Ameredev II, LLC
2901 Via Fortuna Suite 600 • Austin, Texas 78746 • Phone (737) 300-4700

April 10, 2023

NM Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, NM 87505

RE: M60K and 40K ASTs
DeSoto Springs #3 Recycling Containment and Recycling Facility
1RF-498
Facility ID# fVV2234954815
Section 5 T26S R36E, Lea County

Ameredev Operating respectfully submits attached modification to the above DeSoto Springs #3 Facility/inground containment and O60K AST permit/registration applications. This modification describes 2 additional existing AST containments which are associated with this recycling facility identified as M60K and 40K AST, built in June - July 2022.

This registration package includes:

- C 147
- Site map of M60K and 40K ASTs are shown on Plate 1. Constructed on pad northwest of inground containment and west of O60K AST.
- Plat of new pad
- Updated information regarding depth to water and wellhead protection to supplement siting criteria presented in original permit for this facility. (Plate 2 and 3)
- Design and Construction Plan
- Operations and Maintenance Plan
- Closure Plan
- Appendix A: Well logs
- Appendix B: Technical Specifications
- Appendix C: Variance requests
    - Fencing
    - Levee Slope
    - Anchor Trench
    - Primary liner as 40-mil LLDPE
    - Secondary liner as 40-mil LLDPE

Please contact me with any questions.

Sincerely,

Shane McNeely

Shane McNeely
Ameredev II, LLC

April 10, 2023

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: Ameredev Operating, LLC (For multiple operators attach page with information) OGRID #: 37224
Address: 2901 Via Fortuna Suite 600, Austin, TX 78746
Facility or well name (include API# if associated with a well): DeSoto Springs #3 Recycling Facility
OCD Permit Number: 1-RF 498 (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr B, G Section 5 Township 26 S Range 36 E County: Lea
Surface Owner: ☐ Federal ☐ State ☑ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Recycling Facility:**
Location of recycling facility (if applicable): Latitude _____ Longitude _____ 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:** M60K AST
☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude 32.0758329 Longitude -103.2839162 NAD83
☑ For multiple or additional recycling containments, attach design and location information of each containment
☑ Lined ☐ Liner type: Thickness 40 mil ☑ LLDPE ☐ HDPE ☐ PVC ☐ Other Primary and Secondary liners
☐ String-Reinforced
Liner Seams: ☑ Welded ☑ Factory ☐ Other _____ Volume: 60 K bbl Dimensions: Ht: 12 ft 3.5 in Diam. 191 ft
☐ Recycling Containment Closure Completion Date:_____

☑ **Recycling Containment:** 40K AST

☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)

Center of Recycling Containment (if applicable): Latitude 32.0758458 Longitude -103.2846368 NAD83

☐ For multiple or additional recycling containments, attach design and location information of each containment

☑ Lined ☐ Liner type: Thickness 40 mil ☑ LLDPE ☐ HDPE ☐ PVC ☐ Other Primary and secondary liners

☐ String-Reinforced

Liner Seams: ☑ Welded ☑ Factory ☐ Other _____ Volume: 40 K bbl Dimensions: Ht: 12 ft 3.5 in Diam: 159 ft 2 in

☐ 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 fencing 8 feet with single strand barbed wire on top

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 See original permit application for Recycling Facility and inground containment RF- 498

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. Plate 2 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. Plate 3 - 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. Plate 3 - 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.

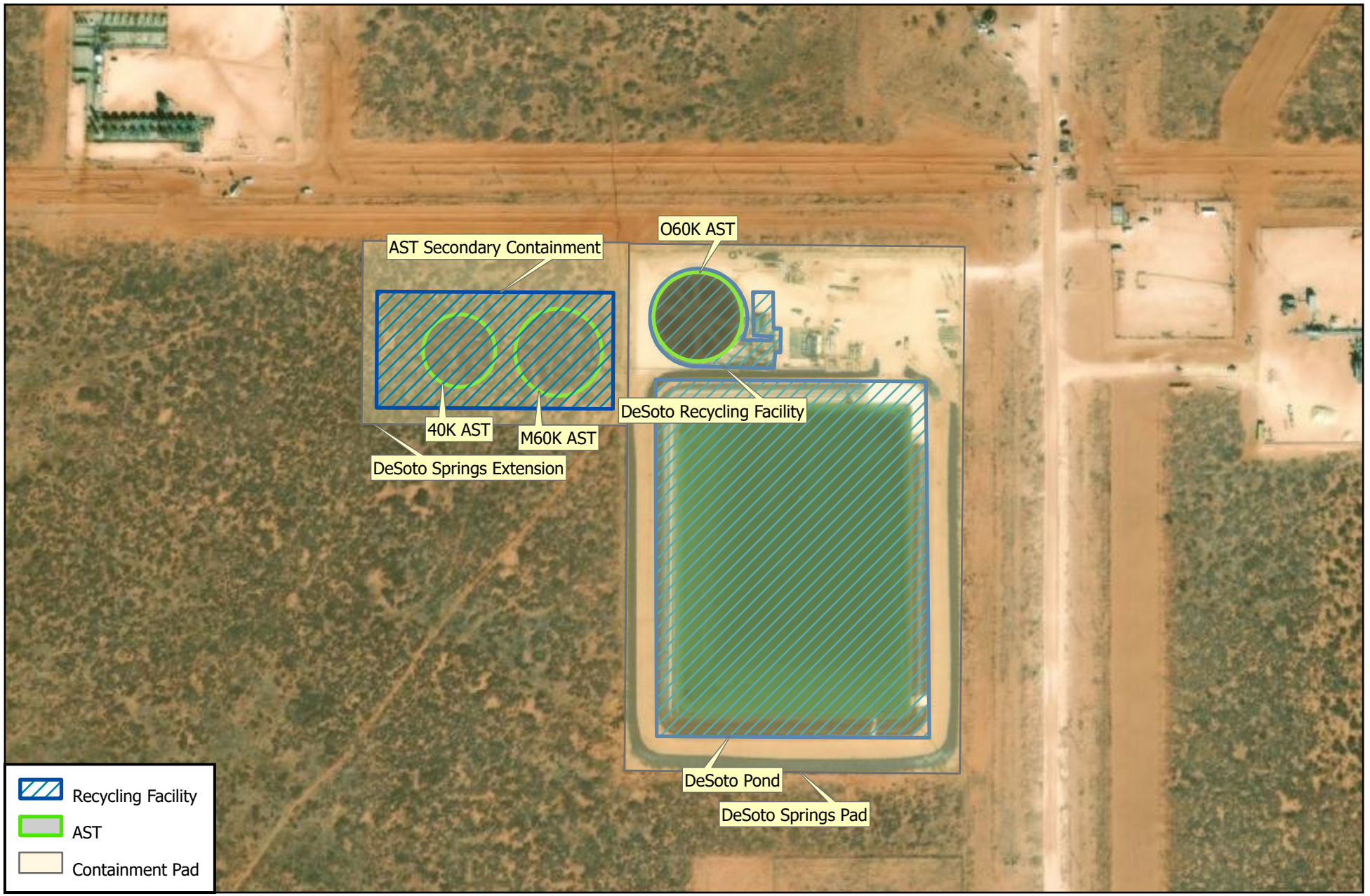
- ☑ Design Plan - based upon the appropriate requirements.
- ☑ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☑ Closure Plan - based upon the appropriate requirements.
- ☑ Site Specific Groundwater Data - Supplemental DTW and Wellhead protection data are included in this submission document.
- ☑ Siting Criteria Compliance Demonstrations – See original permit application for Recycling Facility and inground containment RF- 498
- ☑ **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): Shane McNeely Title: Engineer
Signature: Shane McNeely Date: 4/11/2023
e-mail address: smcneely@ameredev.com Telephone: 737-300-4729

11.
OCD Representative Signature: Victoria Venegas **Approval Date:** 04/25/2023
Title: Environmental Specialist **OCD Permit Number:** 1RF-498

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



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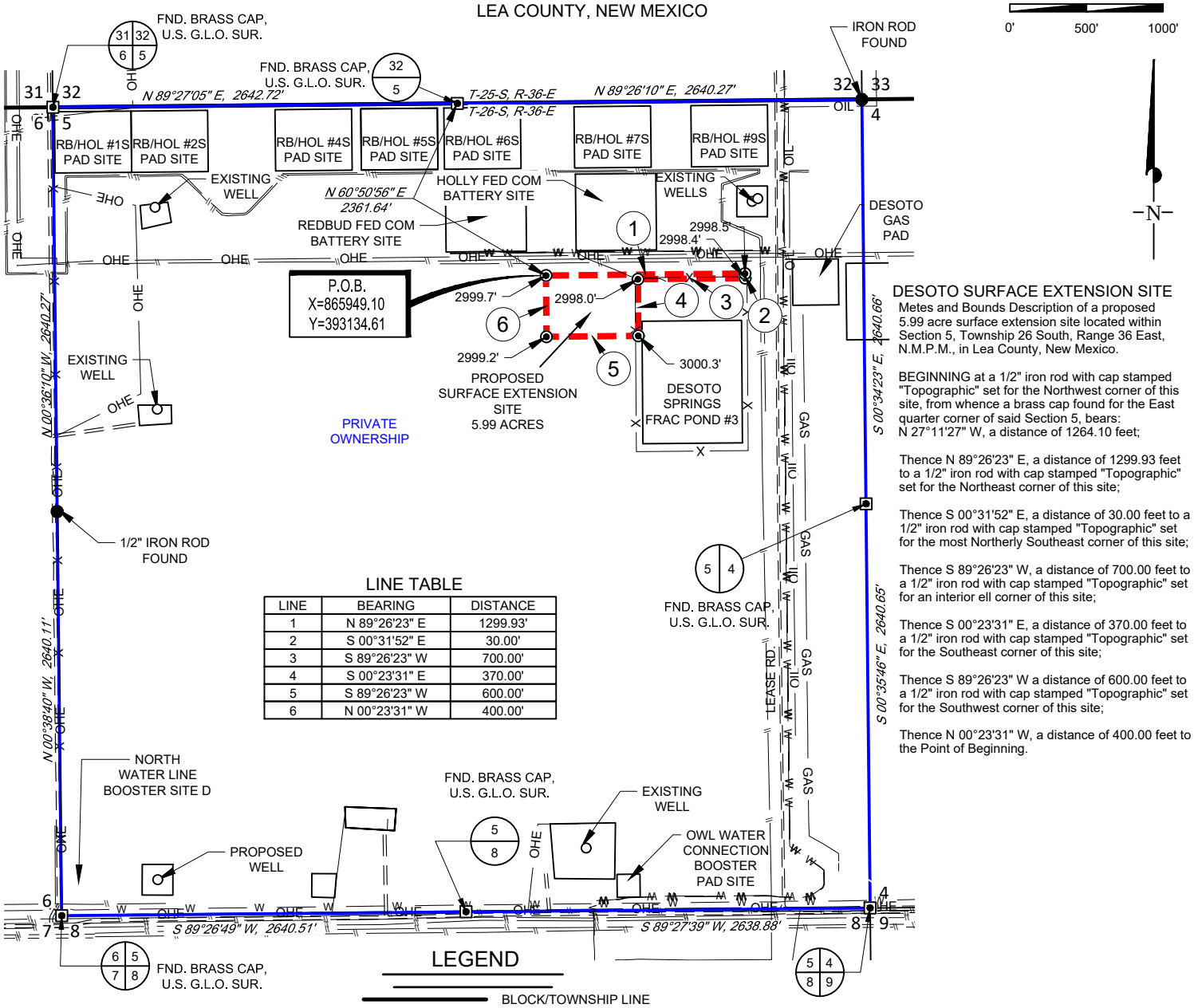
Ameredev II, LLC

Site Map	Plate 1
DeSoto Springs #3 Recycling Containment and Recycling Facility RF-498 [fVV2234954815]	02/10/2023

SECTION 5, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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



LINE TABLE

LINE	BEARING	DISTANCE
1	N 89°26'23" E	1299.93'
2	S 00°31'52" E	30.00'
3	S 89°26'23" W	700.00'
4	S 00°23'31" E	370.00'
5	S 89°26'23" W	600.00'
6	N 00°23'31" W	400.00'

DESOTO SURFACE EXTENSION SITE

Metes and Bounds Description of a proposed 5.99 acre surface extension site located within Section 5, Township 26 South, Range 36 East, N.M.P.M., in Lea County, New Mexico.

BEGINNING at a 1/2" iron rod with cap stamped "Topographic" set for the Northwest corner of this site, from whence a brass cap found for the East quarter corner of said Section 5, bears: N 27°11'27" W, a distance of 1264.10 feet;

Thence N 89°26'23" E, a distance of 1299.93 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northeast corner of this site;

Thence S 00°31'52" E, a distance of 30.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the most Northerly Southeast corner of this site;

Thence S 89°26'23" W, a distance of 700.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for an interior ell corner of this site;

Thence S 00°23'31" E, a distance of 370.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Southeast corner of this site;

Thence S 89°26'23" W a distance of 600.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Southwest corner of this site;

Thence N 00°23'31" W, a distance of 400.00 feet to the Point of Beginning.

LEGEND

- BLOCK/TOWNSHIP LINE
- SURVEY/SECTION LINE
- PROPOSED SITE
- ROAD WAY
- EXISTING PIPELINE
- OHE — OVERHEAD ELECTRIC
- W — WATER LINE
- X — FENCE LINE
- MONUMENT
- IRON ROD FOUND

AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

MICHAEL B. BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

Michael Blake Brown, P.S. No. 18329
APRIL 15, 2022

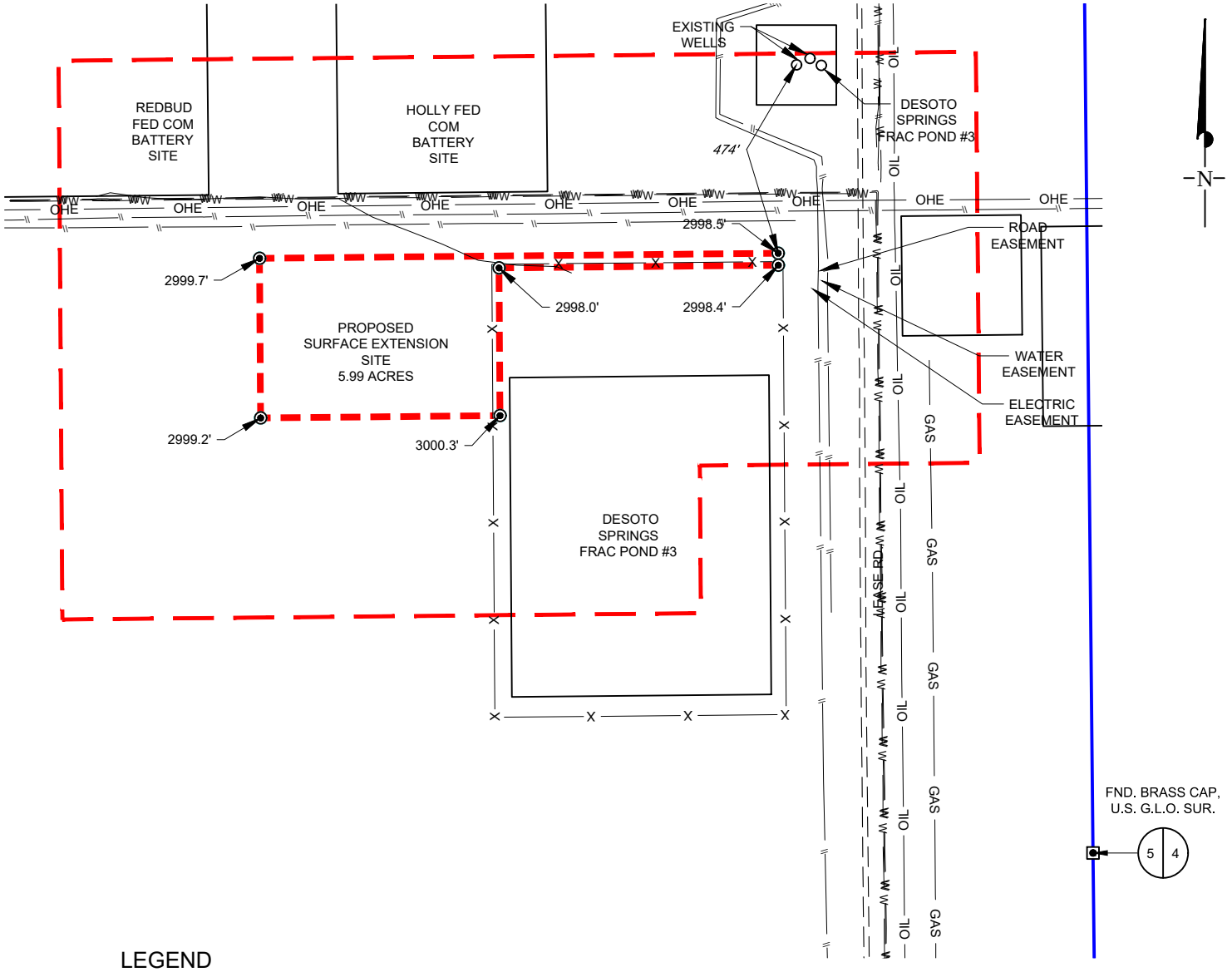
DESOTO SPRINGS SURFACE EXTENSION SITE	REVISION:	
	INT	DATE
DATE: 04/12/2022		
FILE: BO_DESOTO_SPRINGS_SURFACE_EXTENSION_SITE		
DRAWN BY: A.V.F.		
SHEET : 1 OF 1		

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

S:\SURVEY\AMEREDEV_OPERATING_LLC\DESOTO_SPRINGS_POND\FINAL_PRODUCTS\BO_DESOTO_SPRINGS_SURFACE_EXTENSION_SITE.DWG 4/13/2022 4:03:07 PM juliana.franklin

SECTION 5, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SCALE: 1" = 400'
0' 200' 400'



LEGEND

- SECTION LINE
- PROPOSED SITE
- 500' PROXIMITY
- SIXTEENTH SECTION LINE
- TRACT BORDER
- ROAD WAY
- IRON ROD SET

MICHAEL B. BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

AMEREDEV OPERATING, LLC

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
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WWW.TOPOGRAPHIC.COM

Michael Blake Brown, P.S. No. 18329
APRIL 15, 2022

DESOTO SPRINGS SURFACE EXTENSION SITE	REVISION:	
	INT	DATE
DATE: 04/12/2022		
FILE: BO_DESOTO_SPRINGS_SURFACE_EXTENSION_SITE		
DRAWN BY: A.V.F.		
SHEET : 1 OF 1		

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3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
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S:\SURVEY\AMEREDEV_OPERATING_LLC\DESOTO_SPRINGS_POND\FINAL_PRODUCTS\BO_DESOTO_SPRINGS_SURFACE_EXTENSION_SITE.DWG 4/13/2022 4:03:08 PM juliana.franklin

Supplemental Siting Criteria

Depth to Water

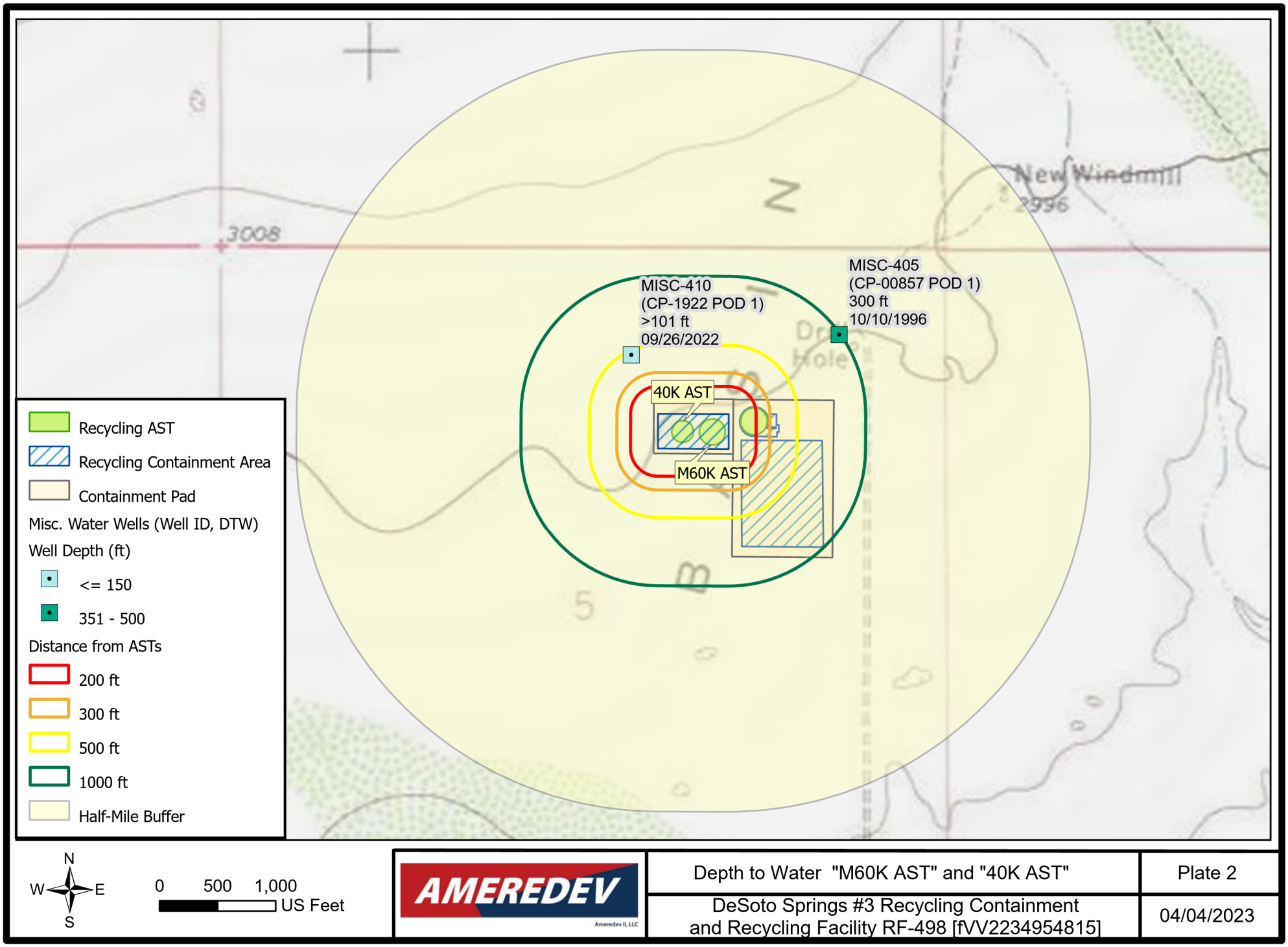
The depth-to-water borehole and water well nearest to the containment are mapped on Plate 2, well log follows in Appendix A:

- MISC-410 (CP-1922 POD 1) is located 0.08 miles to the northwest of the DeSoto Springs #3 M60 K and 40 K AST containments. Depth of the water is noted as >101-feet. This borehole has been plugged.

Wellhead Protection

Wellhead protection is maintained with closest fresh water source > 500 ft from AST is mapped on Plate 3, Point of Diversion Summary follows in Appendix A.

- MISC-405 (CP-00857 POD 1) which is located approximately 1180 feet to the northeast of the DeSoto Springs #3 M60 K and 40 K AST containments. Depth of water bearing strata is noted as 300-feet. The location shown is corrected from OSE documented well location based on visual observation.



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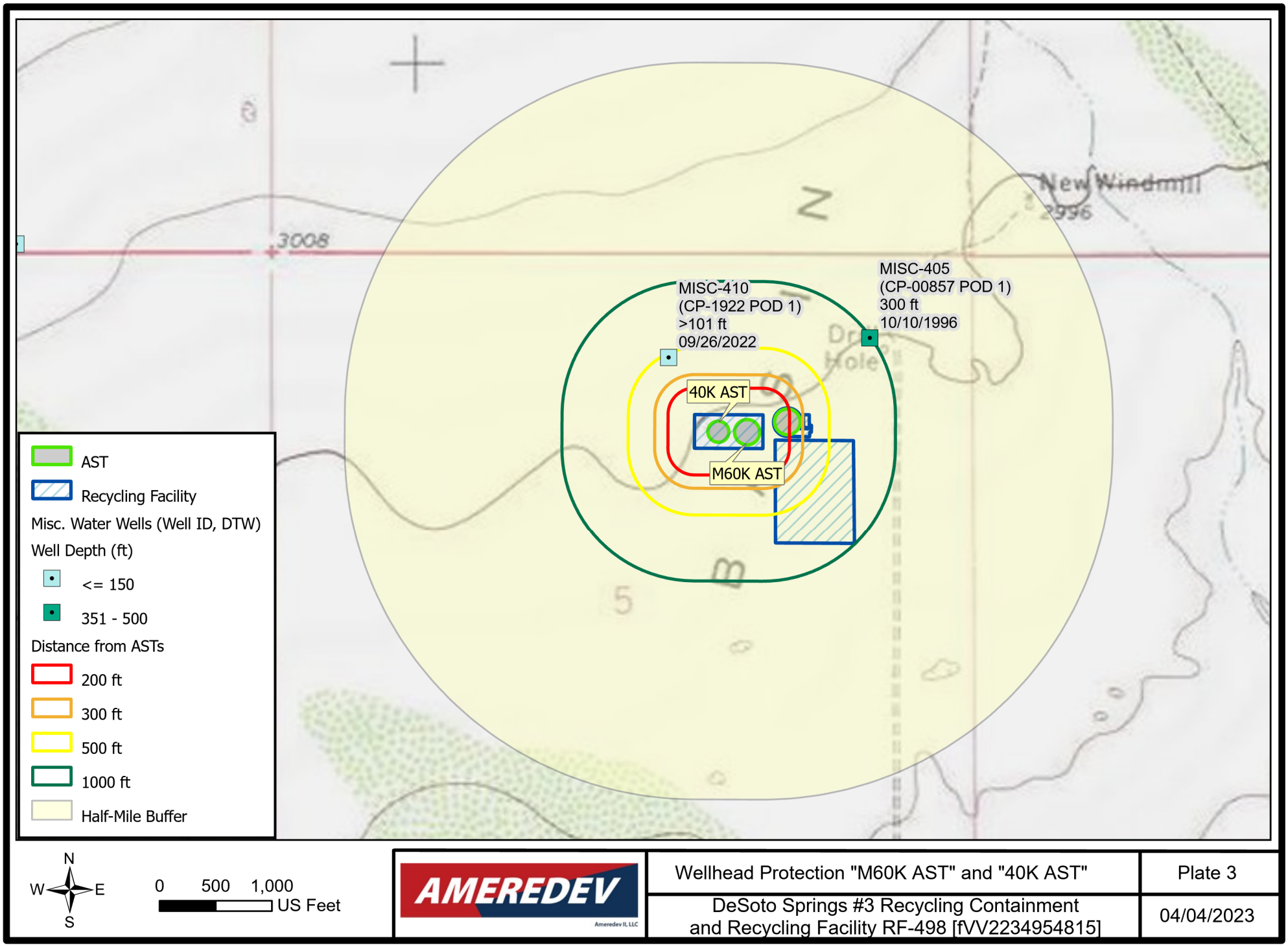
Ameredev II, LLC

Depth to Water "M60K AST" and "40K AST"	Plate 2
DeSoto Springs #3 Recycling Containment and Recycling Facility RF-498 [fVV2234954815]	04/04/2023


MISC-410
(CP-1922 POD 1)
>101 ft
09/26/2022
MISC-405
(CP-00857 POD 1)
300 ft
10/10/1996
40K AST
M60K AST
3008
New Windmill
2996
AST
Recycling Facility
Misc. Water Wells (Well ID, DTW)
Well Depth (ft)
<= 150
351 - 500
Distance from ASTs
200 ft
300 ft
500 ft
1000 ft
Half-Mile Buffer
N
W
E
S
0
500
1,000
US Feet
AMEREDEV
Ameredev II, LLC
Wellhead Protection "M60K AST" and "40K AST"
Plate 3
DeSoto Springs #3 Recycling Containment
and Recycling Facility RF-498 [fVV2234954815]
04/04/2023

Design and Construction Plan
Operations and Maintenance Plan
Closure Plan

Design and Construction Plan

General

M60K and 40K AST are designed and constructed to confine produced water, to prevent releases and to prevent overtopping due to wave action or rainfall to meet or exceed standards put forth by 19.15.34.12 NMAC.

A Tank Tech, LLC Models 600 (M60K AST) and Model 425 (40 K AST) above ground water storage tank were used at this site. Tank Tech specifications are attached in Appendix B.

Layfield is the manufacturer for geomembrane liners and geogrid materials. Liner specifications are attached in Appendix B.

Automated leak detection system was designed and provided by Cold Peak Environmental.

The ASTs were constructed as described in this Design and Construction Plan and in accordance with 19.15.34.12 NMAC, supported by variance requests where the design of the ASTs diverge from the rule, which was written pertaining to inground containments.

Foundation for AST Containment

M60K and 40K AST are constructed on a new pad, northwest of the existing pad for the associated recycling facility. Plate 1 shows the Site Map, followed by plat of surface extension site.

The foundation consists of a firm, unyielding base, smooth and free of rocks, debris, sharp edges, or irregularities. When needed, a geotextile is placed under the secondary liner to reduce stress-strain that may compromise liner's integrity. Any stripped topsoil has been stockpiled for reuse during closure activities.

Containment construction

The 40K AST is constructed of upright steel panels 12 ft 3.5 inched in height, the structure's diameter is 159 ft 2 inches with a capacity of 43,555 barrels.

The M60K AST is constructed of upright steel panels 12 ft 3.5 inches in height. The structure's diameter is 191 ft with a capacity of 62,719 barrels.

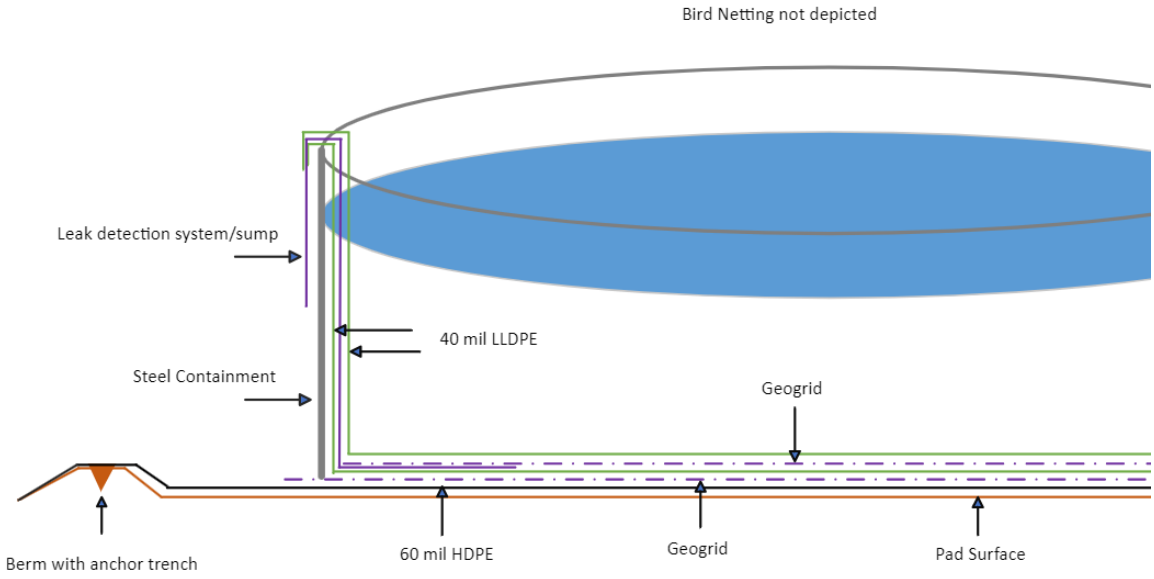
The AST upright steel panels preclude any risk of surface run-on. Adequate access is provided for inspection and maintenance. *A variance from the defined slope requirement for the containment is provided in Appendix C.*

The M60K and 40K ASTs have been constructed within a secondary containment, lined with 60 mil HDPE extending over a 3 ft berm with and with internal grade not steeper than two horizontal feet to one vertical foot (2H: 1V) and the outside grade no steeper than three horizontal feet to one vertical foot (3H: IV).

Liner and Leak Detection System:

The liner and leak detection system meets or exceeds specifications put forth in the 19.15.34.12. A (4).

Schematic for liner/leak detection system is as follows for both M60K and 40K ASTs (not to scale).



- Primary (upper) Liner: 40 mil LLDPE attached to steel containment wall with clips.
- Leak Detection: 200 mil Geogrid placed between the 40 mil primary and secondary liners within the tank with automated conduction based leak detection system
- Secondary (lower) Liner: 40 mil LLDPE attached to steel containment wall with clips
- 200 mil Geogrid placed between 40 mil secondary liner and the 60 mil HDPE liner for secondary containment.
- Secondary Containment Liner: 60 mil HDPE
- Three-foot sloped berm with anchor trench to secure secondary containment liner.
- Employed bird netting on top of containment is not depicted in this schematic.

Per **19.15.34.12 A. (4) NMAC.** "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. Liner compatibility will meet or exceed the EPA SW-846 method 9090A or subsequent relevant publications."
In M60K and 40K AST a 40 mil LLDPE is used as the primary liner. *Variance request attached in Appendix C*

Per **19.15.34.12 A. (4) NMAC.** "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 will meet or exceed the EPA SW-846 method 9090A or subsequent relevant publications."
For M60K and 40K AST the secondary liner is a 40 mil LLDPE. *Variance request attached in Appendix C.*

Unlike inground containments, the build of these ASTs require that the primary and secondary liners are attached to the upright steel walls of the AST with clamps. As the build of the AST system does not allow for the anchor trench as described in the Rule for inground containments, a *variance request from anchor trench for securing liner systems is attached in Appendix C.*

The leak detection system, appropriate for the site's condition, is constructed with a sloped and properly designed drainage and collection system with a highly fluid transmissible **200 mil geonet** placed between the primary (upper) liner and secondary (lower) liner. An automated, conduction based leak detection system extends via a perforated tube down to the bottom of the tank between the primary and secondary liners with a sump to remove any identified fluids. The slope is such to facilitate the earliest possible leak detection. This system meets NMOCD requirements.

To better protect fresh water, public health, and the environment. Ameredev constructed the ASTs within a secondary containment (like those used for tank batteries) within a 3-foot berm and using a 60 mil HDPE liner attached within and 18 inch anchor trench. A **second 200 mil geonet** was placed between the 40 mil LLDPE secondary liner and the 60 mil HDPE liner of the secondary containment. This geonet extends beyond the 12 ft steel walls of the AST and provides rapid assessment of any leak should there be compromise of the secondary liner while being contained within the secondary containment. Any visible or pooling fluids resulting from a leak would be removed with a hydrovac or sump pump for disposal to an NMOCD approved facility.

For both the M60K and 40K ASTs, all seams in the primary and secondary Layfield geomembrane liners are factory welded. If there was a need for any field seaming, liner seams were minimized and oriented up and down, not horizontally on the wall of the AST. And would be overlapped 4-6 inches and thermally sealed and tested by qualified personnel.

The injection or withdrawal of fluids from the containment is 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 (or other hydrostatic force or mechanical damage). These lines will not penetrate the liner system.

Signs

Ameredev has posted signs, not less than 12 inches by 24 inches with lettering 2 inches or greater in height in conspicuous places along the fence surrounding the container, where they can be easily read. It contains the operator's name, the location of the site by quarter-quarter unit letter, section, township and range and emergency numbers.

Fencing

Ameredev has fenced the recycling containment and facilities in a manner to deter unauthorized human access and wildlife and shall maintain the fences in good repair. All gates are closed and locked when responsible personnel are not onsite. This AST is enclosed by 8-foot game fence topped with a single strand of barbed wire. *A variance request is attached in Appendix C.*

Netting

The M60K and 40K AST are netted to be protective of wildlife, including migratory birds. On at least a monthly basis, Ameredev shall 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 to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

Operations and Maintenance Requirements

General

Ameredev will maintain and operate the recycling containments in accordance 19.15.34.11 NMAC with the following plan to contain liquids to prevent contamination of fresh water and protect public health and the environment.

The recycling containments may hold produced water for use in connection with drilling, completions, producing or processing oil and/or gas. Such fluids may include freshwater, brackish water, recycled and treated water, fluids added to water to facilitate well drilling or completion, water produced with oil and gas, flowback from operations, water generated by an oil or gas processing facility or other waters that are gathered for well drilling or completion. They may not include hazardous waste or be used for disposal of produced water or other oilfield waste.

Any releases from the recycling and re-use of produced water shall be remediated in accordance with 19.15.29 NMAC. An oil absorbent boom or other device is maintained on site to contain any unanticipated release.

Ameredev will monitor for and remove any visible oil from the surface of the ASTs with an oil absorbent boom or other device, which will be maintained on site. Removed fluid shall be transported off-site to a division approved disposal facility.

At least three feet of freeboard shall be always maintained.

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 and/or pipes.

The facility will be operated to prevent the collection of surface run-on.

These activities shall occur in a manner consistent with hydrogen sulfide gas provisions in 19.15.11 NMAC or NORM provisions in 19.15.35 NMAC, as applicable.

The M60K and 40K ASTs will 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. Cessation of operations must be reported to the appropriate division district office. An extension to this determination of cessation of operations, not to exceed 6 months, may be

requested from NMOCD via OCD Permitting portal using a C 147 long form with cover letter describing request.

Inspections:

- Must occur **weekly** when ***any*** volume of fluid is present within the containment.
- A log of these inspections should be maintained and available for review on request per NMOCD.
- Inspections to include:
    - Leak detection system and for evidence of fluid in secondary containment.
    - Visible liner integrity/potential compromise by fluid jets or impact from installation and removal of hoses or pipes.
    - Liner secured with clips.
    - Freeboard/fluid levels
    - Noting and removal/appropriate disposal of visible oil on surface.
    - Integrity of berms/prevention of surface run-on.
    - Integrity of netting
    - Presence of wildlife/birds (any found must be reported to appropriate wildlife agency.)
    - Integrity of fencing
    - Assessment of tank panels/compromise of the steel structure.
    - Presence of H2S

Leak Detection

If the liner develops a leak or is compromised above the liquid's surface, then Ameredev will repair the damage or initiate replacement of the primary liner within 48 hours of discovery or will seek an extension from NMOCD.

If the primary liner is compromised below the fluid's surface, determined by inspection of the liner or from evidence of produced water in the leak detection system, all fluid shall be removed above the damage or leak and Ameredev will notify NMOCD within 48 hours of discovery. The liner shall then be cleaned and repaired or replaced by qualified personnel.

Reporting of identified leaks/damage to liner integrity:

- There is no allowable volume for leaks. Any volume of fluid identified with the leak detection system (that is not proven through testing to be unimpacted fluid, i.e. condensation) must be reported within 48 hours. A plan for intervention, including

dropping the fluid level to below the leak and a plan for repair and/or extension request, if indicated, should be included in report.

- Liner damage *above* fluid level is expected to be repaired within 48 hours of discovery or seek extension from NMOCD.
- Communication should be via the OCD Permitting Portal using the C 147 long form with an explanatory cover letter.

Reporting of water transfer and usage:

- Monthly report of volumes of water received (fresh and produced water separately) and volumes leaving facility via online permitting portal using C 148 form (updated January 2022). Use one C 148 per facility, current forms have place for reporting volumes for inground and AST containments.
- Records of sources and disposition of water must be kept and available for NMOCD review upon request.

Containments may be used for 5 years from the date the registration is initially filed with NMOCD. This may or may not correlate with the date of start of use. Annual extension may be requested by online submission of C-147 (long form) with an attached summary of inspections *30 days prior to registration expiration*.

Closure Plan

Once operations have ceased, Ameredev will remove all fluids within 60 days and close the containment within six months from the date operations are ceased. An extension for the removal of fluids, not to exceed 2 months may be requested. An extension to close the containment may be requested, not to exceed six months. Extensions will be requested through the OCD online process using a C-147 long form with an explanatory cover letter.

Containment Deconstruction

Residual fluids in the containments will be removed and sent to disposal at a division-approved facility.

Following removal of fluids, all solid contents, synthetic liners, and leak detection materials will be removed and transported to a division-approved facility.

Deconstruction of the steel walls and other infrastructure will occur according to the manufacturer's recommendations (Tank Tech).

Soil Sampling

After removal of containments, Ameredev will test the soils beneath the containment for contamination with a five-point composite sample to include any areas which may have been impacted as observed by stained or wet soils. Soil samples will be analyzed for the constituents of concern as listed in Table I of 19.15.34.14 NMAC.

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

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 Ameredev must receive NMOCD approval before proceeding with closure.

Closure Report

Within 60 days of completion of closure, Ameredev will submit a closure report to document all closure activities, including required attachments demonstrating sampling results with laboratory certificate of analysis, details of any remediation, backfilling, capping or covering as necessary. The closure report shall certify that all information in the report and attachments are correct and that Ameredev has complied with all applicable closure requirements and conditions specified in division rules or directives. All pertinent communications with NMOCD will be included in the report. Closure report to be submitted through the OCD permitting portal using a C-147 long form with explanatory cover letter.

Remediation, Restoration, & Reclamation

If constituents of concern exceed Closure Criteria per Table 1 of 19.15.34 NMAC, NMOCD may require remediation prior to restoration and reclamation activities. Please refer to the above section “Soil Sampling” for additional details.

If Closure Criteria is met per Table 1 of 19.15.34 NMAC, Ameredev will:

- If the location will remain in-use for oil and gas production, the location will be restored to an active production site.
- If the location will not be in-use for oil and gas production, the site will be restored and reclaimed to the condition that existed prior to the construction of the recycling containment.
    - ✓ 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 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.
    - ✓ Reclamation will 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.

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 provided they provide equal or better protection of fresh water, human health, and the environment.

Ameredev will notify NMOCD when this process is complete via OCD online using form C 147.

Appendix A

Well Logs

Atkins ENGINEERING ASSOCIATES INC.
2904 W 2nd St.
Roswell, NM 88201
voice: 575.624.2420
fax: 575.624.2421
www.atkinseng.com

~~July 8, 2022~~ 10/12/2022

DII-NMOSE
1900 W 2nd Street
Roswell, NM 88201

Hand Delivered to the DII Office of the State Engineer

Re: Resubmitted Well Record CP-1922 Pod-1

To whom it may concern:

Attached please find a corrected well log & record and a plugging record that was originally filed on 9/30/2022 ,corrected is in duplicate, for a one (1) soil borings, CP-1922 Pod-1.

If you have any questions, please contact me at 575.499.9244 or lucas@atkinseng.com.

Sincerely,

Lucas Middleton

Enclosures: as noted above

OSE DII OCT 12 2022 PM2:04

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD-1	n/a	CP-1922

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Ameredev Operating, LLC	737-300-4700

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
2901 Via Fortuna Suite 600	Austin	TX	78746

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	4	38.51	N
	LONGITUDE	103	17	9.02	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

SW NW NE Sec.5 T26S R36S NMPM

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
9/21/2022	9/21/2022	temporary well material	±101	n/a

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): n/a

DATE STATIC MEASURED: 9/26/2022

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	101	±6.25"	Boring-HSA	--	--	--	--

OSE DII OCT 12 2022 PM2:04

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	14	14	Sand, fine-grained, poorly graded, Tan Brown	Y ✓ N	
14	80	66	Sand, fine-grained, poorly graded, poorly consolidated, Tan Brown	Y ✓ N	
80	101	21	Sand, fine-grained, poorly graded, with Caliche , Tan Brown	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Temporary well material removed and soil boring backfilled using drill cuttings from total depth to ten feet below ground surface(bgs), then hydrated bentonite chips ten feet bgs to surface.
DTW-16

OSE DII OCT 12 2022 PM2:04

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge, Cameron Pruitt

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 10/4/2022

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: CP-1922

Well owner: Ameredev Operating, LLC Phone No.: 737-300-4700

Mailing address: 2901 Via Fortuna Suite 600

City: Austin State: Texas Zip code: 78746

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Jackie D. Atkins (Atkins Engineering Associates Inc.)

2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Shane Eldridge, Cameron Pruitt

4) Date well plugging began: 7/26/2022 Date well plugging concluded: 7/26/2022

5) GPS Well Location: Latitude: 32 deg, 4 min, 38.51 sec
Longitude: 103 deg, 17 min, 9.02 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 101 ft below ground level (bgl), by the following manner: water level probe

7) Static water level measured at initiation of plugging: n/a ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 9/12/2022

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

OSE DII OCT 12 2022 PM2:04

Version: September 8, 2009
Page 1 of 2

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
	0-10' Hydrated Bentonite	Approx. 15 gallons	15 gallons	Augers	
	10'-101' Drill Cuttings	Approx. 145 gallons	145 gallons	Boring	

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MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Jackie D. Atkins, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Jack Atkins — Signature of Well Driller

10/4/2022 — Date

Version: September 8, 2009
Page 2 of 2

6_CP-1922_WellLog-packet-forsign-DTW-16

Final Audit Report 2022-10-04

Created:	2022-10-04
By:	Lucas Middleton (lucas@atkinseng.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAzK7AaPUzEPE-3Y1tAUQrH1EtAYsYz3H5

"6_CP-1922_WellLog-packet-forsign-DTW-16" History

Document created by Lucas Middleton (lucas@atkinseng.com)
2022-10-04 - 2:26:57 PM GMT- IP address: 64.17.71.25

Document emailed to Jack Atkins (jack@atkinseng.com) for signature
2022-10-04 - 2:27:56 PM GMT

Email viewed by Jack Atkins (jack@atkinseng.com)
2022-10-04 - 2:58:39 PM GMT- IP address: 64.90.153.232

Document e-signed by Jack Atkins (jack@atkinseng.com)
Signature Date: 2022-10-04 - 3:00:40 PM GMT - Time Source: server- IP address: 64.90.153.232

Agreement completed.
2022-10-04 - 3:00:40 PM GMT

OSE DIT OCT 12 2022 PM2:04

Adobe Acrobat Sign

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twns	Rng	X	Y
NA	CP 00857 POD1	1	2	2	05	26S	36E	662244	3550380

Driller License: 1184 **Driller Company:** WEST TEXAS WATER WELL SERVICE
Driller Name: COLLIS, ROBERT E. (LD)

Drill Start Date: 10/09/1996 **Drill Finish Date:** 10/10/1996 **Plug Date:**
Log File Date: 01/15/1997 **PCW Rcv Date:** **Source:** Shallow
Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 100 GPM
Casing Size: **Depth Well:** 365 feet **Depth Water:**

Water Bearing Stratifications:	Top	Bottom	Description
	300	365	Sandstone/Gravel/Conglomerate

Meter Number: 18966 **Meter Make:**
Meter Serial Number: **Meter Multiplier:** 1.0000
Number of Dials: 1 **Meter Type:** Diversion
Unit of Measure: Gallons **Return Flow Percent:**
Usage Multiplier: **Reading Frequency:** Quarterly (No Reading Expected)

**YTD Meter Amounts:	Year	Amount
	2017	0

Meter Number: 19007 **Meter Make:** OCTAVE
Meter Serial Number: 19235055 **Meter Multiplier:** 1.0000
Number of Dials: 9 **Meter Type:** Diversion
Unit of Measure: Gallons **Return Flow Percent:**
Usage Multiplier: **Reading Frequency:** Monthly

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
02/01/2017	2017	2599614	A	RPT		0	
04/01/2017	2017	2627531	A	RPT		3.598	
05/01/2017	2017	2631319	A	RPT		0.488	
06/01/2017	2017	2652251	A	RPT		2.698	
07/01/2017	2017	2720508	A	RPT		8.798	
08/01/2017	2017	2782114	A	RPT		7.941	
09/01/2017	2017	2858989	A	RPT		9.909	
10/01/2017	2017	2906622	A	RPT		6.140	

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
11/01/2017	2017	2912696	A	RPT		0.783	
12/01/2017	2017	2998304	A	RPT		11.034	
02/01/2018	2018	3146658	A	RPT		19.122	
03/01/2018	2018	3212353	A	RPT		8.468	
04/01/2018	2018	3286487	A	RPT		9.555	
05/01/2018	2018	3381113	A	RPT		12.197	
06/01/2018	2018	3470486	A	RPT		11.520	
07/01/2018	2018	3547614	A	RPT		9.941	
09/01/2018	2018	3569776	A	RPT		2.857	
12/01/2018	2018	4076874	A	RPT		65.362	
01/01/2019	2018	4181523	A	RPT		13.489	
02/01/2019	2019	4296954	A	RPT		14.878	
03/01/2019	2019	4346796	A	RPT		6.424	
04/01/2019	2019	4365803	A	RPT		2.450	
05/01/2019	2019	4418132	A	RPT		6.745	
07/31/2019	2019	0	A	RPT		0	
09/30/2019	2019	325518	A	RPT		41.957	
10/31/2019	2019	388564	A	RPT		8.126	
12/31/2019	2019	622880	A	RPT		30.202	
01/19/2020	2020	672026	A	RPT		6.335	
01/19/2020	2020	0	A	RPT		0	
01/31/2020	2020	336667	A	RPT		1.033	
03/31/2020	2020	9198198	A	RPT		27.195	
08/31/2020	2020	25497766	A	RPT		50.022	
09/30/2020	2020	29234202	A	RPT		11.467	
11/30/2020	2020	36579854	A	RPT		22.543	
12/31/2020	2020	40821185	A	RPT		13.016	
01/31/2021	2021	45738623	A	RPT		15.091	

**YTD Meter Amounts:	Year	Amount
	2017	51.389
	2018	152.511
	2019	110.782
	2020	131.611
	2021	15.091

Meter Number:	19056	**Meter Make:**	MASTER METER
Meter Serial Number:	19814845	**Meter Multiplier:**	10.0000
Number of Dials:	6	**Meter Type:**	Diversion
Unit of Measure:	Gallons	**Return Flow Percent:**	
Usage Multiplier:		**Reading Frequency:**	Quarterly

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
11/30/2020	2020	38460	A	RPT		0	
12/31/2020	2020	42150	A	RPT		0.113	
01/31/2021	2021	49850	A	RPT		0.236	

**YTD Meter Amounts:	Year	Amount
	2020	0.113
	2021	0.236

File ... CP-857

NEW MEXICO OFFICE OF THE STATE ENGINEER

Update Well Location

Date: 03/27/2020 POD No.: CP-00857-POD1 OSE Staff: Chris Angel

Instructions:

Use this form to correct or update POD location(s) based on In-Office Geospatial Applications. Update WATERS by creating a UWL transaction in the pertinent file number(s). Create and image a map, if necessary.

Current Location:

NM State Plane (NAD83) - In feet	NM West Zone ☐ NM Central Zone ☐ NM East Zone ☐	X (in feet): Y (in feet):		
UTM (NAD83) - In meters	UTM Zone 13N ☐ UTM Zone 12N ☐	Easting (in meters): Northing (in meters):		
Lat/Long (WGS84) - To 1/10th of second ☐ Check if seconds are decimal format	Lat:	deg	min	sec
	Long:	deg	min	sec
Other Location Information (complete the below, if applicable):				
PLSS Quarters or Halves: SW1/4NE1/4NE1/4	Section: 05	Township: 26 South	Range: 36 East	
County: Lea	Subasin: Capitan			

Updated Location:

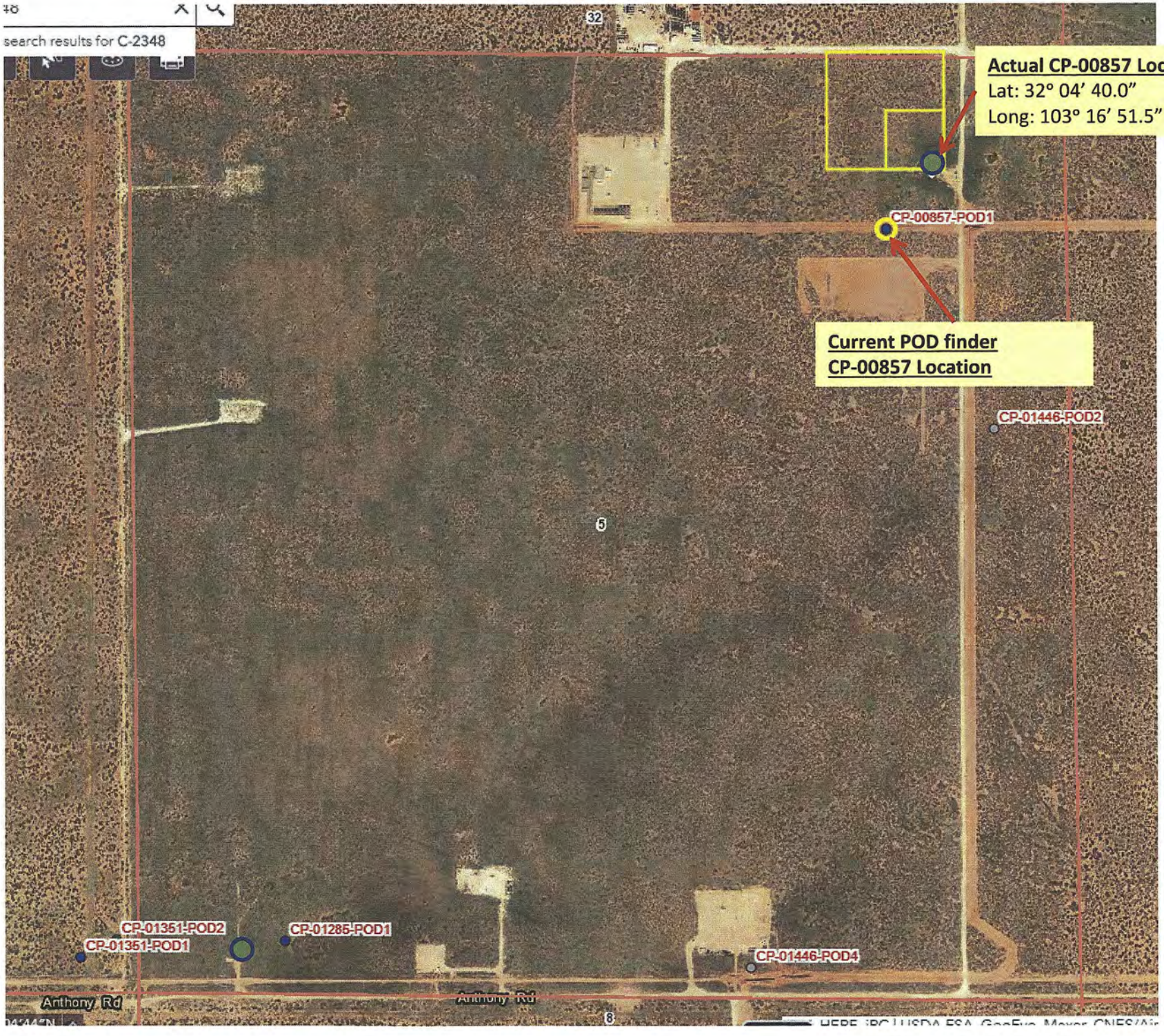
NM State Plane (NAD83) - In feet	NM West Zone ☐ NM Central Zone ☐ NM East Zone ☐	X (in feet): Y (in feet):		
UTM (NAD83) - In meters	UTM Zone 13N ☐ UTM Zone 12N ☐	Easting (in meters): Northing (in meters):		
Lat/Long (WGS84) - To 1/10th of second ☐ Check if seconds are decimal format	Lat: 32	deg	04 min	40.0 sec
	Long: 103	deg	16 min	51.5 sec
Other Location Information (complete the below, if applicable):				
PLSS Quarters or Halves: SE1/4NW1/4NE1/4NE1/4	Section: 05	Township: 26 South	Range: 36 East	
County: Lea	Subasin: Capitan			

Comments:

A GPS was used to locate the well on the attached map.

Update Well Location Form, Rev. 12/11/18

File No.: CP-857 Trn. No.: 670905



Revised June 1972

L 96330

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Anthony Ranch Owner's Well No. Recompletion

Street or Post Office Address P.O. Box 398

City and State Jal, New Mexico 88252

Well was drilled under Permit No. _____ and is located in the:

a. ~~NW~~ ¼ ~~NW~~ ¼ SW¼NE¼NE¼ ¼ of Section 5 Township 26 S Range 36 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 West Texas Water Well Service License No. WD-1184

Address 3432 W. University, Odessa, TX 79764

Drilling Began 10-9-96 Completed 10-10-96 Type tools air rotary Size of hole 9 7/8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 365 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)
West Texas Wate	r Well Service pulled casing from existing			well and
deepened it 65'				
300	365	65	Broken sandstone with streaks	
			of brown sand 100 gpm+	

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
0	15	9 7/8		13	Poured Slurry

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

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 #130947

Date Received 01/15/97

Quad _____ FWL _____ FSL _____

File No. CP-857 Use Stock Location No. 26.36.5.22322

Section 6. LOG OF HOLE

Depth in Feet		Thickness in Feet	Color and Type of Material Encountered
From	To		

Section 7. REMARKS AND ADDITIONAL INFORMATION

STATE ENGINEER OFFICE
ROSWELL NEW MEXICO
'97 JAN 15 AM 11 22

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.

Robert E. Collis
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 B

Technical Specifications

TANK TECH

Tank Tech, LLC can provide
engineering services and fabrication
for any custom size above
ground storage tank.

TANK TECH IS MORE THAN JUST A TANK COMPANY

Tank Tech, LLC is a Fort Worth, Texas based company that provides high capacity industrial modular fluid storage tanks throughout the United States. Our mission is to provide the highest quality tank to mitigate your environmental risk and decrease your overall footprint. This is the solution to earthen pits for drilling fluids, water reclamation and water storage.

Tank Tech Tanks are designed and certified by a professional structural engineer and fabricated by our sister steel company to the strictest quality standards. Our rolled steel panels are made of high quality grade 50 domestic (U.S.A.) steel that should exceed the customers expectations.

In addition, our tanks will be equipped with supply and discharge lines that can be manufactured to fit any application.

Tank Tech offers leasing and the sale of our tanks. Our operations team will erect and dismantle your tank and our VP of operations has over 30 years of experience in the construction industry.

TANK TECH MODELS & SPECS

TANK TECH MODEL	400	425	600
Capacity (Barrels)	40,290	43,555	62,719
Capacity (Barrels) w/8” Freeboard	38,276	41,193	59,317
Capacity (Gallons)	1,692,180	1,829,298	2,634,198
Structure Diameter (ft)	160’-0”	159’-2”	191’-0”
Excavation Diameter (ft)	180’	190’	221’
Panel Height (ft)	11’-3”	12’-3 1/2”	12’-3 1/2”
Number of Panels	16	25	20
Truck Loads	3	3	3

Why Tank Tech, LLC should be incorporated into your operation

- Designed and certified by a licensed Professional Engineer with over 25 years of structural engineering experience.
- We offer the highest quality tanks to mitigate your environmental risk and decrease your overall footprint.
- Our tank height of 11’ & 12’ minimizes wildlife encroachment and transport.
- Each tank utilizes a geotextile mat and liner customized for the installation.
- Perfect alternative to earthen pits for fracking, drilling, water reclamation and water storage.
- Tank Tech can custom design, engineer, and fabricate any size/type tank to accommodate the customers needs.
- Mobility allows the tank to be installed on the most effective area of the job site.

Side view of Model 600 with 6” fill line.

Front view of Tank Tech Model 600.

Tank Tech uses High Density Polyethylene for all mechanical applications.

Tank Tech employee checking water level on Model 425.

An example of a Water Reclamation Project/Tank Farm.

Typical supply/discharge mechanical system.

Tank Tech's Bird netting system with cabling/center pole/netting.

Example of safety clamps on Tank Tech Model 600 tank.

LAYFIELD

ABOVEGROUND SYNTHETICALLY-LINED WALL STORAGE SYSTEMS

AWSS Liner Documentation

For Layfield Enviro Liner® materials

This package is supplied with liners intended to be used in Aboveground Synthetically-Lined Wall Storage Systems (AWSS). This package should be kept on the site where the liner is being used and made available to inspectors as required.

Site Identification ______________________________

Lease ______________________________

Site Name ______________________________

AWSS Tank Identification ______________________________

Liner Identification ______________________________

Revision 2.0

Geomembrane packaging designed for transportation to remote sites.

TABLE OF CONTENTS

INSTALLATION GUIDELINE FOR AWSS OPEN TOP FRAC TANK LINERS

This installation guide describes the logical steps required to install a single lined system.

Step 1 - Delivery and handling of geomembrane liner on site.

- The prefabricated geomembrane liners are packaged and shipped on an open trailer and supported during transportation to eliminate external damage.
- Upon arrival to site, the liner package must be carefully inspected for damage. Any damage or distress to the outside wrapper of the liner should be investigated and any damage claimed against the carrier.
- Shipping documents and liner documentation should be secured and set aside for future reference.
- Verification of fabricated geomembrane panel numbers matching the shipping documents is required and will be signed off by the installer.
- Each prefabricated geomembrane liner delivered to the site will have a label and shall clearly state the manufacturer's name, product identification, thickness, size and any specific deployment directions.
- Prior to installation store prefabricated geomembrane liners on a flat, dry, smooth surface, such as clean pallets or rig mats to prevent damage the material. Ensure that there are not any nails or sharp objects that could damage the liner
- Handle the prefabricated geomembrane liner using slings or on pallets to prevent damage

Step 2 - Sub Grade Preparation and Inspection

- The prepared surface should be uniform, well compacted, and free of sharp rock fragments, large stones and other deleterious matter such as tree roots, construction debris and metallic objects. The surface should not have any natural or foreign object that protrudes above the surface of the subgrade. If the liner base cannot be prepared as described, the use of locally available sand and/or a suitably thick geotextile cushion material should be utilized to protect the liner from damage.

  A subgrade inspection must address:

  - Subgrade stability and bearing capacity
  - Slope and grade
  - The adequacy of surface conditions
  - The requirement for a geotextile cushion
- For winter installations, snow and ice must be removed so that the subgrade can be adequately inspected.
- If the prepared liner base is deemed suitable without the use of a geotextile cushion material, it is still recommended to use a geotextile as a slip sheet for under the liner to aid in the deployment of the liner and to prevent any rocks or debris from being extracted from the sub-surface when the liner is pulled along the base during deployment.
- A subgrade inspection form is included at the end of this documentation package. This form should be signed prior to liner installation.

Step 3 - Deployment of Geomembrane

Once the subgrade is ready for liner deployment, mark the tank perimeter on the ground (or on the geotextile if used). Leave the wrapper on the panel until it is placed in the proper position for unrolling.

Note the unfolding instructions on the geomembrane panel label. Butterfly folded panels are typically used for this application and would be rolled across the centre of the tank – then unfolded to the left and right of centre.

The prefabricated panel of geomembrane is placed in the appropriate position on the marked surface.

Unroll across the marked area . The butterfly folded panel is pulled out half at a time. Once the panel is unrolled and unfolded, adjust the location to fit the tank.

Once the liner is "pulled out" to its full dimensions the geomembrane should now be inspected for any damage. Repair any Found damage (use of the Enviro Liner Glue Gun is recommended) before proceeding to the next step.

Step 4 – Fold the liner inward away from the marked perimeter to allow the tank wall to be erected. The folded liner should be well within the marked area.

Step 5 - Installing geomembrane over tank wall:

Once the tank walls are erected, check for any bolts that are protruding, sharp edges, missing hardware and inspect the inside perimeter of the wall area to make sure no loose objects have been dropped that could damage the liner. The liner is then ready to be lifted over the walls. Unfold the geomembrane and lift over the walls with a crane or other suitable lifting device. Appropriate slack is left in the liner to allow for filling and to ensure no tension is put on liner.

Step 6 - Attaching liner to top of the ring wall:

Make sure the rim at the top of the tank does not have any rough or sharp edges that could damage the liner. Evenly distribute the excess material and attach liner to tank wall around the top with suitable clips or clamping system. Check that the liner is fit up against the ring wall without bridging or tension.

LINER PERFORMANCE

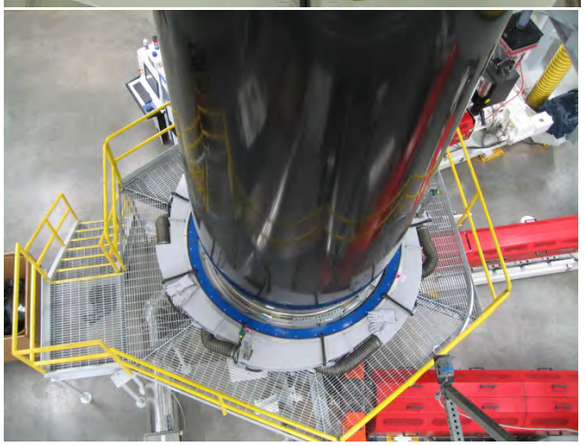
The Enviro Liner® 1000 series is a specialized lining material that has been developed for the containment of drilling fluids and chemicals associated with hydraulic fracturing operations. EL 1000 comes with a light grey top skin layer and a black layer on the bottom.

The grey face helps to identify potential sheet damage and reflects sunlight to reduce wrinkles caused by sheet thermal expansion and contraction. EL 1000 is available in 30 & 40 mil styles.

It is recommended that no geomembranes with reprocessed resins be used in frac tank applications.

Layfield incorporates stringent QA/QC and packaging procedures in the fabrication process of all its frac tank liners. It is important that all areas of material handling including transportation & warehousing are properly managed to ensure the fabricated liner is protected from external damage.

Under no circumstances should a frac tank liner be reused in multiple frac tank containment applications. It is not economically feasible to move and reinstall a frac tank liner without causing damage to the material rendering it ineffective.



DISPOSAL

Used Enviro Liner® can be disposed of at approved waste management sites.

LINER QUALITY TESTING

There are three levels of testing that go into each Enviro Liner® geomembrane from Layfield; manufacturing quality control, fabrication quality control, and field installation testing.

Layfield manufacturing and fabrication have registered quality management systems that meet the requirements of ISO 9001. These management systems are audited regularly to maintain compliance.

MANUFACTURING QUALITY CONTROL

The first level of testing is manufacturing quality control. All geomembrane manufactured by Layfield are tested according to internationally recognized standards. Layfield's Enviro Liner® geomembranes are extruded on modern specialized geomembrane extrusion equipment.

This equipment has automatic thickness sensing that continuously monitors the gauge of the material and adjusts the extrusion conditions to maintain gauge. A sample is taken across the width of each roll produced and is double-checked for thickness.

Quality test samples are removed from each lot number and sent to our in-house lab for testing. Test results are recorded electronically and are retrievable by lot number (which we call a docket number). The testing of each lot is reviewed by the quality department before shipment. Only those materials that fully meet our specifications are sold as Enviro Liner® brand products.

Material Specifications and Test Frequency

For quality control testing, there are six testing frequencies set by Layfield:

1. once per formulation (tests done during development)
2. once per roll
3. once per 20,000 lbs (every 9th roll)
4. once per truckload (every 45,000 lbs or every 20 rolls)
5. once per order (dimensional stability is checked once per order)
6. once per resin lot (once per rail car or 180,000 lbs)

Please refer to the attached QA/QC documentation to identify the Enviro Liner® geomembrane material that was used to fabricate this frac tank liner For detailed specifications please visit fracliners.com and geomembranes.com

FABRICATION / SHOP QUALITY CONTROL

Liners for use in AWSS (Frac Tanks) will be identified on the sales order at the time of sale. This identification will trigger additional inspections to suit this application.

Every liner that is fabricated at Layfield is tested according to our shop quality control procedures. All seams are visually inspected and destructive samples are taken periodically to verify the strength and quality of seams. In addition, qualification welds are performed to verify the correct operation of each welder prior to production. Qualification welds are prepared at the beginning of each shift and after any adjustments to equipment.

Destructive Testing

One set of destructive tests (1 shear, 1 peel) are performed on the first and the last seam of every liner and once every fifth seam (every 1000 lineal feet of seaming) as required. All tests must pass the seam strengths and exhibits a film tear bond. A film tear bond ensures seam integrity.

Seam Inspections

All AWSS liners will be subject to special visual inspections of all seams. Each seam will be 100% visually inspected and will have a tag that is signed by the lead hand verifying that this visual inspection has been performed.

Shop QC Report

A certified copy of the shop QC report will be included with each fabricated Enviro Liner® geomembrane for AWSS projects. The shop QC report will identify the roll goods used to manufacture the liner panel, the seam test results, and the inspections performed on the finished panel. The original shop QC reports will be retained on file and may be reviewed at the request of our customer or Government Agency. A copy of the report is included with this booklet.

Packaging / Shipping

Each prefabricated geomembrane liner is wound on a heavy duty core and wrapped in a protective cover material. A properly packaged liner is required to help prevent any potential damage during shipping and on site handling.

FIELD INSTALLATION TESTING

The liner requires a liner integrity test prior to service. In order to verify that a liner is ready for service a defined scope water test should be carried out as follows

Defined Scope Water Test

A defined scope water test uses a small quantity of water to verify that the critical areas of the liner are leak proof. The critical areas of the liner are the base area and the transition between the base and the walls of the tank. The lined walls of a tank are not normally subject to the same risk of damage as the base and are much easier to survey and repair if a leak occurs during filling operations.

Fill the bottom of the completed tank with enough water to cover the liner 6" deep at its highest elevation. Use fresh water that meets guidelines for surface water discharge for this initial testing. Monitor the system for leakage around the perimeter for 4 hours. If leakage is detected drain and repair the liner.

We recommend that the initial fill of any AWSS system be done with water that meets surface water discharge guidelines; however, once the defined scope water test has been passed a tank can be filled with flow back water. After complete filling detailed monitoring should be done for at least 4 hours.

Daily inspections of the AWSS are recommended while it is in service. The operator should monitor the perimeter of single-lined tanks daily as per the attached inspection sheet. A sign-off for the defined scope water installation test and the daily inspections is included within this booklet.

Warranties

The Seller does not warrant the fitness of goods for any particular purpose, but warrants and agrees to manufacture or supply goods in accordance with the agreed specifications with reasonable skill and without defective workmanship. Any extended warranty required by the buyer must be negotiated at the time of order. Requests for extended warranties after the delivery of the product with not be entertained. The Seller reserves the right to adjust prices to accommodate extended warranty costs. Unless specifically agreed to in writing by the Seller, the Seller warrants the products sold to be in accordance with the Seller's published specifications at the time of order, and that it will repair, or replace, at its option, such products that fail to conform with its published specifications, for a period of twelve (12) months following shipment. The Seller shall in no event be liable for the cost of field labour or for any costs incurred by the buyer in returning the goods to the Seller. The Seller shall in no event be liable to the Buyer or any third party for special, incidental, or consequential damages for, resulting from, or in connection with, any breach of warranty or any loss resulting from the use of the Product by the Buyer. Should the product prove so defective that repair or replacement is not practical, the Buyer's sole and exclusive remedy shall be the refund of the purchase price upon its return of the Product to the Seller. Our legal liability is limited to the cost of the material supplied, and freight, if applicable.

CERTIFICATE OF ACCEPTANCE OF SOIL SUBGRADE SURFACE

The following items were visually inspected prior to liner deployment:

1. The prepared surface was found to be uniform, well compacted, and free of sharp rock fragments, large stones and other deleterious matter such as tree roots, construction debris and metallic objects.
    a) The subgrade should be firm and stable (compacted to 95% of maximum dry density)
    b) If rocks larger than 3/8" exist on the surface then a suitable non-woven geotextile or sand layer is recommended as a liner cushion.

2. The subgrade surface was found to be flat and level and prepared to a uniform finish; the subgrade was free of abrupt or sharp changes in grade.
    a) Layfield recommends that the grade should not be sloped more than 0.5% for AWSS steel tanks.

3. Vehicular traffic on the completed subgrade should be limited. Marks or ruts left in the subgrade by vehicular traffic should be repaired as soon as possible.

4. If snow or ice was present then enough was removed to allow a suitable inspection of the underlying surface and was cleared from the perimeter area of the wall.
    a) Liners can be placed on snow up to 4" thick however the condition of the subgrade must be clearly determined and an suitable geotextile is recommended.

All the above items were inspected and were found in acceptable condition.

Date	
Signature	
Name	
Title	
Company	

LINER INSTALLATION WATER TEST

Date	
Installed by	
Water Test	

LINER INSPECTION CHECKLIST

As per the AER D55 Addendum on AWSS, the normal storage period should not exceed 90 days. This daily checklist should be maintained and made available to an inspector if requested.

Days of Service	Inspected By
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Number of Days	Inspected By
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FLOATING COVER & WILDLIFE MITIGATION

Floating cover systems:

Layfield has several options for cost effective floating covers systems. The key function of a cover is to reduce evaporative heat transfer. Please contact Layfield for details on the various options currently available.

Wildlife Mitigation:

Tanks containing produced or brackish water need to be covered to prevent waterfowl fatalities. Layfield can provide a couple of solutions to prevent this from happening. Most cost effective and common would be the installation of a simple bird net above the surface of the water. Layfield can provide a bird net for virtually any above ground water storage system.

LAYFIELD

800.840.2884 | FracLiner.com

US 866-375-9749
CAN 800-841-0836

Enviro Liner® 1000

1. Product Description

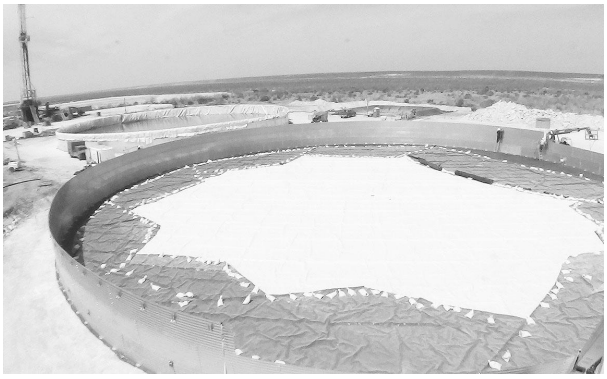
Enviro Liner® 1000 (EL1000) is a specialized polyethylene flexible membrane liner material that has been developed for medium-term performance applications. Typical applications for Enviro Liner® 1000 include containment of drilling fluids and chemicals associated with hydraulic fracturing operations, canal and reservoir liners, applications in which the liner will be backfilled (covered), and medium-term exposed liner applications. In 30 and 40 mil thicknesses, EL1000 comes with a light-coloured top skin layer (light grey or white) and a black layer on the bottom. The light-coloured face helps to identify potential sheet damage and leaks (if the light-coloured top skin layer is damaged, it will typically show the black core layer). The light-coloured face also reflects sunlight better than the dark-coloured face, helping reduce wrinkles caused by thermal expansion and contraction. Enviro Liner® 1000 is a flexible membrane liner that can be factory fabricated so that it can be delivered to the site as large panels. We can also produce 22.5 ft wide roll stock by special order.

2. Technical Data

Materials information is on page 2.

3. Installation

Layfield's Enviro Liner® 1000 (EL1000) is a flexible membrane liner that is flexible enough to be prefabricated at our facility into large panels. The prefabricated panel is accordion folded, rolled on a core, and delivered to the job site secured to a pallet. EL1000 prefabricated frac tank liners can be delivered in one large panel with no seaming required on site. Prefabricated panels can often cover a small oil pit project with a single panel. Local labour forces can be used to unroll and unfold the panel, while Layfield installation forces can be used to join panels on larger oil pit projects. Layfield has spent years developing innovative thin-film seaming technology. Field welding of Enviro Liner® 1000 is based on hot wedge welding technology. Field wedge welding of EL1000 provides strong seams and fast installations on large projects. Small welds and repairs can be completed with the Enviro Liner® welding gun.



4. Availability and Cost

Available from Layfield or distributors. Call
425-254-1075 Pacific time
780-453-6731 Mountain time, or
905-761-9123 Eastern time

5. Manufactured By

Layfield USA Corp.
Layfield Canada Ltd.

6. Warranty

Products sold will meet Layfield's published specifications. Any extended warranty required by the buyer must be negotiated at the time of order. Extended warranties may be available on this product and may be at extra cost. Full warranty details are available from Layfield.

7. Maintenance

Geomembranes should be inspected at least once per year for damage, stress, or any other detrimental condition. The entire containment area should be visually inspected annually. Layfield provides geomembrane maintenance services on request.

8. Filing Systems

9.

18 Oct 2016	Enviro Liner® 1000 Properties				
Style	**ASTM**	**EL 1020**	**EL 1030**	**EL 1040N**	**EL 1040**
Thickness	D5199	20 mil 0.5 mm	30 mil 0.75 mm	36 mil 0.91 mm	40 mil 1.0 mm
Density (Typical)	D792	0.93	0.93	0.93	0.93
Tensile Strength at Break	D6693	76 ppi 13 N/mm	114 ppi 20 N/mm	136 ppi 24 N/mm	152 ppi 27 N/mm
Elongation	D6693	800%	800%	700%	800%
Tear Resistance	D1004	11 lbs 49 N	16 lbs 70 N	19 lbs 84 N	22 lbs 100 N
Puncture Resistance	D4833	28 lbs 120 N	42 lbs 190 N	54 lbs 240 N	56 lbs 250 N
Carbon Black Content	D6370	≥ 2.0%	≥ 2.0%	2.0%	≥ 2.0%
High Pressure OIT	D5885	400 min	400 min	N/A	400 min
Low Temperature Impact Resistance	D746	-69°F -56°C	-69°F -56°C	-40°F -40°C	-69°F -56°C
Service Temperatures	Max Continuous Use	140°F 60°C	140°F 60°C	140°F 60°C	140°F 60°C

10.

18 Oct 2016	Enviro Liner® 1000 Shop Seam Strengths				
Style	**ASTM D6392**	**Enviro Liner® 1020**	**Enviro Liner® 1030**	**Enviro Liner® 1040N**	**Enviro Liner® 1040**
Heat Bonded Seam Strength	25.4 mm (1") Strip	30 ppi 5.2 N/mm	45 ppi 7.7 N/mm	50 ppi 8.7 N/mm	60 ppi 10.3 N/mm
Peel Adhesion Strength (Wedge Weld)	25.4 mm (1") Strip	25 ppi 4.3 N/mm	38 ppi 6.5 N/mm	45 ppi 7.9 N/mm	50 ppi 8.7 N/mm

11.

18 Oct 2016	Enviro Liner® 1000 Field Seam Strengths				
Style	**ASTM D6392**	**Enviro Liner® 1020**	**Enviro Liner® 1030**	**Enviro Liner® 1040N**	**Enviro Liner® 1040**
Heat Bonded Seam Strength Test Temp 23°C, 73°F	25.4 mm (1") Strip	30 ppi 5.2 N/mm	45 ppi 7.7 N/mm	50 ppi 8.7 N/mm	60 ppi 10.3 N/mm
Peel Adhesion Strength (Extrusion Weld)	25.4 mm (1") Strip	22 ppi 3.8 N/mm	34 ppi 5.9 N/mm	40 ppi 7.0 N/mm	44 ppi 7.7 N/mm

WE PROTECT

www.LayfieldContainment.com
Containment@layfieldgroup.com

LAYFIELD
10038 Marathon Parkway
Lakeside, CA 92040
Phone: (619) 562-1200
Toll Free: (800) 377-8404
Web: www.layfieldgroup.com
E-Mail: san@layfieldgroup.com

To whom it may concern

Regarding: Enviro Liner 1040N Chemical Compatibility with produced water and hydrocarbons

Job Number: 33514804N
Liner Lot Number: E0014432
Resin: Chevron Marlex 7104

Marlex 7104 made Enviro Liner geomembrane was subjected to a 30-day chemical compatibility testing with several organic and inorganic chemicals. Both mass and volume changes and loss of tensile strength was measured after being exposed to the test fluids shown in Table 1 below.

Test Criterial: 1. Liners shall exhibit a change in mass not exceeding 10%.
2. Liners shall exhibit volume change not exceeding 20% and
3. shall retain tensile strength not less than 50% of its original value.

Table 1. Compatibility Tests

Chemical	Result
Requirement	Pass
Fuel C[1]	Pass
Fuel H[2]	Pass
Ethanol	Pass
Methanol	Pass
IRM 903[3]	Pass
Biodiesel (Canola source)	Pass
Biodiesel (Tallow source)	Pass
B20[4] (Mixed source)[5]	Pass
pH 10 solution	Pass
pH 3 solution	Pass
Salt solution (saturated)	Pass

[1] 50% Toluene and 50% Iso-octane
[2] 85% Fuel C and 15% Ethanol
[3] A standard test oil
[4] Refers to 20% biodiesel blend
[5] Tallow and Canola source at 10% each

Sample Preparation: Samples of liner materials shall be prepared exposed in accordance with ASTM D5322, Standard Practice for Laboratory Immersion Procedures for Evaluating the Chemical Resistance of Geosynthetics to Liquids, and exposed to the appropriate test environments specified in Table 1 for 30 d at an

LAYFIELD
10038 Marathon Parkway
Lakeside, CA 92040
Phone: (619) 562-1200
Toll Free: (800) 377-8404
Web: www.layfieldgroup.com
E-Mail: san@layfieldgroup.com

ambient temperature of 73±2 °F. This standard (ASTM D5322) was originally developed to supplement and expand EPA 9090 to include all geosynthetics.

The Enviro Liner geomembrane made using the Marlex 7104 demonstrated resistance to the tested fluids as seen the table 1 and had successfully passed the chemical compatibility criteria. Please note that our geomembranes also meet the test properties required in the GRI GM17 specifications.

Liners exposed to higher concentration of hydrocarbons must be inspected periodically to ensure fitness of use. *Please note the information provided in this document should not be construed as an engineering advise.*

If you have questions, do not hesitate to reach me at 780-903-3714.

Yours Truly,

24.03.29

Rohit Sati, M.Sc | Product Manager-Containment & Enclosures | Geosynthetics
17720 - 129 Avenue NW | Edmonton, AB T5V 0C4
phone: (780)-732-5825 | mobile: (780)-903-3714 |

Laura Parker

From: Eric Rankinen <Eric.Rankinen@layfieldgroup.com>
Sent: Tuesday, March 28, 2023 9:10 AM
To: Laura Parker
Subject: RE: [EXTERNAL] RE: Technical support for AST registration
Attachments: SEDMEASTOFF23032416030.pdf

Hello Laura

Here is the letter discussing LLDPE material used for your liners. Layfield needed to confirm with our plant the liners were indeed made from the Chevron 7104 resin. This resin holds up particularly well to produced water.

Here are my thoughts below

19.15.34.12 (A) DESIGN AND CONSTRUCTION SPECIFICATIONS FOR A RECYCLING CONTAINMENT I am referring to above ground storage tanks AST

(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 (PVC does not perform well in produced water), 45-mil LLDPE string reinforced (your liner is LLDPE made from the premier resin. String reinforced will not stretch in the multiaxial direction as good as LLDPE liner will. AST liners need to stretch to eliminate bridging of gaps. or 60-mil HDPE liners (HDPE is the material of choice for impoundments, but not ASTs. HDPE doesn't stretch in the multiaxial direction very well). 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 mee (t or exceed the EPA SW-846 method 9090A or subsequent relevant publications.

(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. 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. (HDPE is not able to be prefabricated) (I've been involved with hundreds of produced water AST projects since 2011. Both installing AST's and now selling liners for Layfield. We always used LLDPE liners for tanks with no problems.) I can't think of any company that specifies anything other than LLDPE liners for above ground storage tanks to hold produced water. LLDPE liners for AST's is definitely the industry standard).

Eric Rankinen | Business Development Manager | Geosynthetics
10038 Marathon Parkway | Lakeside, CA 92040
mobile: 570.932.0481 | www.layfieldgroup.com

From: Eric Rankinen
Sent: Friday, March 24, 2023 3:49 PM
To: Laura Parker <lparker@ameredev.com>
Subject: RE: [EXTERNAL] RE: Technical support for AST registration

Appendix C

Variances

Variance Requests

Ameredev respectfully requests the following variances to 19.15.34.16 NMAC as listed below. A variance to fencing is requested as the utilized fence is felt to be better than what is prescribed. Variance requests for levee slopes, anchor trench, primary and secondary liners are requested due the nature of the build of an above ground steel tanks (ASTs) with vertical walls as compared to inground containments.

Fencing

9.15.34.12. D (2) NMAC prescribes that recycling containments are 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.

Ameredev used an 8-foot game fence with a single strand of barbed wire attached above the game fencing. This will more effectively deter wildlife or human intrusion which may otherwise go under or climb over prescribed fencing, therefore, meeting or exceeding above requirements to provide equal or better protection of fresh water; public health; and the environment.

Levee Slopes

9.15.34.12. A (2) NMAC. …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.

The prescribed slopes apply to a lined inground containment. The M60K and 40K ASTs are modular fluid storage tanks which have upright steel walls that provide the structure for the containment, and prevents surface run-on, (see schematic in Design and Construction Plan). These AST tanks were designed and certified by a professional structural engineer (see technical specifications and associated letter from professional engineer) and provide an alternative to inground containments for produced water storage.

The M60K and 40K ASTs have been constructed within a secondary containment, lined with 60 mil HDPE extending over a 3 ft berm with and internal grade not steeper than two horizontal feet to one vertical foot (2H: 1V) and the outside grade no steeper than three horizontal feet to one vertical foot (3H: IV). This further prevents surface run on, allows for inspection and maintenance between the 12-foot-high tank wall and secondary containment and further

reduces risk of environmental impact from a release. This structure provides equal or better protection of fresh water, public health, and the environment than the prescribed inside and outside levee slopes.

Anchor Trenches

9.15.34.12. A (3) NMAC. …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 prescribed anchor trench for securing the liner system pertains to inground containments. The M60K and 40K ASTs are above ground modular fluid storage tanks which have upright steel walls and therefore no anchor trench can be utilized. The primary and secondary liner system is anchored to the steel walls by clips or clamps. The 60 mil HDPE liner in the secondary containment ***is*** anchored in an 18 in deep trench. (Please see Design and Construction Plan). This system has been engineered and installed in a manner to provide equal protection of fresh water, public health, and the environment.

Primary Liners

9.15.34.12. A (4) NMAC. 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. Liner compatibility shall meet or exceed the EPA SW-846 method 9090A or subsequent relevant publications.

Ameredev has utilized a 40-mil LLDPE liner as the primary liner for both the M60K and the 40K ASTs. The primary liner of a produced water containment is meant to act as the primary protective barrier, withstanding UV and chemical insult, to protect from any potential impact to fresh water, public health, or the environment. The prescribed liners do not take into consideration the upright steel walls of an AST containment.

40-mil LLDPE is more flexible and will more readily conform to the structure of the above ground tank. Field seaming is reduced as it is produced in large sheets. The Layfield EL 1040N LLDPE liner is superior as it is made from a premier resin which was developed for use with oil field fluids and chemicals associated with hydraulic fracturing operations. LLDPE is the material of choice for ASTs where flexibility and a degree of stretch is needed to conform within the upright steel tanks. (PVC, string reinforced and HDPE do not share these qualities). Please refer to the Layfield liner specifications, chemical compatibility information, SOP (AWSS Liner Documentation) and email discussing superiority over prescribed 30 mil PVC, 45 mil LLDPE string reinforced or 60 mil HDPE liners in Appendix B. This primary liner system will provide equal or better protection of fresh water, public health, and the environment.

Secondary Liners

9.15.34.12. A (4) NMAC. 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.

Ameredev has utilized a 40-mil LLDPE liner as the secondary liner for both the M60K and 40K ASTs. The purpose of a secondary liner is to contain any produced water fluids that may leak through the primary liner. Liner thickness and hydraulic conductivity are important to this purpose. The prescribed liners do not take into consideration the upright steel walls of an AST containment.

40 mil LLDPE liner provides additional thickness than the 30 mil LLDPE. 40-mil LLDPE is more flexible and will more readily conform to the structure of the above ground tank. Field seaming is reduced as it is produced in large sheets. The Layfield EL 1040N LLDPE liner is superior as it is made from a premier resin which was developed for use with oil field fluids and chemicals associated with hydraulic fracturing operations. LLDPE is the material of choice for ASTs where flexibility and a degree of stretch is needed to conform within the upright steel tanks. (string reinforced liners do not share these qualities). Please refer to the Layfield liner specifications, chemical compatibility information, SOP (AWSS Liner Documentation) and email discussing superiority over prescribed string reinforced liners in Appendix B. This liner, used as a secondary liner, provides equal or better protection of fresh water, public health, and the environment than the prescribed 30-mil string reinforced LLDPE.

Venegas, Victoria, EMNRD

From: Venegas, Victoria, EMNRD
Sent: Tuesday, April 25, 2023 11:18 AM
To: Laura Parker; Andrew Parker; 'Shane McNeely'
Subject: 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815]. Modification 04/25/2023
Attachments: C-147 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] Modification 04.25.2023.pdf

1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815]

Good morning Ms. Parker,
NMOCD has reviewed the recycling containment permit modification and related documents, submitted by AMEREDEV OPERATING, LLC [372224] on April 11, 2023, Application ID: 206179, for 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] in Unit Letter G, Section 05, Township 26S, Range 36E, Lea County, New Mexico. AMEREDEV OPERATING, LLC [372224] requested variances from 19.15.34 NMAC for 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] ASTs related to 19.15.34. NMAC

The following variances specific to the AST have been approved:

- The variance to 19.15.34.12.A.(2) NMAC for the no side-slope requirement for the AST containment with vertical walls is approved.
- The variance to 19.15.34.12.A.(3) NMAC for the liners to be anchored to the top of the AST steel walls and no anchor trenches is approved.
- The variance to NMAC 19.15.34.12.D to install an 8-foot game fence with a single strand of barbed wire attached above the game fencing is approved.
- The variance to 19.15.34.12.A.(4) NMAC for the installation on the AST containment of a dual 40-mil non-reinforced LLDPE primary liner and a 60-mil HLDPE as the secondary liner is approved. The proposed new liner system cross-section is as follows:
  - Primary (upper) Liner: 40 mil LLDPE attached to steel containment wall with clips.
  - Leak Detection: 200 mil Geogrid placed between the 40-mil primary and secondary liners within the tank with automated conduction-based leak detection system.
  - Secondary (lower) Liner: 40 mil LLDPE attached to steel containment wall with clips.
  - 200 mil Geogrid is placed between 40 mil secondary liner and the 60 mil HDPE liner for secondary containment
  - Secondary Containment Liner: 60 mil HDPE.
  - Three-foot sloped berm with anchor trench to secure secondary containment liner.

The form C-147 and related documents for the modification of permit 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] is approved with the following conditions of approval:

- 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] must operate as originally permitted.
- 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] permit expires on **August 24, 2023**
- **AMEREDEV OPERATING, LLC [372224] will comply with all conditions previously approved for permit 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815]. No changes to the operations procedures, maintenance, and monitoring procedures, or closing procedures will be made aside from the addition of storage volume in the two AST (60,000.00 BBL and 40,000.00 BBL). 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] consists of two (2) AST containment of 60,000.00 BBL each, one (1) AST containment of 40,000.00 BBL and one (1) inground containment of 984,770.00 BBL. The total operational volume of 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] is 1,144,770.00 BBL.**

- A minimum of 3-feet freeboard must be maintained at 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] 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 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] 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, 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] 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.
- AMEREDEV OPERATING, LLC [372224] 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.
- AMEREDEV OPERATING, LLC [372224] must inspect the 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] recycling containment and associated leak detection systems weekly while it contains fluids per 19.15.34.13(A). AMEREDEV OPERATING, LLC [372224] shall maintain a current log of such inspections and make the log available for review by the division upon request.

Please let me know if you have any additional questions.
Regards,

Victoria Venegas ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
(575) 909-0269 | Victoria.Venegas@emnrd.nm.gov
https://www.emnrd.nm.gov/ocd/

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1625 N. French Dr., Hobbs, NM 88240
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811 S. First St., Artesia, NM 88210
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District III
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District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 206179

COMMENTS

Operator: AMEREDEV OPERATING, LLC 2901 Via Fortuna Austin, TX 78746	OGRID: 372224
	Action Number: 206179
	Action Type: [C-147] Water Recycle Long (C-147L)

COMMENTS

Created By	Comment	Comment Date
vvenegas	The form C-147 and related documents for the modification of permit 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] is approved. • 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] must operate as originally permitted. • 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] permit expires on August 24, 2023 • AMEREDEV OPERATING, LLC [372224] will comply with all conditions previously approved for permit 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815]. No changes to the operations procedures, maintenance, and monitoring procedures, or closing procedures will be made aside from the addition of storage volume in the two AST (60,000.00 BBL and 40,000.00 BBL). 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] consists of two (2) AST containment of 60,000.00 BBL each, one (1) AST containment of 40,000.00 BBL and one (1) inground containment of 984,770.00 BBL. The total operational volume of 1RF-498 - DESOTO SPRINGS #3 FACILITY ID [fVV2234954815] is 1,144,770.00	4/25/2023

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CONDITIONS

Action 206179

CONDITIONS

Operator: AMEREDEV OPERATING, LLC 2901 Via Fortuna Austin, TX 78746	OGRID: 372224
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