November 2021

Volume 1 C-147 Registration for Warrior In-Ground Containment

Section 17 T25S R36E, Lea County NM

Transmittal Letter
C-147 Form
Driving Directions
Design Drawings, Specifications and Liner Equivalency
Design Construction Plan
Operations & Maintenance and Closure Plans

View south-southeast from the southern edge of the proposed in-ground containments.

Prepared for:
Intrepid Potash NM LLC
Carlsbad, NM

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

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996

November 8, 2021

Mr. Mike Bratcher
NMOCD - District 2, Supervisor
811 S. First St.
Artesia, NM 88210
Via E-Mail

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

RE: Intrepid Potash NM, LLC, C-147 and Siting Criteria Demonstration for Warrior Recycling Facility and In-Ground Containments 1 &2

Dear Mr. Bratcher and Ms. Venegas:

On behalf of Intrepid Potash NM LLC (Intrepid), R.T. Hicks Consultants is pleased submit Volumes 1 and 2 of the registration for the above-referenced project.

Please note that the siting criteria demonstration evaluates the recycling project area that includes proposed AST Containments, the treatment/recycling facility and the in-ground containments.

Hicks Consultants affirms that

- the location meets all siting criteria in the Rule and the location meets the specified setback criteria
- the Design/Construction Plan, Operation and Maintenance Plan and Closure Plan are consistent with the Rule.
- Unless instructed by OCD, we will employ the analytical tests for closure listed in the Rule

Volume 1 of the registration package includes:

- Signed C-147
- Survey with driving directions
- Final engineering plans and specifications for construction of the two in-ground containments
- Demonstrations of equivalency of the secondary liner system
- The Design/Construction Plan
- Operations & Maintenance Plan
- Closure Plan

Intrepid will specify that the Avian Deterrent System be designed for the Permian Basin of New Mexico.

Volume 2 is the Siting Criteria Demonstration and Appendices

This submission is a registration as no variances are requested. Thus, Intrepid will install four strands of barbed wire on the proposed game fence if requested by the NMOCD District Office.

Intrepid will transmit Volumes 1 and 2 to OCD via the OCD.Online portal.

In compliance with 19.15.34.10 of the Rule, this submission is copied to Intrepid Potash NM, LLC, the owner of the surface upon which the containments will be constructed.

Intrepid is the surface owner and the operator of the proposed containments. The attached Closure Cost Estimate is novel, as you will understand after reading the attachment.

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

Sincerely,
R.T. Hicks Consultants

Randall T. Hicks PG
Principal

Copy: Intrepid Potash NM, LLC

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901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996

Closure Cost Estimate Intrepid Potash In-Ground Containment

Intrepid Potash NM LLC owns the surface and the underlying caliche at the Warrior and Lager Head recycling facility project areas.

When the economic viability of recycling produced water ceases and the containments will no longer be used as Rule 34 Containments, Intrepid intends to evaluate the soils beneath the in-ground containments as required by Rule 34 and use the containments for a purpose other than recycling, as allowed by NMAC 19.15.34.14. Pertinent portions of the Rule are reproduced below for the benefit of Intrepid:

> 19.15.34.14 CLOSURE AND SITE RECLAMATION REQUIREMENTS FOR RECYCLING CONTAINMENTS:
> A. Once the operator has ceased operations, the operator shall remove all fluids within 60 days and close the containment within six months from the date the operator ceases operations from the containment for use....If the operator wants to use the containment for a purpose other than recycling then the operator must have that use approved or permitted by the division in accordance with the appropriate rules.
>
> B. The operator shall close a recycling containment by first removing all fluids...
> C. The operator shall test the soils beneath the containment for contamination with a five-point composite sample which includes stained or wet soils, if any, and that sample shall be analyzed for the constituents listed in Table I below.
> below.
>
> (1) If any contaminant concentration is higher than the parameters listed in Table I, the division may require additional delineation upon review of the results and the operator must receive approval before proceeding with closure.
> (2) If all contaminant concentrations are less than or equal to the parameters listed in Table I, then the operator can proceed to backfill with non-waste containing, uncontaminated, earthen material.

Intrepid desires to maintain the impoundments (including levees, liner foundation and liner system) because these structures reduces the cost for conversion to one or more uses, such as:

- Aquaculture using fresh or salt water,
- Recycling of produced water for agriculture or other uses in accordance with forthcoming regulations being developed by the NM Environment Department, or
- Biofuel production via algae or other aquatic microorganisms.

Intrepid understands the requirement to evaluate the soils beneath the liner and proposes the following protocol for testing:

1. Retain competent geophysics consulting firm, such as Earth Measurement Corporation (see http://www.emcgeophysics.com/) to conduct an Electo-Magnetic survey beneath the liner systems of each containment.
2. The selected consultant will confer with OCD regarding the nature of the survey. Based upon our experience, we believe a reasonable scope of work would be:
    a. EM transects where the levee slopes meet the base of the containment

   b. Several transects coincident with the length of the containment and several coincident with the width
   c. Several transects near the sump and the adjacent levees slopes where hoses and pumps removed water from and added water to the containment
   d. Possibly a transect in an adjacent area, such as the recycling facility pad, where:
      i. a relatively small volume of produced water (e.g., 4 barrels) is placed on the ground and allowed to seep into the upper 5-feet of the soil horizon and
      ii. the release footprint and adjacent areas are covered by the same liner system elements employed for the containments
3. Where recommended by the EM consultants, cause a liner contractor to remove a section of the liner system to permit sampling the underlying soil at up to five locations for each containment.

If the data from the leak detection monitoring from each containment, the EM survey and results of soil sampling cause NMOCD to conclude that no release has occurred, Intrepid would be allowed to propose moving forward with one of the uses mentioned above. If these data suggest a release has occurred, then Intrepid must move forward with a plan under Rule 29.

Conversations with Earth Measurement Corporation suggest the cost of an EM survey with recommendations for sampling is less than $50,000 for two adjacent 500,000 bbl. containments. We estimate the cost of the proposed soil sampling, including the work of the liner contractor is less than $10,000 for each 500,000 bbl. containment. Thus, the total cost of soil testing and re-use of the two containments for an alternative use is less than $70,000.

C-147

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-147
Revised April 3, 2017

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: ___Intrepid Potash NM LLC_____(For multiple operators attach page with information) OGRID #:_ 372681____

Address: __ 2324 W. Peirce St. Carlsbad, NM 88220_____

Facility or well name (include API# if associated with a well): _Warrior Recycling Facility and Containments #1 and #2_____

OCD Permit Number: _____(For new facilities the permit number will be assigned by the district office)

U/L or Qtr/Qtr _J,K, N,O, P_ Section _____17_____ Township ____25S____ Range __36E_____ County: ___Lea_____

Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.

☐ **Recycling Facility:** FNL 3550 FEL 2100

Location of recycling facility (if applicable): Latitude ___32.12806_____ Longitude _____-103.28567___Approx____ 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:** Warrior #1 and #2

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

Center of Recycling Containment (if applicable): Latitude _ ___32.12630_____ Longitude _____-103.28569 Approx_____ NAD83

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

☐ Lined ☐ Liner type: Thickness _See Engineering Drawings_____mil ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☒ Welded ☐ Factory ☐ Other _____ Volume: _See Drawings_____bbl Dimensions: L_____ x W_____ x D_____

☐ 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 $__SEE COST ESTIMATE____ **(work on these facilities cannot commence until bonding amounts are approved)**

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

5.

Fencing:

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

☒ Alternate. Please specify__Game Fence with option to install 4 strands barbed wire from -=0-4 feet if required by District Office_____

6.

Signs:

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

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

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

Check the below box only if a variance is requested:

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

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

8.

Siting Criteria for Recycling Containment

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

General siting	
Ground water is less than 50 feet below the bottom of the Recycling Containment.	
NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells FIGURE 2	☐ 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. FIGURE 3 - Written confirmation or verification from the municipality; written approval obtained from the municipality	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. FIGURE 4 - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division	☐ Yes ☒ No
Within an unstable area. FIGURE 5 - 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 FIGURE 6	☐ 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). FIGURE 7 - 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 FIGURE 8	☐ 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. FIGURES 1 AND 7 - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. FIGURE 9 - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No

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

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

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

Name (Print): Travis McBain Title: Director of Land/Business Development
Signature: Date: November 5, 2021
e-mail address: travis.mcbain@intrepidpotash.com Telephone: 405.938.5411

11.
OCD Representative Signature: **Approval Date:**

Title: **OCD Permit Number:**

☐ OCD Conditions
☐ Additional OCD Conditions on Attachment

SURVEY FOR CONTAINMENT AND RECYCLING FACILITY

INTREPID WARRIOR

LOCATION MAP
SECTION 27, T25E, R35E
N.M.P.M., LEA COUNTY, NEW MEXICO

DRIVING DIRECTION

- STARTING AT HIGHWAY NM-128 MILE 47
- HEAD WEST ON NM-128 APPROXIMATELY 680 FEET
- TURN LEFT ON UNNAMED LEASE ROAD
- HEAD SOUTH APPROXIMATE 0.65 MILES
- TURN RIGHT AT UNNAMED LEASE ROAD
- HEAD WEST APPROXIMATLY 0.32 MILE
- PROJECT AREA STRAIGHT AHEAD

NO.	REVISION	DATE

JOB NUMBER: LS21080933A

DWG NUMBER: LS21080933A-LOC

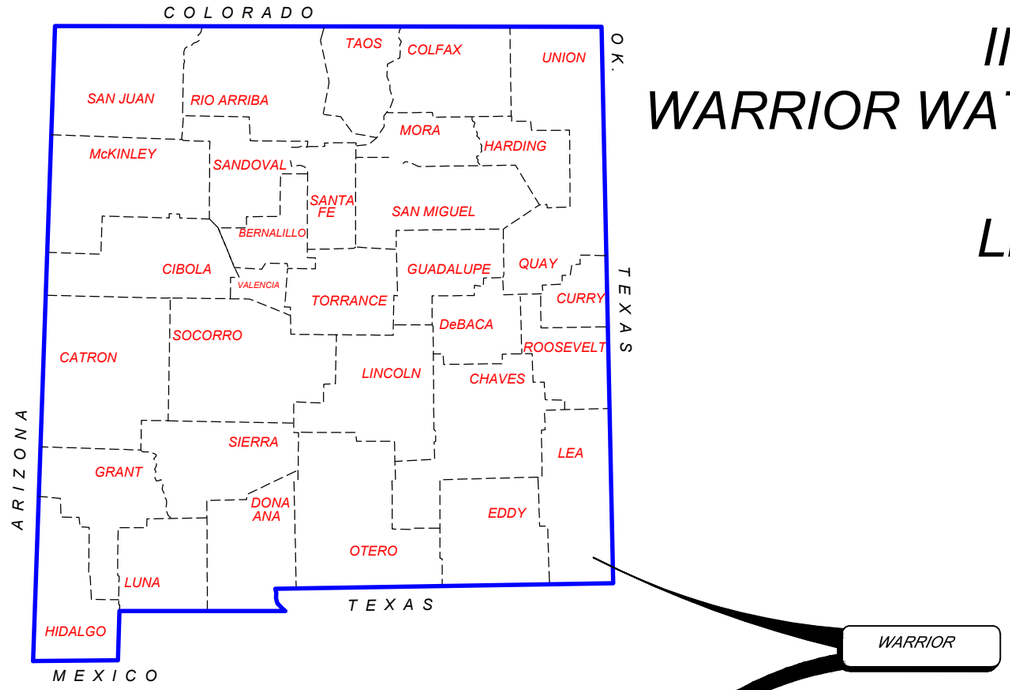
RRC ENERGY SERVICES, LLC.
20308 FRANKIE LANE, PLUGERVILLE, TX 78660
FIRM REG. NO: TEXAS-10194422, NEW MEXICO-4655451

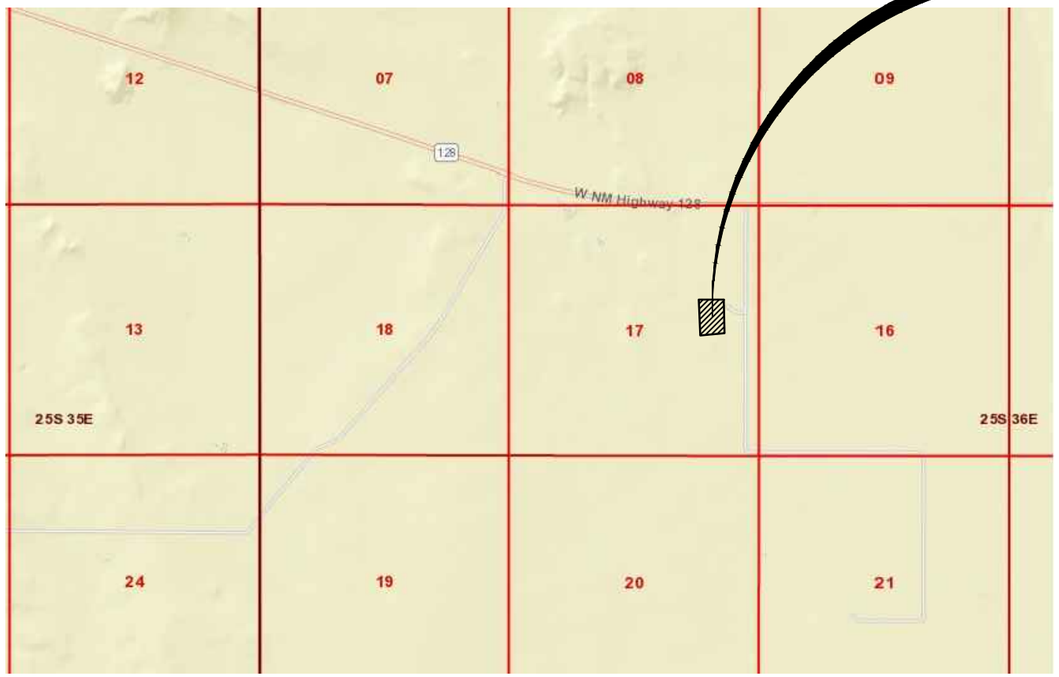
SCALE:	1" = 1000'
DATE:	9/16/2021
SURVEYED BY:	L.C.
DRAWN BY:	J.A.E.
APPROVED BY:	P.G.O.
SHEET:	2 OF 2

S:\PROJECTS\2021\08\LS21080933A - MAGRYM - LEGER HEAD & WARRIOR\DWG\PLATS\WARRIOR\WARRIOR-Thursday, September 16, 2021

RECYCLING CONTAINMENT DESIGN DRAWINGS

AVIAN DETERRENT SYSTEM





INTREPID POTASH NM, LLC
WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO

INDEX OF SHEETS

ISSUED FOR CONSTRUCTION 11-08-2021

Magrym Consulting, Inc.
110 W. Louisiana Ave. Ste 314
Midland, TX 79701
(432) 999-2737
www.magrym.com
TX #F-19848 ND #28610PE OK #8561PE

IFC	ISSUED FOR CONSTRUCTION	11/08/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

Intrepid Potash NM LLC
210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

COVER SHEET

HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-100

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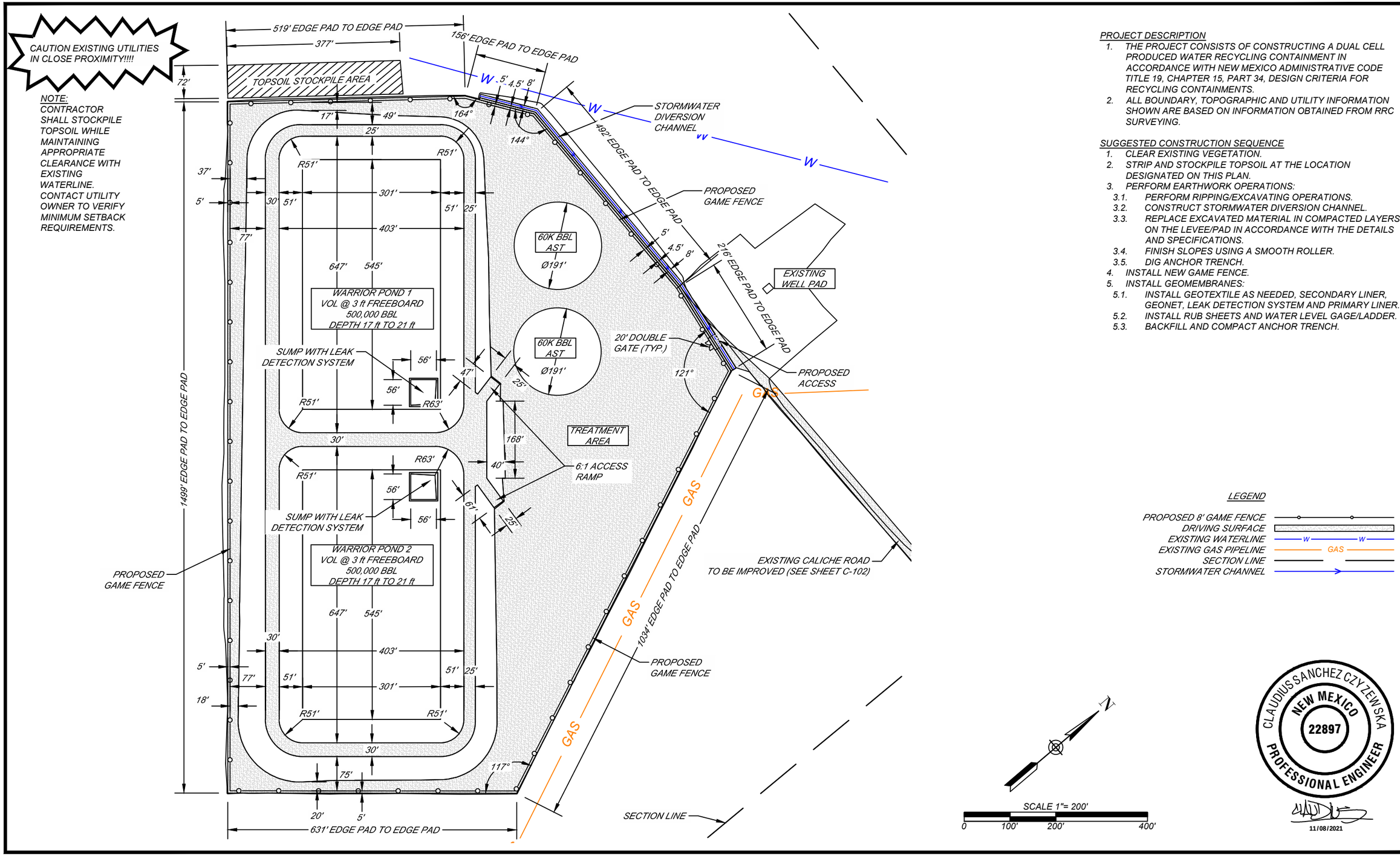

PROJECT DESCRIPTION

1. THE PROJECT CONSISTS OF CONSTRUCTING A DUAL CELL PRODUCED WATER RECYCLING CONTAINMENT IN ACCORDANCE WITH NEW MEXICO ADMINISTRATIVE CODE TITLE 19, CHAPTER 15, PART 34, DESIGN CRITERIA FOR RECYCLING CONTAINMENTS.
2. ALL BOUNDARY, TOPOGRAPHIC AND UTILITY INFORMATION SHOWN ARE BASED ON INFORMATION OBTAINED FROM RRC SURVEYING.

SUGGESTED CONSTRUCTION SEQUENCE

1. CLEAR EXISTING VEGETATION.
2. STRIP AND STOCKPILE TOPSOIL AT THE LOCATION DESIGNATED ON THIS PLAN.
3. PERFORM EARTHWORK OPERATIONS:
   - 3.1. PERFORM RIPPING/EXCAVATING OPERATIONS.
   - 3.2. CONSTRUCT STORMWATER DIVERSION CHANNEL.
   - 3.3. REPLACE EXCAVATED MATERIAL IN COMPACTED LAYERS ON THE LEVEE/PAD IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.
   - 3.4. FINISH SLOPES USING A SMOOTH ROLLER.
   - 3.5. DIG ANCHOR TRENCH.
4. INSTALL NEW GAME FENCE.
5. INSTALL GEOMEMBRANES:
   - 5.1. INSTALL GEOTEXTILE AS NEEDED, SECONDARY LINER, GEONET, LEAK DETECTION SYSTEM AND PRIMARY LINER.
   - 5.2. INSTALL RUB SHEETS AND WATER LEVEL GAGE/LADDER.
   - 5.3. BACKFILL AND COMPACT ANCHOR TRENCH.

LEGEND

- PROPOSED 8' GAME FENCE
- DRIVING SURFACE
- EXISTING WATERLINE
- EXISTING GAS PIPELINE
- SECTION LINE
- STORMWATER CHANNEL

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/08/2021

Magrym Consulting, Inc.
110 W. Louisiana Ave. Ste 314
Midland, TX 79701
(432) 999-2737
www.magrym.com
TX #F-19848 ND #28610PE OK #8561PE

IFC	ISSUED FOR CONSTRUCTION	11/08/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

Intrepid Potash NM LLC
210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

PROPOSED SITE PLAN I

HORIZONTAL SCALE: 1"=200'	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-101

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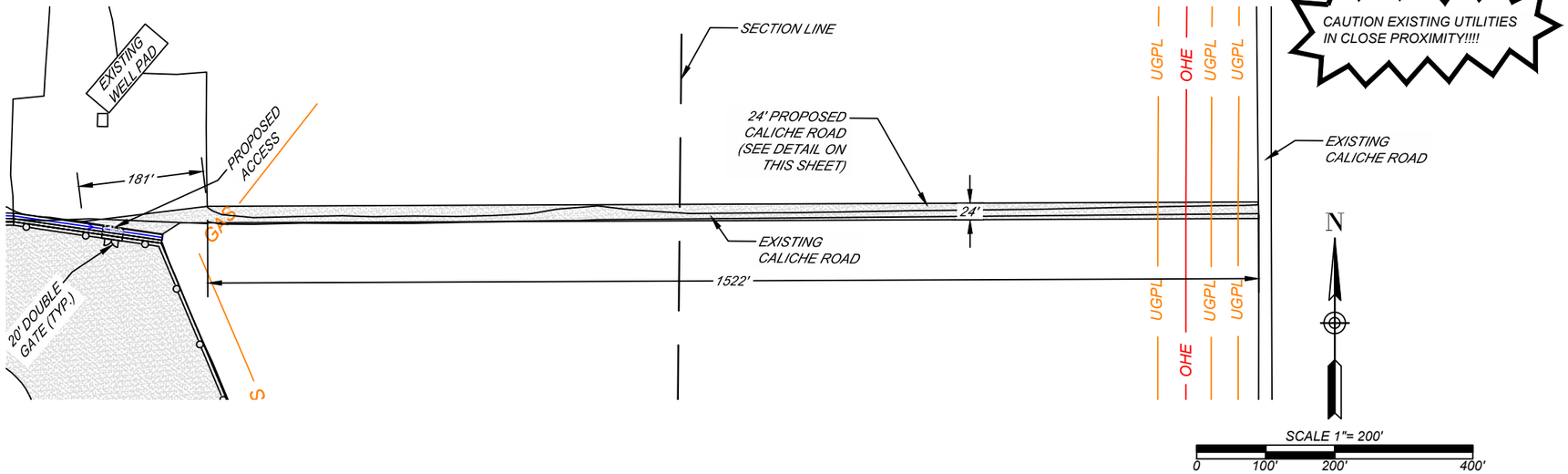

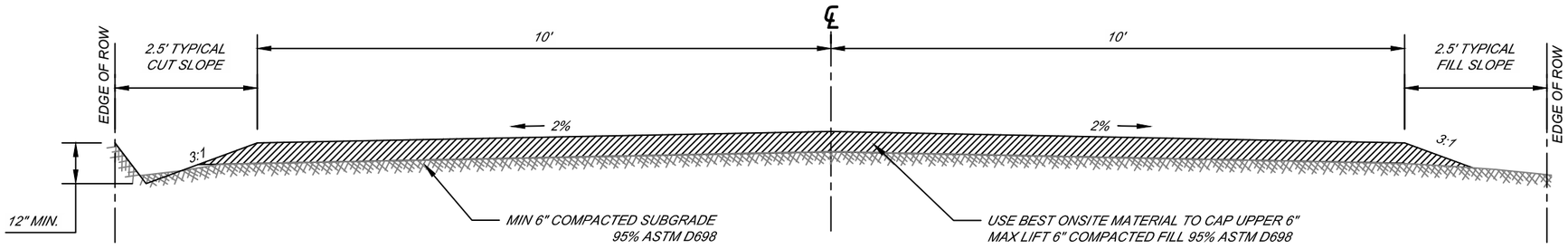

1 C-102 TYPICAL ROAD SECTION NOT TO SCALE

LEGEND

- PROPOSED 8' GAME FENCE
- DRIVING SURFACE
- EXISTING WATERLINE (W)
- EXISTING GAS PIPELINE (GAS)
- SECTION LINE
- EXISTING OVERHEAD ELECTRIC (OHE)
- EXISTING UNDERGROUND PIPELINE (UGPL)
- STORMWATER CHANNEL

CLAUDIUS SANCHEZ CZYZEWSKA NEW MEXICO 22897 PROFESSIONAL ENGINEER

11/08/2021

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REVISIONS (OR CHANGE NOTICES)			

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210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

PROPOSED SITE PLAN II	
HORIZONTAL SCALE: 1"=200'	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-102

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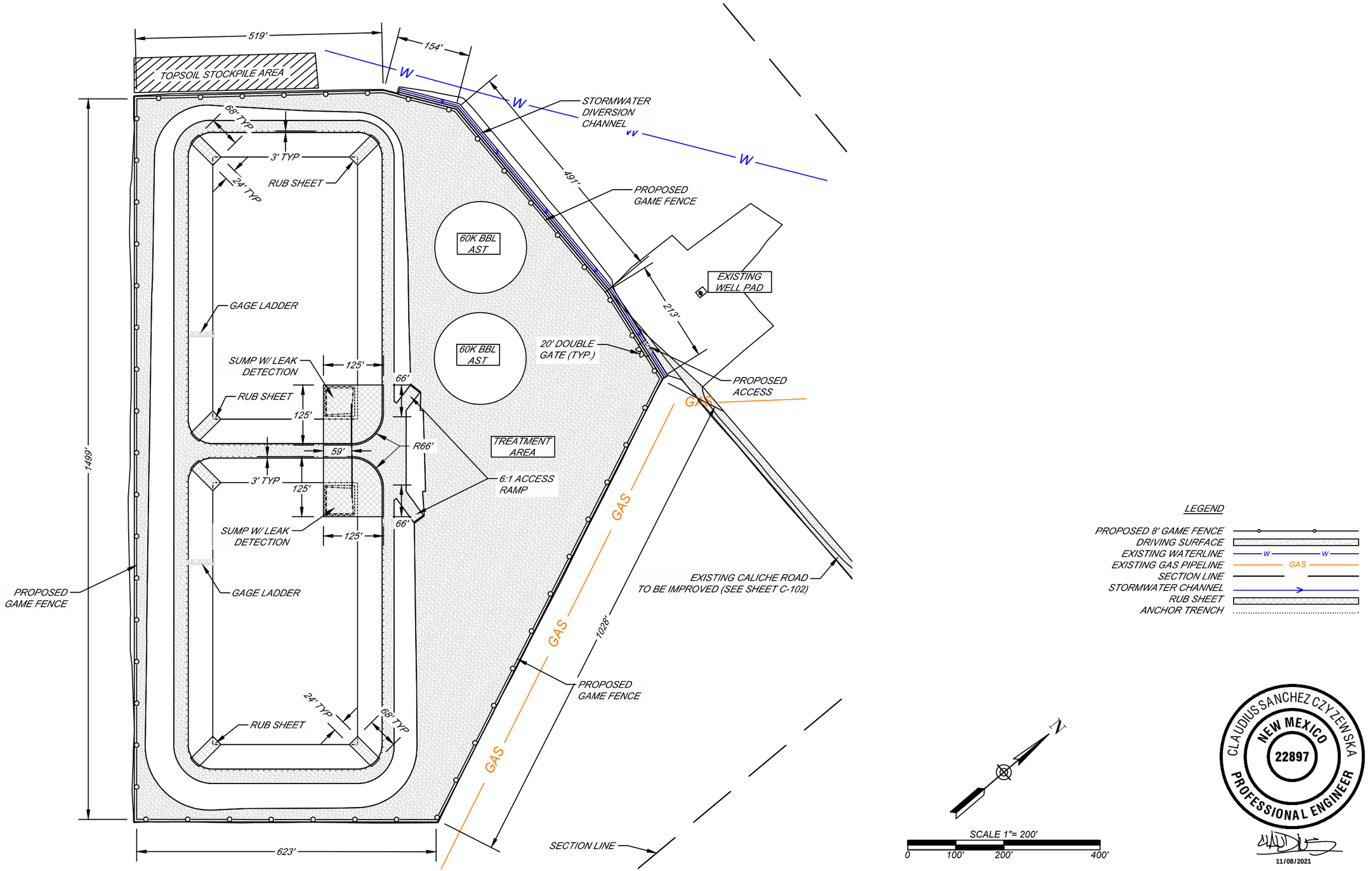

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210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

PROPOSED LINER AND FENCE PLAN

HORIZONTAL SCALE: 1"=200'	VERTICAL SCALE:
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-103

Drawing File: Z:\Shared\Projects\2021 Projects\21-240 RT Hicks Intrepid Warrior\04_CIVIL\Design\Drawings\21-240 Site Plan.dwg

GENERAL NOTES

1. NEW MEXICO ADMINISTRATIVE CODE TITLE 19, CHAPTER 15, PART 34, DESIGN CRITERIA FOR RECYCLING CONTAINMENTS SHALL APPLY TO THIS PROJECT.
2. ALL BOUNDARY, TOPOGRAPHIC AND UTILITY INFORMATION SHOWN ARE BASED ON SURVEY INFORMATION FURNISHED BY RRC SURVEYING.
3. THE CONTRACTOR SHALL IDENTIFY AND LOCATE UTILITY LINES, MONITORING WELLS, SURVEY MONUMENTS, AND OTHER NEARBY STRUCTURES PRIOR TO PERFORMING WORK.
4. COORDINATE INFORMATION IS BASED ON STATE PLANE COORDINATES, NEW MEXICO EAST, NAD 83.
5. THE CONTRACTOR SHALL IDENTIFY ANY DISCREPANCIES PRIOR TO PROCEEDING WITH CONSTRUCTION AND CONTACT THE ENGINEER IN WRITING.
6. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN BEST MANAGEMENT PRACTICES (BMPS) TO MINIMIZE EROSION AND CONTROL SEDIMENT TO PROTECT SURFACE WATER QUALITY DURING STORM EVENTS.

LINER NOTES

1. INSTALLER TO SIGN SUBGRADE ACCEPTANCE FORM (PROVIDED BY OWNER REPRESENTATIVE) DAILY PRIOR TO INSTALLATION.
2. CONTRACTOR TO PROVIDE SUBMITTAL OF LINER PANEL LAYOUT.
3. A 3' DIAMETER MINIMUM PIECE OF 40MIL LINER SHALL BE EXTRUDED WELDED WHERE THE PIE SHAPED CORNER SECTIONS MEET FOR SEAM REINFORCEMENT.
4. INSTALL A FULL DOUBLE WIDTH SECTION OF BLACK OR WHITE 60 MIL TEXTURED HDPE GEOMEMBRANE RUB SHEET. EXTRUDE WELD TO LINER. WELDS SHALL BE 2" LONG AND SPACED EVERY 12" ALONG BOTH SIDES OF THE SHEET. DO NOT WELD END EDGES. SECTION SHALL EXTEND FROM SUMP AND INSTALLED INTO LINER ANCHOR TRENCH AS SHOWN.
5. CONTRACTOR SHALL PLACE SANDBAGS ON LINER DURING INSTALLATION AS REQUIRED TO PREVENT WIND UPLIFT UNTIL POND IS FILLED TO A DEPTH OF 3 FEET.
6. CONTRACTOR SHALL INSPECT GRADED SURFACE FOR DEBRIS, ROCKS OR OTHER MATERIAL THAT MAY DAMAGE THE LINER.
7. CONTRACTOR SHALL ROLL SURFACE WITH A SMOOTH ROLLER TO ELIMINATE RUTS.
8. CONTRACTOR SHALL USE BLACK 60 MIL HDPE SMOOTH GEOMEMBRANE AS THE PRIMARY LINER AND BLACK 40 MIL HDPE SMOOTH GEOMEMBRANE AS THE SECONDARY LINER.
9. LINER TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS (GSI INSTALLATION QUALITY ASSURANCE MANUAL AND THE GSI DROP-IN SPECIFICATIONS FOR GEOMEMBRANES.)
10. ALL SEAMS MUST BE WELDED WITH A 6" MINIMUM OVERLAP.
11. CONTRACTOR SHALL NON-DESTRUCTIVELY TEST ALL SEAMS THEIR FULL LENGTH USING AN AIR PRESSURE OR VACUUM TEST, THE PURPOSE OF THIS TEST IS TO CHECK THE CONTINUITY OF THE SEAM PER THE INSTALLATION QUALITY ASSURANCE MANUAL.
12. FOR AIR PRESSURE TESTING (ASTM 5820), THE FOLLOWING PROCEDURES ARE APPLICABLE TO THE SEAMS WELD WITH DOUBLE SEAM FUSION WELDER.
    a. THE EQUIPMENT USED SHALL CONSIST OF AN AIR TANK OR PUMP CAPABLE OF PRODUCING A MINIMUM 35 PSI AND A SHARP NEEDLE WITH A PRESSURE GAUGE ATTACHED TO INSERT INTO THE AIR CHAMBER.
    b. SEAL BOTH ENDS OF THE SEAM BY HEATING AND SQUEEZING THEM TOGETHER. INSERT THE NEEDLE WITH THE GAUGE INTO THE AIR CHANNEL. PRESSURIZE THE AIR CHANNEL TO A MINIMUM OF 35 PSI. NOTE TIME STARTS AND WAIT A MINIMUM OF 5 MINUTES TO CHECK. IF PRESSURE AFTER 5 MINUTES HAD DROPPED LESS THAN 2 PSI THE TEST IS SUCCESSFUL (THICKNESS OF MATERIAL MAY CAUSE VARIANCE).
    c. CUT OPPOSITE SEAM END AND LISTEN FOR PRESSURE RELEASE TO VERIFY FULL SEAM HAS BEEN TESTED.
    d. IF THE TEST FAILS, FOLLOW THESE PROCEDURES.
        I. WHILE CHANNEL IS UNDER PRESSURE WALK THE LENGTH OF THE SEAM LISTENING FOR A LEAK.
        II. WHILE CHANNEL IS UNDER PRESSURE APPLY A SOAPY SOLUTION TO THE SEAM EDGE AND LOOK FOR BUBBLES FORMED BY AIR ESCAPING.
        iii. RE-TEST THE SEAM IN SMALLER INCREMENTS UNTIL THE LEAK IS FOUND.
    e. ONCE LEAK IS FOUND USING ONE OF THE PROCEDURES ABOVE, CUT OUT THE AREA AND RETEST THE PORTIONS OF THE PORTIONS OF THE SEAMS BETWEEN THE LEAK AREAS PER 6A AND 6B ABOVE. CONTINUE THIS PROCEDURE UNTIL ALL SECTIONS OF THE SEAM PASS THE PRESSURE TEST.
    f. REPAIR THE LEAK WITH A PATCH AND VACUUM TEST.
13. ALL NON-DESTRUCTIVE TESTS WILL BE NOTED IN THE NON-DESTRUCTIVE LOGS.
14. LINER SHALL BE PROTECTED WITH A 8 OZ. NONWOVEN GEOTEXTILE IF ROCK OR OTHER ANGULAR MATERIALS WITH A DIMENSION GREATER THAN 3/4 INCH ARE PRESENT.
15. SUMPS SHALL BE BACKFILLED WITH NON-ANGULAR MAXIMUM 3/8 INCH SIZED PEA GRAVEL.
16. LINER GAS VENTS SHALL BE SPACED ALONG THE INSIDE SLOPE AT APPROXIMATELY 100 FEET ON CENTER OR MINIMUM 2 VENTS PER SIDE.
17. WHEN ANY PIPING EQUIPMENT, INLET, OR OUTLET IS IN DIRECT CONTACT WITH THE LINER, AN APRON CONSISTING OF 60 MIL HDPE MATERIAL SHALL BE INSTALLED BENEATH THE EQUIPMENT OR STRUCTURE TO PROTECT THE PRIMARY LINER SYSTEM.
18. LAY BOTH LINERS IN ANCHOR TRENCH. BACKFILL ANCHOR TRENCH IN 2 LIFTS AND COMPACT.

EARTHWORK NOTES

1. THE CONTRACTOR SHALL USE WATER FOR COMPACTION AT ALL TIMES. THE CONTRACTOR SHALL ENSURE THEIR BID INCLUDES CONSTRUCTION WATER. NO EARTHWORK OPERATIONS SHALL TAKE PLACE IF CONSTRUCTION WATER IS NOT AVAILABLE ONSITE.
2. THE CONTRACTOR SHALL BUILD THE LEVEES USING COMPACTED LAYERS. UNCONTROLLED AND INCONSISTENT PUSHING AND PILING OF MATERIAL FOR LEVEE CONSTRUCTION IS NOT ACCEPTABLE. THE CONTRACTOR SHALL DEVELOP A SUCCESSFUL COMPACTION PATTERN EARLY IN THE PROCESS, VERIFIED THROUGH NUCLEAR DENSITY OR SAND CONE TESTING, AND SHALL MAINTAIN CONSISTENCY IN THE COMPACTIVE EFFORT AS LONG AS THE MATERIALS ENCOUNTERED REMAINS CONSISTENT. IF ONSITE SOILS ENCOUNTERED CHANGE, THE CONTRACTOR SHALL DEVELOP A NEW COMPACTION PATTERN. FILL FOR LEVEES SHALL BE PLACED AND COMPACTED IN HORIZONTAL LIFTS WITH MAXIMUM LOOSE LIFT THICKNESS OF 10 INCHES, OR AS DIRECTED BY ENGINEER. CONSTRUCT EACH LAYER CONTINUOUSLY AND APPROXIMATELY HORIZONTAL FOR THE WIDTH AND LENGTH OF THE LEVEE. FILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY DETERMINED BY THE ASTM D698 AND AT MOISTURE CONTENT WITHIN +2% TO -2% OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY A STANDARD PROCTOR SOILS TEST ON SAMPLES FROM THE SOURCE AREA.
3. FILL SHALL NOT BE PLACED AND COMPACTED WHEN THE MATERIALS ARE TOO WET TO PROPERLY COMPACT. MATERIAL WHICH IS TOO WET SHALL BE SPREAD ON THE FILL AREA AND PERMITTED TO DRY, ASSISTED BY HARROWING IF NECESSARY, UNTIL THE MOISTURE CONTENT IS REDUCED TO ALLOWABLE LIMITS. IF THE ENGINEER DETERMINED THAT ADDED MOISTURE IS REQUIRED, WATER SHALL BE APPLIED UNIFORMLY OVER THE AREA TO BE TREATED, AND GIVE COMPLETE AND ACCURATE CONTROL OF THE AMOUNT OF WATER TO BE USED. IF TOO MUCH WATER IS ADDED, THAT AREA SHALL BE PERMITTED TO DRY BEFORE COMPACTION IS CONTINUED.
4. PERFORM ONE NUCLEAR DENSITY GAGE TEST PER 2500 CY MINIMUM OR AS DIRECTED BY THE ENGINEER.
5. EARTHWORK CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF THE FINISHED COMPACTED POND BOTTOM AND SIDE SLOPES BEFORE HDPE LINER INSTALLATION, REMOVING ALL DEBRIS, SHARP OBJECTS AND GRAVEL LARGER THAN 3/4 INCH.

STAGE STORAGE		
PRODUCED WATER POND ELEVATION (FT)	PRODUCED WATER POND 1 VOLUME (BBL)	PRODUCED WATER POND 2 VOLUME (BBL)
3108	0	0
3109	186	186
3110	807	807
3111	5,198	5,198
3112	23,856	23,856
3113	53,527	53,527
3114	84,112	84,112
3115	115,619	115,619
3116	148,058	148,058
3117	181,439	181,439
3118	215,770	215,770
3119	251,061	251,061
3120	287,322	287,322
3121	324,561	324,561
3122	362,787	362,787
3123	402,011	402,011
3124	429,101	429,101
3125	475,052	475,052
3126	521,003	521,003
3127	566,955	566,955
3128	612,906	612,906
3129	658,857	658,857

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PROFESSIONAL ENGINEER
11/08/2021

SUMMARY OF QUANTITIES			
ITEM NUMBER	ITEM	UNIT	QTY
1	CLEARING AND GRUBBING	ACRES	40
2	STRIP AND STOCKPILE TOPSOIL (6" AVERAGE)	CUBIC YARD	25,048
3	ESTIMATED CUT (BELOW EXISTING GRADE)*	CUBIC YARD	156,745
4	ESTIMATED FILL (ABOVE EXISTING GRADE)**	CUBIC YARD	131,106
5	8' GAME FENCE	LINEAR FEET	4,563
6	20' DOUBLE GATE	LINEAR FEET	1
7	RUB SHEET 60 MIL HDPE GEOMEMBRANE (TEXTURED)***	SQUARE FEET	40,761
8	PRIMARY 60 MIL HDPE GEOMEMBRANE (SMOOTH)***	SQUARE FEET	546,151
9	200 MIL GEONET***	SQUARE FEET	546,151
10	SECONDARY 40 MIL HDPE GEOMEMBRANE (SMOOTH)***	SQUARE FEET	546,151
11	8 OZ. GEOTEXTILE***	SQUARE FEET	546,151
12	6" HDPE DR11 PIPE WITH PERFORATIONS IN SUMP	LINEAR FEET	180
13	GAGE LADDER	EACH	2
14	DRAIN ROCK	CUBIC YARD	2
15	ANCHOR TRENCH	LINEAR FEET	4,093
16	STORMWATER DIVERSION CHANNEL	LINEAR FEET	847
17	CONSTRUCTION WATER	ALLOWANCE	
18	MATERIALS TESTING	ALLOWANCE	
19	EROSION CONTROL BMP'S	ALLOWANCE	

IMPORTANT QUANTITY NOTES:

* CUT QUANTITY (ITEM NUMBER 3) INCLUDES TOPSOIL QUANTITY (ITEM NUMBER 2).

** GEOTECHNICAL INFORMATION WAS NOT AVAILABLE AT THE TIME THESE PLANS WERE PREPARED. 20% FILL FACTOR WAS ASSUMED AND APPLIED TO THE FILL QUANTITY. THE CONTRACTOR SHALL FIELD VERIFY SHRINKAGE AND SWELLING OF EXISTING SOILS.
CUT AND FILL QUANTITIES SHOWN ON THIS TABLE PERTAIN TO THE ENTIRE PROJECT AREA.
LEVEE, PAD, ADJACENT DRIVING SURFACE AND ROAD MATERIAL ARE INCLUDED IN THE FILL QUANTITY.

*** THESE ARE COMPLETE-IN-PLACE QUANTITIES. OVERLAP, ANCHOR, WRINKLE, SCRAP AND/OR SPOIL QUANTITIES ARE NOT INCLUDED IN THIS BID ITEM. THE CONTRACTOR SHALL ACCOUNT FOR THESE ADDITIONAL QUANTITIES IN THEIR BID.

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IFC	ISSUED FOR CONSTRUCTION	11/08/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

Intrepid Potash NM LLC
210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

SUMMARY OF QUANTITIES AND GENERAL NOTES

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-104

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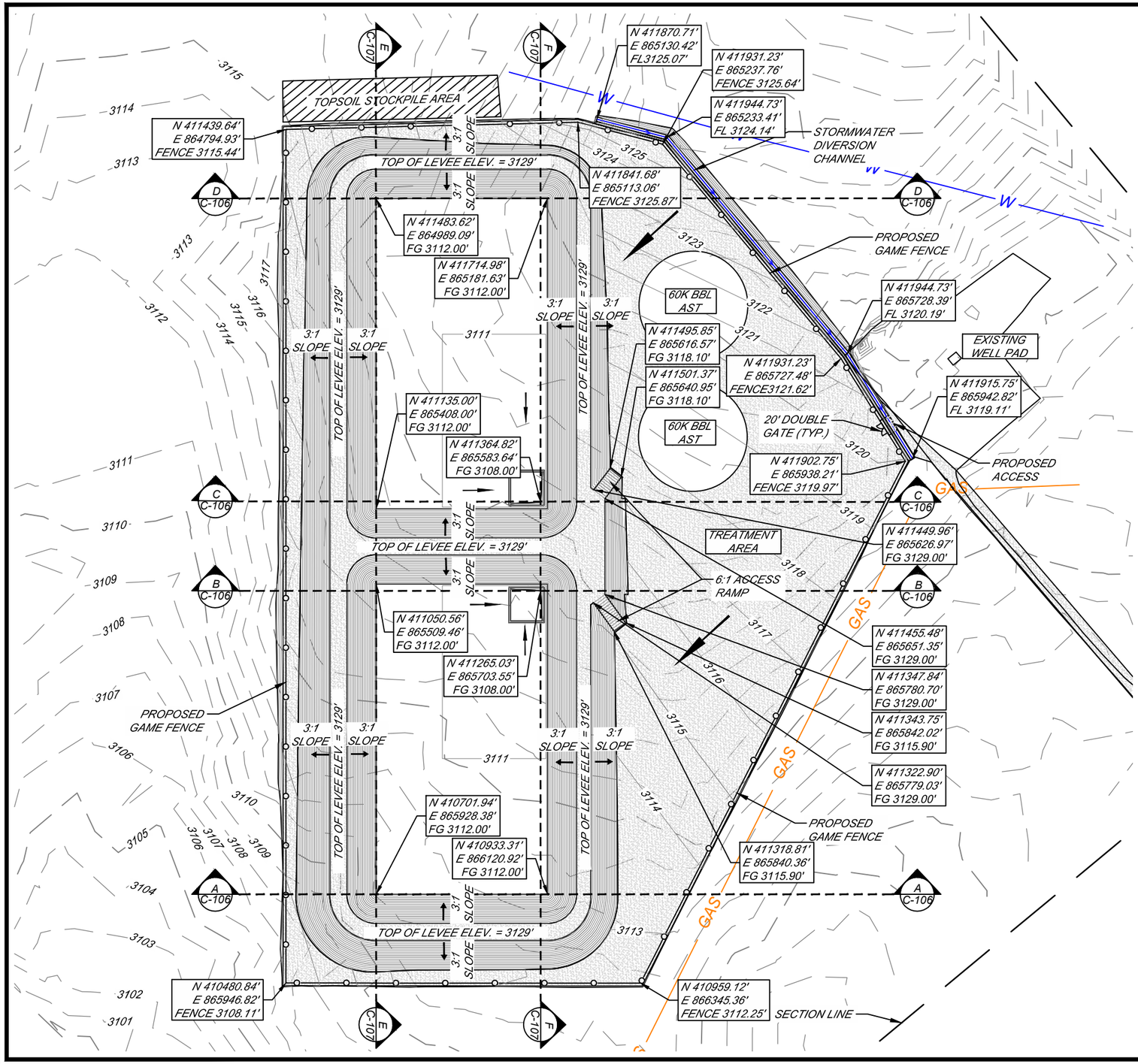

LEGEND

- PROPOSED 8' GAME FENCE
- EXISTING GAS PIPELINE — GAS
- SECTION LINE
- DRIVING SURFACE
- EXISTING WATERLINE — W
- EXISTING CONTOURS (1' INTERVAL)
- PROPOSED CONTOURS (1' INTERVAL)
- SLOPE DIRECTION
- FINISHED GRADE — FG
- STORMWATER CHANNEL
- FLOWLINE — FL

SCALE 1"= 200'

0 100' 200' 400'

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R-X	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		

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WARRIOR WATER TREATMENT AND REUSE FACILITY
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LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

GRADING PLAN

HORIZONTAL SCALE: 1"=200'	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-105

Drawing File: Z:\Shared\Projects\2021 Projects\21-240 RT Hicks Intrepid Warrior\04_CIVIL\Design\Drawings\21-240 Grading.dwg

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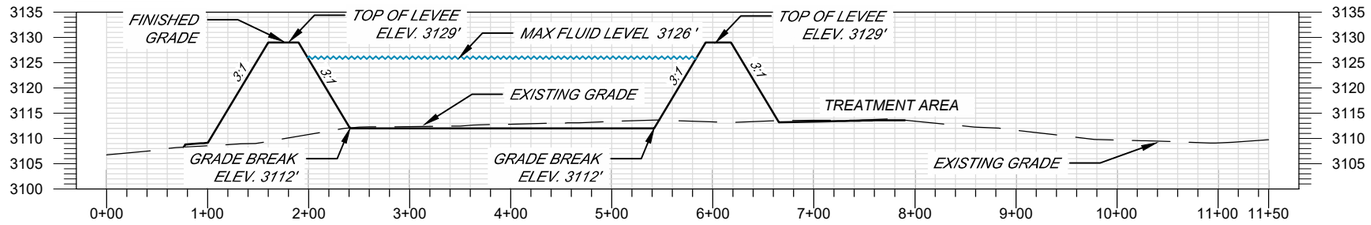

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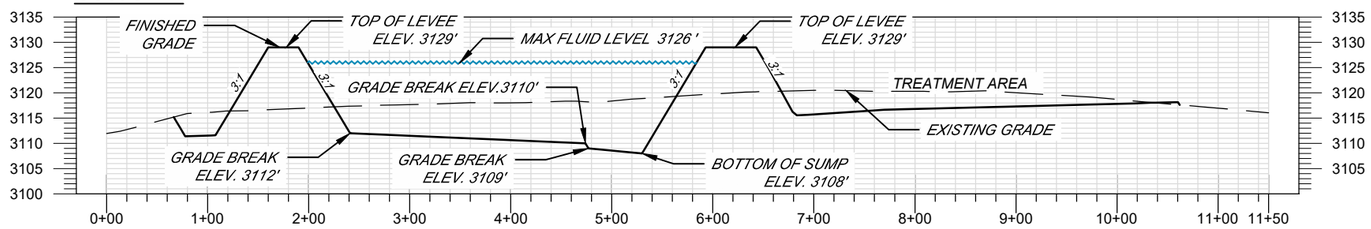

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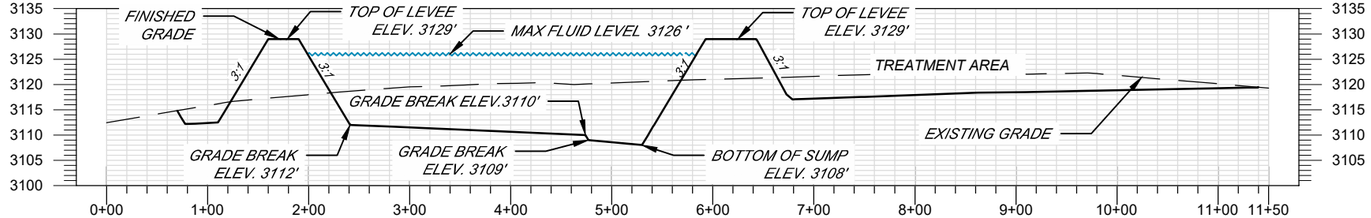

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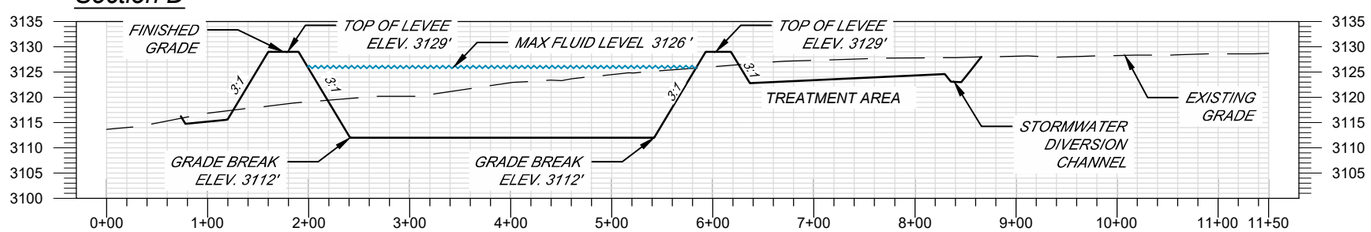

VERTICAL SCALE 1"=24'

0 12' 24' 48'

HORIZONTAL SCALE 1"=150'

0 75' 150' 300'

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IFC	ISSUED FOR CONSTRUCTION	11/08/21	CSC
R-X	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		

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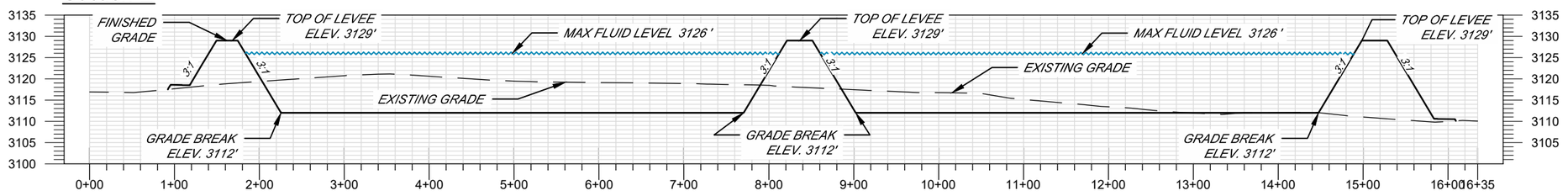
WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

CROSS SECTIONS I

HORIZONTAL SCALE: 1"=150'	VERTICAL SCALE: 1"=24'
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-107

Drawing File: Z:\Shared\Projects\2021 Projects\21-240 RT Hicks Intrepid Warrior\04_CIVIL\Design\Drawings\21-240 Grading.dwg

Section E



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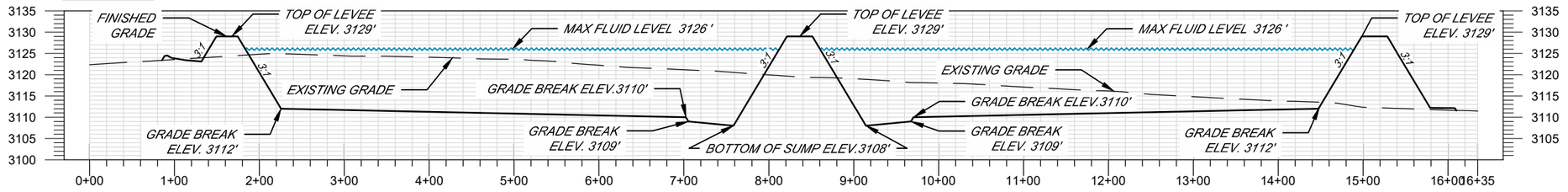

VERTICAL SCALE 1"=24'
0 12' 24' 48'

HORIZONTAL SCALE 1"=150'
0 75' 150' 300'

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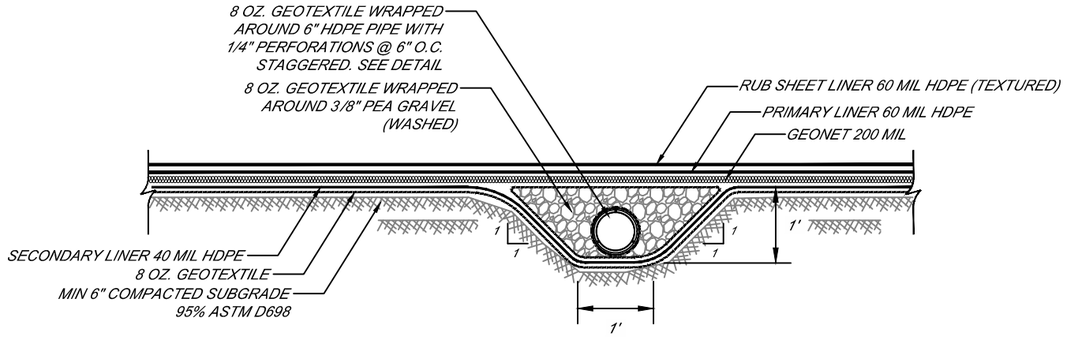
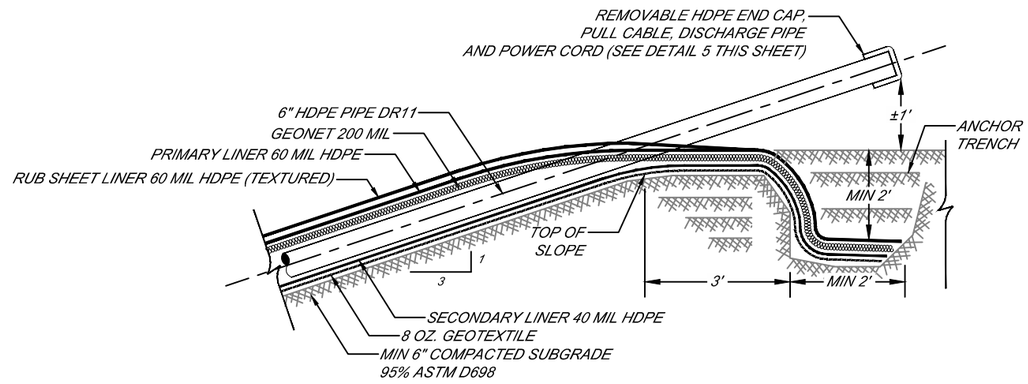
CROSS SECTIONS II

HORIZONTAL SCALE: 1"=150'	VERTICAL SCALE: 1"=24'
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-108

Drawing File: Z:\Shared\Projects\2021 Projects\21-240 RT Hicks Intrepid Warrior\04_CIVIL\Design\Drawings\21-240 Grading.dwg



1 / C-108 LEAK DETECTION SYSTEM SECTION A
NOT TO SCALE



2 / C-108 LEAK DETECTION SYSTEM PIPE RISER
NOT TO SCALE

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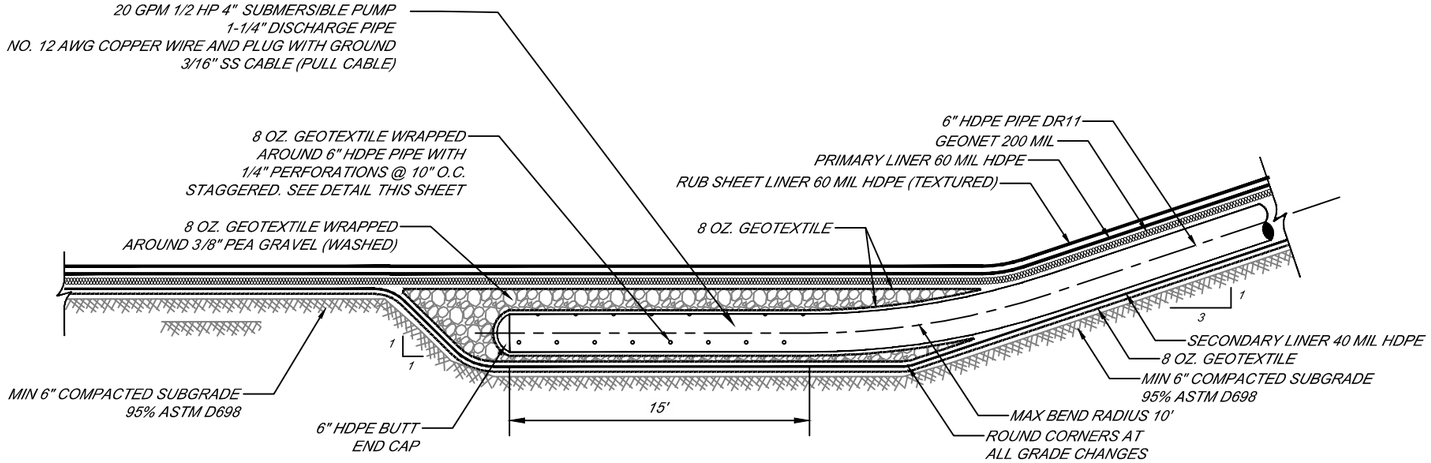

3 / C-108 LEAK DETECTION SYSTEM SECTION B
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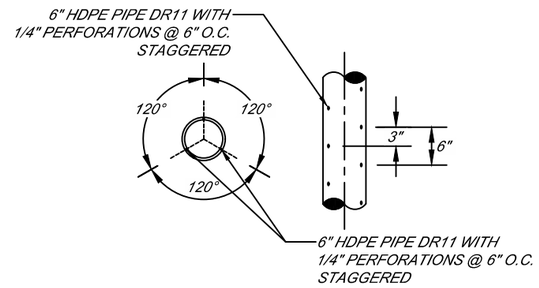
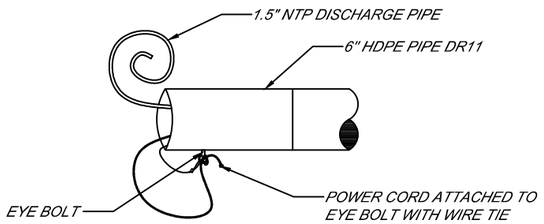


4 / C-108 LEAK DETECTION SYSTEM PERFORATED PIPE
NOT TO SCALE



5 / C-108 DISCHARGE PIPE, PULL CABLE AND POWER CORD
NOT TO SCALE

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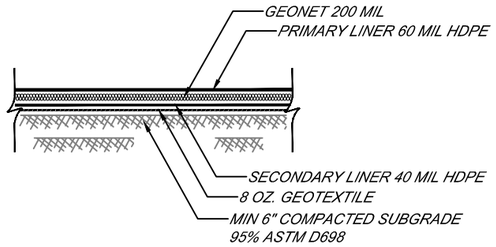
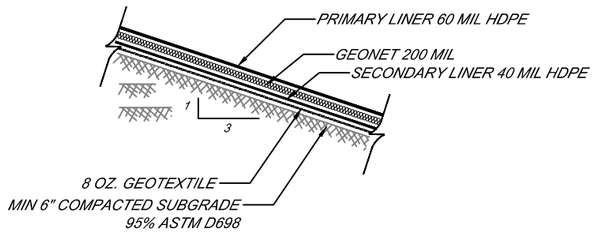
LEAK DETECTION SYSTEM DETAILS

HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-108

Drawing File: Z:\Shared\Projects\2021 Projects\21-240 RT Hicks Intrepid Warrior\04_CIVIL\Design\Drawings\21-240 Details.dwg



1 / C-109 TYPICAL POND BOTTOM LINER
NOT TO SCALE



2 / C-109 TYPICAL POND SLOPE LINER
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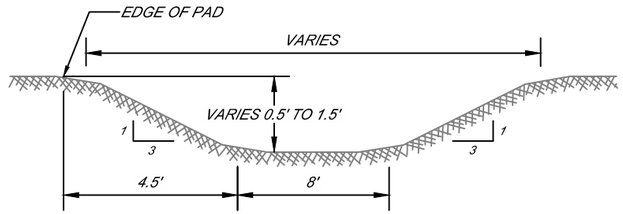
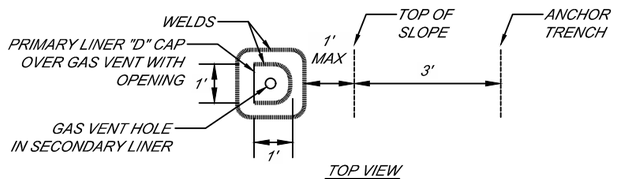
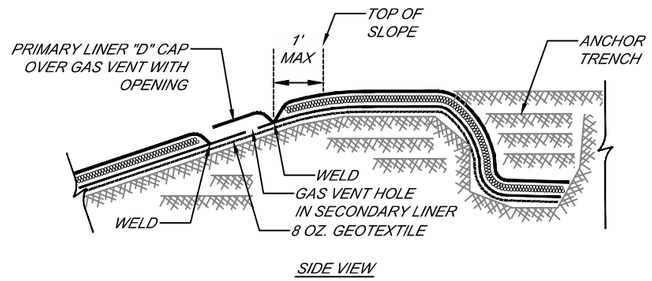


3 / C-109 TYPICAL DRAINAGE DICH
NOT TO SCALE



TOP VIEW



SIDE VIEW

NOTE:
GAS VENT SPACING SHALL BE INSTALLED
PER MANUFACTURER'S RECOMMENDATIONS

4 / C-109 TYPICAL GAS VENT
NOT TO SCALE

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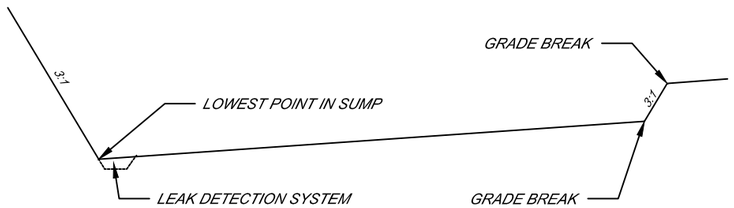
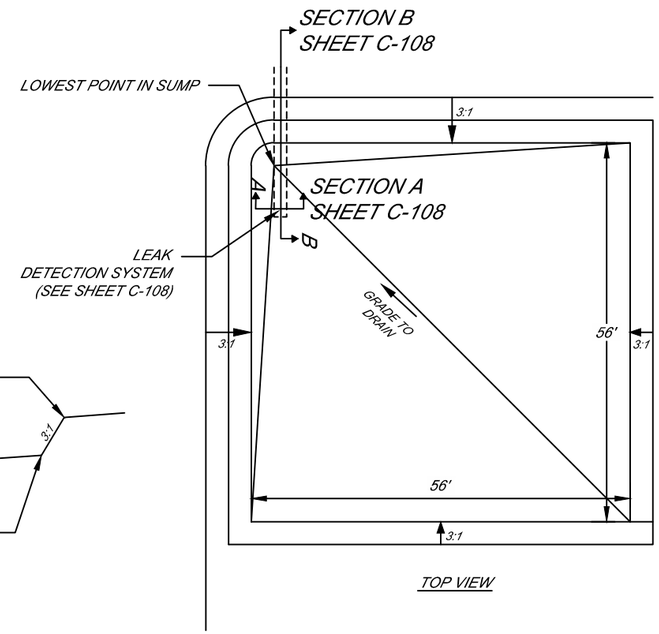
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/08/2021



SIDE VIEW



TOP VIEW

5 / C-109 SUMP DETAIL
NOT TO SCALE

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IFC	ISSUED FOR CONSTRUCTION	11/08/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

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210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

MISCELLANEOUS DETAILS	
HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE:11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-109

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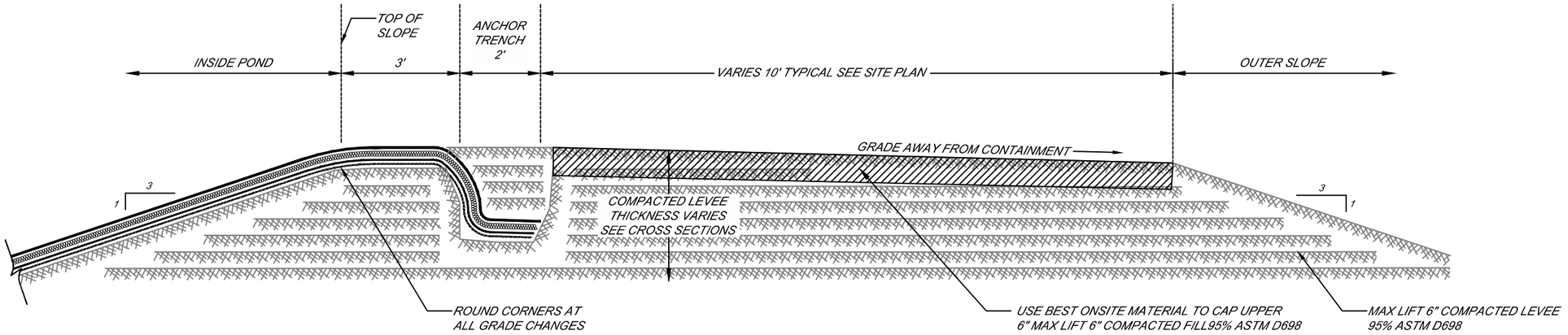
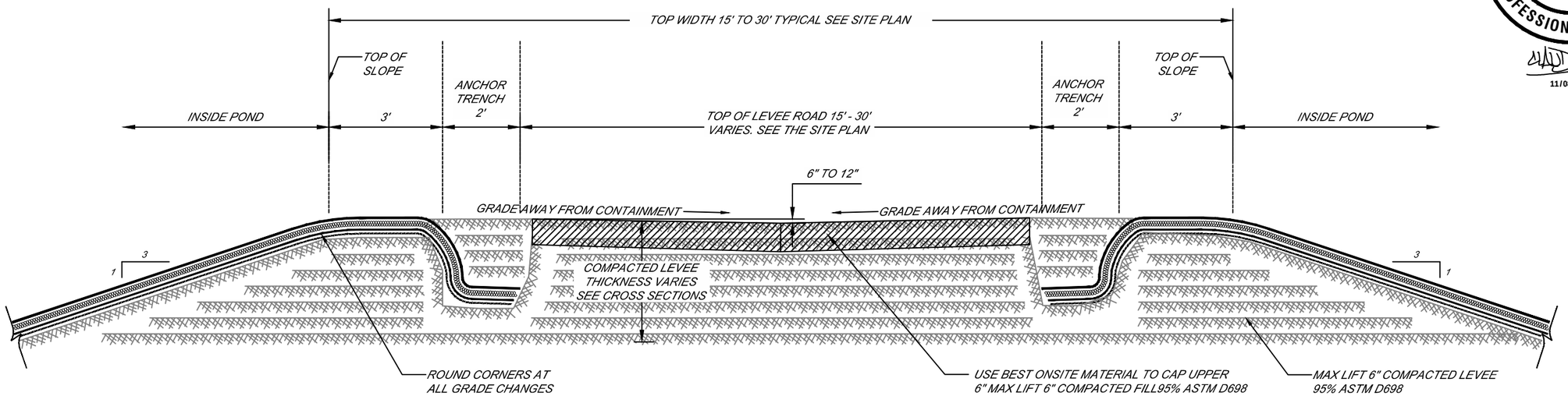


1 / C-110 **TYPICAL LEVEE SECTION**
NOT TO SCALE

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/08/2021



2 / C-110 **TYPICAL LEVEE SECTION BETWEEN CONTAINMENTS**
NOT TO SCALE

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IFC	ISSUED FOR CONSTRUCTION	11/08/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

INTREPID Essential Minerals for Success
Intrepid Potash NM LLC
210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

LEVEE DETAILS

HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-110

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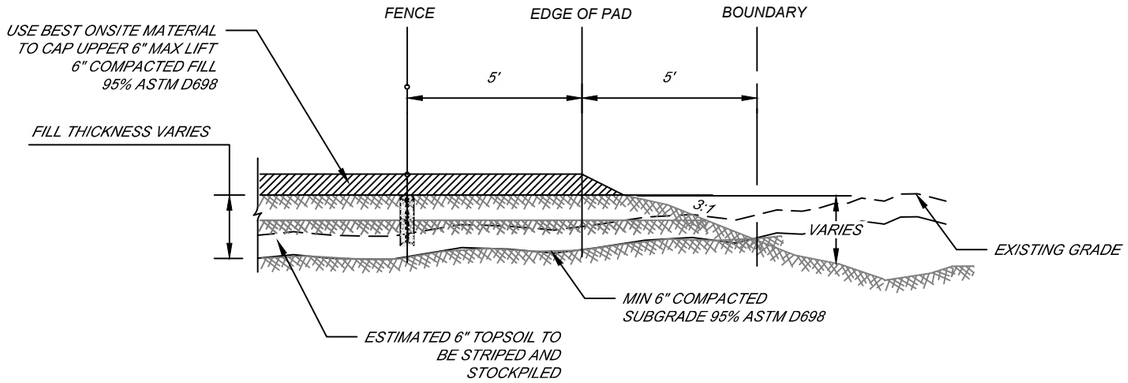
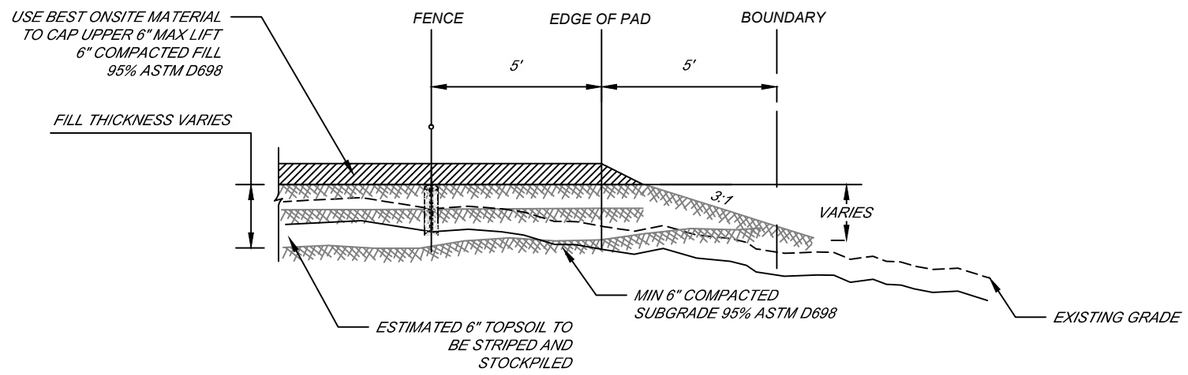


1 / C-111 TYPICAL PAD EDGE CUT SECTION
NOT TO SCALE



2 / C-111 TYPICAL PAD EDGE FILL SECTION
NOT TO SCALE

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/08/2021

MAGRYM
Magrym Consulting, Inc.
110 W. Louisiana Ave. Ste 314
Midland, TX 79701
(432) 999-2737
www.magrym.com
TX #F-19848 ND #28610PE OK #8561PE

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210 Red Cloud Road PO Box 101
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WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

PAD DETAILS

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SUBSET: CIVIL	SHEET: C-111

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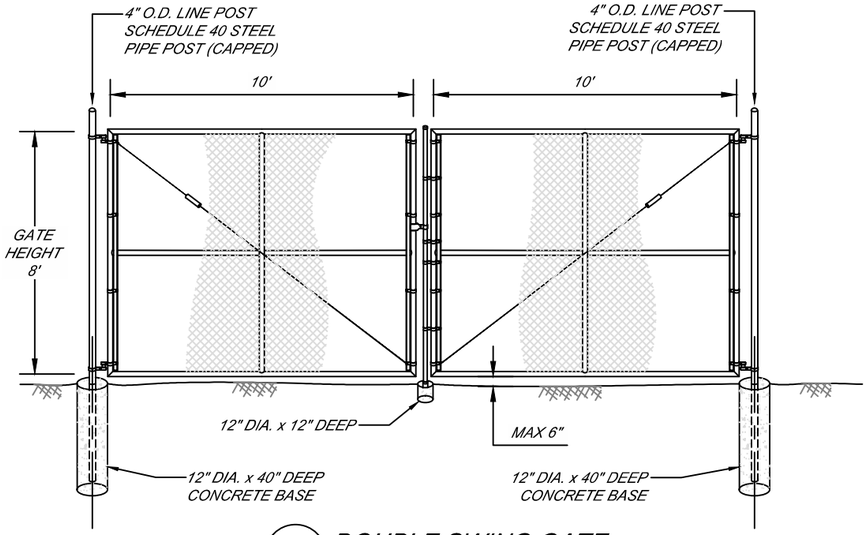
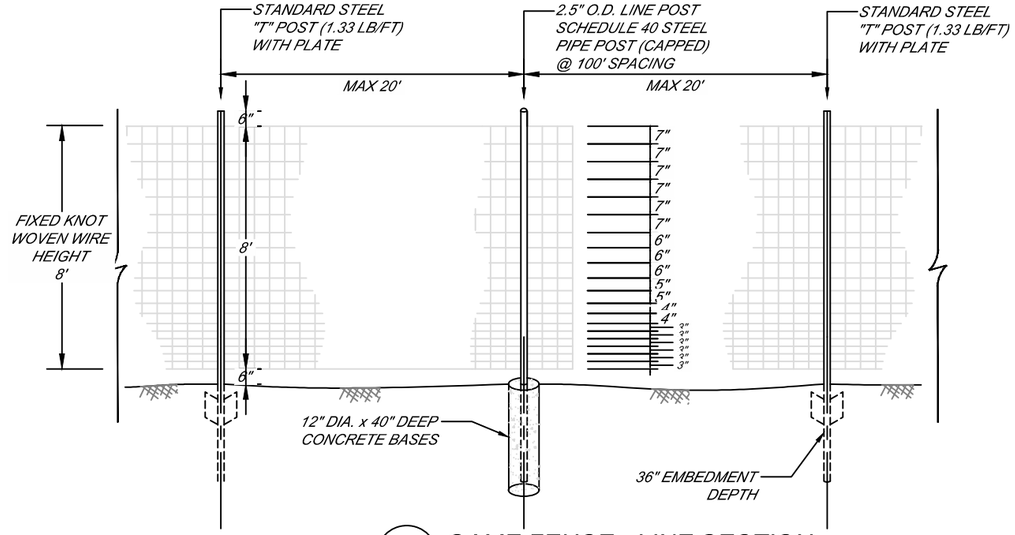


1 C-112 **DOUBLE SWING GATE**
NOT TO SCALE



2 C-112 **GAME FENCE - LINE SECTION**
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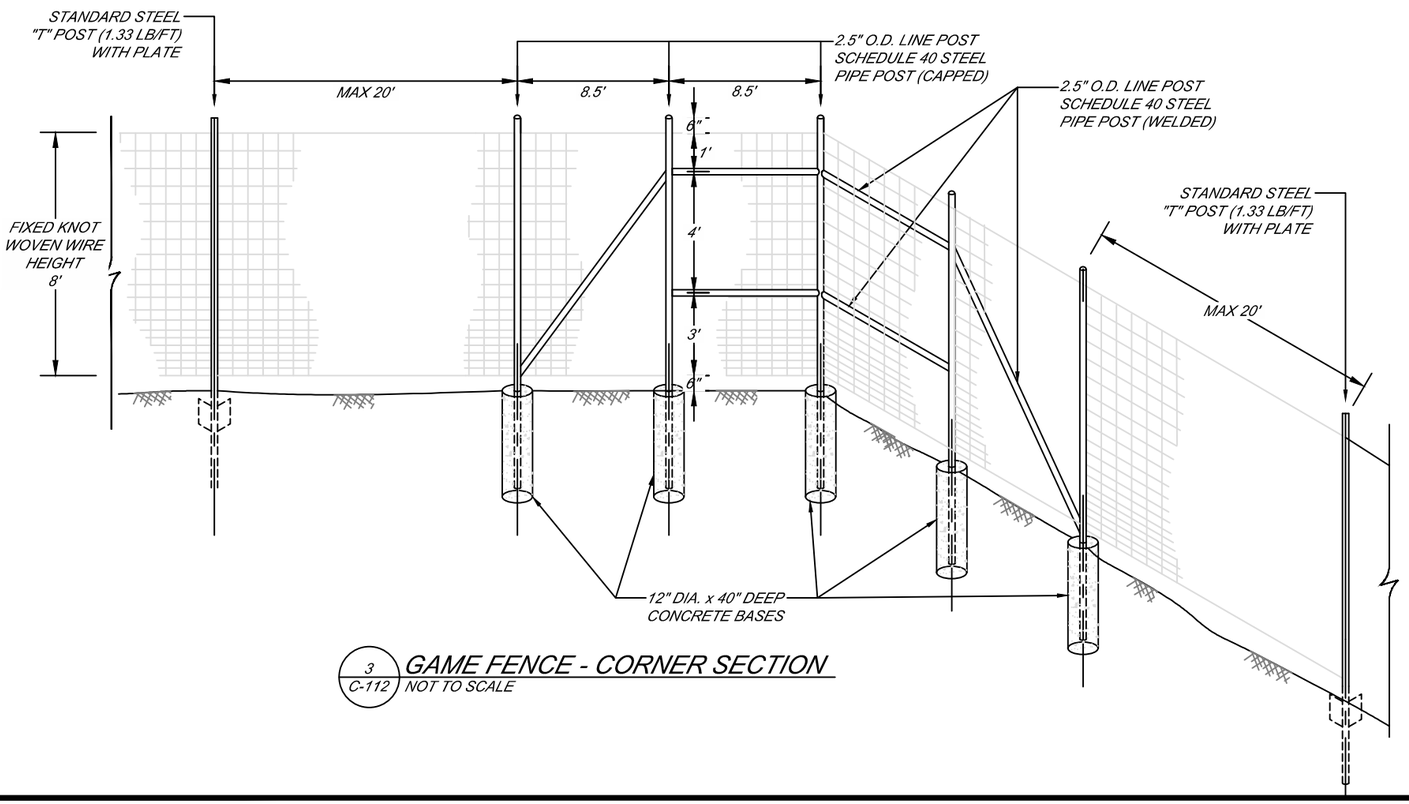

3 C-112 **GAME FENCE - CORNER SECTION**
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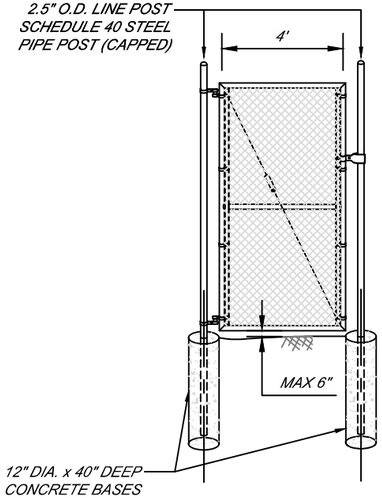

4 C-112 **WALK GATE**
NOT TO SCALE

NOTES:
1. FOR WOVEN WIRE, TOP AND BOTTOM STRANDS SHALL BE 12½ GAUGE OR HEAVIER; INTERMEDIATE STRANDS SHALL BE 14½ GAUGE OR HEAVIER.
2. ALL WIRE SHALL HAVE CLASS III GALVANIZATION.
3. STANDARD WOVEN WIRE FENCES MAY HAVE LINE POSTS SPACED UP TO 15 FEET APART. HI-TENSILE WOVEN WIRE FENCE MAY HAVE LINE POSTS SPACED UP TO 20 FEET APART. CLOSER SPACING IS REQUIRED WHERE NEEDED FOR INCLINES OR CHANGES IN TOPOGRAPHY.
4. CONCRETE FOOTINGS SHALL HAVE TOPS CROWNED.
5. TO PREVENT WIRE FROM SLIPPING ON STEEL POST, DOUBLE WRAP ALL WIRE AROUND STEEL POST OR WELD CHAIN LINK LOOPS.

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/08/2021

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WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

FENCE DETAILS	
HORIZONTAL SCALE:NTS	VERTICAL SCALE: NTS
PRINT DATE:11/8/2021	DESIGNED BY: NC
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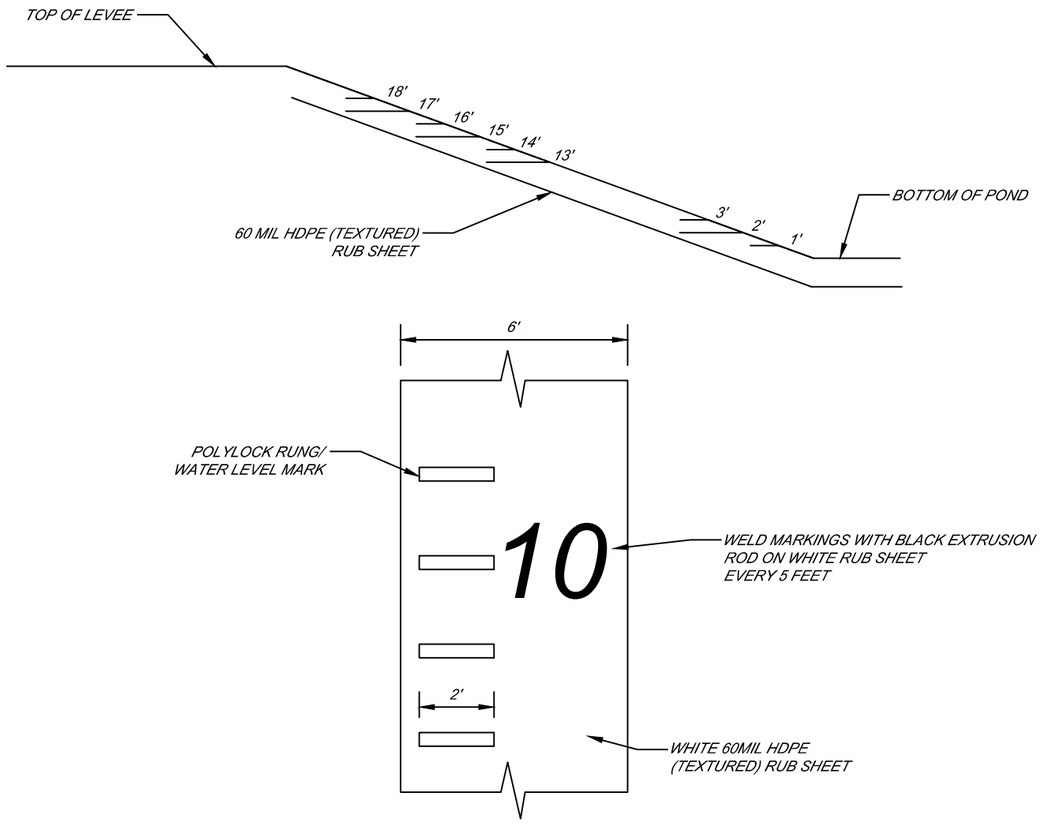
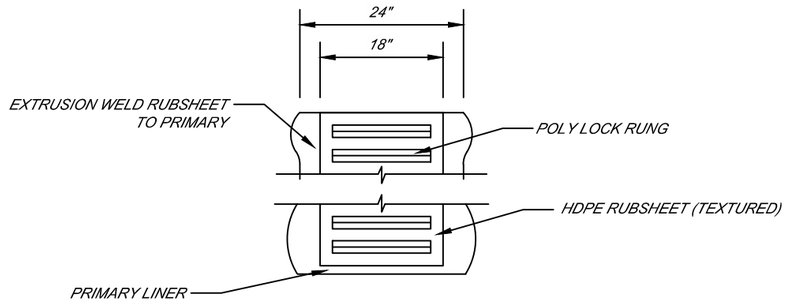
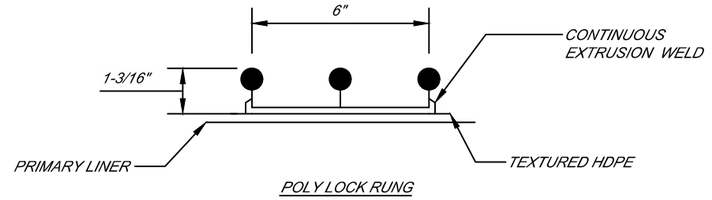


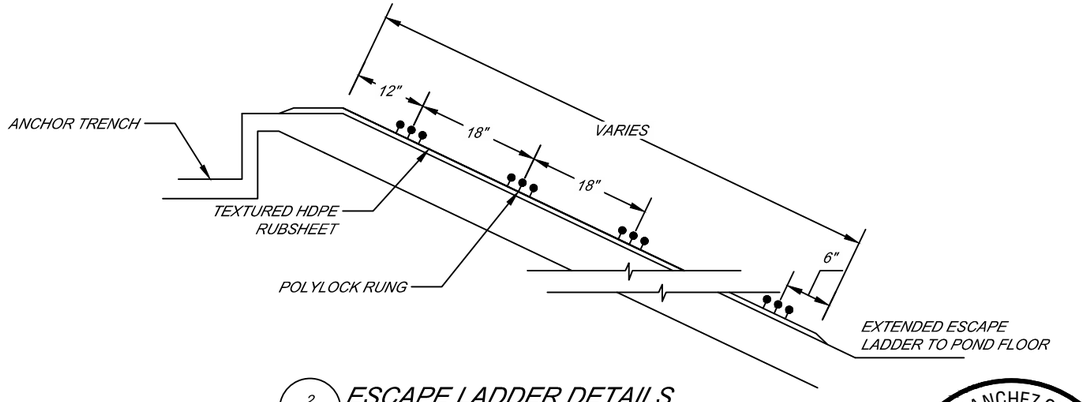
1 C-113 **WATER LEVEL MARKS**
NOT TO SCALE



ESCAPE LADDER FRONT VIEW



POLY LOCK RUNG



2 C-113 **ESCAPE LADDER DETAILS**
NOT TO SCALE

CLAUDIUS SANCHEZ CZYZEWSKA
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22897
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11/08/2021

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210 Red Cloud Road PO Box 101
Carlsbad, NM 88220

WARRIOR WATER TREATMENT AND REUSE FACILITY
S17, T25S, R36E
LEA COUNTY, NEW MEXICO
INTREPID POTASH NM LLC

ESCAPE LADDER AND GAGE DETAILS	
HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/8/2021	DESIGNED BY: NC
PROJECT NO. 21-240	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-113

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EFFECTIVE WIDE-AREA BIRD CONTROL!

Mega Blaster PRO sonic bird repeller covers 30 acres!

Mega Blaster PRO uses intermittent distress calls to create a "danger zone" that frightens infesting birds away for good.

PREDATOR cries help scare all the birds.

- NEMA Rated Case
- Crystal-Clear Digital Sounds

- *Laughing Gull*
- *Ring-Billed Gull*
- *Herring Gull*
- *California Gull*
- *Black-Headed Gull*
- *Glaucous-Winged Gull*
- *Double Crested Cormorant*
- *Marsh Hawk*

Perfect for Landfills, Airfields, Fish Farms, Farm Fields or any multi-acre facility.

Our most powerful system features two high-output amplifiers that drive our specially-designed 20 speaker tower. The intense sound output covers up to 30 acres (12 hectares).

It features solid-state electronics mounted inside a NEMA-type control box, suitable for most any application.

The generating unit mounts easily to a post or pole using the included hardware. The unit comes pre-recorded in four different configurations for the most common bird infestations.

Choose any or all of the 8 sounds, including predators to give the birds even more of a sense of danger. Customize by choosing volume and silent time between sounds.

CONFIGURATIONS AVAILABLE:

- Agricultural
  # MEGA-AG
- Crow / Raven
  # MEGA-CROW
- Woodpecker
  # MEGA-WP
- Marine / Gull
  # MEGA-MAR

Mega Blaster PRO

Complete system includes the generating unit with two built-in high-output amplifiers, 20-speaker tower with audio cables, 40 watt solar panel, battery clips and all mounting hardware.

BIRD-X

The Bird Control 'X'-Perts

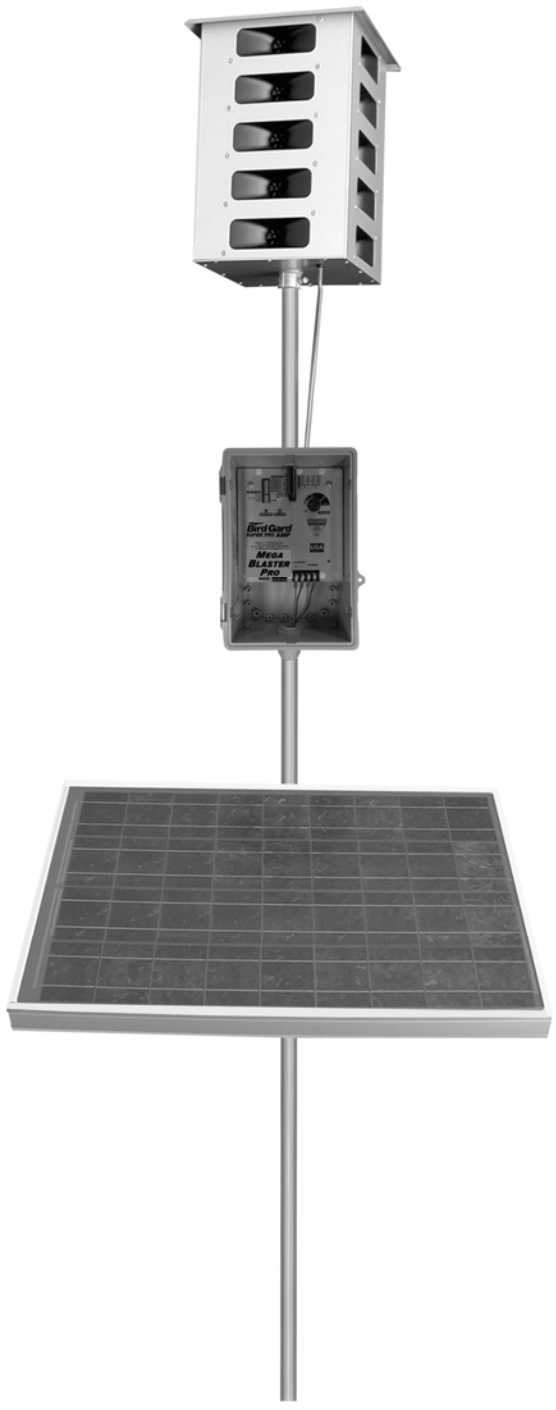
NOTE: This unit is capable of sound output up to 125 decibels. **HEARING PROTECTION IS RECOMMENDED.**

HEARING PROTECTION RECOMMENDED

MEGA BLASTER PRO

BIRD-X

User's Manual



Overview

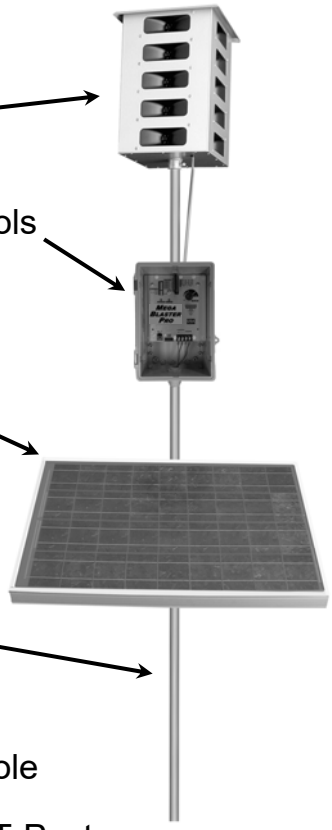
The Bird-X Mega Blaster Pro utilizes the innate power of the natural survival instincts of birds to effectively repel them. Digital recordings of distressed and alarmed birds, along with the sounds made by their natural predators are broadcast through high fidelity weather-resistant speakers over the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

Your Bird-X Mega Blaster Pro system consists of:

20-Speaker Tower broadcasts the bird sounds

Control Unit produces the bird sounds and contains all operational controls

Solar Panel recharges the 12-volt deep cycle battery



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

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

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

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

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

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

Bird Control Management Guidelines

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

For best results:

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

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

R.K. FROBEL & ASSOCIATES
Consulting Engineers

Technical Memorandum: 40-mil HDPE as Alternative Secondary Liner System for In Ground Recycling Containment Facilities

NMAC 19.15.34.12 A

I have investigated the suitability of application for 40 mil HDPE geomembrane as an equivalent secondary liner to 30 mil scrim reinforced LLDPE (LLDPEr) in the application for In Ground Recycling Containment facilities. *In summary, it is my professional opinion that the specified 40 mil HDPE geomembrane will provide a secondary liner system that is equal to or better than 30 mil scrim reinforced LLDPEr and will provide the requisite protection of fresh water, public health and the environment for many years when engineering design provides requisite site/soil/slope preparation and when used in concert with requisite primary liners and drainage layers.*

It is understood that the lining system under discussion is composed of a 60 mil HDPE Primary liner, geonet drainage layer and a 40 mil HDPE Secondary liner. *In consideration of the secondary lining system application, size of impoundment and depth, design details as well as the chemical nature of typical processed water, it is my professional opinion that the 40 mil HDPE geomembrane will provide the requisite barrier against processed water loss and will function effectively as a secondary liner.*

The following are discussion points that hopefully will exhibit the equivalency of a 40 mil HDPE secondary liner to that of a 30 mil LLDPEr.

The nature and formulation of the 40 mil HDPE resin is the same as the Primary 60 mil HDPE. The major difference is that the 40 mil HDPE is lower in thickness (more flexible and less puncture resistant). However, in covered conditions, HDPE will resist aging and degradation and remain intact for many decades. In fact, a secondary liner of 40 mil HDPE will outlast an exposed 60 mil HDPE liner. According to the Geosynthetic Research Institute (GRI) study on lifetime prediction (GRI Paper No. 6), the half life of HDPE (GRI GM 13) exposed is > 36 years and the half-life of HDPE covered or buried is greater than 100 years. It is understood that in order to ensure compliance of materials, the primary 60 mil HDPE to be used must meet or exceed GRI GM 13 Standards. Likewise, the secondary liner that is not exposed to the same environmental and chemical conditions must meet or exceed GRI GM 13 for non-reinforced HDPE. Adhering to the minimum requirements of the GRI Specifications, 40 mil HDPE when used as a secondary liner will be equally as protective as the primary 60 mil HDPE liner (reference: www.geosynthetic-institute.org/grispecs) and equally as protective as a 30 mil scrim reinforced LLDPEr liner.

Durability of Geomembranes is directly affected by exposure conditions. Buried or covered geomembranes are not affected by the same degradation mechanisms (UV, Ozone, Chemical, Stress, Temperature, etc) as are fully exposed geomembranes. In this regard, the secondary liner material and thickness can be much less robust than the fully exposed primary liner which in this case is 60 mil HDPE. This is also the case for

landfill lining systems where the secondary geomembrane in a bottom landfill cell may be 40 mil HDPE.

Thermal Fusion Seaming Requirements. Thermal seaming and QC seam test requirements for geomembranes are product specific and usually prescribed by the sheet manufacturer. Dual wedge thermal fusion welding is commonly used on HDPE and QC testing by air channel (ASTM D 5820) is fully acceptable and recognized as an industry standard. In this regard, there should be no exception requirement for seaming and QC testing as both the Primary and Secondary geomembranes are HDPE. This is fully covered in comprehensive specifications for both the Primary and Secondary geomembranes (Reference: www.ASTM.org/Standards).

Potential for Leakage through the Primary and Secondary Liners. Leakage through geomembrane liners is directly a function of the height of liquid head above any hole or imperfection. The geonet drainage media provides immediate drainage to a low point or sump and thus no hydrostatic head or driving gradient is available to push leakage water through a hole in the secondary liner. In this regard, secondary geomembrane materials can be (and usually are) much less in thickness and also polymer type. Hydraulic Conductivity through the 40 mil HDPE liner material is extremely low due to the polymer type, structure and crystallinity and exceeds requirements of EPA SW-846 Method 9090A.

Chemical Attack. Chemical attack to polymeric geomembranes is directly a function of type of chemical, temperature and exposure time. Again, the HDPE Primary provides the chemically resistant liner and is QC tested to reduce potential defects or holes. If there is a small hole, the geonet drain takes any leakage water immediately to the sump for extraction. Thus, exposure time is very limited on a secondary liner in addition to low temperature, little volume and virtually no head pressure. In this regard, a chemically resistant geomembrane material such as 40 mil HDPE can be specified for the secondary and is a fully acceptable alternate to 30 mil scrim reinforced LLDPEr.

Mechanical Properties Characteristics. Geomembranes of different polymer and/or structure (i.e., reinforced vs non-reinforced) cannot be readily compared using such characteristics as tensile stress/strain, tear, puncture and polymer requirements. For a 40 mil HDPE liner material to function as a Secondary liner it should meet or exceed the manufacturers minimum requirements for Density, Tensile Properties, Tear, Puncture as well as other properties such as UV resistance. The sheet material must also meet or exceed GRI GM 13 minimum requirements. *In this regard, a 40 mil HDPE will be equivalent to a 30 mil LLDPEr as a secondary liner for the conditions listed below:*

- *The subgrade or compacted earth foundation will be smooth, free of debris or loose rocks, dry, unyielding and will support the lining system.*
- *The side slopes for the containment shall be equal to or less than 3H:1V.*
- *The physical properties and condition of the subgrade or liner foundation*

(i.e., density, slope, moisture) will be inspected and certified by a Professional Engineer that it meets or exceeds specification requirements.

- *Immediately prior to installation, the installation contractor shall inspect and sign off on the subgrade conditions that they meet or exceed the HDPE manufacturer and installers requirements.*
- *A protective geotextile will be placed on the finished and accepted subgrade between subgrade and the 40 mil HDPE Secondary liner.*
- *A 200 mil geonet will be placed over the 40 mil HDPE Secondary Liner.*
- *A 60 mil HDPE Primary liner will be placed over the 200 mil geonet drainage layer.*

If you have any questions on the above technical memorandum or require further information, give me a call at 720-289-0300 or email geosynthetics@msn.com

Sincerely Yours,

R K Frobel

Ronald K. Frobel, MSCE, PE

References:

NMAC 19.15.34.12 A DESIGN AND CONSTRUCTION SPECIFICATIONS FOR A RECYCLING CONTAINMENT

Geosynthetic Research Institute (GRI) Published Standards and Papers 2017
www.geosynthetic-institute.org

ASTM Geosynthetics Standards 2017
www.ASTM.org/Standards

SOLMAX

Mustang Extreme

December 9, 2019

Attn: Mr. Steven Roeder
Re: 40 mil HDPE Geomembrane – Hydraulic Conductivity

Dear Mr. Roeder:

Hydraulic Conductivity of HDPE geomembranes can be indirectly obtained through ASTM E96 method (Designing with Geosynthetics, page 437, fifth edition – Robert Koerner).

Based on our test results and the method pointed out in the above reference, it can be concluded that Solmax HDPE geomembranes have a typical Hydraulic Conductivity no higher than 10^{-12} cm/s

Should you need further information, please do not hesitate to contact us.

Sincerely,

Mauricio Ossa
Senior Technical Manager
Houston- Texas

T +1 800 435-2008

GSE ENVIRONMENTAL, LLC | A SOLMAX COMPANY
19103 GUNDLE ROAD, HOUSTON, TX 77073, USA

SOLMAX.COM

SOLMAX

Solmax Reflective HDPE Specification

HDPE 40 mils Smooth Geomembrane Properties

Tested Property	Test Description	Test Method	Unit	Test Value[2]
Thickness	Min. Average	ASTM D5199	mils	40
	Min.	ASTM D5199	mils	36
Resin Density	-	ASTM D1505	g/cm^3	≥ 0.932
Sheet Density	-	ASTM D1505	g/cm^3	≥ 0.940
Carbon Black Content[4]	-	ASTM D4218	%	2.0-3.0
Carbon Black Dispersion[5]	-	ASTM D5596	Category	1 & 2
OIT – Standard	Average	ASTM D3895	min	100
Tensile Properties[1]	Min. Average	ASTM D-6693		
Strength at Yield			ppi	84
Elongation at Yield			%	13
Strength at Break			ppi	162
Elongation at Break			%	700
Tear Resistance	Min. Average	ASTM D1004	lbf	28
Puncture Resistance	Min. Average	ASTM D4833	lbf	80
Dimensional Stability	-	ASTM D1204	%	±2
Stress Crack Resistance	SP-NCTL	ASTM D5397	hours	500
Oven Aging[6]	% retained after 90 days	ASTM D5721		
HP-OIT	Min. Average	ASTM D5885	%	80
UV Resistance[7]	% retained after 1600 hours	ASTM D7238		
HP-OIT	Min. Average	ASTM D5885	%	50
Color	Topside	-	-	White

DESIGN/CONSTRUCTION PLAN

Design and Construction Plan In Ground Containments

This plan addresses construction of the earthen containments.

Magrym Engineers is providing the design of the containment and their plans are presented in this submission.

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

Dike Protection and Structural Integrity

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

Stockpile Topsoil

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

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

Signage

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

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

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

Fencing

The operator will provide for a fence to enclose the recycling containment in a manner that deters unauthorized wildlife and human access. As specified in the transmittal letter and design drawings, the operator will employ a chain-link or game fence rather than a four foot, four-strand wire fence Because feral pigs, javelina and deer are present in the area, a chain link or game fence is required in order to comply with Section 19.15.34.12 D.1 of the Rule. The specification for fencing provided in 19.15.34.12 D.2 contradicts D.1 because pigs will move beneath the lower strand of a 4-strand, 4-foot high barbed wire fence and deer will jump over. Thus, compliance with D.2 results in a violation of D.1. Compliance with D.1 is the critical component of the Rule and operators need not submit a variance request in order to follow Best Management Practices and comply with the Rule.

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

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

Netting and Protection of Wildlife

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

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

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

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

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

Earthwork

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

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

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

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

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

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

Liner and Drainage Geotextile Installation

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

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

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

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

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

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

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

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

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

slope's toe.

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

vii. avoid excessive stress-strain on the liner

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

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

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

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

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

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

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

Leak Detection and Fluid Removal System Installation

The leak detection system, contains the following design elements

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

OPERATIONS AND MAINTENANCE PLAN

CLOSURE PLAN

Operation and Maintenance Plan
In Ground Containments

Overview

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

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

The operation of the containment is summarized below.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Monitoring, Inspection, and Reporting Plan

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

Weekly inspections consist of:

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

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

Monthly, the operator will:

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

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

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

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

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

Freeboard and Overtopping Prevention Plan

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

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

I. Cease discharging produced water to the containment.
II. II. Accelerate re-use of the produced water for purposes approved by the Division.
III. Transfer produced water from the containment to injection wells.

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

Protocol for Leak Detection Monitoring, Fluid Removal and Reporting

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

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

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

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

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

Closure Plan
In Ground Containments

Overview

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

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

The operator shall substantially restore the impacted surface area to

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

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

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

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

Excavation and Removal Closure Plan – Protocols and Procedures

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

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

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

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

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

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

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

Reclamation and Re-vegetation

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

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

Closure Documentation

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

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

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

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

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

November 2021

C-147 Registration for Warrior Containments

Section 17 T25S R36E, Lea County NM

Volume 2:

Survey and Driving Directions
Siting Criteria Demonstration and Appendices

View south-southeast from near the southern edge of the two proposed in-ground containments

Prepared for:
Intrepid Potash NM LLC
Carlsbad, NM

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

INTREPID WARRIOR

LOCATION MAP
SECTION 27, T25E, R35E
N.M.P.M., LEA COUNTY, NEW MEXICO

DRIVING DIRECTION

- STARTING AT HIGHWAY NM-128 MILE 47
- HEAD WEST ON NM-128 APPROXIMATELY 680 FEET
- TURN LEFT ON UNNAMED LEASE ROAD
- HEAD SOUTH APPROXIMATE 0.65 MILES
- TURN RIGHT AT UNNAMED LEASE ROAD
- HEAD WEST APPROXIMATLY 0.32 MILE
- PROJECT AREA STRAIGHT AHEAD

NO.	REVISION	DATE

JOB NUMBER: LS21080933A

DWG NUMBER: LS21080933A-LOC

RRC ENERGY SERVICES, LLC.
20308 FRANKIE LANE, PLUGERVILLE, TX 78660
FIRM REG. NO: TEXAS-10194422, NEW MEXICO-4655451

SCALE:	1" = 1000'
DATE:	9/16/2021
SURVEYED BY:	L.C.
DRAWN BY:	J.A.E.
APPROVED BY:	P.G.O.
SHEET:	2 OF 2

S:\PROJECTS\2021\08\LS21080933A - MAGRYM - LEGER HEAD & WARRIOR\DWG\PLATS\WARRIOR\WARRIOR-Thursday, September 16, 2021

GENERAL SITING CRITERIA DEMONSTRATION AND SITE-SPECIFIC GROUNDWATER DATA

Distance to Groundwater

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

Figure 1 is a geologic/ topographic map that shows:

1. The Warrior Containment area identified by the red polygon and the Lager Head Containment as the turquoise rectangle. Within these 40+ acre areas will be the proposed in-ground containment identified in the C-147 registration and AST Containments described in the permit application.
2. Water wells from the OSE database as a blue triangle inside colored circles that indicate well depth. OSE wells are often mislocated in the WATERS database as older wells are plotted in the center of the quarter, quarter, quarter, of the Section Township and Range. Additionally, the OSE database can include locations of proposed wells (i.e. permit applications). The permit data generally show "no date" and "DTW=0" as data. Figure 1 has screened the OSE data and eliminated permit information from Figure 1. Some wells are grossly mis-located.
3. Water wells from the USGS database as large triangles color-coded to the formation from which the well draws water.
4. Water wells, which are not documented in the public databases but were identified by field inspection or other published reports as colored squares.
5. The depth-to-water from the most recent available measurement for each well is provided adjacent to the well symbol.

Note that CP-01305 (southeast of Lager Head) is plotted using the Lat/Long on the OSE well record but the actual location provided on the log is 25S 37E Section 31.41, which is about 12 miles east. We examined Google Earth and conducted a foot survey and this well is not located as shown on Figure 1.

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

1. The Warrior and Lager Head Containment areas identified by the red polygon and turquoise rectangle respectively with the surface elevation noted.
2. Water wells measured by the USGS, the year of the measurement and the calculated elevation of the groundwater surface.
3. Water wells measured by professionals and documented in published reports or by staff of Hicks Consultants (Misc.) .
4. Isocontour lines displaying the elevation of the groundwater surface.

Geology

Quaternary Age eolian and piedmont deposits (Qe/Qp on Figures 1 and 2a) are the dominant exposed material in the area. These deposits are a thin covering of the underlying Triassic upper Chinle Formation (Tr cu) that is exposed in the northeast corner of Figure 2a. In the southwest corner of the Figure, the Ogallala Formation is exposed and thus we surmise that in the western area of Figure 2a, the Quaternary deposits are also a thin covering over the Tertiary Ogallala.

The redbeds of the upper Chinle (aka Dockum Group) are dominantly red clay/silt with interbedded thin sandstone units that can transmit usable groundwater. The base of the Chinle is the Santa Rosa Sandstone and is the principal bedrock aquifer of the area. The Ogallala Formation (To) consists primarily of sand with some clay, silt and gravel, generally capped by caliche. What appears to be a relatively thin caliche horizon is exposed at an abandoned quarry site located about 1/4 mile southeast. A 10 to 20-foot thick caliche horizon underlies the Warrior location. About ½ mile east-northeast of the location an active quarry exposes more than 20-feet of caliche.

Based on information from Ground-Water Report 6 (GWR-6) *Geology and Ground-Water Conditions in Southern Lea County, New Mexico* by Alexander Nicholson and Alfred Clebsch (1961), the top of the redbeds (upper Chinle Formation) in the area of the Warrior containment is about 3000 feet above sea level (see Plate 2b), which corresponds to a depth from ground surface of about (3120-3000=) 120 feet. Because groundwater elevation at the Warrior site is about 2860 feet asl, the base of Quaternary and/or Tertiary deposits are higher than groundwater, and therefore not saturated. However, within and near the Javalina Basin area in the southeast corner of Figure 2b, the redbed upper surface forms a steep-sided geologic basin and here the alluvium is saturated.

Saturated alluvium does not appear to exist within or near "Dogie Draw" on Figure 2b, which is mapped as Antelope Draw on recent USGS topographic maps and Figure 2a. Groundwater elevations of wells within the draw conform to the elevations observed in the Chinle aquifer.

At the Lager Head location, the elevation of the top of the redbeds is about 3140 feet asl and the groundwater elevation is about 2900 feet asl, 240 feet lower than the top of the redbeds. Here too the Tertiary and/or Quaternary deposits are unsaturated.

The Appendix Well Logs contains several driller's logs from the OSE files. While the logs support a conclusion that groundwater is below the alluvial fill mapped by Nicholson and Clebsch, the description of the lithology of various horizons do not.

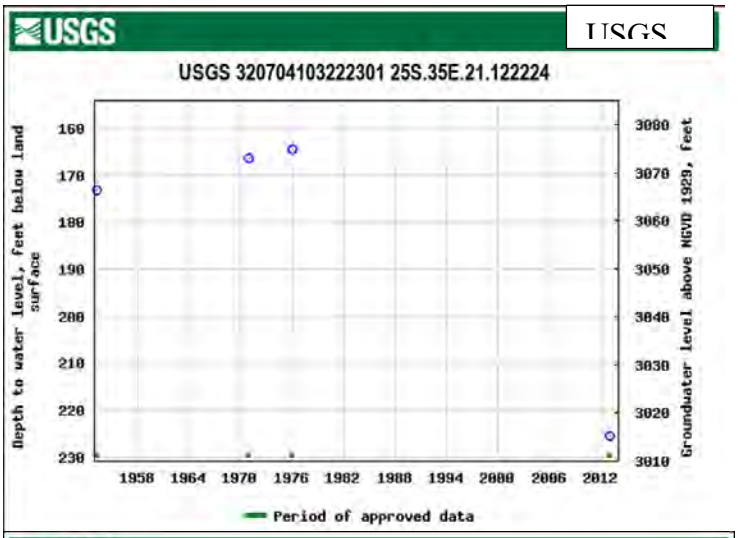
Topographically, the area around the containment area slopes gently to the northeast toward Antelope Draw.

Groundwater Data

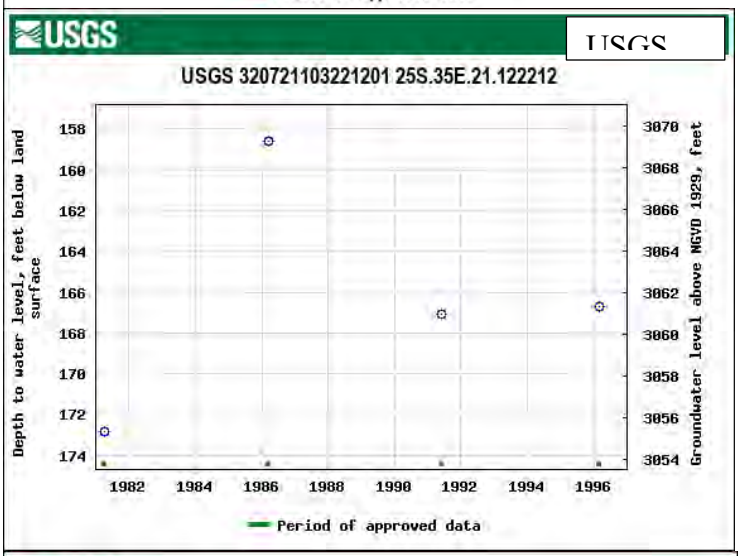
We relied upon the most recent data measured by the USGS and published data to create the water table elevation map shown in Figure 2a and 2b. Water level data from the OSE database rely upon observed water levels by drillers during the completion of the water well. The OSE dataset provides some useful data in certain areas but were not used to generate groundwater elevations for these Figures. Based upon our field survey and examination of Google Earth images, we are confident that the wells shown Figure 2 are located within ¼ mile of the plotted point.

Groundwater levels across the area shown in Figure 2 have declined by 50 feet since the 1990s.

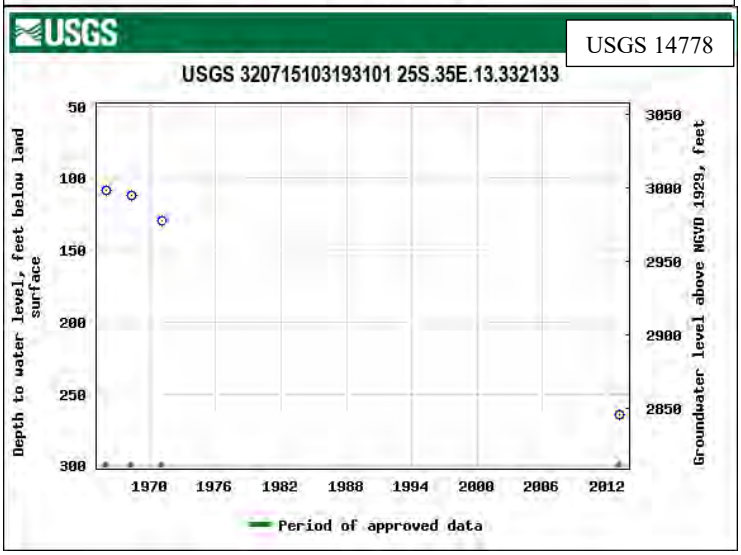
Historic groundwater elevation data are for USGS well 14775 (northwest of Lager Head location), is presented to the right. The 2012 reading is 50 feet lower than the previous 4 measurements. We measured depth to groundwater at a well that believe is USGS 14775 or an adjacent well. The depth to water was 200.25 feet. We saw no evidence of pumping and we believe water levels in this well have declined by about 50 feet.



We believe that well USGS 14762 is the same well as 14775. The data show similar water levels over the time of record that ends in 1996.

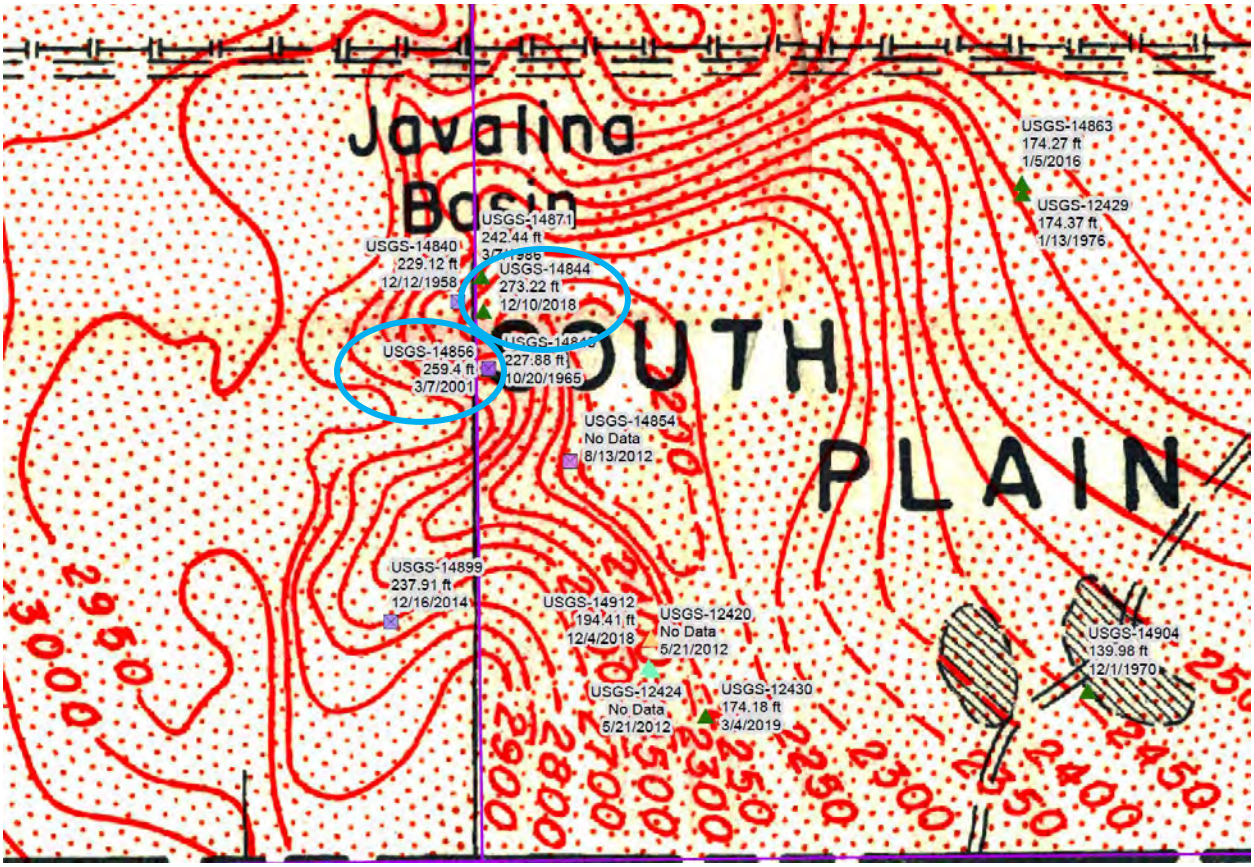


Well USGS 14778 is between the Warrior and Lager Head locations, about 2.5 miles west of Warrior. The historic data also show a 50+ foot decline in 2012 relative to earlier observations3a



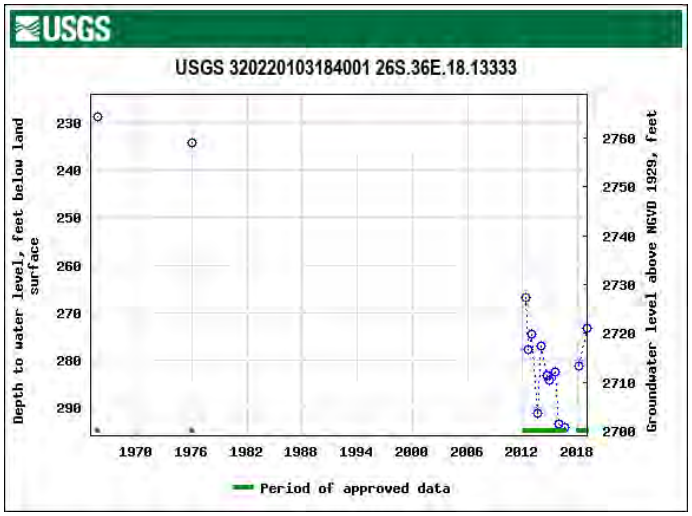
A 50-foot decline in groundwater elevation in this area was surprising. The Chinle bedrock aquifer that underlies the containments is hydraulically connected to the Jal Basin, which l is defined by the Office of the State Engineer as the area of thick alluvial sediments where subsidence

and erosion have caused the top of the redbeds to form a geologic basin as shown in the inset below.

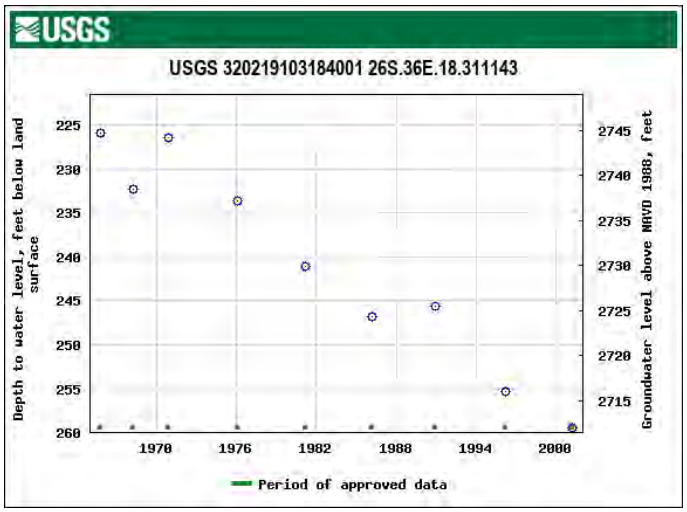


We suspected large withdrawals from this basin by Texas and/or other users could be responsible for the observed decline in groundwater elevation shown in the bedrock wells presented above. We examined historic water levels for two USGS wells within the northwest Jal Basin. These two wells are within the turquoise circle of the inset above.

The historic water levels for USGS 14844 are presented to the right. Water levels from about 1966 and 1976 are about 2760 feet ASL. Water levels from 2012-2016 are about 45 feet lower as shown in the graph. The 20-foot variation in groundwater levels is probably related to pumping to meet demand for Jal and hydraulic stimulation of nearby oil wells.



Groundwater levels for the nearby well USGS 14856 are presented to the right. This graph shows a relatively steady decline of the water table of about 25 feet between 1976 to 2001. As mentioned above, in USGS-14844, water levels declined about 45-feet between 1976 and 2018. Considering the data from both graphs and the proximity of both wells, we surmise that groundwater levels declined by 25 feet between 1976 and 2001 (1 foot/year) and by an additional 20 feet between 2001 and 2015 (1.4 ft/year).



The City of Midland began pumping water from the Jal Basin on or about 2013. The observed water level decline from 1976 to 2013 is caused by others, but clearly impacted water levels near the Warrior and Lager Head locations.

For the potentiometric surface map (Figure 2), we honored all data that we know are accurate to the best of our knowledge. We employed the most recent data and generally subtracted 50 feet from data prior to 2000. From the data presented, we conclude:

- The elevation of the groundwater surface beneath the area in which the Warrior Containment will be constructed is about 2890 feet above mean sea level.
- At the Lager Head location, groundwater elevation is about 2900 feet ASL.
- Surface elevation at Warrior is about 3120 and at Lager Head, ground surface is about 3195.
- As discussed above, at both locations the elevation of the redbed surface (Figure 2b) is higher than groundwater elevation. Thus, there is no water table aquifer present beneath the sites.
- At the Warrior site, the distance between the bottom of the proposed containment (about 3100 feet) and the potentiometric surface is (3100-2890=) 210 feet
- At the Lager Head site, the distance between the bottom of the proposed containment (about 3185 feet) and the potentiometric surface is (3185-2900=) 285 feet

Distance to Municipal Boundaries and Fresh Water Fields

Figure 3 demonstrates that the Warrior and Lager Head locations are not within incorporated municipal boundaries or within defined municipal fresh water well fields covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- The closest municipality is Jal, NM approximately 5 miles to the east of Warrior and about 5 miles east of the Warrior location and 9 miles east of Lager Head.
    - The closest public well fields belong to the City of Jal. One is within Jal and the second is about 7 miles southwest of Jal and more than 4 miles from the Warrior and Lager Head facilities.

Distance to Subsurface Mines

Figure 4 and our general reconnaissance of the Warrior area demonstrate that the nearest mines are caliche pits. This location is not within an area overlying a subsurface mine.

- The nearest mapped caliche pit is operated by Intrepid and is about 1500 feet northeast of the recycling project area.
- There are no subsurface mines in the area shown in Figure 4.

Distance to High or Critical Karst Areas

Figure 5 shows the Warrior and Lager Head recycling project areas are not within mapped zone of high or critical with respect to BLM Karst areas.

- The proposed containments are located within a "low" potential karst area.
- The nearest "high" or "critical" potential karst area is located approximately 18 miles west of the Lager Head site and 23 miles west of the Warrior site.
- We observed no evidence of solution voids or unstable ground near the site during the field inspection.

Distance to 100-Year Floodplain

Figure 6 demonstrates that the Warrior and Lager Head recycling project areas is within Zone D as designated by the Federal Emergency Management Agency with respect to the Flood Insurance Rate 100-Year Floodplain.

- FEMA describes the location as an area with possible but undetermined flood hazards. No flood hazard analysis has been conducted.
- Our field inspection and examination of the topography permits a conclusion that the location is not within any floodplain and has low risk for flooding.
- The nearest mapped flood hazard lies within the City of Jal

Distance to Surface Water

Although Figures 7a and 7b show intermittent streams mapped by the USGS near the proposed Warrior recycling area, the site visit and photographs demonstrate that the area of interest is not within 300 feet of a continuously flowing watercourse or 200-feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark) or spring.

The maps depict a USGS "intermittent stream" along the western boundary of the Warrior site and near the northeast corner of the site. We walked these areas and found no evidence of a stream or any drainage channel with a defined bed and bank.

About ½ mile north of the northern boundary of the Warrior recycling project area is the first of three excavated stock tanks in the mapped watercourse that is east of the Warrior recycling project area. We suggest that the capture of stormwater by these impoundments may be the reason that we observed no bed, bank or any evidence of water flow in the channel east of the recycling project area.

We conclude:

- No continuously-flowing watercourses, significant watercourse or other water bodies, as defined by NMOCD Rules, exist within the prescribed setback criteria for the siting of a recycling containment.
- No springs were identified in Figure 7 or in the site visit.
- No playa lakes or lakebeds were identified by the site visit or databases.
- The area is characterized by low sand dunes that are stabilized by vegetation and lack of watercourses is typical of such geomorphology.

Distance to Permanent Residence or Structures

Figure 8 and the site visit demonstrates that the location is not within 1000 feet from an occupied permanent residence, school, hospital, institution, church, or other structure in existence at the time of initial application.

- The nearest structures are
  - A lease road along the southern boundary of the recycling project area
  - An active SWD well forms the northeastern boundary of the area
- No residences or other structures are in the area.

Distance to Non-Public Water Supply

Figures 1 and 7 demonstrates that the Warrior recycling project is not within 500 horizontal feet of a spring or fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.

- Figure 1 shows the locations of all area water wells, active or plugged.
- The nearest water well is the East windmill, which is used for stock, located about 750 feet northwest of the area of interest
- There are no domestic water wells located within 1,000 feet of the area of interest.
- No springs were identified within the mapping area (see Figure 7)

Distance to Wetlands

Figure 9 demonstrates the Warrior location is not within 300 feet of wetlands.

- The nearest designated wetland from the northern boundary of the recycling project, where the containments are located, is a “freshwater pond” located approximately ½ mile to the north. This is an excavated stock tank within a tributary of Antelope Draw
- About ½ mile south of the project area is another excavated stock tank in the same tributary.
- Natural wetlands (freshwater ponds) are not observed in the area.

FIGURES

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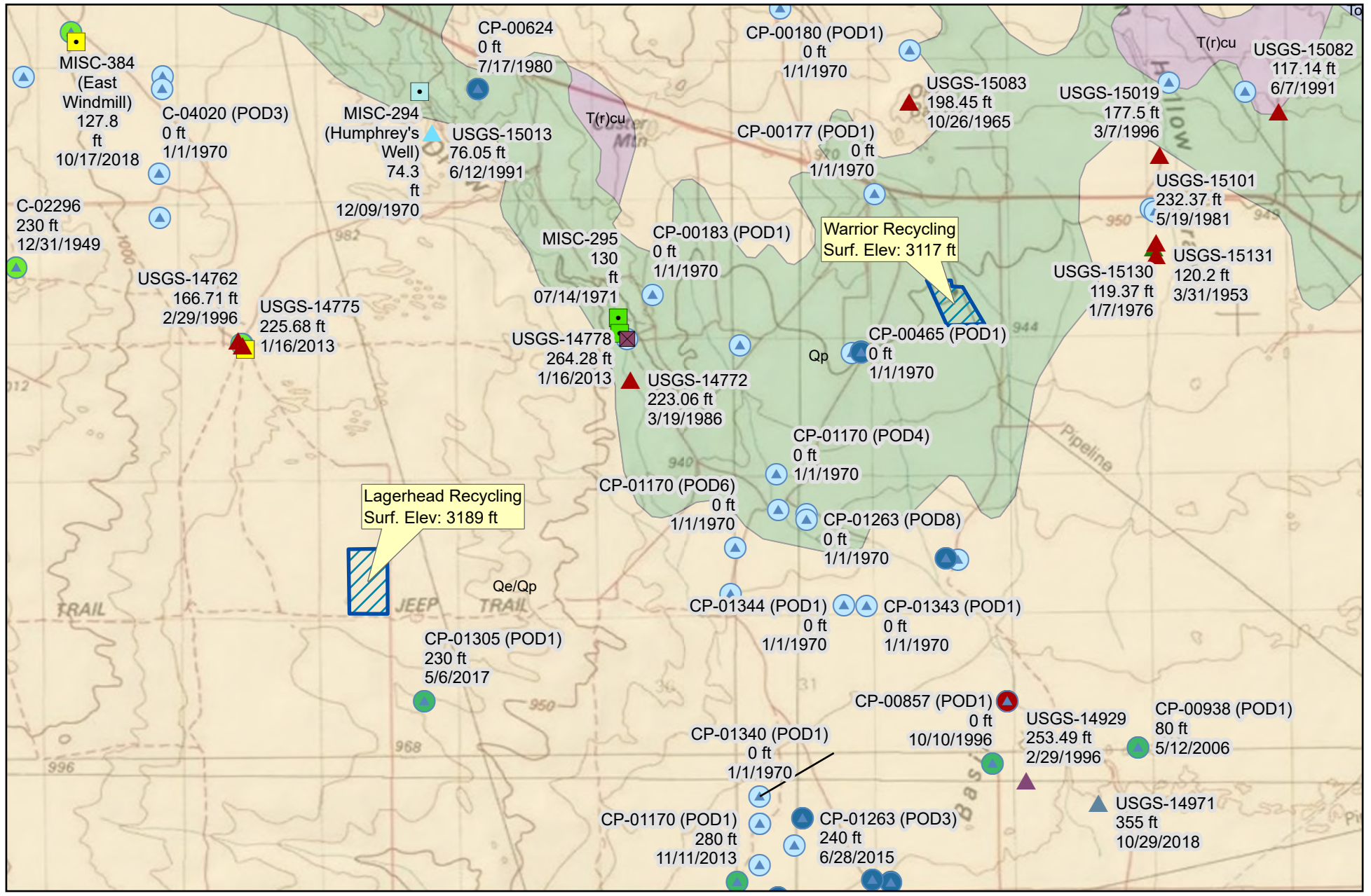

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Geology and Groundwater Elevation Intrepid Potash NM Warrior & Lager Head Containment	Figure 1 Sept. 2021

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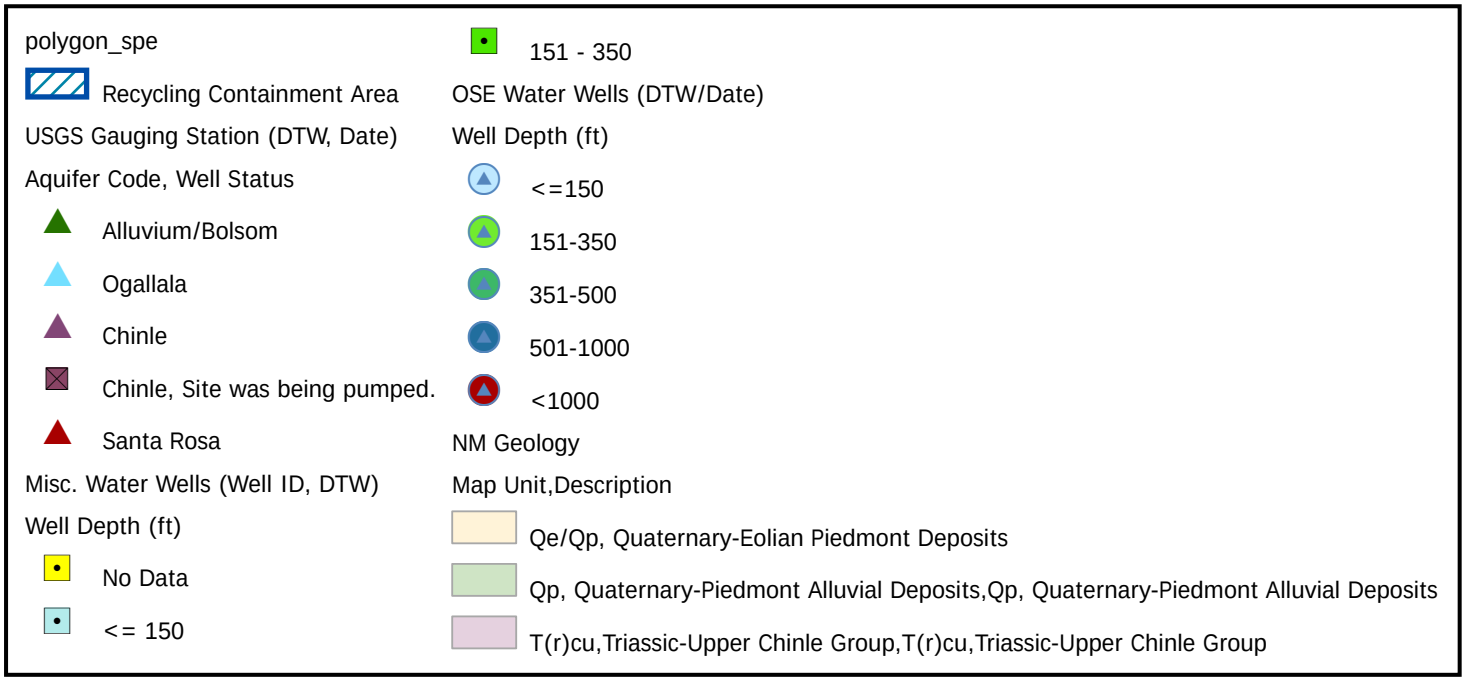

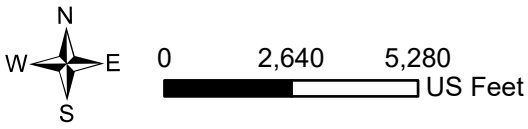

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Geology and Water Wells Intrepid Potash NM Warrior & Lager Head Containment	Figure 1 Sept. 2021

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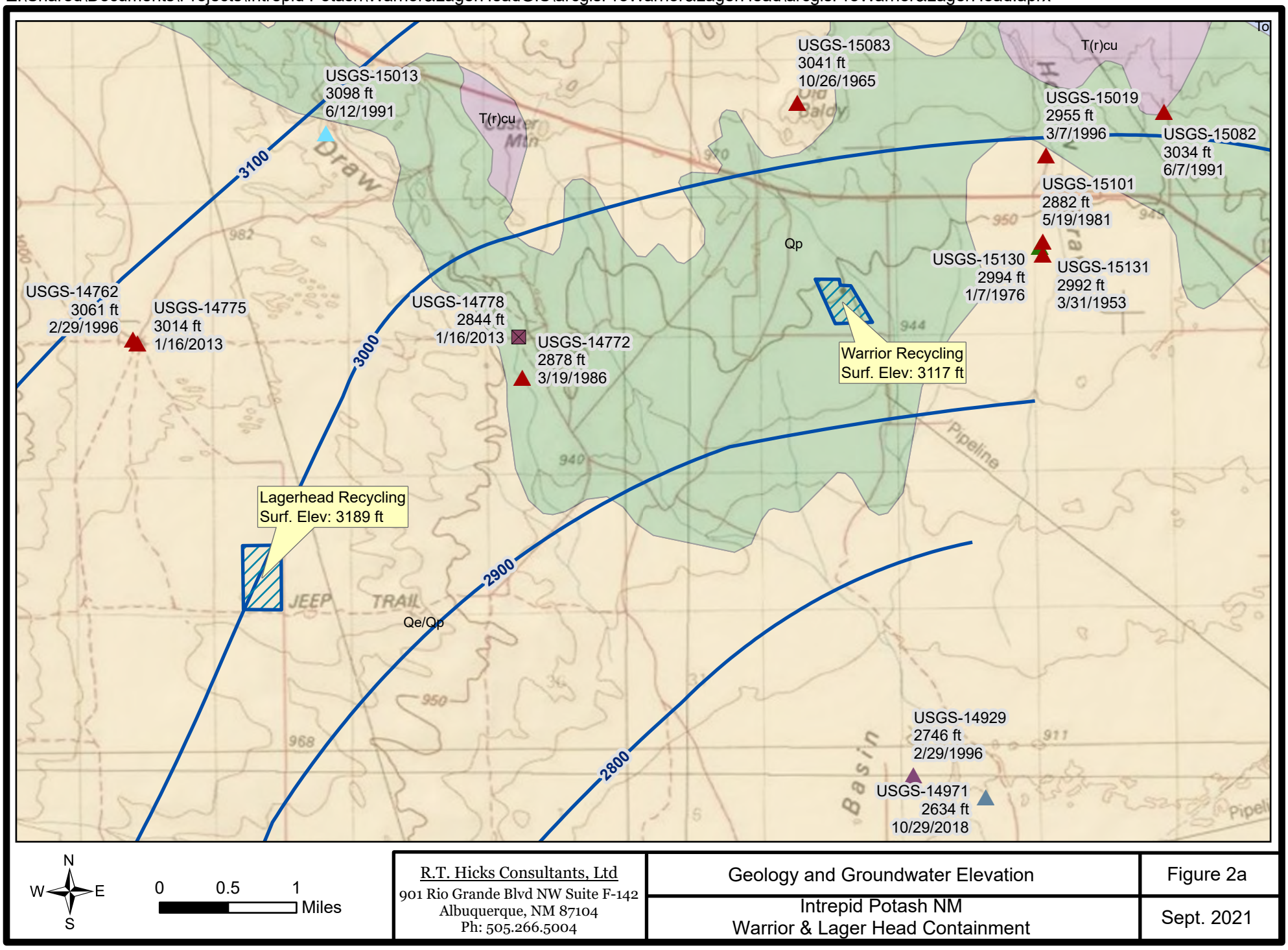

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Geology and Groundwater Elevation	Figure 2a
	Intrepid Potash NM Warrior & Lager Head Containment	Sept. 2021

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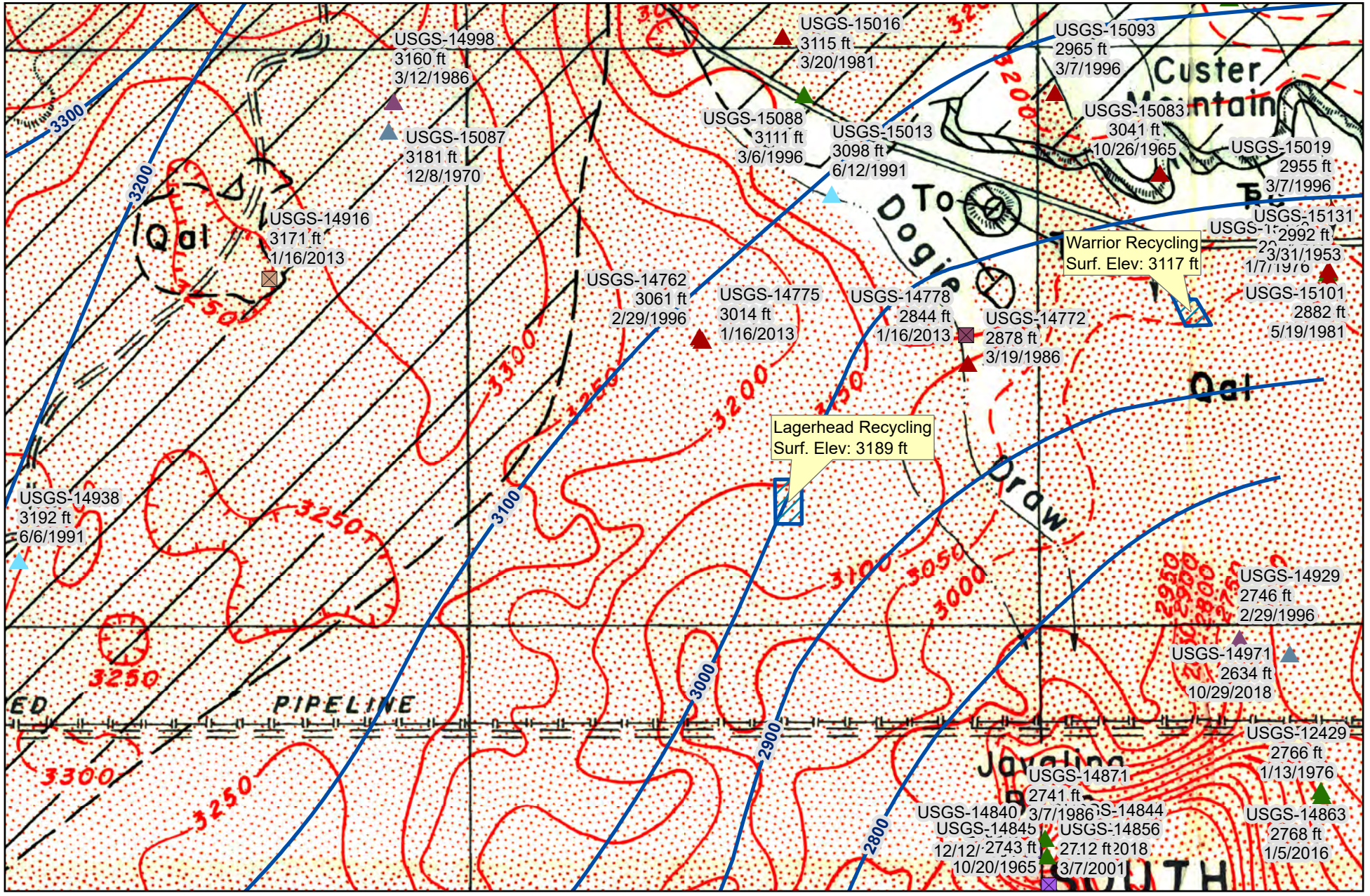

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0 1 2 Miles

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Groundwater Elevation & Red Bed Elevation	Figure 2b
	Intrepid Potash NM Warrior & Lager Head Containment	Sept. 2021

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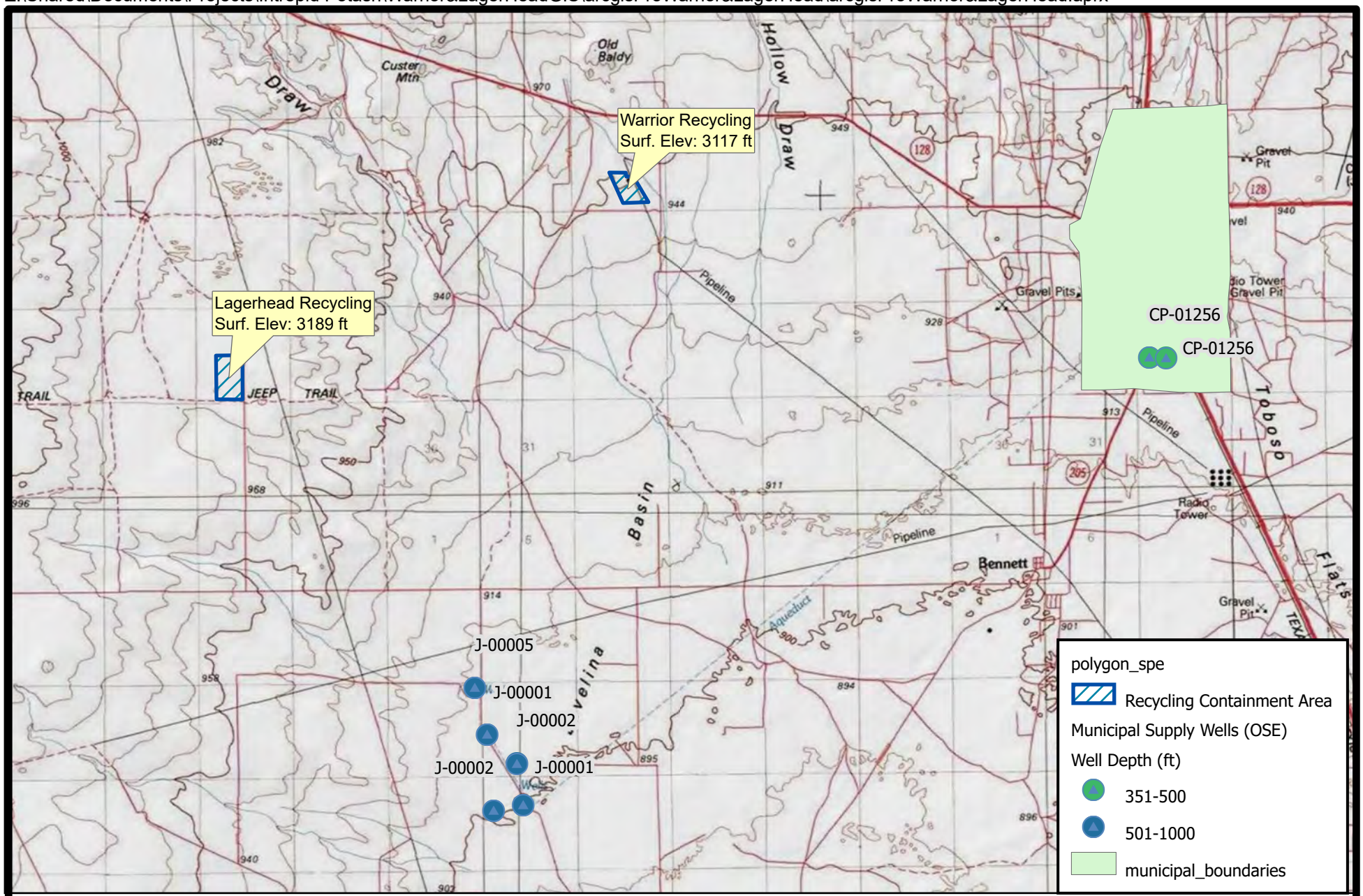

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Albuquerque, NM 87104
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Municipalities and Fresh Water Well Fields

Figure 3

Intrepid Potash NM
Warrior & Lager Head Containment

Sept. 2021

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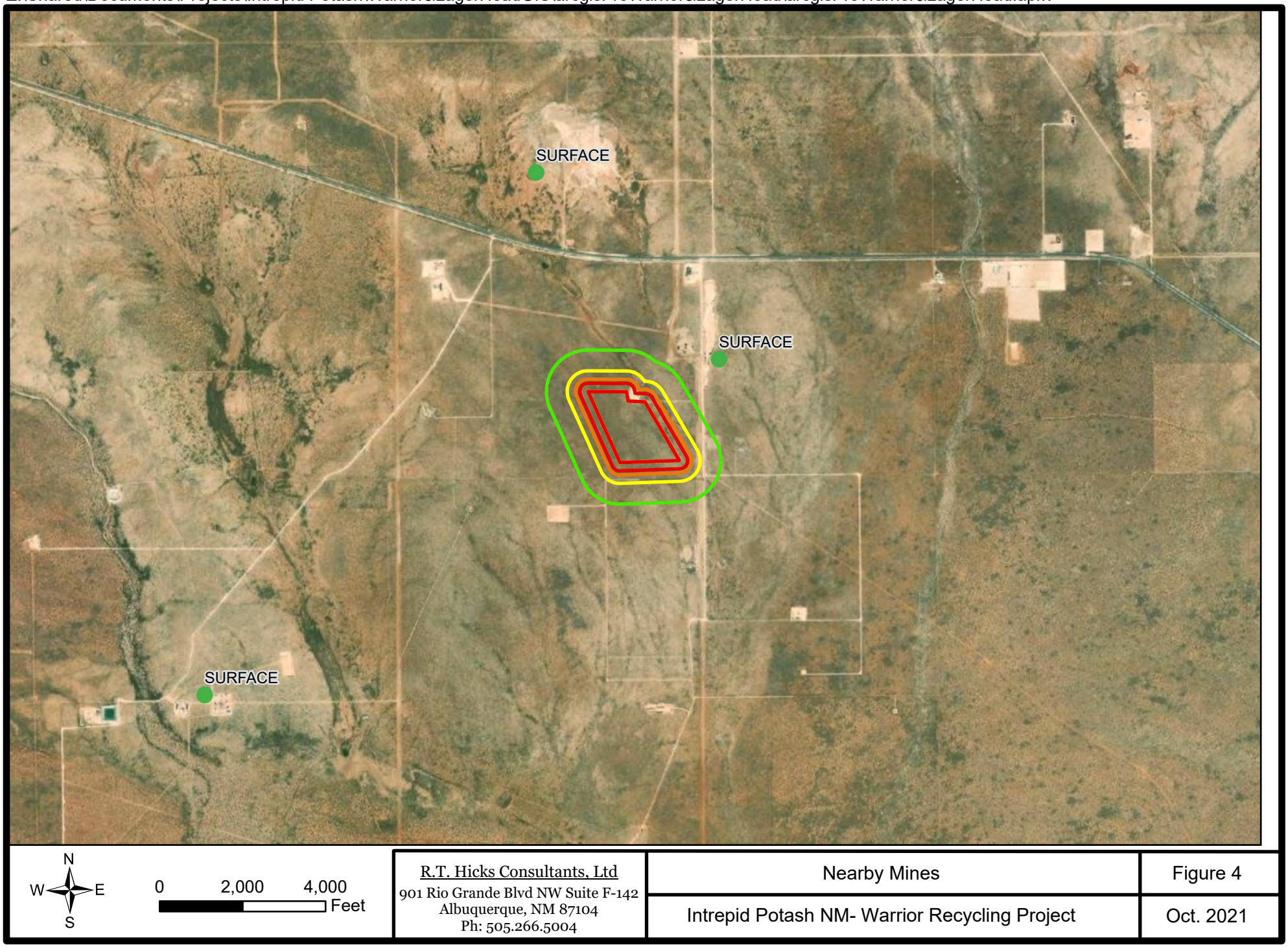

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Mines	Figure 4
	Intrepid Potash NM- Warrior Recycling Project	Oct. 2021

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Distance to Mapped High Karst

Figure 5

Intrepid Potash NM
Warrior & Lager Head Containment

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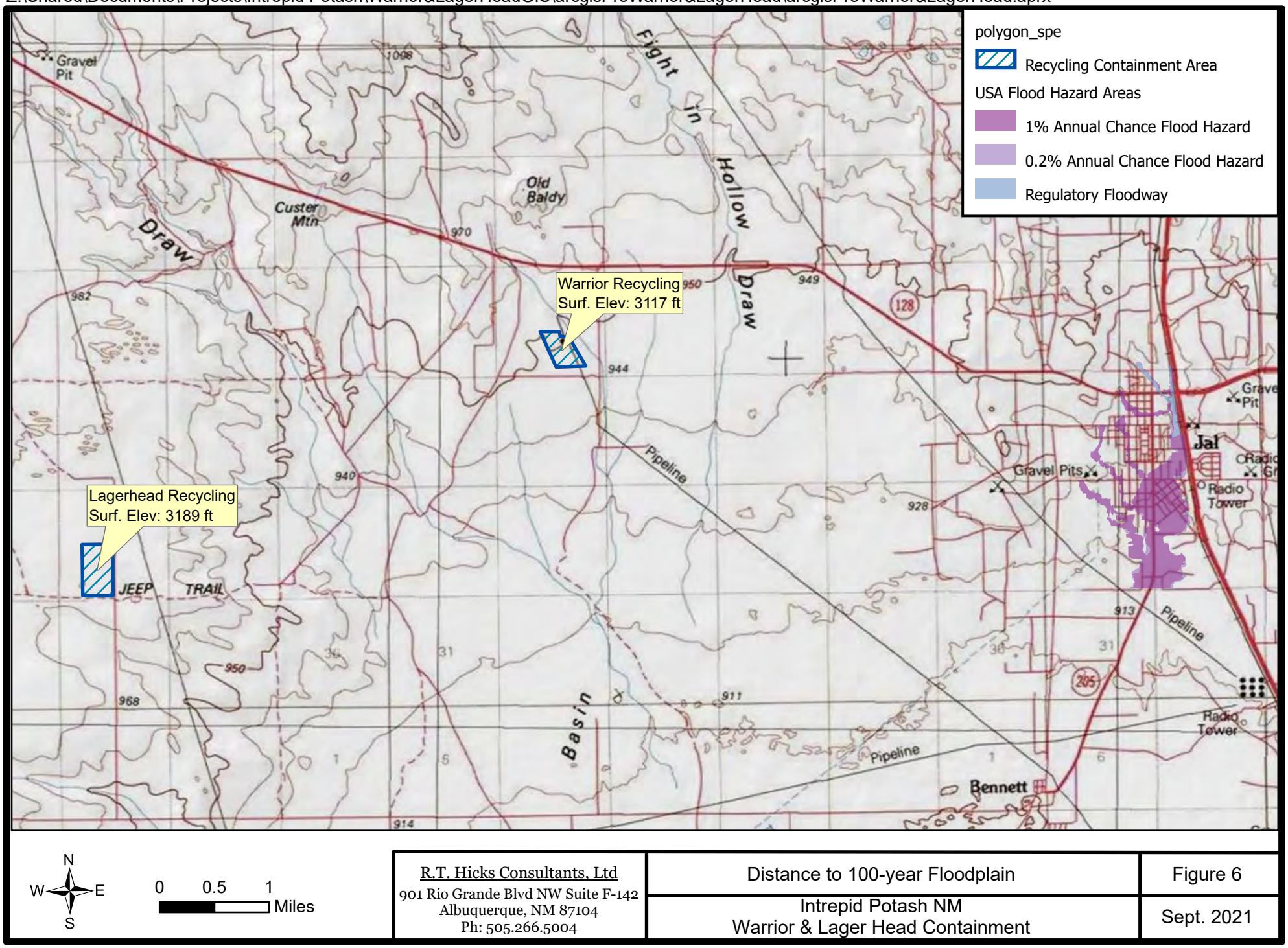

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Distance to 100-year Floodplain Intrepid Potash NM Warrior & Lager Head Containment	Figure 6 Sept. 2021

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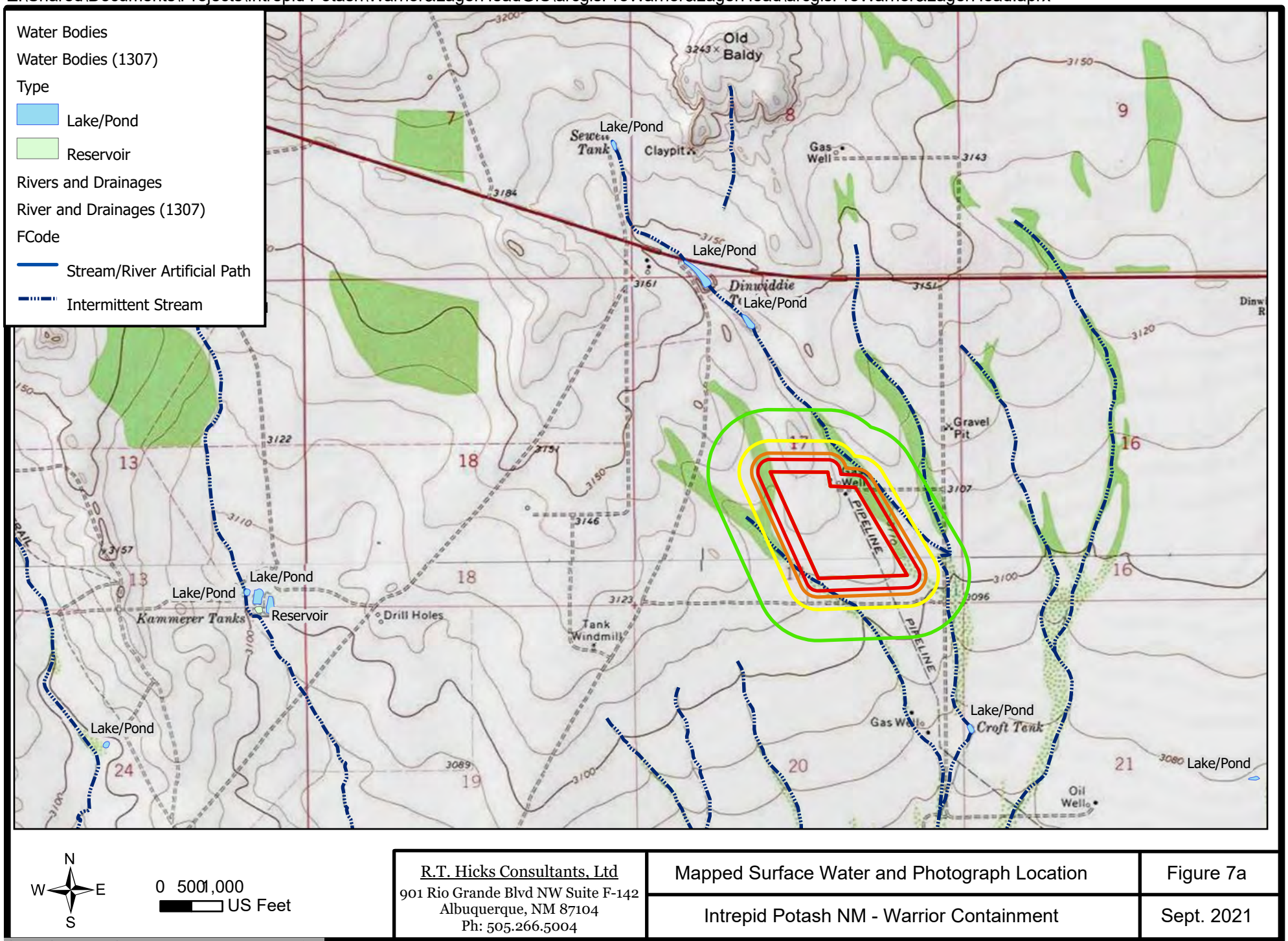

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Mapped Surface Water and Photograph Location	Figure 7a
	Intrepid Potash NM - Warrior Containment	Sept. 2021

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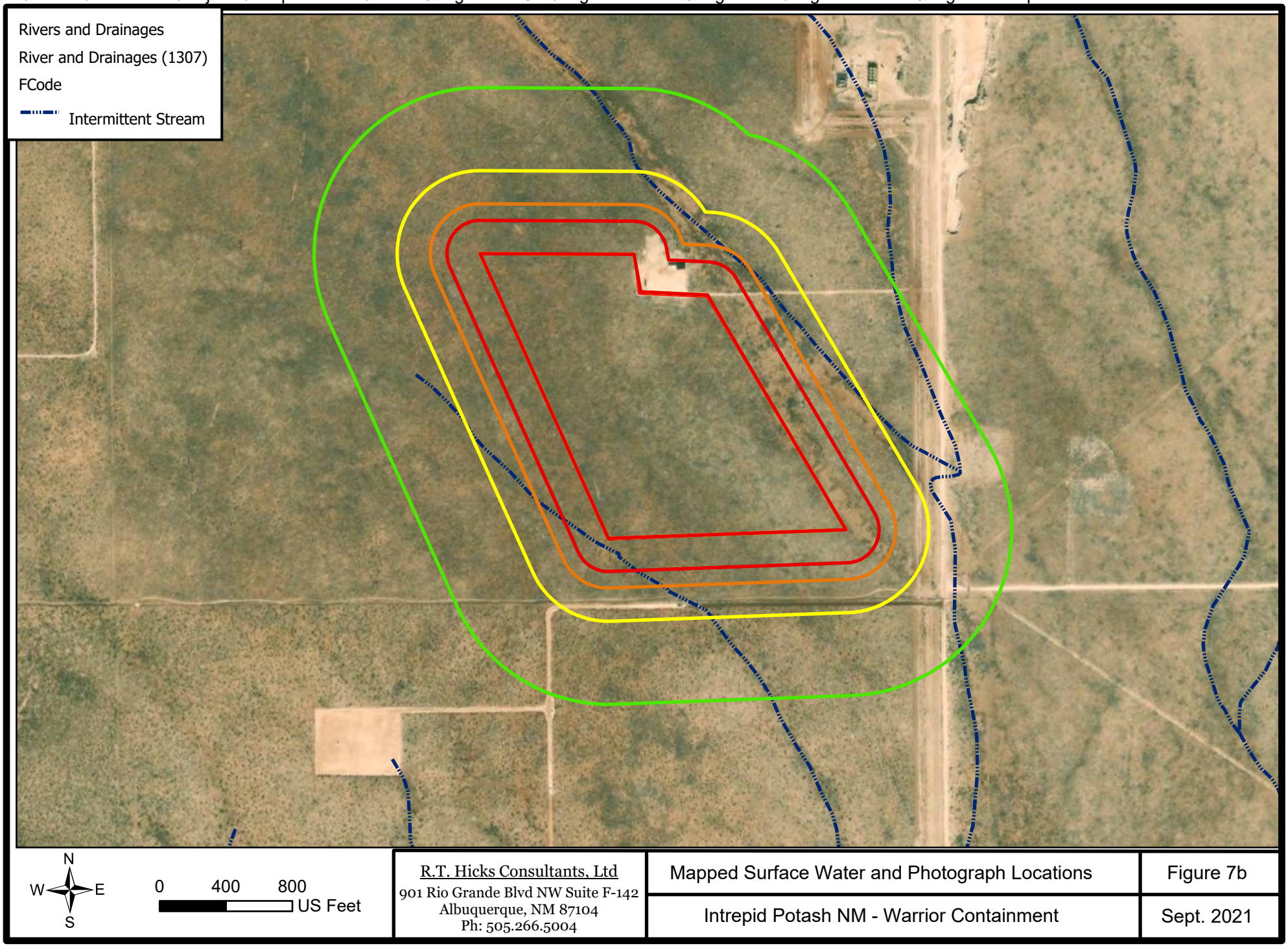

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Mapped Surface Water and Photograph Locations	Figure 7b
	Intrepid Potash NM - Warrior Containment	Sept. 2021

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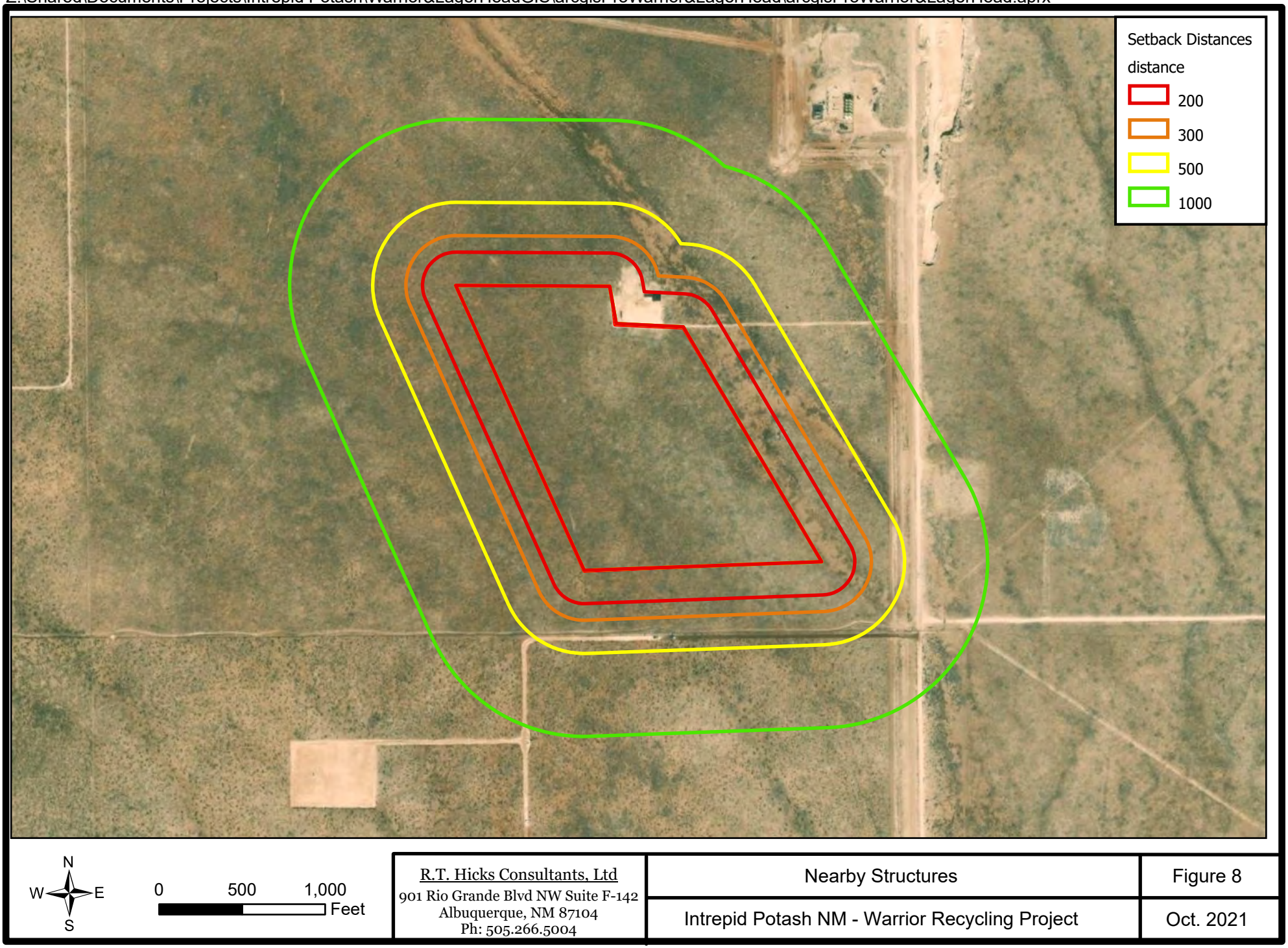

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures	Figure 8
	Intrepid Potash NM - Warrior Recycling Project	Oct. 2021

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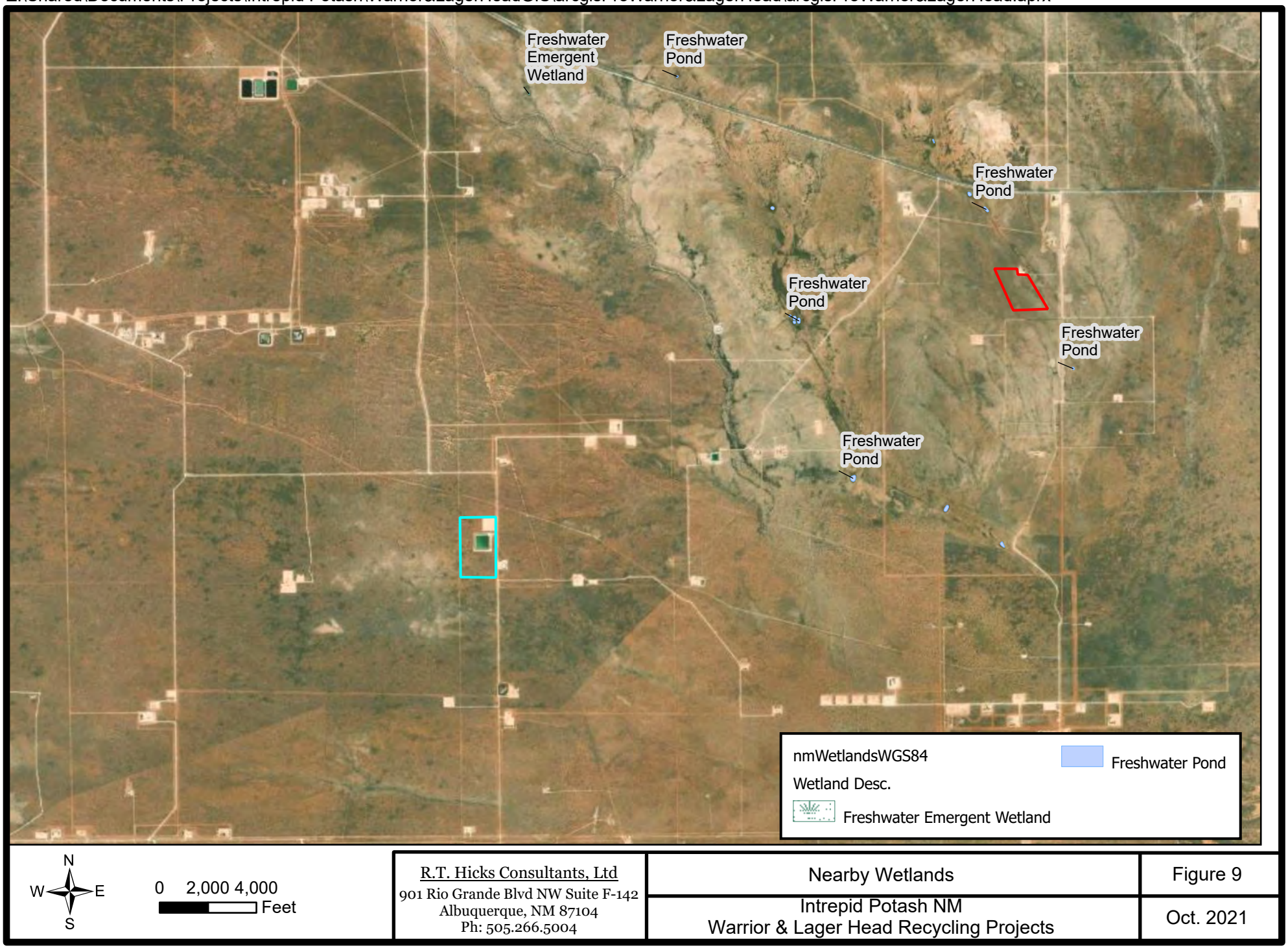

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Nearby Wetlands

Figure 9

Intrepid Potash NM
Warrior & Lager Head Recycling Projects

Oct. 2021

SITE PHOTOGRAPS

Warrior Containment Site Photographs

Location of selected photographs that demonstrate the absence of any significant watercourse near the Warrior Recycling Project is shown above.

Warrior Containment Site Photographs

Figure SP1 View east on lease road south of proposed Warrior Recycling Project. The slight dip in the road identified by red arrow is where USGS maps an intermittent stream. Taller, dark green vegetation on north (left) side of road is the center of a swale that is mapped by the USGS as the intermittent stream

Figure SP2 Looking north (uphill) along axis of swale mapped by the USGS as an intermittent stream. There is no bed or bank formed in the swale and no evidence of occasional flow of water, despite the recent heavy rains in the area (32 7 23.09, -103 17 5.35).

Warrior Containment Site Photographs

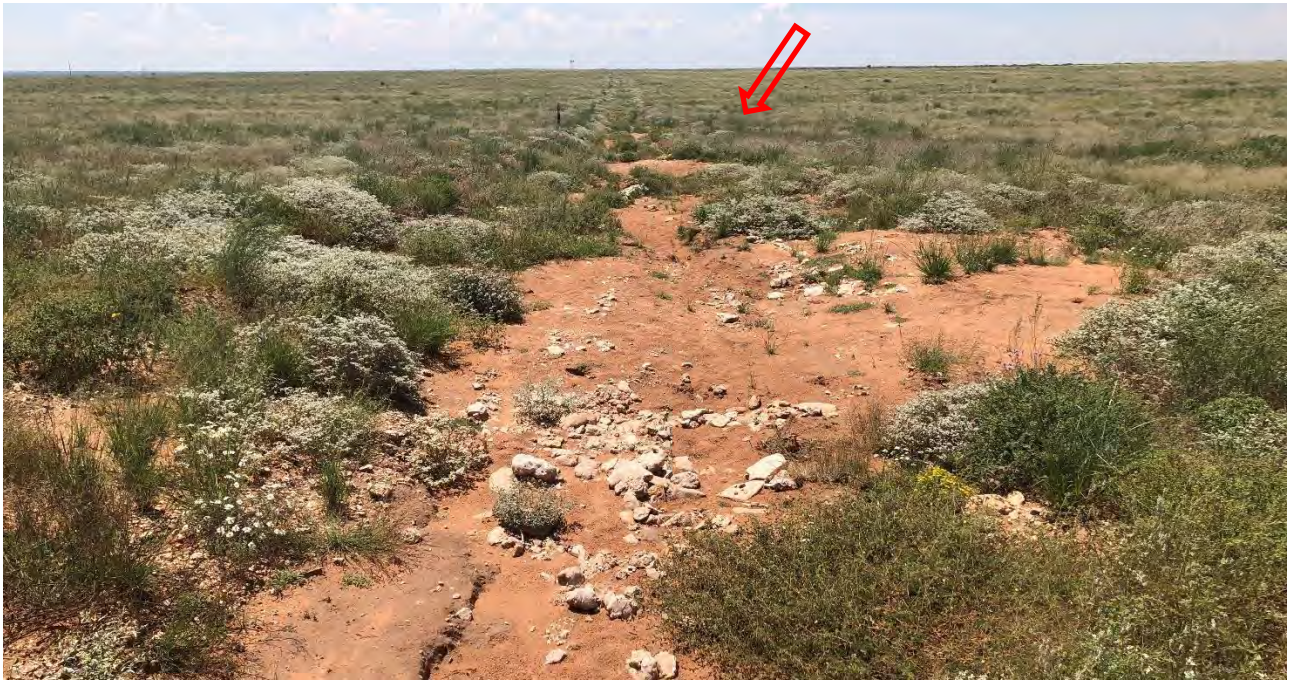

Figure SP3 View to southwest from the surface disturbance over an active pipeline. The red arrow shows the approximate axis of the swale mapped by the USGS as an intermittent stream (32 7 40.86, -103 17 15.46).

Figure SP4 View north-northwest along axis of swale mapped as an intermittent stream. There is no evidence of a bed or bank or recent flow. This photograph is about 2000 feet uphill from the image shown in SP2 (32 7 37.5, -103 17 21.56).

Warrior Containment Site Photographs

Figure SP5 View west-northwest showing denser/greener vegetation in the area mapped by the USGS as an intermittent stream east of the Warrior Recycling Project.

Figure SP6 View "upstream" from the center of a swale in which the USGS mapped an intermittent stream. The mapped watercourse lies about 250 feet northeast of this image (32 7 35.49, -103 16 57.80

Warrior Containment Site Photographs

Figure SP7 – View "downstream" in the center of the swale mapped by the USGS as an intermittent stream. Throughout the area we observed no evidence of a defined bed or bank, no evidence of recent or historic flow. 32 7 37.11, -103 16 55.25

Figure SP8 The Intrepid-owned caliche pit exposes a caliche horizon of about 20 feet thick. The thickness of this horizon beneath the proposed containments may be slightly less.

Warrior Containment Site Photographs

Figure SP9 View to the northeast from the lease road shown in SP1 near the south boundary of the recycling project area. The higher green vegetation is the swale that the USGS mapped as an intermittent stream. The southern edge of the Intrepid caliche pit is shown by the red arrow. The southeast sloping area beneath the yellow triangle is the location of the recycling project.

Figure SP 10 - Well CP-1170 is the steel casing in the foreground and the windmill in the background is probably CP-0465. Neither well could be sampled due to lack of access. The driller's log for this well is the last page of Appendix Well Logs

Warrior Containment Site Photographs

Figure SP11 Well CP-177 Pod 1 lies northwest of the Warrior Recycling Project area and had been idle for several days prior to measuring depth to water. We believe we obtained a static water level.

APPENDIX WELL LOGS

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

COPY

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S): CP-1285
WELL OWNER NAME(S): DINWIDDIE CATTLE COMPANY, LLC & ATKINS ENGINEERING A	PHONE (OPTIONAL): 575-354-2489
WELL OWNER MAILING ADDRESS: P.O. BOX 3156	CITY: ROSWELL STATE: NM ZIP: 88202

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	03	55	N
LONGITUDE	103	17	37	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

SE 1/4, SW 1/4, SW 1/4, SECTION 05, TOWNSHIP 26 SOUTH, RANGE 36 EAST N.M.P.M

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1607	LUIS A. (TONY) DURAN	DURAN DRILLING

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7/01/15	7/6/15	511	510	250

STATIC WATER LEVEL IN COMPLETED WELL (FT):

COMPLETED WELL IS: ○ ARTESIAN ○ DRY HOLE ◉ SHALLOW (UNCONFINED)

DRILLING FLUID: ○ AIR ○ MUD ADDITIVES – SPECIFY: DRILLING MUD

DRILLING METHOD: ◉ ROTARY ○ HAMMER ○ CABLE TOOL ○ OTHER – SPECIFY:

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	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	190	16	STEEL	STEEL PERF	10	1/4	-
190	510	16	STEEL PERF	STEEL	10	1/4	1/8

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
0	20	16	20 BGS 80 LBS CEMENT		MIXER
20	510	16	36 YARDS 1/4 GRAVEL PACK		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1285	POD NUMBER	TRN NUMBER	664512
LOCATION	26S.36E.5.3.3.3			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	1	1	TOPSOIL	O Y ◉ N	
1	16	15	CALICHE	O Y ◉ N	
16	230	214	CLAY	O Y ◉ N	
230	285	55	ROCK	O Y ◉ N	
285	290	5	SAND	◉ Y O N	20
290	315	25	ROCK	◉ Y O N	40
315	507	192	SAND	◉ Y O N	30
507	510	3	RED BED	O Y ◉ N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	
				O Y O N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: O PUMP O AIR LIFT ◉ BAILER O OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 90

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:

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

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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Luis A Duran / LUIS A. DURAN — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

7-6-15 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1285	POD NUMBER	TRN NUMBER	PAGE 2 OF 2
LOCATION	26S.36E.5.3.3.3		comm.	

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.): CP-1752 Pod 1	WELL TAG ID NO.: 2219-D	OSE FILE NO(S).
WELL OWNER NAME(S): Diwwiddie cattle Co LLC		PHONE (OPTIONAL)
WELL OWNER MAILING ADDRESS: 2904 W 2nd St	CITY: Roswell STATE: NM ZIP: 88210	
WELL LOCATION (FROM GPS)	DEGREES MINUTES SECONDS	* ACCURACY REQUIRED: ONE TENTH OF A SECOND
LATITUDE: 32.135798 N		* DATUM REQUIRED: WGS 84
LONGITUDE: -103.260336 W		

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

2. DRILLING & CASING INFORMATION

LICENSE NO.: 1778	NAME OF LICENSED DRILLER: Travis Mann		NAME OF WELL DRILLING COMPANY: Third Generation Drlg
DRILLING STARTED: 7-13-19	DRILLING ENDED: 10-24-19	DEPTH OF COMPLETED WELL (FT): 650	BORE HOLE DEPTH (FT): 660
DEPTH WATER FIRST ENCOUNTERED (FT): 278			
COMPLETED WELL IS: [X] ARTESIAN [ ] DRY HOLE [ ] SHALLOW (UNCONFINED)			STATIC WATER LEVEL IN COMPLETED WELL (FT): 276
DRILLING FLUID: [ ] AIR [X] MUD	ADDITIVES – SPECIFY:		
DRILLING METHOD: [X] ROTARY [ ] HAMMER [ ] CABLE TOOL [ ] OTHER – SPECIFY:			

DEPTH (feet bgl) FROM	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	267	12 1/4	Steel J-55	Weld	5	1/4	N/A
267	650	12 1/4	Steel J-55	Weld	5	1/4	.032

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	264	12 1/4	Cement Portland Type II	216	Tremie Pump
264	650	12 1/4	Gravel 3/8 Pea	351	Bored

2020 FEB 25 AM 7:22 STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

2020 FEB 25 PM 7:22 STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 04/30/19)

FILE NO.: CP-1752	POD NO.: 1	TRN NO.: 675397	
LOCATION: 25S.36E.15.111	WELL TAG ID NO.: 2219D	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	80	80	sand	Y N	
80	120	40	sand \ clay	Y N	
120	140	20	clay	Y N	
140	280	40	clay / sand	Y N	
280	340	60	sand / gravel	(Y) N	5
340	360	20	clay	Y N	
~~360~~	420	60	sand / clay	Y N	
420	460	40	sand / gravel	(Y) N	5
460	480	20	gravel	(Y) N	5
480	520	40	gravel / sand	(Y) N	5
520	600	80	sand / clay	Y N	
600	650	50	sand / silt	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:

[X] PUMP [ ] AIR LIFT [ ] BAILER [ ] OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 20 0.00

RECEIVED 2021 FEB 26 P 1:22 STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

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:

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

Aaron Hartness

6. SIGNATURE

BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.

Travis Mann — Travis Mann — 10-24-19

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 04/30/2019)

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

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Jay Anthony Owner's Well No. _____
Street or Post Office Address P.O. Box 398
City and State Jal New Mexico 88252

Well was drilled under Permit No. CP-938 and is located in the:

a. _____ ¼ _____ ¼ SE ¼ SE ¼ of Section 33 Township ~~26~~ 25S Range 36E 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 Duran Drilling License No. WD-1607
Address P.O. Box 1561 Seminole Tx. 79360

Drilling Began 5-10-06 Completed 5-12-06 Type tools Rotary Size of hole 8 3/4 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 360 ft.

Completed well is ☐ shallow ☑ artesian. Depth to water upon completion of well 80 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)
250	285	35	layers of rocks + Sand	20
300	360	60	layers of rocks + Sand	25

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
5 in			0	360	361		260	360

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	10	8 3/4	7		

STATE ENGINEER ROSWELL, NEW MEX.
2006 MAY 30 A 11:30

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

Date Received 05/30/06 ~~#358498~~ 477042

Quad _____ FWL _____ FSL _____

File No. CP-938 Use Stk Location No. 25.36.33.44

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	5	5	Topsoil
5	75	70	Caliche + Sand
75	85	10	layers of Rocks + Sand
85	250	165	Red Clay + White Sand
250	285	35	layers of Rock + White Sand
285	300	15	Clay + White Sand
300	360	60	layers of Rocks + White Sand

Section 7. REMARKS AND ADDITIONAL INFORMATION

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2006 AUG 16 PM 3:11

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.

Luis R. Duran
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.

STR

~~358498~~

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

2014 APR 21 AM 10:06

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): CP-858 POD 2	OSE FILE NUMBER(S):
WELL OWNER NAME(S): DINWIDDIE CATTLE, LLC.	PHONE (OPTIONAL): 575-631-0385
WELL OWNER MAILING ADDRESS: P.O. BOX 963	CITY: CAPITAN STATE: NM ZIP: 88354

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	5	53.6	N
LONGITUDE	103	17	10.92	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

2.5 MI SOUTH OF HWY 128 @ MILE MKR 47, LEA COUNTY. NW 1/4 NW1/4 SE1/4 S29 T25S R36E

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD~~311~~ 531	PHILLIP STEWART	STEWART BROTHERS DRLG. CO.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
04-07-14	04-12-14	600'	605'	282'

COMPLETED WELL IS: ○ ARTESIAN ○ DRY HOLE ◉ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ○ AIR ◉ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ◉ ROTARY ○ HAMMER ○ CABLE TOOL ○ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
+2	260	12.25	LCS BLANK	WELDED	6.125	.25	NA
260	580	12.25	LCS SCREEN	WELDED	6.125	.25	.040
580	600	12.25	LCS BLANK	WELDED	6.125	.25	.NA

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	222	12.25	NEAT CEMENT	135	TREMIE
222	232	12.25	BENTONITE PELLETS	5.25	TREMIE
232	600	12.25	PREMIER SILICA SAND	210	TREMIE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-858	POD NUMBER	2	TRN NUMBER	604615
LOCATION	25S.36E.29.4.1.3				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	80	80	RED SILT TO PINK SILT AND (ALLUVIAL)	○ Y ◉ N	
80	130	50	LITE GRAY SILTY AND CLAY	○ Y ◉ N	
130	160	30	RED CLAYEY SILT	○ Y ◉ N	
160	190	30	LITE GRAY CLAYEY SILT	○ Y ◉ N	
190	230	40	LITE GRAY SILTY CLAY	○ Y ◉ N	
230	280	50	BROWN SILTY CLAY	○ Y ◉ N	
280	290	10	GRAY SILTY SAND	◉ Y ○ N	
290	370	80	RED TO BROWN SILTONE WITH SMALL GRVL	◉ Y ○ N	
370	530	160	TAN SAND FINE TO COURSE	◉ Y ○ N	
530	560	30	GRAY LILTSTONE WITH SOME GRVL	◉ Y ○ N	
560	605	45	PINK TO RED SILTY SHALE	○ Y ◉ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	

2019 APR 21 AM 10:06

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ○ PUMP ◉ AIR LIFT ○ BAILER ○ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 30

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:

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

GABE ARMIJO, DON TAYLOR, JOE SANCHEZ

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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Phillip D. Stewart / Phillip D. Stewart — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

4-17-14 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-858	POD NUMBER	2	TRN NUMBER	604615
LOCATION	25S.36E.29.4.1.3				PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): 5	OSE FILE NUMBER(S): CP-1170
WELL OWNER NAME(S): Beckham Ranch Inc.	PHONE (OPTIONAL): 706-5659
WELL OWNER MAILING ADDRESS: 3904 Jesse James Ct	CITY: Carlsbad STATE: NM ZIP: 88220

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	07	16	N
LONGITUDE	103	17	51	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: SE1/4, NE1/4, NE1/4, SECTION19, TOWNSHIP25S, RANGE36E

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1607	LUIS A. (TONY) DURAN	DURAN DRILLING

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10-28-14	11-04-14	506	505	270

COMPLETED WELL IS: ○ ARTESIAN ○ DRY HOLE ◉ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ○ AIR ○ MUD ADDITIVES – SPECIFY: DRILLING MUD

DRILLING METHOD: ◉ ROTARY ○ HAMMER ○ CABLE TOOL ○ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	200	12	STEEL	STEEL PERF	8	1/4	-
200	505	12	STEEL PERF	STEEL	8	1/4	1/8

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	20	12	20 BGS 80 LBS CEMENT		MIXER
20	505	12	32 YARDS 1/4 GRAVEL		

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
CP-1170	5	525599

255.36E.19.2.2.4

Commercial

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	1	1	TOP SOIL	○ Y ◉ N	
1	2	1	CALICHE	○ Y ◉ N	
2	36	34	CLAY & ROCK MIX	○ Y ◉ N	
36	305	269	SAND	○ Y ◉ N	
305	320	15	CLAY	○ Y ◉ N	
320	335	15	ROCK & SAND MIX	◉ Y ○ N	17
335	365	30	ROCK & CLAY	○ Y ◉ N	
365	420	55	ROCK SAND MIX	◉ Y ○ N	8
420	454	34	CLAY	○ Y ◉ N	
454	463	9	SAND	◉ Y ○ N	10
463	502	39	CLAY	○ Y ◉ N	
502	505	3	RED BED	○ 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): 35

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:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:
LUIS A. (TONY) DURAN

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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Luis R. Duran Luis A. Duran — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

11/04/14 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
CP-1170	5	525599

25S.36E.19.2.2.4

Venegas, Victoria, EMNRD

From: Venegas, Victoria, EMNRD
Sent: Wednesday, January 19, 2022 11:08 AM
To: 'Travis McBain'; 'Chris Collard (Contractor)'; r@rthicksconsult.com
Cc: Enviro, OCD, EMNRD
Subject: 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716
Attachments: C-147 Approved. 1RF-476 Warrior Recycling Containment 01.18.2022.pdf

1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716

Mr. McBain,
NMOCD has reviewed the recycling containment permit application and related documents, submitted by [372681] INTREPID POTASH - NEW MEXICO, LLC on November 11, 2021 for 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 in Unit Letter J, Section 17, Township 25S, Range 36E, Lea County, New Mexico. The form C-147 and related documents for 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 is approved with the following conditions of approval:

- [372681] INTREPID POTASH - NEW MEXICO, LLC shall construct, operate, maintain, close, and reclaim 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 in compliance with 19.15.34 NMAC.

- 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 is approved for five years of operation from the date of permit application. 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 permit expires on November 11, 2026. If [372681] INTREPID POTASH - NEW MEXICO, LLC wishes to extend operations past five years, an annual permit extension request must be submitted using an OCD form C-147 through OCD Online by October 11, 2026.

- [372681] INTREPID POTASH - NEW MEXICO, LLC cannot receive produced water in 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 until after the original copy of the financial assurance has been accepted by OCD.

- Per Rule 19.15.34.15.A.(1) operators without existing financial assurance pursuant to 19.15.8 NMAC shall furnish financial assurance acceptable to the division in the amount of the recycling containment's estimated closure cost. The total closure cost estimate provided in the application in the amount of $1,103,700.00 for 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 meets the requirements of NMAC 19.15.34.15.A.(1).

- If [372681] INTREPID POTASH - NEW MEXICO, LLC decides to add an AST to the facility, then [372681] INTREPID POTASH shall submit a C-147 Long Form with the box "Modification" checked and the appropriate documentation specific to the AST (*i.e*. Design and Construction Plan, Operations & Maintenance Plan and Closure Plan) via OCD Online. [372681] INTREPID POTASH - NEW MEXICO, LLC would need NMOCD approval prior to installing the future ASTs.

- The financial assurance bond should be mailed to the Oil Conservation Division; Bonding and Compliance; 1220 South St Frances Drive; Santa Fe, NM 87505. NMOCD will notify you when the bond has been received and approved.

- [372681] INTREPID POTASH - NEW MEXICO, LLC shall notify OCD when construction of 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 commences.

- [372681] INTREPID POTASH - NEW MEXICO, LLC shall notify OCD when recycling operations commence and cease at 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716.

- A minimum of 3-feet freeboard must be maintained at 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716, at all times during operations.

- If less than 20% of the total fluid capacity is utilized every six months, beginning from the first withdrawal, operation of the facility is considered ceased and notification of cessation of operations should be sent electronically to OCD.Enviro@state.nm.us. An extension to extend the cessation of operation, not to exceed six months, may be submitted using a C-147 form through OCD Online.

- [372681] INTREPID POTASH - NEW MEXICO, LLC shall submit monthly reports of recycling and reuse of produced water, drilling fluids, and liquid oil field waste on OCD form C-148 through OCD Online even if there is zero activity.

- [372681] INTREPID POTASH - NEW MEXICO, LLC shall comply with 19.15.29 NMAC Releases in the event of any release of produced water or other oil field wastes at 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716.

Please reference number 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 in all future communications.
Regards,

Victoria Venegas ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
811S. First St. | Artesia, NM 88210
(575) 909-0269 | Victoria.Venegas@state.nm.us
http://www.emnrd.state.nm.us/OCD/

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-147
Revised April 3, 2017

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: ___Intrepid Potash NM LLC_____(For multiple operators attach page with information) OGRID #:_ 372681____

Address: __ 2324 W. Peirce St. Carlsbad, NM 88220_____

Facility or well name (include API# if associated with a well): _Warrior Recycling Facility and Containments #1 and #2_____

OCD Permit Number: ___**1RF-476**_____(For new facilities the permit number will be assigned by the district office)

U/L or Qtr/Qtr _J,K, N,O, P_ Section _____17_____ Township ____25S____ Range __36E_____ County: ___Lea_____

Surface Owner: ☐ Federal ☐ State ☒ Private ☐ Tribal Trust or Indian Allotment

2.

☐ **Recycling Facility:** FNL 3550 FEL 2100

Location of recycling facility (if applicable): Latitude ___32.12806_____ Longitude _____-103.28567___Approx____ 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:** Warrior #1 and #2

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

Center of Recycling Containment (if applicable): Latitude _ ___32.12630_____ Longitude _____-103.28569 Approx_____ NAD83

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

☐ Lined ☐ Liner type: Thickness _See Engineering Drawings_____mil ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☒ Welded ☐ Factory ☐ Other _____ Volume: _See Drawings_____bbl Dimensions: L_____ x W_____ x D_____

☐ 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 $__SEE COST ESTIMATE____ **(work on these facilities cannot commence until bonding amounts are approved)**

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

5.

Fencing:

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

☒ Alternate. Please specify__Game Fence with option to install 4 strands barbed wire from -=0-4 feet if required by District Office_____

6.

Signs:

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

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

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

Check the below box only if a variance is requested:

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

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

8.

Siting Criteria for Recycling Containment

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

General siting **Ground water is less than 50 feet below the bottom of the Recycling Containment.**	
NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells FIGURE 2	☐ 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. FIGURE 3 - Written confirmation or verification from the municipality; written approval obtained from the municipality	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. FIGURE 4 - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division	☐ Yes ☒ No
Within an unstable area. FIGURE 5 - 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 FIGURE 6	☐ 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). FIGURE 7 - 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 FIGURE 8	☐ 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. FIGURES 1 AND 7 - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. FIGURE 9 - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No

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

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

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

Name (Print): Travis McBain Title: Director of Land/Business Development
Signature: Date: November 5, 2021
e-mail address: travis.mcbain@intrepidpotash.com Telephone: 405.938.5411

11.
OCD Representative Signature: Victoria Venegas **Approval Date:** 01/18/2022

Title: Environmental Specialist **OCD Permit Number:** 1RF-476

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 61341

CONDITIONS

Operator: INTREPID POTASH - NEW MEXICO, LLC 210 Red Cloud Road Carlsbad, NM 88220	OGRID: 372681
	Action Number: 61341
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	NMOCD has reviewed the recycling containment permit application and related documents, submitted by [372681] INTREPID POTASH - NEW MEXICO, LLC on November 11, 2021 for 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 in Unit Letter J, Section 17, Township 25S, Range 36E, Lea County, New Mexico. The form C-147 and related documents for 1RF-476 - WARRIOR RECYCLING FACILITY AND CONTAINMENTS #1 AND #2 FACILITY ID fVV2134751716 is approved with conditions of approval.	1/19/2022