNW	36.256175	-107.46463	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMNM 28733	6689	0	0	Y
KOP Leg #1	1713	FNL	303	FWL	23N	6W	3	Aliquot SWNW	36.256175	-107.46463	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMNM 28733	2054	5650	4635	Y
PPP Leg #1-1	380	FNL	1910	FEL	23N	6W	4	Lot 2	36.259678	-107.472004	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMNM 130875	1150	6945	5539	Y

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Wellbore	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	Will this well produce from this
PPP Leg #1-2	380	FNL	0	FWL	23N	6W	3	Lot 4	36.25982	-107.465525	RIO ARRIBA	NEW MEXICO	NEW MEXICO	F	NMNM 28733	1137	8856	5552	Y
PPP Leg #1-3	380	FNL	0	FWL	23N	6W	2	Lot 4	36.260215	-107.447337	RIO ARRIBA	NEW MEXICO	NEW MEXICO	S	STATE	1100	14221	5589	Y
EXIT Leg #1	380	FNL	2580	FWL	23N	6W	2	Lot 3	36.260404	-107.438585	RIO ARRIBA	NEW MEXICO	NEW MEXICO	S	STATE	1082	16802	5607	Y
BHL Leg #1	380	FNL	2580	FWL	23N	6W	2	Lot 3	36.260404	-107.438585	RIO ARRIBA	NEW MEXICO	NEW MEXICO	S	STATE	1082	16802	5607	Y

Operator Certification:

I hereby certify that I, or someone under my direct supervision, has 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, to the best of my knowledge, are true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 6th day of September ,2023.

Name: Heather Huntington

Position Title Permitting Technician

Address: 200 Energy Court, Farmington, NM 87401

Telephone: 505-636-9751

Field representative (if not above signatory) _____

Email: hhuntington@enduringresources.com

Date: 9/6/2023

Heather Huntington
Permitting Technician
Enduring Resources, LLC

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	13379	COUNSELOR GALLUP-DAKOTA OIL POOL

[4] Property Code	[5] Property Name	[6] Well Number
	HAYNES CANYON UNIT	438H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372286	ENDURING RESOURCES, LLC	6689'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	3	23N	6W		1713	NORTH	303	WEST	RIO ARRIBA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	2	23N	6W	3	380	NORTH	2580	WEST	RIO ARRIBA

[12] Dedicated Acres		[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
322.44	N/2 NE/4 (aka Lots 1 & 2) - Sec 4 N/2 N/2 (aka Lots 1 - 4) - Sec 3 N/2 NW/4 (aka Lots 3 & 4) - Sec 2			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

[17] OPERATOR CERTIFICATION

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

Signature 8/31/23
Date

Heather Huntington
Printed Name

hhuntington@enduringresources.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date Revised: AUGUST 24, 2023
Date of Survey: APRIL 8, 2023

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

FIRST TAKE POINT
380' FNL 1910' FEL
SEC 4, T23N, R6W

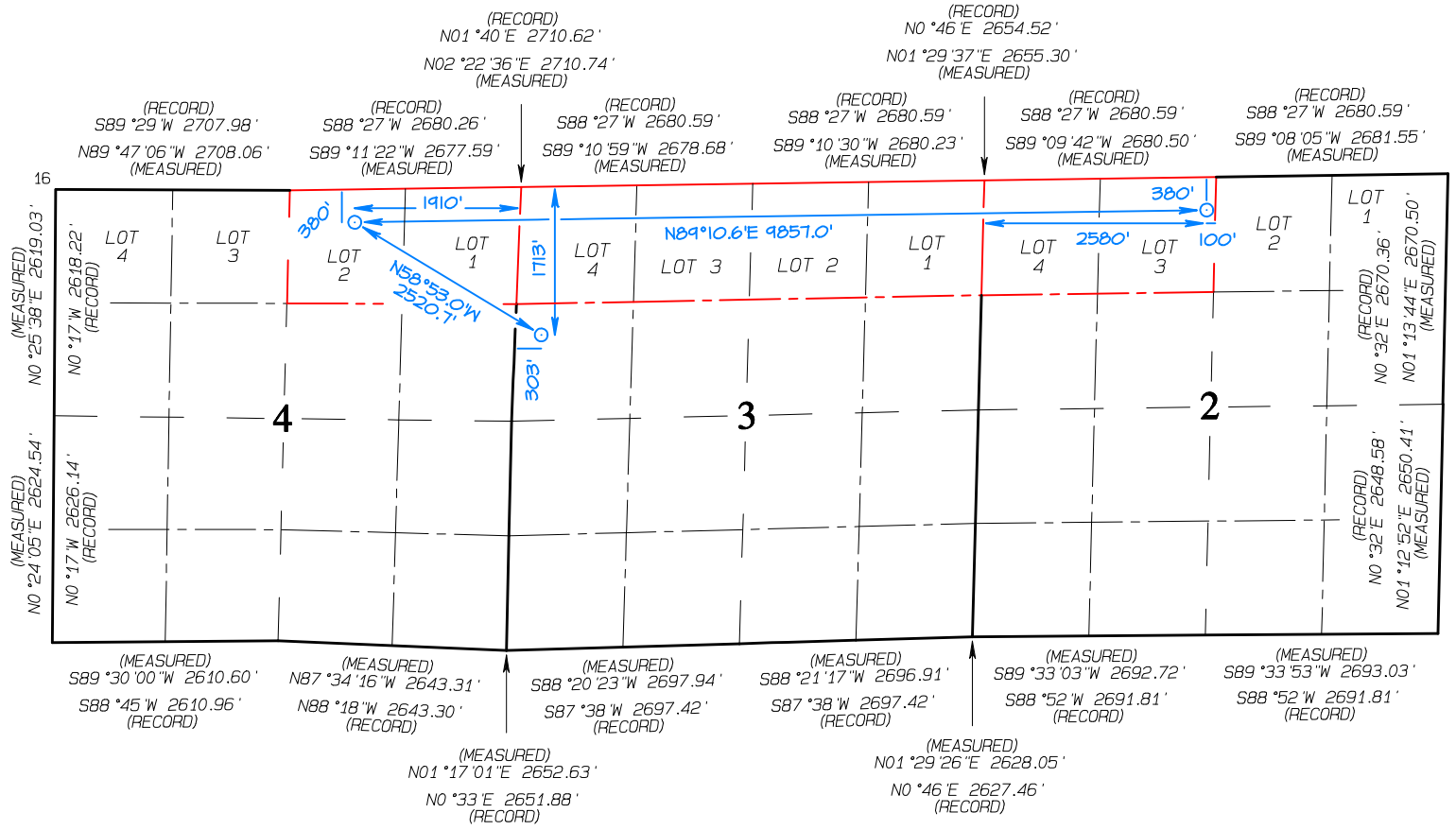
LAT 36.259678 °N
LONG -107.472004 °W
DATUM: NAD1983

SURFACE LOCATION
1713' FNL 303' FWL
SEC 3, T23N, R6W

LAT 36.256175 °N
LONG -107.464630 °W
DATUM: NAD1983

LAST TAKE POINT
380' FNL 2580' FWL
SEC 2, T23N, R6W

LAT 36.260404 °N
LONG -107.438585 °W
DATUM: NAD1983



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E-mail Address

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NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

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Certificate Number 15269

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SURFACE LOCATION
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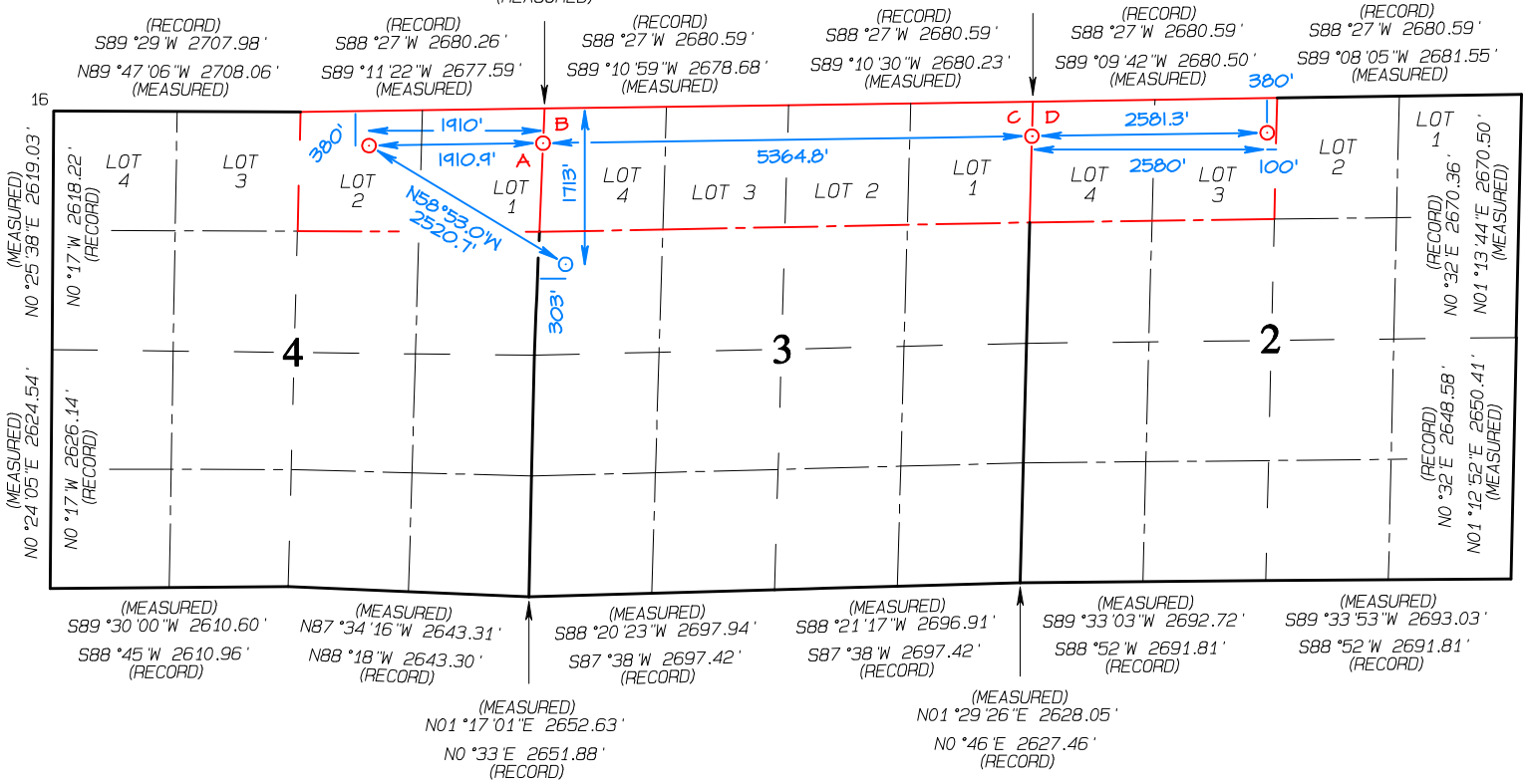


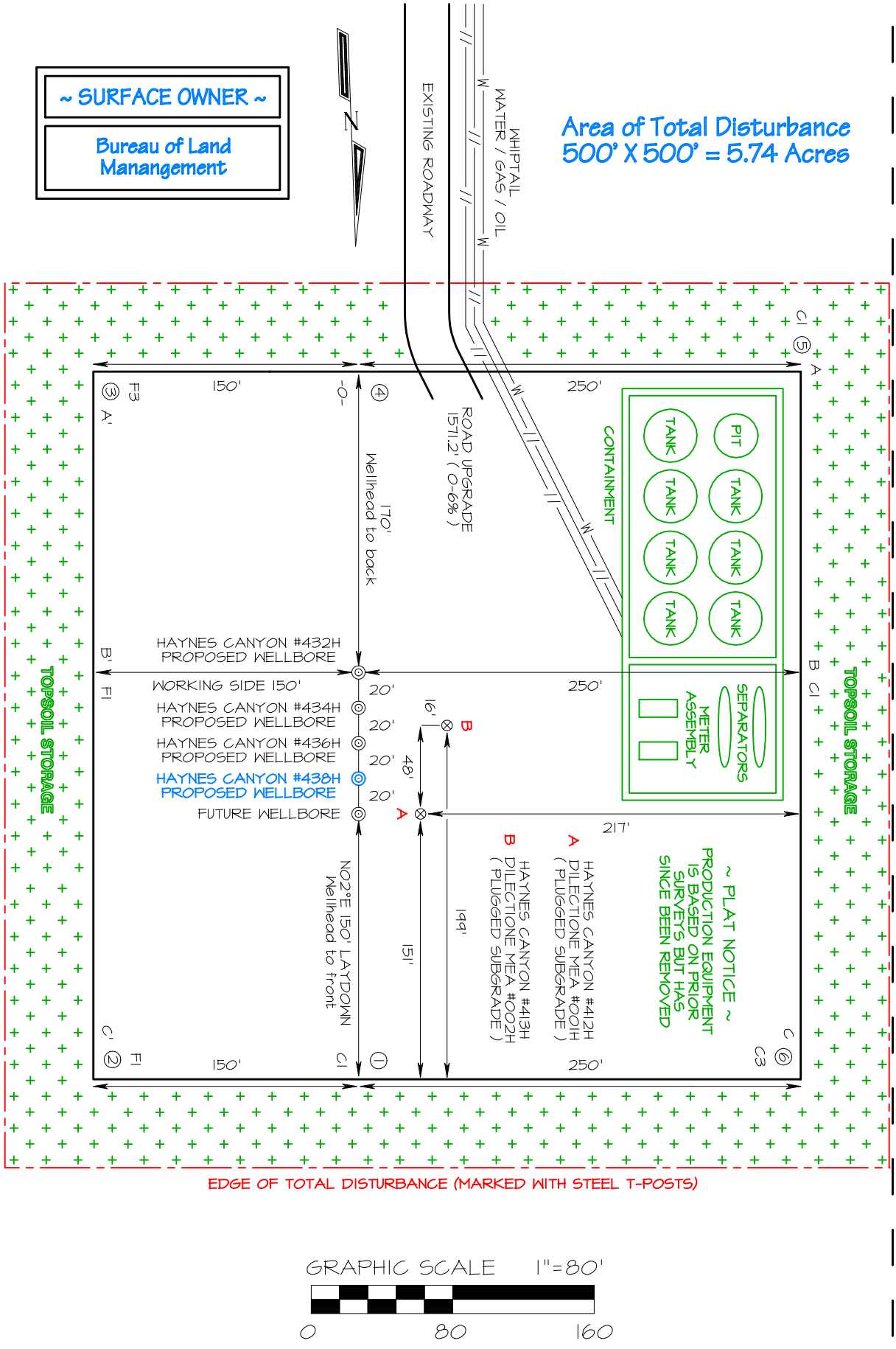
LEASE X-ING (A)
380' FNL 0' FEL
SEC 4, T23N, R6W
LAT 36.259820 °N
LONG -107.465525 °W
DATUM: NAD1983

LEASE X-ING (B)
380' FNL 0' FWL
SEC 3, T23N, R6W
LAT 36.259820 °N
LONG -107.465525 °W
DATUM: NAD1983

LEASE X-ING (C)
380' FNL 0' FEL
SEC 3, T23N, R6W
LAT 36.260215 °N
LONG -107.447337 °W
DATUM: NAD1983

LEASE X-ING (D)
380' FNL 0' FWL
SEC 2, T23N, R6W
LAT 36.260215 °N
LONG -107.447337 °W
DATUM: NAD1983

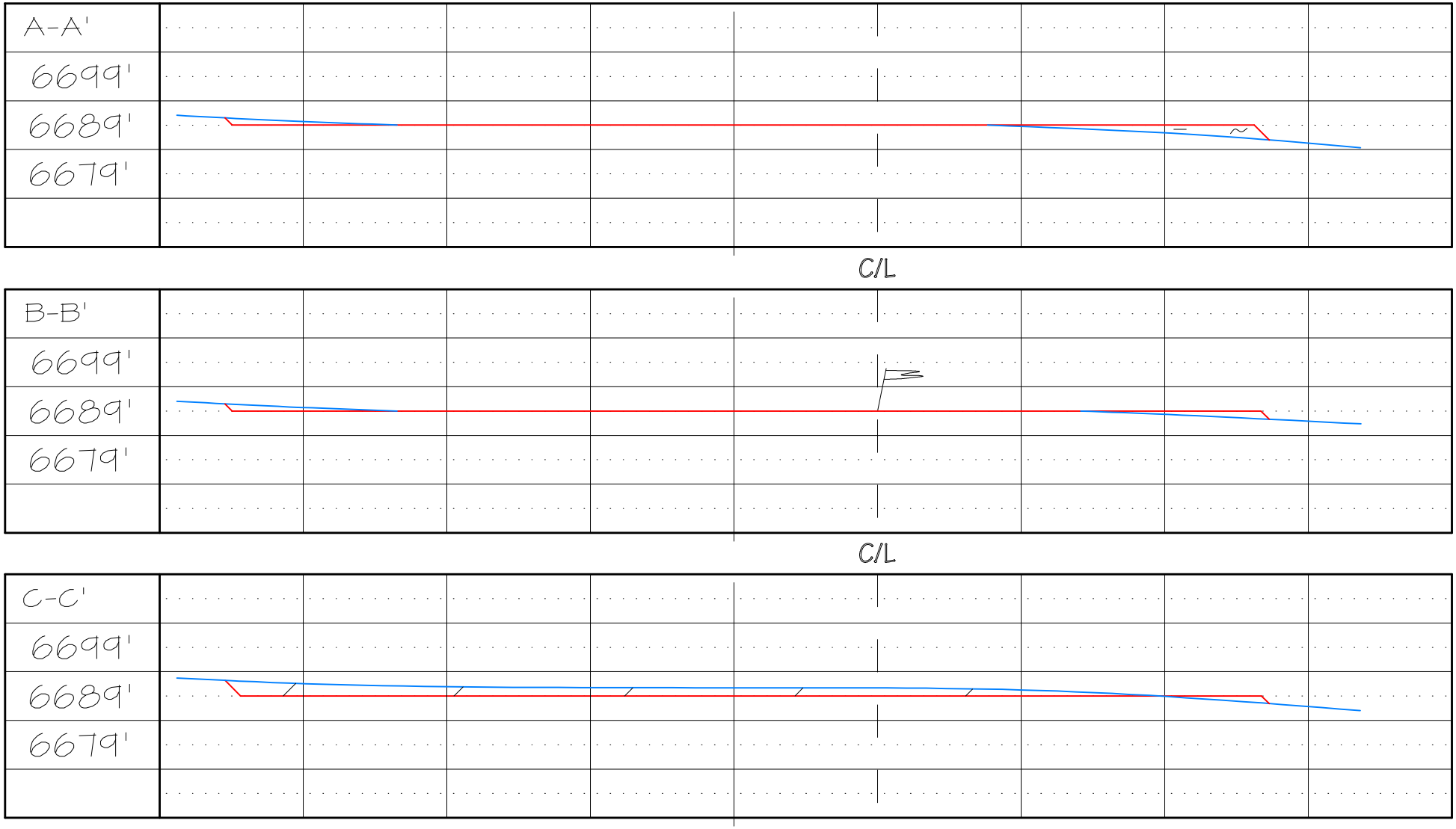
ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
1713' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'
LAT 36.256175°N LONG -107.464630°W DATUM: NAD1983



Steel T-Posts have been set to define the Edge of Disturbance limits which are 50' offset from the edge of the staked wellpad.

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
1713' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'

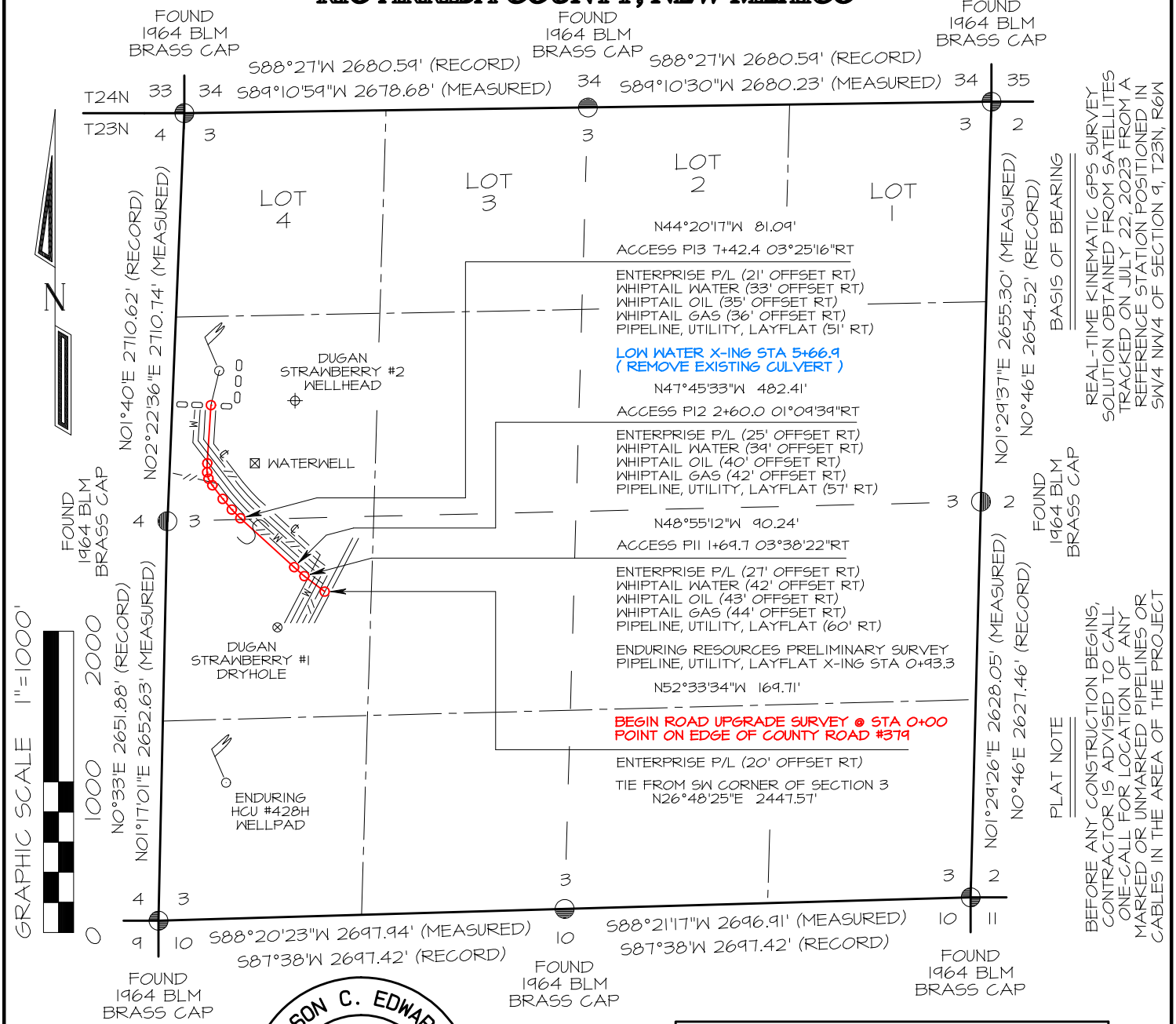
HORIZONTAL SCALE 1"=55' VERTICAL SCALE 1"=30'



EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 15+71.2	1571.2 FT / 95.2 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 24, 2023

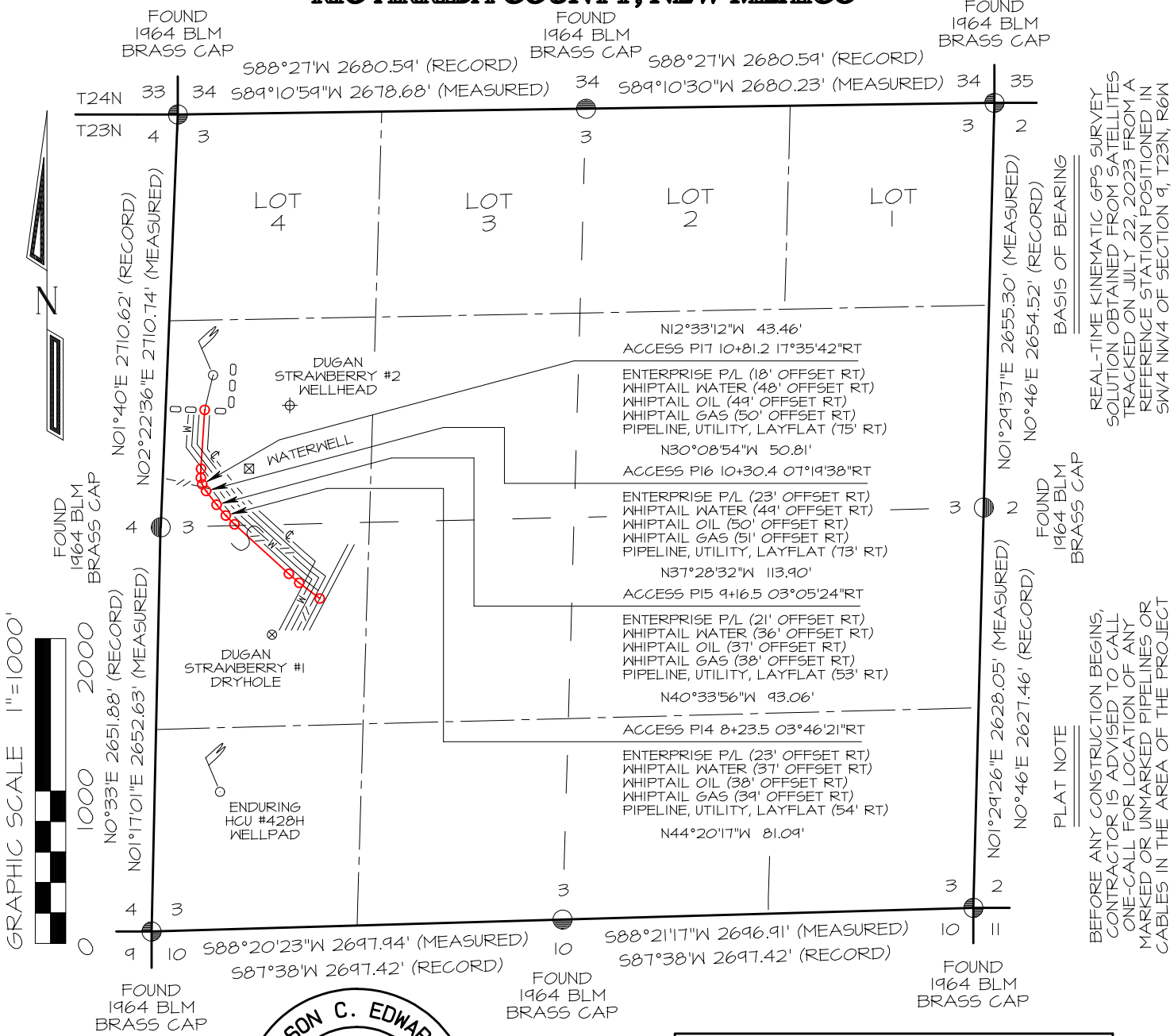
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 5 OF 13
FILENAME: 2363MAP1

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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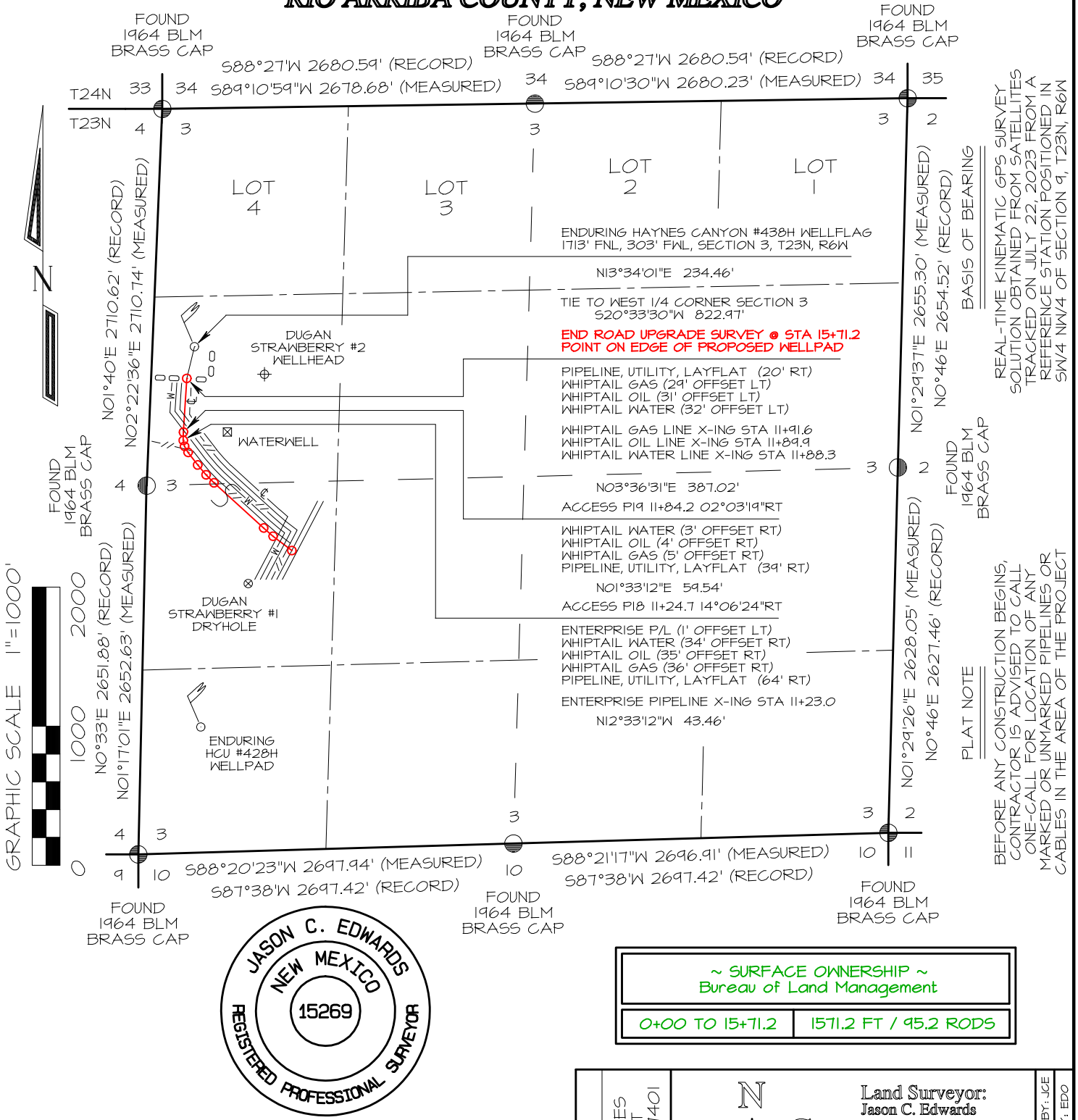
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 6 OF 13
FILENAME: 2363MAP2

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



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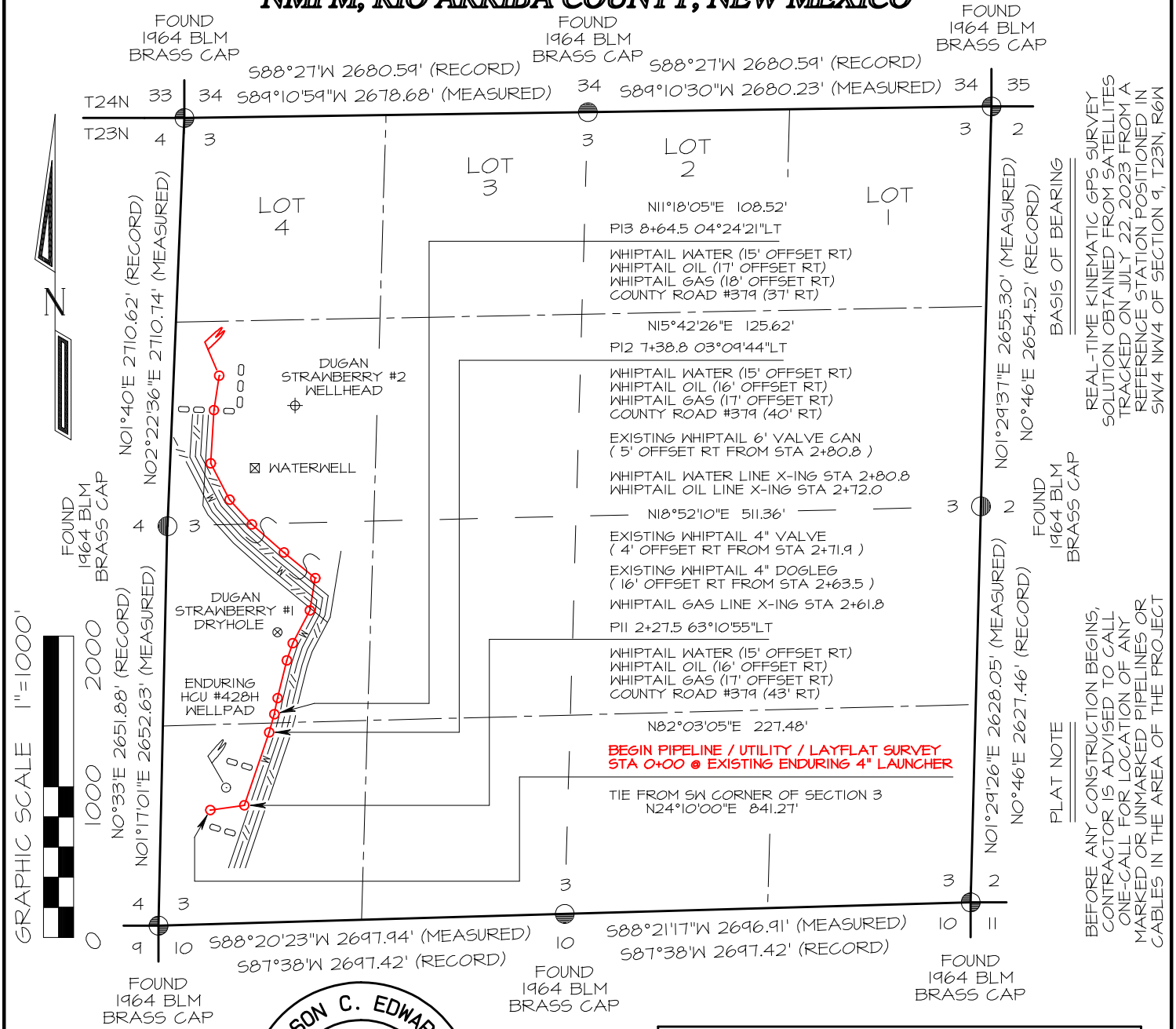
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 1 OF 13
FILENAME: 2363MAP3

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



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NCE SURVEYS, INC.

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DRAWN BY: EDO
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FILENAME: 2363MGPI

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
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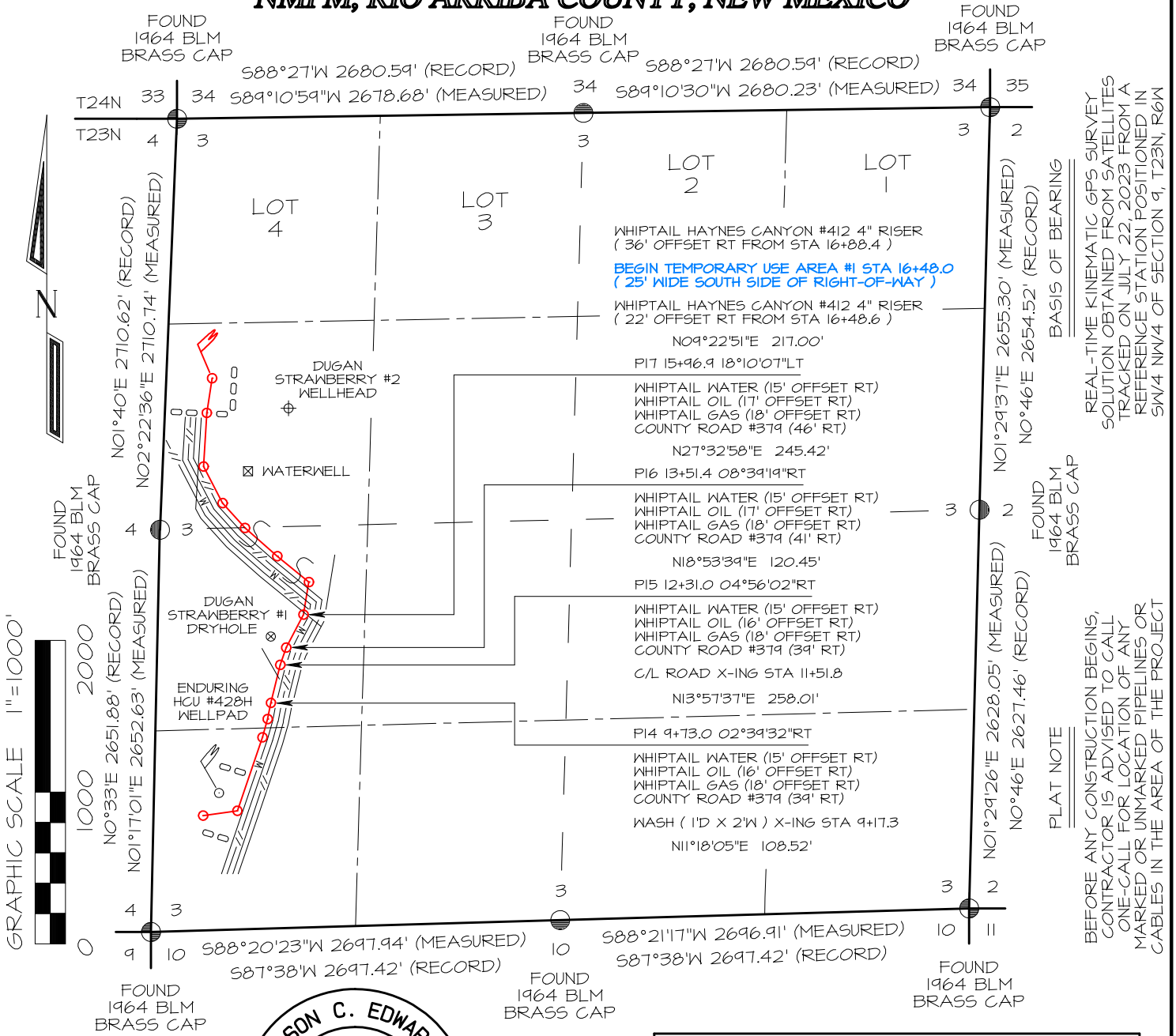

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NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 9 OF 13
FILENAME: 2363MGP2

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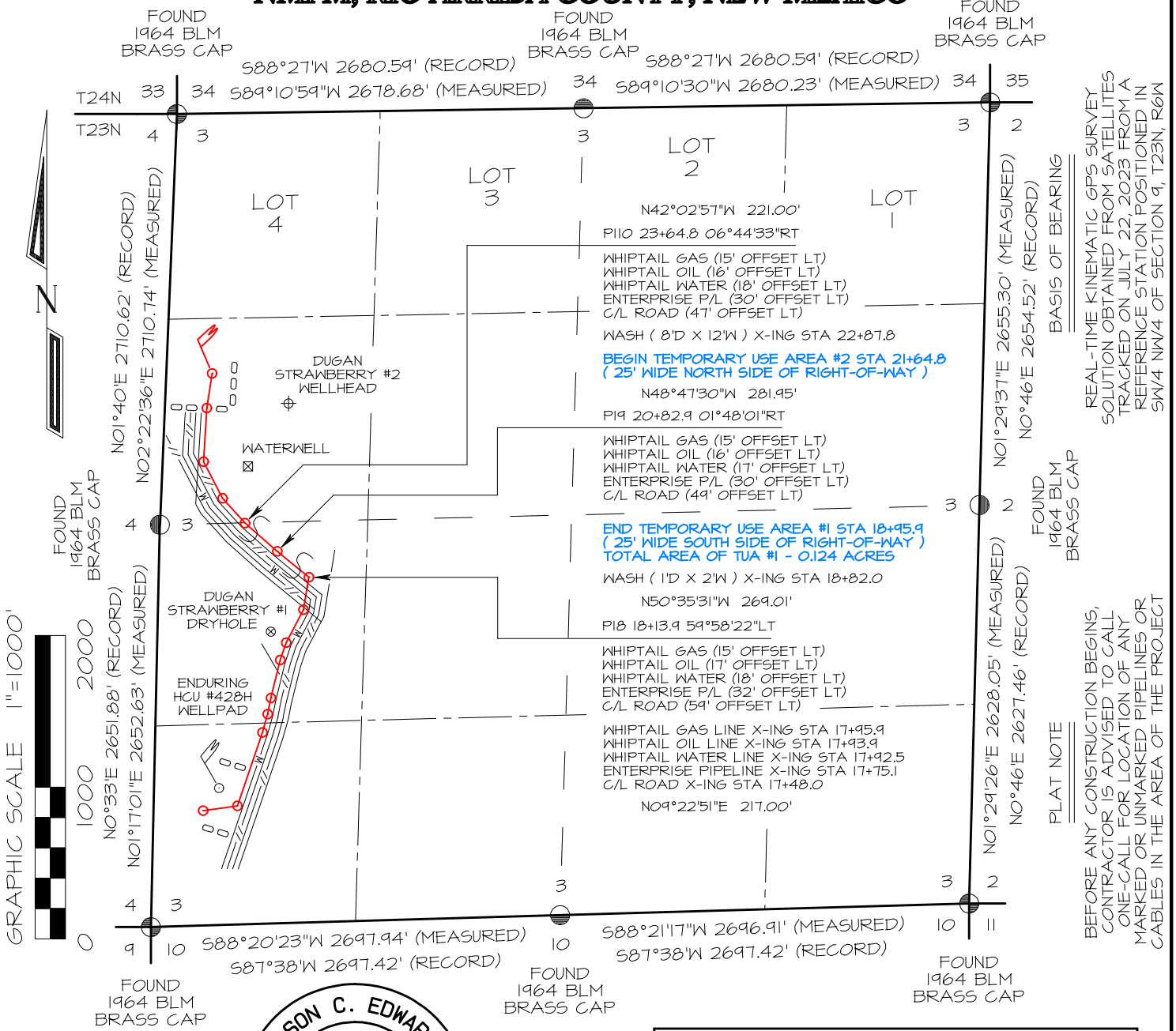

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FILENAME: 2363MGP3

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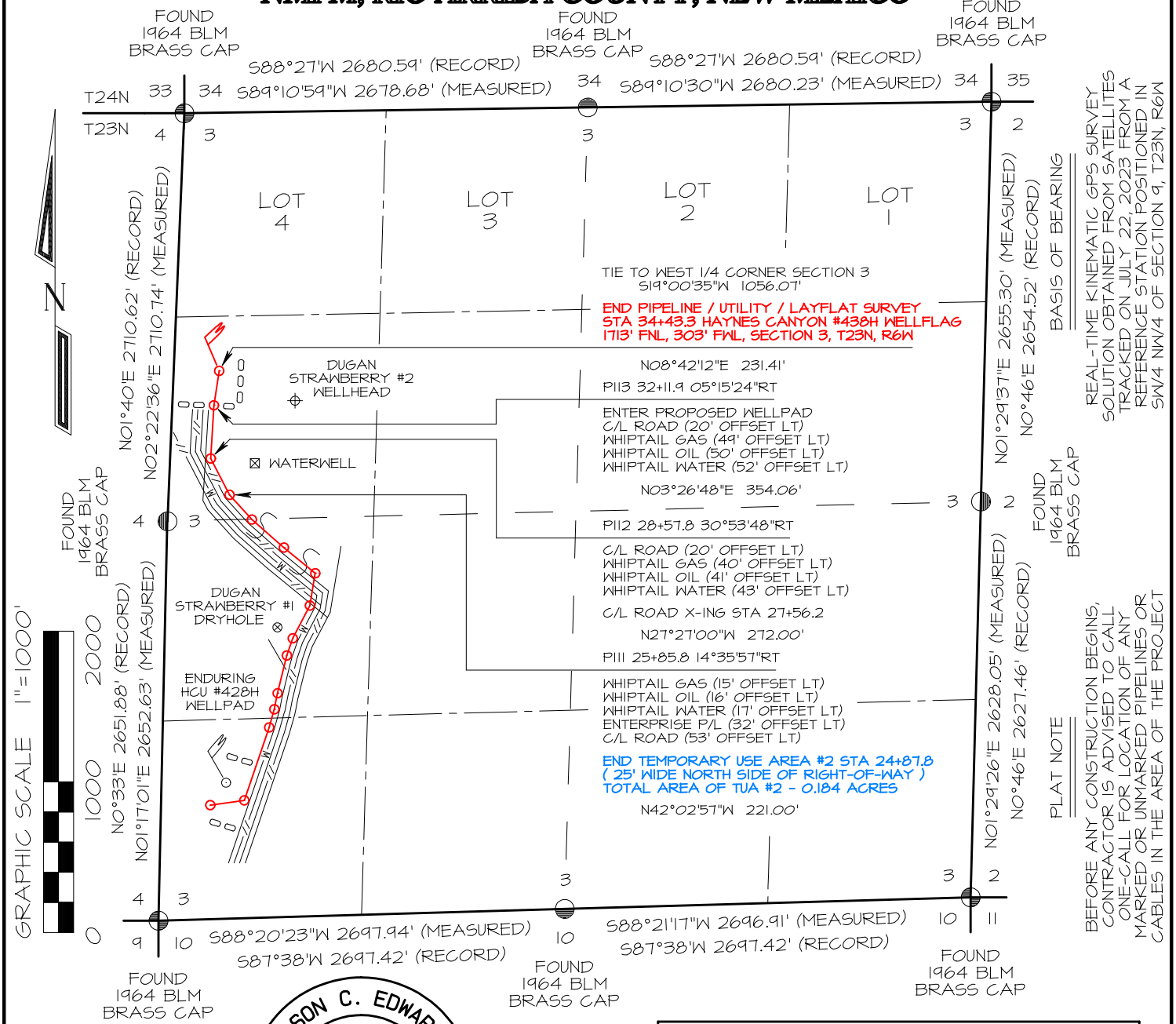

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NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 11 OF 13
FILENAME: 2363MGP4

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H

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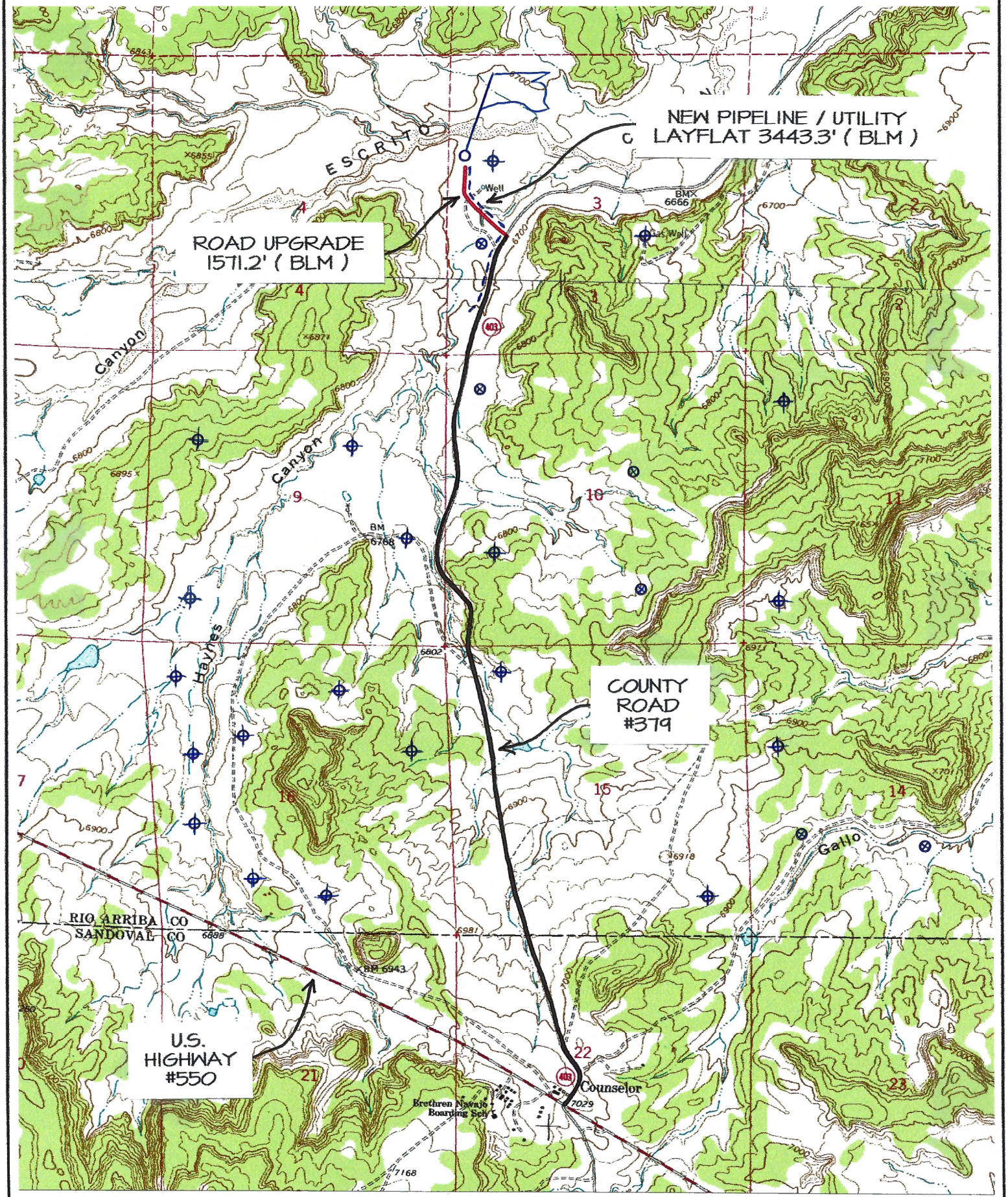
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : COUNSELOR ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #438H

1713' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256175°N Longitude -107.464630°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #438H existing location.

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

Drilling Plan Data Report
12/05/2023

APD ID: 10400093995
Submission Date: 09/29/2023
Operator Name: ENDURING RESOURCES LLC
Well Name: HAYNES CANYON UNIT
Well Number: 438H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12561137	NACIMIENTO	6714	0	0	SANDSTONE, SHALE	USEABLE WATER	N
12561138	OJO ALAMO	5301	1413	1451	SANDSTONE, SILTSTONE	USEABLE WATER	N
12561139	KIRTLAND	5192	1522	1579	SANDSTONE, SHALE, SILTSTONE	USEABLE WATER	N
12561140	FRUITLAND	4973	1741	1851	COAL, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS	N
12561150	PICTURED CLIFFS	4749	1965	2145	SANDSTONE, SILTSTONE	NATURAL GAS	N
12561151	LEWIS	4605	2109	2334	OTHER, SHALE, SILTSTONE : Huarfonito Bentonite is in middle of the interval (1 thick marker bed)	NATURAL GAS	N
12561152	CHACRA	4307	2407	2726	SHALE, SILTSTONE	NATURAL GAS	N
12561154	MENEFEE	3203	3511	4176	COAL, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS	N
12561153	CLIFFHOUSE	3203	3511	4176	SANDSTONE	NATURAL GAS	N
12561155	POINT LOOKOUT	2496	4218	5103	SANDSTONE, SHALE	NATURAL GAS	N
12561141	MANCOS	2203	4511	5488	SHALE, SILTSTONE	NATURAL GAS, OIL	Y
12561142	GALLUP	1857	4857	5898	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12561143	MANCOS	1772	4942	5986	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12561144	MANCOS	1619	5095	6145	SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y
12561145	MANCOS	1544	5170	6226	OTHER : Porous interval within MNCS_C. Called Mancos Silt by Encana	NATURAL GAS, OIL	Y
12561146	MANCOS	1499	5215	6278	SILTSTONE	NATURAL GAS, OIL	Y

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12561147	MANCOS	1418	5296	6376	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y
12561148	MANCOS	1363	5351	6452	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y
12561149	MANCOS	1279	5435	6594	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y
12561135	MANCOS	1216	5498	6730	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y
12561136	MANCOS	1107	5607	16802	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 5607

Equipment: Rig will be equipped with upper and lower kelly cocks with handles available.

Requesting Variance? NO

Variance request:

Testing Procedure: BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.

Choke Diagram Attachment:

Haynes_Canyon_Unit_438H_BOP_and_Choke_20230910161142.pdf

BOP Diagram Attachment:

Haynes_Canyon_Unit_438H_BOP_and_Choke_20230910161148.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	350	0	350	6689	6339	350	J-55	54.5	BUTT	7.39	3.46	BUOY	7.79	BUOY	7.31

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

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
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4372	0	3661	6689	3028	4372	J-55	36	LT&C	1.26	2.52	BUOY	2.11	BUOY	2.62
3	PRODUCTION	8.5	5.5	NEW	API	N	0	16802	0	5607	6689	1082	16802	P-110	17	LT&C	2.69	1.18	BUOY	1.28	BUOY	1.58

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Haynes_Canyon_Unit_438H_Drilling_Package_8_21_2023_8_.xlsx_____Read_Only_20230910170643.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Haynes_Canyon_Unit_438H_Drilling_Package_8_21_2023_8_.xlsx_____Read_Only_20230910170658.pdf

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Casing Attachments

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Haynes_Canyon_Unit_438H_Drilling_Package_8_21_2023_8_.xlsx_____Read_Only_20230910170712.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	350	364	1.39	14.6	505.3	100	Type III	ASTM Type III Blend, Calcium Chloride 2% BWOC Accelerator, D-CD2 .3% BWOC Dispersant/Friction reducer, .25 lbs/sx Cello Flake - seepage
INTERMEDIATE	Lead		0	3872	936	2.14	12.5	2002	70	90:10 Type III:POZ	ASTM Type III 90/10 Poz, D-CSE 1 5.0% BWOC Strength Enhancer, D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control, D-SA 1 1.4% BWOC Na Metasilicate, D-CD 2 .4% BWOC Dispersant, Cello Flace LCM .25 lb/sx, D-FP1 0.5% BWOC Defoamer, D-R1 .5% Retarder
INTERMEDIATE	Tail		3872	4372	150	1.38	14.6	207	20	Type III	ASTM Type III Blend, D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control, D-CD 2 .5% BWOC

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Dispersant, Cello Flace LCM .25 lb/sx, D-R1 .2% Retarder
PRODUCTION	Lead		0	5488	658	2.37	12.4	1560	50	ASTM type I/II	ASTM Type I/II, BA90 Bonding Agent 5.0 lb/sx, Bentonite Viscosifier 8% BWOB, FL24 Fluid Loss .5% BWOB, IntegraGuard GW86 Viscosifier .1% BWOB, R7C Retarder .2% BWOB, FP24 Defoamer 0.3% BWOB, Anti-Static .01 lb/sx
PRODUCTION	Tail		5488	16802	1824	1.57	13.3	2864	10	G:POZ blend	Type G 50%, Pozzolan Fly Ash Extender 50%, BA90 Bonding Agent 3.0 lb/sx, Bentonite Viscosifier 4% BWOB, FL24 Fluid Loss .4% BWOB, IntegraGuard GW86 Viscosifier .1% BWOB, R3 Retarder .5% BWOB, FP24 Defoamer .3% BWOB, IntegraSeal 0.25 lb/sx

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: Sufficient barite will be on location to weight up mud system to balance maximum anticipated pressure gradient.

Describe the mud monitoring system utilized: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimimize the amount of fluids and solids that require disposal.

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

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	350	SPUD MUD	8.4	8.4	2		9	2			
0	4372	LOW SOLIDS NON-DISPERSED (LSND)	8.8	9.5	8		9	8		20	No OBM
0	16802	OIL-BASED MUD	8	9					120000		OWR 80:20 WBM as contingency

Section 6 - Test, Logging, Coring

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

Reference operations plan.

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

DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,GAMMA RAY LOG,

Coring operation description for the well:

GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2420 **Anticipated Surface Pressure:** 1186

Anticipated Bottom Hole Temperature(F): 125

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Enduring_Hayes_Canyon_Unit_438H_rev0_20231128125902.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

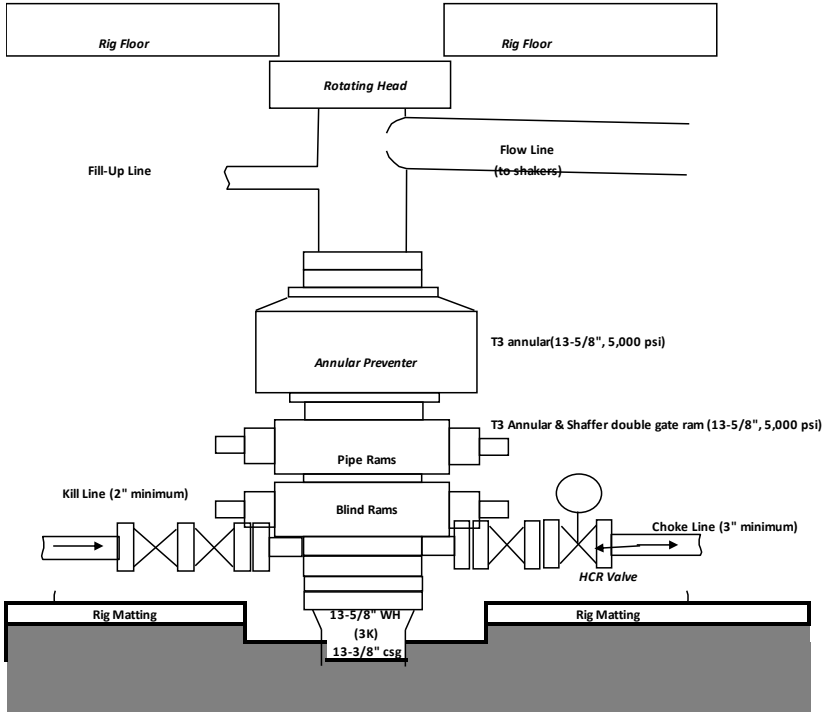
Haynes_Canyon_Unit_438H_WBD_09112023_20230911121935.pdf

Other Variance attachment:

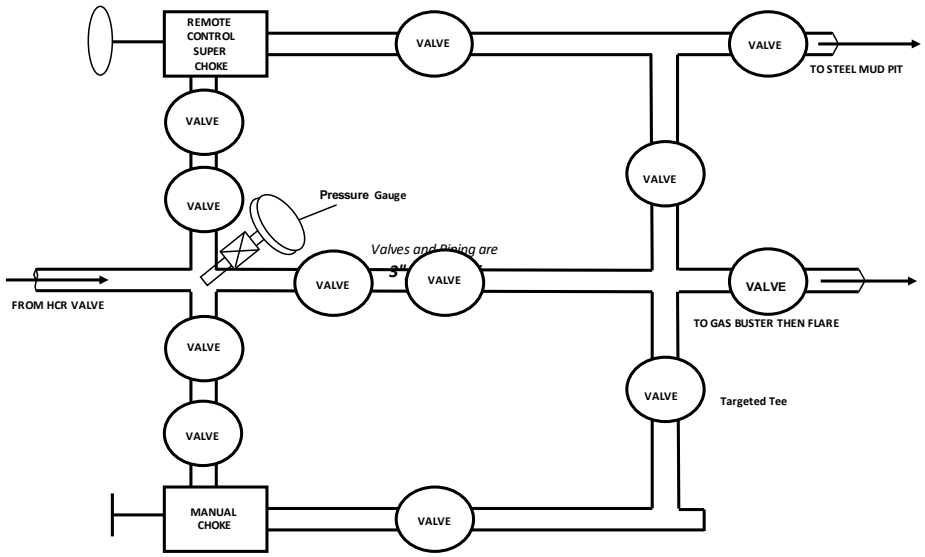
BOPE & CHOKE MANIFOLD DIAGRAMS

NOTE: EXACT BOPE AND CHOKE CONFIRGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3.000 PSI MINIMUM.

BOPE



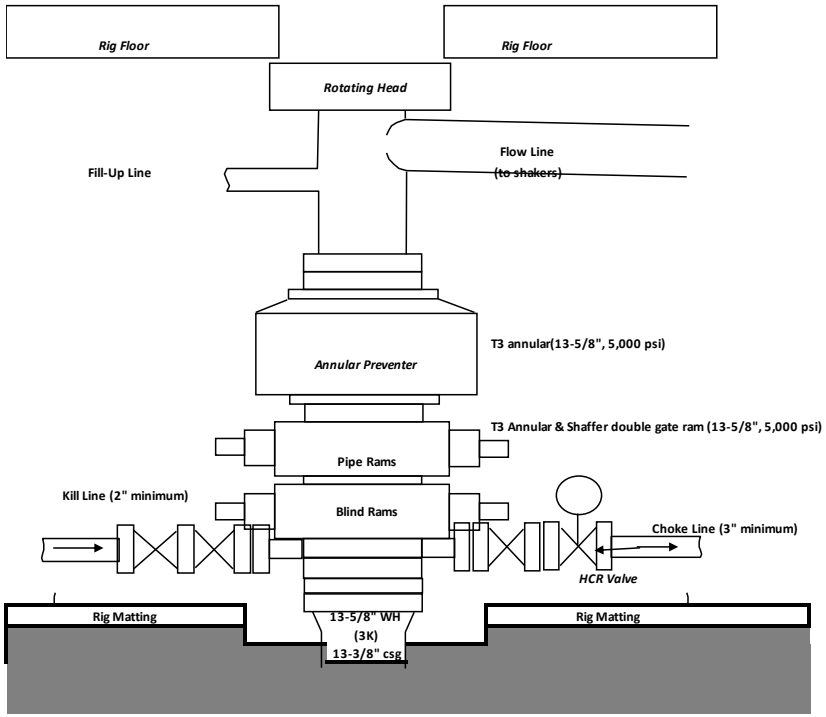
CHOKE MANIFOLD



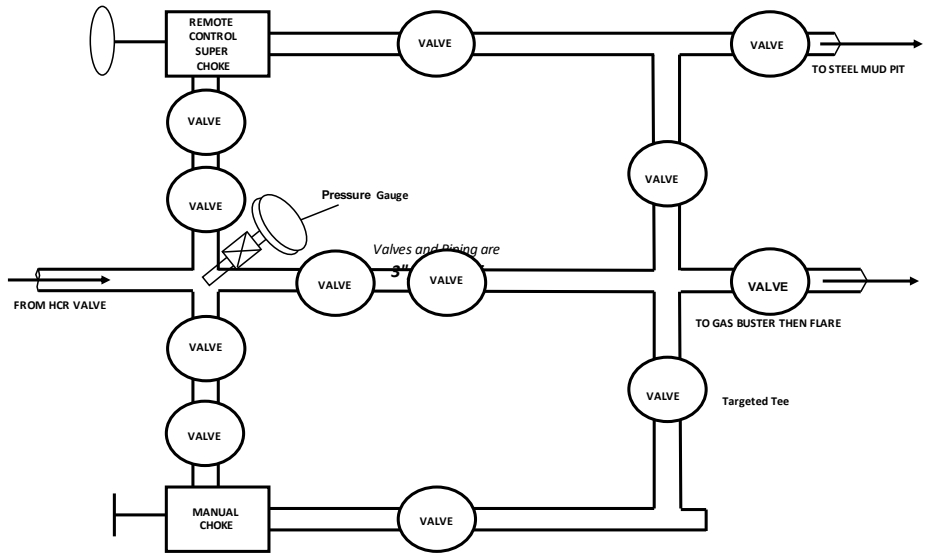
BOPE & CHOKE MANIFOLD DIAGRAMS

NOTE: EXACT BOPE AND CHOKE CONFIRGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3.000 PSI MINIMUM.

BOPE



CHOKE MANIFOLD



ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, COLORADO 80211

DRILLING PLAN: ***Drill, complete, and equip single lateral in the Mancos-H formation***

WELL INFORMATION:

Name: **Haynes Canyon Unit 438H**
API Number: Not yet assigned
AFE Number: *Not yet assigned*
ER Well Number: *Not yet assigned*
State: New Mexico
County: Rio Arriba
Surface Elevation: 6,689 ft ASL (GL) 6,714 ft ASL (KB)
Surface Location: 3-23-6 Sec-Twn-Rng 1,713 ft FNL 303 ft FWL
36.256175 °N latitude 107.46463 °W longitude (NAD 83)
BH Location: 2-23-6 Sec-Twn-Rng 380 ft FNL 2,580 ft FWL
36.260404 °N latitude 107.438585 °W longitude (NAD 83)
Driving Directions: **FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:**
South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	5,301	1,413	1,451	W	normal
Kirtland	5,192	1,522	1,579	W	normal
Fruitland	4,973	1,741	1,851	G, W	sub
Pictured Cliffs	4,749	1,965	2,145	G, W	sub
Lewis	4,605	2,109	2,334	G, W	normal
Chacra	4,307	2,407	2,726	G, W	normal
Cliff House	3,203	3,511	4,176	G, W	sub
Menefee	3,203	3,511	4,176	G, W	normal
Point Lookout	2,496	4,218	5,103	G, W	normal
Mancos	2,203	4,511	5,488	O,G	sub (~0.38)
Gallup (MNCS_A)	1,857	4,857	5,898	O,G	sub (~0.38)
MNCS_B	1,772	4,942	5,986	O,G	sub (~0.38)
MNCS_C	1,619	5,095	6,145	O,G	sub (~0.38)
MNCS_Cms	1,544	5,170	6,226	O,G	sub (~0.38)
MNCS_D	1,499	5,215	6,278	O,G	sub (~0.38)
MNCS_E	1,418	5,296	6,376	O,G	sub (~0.38)
MNCS_F	1,363	5,351	6,452	O,G	sub (~0.38)
MNCS_G	1,279	5,435	6,594	O,G	sub (~0.38)
MNCS_H	1,216	5,498	6,730	O,G	sub (~0.38)
MNCS_I	0	0	0	O,G	sub (~0.38)
FTP TARGET	**1,279**	**5,435**	**6,594**	**O,G**	**sub (~0.38)**
PROJECTED LTP	**1,107**	**5,607**	**16,802**	**O,G**	**sub (~0.38)**

Surface: Nacimiento
Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup
Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations
Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft
Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,420 psi
Maximum anticipated surface pressure, assuming partially evacuated hole: 1,190 psi
Temperature: **Maximum anticipated BHT is 125° F or less**

H_2S INFORMATION:

H_2S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.
Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs:
None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.
MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD
Open Hole Logs: None planned
Testing: None planned
Coring: None planned
Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Aztec
Rig No.: 1000
Draw Works: E80 AC 1,500 hp

Mast: Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
Top Drive: NOV IDS-350PE (350 ton)
Prime Movers: 4 - GE Jenbacher Natural Gas Generator
Pumps: 2 - RS F-1600 (7,500 psi)
BOPE 1: Cameron single & double gate rams (13-5/8", 3,000 psi)
BOPE 2: Cameron annular (13-5/8", 5,000 psi)
Choke Cameron (4", 10,000 psi)
KB-GL (ft): 25
Note: Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

STATE AND FEDERAL NOTIFICATIONS		BLM	State
Construction and Reclamation:	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation. Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BOP	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and cementing.	(505) 564-7750	(505) 334-6178
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
	All notifications are to be recorded in the WellView report with time, date, name or number that notifications were made to.		
	Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov		

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.
2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.
3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimimize the amount of fluids and solids that require disposal.

Fluid Disposal : Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal : Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for additional details. Sufficient barite will be on location to weight up mud system to balance maximum anticipated pressure gradient.

DETAILED DRILLING PLAN:

SURFACE: ***Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.***

0 ft (MD)	**to**	**350 ft (MD)**	**Hole Section Length:**	**350 ft**
0 ft (TVD)	**to**	**350 ft (TVD)**	**Casing Required:**	**350 ft**

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"
Bit / Motor: Mill Tooth or PDC, no motor
MWD / Survey: No MWD, deviation survey
Logging: None
Procedure: Drill to TD. Use 12-/4" bit and open to 17-1/2" if unable to drill with 17-1/2" bit. Run inclination survey in 100' stations from TD to surface. Condition hole and fluid for casing running as required. TOOH. Run casing. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface. Install cellar and wellhead.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	789	116,634	116,634
Min. S.F.					**7.39**	**3.46**	**7.31**	**7.79**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: N/A Optimum: N/A Maximum: N/A*
Make-up as per API Buttress Connection running procedure.
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface
Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
	TYPE III	14.6	1.39	6.686	0.6946	100%	0	364
Annular Capacity	0.6946	cuft/ft	*13-3/8" casing x 17-1/2" hole annulus*			Csg capacity	0.8680	ft3/ft
Drake Energy Services:	*Calculated cement volumes assume gauge hole and the excess noted in table*							Cu Ft Slurry
								505.3
Tail	*ASTM Type III Blend*	Calcium Chloride 2% BWOC Accelerator	D-CD2 .3% BWOC Dispersant/Friction reducer	.25 lbs/sx Cello Flake - seepage				

Notify COGCC & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: ***Drill as per directional plan to casing setting depth, run casing, cement casing to surface.***

350	**ft (MD)**	**to**	**4,372**	**ft (MD)**	**Hole Section Length:** **4,022 ft**
350	**ft (TVD)**	**to**	**3,661**	**ft (TVD)**	**Casing Required:** **4,372 ft**

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (5% KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	No OBM

Hole Size: 12-1/4"
Bit / Motor: 12-1/4" PDC bit w/mud motor
Bit / Motor: MOTOR: NOV 087840 - 7/8, 4.0, stage, 0.16 rev/gal, 1.83 DEG, 900 GPM, 950 DIFF PSIG
BIT: 6-BLADE PDC w/16 mm or 19 mm cutters, TFA = 0.67 sq-in (range 0.65 - 0.90 max), **jet with 6 - 12s**
MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional
Logging: None
Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.
Procedure: Drill to TD following directional plan **(20' rat-hole past casing setting depth)**. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10', when possible. Take surveys every stand, at a minimum. Target flow-rates of 750 GPM (higher if able to control return rates). Minimum desired flow-rate is 650 GPM. At TD, condition hole and fluid for casing running. TOOH. Run casing using a CRT and washing / circulating as required. Land casing. ND BOPE. Walk rig to next well. Perform off-line cement job. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,599	1,399	214,933	214,933
Min. S.F.					**1.26**	**2.52**	**2.62**	**2.11**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,400 Optimum: 4,530 Maximum: 5,660*
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface (FLOAT EQUIPMENT FROM WEATHERFORD)
Centralizers: 1 per joint in non-vertical hole; 1 per 3-joints in vertical hole
Centralizers: 1 centralizers jt stop-banded 10' from float shoe on bottom 1 jt & 1 centralizer floating on bottom joint, 1 centralizer per jt (floating) to KOP ; 1 centralizer per 3 jts (floating) to surface **(Centralizers from Scepter Supply - SLIP'N'SLIDE 9-5/8" x 11.75" SOLID BODY POLYMER)**

Cement:		Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Stage 1	*Spacer*	D-Mud Breaker	8.5				0	10 bbls	

Lead	90:10 Type III:POZ	12.5	2.140	12.05	70%	0	936	2,002
Tail	Type III	14.6	1.380	6.64	20%	3,872	150	207
Displacement	*335*	*est bbls*						

Annular Capacity
0.3627 cuft/ft *9-5/8" casing x 13-3/8" casing annulus*
0.3132 cuft/ft *9-5/8" casing x 12-1/4" hole annulus* 9-5/8" 36#ID 8.921
0.4341 cuft/ft *9-5/8" casing vol* *est shoe jt ft* 44

Calculated cement volumes assume gauge hole and the excess (open hole only) noted in table

Spacer	*D-Mud Breaker*	SAPP						
Lead	*ASTM Type III 90/10 Poz*	D-CSE 1 5.0% BWOC Strength Enhancer	D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control	D-SA 1 1.4% BWOC Na Metasilicate	D-CD 2 .4% BWOC Dispersant	Cello Flace LCM .25 lb/sx	D-FP1 0.5% BWOC Defoamer	D-R1 .5% Retarder
Tail	*ASTM Type III Blend*		D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control		D-CD 2 .5% BWOC Dispersant	Cello Flace LCM .25 lb/sx		D-R1 .2% Retarder

Drake Intermediate Cementing Program

Cement must achieve 500 psi compressive strength before drilling out.
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: *Drill to TD following directional plan, run casing, cement casing to surface.*

4,372	ft (MD)	to	16,802	ft (MD)	Hole Section Length: 12,430 ft
3,661	ft (TVD)	to	5,607	ft (TVD)	Casing Required: 16,802 ft

Estimated KOP:	5,650	ft (MD)	4,635	ft (TVD)
Estimated Landing Point (FTP):	6,594	ft (MD)	5,435	ft (TVD)
Estimated Lateral Length:	10,208	ft (MD)		

Fluid:	Type	MW (ppg)	WPS ppm	HTHP	YP (lb/100 sqft)	ES	OWR	Comment
	OBM	8.0 - 9.0	120,000 CaCl	NC	±6	+300	80:20	WBM as contingency

Fluids / Solids Notes: Newpark OptiDrill OBM system. Ensure that drying shakers are rigged up after the rig (2nd set) of shakers. Solids control will burn retorts on cuttings samples one per tour to check % ROC. Add diesel and products as required to maintain mud in program specs. Reference Newpark's mud program for additional details. No asphalt products are to be added to the OBM system. **Any changes to the mud systems are to be discussed with engineering prior to application.**

Hole Size: 8-1/2"

Bit / Motor: 8-1/2" PDC bit w/mud motor

Bit / Motor: **MOTOR:** NOV 077857 - 6.5" 7/8, 5.0 stage, 0.23 rev/gal, 1.83 deg, 750 GPM, 1,580 DIFF PSIG (or similar); on demand friction breaking device(s) as required, bottom tool spaced ~3,000' behind the bit.
BIT: 5-BLADE PDC w/16 mm - 19 mm cutters, matrix body, target TFA = 1.0 - 1.5 sq-in

MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

Logging: GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs

Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

Procedure: Drill to KOP following directional plan. Target flow-rate is 650 - 700 GPM. Target differential is pressure is 700 - 1,000 psig. Target ROP 500 - 600 ft/hr. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10' until KOP, when feasible. Take surveys every stand, at a minimum. Confirm landing target, planned BUR for curve, and KOP with Geology and Engineering. Drill curve following directional plan and updated landing target. Take survey every joint during curve. Land curve. Continue drilling in lateral section, steering as needed to keep well on plan and in the target window. Keep DLS < 2 deg/100' and keep slide length < 20', when feasible. Take surveys every stand, at a minimum. **Target rotating parameters / performance: flow-rate is 650 - 700 GPM, differential is pressure is 700 - 1,000 psig, ROP 500 - 600 ft/hr, torque 38K ft-lbs (MAX drill pipe MUT).** After reaching TD, perform no more than one clean-up cycle to condition hole for casing running unless shakers indicate additional cleaning needed. TOOH & LD drill pipe (ROOH, if required; should NOT be required with OBM system). When pumping hole cleaning sweeps, fine LCM product is to be used -**Do not use barite for sweeps**. Run casing as described below. Use CRT for casing running only if necessary (should NOT be required with OBM). Verify make up torque when running casing. Space out casing getting the toe sleeve as close to LTP as possible. Land casing and test pack-off. Open floatation sub, fill casing, and circulate as required. Pump cement as detailed below. Note cement volume circulated to surface. Nipple down BOPE. Clean pits. RDMO to next pad.

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,770	9,025	346,476	346,476
Min. S.F.					**2.69**	**1.18**	**1.58**	**1.28**

Assumptions: *Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)*
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *3,470* *Optimum:* *4,620* *Maximum:* *5,780*

Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

Casing Summary: Float shoe, float collar w/debris catcher, 1 jt casing, float collar **(Weatherford (WFT) float equipment)**, 20' marker joint, toe-intitiation sleeve **(WFT RD 8,500 psi)**, casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation sub **(NCS Air-Lock 2,500 psi from WFT)**, casing to surface. The toe-initiation sleeve shall be placed no closer to the unit boundary than 300' measured perpendicular to the East or West lease lines for a East-West azimuth drilled wellbore. Wellbore path must be no closer than 600' from the parallel lease lines. ***Note: the LTP is the maximum depth of the toe sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place the toe sleeve as close to (but not past) the planned LTP as possible.***

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.*
Lateral: 1 centralizer per 3 joints (purchase centralizers from Scepter Supply)
Top of curve to 9-5/8" shoe: 1 centralizer per 5 joints
9-5/8" shoe to surface: 1 centralizer per 5 joints

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	658	1,560
Tail	G:POZ blend	13.3	1.570	7.70	10%	5,488	1,824	2,864

Displacement *370* *est bbls*

Annular Capacity
0.2691 cuft/ft *5-1/2" casing x 9-5/8" casing annulus*
0.2291 cuft/ft *5-1/2" casing x 8-1/2" hole annulus*
0.1245 cuft/ft *5-1/2" casing vol* *est shoe jt ft* 100

Calculated cement volumes assume gauge hole and the excess noted in table
American Cementing Liner & Production Blend

Spacer	*S-8 Silica Flour* *163.7 lbs/bbl*	Avis 616 viscosifier 11.6 lb/bbl	FP24 Defoamer .5 lb/bbl	IntegraGuard Star Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Lead	*ASTM Type I/II*	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R7C Retarder .2% BWOB	FP24 Defoamer 0.3% BWOB, Anti-Static .01 lb/sx	
Tail	*Type G 50%*	Pozzolan Fly Ash Extender 50%	BA90 Bonding Agent 3.0 lb/sx	Bentonite Viscosifier 4% BWOB	FL24 Fluid Loss .4% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R3 Retarder .5% BWOB	FP24 Defoamer .3% BWOB, IntegraSeal 0.25 lb/sx

Calculated cement volumes assume gauge hole and the excess noted in table
Notify NMOCD & BLM if cement is not circulated to surface.

Note: This well will not be considered an unorthodox well location as defintned by NMAC19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

FINISH WELL: ***ND BOP, cap well, RDMO.***
Procedure: After off-line cement job, cap and cover well. Continue drilling operations on subsequent wells on pad.

COMPLETION AND PRODUCTION PLAN:
Est Lateral Length: 10,108
Est Frac Inform: *42 Frac Stages* *162,000 bbls slick water* *13,150,000 lbs proppant*
Flowback: Flow back through production tubing as pressures allow
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:
Drilling: 11/1/23
Completion: 12/31/23
Production: 2/14/24

Prepared by:	**Alec Bridge**	**12/20/21**
Updated:	Greg Olson	2/20/23
	Greg Olson	3/27/23
	G Olson	**8/17/23**

ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, COLORADO 80211

DRILLING PLAN: ***Drill, complete, and equip single lateral in the Mancos-H formation***

WELL INFORMATION:

Name: **Haynes Canyon Unit 438H**
API Number: Not yet assigned
AFE Number: *Not yet assigned*
ER Well Number: *Not yet assigned*
State: New Mexico
County: Rio Arriba
Surface Elevation: 6,689 ft ASL (GL) 6,714 ft ASL (KB)
Surface Location: 3-23-6 Sec-Twn-Rng 1,713 ft FNL 303 ft FWL
36.256175 °N latitude 107.46463 °W longitude (NAD 83)
BH Location: 2-23-6 Sec-Twn-Rng 380 ft FNL 2,580 ft FWL
36.260404 °N latitude 107.438585 °W longitude (NAD 83)
Driving Directions: **FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:**
South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	5,301	1,413	1,451	W	normal
Kirtland	5,192	1,522	1,579	W	normal
Fruitland	4,973	1,741	1,851	G, W	sub
Pictured Cliffs	4,749	1,965	2,145	G, W	sub
Lewis	4,605	2,109	2,334	G, W	normal
Chacra	4,307	2,407	2,726	G, W	normal
Cliff House	3,203	3,511	4,176	G, W	sub
Menefee	3,203	3,511	4,176	G, W	normal
Point Lookout	2,496	4,218	5,103	G, W	normal
Mancos	2,203	4,511	5,488	O,G	sub (~0.38)
Gallup (MNCS_A)	1,857	4,857	5,898	O,G	sub (~0.38)
MNCS_B	1,772	4,942	5,986	O,G	sub (~0.38)
MNCS_C	1,619	5,095	6,145	O,G	sub (~0.38)
MNCS_Cms	1,544	5,170	6,226	O,G	sub (~0.38)
MNCS_D	1,499	5,215	6,278	O,G	sub (~0.38)
MNCS_E	1,418	5,296	6,376	O,G	sub (~0.38)
MNCS_F	1,363	5,351	6,452	O,G	sub (~0.38)
MNCS_G	1,279	5,435	6,594	O,G	sub (~0.38)
MNCS_H	1,216	5,498	6,730	O,G	sub (~0.38)
MNCS_I	0	0	0	O,G	sub (~0.38)
FTP TARGET	**1,279**	**5,435**	**6,594**	**O,G**	**sub (~0.38)**
PROJECTED LTP	**1,107**	**5,607**	**16,802**	**O,G**	**sub (~0.38)**

Surface: Nacimiento
Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup
Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations
Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft
Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,420 psi
Maximum anticipated surface pressure, assuming partially evacuated hole: 1,190 psi
Temperature: **Maximum anticipated BHT is 125° F or less**

H_2S INFORMATION:

H_2S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.
Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs:
None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.
MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD
Open Hole Logs: None planned
Testing: None planned
Coring: None planned
Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Aztec
Rig No.: 1000
Draw Works: E80 AC 1,500 hp

Mast:	Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
Top Drive:	NOV IDS-350PE (350 ton)
Prime Movers:	4 - GE Jenbacher Natural Gas Generator
Pumps:	2 - RS F-1600 (7,500 psi)
BOPE 1:	Cameron single & double gate rams (13-5/8", 3,000 psi)
BOPE 2:	Cameron annular (13-5/8", 5,000 psi)
Choke	Cameron (4", 10,000 psi)
KB-GL (ft):	25
Note:	Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

STATE AND FEDERAL NOTIFICATIONS		BLM	State
Construction and Reclamation:	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation. Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BOP	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and cementing.	(505) 564-7750	(505) 334-6178
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
	All notifications are to be recorded in the WellView report with time, date, name or number that notifications were made to.		
	Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov		

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.

2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.

2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.

3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.

4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.

5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimimize the amount of fluids and solids that require disposal.

Fluid Disposal : Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal : Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for additional details. Sufficient barite will be on location to weight up mud system to balance maximum anticipated pressure gradient.

DETAILED DRILLING PLAN:

SURFACE: ***Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.***

0 ft (MD)	**to**	**350 ft (MD)**	**Hole Section Length:**	**350 ft**
0 ft (TVD)	**to**	**350 ft (TVD)**	**Casing Required:**	**350 ft**

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"
Bit / Motor: Mill Tooth or PDC, no motor
MWD / Survey: No MWD, deviation survey
Logging: None
Procedure: Drill to TD. Use 12-/4" bit and open to 17-1/2" if unable to drill with 17-1/2" bit. Run inclination survey in 100' stations from TD to surface. Condition hole and fluid for casing running as required. TOOH. Run casing. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface. Install cellar and wellhead.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	789	116,634	116,634
Min. S.F.					**7.39**	**3.46**	**7.31**	**7.79**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *N/A* *Optimum:* *N/A* *Maximum:* *N/A*
Make-up as per API Buttress Connection running procedure.
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface
Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
	TYPE III	14.6	1.39	6.686	0.6946	100%	0	364
Annular Capacity	0.6946	cuft/ft	*13-3/8" casing x 17-1/2" hole annulus*			Csg capacity	0.8680	ft3/ft
Drake Energy Services:	*Calculated cement volumes assume gauge hole and the excess noted in table*							Cu Ft Slurry
								505.3

Tail	*ASTM Type III Blend*	Calcium Chloride 2% BWOC Accelerator	D-CD2 .3% BWOC Dispersant/Friction reducer	.25 lbs/sx Cello Flake - seepage

Notify COGCC & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: ***Drill as per directional plan to casing setting depth, run casing, cement casing to surface.***

350	**ft (MD)**	**to**	**4,372**	**ft (MD)**	**Hole Section Length:** **4,022 ft**
350	**ft (TVD)**	**to**	**3,661**	**ft (TVD)**	**Casing Required:** **4,372 ft**

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (5% KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	No OBM

Hole Size: 12-1/4"
Bit / Motor: 12-1/4" PDC bit w/mud motor
Bit / Motor: MOTOR: NOV 087840 - 7/8, 4.0, stage, 0.16 rev/gal, 1.83 DEG, 900 GPM, 950 DIFF PSIG
BIT: 6-BLADE PDC w/16 mm or 19 mm cutters, TFA = 0.67 sq-in (range 0.65 - 0.90 max), **jet with 6 - 12s**
MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional
Logging: None
Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.
Procedure: Drill to TD following directional plan **(20' rat-hole past casing setting depth)**. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10', when possible. Take surveys every stand, at a minimum. Target flow-rates of 750 GPM (higher if able to control return rates). Minimum desired flow-rate is 650 GPM. At TD, condition hole and fluid for casing running. TOOH. Run casing using a CRT and washing / circulating as required. Land casing. ND BOPE. Walk rig to next well. Perform off-line cement job. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,599	1,399	214,933	214,933
Min. S.F.					**1.26**	**2.52**	**2.62**	**2.11**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *3,400* *Optimum:* *4,530* *Maximum:* *5,660*
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface (FLOAT EQUIPMENT FROM WEATHERFORD)
Centralizers: 1 per joint in non-vertical hole; 1 per 3-joints in vertical hole
Centralizers: 1 centralizers jt stop-banded 10' from float shoe on bottom 1 jt & 1 centralizer floating on bottom joint, 1 centralizer per jt (floating) to KOP ; 1 centralizer per 3 jts (floating) to surface **(Centralizers from Scepter Supply - SLIP'N'SLIDE 9-5/8" x 11.75" SOLID BODY POLYMER)**

	Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Stage 1	*Spacer*	D-Mud Breaker	8.5				0	10 bbls	

Lead	90:10 Type III:POZ	12.5	2.140	12.05	70%	0	936	2,002
Tail	Type III	14.6	1.380	6.64	20%	3,872	150	207
Displacement	*335*	*est bbls*						

Annular Capacity
0.3627 cuft/ft *9-5/8" casing x 13-3/8" casing annulus*
0.3132 cuft/ft *9-5/8" casing x 12-1/4" hole annulus* 9-5/8" 36#ID 8.921
0.4341 cuft/ft *9-5/8" casing vol* *est shoe jt ft* 44

Calculated cement volumes assume gauge hole and the excess (open hole only) noted in table

Spacer	*D-Mud Breaker*	SAPP						
Lead	*ASTM Type III 90/10 Poz*	D-CSE 1 5.0% BWOC Strength Enhancer	D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control	D-SA 1 1.4% BWOC Na Metasilicate	D-CD 2 .4% BWOC Dispersant	Cello Flace LCM .25 lb/sx	D-FP1 0.5% BWOC Defoamer	D-R1 .5% Retarder
Tail	*ASTM Type III Blend*		D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control		D-CD 2 .5% BWOC Dispersant	Cello Flace LCM .25 lb/sx		D-R1 .2% Retarder

Drake Intermediate Cementing Program

Cement must achieve 500 psi compressive strength before drilling out.
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: *Drill to TD following directional plan, run casing, cement casing to surface.*

4,372	ft (MD)	to	16,802	ft (MD)	Hole Section Length: 12,430 ft
3,661	ft (TVD)	to	5,607	ft (TVD)	Casing Required: 16,802 ft

Estimated KOP:	5,650	ft (MD)	4,635	ft (TVD)
Estimated Landing Point (FTP):	6,594	ft (MD)	5,435	ft (TVD)
Estimated Lateral Length:	10,208	ft (MD)		

Fluid:	Type	MW (ppg)	WPS ppm	HTHP	YP (lb/100 sqft)	ES	OWR	Comment
	OBM	8.0 - 9.0	120,000 CaCl	NC	±6	+300	80:20	WBM as contingency

Fluids / Solids Notes: Newpark OptiDrill OBM system. Ensure that drying shakers are rigged up after the rig (2nd set) of shakers. Solids control will burn retorts on cuttings samples one per tour to check % ROC. Add diesel and products as required to maintain mud in program specs. Reference Newpark's mud program for additional details. No asphalt products are to be added to the OBM system. **Any changes to the mud systems are to be discussed with engineering prior to application.**

Hole Size: 8-1/2"
Bit / Motor: 8-1/2" PDC bit w/mud motor
Bit / Motor: **MOTOR:** NOV 077857 - 6.5" 7/8, 5.0 stage, 0.23 rev/gal, 1.83 deg, 750 GPM, 1,580 DIFF PSIG (or similar); on demand friction breaking device(s) as required, bottom tool spaced ~3,000' behind the bit.
BIT: 5-BLADE PDC w/16 mm - 19 mm cutters, matrix body, target TFA = 1.0 - 1.5 sq-in
MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)
Logging: GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs
Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.
Procedure: Drill to KOP following directional plan. Target flow-rate is 650 - 700 GPM. Target differential is pressure is 700 - 1,000 psig. Target ROP 500 - 600 ft/hr. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10' until KOP, when feasible. Take surveys every stand, at a minimum. Confirm landing target, planned BUR for curve, and KOP with Geology and Engineering. Drill curve following directional plan and updated landing target. Take survey every joint during curve. Land curve. Continue drilling in lateral section, steering as needed to keep well on plan and in the target window. Keep DLS < 2 deg/100' and keep slide length < 20', when feasible. Take surveys every stand, at a minimum. **Target rotating parameters / performance: flow-rate is 650 - 700 GPM, differential is pressure is 700 - 1,000 psig, ROP 500 - 600 ft/hr, torque 38K ft-lbs (MAX drill pipe MUT).** After reaching TD, perform no more than one clean-up cycle to condition hole for casing running unless shakers indicate additional cleaning needed. TOOH & LD drill pipe (ROOH, if required; should NOT be required with OBM system). When pumping hole cleaning sweeps, fine LCM product is to be used -**Do not use barite for sweeps**. Run casing as described below. Use CRT for casing running only if necessary (should NOT be required with OBM). Verify make up torque when running casing. Space out casing getting the toe sleeve as close to LTP as possible. Land casing and test pack-off. Open floatation sub, fill casing, and circulate as required. Pump cement as detailed below. Note cement volume circulated to surface. Nipple down BOPE. Clean pits. RDMO to next pad.

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,770	9,025	346,476	346,476
Min. S.F.					**2.69**	**1.18**	**1.58**	**1.28**

Assumptions: *Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)*
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *3,470* *Optimum:* *4,620* *Maximum:* *5,780*

Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

Casing Summary: Float shoe, float collar w/debris catcher, 1 jt casing, float collar **(Weatherford (WFT) float equipment)**, 20' marker joint, toe-intitiation sleeve **(WFT RD 8,500 psi)**, casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation sub **(NCS Air-Lock 2,500 psi from WFT)**, casing to surface. The toe-initiation sleeve shall be placed no closer to the unit boundary than 300' measured perpendicular to the East or West lease lines for a East-West azimuth drilled wellbore. Wellbore path must be no closer than 600' from the parallel lease lines. ***Note: the LTP is the maximum depth of the toe sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place the toe sleeve as close to (but not past) the planned LTP as possible.***

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.*
Lateral: 1 centralizer per 3 joints (purchase centralizers from Scepter Supply)
Top of curve to 9-5/8" shoe: 1 centralizer per 5 joints
9-5/8" shoe to surface: 1 centralizer per 5 joints

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	658	1,560
Tail	G:POZ blend	13.3	1.570	7.70	10%	5,488	1,824	2,864

Displacement *370* *est bbls*

Annular Capacity
0.2691 cuft/ft *5-1/2" casing x 9-5/8" casing annulus*
0.2291 cuft/ft *5-1/2" casing x 8-1/2" hole annulus*
0.1245 cuft/ft *5-1/2" casing vol* *est shoe jt ft* 100

Calculated cement volumes assume gauge hole and the excess noted in table
American Cementing Liner & Production Blend

Spacer	*S-8 Silica Flour* *163.7 lbs/bbl*	Avis 616 viscosifier 11.6 lb/bbl	FP24 Defoamer .5 lb/bbl	IntegraGuard Star Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Lead	*ASTM Type I/II*	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R7C Retarder .2% BWOB	FP24 Defoamer 0.3% BWOB, Anti-Static .01 lb/sx	
Tail	*Type G 50%*	Pozzolan Fly Ash Extender 50%	BA90 Bonding Agent 3.0 lb/sx	Bentonite Viscosifier 4% BWOB	FL24 Fluid Loss .4% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R3 Retarder .5% BWOB	FP24 Defoamer .3% BWOB, IntegraSeal 0.25 lb/sx

Calculated cement volumes assume gauge hole and the excess noted in table
Notify NMOCD & BLM if cement is not circulated to surface.

Note: This well will not be considered an unorthodox well location as definted by NMAC19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

FINISH WELL: ***ND BOP, cap well, RDMO.***
Procedure: After off-line cement job, cap and cover well. Continue drilling operations on subsequent wells on pad.

COMPLETION AND PRODUCTION PLAN:
Est Lateral Length: 10,108
Est Frac Inform: *42 Frac Stages* *162,000 bbls slick water* *13,150,000 lbs proppant*
Flowback: Flow back through production tubing as pressures allow
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:
Drilling: 11/1/23
Completion: 12/31/23
Production: 2/14/24

Prepared by:	**Alec Bridge**	**12/20/21**
Updated:	Greg Olson	2/20/23
	Greg Olson	3/27/23
	G Olson	**8/17/23**

ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, COLORADO 80211

DRILLING PLAN: ***Drill, complete, and equip single lateral in the Mancos-H formation***

WELL INFORMATION:

Name: **Haynes Canyon Unit 438H**
API Number: Not yet assigned
AFE Number: *Not yet assigned*
ER Well Number: *Not yet assigned*
State: New Mexico
County: Rio Arriba
Surface Elevation: 6,689 ft ASL (GL) 6,714 ft ASL (KB)
Surface Location: 3-23-6 Sec-Twn-Rng 1,713 ft FNL 303 ft FWL
36.256175 °N latitude 107.46463 °W longitude (NAD 83)
BH Location: 2-23-6 Sec-Twn-Rng 380 ft FNL 2,580 ft FWL
36.260404 °N latitude 107.438585 °W longitude (NAD 83)
Driving Directions: **FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:**
South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	5,301	1,413	1,451	W	normal
Kirtland	5,192	1,522	1,579	W	normal
Fruitland	4,973	1,741	1,851	G, W	sub
Pictured Cliffs	4,749	1,965	2,145	G, W	sub
Lewis	4,605	2,109	2,334	G, W	normal
Chacra	4,307	2,407	2,726	G, W	normal
Cliff House	3,203	3,511	4,176	G, W	sub
Menefee	3,203	3,511	4,176	G, W	normal
Point Lookout	2,496	4,218	5,103	G, W	normal
Mancos	2,203	4,511	5,488	O,G	sub (~0.38)
Gallup (MNCS_A)	1,857	4,857	5,898	O,G	sub (~0.38)
MNCS_B	1,772	4,942	5,986	O,G	sub (~0.38)
MNCS_C	1,619	5,095	6,145	O,G	sub (~0.38)
MNCS_Cms	1,544	5,170	6,226	O,G	sub (~0.38)
MNCS_D	1,499	5,215	6,278	O,G	sub (~0.38)
MNCS_E	1,418	5,296	6,376	O,G	sub (~0.38)
MNCS_F	1,363	5,351	6,452	O,G	sub (~0.38)
MNCS_G	1,279	5,435	6,594	O,G	sub (~0.38)
MNCS_H	1,216	5,498	6,730	O,G	sub (~0.38)
MNCS_I	0	0	0	O,G	sub (~0.38)
FTP TARGET	**1,279**	**5,435**	**6,594**	**O,G**	**sub (~0.38)**
PROJECTED LTP	**1,107**	**5,607**	**16,802**	**O,G**	**sub (~0.38)**

Surface: Nacimiento
Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup
Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations
Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft
Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,420 psi
Maximum anticipated surface pressure, assuming partially evacuated hole: 1,190 psi
Temperature: **Maximum anticipated BHT is 125° F or less**

H_2S INFORMATION:

H_2S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.
Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs:
None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.
MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD
Open Hole Logs: None planned
Testing: None planned
Coring: None planned
Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Aztec
Rig No.: 1000
Draw Works: E80 AC 1,500 hp

Mast:	Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
Top Drive:	NOV IDS-350PE (350 ton)
Prime Movers:	4 - GE Jenbacher Natural Gas Generator
Pumps:	2 - RS F-1600 (7,500 psi)
BOPE 1:	Cameron single & double gate rams (13-5/8", 3,000 psi)
BOPE 2:	Cameron annular (13-5/8", 5,000 psi)
Choke	Cameron (4", 10,000 psi)
KB-GL (ft):	25
Note:	Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

STATE AND FEDERAL NOTIFICATIONS		BLM	State
Construction and Reclamation:	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation. Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BOP	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and cementing.	(505) 564-7750	(505) 334-6178
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
	All notifications are to be recorded in the WellView report with time, date, name or number that notifications were made to.		
	Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov		

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.
2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.
3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimimize the amount of fluids and solids that require disposal.

Fluid Disposal : Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal : Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for additional details. Sufficient barite will be on location to weight up mud system to balance maximum anticipated pressure gradient.

DETAILED DRILLING PLAN:

SURFACE: ***Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.***

0 ft (MD)	**to**	**350 ft (MD)**	**Hole Section Length:**	**350 ft**
0 ft (TVD)	**to**	**350 ft (TVD)**	**Casing Required:**	**350 ft**

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"
Bit / Motor: Mill Tooth or PDC, no motor
MWD / Survey: No MWD, deviation survey
Logging: None
Procedure: Drill to TD. Use 12-/4" bit and open to 17-1/2" if unable to drill with 17-1/2" bit. Run inclination survey in 100' stations from TD to surface. Condition hole and fluid for casing running as required. TOOH. Run casing. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface. Install cellar and wellhead.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	789	116,634	116,634
Min. S.F.					**7.39**	**3.46**	**7.31**	**7.79**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *N/A* *Optimum:* *N/A* *Maximum:* *N/A*
Make-up as per API Buttress Connection running procedure.
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface
Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
	TYPE III	14.6	1.39	6.686	0.6946	100%	0	364
Annular Capacity	0.6946	cuft/ft	*13-3/8" casing x 17-1/2" hole annulus*			Csg capacity	0.8680	ft3/ft
Drake Energy Services:	*Calculated cement volumes assume gauge hole and the excess noted in table*							Cu Ft Slurry
								505.3
Tail	*ASTM Type III Blend*	Calcium Chloride 2% BWOC Accelerator	D-CD2 .3% BWOC Dispersant/Friction reducer	.25 lbs/sx Cello Flake - seepage				

Notify COGCC & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: ***Drill as per directional plan to casing setting depth, run casing, cement casing to surface.***

350	**ft (MD)**	**to**	**4,372**	**ft (MD)**	**Hole Section Length:** **4,022 ft**
350	**ft (TVD)**	**to**	**3,661**	**ft (TVD)**	**Casing Required:** **4,372 ft**

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (5% KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	No OBM

Hole Size: 12-1/4"
Bit / Motor: 12-1/4" PDC bit w/mud motor
Bit / Motor: MOTOR: NOV 087840 - 7/8, 4.0, stage, 0.16 rev/gal, 1.83 DEG, 900 GPM, 950 DIFF PSIG
BIT: 6-BLADE PDC w/16 mm or 19 mm cutters, TFA = 0.67 sq-in (range 0.65 - 0.90 max), **jet with 6 - 12s**
MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional
Logging: None
Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.
Procedure: Drill to TD following directional plan **(20' rat-hole past casing setting depth)**. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10', when possible. Take surveys every stand, at a minimum. Target flow-rates of 750 GPM (higher if able to control return rates). Minimum desired flow-rate is 650 GPM. At TD, condition hole and fluid for casing running. TOOH. Run casing using a CRT and washing / circulating as required. Land casing. ND BOPE. Walk rig to next well. Perform off-line cement job. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,599	1,399	214,933	214,933
Min. S.F.					**1.26**	**2.52**	**2.62**	**2.11**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *3,400* *Optimum:* *4,530* *Maximum:* *5,660*
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface (FLOAT EQUIPMENT FROM WEATHERFORD)
Centralizers: 1 per joint in non-vertical hole; 1 per 3-joints in vertical hole
Centralizers: 1 centralizers jt stop-banded 10' from float shoe on bottom 1 jt & 1 centralizer floating on bottom joint, 1 centralizer per jt (floating) to KOP ; 1 centralizer per 3 jts (floating) to surface **(Centralizers from Scepter Supply - SLIP'N'SLIDE 9-5/8" x 11.75" SOLID BODY POLYMER)**

	Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Stage 1	*Spacer*	D-Mud Breaker	8.5				0	10 bbls	

Lead	90:10 Type III:POZ	12.5	2.140	12.05	70%	0	936	2,002
Tail	Type III	14.6	1.380	6.64	20%	3,872	150	207
Displacement	*335*	*est bbls*						

Annular Capacity
0.3627 cuft/ft *9-5/8" casing x 13-3/8" casing annulus*
0.3132 cuft/ft *9-5/8" casing x 12-1/4" hole annulus* 9-5/8" 36#ID 8.921
0.4341 cuft/ft *9-5/8" casing vol* *est shoe jt ft* 44

Calculated cement volumes assume gauge hole and the excess (open hole only) noted in table

Spacer	*D-Mud Breaker*	SAPP						
Lead	*ASTM Type III 90/10 Poz*	D-CSE 1 5.0% BWOC Strength Enhancer	D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control	D-SA 1 1.4% BWOC Na Metasilicate	D-CD 2 .4% BWOC Dispersant	Cello Flace LCM .25 lb/sx	D-FP1 0.5% BWOC Defoamer	D-R1 .5% Retarder
Tail	*ASTM Type III Blend*		D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control		D-CD 2 .5% BWOC Dispersant	Cello Flace LCM .25 lb/sx		D-R1 .2% Retarder

Drake Intermediate Cementing Program

Cement must achieve 500 psi compressive strength before drilling out.
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: *Drill to TD following directional plan, run casing, cement casing to surface.*

4,372	ft (MD)	to	16,802	ft (MD)	Hole Section Length: 12,430 ft
3,661	ft (TVD)	to	5,607	ft (TVD)	Casing Required: 16,802 ft

Estimated KOP:	5,650	ft (MD)	4,635	ft (TVD)
Estimated Landing Point (FTP):	6,594	ft (MD)	5,435	ft (TVD)
Estimated Lateral Length:	10,208	ft (MD)		

Fluid:	Type	MW (ppg)	WPS ppm	HTHP	YP (lb/100 sqft)	ES	OWR	Comment
	OBM	8.0 - 9.0	120,000 CaCl	NC	±6	+300	80:20	WBM as contingency

Fluids / Solids Notes: Newpark OptiDrill OBM system. Ensure that drying shakers are rigged up after the rig (2nd set) of shakers. Solids control will burn retorts on cuttings samples one per tour to check % ROC. Add diesel and products as required to maintain mud in program specs. Reference Newpark's mud program for additional details. No asphalt products are to be added to the OBM system. **Any changes to the mud systems are to be discussed with engineering prior to application.**

Hole Size: 8-1/2"

Bit / Motor: 8-1/2" PDC bit w/mud motor

Bit / Motor: **MOTOR:** NOV 077857 - 6.5" 7/8, 5.0 stage, 0.23 rev/gal, 1.83 deg, 750 GPM, 1,580 DIFF PSIG (or similar); on demand friction breaking device(s) as required, bottom tool spaced ~3,000' behind the bit.
BIT: 5-BLADE PDC w/16 mm - 19 mm cutters, matrix body, target TFA = 1.0 - 1.5 sq-in

MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

Logging: GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs

Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

Procedure: Drill to KOP following directional plan. Target flow-rate is 650 - 700 GPM. Target differential is pressure is 700 - 1,000 psig. Target ROP 500 - 600 ft/hr. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10' until KOP, when feasible. Take surveys every stand, at a minimum. Confirm landing target, planned BUR for curve, and KOP with Geology and Engineering. Drill curve following directional plan and updated landing target. Take survey every joint during curve. Land curve. Continue drilling in lateral section, steering as needed to keep well on plan and in the target window. Keep DLS < 2 deg/100' and keep slide length < 20', when feasible. Take surveys every stand, at a minimum. **Target rotating parameters / performance: flow-rate is 650 - 700 GPM, differential is pressure is 700 - 1,000 psig, ROP 500 - 600 ft/hr, torque 38K ft-lbs (MAX drill pipe MUT).** After reaching TD, perform no more than one clean-up cycle to condition hole for casing running unless shakers indicate additional cleaning needed. TOOH & LD drill pipe (ROOH, if required; should NOT be required with OBM system). When pumping hole cleaning sweeps, fine LCM product is to be used -**Do not use barite for sweeps**. Run casing as described below. Use CRT for casing running only if necessary (should NOT be required with OBM). Verify make up torque when running casing. Space out casing getting the toe sleeve as close to LTP as possible. Land casing and test pack-off. Open floatation sub, fill casing, and circulate as required. Pump cement as detailed below. Note cement volume circulated to surface. Nipple down BOPE. Clean pits. RDMO to next pad.

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,770	9,025	346,476	346,476
Min. S.F.					**2.69**	**1.18**	**1.58**	**1.28**

Assumptions: *Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)*
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *3,470* *Optimum:* *4,620* *Maximum:* *5,780*

Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

Casing Summary: Float shoe, float collar w/debris catcher, 1 jt casing, float collar **(Weatherford (WFT) float equipment)**, 20' marker joint, toe-intitiation sleeve **(WFT RD 8,500 psi)**, casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation sub **(NCS Air-Lock 2,500 psi from WFT)**, casing to surface. The toe-initiation sleeve shall be placed no closer to the unit boundary than 300' measured perpendicular to the East or West lease lines for a East-West azimuth drilled wellbore. Wellbore path must be no closer than 600' from the parallel lease lines. ***Note: the LTP is the maximum depth of the toe sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place the toe sleeve as close to (but not past) the planned LTP as possible.***

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.*
Lateral: 1 centralizer per 3 joints (purchase centralizers from Scepter Supply)
Top of curve to 9-5/8" shoe: 1 centralizer per 5 joints
9-5/8" shoe to surface: 1 centralizer per 5 joints

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	658	1,560
Tail	G:POZ blend	13.3	1.570	7.70	10%	5,488	1,824	2,864

Displacement *370* *est bbls*

Annular Capacity
0.2691 cuft/ft *5-1/2" casing x 9-5/8" casing annulus*
0.2291 cuft/ft *5-1/2" casing x 8-1/2" hole annulus*
0.1245 cuft/ft *5-1/2" casing vol* *est shoe jt ft* 100

Calculated cement volumes assume gauge hole and the excess noted in table
American Cementing Liner & Production Blend

Spacer	*S-8 Silica Flour* *163.7 lbs/bbl*	Avis 616 viscosifier 11.6 lb/bbl	FP24 Defoamer .5 lb/bbl	IntegraGuard Star Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Lead	*ASTM Type I/II*	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R7C Retarder .2% BWOB	FP24 Defoamer 0.3% BWOB, Anti-Static .01 lb/sx	
Tail	*Type G 50%*	Pozzolan Fly Ash Extender 50%	BA90 Bonding Agent 3.0 lb/sx	Bentonite Viscosifier 4% BWOB	FL24 Fluid Loss .4% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R3 Retarder .5% BWOB	FP24 Defoamer .3% BWOB, IntegraSeal 0.25 lb/sx

Calculated cement volumes assume gauge hole and the excess noted in table
Notify NMOCD & BLM if cement is not circulated to surface.

Note: This well will not be considered an unorthodox well location as defintned by NMAC19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

FINISH WELL: ***ND BOP, cap well, RDMO.***
Procedure: After off-line cement job, cap and cover well. Continue drilling operations on subsequent wells on pad.

COMPLETION AND PRODUCTION PLAN:

Est Lateral Length: 10,108
Est Frac Inform: *42 Frac Stages* *162,000 bbls slick water* *13,150,000 lbs proppant*
Flowback: Flow back through production tubing as pressures allow
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:

Drilling: 11/1/23
Completion: 12/31/23
Production: 2/14/24

Prepared by:	**Alec Bridge**	**12/20/21**
Updated:	Greg Olson	2/20/23
	Greg Olson	3/27/23
	G Olson	**8/17/23**

Well: Haynes Canyon Unit 438H
Site: Haynes Canyon Unit (432, 434, 436 & 438)
Project: Rio Arriba County, New Mexico NAD83 NM C
Design: rev0
Rig:

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Haynes 438 FTP 380 FNL 1910 FEL	5539.00	1302.59	-2158.09	1916062.096	1280149.734	36.259678000	-107.472004000
Haynes 438 LTP 380 FNL 2580 FWL	5607.00	1444.28	7698.08	1916203.783	1290005.884	36.260404000	-107.438585000

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 3°/100' build
3	1846.55	40.40	292.854	1737.73	176.85	-419.61	3.00	292.85	-417.02	Begin 40.40° tangent
4	5612.46	40.40	292.854	4605.76	1124.73	-2668.60	0.00	0.00	-2652.15	Begin 10°/100' build/turn
5	6589.01	60.00	89.176	5432.25	1297.78	-2492.55	10.00	159.46	-2473.62	Begin 60.00° tangent
6	6649.01	60.00	89.176	5462.25	1298.53	-2440.59	0.00	0.00	-2421.66	Begin 10°/100' build
7	6945.06	89.60	89.176	5539.00	1302.59	-2158.09	10.00	0.00	-2139.14	Begin 89.60° lateral
8	16802.49	89.60	89.176	5607.00	1444.28	7698.08	0.00	0.00	7718.05	PBHL/TD @ 16802.49 MD 5607.00

MARKSMAN DIRECTIONAL

CASING DETAILS

TVD	MD	Name
350.00	350.00	13 3/8" Csg
3674.00	4389.00	9 5/8" Csg

Azimuths to Grid North
True North: 0.72°
Magnetic North: 9.17°

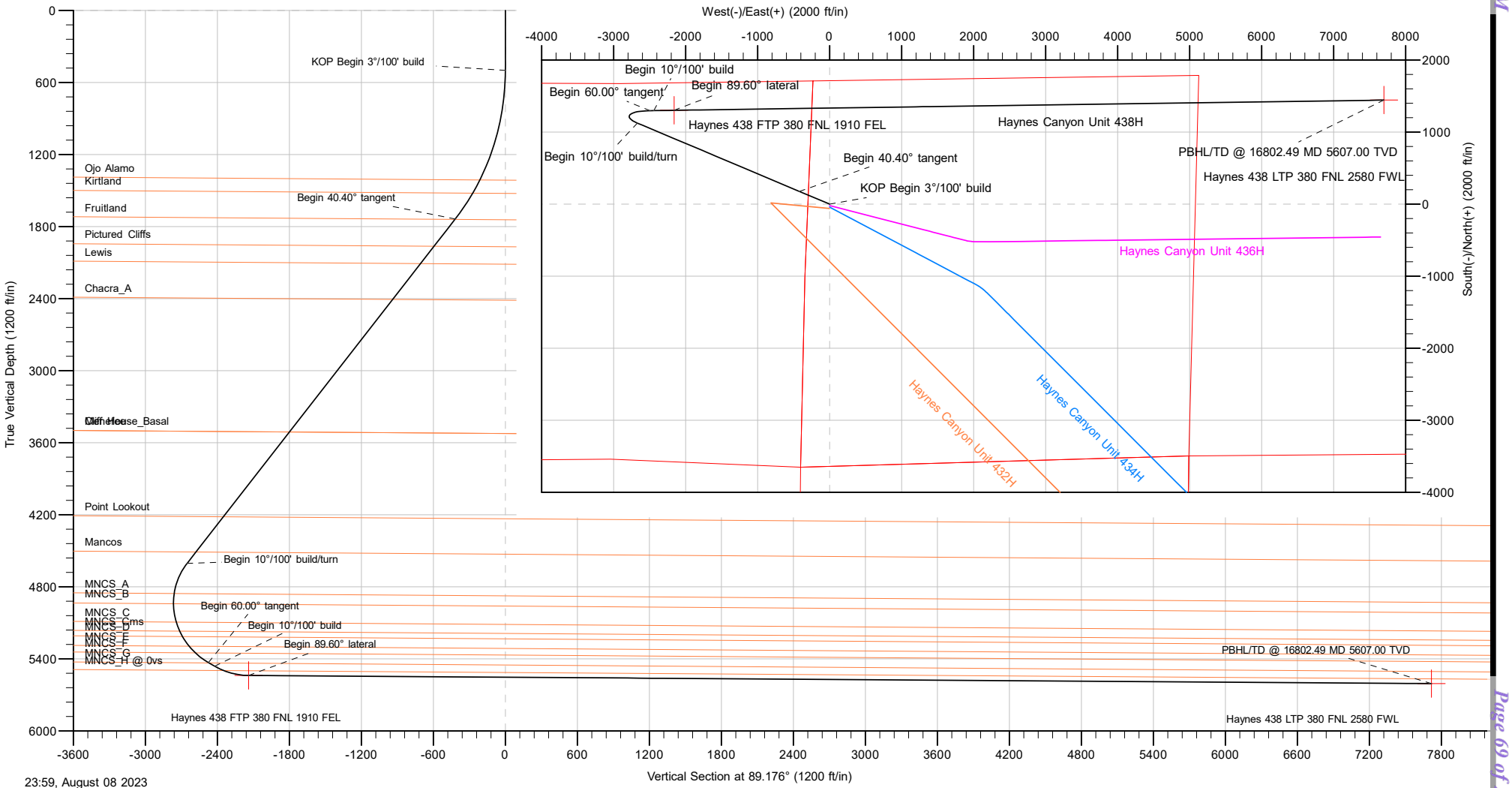
Magnetic Field
Strength: 49140.7nT
Dip Angle: 62.77°
Date: 8/8/2023
Model: IGRF2020

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone
System Datum: Mean Sea Level
Depth Reference: RKB=6689+25 @ 6714.00ft

Surface location:

Northing	Easting	Latittude	Longitude
1914759.511	1282307.819	36.256175000	-107.464630000

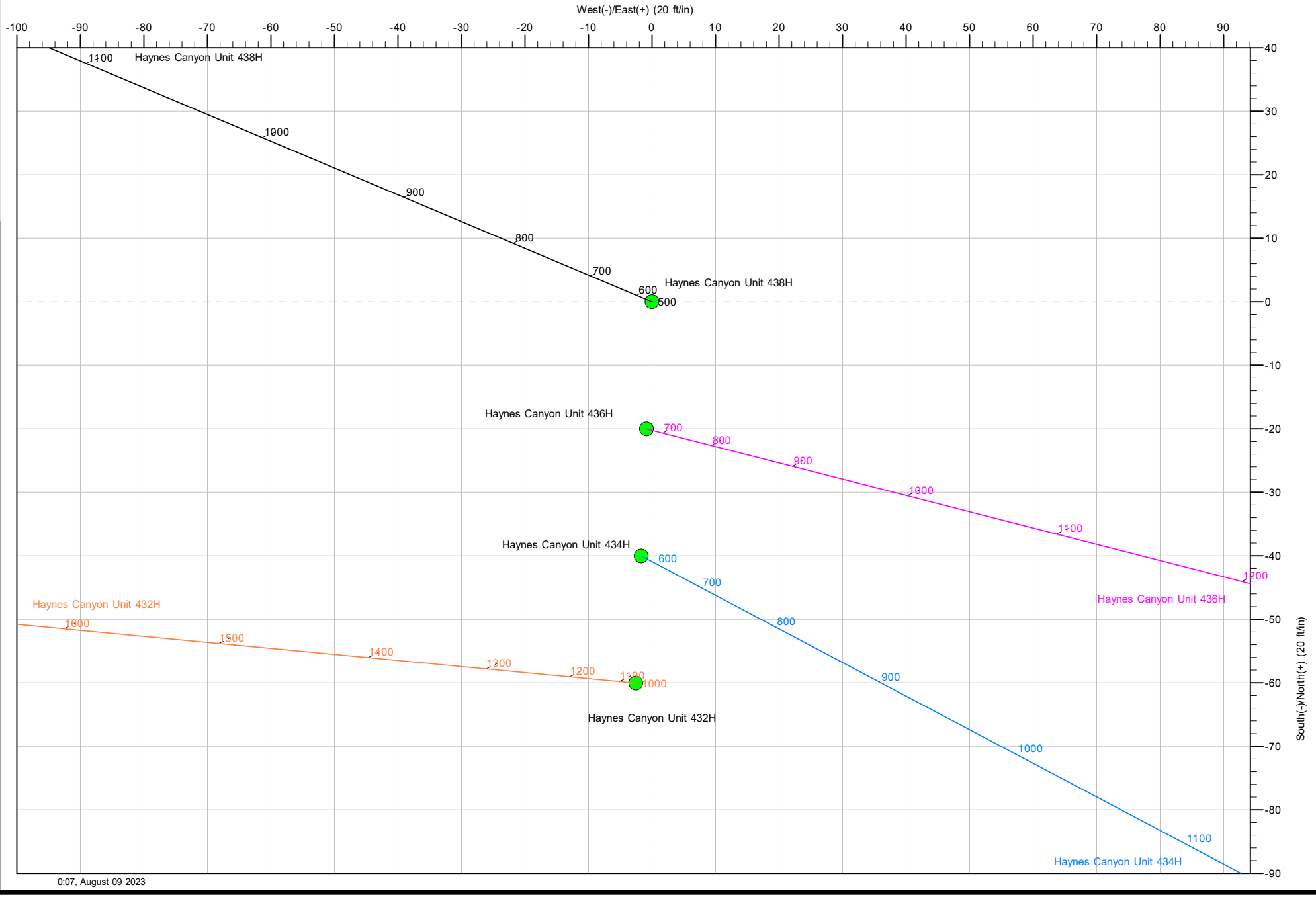
Total Corr (M=>G): To convert a Magnetic Direction to a Grid Direction, Add 9.17°



23:59, August 08 2023

Well: Haynes Canyon Unit 438H
Site: Haynes Canyon Unit (432, 434, 436 & 438)
Project: Rio Arriba County, New Mexico NAD83 NM C
Design: rev0
Rig:

MARKSMAN DIRECTIONAL



Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project Rio Arriba County, New Mexico NAD83 NM C

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site Haynes Canyon Unit (432, 434, 436 & 438)

Site Position:		**Northing:**	1,914,699.466 usft	**Latitude:**	36.256010000
From:	Lat/Long	**Easting:**	1,282,305.297 usft	**Longitude:**	-107.464636000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well Haynes Canyon Unit 438H, Surf loc: 1713 FNL 303 FWL Section 03-T23N-R06W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,914,759.511 usft	**Latitude:**	36.256175000
	+E/-W	0.00 ft	**Easting:**	1,282,307.819 usft	**Longitude:**	-107.464630000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,689.00 ft
Grid Convergence:		-0.72 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	8/8/2023	8.46	62.77	49,140.66294256

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	89.176

Plan Survey Tool Program **Date** 8/8/2023

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,802.42	rev0 (Original Hole)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	3.00	3.00	0.00	292.85	
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	0.00	0.00	0.00	0.00	
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	10.00	2.01	16.01	159.46	
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	0.00	0.00	0.00	0.00	
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	10.00	10.00	0.00	0.00	
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	0.00	0.00	0.00	0.00	Haynes 438 LTP 380

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.000	350.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8" Csg									
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3°/100' build									
600.00	3.00	292.854	599.95	1.02	-2.41	-2.40	3.00	3.00	0.00
700.00	6.00	292.854	699.63	4.06	-9.64	-9.58	3.00	3.00	0.00
800.00	9.00	292.854	798.77	9.13	-21.67	-21.53	3.00	3.00	0.00
900.00	12.00	292.854	897.08	16.21	-38.46	-38.22	3.00	3.00	0.00
1,000.00	15.00	292.854	994.31	25.27	-59.97	-59.60	3.00	3.00	0.00
1,100.00	18.00	292.854	1,090.18	36.30	-86.14	-85.61	3.00	3.00	0.00
1,200.00	21.00	292.854	1,184.43	49.27	-116.89	-116.17	3.00	3.00	0.00
1,300.00	24.00	292.854	1,276.81	64.13	-152.15	-151.22	3.00	3.00	0.00
1,400.00	27.00	292.854	1,367.06	80.85	-191.82	-190.64	3.00	3.00	0.00
1,451.38	28.54	292.854	1,412.52	90.14	-213.88	-212.56	3.00	3.00	0.00
Ojo Alamo									
1,500.00	30.00	292.854	1,454.93	99.38	-235.79	-234.33	3.00	3.00	0.00
1,578.52	32.36	292.854	1,522.10	115.16	-273.24	-271.56	3.00	3.00	0.00
Kirtland									
1,600.00	33.00	292.854	1,540.18	119.67	-283.93	-282.18	3.00	3.00	0.00
1,700.00	36.00	292.854	1,622.59	141.66	-336.12	-334.05	3.00	3.00	0.00
1,800.00	39.00	292.854	1,701.91	165.30	-392.21	-389.79	3.00	3.00	0.00
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	-417.02	3.00	3.00	0.00
Begin 40.40° tangent									
1,850.94	40.40	292.854	1,741.07	177.96	-422.23	-419.62	0.00	0.00	0.00
Fruitland									
1,900.00	40.40	292.854	1,778.44	190.30	-451.53	-448.74	0.00	0.00	0.00
2,000.00	40.40	292.854	1,854.59	215.47	-511.25	-508.10	0.00	0.00	0.00
2,100.00	40.40	292.854	1,930.75	240.64	-570.97	-567.45	0.00	0.00	0.00
2,144.78	40.40	292.854	1,964.85	251.92	-597.71	-594.02	0.00	0.00	0.00
Pictured Cliffs									
2,200.00	40.40	292.854	2,006.91	265.81	-630.69	-626.80	0.00	0.00	0.00
2,300.00	40.40	292.854	2,083.07	290.98	-690.41	-686.15	0.00	0.00	0.00
2,334.14	40.40	292.854	2,109.07	299.58	-710.80	-706.41	0.00	0.00	0.00
Lewis									
2,400.00	40.40	292.854	2,159.22	316.15	-750.13	-745.50	0.00	0.00	0.00
2,500.00	40.40	292.854	2,235.38	341.33	-809.85	-804.85	0.00	0.00	0.00
2,600.00	40.40	292.854	2,311.54	366.50	-869.57	-864.21	0.00	0.00	0.00
2,700.00	40.40	292.854	2,387.70	391.67	-929.29	-923.56	0.00	0.00	0.00
2,725.93	40.40	292.854	2,407.44	398.19	-944.77	-938.95	0.00	0.00	0.00
Chacra_A									
2,800.00	40.40	292.854	2,463.86	416.84	-989.01	-982.91	0.00	0.00	0.00
2,900.00	40.40	292.854	2,540.01	442.01	-1,048.73	-1,042.26	0.00	0.00	0.00
3,000.00	40.40	292.854	2,616.17	467.18	-1,108.45	-1,101.61	0.00	0.00	0.00
3,100.00	40.40	292.854	2,692.33	492.35	-1,168.17	-1,160.96	0.00	0.00	0.00
3,200.00	40.40	292.854	2,768.49	517.52	-1,227.88	-1,220.32	0.00	0.00	0.00
3,300.00	40.40	292.854	2,844.64	542.69	-1,287.60	-1,279.67	0.00	0.00	0.00
3,400.00	40.40	292.854	2,920.80	567.86	-1,347.32	-1,339.02	0.00	0.00	0.00
3,500.00	40.40	292.854	2,996.96	593.03	-1,407.04	-1,398.37	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,600.00	40.40	292.854	3,073.12	618.20	-1,466.76	-1,457.72	0.00	0.00	0.00
3,700.00	40.40	292.854	3,149.28	643.37	-1,526.48	-1,517.07	0.00	0.00	0.00
3,800.00	40.40	292.854	3,225.43	668.54	-1,586.20	-1,576.43	0.00	0.00	0.00
3,900.00	40.40	292.854	3,301.59	693.71	-1,645.92	-1,635.78	0.00	0.00	0.00
4,000.00	40.40	292.854	3,377.75	718.88	-1,705.64	-1,695.13	0.00	0.00	0.00
4,100.00	40.40	292.854	3,453.91	744.05	-1,765.36	-1,754.48	0.00	0.00	0.00
4,175.54	40.40	292.854	3,511.44	763.06	-1,810.48	-1,799.32	0.00	0.00	0.00
Cliff House_Basal - Menefee									
4,200.00	40.40	292.854	3,530.06	769.22	-1,825.08	-1,813.83	0.00	0.00	0.00
4,300.00	40.40	292.854	3,606.22	794.39	-1,884.80	-1,873.18	0.00	0.00	0.00
4,389.00	40.40	292.854	3,674.00	816.79	-1,937.95	-1,926.01	0.00	0.00	0.00
9 5/8" Csg									
4,400.00	40.40	292.854	3,682.38	819.56	-1,944.52	-1,932.54	0.00	0.00	0.00
4,500.00	40.40	292.854	3,758.54	844.73	-2,004.24	-1,991.89	0.00	0.00	0.00
4,600.00	40.40	292.854	3,834.70	869.90	-2,063.96	-2,051.24	0.00	0.00	0.00
4,700.00	40.40	292.854	3,910.85	895.07	-2,123.68	-2,110.59	0.00	0.00	0.00
4,800.00	40.40	292.854	3,987.01	920.24	-2,183.40	-2,169.94	0.00	0.00	0.00
4,900.00	40.40	292.854	4,063.17	945.41	-2,243.12	-2,229.29	0.00	0.00	0.00
5,000.00	40.40	292.854	4,139.33	970.58	-2,302.84	-2,288.65	0.00	0.00	0.00
5,100.00	40.40	292.854	4,215.48	995.75	-2,362.56	-2,348.00	0.00	0.00	0.00
5,102.77	40.40	292.854	4,217.60	996.44	-2,364.22	-2,349.64	0.00	0.00	0.00
Point Lookout									
5,200.00	40.40	292.854	4,291.64	1,020.92	-2,422.28	-2,407.35	0.00	0.00	0.00
5,300.00	40.40	292.854	4,367.80	1,046.09	-2,482.00	-2,466.70	0.00	0.00	0.00
5,400.00	40.40	292.854	4,443.96	1,071.26	-2,541.72	-2,526.05	0.00	0.00	0.00
5,488.03	40.40	292.854	4,511.00	1,093.41	-2,594.29	-2,578.30	0.00	0.00	0.00
Mancos									
5,500.00	40.40	292.854	4,520.12	1,096.43	-2,601.44	-2,585.40	0.00	0.00	0.00
5,600.00	40.40	292.854	4,596.27	1,121.60	-2,661.16	-2,644.76	0.00	0.00	0.00
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	-2,652.15	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,650.00	36.90	295.047	4,635.08	1,134.23	-2,690.03	-2,673.44	10.00	-9.31	5.84
5,700.00	32.32	298.587	4,676.22	1,146.99	-2,715.38	-2,698.61	10.00	-9.16	7.08
5,750.00	27.87	303.135	4,719.48	1,159.78	-2,736.92	-2,719.96	10.00	-8.91	9.10
5,800.00	23.62	309.211	4,764.51	1,172.51	-2,754.48	-2,737.33	10.00	-8.51	12.15
5,850.00	19.69	317.654	4,810.99	1,185.08	-2,767.92	-2,750.59	10.00	-7.84	16.89
5,898.11	16.45	329.183	4,856.74	1,196.93	-2,776.88	-2,759.38	10.00	-6.73	23.96
MNCS_A									
5,900.00	16.34	329.721	4,858.54	1,197.38	-2,777.15	-2,759.64	10.00	-5.92	28.54
5,950.00	13.98	346.677	4,906.82	1,209.34	-2,782.09	-2,764.41	10.00	-4.73	33.91
5,985.86	13.20	1.623	4,941.70	1,217.65	-2,782.97	-2,765.17	10.00	-2.17	41.68
MNCS_B									
6,000.00	13.15	7.825	4,955.46	1,220.86	-2,782.71	-2,764.86	10.00	-0.37	43.87
6,050.00	14.12	28.753	5,004.08	1,231.85	-2,778.99	-2,760.99	10.00	1.95	41.86
6,100.00	16.59	45.288	5,052.32	1,242.22	-2,770.98	-2,752.83	10.00	4.93	33.07
6,144.75	19.61	55.963	5,094.86	1,250.92	-2,760.22	-2,741.94	10.00	6.75	23.85
MNCS_C									
6,150.00	20.00	57.004	5,099.80	1,251.90	-2,758.73	-2,740.45	10.00	7.41	19.82
6,200.00	23.95	65.211	5,146.17	1,260.82	-2,742.34	-2,723.92	10.00	7.91	16.42
6,226.37	26.18	68.561	5,170.06	1,265.19	-2,732.06	-2,713.59	10.00	8.43	12.70
MNCS_Cms									
6,250.00	28.23	71.136	5,191.07	1,268.91	-2,721.92	-2,703.39	10.00	8.67	10.90
6,277.73	30.68	73.749	5,215.22	1,273.01	-2,708.92	-2,690.33	10.00	8.86	9.42

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
MNCS_D									
6,300.00	32.69	75.586	5,234.16	1,276.09	-2,697.64	-2,679.01	10.00	9.01	8.25
6,350.00	37.28	79.060	5,275.12	1,282.33	-2,669.68	-2,650.96	10.00	9.18	6.95
6,376.17	39.72	80.597	5,295.60	1,285.20	-2,653.64	-2,634.89	10.00	9.31	5.87
MNCS_E									
6,400.00	41.95	81.865	5,313.63	1,287.57	-2,638.25	-2,619.46	10.00	9.38	5.32
6,450.00	46.68	84.201	5,349.40	1,291.78	-2,603.59	-2,584.74	10.00	9.45	4.67
6,452.29	46.89	84.299	5,350.97	1,291.95	-2,601.93	-2,583.08	10.00	9.50	4.28
MNCS_F									
6,500.00	51.44	86.198	5,382.16	1,294.92	-2,565.96	-2,547.07	10.00	9.54	3.98
6,550.00	56.24	87.945	5,411.65	1,296.96	-2,525.66	-2,506.74	10.00	9.59	3.49
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	-2,473.63	10.00	9.63	3.16
Begin 60.00° tangent									
6,594.03	60.00	89.176	5,434.76	1,297.85	-2,488.20	-2,469.28	0.00	0.00	0.00
MNCS_G									
6,600.00	60.00	89.176	5,437.74	1,297.92	-2,483.03	-2,464.11	0.00	0.00	0.00
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	-2,421.66	0.00	0.00	0.00
Begin 10°/100' build									
6,700.00	65.10	89.176	5,485.75	1,299.18	-2,395.36	-2,376.43	10.00	10.00	0.00
6,729.84	68.08	89.176	5,497.60	1,299.57	-2,367.99	-2,349.05	10.00	10.00	0.00
MNCS_H @ 0vs									
6,750.00	70.10	89.176	5,504.80	1,299.84	-2,349.16	-2,330.22	10.00	10.00	0.00
6,800.00	75.10	89.176	5,519.74	1,300.53	-2,301.46	-2,282.52	10.00	10.00	0.00
6,850.00	80.10	89.176	5,530.48	1,301.23	-2,252.65	-2,233.71	10.00	10.00	0.00
6,900.00	85.10	89.176	5,536.92	1,301.94	-2,203.09	-2,184.14	10.00	10.00	0.00
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	-2,139.14	10.00	10.00	0.00
Begin 89.60° lateral									
7,000.00	89.60	89.176	5,539.38	1,303.38	-2,103.16	-2,084.20	0.00	0.00	0.00
7,100.00	89.60	89.176	5,540.07	1,304.82	-2,003.17	-1,984.20	0.00	0.00	0.00
7,200.00	89.60	89.176	5,540.76	1,306.26	-1,903.19	-1,884.20	0.00	0.00	0.00
7,300.00	89.60	89.176	5,541.45	1,307.69	-1,803.20	-1,784.21	0.00	0.00	0.00
7,400.00	89.60	89.176	5,542.14	1,309.13	-1,703.21	-1,684.21	0.00	0.00	0.00
7,500.00	89.60	89.176	5,542.83	1,310.57	-1,603.22	-1,584.21	0.00	0.00	0.00
7,600.00	89.60	89.176	5,543.52	1,312.00	-1,503.24	-1,484.21	0.00	0.00	0.00
7,700.00	89.60	89.176	5,544.21	1,313.44	-1,403.25	-1,384.22	0.00	0.00	0.00
7,800.00	89.60	89.176	5,544.90	1,314.88	-1,303.26	-1,284.22	0.00	0.00	0.00
7,900.00	89.60	89.176	5,545.59	1,316.32	-1,203.27	-1,184.22	0.00	0.00	0.00
8,000.00	89.60	89.176	5,546.28	1,317.75	-1,103.29	-1,084.22	0.00	0.00	0.00
8,100.00	89.60	89.176	5,546.97	1,319.19	-1,003.30	-984.22	0.00	0.00	0.00
8,200.00	89.60	89.176	5,547.66	1,320.63	-903.31	-884.23	0.00	0.00	0.00
8,300.00	89.60	89.176	5,548.35	1,322.07	-803.33	-784.23	0.00	0.00	0.00
8,400.00	89.60	89.176	5,549.04	1,323.50	-703.34	-684.23	0.00	0.00	0.00
8,500.00	89.60	89.176	5,549.73	1,324.94	-603.35	-584.23	0.00	0.00	0.00
8,600.00	89.60	89.176	5,550.41	1,326.38	-503.36	-484.24	0.00	0.00	0.00
8,700.00	89.60	89.176	5,551.10	1,327.82	-403.38	-384.24	0.00	0.00	0.00
8,800.00	89.60	89.176	5,551.79	1,329.25	-303.39	-284.24	0.00	0.00	0.00
8,900.00	89.60	89.176	5,552.48	1,330.69	-203.40	-184.24	0.00	0.00	0.00
9,000.00	89.60	89.176	5,553.17	1,332.13	-103.41	-84.25	0.00	0.00	0.00
9,100.00	89.60	89.176	5,553.86	1,333.56	-3.43	15.75	0.00	0.00	0.00
9,200.00	89.60	89.176	5,554.55	1,335.00	96.56	115.75	0.00	0.00	0.00
9,300.00	89.60	89.176	5,555.24	1,336.44	196.55	215.75	0.00	0.00	0.00
9,400.00	89.60	89.176	5,555.93	1,337.88	296.53	315.74	0.00	0.00	0.00
9,500.00	89.60	89.176	5,556.62	1,339.31	396.52	415.74	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,600.00	89.60	89.176	5,557.31	1,340.75	496.51	515.74	0.00	0.00	0.00
9,700.00	89.60	89.176	5,558.00	1,342.19	596.50	615.74	0.00	0.00	0.00
9,800.00	89.60	89.176	5,558.69	1,343.63	696.48	715.73	0.00	0.00	0.00
9,900.00	89.60	89.176	5,559.38	1,345.06	796.47	815.73	0.00	0.00	0.00
10,000.00	89.60	89.176	5,560.07	1,346.50	896.46	915.73	0.00	0.00	0.00
10,100.00	89.60	89.176	5,560.76	1,347.94	996.45	1,015.73	0.00	0.00	0.00
10,200.00	89.60	89.176	5,561.45	1,349.38	1,096.43	1,115.73	0.00	0.00	0.00
10,300.00	89.60	89.176	5,562.14	1,350.81	1,196.42	1,215.72	0.00	0.00	0.00
10,400.00	89.60	89.176	5,562.83	1,352.25	1,296.41	1,315.72	0.00	0.00	0.00
10,500.00	89.60	89.176	5,563.52	1,353.69	1,396.40	1,415.72	0.00	0.00	0.00
10,600.00	89.60	89.176	5,564.21	1,355.12	1,496.38	1,515.72	0.00	0.00	0.00
10,700.00	89.60	89.176	5,564.90	1,356.56	1,596.37	1,615.71	0.00	0.00	0.00
10,800.00	89.60	89.176	5,565.59	1,358.00	1,696.36	1,715.71	0.00	0.00	0.00
10,900.00	89.60	89.176	5,566.28	1,359.44	1,796.34	1,815.71	0.00	0.00	0.00
11,000.00	89.60	89.176	5,566.97	1,360.87	1,896.33	1,915.71	0.00	0.00	0.00
11,100.00	89.60	89.176	5,567.66	1,362.31	1,996.32	2,015.70	0.00	0.00	0.00
11,200.00	89.60	89.176	5,568.35	1,363.75	2,096.31	2,115.70	0.00	0.00	0.00
11,300.00	89.60	89.176	5,569.04	1,365.19	2,196.29	2,215.70	0.00	0.00	0.00
11,400.00	89.60	89.176	5,569.73	1,366.62	2,296.28	2,315.70	0.00	0.00	0.00
11,500.00	89.60	89.176	5,570.42	1,368.06	2,396.27	2,415.69	0.00	0.00	0.00
11,600.00	89.60	89.176	5,571.11	1,369.50	2,496.26	2,515.69	0.00	0.00	0.00
11,700.00	89.60	89.176	5,571.80	1,370.94	2,596.24	2,615.69	0.00	0.00	0.00
11,800.00	89.60	89.176	5,572.49	1,372.37	2,696.23	2,715.69	0.00	0.00	0.00
11,900.00	89.60	89.176	5,573.18	1,373.81	2,796.22	2,815.68	0.00	0.00	0.00
12,000.00	89.60	89.176	5,573.87	1,375.25	2,896.20	2,915.68	0.00	0.00	0.00
12,100.00	89.60	89.176	5,574.56	1,376.68	2,996.19	3,015.68	0.00	0.00	0.00
12,200.00	89.60	89.176	5,575.25	1,378.12	3,096.18	3,115.68	0.00	0.00	0.00
12,300.00	89.60	89.176	5,575.94	1,379.56	3,196.17	3,215.68	0.00	0.00	0.00
12,400.00	89.60	89.176	5,576.63	1,381.00	3,296.15	3,315.67	0.00	0.00	0.00
12,500.00	89.60	89.176	5,577.32	1,382.43	3,396.14	3,415.67	0.00	0.00	0.00
12,600.00	89.60	89.176	5,578.01	1,383.87	3,496.13	3,515.67	0.00	0.00	0.00
12,700.00	89.60	89.176	5,578.70	1,385.31	3,596.12	3,615.67	0.00	0.00	0.00
12,800.00	89.60	89.176	5,579.39	1,386.75	3,696.10	3,715.66	0.00	0.00	0.00
12,900.00	89.60	89.176	5,580.08	1,388.18	3,796.09	3,815.66	0.00	0.00	0.00
13,000.00	89.60	89.176	5,580.77	1,389.62	3,896.08	3,915.66	0.00	0.00	0.00
13,100.00	89.60	89.176	5,581.46	1,391.06	3,996.06	4,015.66	0.00	0.00	0.00
13,200.00	89.60	89.176	5,582.15	1,392.50	4,096.05	4,115.65	0.00	0.00	0.00
13,300.00	89.60	89.176	5,582.84	1,393.93	4,196.04	4,215.65	0.00	0.00	0.00
13,400.00	89.60	89.176	5,583.53	1,395.37	4,296.03	4,315.65	0.00	0.00	0.00
13,500.00	89.60	89.176	5,584.22	1,396.81	4,396.01	4,415.65	0.00	0.00	0.00
13,600.00	89.60	89.176	5,584.91	1,398.24	4,496.00	4,515.64	0.00	0.00	0.00
13,700.00	89.60	89.176	5,585.60	1,399.68	4,595.99	4,615.64	0.00	0.00	0.00
13,800.00	89.60	89.176	5,586.29	1,401.12	4,695.98	4,715.64	0.00	0.00	0.00
13,900.00	89.60	89.176	5,586.98	1,402.56	4,795.96	4,815.64	0.00	0.00	0.00
14,000.00	89.60	89.176	5,587.67	1,403.99	4,895.95	4,915.63	0.00	0.00	0.00
14,100.00	89.60	89.176	5,588.36	1,405.43	4,995.94	5,015.63	0.00	0.00	0.00
14,200.00	89.60	89.176	5,589.05	1,406.87	5,095.92	5,115.63	0.00	0.00	0.00
14,300.00	89.60	89.176	5,589.74	1,408.31	5,195.91	5,215.63	0.00	0.00	0.00
14,400.00	89.60	89.176	5,590.43	1,409.74	5,295.90	5,315.63	0.00	0.00	0.00
14,500.00	89.60	89.176	5,591.12	1,411.18	5,395.89	5,415.62	0.00	0.00	0.00
14,600.00	89.60	89.176	5,591.81	1,412.62	5,495.87	5,515.62	0.00	0.00	0.00
14,700.00	89.60	89.176	5,592.50	1,414.06	5,595.86	5,615.62	0.00	0.00	0.00
14,800.00	89.60	89.176	5,593.19	1,415.49	5,695.85	5,715.62	0.00	0.00	0.00
14,900.00	89.60	89.176	5,593.88	1,416.93	5,795.84	5,815.61	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,000.00	89.60	89.176	5,594.57	1,418.37	5,895.82	5,915.61	0.00	0.00	0.00
15,100.00	89.60	89.176	5,595.26	1,419.80	5,995.81	6,015.61	0.00	0.00	0.00
15,200.00	89.60	89.176	5,595.95	1,421.24	6,095.80	6,115.61	0.00	0.00	0.00
15,300.00	89.60	89.176	5,596.64	1,422.68	6,195.79	6,215.60	0.00	0.00	0.00
15,400.00	89.60	89.176	5,597.33	1,424.12	6,295.77	6,315.60	0.00	0.00	0.00
15,500.00	89.60	89.176	5,598.01	1,425.55	6,395.76	6,415.60	0.00	0.00	0.00
15,600.00	89.60	89.176	5,598.70	1,426.99	6,495.75	6,515.60	0.00	0.00	0.00
15,700.00	89.60	89.176	5,599.39	1,428.43	6,595.73	6,615.59	0.00	0.00	0.00
15,800.00	89.60	89.176	5,600.08	1,429.87	6,695.72	6,715.59	0.00	0.00	0.00
15,900.00	89.60	89.176	5,600.77	1,431.30	6,795.71	6,815.59	0.00	0.00	0.00
16,000.00	89.60	89.176	5,601.46	1,432.74	6,895.70	6,915.59	0.00	0.00	0.00
16,100.00	89.60	89.176	5,602.15	1,434.18	6,995.68	7,015.58	0.00	0.00	0.00
16,200.00	89.60	89.176	5,602.84	1,435.62	7,095.67	7,115.58	0.00	0.00	0.00
16,300.00	89.60	89.176	5,603.53	1,437.05	7,195.66	7,215.58	0.00	0.00	0.00
16,400.00	89.60	89.176	5,604.22	1,438.49	7,295.65	7,315.58	0.00	0.00	0.00
16,500.00	89.60	89.176	5,604.91	1,439.93	7,395.63	7,415.58	0.00	0.00	0.00
16,600.00	89.60	89.176	5,605.60	1,441.37	7,495.62	7,515.57	0.00	0.00	0.00
16,700.00	89.60	89.176	5,606.29	1,442.80	7,595.61	7,615.57	0.00	0.00	0.00
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	7,718.05	0.00	0.00	0.00
PBHL/TD @ 16802.49 MD 5607.00 TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Haynes 438 FTP 380 FN - plan hits target center - Point	0.00	0.000	5,539.00	1,302.59	-2,158.09	1,916,062.096	1,280,149.734	36.259678000	-107.472004000
Haynes 438 LTP 380 FN - plan hits target center - Point	0.00	0.000	5,607.00	1,444.28	7,698.08	1,916,203.783	1,290,005.884	36.260404000	-107.438585000

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2
4,389.00	3,674.00	9 5/8" Csg	9-5/8	12-1/4

Planning Report

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Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,451.38	1,412.52	Ojo Alamo		0.40	89.176
1,578.52	1,522.10	Kirtland		0.40	89.176
1,850.94	1,741.07	Fruitland		0.40	89.176
2,144.78	1,964.85	Pictured Cliffs		0.40	89.176
2,334.14	2,109.07	Lewis		0.40	89.176
2,725.93	2,407.44	Chacra_A		0.40	89.176
4,175.54	3,511.44	Cliff House_Basal		0.40	89.176
4,175.54	3,511.44	Menefee		0.40	89.176
5,102.77	4,217.60	Point Lookout		0.40	89.176
5,488.03	4,511.00	Mancos		0.40	89.176
5,898.11	4,856.74	MNCS_A		0.40	89.176
5,985.86	4,941.70	MNCS_B		0.40	89.176
6,144.75	5,094.86	MNCS_C		0.40	89.176
6,226.37	5,170.06	MNCS_Cms		0.40	89.176
6,277.73	5,215.22	MNCS_D		0.40	89.176
6,376.17	5,295.60	MNCS_E		0.40	89.176
6,452.29	5,350.97	MNCS_F		0.40	89.176
6,594.03	5,434.76	MNCS_G		0.40	89.176
6,729.84	5,497.60	MNCS_H @ 0vs		0.40	89.176

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.00	500.00	0.00	0.00	KOP Begin 3°/100' build
1,846.55	1,737.73	176.85	-419.61	Begin 40.40° tangent
5,612.46	4,605.76	1,124.73	-2,668.60	Begin 10°/100' build/turn
6,589.01	5,432.25	1,297.78	-2,492.55	Begin 60.00° tangent
6,649.01	5,462.25	1,298.53	-2,440.59	Begin 10°/100' build
6,945.06	5,539.00	1,302.59	-2,158.09	Begin 89.60° lateral
16,802.49	5,607.00	1,444.28	7,698.08	PBHL/TD @ 16802.49 MD 5607.00 TVD

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project Rio Arriba County, New Mexico NAD83 NM C

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site Haynes Canyon Unit (432, 434, 436 & 438)

Site Position:		**Northing:**	1,914,699.466 usft	**Latitude:**	36.256010000
From:	Lat/Long	**Easting:**	1,282,305.297 usft	**Longitude:**	-107.464636000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well Haynes Canyon Unit 438H, Surf loc: 1713 FNL 303 FWL Section 03-T23N-R06W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,914,759.511 usft	**Latitude:**	36.256175000
	+E/-W	0.00 ft	**Easting:**	1,282,307.819 usft	**Longitude:**	-107.464630000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,689.00 ft
Grid Convergence:		-0.72 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	8/8/2023	8.46	62.77	49,140.66294256

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	89.176

Plan Survey Tool Program **Date** 8/8/2023

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,802.42	rev0 (Original Hole)	MWD OWSG MWD - Standard	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	3.00	3.00	0.00	292.85	
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	0.00	0.00	0.00	0.00	
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	10.00	2.01	16.01	159.46	
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	0.00	0.00	0.00	0.00	
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	10.00	10.00	0.00	0.00	
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	0.00	0.00	0.00	0.00	Haynes 438 LTP 380

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
100.00	0.00	0.000	100.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
200.00	0.00	0.000	200.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
300.00	0.00	0.000	300.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
350.00	0.00	0.000	350.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
13 3/8" Csg									
400.00	0.00	0.000	400.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
500.00	0.00	0.000	500.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
KOP Begin 3°/100' build									
600.00	3.00	292.854	599.95	1.02	-2.41	1,914,760.528	1,282,305.407	36.256177709	-107.464638223
700.00	6.00	292.854	699.63	4.06	-9.64	1,914,763.574	1,282,298.178	36.256185829	-107.464662867
800.00	9.00	292.854	798.77	9.13	-21.67	1,914,768.643	1,282,286.152	36.256199336	-107.464703866
900.00	12.00	292.854	897.08	16.21	-38.46	1,914,775.720	1,282,269.361	36.256218194	-107.464761107
1,000.00	15.00	292.854	994.31	25.27	-59.97	1,914,784.786	1,282,247.851	36.256242352	-107.464834433
1,100.00	18.00	292.854	1,090.18	36.30	-86.14	1,914,795.815	1,282,221.682	36.256271743	-107.464923644
1,200.00	21.00	292.854	1,184.43	49.27	-116.89	1,914,808.778	1,282,190.926	36.256306286	-107.465028494
1,300.00	24.00	292.854	1,276.81	64.13	-152.15	1,914,823.639	1,282,155.665	36.256345887	-107.465148697
1,400.00	27.00	292.854	1,367.06	80.85	-191.82	1,914,840.357	1,282,115.999	36.256390438	-107.465283923
1,451.38	28.54	292.854	1,412.52	90.14	-213.88	1,914,849.654	1,282,093.940	36.256415212	-107.465359121
Ojo Alamo									
1,500.00	30.00	292.854	1,454.93	99.38	-235.79	1,914,858.887	1,282,072.034	36.256439815	-107.465433802
1,578.52	32.36	292.854	1,522.10	115.16	-273.24	1,914,874.674	1,282,034.578	36.256481882	-107.465561491
Kirtland									
1,600.00	33.00	292.854	1,540.18	119.67	-283.93	1,914,879.178	1,282,023.891	36.256493884	-107.465597922
1,700.00	36.00	292.854	1,622.59	141.66	-336.12	1,914,901.174	1,281,971.703	36.256552496	-107.465775835
1,800.00	39.00	292.854	1,701.91	165.30	-392.21	1,914,924.814	1,281,915.612	36.256615491	-107.465967051
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	1,914,936.362	1,281,888.213	36.256646263	-107.466060455
Begin 40.40° tangent									
1,850.94	40.40	292.854	1,741.07	177.96	-422.23	1,914,937.466	1,281,885.593	36.256649205	-107.466069387
Fruitland									
1,900.00	40.40	292.854	1,778.44	190.30	-451.53	1,914,949.815	1,281,856.293	36.256682112	-107.466169273
2,000.00	40.40	292.854	1,854.59	215.47	-511.25	1,914,974.985	1,281,796.574	36.256749182	-107.466372862
2,100.00	40.40	292.854	1,930.75	240.64	-570.97	1,915,000.155	1,281,736.854	36.256816251	-107.466576451
2,144.78	40.40	292.854	1,964.85	251.92	-597.71	1,915,011.426	1,281,710.112	36.256846284	-107.466667614
Pictured Cliffs									
2,200.00	40.40	292.854	2,006.91	265.81	-630.69	1,915,025.325	1,281,677.134	36.256883321	-107.466780040
2,300.00	40.40	292.854	2,083.07	290.98	-690.41	1,915,050.495	1,281,617.414	36.256950390	-107.466983630
2,334.14	40.40	292.854	2,109.07	299.58	-710.80	1,915,059.089	1,281,597.025	36.256973288	-107.467053140
Lewis									
2,400.00	40.40	292.854	2,159.22	316.15	-750.13	1,915,075.665	1,281,557.695	36.257017458	-107.467187220
2,500.00	40.40	292.854	2,235.38	341.33	-809.85	1,915,100.835	1,281,497.975	36.257084527	-107.467390811
2,600.00	40.40	292.854	2,311.54	366.50	-869.57	1,915,126.005	1,281,438.255	36.257151595	-107.467594401
2,700.00	40.40	292.854	2,387.70	391.67	-929.29	1,915,151.175	1,281,378.535	36.257218662	-107.467797992
2,725.93	40.40	292.854	2,407.44	398.19	-944.77	1,915,157.702	1,281,363.050	36.257236052	-107.467850782
Chacra_A									
2,800.00	40.40	292.854	2,463.86	416.84	-989.01	1,915,176.345	1,281,318.816	36.257285729	-107.468001584
2,900.00	40.40	292.854	2,540.01	442.01	-1,048.73	1,915,201.515	1,281,259.096	36.257352796	-107.468205176
3,000.00	40.40	292.854	2,616.17	467.18	-1,108.45	1,915,226.685	1,281,199.376	36.257419863	-107.468408768
3,100.00	40.40	292.854	2,692.33	492.35	-1,168.17	1,915,251.855	1,281,139.657	36.257486929	-107.468612360
3,200.00	40.40	292.854	2,768.49	517.52	-1,227.88	1,915,277.025	1,281,079.937	36.257553995	-107.468815953
3,300.00	40.40	292.854	2,844.64	542.69	-1,287.60	1,915,302.195	1,281,020.217	36.257621060	-107.469019546
3,400.00	40.40	292.854	2,920.80	567.86	-1,347.32	1,915,327.365	1,280,960.497	36.257688125	-107.469223140
3,500.00	40.40	292.854	2,996.96	593.03	-1,407.04	1,915,352.535	1,280,900.778	36.257755190	-107.469426734

Planning Report - Geographic

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Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,600.00	40.40	292.854	3,073.12	618.20	-1,466.76	1,915,377.705	1,280,841.058	36.257822254	-107.469630328
3,700.00	40.40	292.854	3,149.28	643.37	-1,526.48	1,915,402.875	1,280,781.338	36.257889318	-107.469833922
3,800.00	40.40	292.854	3,225.43	668.54	-1,586.20	1,915,428.045	1,280,721.618	36.257956382	-107.470037517
3,900.00	40.40	292.854	3,301.59	693.71	-1,645.92	1,915,453.216	1,280,661.899	36.258023445	-107.470241112
4,000.00	40.40	292.854	3,377.75	718.88	-1,705.64	1,915,478.386	1,280,602.179	36.258090508	-107.470444708
4,100.00	40.40	292.854	3,453.91	744.05	-1,765.36	1,915,503.556	1,280,542.459	36.258157571	-107.470648304
4,175.54	40.40	292.854	3,511.44	763.06	-1,810.48	1,915,522.570	1,280,497.345	36.258208231	-107.470802106
Cliff House_Basal - Menefee									
4,200.00	40.40	292.854	3,530.06	769.22	-1,825.08	1,915,528.726	1,280,482.740	36.258224633	-107.470851900
4,300.00	40.40	292.854	3,606.22	794.39	-1,884.80	1,915,553.896	1,280,423.020	36.258291695	-107.471055496
4,389.00	40.40	292.854	3,674.00	816.79	-1,937.95	1,915,576.296	1,280,369.871	36.258351377	-107.471236691
9 5/8" Csg									
4,400.00	40.40	292.854	3,682.38	819.56	-1,944.52	1,915,579.066	1,280,363.300	36.258358756	-107.471259093
4,500.00	40.40	292.854	3,758.54	844.73	-2,004.24	1,915,604.236	1,280,303.580	36.258425818	-107.471462690
4,600.00	40.40	292.854	3,834.70	869.90	-2,063.96	1,915,629.406	1,280,243.861	36.258492878	-107.471666287
4,700.00	40.40	292.854	3,910.85	895.07	-2,123.68	1,915,654.576	1,280,184.141	36.258559939	-107.471869885
4,800.00	40.40	292.854	3,987.01	920.24	-2,183.40	1,915,679.746	1,280,124.421	36.258626999	-107.472073483
4,900.00	40.40	292.854	4,063.17	945.41	-2,243.12	1,915,704.916	1,280,064.702	36.258694059	-107.472277082
5,000.00	40.40	292.854	4,139.33	970.58	-2,302.84	1,915,730.086	1,280,004.982	36.258761118	-107.472480681
5,100.00	40.40	292.854	4,215.48	995.75	-2,362.56	1,915,755.256	1,279,945.262	36.258828177	-107.472684280
5,102.77	40.40	292.854	4,217.60	996.44	-2,364.22	1,915,755.954	1,279,943.606	36.258830037	-107.472689926
Point Lookout									
5,200.00	40.40	292.854	4,291.64	1,020.92	-2,422.28	1,915,780.426	1,279,885.542	36.258895236	-107.472887880
5,300.00	40.40	292.854	4,367.80	1,046.09	-2,482.00	1,915,805.596	1,279,825.823	36.258962294	-107.473091480
5,400.00	40.40	292.854	4,443.96	1,071.26	-2,541.72	1,915,830.766	1,279,766.103	36.259029352	-107.473295080
5,488.03	40.40	292.854	4,511.00	1,093.41	-2,594.29	1,915,852.923	1,279,713.531	36.259088384	-107.473474311
Mancos									
5,500.00	40.40	292.854	4,520.12	1,096.43	-2,601.44	1,915,855.936	1,279,706.383	36.259096410	-107.473498681
5,600.00	40.40	292.854	4,596.27	1,121.60	-2,661.16	1,915,881.106	1,279,646.663	36.259163467	-107.473702282
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	1,915,884.242	1,279,639.223	36.259171822	-107.473727649
Begin 10°/100' build/turn									
5,650.00	36.90	295.047	4,635.08	1,134.23	-2,690.03	1,915,893.741	1,279,617.795	36.259197168	-107.473800722
5,700.00	32.32	298.587	4,676.22	1,146.99	-2,715.38	1,915,906.500	1,279,592.443	36.259231330	-107.473887244
5,750.00	27.87	303.135	4,719.48	1,159.78	-2,736.92	1,915,919.291	1,279,570.906	36.259265715	-107.473960827
5,800.00	23.62	309.211	4,764.51	1,172.51	-2,754.48	1,915,932.019	1,279,553.350	36.259300061	-107.474020910
5,850.00	19.69	317.654	4,810.99	1,185.08	-2,767.92	1,915,944.585	1,279,539.907	36.259334106	-107.474067038
5,898.11	16.45	329.183	4,856.74	1,196.93	-2,776.88	1,915,956.435	1,279,530.950	36.259366343	-107.474097921
MNCS_A									
5,900.00	16.34	329.721	4,858.54	1,197.38	-2,777.15	1,915,956.893	1,279,530.679	36.259367592	-107.474098858
5,950.00	13.98	346.677	4,906.82	1,209.34	-2,782.09	1,915,968.852	1,279,525.738	36.259400264	-107.474116128
5,985.86	13.20	1.623	4,941.70	1,217.65	-2,782.97	1,915,977.162	1,279,524.855	36.259423059	-107.474119476
MNCS_B									
6,000.00	13.15	7.825	4,955.46	1,220.86	-2,782.71	1,915,980.368	1,279,525.120	36.259431873	-107.474118717
6,050.00	14.12	28.753	5,004.08	1,231.85	-2,778.99	1,915,991.356	1,279,528.830	36.259462179	-107.474106605
6,100.00	16.59	45.288	5,052.32	1,242.22	-2,770.98	1,916,001.730	1,279,536.841	36.259490950	-107.474079884
6,144.75	19.61	55.963	5,094.86	1,250.92	-2,760.22	1,916,010.431	1,279,547.607	36.259515220	-107.474043745
MNCS_C									
6,150.00	20.00	57.004	5,099.80	1,251.90	-2,758.73	1,916,011.413	1,279,549.090	36.259517969	-107.474038758
6,200.00	23.95	65.211	5,146.17	1,260.82	-2,742.34	1,916,020.330	1,279,565.486	36.259543028	-107.473983539
6,226.37	26.18	68.561	5,170.06	1,265.19	-2,732.06	1,916,024.701	1,279,575.762	36.259555391	-107.473948876
MNCS_Cms									
6,250.00	28.23	71.136	5,191.07	1,268.91	-2,721.92	1,916,028.413	1,279,585.902	36.259565938	-107.473914649

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,277.73	30.68	73.749	5,215.22	1,273.01	-2,708.92	1,916,032.515	1,279,598.905	36.259577655	-107.473870730
MNCS_D									
6,300.00	32.69	75.586	5,234.16	1,276.09	-2,697.64	1,916,035.602	1,279,610.184	36.259586525	-107.473832610
6,350.00	37.28	79.060	5,275.12	1,282.33	-2,669.68	1,916,041.841	1,279,638.147	36.259604630	-107.473738048
6,376.17	39.72	80.597	5,295.60	1,285.20	-2,653.64	1,916,044.712	1,279,654.183	36.259613072	-107.473683792
MNCS_E									
6,400.00	41.95	81.865	5,313.63	1,287.57	-2,638.25	1,916,047.083	1,279,669.578	36.259620118	-107.473631683
6,450.00	46.68	84.201	5,349.40	1,291.78	-2,603.59	1,916,051.288	1,279,704.238	36.259632869	-107.473514323
6,452.29	46.89	84.299	5,350.97	1,291.95	-2,601.93	1,916,051.455	1,279,705.897	36.259633385	-107.473508706
MNCS_F									
6,500.00	51.44	86.198	5,382.16	1,294.92	-2,565.96	1,916,054.424	1,279,741.863	36.259642787	-107.473386861
6,550.00	56.24	87.945	5,411.65	1,296.96	-2,525.66	1,916,056.467	1,279,782.167	36.259649796	-107.473250269
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	1,916,057.291	1,279,815.278	36.259653209	-107.473138017
Begin 60.00° tangent									
6,594.03	60.00	89.176	5,434.76	1,297.85	-2,488.20	1,916,057.354	1,279,819.627	36.259653532	-107.473123272
MNCS_G									
6,600.00	60.00	89.176	5,437.74	1,297.92	-2,483.03	1,916,057.428	1,279,824.792	36.259653915	-107.473105758
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	1,916,058.038	1,279,867.234	36.259657063	-107.472961853
Begin 10°/100' build									
6,700.00	65.10	89.176	5,485.75	1,299.18	-2,395.36	1,916,058.688	1,279,912.461	36.259660416	-107.472808506
6,729.84	68.08	89.176	5,497.60	1,299.57	-2,367.99	1,916,059.082	1,279,939.838	36.259662447	-107.472715680
MNCS_H @ 0vs									
6,750.00	70.10	89.176	5,504.80	1,299.84	-2,349.16	1,916,059.353	1,279,958.668	36.259663843	-107.472651835
6,800.00	75.10	89.176	5,519.74	1,300.53	-2,301.46	1,916,060.038	1,280,006.360	36.259667379	-107.472490130
6,850.00	80.10	89.176	5,530.48	1,301.23	-2,252.65	1,916,060.740	1,280,055.172	36.259670998	-107.472324624
6,900.00	85.10	89.176	5,536.92	1,301.94	-2,203.09	1,916,061.452	1,280,104.735	36.259674673	-107.472156576
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	1,916,062.099	1,280,149.731	36.259678008	-107.472004012
Begin 89.60° lateral									
7,000.00	89.60	89.176	5,539.38	1,303.38	-2,103.16	1,916,062.889	1,280,204.663	36.259682081	-107.471817756
7,100.00	89.60	89.176	5,540.07	1,304.82	-2,003.17	1,916,064.326	1,280,304.650	36.259689492	-107.471478737
7,200.00	89.60	89.176	5,540.76	1,306.26	-1,903.19	1,916,065.764	1,280,404.638	36.259696902	-107.471139718
7,300.00	89.60	89.176	5,541.45	1,307.69	-1,803.20	1,916,067.201	1,280,504.625	36.259704311	-107.470800699
7,400.00	89.60	89.176	5,542.14	1,309.13	-1,703.21	1,916,068.638	1,280,604.612	36.259711720	-107.470461679
7,500.00	89.60	89.176	5,542.83	1,310.57	-1,603.22	1,916,070.076	1,280,704.599	36.259719127	-107.470122660
7,600.00	89.60	89.176	5,543.52	1,312.00	-1,503.24	1,916,071.513	1,280,804.586	36.259726534	-107.469783640
7,700.00	89.60	89.176	5,544.21	1,313.44	-1,403.25	1,916,072.950	1,280,904.573	36.259733939	-107.469444620
7,800.00	89.60	89.176	5,544.90	1,314.88	-1,303.26	1,916,074.388	1,281,004.560	36.259741344	-107.469105600
7,900.00	89.60	89.176	5,545.59	1,316.32	-1,203.27	1,916,075.825	1,281,104.547	36.259748747	-107.468766580
8,000.00	89.60	89.176	5,546.28	1,317.75	-1,103.29	1,916,077.262	1,281,204.534	36.259756150	-107.468427560
8,100.00	89.60	89.176	5,546.97	1,319.19	-1,003.30	1,916,078.700	1,281,304.521	36.259763551	-107.468088540
8,200.00	89.60	89.176	5,547.66	1,320.63	-903.31	1,916,080.137	1,281,404.508	36.259770952	-107.467749519
8,300.00	89.60	89.176	5,548.35	1,322.07	-803.33	1,916,081.574	1,281,504.495	36.259778352	-107.467410499
8,400.00	89.60	89.176	5,549.04	1,323.50	-703.34	1,916,083.012	1,281,604.483	36.259785750	-107.467071478
8,500.00	89.60	89.176	5,549.73	1,324.94	-603.35	1,916,084.449	1,281,704.470	36.259793148	-107.466732458
8,600.00	89.60	89.176	5,550.41	1,326.38	-503.36	1,916,085.886	1,281,804.457	36.259800545	-107.466393437
8,700.00	89.60	89.176	5,551.10	1,327.82	-403.38	1,916,087.324	1,281,904.444	36.259807941	-107.466054416
8,800.00	89.60	89.176	5,551.79	1,329.25	-303.39	1,916,088.761	1,282,004.431	36.259815336	-107.465715395
8,900.00	89.60	89.176	5,552.48	1,330.69	-203.40	1,916,090.198	1,282,104.418	36.259822730	-107.465376375
9,000.00	89.60	89.176	5,553.17	1,332.13	-103.41	1,916,091.636	1,282,204.405	36.259830123	-107.465037353
9,100.00	89.60	89.176	5,553.86	1,333.56	-3.43	1,916,093.073	1,282,304.392	36.259837515	-107.464698332
9,200.00	89.60	89.176	5,554.55	1,335.00	96.56	1,916,094.510	1,282,404.379	36.259844906	-107.464359311
9,300.00	89.60	89.176	5,555.24	1,336.44	196.55	1,916,095.948	1,282,504.366	36.259852296	-107.464020290
9,400.00	89.60	89.176	5,555.93	1,337.88	296.53	1,916,097.385	1,282,604.353	36.259859685	-107.463681268
9,500.00	89.60	89.176	5,556.62	1,339.31	396.52	1,916,098.822	1,282,704.340	36.259867073	-107.463342247

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,600.00	89.60	89.176	5,557.31	1,340.75	496.51	1,916,100.260	1,282,804.328	36.259874461	-107.463003225
9,700.00	89.60	89.176	5,558.00	1,342.19	596.50	1,916,101.697	1,282,904.315	36.259881847	-107.462664204
9,800.00	89.60	89.176	5,558.69	1,343.63	696.48	1,916,103.134	1,283,004.302	36.259889232	-107.462325182
9,900.00	89.60	89.176	5,559.38	1,345.06	796.47	1,916,104.572	1,283,104.289	36.259896617	-107.461986160
10,000.00	89.60	89.176	5,560.07	1,346.50	896.46	1,916,106.009	1,283,204.276	36.259903999	-107.461647138
10,100.00	89.60	89.176	5,560.76	1,347.94	996.45	1,916,107.446	1,283,304.263	36.259911381	-107.461308116
10,200.00	89.60	89.176	5,561.45	1,349.38	1,096.43	1,916,108.884	1,283,404.250	36.259918763	-107.460969094
10,300.00	89.60	89.176	5,562.14	1,350.81	1,196.42	1,916,110.321	1,283,504.237	36.259926143	-107.460630071
10,400.00	89.60	89.176	5,562.83	1,352.25	1,296.41	1,916,111.758	1,283,604.224	36.259933523	-107.460291049
10,500.00	89.60	89.176	5,563.52	1,353.69	1,396.40	1,916,113.196	1,283,704.211	36.259940902	-107.459952027
10,600.00	89.60	89.176	5,564.21	1,355.12	1,496.38	1,916,114.633	1,283,804.198	36.259948279	-107.459613004
10,700.00	89.60	89.176	5,564.90	1,356.56	1,596.37	1,916,116.070	1,283,904.186	36.259955656	-107.459273982
10,800.00	89.60	89.176	5,565.59	1,358.00	1,696.36	1,916,117.508	1,284,004.173	36.259963032	-107.458934959
10,900.00	89.60	89.176	5,566.28	1,359.44	1,796.34	1,916,118.945	1,284,104.160	36.259970406	-107.458595936
11,000.00	89.60	89.176	5,566.97	1,360.87	1,896.33	1,916,120.382	1,284,204.147	36.259977780	-107.458256913
11,100.00	89.60	89.176	5,567.66	1,362.31	1,996.32	1,916,121.820	1,284,304.134	36.259985153	-107.457917890
11,200.00	89.60	89.176	5,568.35	1,363.75	2,096.31	1,916,123.257	1,284,404.121	36.259992525	-107.457578867
11,300.00	89.60	89.176	5,569.04	1,365.19	2,196.29	1,916,124.694	1,284,504.108	36.259999896	-107.457239844
11,400.00	89.60	89.176	5,569.73	1,366.62	2,296.28	1,916,126.132	1,284,604.095	36.260007266	-107.456900821
11,500.00	89.60	89.176	5,570.42	1,368.06	2,396.27	1,916,127.569	1,284,704.082	36.260014635	-107.456561797
11,600.00	89.60	89.176	5,571.11	1,369.50	2,496.26	1,916,129.006	1,284,804.069	36.260022003	-107.456222774
11,700.00	89.60	89.176	5,571.80	1,370.94	2,596.24	1,916,130.444	1,284,904.056	36.260029370	-107.455883750
11,800.00	89.60	89.176	5,572.49	1,372.37	2,696.23	1,916,131.881	1,285,004.043	36.260036736	-107.455544727
11,900.00	89.60	89.176	5,573.18	1,373.81	2,796.22	1,916,133.318	1,285,104.031	36.260044101	-107.455205703
12,000.00	89.60	89.176	5,573.87	1,375.25	2,896.20	1,916,134.756	1,285,204.018	36.260051465	-107.454866679
12,100.00	89.60	89.176	5,574.56	1,376.68	2,996.19	1,916,136.193	1,285,304.005	36.260058828	-107.454527655
12,200.00	89.60	89.176	5,575.25	1,378.12	3,096.18	1,916,137.630	1,285,403.992	36.260066191	-107.454188631
12,300.00	89.60	89.176	5,575.94	1,379.56	3,196.17	1,916,139.068	1,285,503.979	36.260073552	-107.453849607
12,400.00	89.60	89.176	5,576.63	1,381.00	3,296.15	1,916,140.505	1,285,603.966	36.260080912	-107.453510583
12,500.00	89.60	89.176	5,577.32	1,382.43	3,396.14	1,916,141.942	1,285,703.953	36.260088272	-107.453171559
12,600.00	89.60	89.176	5,578.01	1,383.87	3,496.13	1,916,143.380	1,285,803.940	36.260095630	-107.452832535
12,700.00	89.60	89.176	5,578.70	1,385.31	3,596.12	1,916,144.817	1,285,903.927	36.260102988	-107.452493510
12,800.00	89.60	89.176	5,579.39	1,386.75	3,696.10	1,916,146.254	1,286,003.914	36.260110344	-107.452154486
12,900.00	89.60	89.176	5,580.08	1,388.18	3,796.09	1,916,147.692	1,286,103.901	36.260117700	-107.451815461
13,000.00	89.60	89.176	5,580.77	1,389.62	3,896.08	1,916,149.129	1,286,203.888	36.260125054	-107.451476436
13,100.00	89.60	89.176	5,581.46	1,391.06	3,996.06	1,916,150.566	1,286,303.876	36.260132408	-107.451137411
13,200.00	89.60	89.176	5,582.15	1,392.50	4,096.05	1,916,152.004	1,286,403.863	36.260139761	-107.450798387
13,300.00	89.60	89.176	5,582.84	1,393.93	4,196.04	1,916,153.441	1,286,503.850	36.260147112	-107.450459362
13,400.00	89.60	89.176	5,583.53	1,395.37	4,296.03	1,916,154.878	1,286,603.837	36.260154463	-107.450120336
13,500.00	89.60	89.176	5,584.22	1,396.81	4,396.01	1,916,156.316	1,286,703.824	36.260161813	-107.449781311
13,600.00	89.60	89.176	5,584.91	1,398.24	4,496.00	1,916,157.753	1,286,803.811	36.260169162	-107.449442286
13,700.00	89.60	89.176	5,585.60	1,399.68	4,595.99	1,916,159.190	1,286,903.798	36.260176510	-107.449103261
13,800.00	89.60	89.176	5,586.29	1,401.12	4,695.98	1,916,160.628	1,287,003.785	36.260183857	-107.448764235
13,900.00	89.60	89.176	5,586.98	1,402.56	4,795.96	1,916,162.065	1,287,103.772	36.260191203	-107.448425210
14,000.00	89.60	89.176	5,587.67	1,403.99	4,895.95	1,916,163.502	1,287,203.759	36.260198547	-107.448086184
14,100.00	89.60	89.176	5,588.36	1,405.43	4,995.94	1,916,164.940	1,287,303.746	36.260205892	-107.447747158
14,200.00	89.60	89.176	5,589.05	1,406.87	5,095.92	1,916,166.377	1,287,403.733	36.260213235	-107.447408133
14,300.00	89.60	89.176	5,589.74	1,408.31	5,195.91	1,916,167.814	1,287,503.721	36.260220577	-107.447069107
14,400.00	89.60	89.176	5,590.43	1,409.74	5,295.90	1,916,169.252	1,287,603.708	36.260227918	-107.446730081
14,500.00	89.60	89.176	5,591.12	1,411.18	5,395.89	1,916,170.689	1,287,703.695	36.260235258	-107.446391055
14,600.00	89.60	89.176	5,591.81	1,412.62	5,495.87	1,916,172.126	1,287,803.682	36.260242597	-107.446052029
14,700.00	89.60	89.176	5,592.50	1,414.06	5,595.86	1,916,173.564	1,287,903.669	36.260249936	-107.445713002
14,800.00	89.60	89.176	5,593.19	1,415.49	5,695.85	1,916,175.001	1,288,003.656	36.260257273	-107.445373976
14,900.00	89.60	89.176	5,593.88	1,416.93	5,795.84	1,916,176.438	1,288,103.643	36.260264609	-107.445034949
15,000.00	89.60	89.176	5,594.57	1,418.37	5,895.82	1,916,177.876	1,288,203.630	36.260271945	-107.444695923

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,100.00	89.60	89.176	5,595.26	1,419.80	5,995.81	1,916,179.313	1,288,303.617	36.260279279	-107.444356896
15,200.00	89.60	89.176	5,595.95	1,421.24	6,095.80	1,916,180.750	1,288,403.604	36.260286613	-107.444017870
15,300.00	89.60	89.176	5,596.64	1,422.68	6,195.79	1,916,182.188	1,288,503.591	36.260293945	-107.443678843
15,400.00	89.60	89.176	5,597.33	1,424.12	6,295.77	1,916,183.625	1,288,603.579	36.260301277	-107.443339816
15,500.00	89.60	89.176	5,598.01	1,425.55	6,395.76	1,916,185.062	1,288,703.566	36.260308607	-107.443000789
15,600.00	89.60	89.176	5,598.70	1,426.99	6,495.75	1,916,186.500	1,288,803.553	36.260315937	-107.442661762
15,700.00	89.60	89.176	5,599.39	1,428.43	6,595.73	1,916,187.937	1,288,903.540	36.260323266	-107.442322735
15,800.00	89.60	89.176	5,600.08	1,429.87	6,695.72	1,916,189.374	1,289,003.527	36.260330593	-107.441983707
15,900.00	89.60	89.176	5,600.77	1,431.30	6,795.71	1,916,190.812	1,289,103.514	36.260337920	-107.441644680
16,000.00	89.60	89.176	5,601.46	1,432.74	6,895.70	1,916,192.249	1,289,203.501	36.260345246	-107.441305653
16,100.00	89.60	89.176	5,602.15	1,434.18	6,995.68	1,916,193.686	1,289,303.488	36.260352571	-107.440966625
16,200.00	89.60	89.176	5,602.84	1,435.62	7,095.67	1,916,195.124	1,289,403.475	36.260359894	-107.440627598
16,300.00	89.60	89.176	5,603.53	1,437.05	7,195.66	1,916,196.561	1,289,503.462	36.260367217	-107.440288570
16,400.00	89.60	89.176	5,604.22	1,438.49	7,295.65	1,916,197.998	1,289,603.449	36.260374539	-107.439949542
16,500.00	89.60	89.176	5,604.91	1,439.93	7,395.63	1,916,199.436	1,289,703.436	36.260381860	-107.439610514
16,600.00	89.60	89.176	5,605.60	1,441.37	7,495.62	1,916,200.873	1,289,803.424	36.260389180	-107.439271486
16,700.00	89.60	89.176	5,606.29	1,442.80	7,595.61	1,916,202.310	1,289,903.411	36.260396499	-107.438932458
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	1,916,203.783	1,290,005.884	36.260404000	-107.438585000
PBHL/TD @ 16802.49 MD 5607.00 TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Haynes 438 FTP 380 FN - plan hits target center - Point	0.00	0.000	5,539.00	1,302.59	-2,158.09	1,916,062.096	1,280,149.734	36.259678000	-107.472004000
Haynes 438 LTP 380 FN - plan hits target center - Point	0.00	0.000	5,607.00	1,444.28	7,698.08	1,916,203.783	1,290,005.884	36.260404000	-107.438585000

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2
4,389.00	3,674.00	9 5/8" Csg	9-5/8	12-1/4

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,451.38	1,412.52	Ojo Alamo		0.40	89.176
1,578.52	1,522.10	Kirtland		0.40	89.176
1,850.94	1,741.07	Fruitland		0.40	89.176
2,144.78	1,964.85	Pictured Cliffs		0.40	89.176
2,334.14	2,109.07	Lewis		0.40	89.176
2,725.93	2,407.44	Chacra_A		0.40	89.176
4,175.54	3,511.44	Cliff House_Basal		0.40	89.176
4,175.54	3,511.44	Menefee		0.40	89.176
5,102.77	4,217.60	Point Lookout		0.40	89.176
5,488.03	4,511.00	Mancos		0.40	89.176
5,898.11	4,856.74	MNCS_A		0.40	89.176
5,985.86	4,941.70	MNCS_B		0.40	89.176
6,144.75	5,094.86	MNCS_C		0.40	89.176
6,226.37	5,170.06	MNCS_Cms		0.40	89.176
6,277.73	5,215.22	MNCS_D		0.40	89.176
6,376.17	5,295.60	MNCS_E		0.40	89.176
6,452.29	5,350.97	MNCS_F		0.40	89.176
6,594.03	5,434.76	MNCS_G		0.40	89.176
6,729.84	5,497.60	MNCS_H @ 0vs		0.40	89.176

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.00	500.00	0.00	0.00	KOP Begin 3°/100' build
1,846.55	1,737.73	176.85	-419.61	Begin 40.40° tangent
5,612.46	4,605.76	1,124.73	-2,668.60	Begin 10°/100' build/turn
6,589.01	5,432.25	1,297.78	-2,492.55	Begin 60.00° tangent
6,649.01	5,462.25	1,298.53	-2,440.59	Begin 10°/100' build
6,945.06	5,539.00	1,302.59	-2,158.09	Begin 89.60° lateral
16,802.49	5,607.00	1,444.28	7,698.08	PBHL/TD @ 16802.49 MD 5607.00 TVD

WELL NAME: Haynes Canyon Unit 438H

OBJECTIVE: Drill, complete, and equip single lateral in the Mancos-H formation

API Number: *Not yet assigned*

AFE Number: *Not yet assigned*

ER Well Number: *Not yet assigned*

State: New Mexico

County: Rio Arriba

Surface Elev.:	6,689	ft ASL (GL)	6,714	ft ASL (KB)		
Surface Location:	3-23-6	Sec-Twn- Rng	1,713	ft FNL	303	ft FWL
BH Location:	2-23-6	Sec-Twn- Rng	380	ft FNL	2580	ft FWL

Driving Directions: ***FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:***

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

QUICK REFERENCE		
Sur TD (MD)	350	ft
Int TD (MD)	4,372	ft
KOP (MD)	5,650	ft
KOP (TVD)	4,635	ft
Target (TVD)	5,435	ft
Curve BUR	10	°/100 ft
POE (MD)	6,594	ft
TD (MD)	16,802	ft
Lat Len (ft)	10,208	ft

WELL CONSTRUCTION SUMMARY:

	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	17.500	350	13.375	54.5	J-55	BTC	0	350
Intermediate	12.250	4,372	9.625	36.0	J-55	LTC	0	4,372
Production	8.500	16,802	5.500	17.0	P-110	LTC	0	16,802

CEMENT PROPERTIES SUMMARY:

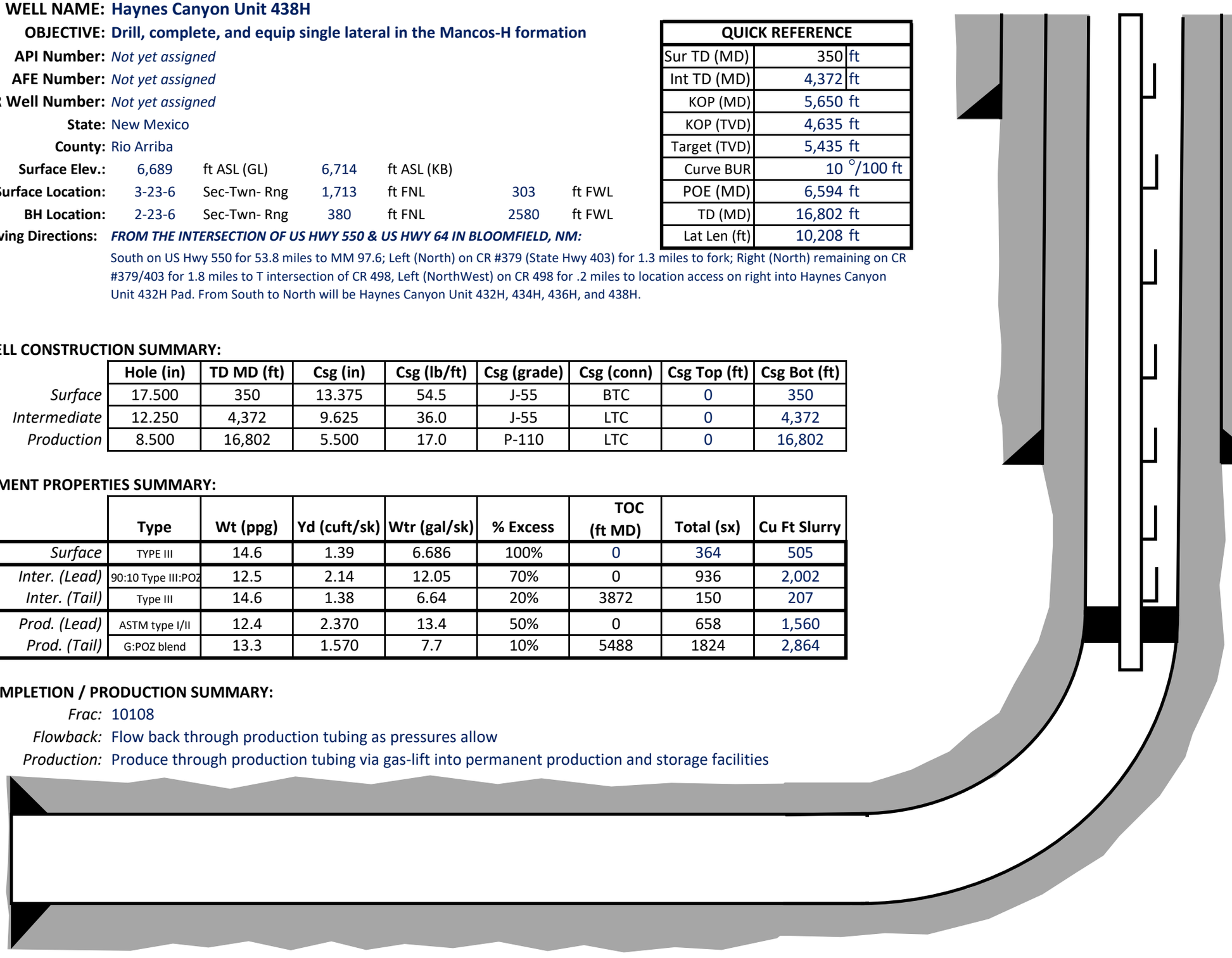
	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	% Excess	TOC (ft MD)	Total (sx)	Cu Ft Slurry
Surface	TYPE III	14.6	1.39	6.686	100%	0	364	505
Inter. (Lead)	90:10 Type III:POZ	12.5	2.14	12.05	70%	0	936	2,002
Inter. (Tail)	Type III	14.6	1.38	6.64	20%	3872	150	207
Prod. (Lead)	ASTM type I/II	12.4	2.370	13.4	50%	0	658	1,560
Prod. (Tail)	G:POZ blend	13.3	1.570	7.7	10%	5488	1824	2,864

COMPLETION / PRODUCTION SUMMARY:

Frac: 10108

Flowback: Flow back through production tubing as pressures allow

Production: Produce through production tubing via gas-lift into permanent production and storage facilities



Tops	TVD (ft KB)	MD (ft KB)
Ojo Alamo	1,413	1,451
Kirtland	1,522	1,579
Fruitland	1,741	1,851
Pictured Cliffs	1,965	2,145
Lewis	2,109	2,334
Chacra	2,407	2,726
Cliff House	3,511	4,176
Menefee	3,511	4,176
Point Lookout	4,218	5,103
Mancos	4,511	5,488
Gallup (MNCS_A)	4,857	5,898
MNCS_B	4,942	5,986
MNCS_C	5,095	6,145
MNCS_Cms	5,170	6,226
MNCS_D	5,215	6,278
MNCS_E	5,296	6,376
MNCS_F	5,351	6,452
MNCS_G	5,435	6,594
MNCS_H	5,498	6,730
MNCS_I	0	0
FTP TARGET	5,435	6,594
PROJECTED LTP	5,607	16,802

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

SUPO Data Report
12/05/2023

APD ID: 10400093995
Submission Date: 09/29/2023
Operator Name: ENDURING RESOURCES LLC
Well Name: HAYNES CANYON UNIT
Well Number: 438H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

HCU_438_Existing_Roads_20230924204207.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? YES

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description:

Existing Road Improvement Attachment:

438H_HAYNES_CANYON_ACCESS_ROAD_20230920175136.pdf

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

HCU_438_Wells_Within_1Mile_08222023_20230919212255.pdf

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description:

Production Facilities map:

Haynes_Canyon_Unit_438_Facility_Layout_Rev_B_20230919212308.pdf
Haynes_Canyon_Unit_438_Completions_Layout_Rev_A__1__20230920142933_20230920175204.pdf
Haynes_Canyon_Unit_438_Rig_Layout_Rev_A_20230920175238.pdf
Haynes_Canyon_Unit_438_Proposed_Reclamation_Rev_A_20230920175239.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: GW WELL

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

Source latitude: 36.069826 **Source longitude:** -107.04718

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Source land ownership: PRIVATE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 15562 **Source volume (acre-feet):** 2.00583437

Source volume (gal): 653604

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Water source type: GW WELL

Water source use type: DUST CONTROL

SURFACE CASING

INTERMEDIATE/PRODUCTION CASING

Source latitude: 36.359802 **Source longitude:** -107.81031

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Source land ownership: STATE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 15562 **Source volume (acre-feet):** 2.00583437

Source volume (gal): 653604

Water source type: RECYCLED

Water source use type: STIMULATION

Source latitude: 36.143567 **Source longitude:** -107.576013

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Source land ownership: STATE

Source transportation land ownership: STATE

Water source volume (barrels): 650912 **Source volume (acre-feet):** 83.89806312

Source volume (gal): 27338304

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Water source type: RECYCLED

Water source use type: STIMULATION

Source latitude: 36.205932 **Source longitude:** -107.741568

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Source land ownership: FEDERAL

Source transportation land ownership: FEDERAL

Water source volume (barrels): 650912 **Source volume (acre-feet):** 83.89806312

Source volume (gal): 27338304

Water source type: RECYCLED

Water source use type: STIMULATION

Source latitude: 36.210181 **Source longitude:** -107.831776

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Source land ownership: FEDERAL

Source transportation land ownership: FEDERAL

Water source volume (barrels): 650912 **Source volume (acre-feet):** 83.89806312

Source volume (gal): 27338304

Water source type: RECYCLED

Water source use type: STIMULATION

Source latitude: 36.117342 **Source longitude:** -107.488712

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Source land ownership: FEDERAL

Source transportation land ownership: FEDERAL

Water source volume (barrels): 650912 **Source volume (acre-feet):** 83.89806312

Source volume (gal): 27338304

Water source type: RECYCLED

Water source use type: STIMULATION

Source latitude: 36.310147 **Source longitude:** -107.651626

Source datum: NAD83

Water source permit type: WATER WELL

Water source transport method: TRUCKING

Source land ownership: FEDERAL

Source transportation land ownership: FEDERAL

Water source volume (barrels): 650912 **Source volume (acre-feet):** 83.89806312

Source volume (gal): 27338304

Water source and transportation

HCU_438_Water_Transportation_08222023_20230919214655.pdf

Water source comments: Smelser (POD No. RG06855), Blanco Trading Post (POD No. SJ02105), NEU 2207-16B Water Recycling Facility, WLU 2309-24N Water Recycling Facility, KWU 2309-19K Water Recycling Facility, SEU 2206-20O Water Recycling Facility, NEL 2306-06P Water Recycling Facility
New water well? N

New Water Well Info

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

Well target aquifer:

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

Aquifer comments:

Aquifer documentation:

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

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

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

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

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

Using any construction materials: YES

Construction Materials description: Reference attached SUPO chapter 6 construction materials.

Construction Materials source location

MaterialSourceLocationMap_08162023_20230919212326.pdf

Section 7 - Methods for Handling

Waste type: DRILLING

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Drilling Fluids).
Amount of waste: 12000 barrels

Waste disposal frequency : Weekly

Safe containment description: Drilling fluids would be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids would be recycled and transferred to other permitted closed-loop systems or disposed of at one of the locations specified in the SUPO section 9.
Safe containmant attachment:

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

Disposal location description: Approved commercial disposal facility or land farm.

Waste type: FLOWBACK

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Flowback). Flowback transported off location will consist of approximately 1000 bbls of produced water per day for approximately 14 days.
Amount of waste: 1000 barrels

Waste disposal frequency : Daily

Safe containment description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Flowback). Flowback transported off location will consist of approximately 1000 bbls of produced water per day for approximately 14 days.
Safe containmant attachment:

Waste disposal type: RECYCLE **Disposal location ownership:** OTHER

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Disposal type description:

Disposal location description: Produced water from flowback will be stored, treated, and recycled at any of Enduring's approved water recycling facilities. Containments are constructed, lined, and monitored per regulatory requirements. Flowback would be disposed of at one of the disposal wells listed in Section 9 of the SUPO.

Waste type: SEWAGE

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Sewage).
Amount of waste: 500 gallons

Waste disposal frequency : Weekly

Safe containment description: toilets would be provided and maintained as needed. See SUPO section 9 for reference.

Safe containmant attachment:

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

Disposal location description: Commercial facilities disposal.

Waste type: GARBAGE

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Garbage and other waste material).
Amount of waste: 1500 pounds

Waste disposal frequency : Weekly

Safe containment description: All garbage and trash would be placed in enclosed metal trash containers. The trash and garbage would be hauled off site and dumped in an approved landfill, as needed. See SUPO, Section 9.

Safe containmant attachment:

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

Disposal location description: Approved landfill.

Waste type: PRODUCED WATER

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Produced Water).
Amount of waste: 11000 barrels

Waste disposal frequency : Weekly

Safe containment description: Drilling fluids would be stored onsite in above-ground storage tanks. See SUPO section 9, Drilling Fluids.
Safe containmant attachment:

Waste disposal type: ON-LEASE INJECTION **Disposal location ownership:** PRIVATE

Disposal type description:

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Disposal location description: Commercial UIC, See SUPO Chapter 9 disposal locations.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

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

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

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? N

Description of cuttings location

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Haynes_Canyon_Unit_438_Facility_Layout_Rev_B_20230919212356.pdf
HCU_438H_Topsoil_and_Cut_20230924203831.pdf

Comments:

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Section 10 - Plans for Surface

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

Multiple Well Pad Number: 412

Recontouring

Haynes_Canyon_Unit_438H_Proposed_Reclamation_Rev_A_20230928144957.pdf

Drainage/Erosion control construction: Drainage/Erosion control construction: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.5 AND THE CONSTRUCTION PLATS.

Drainage/Erosion control reclamation: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION) Section 4.5 AND THE CONSTRUCTION PLATS.

Well pad proposed disturbance (acres): 5.74	**Well pad interim reclamation (acres):** 3.64	**Well pad long term disturbance (acres):** 2.1
Road proposed disturbance (acres):	**Road interim reclamation (acres):** 0	**Road long term disturbance (acres):** 0
Powerline proposed disturbance (acres): 0	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 1.37	**Pipeline interim reclamation (acres):** 1.37	**Pipeline long term disturbance (acres):** 0
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0	**Other long term disturbance (acres):** 0
Total proposed disturbance: 7.11	**Total interim reclamation:** 5.01	**Total long term disturbance:** 2.1

Disturbance Comments:

Reconstruction method: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.4.

Topsoil redistribution: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.3.

Soil treatment: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.7.

Existing Vegetation at the well pad: Rubber-rabbit brush, Russian thistle, dropseed grass, needle and thread grass, and variety of forbs are the dominant species within the existing well pad and surrounding areas that have revegetated following previous disturbance.

Existing Vegetation at the well pad

Existing Vegetation Community at the road: Rubber-rabbit brush, Russian thistle, dropseed grass, needle and thread grass, and variety of forbs are the dominant species along the existing road and surrounding areas that have revegetated following previous disturbance.

Existing Vegetation Community at the road

Existing Vegetation Community at the pipeline: Rubber-rabbit brush, dropseed grass, needle and thread grass, and various forbs are the dominant species along the proposed pipeline route.

Existing Vegetation Community at the pipeline

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed

Seed Table

Seed type: PERENNIAL GRASS **Seed source:** COMMERCIAL

Seed name: Western Wheatgrass

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

PLS pounds per acre: 4 **Proposed seeding season:** AUTUMN

Seed type: PERENNIAL GRASS **Seed source:** COMMERCIAL

Seed name: Blue grama

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

PLS pounds per acre: 2 **Proposed seeding season:** AUTUMN

Seed type: FORB **Seed source:** COMMERCIAL

Seed name: Blue Flax

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

PLS pounds per acre: 0 **Proposed seeding season:** AUTUMN

Seed type: PERENNIAL GRASS **Seed source:** COMMERCIAL

Seed name: Winterfat

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

PLS pounds per acre: 2 **Proposed seeding season:** AUTUMN

Seed type: PERENNIAL GRASS **Seed source:** COMMERCIAL

Seed name: Sand dropseed

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

PLS pounds per acre: 0 **Proposed seeding season:** AUTUMN

Seed type: FORB **Seed source:** COMMERCIAL

Seed name: Rocky Mountain Bee Plant

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

PLS pounds per acre: 0 **Proposed seeding season:** AUTUMN

Seed type: PERENNIAL GRASS **Seed source:** COMMERCIAL

Seed name: Indian Ricegrass

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

PLS pounds per acre: 4 **Proposed seeding season:** AUTUMN

Seed type: PERENNIAL GRASS **Seed source:** COMMERCIAL

Seed name: Bottle brush squirreltail

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Seed use location: WELL PAD

PLS pounds per acre: 3 **Proposed seeding season:** AUTUMN

Seed type: SHRUB **Seed source:** COMMERCIAL

Seed name: Fourwing saltbrush

Source name: Southwest Seed, Inc. **Source address:** 13514 Rd. 29, Dolores, CO 81323

Source phone: (970)565-8722

Seed cultivar: VNS

Seed use location: WELL PAD

PLS pounds per acre: 2 **Proposed seeding season:** AUTUMN

Seed Summary

Total pounds/Acre: 17

Seed Type	Pounds/Acre
SHRUB	2
FORB	0
PERENNIAL GRASS	15

Seed reclamation

Operator Contact/Responsible Official

First Name: Theresa **Last Name:** Ancell

Phone: (970)749-0124 **Email:** tancell@enduringresources.com

Seedbed prep: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.6.
Seed BMP: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 3 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.7.
Seed method: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 3 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.8.
Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment

Weed treatment plan description: N/A

Weed treatment plan

Monitoring plan description: N/A

Monitoring plan

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Section 11 - Surface

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

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: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

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

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Section 12 - Other

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

ROW Type(s):

ROW

SUPO Additional Information:

Use a previously conducted onsite? Y

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

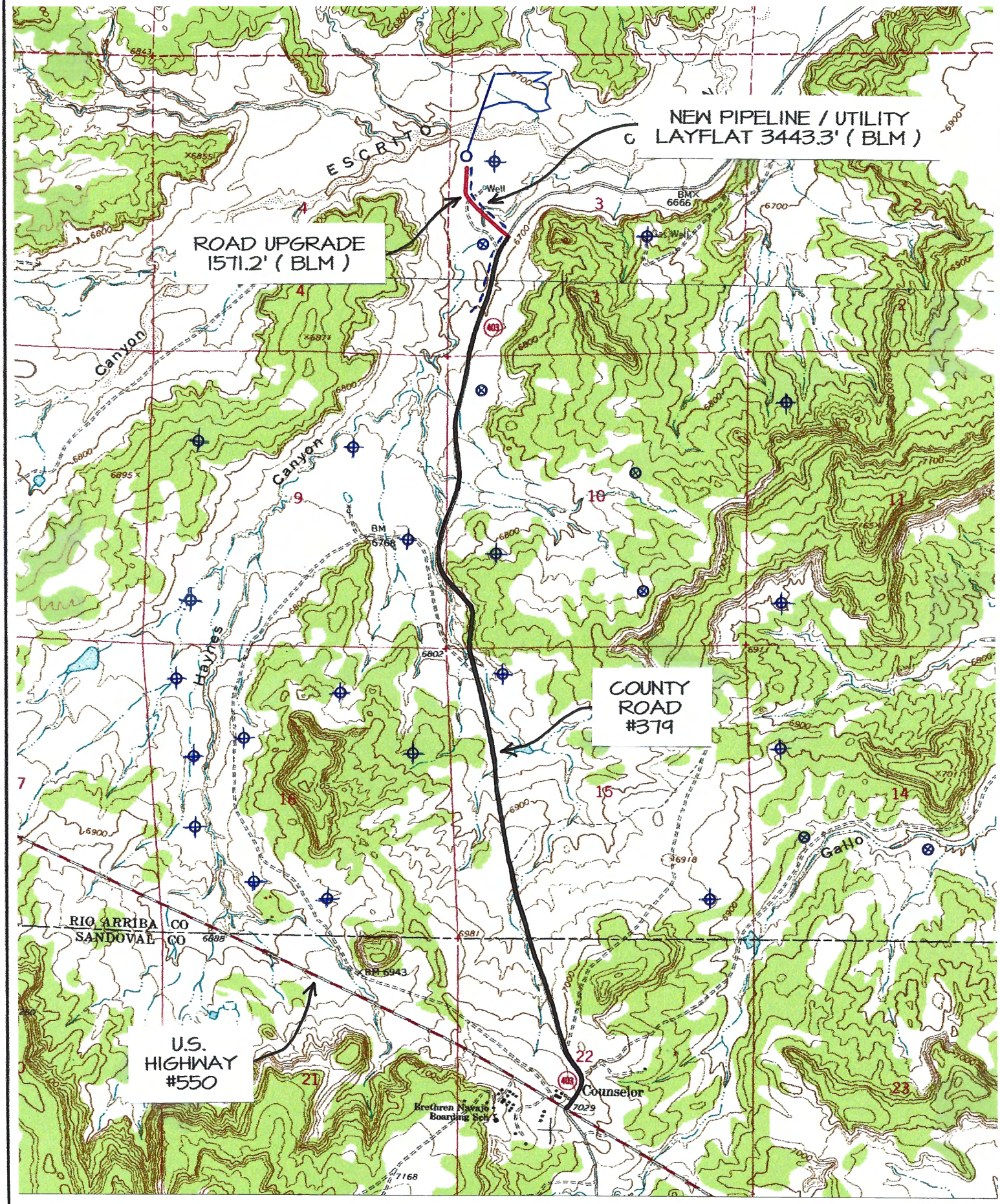
Previous Onsite information: Onsite was held on June 27, 2023, please see attached onsite notes for reference.

Other SUPO

20230627_HCU_438_Onsite_Notes_20230919212146.pdf
HCU_438_RD.Maint.Pln_09202023_20230920170903_20230920181354.pdf
HCU_438H_SUPO_Final_20230927_20230928153311.pdf
HCU_438H_RecPlan_Final_20230929_20230929114055.pdf

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H

1713' FNL & 303' FWL, SECTION 3, T23N, R6W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : COUNSELOR ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #438H

1713' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256175°N Longitude -107.464630°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

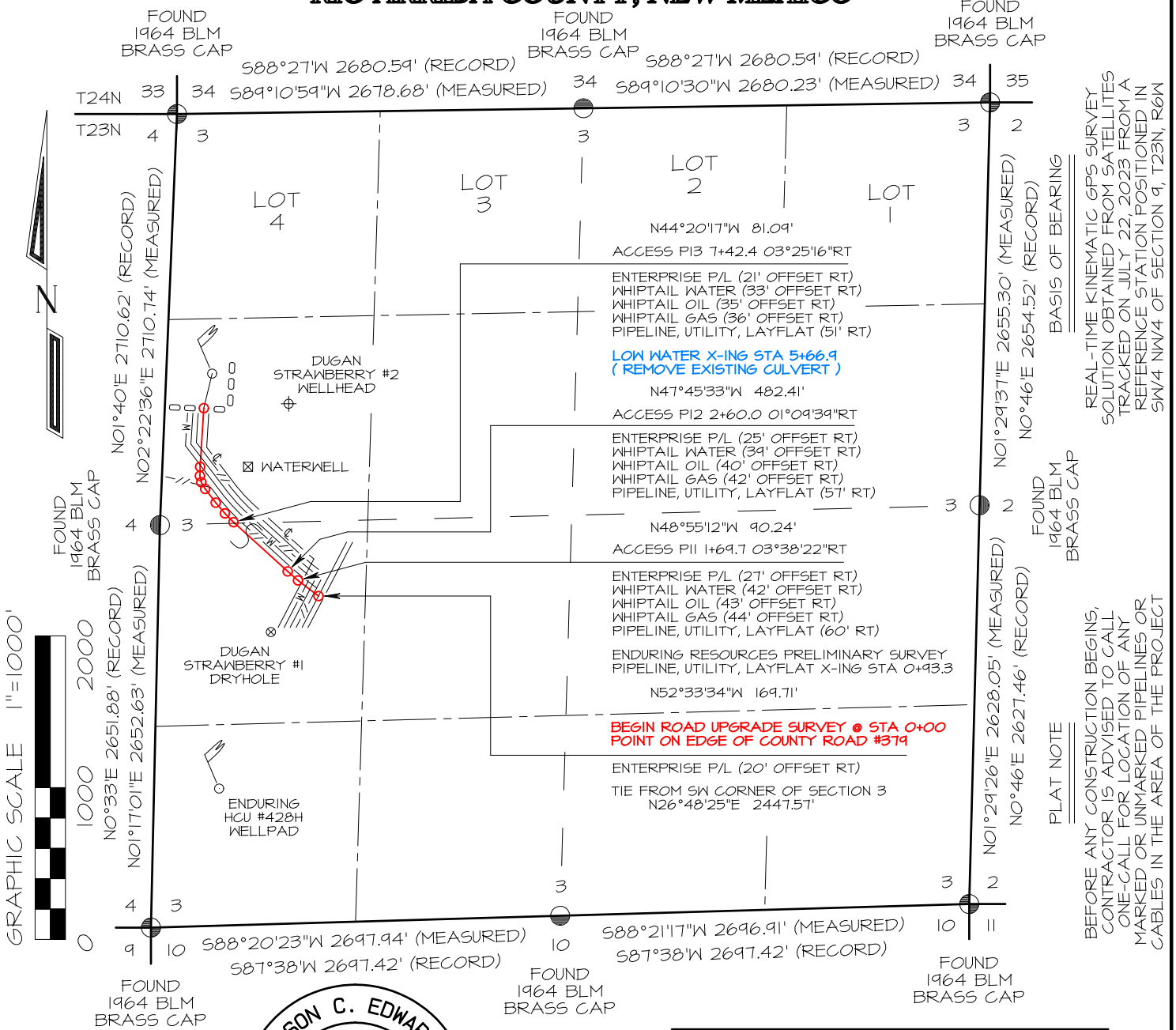
Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #438H existing location.

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 15+71.2	1571.2 FT / 95.2 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 24, 2023

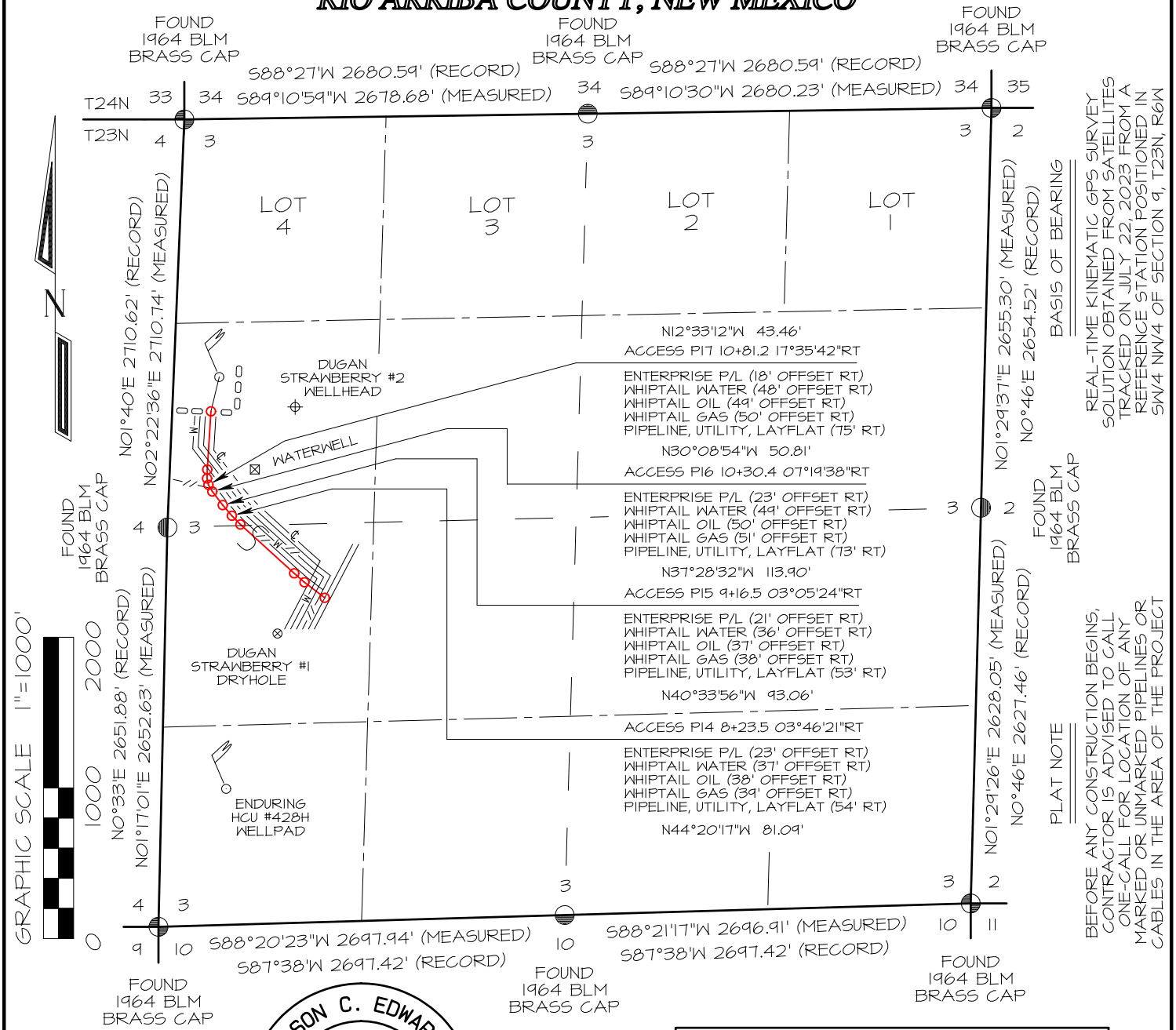
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 5 OF 13
FILENAME: 2363MAP1

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
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New Mexico L.S. #15269

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200 ENERGY COURT
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Land Surveyor:
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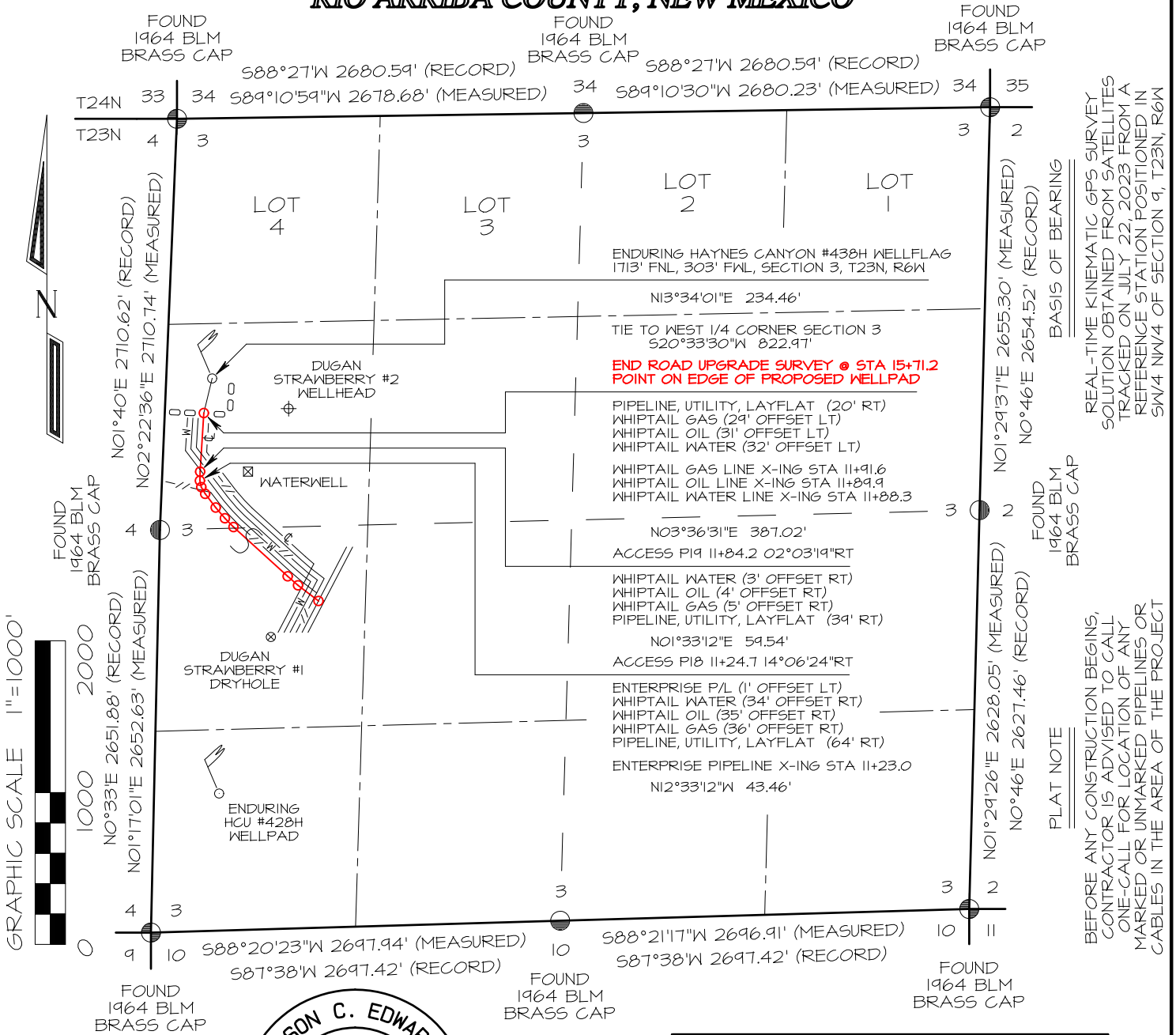
(505) 486-1695 (Office)
ncesurveys@comcast.net
SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 6 OF 13
FILENAME: 2363MAP2

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



PLAT NOTE

BEFORE ANY CONSTRUCTION BEGINS, CONTRACTOR IS ADVISED TO CALL ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED PIPELINES OR CABLES IN THE AREA OF THE PROJECT

~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 15+71.2	1571.2 FT / 95.2 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 24, 2023

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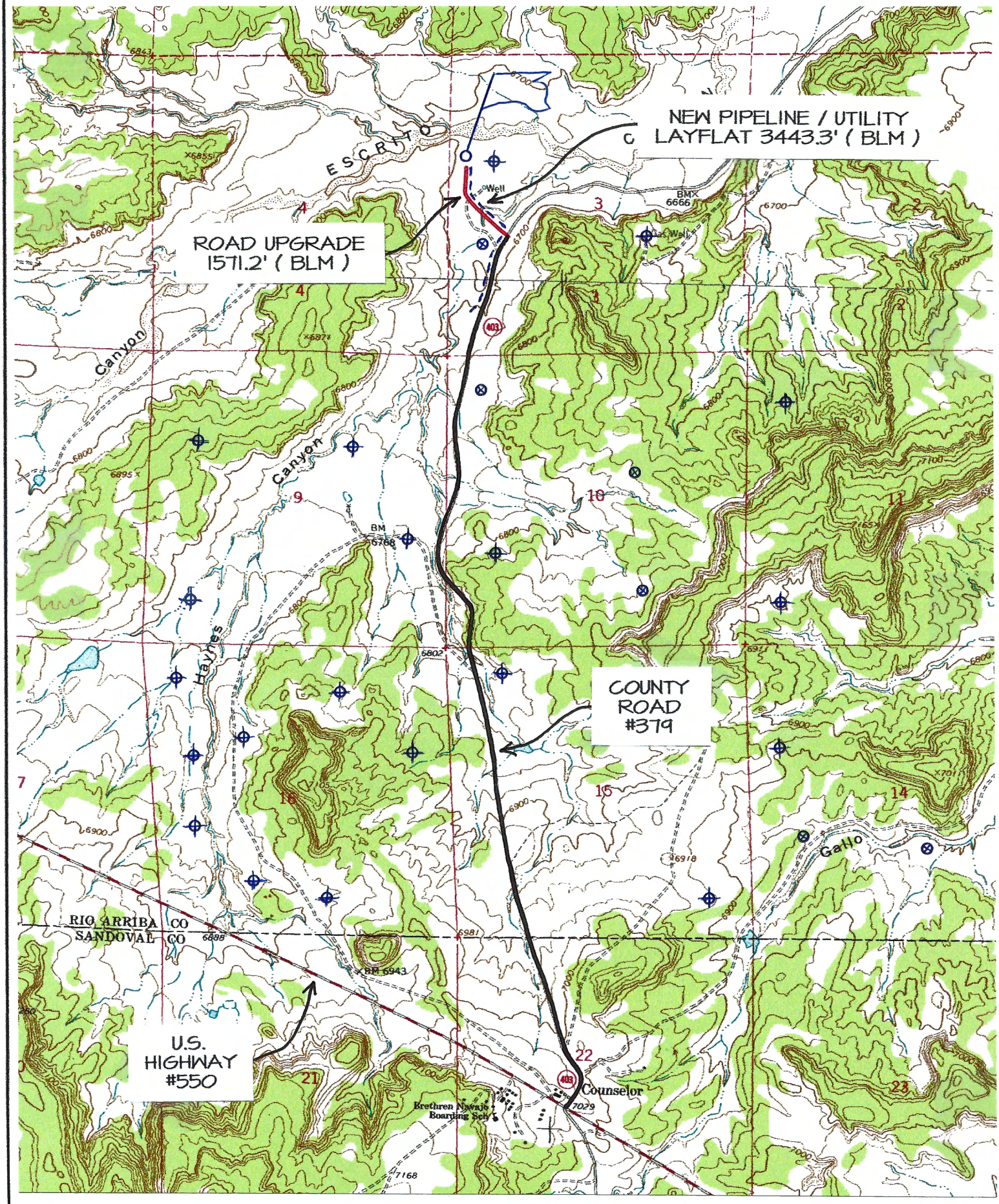
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

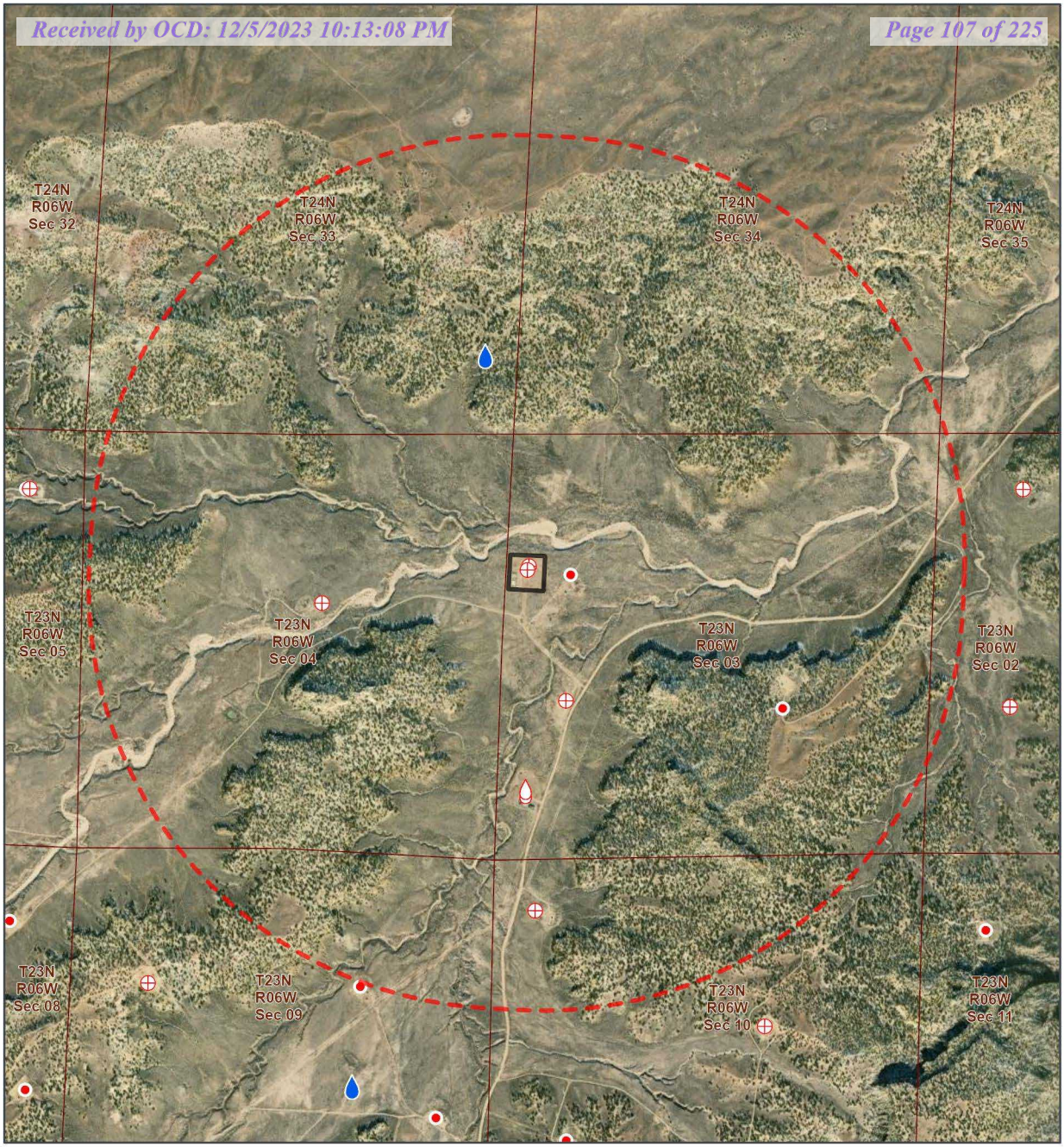
CHECKED BY: JCE
DRAWN BY: EDO
SHEET 7 OF 13
FILENAME: 2363MAP3

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H

1713' FNL & 303' FWL, SECTION 3, T23N, R6W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : COUNSELOR ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL



HCU 432H Project | Wells Within 1 Mile

OSE Points of Diversion

Wellpad

1 Mile Buffer

Oil and Gas Well Status

Active

New

Plugged (site released)

Wells	Within 1 Mile	Within Map Extent
OSE Points of Diversion	1	2
Active O&G	2	9
New O&G	0	2
Plugged (site released) O&G	5	9

Rio Arriba County, NM
NAD 1983 BLM Zone 13N
36.2561°N 107.4645°W

0 1,000 2,000 Feet
0 250 500 Meters

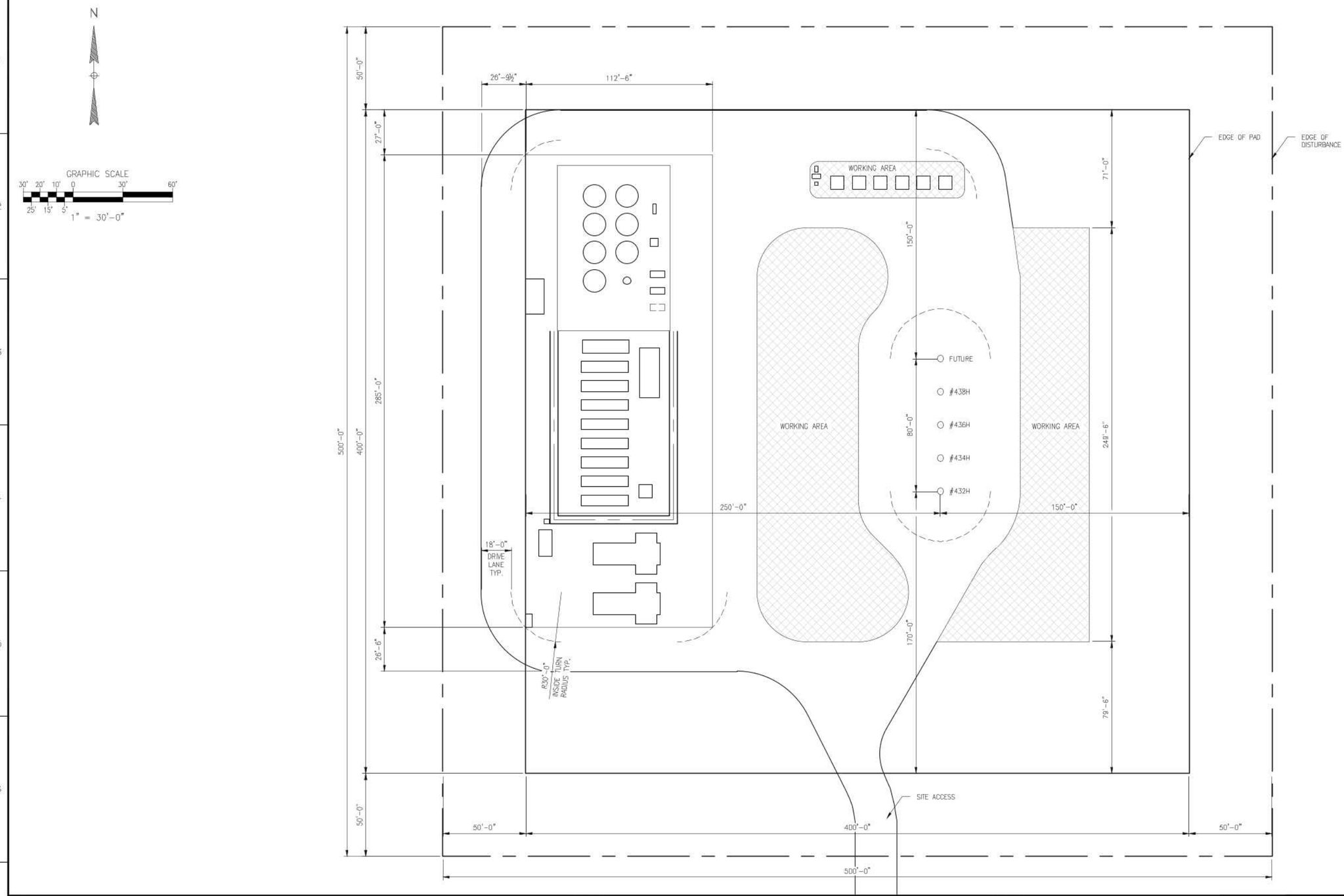
N

1:25,000

Base Map: ESRI ArcGIS Online, accessed August 2023
Updated: 8/4/2023
Project No. 75253p36
Layout: 253p36_HCU_432_Wells_Within_1Mile
Aprx: 75253p36_HCU432

SWCA ENVIRONMENTAL CONSULTANTS

ENDURING RESOURCES, LLC



NOTES:

REFERENCE DRAWINGS	
DWG NO.	TITLE

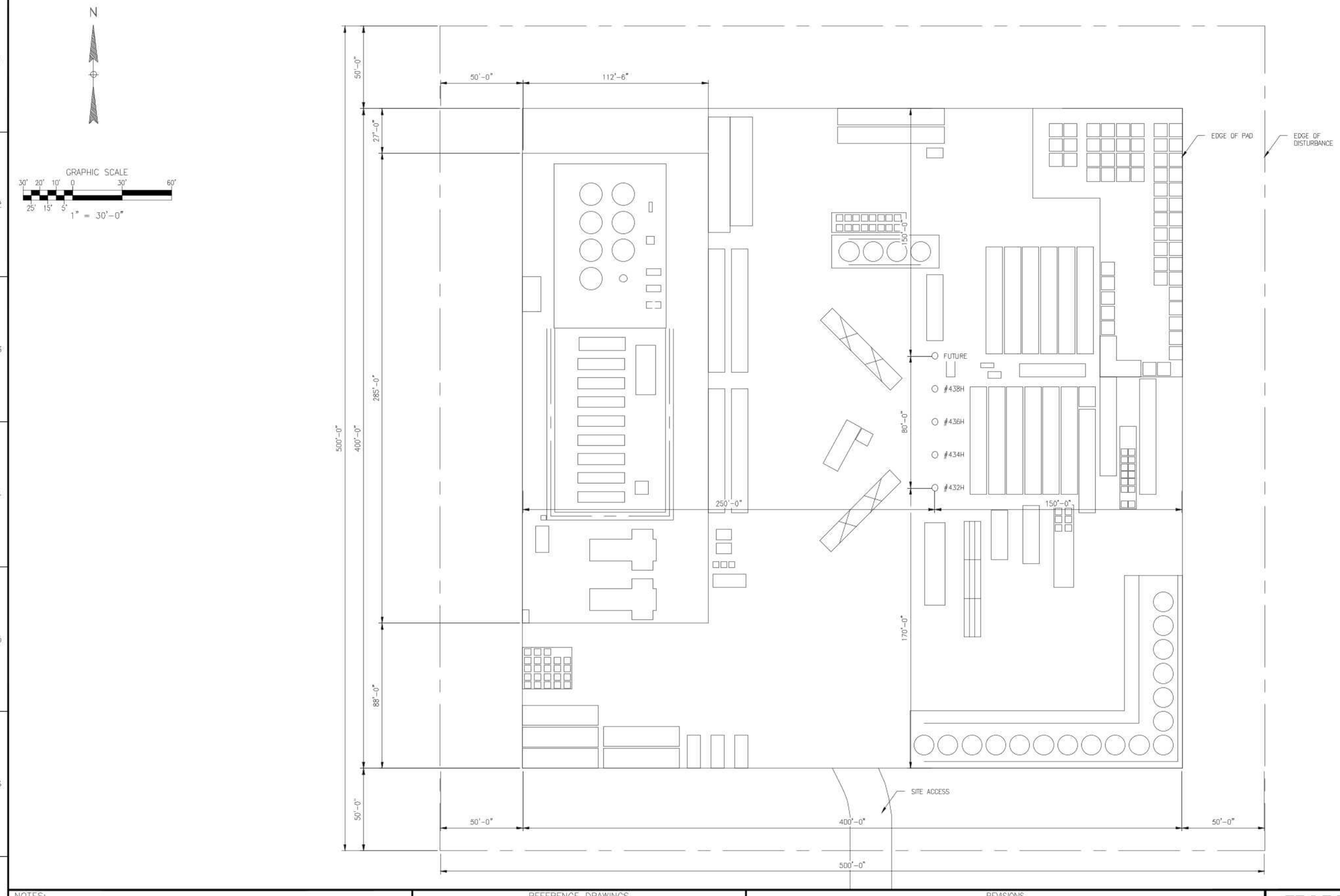
REVISIONS						
REV	DESCRIPTION	DATE	BY	CHK	ENG	APR
B	ISSUED FOR INFORMATION	08/28/23	SCK	DTS	–	BBS
A	ISSUED FOR INFORMATION	08/25/23	DTS	BBS	–	BBS

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
FACILITY LAYOUT

SCALE: (FORMATTED 22X34) 1"=30'-0"
DRAWING NO. 21129-01-31182
B

FILE PATH: P:\ENDURING RESOURCES\21129-01_PAD_LAYOUTS_&_BORING_PROJECTS\3-0_DESIGN\3-1_CIVIL\21129-01-31182_FACILITY.DWG BY:SCOTTKLANCIC DATE:Aug 28, 2023 10:24am



NOTES:

REFERENCE DRAWINGS	
DWG NO.	TITLE

REVISIONS						
REV	DESCRIPTION	DATE	BY	CHK	ENG	APR
A	ISSUED FOR INFORMATION	09/01/23	DTS	SCK	–	BBS

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
FACILITY AND COMPLETIONS LAYOUT

SCALE: (FORMATTED 22X34) 1"=30'-0"
DRAWING NO. 21129-01-31181
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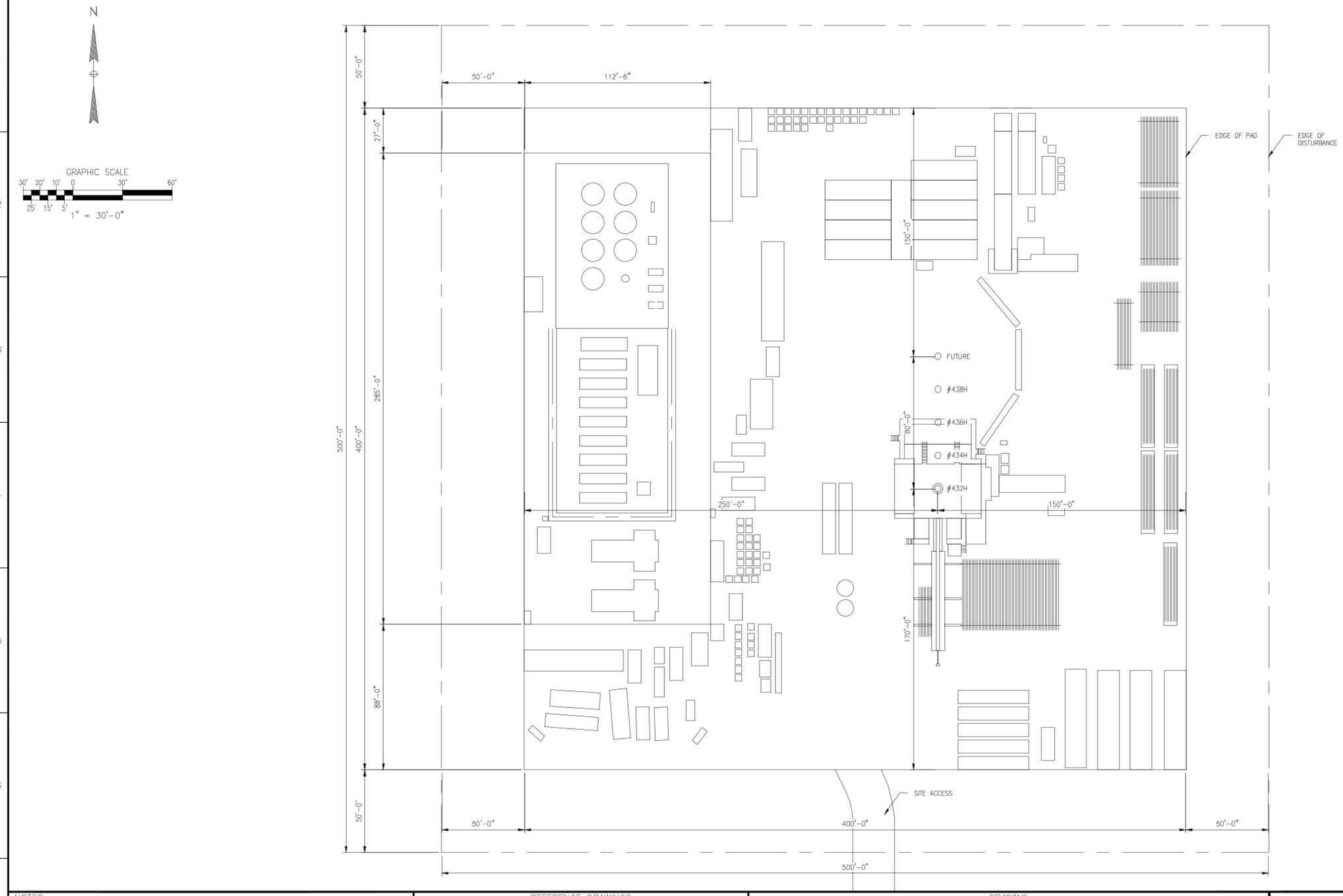

NOTES:

REFERENCE DRAWINGS	
DWG NO.	TITLE

REVISIONS						
REV	DESCRIPTION	DATE	BY	CHK	ENG	APR
A	ISSUED FOR INFORMATION	09/01/23	DTS	SCK	–	BBS

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
FACILITY AND RIG LAYOUT

SCALE: (FORMATTED 22X34) 1"=30'-0"
DRAWING NO. 21129-01-31180
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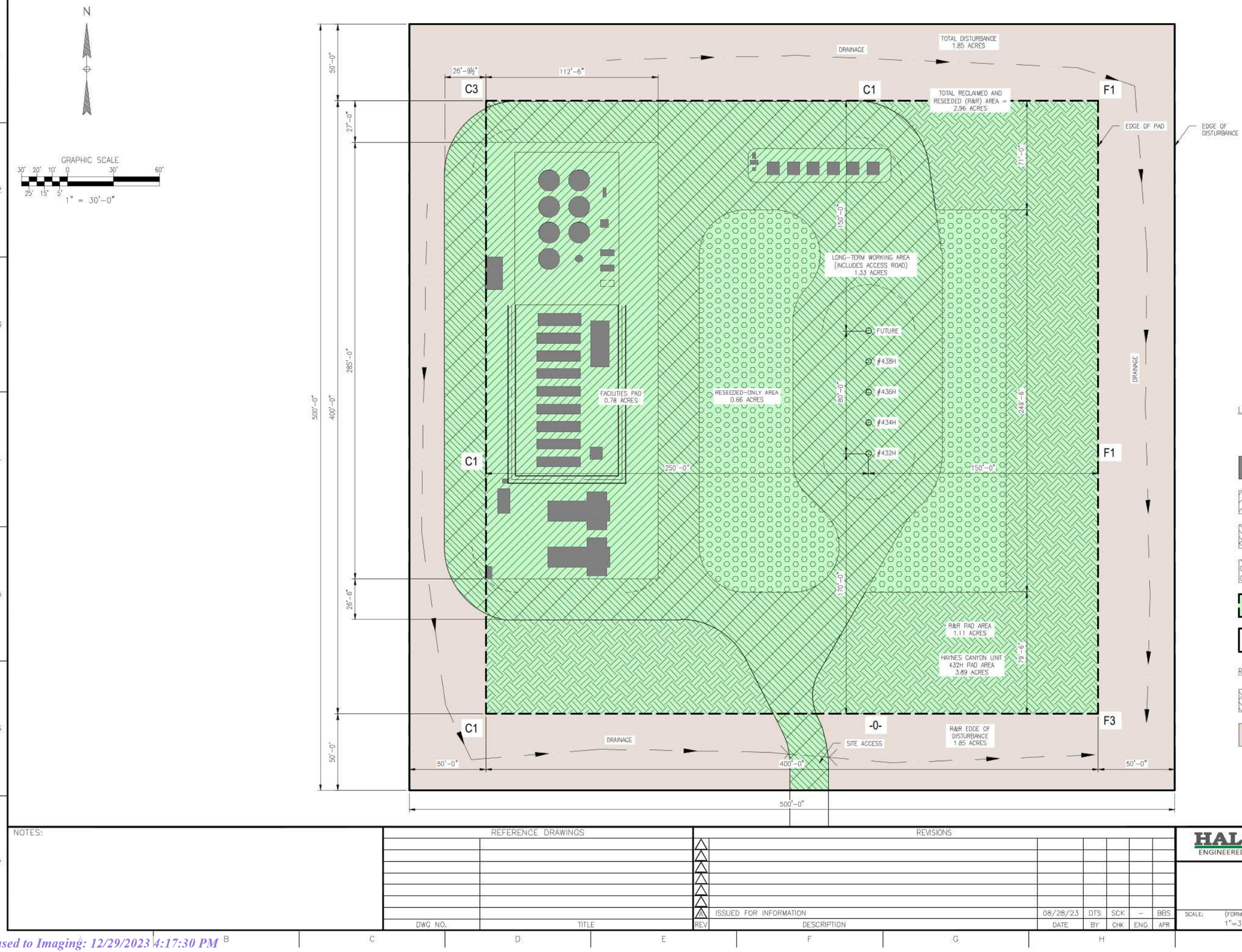

NOTES:

REFERENCE DRAWINGS	
DWG NO.	TITLE

REVISIONS							
REV	DESCRIPTION	DATE	BY	CHK	ENG	APR	
A	ISSUED FOR INFORMATION	08/28/23	DTS	SCK	–	BBS	

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
PROPOSED RECLAMATION

SCALE: 1"=30'-0" (FORMATTED 22X34)
DRAWING NO. 21129-01-31183
A

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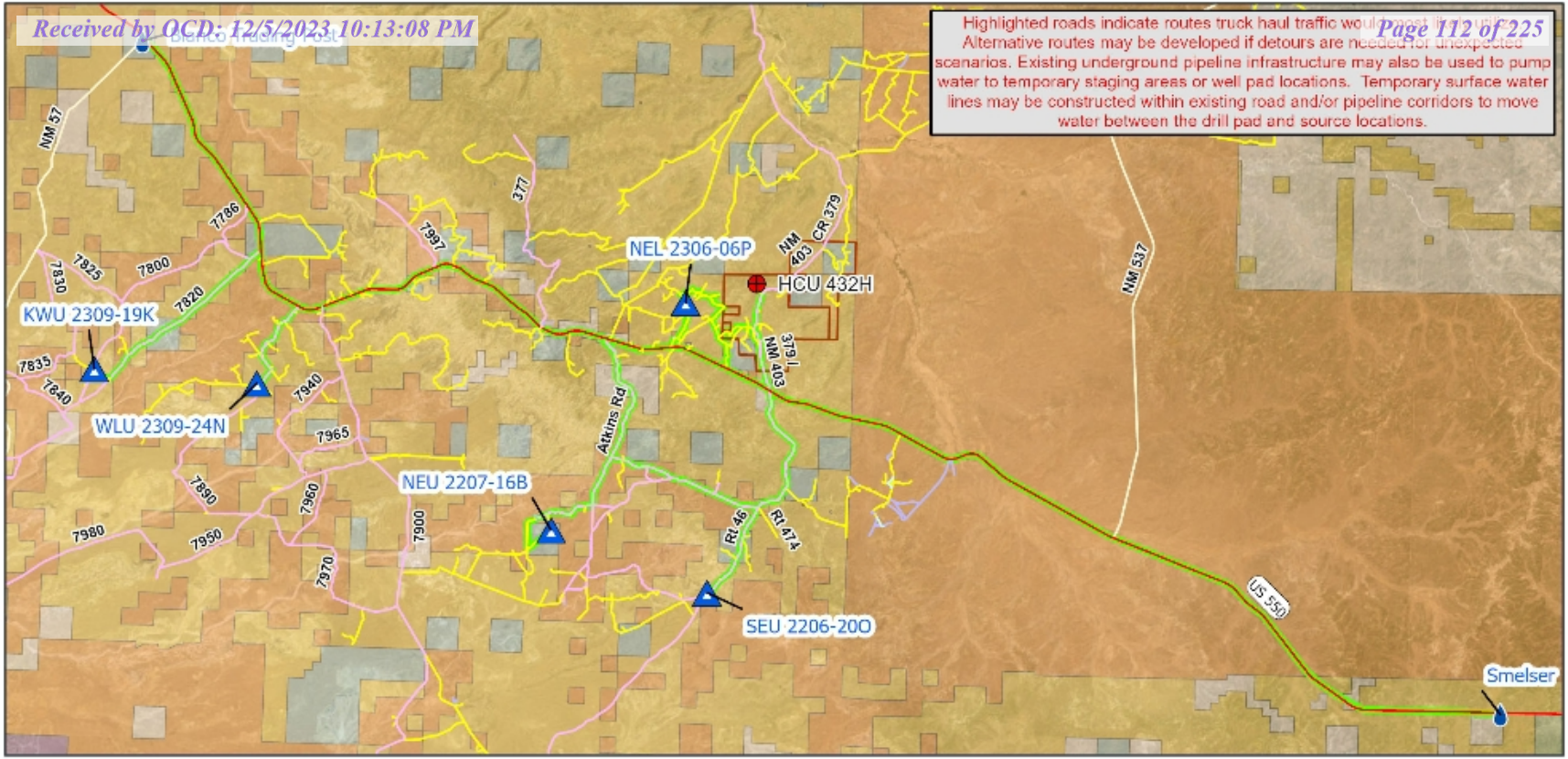


HCU 432H Project | Water Transportation

- HCU 432H
- Potable Water Sources
- Non-Potable Water Sources
- Potential Truck Routes
- Access, Dirt
- County
- Highway
- Private
- Reclaim
- State

Land Ownership

- BLM
- USFS
- Tribal
- NPS
- Private
- State

- Unit Boundary

San Juan, Rio Arriba, and Sandoval County, NM
NAD 1983 UTM Zone 13N
36.2141°N 107.449°W

0 10,000 20,000 Feet
0 3,000 6,000 Meters

N

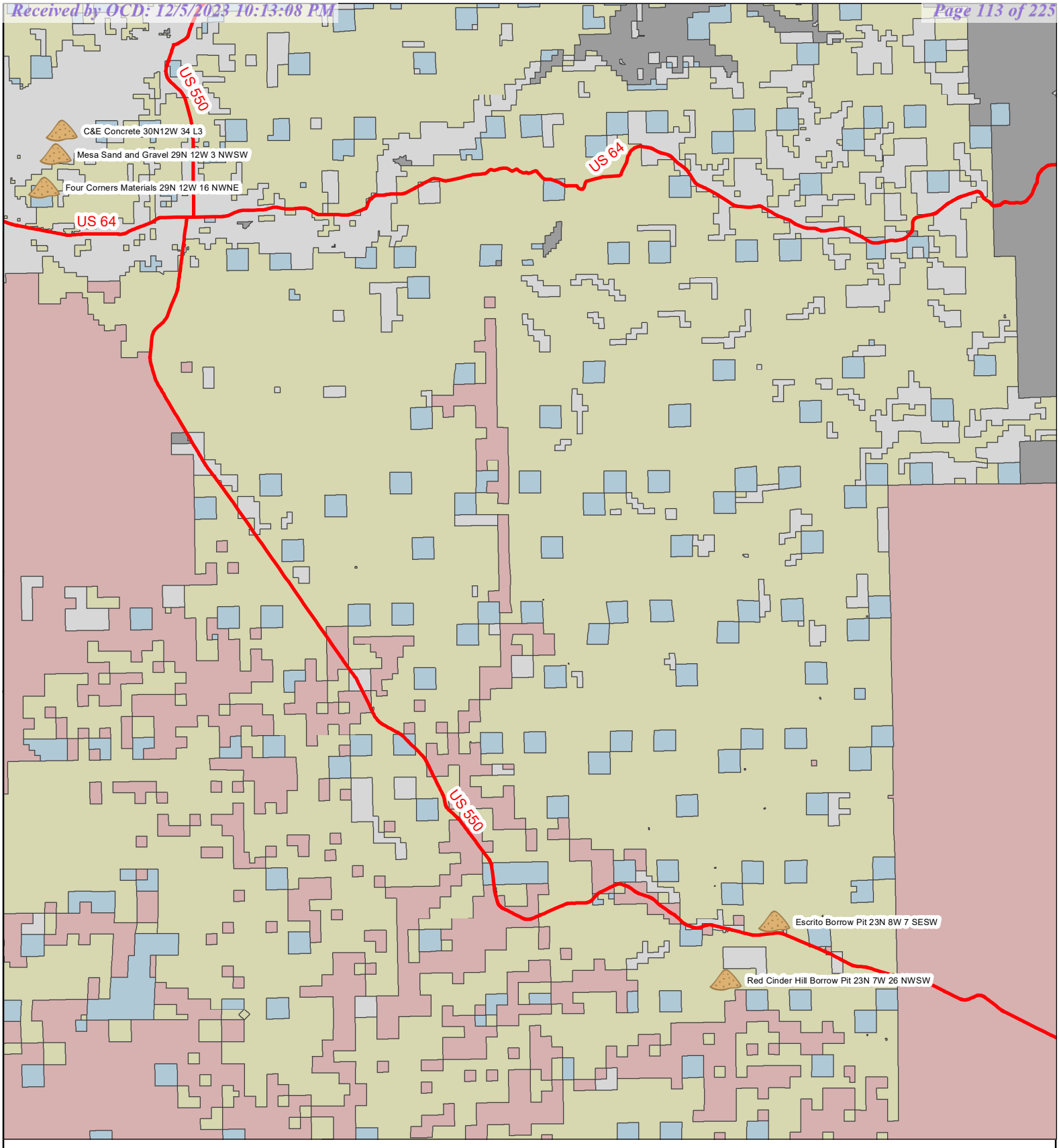
1:345,000

New Mexico

Base Map: ESRI ArcGIS Online, accessed August 2022
Updated: 8/10/2023
Project No. 75253p38
Layout: 432_Water_Transportation_Landscape
Aprx: 75253p38_HCU432

SWCA ENVIRONMENTAL CONSULTANTS

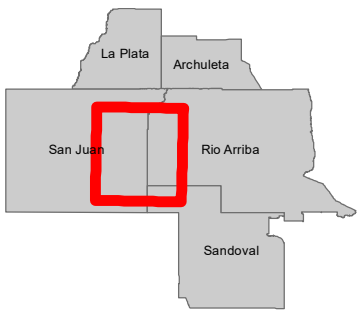
ENDURING RESOURCES, LLC



Material Source Location Map

Material Source
Highway, Paved
BLM Surface
Indian Surface
Private Surface
State Surface

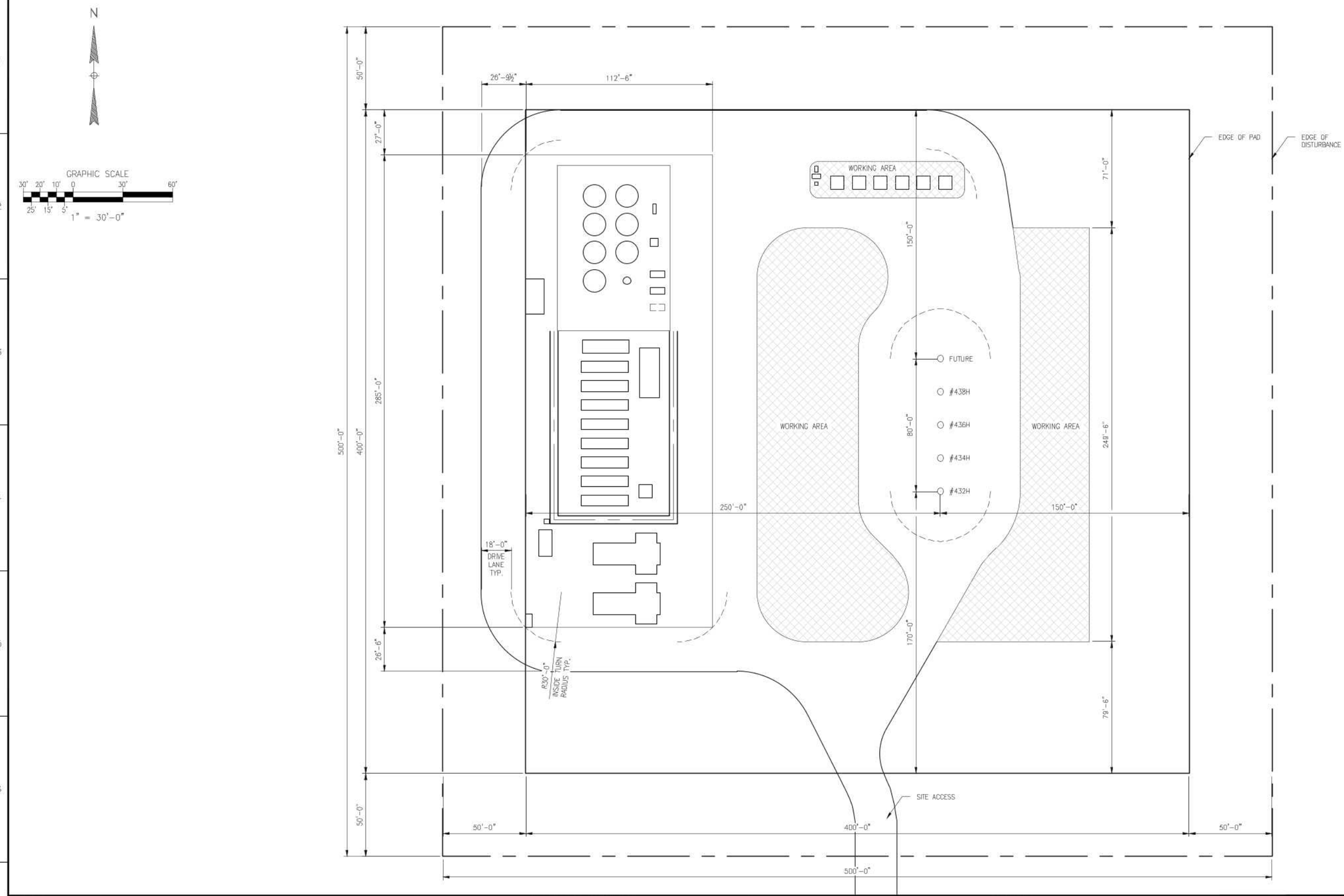
Miles
0 5 10 20



ENDURING RESOURCES, LLC

Data Source Statement:
BLM-FFO, Enduring Resources GIS, ESRI Inc., NCE Surveys, USGS

Author: drogers
Date: 10/23/2019



NOTES:

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DWG NO.	TITLE

REVISIONS						
REV	DESCRIPTION	DATE	BY	CHK	ENG	APR
B	ISSUED FOR INFORMATION	08/28/23	SCK	DTS	–	BBS
A	ISSUED FOR INFORMATION	08/25/23	DTS	BBS	–	BBS

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
FACILITY LAYOUT

SCALE: (FORMATTED 22X34) 1"=30'-0"
DRAWING NO. 21129-01-31182
B

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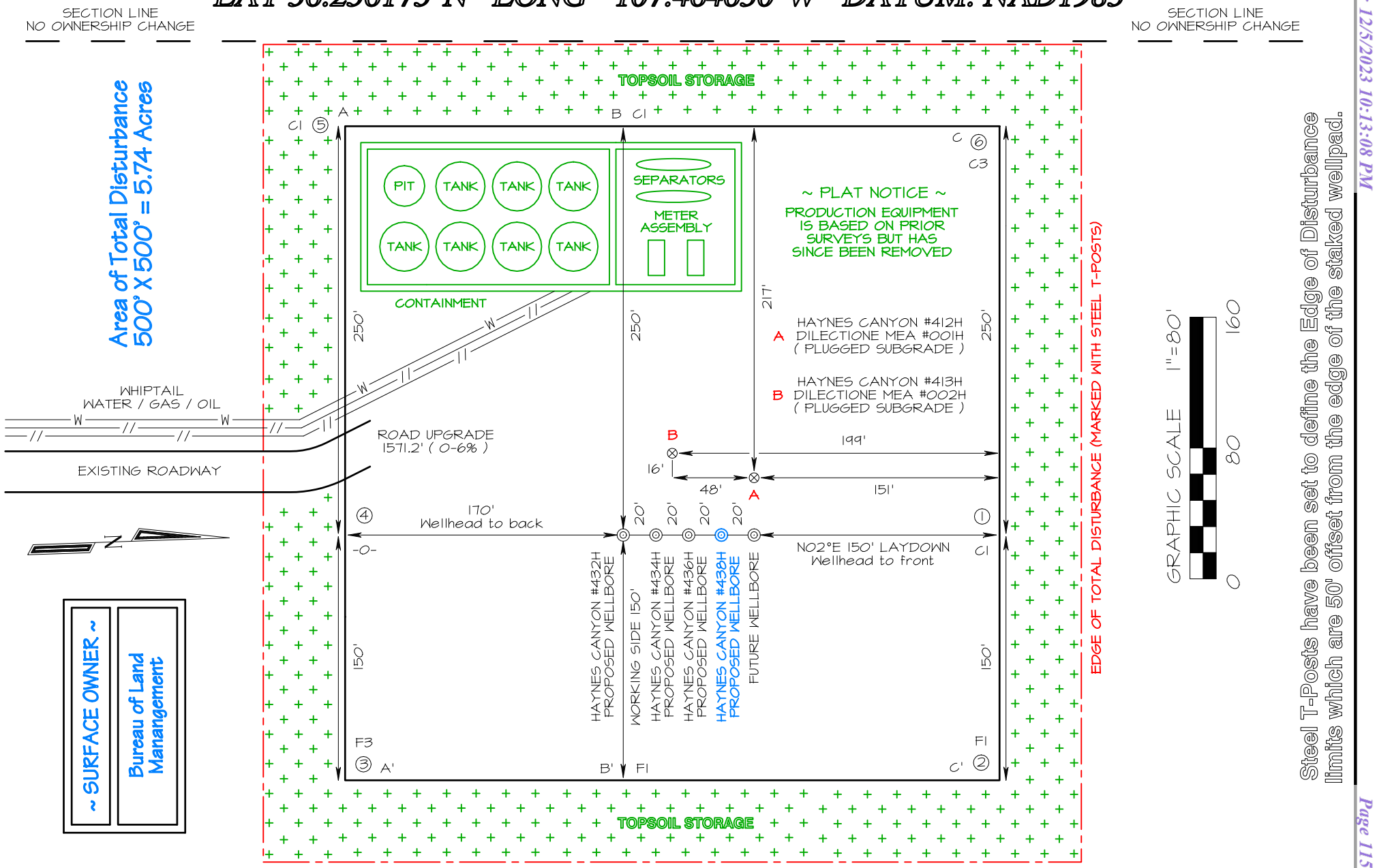
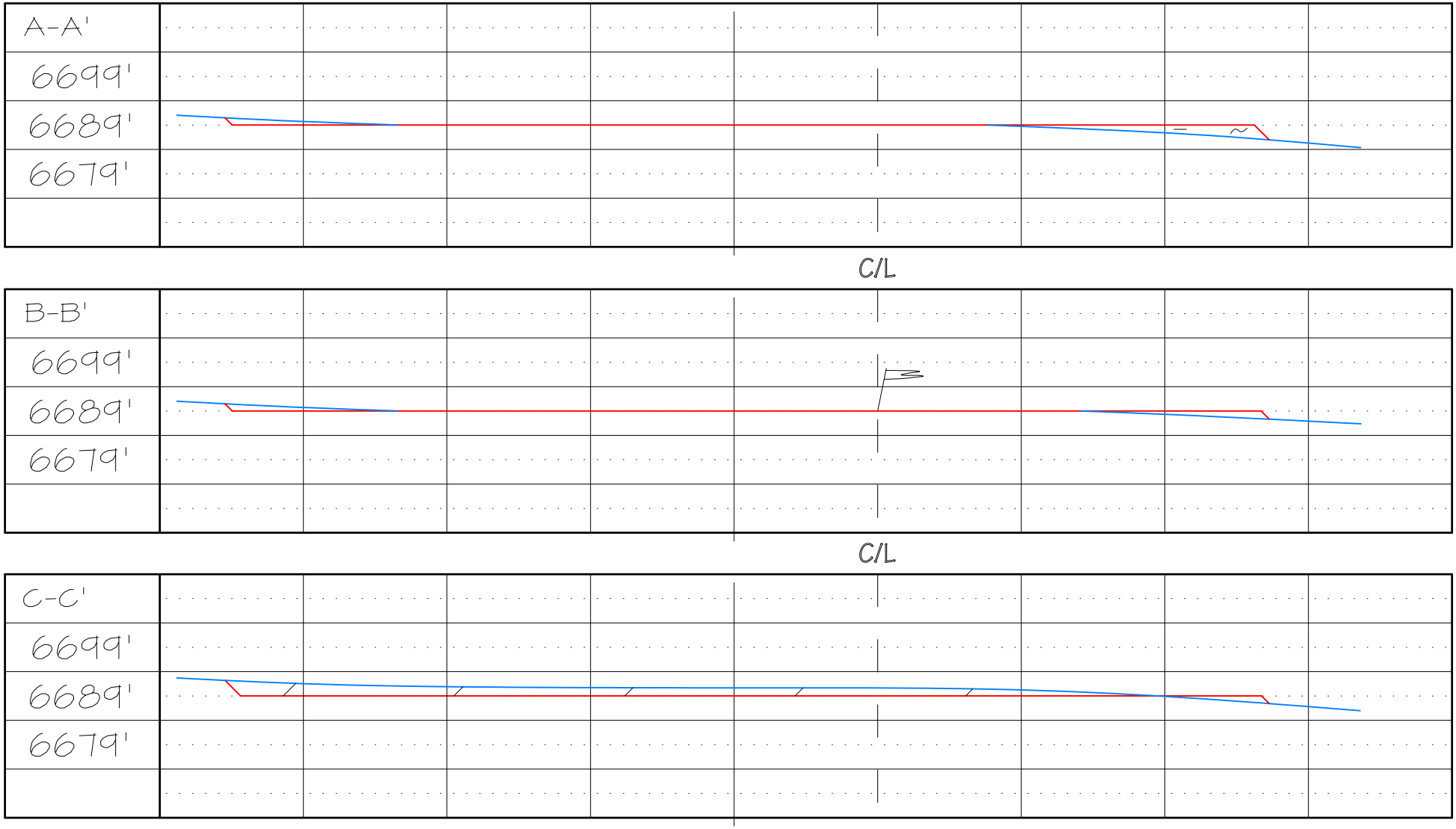
ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
1713' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'
LAT 36.256175°N LONG -107.464630°W DATUM: NAD1983



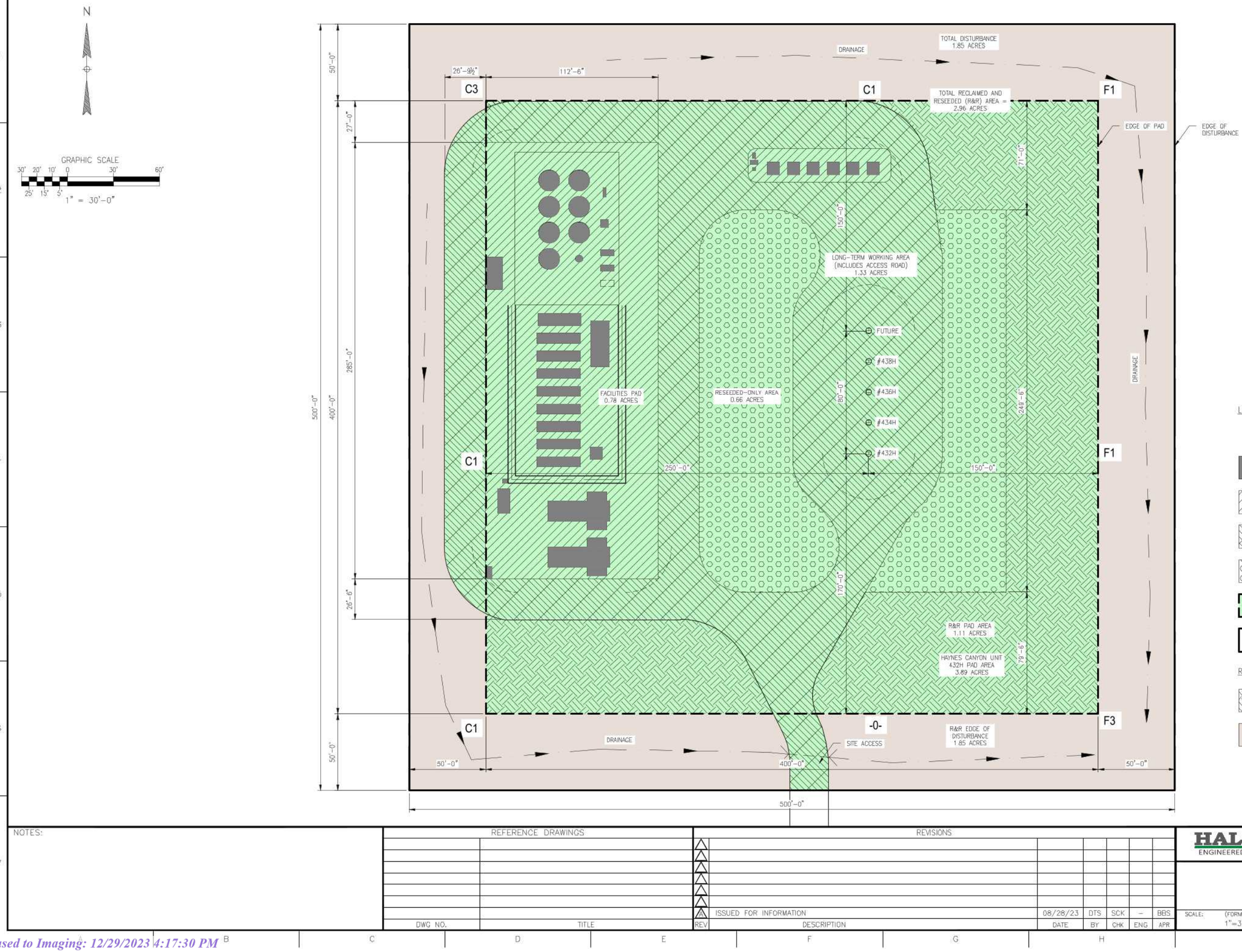
ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
1713' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'

HORIZONTAL SCALE 1"=55' VERTICAL SCALE 1"=30'



EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.



NOTES:

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DWG NO.	TITLE

REVISIONS							
REV	DESCRIPTION	DATE	BY	CHK	ENG	APR	
1	ISSUED FOR INFORMATION	08/28/23	DTS	SCK	–	BBS	

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
PROPOSED RECLAMATION

SCALE: 1"=30'-0" (FORMATTED 22X34)
DRAWING NO. 21129-01-31183
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Onsite Notes for Enduring Resources IV, LLC's Proposed Haynes Canyon Unit 432H Pad

Will be located on an **existing** location. The APD's on said location have expired.

Onsite Date: June 27, 2023

Attendees

NAME	ORGANIZATION
Harley Davis	BLM NRS
Gary Smith	BLM-FFO NRS
Jason Meininger	Division of Conservation Archaeology (DCA)
Jason Edwards	NCE Surveys
Johnny Stinson	Enduring Resources
Lena Wilson	Enduring Resources
Casey Haga	Enduring Resources

Notes that require change in plats are identified in Red.

Notes that Enduring needs to answer and consider are in Blue.

Please review all onsite notes and reply to the entire group if there are changes, mistakes, or additional notes I may have missed. If there are replies with changes, I will update these notes with them accordingly. If you have questions or concerns, please contact me at:

(970)-769-8814 or at chaga@enduringresources.com

ENDURING RESOURCES IV, LLC

200 Energy Court
Farmington, New Mexico 87401
Phone: (505) 636-9720

Project Name: **Haynes Canyon Unit 432H, 434H, 436H, 438H, and one future**

On/Off lease: **On Lease**

Surface: **BLM** Mineral: **Federal, Fee, and State**

Onsite Notes

Project Scope and Region

- These wells are being proposed on an existing location that has two plugged and abandoned wells. These plugged wells were cut and capped 3'6" below grade. The well pad was interim reclaimed but never fully reclaimed upon abandonment. The roadway is degraded but still accessible. The facilities were stripped but buried pipe remains buried in the facility lift. The SUPO needs to reflect that this "disturbance" exists but written in a level of detail as a new project since we currently hold no active APD to the location.
- Region dominated by sagebrush shrublands. Location is situated in a valley between several ephemeral washes. Area is surrounded by small mesas with sandstone outcrops.

Access Road

- There is an existing access road to location. This roadway will need upgraded to an all weather resource roadway. There is pipe each side of road that will restrict significant upgrades.
- Need to centerline survey existing roadway being used off CR 379 for upgrades.
- Remove the existing culvert in wash and replace with low water x-ing.
- Update topo to reflect existing road upgrade section.

Well Pad

- Well pad is existing but we don't hold active APD. The well pad was interim reclaimed but never fully reclaimed. We will permit the original footprint as seen in the plats.
- Add the two plugged and abandoned well locations to plats.
- Correct pad diagram dimensions. It should be 500' by 500'.

Well Connect Pipeline

- Facilities will be located on the HCU 428H location. As such, 3 phase flow lines will be needed from the 432H pad to the 428H pad. The existing whiptail pipe cannot be used for this.
- Survey new pipeline ROW from the HCU 432H to the HCU 428H pad.
- Need to plan layflat route.
- Need to survey layflat route.

Topsoil Storage

- Mulch vegetation into topsoil then strip and windrow along perimeter of location within the EOD.

Production Facilities

- Facilities will be remote to the HCU 428H Location.

Facilities Color

- Juniper Green

Seed Mix

- Sagebrush seed mix

Other Notes

- Arc monitoring and reporting was needed on original build.

ROAD MAINTENANCE PLAN

Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project
HCU 432H, 434H, HCU436H, HCU438H and One Future

September 2023

ENDURING RESOURCES IV, LLC

200 Energy Court
Farmington, New Mexico 87401
Phone: (505) 636-9720

1. INTRODUCTION

Enduring Resources IV, LLC (Enduring) is providing this Road Maintenance Plan (Plan) to the Bureau of Land Management Farmington Field Office (BLM-FFO) as part of the Surface Use Plan of Operations (SUPO) for the Haynes (HCU) Five Well (432H, 434H, 436H, 438H and Future) Oil and Natural Gas Project (HCU 432H Project). The existing 1571.2-foot-long by 30-foot-wide access road addressed in this plan was previously permitted and constructed under the Applications for Permit to Drill (APD) for the HCU 412H. The coordinates for the access road are as follows:

- Start: N 107^0 27'53.61W 36^0 15'15.61N

  End: N 107^0 27'53.46W 36^0 15'19.65N

The road maintenance procedures provided in this Plan meet the standards established in The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development and BLM Manual 9113. Per the HCU 432H Project APD's, Enduring will be responsible for road maintenance associated with the aforementioned wells. This responsibility will continue until Enduring transfers the permit or abandons the project and obtains a Final Abandonment Notice or relinquishment from the BLM-FFO. Refer to the SUPO or Conditions of Approval (COAs) attached to the approved APDs for any upgrades to existing roads.

2. ROAD INSPECTIONS

Enduring Representatives will formally inspect the road biannually, in the spring and fall, to assess the condition of the road. The formal road inspection will be recorded on a Road Inspection Form (blank form attached to this Plan). Completed Road Inspection Forms will be kept on file at Enduring and can be provided to the BLM-FFO, if requested.

Additionally, outside of the formal inspection period, Enduring Representatives driving to/from the project area will assess the condition of the road and notify the Enduring Construction Supervisor if maintenance is needed.

Road maintenance activities will be documented at Enduring and can be provided to the BLM-FFO, if requested.

3. ROAD MAINTENANCE

The following maintenance may be performed on an as needed basis:

- Water control structures (such as culverts, ditches, and silt traps) and/or cattle guards may be cleaned. If this occurs, the soil/sediment material will be spread on area roads or locations.
- Bar ditches may be pulled.
- Low water crossings and drainage dips may be cleared and/or repaired.
- Crowning may be repaired.
- Litter may be collected.
- Noxious weeds may be treated or controlled following the BLM-FFO noxious weed guidelines.
- The access road may be bladed.

ROAD INSPECTION FORM

Road Name:	**County:**
Date:	**Time:**
Weather:	
Inspector(s):	
Road Surface Type:	

Road Condition Inspection Items	Road Condition		
	Good	Poor	Comment
Water Control Structure(s)			
Low Water Crossing(s)			
Road Crowning/Ruts/Potholes			
Road Surfacing			
Cattle Guard(s)			
Litter			
Noxious Weeds Within/Adjacent to Roadway			
Vegetation Within Roadway			

Additional Site Specific Inspection Notes:

SURFACE USE PLAN OF OPERATIONS

Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project

HCU 432H, HCU 434H, HCU 436H, HCU 438H and One Future

SEPTEMBER 2023

ENDURING RESOURCES IV, LLC

200 Energy Court
Farmington, New Mexico 87401
Phone: (505) 636-9720

TABLE OF CONTENTS

1. INTRODUCTION

1.1. Purpose and Intent

The purpose of the Proposed Project is to allow Enduring Resources IV, LLC's (Enduring) reasonable access to public lands to develop federal minerals administered by the Bureau of Land Management's (BLM's) Farmington Field Office (FFO) and New Mexico Oil Conservation Division (NMOCD) for Enduring's valid mineral lease (NMNM-028733) within the Haynes Canyon Unit (NMNM-142111).

The need for the Proposed Project is BLM's requirement to respond to Enduring's Application for Permit to Drill (APD). Per Onshore Oil and Gas Operating Regulations (43 Code of Federal Regulations [CFR] 3160); the Mineral Leasing Act (MLA) of 1920, as amended (30 United States Code [USC] 181 et seq); and the Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.).

In accordance with Onshore Oil and Gas Order No. 1 (43 CFR 3160), this Surface Use Plan of Operations (SUPO) has been prepared for Enduring's proposed Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project HCU 432H, HCU 434H, HCU 436H, HCU 438H, and one future (HCU 432H Project). The project as proposed would provide for the drilling, development, transportation, operation, and maintenance of the HCU 432H Project.

The proposed action is not known to cross or impact any U.S. Army Corps of Engineers (USACE) jurisdictional Waters of the U.S. (WOUS).

The information is provided to the surface management agency to give an accurate account of the proposed action for National Environmental Policy Act (NEPA) disclosure. This SUPO details only the proposed action, any alternatives considered in detail are described in the associated Environmental Analysis (EA) document.

Enduring will comply with all applicable laws, regulations, Onshore Orders, Conditions of Approval (COA) attached to the approved APDs, and this SUPO. No additional surface disturbance beyond that authorized by the approved APDs will be initiated without prior approval by the Authorized Officer (AO).

Enduring Resource IV, LLC (Enduring) may submit a request to the BLM-FFO to revise this SUPO at any time during the life of the project in accordance with The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and U.S. Forest Service 2007). Enduring would include justification for the revision request.

The Enduring representative for this reclamation plan is:
Theresa Ancell
Regulatory Manager
Enduring Resources IV, LLC
200 Energy Court
Farmington, New Mexico 87401
505-636-9720

2. PROJECT DESCRIPTION

Table 2.1. Project Information

Applicant:	Enduring Resources IV, LLC
Project Name:	Haynes Canyon Unit (HCU) 432H-Five Well Site Reoccupation Project HCU 432H, 434H, 436H, 438H, and one future (HCU 432H Project)
Project Features:	One well pad with five wells and (production facilities if present), access road corridor, 3-phase pipeline, and utility corridor.
Lease Number(s):	NMNM-028733
Land Manager(s):	BLM-FFO
Mineral Manager(s):	BLM-FFO

Infrastructure proposed to be constructed, operated, subsequently interim reclaimed, and eventually fully reclaimed as part of the HCU 432H Project would be located on lease, located on BLM-FFO administered lands with Federal minerals. The project would be permitted, built, and operated per lease authority for the term of the proposed wells served in Enduring's surface lease (NMNM-028733) within the Haynes Canyon Unit (NMNM-142111X).

The HCU 432H Project would be constructed within existing disturbance associated with plugged and abandoned HCU 412H and HCU 413H wells. The existing well pad, for the HCU 412H was permitted, constructed, plugged and abandoned by a previous operator, WPX.

Existing on-lease infrastructure includes:

The 5.74-acre existing well pad proposed to be utilized for the HCU 432H five well Reoccupation Project well pad is 500-foot by 500-foot well pad inclusive of a 50-foot construction buffer zone/edge of disturbance (EOD).

Proposed HCU 432H Project infrastructure includes:

- **Well pad:** The 5.74 acre well pad would accommodate the development of five proposed wells.
- **Access Road:** One existing 1571.2-foot-long by 30-foot-wide access road corridor would be improved and utilized to accommodate access for construction, drilling, completion, and long-term operation of the wells mentioned above; no new access road is proposed for the project.
- **Pipeline and Utilities Corridor:** The HCU 432H proposed project located north of the proposed HCU 428H would include a 3383.8 foot by 40-foot pipeline and utilities corridor connecting HCU 432H to HCU 428H facilities and infrastructure. The pipeline corridor would be constructed adjacent to an existing Whiptail pipeline right-of-way (ROW). The proposed new corridor disturbance would be partially contained within the existing well pads (400-feet) and partially within the existing Whiptail ROW disturbance (20 feet of the 40 feet). The proposed new disturbance associated with the HCU 432H pipeline and utility corridor would be 2983.8 feet by 20-feet creating an estimated 1.37 acres of new disturbance. There are two Temporary Use Areas (TUAs) proposed within the HCU 432H pipeline corridor. TUA No. 1 located would be between STA 1648 and STA 1895.9 measuring 25-feet on the wide side of the corridor. TUA No. 2 would be located between STA 2164.8 and STA 2487.8 would be 25-feet on the wide side of the corridor.

2.1. Location

The HCU 432H Project is in the Southwest ¼ of Northwest ¼ of Section 3, Township 23 North, Range 6 West, New Mexico Principal Meridian (NMPM), in Rio Arriba County, New Mexico. See table 3.1 below and the survey plat package in Appendix A for detailed location regarding each of the proposed wells.

See the existing road map and written directions in the survey plat package in Appendix A. Directions are from the intersection of US Hwy 550 and US Hwy 64 in Bloomfield, New Mexico.

3. WELL SITE CONSTRUCTION AND LAYOUT

Drilling of the proposed HCU 432H Project would require utilizing a 5.74-acre existing well pad. This entire area would be utilized during construction, setting of production equipment, drilling, and completion phases. The Surface Hole Locations for the four wells associated with the HCU 432H Project are located below in Table 3.1.

Table 3.1. Surface Hole Locations

Well flag	Footages	Latitude (NAD 83)	Longitude (NAD 83)
HCU 432H	1773’ FSL, 303’ FWL	36.256010°N	-107.464636°W
HCU 434H	1753’ FSL, 303’ FWL	36.256065°N	-107.464634°W
HCU 436H	1733’ FSL, 303’ FWL	36.256120°N	-107.464632°W
HCU 438H	1713’ FSL, 303’ FWL	36.256175°N	-107.464630°W

During construction, the existing well pad would be leveled to provide adequate space and a level working surface for vehicles and equipment. Excavated materials from cuts are used to fill portions of the well pad to level the surface. The approximate cuts, fills, and well pad orientation are shown on the cut/fill worksheet and cross-section diagrams in the survey plats found in Appendix A.

See Appendix E for the proposed Well Pad Facility Diagram showing the long-term well pad layout, areas to be reclaimed, and anticipated utilization of existing disturbance acreage; Well Pad Drilling Diagrams showing the location and orientation of the drill rig; and the Well Pad Completion Diagram, showing the location and orientation of the completion equipment.

3.1. 3.1 Production Facilities

Current plans include collocating facilities for the proposed HCU 428H and HCU 432H projects. Due to existing infrastructure present at the HCU 428H project location, current plans are for production facilities for the HCU 432H Project to be located on the south adjacent HCU 428H well pad. However, due to the changing nature of projects, each project is being proposed with separate facilities to account for changes in drilling sequence and schedule. If facilities are not built and needed on location for the HCU 432H wells (as is intended), the pad will be reclaimed to reflect reduced operational needs without production facilities. Potential facilities on location may include but are not limited to (including facilities that may occur through the life of the four wells) and Temporary equipment during drilling, completion, and flowback operations may be placed anywhere within the permitted location. During road construction, production-associated equipment would be delivered and left within the permitted area until construction is complete.

3.2. Best Practices and Mitigation Measures

Topsoil removal, storage, and protection are described in detail in the associated Surface Reclamation Plan.

4. PROPOSED NEW OR RECONSTRUCTED ACCESS ROAD(S)

During the June 27, 2023, onsite visit, it was determined by the operator and surface managing agency that County Road 379 (CR 379) and the existing 1571.2-foot access road corridor would be utilized to access the proposed project location.

Upon approval, CR 379 and the project access road will be maintained, upgraded, or reconstructed to meet anticipated traffic volumes and all-weather access needs.

Any site-specific stipulations, design features, and Best Management Practices (BMPs) discussed to be implemented on this section of the existing roadway are listed below (4.2 Best Practices and Mitigation Measures) and in Enduring's Road Maintenance Plan. See the construction plats in Appendix A for the access road length and location from existing established roads.

4.1. Best Practices and Mitigation Measures

A. Enduring will construct, improve, and maintain roads in accordance with The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. Enduring will defer to the county or the Roads Committee, when formed, for maintenance determinations for any existing County Roads or roads that are considered collector roads, utilized for the project. See Enduring's associated Road Maintenance Plan for more details.

B. The existing culvert located access road culvert located at 566.9-feet will be removed and a low water crossing installed. Low water crossings may include armored on the downstream side.

C. Any pre-existing water management and erosion control structures not specifically mentioned will be inspected and maintained to accommodate long-term stormwater control.

D. If found to be necessary, additional water management features such as water bars, rolling dips, or culverts will be installed within the existing roadway if found to be necessary for maintaining a safe stable roadway allowing all-weather access.

E. No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts deeper than six inches, the soil will be deemed too wet for construction or maintenance.

F. Before any soil disturbing road or well pad construction-related activities, if present and warranted, the project area including the proposed access road and pipeline/utility corridor would be cleared of trees and vegetation. A compact track loader with a mulching attachment will mulch and incorporate all trees that measure less than 3 inches in diameter at ground level (if present) and slash/brush into the topsoil. A woodcutting crew will clear all trees three inches or greater at ground level (if present) with chainsaws. The mean height of any stump will not exceed one-half its diameter and in no case exceed six inches on the uphill side. Tree trunks (left whole) and large limbs will be stacked and made available to the public unless stipulated otherwise by the AO.

G. Material will be imported only if necessary to establish a safe all-weather roadway. Once the roadway has been established, the driving surface may be capped if needed and deemed economically viable. Sandstone from a nearby permitted location would be the preferred surfacing material and would be laid approximately 8-12 inches thick.

H. Maintenance of existing roads will be restricted to the existing disturbed footprint; no new surface disturbance will be created. Maintenance will continue until wells accessed by the existing roadway have been Plugged and Abandoned (P&A) and a Final Abandonment Notice (FAN) has been approved.

I. During interim reclamation, once drilling and completion phases are complete for all wells on location, the roadway will be reduced in size to a 14-foot-wide running surface with 0 pullouts, and appropriate water/erosion control on each side of the roadway. The roadway will measure approximately 22 feet wide from the bottom of the borrow ditch to the bottom of the barrow ditch assuming a 24-inch lift on the road with 2:1 shoulder to the bottom of the ditch (silt traps, culvert bell holes, and turnout ditches will extend beyond this). All remaining disturbed areas within the 30-foot access road corridor and exterior to borrow ditches and back slopes anticipated to be needed for long-term maintenance will be reseeded in efforts to reduce erosion. Any established cut and fill slopes (including any Temporary Use Areas (TUAS) used for cut and fill) will be reseeded only to preserve safe and stable slopes.

J. There are no steep slopes, side slopes, or large wash crossings requiring the need for additional TUAs beyond the 30-foot access road corridor.

K. Due to the short nature of the proposed roadway and lack of foreseen drainage concerns, no new culverts are anticipated to be needed. If culverts exist or are found to be needed to maintain a safe and stable roadway, they would be installed during construction and/or interim reclamation. There are no pullouts necessary for the proposed access road due to its short nature and full sight distance from the new access road takeoff to the well pad.

L. There are no Army Corps of Engineers designated Waters of the United States impacted by the proposed access road. No low water crossings would be required associated with the proposed action.

M. The existing access road does not cross any existing fence lines.

N. Enduring would maximize the use of native material within the project area to reduce or eliminate the need to haul in foreign material. This includes the use of sandstone surfacing material as opposed to foreign rock in this area. However, foreign materials such as pit run, gravel, road base, rip-rap cobblestone, and large boulders may be imported and used for reasons such as but not limited to elevating roadways, low water crossings, road surfacing, erosion control, culvert and cattle guard installations, natural barricade, surface replacement, and spot repairs. A map of potential borrowing sites where Enduring may obtain material can be found in Appendix D. The material sources have been labeled with the operator's name (if applicable) and legal location to the quarter-quarter. Material excavated during the establishment of silt traps and erosion control may also be used in construction project features.

O. BMPs for dust abatement will be utilized along the roads to reduce fugitive dust during construction, drilling, completion, and any other heavy traffic activities during the life of the project. Water application using a rear-spraying truck or other suitable means will be the primary method of dust suppression. If it is found to be necessary to apply commercial dust mitigation materials such as magnesium chloride, organic-based compounds, or polymer compounds; Enduring will seek approval from the appropriate surface managing agency. These dust mitigation measures may also be included as COAs attached to the approved APDs.

P. The final reclamation of the proposed access road is discussed in the associated Surface Reclamation Plan.

Q. Topsoil removal, storage, and protection are described in detail in the associated Surface Reclamation Plan.

5. Location of Existing Wells

Water wells and oil and gas wells (plugged and abandoned, active, and proposed) within a one-mile radius of the HCU 432H Project are depicted in Appendix B. There are 1 water well, 9 oil and gas wells (plugged and abandoned, active, or proposed) within a one-mile radius of the proposed well pad location.

6. Water Use and Applications

Please see Appendix C for the water transportation map identifying the locations of the supply wells.

During construction, freshwater sources would be used for the drill point and concrete casing. Fresh water would be used to dampen native soils as fill material is placed in lifts. This would promote adequate compaction on the fill slopes of the access road and well pad, as well as control fugitive dust.

During initial drilling, and post completion drill out operations, Enduring will use a consolidated 15,562 bbls of fresh water. This is inclusive of the HCU 432H (2,330 bbls), 434H (2,520 bbls), 436H (1,040 bbls), 438H (1,971 bbls) wells, and estimated 130 bbl rig wash. During well pad, road improvements and dust abatement, an estimated 7,571 bbls of water is estimated to meet improvement requirements.

The estimates are general and predicted using average past water volume usage for similar activities. Variables that can significantly affect these volumes include but are not limited to, soil type, grain size, grain shape, recent weather events, relative humidity, time of year, and soil moisture holding capacity.

Fresh water is additionally used on an as-needed basis for dampening native soils to maximum dry density using American Society for Testing and Materials (ASTM) standards to achieve acceptable engineered compaction, dust suppression along dirt roadways during drilling, completion, and any other operations where heavy traffic may be anticipated. The total amount applied during these activities is all dependent upon, but not limited to, the length of the dirt road, weather conditions, relative humidity, density of traffic, and duration of traffic.

During completion operations, Enduring predicts using a consolidated 650,912 bbls of non-potable brine water from a non-potable formation, produced water, and recycled water. This is inclusive of the HCU 432H (191,900 bbls), 434H (207,100 bbls), 436H (88,700 bbls), and 438H (163,212 bbls). Sources of these fluids and the process of recycling are discussed further below.

During completion operations, Enduring would use non-potable water from a non-potable water-bearing formation. Enduring may also utilize produced water gathered from their existing wells within the Mancos Gallup area. Produced water may be gathered and delivered to the HCU 432H Project via existing underground pipeline infrastructure and trucks. Produced water gathered at Shiprock San Juan, LLC's 4-1 CDP may also be tracked and used during completion operations. Flowback water from completion operations will be recycled for reuse. These non-potable sources will be gathered, stored, treated, and recycled at any of Enduring's Water Recycling Facilities.

Enduring filters and separates water contained within their recycling facilities in three phases. Phase one includes the retention of water within a 750 bbl water leg that separates 100-micron oil droplets and sediment/particles. Phase two, downstream of the water leg, water passes through a large coalesquer filter with estimated 30-micron oil droplet removal capabilities. The final phase of filtration before entering the containment includes passing through two filter pots in parallel containing bag or cartridge filters. These filters can vary in micron filtration sizing dictated by the solids recovered, likely, a range between 10-50 microns. Enduring will size bag or cartridge filters as necessary during operations. The average Entrada water supply well total dissolved solids (TDS) are 10,000+.

Flowback water from completion activities will be recycled and returned to an Enduring water recycling facility for reuse. Flowback water may contain solids, oil, and produced water when immediately returned from the wellbore. Before the water leaves the completion location, it will pass through the permanent facilities on location if built and commissioned or pass through a temporary treatment facility on location. Treatment will remove oil and solids before leaving the location. Flowback water may additionally pass through the permanent water treatment facility at the containment location before entering the containment if necessary. Flowback water within containment after treatment and filtration may contain a mixture of produced water and supply water from the Entrada Formation used for the stimulation process.

Enduring will fill and store water in all their water recycling containments and Above-Ground Storage Tanks (ASTs) for anticipated use during drilling and completion activities. Filling containments and ASTs via Entrada supply wells will begin no later than four to five working weeks before drilling and completion activities commence unless supplementary sources are used in addition thereto. Enduring provides all stimulation fluid properties and additives through the Frac Focus site established for reporting to State and Federal Agencies. See Frac Focus for stimulation fluid components.

7. LOCATIONS AND TYPES OF WATER SUPPLY

Fresh water would be obtained from the following location(s):

5.3. Smelser (POD No. RG06855)

- The Smelser Well is located in the northeast ¼ of the northeast ¼ of Section 9, Township 21, North Range 2 West, NMPM. The well is located at Latitude 36.069826° North and Longitude -107.04718° West. This source is located on private lands. Transportation from source will be via truck.

5.4. Blanco Trading Post (POD No. SJ02105)

- The Blanco Trading Post Well is located in the southwest ¼ of the northeast ¼ of Section 32, Township 25 North, Range 9 West, NMPM. The well is located at Latitude 36.359802° North and Longitude -

107.810310° West. This source is located on State of New Mexico lands managed by the New Mexico State Lands Office (NMSLO). Transportation from source will be via truck.

Non-Potable water would be obtained from the following location(s):

Enduring Resources NEU 2207-16B Water Recycling Facility

The NEU 2207-16B Water Recycling Facility is located in the Northwest ¼ of the Northeast ¼ of Section 16, Township 22 North, Range 9 West, NMPM. The supply well is located at Latitude 36.143567° North and Longitude -107.576013° West. This water recycling Facility is located on State of New Mexico lands managed by the NMSLO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources WLU 2309-24N Water Recycling Facility

The WLU 2309-24N Water Recycling Facility is located in the Southeast ¼ of the Southwest ¼ and Southwest ¼ of the Southeast ¼ of Section 24, Township 23 North, Range 9 West, NMPM. The supply well is located at Latitude 36.205932° North and Longitude -107.741568° West. This water recycling Facility is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources KWU 2309-19K Water Recycling Facility

The KWU 2309-19K Water Recycling Facility is located in the Northeast ¼ of the Southwest ¼ of Section 19, Township 23 North, Range 9 West, NMPM. The supply well is located at Latitude 36.210181° North and Longitude -107.831776° West. This water recycling Facility is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources SEU 2206-20O Water Recycling Facility

The SEU 2206-20O Water Recycling Facility is located in the Southwest ¼ of the Southeast ¼ of Section 20, Township 22 North, Range 6 West, NMPM. The supply well is located at Latitude 36.117342° North and Longitude -107.488712° West. This water supply well is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources NEL 2306-06P Water Recycling Facility

The NELC 2306-06P Water Recycling Facility is located in the South ½ of Section 14, Township 22 North, Range 8 West, NMPM. The supply well is located at Latitude 36.310147° North and Longitude -107.651626° West. This water supply well is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

8. CONSTRUCTION MATERIALS

A. Enduring will maximize the use of native material within the proposed project area to reduce or eliminate the need to haul in foreign material.

B. All surface infrastructure would be constructed utilizing native borrow within the permitted area to create a balanced working surface. Surfacing material or fill material, such as sandstone, gravel, pit run, or road base would be used if needed and economically viable and obtained from an approved location.

C. Material may be imported and used for any of the following reasons; low water crossings (pit run and road base), road surfacing (road base, gravel, or sandstone), erosion control (riprap cobblestone), barricades (boulders), under and surrounding equipment (gravel), and filling soft or muddy areas (sandstone, pit run, road base, or gravel).

D. A map of borrow pit locations where Enduring may obtain material can be found in Appendix D. The borrow pits are labeled with the operating company name if applicable and the legal location of the quarter-quarter.

E. Range ponds are not currently proposed to be constructed for the construction of the HCU 432H Project.

9. METHODS FOR HANDLING WASTE

A. Cuttings:
- Drilling operations will utilize a closed-loop system. Drilling of the horizontal laterals will be accomplished with water-based mud. Oil-based mud could be used contingent on the formation properties encountered.
- All cuttings will be placed in roll-off bins and hauled to a commercial disposal facility or land farm. Enduring will follow Onshore Oil and Gas Order No. 1 regarding the placement, operation, and removal of closed-loop systems. No blow pit will be used.
- Closed-loop tanks will be adequately sized for the containment of all fluids.

B. Drilling Fluids:
- Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted closed-loop systems or disposed of at a designated facility.

C. Spills:
- Any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site.

D. Sewage
- Portable toilets will be provided and maintained as needed during construction.

E. Garbage and other waste material
- All garbage and trash will be placed in enclosed metal trash containers. The trash and garbage will be hauled off-site and dumped in an approved landfill, as needed.

F. Hazardous Waste
- No chemicals subject to reporting under Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completion of these wells.
- No extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.
- All fluids (i.e., scrubber cleaners) used during the washing of production equipment will be properly disposed of to avoid ground contamination or hazards to livestock or wildlife.

G. Flowback:
- Flowback transported off location/through temporary flowback equipment will consist of approximately 1,000 bbls of produced water per day per well for approximately 14 days. After this flow-back period, production will be sent to the permanent facility for processing.
- Flowback fluid will be gathered, recycled, and reused as described in Section 5. If there are no foreseeable drilling and completion operations, flow back will be disposed of at one of the disposal wells listed below.

H. Produced water will be hauled by truck and/or if permitted, transported through below-grade or surface pipeline infrastructure to any of Enduring's water recycling facilities. Produced water may be gathered and used in future drilling and completion operations as an alternative disposal method.

I. Enduring will dispose of produced water at the following facilities:
- Disposal 001, API 30-045-26862, operated by Basin Disposal Inc., located in the Southeast ¼ of the Northwest ¼, Section 3, Township 29 North, Range 11 West.
- Sunco Disposal 001, API 30-045-28653, operated by Agua Moss, LLC, located in the Southwest ¼ of the Northwest ¼, Section 2, Township 29 North, Range 12 West.
- Pretty Lady 30 11 34 001, API 30-045-30922, operated by Agua Moss, LLC, located in the Northwest ¼ of the Southeast ¼, Section 34, Township 30 North, Range 11 West.

- NE Lybrook SWD 001, API 30-039-31378, operated by Enduring Resources IV, LLC, located in the Northwest ¼ of the Southeast ¼ of Section 13, Township 23 North, Range 7 West.
- W Lybrook 2309 24N SWD 001, API 30-045-38292, operated by Enduring Resources IV, LLC, located in the Southeast ¼ of the Southwest ¼ of Section 24, Township 23 North, Range 9 West.

10. PLANS FOR SURFACE RECLAMATION

A Surface Reclamation Plan for the HCU 432H Project has been provided as a separate document. The project-associated Surface Reclamation Plan was prepared in accordance with Onshore Oil and Gas Order No. 1 and the BLM Bare Soil Reclamation Procedures.

The Surface Reclamation plan addresses:

- Configuration of the reshaped topography;
- Drainage systems;
- Segregation of spoil material;
- Surface disturbances;
- Backfill requirements;
- Redistribution of topsoil;
- Soil treatments;
- Seeding or other steps to reestablish vegetation;
- Weed control;
- and practices necessary to reclaim all disturbed areas.

11. SURFACE OWNERSHIP

The project is located on public lands managed by the BLM-FFO

Bureau of Land Management Farmington Field Office
6251 College Boulevard, Suite A
Farmington, New Mexico 87402
(505) 564-7600

12. OTHER INFORMATION

A. Enduring's appointed construction contractors will call New Mexico One-Call (or equivalent) to identify the location of any marked or unmarked pipelines or cables located in proximity to the proposed HCU 432H Project or any other areas proposed to have ground disturbances at least two working days before ground disturbance.

B. The construction phase of the project will commence upon receipt of an approved APD. The BLM-FFO will be notified via phone or email at least 48 hours before the start of construction activities associated with the project.

C. All activities associated with the construction, use/operation, maintenance, and abandonment or termination of the HCU 432H Project will be limited to areas approved in the APDs.

D. The project area has been surveyed by the Division of Conservation Archeology (DCA). The cultural survey report has been submitted directly to the surface managing agencies. Cultural mitigation, monitoring, and implementation of site protection barriers will occur if stipulated in the COAs attached to the approved APDs.

E. Per BLM at the June 27, 2023, onsite, a biological survey would not be required as no new surface is permitted or anticipated disturbance resultant of project approval and implementation. Any necessary protection of flora and fauna, Special Status Species (SSS), wildlife, migratory birds, water resources, and air resources will occur if stipulated in the COAs attached to the approved APDs or stipulations in the ROW grants.

F. Construction and maintenance activities will cease if soil or road surfaces become saturated to the extent that construction equipment is unable to stay within the project area and/or when activities cause irreparable harm to roads, soils, or streams.

G. All BLM-FFO general COAs will apply to this proposed action.

Appendix A. SURVEY PLATS

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	13379	COUNSELOR GALLUP-DAKOTA OIL POOL

[4] Property Code	[5] Property Name	[6] Well Number
	HAYNES CANYON UNIT	432H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372286	ENDURING RESOURCES, LLC	6689'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	3	23N	6W		1773	NORTH	303	WEST	RIO ARRIBA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	11	23N	6W		234	SOUTH	2592	EAST	RIO ARRIBA

[12] Dedicated Acres		[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
680.00	SW/4 NW/4, N/2 SW/4, SE/4 SW/4 SW/4 SE/4 - Section 3, T23N, R6W SE/4 NE/4 - Section 4, T23N, R6W NE/4, NE/4 SE/4 - Section 10, T23N, R6W SW/4 NW/4, SW/4 SW/4 SE/4 - Section 11, T23N, R6W			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

[17] OPERATOR CERTIFICATION

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

Signature 8/23/23
Date

Heather Huntington
Printed Name

hhuntington@enduringresources.com
E-mail Address

[18] SURVEYOR CERTIFICATION

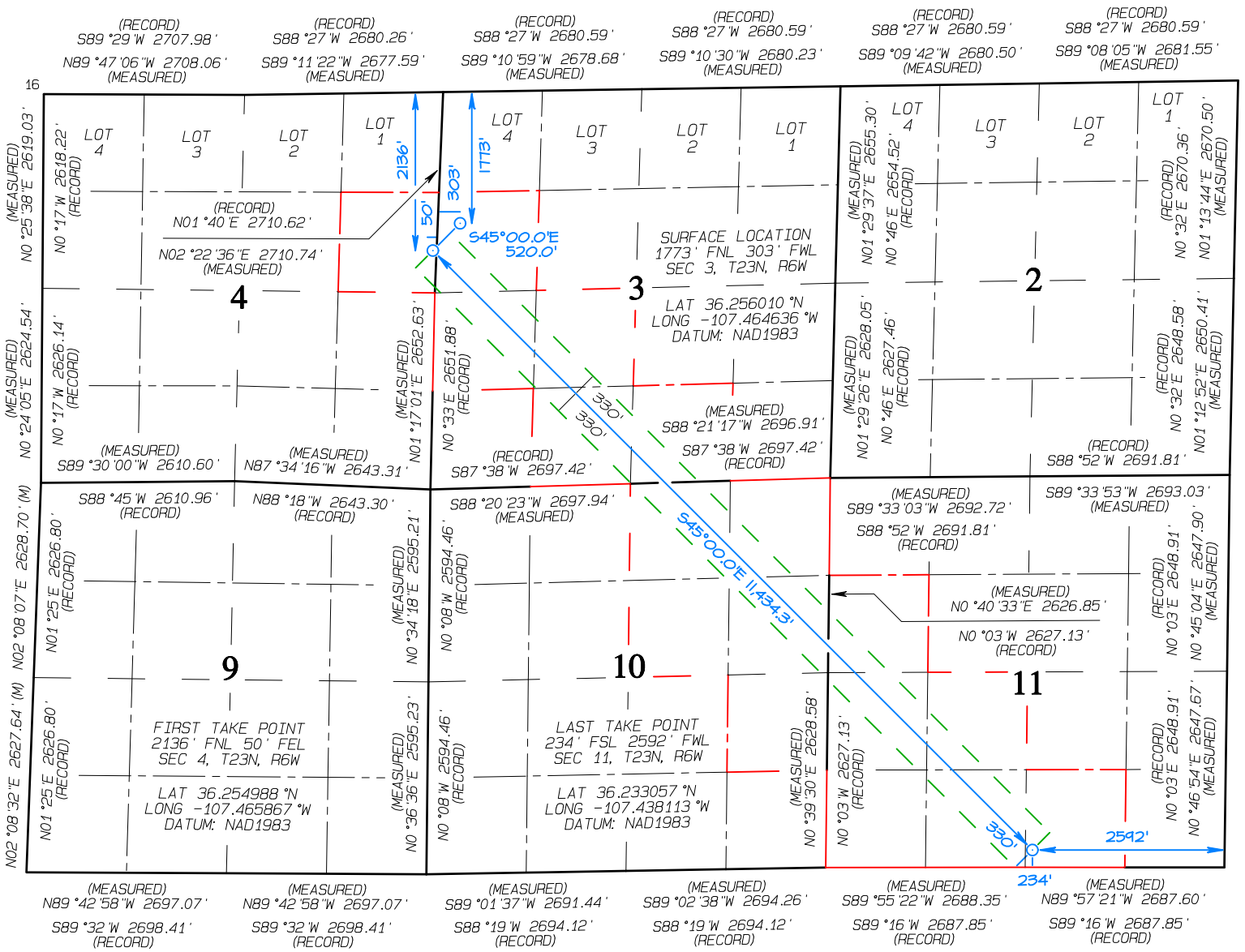
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: AUGUST 22, 2023
Date of Survey: APRIL 8, 2023

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269



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	HAYNES CANYON UNIT	432H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372286	ENDURING RESOURCES, LLC	6689'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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Heather Huntington 8/23/23
Signature Date

Heather Huntington
Printed Name

hhuntington@enduringresources.com
E-mail Address

[18] SURVEYOR CERTIFICATION

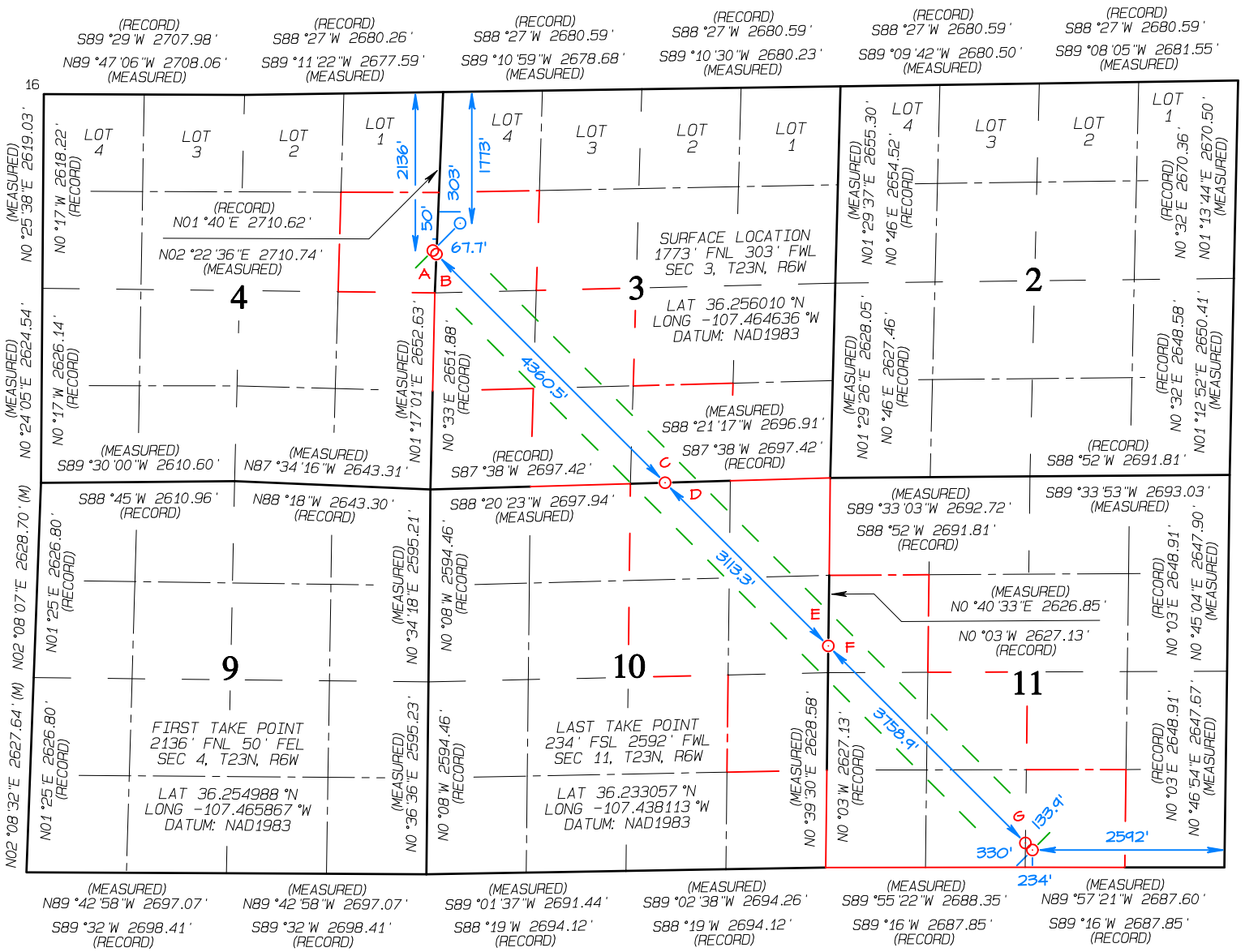
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: AUGUST 22, 2023
Date of Survey: APRIL 8, 2023

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269



LEASE X-ING (A)
2187' FNL 0' FEL
SEC 4, T23N, R6W

LAT 36.254858 °N
LONG -107.465703 °W
DATUM: NAD1983

LEASE X-ING (B)
2187' FNL 0' FWL
SEC 3, T23N, R6W

LAT 36.254858 °N
LONG -107.465703 °W
DATUM: NAD1983

LEASE X-ING (C)
0' FSL 2229' FEL
SEC 3, T23N, R6W

LAT 36.246496 °N
LONG -107.455117 °W
DATUM: NAD1983

LEASE X-ING (D)
0' FNL 2229' FEL
SEC 10, T23N, R6W

LAT 36.246496 °N
LONG -107.455117 °W
DATUM: NAD1983

LEASE X-ING (E)
2266' FNL 0' FEL
SEC 10, T23N, R6W

LAT 36.240524 °N
LONG -107.447560 °W
DATUM: NAD1983

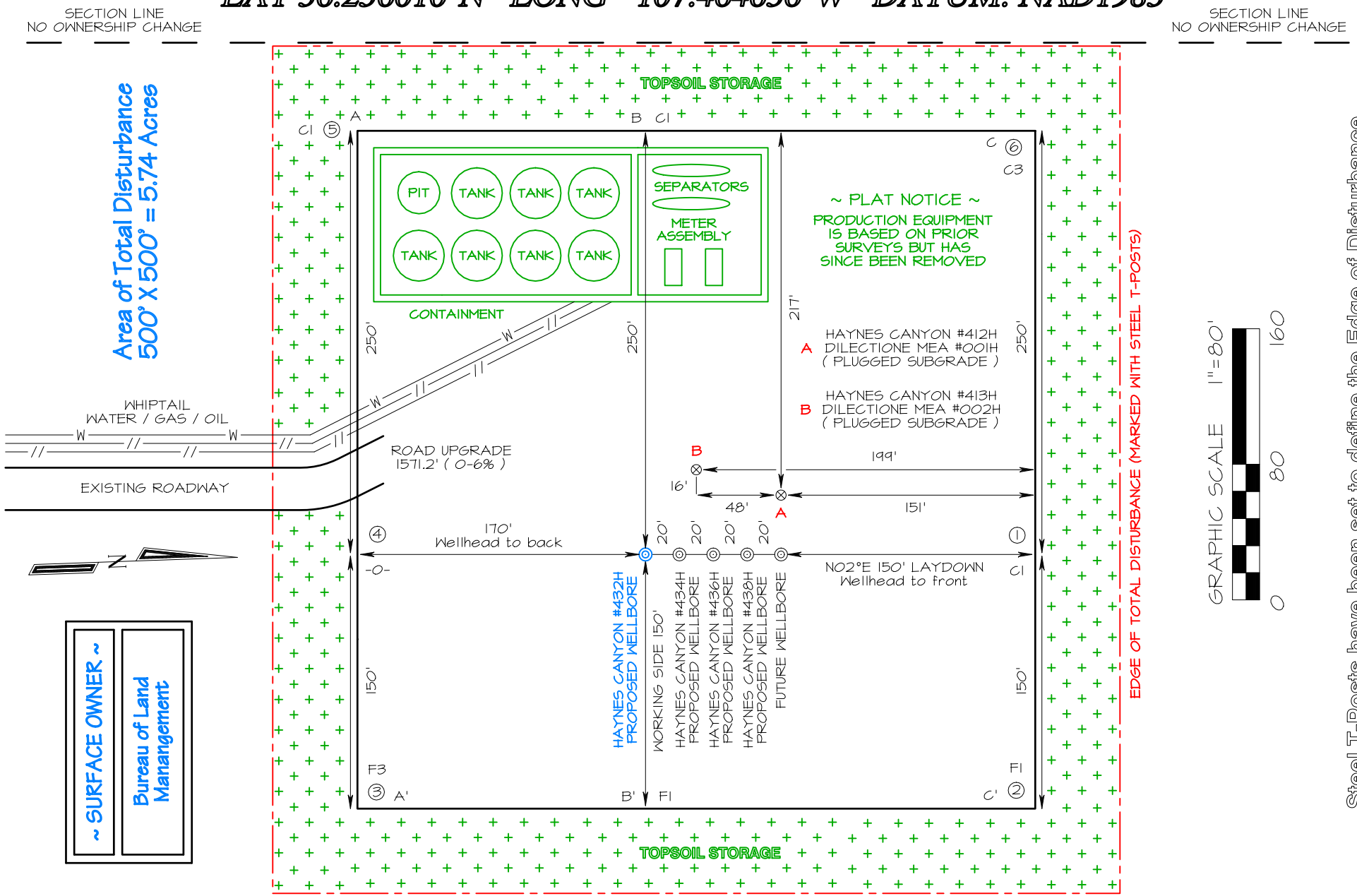
LEASE X-ING (F)
2266' FNL 0' FWL
SEC 11, T23N, R6W

LAT 36.240524 °N
LONG -107.447560 °W
DATUM: NAD1983

LEASE X-ING (G)
328' FSL 2688' FWL
SEC 11, T23N, R6W

LAT 36.233314 °N
LONG -107.438438 °W
DATUM: NAD1983

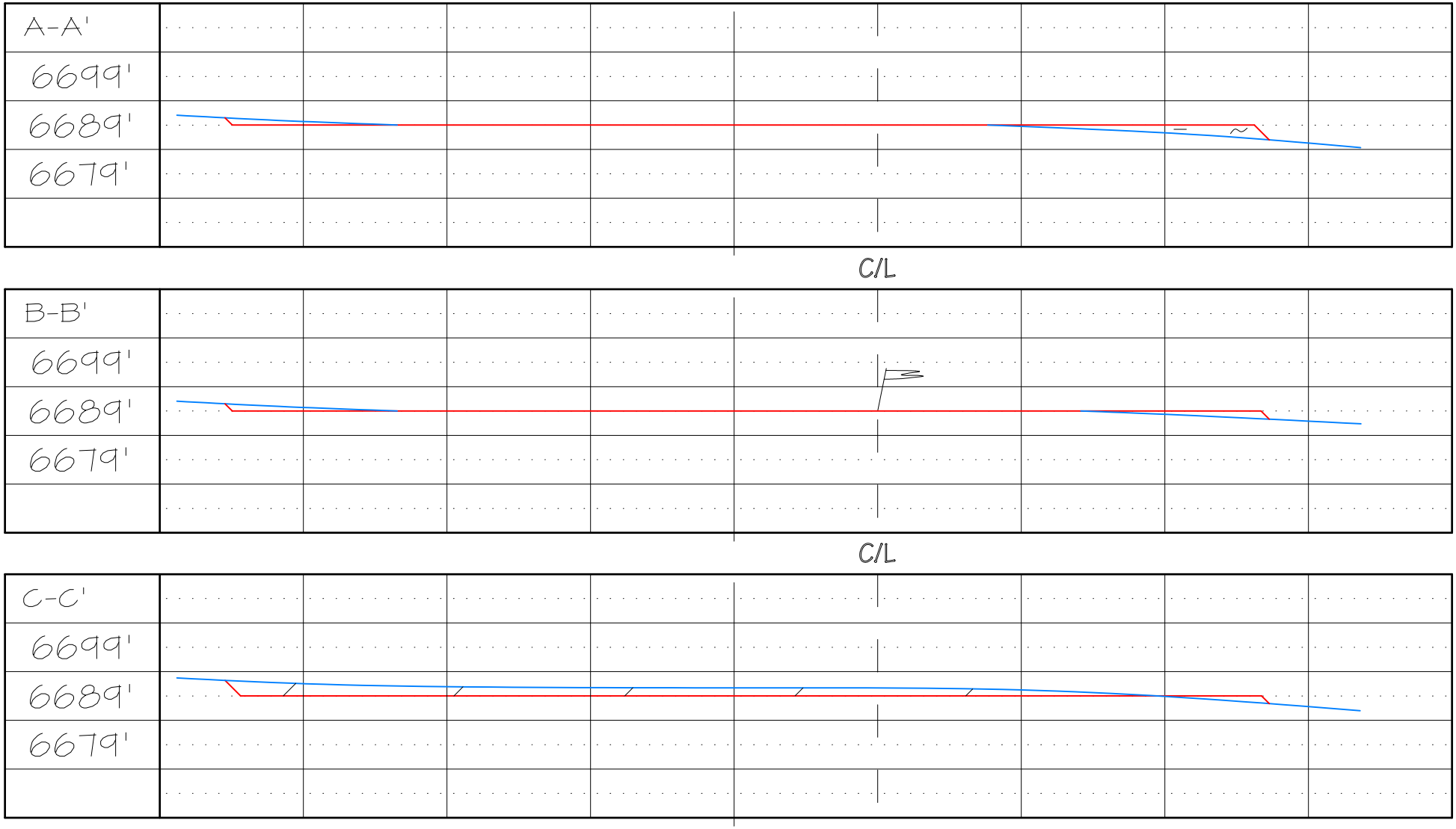
ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
1773' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'
LAT 36.256010°N LONG -107.464636°W DATUM: NAD1983



Steel T-Posts have been set to define the Edge of Disturbance limits which are 50' offset from the edge of the staked wellpad.

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
1773' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'

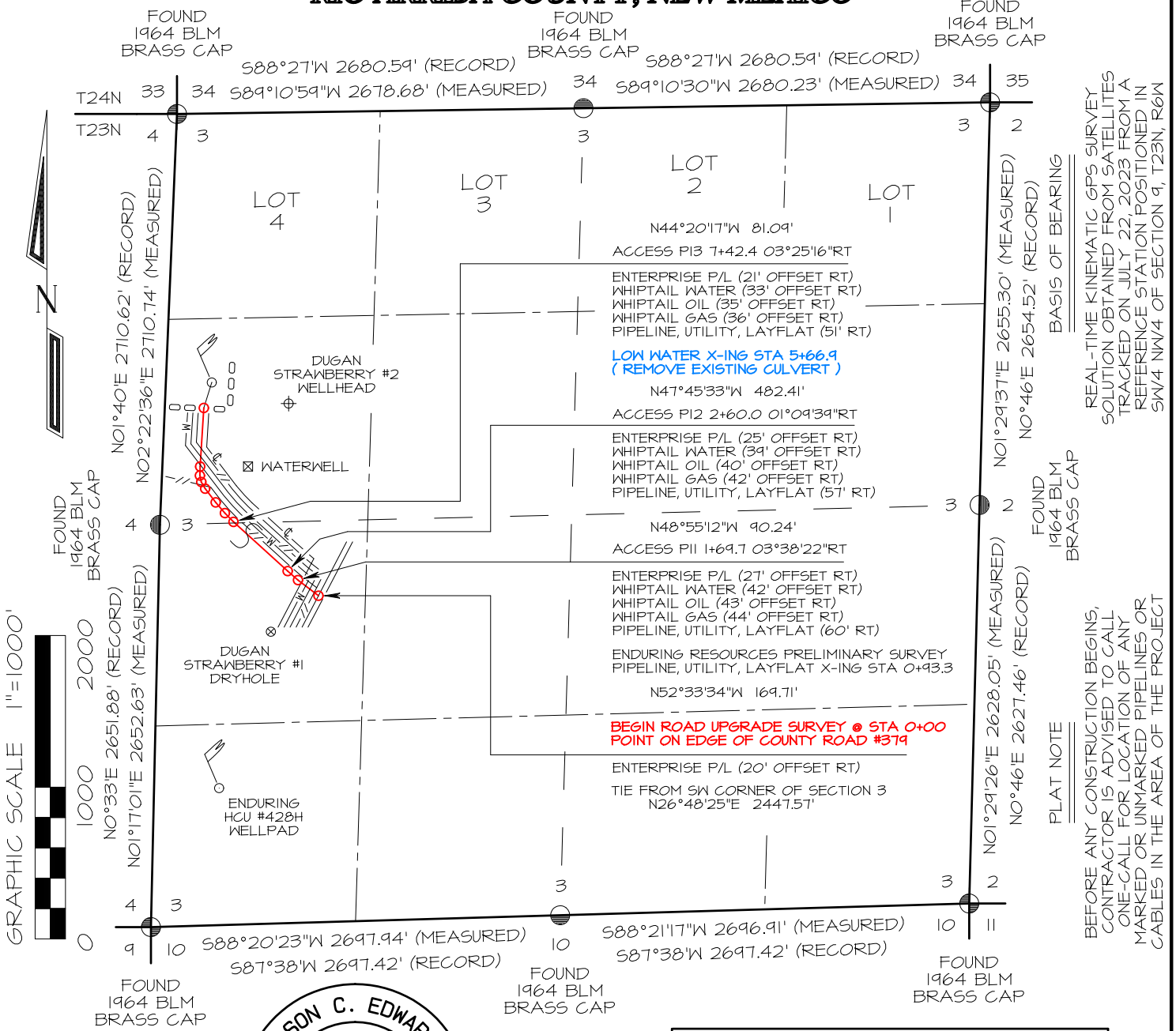
HORIZONTAL SCALE 1"=55' VERTICAL SCALE 1"=30'



EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 15+71.2	1571.2 FT / 95.2 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 22, 2023

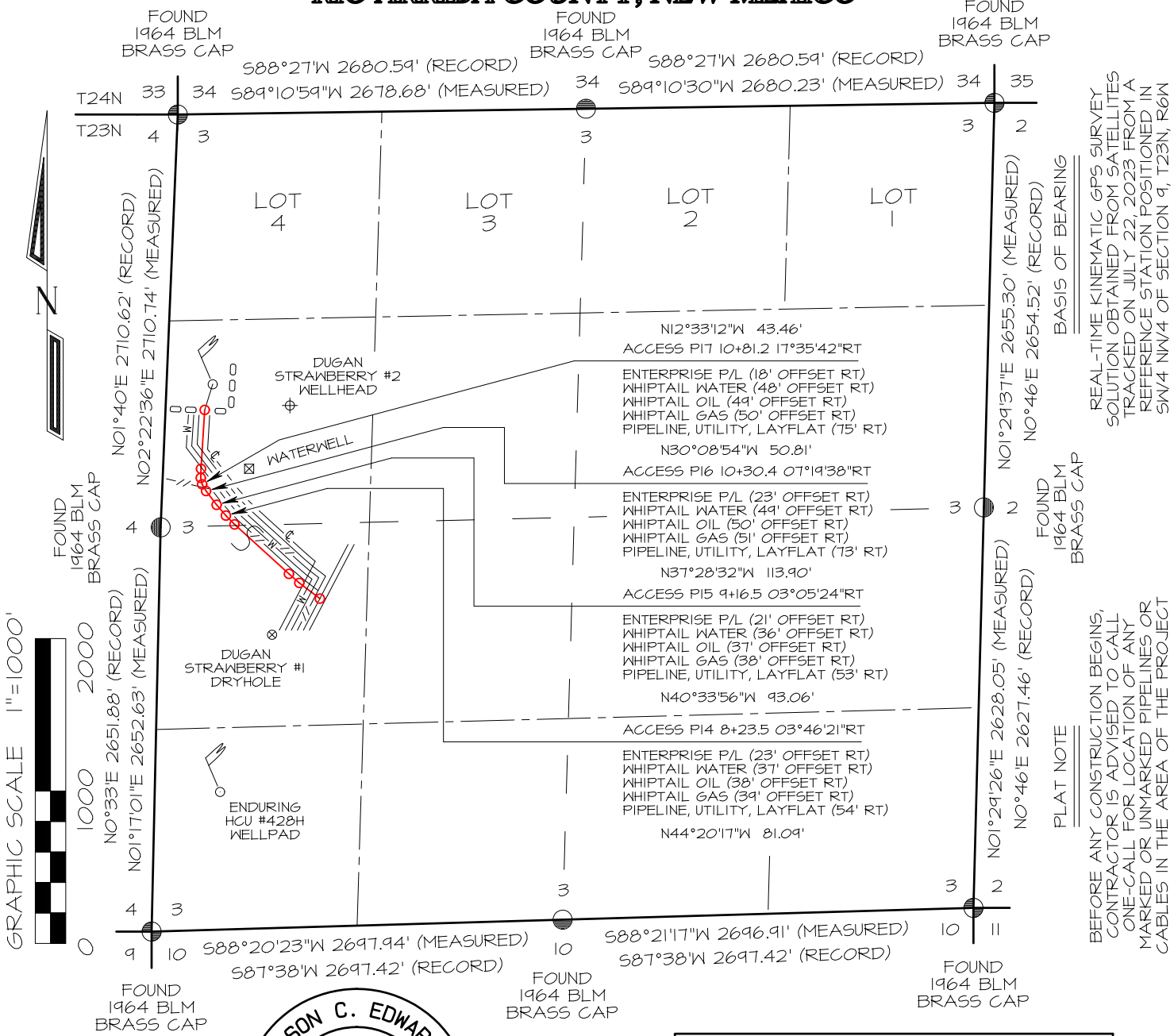
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 6 OF 14
FILENAME: 2363MAP1

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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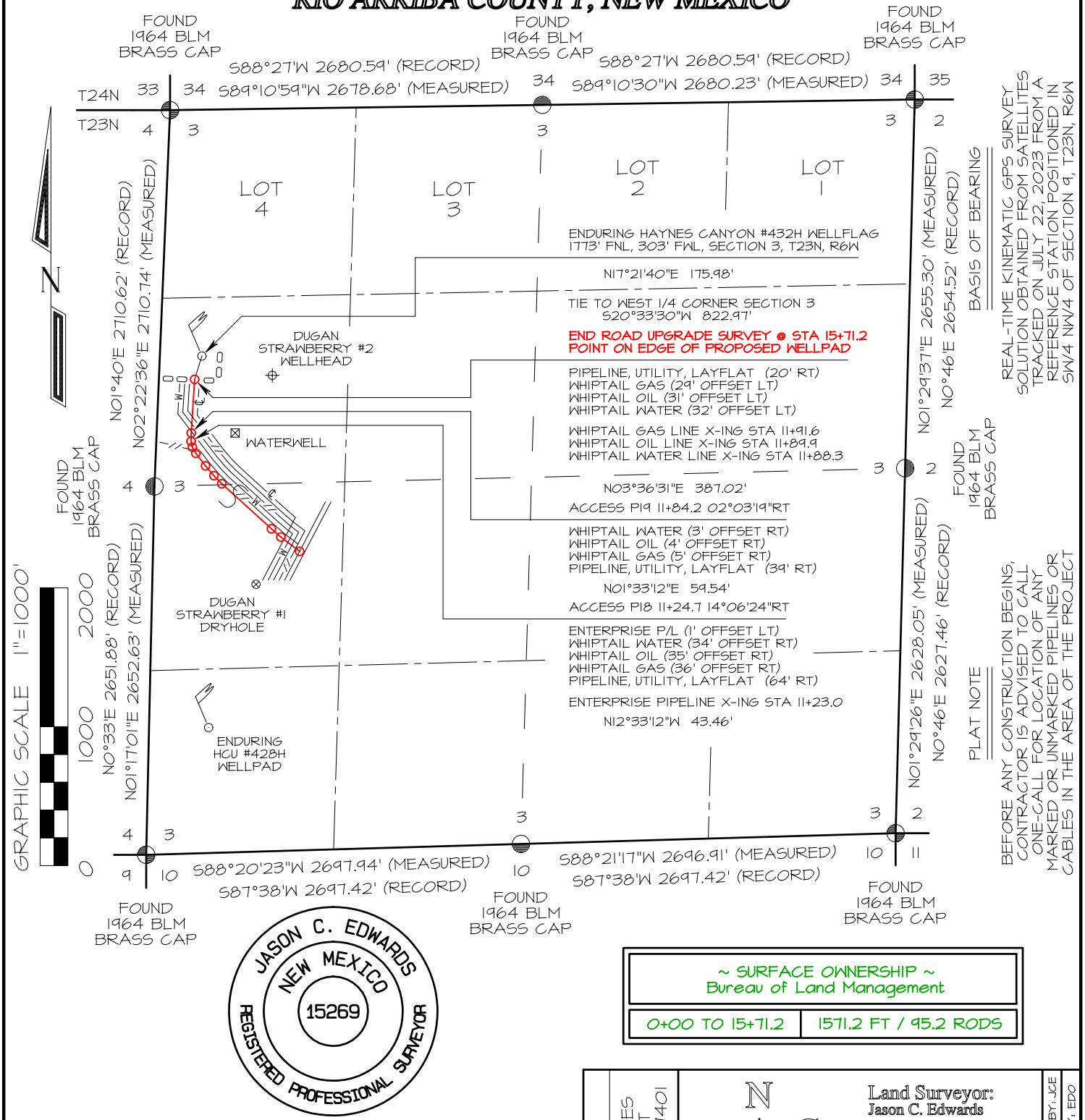
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 7 OF 14
FILENAME: 2363MAP2

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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200 ENERGY COURT
FARMINGTON, NM 87401

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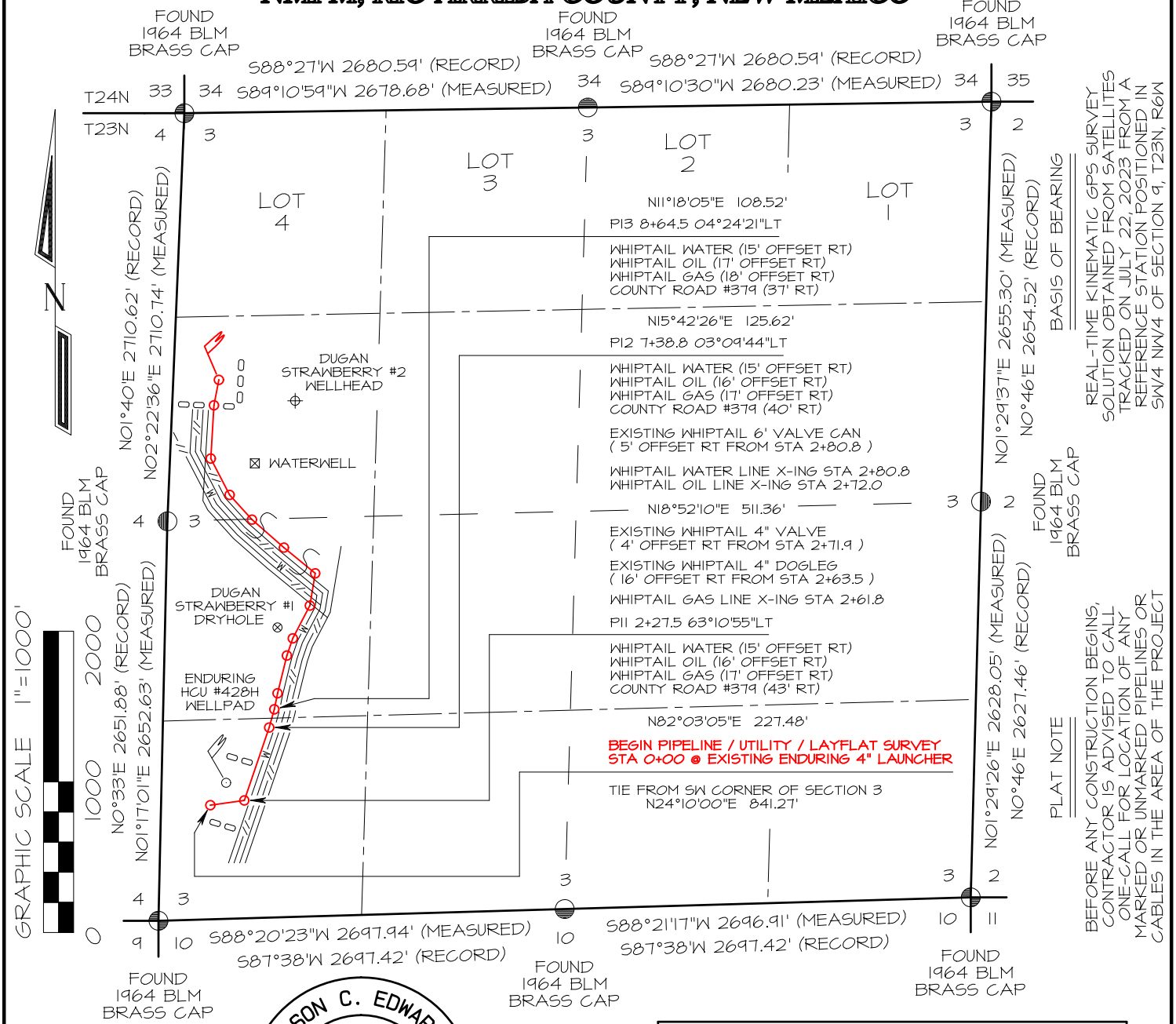
(505) 486-1695 (Office)
ncesurveys@comcast.net
SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 8 OF 14
FILENAME: 2363MAP3

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 33+83.8	3383.8 FT / 205.1 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 22, 2023

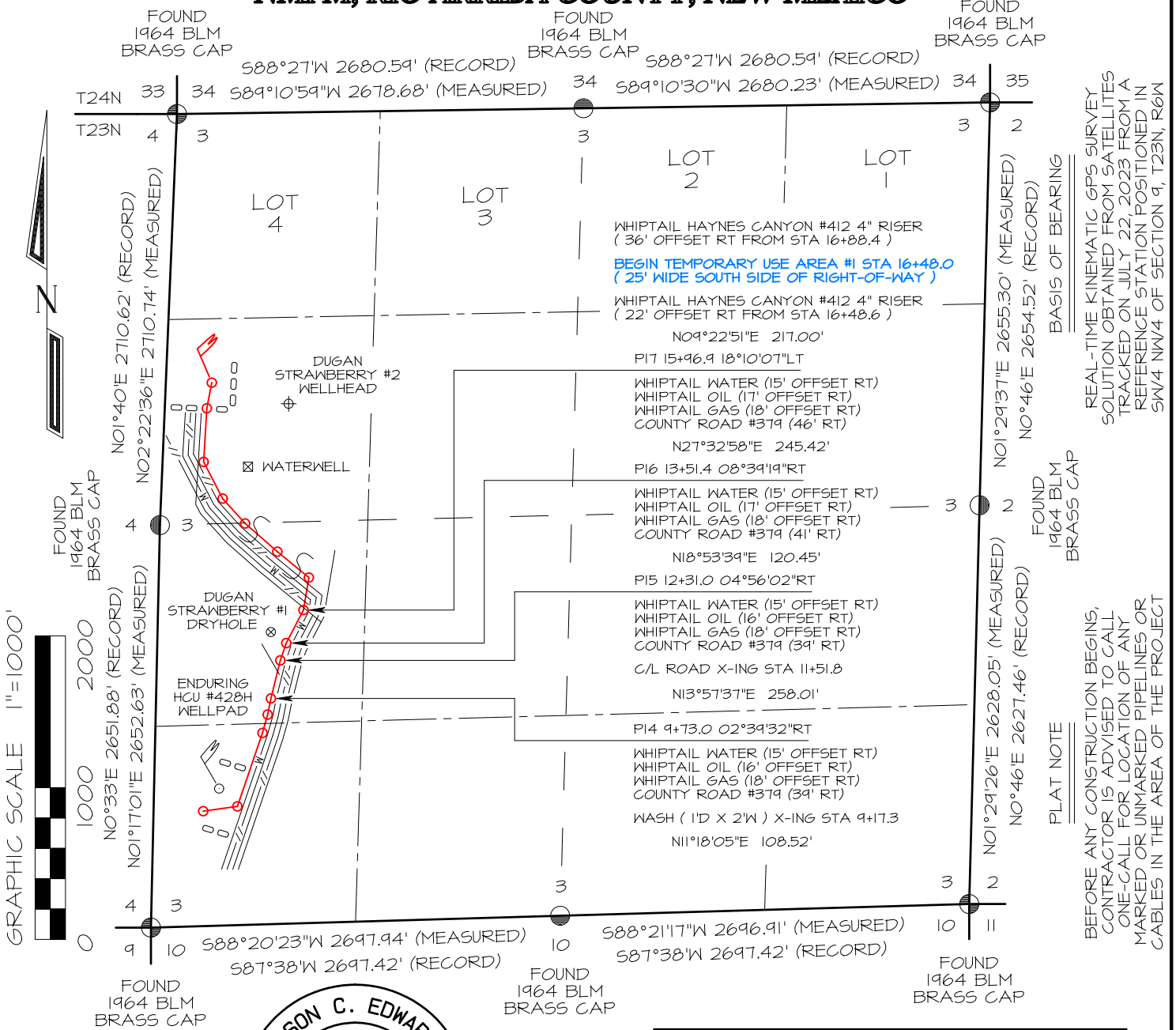
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 9 OF 14
FILENAME: 2363MGPI

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



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Mailing Address:
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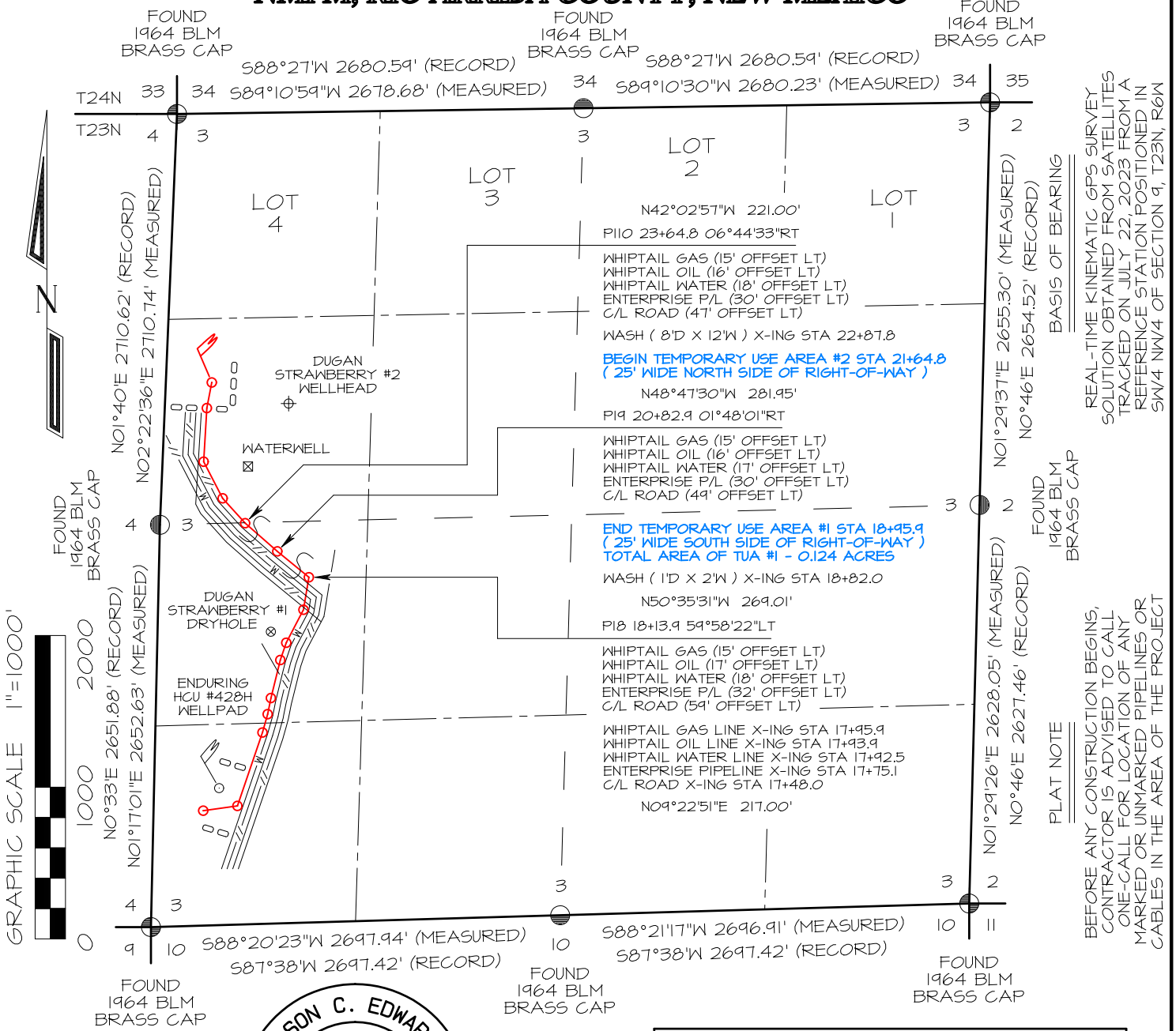
SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 10 OF 14
FILENAME: 2363MGP2

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
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JASON C. EDWARDS Date: August 22, 2023

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
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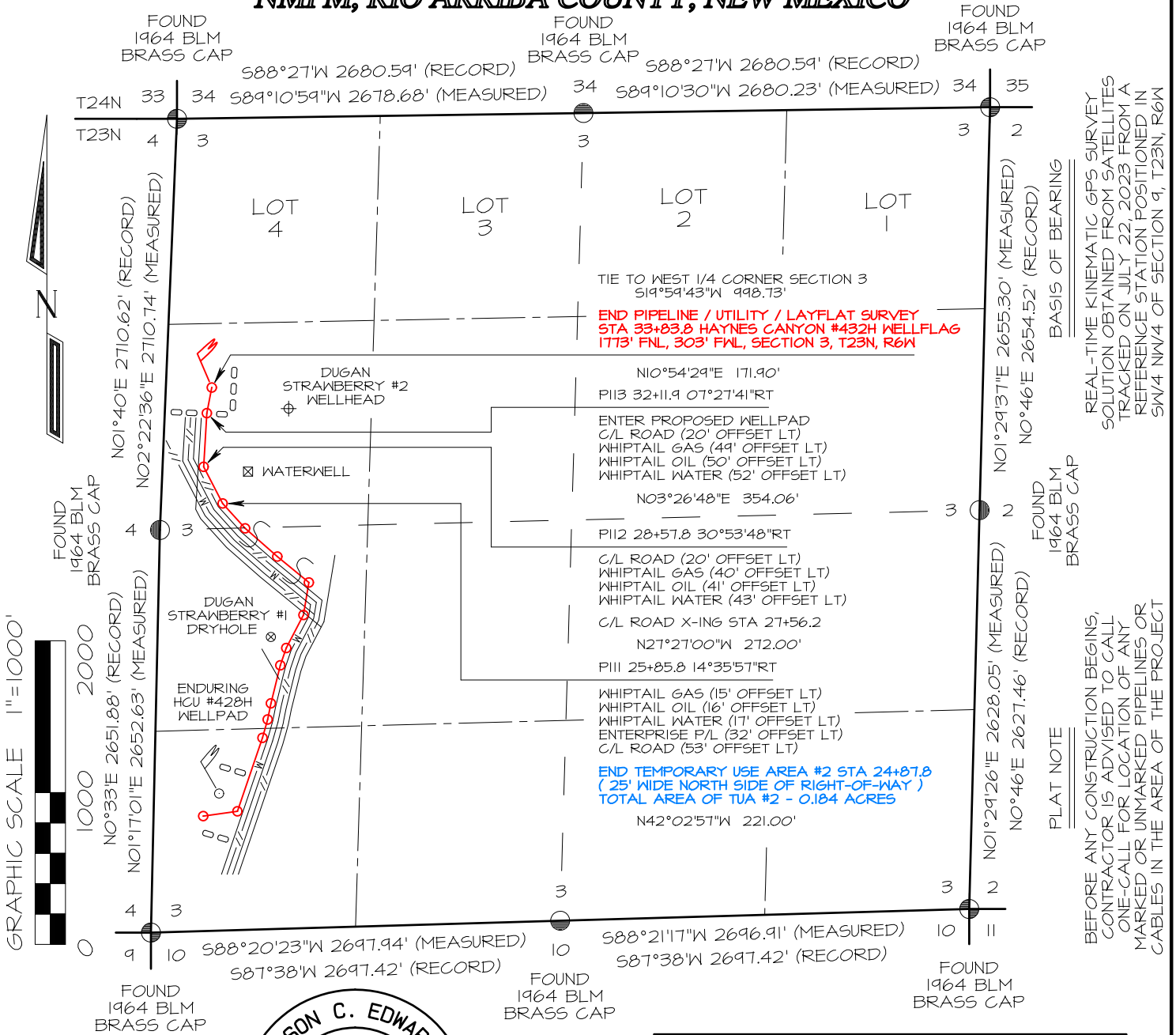
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 11 OF 14
FILENAME: 2363MGP3

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 33+83.8	3383.8 FT / 205.1 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

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JASON C. EDWARDS Date: August 22, 2023

Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
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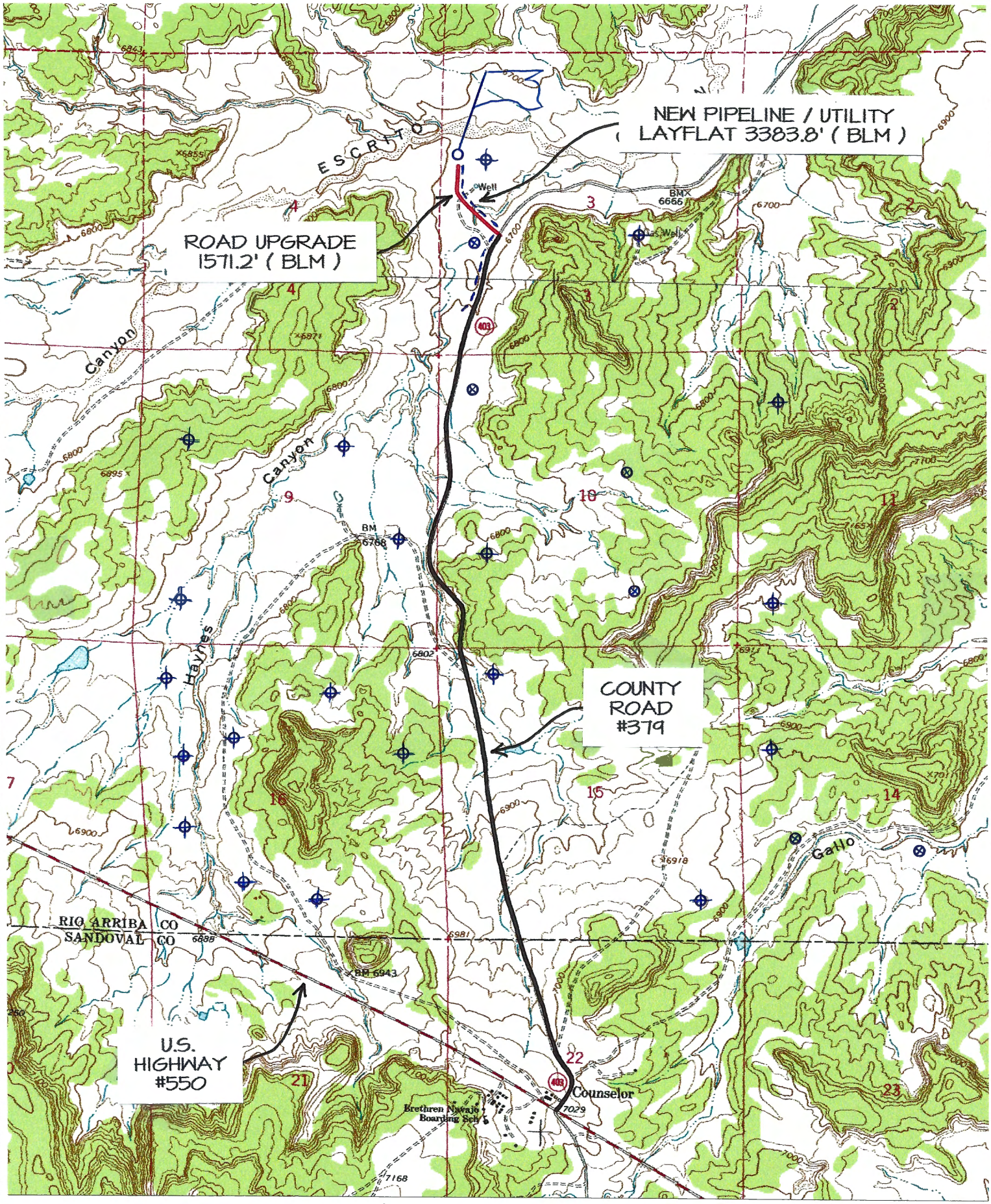
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 12 OF 14
FILENAME: 2363MGP4

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H

1773' FNL & 303' FWL, SECTION 3, T23N, R6W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : COUNSELOR ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #432H

1773' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256010°N Longitude -107.464636°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

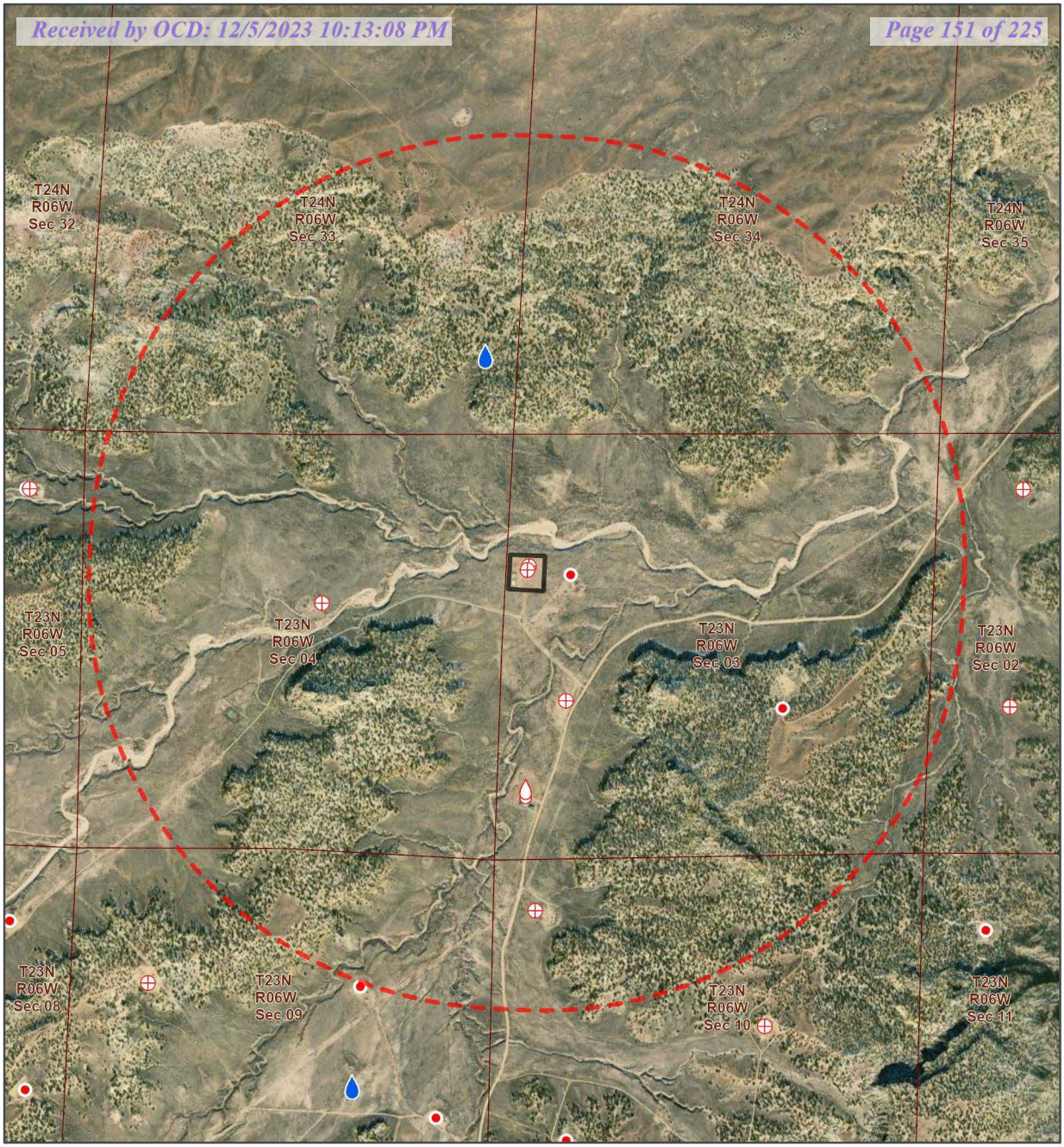
Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #432H existing location.

Appendix B. EXISTING WELLS WITHIN 1 MILE



HCU 432H Project | Wells Within 1 Mile

OSE Points of Diversion

Wellpad

1 Mile Buffer

Oil and Gas Well Status

Active

New

Plugged (site released)

Wells	Within 1 Mile	Within Map Extent
OSE Points of Diversion	1	2
Active O&G	2	9
New O&G	0	2
Plugged (site released) O&G	5	9

Rio Arriba County, NM
NAD 1983 BLM Zone 13N
36.2561°N 107.4645°W

0 1,000 2,000 Feet
0 250 500 Meters

N

1:25,000

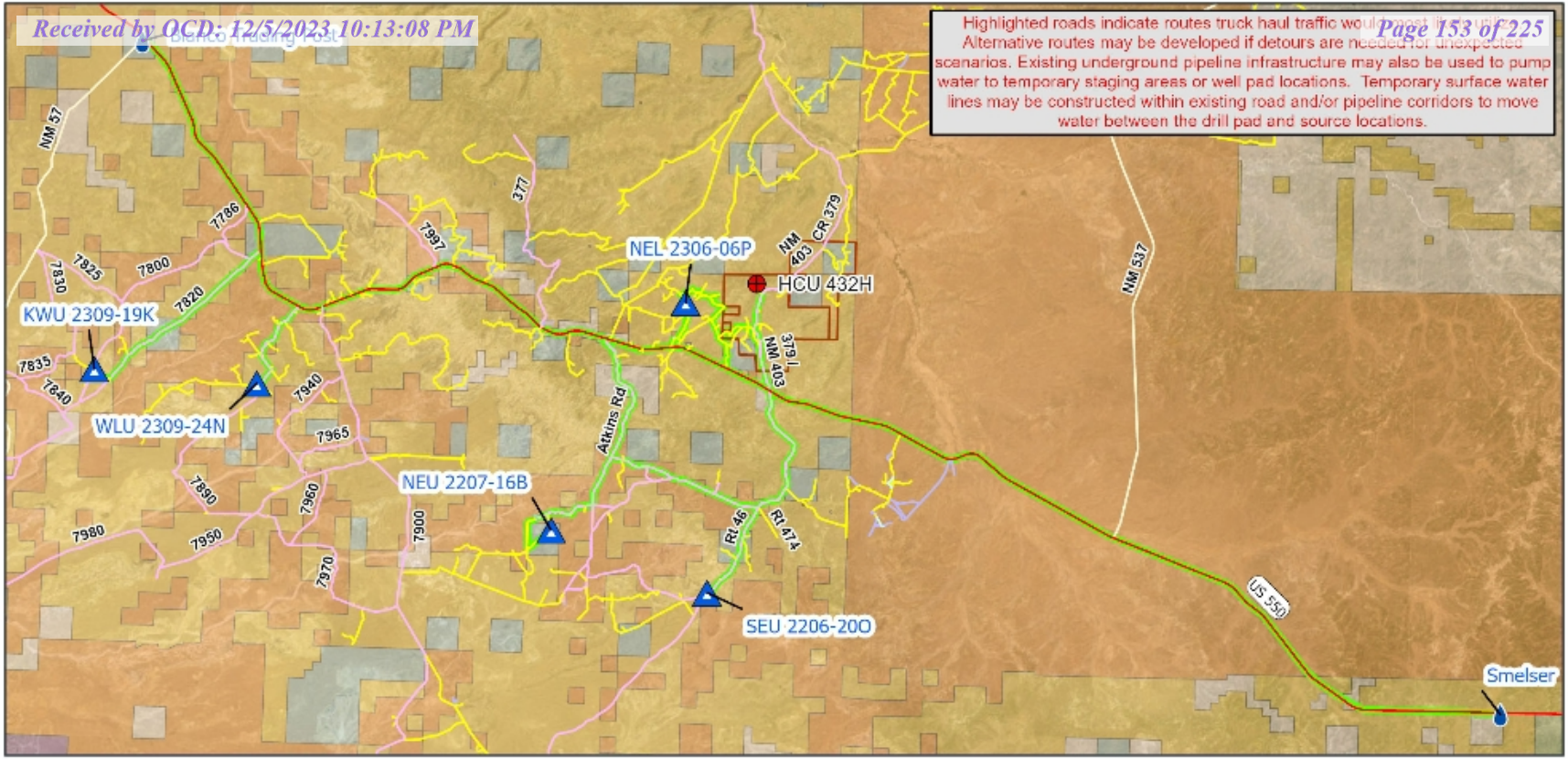
Base Map: ESRI ArcGIS Online, accessed August 2023
Updated: 8/4/2023
Project No. 75253p36
Layout: 253p36_HCU_432_Wells_Within_1Mile
Aprx: 75253p36_HCU432

SWCA ENVIRONMENTAL CONSULTANTS

ENDURING RESOURCES, LLC

Appendix C. WATER TRANSPORTATION MAP

Highlighted roads indicate routes truck haul traffic would travel. Alternative routes may be developed if detours are needed for unexpected scenarios. Existing underground pipeline infrastructure may also be used to pump water to temporary staging areas or well pad locations. Temporary surface water lines may be constructed within existing road and/or pipeline corridors to move water between the drill pad and source locations.



HCU 432H Project | Water Transportation

- HCU 432H
- Potable Water Sources
- Non-Potable Water Sources
- Potential Truck Routes
- Access, Dirt
- County
- Highway
- Private
- Reclaim
- State

Land Ownership

- BLM
- USFS
- Tribal
- NPS
- Private
- State

- Unit Boundary

San Juan, Rio Arriba, and Sandoval County, NM
NAD 1983 UTM Zone 13N
36.2141°N 107.449°W

0 10,000 20,000 Feet
0 3,000 6,000 Meters

N

1:345,000

New Mexico

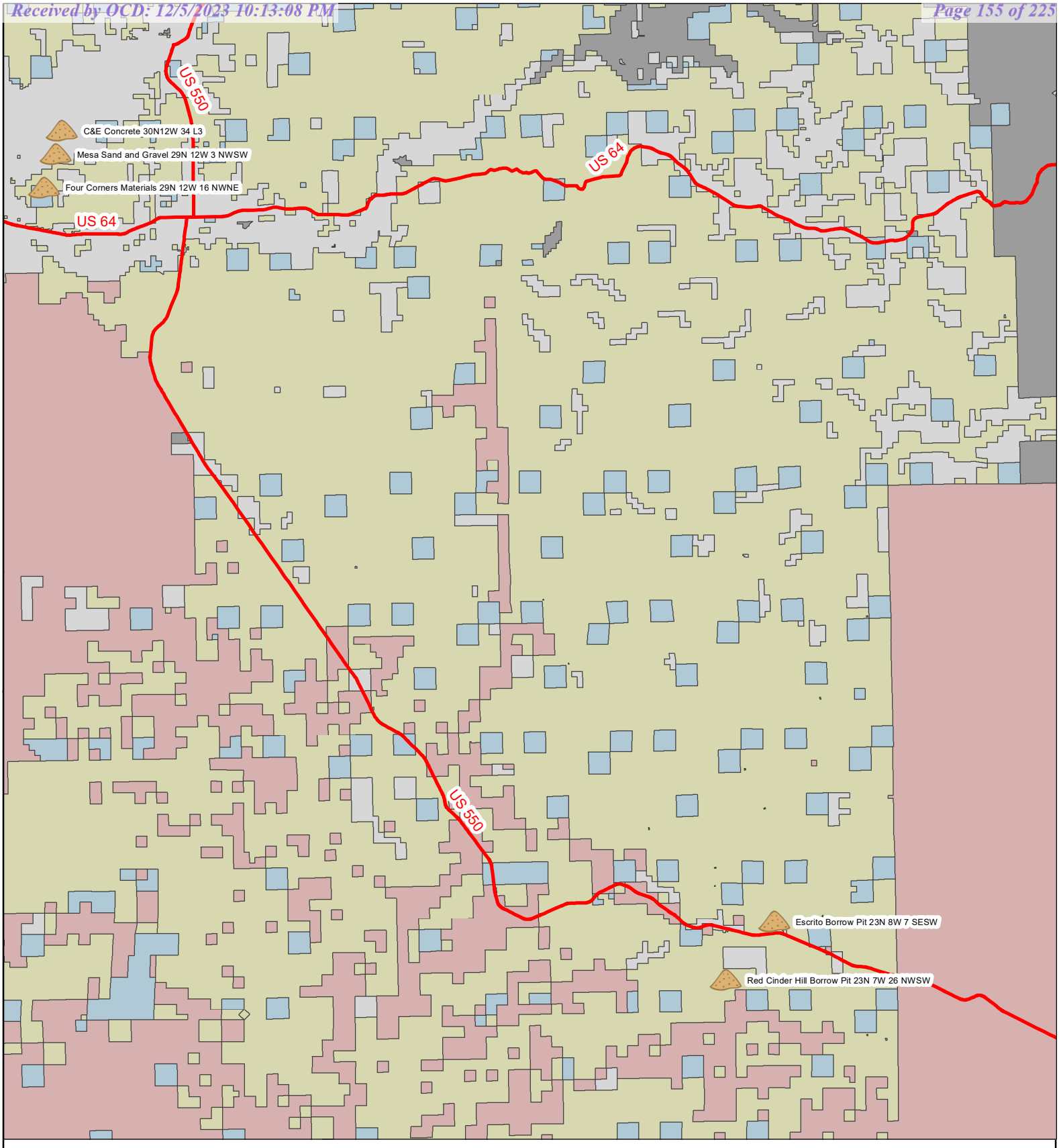
Base Map: ESRI ArcGIS Online, accessed August 2022
Updated: 8/10/2023
Project No. 75253p38
Layout: 432_Water_Transportation_Landscape
Aprx: 75253p38_HCU432

SWCA ENVIRONMENTAL CONSULTANTS

ENDURING RESOURCES, LLC

Appendix D. CONSTRUCTION MATERIALS MAP

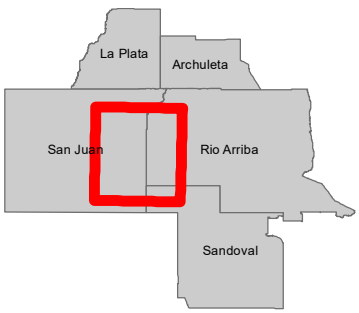
P



Material Source Location Map

Material Source
Highway, Paved
BLM Surface
Indian Surface
Private Surface
State Surface

Miles
0 5 10 20



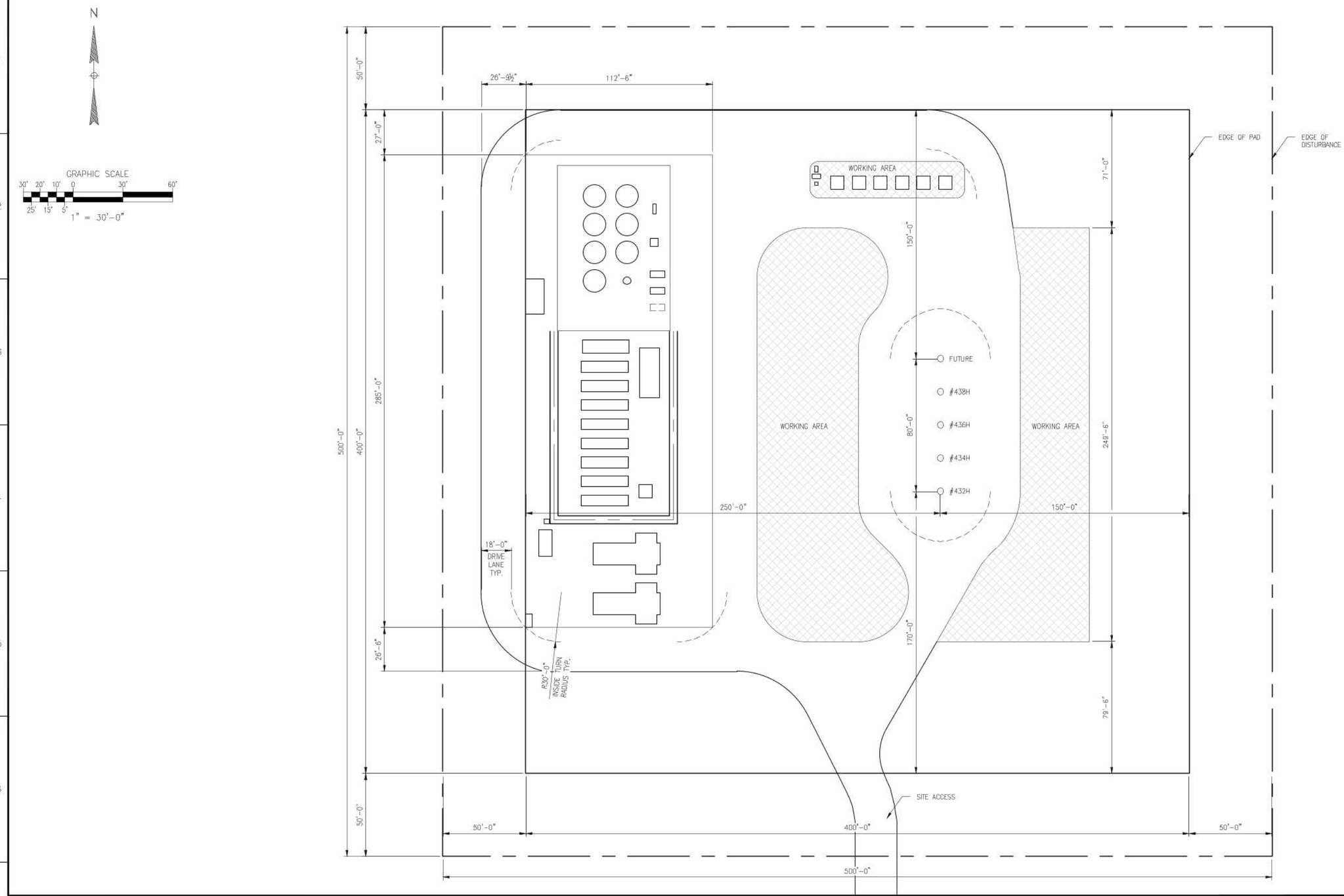
ENDURING RESOURCES, LLC

Data Source Statement:
BLM-FFO, Enduring Resources GIS, ESRI Inc., NCE Surveys, USGS

Author: drogers | Date: 10/23/2019

Appendix E. WELL PAD LAYOUT DIAGRAMS

Q



NOTES:

REFERENCE DRAWINGS	
DWG NO.	TITLE

REVISIONS						
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A	ISSUED FOR INFORMATION	08/25/23	DTS	BBS	–	BBS

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
FACILITY LAYOUT

SCALE: (FORMATTED 22X34) 1"=30'-0"
DRAWING NO. 21129-01-31182
B

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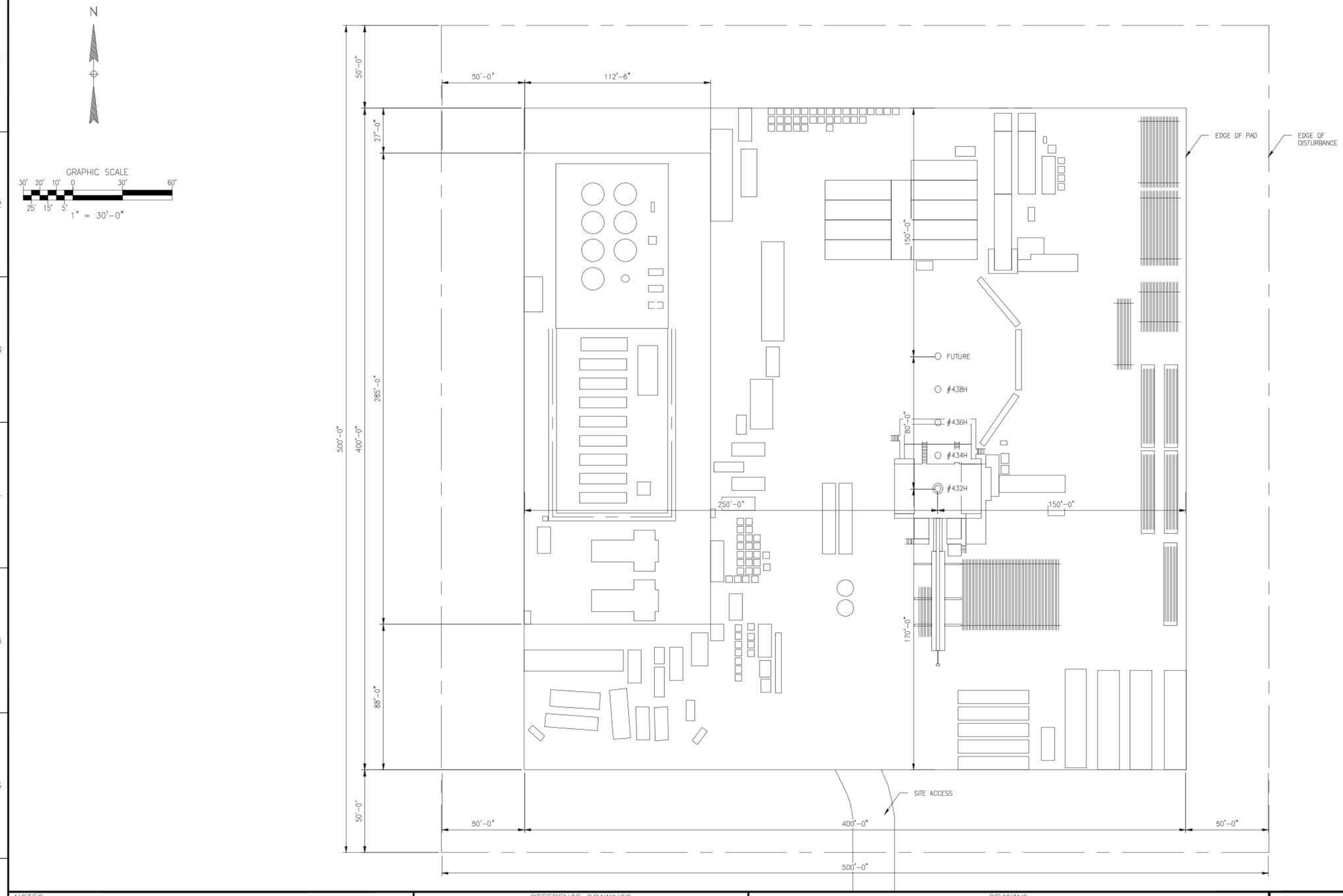

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REFERENCE DRAWINGS	
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HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
FACILITY AND RIG LAYOUT

SCALE: (FORMATTED 22X34) 1"=30'-0"
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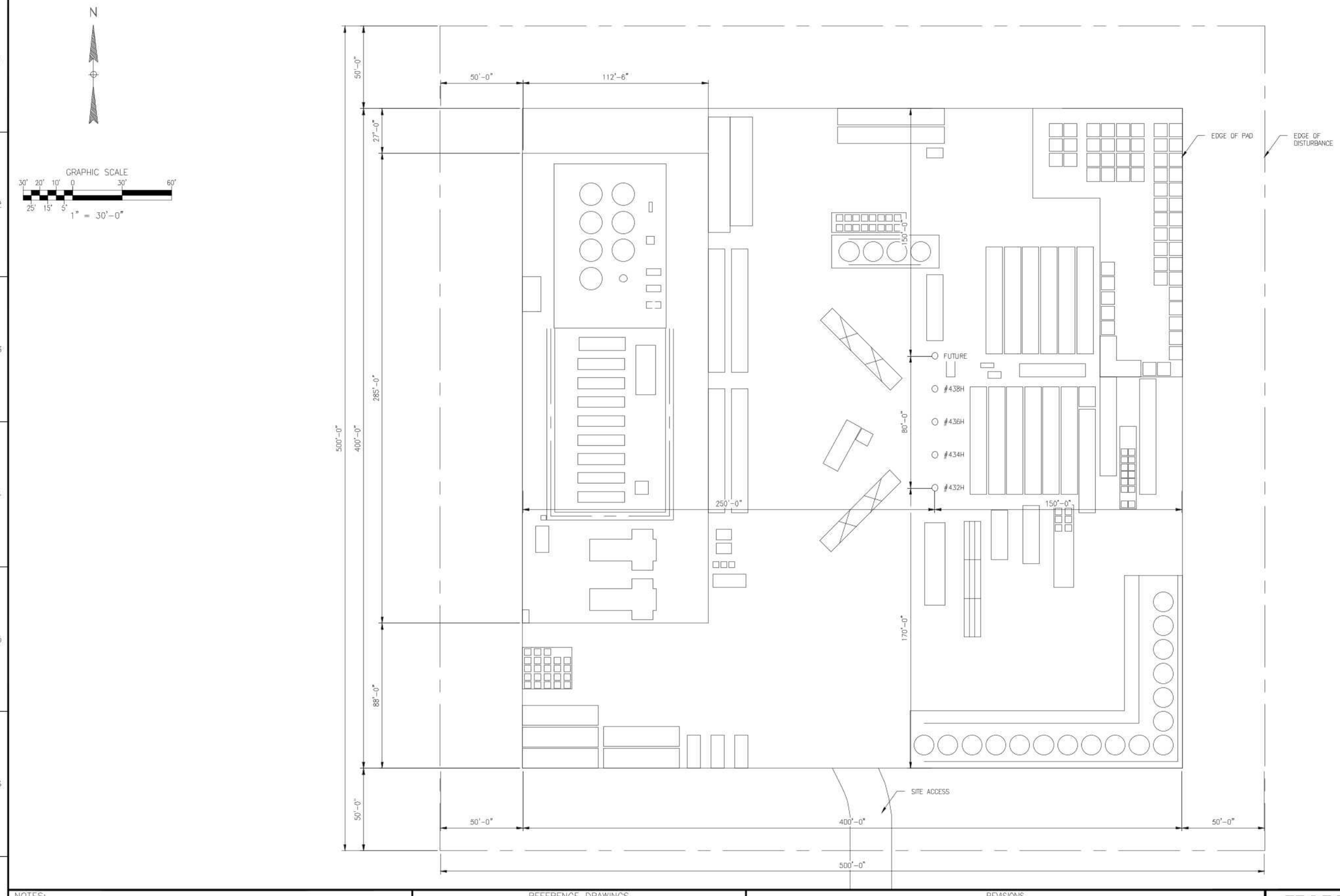

NOTES:

REFERENCE DRAWINGS	
DWG NO.	TITLE

REVISIONS						
REV	DESCRIPTION	DATE	BY	CHK	ENG	APR
A	ISSUED FOR INFORMATION	09/01/23	DTS	SCK	–	BBS

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
FACILITY AND COMPLETIONS LAYOUT

SCALE: (FORMATTED 22X34) 1"=30'-0"
DRAWING NO. 21129-01-31181
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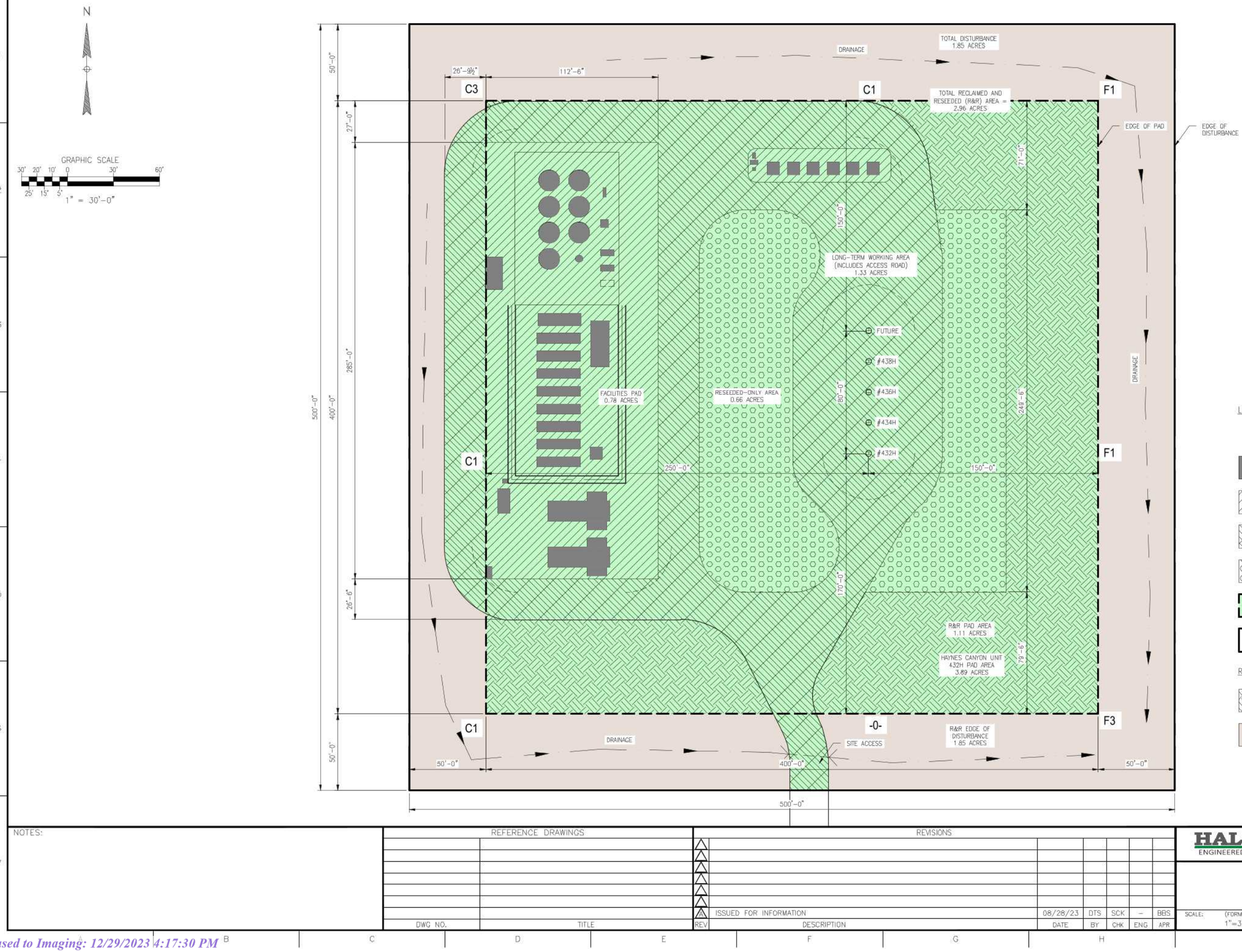

NOTES:

REFERENCE DRAWINGS	
DWG NO.	TITLE

REVISIONS						
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A	ISSUED FOR INFORMATION	08/28/23				

HALKER
ENGINEERED SOLUTIONS

ENDURING RESOURCES
HAYNES CANYON UNIT 432H
PROPOSED RECLAMATION

SCALE: (FORMATTED 22X34) 1"=30'-0"
DRAWING NO. 21129-01-31183
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SURFACE RECLAMATION PLAN

Haynes Canyon Unit (HCU) 432H-Four Well-Site Reoccupation Project

HCU 432H, HCU 434H, HCU 436H, HCU 438H

SEPTEMBER 2023

ENDURING RESOURCES IV, LLC

200 Energy Court

Farmington, New Mexico 87401

Phone: (505) 636-9720

TABLE OF CONTENTS

LIST OF APPENDICES

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LIST OF TABLES

1. INTRODUCTION

This Surface Reclamation Plan (Plan) has been prepared for the Bureau of Land Management (BLM) Farmington Field Office (FFO) to support the Surface Use Plan of Operations (SUPO) for the Haynes Canyon Unit (HCU) 432H-Four Well-Site Reoccupation Project HCU 432H, HCU 434H, HCU 436H, HCU 438H (HCU 432H Project). Following the guidance provided in Appendix A (SUPO Procedure) of the *Farmington Field Office Bare Soil Reclamation Procedures* (Procedures) (BLM 2013), this Plan will be used to re-establish vegetation and control New Mexico Department of Agriculture (NMDA)–listed Class A and Class B noxious weeds (NMDA 2020) within the project area. Information associated with the project is provided in Table 1.

Table 1. Project Information

Applicant:	Enduring Resources IV, LLC
Project Name:	Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project
Project Features:	• Reoccupation of existing HCU 412H well pad and facilities • Four proposed oil and gas wells (HCU 432H, HCU 434H, HCU 436H, HCU 438H)
Lease Number(s):	NMNM-028733
Unit Number:	NMNM-142111 New BLM System MLRS # NMNM105770949
Land Manager(s):	BLM-FFO
Mineral Manager(s):	BLM-FFO
Associated Authorization Applications, Pending:	4 APDs

Enduring may submit a request to the BLM-FFO to revise this reclamation plan at any time during the life of the project in accordance with page The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and U.S. Forest Service 2007). Enduring would include justification for the revision request.

The Enduring contact person for this reclamation plan is:

Theresa Ancell
Regulatory Manager
Enduring Resources IV, LLC
200 Energy Court
Farmington, New Mexico 87401
505-636-9720

2. PROJECT DESCRIPTION

2.1. Location

The project area is in Rio Arriba County, New Mexico, approximately 60 miles south-southeast of Bloomfield, New Mexico. The project area can be accessed as follows:

- From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550
- for 53.8 miles to Mile Marker 97.6
- Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;
- Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for
- 1.7 miles to fork in roadway;
- Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in
- road;
- Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #432H.The project area is located on lands managed by the BLM FFO. The legal location is provided below.

2.1.1. Well Pad

BLM-managed surface

Enduring would utilize the existing 5.74-acre HCU 412H well pad located in the Southwest ¼ of Northwest ¼ of Section 3, Township 23 North, Range 6, New Mexico Principal Meridian (NMPM).

2.1.2. Access Road

One existing 1571.2-foot-long by 30-foot-wide access road corridor would be improved and utilized to accommodate access for construction, drilling, completion, and long-term operation of the wells mentioned above; no new access road is proposed for the project.

2.1.3. Pipeline Utilities Corridor

The HCU 432H proposed project located north of the proposed HCU 428H would include a 3383.8 foot by 40-foot pipeline and utilities corridor connecting HCU 432H to HCU 428H facilities and infrastructure.

2.1. Pre-Disturbance On-Site Meeting

A pre-disturbance on-site meeting for the project was held with representatives from the BLM-FFO, Enduring, and SWCA Environmental Consultants (SWCA) on June 27, 2023. The BLM-FFO invited stakeholders and interested parties to the meeting. Aside from those listed, no private citizens or other groups attended.

.

2.2. Surface Disturbance

Enduring proposes to utilize the existing HCU 412H well pad and existing access road. Enduring proposes a new pipeline/utilities corridor for the proposed HCU 432H five well project connecting the proposed HCU 432 to the proposed HCU 428H facilities; new surface disturbance with the pipeline corridor is proposed. During construction, the project working area would be lightly "skimmed" and cleared of vegetation and topsoil would be stored in designated areas.

The Enduring proposed HCU 432H pipeline corridor would be constructed adjacent to an existing Whiptail pipeline right-of-way (ROW). The proposed new corridor disturbance would be partially contained within the existing well pads (400-feet) and partially within the existing Whiptail ROW disturbance (20 feet of the 40 feet). The proposed new disturbance associated with the HCU 432H pipeline and utility corridor would be 2983.8 feet by 20-feet creating an estimated 1.37 acres of new disturbance. Additionally, there are two Temporary Use Areas (TUAs) proposed within the HCU 432H pipeline corridor. TUA No. 1 located would be between STA 1648 and STA 1895.9 would be 25-feet on the wide side of the corridor. TUA No. 2 would be located between STA 2164.8 and STA 2487.8 would be 25-feet on the wide side of the corridor.

2.3. Reclamation

During interim reclamation, approximately 4.22 acres of the well pad and access road will be reclaimed. The remaining 2.51 acres of the well pad and project area will remain disturbed throughout the life of the project and will be reclaimed during final reclamation, when the project is abandoned.

Roadway interim reclamation, once drilling and completion phases are complete for all wells on location, the roadway will be reduced in size from 30-foot to a 14-foot-wide running surface. All remaining disturbed areas within the 30-foot access road corridor and exterior to borrow ditches and back slopes anticipated to be needed for long-term maintenance will be reseeded in efforts to reduce erosion.

Upon completion of pipeline and utilities, 1.37 acres of pipeline/utilities corridor would be reclaimed.

Based on the amount of surface disturbance, Vegetation Reclamation Procedure B applies to this project (BLM 2013). Vegetation Reclamation Procedure B is described further in the Procedures (BLM 2013). Surface disturbance is summarized in Table 2 below.

Table 2. Surface Disturbance Associated with the Project

Project Feature	Summarized Description	Landowner/ Land Manager	Existing Surface Disturbance (acres)	Proposed New Disturbance (acres)	Interim Reclamation (acres)	Final Reclamation (acres)
Access Road	Existing, preauthorized	BLM	1.08	N/A	0.58	0.5

Project Feature	Summarized Description	Landowner/ Land Manager	Existing Surface Disturbance (acres)	Proposed New Disturbance (acres)	Interim Reclamation (acres)	Final Reclamation (acres)
Well pad	Existing, Preauthorized The well pad measures approximately 500’ × 450’	BLM	5.74	N/A	3.64	2.1
Pipeline & Utilities Corridor	Proposed 2983.8 feet x 40	BLM	0	1.37	1.37	0
Total†		**BLM**	**6.82**	**1.37**	**5.59**	**2.6**

† Totals may vary due to rounding discrepancies.

3. SITE CONDITIONS

The project area topography is fairly level. The elevation of the project area ranges from approximately 6,690 to 6,710 feet above mean sea level. Two soil types are mapped within the project area: Blancot-Notal association and Gypsiorthids-Badland-Stumble complex (Natural Resources Conservation Service 2023). Based on the climatic records for Lybrook, New Mexico (Station No. 295290), this area has an average annual maximum temperature of 61.1 degrees Fahrenheit and an average annual minimum temperature of 34.9 degrees Fahrenheit. The average annual rainfall is 10.8 inches, with the majority occurring between July and September. The average annual total snowfall is 25.3 inches, which largely occurs between October and April (Western Regional Climate Center 2023). Soil testing may be conducted prior to reclamation activities, if requested by the BLM.

3.1. Vegetation Community

Reclamation standards are based on eight BLM FFO–designated vegetation communities that are outlined in the Farmington Field Office Bare Soil Reclamation Procedures (BLM 2013). During the on-site meeting on June 27, 2023, the BLM determined that the sagebrush community would best describe the project area prior to previous disturbances. Dominate species in the surrounding area include sagebrush (*Artemisia tridentata),* blue grama (*Bouteloua gracilis*), and fourwing saltbush (*Atriplex canescens*). Existing disturbance within the project area includes the HCU 412H well pad, an access road, and livestock grazing. There was no indication of current recreational activity.

During the pre-disturbance on-site meeting, SWCA and Enduring personnel conducted a noxious weed survey for New Mexico Department of Agriculture (NMDA)–listed Class A and Class B noxious weeds in the project area. No NMDA-listed noxious weed species were identified within the project area.

Please refer to the onsite noxious weed form in Appendix A for details.

3.2. Project Area Photographs

Photographs of the project area to be reclaimed are provided in Table 3.

Table 3. Project Area Photographs

Photograph Description	Photograph
Photograph of existing access	
Photograph taken from stake 2 looking towards stakes.	

Photograph Description	Photograph
Photograph taken from stake 3 viewing well stakes.	
Photograph taken from mid-east stake viewing well stakes.	

4. RECLAMATION TECHNIQUES FOR SUCCESSFUL REVEGETATION

The BLM FFO will be notified at least 48 hours prior to the start of reclamation activities. Final facility layouts and placement were determined at the formal BLM facility on-site meeting with the BLM FFO.

4.1. Interim Reclamation

Interim reclamation will take place within 120 days of final construction. This phase will occur following the construction, drilling, and completion phases of the project. Areas that will be reclaimed during interim reclamation are described in Section 2.2.

4.2. Vegetation and Site Clearing

If present, trees and brush 3 inches in diameter or greater at ground level will be cut and stacked for wood gatherers. All other trees and brush will be mowed or mulched at ground level. Stumps and root balls will be hauled to an approved disposal site or stockpiled at the edge of the well pad and buried in the cut slopes of the well pad during interim reclamation. Any slash and brush will be chipped, shredded, or mulched, and incorporated into the topsoil for later use in interim reclamation. Vegetation that has re-established within the interim reclaimed portions of the disturbance area will be mulched and incorporated into the topsoil as additional organic matter.

4.3. Topsoil Stripping, Storage, and Replacement

The upper 6 inches of topsoil (if available) will be stripped following vegetation mulching. Topsoil would not be mixed with the underlying subsoil horizons and would be stockpiled as a berm/windrow along the interior perimeter of the construction buffer zone. Topsoil and sub-surface soils will be replaced in the proper order, prior to final seedbed preparation. Topsoil will be spread evenly over sub-soils upon completion of recontouring operations and prior to final seedbed preparation. Redistribution of topsoil shall not be done when the ground or topsoil is wet. Vehicle/equipment traffic will not be allowed to cross topsoil stockpiles. If topsoil is stored for a length of time such that nutrients are depleted from the topsoil, amendments would be added to the topsoil as advised by the Enduring environmental scientist or appropriate agent/contractor.

4.4. Recontouring

All disturbed areas related to the project area will be recontoured to blend with the surrounding landscape, emphasizing restoration of the existing drainage patterns and landforms to pre-construction condition to the extent practicable. Within areas that require recontouring, the surface will be recontoured to match pre-disturbance conditions (particularly drainage patterns) or to blend with the surrounding landform as closely as possible.

The well pad will be contoured to blend with the surrounding landforms, removing signs of cut/fill slopes. The fill slope on the northern sides of the location and stockpiled berm just northeast of the fill slope will be pushed (dozer)/excavated (excavator)/or carried (belly scraper) and placed within the cut slope on the southern sides of the location. Natural rolling contours will be implemented to break up the surface and aid in removing signs of the well pad once vegetation establishes.

4.5. Water Management/Erosion Control Features

The BLM-FFO and the Enduring would work in collaboration to develop site-specific erosion control or water management features and to identify installation locations. Potential erosion control or water management features that may be used include (but are not limited to) water bars or rolling dips for roads, sediment basins or sediment traps, check dams, silt fencing, bellholes upstream of culverts, outlet protection for culverts, erosion control blankets, straw bales, and straw wattles.

As determined during the on-site visit on June 27, 2023, the following water management/erosion control features would be implemented during construction of the project:

- Diversions will be constructed as needed.

During interim reclamation, areas of the project that are not needed for long-term operations and maintenance will be recontoured to reestablish disturbed terrain and blend into the surrounding landscape. The natural drainage network would be reestablished as practicable with necessary diversions around the long-term project footprint.

4.6. Seedbed Preparation

For cut-and-fill slopes, initial seedbed preparation would consist of pushing (dozer)/excavating (excavator)/hauling (belly scraper) the unneeded fill slope material and placing it within the cut slopes. Natural rolling contours would be implemented to break up the surface and aid in removing signs of the sharp well pad corners once vegetation establishes. Emphasis would be placed on restoration of the existing drainage patterns and landforms to pre-construction conditions, to the extent practicable.

Within areas that would be reseeded, stockpiled topsoil would be evenly redistributed prior to final seedbed preparation. Seedbed preparation within compacted areas would include ripping to a minimum depth of 18 inches and spacing furrows 2 feet apart. Ripping would be conducted perpendicularly in two phases, where practicable. If large clumps/clods result from the ripping process, disking would be conducted perpendicular to slopes in order to provide terracing and minimize runoff and erosion. Final seedbed preparation would consist of raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting. Seedbed preparation may not be necessary for topsoil storage piles or other areas of temporary seeding.

4.7. Soil Amendments

Soil amendments would be added to the topsoil, if needed, as advised by the Enduring environmental scientist or appropriate surface management agency. During the onsite meeting, no soil amendments were identified for use during reclamation.

4.8. Seeding

Table 4 lists BLM FFO's sagebrush seed pick list was identified as suitable for the project area. The seed pick list components are listed in Table 5.

Table 4. BLM Farmington Field Office Sagebrush Community Seed Mix

Common Name	Scientific Name	Pure live Seed lbs/acre[1]
Fourwing saltbush	*Atriplex canescens*	2.0
Winterfat	*Krascheninnikovia lanata*	2.0
Sand dropseed	*Sporobolus cryptandrus*	0.5
Western wheatgrass	*Pascopyrum smithii*	4.0
Indian ricegrass	*Achnatherum hymenoides*	4.0
Blue grama	*Bouteloua gracilis*	2.5
Bottle brush squirreltail	*Elymus elymoides*	3.0
Blue flax	*Linum lewisii*	0.25
Rocky Mountain bee plant	*Cleome Serrulata*	0.25

[1]Based on 60 PLS per square foot, drill seeded; double this rate (120 PLS per square foot) if broadcast or hydro-seeded.

Seeding will occur immediately following recontouring and seedbed preparation. A disc-type seed drill with two boxes for various seed sizes will be utilized for seeding the disturbed areas of the site. Enduring or its reclamation subcontractor will ensure that perennial grasses and shrubs are planted at the appropriate depth. Intermediate-size seeds (such as wheatgrasses and shrubs) will be planted at a depth of 0.5-inch, larger seeds (such as Indian ricegrass) will be planted at a depth of 1 to 2 inches, and small seeds (such as sand dropseed) will be planted at a depth of 0.25 inch. In situations where differing planting depths are not practicable with the equipment being used, the entire mix will be planted no deeper than 0.25 inch. A drag, packer, or roller will follow the seeder to ensure uniform seed coverage and adequate compaction. Seeding will be run perpendicular to slopes in order to minimize runoff and erosion.

Drill seeding may be used on well-packed and stable soils on gentler slopes and where tractors and drills can safely operate. Where drill seeding is not practical, the contractor will hand broadcast seed using a "*cyclone*" hand seeder or similar broadcast seeder. Galleta seed may also be broadcast; due to the light fluffy nature of this seed, it does not seed well through a drill seeder. Broadcast application of seed requires a doubling of the drill-seeding rate. The seed will then be raked into the ground so that the seed is planted no deeper than 0.25 inch below the surface.

Upon completion of seeding, straw mulch will be spread across the reclaimed area and crimped into the soil. This will promote site stabilization and slightly increase moisture retention.

4.9. Noxious and Invasive Weed Control

Should any noxious or invasive weeds be documented within the project area following the completion of reclamation activities, Enduring will follow the guidance outlined in their Pesticide Use Proposal approved by the BLM FFO. Enduring will submit all required documentation for weed treatments associated with the proposed project; this includes chemical and manual weed removal. Enduring will submit a Pesticide Use Report quarterly and annually or when requested by the BLM-FFO Authorized Officer or the BLM-FFO Noxious Weed Specialist.

5. MONITORING REQUIREMENTS

Reclamation monitoring is required to document attainment of the vegetation percent cover standard and reclamation success. The monitoring and reporting methods described below will apply to both interim and final reclamation. Monitoring and reporting requirements remain in effect as long as the permit, grant, or authorization is in force, and until all associated facilities and infrastructure are abandoned by BLM procedure and a FAN and/or relinquishment is issued. The vegetation percent cover referenced below is described in detail in Section 5.4 (Reclamation Attainment).

5.1. Initial Monitoring and Reporting

Monitoring sites will be established by the BLM FFO, in collaboration with Enduring, during the required earthwork and/or seeding inspections. Initial monitoring tasks will be conducted by the BLM FFO. The BLM FFO will submit the initial monitoring reports to Enduring within 60 days of conducting the initial monitoring tasks.

5.2. Annual Monitoring and Reporting

Enduring will perform annual monitoring starting 2 calendar years after BLM FFO's approval of earthwork and/or seeding. Annual monitoring will continue until the vegetation percent cover standard has been attained. Annual monitoring reports will be submitted to the BLM FFO by December 31 of the year monitored.

5.3. Long-Term Monitoring

After the required percent revegetation standard has been attained, Enduring will begin long-term monitoring. This includes every fifth year after attainment as determined by the BLM FFO, Enduring will monitor the site at all established photo points to ensure the site remains productive and stable. Enduring will submit the monitoring report to the BLM by December 31 of the year monitored.

5.4. Reclamation Attainment

Per the Procedures (BLM 2013), the following foliar percent cover standards listed in Table 5 must be attained for reclamation to be considered successful.

Table 5. Reclamation Goal for Sagebrush Community

Functional Group	Percent (%) Foliar Cover	Common Species
Trees/Shrubs/ Grasses/ Forbs	≥ 35	Utah juniper, Piñon pine; big sagebrush, four-wing saltbush, antelope bitterbrush, alkali sacaton, Western wheatgrass, Indian ricegrass, galleta, sand dropseed, scarlet globemallow, wooly Indian wheat, fleabane, Penstemon spp., buckwheat, threadleaf groundsel.
Invasive/undesirables 10% allowed toward meeting standard of 35%	≤ 10	Plants that have the potential to become a dominant species on a site where its presence is a detriment to revegetation efforts or the native plant community. Examples of invasive species include cheatgrass, Russian thistle, halogeton.

When vegetation meets the attainment standards listed in Table 4 and as required by the BLM-FFO Bare Soil Reclamation Procedure, Enduring may request BLM-FFO concurrence that vegetation percent cover standards have been attained any time after 2 calendar years of completion of earthwork and seeding. Enduring will submit a final abandonment notice (FAN), identifying that revegetation standards have been attained. The BLM-FFO will reply to the operator to confirm concurrence (or not) with a rationale for the determination within 60 days of receiving the

request. If the revegetation standards are not being attained, Enduring and the BLM-FFO will analyze the issues that may have contributed to vegetation reclamation failure or lack of meaningful progress. Remedial actions will be developed collaboratively if vegetation percent cover standards are not being attained. Details regarding this process can be found in the Procedures (BLM 2013).

6. REFERENCES

Bureau of Land Management (BLM). 2013. Farmington Field Office Bare Soil Reclamation Procedures. Available at: http://www.emnrd.state.nm.us/MMD/AML/documents/FFOBareSoilReclamationProcedures2-1-13.pdf. Accessed July 2023.

Bureau of Land Management (BLM) and U.S. Forest Service. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+307/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

Natural Resources Conservation Service. 2023. Web Soil Survey. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed July 2023.

New Mexico Department of Agriculture (NMDA). 2020. Memo: New Mexico Noxious Weed List Update. Available at: https://nmdeptag.nmsu.edu/apr/noxious-weeds.html. Accessed July 2023.

Western Regional Climate Center. 2023. New Mexico Climate Summaries: Lybrook, New Mexico (295290). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?nm5290. Accessed July 2023.

APPENDIX A. ONSITE NOXIOUS WEED FORM

Onsite Noxious Weed Form

If noxious weeds are found during the onsite, fill out form and submit to FFO weed coordinator
Operator Endurino Surveyor(s) _____
Well Name and Number Haynes Canyon 432H Date 6/27/2023
Location: Township, Range, Section T23N. R8W S3
Location of Project NAD 83 Decimal Degrees 36.2345°N 107.454°W

Class A Noxious Weed – Check Box if Found

	Alfombrilla		Diffuse knapweed		Hydrilla		Purple starthistle		Yellow toadflax
	Black henbane		Dyer's woad		Leafy spurge		Ravenna grass		
	Camelthorm		Eurasian watermilfoil		Oxeye daise		Scotch thistle		
	Canada thistle		Giant salvinia		Parrotfeather		Spotted knapweed		
	Dalmation toadflax		Hoary cress		Purple loosestrife		Yellow starthistle		

Class B Noxious Weed – Check Box if Found

	African rue		Perennial pepperweed		Russian knapweed		Tree of heaven
	Chicory		Musk thistle		Poison hemlock		
	Halogeton		Malta starthistle		Teasel		

Comments:

FFO Representative: [signature] 6/27/23
sign and date
Operator Representative [signature] 6/27/23
sign and date

38

AFMSS

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

PWD Data Report

12/05/2023

APD ID: 10400093995 **Submission Date:** 09/29/2023

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

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

Section 1 - General

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

Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N

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

Pit liner description:

Pit liner manufacturers

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule

Lined pit reclamation description:

Lined pit reclamation

Leak detection system description:

Leak detection system

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Lined pit Monitor description:

Lined pit Monitor

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

Section 3 - Unlined

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule

Unlined pit reclamation description:

Unlined pit reclamation

Unlined pit Monitor description:

Unlined pit Monitor

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

Beneficial use user

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

State

Unlined Produced Water Pit Estimated

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

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information

Section 4 -

Would you like to utilize Injection PWD options? N

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

Underground Injection Control (UIC) Permit?

UIC Permit

Section 5 - Surface

Would you like to utilize Surface Discharge PWD options? N

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 -

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

Other PWD type description:

Other PWD type

Have other regulatory requirements been met?

Other regulatory requirements

AFMSS

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

Bond Info Data

12/05/2023

APD ID: 10400093995 **Submission Date:** 09/29/2023

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT **Well Number:** 438H

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

Highlighted data reflects the most recent changes

Show Final Text

Bond

Federal/Indian APD: FED

BLM Bond number:

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

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-31452	13379	COUNSELOR GALLUP-DAKOTA OIL POOL

[4] Property Code	[5] Property Name	[6] Well Number
335063	HAYNES CANYON UNIT	438H

[7] OGRID No.	[8] Operator Name	[9] Elevation
372286	ENDURING RESOURCES, LLC	6689'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	3	23N	6W		1713	NORTH	303	WEST	RIO ARRIBA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	2	23N	6W	3	380	NORTH	2580	WEST	RIO ARRIBA

[12] Dedicated Acres		[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
322.44	N/2 NE/4 (aka Lots 1 & 2) - Sec 4 N/2 N/2 (aka Lots 1 - 4) - Sec 3 N/2 NW/4 (aka Lots 3 & 4) - Sec 2			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

[17] OPERATOR CERTIFICATION

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

Signature 8/31/23
Date

Heather Huntington
Printed Name

hhuntington@enduringresources.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date Revised: AUGUST 24, 2023
Date of Survey: APRIL 8, 2023

Signature and Seal of Professional Surveyor

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

FIRST TAKE POINT
380' FNL 1910' FEL
SEC 4, T23N, R6W

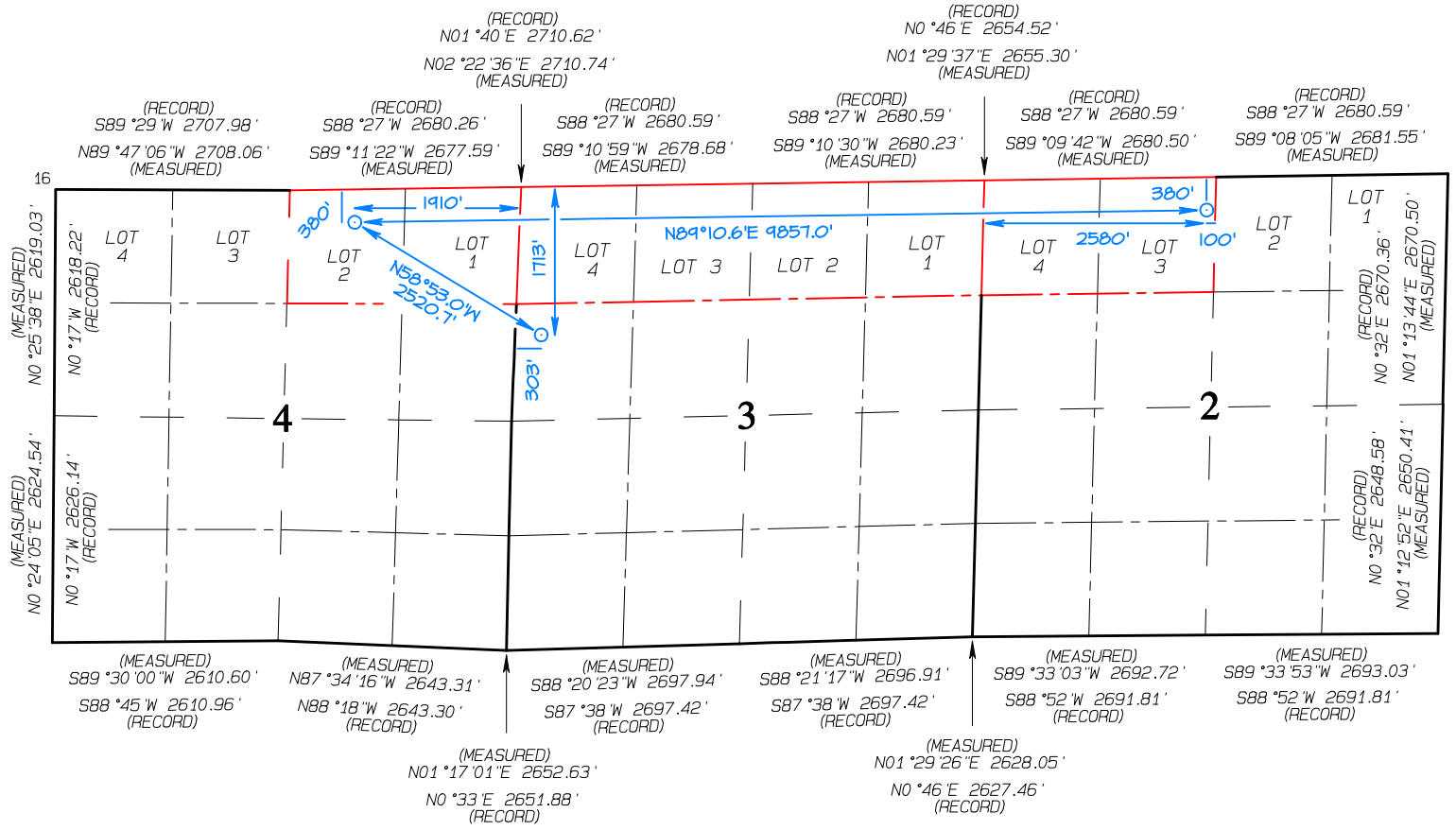
LAT 36.259678 °N
LONG -107.472004 °W
DATUM: NAD1983

SURFACE LOCATION
1713' FNL 303' FWL
SEC 3, T23N, R6W

LAT 36.256175 °N
LONG -107.464630 °W
DATUM: NAD1983

LAST TAKE POINT
380' FNL 2580' FWL
SEC 2, T23N, R6W

LAT 36.260404 °N
LONG -107.438585 °W
DATUM: NAD1983



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	HAYNES CANYON UNIT	438H

[7] OGRID No.	[8] Operator Name	[9] Elevation
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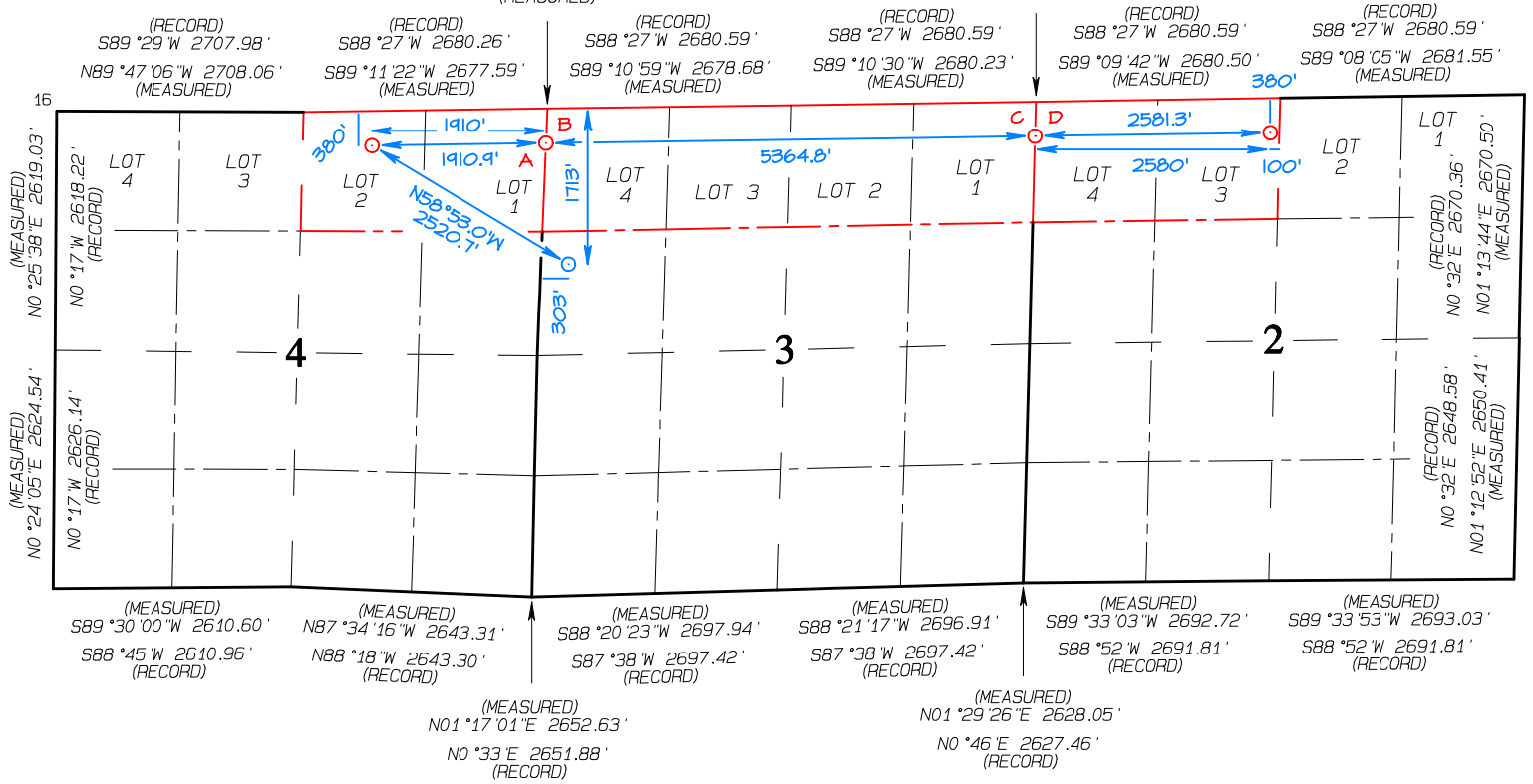


LEASE X-ING (A)
380' FNL 0' FEL
SEC 4, T23N, R6W

LAT 36.259820 °N
LONG -107.465525 °W
DATUM: NAD1983

LEASE X-ING (B)
380' FNL 0' FWL
SEC 3, T23N, R6W

LAT 36.259820 °N
LONG -107.465525 °W
DATUM: NAD1983

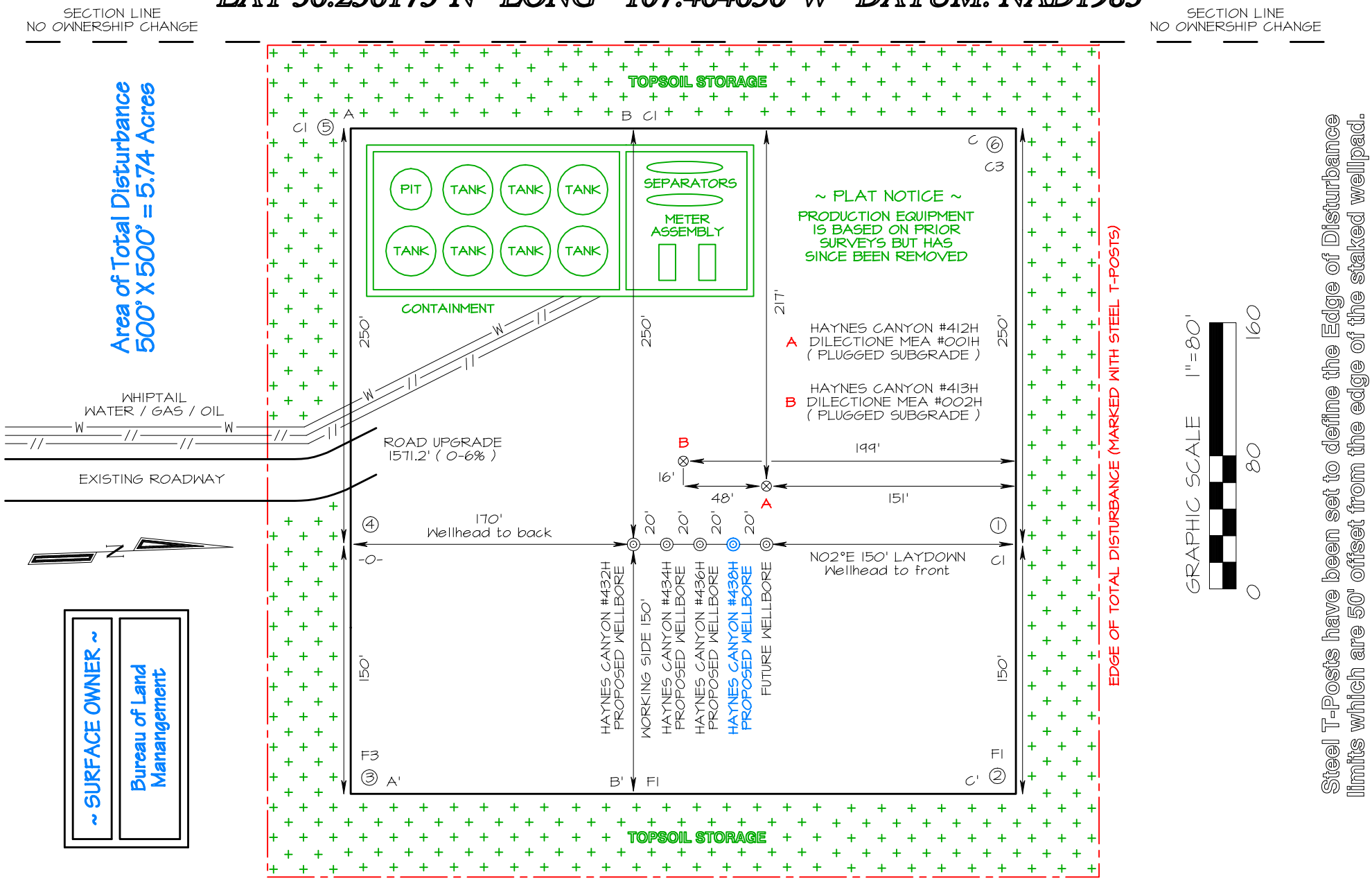
LEASE X-ING (C)
380' FNL 0' FEL
SEC 3, T23N, R6W

LAT 36.260215 °N
LONG -107.447337 °W
DATUM: NAD1983

LEASE X-ING (D)
380' FNL 0' FWL
SEC 2, T23N, R6W

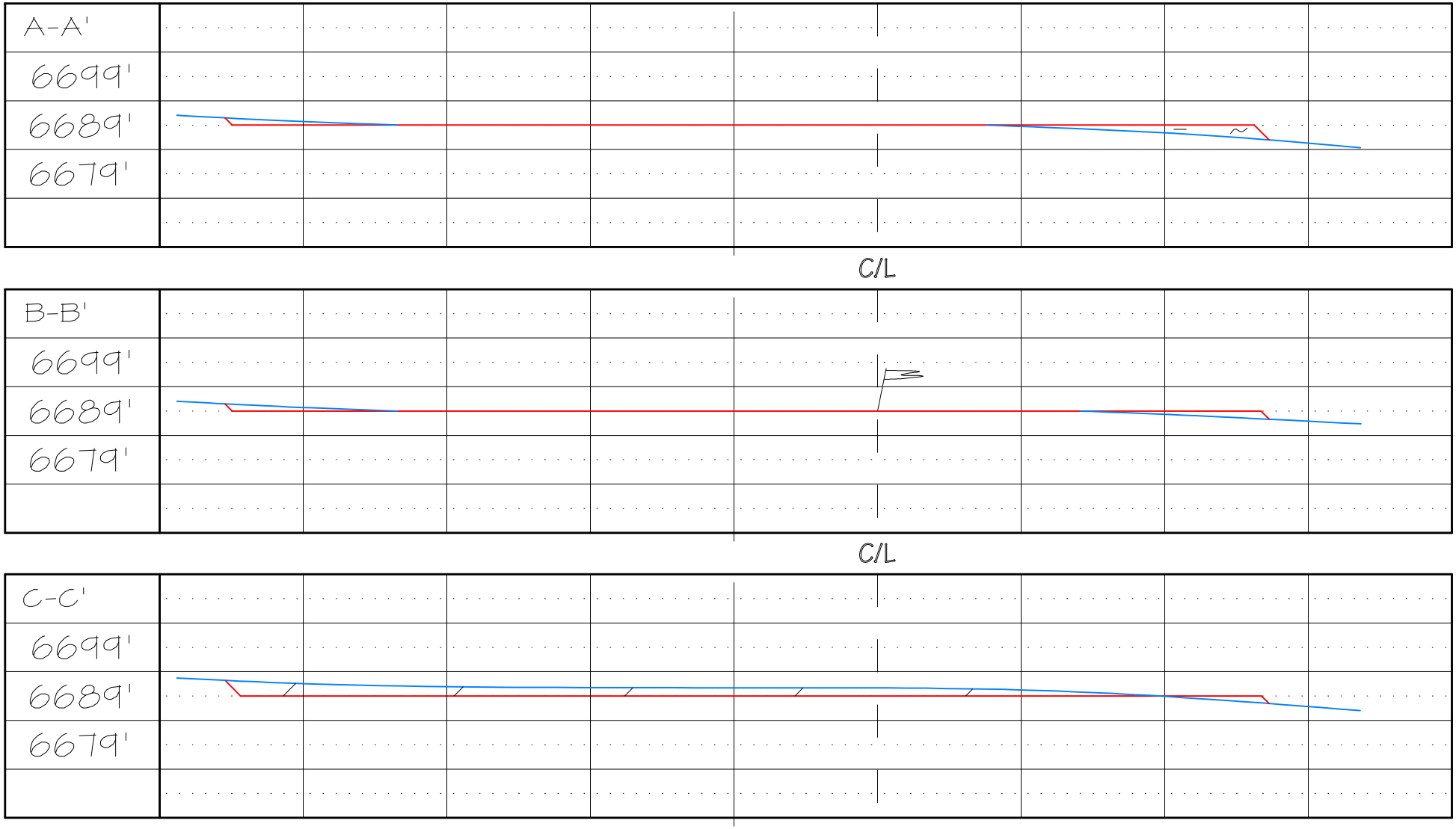
LAT 36.260215 °N
LONG -107.447337 °W
DATUM: NAD1983

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
1713' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'
LAT 36.256175°N LONG -107.464630°W DATUM: NAD1983



ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
1713' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM
RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'

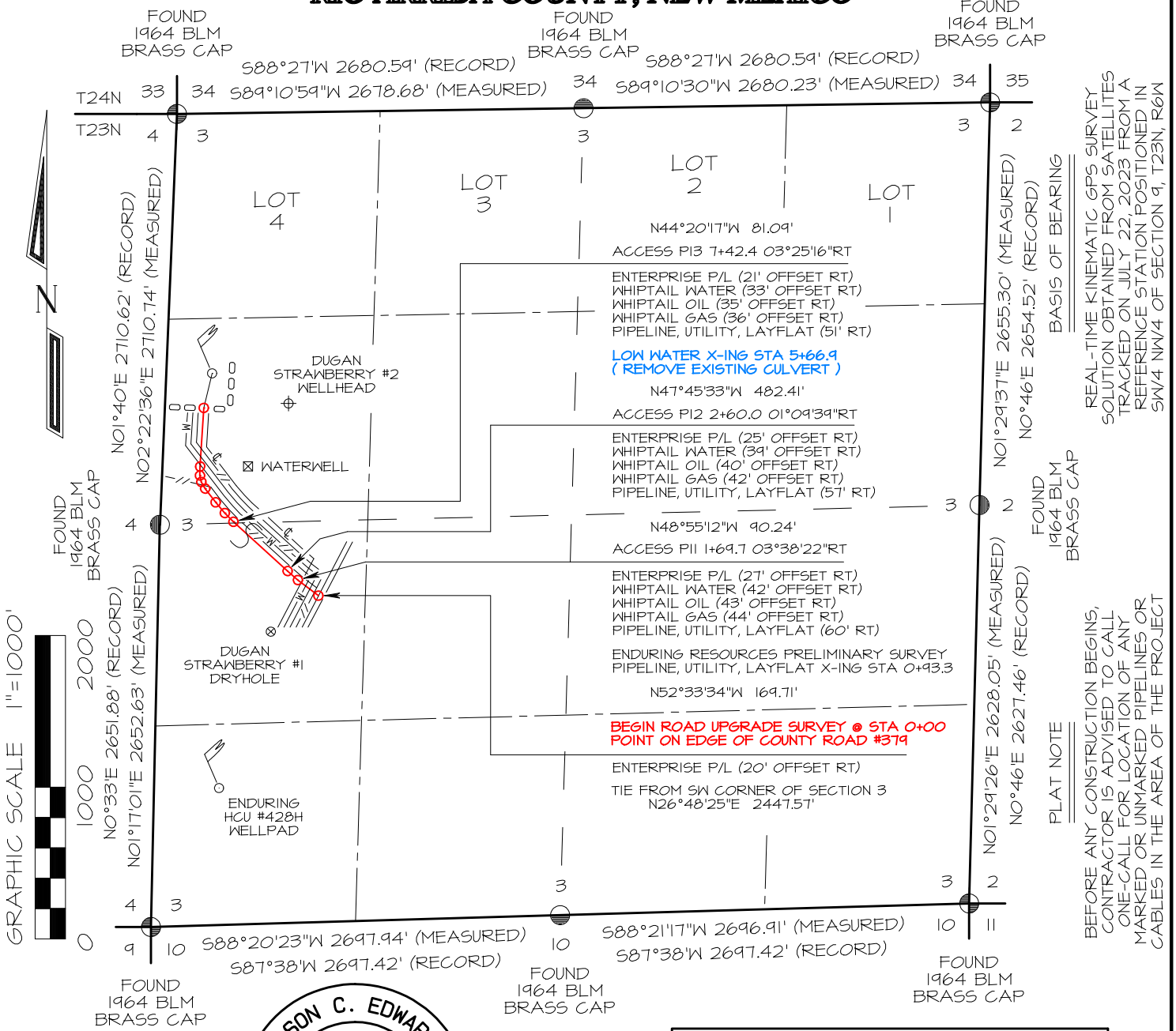
HORIZONTAL SCALE 1"=55' VERTICAL SCALE 1"=30'



EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES.

CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 15+71.2	1571.2 FT / 95.2 RODS

JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR

I, Jason C. Edwards, a registered Professional Surveyor under the laws of the State of New Mexico, hereby certify that this plat was prepared from field notes of an actual survey meeting the minimum requirements of the standards for easement surveys and is true and correct to the best of my knowledge and belief.

JASON C. EDWARDS Date: August 24, 2023

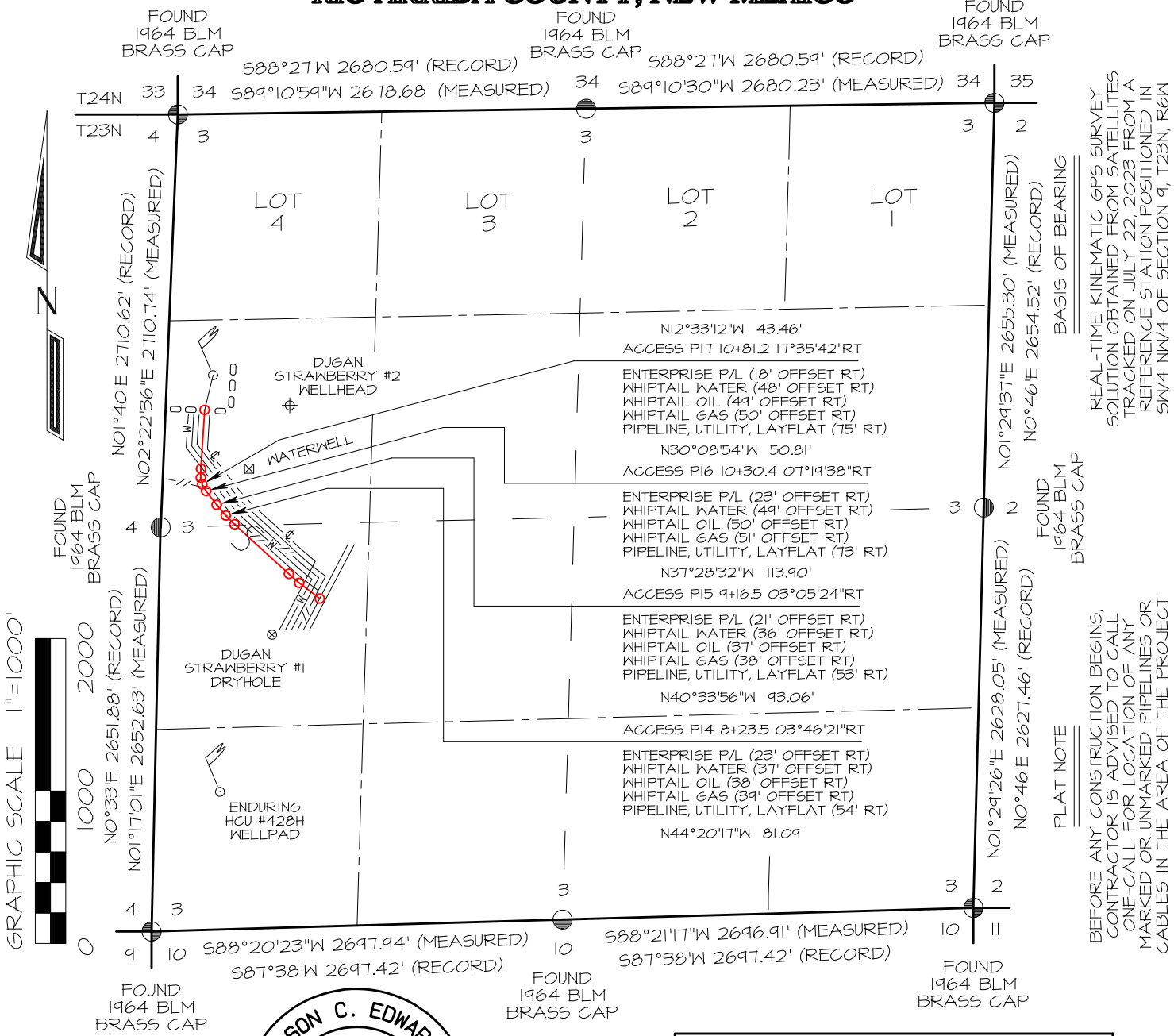
Jason C. Edwards, P.L.S.
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

Land Surveyor:
Jason C. Edwards
Mailing Address:
Post Office Box 6612
Farmington, NM 87499
Business Address:
111 East Pinon Street
Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net
SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 5 OF 13
FILENAME: 2363MAP1

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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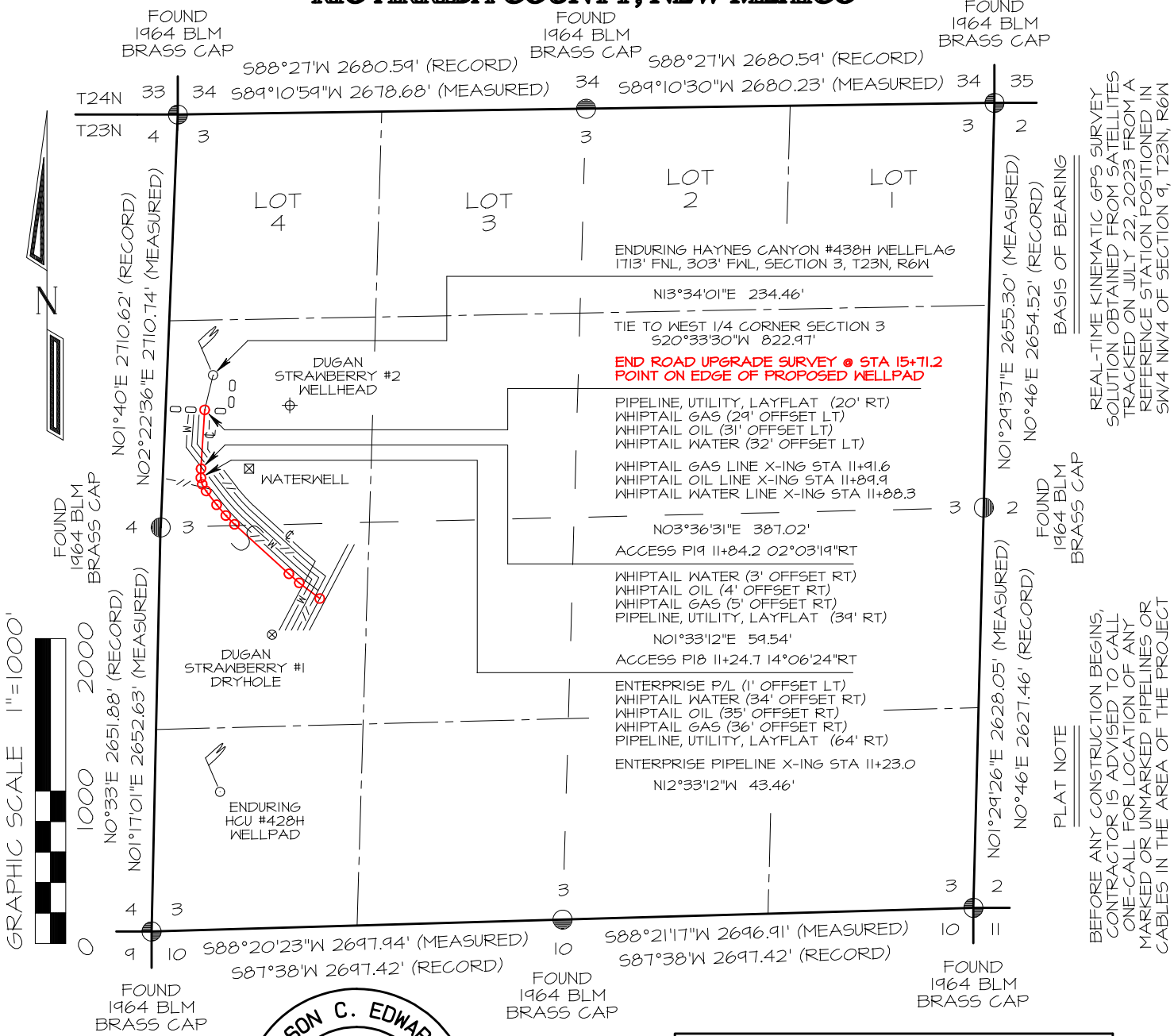
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 6 OF 13
FILENAME: 2363MAP2

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR UPGRADE TO EXISTING ROADWAY LOCATED IN NW/4 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO



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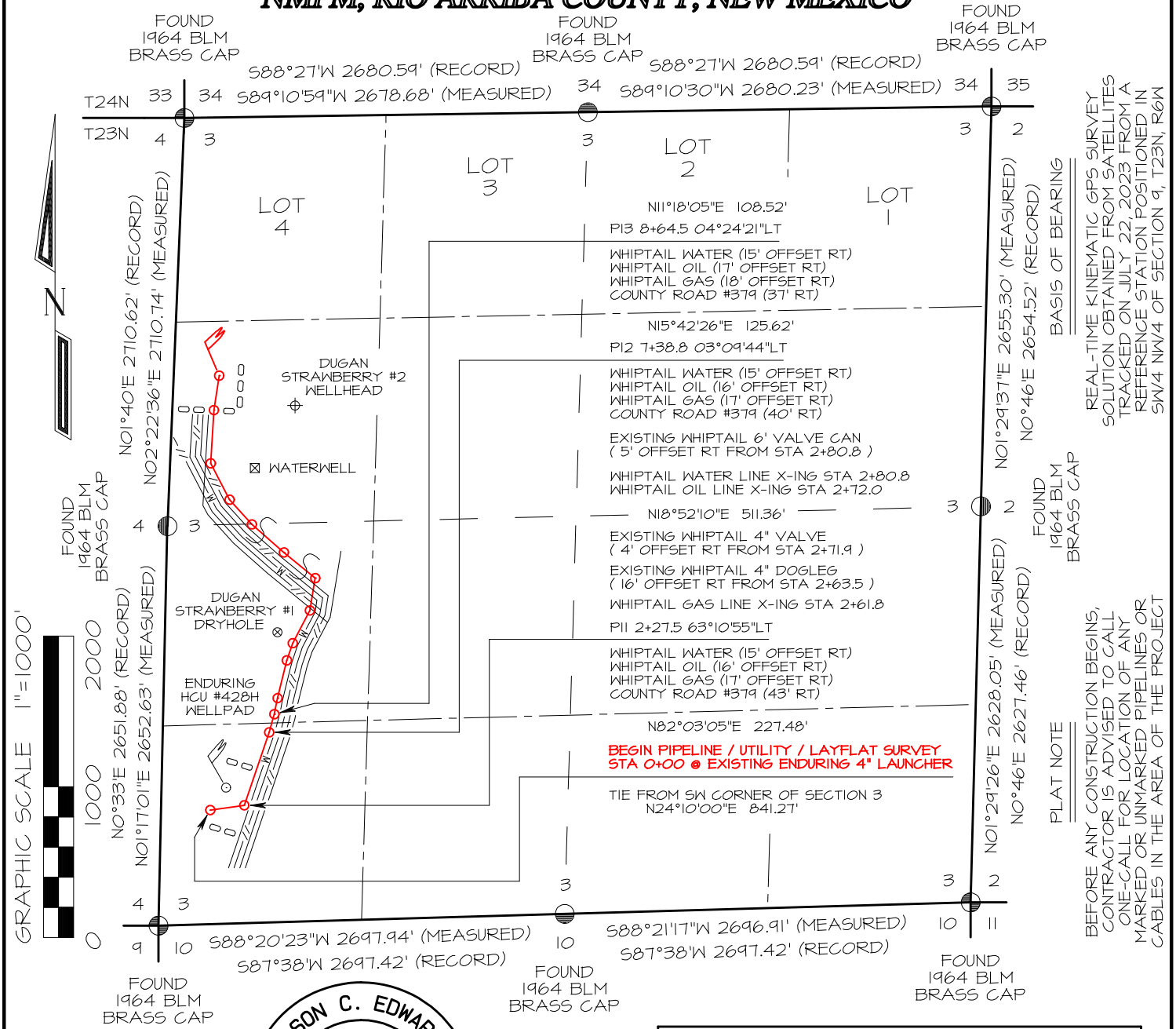
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 7 OF 13
FILENAME: 2363MAP3

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



~ SURFACE OWNERSHIP ~ Bureau of Land Management	
0+00 TO 34+43.3	3443.3 FT / 208.7 RODS

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Prepared for:
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200 ENERGY COURT
FARMINGTON, NM 87401

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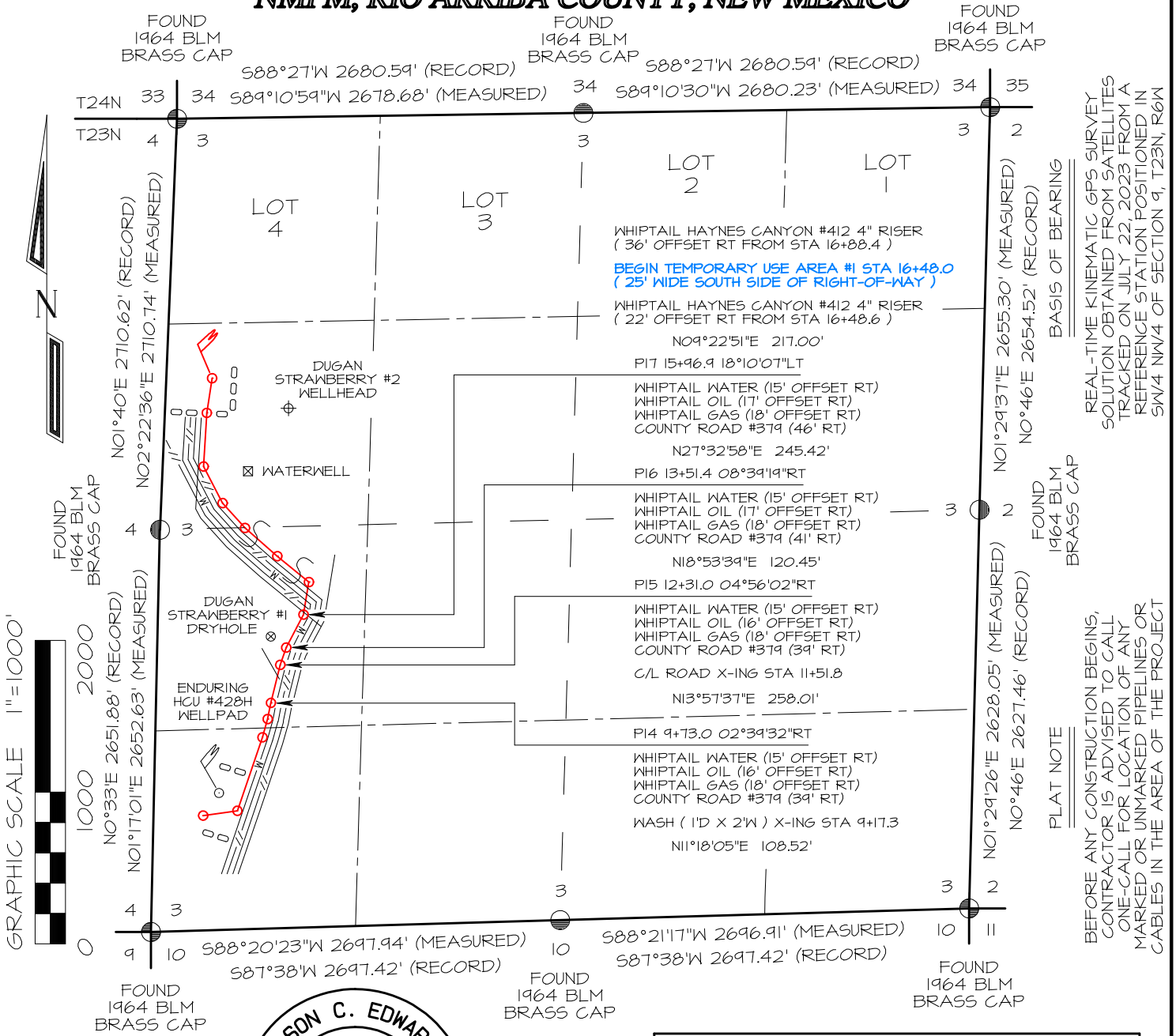
ncesurveys@comcast.net
NCE SURVEYS, INC.

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 8 OF 13
FILENAME: 2363MGPI

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



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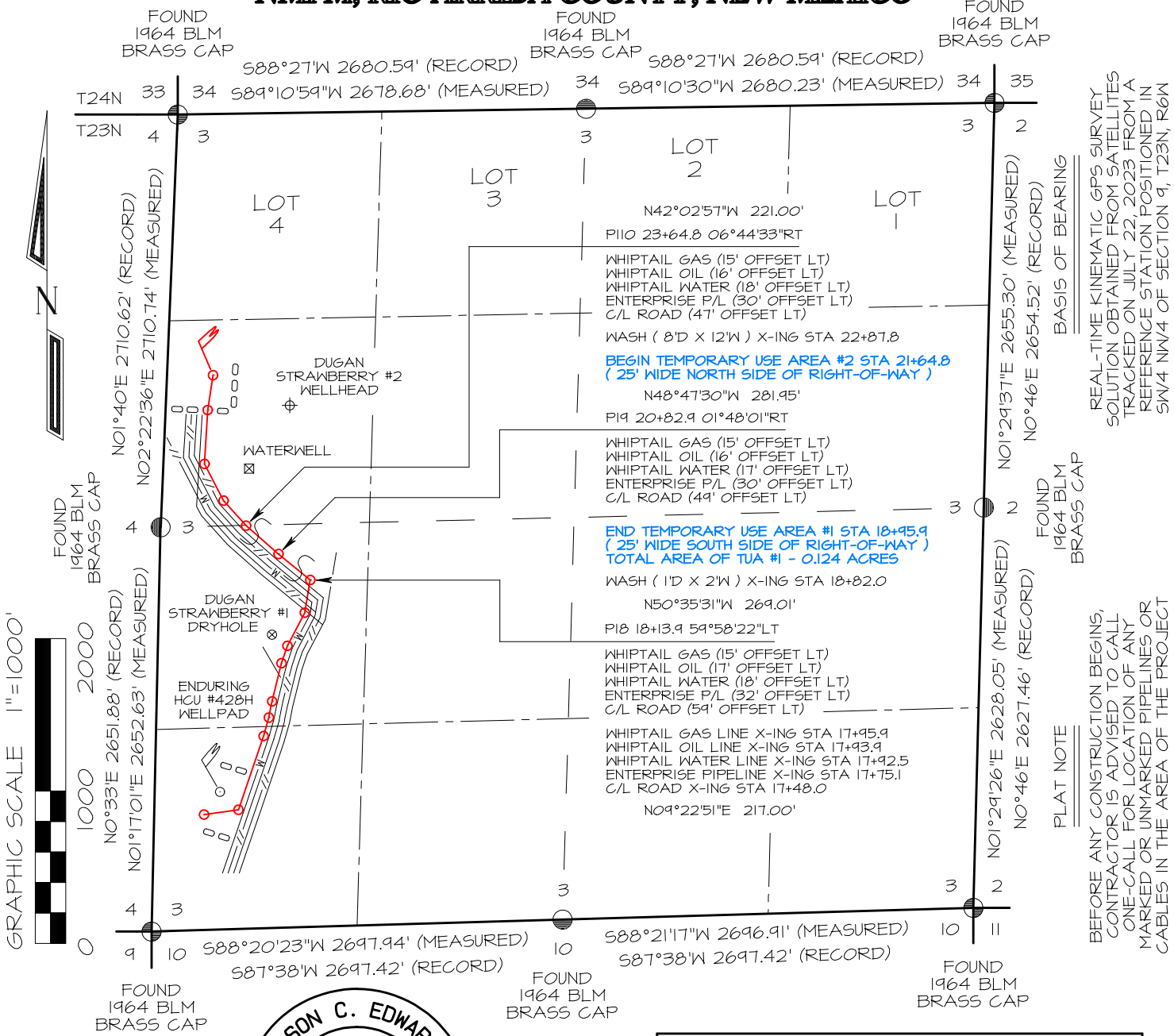
New Mexico L.S. #15269

Prepared for:
ENDURING RESOURCES
200 ENERGY COURT
FARMINGTON, NM 87401

NCE SURVEYS, INC.
Land Surveyor: Jason C. Edwards
Mailing Address: Post Office Box 6612 Farmington, NM 87499
Business Address: 111 East Pinon Street Farmington, NM 87402
(505) 486-1695 (Office)
ncesurveys@comcast.net

CHECKED BY: JCE
DRAWN BY: EDO
SHEET 9 OF 13
FILENAME: 2363MGP2

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
LOCATED IN W/2 SW/4 & SW/4 NW/4 OF SECTION 3, T23N, R6W NMPM, RIO ARRIBA COUNTY, NEW MEXICO



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DRAWN BY: EDO
SHEET 10 OF 13
FILENAME: 2363MGP3

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H
SURVEY FOR PIPELINE / UTILITY / LAYFLAT WATERLINE
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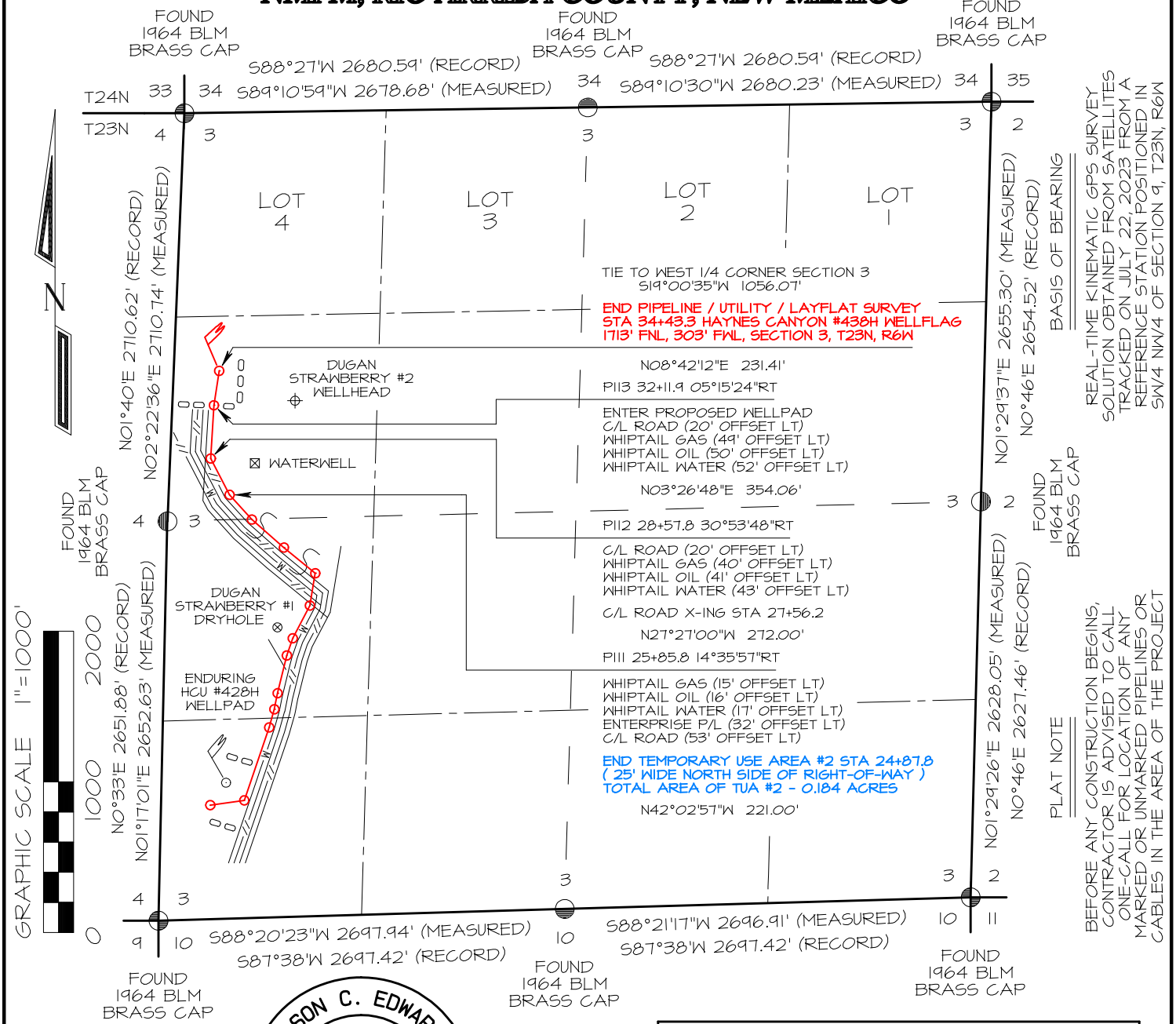

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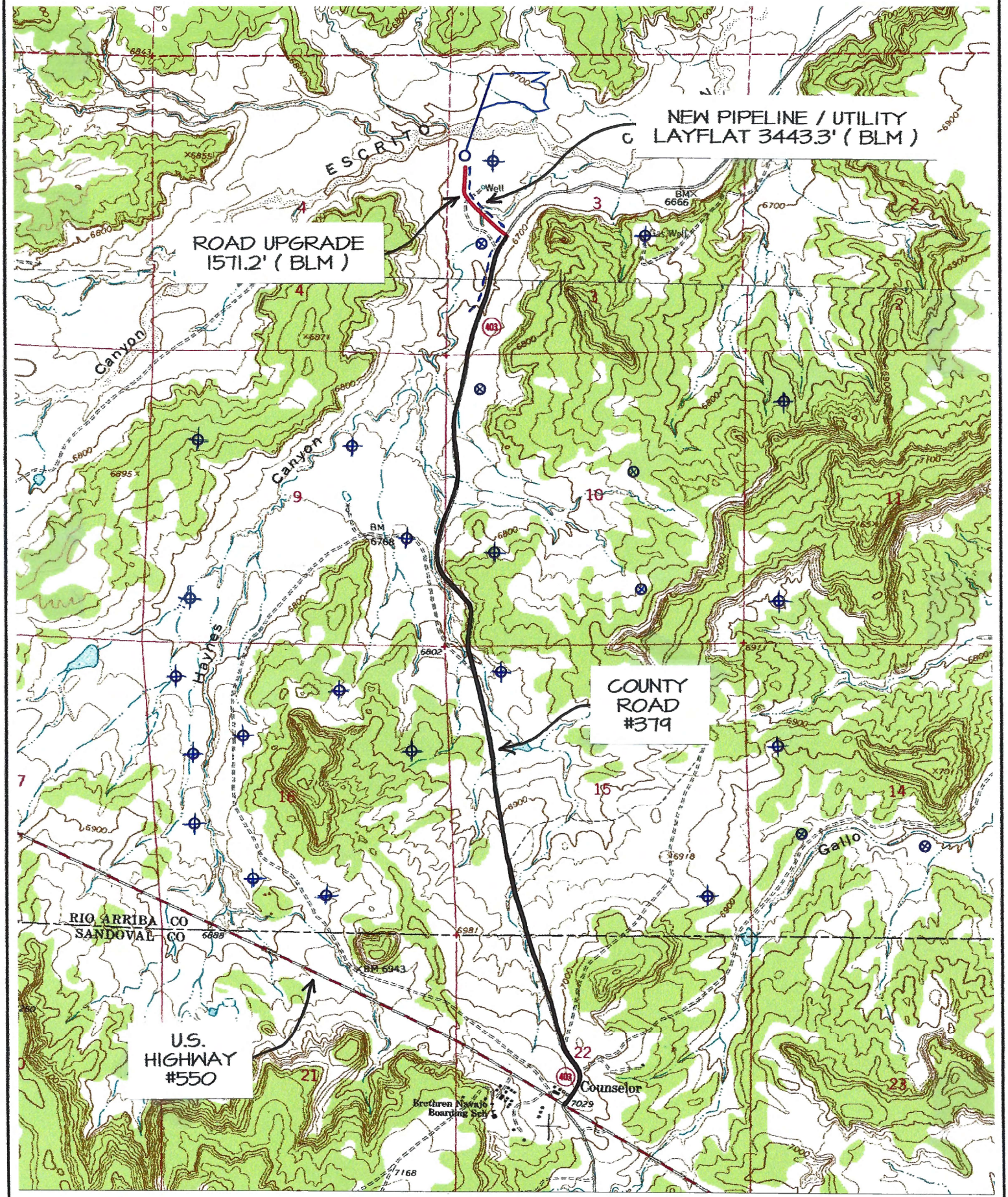
CHECKED BY: JCE
DRAWN BY: EDO
SHEET 11 OF 13
FILENAME: 2363MGP4

ENDURING RESOURCES, LLC HAYNES CANYON UNIT #438H

1713' FNL & 303' FWL, SECTION 3, T23N, R6W, N.M.P.M.
RIO ARRIBA COUNTY, NEW MEXICO



TOPO NAME : COUNSELOR ⊕ PRODUCING WELL ⊗ PLUGGED & ABANDONED WELL

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #438H

1713' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256175°N Longitude -107.464630°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #438H existing location.

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Enduring Resources IV, LLC **OGRID:** 372286 **Date:** 12/5/2023

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water
Haynes Canyon Unit 432H	pending	Sec. 3, T23N, R6W	UL:E SHL:1773' FNL & 303' FWL	412	1925	550
Haynes Canyon Unit 434H	pending	Sec. 3, T23N, R6W	UL:E SHL:1753' FNL & 303' FWL	412	1925	550
Haynes Canyon Unit 436H	pending	Sec. 3, T23N, R6W	UL:E SHL:1733' FNL & 303' FWL	412	1925	550
Haynes Canyon Unit 438H	pending	Sec. 3, T23N, R6W	UL:E SHL:1713' FNL & 303' FWL	412	1925	550

IV. Central Delivery Point Name: Haynes Canyon 428 CDP [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Haynes Canyon Unit 432H	pending	6/10/2024	6/30/2024	7/26/2024	8/26/2024	8/28/2024
Haynes Canyon Unit 434H	pending	6/23/2024	7/3/2024	7/26/2024	8/26/2024	8/28/2024
Haynes Canyon Unit 436H	pending	7/6/2024	7/20/2024	7/26/2024	8/27/2024	8/29/2024
Haynes Canyon Unit 438H	pending	7/18/2024	7/24/2024	7/26/2024	8/27/2024	8/29/2024

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☒ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☒ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Heather Huntington
Title: Regulatory Agent
E-mail Address: hhuntington@enduringresources.com
Date: 12/5/2023
Phone: 505-636-9751

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

Attachments:

Separation Equipment: Below is a complete description of how Operator will size separation equipment to optimize gas capture.

Description of how separation equipment will be sized to optimize gas capture:
Well separation equipment is sized to have appropriate residence time and vapor space to remove gas particles on the micron scale per typical engineering calculations and/or operational experience. Furthermore, a sales scrubber downstream of the well separators is planned in order to capture any additional liquids if present. All gas is routed to end users or the sales pipeline under normal operating conditions.

Operational & Best Management Practices: Below is a complete description of the actions the Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC. Additionally, below is a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Drilling Operations:
Enduring Resources will minimize venting by:

- Gas will only be vented to the atmosphere to avoid risk of immediate or substantial adverse impact to employee safety, public health, and the environment.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hole location

Completion Operations:
Enduring Resources will minimize venting by:

- Separator operation will commence as soon as technically feasible.
- Gas will route immediately to a collection system or applied to other beneficial use, such as a fuel source for onsite equipment.
- During initial flowback and if technically feasible, flaring shall occur rather than venting.
- If natural gas does not meet pipeline standards, gas will be vented or flared. A gas analysis will be performed twice weekly until standards are met (for up to 60 days). This is not anticipated to occur.
- If required, all venting and flaring of natural gas during flowback operations shall be performed in compliance with Subsections B, C and D of 19.15.27.8 NMAC.

Production Operations:
Enduring Resources will minimize venting by:

- Shutting in the wells if the pipeline is not available. No flaring of high pressure gas will occur.
- Utilizing gas for equipment fuel, heater fuel, and artificial lift when allowable.
- Capturing low pressure gas via a gas capture system when allowable.

In General:

- All venting and flaring from drilling, flowback and operation phases shall be reported in compliance with Subsection G of 19.15.27.8 NMAC.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hole location and 100 ft from the permanent facility storage tanks.

Flowback Strategy
After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Gas Transporter system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines
- Power generation for grid;
- Liquids removal on lease;
- Reinjection for underground storage;
- Reinjection for temporary storage;
- Reinjection for enhanced oil recovery;
- Fuel cell production; and
- Other alternative beneficial uses approved by the division.

ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, COLORADO 80211

DRILLING PLAN: ***Drill, complete, and equip single lateral in the Mancos-H formation***

WELL INFORMATION:

Name: **Haynes Canyon Unit 438H**
API Number: Not yet assigned
AFE Number: *Not yet assigned*
ER Well Number: *Not yet assigned*
State: New Mexico
County: Rio Arriba
Surface Elevation: 6,689 ft ASL (GL) 6,714 ft ASL (KB)
Surface Location: 3-23-6 Sec-Twn-Rng 1,713 ft FNL 303 ft FWL
36.256175 °N latitude 107.46463 °W longitude (NAD 83)
BH Location: 2-23-6 Sec-Twn-Rng 380 ft FNL 2,580 ft FWL
36.260404 °N latitude 107.438585 °W longitude (NAD 83)
Driving Directions: **FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:**
South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Ojo Alamo	5,301	1,413	1,451	W	normal
Kirtland	5,192	1,522	1,579	W	normal
Fruitland	4,973	1,741	1,851	G, W	sub
Pictured Cliffs	4,749	1,965	2,145	G, W	sub
Lewis	4,605	2,109	2,334	G, W	normal
Chacra	4,307	2,407	2,726	G, W	normal
Cliff House	3,203	3,511	4,176	G, W	sub
Menefee	3,203	3,511	4,176	G, W	normal
Point Lookout	2,496	4,218	5,103	G, W	normal
Mancos	2,203	4,511	5,488	O,G	sub (~0.38)
Gallup (MNCS_A)	1,857	4,857	5,898	O,G	sub (~0.38)
MNCS_B	1,772	4,942	5,986	O,G	sub (~0.38)
MNCS_C	1,619	5,095	6,145	O,G	sub (~0.38)
MNCS_Cms	1,544	5,170	6,226	O,G	sub (~0.38)
MNCS_D	1,499	5,215	6,278	O,G	sub (~0.38)
MNCS_E	1,418	5,296	6,376	O,G	sub (~0.38)
MNCS_F	1,363	5,351	6,452	O,G	sub (~0.38)
MNCS_G	1,279	5,435	6,594	O,G	sub (~0.38)
MNCS_H	1,216	5,498	6,730	O,G	sub (~0.38)
MNCS_I	0	0	0	O,G	sub (~0.38)
FTP TARGET	**1,279**	**5,435**	**6,594**	**O,G**	**sub (~0.38)**
PROJECTED LTP	**1,107**	**5,607**	**16,802**	**O,G**	**sub (~0.38)**

Surface: Nacimiento
Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup
Pressure: Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations
Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft
Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,420 psi
Maximum anticipated surface pressure, assuming partially evacuated hole: 1,190 psi
Temperature: **Maximum anticipated BHT is 125° F or less**

H_2S INFORMATION:

H_2S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.
Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs:
None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.
MWD / LWD: Gamma Ray from drillout of 13-3/8" casing to TD
Open Hole Logs: None planned
Testing: None planned
Coring: None planned
Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Aztec
Rig No.: 1000
Draw Works: E80 AC 1,500 hp

Mast:	Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
Top Drive:	NOV IDS-350PE (350 ton)
Prime Movers:	4 - GE Jenbacher Natural Gas Generator
Pumps:	2 - RS F-1600 (7,500 psi)
BOPE 1:	Cameron single & double gate rams (13-5/8", 3,000 psi)
BOPE 2:	Cameron annular (13-5/8", 5,000 psi)
Choke	Cameron (4", 10,000 psi)
KB-GL (ft):	25
Note:	Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

STATE AND FEDERAL NOTIFICATIONS		BLM	State
Construction and Reclamation:	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation. Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BOP	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and cementing.	(505) 564-7750	(505) 334-6178
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
	All notifications are to be recorded in the WellView report with time, date, name or number that notifications were made to.		
	Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov		

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.
2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.
3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
5) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement: Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimimize the amount of fluids and solids that require disposal.

Fluid Disposal : Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal : Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for additional details. Sufficient barite will be on location to weight up mud system to balance maximum anticipated pressure gradient.

DETAILED DRILLING PLAN:

SURFACE: ***Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.***

0 ft (MD)	**to**	**350 ft (MD)**	**Hole Section Length:**	**350 ft**
0 ft (TVD)	**to**	**350 ft (TVD)**	**Casing Required:**	**350 ft**

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"
Bit / Motor: Mill Tooth or PDC, no motor
MWD / Survey: No MWD, deviation survey
Logging: None
Procedure: Drill to TD. Use 12-/4" bit and open to 17-1/2" if unable to drill with 17-1/2" bit. Run inclination survey in 100' stations from TD to surface. Condition hole and fluid for casing running as required. TOOH. Run casing. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface. Install cellar and wellhead.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	789	116,634	116,634
Min. S.F.					**7.39**	**3.46**	**7.31**	**7.79**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: N/A Optimum: N/A Maximum: N/A*
Make-up as per API Buttress Connection running procedure.
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface
Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
	TYPE III	14.6	1.39	6.686	0.6946	100%	0	364
Annular Capacity	0.6946	cuft/ft	*13-3/8" casing x 17-1/2" hole annulus*			Csg capacity	0.8680	ft3/ft
Drake Energy Services:	*Calculated cement volumes assume gauge hole and the excess noted in table*							Cu Ft Slurry
								505.3
Tail	*ASTM Type III Blend*	Calcium Chloride 2% BWOC Accelerator	D-CD2 .3% BWOC Dispersant/Friction reducer	.25 lbs/sx Cello Flake - seepage				

Notify COGCC & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: ***Drill as per directional plan to casing setting depth, run casing, cement casing to surface.***

350	**ft (MD)**	**to**	**4,372**	**ft (MD)**	**Hole Section Length:** **4,022 ft**
350	**ft (TVD)**	**to**	**3,661**	**ft (TVD)**	**Casing Required:** **4,372 ft**

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (5% KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	No OBM

Hole Size: 12-1/4"
Bit / Motor: 12-1/4" PDC bit w/mud motor
Bit / Motor: MOTOR: NOV 087840 - 7/8, 4.0, stage, 0.16 rev/gal, 1.83 DEG, 900 GPM, 950 DIFF PSIG
BIT: 6-BLADE PDC w/16 mm or 19 mm cutters, TFA = 0.67 sq-in (range 0.65 - 0.90 max), **jet with 6 - 12s**
MWD / Survey: MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional
Logging: None
Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.
Procedure: Drill to TD following directional plan **(20' rat-hole past casing setting depth)**. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10', when possible. Take surveys every stand, at a minimum. Target flow-rates of 750 GPM (higher if able to control return rates). Minimum desired flow-rate is 650 GPM. At TD, condition hole and fluid for casing running. TOOH. Run casing using a CRT and washing / circulating as required. Land casing. ND BOPE. Walk rig to next well. Perform off-line cement job. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading					1,599	1,399	214,933	214,933
Min. S.F.					**1.26**	**2.52**	**2.62**	**2.11**

Assumptions: *Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*
Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,400 Optimum: 4,530 Maximum: 5,660*
Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface (FLOAT EQUIPMENT FROM WEATHERFORD)
Centralizers: 1 per joint in non-vertical hole; 1 per 3-joints in vertical hole
Centralizers: 1 centralizers jt stop-banded 10' from float shoe on bottom 1 jt & 1 centralizer floating on bottom joint, 1 centralizer per jt (floating) to KOP ; 1 centralizer per 3 jts (floating) to surface **(Centralizers from Scepter Supply - SLIP'N'SLIDE 9-5/8" x 11.75" SOLID BODY POLYMER)**

Cement:		Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Stage 1	*Spacer*	D-Mud Breaker	8.5				0	10 bbls	

Lead	90:10 Type III:POZ	12.5	2.140	12.05	70%	0	936	2,002
Tail	Type III	14.6	1.380	6.64	20%	3,872	150	207
Displacement	*335*	*est bbls*						

Annular Capacity
0.3627 cuft/ft *9-5/8" casing x 13-3/8" casing annulus*
0.3132 cuft/ft *9-5/8" casing x 12-1/4" hole annulus* 9-5/8" 36#ID 8.921
0.4341 cuft/ft *9-5/8" casing vol* *est shoe jt ft* 44

Calculated cement volumes assume gauge hole and the excess (open hole only) noted in table

Spacer *D-Mud Breaker* SAPP

Lead	*ASTM Type III 90/10 Poz*	D-CSE 1 5.0% BWOC Strength Enhancer	D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control	D-SA 1 1.4% BWOC Na Metasilicate	D-CD 2 .4% BWOC Dispersant	Cello Flace LCM .25 lb/sx	D-FP1 0.5% BWOC Defoamer	D-R1 .5% Retarder
Tail	*ASTM Type III Blend*		D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control		D-CD 2 .5% BWOC Dispersant	Cello Flace LCM .25 lb/sx		D-R1 .2% Retarder

Drake Intermediate Cementing Program

Cement must achieve 500 psi compressive strength before drilling out.
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: *Drill to TD following directional plan, run casing, cement casing to surface.*

4,372	ft (MD)	to	16,802	ft (MD)	Hole Section Length:	12,430 ft
3,661	ft (TVD)	to	5,607	ft (TVD)	Casing Required:	16,802 ft

Estimated KOP:	5,650	ft (MD)	4,635	ft (TVD)
Estimated Landing Point (FTP):	6,594	ft (MD)	5,435	ft (TVD)
Estimated Lateral Length:	10,208	ft (MD)		

Fluid:	Type	MW (ppg)	WPS ppm	HTHP	YP (lb/100 sqft)	ES	OWR	Comment
	OBM	8.0 - 9.0	120,000 CaCl	NC	±6	+300	80:20	WBM as contingency

Fluids / Solids Notes: Newpark OptiDrill OBM system. Ensure that drying shakers are rigged up after the rig (2nd set) of shakers. Solids control will burn retorts on cuttings samples one per tour to check % ROC. Add diesel and products as required to maintain mud in program specs. Reference Newpark's mud program for additional details. No asphalt products are to be added to the OBM system. **Any changes to the mud systems are to be discussed with engineering prior to application.**

Hole Size: 8-1/2"

Bit / Motor: 8-1/2" PDC bit w/mud motor

Bit / Motor: **MOTOR:** NOV 077857 - 6.5" 7/8, 5.0 stage, 0.23 rev/gal, 1.83 deg, 750 GPM, 1,580 DIFF PSIG (or similar); on demand friction breaking device(s) as required, bottom tool spaced ~3,000' behind the bit.
BIT: 5-BLADE PDC w/16 mm - 19 mm cutters, matrix body, target TFA = 1.0 - 1.5 sq-in

MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

Logging: GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs

Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

Procedure: Drill to KOP following directional plan. Target flow-rate is 650 - 700 GPM. Target differential is pressure is 700 - 1,000 psig. Target ROP 500 - 600 ft/hr. Steer as needed to keep well on plan. Keep DLS < 3 deg/100' and keep slide length < 10' until KOP, when feasible. Take surveys every stand, at a minimum. Confirm landing target, planned BUR for curve, and KOP with Geology and Engineering. Drill curve following directional plan and updated landing target. Take survey every joint during curve. Land curve. Continue drilling in lateral section, steering as needed to keep well on plan and in the target window. Keep DLS < 2 deg/100' and keep slide length < 20', when feasible. Take surveys every stand, at a minimum. **Target rotating parameters / performance: flow-rate is 650 - 700 GPM, differential is pressure is 700 - 1,000 psig, ROP 500 - 600 ft/hr, torque 38K ft-lbs (MAX drill pipe MUT).** After reaching TD, perform no more than one clean-up cycle to condition hole for casing running unless shakers indicate additional cleaning needed. TOOH & LD drill pipe (ROOH, if required; should NOT be required with OBM system). When pumping hole cleaning sweeps, fine LCM product is to be used -**Do not use barite for sweeps**. Run casing as described below. Use CRT for casing running only if necessary (should NOT be required with OBM). Verify make up torque when running casing. Space out casing getting the toe sleeve as close to LTP as possible. Land casing and test pack-off. Open floatation sub, fill casing, and circulate as required. Pump cement as detailed below. Note cement volume circulated to surface. Nipple down BOPE. Clean pits. RDMO to next pad.

Casing Specs:	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,770	9,025	346,476	346,476
Min. S.F.					**2.69**	**1.18**	**1.58**	**1.28**

Assumptions: *Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)*
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum:* *3,470* *Optimum:* *4,620* *Maximum:* *5,780*

Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

Casing Summary: Float shoe, float collar w/debris catcher, 1 jt casing, float collar **(Weatherford (WFT) float equipment)**, 20' marker joint, toe-intitiation sleeve **(WFT RD 8,500 psi)**, casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation sub **(NCS Air-Lock 2,500 psi from WFT)**, casing to surface. The toe-initiation sleeve shall be placed no closer to the unit boundary than 300' measured perpendicular to the East or West lease lines for a East-West azimuth drilled wellbore. Wellbore path must be no closer than 600' from the parallel lease lines. ***Note: the LTP is the maximum depth of the toe sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place the toe sleeve as close to (but not past) the planned LTP as possible.***

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.*
Lateral: 1 centralizer per 3 joints (purchase centralizers from Scepter Supply)
Top of curve to 9-5/8" shoe: 1 centralizer per 5 joints
9-5/8" shoe to surface: 1 centralizer per 5 joints

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)	Total Cmt (cu ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	658	1,560
Tail	G:POZ blend	13.3	1.570	7.70	10%	5,488	1,824	2,864

Displacement	*370*	*est bbls*			
Annular Capacity	0.2691	cuft/ft	*5-1/2" casing x 9-5/8" casing annulus*		
	0.2291	cuft/ft	*5-1/2" casing x 8-1/2" hole annulus*		
	0.1245	cuft/ft	*5-1/2" casing vol*	*est shoe jt ft*	100

Calculated cement volumes assume gauge hole and the excess noted in table
American Cementing Liner & Production Blend

Spacer	*S-8 Silica Flour 163.7 lbs/bbl*	Avis 616 viscosifier 11.6 lb/bbl	FP24 Defoamer .5 lb/bbl	IntegraGuard Star Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Lead	*ASTM Type I/II*	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R7C Retarder .2% BWOB	FP24 Defoamer 0.3% BWOB, Anti-Static .01 lb/sx	
Tail	*Type G 50%*	Pozzolan Fly Ash Extender 50%	BA90 Bonding Agent 3.0 lb/sx	Bentonite Viscosifier 4% BWOB	FL24 Fluid Loss .4% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R3 Retarder .5% BWOB	FP24 Defoamer .3% BWOB, IntegraSeal 0.25 lb/sx

Calculated cement volumes assume gauge hole and the excess noted in table
Notify NMOCD & BLM if cement is not circulated to surface.

Note: This well will not be considered an unorthodox well location as defintned by NMAC19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

FINISH WELL: ***ND BOP, cap well, RDMO.***
Procedure: After off-line cement job, cap and cover well. Continue drilling operations on subsequent wells on pad.

COMPLETION AND PRODUCTION PLAN:

Est Lateral Length: 10,108
Est Frac Inform: *42 Frac Stages 162,000 bbls slick water 13,150,000 lbs proppant*
Flowback: Flow back through production tubing as pressures allow
Production: Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:

Drilling: 11/1/23
Completion: 12/31/23
Production: 2/14/24

Prepared by:	**Alec Bridge**	**12/20/21**
Updated:	Greg Olson	2/20/23
	Greg Olson	3/27/23
	G Olson	**8/17/23**

Well: Haynes Canyon Unit 438H
Site: Haynes Canyon Unit (432, 434, 436 & 438)
Project: Rio Arriba County, New Mexico NAD83 NM C
Design: rev0
Rig:

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Haynes 438 FTP 380 FNL 1910 FEL	5539.00	1302.59	-2158.09	1916062.096	1280149.734	36.259678000	-107.472004000
Haynes 438 LTP 380 FNL 2580 FWL	5607.00	1444.28	7698.08	1916203.783	1290005.884	36.260404000	-107.438585000

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 3°/100' build
3	1846.55	40.40	292.854	1737.73	176.85	-419.61	3.00	292.85	-417.02	Begin 40.40° tangent
4	5612.46	40.40	292.854	4605.76	1124.73	-2668.60	0.00	0.00	-2652.15	Begin 10°/100' build/turn
5	6589.01	60.00	89.176	5432.25	1297.78	-2492.55	10.00	159.46	-2473.62	Begin 60.00° tangent
6	6649.01	60.00	89.176	5462.25	1298.53	-2440.59	0.00	0.00	-2421.66	Begin 10°/100' build
7	6945.06	89.60	89.176	5539.00	1302.59	-2158.09	10.00	0.00	-2139.14	Begin 89.60° lateral
8	16802.49	89.60	89.176	5607.00	1444.28	7698.08	0.00	0.00	7718.05	PBHL/TD @ 16802.49 MD 5607.00

MARKSMAN DIRECTIONAL

CASING DETAILS

TVD	MD	Name
350.00	350.00	13 3/8" Csg
3674.00	4389.00	9 5/8" Csg

Azimuths to Grid North
True North: 0.72°
Magnetic North: 9.17°

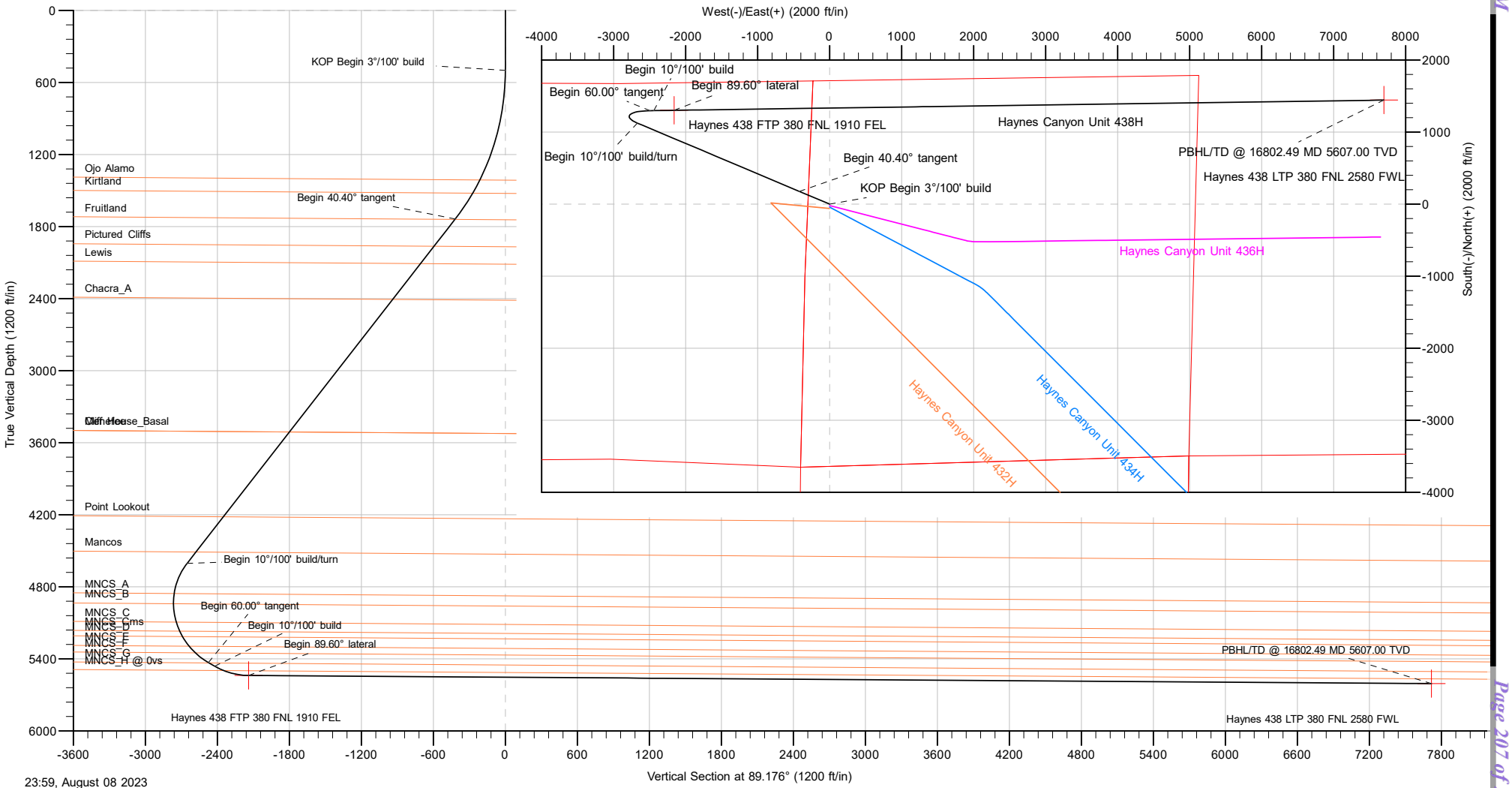
Magnetic Field
Strength: 49140.7nT
Dip Angle: 62.77°
Date: 8/8/2023
Model: IGRF2020

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone
System Datum: Mean Sea Level
Depth Reference: RKB=6689+25 @ 6714.00ft

Surface location:

Northing	Easting	Latittude	Longitude
1914759.511	1282307.819	36.256175000	-107.464630000

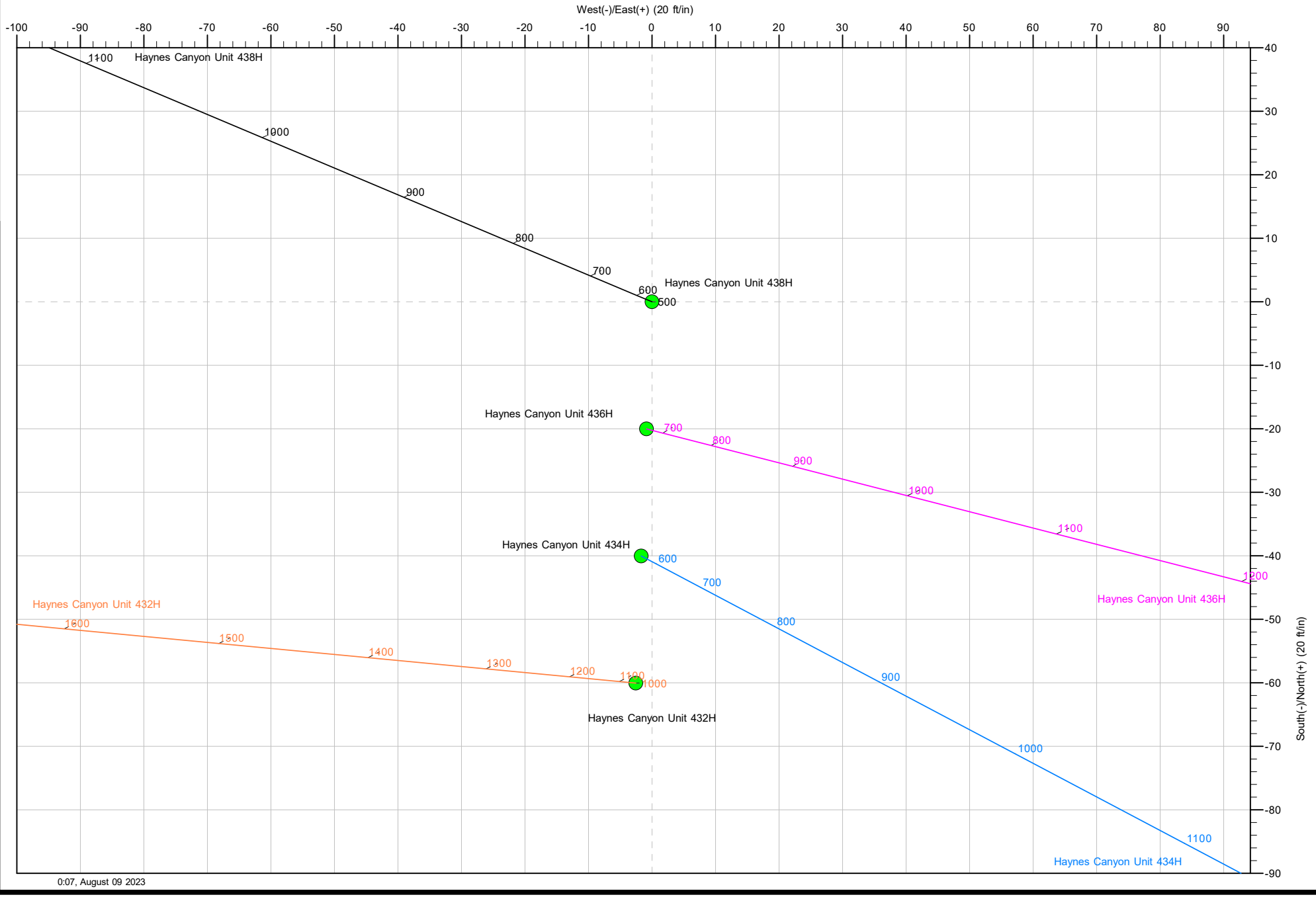
Total Corr (M=>G): To convert a Magnetic Direction to a Grid Direction, Add 9.17°



23:59, August 08 2023

Well: Haynes Canyon Unit 438H
Site: Haynes Canyon Unit (432, 434, 436 & 438)
Project: Rio Arriba County, New Mexico NAD83 NM C
Design: rev0
Rig:

MARKSMAN DIRECTIONAL



Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project Rio Arriba County, New Mexico NAD83 NM C

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site Haynes Canyon Unit (432, 434, 436 & 438)

Site Position:		**Northing:**	1,914,699.466 usft	**Latitude:**	36.256010000
From:	Lat/Long	**Easting:**	1,282,305.297 usft	**Longitude:**	-107.464636000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well Haynes Canyon Unit 438H, Surf loc: 1713 FNL 303 FWL Section 03-T23N-R06W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,914,759.511 usft	**Latitude:**	36.256175000
	+E/-W	0.00 ft	**Easting:**	1,282,307.819 usft	**Longitude:**	-107.464630000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,689.00 ft
Grid Convergence:		-0.72 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	8/8/2023	8.46	62.77	49,140.66294256

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	89.176

Plan Survey Tool Program **Date** 8/8/2023

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,802.42	rev0 (Original Hole)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	3.00	3.00	0.00	292.85	
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	0.00	0.00	0.00	0.00	
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	10.00	2.01	16.01	159.46	
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	0.00	0.00	0.00	0.00	
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	10.00	10.00	0.00	0.00	
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	0.00	0.00	0.00	0.00	Haynes 438 LTP 380

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.000	350.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8" Csg									
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3°/100' build									
600.00	3.00	292.854	599.95	1.02	-2.41	-2.40	3.00	3.00	0.00
700.00	6.00	292.854	699.63	4.06	-9.64	-9.58	3.00	3.00	0.00
800.00	9.00	292.854	798.77	9.13	-21.67	-21.53	3.00	3.00	0.00
900.00	12.00	292.854	897.08	16.21	-38.46	-38.22	3.00	3.00	0.00
1,000.00	15.00	292.854	994.31	25.27	-59.97	-59.60	3.00	3.00	0.00
1,100.00	18.00	292.854	1,090.18	36.30	-86.14	-85.61	3.00	3.00	0.00
1,200.00	21.00	292.854	1,184.43	49.27	-116.89	-116.17	3.00	3.00	0.00
1,300.00	24.00	292.854	1,276.81	64.13	-152.15	-151.22	3.00	3.00	0.00
1,400.00	27.00	292.854	1,367.06	80.85	-191.82	-190.64	3.00	3.00	0.00
1,451.38	28.54	292.854	1,412.52	90.14	-213.88	-212.56	3.00	3.00	0.00
Ojo Alamo									
1,500.00	30.00	292.854	1,454.93	99.38	-235.79	-234.33	3.00	3.00	0.00
1,578.52	32.36	292.854	1,522.10	115.16	-273.24	-271.56	3.00	3.00	0.00
Kirtland									
1,600.00	33.00	292.854	1,540.18	119.67	-283.93	-282.18	3.00	3.00	0.00
1,700.00	36.00	292.854	1,622.59	141.66	-336.12	-334.05	3.00	3.00	0.00
1,800.00	39.00	292.854	1,701.91	165.30	-392.21	-389.79	3.00	3.00	0.00
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	-417.02	3.00	3.00	0.00
Begin 40.40° tangent									
1,850.94	40.40	292.854	1,741.07	177.96	-422.23	-419.62	0.00	0.00	0.00
Fruitland									
1,900.00	40.40	292.854	1,778.44	190.30	-451.53	-448.74	0.00	0.00	0.00
2,000.00	40.40	292.854	1,854.59	215.47	-511.25	-508.10	0.00	0.00	0.00
2,100.00	40.40	292.854	1,930.75	240.64	-570.97	-567.45	0.00	0.00	0.00
2,144.78	40.40	292.854	1,964.85	251.92	-597.71	-594.02	0.00	0.00	0.00
Pictured Cliffs									
2,200.00	40.40	292.854	2,006.91	265.81	-630.69	-626.80	0.00	0.00	0.00
2,300.00	40.40	292.854	2,083.07	290.98	-690.41	-686.15	0.00	0.00	0.00
2,334.14	40.40	292.854	2,109.07	299.58	-710.80	-706.41	0.00	0.00	0.00
Lewis									
2,400.00	40.40	292.854	2,159.22	316.15	-750.13	-745.50	0.00	0.00	0.00
2,500.00	40.40	292.854	2,235.38	341.33	-809.85	-804.85	0.00	0.00	0.00
2,600.00	40.40	292.854	2,311.54	366.50	-869.57	-864.21	0.00	0.00	0.00
2,700.00	40.40	292.854	2,387.70	391.67	-929.29	-923.56	0.00	0.00	0.00
2,725.93	40.40	292.854	2,407.44	398.19	-944.77	-938.95	0.00	0.00	0.00
Chacra_A									
2,800.00	40.40	292.854	2,463.86	416.84	-989.01	-982.91	0.00	0.00	0.00
2,900.00	40.40	292.854	2,540.01	442.01	-1,048.73	-1,042.26	0.00	0.00	0.00
3,000.00	40.40	292.854	2,616.17	467.18	-1,108.45	-1,101.61	0.00	0.00	0.00
3,100.00	40.40	292.854	2,692.33	492.35	-1,168.17	-1,160.96	0.00	0.00	0.00
3,200.00	40.40	292.854	2,768.49	517.52	-1,227.88	-1,220.32	0.00	0.00	0.00
3,300.00	40.40	292.854	2,844.64	542.69	-1,287.60	-1,279.67	0.00	0.00	0.00
3,400.00	40.40	292.854	2,920.80	567.86	-1,347.32	-1,339.02	0.00	0.00	0.00
3,500.00	40.40	292.854	2,996.96	593.03	-1,407.04	-1,398.37	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,600.00	40.40	292.854	3,073.12	618.20	-1,466.76	-1,457.72	0.00	0.00	0.00
3,700.00	40.40	292.854	3,149.28	643.37	-1,526.48	-1,517.07	0.00	0.00	0.00
3,800.00	40.40	292.854	3,225.43	668.54	-1,586.20	-1,576.43	0.00	0.00	0.00
3,900.00	40.40	292.854	3,301.59	693.71	-1,645.92	-1,635.78	0.00	0.00	0.00
4,000.00	40.40	292.854	3,377.75	718.88	-1,705.64	-1,695.13	0.00	0.00	0.00
4,100.00	40.40	292.854	3,453.91	744.05	-1,765.36	-1,754.48	0.00	0.00	0.00
4,175.54	40.40	292.854	3,511.44	763.06	-1,810.48	-1,799.32	0.00	0.00	0.00
Cliff House_Basal - Menefee									
4,200.00	40.40	292.854	3,530.06	769.22	-1,825.08	-1,813.83	0.00	0.00	0.00
4,300.00	40.40	292.854	3,606.22	794.39	-1,884.80	-1,873.18	0.00	0.00	0.00
4,389.00	40.40	292.854	3,674.00	816.79	-1,937.95	-1,926.01	0.00	0.00	0.00
9 5/8" Csg									
4,400.00	40.40	292.854	3,682.38	819.56	-1,944.52	-1,932.54	0.00	0.00	0.00
4,500.00	40.40	292.854	3,758.54	844.73	-2,004.24	-1,991.89	0.00	0.00	0.00
4,600.00	40.40	292.854	3,834.70	869.90	-2,063.96	-2,051.24	0.00	0.00	0.00
4,700.00	40.40	292.854	3,910.85	895.07	-2,123.68	-2,110.59	0.00	0.00	0.00
4,800.00	40.40	292.854	3,987.01	920.24	-2,183.40	-2,169.94	0.00	0.00	0.00
4,900.00	40.40	292.854	4,063.17	945.41	-2,243.12	-2,229.29	0.00	0.00	0.00
5,000.00	40.40	292.854	4,139.33	970.58	-2,302.84	-2,288.65	0.00	0.00	0.00
5,100.00	40.40	292.854	4,215.48	995.75	-2,362.56	-2,348.00	0.00	0.00	0.00
5,102.77	40.40	292.854	4,217.60	996.44	-2,364.22	-2,349.64	0.00	0.00	0.00
Point Lookout									
5,200.00	40.40	292.854	4,291.64	1,020.92	-2,422.28	-2,407.35	0.00	0.00	0.00
5,300.00	40.40	292.854	4,367.80	1,046.09	-2,482.00	-2,466.70	0.00	0.00	0.00
5,400.00	40.40	292.854	4,443.96	1,071.26	-2,541.72	-2,526.05	0.00	0.00	0.00
5,488.03	40.40	292.854	4,511.00	1,093.41	-2,594.29	-2,578.30	0.00	0.00	0.00
Mancos									
5,500.00	40.40	292.854	4,520.12	1,096.43	-2,601.44	-2,585.40	0.00	0.00	0.00
5,600.00	40.40	292.854	4,596.27	1,121.60	-2,661.16	-2,644.76	0.00	0.00	0.00
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	-2,652.15	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,650.00	36.90	295.047	4,635.08	1,134.23	-2,690.03	-2,673.44	10.00	-9.31	5.84
5,700.00	32.32	298.587	4,676.22	1,146.99	-2,715.38	-2,698.61	10.00	-9.16	7.08
5,750.00	27.87	303.135	4,719.48	1,159.78	-2,736.92	-2,719.96	10.00	-8.91	9.10
5,800.00	23.62	309.211	4,764.51	1,172.51	-2,754.48	-2,737.33	10.00	-8.51	12.15
5,850.00	19.69	317.654	4,810.99	1,185.08	-2,767.92	-2,750.59	10.00	-7.84	16.89
5,898.11	16.45	329.183	4,856.74	1,196.93	-2,776.88	-2,759.38	10.00	-6.73	23.96
MNCS_A									
5,900.00	16.34	329.721	4,858.54	1,197.38	-2,777.15	-2,759.64	10.00	-5.92	28.54
5,950.00	13.98	346.677	4,906.82	1,209.34	-2,782.09	-2,764.41	10.00	-4.73	33.91
5,985.86	13.20	1.623	4,941.70	1,217.65	-2,782.97	-2,765.17	10.00	-2.17	41.68
MNCS_B									
6,000.00	13.15	7.825	4,955.46	1,220.86	-2,782.71	-2,764.86	10.00	-0.37	43.87
6,050.00	14.12	28.753	5,004.08	1,231.85	-2,778.99	-2,760.99	10.00	1.95	41.86
6,100.00	16.59	45.288	5,052.32	1,242.22	-2,770.98	-2,752.83	10.00	4.93	33.07
6,144.75	19.61	55.963	5,094.86	1,250.92	-2,760.22	-2,741.94	10.00	6.75	23.85
MNCS_C									
6,150.00	20.00	57.004	5,099.80	1,251.90	-2,758.73	-2,740.45	10.00	7.41	19.82
6,200.00	23.95	65.211	5,146.17	1,260.82	-2,742.34	-2,723.92	10.00	7.91	16.42
6,226.37	26.18	68.561	5,170.06	1,265.19	-2,732.06	-2,713.59	10.00	8.43	12.70
MNCS_Cms									
6,250.00	28.23	71.136	5,191.07	1,268.91	-2,721.92	-2,703.39	10.00	8.67	10.90
6,277.73	30.68	73.749	5,215.22	1,273.01	-2,708.92	-2,690.33	10.00	8.86	9.42

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
MNCS_D									
6,300.00	32.69	75.586	5,234.16	1,276.09	-2,697.64	-2,679.01	10.00	9.01	8.25
6,350.00	37.28	79.060	5,275.12	1,282.33	-2,669.68	-2,650.96	10.00	9.18	6.95
6,376.17	39.72	80.597	5,295.60	1,285.20	-2,653.64	-2,634.89	10.00	9.31	5.87
MNCS_E									
6,400.00	41.95	81.865	5,313.63	1,287.57	-2,638.25	-2,619.46	10.00	9.38	5.32
6,450.00	46.68	84.201	5,349.40	1,291.78	-2,603.59	-2,584.74	10.00	9.45	4.67
6,452.29	46.89	84.299	5,350.97	1,291.95	-2,601.93	-2,583.08	10.00	9.50	4.28
MNCS_F									
6,500.00	51.44	86.198	5,382.16	1,294.92	-2,565.96	-2,547.07	10.00	9.54	3.98
6,550.00	56.24	87.945	5,411.65	1,296.96	-2,525.66	-2,506.74	10.00	9.59	3.49
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	-2,473.63	10.00	9.63	3.16
Begin 60.00° tangent									
6,594.03	60.00	89.176	5,434.76	1,297.85	-2,488.20	-2,469.28	0.00	0.00	0.00
MNCS_G									
6,600.00	60.00	89.176	5,437.74	1,297.92	-2,483.03	-2,464.11	0.00	0.00	0.00
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	-2,421.66	0.00	0.00	0.00
Begin 10°/100' build									
6,700.00	65.10	89.176	5,485.75	1,299.18	-2,395.36	-2,376.43	10.00	10.00	0.00
6,729.84	68.08	89.176	5,497.60	1,299.57	-2,367.99	-2,349.05	10.00	10.00	0.00
MNCS_H @ 0vs									
6,750.00	70.10	89.176	5,504.80	1,299.84	-2,349.16	-2,330.22	10.00	10.00	0.00
6,800.00	75.10	89.176	5,519.74	1,300.53	-2,301.46	-2,282.52	10.00	10.00	0.00
6,850.00	80.10	89.176	5,530.48	1,301.23	-2,252.65	-2,233.71	10.00	10.00	0.00
6,900.00	85.10	89.176	5,536.92	1,301.94	-2,203.09	-2,184.14	10.00	10.00	0.00
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	-2,139.14	10.00	10.00	0.00
Begin 89.60° lateral									
7,000.00	89.60	89.176	5,539.38	1,303.38	-2,103.16	-2,084.20	0.00	0.00	0.00
7,100.00	89.60	89.176	5,540.07	1,304.82	-2,003.17	-1,984.20	0.00	0.00	0.00
7,200.00	89.60	89.176	5,540.76	1,306.26	-1,903.19	-1,884.20	0.00	0.00	0.00
7,300.00	89.60	89.176	5,541.45	1,307.69	-1,803.20	-1,784.21	0.00	0.00	0.00
7,400.00	89.60	89.176	5,542.14	1,309.13	-1,703.21	-1,684.21	0.00	0.00	0.00
7,500.00	89.60	89.176	5,542.83	1,310.57	-1,603.22	-1,584.21	0.00	0.00	0.00
7,600.00	89.60	89.176	5,543.52	1,312.00	-1,503.24	-1,484.21	0.00	0.00	0.00
7,700.00	89.60	89.176	5,544.21	1,313.44	-1,403.25	-1,384.22	0.00	0.00	0.00
7,800.00	89.60	89.176	5,544.90	1,314.88	-1,303.26	-1,284.22	0.00	0.00	0.00
7,900.00	89.60	89.176	5,545.59	1,316.32	-1,203.27	-1,184.22	0.00	0.00	0.00
8,000.00	89.60	89.176	5,546.28	1,317.75	-1,103.29	-1,084.22	0.00	0.00	0.00
8,100.00	89.60	89.176	5,546.97	1,319.19	-1,003.30	-984.22	0.00	0.00	0.00
8,200.00	89.60	89.176	5,547.66	1,320.63	-903.31	-884.23	0.00	0.00	0.00
8,300.00	89.60	89.176	5,548.35	1,322.07	-803.33	-784.23	0.00	0.00	0.00
8,400.00	89.60	89.176	5,549.04	1,323.50	-703.34	-684.23	0.00	0.00	0.00
8,500.00	89.60	89.176	5,549.73	1,324.94	-603.35	-584.23	0.00	0.00	0.00
8,600.00	89.60	89.176	5,550.41	1,326.38	-503.36	-484.24	0.00	0.00	0.00
8,700.00	89.60	89.176	5,551.10	1,327.82	-403.38	-384.24	0.00	0.00	0.00
8,800.00	89.60	89.176	5,551.79	1,329.25	-303.39	-284.24	0.00	0.00	0.00
8,900.00	89.60	89.176	5,552.48	1,330.69	-203.40	-184.24	0.00	0.00	0.00
9,000.00	89.60	89.176	5,553.17	1,332.13	-103.41	-84.25	0.00	0.00	0.00
9,100.00	89.60	89.176	5,553.86	1,333.56	-3.43	15.75	0.00	0.00	0.00
9,200.00	89.60	89.176	5,554.55	1,335.00	96.56	115.75	0.00	0.00	0.00
9,300.00	89.60	89.176	5,555.24	1,336.44	196.55	215.75	0.00	0.00	0.00
9,400.00	89.60	89.176	5,555.93	1,337.88	296.53	315.74	0.00	0.00	0.00
9,500.00	89.60	89.176	5,556.62	1,339.31	396.52	415.74	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,600.00	89.60	89.176	5,557.31	1,340.75	496.51	515.74	0.00	0.00	0.00
9,700.00	89.60	89.176	5,558.00	1,342.19	596.50	615.74	0.00	0.00	0.00
9,800.00	89.60	89.176	5,558.69	1,343.63	696.48	715.73	0.00	0.00	0.00
9,900.00	89.60	89.176	5,559.38	1,345.06	796.47	815.73	0.00	0.00	0.00
10,000.00	89.60	89.176	5,560.07	1,346.50	896.46	915.73	0.00	0.00	0.00
10,100.00	89.60	89.176	5,560.76	1,347.94	996.45	1,015.73	0.00	0.00	0.00
10,200.00	89.60	89.176	5,561.45	1,349.38	1,096.43	1,115.73	0.00	0.00	0.00
10,300.00	89.60	89.176	5,562.14	1,350.81	1,196.42	1,215.72	0.00	0.00	0.00
10,400.00	89.60	89.176	5,562.83	1,352.25	1,296.41	1,315.72	0.00	0.00	0.00
10,500.00	89.60	89.176	5,563.52	1,353.69	1,396.40	1,415.72	0.00	0.00	0.00
10,600.00	89.60	89.176	5,564.21	1,355.12	1,496.38	1,515.72	0.00	0.00	0.00
10,700.00	89.60	89.176	5,564.90	1,356.56	1,596.37	1,615.71	0.00	0.00	0.00
10,800.00	89.60	89.176	5,565.59	1,358.00	1,696.36	1,715.71	0.00	0.00	0.00
10,900.00	89.60	89.176	5,566.28	1,359.44	1,796.34	1,815.71	0.00	0.00	0.00
11,000.00	89.60	89.176	5,566.97	1,360.87	1,896.33	1,915.71	0.00	0.00	0.00
11,100.00	89.60	89.176	5,567.66	1,362.31	1,996.32	2,015.70	0.00	0.00	0.00
11,200.00	89.60	89.176	5,568.35	1,363.75	2,096.31	2,115.70	0.00	0.00	0.00
11,300.00	89.60	89.176	5,569.04	1,365.19	2,196.29	2,215.70	0.00	0.00	0.00
11,400.00	89.60	89.176	5,569.73	1,366.62	2,296.28	2,315.70	0.00	0.00	0.00
11,500.00	89.60	89.176	5,570.42	1,368.06	2,396.27	2,415.69	0.00	0.00	0.00
11,600.00	89.60	89.176	5,571.11	1,369.50	2,496.26	2,515.69	0.00	0.00	0.00
11,700.00	89.60	89.176	5,571.80	1,370.94	2,596.24	2,615.69	0.00	0.00	0.00
11,800.00	89.60	89.176	5,572.49	1,372.37	2,696.23	2,715.69	0.00	0.00	0.00
11,900.00	89.60	89.176	5,573.18	1,373.81	2,796.22	2,815.68	0.00	0.00	0.00
12,000.00	89.60	89.176	5,573.87	1,375.25	2,896.20	2,915.68	0.00	0.00	0.00
12,100.00	89.60	89.176	5,574.56	1,376.68	2,996.19	3,015.68	0.00	0.00	0.00
12,200.00	89.60	89.176	5,575.25	1,378.12	3,096.18	3,115.68	0.00	0.00	0.00
12,300.00	89.60	89.176	5,575.94	1,379.56	3,196.17	3,215.68	0.00	0.00	0.00
12,400.00	89.60	89.176	5,576.63	1,381.00	3,296.15	3,315.67	0.00	0.00	0.00
12,500.00	89.60	89.176	5,577.32	1,382.43	3,396.14	3,415.67	0.00	0.00	0.00
12,600.00	89.60	89.176	5,578.01	1,383.87	3,496.13	3,515.67	0.00	0.00	0.00
12,700.00	89.60	89.176	5,578.70	1,385.31	3,596.12	3,615.67	0.00	0.00	0.00
12,800.00	89.60	89.176	5,579.39	1,386.75	3,696.10	3,715.66	0.00	0.00	0.00
12,900.00	89.60	89.176	5,580.08	1,388.18	3,796.09	3,815.66	0.00	0.00	0.00
13,000.00	89.60	89.176	5,580.77	1,389.62	3,896.08	3,915.66	0.00	0.00	0.00
13,100.00	89.60	89.176	5,581.46	1,391.06	3,996.06	4,015.66	0.00	0.00	0.00
13,200.00	89.60	89.176	5,582.15	1,392.50	4,096.05	4,115.65	0.00	0.00	0.00
13,300.00	89.60	89.176	5,582.84	1,393.93	4,196.04	4,215.65	0.00	0.00	0.00
13,400.00	89.60	89.176	5,583.53	1,395.37	4,296.03	4,315.65	0.00	0.00	0.00
13,500.00	89.60	89.176	5,584.22	1,396.81	4,396.01	4,415.65	0.00	0.00	0.00
13,600.00	89.60	89.176	5,584.91	1,398.24	4,496.00	4,515.64	0.00	0.00	0.00
13,700.00	89.60	89.176	5,585.60	1,399.68	4,595.99	4,615.64	0.00	0.00	0.00
13,800.00	89.60	89.176	5,586.29	1,401.12	4,695.98	4,715.64	0.00	0.00	0.00
13,900.00	89.60	89.176	5,586.98	1,402.56	4,795.96	4,815.64	0.00	0.00	0.00
14,000.00	89.60	89.176	5,587.67	1,403.99	4,895.95	4,915.63	0.00	0.00	0.00
14,100.00	89.60	89.176	5,588.36	1,405.43	4,995.94	5,015.63	0.00	0.00	0.00
14,200.00	89.60	89.176	5,589.05	1,406.87	5,095.92	5,115.63	0.00	0.00	0.00
14,300.00	89.60	89.176	5,589.74	1,408.31	5,195.91	5,215.63	0.00	0.00	0.00
14,400.00	89.60	89.176	5,590.43	1,409.74	5,295.90	5,315.63	0.00	0.00	0.00
14,500.00	89.60	89.176	5,591.12	1,411.18	5,395.89	5,415.62	0.00	0.00	0.00
14,600.00	89.60	89.176	5,591.81	1,412.62	5,495.87	5,515.62	0.00	0.00	0.00
14,700.00	89.60	89.176	5,592.50	1,414.06	5,595.86	5,615.62	0.00	0.00	0.00
14,800.00	89.60	89.176	5,593.19	1,415.49	5,695.85	5,715.62	0.00	0.00	0.00
14,900.00	89.60	89.176	5,593.88	1,416.93	5,795.84	5,815.61	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,000.00	89.60	89.176	5,594.57	1,418.37	5,895.82	5,915.61	0.00	0.00	0.00
15,100.00	89.60	89.176	5,595.26	1,419.80	5,995.81	6,015.61	0.00	0.00	0.00
15,200.00	89.60	89.176	5,595.95	1,421.24	6,095.80	6,115.61	0.00	0.00	0.00
15,300.00	89.60	89.176	5,596.64	1,422.68	6,195.79	6,215.60	0.00	0.00	0.00
15,400.00	89.60	89.176	5,597.33	1,424.12	6,295.77	6,315.60	0.00	0.00	0.00
15,500.00	89.60	89.176	5,598.01	1,425.55	6,395.76	6,415.60	0.00	0.00	0.00
15,600.00	89.60	89.176	5,598.70	1,426.99	6,495.75	6,515.60	0.00	0.00	0.00
15,700.00	89.60	89.176	5,599.39	1,428.43	6,595.73	6,615.59	0.00	0.00	0.00
15,800.00	89.60	89.176	5,600.08	1,429.87	6,695.72	6,715.59	0.00	0.00	0.00
15,900.00	89.60	89.176	5,600.77	1,431.30	6,795.71	6,815.59	0.00	0.00	0.00
16,000.00	89.60	89.176	5,601.46	1,432.74	6,895.70	6,915.59	0.00	0.00	0.00
16,100.00	89.60	89.176	5,602.15	1,434.18	6,995.68	7,015.58	0.00	0.00	0.00
16,200.00	89.60	89.176	5,602.84	1,435.62	7,095.67	7,115.58	0.00	0.00	0.00
16,300.00	89.60	89.176	5,603.53	1,437.05	7,195.66	7,215.58	0.00	0.00	0.00
16,400.00	89.60	89.176	5,604.22	1,438.49	7,295.65	7,315.58	0.00	0.00	0.00
16,500.00	89.60	89.176	5,604.91	1,439.93	7,395.63	7,415.58	0.00	0.00	0.00
16,600.00	89.60	89.176	5,605.60	1,441.37	7,495.62	7,515.57	0.00	0.00	0.00
16,700.00	89.60	89.176	5,606.29	1,442.80	7,595.61	7,615.57	0.00	0.00	0.00
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	7,718.05	0.00	0.00	0.00
PBHL/TD @ 16802.49 MD 5607.00 TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Haynes 438 FTP 380 FN - plan hits target center - Point	0.00	0.000	5,539.00	1,302.59	-2,158.09	1,916,062.096	1,280,149.734	36.259678000	-107.472004000
Haynes 438 LTP 380 FN - plan hits target center - Point	0.00	0.000	5,607.00	1,444.28	7,698.08	1,916,203.783	1,290,005.884	36.260404000	-107.438585000

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2
4,389.00	3,674.00	9 5/8" Csg	9-5/8	12-1/4

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,451.38	1,412.52	Ojo Alamo		0.40	89.176
1,578.52	1,522.10	Kirtland		0.40	89.176
1,850.94	1,741.07	Fruitland		0.40	89.176
2,144.78	1,964.85	Pictured Cliffs		0.40	89.176
2,334.14	2,109.07	Lewis		0.40	89.176
2,725.93	2,407.44	Chacra_A		0.40	89.176
4,175.54	3,511.44	Cliff House_Basal		0.40	89.176
4,175.54	3,511.44	Menefee		0.40	89.176
5,102.77	4,217.60	Point Lookout		0.40	89.176
5,488.03	4,511.00	Mancos		0.40	89.176
5,898.11	4,856.74	MNCS_A		0.40	89.176
5,985.86	4,941.70	MNCS_B		0.40	89.176
6,144.75	5,094.86	MNCS_C		0.40	89.176
6,226.37	5,170.06	MNCS_Cms		0.40	89.176
6,277.73	5,215.22	MNCS_D		0.40	89.176
6,376.17	5,295.60	MNCS_E		0.40	89.176
6,452.29	5,350.97	MNCS_F		0.40	89.176
6,594.03	5,434.76	MNCS_G		0.40	89.176
6,729.84	5,497.60	MNCS_H @ 0vs		0.40	89.176

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.00	500.00	0.00	0.00	KOP Begin 3°/100' build
1,846.55	1,737.73	176.85	-419.61	Begin 40.40° tangent
5,612.46	4,605.76	1,124.73	-2,668.60	Begin 10°/100' build/turn
6,589.01	5,432.25	1,297.78	-2,492.55	Begin 60.00° tangent
6,649.01	5,462.25	1,298.53	-2,440.59	Begin 10°/100' build
6,945.06	5,539.00	1,302.59	-2,158.09	Begin 89.60° lateral
16,802.49	5,607.00	1,444.28	7,698.08	PBHL/TD @ 16802.49 MD 5607.00 TVD

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project Rio Arriba County, New Mexico NAD83 NM C

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site Haynes Canyon Unit (432, 434, 436 & 438)

Site Position:		**Northing:**	1,914,699.466 usft	**Latitude:**	36.256010000
From:	Lat/Long	**Easting:**	1,282,305.297 usft	**Longitude:**	-107.464636000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well Haynes Canyon Unit 438H, Surf loc: 1713 FNL 303 FWL Section 03-T23N-R06W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,914,759.511 usft	**Latitude:**	36.256175000
	+E/-W	0.00 ft	**Easting:**	1,282,307.819 usft	**Longitude:**	-107.464630000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,689.00 ft
Grid Convergence:		-0.72 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	8/8/2023	8.46	62.77	49,140.66294256

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	89.176

Plan Survey Tool Program **Date** 8/8/2023

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,802.42	rev0 (Original Hole)	MWD OWSG MWD - Standard	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	3.00	3.00	0.00	292.85	
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	0.00	0.00	0.00	0.00	
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	10.00	2.01	16.01	159.46	
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	0.00	0.00	0.00	0.00	
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	10.00	10.00	0.00	0.00	
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	0.00	0.00	0.00	0.00	Haynes 438 LTP 380

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
100.00	0.00	0.000	100.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
200.00	0.00	0.000	200.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
300.00	0.00	0.000	300.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
350.00	0.00	0.000	350.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
13 3/8" Csg									
400.00	0.00	0.000	400.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
500.00	0.00	0.000	500.00	0.00	0.00	1,914,759.511	1,282,307.819	36.256175000	-107.464630000
KOP Begin 3°/100' build									
600.00	3.00	292.854	599.95	1.02	-2.41	1,914,760.528	1,282,305.407	36.256177709	-107.464638223
700.00	6.00	292.854	699.63	4.06	-9.64	1,914,763.574	1,282,298.178	36.256185829	-107.464662867
800.00	9.00	292.854	798.77	9.13	-21.67	1,914,768.643	1,282,286.152	36.256199336	-107.464703866
900.00	12.00	292.854	897.08	16.21	-38.46	1,914,775.720	1,282,269.361	36.256218194	-107.464761107
1,000.00	15.00	292.854	994.31	25.27	-59.97	1,914,784.786	1,282,247.851	36.256242352	-107.464834433
1,100.00	18.00	292.854	1,090.18	36.30	-86.14	1,914,795.815	1,282,221.682	36.256271743	-107.464923644
1,200.00	21.00	292.854	1,184.43	49.27	-116.89	1,914,808.778	1,282,190.926	36.256306286	-107.465028494
1,300.00	24.00	292.854	1,276.81	64.13	-152.15	1,914,823.639	1,282,155.665	36.256345887	-107.465148697
1,400.00	27.00	292.854	1,367.06	80.85	-191.82	1,914,840.357	1,282,115.999	36.256390438	-107.465283923
1,451.38	28.54	292.854	1,412.52	90.14	-213.88	1,914,849.654	1,282,093.940	36.256415212	-107.465359121
Ojo Alamo									
1,500.00	30.00	292.854	1,454.93	99.38	-235.79	1,914,858.887	1,282,072.034	36.256439815	-107.465433802
1,578.52	32.36	292.854	1,522.10	115.16	-273.24	1,914,874.674	1,282,034.578	36.256481882	-107.465561491
Kirtland									
1,600.00	33.00	292.854	1,540.18	119.67	-283.93	1,914,879.178	1,282,023.891	36.256493884	-107.465597922
1,700.00	36.00	292.854	1,622.59	141.66	-336.12	1,914,901.174	1,281,971.703	36.256552496	-107.465775835
1,800.00	39.00	292.854	1,701.91	165.30	-392.21	1,914,924.814	1,281,915.612	36.256615491	-107.465967051
1,846.55	40.40	292.854	1,737.73	176.85	-419.61	1,914,936.362	1,281,888.213	36.256646263	-107.466060455
Begin 40.40° tangent									
1,850.94	40.40	292.854	1,741.07	177.96	-422.23	1,914,937.466	1,281,885.593	36.256649205	-107.466069387
Fruitland									
1,900.00	40.40	292.854	1,778.44	190.30	-451.53	1,914,949.815	1,281,856.293	36.256682112	-107.466169273
2,000.00	40.40	292.854	1,854.59	215.47	-511.25	1,914,974.985	1,281,796.574	36.256749182	-107.466372862
2,100.00	40.40	292.854	1,930.75	240.64	-570.97	1,915,000.155	1,281,736.854	36.256816251	-107.466576451
2,144.78	40.40	292.854	1,964.85	251.92	-597.71	1,915,011.426	1,281,710.112	36.256846284	-107.466667614
Pictured Cliffs									
2,200.00	40.40	292.854	2,006.91	265.81	-630.69	1,915,025.325	1,281,677.134	36.256883321	-107.466780040
2,300.00	40.40	292.854	2,083.07	290.98	-690.41	1,915,050.495	1,281,617.414	36.256950390	-107.466983630
2,334.14	40.40	292.854	2,109.07	299.58	-710.80	1,915,059.089	1,281,597.025	36.256973288	-107.467053140
Lewis									
2,400.00	40.40	292.854	2,159.22	316.15	-750.13	1,915,075.665	1,281,557.695	36.257017458	-107.467187220
2,500.00	40.40	292.854	2,235.38	341.33	-809.85	1,915,100.835	1,281,497.975	36.257084527	-107.467390811
2,600.00	40.40	292.854	2,311.54	366.50	-869.57	1,915,126.005	1,281,438.255	36.257151595	-107.467594401
2,700.00	40.40	292.854	2,387.70	391.67	-929.29	1,915,151.175	1,281,378.535	36.257218662	-107.467797992
2,725.93	40.40	292.854	2,407.44	398.19	-944.77	1,915,157.702	1,281,363.050	36.257236052	-107.467850782
Chacra_A									
2,800.00	40.40	292.854	2,463.86	416.84	-989.01	1,915,176.345	1,281,318.816	36.257285729	-107.468001584
2,900.00	40.40	292.854	2,540.01	442.01	-1,048.73	1,915,201.515	1,281,259.096	36.257352796	-107.468205176
3,000.00	40.40	292.854	2,616.17	467.18	-1,108.45	1,915,226.685	1,281,199.376	36.257419863	-107.468408768
3,100.00	40.40	292.854	2,692.33	492.35	-1,168.17	1,915,251.855	1,281,139.657	36.257486929	-107.468612360
3,200.00	40.40	292.854	2,768.49	517.52	-1,227.88	1,915,277.025	1,281,079.937	36.257553995	-107.468815953
3,300.00	40.40	292.854	2,844.64	542.69	-1,287.60	1,915,302.195	1,281,020.217	36.257621060	-107.469019546
3,400.00	40.40	292.854	2,920.80	567.86	-1,347.32	1,915,327.365	1,280,960.497	36.257688125	-107.469223140
3,500.00	40.40	292.854	2,996.96	593.03	-1,407.04	1,915,352.535	1,280,900.778	36.257755190	-107.469426734

Planning Report - Geographic

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Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,600.00	40.40	292.854	3,073.12	618.20	-1,466.76	1,915,377.705	1,280,841.058	36.257822254	-107.469630328
3,700.00	40.40	292.854	3,149.28	643.37	-1,526.48	1,915,402.875	1,280,781.338	36.257889318	-107.469833922
3,800.00	40.40	292.854	3,225.43	668.54	-1,586.20	1,915,428.045	1,280,721.618	36.257956382	-107.470037517
3,900.00	40.40	292.854	3,301.59	693.71	-1,645.92	1,915,453.216	1,280,661.899	36.258023445	-107.470241112
4,000.00	40.40	292.854	3,377.75	718.88	-1,705.64	1,915,478.386	1,280,602.179	36.258090508	-107.470444708
4,100.00	40.40	292.854	3,453.91	744.05	-1,765.36	1,915,503.556	1,280,542.459	36.258157571	-107.470648304
4,175.54	40.40	292.854	3,511.44	763.06	-1,810.48	1,915,522.570	1,280,497.345	36.258208231	-107.470802106
Cliff House_Basal - Menefee									
4,200.00	40.40	292.854	3,530.06	769.22	-1,825.08	1,915,528.726	1,280,482.740	36.258224633	-107.470851900
4,300.00	40.40	292.854	3,606.22	794.39	-1,884.80	1,915,553.896	1,280,423.020	36.258291695	-107.471055496
4,389.00	40.40	292.854	3,674.00	816.79	-1,937.95	1,915,576.296	1,280,369.871	36.258351377	-107.471236691
9 5/8" Csg									
4,400.00	40.40	292.854	3,682.38	819.56	-1,944.52	1,915,579.066	1,280,363.300	36.258358756	-107.471259093
4,500.00	40.40	292.854	3,758.54	844.73	-2,004.24	1,915,604.236	1,280,303.580	36.258425818	-107.471462690
4,600.00	40.40	292.854	3,834.70	869.90	-2,063.96	1,915,629.406	1,280,243.861	36.258492878	-107.471666287
4,700.00	40.40	292.854	3,910.85	895.07	-2,123.68	1,915,654.576	1,280,184.141	36.258559939	-107.471869885
4,800.00	40.40	292.854	3,987.01	920.24	-2,183.40	1,915,679.746	1,280,124.421	36.258626999	-107.472073483
4,900.00	40.40	292.854	4,063.17	945.41	-2,243.12	1,915,704.916	1,280,064.702	36.258694059	-107.472277082
5,000.00	40.40	292.854	4,139.33	970.58	-2,302.84	1,915,730.086	1,280,004.982	36.258761118	-107.472480681
5,100.00	40.40	292.854	4,215.48	995.75	-2,362.56	1,915,755.256	1,279,945.262	36.258828177	-107.472684280
5,102.77	40.40	292.854	4,217.60	996.44	-2,364.22	1,915,755.954	1,279,943.606	36.258830037	-107.472689926
Point Lookout									
5,200.00	40.40	292.854	4,291.64	1,020.92	-2,422.28	1,915,780.426	1,279,885.542	36.258895236	-107.472887880
5,300.00	40.40	292.854	4,367.80	1,046.09	-2,482.00	1,915,805.596	1,279,825.823	36.258962294	-107.473091480
5,400.00	40.40	292.854	4,443.96	1,071.26	-2,541.72	1,915,830.766	1,279,766.103	36.259029352	-107.473295080
5,488.03	40.40	292.854	4,511.00	1,093.41	-2,594.29	1,915,852.923	1,279,713.531	36.259088384	-107.473474311
Mancos									
5,500.00	40.40	292.854	4,520.12	1,096.43	-2,601.44	1,915,855.936	1,279,706.383	36.259096410	-107.473498681
5,600.00	40.40	292.854	4,596.27	1,121.60	-2,661.16	1,915,881.106	1,279,646.663	36.259163467	-107.473702282
5,612.46	40.40	292.854	4,605.76	1,124.73	-2,668.60	1,915,884.242	1,279,639.223	36.259171822	-107.473727649
Begin 10°/100' build/turn									
5,650.00	36.90	295.047	4,635.08	1,134.23	-2,690.03	1,915,893.741	1,279,617.795	36.259197168	-107.473800722
5,700.00	32.32	298.587	4,676.22	1,146.99	-2,715.38	1,915,906.500	1,279,592.443	36.259231330	-107.473887244
5,750.00	27.87	303.135	4,719.48	1,159.78	-2,736.92	1,915,919.291	1,279,570.906	36.259265715	-107.473960827
5,800.00	23.62	309.211	4,764.51	1,172.51	-2,754.48	1,915,932.019	1,279,553.350	36.259300061	-107.474020910
5,850.00	19.69	317.654	4,810.99	1,185.08	-2,767.92	1,915,944.585	1,279,539.907	36.259334106	-107.474067038
5,898.11	16.45	329.183	4,856.74	1,196.93	-2,776.88	1,915,956.435	1,279,530.950	36.259366343	-107.474097921
MNCS_A									
5,900.00	16.34	329.721	4,858.54	1,197.38	-2,777.15	1,915,956.893	1,279,530.679	36.259367592	-107.474098858
5,950.00	13.98	346.677	4,906.82	1,209.34	-2,782.09	1,915,968.852	1,279,525.738	36.259400264	-107.474116128
5,985.86	13.20	1.623	4,941.70	1,217.65	-2,782.97	1,915,977.162	1,279,524.855	36.259423059	-107.474119476
MNCS_B									
6,000.00	13.15	7.825	4,955.46	1,220.86	-2,782.71	1,915,980.368	1,279,525.120	36.259431873	-107.474118717
6,050.00	14.12	28.753	5,004.08	1,231.85	-2,778.99	1,915,991.356	1,279,528.830	36.259462179	-107.474106605
6,100.00	16.59	45.288	5,052.32	1,242.22	-2,770.98	1,916,001.730	1,279,536.841	36.259490950	-107.474079884
6,144.75	19.61	55.963	5,094.86	1,250.92	-2,760.22	1,916,010.431	1,279,547.607	36.259515220	-107.474043745
MNCS_C									
6,150.00	20.00	57.004	5,099.80	1,251.90	-2,758.73	1,916,011.413	1,279,549.090	36.259517969	-107.474038758
6,200.00	23.95	65.211	5,146.17	1,260.82	-2,742.34	1,916,020.330	1,279,565.486	36.259543028	-107.473983539
6,226.37	26.18	68.561	5,170.06	1,265.19	-2,732.06	1,916,024.701	1,279,575.762	36.259555391	-107.473948876
MNCS_Cms									
6,250.00	28.23	71.136	5,191.07	1,268.91	-2,721.92	1,916,028.413	1,279,585.902	36.259565938	-107.473914649

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Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,277.73	30.68	73.749	5,215.22	1,273.01	-2,708.92	1,916,032.515	1,279,598.905	36.259577655	-107.473870730
MNCS_D									
6,300.00	32.69	75.586	5,234.16	1,276.09	-2,697.64	1,916,035.602	1,279,610.184	36.259586525	-107.473832610
6,350.00	37.28	79.060	5,275.12	1,282.33	-2,669.68	1,916,041.841	1,279,638.147	36.259604630	-107.473738048
6,376.17	39.72	80.597	5,295.60	1,285.20	-2,653.64	1,916,044.712	1,279,654.183	36.259613072	-107.473683792
MNCS_E									
6,400.00	41.95	81.865	5,313.63	1,287.57	-2,638.25	1,916,047.083	1,279,669.578	36.259620118	-107.473631683
6,450.00	46.68	84.201	5,349.40	1,291.78	-2,603.59	1,916,051.288	1,279,704.238	36.259632869	-107.473514323
6,452.29	46.89	84.299	5,350.97	1,291.95	-2,601.93	1,916,051.455	1,279,705.897	36.259633385	-107.473508706
MNCS_F									
6,500.00	51.44	86.198	5,382.16	1,294.92	-2,565.96	1,916,054.424	1,279,741.863	36.259642787	-107.473386861
6,550.00	56.24	87.945	5,411.65	1,296.96	-2,525.66	1,916,056.467	1,279,782.167	36.259649796	-107.473250269
6,589.01	60.00	89.176	5,432.25	1,297.78	-2,492.55	1,916,057.291	1,279,815.278	36.259653209	-107.473138017
Begin 60.00° tangent									
6,594.03	60.00	89.176	5,434.76	1,297.85	-2,488.20	1,916,057.354	1,279,819.627	36.259653532	-107.473123272
MNCS_G									
6,600.00	60.00	89.176	5,437.74	1,297.92	-2,483.03	1,916,057.428	1,279,824.792	36.259653915	-107.473105758
6,649.01	60.00	89.176	5,462.25	1,298.53	-2,440.59	1,916,058.038	1,279,867.234	36.259657063	-107.472961853
Begin 10°/100' build									
6,700.00	65.10	89.176	5,485.75	1,299.18	-2,395.36	1,916,058.688	1,279,912.461	36.259660416	-107.472808506
6,729.84	68.08	89.176	5,497.60	1,299.57	-2,367.99	1,916,059.082	1,279,939.838	36.259662447	-107.472715680
MNCS_H @ 0vs									
6,750.00	70.10	89.176	5,504.80	1,299.84	-2,349.16	1,916,059.353	1,279,958.668	36.259663843	-107.472651835
6,800.00	75.10	89.176	5,519.74	1,300.53	-2,301.46	1,916,060.038	1,280,006.360	36.259667379	-107.472490130
6,850.00	80.10	89.176	5,530.48	1,301.23	-2,252.65	1,916,060.740	1,280,055.172	36.259670998	-107.472324624
6,900.00	85.10	89.176	5,536.92	1,301.94	-2,203.09	1,916,061.452	1,280,104.735	36.259674673	-107.472156576
6,945.06	89.60	89.176	5,539.00	1,302.59	-2,158.09	1,916,062.099	1,280,149.731	36.259678008	-107.472004012
Begin 89.60° lateral									
7,000.00	89.60	89.176	5,539.38	1,303.38	-2,103.16	1,916,062.889	1,280,204.663	36.259682081	-107.471817756
7,100.00	89.60	89.176	5,540.07	1,304.82	-2,003.17	1,916,064.326	1,280,304.650	36.259689492	-107.471478737
7,200.00	89.60	89.176	5,540.76	1,306.26	-1,903.19	1,916,065.764	1,280,404.638	36.259696902	-107.471139718
7,300.00	89.60	89.176	5,541.45	1,307.69	-1,803.20	1,916,067.201	1,280,504.625	36.259704311	-107.470800699
7,400.00	89.60	89.176	5,542.14	1,309.13	-1,703.21	1,916,068.638	1,280,604.612	36.259711720	-107.470461679
7,500.00	89.60	89.176	5,542.83	1,310.57	-1,603.22	1,916,070.076	1,280,704.599	36.259719127	-107.470122660
7,600.00	89.60	89.176	5,543.52	1,312.00	-1,503.24	1,916,071.513	1,280,804.586	36.259726534	-107.469783640
7,700.00	89.60	89.176	5,544.21	1,313.44	-1,403.25	1,916,072.950	1,280,904.573	36.259733939	-107.469444620
7,800.00	89.60	89.176	5,544.90	1,314.88	-1,303.26	1,916,074.388	1,281,004.560	36.259741344	-107.469105600
7,900.00	89.60	89.176	5,545.59	1,316.32	-1,203.27	1,916,075.825	1,281,104.547	36.259748747	-107.468766580
8,000.00	89.60	89.176	5,546.28	1,317.75	-1,103.29	1,916,077.262	1,281,204.534	36.259756150	-107.468427560
8,100.00	89.60	89.176	5,546.97	1,319.19	-1,003.30	1,916,078.700	1,281,304.521	36.259763551	-107.468088540
8,200.00	89.60	89.176	5,547.66	1,320.63	-903.31	1,916,080.137	1,281,404.508	36.259770952	-107.467749519
8,300.00	89.60	89.176	5,548.35	1,322.07	-803.33	1,916,081.574	1,281,504.495	36.259778352	-107.467410499
8,400.00	89.60	89.176	5,549.04	1,323.50	-703.34	1,916,083.012	1,281,604.483	36.259785750	-107.467071478
8,500.00	89.60	89.176	5,549.73	1,324.94	-603.35	1,916,084.449	1,281,704.470	36.259793148	-107.466732458
8,600.00	89.60	89.176	5,550.41	1,326.38	-503.36	1,916,085.886	1,281,804.457	36.259800545	-107.466393437
8,700.00	89.60	89.176	5,551.10	1,327.82	-403.38	1,916,087.324	1,281,904.444	36.259807941	-107.466054416
8,800.00	89.60	89.176	5,551.79	1,329.25	-303.39	1,916,088.761	1,282,004.431	36.259815336	-107.465715395
8,900.00	89.60	89.176	5,552.48	1,330.69	-203.40	1,916,090.198	1,282,104.418	36.259822730	-107.465376375
9,000.00	89.60	89.176	5,553.17	1,332.13	-103.41	1,916,091.636	1,282,204.405	36.259830123	-107.465037353
9,100.00	89.60	89.176	5,553.86	1,333.56	-3.43	1,916,093.073	1,282,304.392	36.259837515	-107.464698332
9,200.00	89.60	89.176	5,554.55	1,335.00	96.56	1,916,094.510	1,282,404.379	36.259844906	-107.464359311
9,300.00	89.60	89.176	5,555.24	1,336.44	196.55	1,916,095.948	1,282,504.366	36.259852296	-107.464020290
9,400.00	89.60	89.176	5,555.93	1,337.88	296.53	1,916,097.385	1,282,604.353	36.259859685	-107.463681268
9,500.00	89.60	89.176	5,556.62	1,339.31	396.52	1,916,098.822	1,282,704.340	36.259867073	-107.463342247

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,600.00	89.60	89.176	5,557.31	1,340.75	496.51	1,916,100.260	1,282,804.328	36.259874461	-107.463003225
9,700.00	89.60	89.176	5,558.00	1,342.19	596.50	1,916,101.697	1,282,904.315	36.259881847	-107.462664204
9,800.00	89.60	89.176	5,558.69	1,343.63	696.48	1,916,103.134	1,283,004.302	36.259889232	-107.462325182
9,900.00	89.60	89.176	5,559.38	1,345.06	796.47	1,916,104.572	1,283,104.289	36.259896617	-107.461986160
10,000.00	89.60	89.176	5,560.07	1,346.50	896.46	1,916,106.009	1,283,204.276	36.259903999	-107.461647138
10,100.00	89.60	89.176	5,560.76	1,347.94	996.45	1,916,107.446	1,283,304.263	36.259911381	-107.461308116
10,200.00	89.60	89.176	5,561.45	1,349.38	1,096.43	1,916,108.884	1,283,404.250	36.259918763	-107.460969094
10,300.00	89.60	89.176	5,562.14	1,350.81	1,196.42	1,916,110.321	1,283,504.237	36.259926143	-107.460630071
10,400.00	89.60	89.176	5,562.83	1,352.25	1,296.41	1,916,111.758	1,283,604.224	36.259933523	-107.460291049
10,500.00	89.60	89.176	5,563.52	1,353.69	1,396.40	1,916,113.196	1,283,704.211	36.259940902	-107.459952027
10,600.00	89.60	89.176	5,564.21	1,355.12	1,496.38	1,916,114.633	1,283,804.198	36.259948279	-107.459613004
10,700.00	89.60	89.176	5,564.90	1,356.56	1,596.37	1,916,116.070	1,283,904.186	36.259955656	-107.459273982
10,800.00	89.60	89.176	5,565.59	1,358.00	1,696.36	1,916,117.508	1,284,004.173	36.259963032	-107.458934959
10,900.00	89.60	89.176	5,566.28	1,359.44	1,796.34	1,916,118.945	1,284,104.160	36.259970406	-107.458595936
11,000.00	89.60	89.176	5,566.97	1,360.87	1,896.33	1,916,120.382	1,284,204.147	36.259977780	-107.458256913
11,100.00	89.60	89.176	5,567.66	1,362.31	1,996.32	1,916,121.820	1,284,304.134	36.259985153	-107.457917890
11,200.00	89.60	89.176	5,568.35	1,363.75	2,096.31	1,916,123.257	1,284,404.121	36.259992525	-107.457578867
11,300.00	89.60	89.176	5,569.04	1,365.19	2,196.29	1,916,124.694	1,284,504.108	36.259999896	-107.457239844
11,400.00	89.60	89.176	5,569.73	1,366.62	2,296.28	1,916,126.132	1,284,604.095	36.260007266	-107.456900821
11,500.00	89.60	89.176	5,570.42	1,368.06	2,396.27	1,916,127.569	1,284,704.082	36.260014635	-107.456561797
11,600.00	89.60	89.176	5,571.11	1,369.50	2,496.26	1,916,129.006	1,284,804.069	36.260022003	-107.456222774
11,700.00	89.60	89.176	5,571.80	1,370.94	2,596.24	1,916,130.444	1,284,904.056	36.260029370	-107.455883750
11,800.00	89.60	89.176	5,572.49	1,372.37	2,696.23	1,916,131.881	1,285,004.043	36.260036736	-107.455544727
11,900.00	89.60	89.176	5,573.18	1,373.81	2,796.22	1,916,133.318	1,285,104.031	36.260044101	-107.455205703
12,000.00	89.60	89.176	5,573.87	1,375.25	2,896.20	1,916,134.756	1,285,204.018	36.260051465	-107.454866679
12,100.00	89.60	89.176	5,574.56	1,376.68	2,996.19	1,916,136.193	1,285,304.005	36.260058828	-107.454527655
12,200.00	89.60	89.176	5,575.25	1,378.12	3,096.18	1,916,137.630	1,285,403.992	36.260066191	-107.454188631
12,300.00	89.60	89.176	5,575.94	1,379.56	3,196.17	1,916,139.068	1,285,503.979	36.260073552	-107.453849607
12,400.00	89.60	89.176	5,576.63	1,381.00	3,296.15	1,916,140.505	1,285,603.966	36.260080912	-107.453510583
12,500.00	89.60	89.176	5,577.32	1,382.43	3,396.14	1,916,141.942	1,285,703.953	36.260088272	-107.453171559
12,600.00	89.60	89.176	5,578.01	1,383.87	3,496.13	1,916,143.380	1,285,803.940	36.260095630	-107.452832535
12,700.00	89.60	89.176	5,578.70	1,385.31	3,596.12	1,916,144.817	1,285,903.927	36.260102988	-107.452493510
12,800.00	89.60	89.176	5,579.39	1,386.75	3,696.10	1,916,146.254	1,286,003.914	36.260110344	-107.452154486
12,900.00	89.60	89.176	5,580.08	1,388.18	3,796.09	1,916,147.692	1,286,103.901	36.260117700	-107.451815461
13,000.00	89.60	89.176	5,580.77	1,389.62	3,896.08	1,916,149.129	1,286,203.888	36.260125054	-107.451476436
13,100.00	89.60	89.176	5,581.46	1,391.06	3,996.06	1,916,150.566	1,286,303.876	36.260132408	-107.451137411
13,200.00	89.60	89.176	5,582.15	1,392.50	4,096.05	1,916,152.004	1,286,403.863	36.260139761	-107.450798387
13,300.00	89.60	89.176	5,582.84	1,393.93	4,196.04	1,916,153.441	1,286,503.850	36.260147112	-107.450459362
13,400.00	89.60	89.176	5,583.53	1,395.37	4,296.03	1,916,154.878	1,286,603.837	36.260154463	-107.450120336
13,500.00	89.60	89.176	5,584.22	1,396.81	4,396.01	1,916,156.316	1,286,703.824	36.260161813	-107.449781311
13,600.00	89.60	89.176	5,584.91	1,398.24	4,496.00	1,916,157.753	1,286,803.811	36.260169162	-107.449442286
13,700.00	89.60	89.176	5,585.60	1,399.68	4,595.99	1,916,159.190	1,286,903.798	36.260176510	-107.449103261
13,800.00	89.60	89.176	5,586.29	1,401.12	4,695.98	1,916,160.628	1,287,003.785	36.260183857	-107.448764235
13,900.00	89.60	89.176	5,586.98	1,402.56	4,795.96	1,916,162.065	1,287,103.772	36.260191203	-107.448425210
14,000.00	89.60	89.176	5,587.67	1,403.99	4,895.95	1,916,163.502	1,287,203.759	36.260198547	-107.448086184
14,100.00	89.60	89.176	5,588.36	1,405.43	4,995.94	1,916,164.940	1,287,303.746	36.260205892	-107.447747158
14,200.00	89.60	89.176	5,589.05	1,406.87	5,095.92	1,916,166.377	1,287,403.733	36.260213235	-107.447408133
14,300.00	89.60	89.176	5,589.74	1,408.31	5,195.91	1,916,167.814	1,287,503.721	36.260220577	-107.447069107
14,400.00	89.60	89.176	5,590.43	1,409.74	5,295.90	1,916,169.252	1,287,603.708	36.260227918	-107.446730081
14,500.00	89.60	89.176	5,591.12	1,411.18	5,395.89	1,916,170.689	1,287,703.695	36.260235258	-107.446391055
14,600.00	89.60	89.176	5,591.81	1,412.62	5,495.87	1,916,172.126	1,287,803.682	36.260242597	-107.446052029
14,700.00	89.60	89.176	5,592.50	1,414.06	5,595.86	1,916,173.564	1,287,903.669	36.260249936	-107.445713002
14,800.00	89.60	89.176	5,593.19	1,415.49	5,695.85	1,916,175.001	1,288,003.656	36.260257273	-107.445373976
14,900.00	89.60	89.176	5,593.88	1,416.93	5,795.84	1,916,176.438	1,288,103.643	36.260264609	-107.445034949
15,000.00	89.60	89.176	5,594.57	1,418.37	5,895.82	1,916,177.876	1,288,203.630	36.260271945	-107.444695923

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,100.00	89.60	89.176	5,595.26	1,419.80	5,995.81	1,916,179.313	1,288,303.617	36.260279279	-107.444356896
15,200.00	89.60	89.176	5,595.95	1,421.24	6,095.80	1,916,180.750	1,288,403.604	36.260286613	-107.444017870
15,300.00	89.60	89.176	5,596.64	1,422.68	6,195.79	1,916,182.188	1,288,503.591	36.260293945	-107.443678843
15,400.00	89.60	89.176	5,597.33	1,424.12	6,295.77	1,916,183.625	1,288,603.579	36.260301277	-107.443339816
15,500.00	89.60	89.176	5,598.01	1,425.55	6,395.76	1,916,185.062	1,288,703.566	36.260308607	-107.443000789
15,600.00	89.60	89.176	5,598.70	1,426.99	6,495.75	1,916,186.500	1,288,803.553	36.260315937	-107.442661762
15,700.00	89.60	89.176	5,599.39	1,428.43	6,595.73	1,916,187.937	1,288,903.540	36.260323266	-107.442322735
15,800.00	89.60	89.176	5,600.08	1,429.87	6,695.72	1,916,189.374	1,289,003.527	36.260330593	-107.441983707
15,900.00	89.60	89.176	5,600.77	1,431.30	6,795.71	1,916,190.812	1,289,103.514	36.260337920	-107.441644680
16,000.00	89.60	89.176	5,601.46	1,432.74	6,895.70	1,916,192.249	1,289,203.501	36.260345246	-107.441305653
16,100.00	89.60	89.176	5,602.15	1,434.18	6,995.68	1,916,193.686	1,289,303.488	36.260352571	-107.440966625
16,200.00	89.60	89.176	5,602.84	1,435.62	7,095.67	1,916,195.124	1,289,403.475	36.260359894	-107.440627598
16,300.00	89.60	89.176	5,603.53	1,437.05	7,195.66	1,916,196.561	1,289,503.462	36.260367217	-107.440288570
16,400.00	89.60	89.176	5,604.22	1,438.49	7,295.65	1,916,197.998	1,289,603.449	36.260374539	-107.439949542
16,500.00	89.60	89.176	5,604.91	1,439.93	7,395.63	1,916,199.436	1,289,703.436	36.260381860	-107.439610514
16,600.00	89.60	89.176	5,605.60	1,441.37	7,495.62	1,916,200.873	1,289,803.424	36.260389180	-107.439271486
16,700.00	89.60	89.176	5,606.29	1,442.80	7,595.61	1,916,202.310	1,289,903.411	36.260396499	-107.438932458
16,802.49	89.60	89.176	5,607.00	1,444.28	7,698.08	1,916,203.783	1,290,005.884	36.260404000	-107.438585000
PBHL/TD @ 16802.49 MD 5607.00 TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Haynes 438 FTP 380 FN - plan hits target center - Point	0.00	0.000	5,539.00	1,302.59	-2,158.09	1,916,062.096	1,280,149.734	36.259678000	-107.472004000
Haynes 438 LTP 380 FN - plan hits target center - Point	0.00	0.000	5,607.00	1,444.28	7,698.08	1,916,203.783	1,290,005.884	36.260404000	-107.438585000

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2
4,389.00	3,674.00	9 5/8" Csg	9-5/8	12-1/4

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well Haynes Canyon Unit 438H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	**MD Reference:**	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	**North Reference:**	Grid
Well:	Haynes Canyon Unit 438H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,451.38	1,412.52	Ojo Alamo		0.40	89.176
1,578.52	1,522.10	Kirtland		0.40	89.176
1,850.94	1,741.07	Fruitland		0.40	89.176
2,144.78	1,964.85	Pictured Cliffs		0.40	89.176
2,334.14	2,109.07	Lewis		0.40	89.176
2,725.93	2,407.44	Chacra_A		0.40	89.176
4,175.54	3,511.44	Cliff House_Basal		0.40	89.176
4,175.54	3,511.44	Menefee		0.40	89.176
5,102.77	4,217.60	Point Lookout		0.40	89.176
5,488.03	4,511.00	Mancos		0.40	89.176
5,898.11	4,856.74	MNCS_A		0.40	89.176
5,985.86	4,941.70	MNCS_B		0.40	89.176
6,144.75	5,094.86	MNCS_C		0.40	89.176
6,226.37	5,170.06	MNCS_Cms		0.40	89.176
6,277.73	5,215.22	MNCS_D		0.40	89.176
6,376.17	5,295.60	MNCS_E		0.40	89.176
6,452.29	5,350.97	MNCS_F		0.40	89.176
6,594.03	5,434.76	MNCS_G		0.40	89.176
6,729.84	5,497.60	MNCS_H @ 0vs		0.40	89.176

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
500.00	500.00	0.00	0.00	KOP Begin 3°/100' build
1,846.55	1,737.73	176.85	-419.61	Begin 40.40° tangent
5,612.46	4,605.76	1,124.73	-2,668.60	Begin 10°/100' build/turn
6,589.01	5,432.25	1,297.78	-2,492.55	Begin 60.00° tangent
6,649.01	5,462.25	1,298.53	-2,440.59	Begin 10°/100' build
6,945.06	5,539.00	1,302.59	-2,158.09	Begin 89.60° lateral
16,802.49	5,607.00	1,444.28	7,698.08	PBHL/TD @ 16802.49 MD 5607.00 TVD

WELL NAME: Haynes Canyon Unit 438H

OBJECTIVE: Drill, complete, and equip single lateral in the Mancos-H formation

API Number: *Not yet assigned*

AFE Number: *Not yet assigned*

ER Well Number: *Not yet assigned*

State: New Mexico

County: Rio Arriba

Surface Elev.:	6,689	ft ASL (GL)	6,714	ft ASL (KB)		
Surface Location:	3-23-6	Sec-Twn- Rng	1,713	ft FNL	303	ft FWL
BH Location:	2-23-6	Sec-Twn- Rng	380	ft FNL	2580	ft FWL

Driving Directions: ***FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:***

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

QUICK REFERENCE		
Sur TD (MD)	350	ft
Int TD (MD)	4,372	ft
KOP (MD)	5,650	ft
KOP (TVD)	4,635	ft
Target (TVD)	5,435	ft
Curve BUR	10	°/100 ft
POE (MD)	6,594	ft
TD (MD)	16,802	ft
Lat Len (ft)	10,208	ft

WELL CONSTRUCTION SUMMARY:

	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	17.500	350	13.375	54.5	J-55	BTC	0	350
Intermediate	12.250	4,372	9.625	36.0	J-55	LTC	0	4,372
Production	8.500	16,802	5.500	17.0	P-110	LTC	0	16,802

CEMENT PROPERTIES SUMMARY:

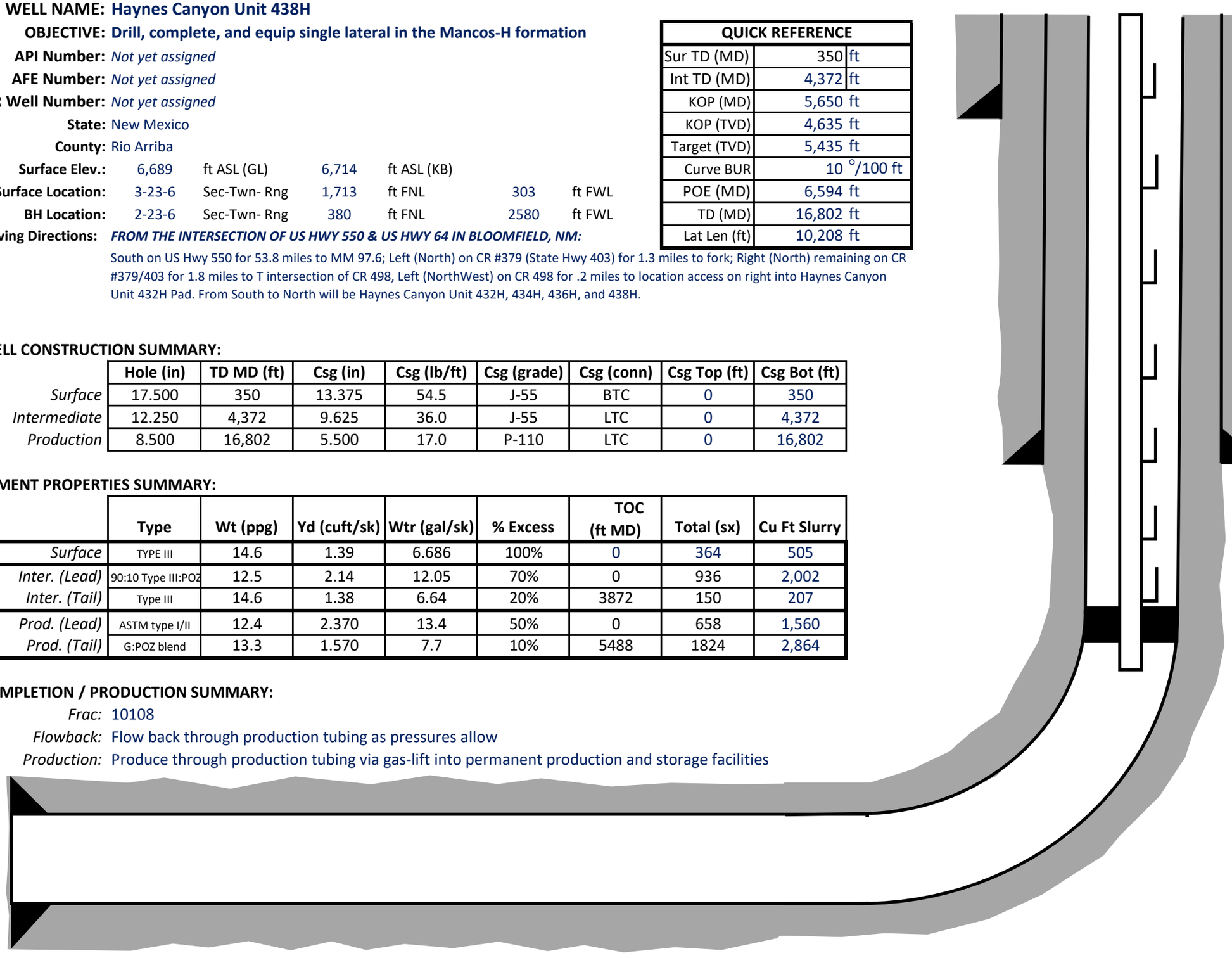
	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	% Excess	TOC (ft MD)	Total (sx)	Cu Ft Slurry
Surface	TYPE III	14.6	1.39	6.686	100%	0	364	505
Inter. (Lead)	90:10 Type III:POZ	12.5	2.14	12.05	70%	0	936	2,002
Inter. (Tail)	Type III	14.6	1.38	6.64	20%	3872	150	207
Prod. (Lead)	ASTM type I/II	12.4	2.370	13.4	50%	0	658	1,560
Prod. (Tail)	G:POZ blend	13.3	1.570	7.7	10%	5488	1824	2,864

COMPLETION / PRODUCTION SUMMARY:

Frac: 10108

Flowback: Flow back through production tubing as pressures allow

Production: Produce through production tubing via gas-lift into permanent production and storage facilities

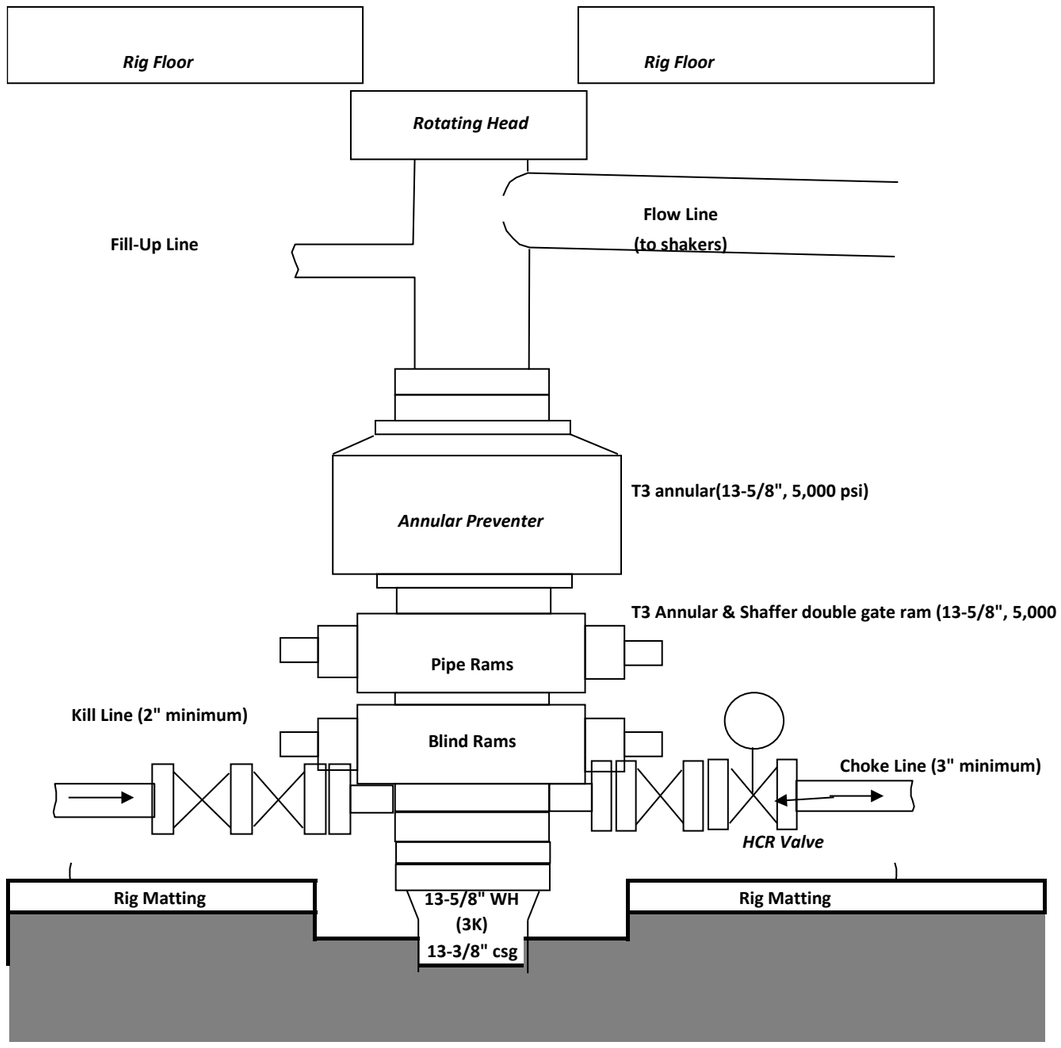


Tops	TVD (ft KB)	MD (ft KB)
Ojo Alamo	1,413	1,451
Kirtland	1,522	1,579
Fruitland	1,741	1,851
Pictured Cliffs	1,965	2,145
Lewis	2,109	2,334
Chacra	2,407	2,726
Cliff House	3,511	4,176
Menefee	3,511	4,176
Point Lookout	4,218	5,103
Mancos	4,511	5,488
Gallup (MNCS_A)	4,857	5,898
MNCS_B	4,942	5,986
MNCS_C	5,095	6,145
MNCS_Cms	5,170	6,226
MNCS_D	5,215	6,278
MNCS_E	5,296	6,376
MNCS_F	5,351	6,452
MNCS_G	5,435	6,594
MNCS_H	5,498	6,730
MNCS_I	0	0
FTP TARGET	5,435	6,594
PROJECTED LTP	5,607	16,802

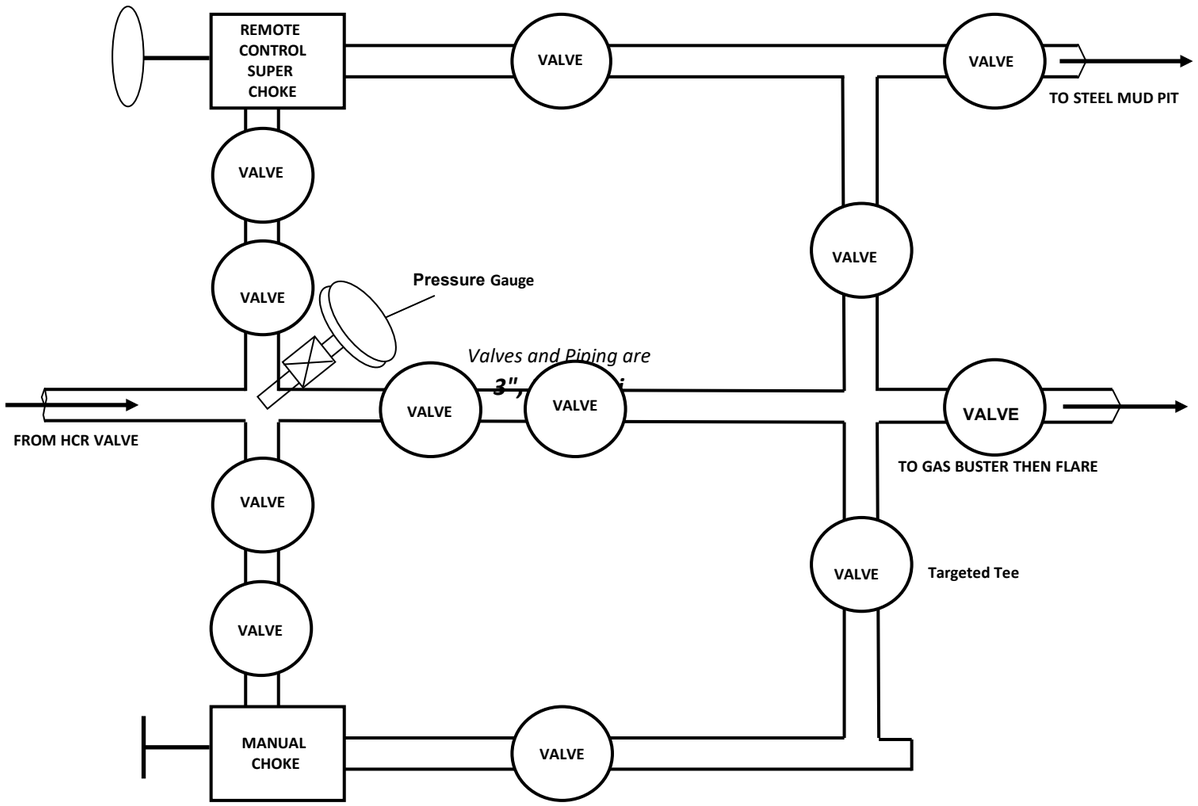
BOPE & CHOKE MANIFOLD DIAGRAMS

NOTE: EXACT BOPE AND CHOKE CONFIRGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3,000 PSI MINIMUM.

BOPE



CHOKE MANIFOLD



District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 291558

CONDITIONS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 291558
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	12/29/2023
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/29/2023
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	12/29/2023
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	12/29/2023
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	12/29/2023
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	12/29/2023