May 10, 2023

Volume 1
C-147 Registration Package for
Fed 128 In-Ground Containment
Section 28, T23S, R31E, Eddy County

Transmittal Letter, Liner Equivalency Demonstration
C-147 Form
Design/Construct, Operations and Closure Plans
Design Drawings, Avian Hazing and Liner Specifications
Closure Cost Estimate
Siting Criteria Demonstration, Plates and Appendices
Site Photos

View northwest from the southeast corner of the closed quarry. The dozer/ripper is preparing the surface for construction of the proposed Fed 128 In Ground Containment.

Prepared for:
Enchantment Water LLC
1250 S. Capital of Texas Hwy, Ste 1-270
Austin, Texas

Prepared by:
R.T. Hicks Consultants, Ltd.
901 Rio Grande NW F-142
Albuquerque, New Mexico

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996

Ms. Victoria Venegas
NMOCD - District 2
811 S. First St.
Artesia, NM 88210
Via E-Mail

RE: Enchantment Water LLC, Fed 128 In Ground Containment Registration
Section 28 T23S, R31E, Eddy County

Dear Ms. Venegas:

On behalf Enchantment Water, LLC, R.T. Hicks Consultants is pleased to submit a C-147 *registration* for the above-referenced project. Enchantment began construction, as shown in Appendix Site Photos, about two weeks ago. Filling of the completed containment will commence no sooner than June 1, 2023.

As indicated in the title page of this submission, included are:

- This transmittal Letter
- Signed C-147 Form
- Design/Construct, Operations and Closure Plans
- Design Drawings, Avian Hazing and Liner Specifications
- Closure Cost Estimate
- Siting Criteria Demonstration, Plates and Appendices

Enchantment will transmit the registration package to OCD via the OCD.Online portal. In compliance with 19.15.34.10 of the Rule, this submission is copied to the surface owner's representative, BLM Carlsbad.

No variances from the Rule are necessary for the Fed 128 in-ground containment this submission demonstrates compliance with all mandates of the Rule. Since the Mills Ranch 1 Pin recycling facility will supply treated water to the Dagger in-ground Containment, it meets the criteria of 19.15.34.9.B.7, the recycling facility also requires registration. Thus, the Rule does not require approval by OCD in advance of using the in-ground containment.

This submission refers to the following elements that some OCD reviewers have considered variances:

1. An equivalency demonstration written by experts for the proposed 40-mil HDPE secondary liner has been previously approved by OCD. We maintain that the language of the Rule is clear, and a variance is not required.

2. OCD has approved the proposed Avian Protection Plan (Bird-X Mega Blaster Pro) for other containments. Thus, the plan meets the requirement of the rule that the "otherwise protective of wildlife, including migratory birds" and a variance is not required.
3. Using the proposed game fence in lieu of a 4-strand barbed wire fence is not a variance. Because feral pigs, javelina and deer are present in the area, a game fence is required to comply with Section 19.15.34.12 D.1 of the Rule. The specification for fencing provided in 19.15.34.12 D.2 contradicts D.1 because pigs will move beneath the lower strand of a 4-foot high barbed wire fence and deer will jump over. Thus, compliance with D.2 results in a violation of D.1. We maintain that compliance with D.1 is the critical component of the Rule and operators need not be required to submit a variance request to follow Best Management Practices and comply with the Rule. Nevertheless, Enchantment will attach 4 strands of barbed wire to the game fence if required by OCD.

Please note that the Fed 128 In-Ground Containment was a partially reclaimed quarry prior to BLM granting approval for conversion of the quarry to a produced water recycling storage containment. Thus, the cost estimate calls for reclamation of the surface to the original condition – a reclaimed quarry.

If you have any questions or concerns regarding this permit or the attached C-147, please contact me. As always, we appreciate your work ethic and diligence.

Sincerely,
R.T. Hicks Consultants

Randall T. Hicks PG
Principal

Copy: Enchantment Water LLC
BLM Carlsbad

C-147 FORM

State of New Mexico
Energy Minerals and Natural Resources
Department Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505
https://www.emnrd.nm.gov/ocd/ocd-e-permitting/

Form C-147
Revised October 11, 2022

Recycling Facility and/or Recycling Containment

Type of Facility: ☐ Recycling Facility ☐ Recycling Containment*

Type of action: ☐ Permit ☐ Registration ☐ Modification ☐ Extension ☐ Closure ☐ Other (explain) _____

*** At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.**

Be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: Enchantment Water LLC (For multiple operators attach page with information) OGRID #: 329620
Address: 1250 S. Capital of Texas Hwy, Ste 2- -220, Austin, Texas, 78746
Facility or well name (include API# if associated with a well): Fed 128 In-Ground Containment
OCD Permit Number: 2RF-195 (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr B & C Section 28 Township 23S Range 31E County: Eddy
Surface Owner: ☑ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☒ **Recycling Facility:**
Location of recycling facility (if applicable): Latitude _32°19'47.25"N_ Longitude __103°49'30.58"W_____ NAD83
Proposed Use ☑ Drilling ☑ Completion ☑ Production ☑ Plugging *
The re-use of produced water may NOT be used until fresh water zones are cased and cemented
☐ Other, ***requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.***
☑ Fluid Storage
☑ Above ground tanks ☑ Recycling containment ☐ Activity permitted under 19.15.17 NMAC explain type_____
☐ Activity permitted under 19.15.36 NMAC explain type:_____ ☐ Other explain _____
☐ For multiple or additional recycling containments, attach design and location information of each containment
☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date:_____

3.
☑ **Recycling Containment:**
☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude _32.281896, ____ Longitude __-103.783459_____ NAD83
☐ For multiple or additional recycling containments, attach design and location information of each containment
☑ Lined ☐ Liner type: Thickness 60 Primary mil ☐ LLDPE ☑ HDPE ☐ PVC ☐ Other See Drawings
☐ String-Reinforced
Liner Seams: ☑ Welded ☐ Factory ☐ Other Volume: _671,925 bbls (appx)_____bbl Dimensions: L_____ x W693 x D525 18
☐ Recycling Containment Closure Completion Date:_____

4.

Bonding:

☐ Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC **(These containments are limited to only the wells owned or operated by the owners of the containment.)**

☑ Bonding in accordance with 19.15.34.15(A)(1). Amount of bond $_____ **(work on these facilities cannot commence until bonding amounts are approved)**

☑ Attach closure cost estimate and documentation on how the closure cost was calculated.

5.

Fencing:

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☑ Alternate. Please specify Game Fence

6.

Signs:

☑ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

Check the below box only if a variance is requested:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

If a Variance is requested, it must be approved prior to implementation.

8.

Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☑ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality	☐ Yes ☑ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division	☐ Yes ☑ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map	☐ Yes ☑ No
Within a 100-year floodplain. FEMA map	☐ Yes ☑ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site	☐ Yes ☑ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image	☐ Yes ☑ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☑ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☑ No

9.
Recycling Facility and/or Containment Checklist:
Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☑ Design Plan - based upon the appropriate requirements.
- ☑ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☑ Closure Plan - based upon the appropriate requirements.
- ☑ Site Specific Groundwater Data -
- ☑ Siting Criteria Compliance Demonstrations –
- ☑ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

10.
Operator Application Certification:
I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): Peter Mercure Title: Chief Operating Officer

Signature: Date: 05/10/23

e-mail address: peter@water.energy Telephone: 432 242 2021

11.
OCD Representative Signature: Victoria Venegas **Approval Date:** 07/27/2023

Title: Environmental Specialist **OCD Permit Number:** 2RF-195

- [X] OCD Conditions
- [X] Additional OCD Conditions on Attachment

DESIGN/CONSTRUCTION PLAN OPERATION AND MAINTENANCE PLAN CLOSURE PLAN

Design and Construction Plan In Ground Containments

This plan addresses construction of the earthen containments.

A NM Professional Engineer is providing the design of the containment and their plans are presented in this submission.

19.15.34.12 A Design and Construction Specifications
(1). The operator shall design and construct a recycling containment to ensure the confinement of produced water, to prevent releases and to prevent overtopping due to wave action or rainfall.
(8). The operator of a recycling containment shall design the containment to prevent run-on of surface water. The containment shall be surrounded by a berm, ditch or other diversion to prevent run-on of surface water

Dike Protection and Structural Integrity

The design and operation provide for the confinement of produced water, prevention of releases and prevention of overtopping due to wave action or rainfall. Additionally, the design prevents run-on of surface water as the containment is surrounded by an above-grade levee (a berm) and/or diversion ditch (between the levee and the soil stockpile) to prevent run-on of surface water.

Stockpile Topsoil

Where topsoil is present, prior to constructing containment, the operator will strip and stockpile the topsoil for use as the final cover or fill at the time of closure.

19.15.34.12 B. Prior to constructing containment, the operator shall strip and stockpile the topsoil for use as the final cover or fill at the time of closure

Signage

The operator will place an upright sign no less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the containment. The sign is posted in a manner and location such that a person can easily read the legend. The sign will provide the following information:

- the operator's name,
- the location of the site by quarter-quarter or unit letter, section, township and range, and
- emergency telephone numbers

19.15.34.12 C. Signs.
The operator shall post an upright sign no less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the containment. The operator shall post the sign in a manner and location such that a person can easily read the legend. The sign shall provide the following information: the operator's name, the location of the site by quarter-quarter or unit letter, section, township and range, and emergency telephone numbers

Fencing

The operator will provide for a fence to enclose the recycling containment in a manner that deters unauthorized wildlife and human access. As specified in the design drawings, the operator will employ a chain-link or game fence. If required by the District Office, the operator will add four-strands of barbed wire to comply with the text of the Rule. Because feral pigs, javelina and deer are present in the area, a chain link or game fence is required in order to comply with Section 19.15.34.12 D.1 of the Rule because pigs will move beneath the lower strand of a 4-strand, 4-foot high barbed wire fence and deer will jump over. However, 19.15.34.12 D.2 requires "a four-foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level". Therefore, a barbed wire specification will be added to the game fence to avoid a variance if required by the OCD District Office.

19.15.34.12 D. Fencing
(1) The operator shall fence or enclose a recycling containment in a manner that deters unauthorized wildlife and human access and shall maintain the fences in good repair. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
(2) Recycling containments shall be fenced with a four-foot fence that has at least four strands of barbed wire evenly spaced in the interval between one foot and four feet above ground level.

As stated in the O&M plan, the operator will ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.

Netting and Protection of Wildlife

The perimeter game/chain-link fence will be effective in excluding stock and most terrestrial wildlife. If requested by the surface owner, the game fence can include a fine mesh from the base to 1 foot above the ground to exclude the small reptiles (e.g. dune sagebrush lizard).

The recycling containment will be protective of wildlife, including migratory birds through the implementation of an Avian Protection Plan, routine inspections and the perimeter fence.

The avian protection plan includes the use of a Bird-X Mega Blaster Pro[1] as a primary hazing program for avian species. The device will be equipped with sounds suitable for the Permian Basin environment. In addition to this sonic device, staff will routinely inspect the containment for the presence of avian species and, if detected, will use a blank cartridge or shell in a handgun, starter pistol or shotgun as additional hazing. Decoys of birds of prey may be placed on the game fence and other roosts around the open water to provide additional hazing.

The O&M plan calls for the operator to inspect for and, within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

19.15.34.12 E Netting.
The operator shall ensure that a recycling containment is screened, netted or otherwise protective of wildlife, including migratory birds. The operator shall on a monthly basis inspect for and, within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

Earthwork

The containment will have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. Geotextile is required under the liner when needed to reduce localized stress-strain or protuberances that otherwise may compromise the liner's integrity.

This volume provides the stamped drawings for the containment with the following design/construction specifications:

a) levee has inside grade no steeper than two horizontal feet to one vertical foot (2H: 1V).

19.15.34.12 A
(2) A recycling containment shall have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. Geotextile is required under the liner when needed to reduce localized stress-strain or protuberances that otherwise may compromise the liner's integrity…

b) levee outside grade is no steeper than three horizontal feet to one vertical foot (3H: 1V)
c) top of the levee is wide enough to install an anchor trench and provide adequate room for inspection and maintenance.
d) The containment floor design calls for a slope toward the sump in the corner(s).

19.15.34.12 A
(2) ...The operator shall construct the containment in a levee with an inside grade no steeper than two horizontal feet to one vertical foot (2H:1V). The levee shall have an outside grade no steeper than three horizontal feet to one vertical foot (3H:1V). The top of the levee shall be wide enough to install an anchor trench and provide adequate room for inspection and maintenance.

Liner and Drainage Geotextile Installation

The containment has a primary (upper) liner and a secondary (lower) liner with a leak detection system appropriate to the site's conditions.

19.15.34.12 A
(3) Each recycling containment shall incorporate, at a minimum, a primary (upper) liner and a secondary (lower) liner with a leak detection system appropriate to the site's conditions.

The primary (upper) liner is a geomembrane liner composed of an impervious, synthetic material that is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. It is 60-mil HDPE. The secondary liner is specified in the design drawings and is 40-mil HDPE or thicker and is equivalent to 30-mil LLDPEr (in accordance with a previously approved variance) Liner compatibility meets or exceeds a subsequent relevant publication to EPA SW-846 method 9090A.

19.15.34.12 A
(4) All primary (upper) liners in a recycling containment shall be geomembrane liners composed of an impervious, synthetic material that is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. All primary liners shall be 30-mil flexible PVC, 45-mil LLDPE string reinforced or 60-mil HDPE liners. Secondary liners shall be 30-mil LLDPE string reinforced or equivalent with a hydraulic conductivity no greater than 1 x 10-9 cm/sec. Liner compatibility shall meet or exceed the EPA SW-846 method 9090A or subsequent relevant publications.

The recycling containment design has a leak detection system between the upper and lower geomembrane liners of 200-mil geonet to facilitate drainage. The leak detection system consists of a properly designed drainage and collection and removal system placed above the lower geomembrane liner in depressions and sloped to facilitate the earliest possible leak detection. The containment floor design calls for a slope toward the sump in the corner(s) of the containment, as shown in the design drawings. This slope combined with the highly transmissive geonet drainage layer provide for rapid leak detection.

19.15.34.12 A
(7) The operator of a recycling containment shall place a leak detection system between the upper and lower geomembrane liners that shall consist of 200-mil geonet or two feet of compacted soil with a saturated hydraulic conductivity of 1 x 10-5 cm/sec or greater to facilitate drainage. The leak detection system shall consist of a properly designed drainage and collection and removal system placed above the lower geomembrane liner in depressions and sloped to facilitate the earliest possible leak detection.

The liners and drainage material will be installed consistent with the Manufacturer's specifications. In addition to any specifications of the Manufacturer, protocols for liner installation include measures to:

i. minimizing liner seams and orient them up and down, not across, a slope of the levee.
ii. use factory-welded seams where possible.
iii. use field seams in geosynthetic material that are thermally seamed and prior to field seaming, overlap liners four to six inches.
iv. minimize the number of field seams and comers and irregularly shaped areas.
v. provide for no horizontal seams within five feet of the

19.15.34.12 A
(5) The operator of a recycling containment shall minimize liner seams and orient them up and down, not across, a slope of the levee. Factory welded seams shall be used where possible. The operator shall ensure field seams in geosynthetic material are thermally seamed. Prior to field seaming, the operator shall overlap liners four to six inches...

slope's toe.

vi. use qualified personnel to perform field welding and testing.

vii. avoid excessive stress-strain on the liner

viii. The edges of all liners are anchored in the bottom of a compacted earth-filled trench that is at least 18 inches deep

19.15.34.12 A
(5) ...The operator shall minimize the number of field seams and corners and irregularly shaped areas. There shall be no horizontal seams within five feet of the slope's toe. Qualified personnel shall perform field welding and testing.

At points of discharge into the lined earthen containment the pipe configuration effectively protects the liner from excessive hydrostatic force or mechanical damage during filling.

19.15.34.12 A
(3) The edges of all liners shall be anchored in the bottom of a compacted earth-filled trench. The anchor trench shall be at least 18 inches deep.

The design shows that at any point of discharge into or suction from the recycling containment, the liner is protected from excessive hydrostatic force or mechanical damage. External discharge or suction lines do not penetrate the liner.

19.15.34.12 A
(6) At a point of discharge into or suction from the recycling containment, the operator shall insure that the liner is protected from excessive hydrostatic force or mechanical damage. External discharge or suction lines shall not penetrate the liner.

Pumping from the containment to hydraulic fracturing operations is the responsibility of stimulation contractors. Typically, lines are permanently placed in the containment with floats attached to prevent damage to the liner system. The containment may be equipped with permanent HDPE stinger (supported by a sacrificial liner or geotextile) for withdrawal of fluid if the owner deems necessary during operations.

Leak Detection and Fluid Removal System Installation

The leak detection system, contains the following design elements

a. The 200-mil HyperNet Geonet drainage material between the primary and secondary liner that is sufficiently permeable to allow the transport of fluids to the observation ports (Appendix A).
b. The containment floor is sloped towards the monitoring riser pipe to facilitate the earliest possible leak detection of the containment bottom. A pump may be placed in the observation port to provide for fluid removal.
c. Piping will withstand chemical attack from any seepage, structural loading from stresses and disturbances from overlying water, cover materials, equipment operation or expansion or contraction (see Appendix A).

Operation and Maintenance Plan
In Ground Containments

Overview

The operator will operate and maintain the lined earthen containment to contain liquids and solids (blow sand and minimal precipitates from the produced water) and maintain the integrity of the liner system in a manner that prevents contamination of fresh water and protects public health and the environment as described below. The purpose of the lined earthen containment is to facilitate recycling, reuse and reclamation of produced water derived from oil and gas wells. During periods when water for E&P operations is not needed, produced water will discharge to injection wells or to a pipeline for transfer to another recycling facility. The containment will not be used for the disposal of produced water or other oilfield waste.

19.15.34.10 D
Recycling containments may not be used for the disposal of produced water or other oilfield wastes.

The operation of the containment is summarized below.

A. Produced water generated from nearby oil and gas wells is delivered to a treatment system located as indicated in the C-147.
B. Unless specified in the transmittal letter, after treatment, the produced water discharges into the containment.
C. When required, produced water is removed from the containment for E&P operations. At this time, produced water will be used for drilling beneath the freshwater zones (beneath surface casing), for well stimulation (e.g. hydraulic fracturing) and other E&P uses as approved by OCD.
D. Whenever the maximum fluid capacity of the containment is reached, treatment and discharge to the containment ceases (see Freeboard and Overtopping Plan, below).
E. The operator will keep accurate records and shall report monthly to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use on form C-148 (see attached example).
F. The operator will maintain accurate records that identify the sources and disposition of all recycled water that shall be made available for review by the division upon request.

19.15.34.9 E
The operator of a recycling facility shall keep accurate records and shall report monthly to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use on form C-148.

19.15.34.9 F
The operator of a recycling facility shall maintain accurate records that identify the sources and disposition of all recycled water that shall be made available for review by the division upon request.

G. The containment shall be deemed to have ceased operations if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use. The operator will report cessation of operations to the appropriate division district office. The appropriate division district office may grant an extension to this determination of cessation of operations not to exceed six months.

19.15.34.13 C
A recycling containment shall be deemed to have ceased operations if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use. The operator must report cessation of operations to the appropriate division district office. The appropriate division district office may grant an extension to this determination of cessation of operations not to exceed six months.

The operation of the lined earthen containment will follow the mandates listed below:

1. The operator will not discharge into or store any hazardous waste (as defined by 40 CFR 261 and NMAC 19.15.2.7.H.3) in the containments.
2. If the containment's primary liner is compromised above the fluid's surface, the operator will repair the damage or initiate replacement of the primary liner within 48 hours of discovery or seek an extension of time from the division district office.
3. If the primary liner is compromised below the fluid's surface, the operator will remove all fluid above the damage or leak within 48 hours of discovery, notify the division district office and repair the damage or replace the primary liner.
4. If any penetration of the containment liner is confirmed by sampling of fluid in the leak detection system (see Monitoring, Inspection, and Reporting Plan; below), the operator will:
    a. Begin and maintain fluid removal from the leak detection/pump-back system,
    b. Notify the district office within 48 hours (phone or email) of the discovery,
    c. Identify the location of the leak, and
    d. Repair the damage or, if necessary, replace the containment liner.
5. The operator will install, or maintain on site, an oil absorbent boom or other device to contain an unanticipated release and the operator will remove any visible layer of oil from the surface of the recycling containment.
6. The operator will report releases of fluid in a manner consistent with NMAC 19.15.29
7. The containment will be operated to prevent the collection of surface water run-on.

19.15.34.13 B
(4) If the containment's primary liner is compromised above the fluid's surface, the operator shall repair the damage or initiate replacement of the primary liner within 48 hours of discovery or seek an extension of time from the division district office.
(5) If the primary liner is compromised below the fluid's surface, the operator shall remove all fluid above the damage or leak within 48 hours of discovery, notify the division district office and repair the damage or replace the primary liner.

19.15.34.13 B
(7) The operator shall install, or maintain on site, an oil absorbent boom or other device to contain an unanticipated release.
(1) The operator shall remove any visible layer of oil from the surface of the recycling containment.
19.15.34.8 A

(6) All releases from the recycling and re-use of produced water shall be handled in accordance with 19.15.29 NMAC.

8. The operator will maintain the containment free of miscellaneous solid waste or debris.
9. The operator will maintain at least three feet of freeboard for the containment and will use a free-standing staff gauge to allow easy determination of the required 3-foot of freeboard.
10. As described in the design/construction plan, the injection or withdrawal of fluids from the containment is accomplished through hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.
11. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
12. The operator will maintain the fences in good repair.

19.15.34.13
(6) The containment shall be operated to prevent the collection of surface water run-on.

19.15.34.13 B
(2) The operator shall maintain at least three feet of freeboard at each containment.

19.15.34.13 B
(3) The injection or withdrawal of fluids from the containment shall be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.

19.15.34.12 D
(1) The operator shall fence or enclose a recycling containment in a manner that deters unauthorized wildlife and human access and shall maintain the fences in good repair. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.

Monitoring, Inspection, and Reporting Plan

The operator will inspect the recycling containment and associated leak detection systems weekly while it contains fluids. The operator shall maintain a current log of such inspections and make the log available for review by the division upon request.

19.15.34.13 A
The operator shall inspect the recycling containment and associated leak detection systems weekly while it contains fluids. The operator shall maintain a current log of such inspections and make the log available for review by the division upon request.

Weekly inspections consist of:

- reading and recording the fluid height of staff gauges,
- recording any evidence that the pond surface shows visible oil,
- visually inspecting the containment's exposed liners
- checking the leak detection system for any evidence of a loss of integrity of the primary liner.
- inspect diversion ditches and berms around the containment to check for erosion and collection of surface water run-on.
- inspect the leak detection system for evidence of damage or malfunction and monitor for leakage.

As stated above, if a liner's integrity is compromised, or if any penetration of the liner occurs, then the operator will take appropriate action within 48 hours, based on if above or below water surface, as noted above.

Monthly, the operator will:

A. Inspect the containment for dead migratory birds and other wildlife. Within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.
B. Report to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use on form C-148.
C. Record sources and disposition of all recycled water.

19.15.34.12 E
The operator shall on a monthly basis inspect for and, within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

19.15.34.9 E
The operator of a recycling facility shall keep accurate records and shall report monthly to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use on form C-148.

19.15.34.9 F
The operator of a recycling facility shall maintain accurate records that identify the sources and disposition of all recycled water that shall be made available for review by the division upon request.

The operator will maintain a log of all inspections and make the log available for the appropriate Division district office's review upon request. An example of the log is attached to this section of the permit application.

Freeboard and Overtopping Prevention Plan

The method of operation of the containment allows for maintaining freeboard with very few potential problems. When the capacity of the containment is reached (3-feet of freeboard), the discharge of produced water ceases and the produced water generated by nearby oil and gas wells is managed by an injection well(s).

If rising water levels suggest that 3-feet of freeboard will not be maintained, the operator will implement one or more of the following options:

I. Cease discharging produced water to the containment.

II.Accelerate re-use of the produced water for purposes approved by the Division.

III. Transfer produced water from the containment to injection wells.

The reading of the staff gauge typically occurs daily when treatment operations are ongoing and weekly when discharge to the containment is not occurring.

Protocol for Leak Detection Monitoring, Fluid Removal and Reporting

As shown in Appendix A, the leak detection system includes a monitoring system. Any fluid released from the primary liner will flow to the collection sump, where fluid level monitoring is possible at the monitoring riser pipe associated with the leak detection system.

Staff may employ a portable electronic water level meter to determine if fluid exists in the monitoring riser pipe. Obtaining accurate readings of water levels in a sloped pipe beneath a containment can be a challenge. An electrician's wire snake may be required to push the probe to the bottom of the port and the probe may be fixed in a 2-inch pipe "dry housing" to avoid false readings due to water condensation on the pipe. There are many techniques to determine the existence of water in the sumps – including low flow pumps and a simple small bailer affixed to an electrician's snake. The operator will use the method that works best for this containment.

If seepage from the containment into the leak detection system is suspected by a positive fluid level measurement, the operator will:

1. Re-measure fluid levels in the monitoring riser pipe on a daily basis for one week to determine the rate of seepage.
2. Collect a water sample from the monitoring riser pipe to confirm the seepage is produced water from the containment via electrical conductivity and chloride measurements.
3. Notify NMOCD of a confirmed positive detection in the system within 48 hours of sampling (initial notification).
4. Install a pump into the monitoring riser pipe sump to continually (manually on a daily basis or via automatic timers) remove fluids from the leak detection system into the containment until the liner is repaired or replaced.
5. Dispatch a liner professional to inspect the portion of the containment suspected of leakage during a "low water" monitoring event.
6. Provide NMOCD a second report describing the inspection and/or repair within 20 days of the initial notification.

If the point of release is obvious from a low water inspection, the liner professional will repair the loss of integrity. If the point of release cannot be determined by the inspection, the liner professional will develop a more robust plan to identify the point(s) of release. The inspection plan and schedule will be submitted to OCD with the second report. The operator will implement the plan upon OCD approval.

Closure Plan
In Ground Containments

Overview

After operations cease, the operator will remove all fluids within 60 days and close the containment within six months from the date the operator ceases operations from the containment for use.

19.15.34.14 A
Once the operator has ceased operations, the operator shall remove all fluids within 60 days and close the containment within six months from the date the operator ceases operations from the containment for use.

The operator shall substantially restore the impacted surface area to

a. the condition that existed prior to the construction of the recycling containment or
b. to a condition imposed by federal, state trust land or tribal agencies on lands managed by those agencies as these provisions govern the obligations of any operator subject to those provisions,

19.15.34.14 E
The operator shall substantially restore the impacted surface area to the condition that existed prior to the construction of the recycling containment.

19.15.34.14 G
The re-vegetation and reclamation obligations imposed by federal, state trust land or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of any operator subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health and the environment.

The surface owner will impose a closure design that conforms to their needs for the site. The operator understands that a variance will be submitted to OCD to allow for any alternative closure protocol.

Excavation and Removal Closure Plan – Protocols and Procedures

The containment is expected to hold a small volume of solids, the majority of which will be windblown sand and dust with some mineral precipitates from the water

1. The operator will remove all liquids from the containment and either:
    a. Dispose of the liquids in a division-approved facility, or
    b. Recycle, reuse or reclaim the water for reuse in drilling and stimulation.
2. The operator will close the recycling containment by first removing all fluids, contents and synthetic liners and transferring these materials to a division approved facility.
3. After the removal of the containment contents and liners, soils beneath the containment will be tested by collection of a five-point (minimum) composite sample which includes stained or wet soils, if any, and that sample shall be analyzed for the constituents listed in Table I of 19.15.34.14.
4. After review of the laboratory results:
    a. If any contaminant concentration is higher than the parameters listed in Table I, additional delineation may be required, and the operator must receive approval before proceeding with closure.

19.15.34.14 B
The operator shall close a recycling containment by first removing all fluids, contents and synthetic liners and transferring these materials to a division approved facility.

19.15.34.14 C
The operator shall test the soils beneath the containment for contamination with a five-point composite sample which includes stained or wet soils, if any, and that sample shall be analyzed for the constituents listed in Table I below.

19.15.34.14 C
(1) If any contaminant concentration is higher than the parameters listed in Table I, the division may require additional delineation upon review of the results and the operator must receive approval before proceeding with closure.

b. If all contaminant concentrations are less than or equal to the parameters listed in Table I, then the operator will proceed to
    i. backfill with non-waste containing, uncontaminated, earthen material - Or
    ii. undertake an alternative closure process pursuant to a variance request after approval by OCD.

19.15.34.14 C
(2) If all contaminant concentrations are less than or equal to the parameters listed in Table I, then the operator can proceed to backfill with non-waste containing, uncontaminated, earthen material.

Reclamation and Re-vegetation

a. The operator will reclaim the containment's location to a safe and stable condition that blends with the surrounding undisturbed area.
b. Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.
c. The disturbed area shall then be reseeded in the first favorable growing season following closure of a recycling containment.

19.15.34.14 E
Once the operator has closed the recycling containment, the operator shall reclaim the containment's location to a safe and stable condition that blends with the surrounding undisturbed area. Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area shall then be reseeded in the first favorable growing season following closure of a recycling containment.

Closure Documentation

Within 60 days of closure completion, the operator shall submit a closure report on form C-147, including required attachments, to document all closure activities including sampling results and the details on any backfilling, capping or covering, where applicable. The closure report shall certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in division rules or directives.

19.15.34.14 D
Within 60 days of closure completion, the operator shall submit a closure report on form C-147, including required attachments, to document all closure activities including sampling results and the details on any backfilling, capping or covering, where applicable. The closure report shall certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in division rules or directives.

The operator shall notify the division when reclamation and re-vegetation are complete. Specifically the notice will document that all ground surface disturbing activities at the site have been completed, and a uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.

19.15.34.14 H
The operator shall notify the division when reclamation and re-vegetation are complete.

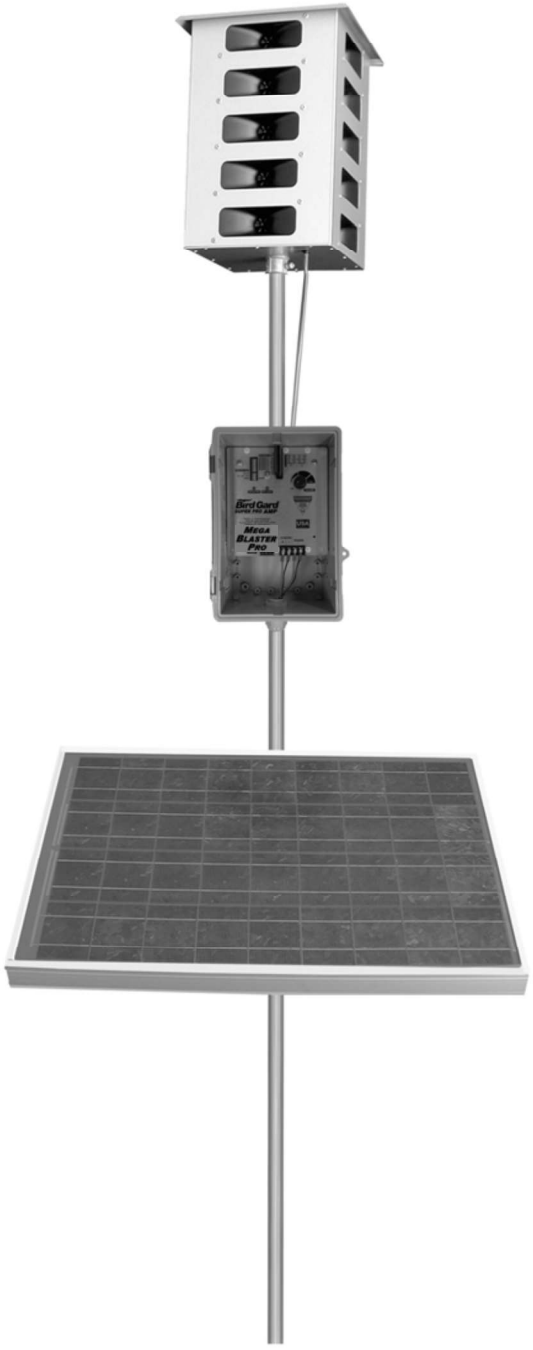
19.15.34.14 F
Reclamation of all disturbed areas no longer in use shall be considered complete when all ground surface disturbing activities at the site have been completed, and a uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.

RECYCLING CONTAINMENT DESIGN DRAWINGS

MEGA BLASTER PRO

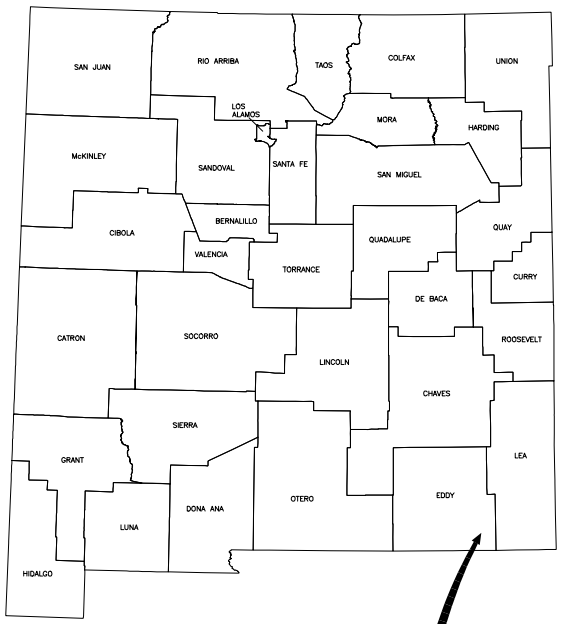
BIRD-X

User's Manual

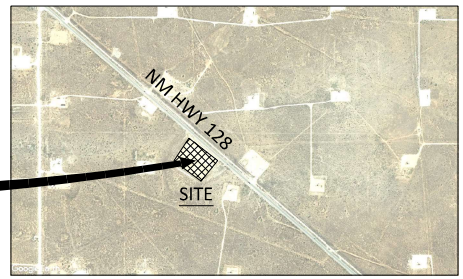


ENCHANTMENT WATER, LLC

FED 128 RECYCLING CONTAINMENT
S21 & S28 T23S R31E
EDDY COUNTY, NM



PROJECT LOCATION



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PH: (575) 746-2158
www.harcrowsurveying.com

ENCHANTMENT WATER, LLC

FED 128 CONTAINMENT POND
NM 128 MM 14.54

S21 & S28 T23S R31E

EDDY COUNTY, NM

CELINA L. FOLMAR
NEW MEXICO
21672
PROFESSIONAL ENGINEER
4/21/2023

APPROVED BY: CF
DRAWN BY: CF
FILE: 23-145

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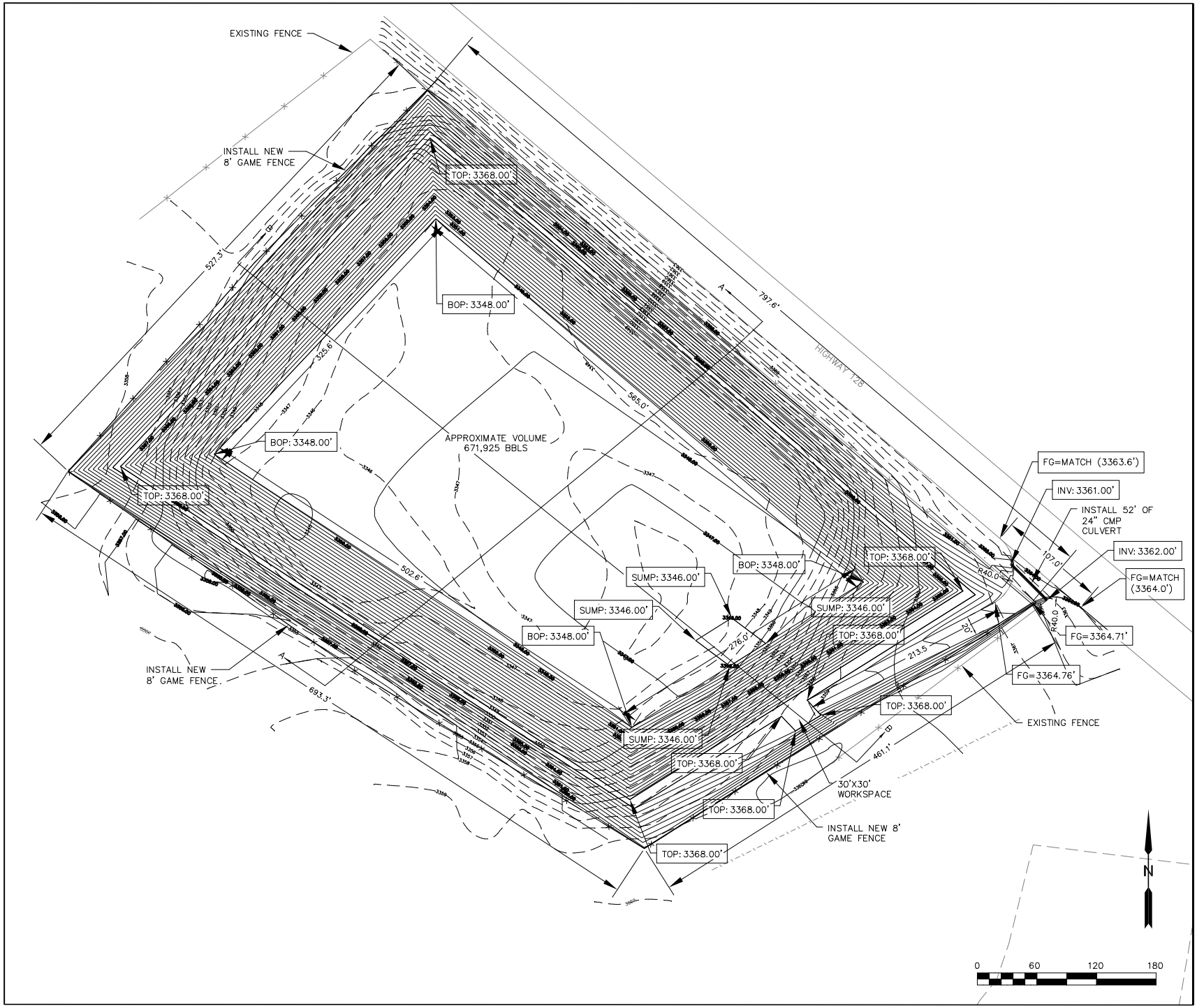
COVER SHEET



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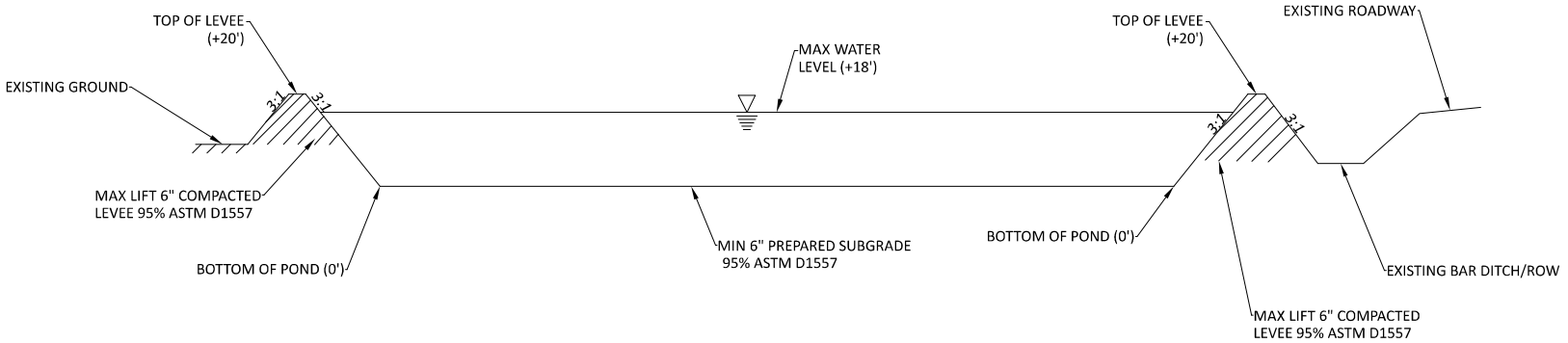
- XXXX — EXISTING CONTOUR
- XXXX.00 — DESIGN CONTOUR
- FENCE
- BURIED PIPELINE

CONTAINMENT PLAN VIEW

CG101



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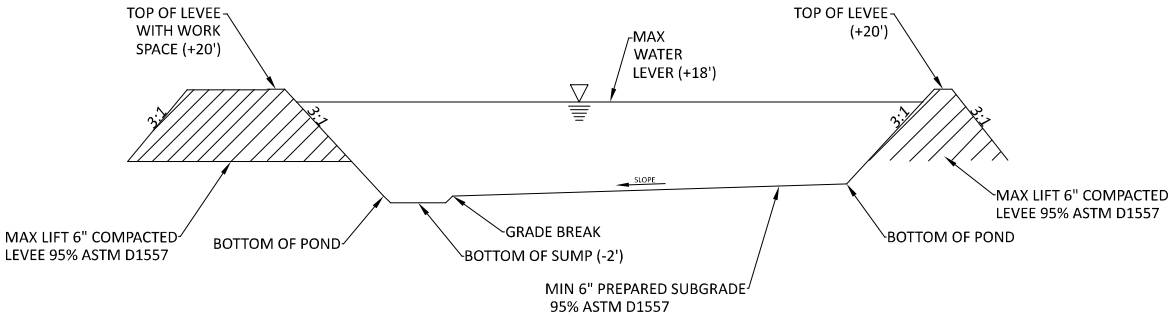

SECTION B

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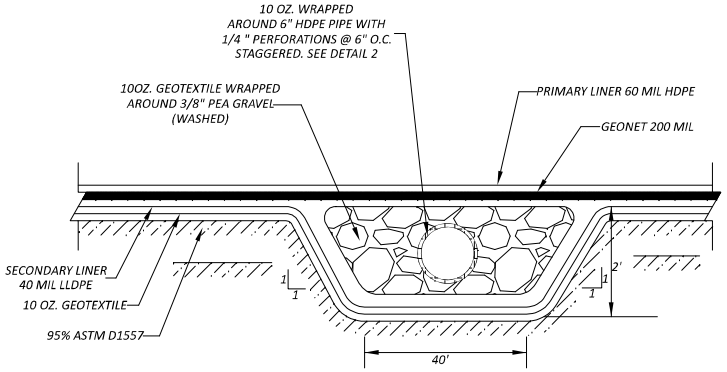
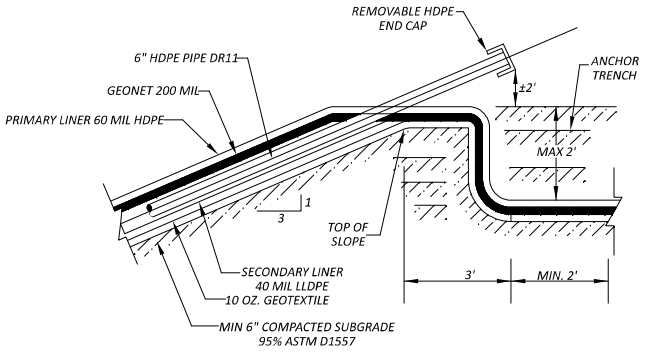
CONTAINMENT DETAILS
CROSS SECTIONS

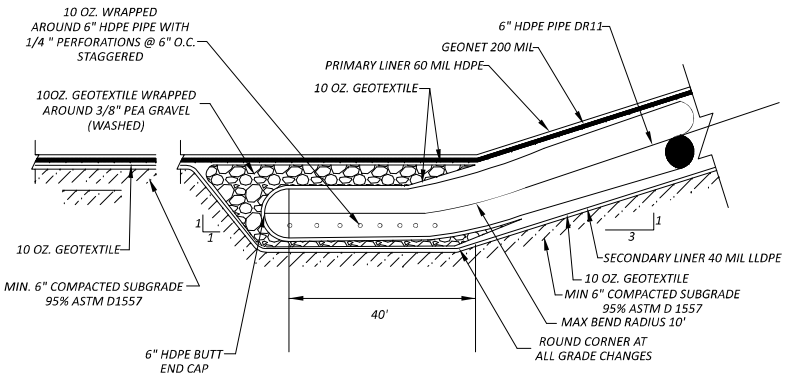
CG501



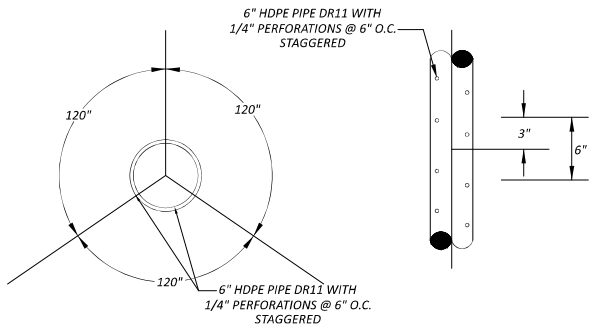
1 CG502 **LEAK DETECTION SYSTEM SECTION**
N.T.S.



3 CG502 **LEAK DETECTION SYSTEM PIPE RISER**
N.T.S.



2 CG502 **LEAK DETECTION SYSTEM SECTION**
N.T.S.



4 CG502 **LEAK DETECTION SYSTEM PIPE RISER (TYP)**
N.T.S.

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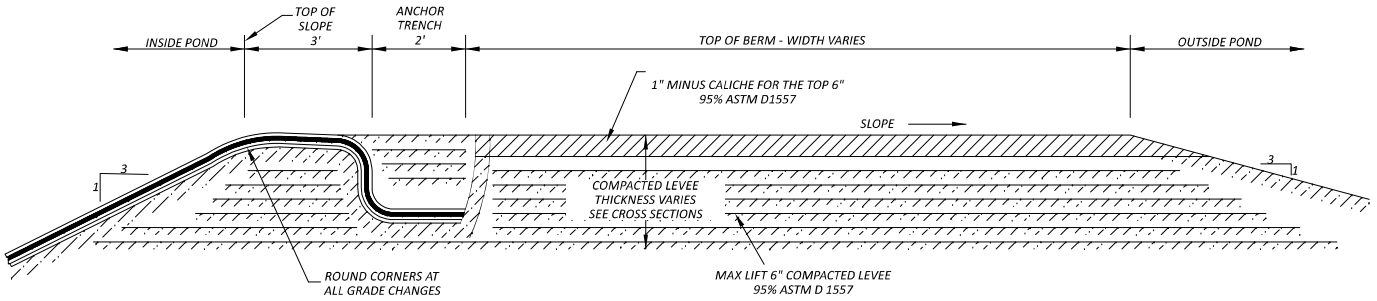
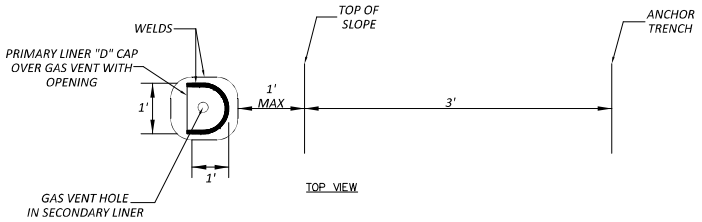
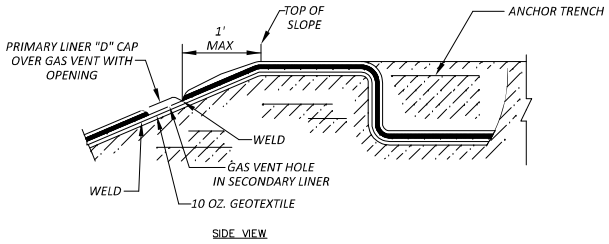
LINER DETAILS

CG502

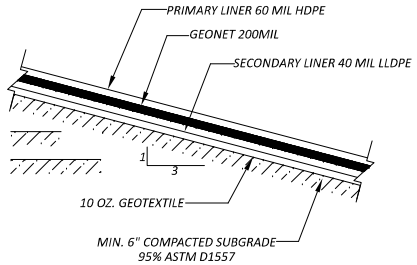


1 CS503 **LEVEE COMPACTION (TYP.)** N.T.S.

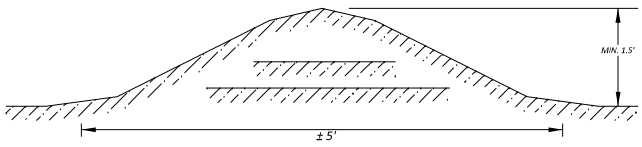




2 CS503 **GAS VENT (TYP.)** N.T.S.



3 CS503 **POND SLOPE LINER (TYP.)** N.T.S.



4 CS503 **EROSION PROTECTION BERM (TYP.)** N.T.S.

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CONTAINMENT DETAILS

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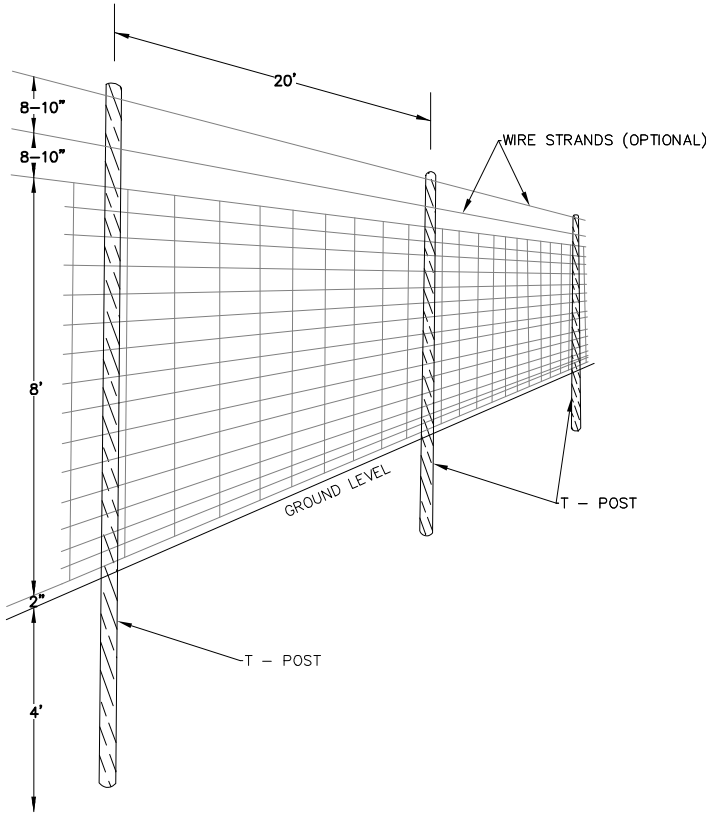

1 CG504 *8' GAME FENCE* N.T.S.

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GAME FENCE DETAIL

CG504

Overview

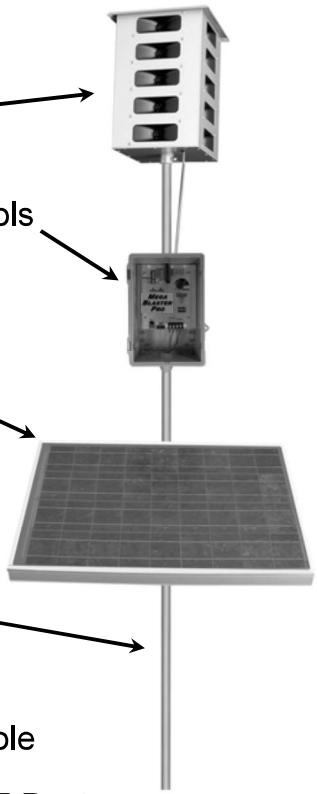
The Bird-X Mega Blaster Pro utilizes the innate power of the natural survival instincts of birds to effectively repel them. Digital recordings of distressed and alarmed birds, along with the sounds made by their natural predators are broadcast through high fidelity weather-resistant speakers over the top of areas. This action triggers a primal fear and flee response. Pest birds soon relocate to where they can feed without feeling threatened.

Your Bird-X Mega Blaster Pro system consists of:

20-Speaker Tower broadcasts the bird sounds

Control Unit produces the bird sounds and contains all operational controls

Solar Panel recharges the 12-volt deep cycle battery



Items needed but <u>not</u> included:

(1) **Mounting Pole** or **Mast** tall enough to raise the 20-Speaker Tower at least 5 feet above the top of the areas, trees or other obstructions

(1) **12-volt Deep Cycle Battery** (RV/Marine) Group 27 or larger wet cell

(1) **T-Post** or similar (Optional) may be needed to support the mounting pole

(1) **Bailing Wire or zip-tie** (Optional) to secure the Mounting Pole to the T-Post

CAUTION: THE MEGA BLASTER PRO IS CAPABLE OF PRODUCING SOUNDS UP TO 125 DECIBELS. PROPER HEARING PROTECTION MUST BE WORN ANYTIME THE UNIT IS TURNED ON.

Bird Control Management Guidelines

An active bird control management program is a key to successfully repelling pest birds. Bird feeding patterns may take several days or weeks to break. Follow all suggestions for maximum effectiveness. Read all instructions prior to installation.

For best results:

- **It is extremely important to fully protect your entire area from birds.** Any areas not fully protected will allow birds to begin feeding at the fringes of the sound coverage. They will soon become bolder and learn the sounds are nothing to fear. This will cause the effectiveness to diminish. Complete Bird-X product coverage forces birds to leave the area entirely.
- Install the Mega Blaster Pro unit at least two weeks before birds are attracted to your area. It is much easier to keep birds away before they have found a food source than it is to repel them once they have developed a feeding pattern.
- Most birds begin feeding from the perimeter of an area. Place Mega Blaster Pro units so the sound protection covers past the edges of the area.
- Birds will often use tall trees for roosting and observation. If birds are in bordering trees it is necessary to position the units so the sound protection covers the trees as well.
- Mount the 20-Speaker Tower at least five feet above trees, areas and structures for maximum coverage. The higher the better. Sound will disperse or reflect off structures or foliage. Mount control unit out of direct sun, if possible.
- When first installed, run Mega Blaster Pro units at FULL volume and on SHORT time off periods. This ensures maximum “bird stress” and creates a hostile environment.
- Watch for changes in bird activity and adjust the location of your Mega Blaster Pro unit if needed.
- **Check the battery and unit settings often to insure continuous bird control. Be certain that the system is not turned down or has a dead battery. Field hands or harvesters may turn down the volume.**
- Changing settings and switches often helps to prevent bird habituation. Periodically change the switch settings of the eight sounds (turning them ON or OFF). NEVER turn OFF the distress calls of the target birds you are trying to repel and always keep at least one predator bird sound turned ON.
- If different bird species enter the protected area and begin causing damage contact us immediately for an updated Sound Recording Card designed to repel the new invading birds.
- Remember that the Mega Blaster Pro system is a management tool, and should be used as part of your overall bird control strategy, sometimes in conjunction with other bird control techniques and devices.

Be aware that under extreme drought or other adverse conditions, birds will disregard all deterrents and risks in order to survive

CLOSURE COST ESTIMATE

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996

Enchantment Water LLC, Fed 128 In Ground Containment Registration
Section 28 T23S, R31E, Eddy County

Closure Cost Estimate

Please note that the Fed 128 In-Ground Containment was a partially reclaimed quarry prior to BLM granting approval for conversion of the quarry to a produced water recycling storage containment. Thus, the cost estimate calls for reclamation of the surface to the original condition – a reclaimed quarry. This is consistent with Rule 34 that states (**emphasis added**):

> Topsoils and subsoils shall be **replaced to their original relative positions** and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area shall then be reseeded in the first favorable growing season following closure of a recycling containment. The operator shall substantially restore the impacted surface area **to the condition that existed prior to the construction of the recycling containment.**

Enchantment will undertake removal of all fluid from containment, pipes, headers, fencing & associated structures (e.g. fencing). Using Enchantment field crews, the estimate for this action is $15,000.

Per the attached bid, 4D Excavating will remove and dispose of liner. Disaggregate former quarry surface as appropriate, & seed surface w/LSO or BLM seed mix . Seeding will occur at the time agreed to with BLM. This cost is $158,000.00.

Our estimate for sampling and analysis for closure, and the closure report is $5,000.

Thus, the total closure cost is (15000 + 158000 + 5000) $178,000.

4 D Excavating, Inc.
P O Box 7057
Odessa, TX 79760
Office (432) 362-1346
Cell (432) 803-9402
Fax (866) 464-4505

Quote 22-0508X

May 10, 2023

"PO required"

Enchantment Water, LLC.
1250 S Capital of Texas Hwy
Austin, TX 78746
Chris Caudill 713 628 1148

Fed 128
Reclaim Water Pond
Eddy County

Mobilize
After infinity removes all fluid from containment, pipes,
headers, fencing & associated structures
Mobilize
Reclaim Pond - remove and dispose of liner
Disaggregate former quarry surface as appropriate
& seed surface w/LSO or BLM seed mix

$158,000.00

Prepared by

Ben Davis

SITING CRITERIA DEMONSTRATION

Distance to Groundwater

Plate 1, Plate 2, and the discussion below demonstrates that groundwater (fresh water as defined by NMOCD Rules) at the location is greater than 100 feet beneath the area of interest that will include the location of the recycling containment.

Plate 1 is a topographic map that shows:

1. The proposed Fed 128 In-Ground Containment area identified by the blue polygon and the closed FED 128 AST site that lies north of Route 128.
2. Water wells from the OSE database as a blue triangle inside colored circles that indicate well depth. OSE wells are often mislocated in the WATERS database as older wells will plot in the center of the quarter, quarter, quarter, of the Section Township and Range. Additionally, the OSE database can include locations of proposed wells (i.e., permit applications). OSE data that do not contain a "start date" of drilling are eliminated from Plate 1 as these are generally permits or .
3. Water wells from the USGS database as large triangles color-coded to the formation from which the well draws water.
4. Water wells, which are not documented in the public databases but were identified by field inspection or other published reports as colored squares.
5. The depth-to-water from the most recent available measurement for each well is adjacent to the well symbol.

Plate 2a is an area topographic and geologic map that shows:

1. The Fed 128 In-Ground Containment area identified by the blue polygon.
2. Water wells measured by the USGS, the year of the measurement and the calculated elevation of the groundwater surface.
3. Water wells measured by professionals and documented in published reports or by staff of Hicks Consultants (Misc.).
4. Isocontour lines displaying the elevation of the groundwater surface.

Plate 2b displays the data points (wells measured by professionals) used to create the potentiometric surface displayed in Plate 2a

Geology

Quaternary Age eolian and piedmont deposits (Qe/Qp on Plate 2a) are the dominant exposed material in the area. These deposits are a 5-100 foot covering of the underlying Permian Dewey Lake Formation (aka Quartermaster Formation) or, further east, the Triassic upper Chinle Formation.

A detailed description of the geology near the site is available in *Basic Data Report for Drillhole SNL-12 (C-2954)* and *Basic Data Report for Drill Hole H-12R (C-3749 Pod-1).* SNL-12 (C-3150) lies about 6500 feet east of the Fed 128 In-Ground Containment area H-12R, is 2.3 miles northeast.

The referenced report for SNL-12 includes a description of groundwater encountered in the Dewey Lake Formation during drilling. In Section 3.1 the report states:

> Groundwater was encountered in the Dewey Lake Formation at SNL-12 on June 26, 2003. As the drillhole reached ~160 ft depth using compressed air, cuttings began to cake and felt moist … The drillhole was deepened to 175 ft, and the hole was allowed to stand …. To provide ample opportunity for the water level to stabilize, drilling was suspended until July 7, 2003. The water level was measured at 141.55 ft at 12:19 MDT on July 7.

Thus, Plate 1 shows a static depth to water in the Dewey Lake formation of 141.6 feet below grade.

The data for C-3749 (WIPP Well H-12 in Appendix Well Logs) describes the Santa Rosa/Chinle as 53 feet thick (19-72 feet deep). The well log reports that the underlying Permian Dewey Lake Formation is 548 feet thick. The report provides no data relating to shallow groundwater in the Dewey Lake. The DOE drilled this well to provide data from the Culebra Dolomite of the Rustler Formation.

The principal aquifer around the area of the Fed 128 In-Ground containment is the sandstone units of the Dewey Lake Redbeds. To the east, the overlying Chinle Formation (including the basal Santa Rosa Sandstone) is the uppermost water bearing unit that provides water to wells.

Topographically, the area around the containment area slopes to the west southwest toward drainages of Nash Draw.

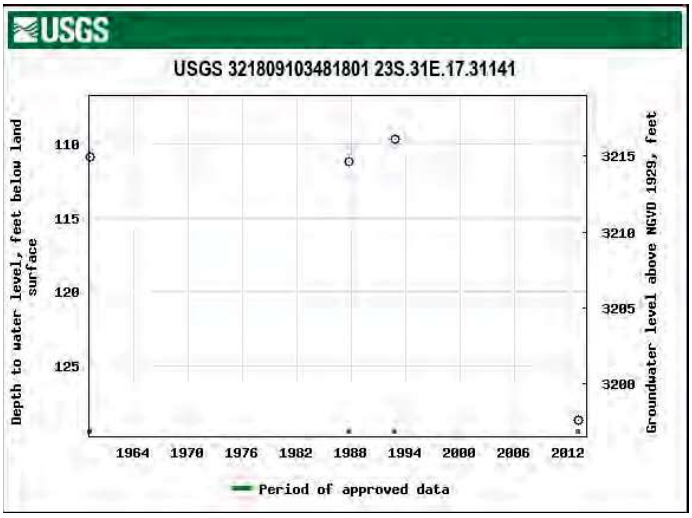
Groundwater Data

We relied upon the most recent data measured by the USGS and published data to create the water table elevation map shown in Plate 2a. Water level data from the OSE database rely upon observed water levels by drillers during the completion of the water well. The OSE dataset provides some useful data in certain areas but are not used to generate groundwater elevations for these Plates, unless specifically noted in the text.

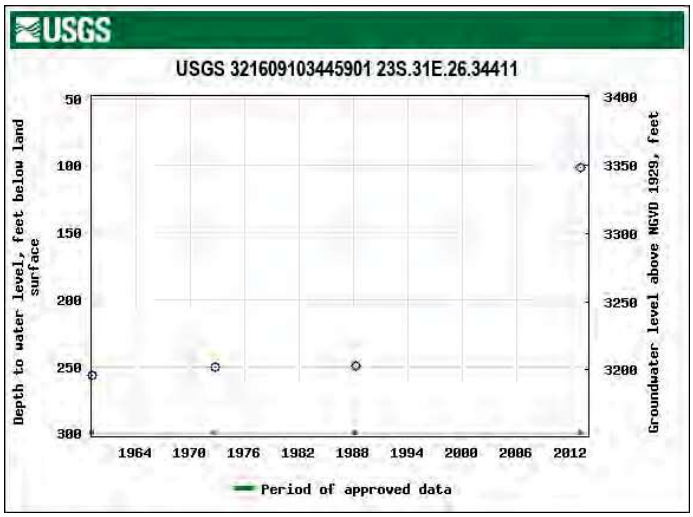
The Rustler Formation is an aquifer in much of Eddy County and can be weakly hydraulically connected to the Dewey Lake Formation, which is the uppermost water-bearing unit near the proposed containment. The overlying Chinle Formation is also connected to the Dewey Lake. The Tertiary Ogallala Formation and Quaternary alluvium have protectable groundwater east of the containments and these saturated units are not hydraulically connected to the Dewey Lake in this area. Our discussion relies on data from the wells nearest to the containment (Plate 2a), which are completed in the Dewey Lake, Chinle and Rustler Formations.

The graphs below present USGS historic ground water elevation data for selected wells.

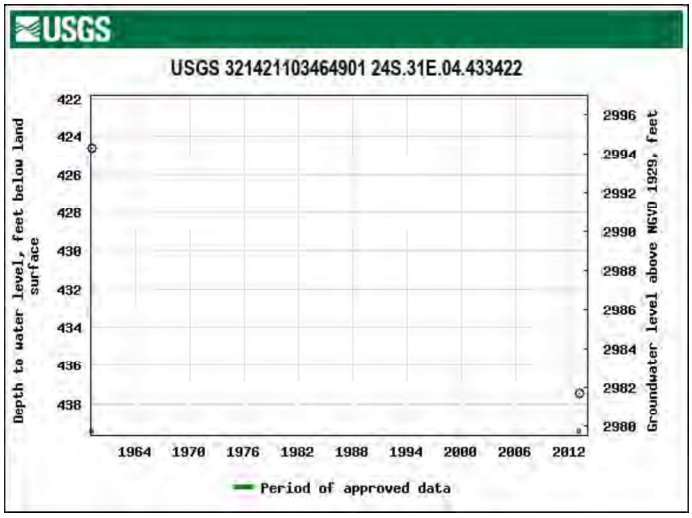
USGS-9122 is located about 2.5 miles northwest of the proposed containment and the data are presented to the right. Over the 50+ year record, ground water elevation in this Rustler Formation well has varied by about 20 feet. However, the well was pumping during the 2013 monitoring event and this one measurement creates about 18 feet of the 20-foot variation. .



The database shows USGS-9203 draws water from the Dewey Lake Redbeds, which underlies the Chile/Santa Rosa aquifer. This well is three miles to the east-southeast of SNL-8 and the uppermost groundwater unit may be the Dewey Lake or the Chinle/Santa Rosa. The most recent USGS monitoring event indicates the well was pumping and the graph shows the elevation nearly 150 feet higher than previous measurements – suggesting the USGS measured the wrong well. Our 2021 depth to groundwater is 248.8 feet (MISC-161), consistent with the earlier USGS data. The groundwater elevation in this well is stable.



Well USGS 8847 is 3 miles south of the proposed containment and draws water from the Dewey Lake Redbeds according to the USGS database. Although this well was being pumped at the most recent measurement, groundwater elevation is only 13 feet lower than the other data point from 1959. MISC-162 (Engles Well), measured in 1959 for the USGS report on the Gnome Site, is the same data displayed in the graph.



The data in Plate 2s and the discussion above demonstrate:

- Groundwater elevation in the Dewey Lake (aka Quartermaster) groundwater zone beneath the proposed containments is about 3197 feet ASL
- Groundwater levels in the area are relatively stable over time
- The alluvial sediments overlying the Chinle or Dewey Lake are unsaturated
- Given a surface elevation for the containments of 3366, depth to the groundwater surface is about (3366-3197=) 169 feet

Distance to Municipal Boundaries and Freshwater Fields

Plate 3 demonstrates that the area of interest is not within incorporated municipal boundaries or within defined municipal freshwater well fields covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- The nearest freshwater well field is a City of Carlsbad Wellfield, which is 32 miles east.
- The nearest municipality is the Village of Malaga, which is 18 miles southeast of the site.

Distance to Subsurface Mines

Plate 4 and our general reconnaissance of the area demonstrate the absence of subsurface mines in the area.

- The Fed 128 site is not in an area where subsurface mines exist. Subsurface workings (red lines) are shown in the northwest corner of Plate 4, about 4 miles from the proposed containment.
- The site is within the Main potash district (orange highlight).
- The nearest surface mine mapped in the MILS database is a gravel pit approximately 4 miles to the southeast.
- The MILS database shows a “prospect” north of the proposed Containment. We can find no backup documentation that provides any information and there is no evidence of a feature on Google Earth.
- However, examination of historic Google Earth images shows that the site of the Fed 128 In-Ground Containment was a small quarry. Site Photos support this finding.

Distance to High or Critical Karst Areas

Plate 5 illustrates the Fed 128 In-Ground Containment lies in an area mapped as low karst potential.

- Our field investigation saw no evidence of karst features such as sinkholes.
- The nearest mapped high karst potential area is more than 4 miles northwest.
- We observed no evidence of unstable ground

Distance to 100-Year Floodplain

Plate 6 demonstrates the absence of 100-year flood plains with respect to the proposed location for the Fed 128 In-Ground Containment.

- The nearest 100-year flood plain is almost 8 miles southwest of the site in Dog Town Draw.
- Another area of flooding potential is in the northwest corner of Plate 6 and is associated with a closed basin within the Nash Draw basin.
- Our site investigation found no evidence of flood potential.

Distance to Surface Water

Plate 7 and the site visit demonstrate the that the Fed 128 site is outside of the setback distances for a continuously flowing watercourse, significant watercourse or the next lower order tributary, lakebed, sinkhole, playa lake (measured from the ordinary high-water mark) or spring.

- The nearest surface water feature is a lake/pond that is located about 3.3 miles southeast and the nearest mapped watercourse is about 2.5 miles to the south-southwest.
- We observed no watercourses that meet the Rule 34 definition near the site.

Distance to Permanent Residences or Structures

Plate 8 demonstrates that the proposed site for the Fed 128 site is not within the setback distances of an occupied permanent residence, school, hospital, institution, church, or other structure at the time of the initial application.

- The only structures near the proposed site are well pads, pipelines, and the referenced produced water recycling facility.
- Plate 8 shows the now-closed FED 128 AST Containment about 750 feet northeast of the proposed in-ground containment.

Distance to Non-Public Water Supply

Plates 1 and 7 demonstrate the Fed 128 location is not within the setback distances of a spring or freshwater well used for domestic or stock watering purposes, in existence at the time of initial application.

- Plate 1 shows the location of all area water wells.
- The nearest well is USGS-9666/Misc.143, about 1.5 miles west. This is an active stock watering well.
- No domestic water wells are located within 1,000 feet of the recycling area.
- No springs are in the area.

Distance to Wetlands

Plate 9 demonstrates that the proposed location of the Fed 128 In-Ground Containment is not within the 300-foot setback distance of a wetland.

- The nearest mapped wetland is a freshwater pond that is about 4 miles east of the site.

SITING CRITERIA DEMONSTRATION PLATES

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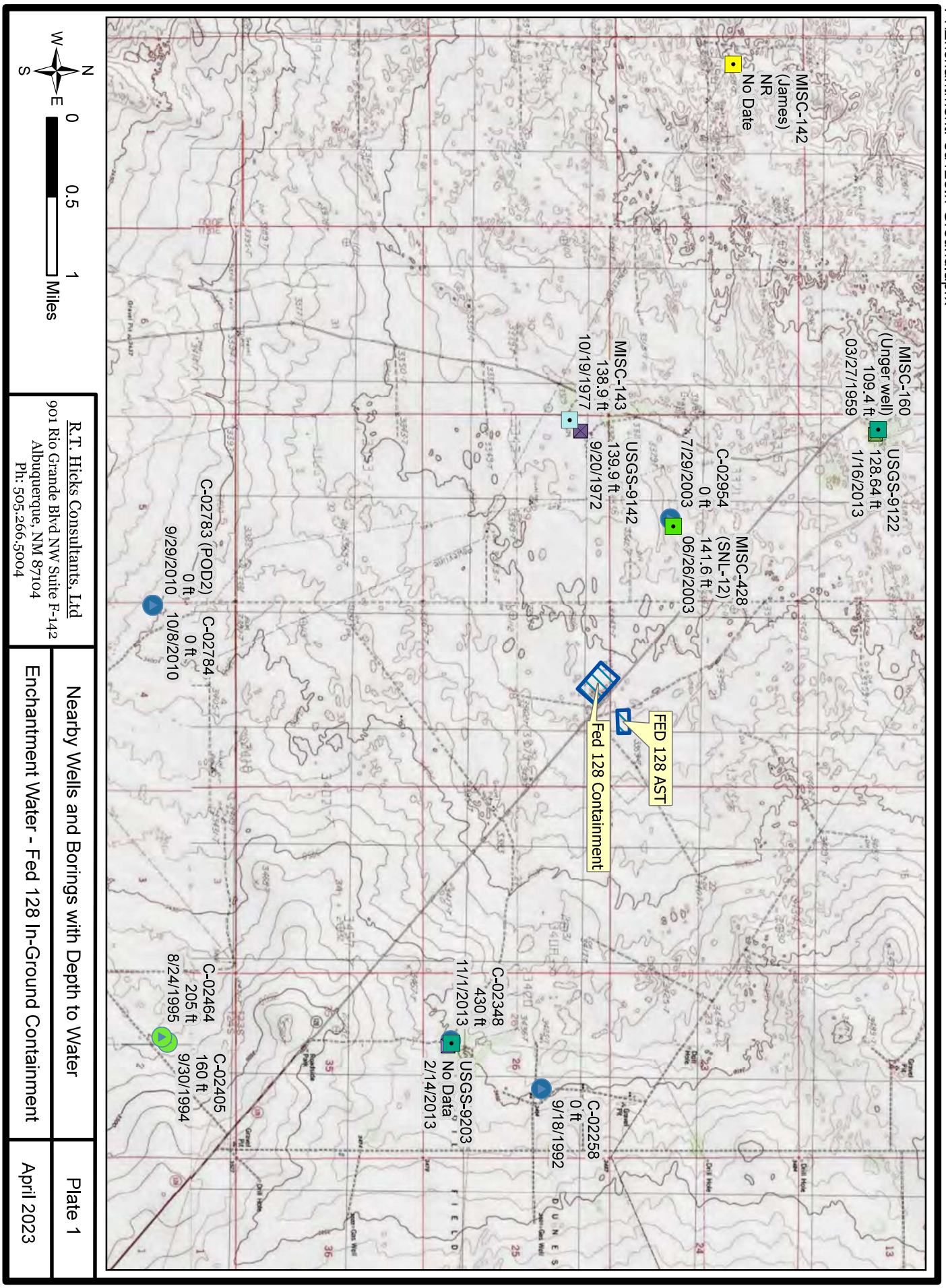

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wells and Borings with Depth to Water
Enchantment Water - Fed 128 In-Ground Containment	Plate 1
April 2023	

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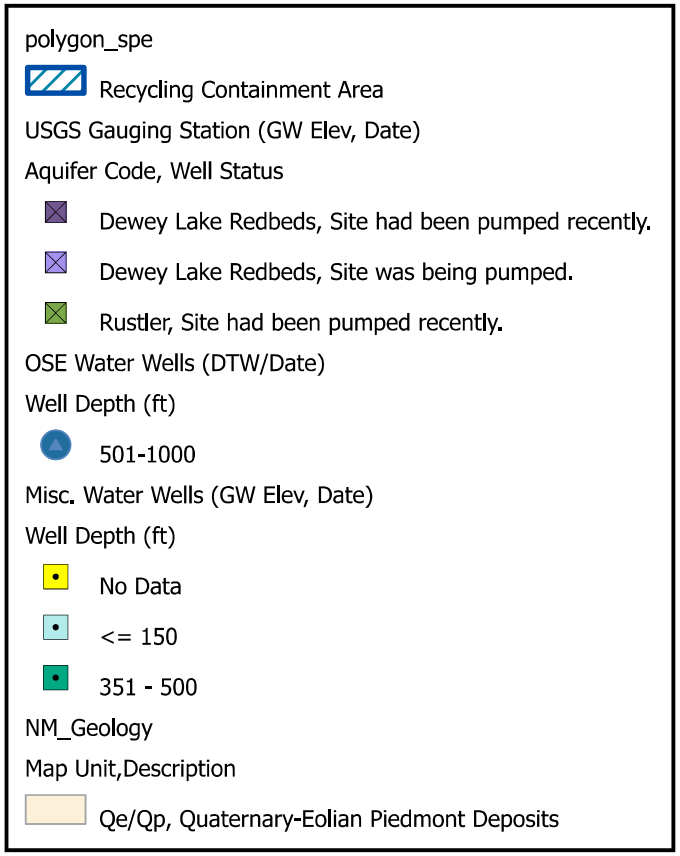

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Plates 1 & 2 Legend	
	Enchantment Water - Fed 128 In-Ground Containment	April 2023

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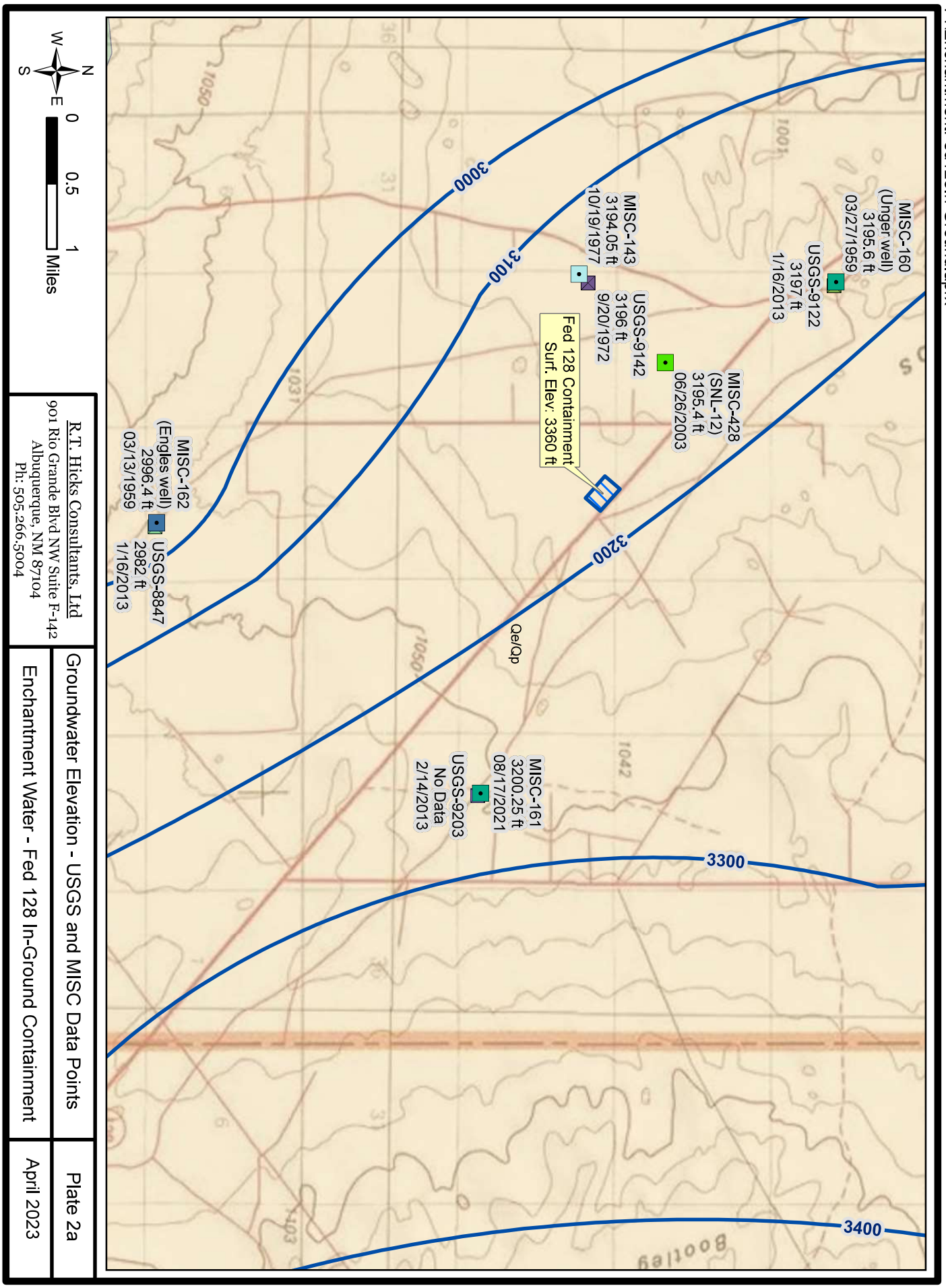

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Groundwater Elevation - USGS and MISC Data Points
Enchantment Water - Fed 128 In-Ground Containment	Plate 2a
	April 2023

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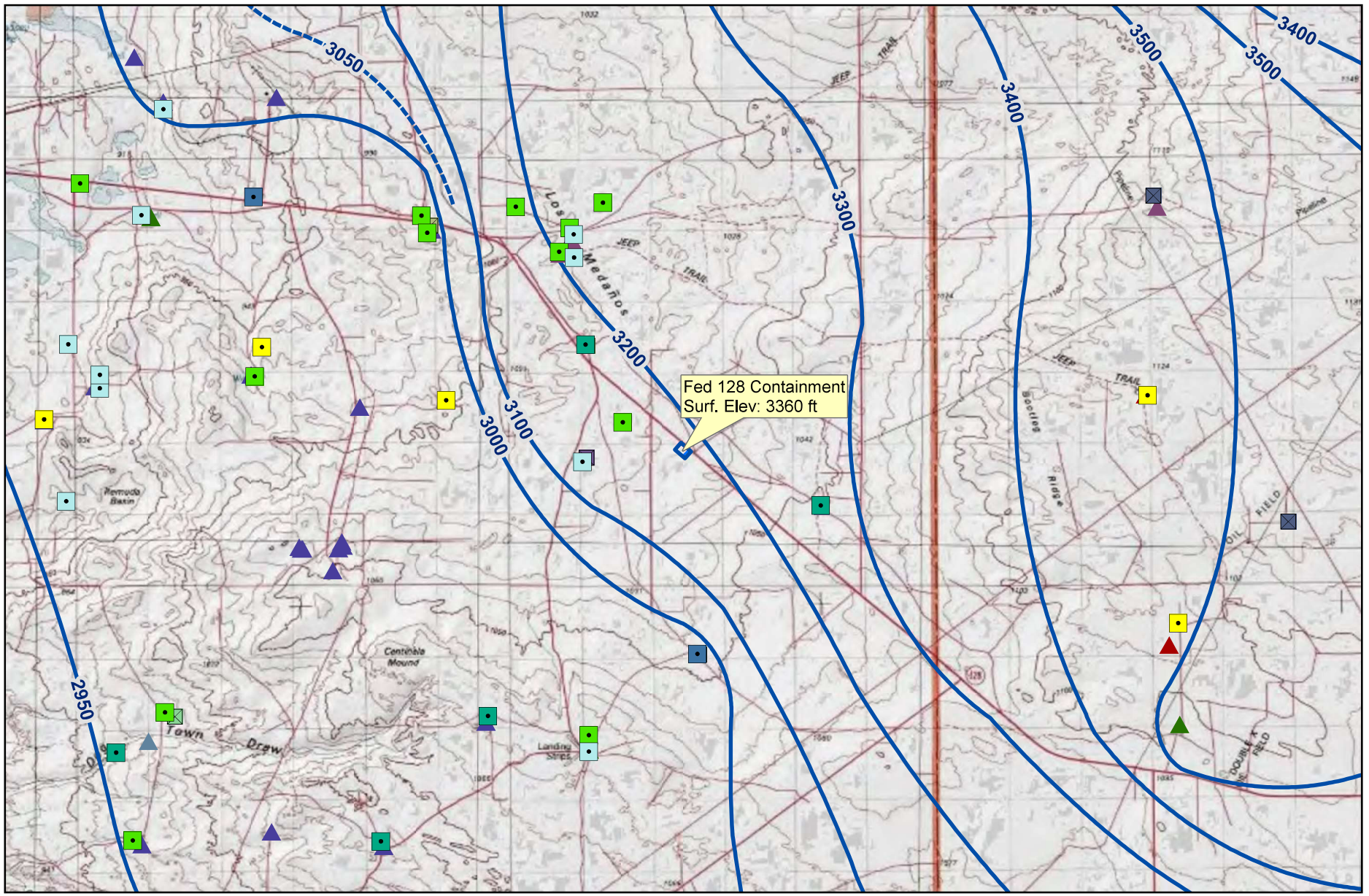

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Ph: 505.266.5004

Groundwater Elevation USGS and MISC Data Points	Plate 2b
Enchantment Water - Fed 128 In-Ground Containment	April 2023

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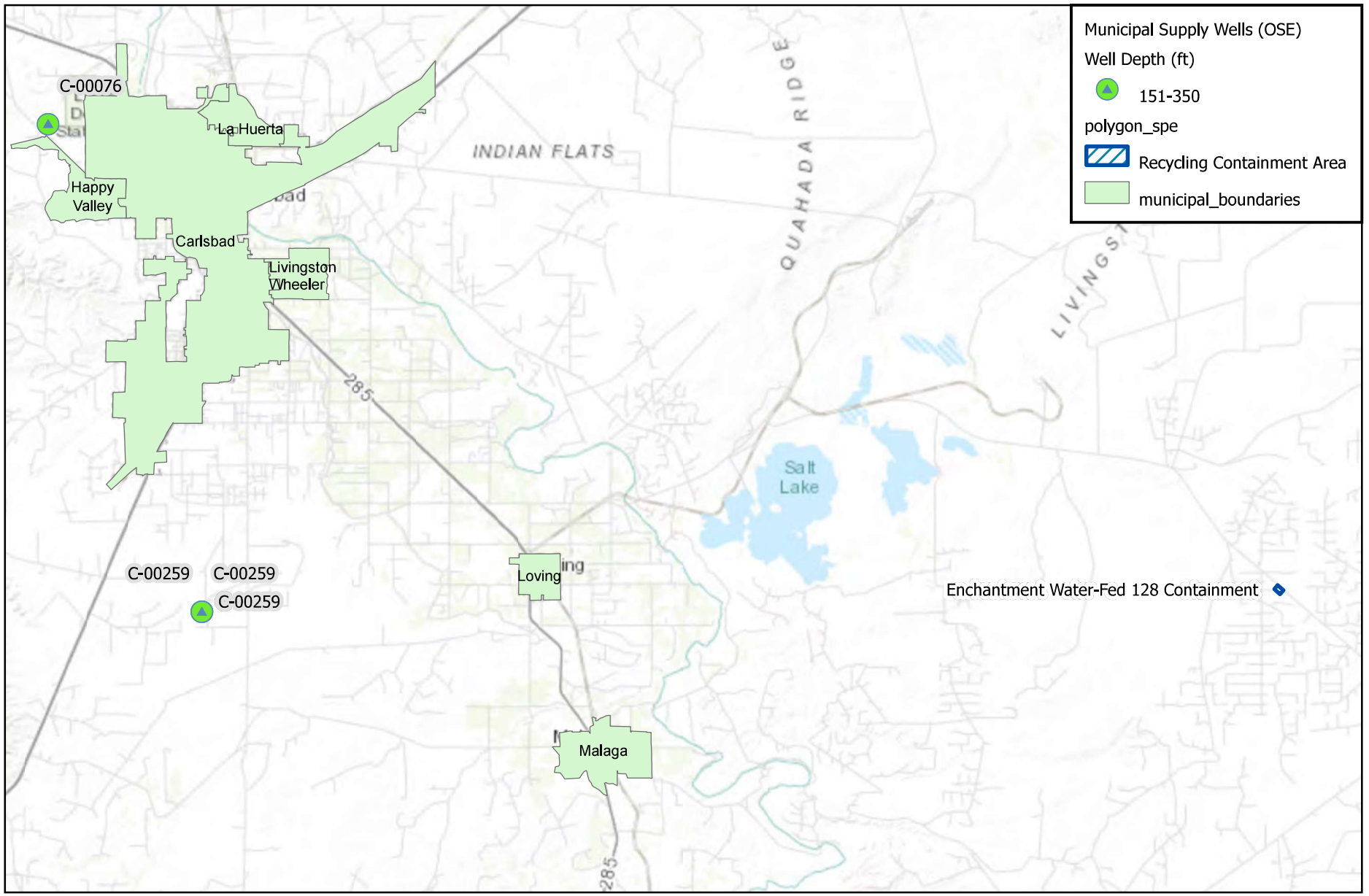

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearest Municipalities & Public Water Supplies	Plate 3
	Enchantment Water - Fed 128 In-Ground Containment	April 2023

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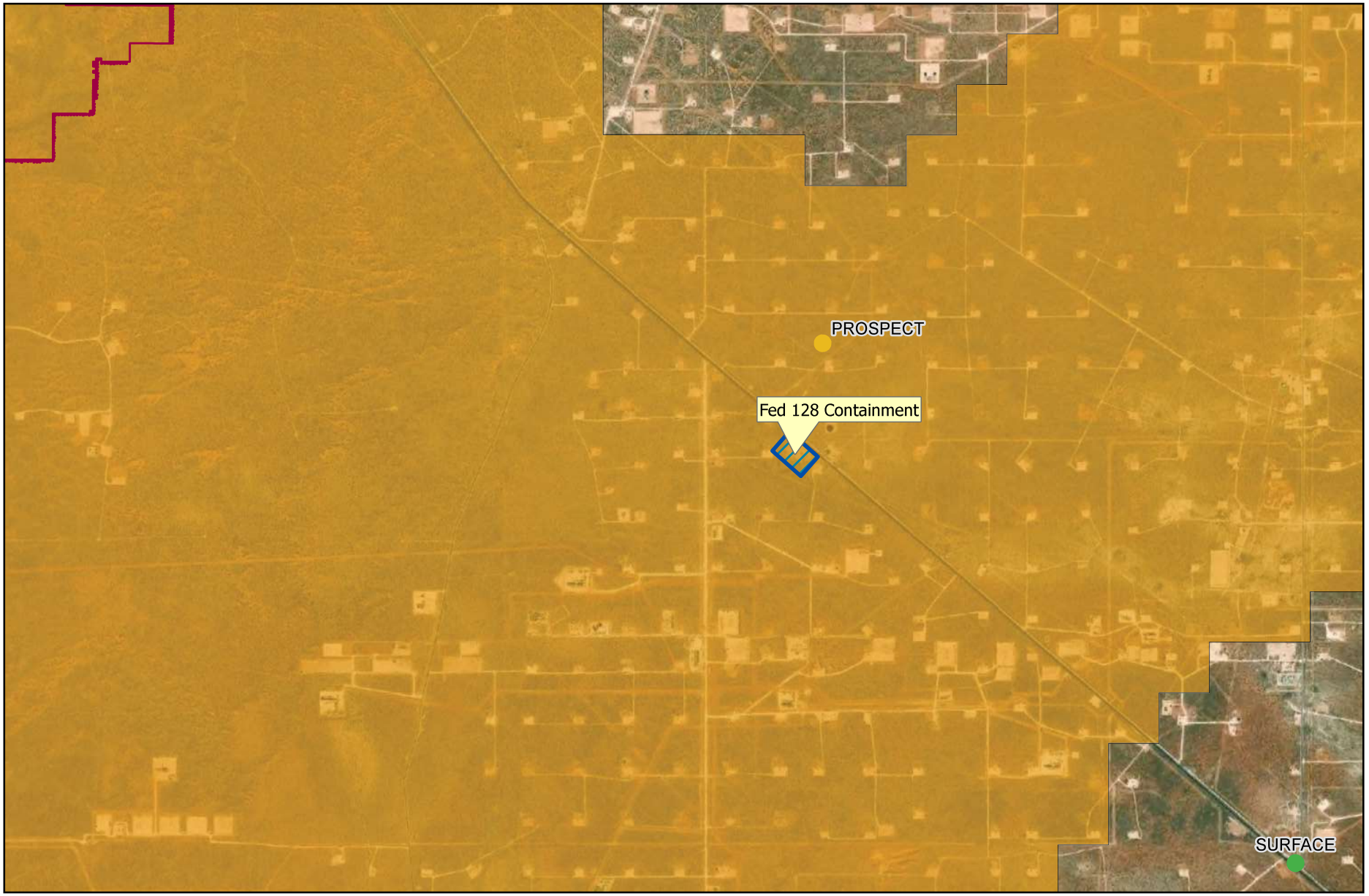

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Nearby Mines - Caliche Pits & Subsurface Tunnels	Plate 4
Enchantment Water - Fed 128 In-Ground Containment	April 2023

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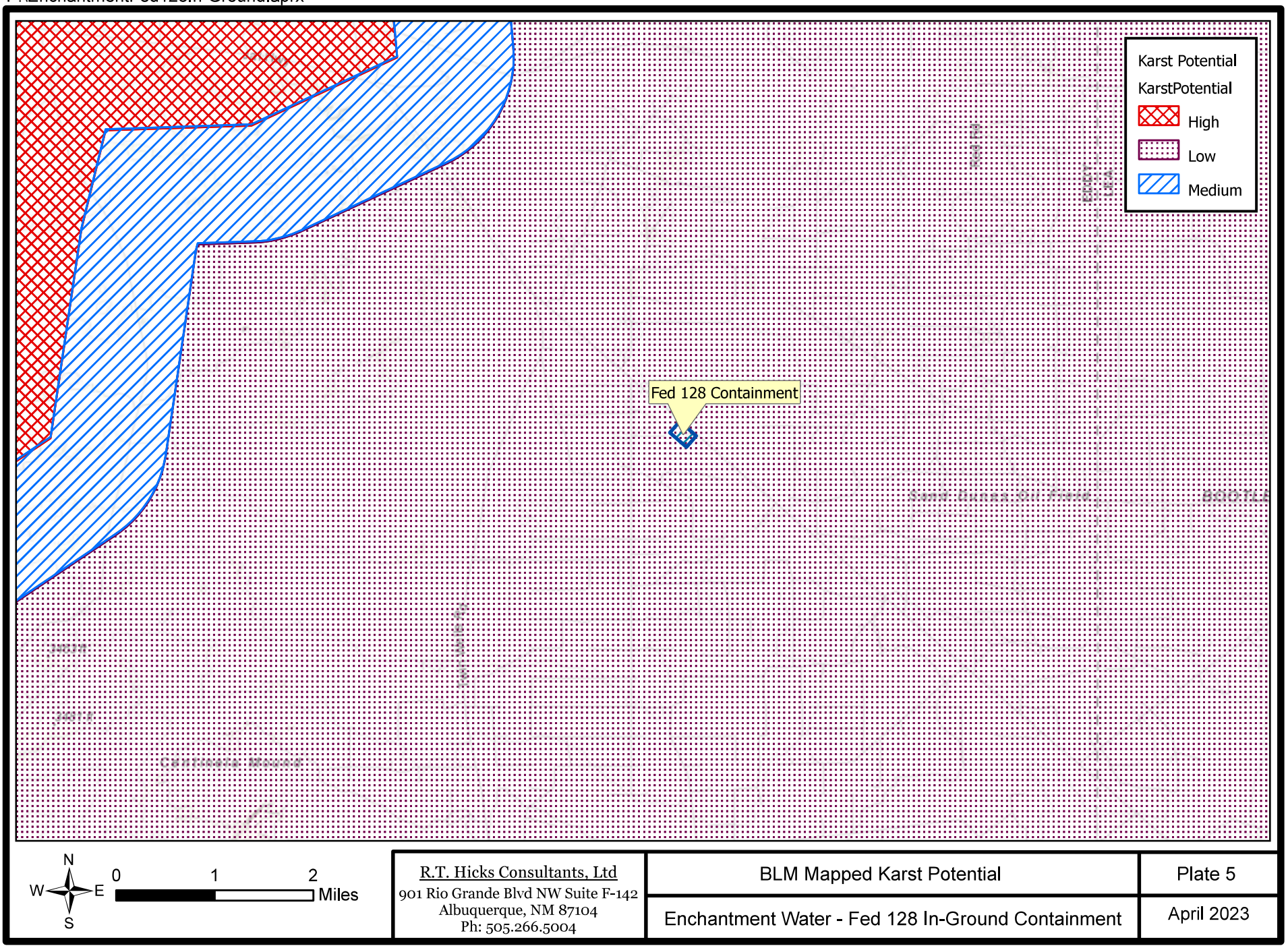

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	BLM Mapped Karst Potential	Plate 5
	Enchantment Water - Fed 128 In-Ground Containment	April 2023

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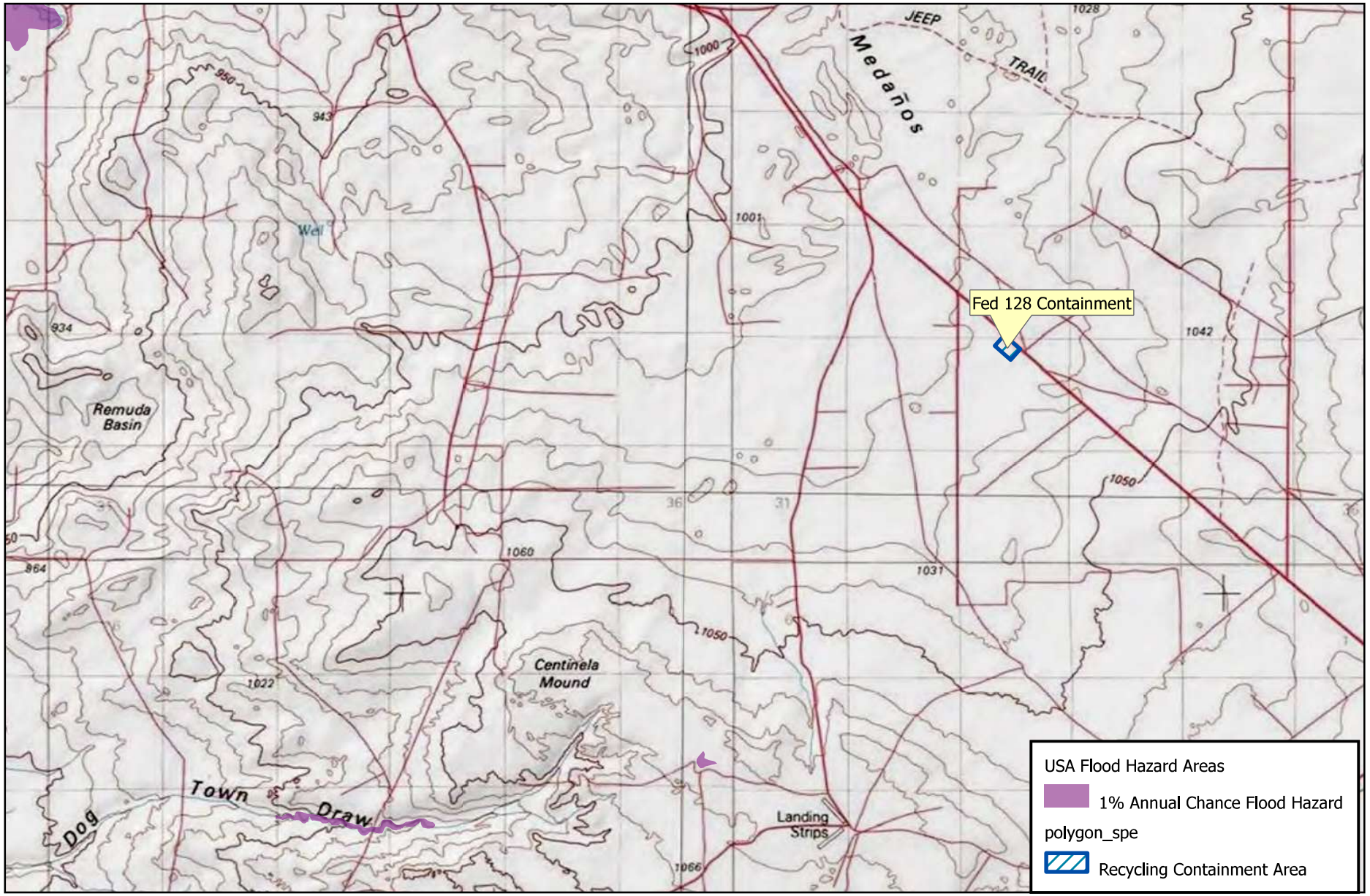

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Ph: 505.266.5004

FEMA Mapped Flood Zones	Plate 6
Enchantment Water - Fed 128 In-Ground Containment	April 2023

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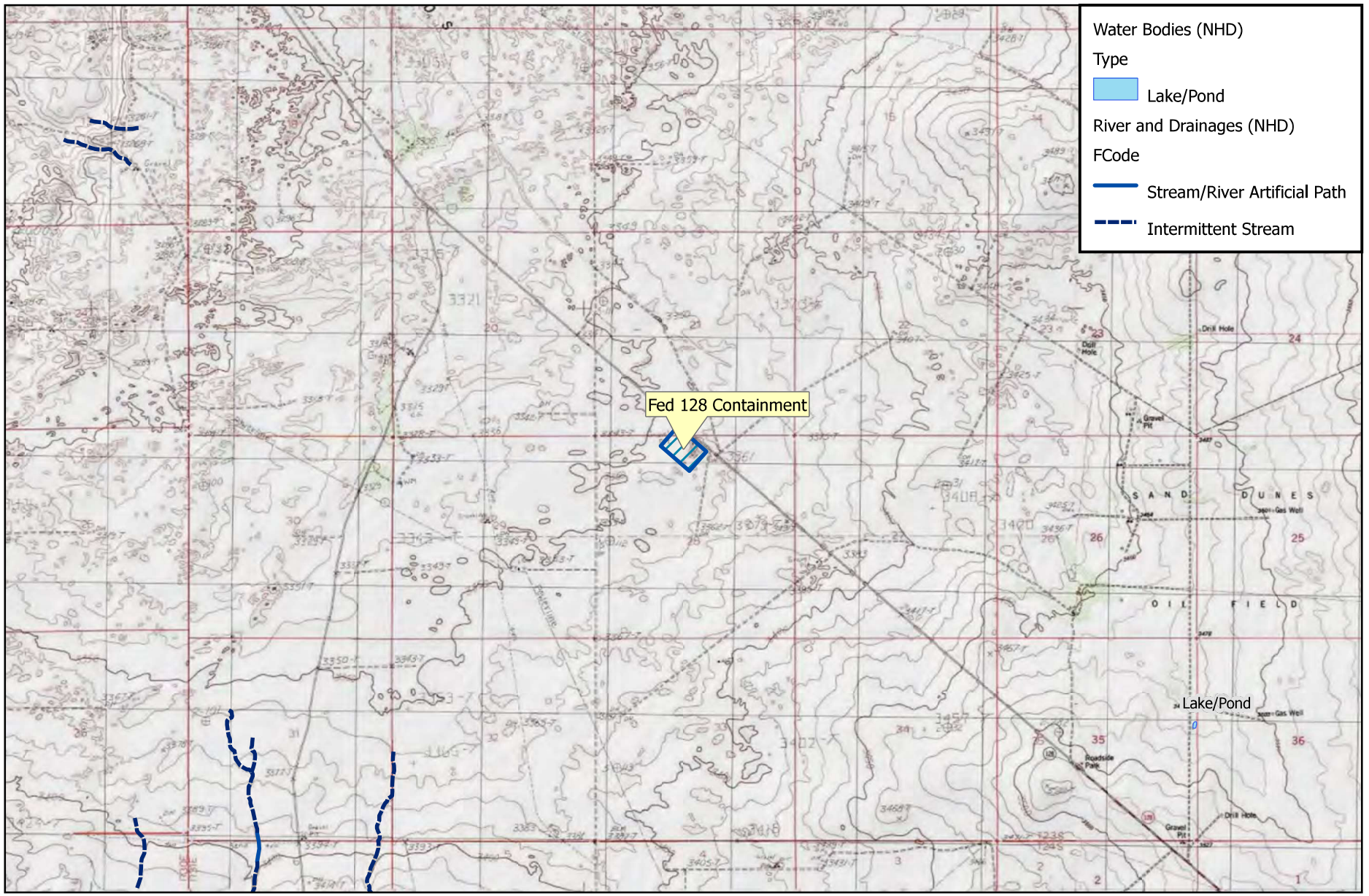

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Mapped Surface Water	Plate 7
	Enchantment Water - Fed 128 In-Ground Containment	April 2023

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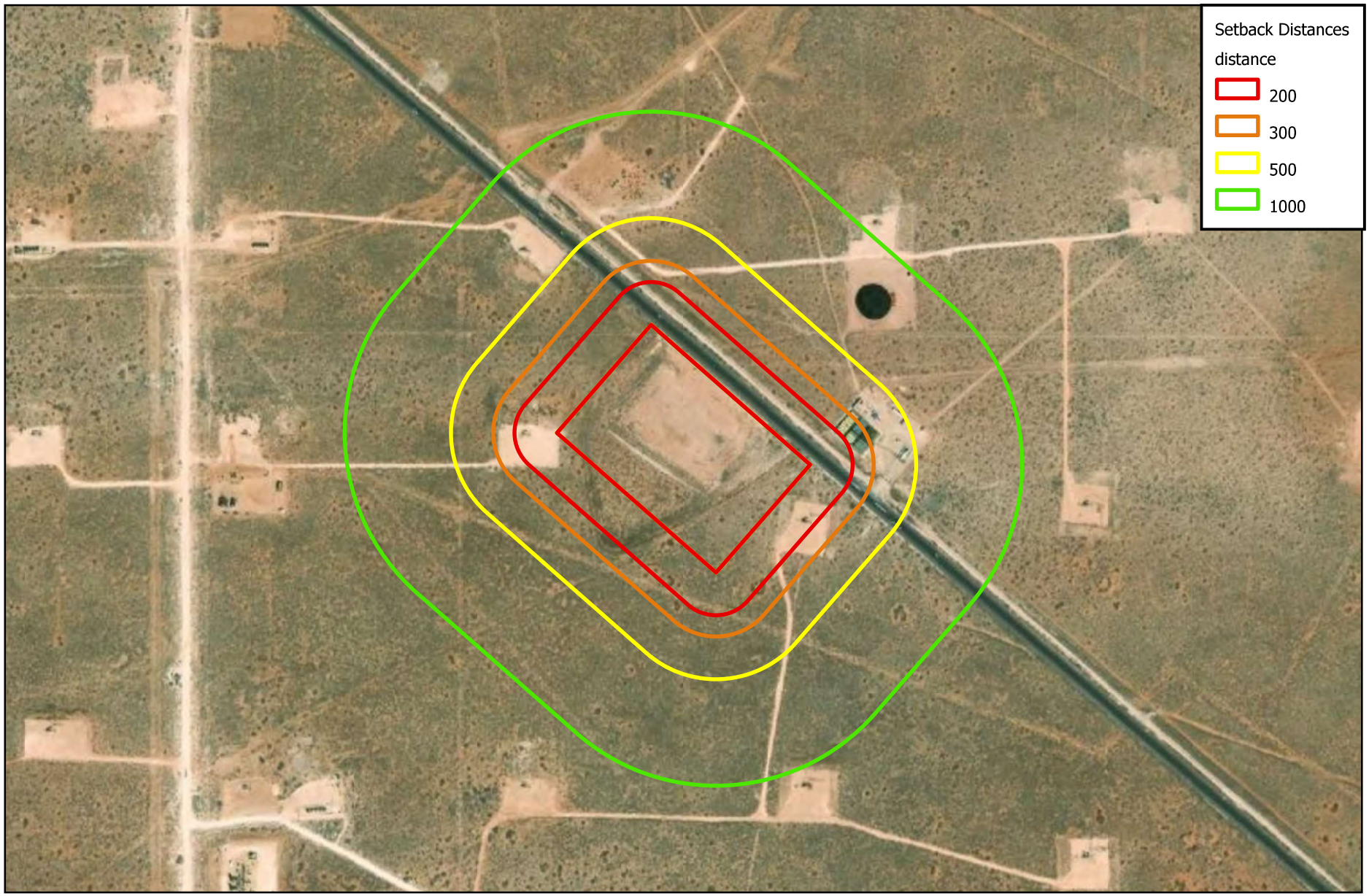

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearest Structures	Plate 8
	Enchantment Water - Fed 128 In-Ground Containment	April 2023

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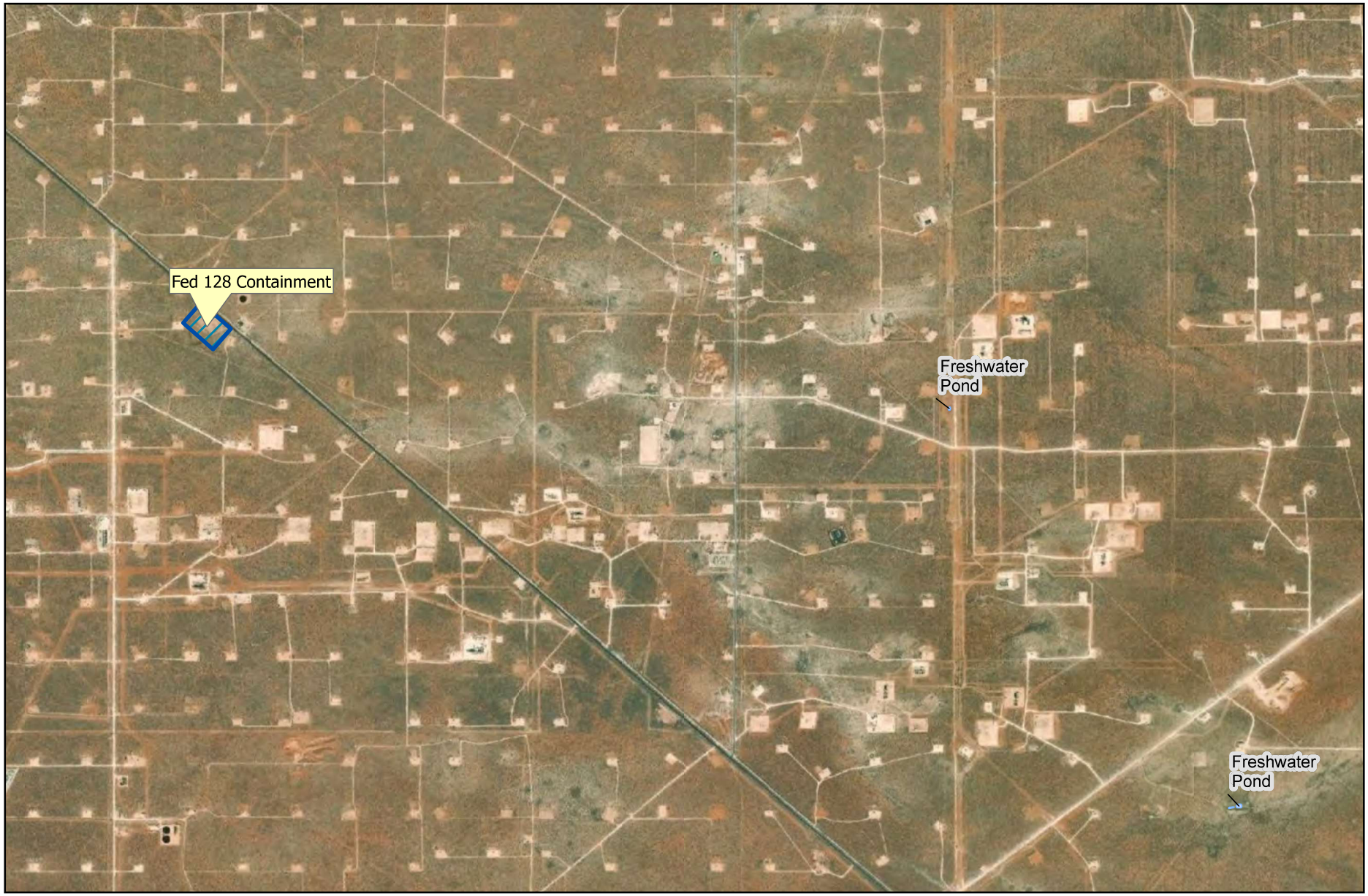


R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Mapped NM Wetlands	Plate 9
	Enchantment Water - Fed 128 In-Ground Containment	April 2023

APPENDIX WELL LOGS

Table 2-1
Geology at Drillhole SNL-12

System/ Period/Epoch		Formation or unit	Member *Informal units*	Depth below surface (ft)[1]
Cenozoic	Holocene	surface dune sand and Berino soil		0 - 10 ft
	Pleistocene	Mescalero caliche		10 - 18 ft
	Miocene-Pleistocene	Gatuña		18 ft - 36 ft
Mesozoic	**Triassic**	Santa Rosa[2]		eroded
		Dewey Lake[3]		36 ft - 372 ft
Paleozoic	**Permian**	Rustler	Forty-niner *A-5* *M-4/H-4* *A-4*	372 ft - 432 ft *372 ft - 403 ft* *403 ft - 418 ft* *418 ft - 432 ft*
			Magenta Dolomite	432 ft - 460 ft
			Tamarisk *A-3* *M-3/H-3* *A-2*	460 ft - 547 ft *460 ft - 524 ft* *524 ft - 536 ft* *536 ft - 547 ft*
			Culebra Dolomite	547 ft - 587 ft
			Los Medaños[4] *M-2/H-2* *A-1* *M-1/H-1*	587 ft - 692 ft *587 ft - 600 ft* *600 ft - 608 ft* *608 ft - 692 ft*
		Salado	*?Marker Bed 100* *Marker Bed 101* *Marker Bed 102* *Marker Bed 103*	692 - total depth (905 ft) *? - 785? ft* *822 ft - 825 ft* *845 ft - 850 ft?* *879 ft - 894 ft*

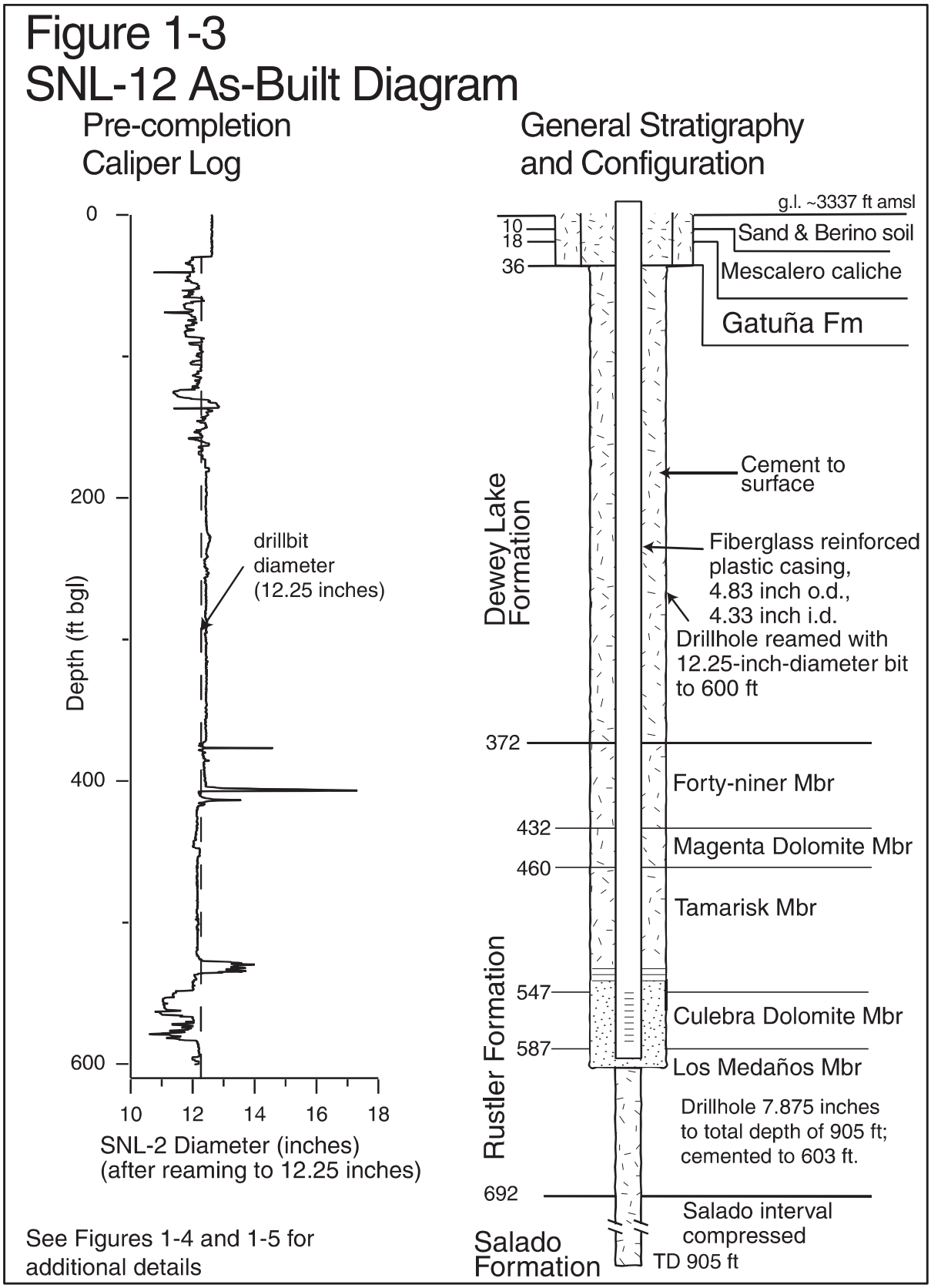
[1]Depths are based on measurements by geophysical logging supplemented by drilling data.Geological logs based on field descriptions (Appendix C) and markings on cores (Appendix G) vary modestly because of incomplete recovery and lesser precision using cuttings.

[2]The Santa Rosa Formation, part of the Dockum Group or undifferentiated Triassic, is completely eroded at SNL-12.

[3]The Dewey Lake Formation has been considered part of the Permian System in the past. Recent work (Renne and others, 1996, 2001) indicates that lithologically equivalent rocks in Texas are mostly Lower Triassic, with some Upper Permian at the base.

[4]The Los Medaños Member was named by Powers and Holt (1999) to replace the informal unit "unnamed lower member" of the Rustler Formation.

Figure 1-3
SNL-12 As-Built Diagram



ISSUED

Basic Data Report for Drillhole H-12R (C-3749 POD-1)
DOE/WIPP-16-3559, Rev. 0

Well Cuttings Log Page 1 of 5

Hole ID: H-12R, C-3749 Location: NE 1/4, NE 1/4, NE 1/4, Section 15, T23S, R31E

Drill Date: 7-12-14 to 7-24-14	Drilling Method: Hollow-Stem/Air Rotary	Drill Make/Model: NA
Drill Co: Stewart Brothers Drilling Company	Hole Diameter: 10.5 Inch	Barrel Specs: NA
	Hole Depth: 865 Feet bgl	Drill Fluid: NA
	Hole Orientation: Vertical	Core Preserve: NA
Logged by: Brett Seal	Date: 6/8/15	Scale: NA

	Northing	Easting	Elevation
Survey Coordinate (Ft):			

Comments: Depths to unit contacts are derived from geophysical logs. Lithology comes from cuttings. S sample depths were adjusted to correlate with units

Sample Number	Depth (Ft bgl)	Formation	Member	Informal Unit	Description	Lithology
C-S1				Surficial Deposits	Mostly unconsolidated dune sands, with a few very poorly consolidated pebble sized cuttings. 5 YR 5/8 (yellowish red), well sorted rounded grains with high porosity	
C-S3	10	Mescalero			Caliche, 5 YR 8/3 (Pale pink), poorly sorted, highly effervescent when exposed to HCL, high porosity	
C-S4		Gatuña			Sandstone, 2.5 YR 5/4 (Reddish brown) , poorly sorted grains, clast supported with a calcic matrix, contains caliche from the above Mescalero, manganese oxide staining present, effervescent when exposed to HCl, low porosity.	
C-S5	30	Santa Rosa			Sandstone, 2.5 YR 5/6 (red) moderately consolidated, poorly sorted, calcic cement, effervescent when exposed to HCL	
C-2	40				Sandstone, 2.5 YR 5/6 (red), cuttings powdered, fine grained, subrounded and subangular, poorly sorted, calcareous cement, effervescent when exposed to HCL	
C-3	50				Sandstone, 2.5 YR 4/6 (red), coarse to fine grained, poorly consolidated, calcareous cement, effervescent with HCL, moderately sorted, low porosity	
C-4	60				Sandstone 2.5 YR 6/4 (light reddish brown), fine grained, poorly consolidated, low porosity, manganese oxide flakes present	
C-5	70				Sandstone, 2.5 YR 5/4 (reddish brown), calcareous cement, fine grained, subangular to subrounded, low porosity, poorly consolidated, iron oxides present	
C-6	80	Dewey Lake			Sandstone, same as above	
C-7	100				Sandstone, same as above, poor to moderate consolidation, reduction spots are visible.	
C-8	120				Sandstone same as above, reduction material present, minimal manganese oxides present.	
C-9	140				Sandstone, 2.5 YR 6/6 (light red), slightly calcic cement, fine grained, low porosity, some reduction spots, minute amounts of fiberous gypsum.	
C-10	160				Sandstone, 2.5 YR 5/3 (reddish brown), slightly calcic cement, fine grained, low porosity, minimal reduction material, minimal amounts of fiberous gypsum.	

ISSUED

Basic Data Report for Drillhole H-12R (C-3749 POD-1)
DOE/WIPP-16-3559, Rev. 0

Well Cuttings Log Page 2 of 5

Hole ID: H-12R Location: Section 15, T23S, R31E

Sample Number	Depth (Ft bgl)	Formation	Member	Informal Unit	Description	Lithology
	170					
C-11	180				Sandstone, 2.5 YR 5/4 (reddish brown), slightly calcic cement, fine grained, low porosity, minimal amounts of fiberous gypsum	
	190					
	200					
	210				Sanstone, 2.5 YR 4/6 (red) fine grained, low porosity, sub-angular and sub-rounded moderately sorted grains, slightly calcic cement, poor to moderate consolidated, reduction spots visible. No gypsum present.	
C-12						
C-13	220				Sandstone, 2.5 YR 5/6 (red) , fine grained and moderately sorted, poor to moderate consoildation, low porosity, reduction spots, slightly calcic. No gypsum present.	
	230					
C-14	240				Sandstone, 2.5 YR 5/6 (red), fine grained, moderately sorted, sub-angular and sub-rounded grains, poor to moderate consolidation, low porosity, reduction spots. Sample is slightly calcic. Fiberous gypsum is present in layers of sandstone.	
	250					
C-15	260	Dewey Lake			Sandstone, 2.5 YR 5/4 (reddish brown), fine grained, well sorted with low porosity, poor to moderate consolidation. Sample is slightly calcic and contains minute amounts of gypsum and has reduction spots.	
	270					
C-16	280				Sandstone, 2.5 YR 5/4 (reddish brown), fine grained, moderately sorted, low porosity, moderate consolidation, slightly calic, reduction spots. No gypsum present	
	290					
	300					
	310					
C-18	320				Sandstone, 2.5 YR 5/4 (reddish brown) fine grained, moderately sorted and consolidated, sub-angular and sub-rounded grains with low porosity. Reduction material and spots present. Minor in amounts of gypsum present.	
	330					
C-19	340				Sandstone, 2.5 YR 5/4 (reddish brown) fine grained, moderately sorted and consolidated, sub-angular and sub-rounded grains with low porosity. Reduction spots present. Minor in amounts of gypsum present.	
	350					
	360					
	370					
C-21	380				Same as C-19, slighlty calcic.	

ISSUED

Basic Data Report for Drillhole H-12R (C-3749 POD-1)
DOE/WIPP-16-3559, Rev. 0

Well Cuttings Log Page 3 of 5

Hole ID: H-12R Location: Section 15, T23S, R31E

Sample Number	Depth (Ft bgl)	Formation	Member	Informal Unit	Description	Lithology
	390					
C-22	400				Increase in the amount of reduction material and spots.	
	410					
C-23	420				Increase in reduction spots	
	430					
C-24	440				Sandstone, 2.5 YR 4/4 (reddish brown), low porosity, medium to high consolidation, reduction spots present, sub-angular to sub-rounded, minor amounts of gypsum. Non calcic cement.	
	450					
C-25	460				Sandstone, 2.5 YR 4/6 (red), low porosity, medium to high consolidaiton, moderately sorted, reduction material and spots, gypsum present. Non calcic cement.	
	470					
C-26	480				Decrease in reduction material and poorly sorted.	
C-27	490	Dewey Lake			Sandstone, 2.5 YR 6/4 (light reddish brown), low porosity, medium to high consolidation, reduction spots, non calcic cement. Sandstone , 10 YR 8/1 (white), low porosity, low to high consolidation, no reduction spots, non calcic cement, minimal gypsum present. Poorly sorted.	
C-28	500				Sandstone, 2.5 YR 5/4 (reddish brown), low porosity, medium to high consolidation, reduction spots and material, non calcic cement, poorly sorted, minimal gypsum.	
	510					
C-29	520				No reduction material and poorly sorted. Gypsum present.	
	530					
C-30	540				Same as above	
	550					
C-31	560				Sandstone, 2.5 YR 4/4 (reddish brown), well sorted, poor to medium consolidation, sub-anglular to sub-rounded, low porosity, reduction spots, non calcic cement, gypsum present.	
C-32	570				No Change.	
C-33	580				Sandstone, 2.5 YR 5/4 (reddish brown), low porosity, moderately sorted, low consolidation, sub-angular to sub-rounded, reduction material and spots, non calcic cement, gypsum present.	
	590					
C-34	600				No reduction material	
	610					

ISSUED

Basic Data Report for Drillhole H-12R (C-3749 POD-1)
DOE/WIPP-16-3559, Rev. 0

Well Cuttings Log Page 4 of 5

Hole ID: H-12R Location: Section 15, T23S, R31E

Sample Number	Depth (Ft bgl)	Formation	Member	Informal Unit	Description	Lithology
C-35					Sandstone, 2.5 YR 5/4 (reddish brown), low porosity, moderate sorting, poor consolidation, sub-angular to sub-rounded, non calcic cement, gypsum.	
C-36	620	Rustler	Forty-Niner	A-5	Anhydrite, 7.5 YR 6/1 (gray), low porosity, fine crystalline structure, minimal gypsum present. Fall down Dewey Lake sandston present with reduction spots.	
	630					
C-37	640				Anhydrite, 7.5 YR 6/1 (gray), fine crystalline structure with low porosity. Minimal Dewey Lake falldown.	
	650			M-4		
C-39	660					
C-40				A-4	Anhydrite, 7.5 YR 6/1 (gray), fine crystalline structure with low porosity.	
C-41	670				Same as above.	
C-42					No change.	
	680		Magenta			
C-43					Dolomite, 10 YR 6/1 (gray), microcrystalline, minor amounts of anhydrite present.	
C-44	690				Dolomite, 10 YR 7/1 (light gray), microcrystalline, minor amounts of gypsum present.	
C-45	700			A-3	Anhydrite, 7.5 YR 6/1 (gray) fine crystalline structure with low porosity and gypsum present. Dolomite fall down present.	
C-46	710				Anhydrite, 7.5 YR 6/1 (gray), fine crystalline structure with low porosity.	
C-47	720				Same as above.	
C-48	730				No Change.	
C-49	740				No Change.	
C-50	750				Anhydrite, 10 YR 7/1 (light gray) fine crystalline structure with low porosity.	
					Anhydrite, GLEY 1 7/N (light greenish gray), fine crystalline structure with low porosity.	
	760		Tamarisk		Mudstone, 5 Y 6/1 (gray), very fine grained, low porosity, some samples with specs of pyrite Anhydrite fall down present.	
C-51				M-3		
C-52					Anhydrite, GLEY 1 6/N (gray), fine crystallin structure with low porosity, moderately sorted, poor to moderate consolidation. Halite present.	
C-53	770					
					Salt, 2.5 YR 6/1 (reddish gray), well sorted, some anhydrite fall down present.	
C-54	780				Salt, 5 YR 4/2 (dark reddish gray) to clear, well sorted.	
C-55	790				Salt, 5 YR 6/2 (pinkish gray) to clear, well sorted.	
				A-2		
C-56	800				Anhydrite, 10 YR 5/2 (grayish brown), poor to moderate consolidation, moderately sorted, some halite present.	
C-57	810				Anhydrite, 10 YR 5/1 (gray), well sorted, low porosity, fine crystalline structure.	
					Anhydrite, 10 YR 5/1 (gray), moderately sorted, fine crystalline structure with low porosity. Small amount of dolomite present.	
C-58	820		Culebra		Dolomite, 10 YR 7/1 (light gray), poor to medium consolidation, microcrystalline.	
	830					

ISSUED

Basic Data Report for Drillhole H-12R (C-3749 POD-1)
DOE/WIPP-16-3559, Rev. 0

Well Cuttings Log Page 5 of 5

Hole ID: H-12R Location: Section 15, T23S, R31E

Sample Number	Depth (Ft bgl)	Formation	Member	Informal Unit	Description	Lithology
C-60	840	Rustler	Culebra		Dolomite, 10 YR 7/2 (light gray), vuggy texture, microcrystalline matrix, and minor amounts of gypsum present.	
C-61	850		Los Medaños		Dolomite, 10 YR 5/1 (gray), microcrystalline matrix. Dolomite, 10 YR 7/2 (light gray), vuggy texture, microcrystalline matrix. Minor amount of anhydrite fall down.	
C-62					Dolomite, 10 YR 5/1 (gray), microcrystalline matrix, well sorted. Gypsum present in minor amounts.	
C-63	860				Anhydrite, 5 YR 6/2 (pinkish gray), fine crystalline structure, minor amounts of dolomite and gypsum.	
C-64					End of Geophysical Log	
	870				Salt, 5 YR 5/3 (reddish brown), moderately sorted. Minor amounts of anhydrite and dolomite from fall down.	
	880					
	890					
	900					

Revised June-1972

STATE ENGINEER OFFICE

WELL RECORD

469242

'92 OCT 30 PM 1 52

STATE ENGINEER OFFICE SANTA FE NEW MEXICO

Section 1. GENERAL INFORMATION

(A) Owner of well Devon Energy Corporation Owner's Well No.

Street or Post Office Address 20 North Broadway Suite 1500

City and State Oklahoma City, Oklahoma 73102

Well was drilled under Permit No. C-2258 and is located in the:

a. ___ ¼ ___ ¼ SW ¼ NE ¼ of Section 26 Township 23-S Range 31-E N.M.P.M.

b. Tract No. ___ of Map No. ___ of the ___

c. Lot No. ___ of Block No. ___ of the ___ Subdivision, recorded in ___ County.

d. X= ___ feet, Y= ___ feet, N.M. Coordinate System ___ Zone in the ___ Grant.

(B) Drilling Contractor Glenn's Water Well Service License No. WD 421

Address P.O. Box 692 Tatum, New Mexico 88267

Drilling Began 9/18/92 Completed 9/18/92 Type tools Rotary Size of hole 7 7/8 in.

Elevation of land surface or ___ at well is ___ ft. Total depth of well 662 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well ___ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
			No Water	

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement

Section 5. PLUGGING RECORD

Plugging Contractor ___

Address ___

Plugging Method back filled with mud & jel

Date Well Plugged ___

Plugging approved by:

State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received 09-25-92

Quad ___ FWL ___ FSL ___

No. C-2258 Use OWD Location No. 23S.31E.26.23344

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	10	10	sand
10	15	5	sandy caleche
15	55	40	red clay
55	66	11	red shale
66	90	24	red sandy shale
90	135	45	red shale (some blue)
135	155	20	sandy shale
155	165	10	blue sandrock (hard no water)
165	175	10	red shale
175	298	123	red shale (stringers of sandrock)
298	321	23	red shale (softer)
321	330	9	red shale (hard)
330	565	235	red shale
565	590	25	red shale (some anyhydrite)
590	605	15	brown sandstone (tight)
605	645	40	red shale
645	662	17	red clay

STATE ENGINEER OFFICE
ROSWELL NEW MEXICO
'92 SEP 25 AM 11 32

Section 7. REMARKS AND ADDITIONAL INFORMATION

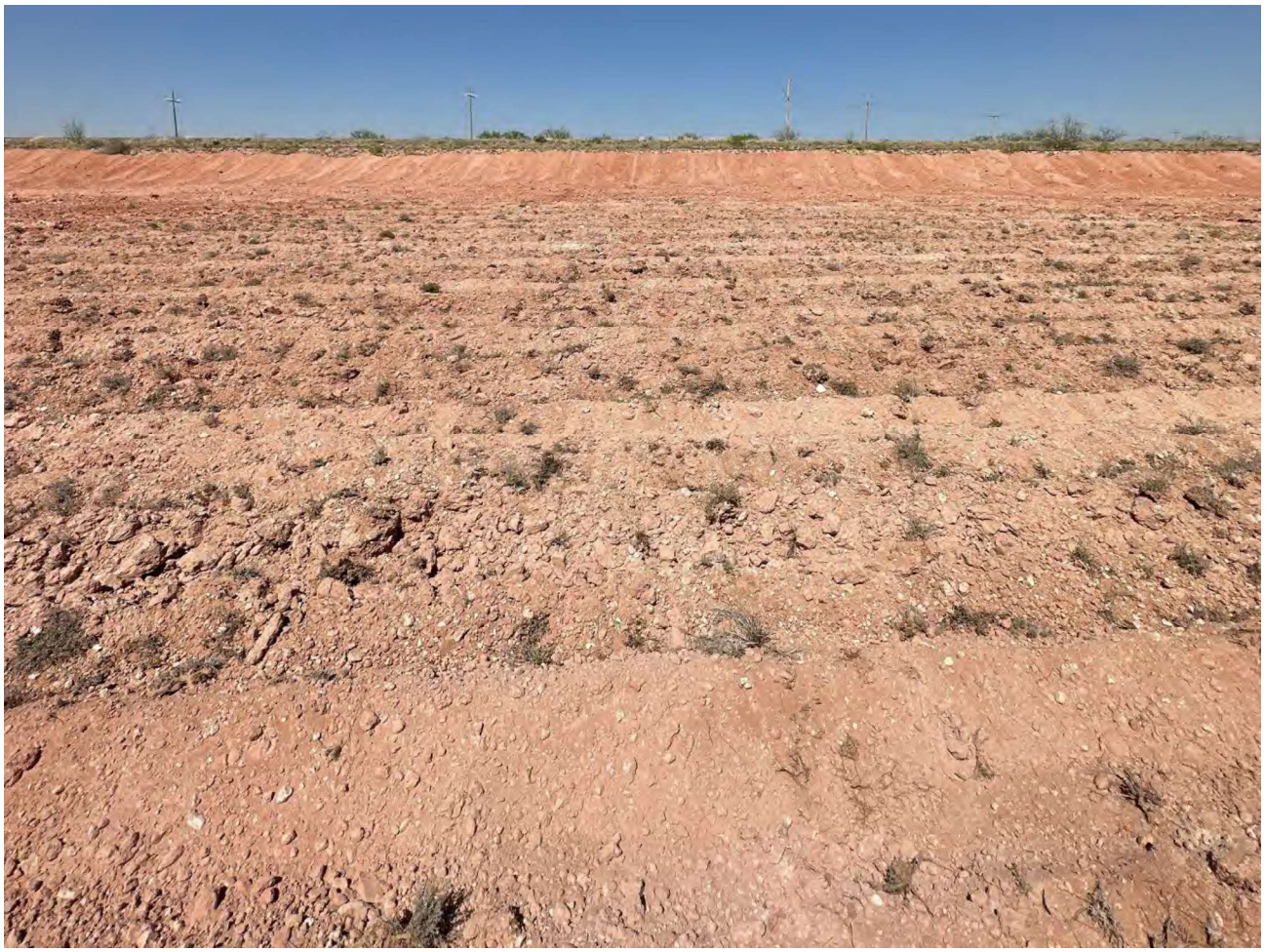
The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Corky Allen
Driller

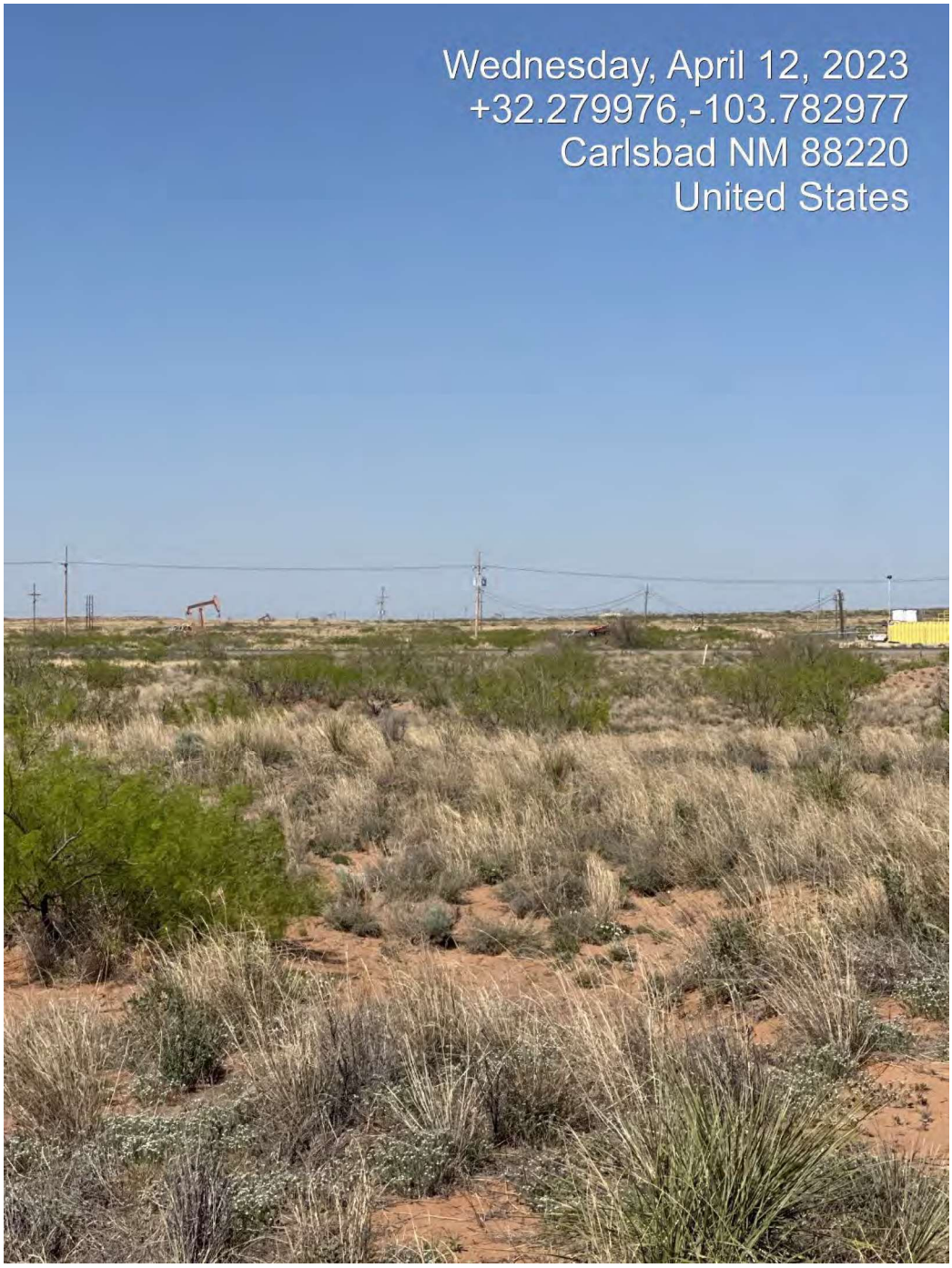
INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

APPENDIX SITE PHOTOGRAPHS

SP1 – View northwest of the former quarry that will soon become the Fed 128 In-Ground Containment.



SP2 – View west from near the center of the former quarry. Note the condition of the quarry prior to preparation for containment construction. Reclamation will maintain the existing topography of the former quarry but improve the vegetative condition. 32.281959, -103.783625



SP3 View north toward Route 128 and the Infinity E&P facility showing the nature of landscaping outside of disturbances.

Venegas, Victoria, EMNRD

From: Venegas, Victoria, EMNRD
Sent: Friday, July 28, 2023 1:34 PM
To: Matthew Grisell
Cc: Randy T. Hicks PG; Carrie Caylor
Subject: 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503]
Attachments: C-147 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503].pdf

2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503].

Good afternoon Mr. Grisell,
NMOCD has reviewed the recycling containment permit application and related documents, submitted by [329620] Enchantment Water, LLC on July 19, 2023, for 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] in Unit Letter C, Section 28, Township 23S, Range 31E, Eddy County, New Mexico.

The form C-147 and related documents for 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] is approved with the following conditions of approval:

- The purpose of this permit is for oil and gas activities regulated under the NMAC 19.15.34.3 STATUTORY AUTHORITY: 19.15.34 NMAC is adopted pursuant to the Oil and Gas Act, Paragraph (15) of Section 70-2-12(B) NMSA 1978, which authorizes the division to regulate the disposition of water produced or used in connection with the drilling for or producing of oil and gas or both and Paragraph (21) of Section 70-2-12(B) NMSA 1978 which authorizes the regulation of the disposition of nondomestic wastes from the exploration, development, production or storage of crude oil or natural gas.
- 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] is approved for five years of operation from the date of the permit application.
- 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] permit expires on July 19, 2028. If [329620] Enchantment Water, LLC wishes to extend operations past five years, an annual permit extension request must be submitted using an OCD form C-147 through OCD Permitting by June 19, 2028.
- [329620] Enchantment Water, LLC shall construct, operate, maintain, close, and reclaim 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] in compliance with NMAC 19.15.34 NMAC.
- Per Rule 19.15.34.15.A.(1) operators without existing financial assurance pursuant to 19.15.8 NMAC shall furnish financial assurance acceptable to the division in the amount of the recycling containment's estimated closure cost. The total closure cost estimated for 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503], consisting of one (1) inground containment with 671,925.00 BBL of fluid capacity in the amount of $178,000.00, meets the requirements of NMAC 19.15.34.15.A.(1).
- The financial assurance should be mailed to Oil Conservation Division; Bonding and Compliance; 1220 South St Frances Drive; Santa Fe, NM 87505.
- Per 19.15.34.13.C. A recycling containment shall be deemed to have ceased operations if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use. The operator must report cessation of operations to the appropriate division district office. The appropriate division district office may grant an extension to this determination of cessation of operations not to exceed six months.
- [329620] Enchantment Water, LLC shall notify OCD, through OCD Permitting, when construction at 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] commences.
- [329620] Enchantment Water, LLC shall notify NMOCD through OCD Permitting when recycling operations commence and cease at 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503].

- A minimum of 3-feet freeboard must be maintained at 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] at all times during operations.
- If less than 20% of the total fluid capacity is utilized every six months, beginning from the first withdrawal, operations of the 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] is considered ceased and a notification of cessation of operations should be sent electronically to OCD Permitting. A request to extend the cessation of operation, not to exceed six months, may be submitted using a C-147 form through OCD Permitting. If after that 6-month extension period, the 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] is not utilized at a minimum of 20% fluid capacity, no additional extensions would be granted, and the operator would be directed to remove all fluids and proceed with the closure requirements.
- [329620] Enchantment Water, LLC shall submit monthly reports of recycling and reuse of produced water, drilling fluids, and liquid oil field waste on OCD form C-148 via OCD Permitting even if there is zero activity.
- [329620] Enchantment Water, LLC shall inspect the recycling containment and associated leak detection systems weekly while it contains fluids. The operator shall maintain a current log of such inspections and make the log available for review by the division upon request as per 19.15.34.13.A.
- [329620] Enchantment Water, LLC shall comply with 19.15.29 NMAC Releases in the event of any release of produced water or other oil field waste at 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503].

Please reference number 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] in all future communications.
Regards,

Victoria Venegas ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave. Artesia, NM 88210
(575) 909-0269 | Victoria.Venegas@emnrd.nm.gov
https://www.emnrd.nm.gov/ocd/

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 242157

CONDITIONS

Operator: Enchantment Water, LLC 1250 S. Capital of Texas Hwy. Austin, TX 78746	OGRID: 329620
	Action Number: 242157
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	• 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] permit expires on July 19, 2028. If [329620] Enchantment Water, LLC wishes to extend operations past five years, an annual permit extension request must be submitted using an OCD form C-147 through OCD Permitting by June 19, 2028. • [329620] Enchantment Water, LLC shall construct, operate, maintain, close, and reclaim 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] in compliance with NMAC 19.15.34 NMAC.• If less than 20% of the total fluid capacity is utilized every six months, beginning from the first withdrawal, operations of the 2RF-195 - FED 128 IN-GROUND CONTAINMENT FACILITY ID [fVV2320854503] is considered ceased and a notification of cessation of operations should be sent electronically to OCD Permitting.	7/28/2023