December 2021

C-147 Registration Package for Zeus In-Ground Containment

Section 35, T21S, R32E, Lea County

Location of Zeus Containment is due west of recycling facility at the Zeus SWD pad. The nearest water well is about 3500 feet northwest and an very good well log for CP-1701 is in the Appendix Well Logs.

Prepared for:
Solaris Midstream LLC
9811 Katy Freeway Suite 900
Houston, TX 77024

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

December 28, 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: Solaris Water Midstream - Zeus Recycling Containment Registration Package

Dear Mr. Bratcher and Ms. Venegas:

On behalf of Solaris Water Midstream LLC, LLC, R.T. Hicks Consultants is pleased submit a registration for the above-referenced project. Because produced water will be introduced to the Containment on or about January 25, 2022, we request a relatively rapid review of the closure cost estimate to allow 3-5 days to secure the reclamation bond.

As stated in this submission, the project requires no variances for this facility, thus OCD approval is not required for a registration prior to use. Specifically:

- Solaris will install a 4-strand barbed wire fence over the proposed game fence to comply with the specific language of the Rule if requested by the District Office.
- The 40-mil HDPE secondary liner is "equivalent with a hydraulic conductivity no greater than 1 x 10-9 cm/sec" and meets or exceeds the "EPA SW-846 method 9090A or subsequent relevant publications" and is therefore consistent with the criteria of the Rule. The equivalency demonstration is attached to this letter.
- The Mega Blaster Pro Sonic Bird Repeller "is otherwise protective of wildlife, including migratory birds" and is therefore consistent with the criteria of the Rule. This avian hazing equipment is used at numerous OCD-approved projects and Solaris has ordered a unit specific to the Pecos River Valley.
- 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.

In compliance with 19.15.34.10 of the Rule, this submission is copied to the Ms. Stacey Mills who is the representative of the surface owner where the containments will be constructed.

If you have any questions or concerns regarding this registration or the attached C-147, please contact me. The closure cost estimate is attached. As always, we appreciate your work ethic and attention to detail.

Sincerely,
R.T. Hicks Consultants

Randall T. Hicks PG
Principal

Copy: Solaris Water Midstream, LLC
Ms. Stacey Mills, slash46@live.com

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

ZEUS IN-GROUND CONTAINMENT

Financial Assurance Cost Estimate

Attached is the cost estimate for reclamation of the Zeus recycling in-ground containment. The cost of closure sampling and reporting is no more than $5,000 to "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" of Rule 34. Thus, the total closure cost estimate is ($293,606.5 +$5,000=) $298,606.50

The reclamation must meet terms set forth in the surface lease agreement with the landowner, who received a copy of the registration.

Please contact Randall Hicks or Todd Carpenter if you have any questions.

Patriot Environmental I
220 W. Carl Hubbell Blvd. #671
Meeker, OK 74855
USA

Voice: 405-279-6052
Fax:

PATRIOT ENVIRONMENTAL
AN ESI COMPANY

QUOTATION

Quote Number: 1869
Quote Date: Jan 6, 2022
Page: 1

Quoted To:

Solaris Water Midstream
9811 katy freeway suite 700
Houston, TX 77024
USA

Customer ID	Good Thru	Payment Terms	Sales Rep
Solaris	2/5/22	Net 30 Days	

Quantity	Item	Description	Unit Price	Amount
1.00	Labor - Liner	Zeus Containment Section: 35 Township: 21S Range: 32E Lea Co. NM Backfill the containment excavation with non-waste containing, uncontaminated, earthen material derived from the levees. Reclaim the containment's location to a safe and stable condition that blends with the surrounding undisturbed area. Topsoils and subsoils will be replaced to their original relative positions to the extent possible. The location will be contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. The disturbed area will be reseeded in the first favorable growing season following closure	278,300.000	278,300.00
			Subtotal	278,300.00
			Sales Tax	15,306.50
			TOTAL	**293,606.50**

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

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: Solaris Midstream LLC OGRID #: 371643

Address: 9811 Katy Freeway, Suite 900, Houston, TX, 77024

Facility or well name (include API# if associated with a well): Zeus Containment

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

U/L or Qtr/Qtr: O&P Section: 35 Township: 21S Range: 32E County: Lea

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

2.

☒ **Recycling Facility:**

Location of (if applicable): Latitude: 32.428995 N Longitude: 103.638084 W approximately (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 #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: 32.42936 N Longitude: 103.63979 W approx. (NAD83)

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

☒ Lined ☐ Liner type: Thickness See Attached Engineer Drawings1 ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☐ Welded ☐ Factory ☐ Other Volume: See Attachment Drawings and Plans Dimensions _____.

☐ Recycling Containment Closure Completion Date: _____

4.

Bonding:

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

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

☒ Attach closure cost estimate and documentation on how the closure cost was calculated. (See Transmittal Letter)

5.

Fencing:

☒ Four-foot height, four strands of barbed wire evenly spaced between one and four feet IF REQUESTED BY DISTRICT OFFICE

☐ Alternate. Please specify: Game Fence .

6.

Signs:

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

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

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

Check the below box only if a variance is requested:

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

If a Variance is requested, it must be approved prior to implementation. See Volume 2 for Variances

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 FIGURES 1-2	☐ 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. - Written confirmation or verification from the municipality; written approval obtained from the municipality FIGURE 3	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division FIGURE 4	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map FIGURE 5	☐ 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). - Topographic map; visual inspection (certification) of the proposed site FIGURE 7	☐ 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.

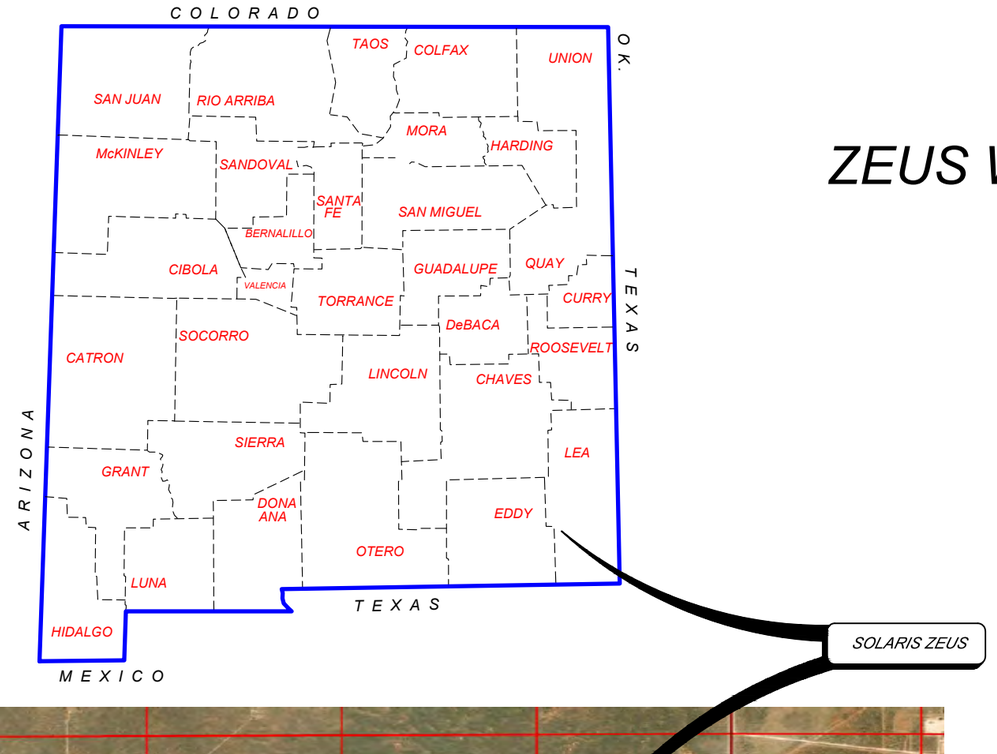
Name (Print): Bradley Todd Carpenter Title: Operations Manager
Signature: Todd Carpenter Date: 12/10/21
e-mail address: todd.carpenter@solarismidstream.com Telephone: (432) 203-9020

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

Title: _____ **OCD Permit Number:** _____

☐ OCD Conditions _____
☐ Additional OCD Conditions on Attachment

RECYCLING CONTAINMENT DESIGN DRAWINGS AND AVIAN SPECIES HAZING EQUIPMENT



SOLARIS WATER MIDSTREAM, LLC
ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO

INDEX OF SHEETS

ISSUED FOR CONSTRUCTION
11-07-2021
REVISION 1

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/07/2021

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

REV1	REVISED DIMENSIONS AND GRADING	11/07/21	CSC
IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

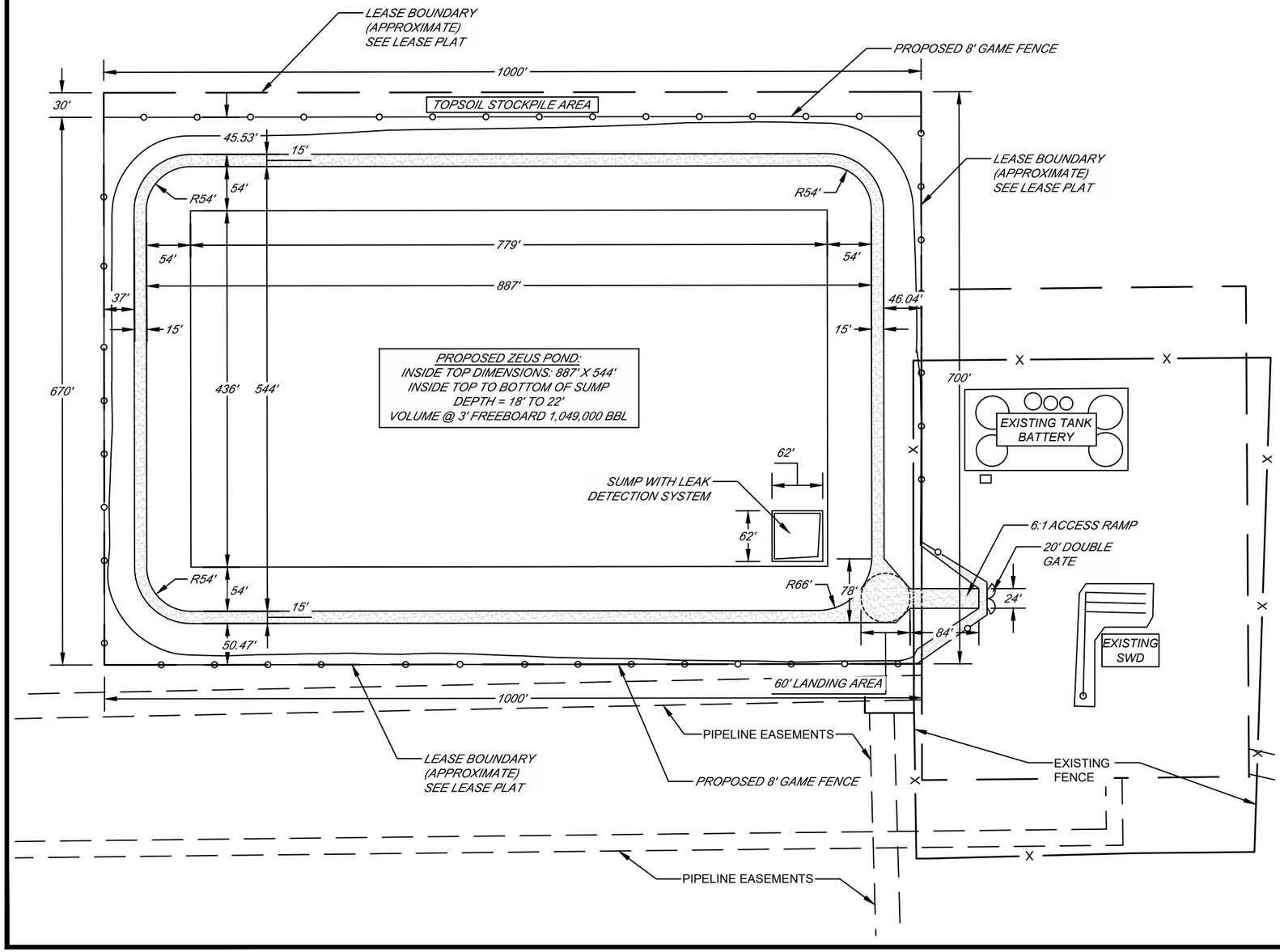
Solaris Water Midstream, LLC
907 Tradewinds Boulevard
Midland, TX 79701
432-203-9020
www.solarismidstream.com

ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO
SOLARIS WATER MIDSTREAM, LLC.

COVER SHEET

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-100

Drawing File: Z:\Shared\Projects\2021 Projects\21-270 Solaris Zeus\04_CIVIL\Design\Drawings\21-270 Cover REV1.dwg



PROJECT DESCRIPTION

1. *THE PROJECT CONSISTS OF CONSTRUCTING A SINGLE 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 THE OWNER.*

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. *REPLACE EXCAVATED MATERIAL IN COMPACTED LAYERS ON THE LEVEES IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.*
   - 3.3. *FINISH SLOPES USING A SMOOTH ROLLER.*
   - 3.4. *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
EXISTING FENCE — X
PROPOSED LEASE BOUNDARY
PROPOSED DRIVING SURFACE
EDGE OF EASEMENT

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/07/2021

Magrym Consulting, Inc.
110 W. Louisiana Ave. Ste 314
Midland, TX 79701
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REV1	REVISED DIMENSIONS AND GRADING	11/07/21	CSC
IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
R-X	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

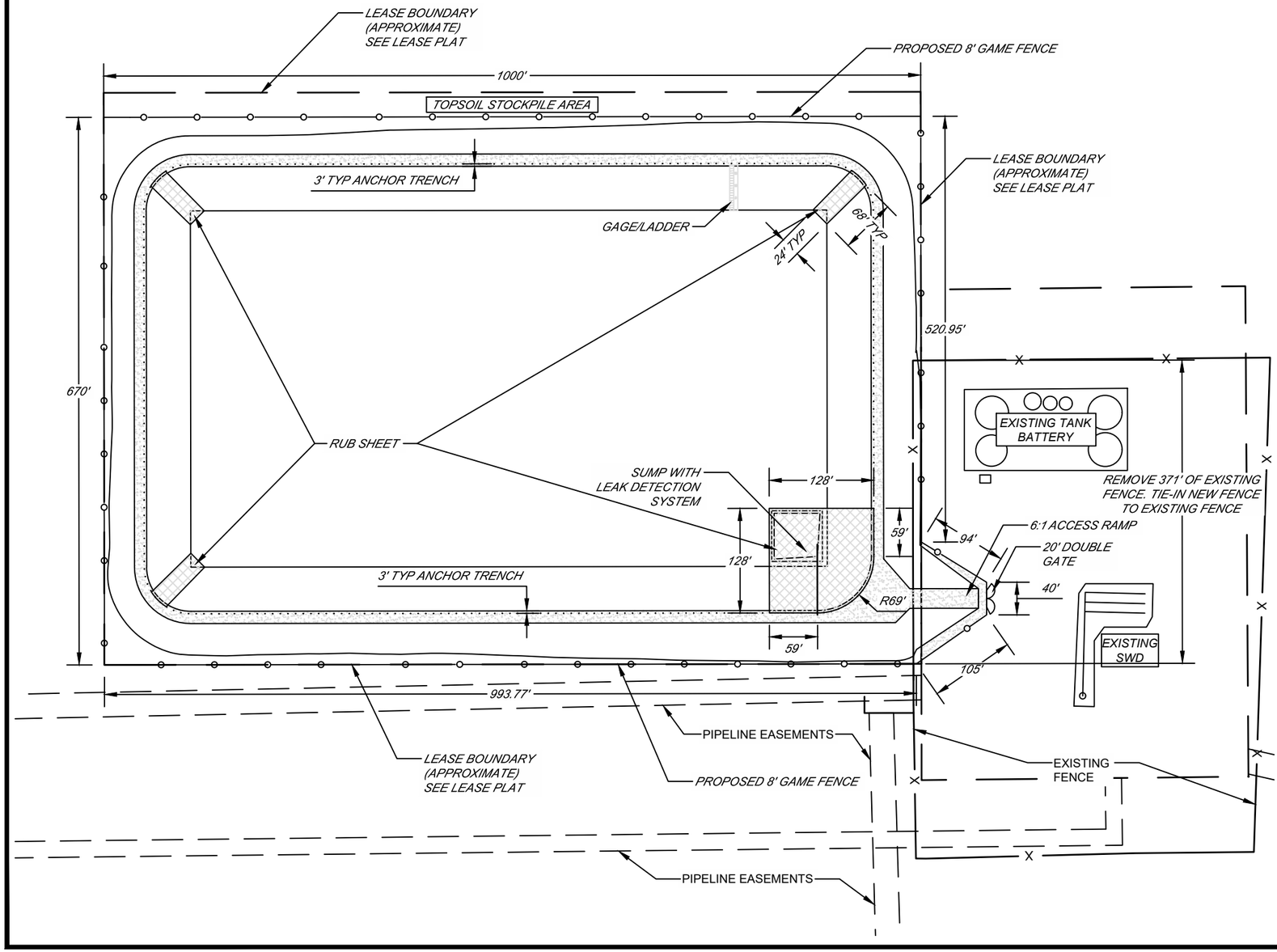
Solaris Water Midstream, LLC
907 Tradewinds Boulevard
Midland, TX 79701
432-203-9020
www.solarismidstream.com

ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO
SOLARIS WATER MIDSTREAM, LLC.

PROPOSED SITE PLAN

HORIZONTAL SCALE: 1"=150'	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-101

Drawing File: Z:\Shared\Projects\2021 Projects\21-270 Solaris Zeus\04_CIVIL\Design\Drawings\21-270 Site Plan REV1.dwg



Magrym Consulting, Inc. 110 W. Louisiana Ave. Ste 314 Midland, TX 79701 (432) 999-2737 www.magrym.com TX #F-19848 I ND #28610PE I OK #8561PE			
REV1	REVISED DIMENSIONS AND GRADING	11/07/21	CSC
IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

Solaris Water Midstream, LLC
907 Tradewinds Boulevard
Midland, TX 79701
432-203-9020
www.solarismidstream.com

ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO
SOLARIS WATER MIDSTREAM, LLC.

PROPOSED LINER AND FENCE PLAN

HORIZONTAL SCALE: 1"=150'	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-102

Drawing File: Z:\Shared\Projects\2021 Projects\21-270 Solaris Zeus\04_CIVIL\Design\Drawings\21-270 Site Plan REV1.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 SOLARIS WATER MIDSTREAM, LLC.
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 VOLUME (BBL)
3655.1	0
3656.1	186
3657.1	807
3658.1	46,065
3659.1	107,209
3660.1	169,661
3661.1	233,431
3662.1	298,527
3663.1	364,959
3664.1	432,736
3665.1	501,867
3666.1	572,363
3667.1	644,232
3668.1	717,483
3669.1	792,127
3670.1	868,172
3671.1	945,628
3672.1	1,024,504
3673.1	1,104,810
3674.1	1,186,585
3675.1	1,269,869
3676.1	1,354,659

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PROFESSIONAL ENGINEER
11/07/2021

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	UNIT	QTY
1	CLEARING AND GRUBBING	ACRES	15
2	STRIP AND STOCKPILE TOPSOIL (6" AVERAGE)	CUBIC YARD	11,800
3	ESTIMATED CUT (BELOW EXISTING GRADE)*	CUBIC YARD	91,800
4	ESTIMATED FILL (ABOVE EXISTING GRADE)**	CUBIC YARD	80,400
5	8' GAME FENCE	LINEAR FEET	3,500
6	20' DOUBLE GATE	LINEAR FEET	1
7	RUB SHEET 60 MIL HDPE GEOMEMBRANE (TEXTURED)***	SQUARE FEET	20,600
8	PRIMARY 60 MIL HDPE GEOMEMBRANE (SMOOTH)***	SQUARE FEET	501,400
9	200 MIL GEONET***	SQUARE FEET	501,400
10	SECONDARY 40 MIL HDPE GEOMEMBRANE (SMOOTH)***	SQUARE FEET	501,400
11	8 OZ. GEOTEXTILE***	SQUARE FEET	501,400
12	6" HDPE DR11 PIPE WITH PERFORATIONS IN SUMP	LINEAR FEET	90
13	GAGE LADDER	EACH	1
14	DRAIN ROCK	CUBIC YARD	1
15	ANCHOR TRENCH	LINEAR FEET	2,900
16	RELOCATE EXISTING FENCE	LINEAR FEET	380
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 AND ADJACENT DRIVING SURFACE 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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REV1	REVISED DIMENSIONS AND GRADING	11/07/21	CSC
IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
R-X	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

SOLARIS WATER MIDSTREAM
Solaris Water Midstream, LLC
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ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO
SOLARIS WATER MIDSTREAM, LLC.

SUMMARY OF QUANTITIES AND GENERAL NOTES

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-103

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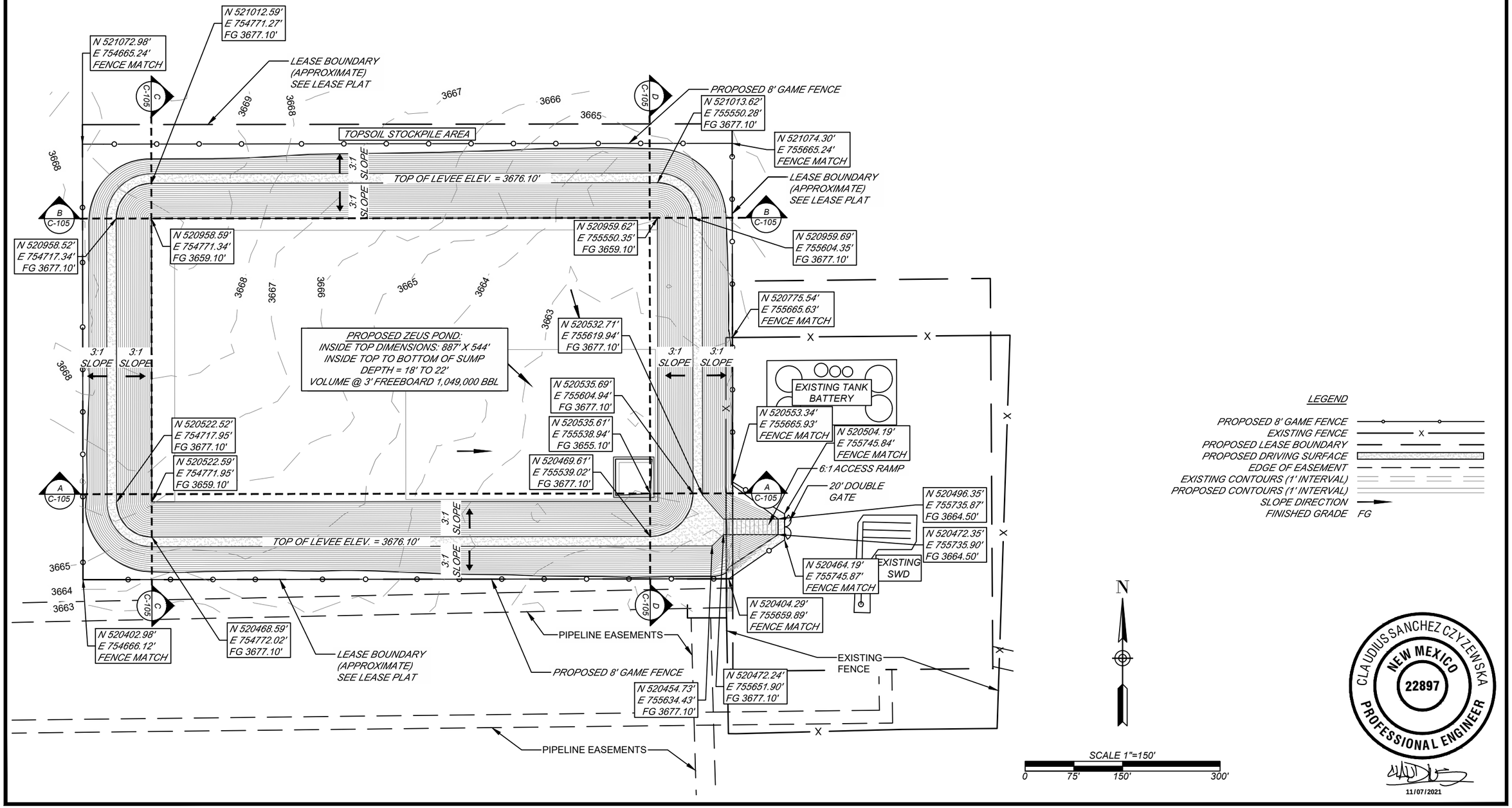

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Magrym Consulting, Inc. 110 W. Louisiana Ave. Ste 314 Midland, TX 79701 (432) 999-2737 www.magrym.com TX #F-19848 I ND #28610PE I OK #8561PE	Solaris Water Midstream, LLC 907 Tradewinds Boulevard Midland, TX 79701 432-203-9020 www.solarismidstream.com	ZEUS WATER TREATMENT AND REUSE FACILITY S35, T21S, R32E LEA COUNTY, NEW MEXICO SOLARIS WATER MIDSTREAM, LLC.	GRADING PLAN

REV1	REVISED DIMENSIONS AND GRADING	11/07/21	CSC
IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

HORIZONTAL SCALE: 1"=150'	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-104

Drawing File: Z:\Shared\Projects\2021 Projects\21-270 Solaris Zeus\04_CIVIL\Design\Drawings\21-270 Grading REV1.dwg

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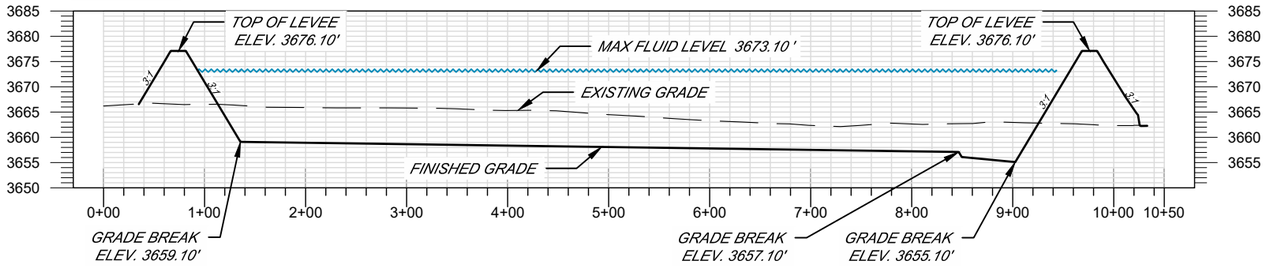

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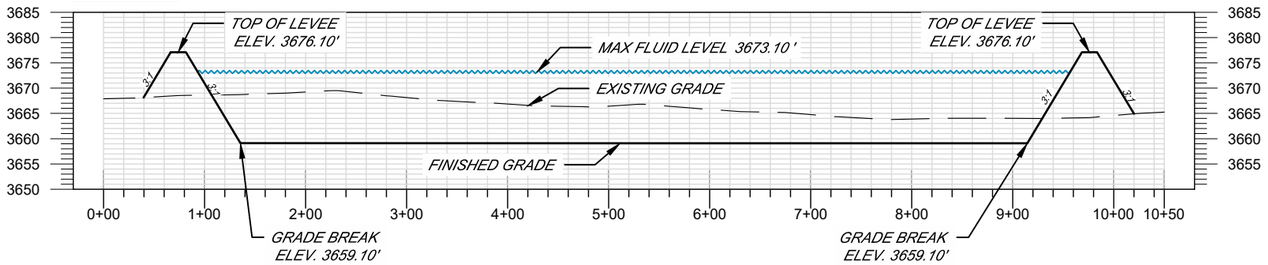

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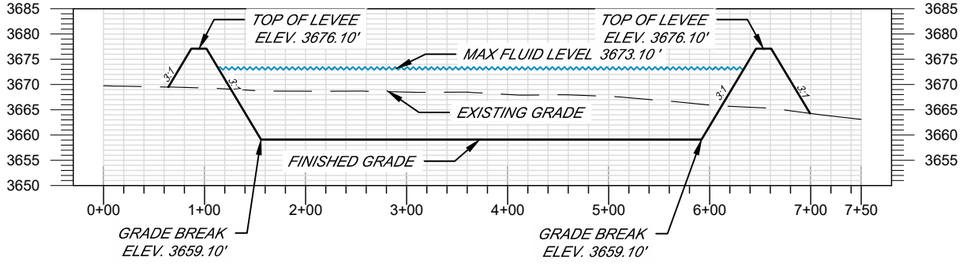

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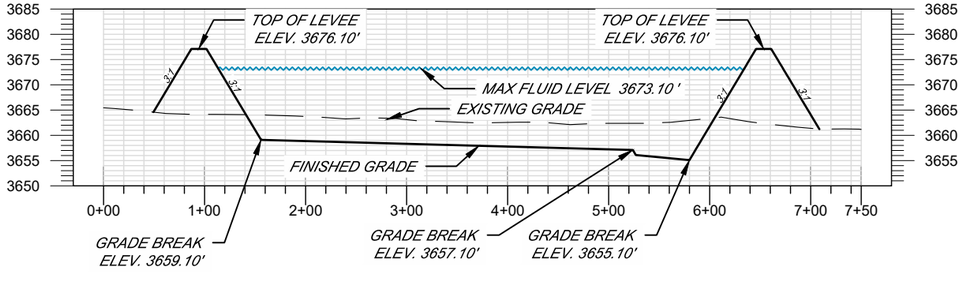

VERTICAL SCALE 1"=30'

0 15' 30' 60'

HORIZONTAL SCALE 1"=150'

0 75' 150' 300'

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REV1	REVISED DIMENSIONS AND GRADING	11/07/21	CSC
IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
R-X	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

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ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO
SOLARIS WATER MIDSTREAM, LLC.

CROSS SECTIONS

HORIZONTAL SCALE: 1"=150'	VERTICAL SCALE: 1"=30'
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-105

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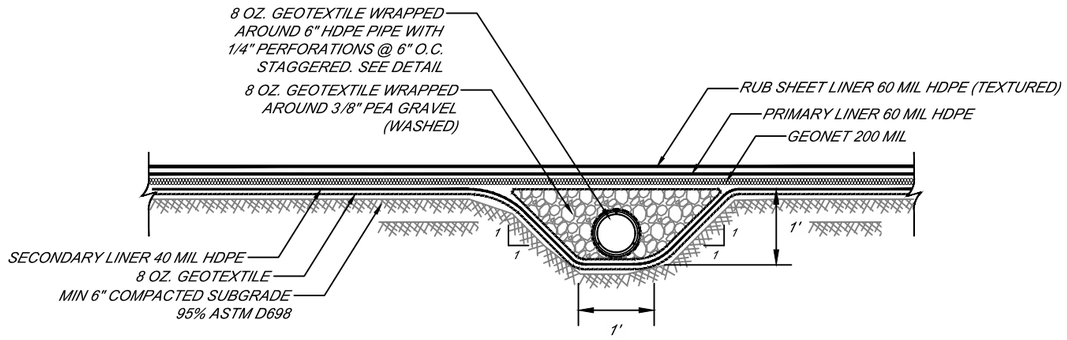
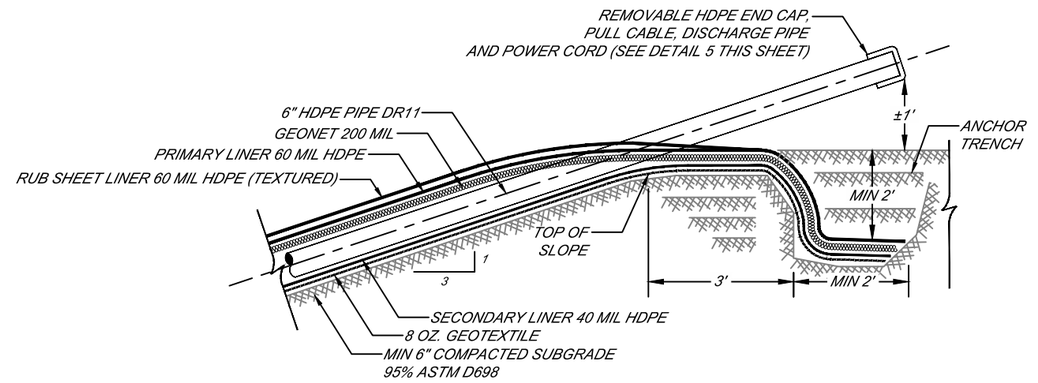
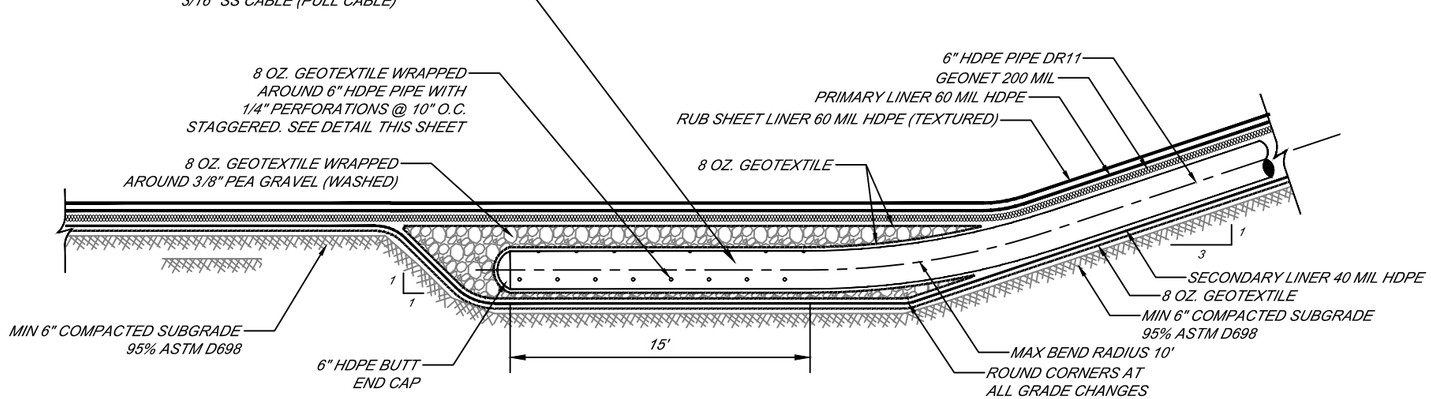


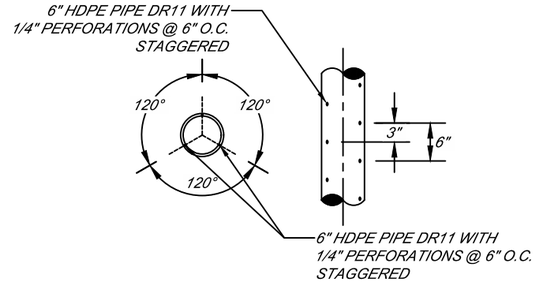
1 / C-106 **LEAK DETECTION SYSTEM SECTION A**
NOT TO SCALE



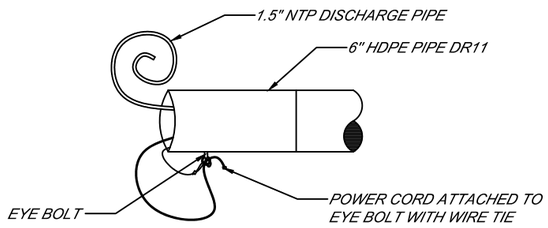
2 / C-106 **LEAK DETECTION SYSTEM PIPE RISER**
NOT TO SCALE



3 / C-106 **LEAK DETECTION SYSTEM SECTION B**
NOT TO SCALE



4 / C-106 **LEAK DETECTION SYSTEM PERFORATED PIPE**
NOT TO SCALE



5 / C-106 **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: 11/7/2021	DESIGNED BY: CSC
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SUBSET: CIVIL	SHEET: C-106

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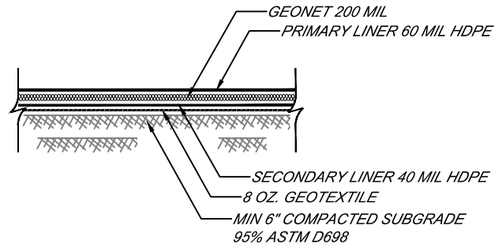
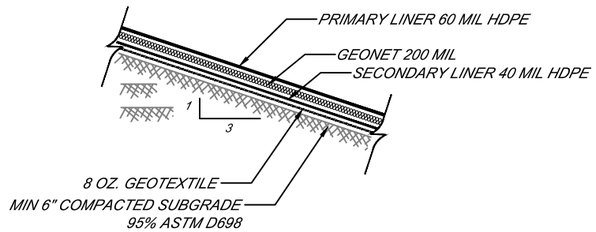
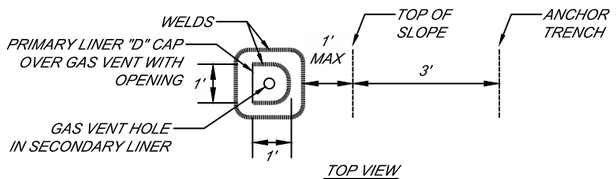


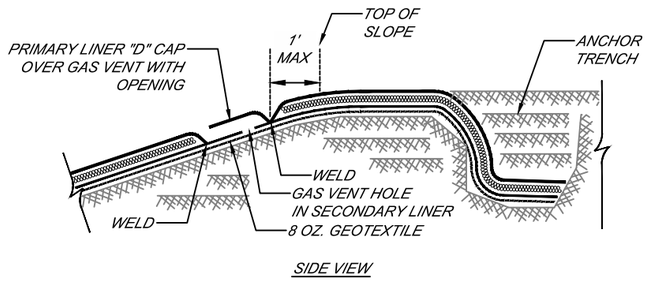
1 / C-107 TYPICAL POND BOTTOM LINER
NOT TO SCALE



2 / C-107 TYPICAL POND SLOPE LINER
NOT TO SCALE



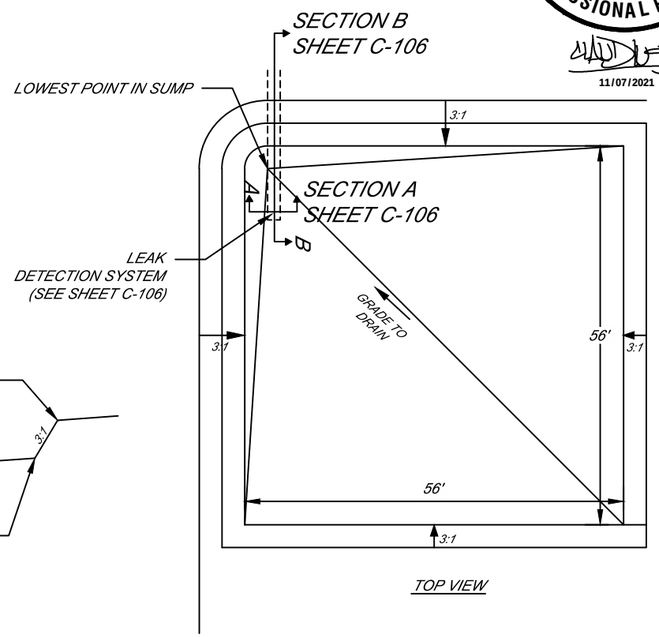
TOP VIEW



SIDE VIEW

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

3 / C-107 TYPICAL GAS VENT
NOT TO SCALE



SIDE VIEW

TOP VIEW

4 / C-107 SUMP DETAIL
NOT TO SCALE

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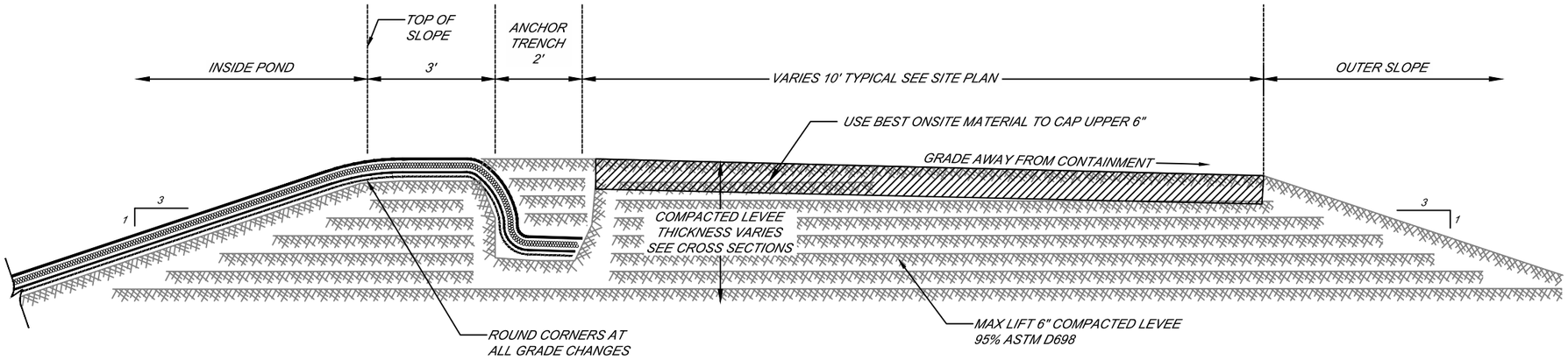
MISCELLANEOUS DETAILS

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-107

Drawing File: Z:\Shared\Projects\2021 Projects\21-270 Solaris Zeus\04_CIVIL\Design\Drawings\21-270 Details REV1.dwg



1 / C-108 **TYPICAL LEVEE SECTION**
NOT TO SCALE

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11/07/2021

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LEVEE AND PAD DETAILS

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PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-108

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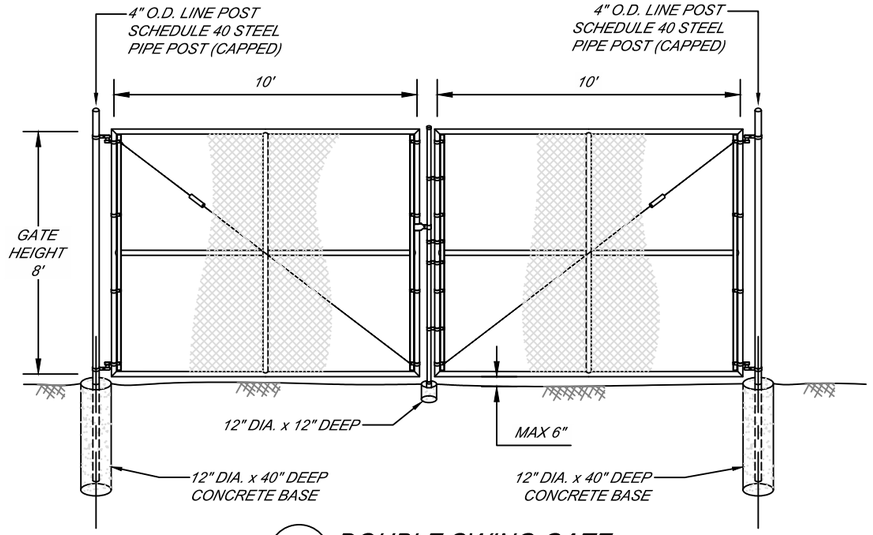
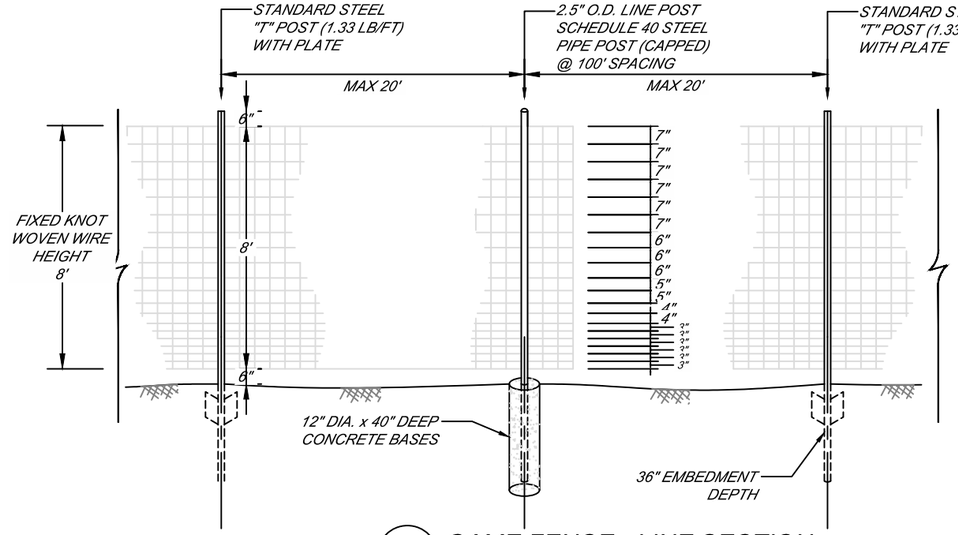
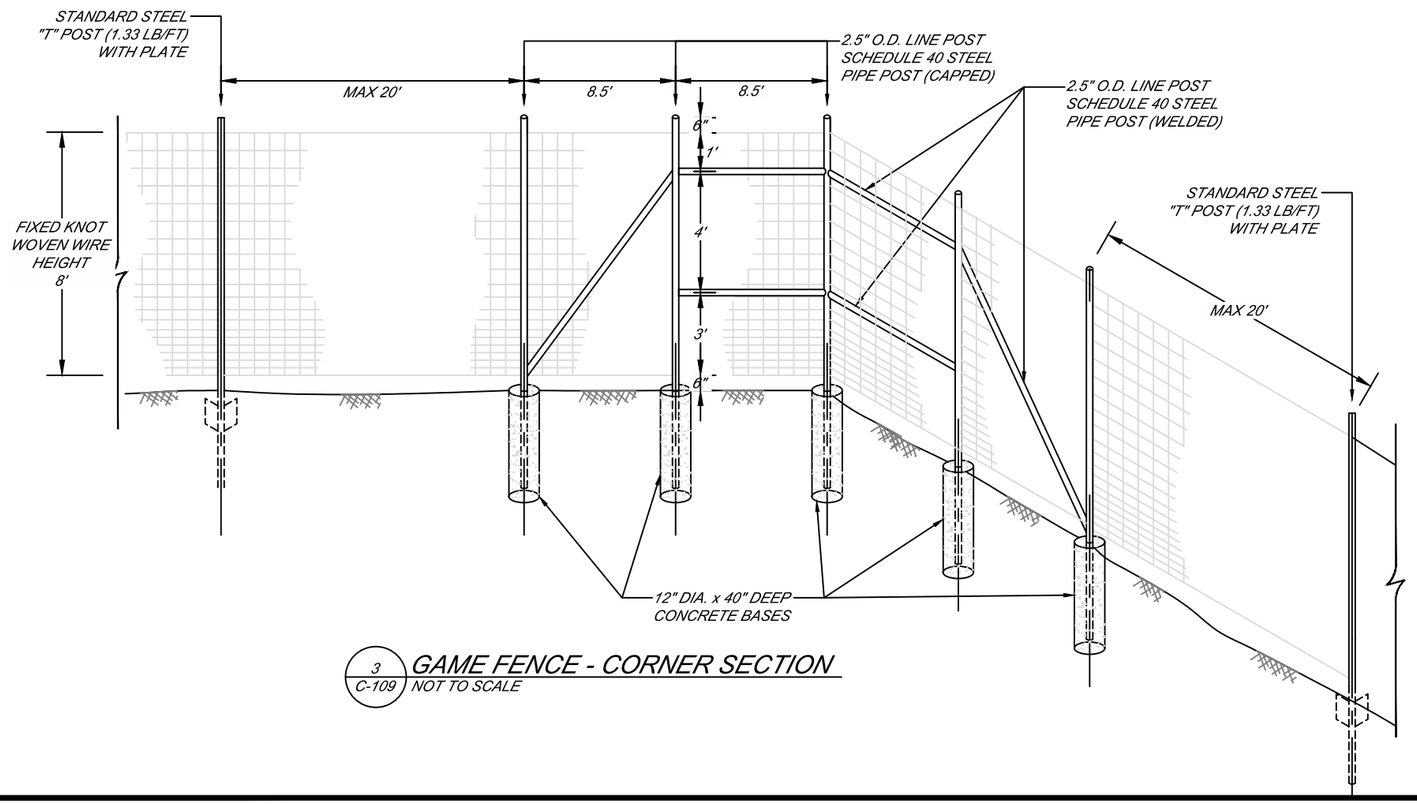


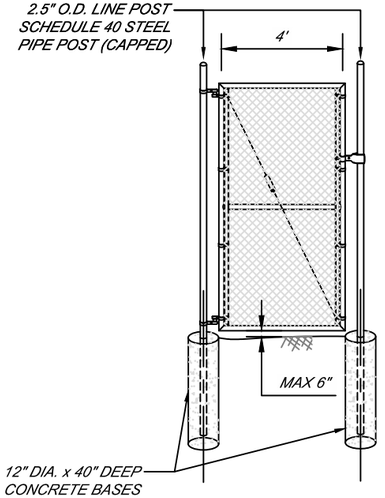
1 C-109 **DOUBLE SWING GATE**
NOT TO SCALE



2 C-109 **GAME FENCE - LINE SECTION**
NOT TO SCALE



3 C-109 **GAME FENCE - CORNER SECTION**
NOT TO SCALE



4 C-109 **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.

Magrym Consulting, Inc.
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Midland, TX 79701
(432) 999-2737
www.magrym.com
TX #F-19848 I ND #28610PE I OK #8561PE

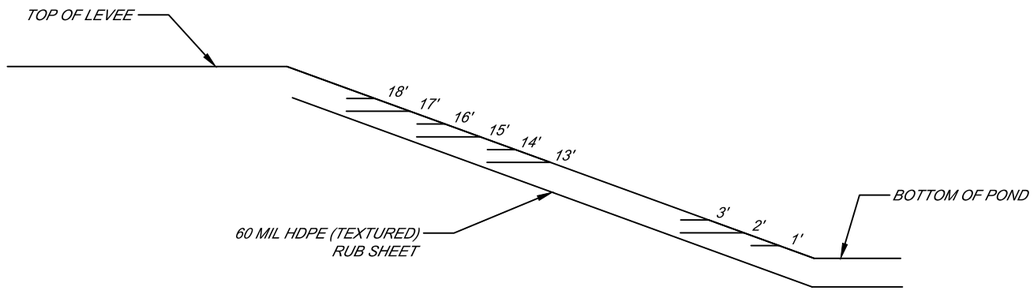
IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
R-X	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

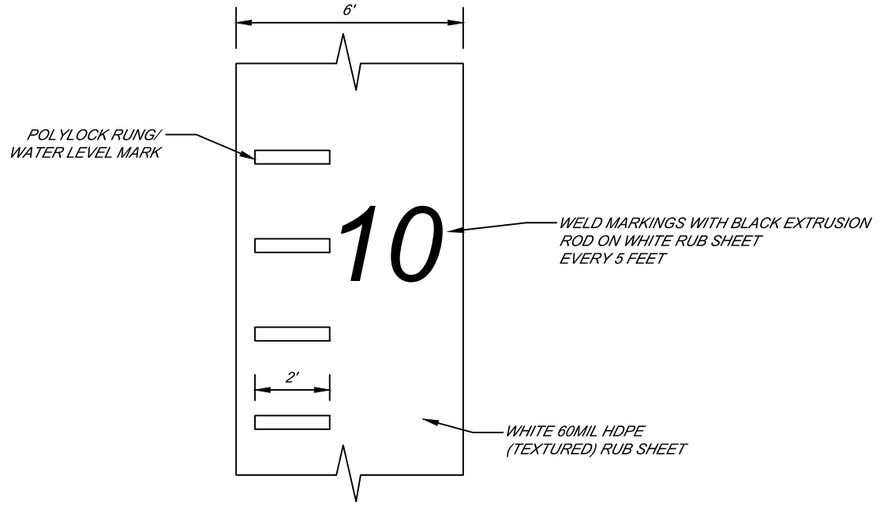
Solaris Water Midstream, LLC
907 Tradewinds Boulevard
Midland, TX 79701
432-203-9020
www.solarismidstream.com

ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO
SOLARIS WATER MIDSTREAM, LLC.

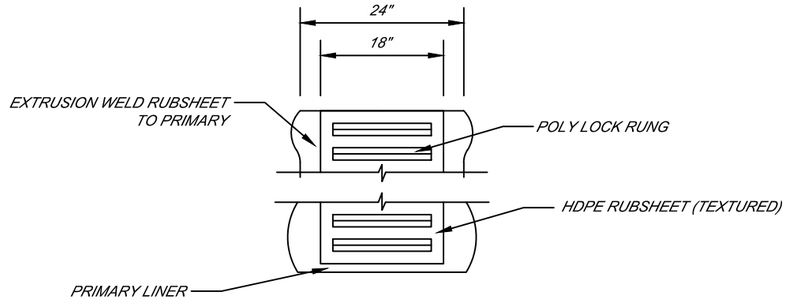
FENCE DETAILS	
HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-109

Drawing File: Z:\Shared\Projects\2021 Projects\21-270 Solaris Zeus\04_CIVIL\Design\Drawings\21-270 Details REV1.dwg

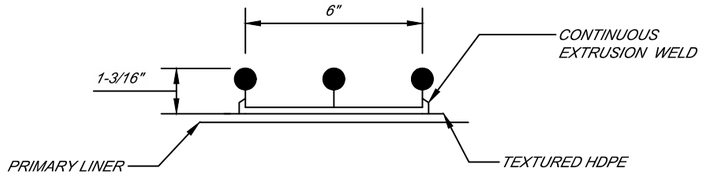




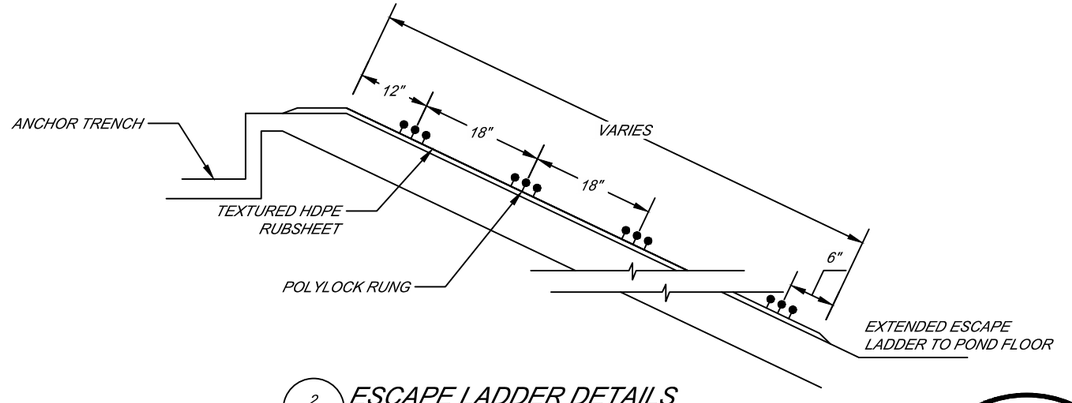
1 / C-110 WATER LEVEL MARKS
NOT TO SCALE



ESCAPE LADDER FRONT VIEW



POLY LOCK RUNG



2 / C-110 ESCAPE LADDER DETAILS
NOT TO SCALE

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
11/07/2021

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IFC	ISSUED FOR CONSTRUCTION	11/05/21	CSC
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ZEUS WATER TREATMENT AND REUSE FACILITY
S35, T21S, R32E
LEA COUNTY, NEW MEXICO
SOLARIS WATER MIDSTREAM, LLC.

ESCAPE LADDER AND GAGE DETAILS

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 11/7/2021	DESIGNED BY: CSC
PROJECT NO. 21-270	CHECKED BY: CSC/EMH
SUBSET: CIVIL	SHEET: C-110

Drawing File: Z:\Shared\Projects\2021 Projects\21-270 Solaris Zeus\04_CIVIL\Design\Drawings\21-270 Details REV1.dwg

EFFECTIVE WIDE-AREA BIRD CONTROL!

Mega Blaster PRO
sonic bird repeller
covers 30 acres!

- NEMA Rated Case
- Crystal-Clear Digital Sounds

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.

- *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

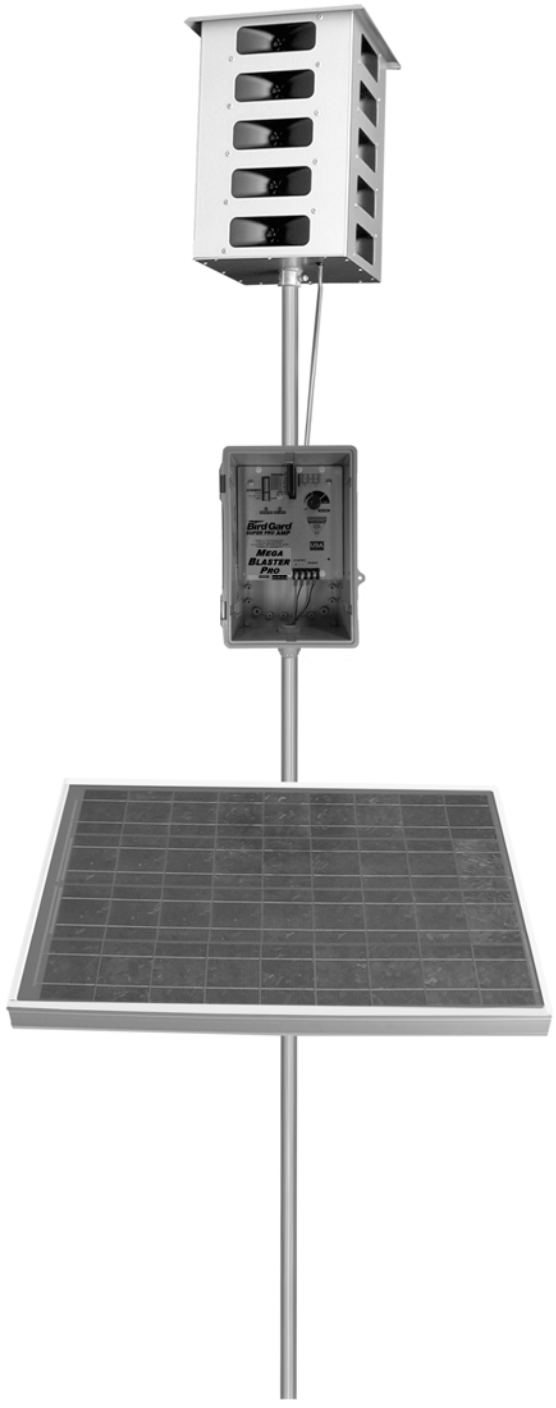
The Bird Control 'X'-Perts

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

MEGA BLASTER PRO

BIRD-X

User's Manual



Overview

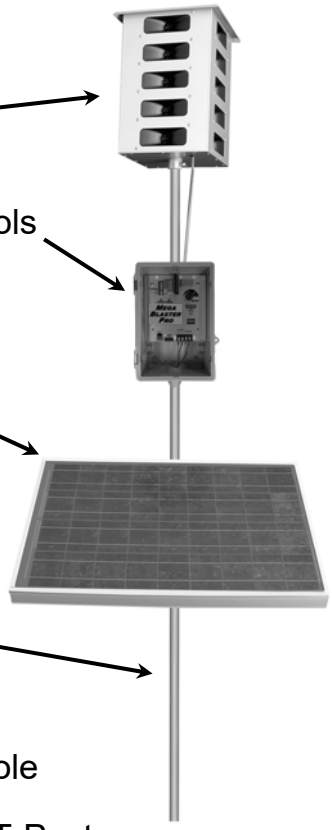
The Bird-X Mega Blaster Pro utilizes the innate power of the natural survival instincts of birds to effectively repel them. Digital recordings of distressed and alarmed birds, along with the sounds made by their natural predators are broadcast through high fidelity weather-resistant speakers over the 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

DESIGN AND CONSTRUCTION PLAN
OPERATION AND MAINTENANCE PLAN
CLOSURE PLAN

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)**

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).

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.

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.

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.

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.

Quarterly Inspection Log Sheet - In Ground Containment

Solaris Water Midstream
Zeus Containment

Inspect weekly while fluids present (>1 foot); Monthly when fluids <1 foot								
Inspection Date	Inspector (Initials)	Describe any 1. Tear of Liner 2. Break in Berms and Run-on of Stormwater 3. Dead Wildlife 4. Oil on Fluid				Report Fluid Freeboard	Leak Detection System Functioning (yes/no)	Comments
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			
			None Observed		Yes Describe			

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.

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.

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.

General Siting Criteria Demonstration and Site-Specific Groundwater Data

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 FIGURES 1-2 Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality FIGURE 3 Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division FIGURE 4 Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map FIGURE 5 Within a 100-year floodplain. FEMA map FIGURE 6 Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site FIGURE 7 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 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 Within 500 feet of a wetland. FIGURE 9 - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site

Distance to Groundwater

Figures 1, 2a, and 2b with their associated legend, and the discussion presented below demonstrate that groundwater (fresh water, as defined by NMOCD Rules) at the location is greater than the required 50 feet below the proposed Zeus AST that compose the Zeus Site. Specifically, the estimated depth to water is greater than 100 feet.

Hydrogeology of Zeus Site Containment

Figure 1 shows the topography of the area of the Zeus Containment and the locations of water wells in the databases of the NM Office of the State Engineer, the USGS and Hicks Consultants.

Figure 1 shows that the site is within the northwestern portion of the northwest to southeast trending San Simon Swale. At the site, stormwater flows southeast toward the center of the Swale, 16 miles distant and beyond the southeastern limit of Figure 1. About 1.3 miles northwest of the site is an indistinct saddle where surface water flows to the northwest into the Bilbrey Basin. The center of the San Simon Swale has an elevation of 3273 feet above sea level and the elevation of the aforementioned saddle is 3680 feet ASL.

The State Geologic Map of Figure 2a shows that the Tertiary Ogallala Formation (To) is exposed north and northeast of the Zeus site. Quaternary eolian sand and piedmont alluvial deposits characterize the surface at the site. Underlying the piedmont deposits are the Tertiary Ogallala Formation in the north and northeast portion of Figure 2a. In western Lea County, the Triassic Chinle (aka Dockum Group) underlies a thin veneer of alluvium.

At the Zeus site, Figure 2b shows no elevation data for the top of the Triassic surface (Chinle/Dockum). Projecting the data from the southeast to the Zeus site suggests the top of the Chinle may be at 3650 ASL. Because the surface elevation of the Zeus site is about 3665, the map suggests the thickness of alluvial material (Qp or To) is only15 feet. The driller's log for CP-1701 (see Well Logs Appendix), about 0.8 miles northwest of the site, penetrated a red clay from 80 feet to 190 feet deep. Underlying the clay is 210 feet of Tan/Red sandstone. This lithology is typical of the Chinle. We know the work of the driller of this well (Bryce Wallace) and believe the record of cuttings is valid. The surface elevation of CP-1707 is about 3680, which calculates a top of "red bed" (Chinle) is (3675-80=) 3595. We believe the data from CP-1707 is valid. About 80 feet of alluvial material (Ogallala or Quaternary) underlie the Zeus location. The well log also indicates the uppermost water bearing zone is a red siltstone with gypsum at 560 feet, which may be the Permian Quartermaster or Rustler, and this water-bearing zone exhibited a static water depth of 457 feet. The USGS identifies the Chinle/Santa Rosa as the primary aquifer in this area, and we agree with their interpretation. The 560-foot depth of first encountered groundwater results in an elevation of groundwater as (3680-560=) 3120 feet ASL, which is presented in Figure 2a. However, groundwater at this depth is clearly confined as the recorded static groundwater elevation is (3680-457=) 3223 feet ASL.

Other well logs in the Well Logs Appendix provide useful data as indicated below.

- C-2821 (2.6 miles south of Zeus) describes a red/smooth/sticky clay, is at 72 feet below surface. The elevation of the Chinle red beds on Figure 2b at this location is about (3715-72=) 3643, which agrees with the projected 3650 elevation of Figure 2b. The uppermost water bearing strata is noted at a depth of 410 feet.
- C-3717 is about 2.7 miles southwest of the Zeus site and was not completed as a well due to lack of water. Groundwater is noted at a depth of 55 feet, which may be a perched zone caused by recharge from the nearby Divide Tank. Red clay at 30 feet depth is probably the top of the Chinle, which calculates to an elevation of (3775-30=) 3745. Note that Figure 2b suggests the Chinle is at or near the surface about 2 miles west of this well.

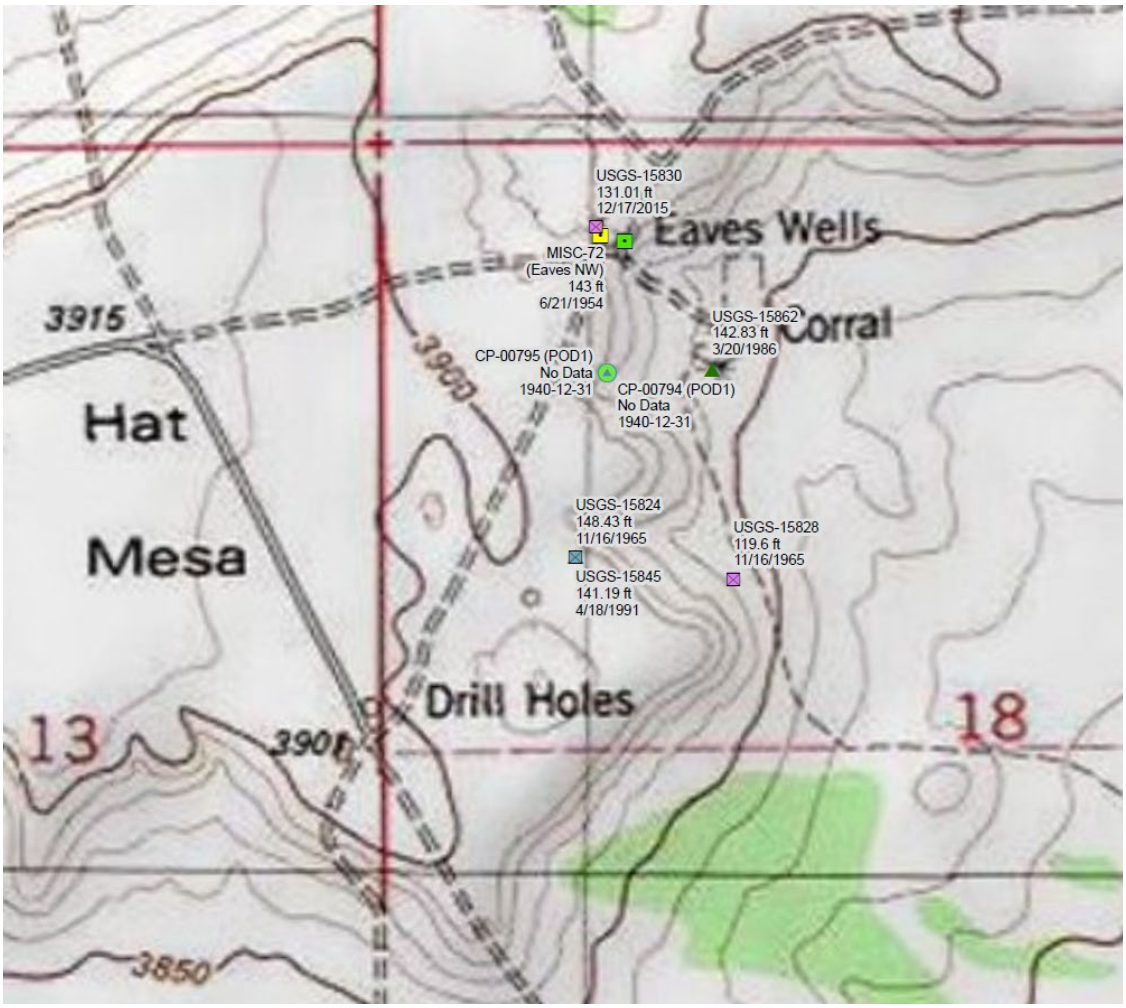
Depth to Water Data and Nearby Wells

Figure 2a and the associated legend presents a topographic map overlain by a transparent geologic map of the state of New Mexico that display the following:

- A blue hatched rectangle, which represents the footprint of the Zeus Site.
- Water wells from the USGS database as green, cyan, purple, red, and blue triangles. These colors indicate the principal water-bearing unit for each well: Alluvium/Bolsom, Ogallala, Chinle, Santa Rosa, and Not Defined, respectively. The well number as defined in the database, recorded depth to water value, and date the water level was measured is displayed next to the corresponding well point.
- Miscellaneous water wells from public and non-public databases were identified by field inspection or other published documents are represented by yellow, cyan, green, dark green, and dark blue squares with black dots in the center. The colors correspond to the depth to water. The water level measurement and the date the measurement was recorded are displayed next to the corresponding well points.
- A larger scale map displayed below shows the closely spaced wells on the northern margin of the maps.

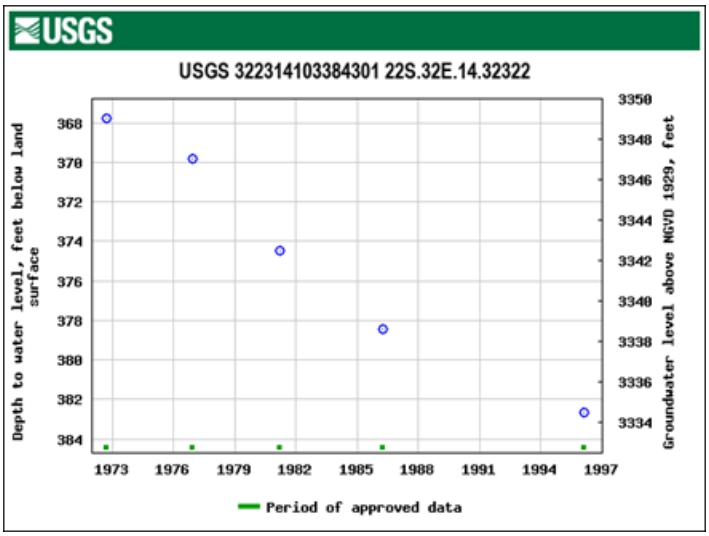
While alluvial sediments near Hat Mesa to the north of the containment and the Ogallala Formation to the northeast create a reasonable water-table aquifer, these sediments are relatively thin and not saturated at the Zeus containment site, as described above. Groundwater at the Zeus site is derived from the Triassic Chinle/Santa Rosa units. The driller's log from the closest well, CP-1701, indicates "first water" at a depth of 560 feet and a static water level of 557. Figure 2a uses the 560 depth to calculate the elevation of groundwater, resulting in a groundwater elevation of 3120. Using the static water level from the well log (457), the groundwater elevation is 3223 and the aquifer is confined.

A groundwater elevation of about 3223 ASL beneath the Zeus containment yields a depth to water of (3665-3223=) 442 feet. Data from driller's logs can be inaccurate, but the description of the lithology and groundwater characteristics displayed in the log for CP-1710 is consisted with data from nearby wells, the geology of the area and USGS water level data, some of which are presented below. We can state with a high degree of scientific certainty that the depth to the groundwater surface beneath the Zeus site is greater than 100 feet.



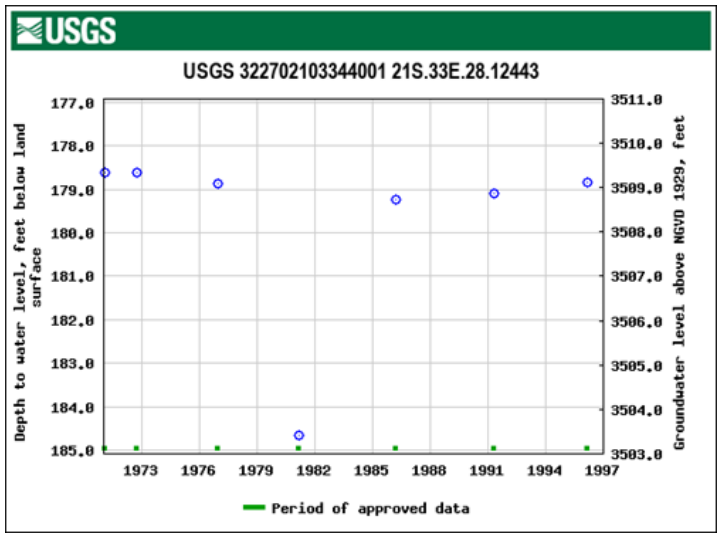
This is USGS 15223, about 2.8 miles south of Zeus. The USGS description of this well is:
Latitude 32°23'23", Longitude 103°38'53" NAD27
Land-surface elevation 3717.00 feet above NGVD29
The depth of the well is 435 feet below land surface.
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

The observed decline of the groundwater elevation over time is consistent with other Santa Rosa wells in the area.



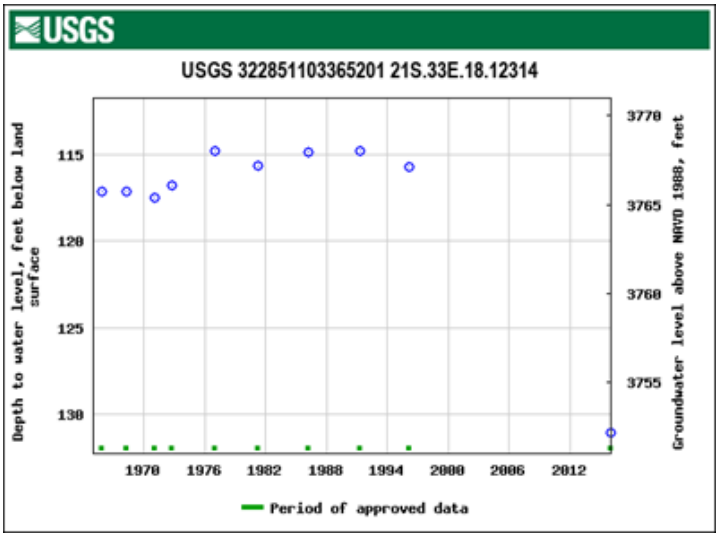
The graph to the right is from USGS- 15373, about 3.8 miles to the east-northeast. The USGS describes this well as:

Latitude 32°27'13", Longitude 103°34'42" NAD27
Land-surface elevation 3,688.00 feet above NGVD29
The depth of the well is 224 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

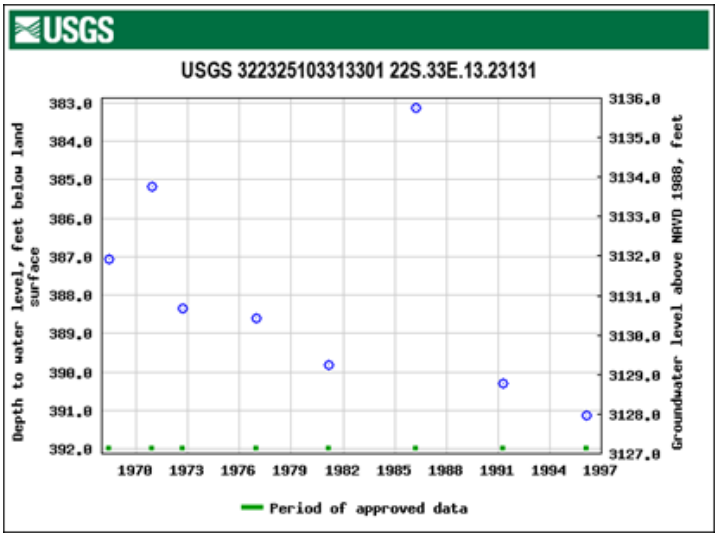


This well lies southwest of the exposed Ogallala Aquifer. The relatively stable water level over time probably represents a hydraulic connection between the Ogallala and Chinle in this area as suggested in the hydrograph presented below.

The hydrograph of USGS-15830 to the right shows a relatively stable static water elevation over the same period of record as Well-15373. This well lies about 4 miles north of the Zeus site, on Hat Mesa. The USGS description is:
Latitude 32°29'06.6", Longitude 103°37'00.6" NAD83
Land-surface elevation 3,883 feet above NAVD88
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.
The well was pumping/recovering for the 2015 measurement



The USGS hydrograph for well USGS-15229 is to the right. This well is about 7 miles southeast, near CP-1724 (see Appendix Well Logs). Like well CP-1701, northwest of the Zeus site, the top of the Chinle is 80 feet below land surface and the distance to the Ogallala/Alluvium is about the same. The description of this well in the USGS database is:
Latitude 32°23'38.6", Longitude 103°31'33.6" NAD83
Land-surface elevation 3,519 feet above NAVD88
The depth of the well is 508 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.



We contend that the geology and groundwater characteristics at the Zeus site is similar to what is reported at CP-1701 and USGS-1724.

Distance to Municipal Boundaries and Freshwater Fields

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

- The nearest freshwater well field is 28 miles to the west and is associated with Loving and/or Otis New Mexico.
- The nearest municipality is the City of Loving, which is 27 miles west-southwest of the site.

Distance to Subsurface Mines

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

- The Zeus site is not in an area where subsurface mines exist.
- The site is located more than 2000 feet west and more than 4000 feet south of the Main potash district.
- The nearest surface mine mapped in the MILS database is a caliche pit about 8400 feet to the north-northwest.
- An unmapped caliche pit is about 5000 feet west-southwest.

Distance to High or Critical Karst Areas

Figure 5 illustrates the Zeus Site is within a “low” karst potential.

- The closest high karst area is more than 8 miles west.
- Our field investigation saw no evidence of unstable ground or karst features such as sinkholes.

Distance to 100-Year Floodplain

Figure 6 demonstrates the absence of 100-year flood plains with respect to the proposed location for the Zeus site.

- The nearest 100-year flood plain is 16 miles southwest of the site.

Distance to Surface Water

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

- The nearest surface water feature is an intermittent stream that is located more than 800 feet due west.
- We observed no watercourses that meet the Rule 34 definition near the site.

Distance to Permanent Residences or Structures

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

- The only nearby structures are the well pads, lease roads and pipelines.

Distance to Non-Public Water Supply

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

- Figure 1 shows the location of all area water wells. The nearest well, CP-1701, is located more than 3000 feet from the Zeus containment location.
- No domestic water wells are located within 1,000 feet of the recycling area.
- No springs were identified in the area.
- The site is not within 500 feet of a spring or freshwater well used for domestic or stock watering purposes, in existence at the time of initial application.

Distance to Wetlands

Figure 9 demonstrates that the proposed site of the Zeus site is not within the 300-foot setback distance of a wetland.

- The nearest wetland mapped by the USA database is a riverine wetland associated with an arroyo about 2600 feet southwest. Most riverine wetlands from this database are not true wetlands but arroyos with relatively dense brush that may appear as “wet” in aerial photographs.
- The nearest wetland mapped by the New Mexico database are associated with the School Section Tanks that are more than 4000 feet from the Zeus location.

Figures

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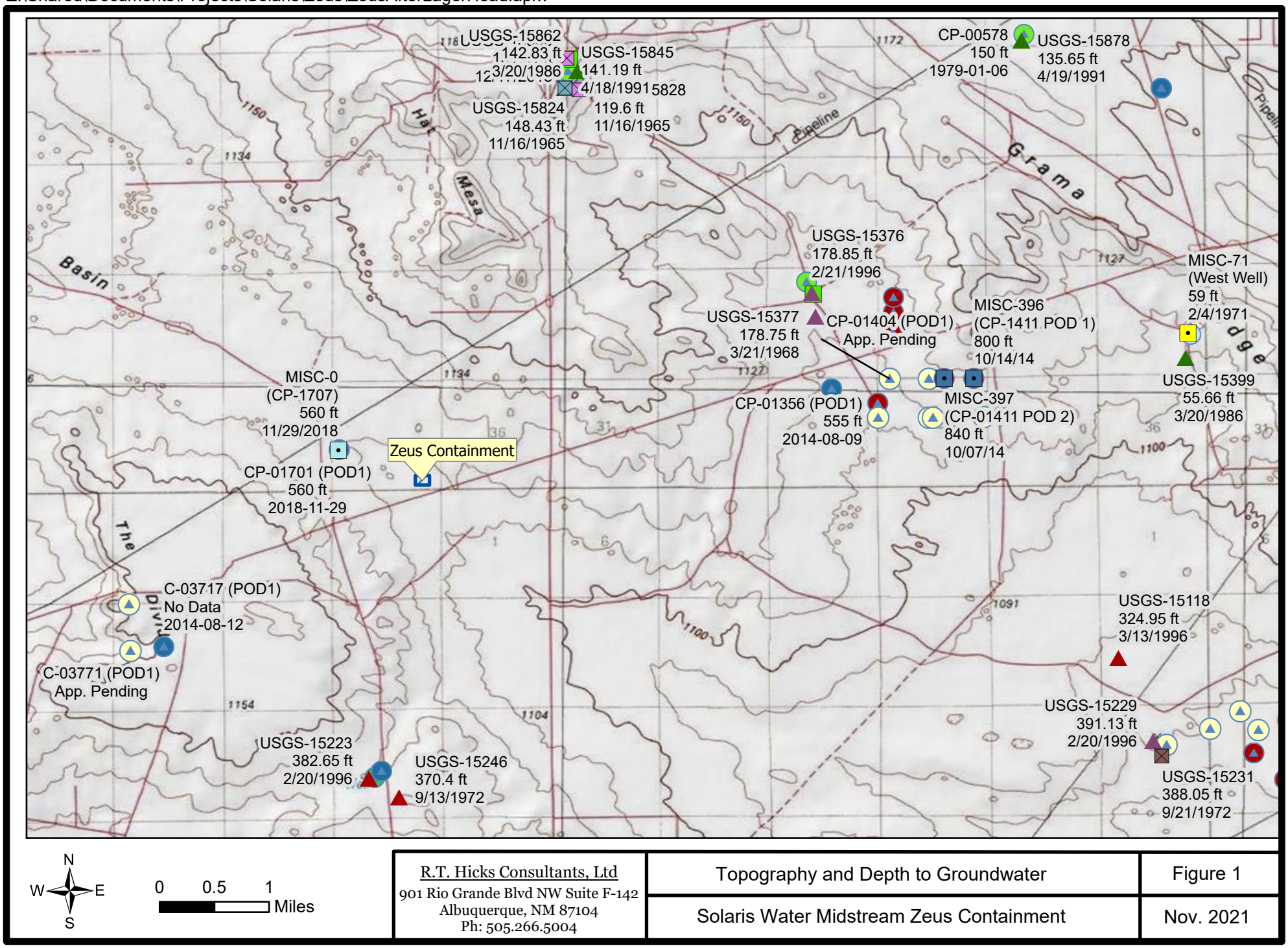

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Topography and Depth to Groundwater	Figure 1
	Solaris Water Midstream Zeus Containment	Nov. 2021

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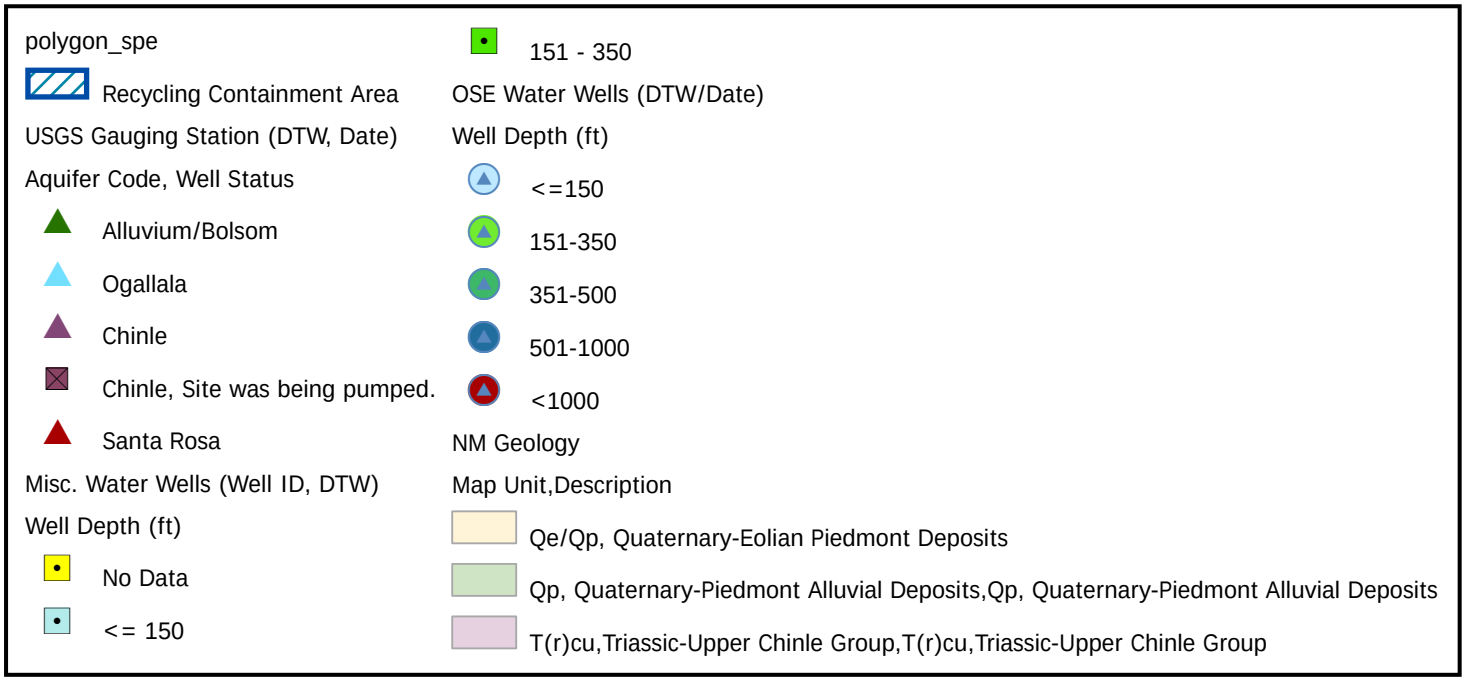

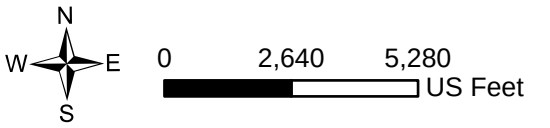

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Legend for Figures 1 and 2a

Figures 1&2 Legend

Solaris Water Midstream - Zeus Containment

Sept. 2021

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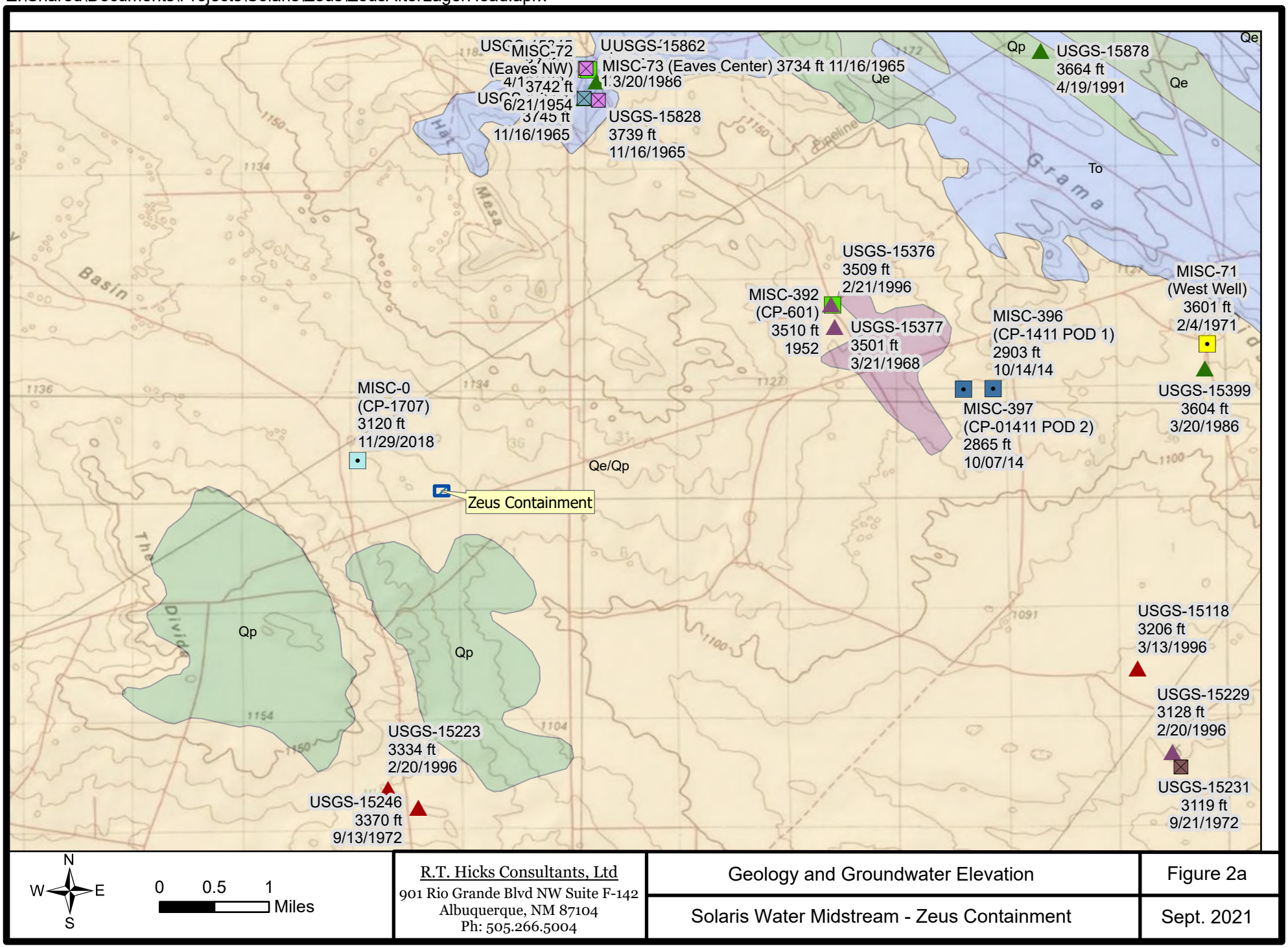

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Geology and Groundwater Elevation	Figure 2a
	Solaris Water Midstream - Zeus Containment	Sept. 2021

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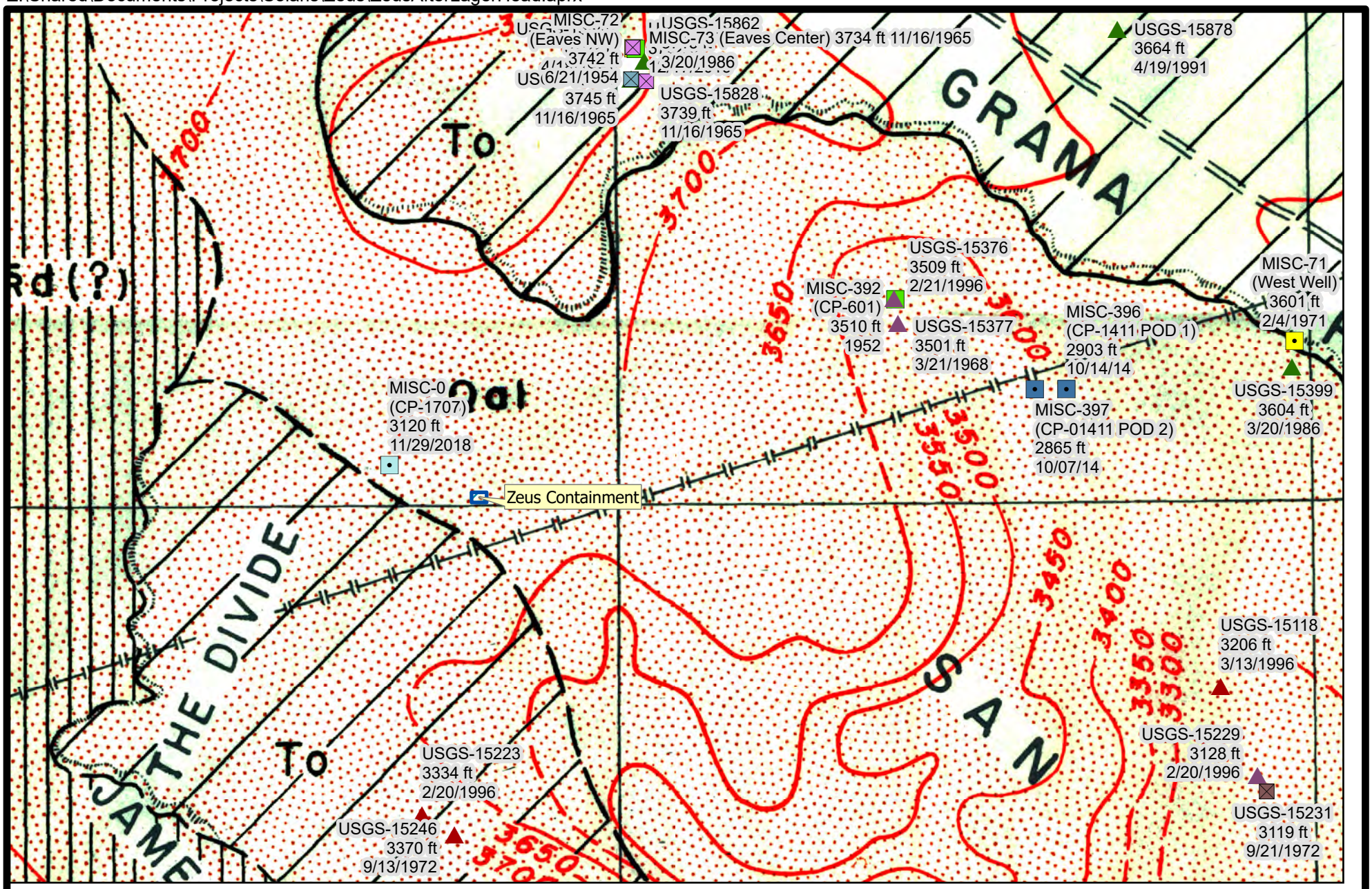

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Groundwater Elevation & Red Bed Elevation	Figure 2b
	Solaris Water Midstream - Zeus Containment	Nov. 2021

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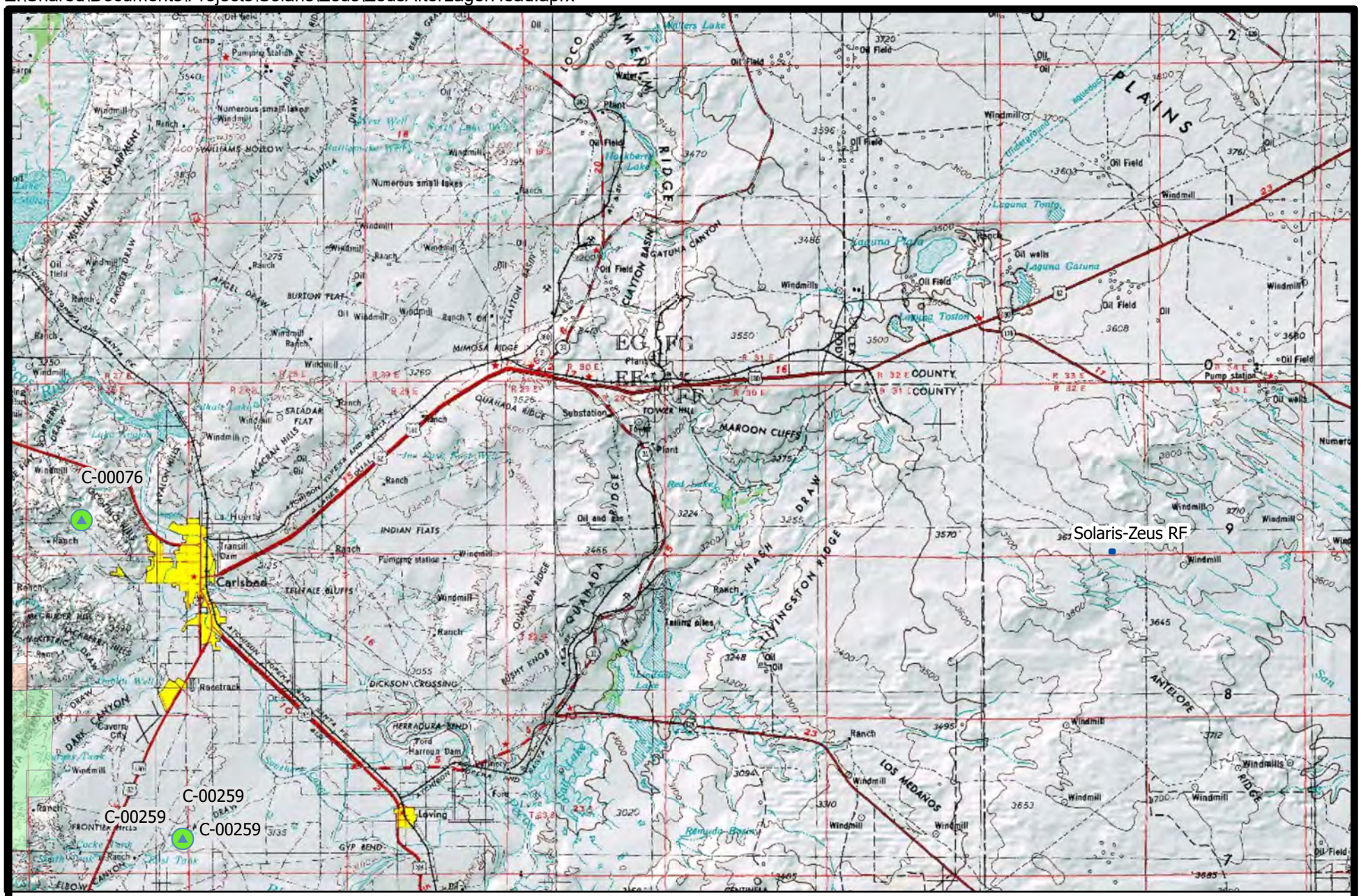

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Municipalities and Fresh Water Well Fields	Figure 3
	Solaris Water Midstream - Zeus Containment	Dec. 2021

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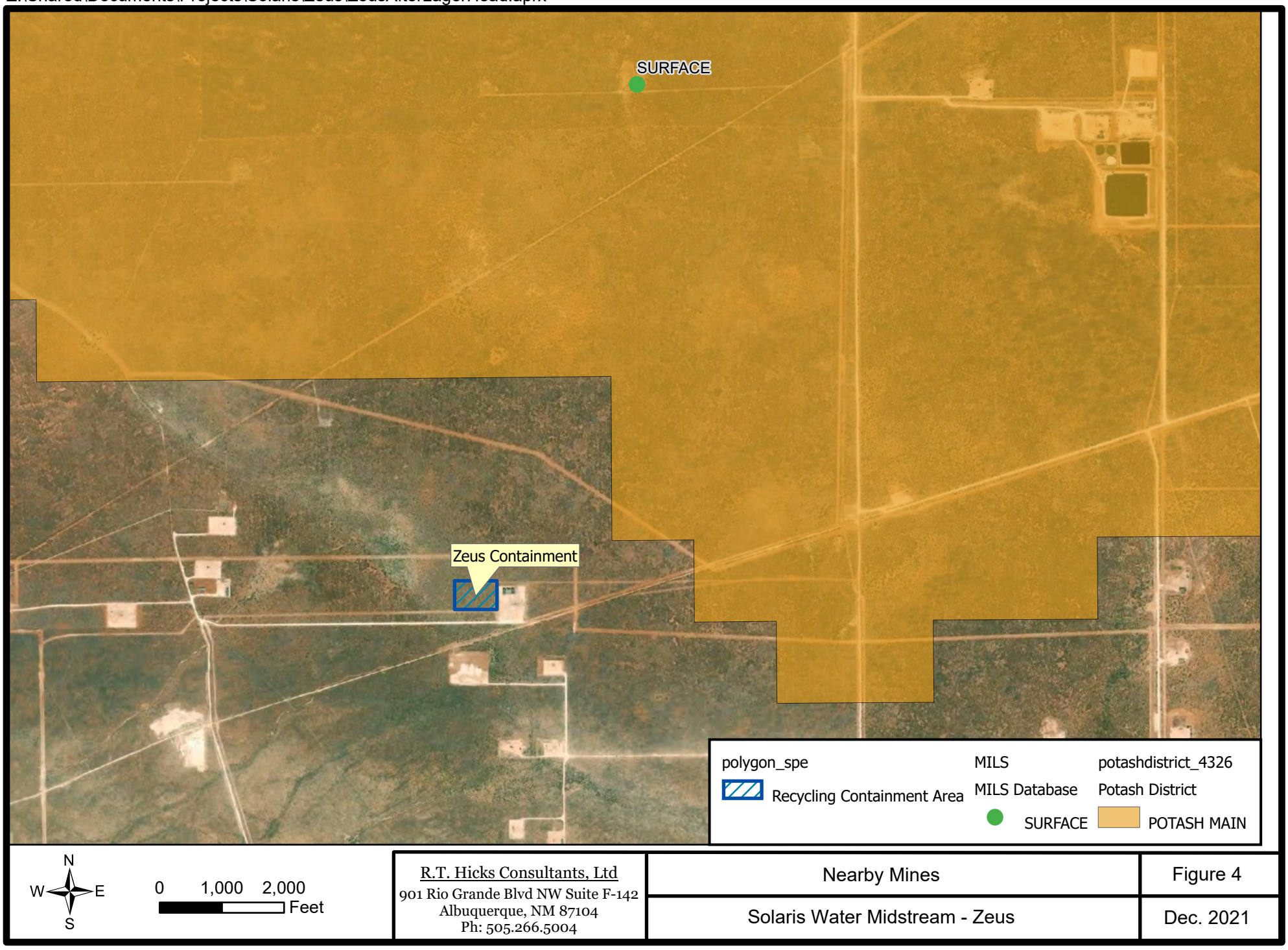

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Albuquerque, NM 87104
Ph: 505.266.5004

Nearby Mines

Figure 4

Solaris Water Midstream - Zeus

Dec. 2021

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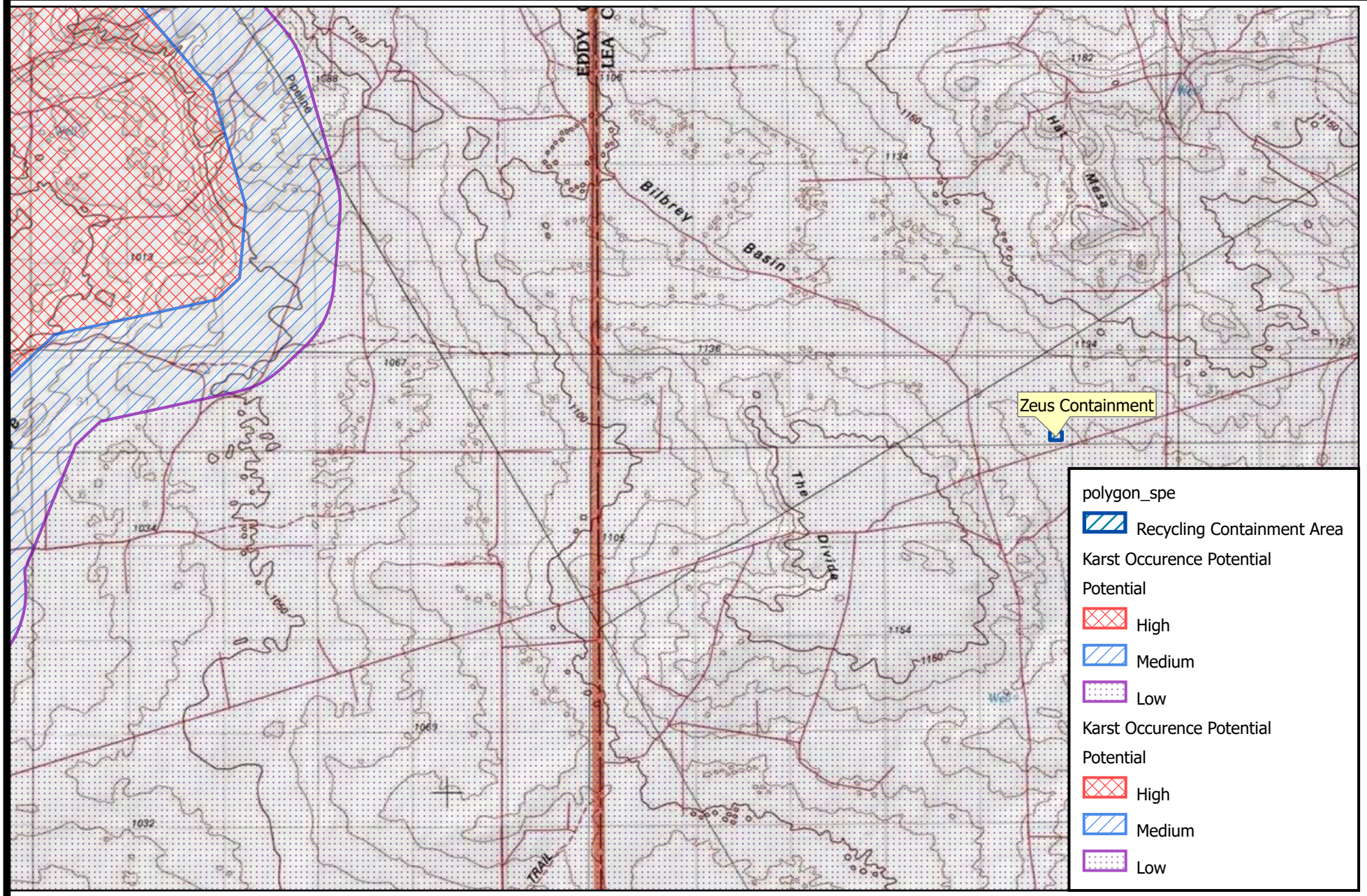

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0 1 2 Miles

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901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Distance to Mapped High Karst

Figure 5

Solaris Water Midstream Zeus Containment

Dec. 2021

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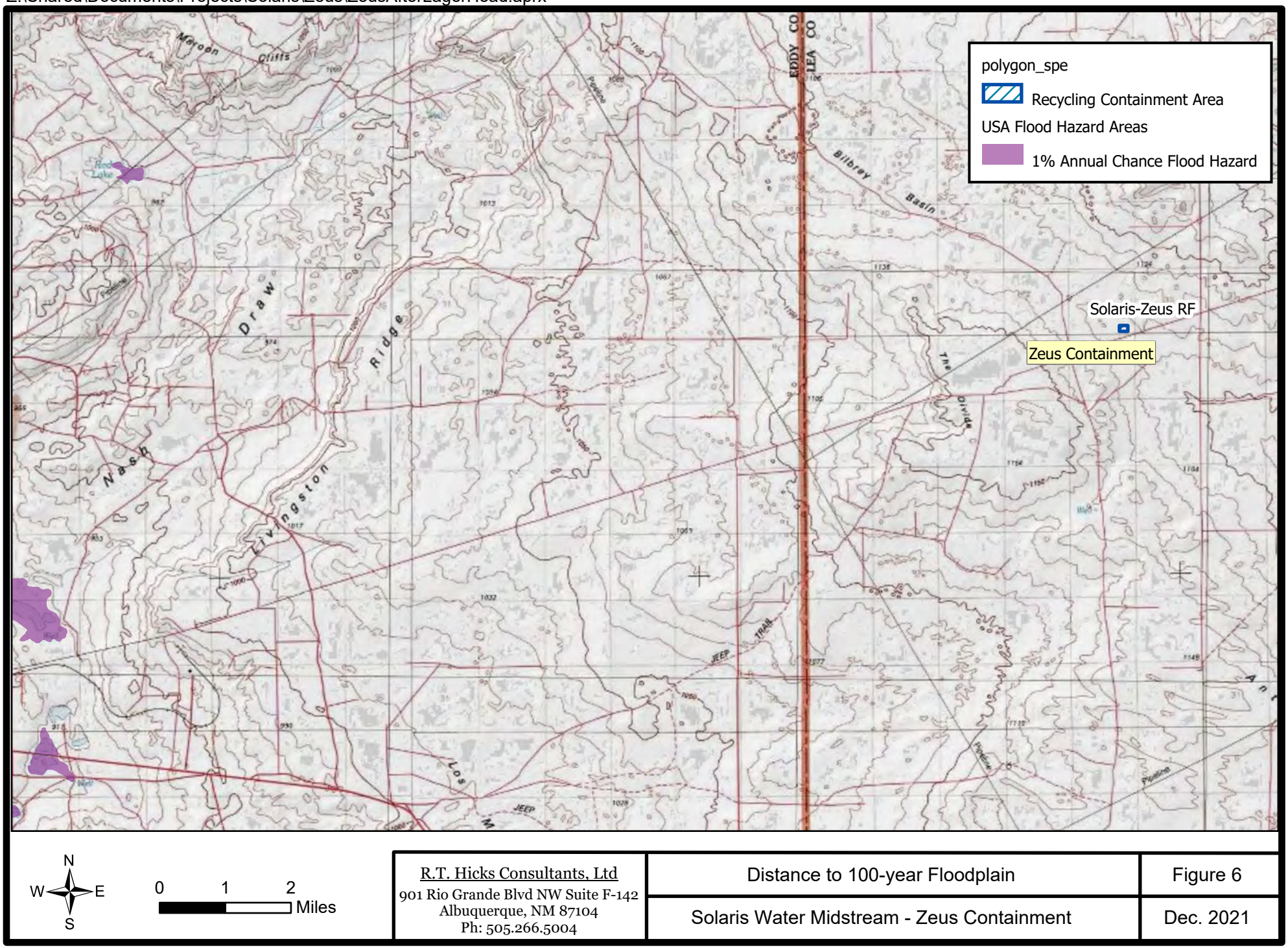

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Distance to 100-year Floodplain	Figure 6
	Solaris Water Midstream - Zeus Containment	Dec. 2021

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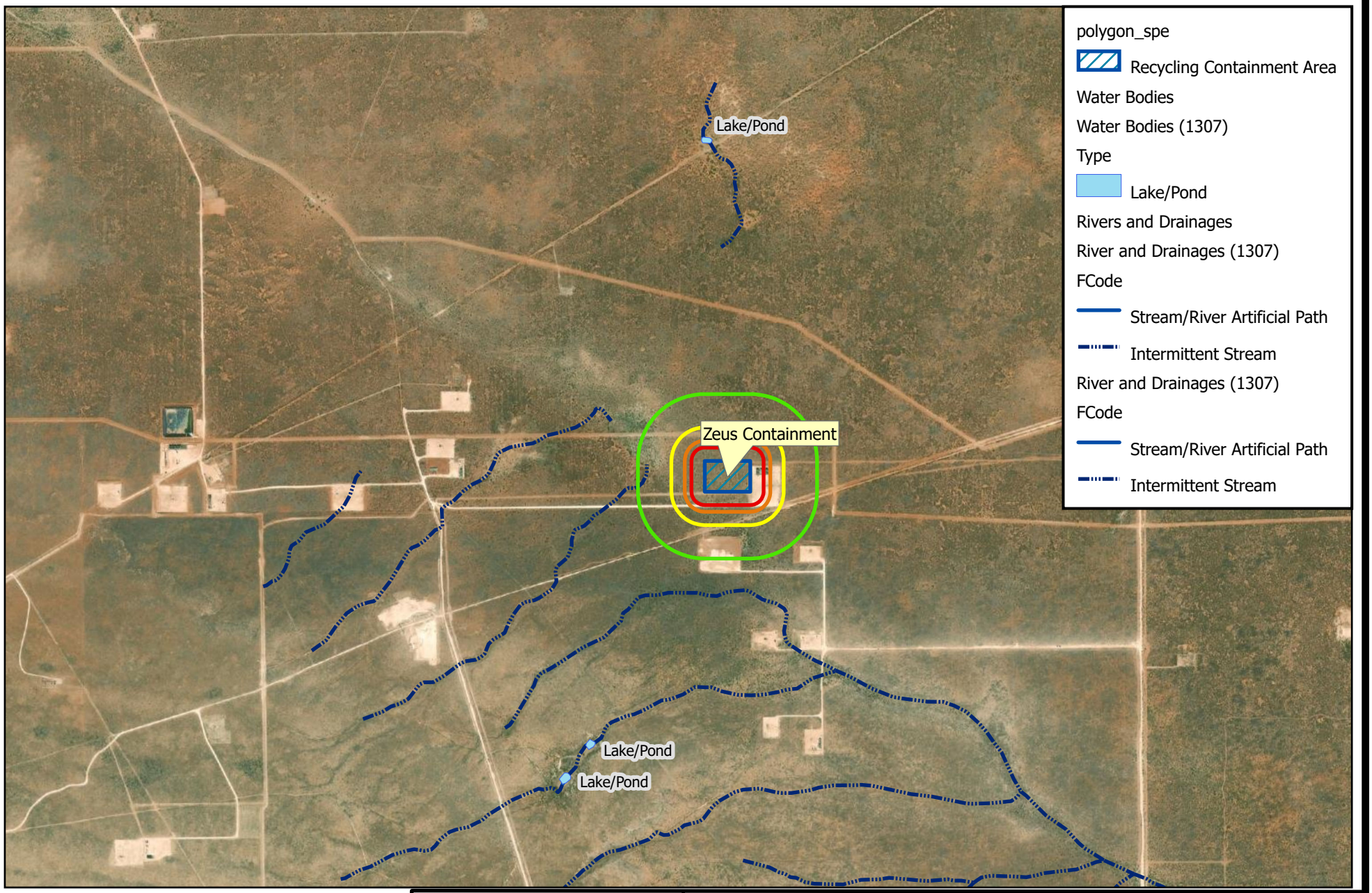

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Feet

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901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Mapped Surface Water	Figure 7
Solaris Water Midstream - Zeus Containment	Dec. 2021

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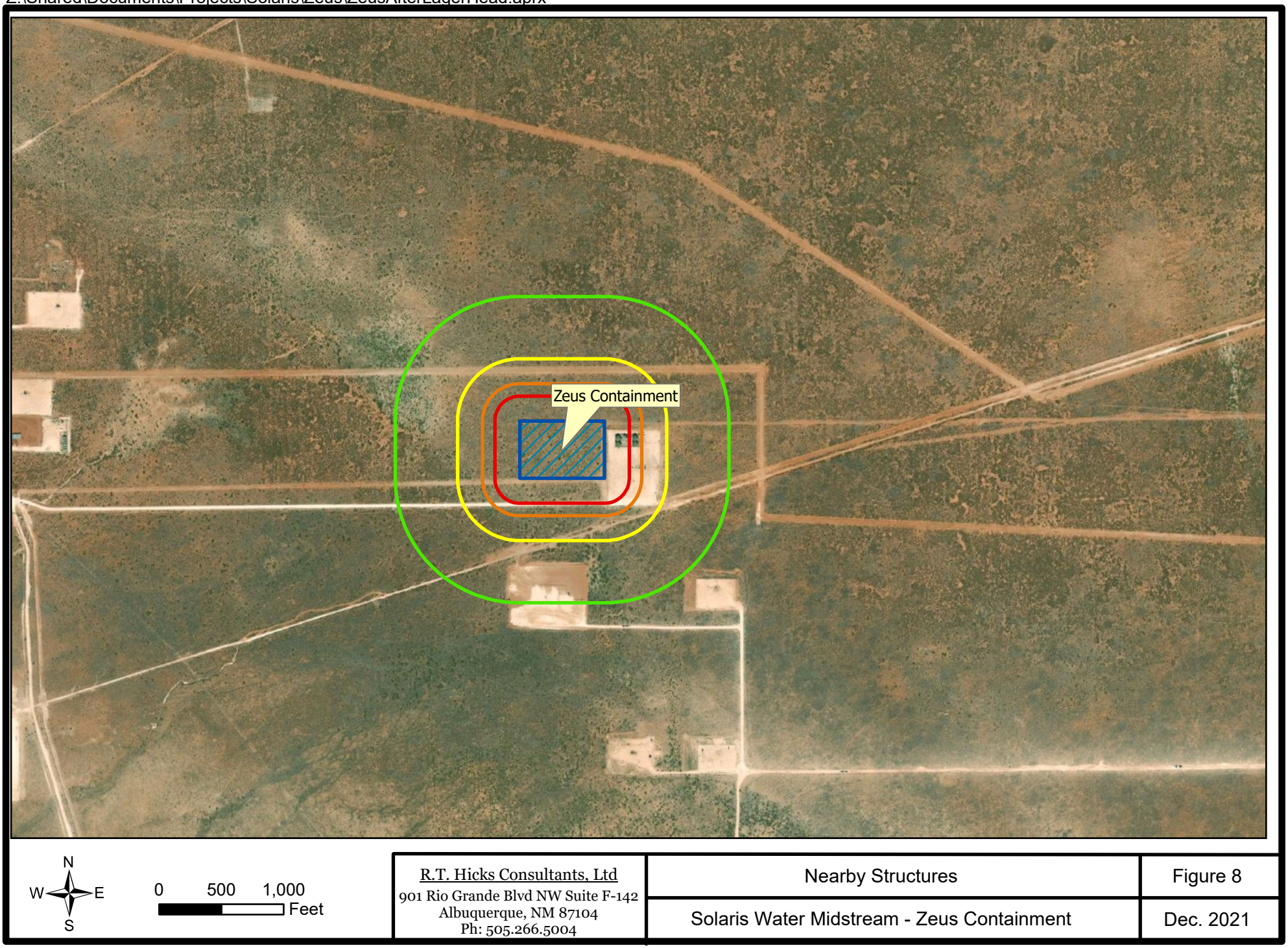

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures	Figure 8
	Solaris Water Midstream - Zeus Containment	Dec. 2021

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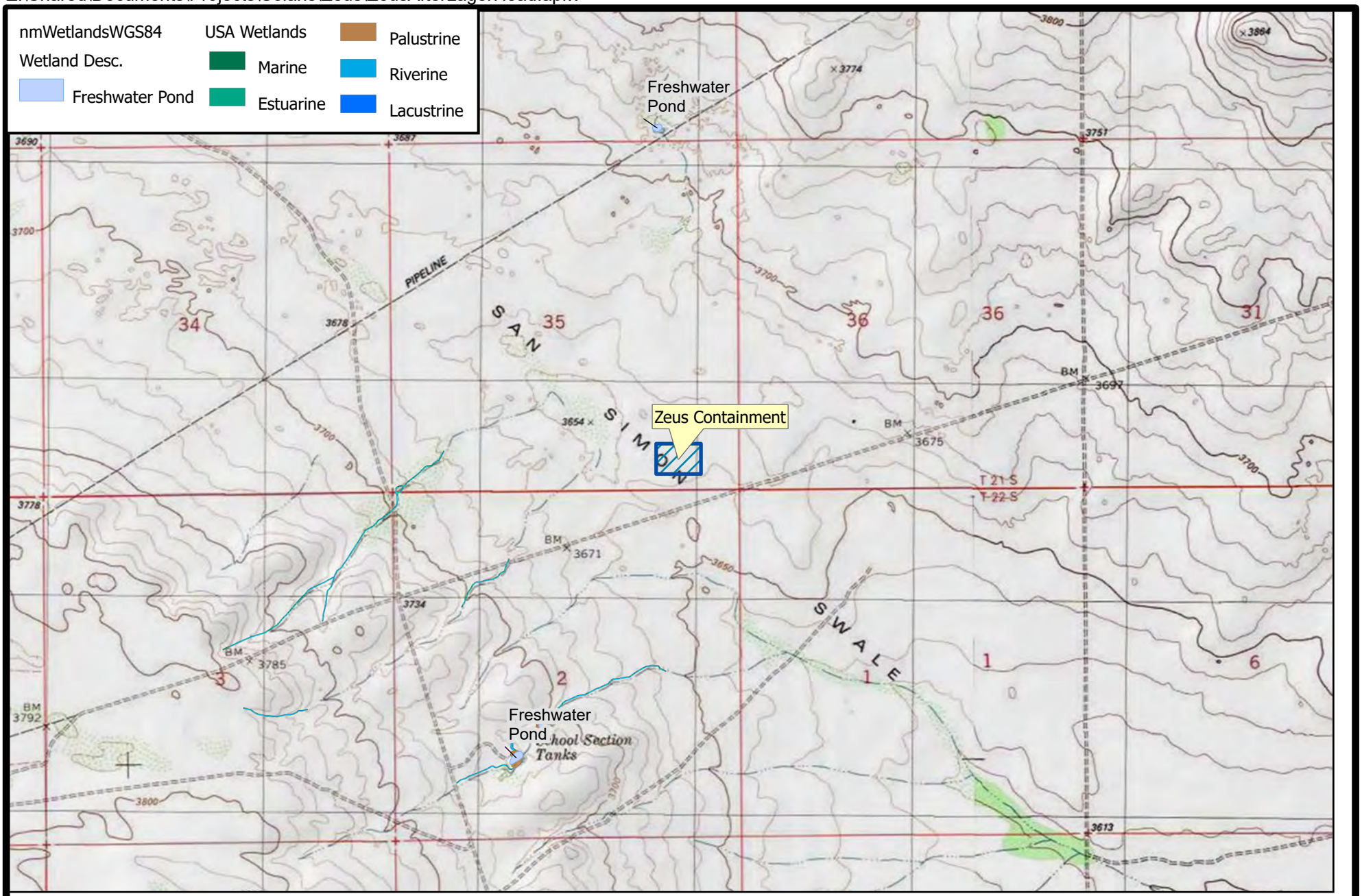

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wetlands	Figure 9
	Solaris Water Midstream - Zeus Containment	Dec. 2021

APPENDIX Well Logs

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
CP-1701-POD1		

WELL OWNER NAME(S)	PHONE (OPTIONAL)
The Jimmy Mills GST and 2005 GST Trusts	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
c/o Stacey Mills PO Box 1359	Loving	NM	88256-1358

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	26	0.5	N
	LONGITUDE	103	39	10.1	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. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD1706	Bryce Wallace	Elite Drillers Corporation

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10/15/18	11/29/18	840	880	560

COMPLETED WELL IS: [x] ARTESIAN [ ] DRY HOLE [ ] SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 457

DRILLING FLUID: [x] AIR [ ] MUD ADDITIVES – SPECIFY:

DRILLING METHOD: [x] 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 (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	20	12.75	ASTM53 Grade B Steel	N/A	12.57	.188	
+2	460	12.25	ASTM53 Grade B steel	Welded	6.065	.28	
460	840	12.25	SDR17 PVC	Spline	6	SDR17	.032

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	12.75	Portland I/II Cement	17	Pour
0	453	12.25	Baroid Benseal Grout	247	Trimmie
453	860	12.25	8/16 Silica Sand	285	Pour

FOR OSE INTERNAL USE WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. CP-1701	POD NO. 1	TRN NO. 619305	
LOCATION Exp1	21S.32E.35.31	WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	5	5	Topsoil	Y N	
5	8	3	Caliche	Y N	
8	80	72	Tan/Red sandy caliche	Y N	
80	190	110	Red clay	Y N	
190	400	210	Tan/Red sandstone	Y N	
400	560	160	Red siltstone	Y N	
560	575	15	Red siltstone/Gyp	✓ Y N	5.00
575	750	175	Red siltstone	Y N	
750	770	20	Red siltstone/Gyp	✓ Y N	25.00
770	840	70	Red siltstone	Y N	
840	880	40	Red Shale	Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm): 30.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION:

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

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:

Bryce Wallace — 12/10/2018

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. CP-1701	POD NO. 1	TRN NO. 619305
LOCATION Exp1 215.32E.35.31	WELL TAG ID NO. —	PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO	OSE FILE NO(S).
CP-1724-POD-1 OGS North		

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Merchant Livestock Company/Glenn's Water Well Service, Inc.	575-398-2424

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
PO Box 692	Tatum	NM	88267

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	23	44.39	N
	LONGITUDE	-103	31	1.34	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

SW1/4 NW1/4 NW1/4 Section 18, Township 22 South, Range 34 East on Merchant Livestock Company Land

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 421	Corky Glenn	Glenn's Water Well Service, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
04/16/19	04/20/19	1,172'	1,172'	800'

COMPLETED WELL IS: [✓] ARTESIAN [ ] DRY HOLE [ ] SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 484'

DRILLING FLUID: [ ] AIR [✓] MUD ADDITIVES – SPECIFY:

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 (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	40	20"	ASTM A53 Sch 40 Steel 16" OD	None	15.5	.25	---
0	799	14.75"	API Steel Grade J-55/K-55 10.75" OD	Thread & Collar	10.05	.35	---
752	1,172	9.875"	Steel Casing 8 5/8" / 8.625" OD	Plain End	8.125	.25	1/8"
			(420' Total) Bottom 378 Perforated				

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	40'	20"	Cemented	2 yards	Top Pour
0	799'	14.75"	Float and Shoe Cemented to Surface 29 Barrels	325 Sacks Pumped	Circulated

FOR OSE INTERNAL USE WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. CP-1724	POD NO.	TRN NO. 628588
LOCATION 22S.34E.18.113	WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	5	5	Sand	Y ✓ N	
5	30	25	Caliche	Y ✓ N	
30	80	50	Sand & Red Clay	Y ✓ N	
80	450	370	Red Clay	Y ✓ N	
450	510	60	Red Shale	Y ✓ N	
510	580	70	Brown Shale	Y ✓ N	
580	799	219	Brown & Red Shale	Y ✓ N	
799	919	120	Sand Rock	✓ Y N	
919	950	31	Red & Blue Shales Stringers of Sand	✓ Y N	75.00
950	1,140	190	Sand Stone	✓ Y N	
1,140	1,172	32	Red Shale	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

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

TOTAL ESTIMATED WELL YIELD (gpm): 75.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION:

0' to 799' drilled with mud.
799' to 1,172' drilled with air and foam.

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

6. SIGNATURE

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

Corky Glenn — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

5/16/19 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

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

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
CP-1724-POD-1 OGS North		

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Merchant Livestock Company/Glenn's Water Well Service, Inc.	575-398-2424

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
PO Box 692	Tatum	NM	88267

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	23	44.39	N
	LONGITUDE	-103	31	1.34	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

SW1/4 NW1/4 NW1/4 Section 18, Township 22 South, Range 34 East on Merchant Livestock Company Land

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 421	Corky Glenn	Glenn's Water Well Service, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
04/16/19	04/20/19	1,172'	1,172'	800'

COMPLETED WELL IS: [x] ARTESIAN [ ] DRY HOLE [ ] SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 484'

DRILLING FLUID: [ ] AIR [x] MUD ADDITIVES – SPECIFY:

DRILLING METHOD: [x] 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 (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	40	20"	ASTM A53 Sch 40 Steel 16" OD	None	15.5	.25	---
0	799	14.75"	API Steel Grade J-55/K-55 10.75" OD	Thread & Collar	10.05	.35	---
752	1,172	9.875"	Steel Casing 8 5/8" / 8.625" OD	Plain End	8.125	.25	1/8"
			(420' Total) Bottom 378 Perforated				

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	40'	20"	Cemented	2 yards	Top Pour
0	799'	14.75"	Float and Shoe Cemented to Surface 29 Barrels	325 Sacks Pumped	Circulated

FOR OSE INTERNAL USE WR-20 WELL RECORD & LOG (Version 06/30/17)

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

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	5	5	Sand	Y ✓N	
5	30	25	Caliche	Y ✓N	
30	80	50	Sand & Red Clay	Y ✓N	
80	450	370	Red Clay	Y ✓N	
450	510	60	Red Shale	Y ✓N	
510	580	70	Brown Shale	Y ✓N	
580	799	219	Brown & Red Shale	Y ✓N	
799	919	120	Sand Rock	✓Y N	
919	950	31	Red & Blue Shales Stringers of Sand	✓Y N	75.00
950	1,140	190	Sand Stone	✓Y N	
1,140	1,172	32	Red Shale	Y ✓N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm): 75.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION:

0' to 799' drilled with mud.
799' to 1,172' drilled with air and foam.

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

6. SIGNATURE

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

Corky Glenn — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

5/16/19 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. CP-024	POD NO. 1	TRN NO. 628588
LOCATION	WELL TAG ID NO.	PAGE 2 OF 2

5X

Trans # 466507

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well JC Mills Ranch Owner's Well No. ____
Street or Post Office Address Box 1358
City and State Loving, NM 88256

Well was drilled under Permit No. C-2821 and is located in the:

a. NE ¼ NE ¼ SW ¼ ____ ¼ of Section 14 Township 22S Range 32E 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 Taylor Water Well Service License No. WD-1348

Address 7317 Etcheverry Rd., Carlsbad, NM 88220

Drilling Began 6/12/01 Completed 6/23/01 Type tools Air Rotary Size of hole 7 7/8 in.

Elevation of land surface or ____ at well is UK ft. Total depth of well 540 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 340 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
410	540	130	Very thin silt stone+sand stone layers	1.5

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5	SCH 40	PVC	+2	540	542	Cap	410	430
							440	540

STATE ENGINEER OFFICE ROSWELL NEW MEXICO 2001 OCT -4 AM 8: 56

Section 4. RECORD OF MUDDING AND CEMENTING

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

Section 5. PLUGGING RECORD

Plugging Contractor ____
Address ____
Plugging Method ____
Date Well Plugged ____
Plugging approved by:

____
State Engineer Representative

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

FOR USE OF STATE ENGINEER ONLY

Date Received 10-04-2001

Quad ____ FWL ____ FSL ____

File No. C-2821 Use Domestic/Stock Location No. 22S.32E.14.322

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	4	4	Sandy Soil
4	14	10	Caliche+Pnk Shdy Congl
14	26	12	Clay:pnk,rd,sndy
26	30	4	Limestone:yel brn,dns
30	36	6	Conglomerate:wht,pnk,sndy,lmy
36	68	32	Clay:rd,sndy
68	72	4	Conglomerate:rd,sndy,vfn-fn grn,wl consl
72	166	94	Clay:rd,smth,stky
166	170	4	Siltstone:gry,fria,calc
170	184	14	Clay:rd,smth,stky
184	188	4	Siltstone:gry,fria,calc
188	194	6	Clay:rd,sft
194	238	44	Shale:rd,blky,sme rd sandstone
238	266	28	Sandstone:rd,gry,frstd,fn-med grn,shly in prt
266	290	24	Conglomerate:rd,gry,vfn grn ss+sh gravel,calc
290	302	12	Sh:rd,blky,slty,sndy
302	310	8	Conglomerate:yel brn,vry sndy,lmy
310	386	76	Shale:rd,sme lt gn+bent,blky-tblr,slty
386	390	4	Clay:rd,vry stky
390	476	86	Shale:rd,blky,slty,thin layers of sandstone
476	482	6	Sandstone:gry,vfn grn,slty,fria
482	518	36	Shale:rd,blky,slty,sme gry ss
518	522	4	Sandstone:gry,vfn grn,slty,fria,calc
522	532	10	Sh:rd,blky,slty
532	538	6	Sandstone:gry,vfn grn,slty,fria,calc
538	540	2	SH:rd,blky,slty

Section 7. REMARKS AND ADDITIONAL INFORMATION

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

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 [redacted] and Section 5 need be completed.

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

		OSE FILE NUMBER(S): C 3717
	WELL OWNER NAME(S): SLASH 46 INC.-STACEY MILLS	PHONE (OPTIONAL):
	WELL OWNER MAILING ADDRESS: PO BOX 1548	CITY: LOVINGTON STATE: NM ZIP: 88256

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	40	74.5	N
	LONGITUDE	103	68	04	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

DIVIDE WELL-NE OF WIPP SITE SE SE NW S09 TS22S R 32E COUNTY LEE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1058	CASEY KEY	KEYS DRILLING & PUMP SERVICE INC.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
8-4-14	8-12-14	650	650	55

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	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)
-1.5	20	14-1/2"	STEEL		10"	.250	

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	14-1/2"	CEMENT		HAND

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

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		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	5	5	TOP SOIL	☐ Y ■ N	
5	20	15	RED SAND	☐ Y ■ N	
20	25	5	HARD PINK SANDSTONE	☐ Y ■ N	
25	30	5	MULTI COLORED SANDSTONE	☐ Y ■ N	
30	55	25	RED CLAY	☐ Y ■ N	
55	72	17	MULTI COLORED SANDSTONE	■ Y ☐ N	
72	110	28	RED SANDSTONE	☐ Y ■ N	
110	125	15	TAN SANDSTONE	☐ Y ■ N	
125	150	25	RED CLAY	☐ Y ■ N	
150	480	330	RED SANDSTONE	☐ Y ■ N	
480	510	30	RED CLAY	☐ Y ■ N	
510	620	110	RED SANDSTONE	☐ Y ■ N	
620	630	10	CONGLOMERATE	■ Y ☐ N	
630	650	20	RED BED	☐ 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): 2

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: WELL WAS NOT COMPLETED, NOT ENOUGH WATER.

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

CASEY KEY

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:

Casey Key — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

8-26-14 — DATE

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

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): CP-1356 (JD-33 East)	OSE FILE NUMBER(S):
WELL OWNER NAME(S): Merchants/Glenn's Water Well Service, Inc.	PHONE (OPTIONAL): 575-398-2424
WELL OWNER MAILING ADDRESS: P. O. Box 692	CITY: Tatum STATE: NM ZIP: 88267

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	26	20.9	N
LONGITUDE	103	34	7	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

SE1/4NE1/4NE1/4 Section 33, Township 21 South, Range 33 East on Merchants Livestock Land

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 421	Corky Glenn	Glenn's Water Well Service, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
08/01/14	08/09/14	1,098'	1,098'	765'

COMPLETED WELL IS: (•) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 555.2'

DRILLING FLUID: (•) AIR (•) MUD ADDITIVES – SPECIFY:

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'	40'	20"	16"	None	15 1/2"	.250	
0'	760'	14 3/4"	9 5/8"	Thread & Collar	8.921"	36 lbs.	none
735'	1,098'	8 3/4"	7"	Thread & Collar	6.366"	23 lbs.	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'	40'	20"	Cemented	2 yds.	Top Pour
0'	760'	14 3/4"	Float and shoe cemented to surface	655 cu ft	Circulated

FOR OSE INTERNAL USE

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

FILE NUMBER	CP-1356	POD NUMBER	1	TRN NUMBER	549453
LOCATION	Exp1	21S.33E.33.224			PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	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	3	3	Soil	N	
3	34	31	Caleche	N	
34	275	241	Red Clay	N	
275	760	485	Red & Brown Shale	N	
760	765	5	Red Shale & Sandrock	N	
765	795	30	Water Sand	Y	
795	825	30	Red Shale & Sandrock	Y	
825	920	95	Water Sand	Y	
920	935	15	Red Shale & Sandrock	Y	
935	968	33	Water Sand & Sandrock	Y	
968	976	8	Red Shale & Sandrock	Y	
976	1005	29	Water sand & strips of red shale	Y	
1005	1092	87	Water sand fine	Y	
1092	1098	6	Red Shale	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):

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:

0' to 760' drilled with mud.
760' to 1,098' drilled with air and foam.

STATE ENGINEER OFFICE 2014 AUG 25

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

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:

Corky Glenn (signature) Corky Glenn — 8/21/14

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

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

FILE NUMBER CP-1356	POD NUMBER 1	TRN NUMBER 549453	
LOCATION Expl	21S.33E.33.224		PAGE 2 OF 2

Venegas, Victoria, EMNRD

From: Venegas, Victoria, EMNRD
Sent: Wednesday, February 2, 2022 11:42 AM
To: Michael Incerto; 'Todd Carpenter'; Teena Robbins
Cc: r@rthicksconsult.com; Enviro, OCD, EMNRD
Subject: 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361. Conditions of Approval
Attachments: Revised C-148 Form January 2022.pdf; C-147 1RF-478 - ZEUS CONTAINMENT.pdf

1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361. Conditions of Approval.

Good afternoon,
NMOCD has reviewed the recycling containment permit application and related documents, submitted by [371643] SOLARIS WATER MIDSTREAM, LLC on January 6, 2022, for 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 in Unit Letter P, Section 35, Township 21S, Range 36E, Lea County, New Mexico. The form C-147 and related documents for 1RF-478 - ZEUS CONTAINMENT fVV2203339361 is approved with the following conditions of approval:

- [371643] SOLARIS WATER MIDSTREAM, LLC shall construct, operate, maintain, close, and reclaim 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 in compliance with 19.15.34 NMAC.
- 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 is approved for five years of operation from the date of permit application. 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 permit expires on January 6, 2027. If [371643] SOLARIS WATER MIDSTREAM, LLC, wishes to extend operations past five years, an annual permit extension request must be submitted using an NMOCD form C-147 through OCD Online by December 6, 2026.
- [371643] SOLARIS WATER MIDSTREAM, LLC cannot receive produced water in 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 until after the original copy of the financial assurance has been accepted by NMOCD.
- 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 $298,606.50 for 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 meets the requirements of NMAC 19.15.34.15.A.(1).
- 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.
- [371643] SOLARIS WATER MIDSTREAM, LLC shall notify OCD when construction of 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 commences.
- [371643] SOLARIS WATER MIDSTREAM, LLC shall notify OCD when recycling operations commence and cease at 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361.
- A minimum of 3-feet freeboard must be maintained at 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361, 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 Online. An extension to extend the cessation of operation, not to exceed six months, may be submitted using a C-147 form through OCD Online.

- [371643] SOLARIS WATER MIDSTREAM, 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.

- ***Please note that NMOCD has updated Form C-148. The new Form C-148 is attached and can be also found at: https://www.emnrd.nm.gov/ocd/wp-content/uploads/sites/6/Revised-C-148-Form-January-2022.pdf***

- [371643] SOLARIS WATER MIDSTREAM, 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-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361.

Please reference number 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 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: Solaris Midstream LLC OGRID #: 371643

Address: 9811 Katy Freeway, Suite 900, Houston, TX, 77024

Facility or well name (include API# if associated with a well): Zeus Containment

OCD Permit Number: **1RF-478** (For new facilities the permit number will be assigned by the district office)

U/L or Qtr/Qtr: O&P Section: 35 Township: 21S Range: 32E County: Lea

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

2.

☒ **Recycling Facility:**

Location of (if applicable): Latitude: 32.428995 N Longitude: 103.638084 W approximately (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 #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: 32.42936 N Longitude: 103.63979 W approx. (NAD83)

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

☒ Lined ☐ Liner type: Thickness See Attached Engineer Drawings1 ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☐ Welded ☐ Factory ☐ Other Volume: See Attachment Drawings and Plans Dimensions _____.

☐ Recycling Containment Closure Completion Date: _____

4.

Bonding:

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

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

☒ Attach closure cost estimate and documentation on how the closure cost was calculated. (See Transmittal Letter)

5.

Fencing:

☒ Four-foot height, four strands of barbed wire evenly spaced between one and four feet IF REQUESTED BY DISTRICT OFFICE

☐ Alternate. Please specify: Game Fence .

6.

Signs:

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

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

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

Check the below box only if a variance is requested:

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

If a Variance is requested, it must be approved prior to implementation. See Volume 2 for Variances

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 FIGURES 1-2	☐ 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. - Written confirmation or verification from the municipality; written approval obtained from the municipality FIGURE 3	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division FIGURE 4	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map FIGURE 5	☐ 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). - Topographic map; visual inspection (certification) of the proposed site FIGURE 7	☐ 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): Bradley Todd Carpenter Title: Operations Manager
Signature: Todd Carpenter Date: 12/10/21
e-mail address: todd.carpenter@solarismidstream.com Telephone: (432) 203-9020

11.
OCD Representative Signature: Victoria Venegas **Approval Date:** 02/02/2022

Title: Enviromental Specialist **OCD Permit Number:** 1RF-478

[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
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 70923

CONDITIONS

Operator: SOLARIS WATER MIDSTREAM, LLC 907 Tradewinds Blvd, Suite B Midland, TX 79706	OGRID: 371643
	Action Number: 70923
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	NMOCD has reviewed and approved the recycling containment permit application and related documents, submitted by [371643] SOLARIS WATER MIDSTREAM, LLC on January 6, 2022, for 1RF-478 - ZEUS CONTAINMENT FACILITY ID fVV2203339361 in Unit Letter P, Section 35, Township 21S, Range 36E, Lea County, New Mexico.	2/2/2022