November 2024

Modification to Rule 34 Registration: Volume 2 Lois Lane Containment

Section 27, T26S, R32E, Lea County

- **C-147 Form & Liner Equivalency Demonstration**
- **Stamped Design Drawings**
- **Recently Approved Plans for Design/Construction, O&M, & Closure**

Top Goggle Earth image of Lois Lane fresh water frac pond in March 2022

Bottom image of Lois Lane Rule 34 containment in December 2023

Prepared for:
ConocoPhillips
Houston, Texas

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

C-147

LINER EQUIVALENCY DEMONSTRATION

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

Form C-147
Revised October 11, 2022

Recycling Facility and/or Recycling Containment

Type of Facility: ☑ Recycling Facility ☑ Recycling Containment*

Type of action: ☐ Permit ☑ Registration ☑ Modification ☐ Extension ☐ Closure ☑ Other (explain) Update Original Submission

*** 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: ConocoPhillips Company (For multiple operators attach page with information) OGRID #: 217817
Address: PO Box 2197 Houston TX 77252
Facility or well name (include API# if associated with a well): Lois Lane Containment
OCD Permit Number: 1RF-504 (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr B & G Section 27 Township 26S Range 32E County: Lea
Surface Owner: ☑ Federal ☐ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☑ **Recycling Facility:** Pintail RF-468
Location of recycling facility (if applicable): Latitude 32.061164 Longitude -103.6755599 (approx) NAD83
Proposed Use: ☑ Drilling* ☑ Completion* ☑ Production* ☑ Plugging *
The re-use of produced water may NOT be used until fresh water zones are cased and cemented
☐ Other, ***requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.***
☑ Fluid Storage
☑ Above ground tanks ☑ Recycling containment ☐ Activity permitted under 19.15.17 NMAC explain type
☐ Activity permitted under 19.15.36 NMAC explain type: ☐ Other explain
☐ For multiple or additional recycling containments, attach design and location information of each containment
☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date:

3.
☑ **Recycling Containment:**
☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude 32.018470 Longitude -103.661220 (approx.) NAD83
☐ For multiple or additional recycling containments, attach design and location information of each containment
☑ Lined ☐ Liner type: Thickness 60 mil pri &40 mil sec mil ☐ LLDPE ☑ HDPE ☐ PVC ☐ Other
☐ String-Reinforced
805,467 bbls at 3-foot freeboard
Liner Seams: ☑ Welded ☐ Factory ☐ Other Volume: bbl Dimensions: L x W x D
☐ Recycling Containment Closure Completion Date:
See Attached As Built Drawings

4.

Bonding:

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

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

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

5.

Fencing:

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

☑ Alternate. Please specify Game Fence

6.

Signs:

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

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

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

Check the below box only if a variance is requested:

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

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

8.

Siting Criteria for Recycling Containment

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

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells Plates 1 and 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 Plate 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 Plate 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 Plate 5	☐ Yes ☑ No
Within a 100-year floodplain. FEMA map Plate 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 Plate 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 Plate 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. Plates 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. Plate 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): Jim Reed Title: Delaware Basin Water Superintendent
Signature: Jim Reed Date: 11/15/2024
e-mail address: timothy.reed@conocophillips.com Telephone: 432-238-8395

11.
OCD Representative Signature: Victoria Venegas **Approval Date:** 12/05/2024
Title: Environmental Specialist **OCD Permit Number:** 1RF-504 -

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

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

RECYCLING CONTAINMENT DESIGN DRAWINGS

SquareRoot services
Engineering | Surveying
Materials Testing
7921 N. World Dr.
Hobbs, NM 88242
Squarerootservices.net
575-231-7347

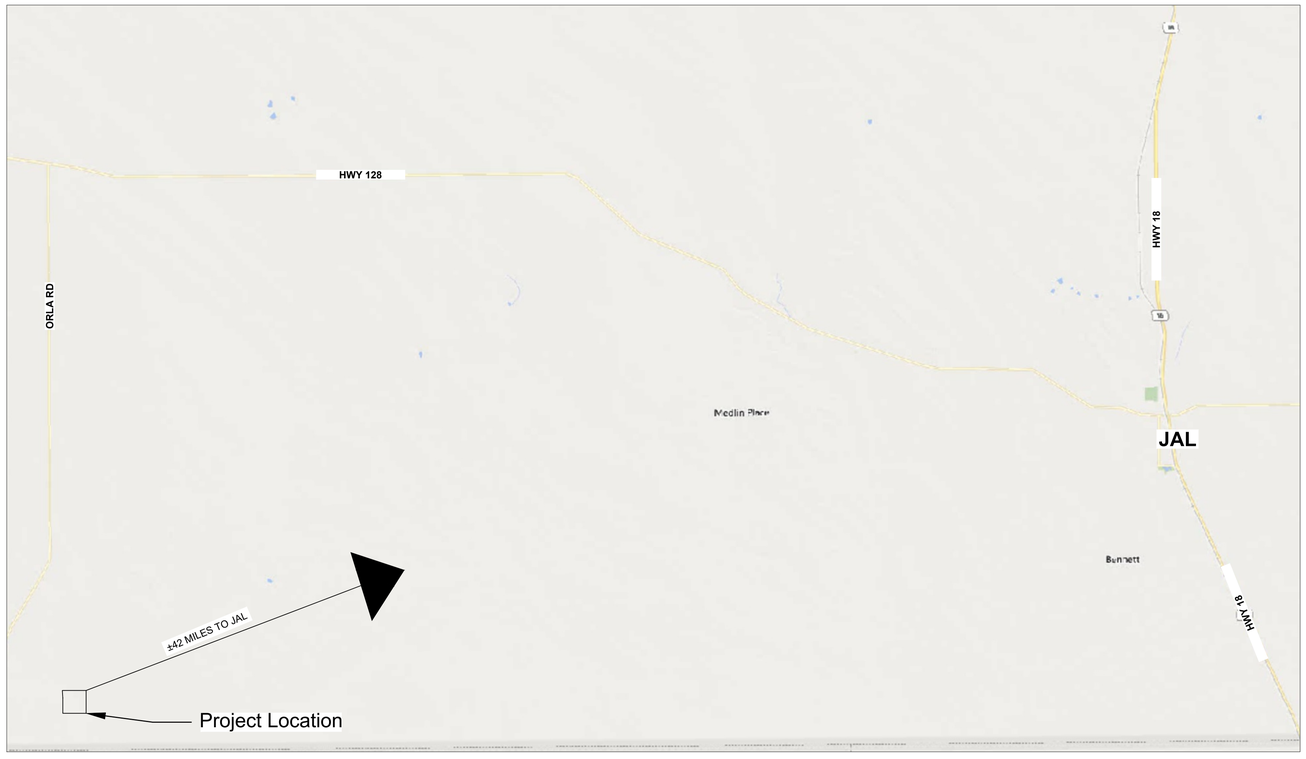
CIVIL PLANS

CONOCO PHILIPS

LOIS LANE RECYCLE FACILITY

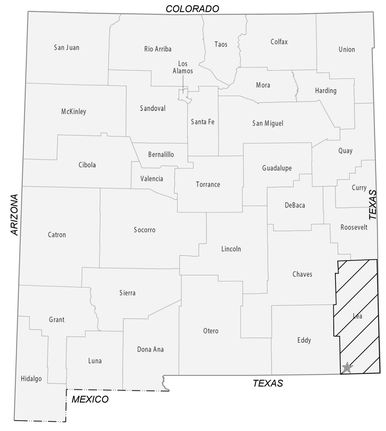
CITY OF JAL
SECTION 27, TOWNSHIP 26 SOUTH, RANGE 32 EAST
N.M.P.M., LEA COUNTY, NEW MEXICO

INDEX OF SHEETS		
SHEET	NAME	DESCRIPTION
1	C-100	COVER SHEET
2	SU-101	TOPOGRAPHIC MAP
3	C-101	GENERAL NOTES
4	CS-101	CIVIL SITE PLAN
5	CS-102	CONTAINMENT PROFILES
6	CS-501	LEAK DETECTION DETAILS
7	CS-502	LINER DETAILS
8	CS-503	FENCE DETAILS



VICINITY MAP
N.T.S.

EDDY COUNTY
NEW MEXICO

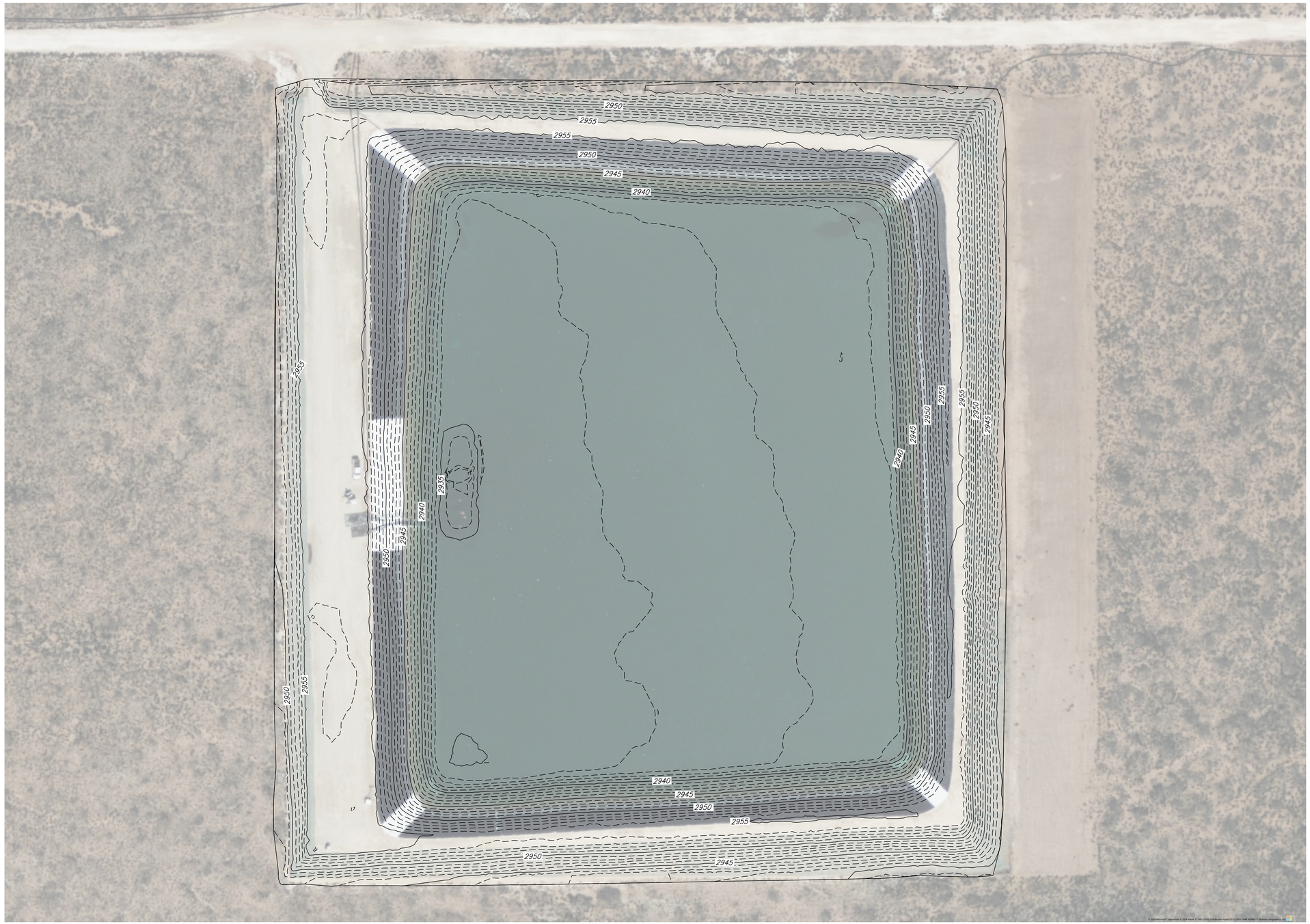


nm811
Know what's below.
Call before you dig.

(505)-254-7310

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

JEREMY BAKER
NEW MEXICO
16207
REGISTERED PROFESSIONAL ENGINEER
11/12/2024



TOPOGRAPHIC NOTE

THE TOPOGRAPHY SHOWN HEREIN WAS NOT SURVEYED BY SQUARE ROOT SERVICES. THE TOPOGRAPHY WAS CREATED USING CONTOUR LINES PROVIDED BY THE CLIENT. NO SCALING FACTOR, CONTROL DATA, OR UAV DATA IS AVAILABLE FOR THIS PROJECT.

SquareRoot services
Engineering | Surveying
Materials Testing

7921 N World Dr.
Hobbs, NM 88242-9032
Squarerootservices.net
575-231-7347

ENGINEERING SHEET:

TOPOGRAPHIC MAP

OF

PROJECT NAME:

LOIS LANE RECYCLE FACILITY

FOR

CLIENT:

CONOCO PHILIPS

PROJECT NUMBER:
24263

PROJECT ENGINEER:
JEREMY BAKER, PE

DRAWN BY:
XAVIER CLARK

GRAPHIC SCALE
HORIZONTAL
0 50' 100'
SCALE: 1" = 50'
(IN FEET)

REVISIONS

No.	DATE	DESCRIPTION

SHEET:
2 of 8

SU-101

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 TOPOGRAPHIC.
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.

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.
3. 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.
4. 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.
5. PERFORM ONE NUCLEAR DENSITY GAGE TEST PER 2500 CY MINIMUM OR AS DIRECTED BY THE ENGINEER.
6. 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.
7. EARTHWORK CONTRACTOR SHALL ROLL SURFACE WITH A SMOOTH ROLLER TO ELIMINATE RUTS.

LINER NOTES

1. LINER CONTRACTOR SHALL INSPECT GRADED SURFACE FOR DEBRIS, ROCKS OR OTHER MATERIAL THAT MAY DAMAGE THE LINER AND COORDINATE WITH OWNER IF ADDITIONAL SUBGRADE RESURFACING IS NEEDED PRIOR TO PERFORMING WORK.
2. LINER CONTRACTOR TO PROVIDE SUBMITTAL OF LINER PANEL LAYOUT.
3. LINER CONTRACTOR TO SIGN SUBGRADE ACCEPTANCE FORM (PROVIDED BY OWNER REPRESENTATIVE) DAILY PRIOR TO INSTALLATION.
4. LINER TO BE INSTALLED PER GRI SPECIFICATIONS, GUIDES AND PRACTICES.
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 USE BLACK 60 MIL HDPE SMOOTH GEOMEMBRANE AS THE PRIMARY LINER AND BLACK 40 MIL HDPE SMOOTH GEOMEMBRANE AS THE SECONDARY LINER.
7. A 3' DIAMETER MINIMUM PIECE OF 40MIL LINER SHALL BE EXTRUDED WELDED WHERE THE PIE SHAPED CORNER SECTIONS MEET FOR SEAM REINFORCEMENT.
8. 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.
9. 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.
10. SUMPS SHALL BE BACKFILLED WITH NON-ANGULAR MAXIMUM 3/8 INCH SIZED PEA GRAVEL.
11. ALL SEAMS MUST BE WELDED WITH A 6" MINIMUM OVERLAP.
12. 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.
13. 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.
14. ALL NON-DESTRUCTIVE TESTS WILL BE NOTED IN THE NON-DESTRUCTIVE LOGS.
15. LINER GAS VENTS SHALL BE SPACED ALONG THE INSIDE SLOPE AT APPROXIMATELY 100 FEET ON CENTER OR MINIMUM 2 VENTS PER SIDE.
16. 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.
17. LAY BOTH LINERS IN ANCHOR TRENCH. BACKFILL ANCHOR TRENCH IN 2 LIFTS AND COMPACT.

SUGGESTED CONSTRUCTION SEQUENCE

1. CLEAR EXISTING VEGETATION.

2. STRIP AND STOCKPILE TOPSOIL AT THE LOCATION DESIGNATED ON THESE PLANS.

3. PERFORM EARTHWORK OPERATIONS:
    3.1. CONSTRUCT STORMWATER DIVERSION CHANNEL.
    3.2. PERFORM RIPPING/EXCAVATING OPERATIONS.
    3.3. REPLACE EXCAVATED MATERIAL IN COMPACTED LAYERS ON THE LEVEE/PAD IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.
    3.4. FINISH SLOPES USING A SMOOTH ROLLER.
    3.5. DIG ANCHOR TRENCH.

4. INSTALL NEW GAME FENCE AND GATES.

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.

SquareRoot services
Engineering | Surveying
Materials Testing

7921 N World Dr.
Hobbs, NM 88242-9032
Squarerootservices.net
575-231-7347

ENGINEERING SHEET:
GENERAL NOTES
OF
PROJECT NAME:
LOIS LANE RECYCLE FACILITY
FOR
CLIENT:
HYDROSOURCE

PROJECT NUMBER: 24212

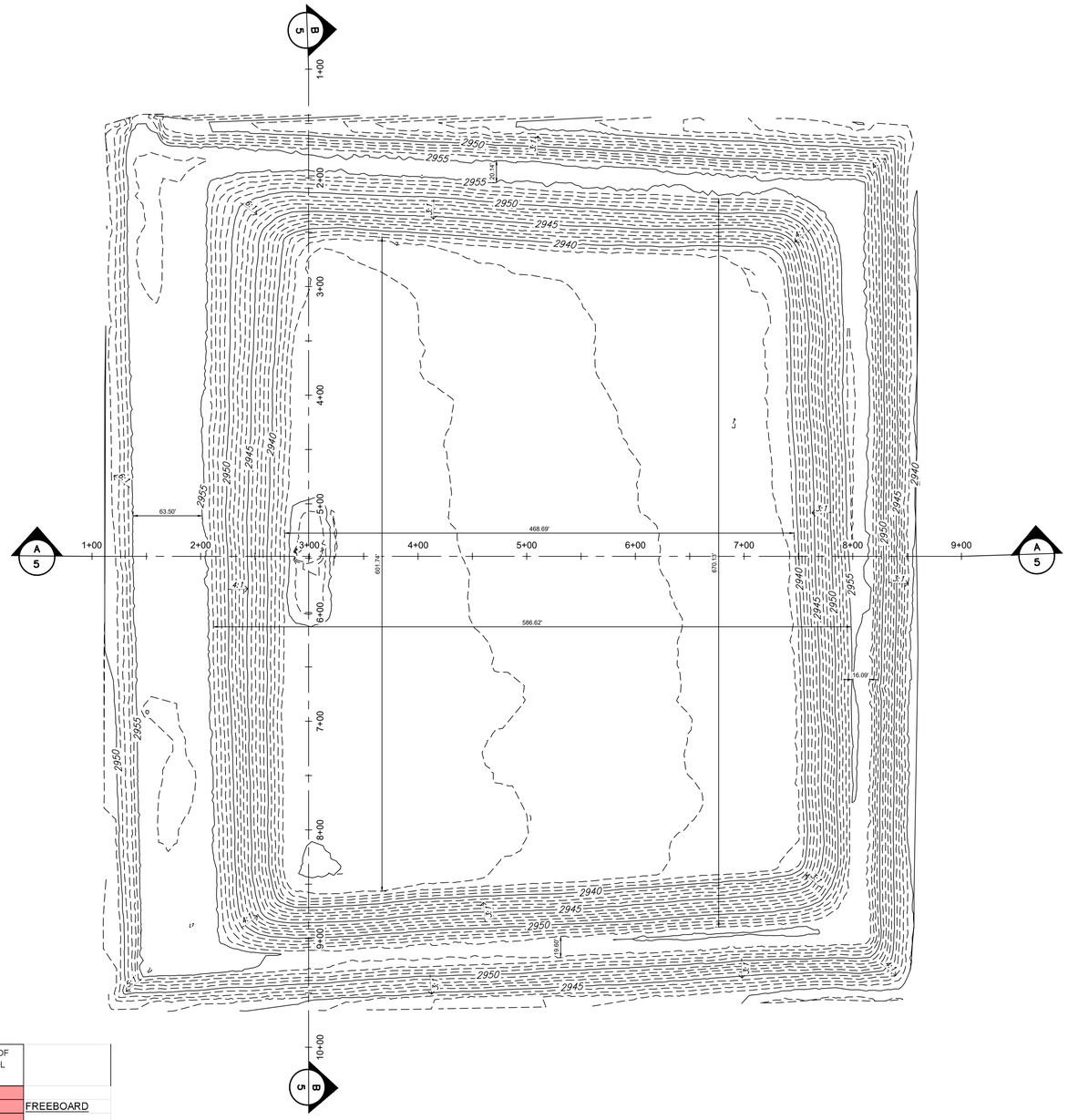
PROJECT ENGINEER: JEREMY BAKER, PE
DRAWN BY: XAVIER CLARK

REVISIONS

No.	DATE	DESCRIPTION

JEREMY BAKER NEW MEXICO 16207 LICENSED PROFESSIONAL ENGINEER
11/12/2024

SHEET: 3 of 8
C-102



ELEVATION (FT)	CONTAINMENT DEPTH (FT)	REMAINING STORAGE (FT)	REMAINING STORAGE VOL (FT3)	REMAINING STORAGE VOL (GAL)	REMAINING STORAGE VOL (BBL)	PERCENT OF TOTAL VOL (%)	VOL IN CONTAINMENT (FT3)	VOL IN CONTAINMENT (GAL)	VOL IN CONTAINMENT (BBL)	VOL IN CONTAINMENT (AC-FT)	PERCENT OF TOTAL VOL (%)	
2,954.00	0	21	0	-	-	0%	5,773,651	43,192,684	1,028,255	132.54	100%	
2,953.00	1	20	394,334	2,950,016	70,229	7%	5,379,317	40,242,668	958,026	123.49	93%	FREEBOARD
2,952.00	2	19	779,973	5,834,978	138,909	14%	4,993,678	37,357,706	889,346	114.64	86%	
2,951.00	3	18	1,157,314	8,657,868	206,111	20%	4,616,337	34,534,816	822,144	105.98	80%	MAX VOLUME
2,950.00	4	17	1,526,549	11,420,115	271,870	26%	4,247,102	31,772,569	756,385	97.50	74%	
2,949.00	5	16	1,887,930	14,123,608	336,230	33%	3,885,721	29,069,076	692,025	89.20	67%	
2,948.00	6	15	2,241,675	16,769,973	399,230	39%	3,531,976	26,422,711	629,025	81.08	61%	
2,947.00	7	14	2,587,874	19,359,884	460,886	45%	3,185,777	23,832,800	567,369	73.14	55%	
2,946.00	8	13	2,926,557	21,893,571	521,203	51%	2,847,094	21,299,113	507,052	65.36	49%	
2,945.00	9	12	3,257,758	24,371,287	580,188	56%	2,515,893	18,821,397	448,066	57.76	44%	STORAGE
2,944.00	10	11	3,581,536	26,793,473	637,852	62%	2,192,115	16,399,211	390,403	50.32	38%	VOLUME
2,943.00	11	10	3,897,966	29,160,681	694,206	68%	1,875,685	14,032,003	334,049	43.06	32%	
2,942.00	12	9	4,207,251	31,474,445	749,288	73%	1,566,400	11,718,239	278,967	35.96	27%	
2,941.00	13	8	4,509,548	33,735,927	803,125	78%	1,264,103	9,456,757	225,130	29.02	22%	
2,940.00	14	7	4,804,860	35,945,160	855,719	83%	968,791	7,247,524	172,536	22.24	17%	
2,939.00	15	6	5,093,120	38,101,628	907,056	88%	680,531	5,091,056	121,199	15.62	12%	
2,938.00	16	5	5,372,020	40,188,085	956,727	93%	401,631	3,004,599	71,528	9.22	7%	FLOOR VOLUME
2,937.00	17	4	5,602,890	41,915,221	997,843	97%	170,761	1,277,463	30,412	3.92	3%	
2,936.00	18	3	5,746,724	42,991,244	1,023,459	100%	26,927	201,440	4,796	0.62	0%	
2,935.00	19	2	5,768,498	43,154,131	1,027,337	100%	5,153	38,553	918	0.12	0%	SUMP
2,934.00	20	1	5,771,715	43,178,204	1,027,910	100%	1,936	14,480	345	0.04	0%	
2,933.00	21	0	5,773,292	43,189,996	1,028,191	100%	359	2,688	64	0.01	0%	

SquareRoot services
Engineering | Surveying
Materials Testing

7921 N World Dr.
Hobbs, NM 88242-9032
Squarerootservices.net
575-231-7347

ENGINEERING SHEET:

CIVIL SITE PLAN

OF

PROJECT NAME:

LOIS LANE RECYCLE FACILITY

FOR

CLIENT:

HYDROSOURCE

PROJECT NUMBER:

PROJECT ENGINEER: JEREMY BAKER, PE

DRAWN BY: XAVIER CLARK

GRAPHIC SCALE
HORIZONTAL
0 60' 120'
SCALE: 1" = 60'
(IN FEET)

REVISIONS

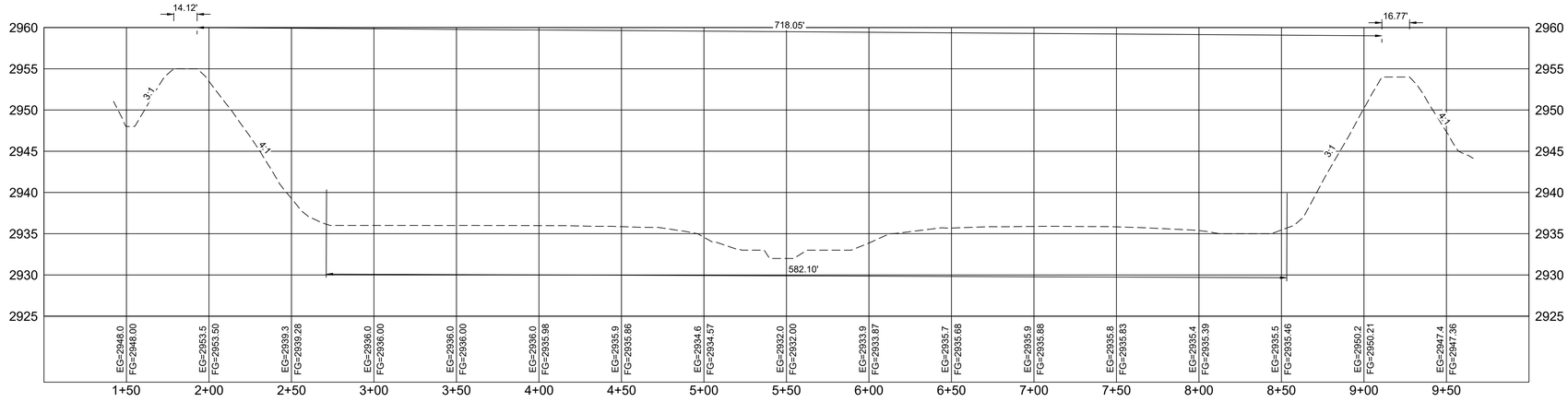
No.	DATE	DESCRIPTION

JEREMY BAKER NEW MEXICO 16207 LICENSED PROFESSIONAL ENGINEER
11/12/2024

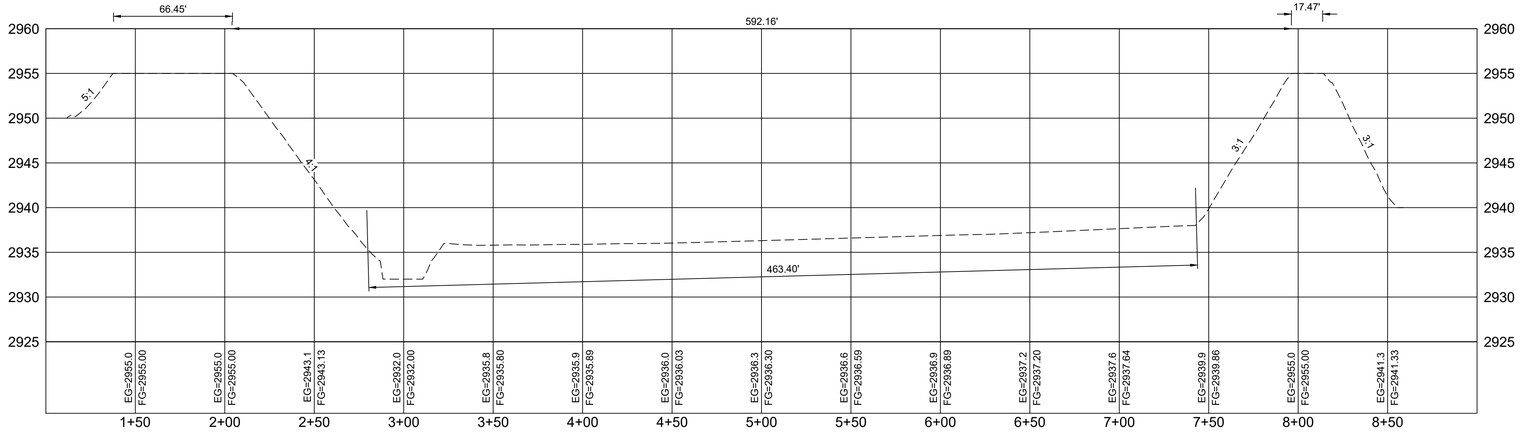
SHEET: 4 of 8

CS-101

NORTH TO SOUTH ALIGNMENT (B)



EAST TO WEST ALIGNMENT (A)



SquareRoot services
Engineering | Surveying
Materials Testing

7921 N World Dr.
Hobbs, NM 88242-9032
Squarerootservices.net
575-231-7347

ENGINEERING SHEET:

CONTAINMENT PROFILES

OF

PROJECT NAME:

LOIS LANE RECYCLE FACILITY

FOR

CLIENT:

HYDROSOURCE

PROJECT NUMBER:

PROJECT ENGINEER: JEREMY BAKER, PE

DRAWN BY: XAVIER CLARK

GRAPHIC SCALE
HORIZONTAL
0 40' 80'
SCALE: 1" = 40'
(IN FEET)

GRAPHIC SCALE
VERTICAL
0 8' 16'
SCALE: 1" = 8'
(IN FEET)

REVISIONS

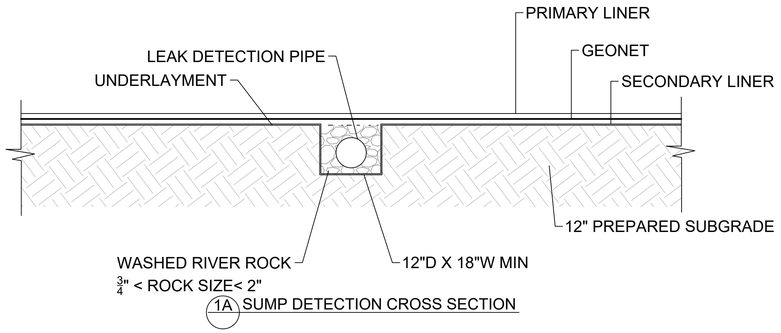
No.	DATE	DESCRIPTION

JEREMY BAKER NEW MEXICO 16207 LICENSED PROFESSIONAL ENGINEER

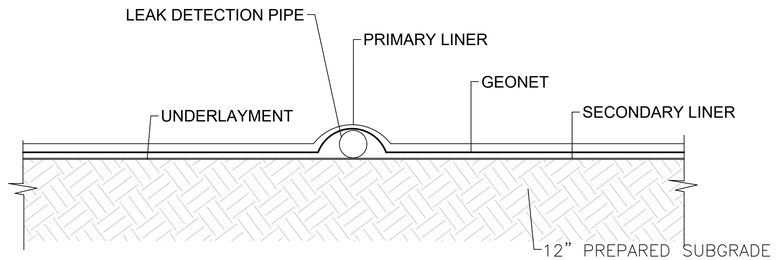
11/12/2024

SHEET: 5 of 8

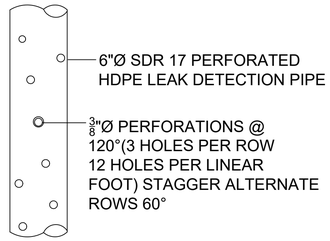
CS-102



1A SUMP DETECTION CROSS SECTION



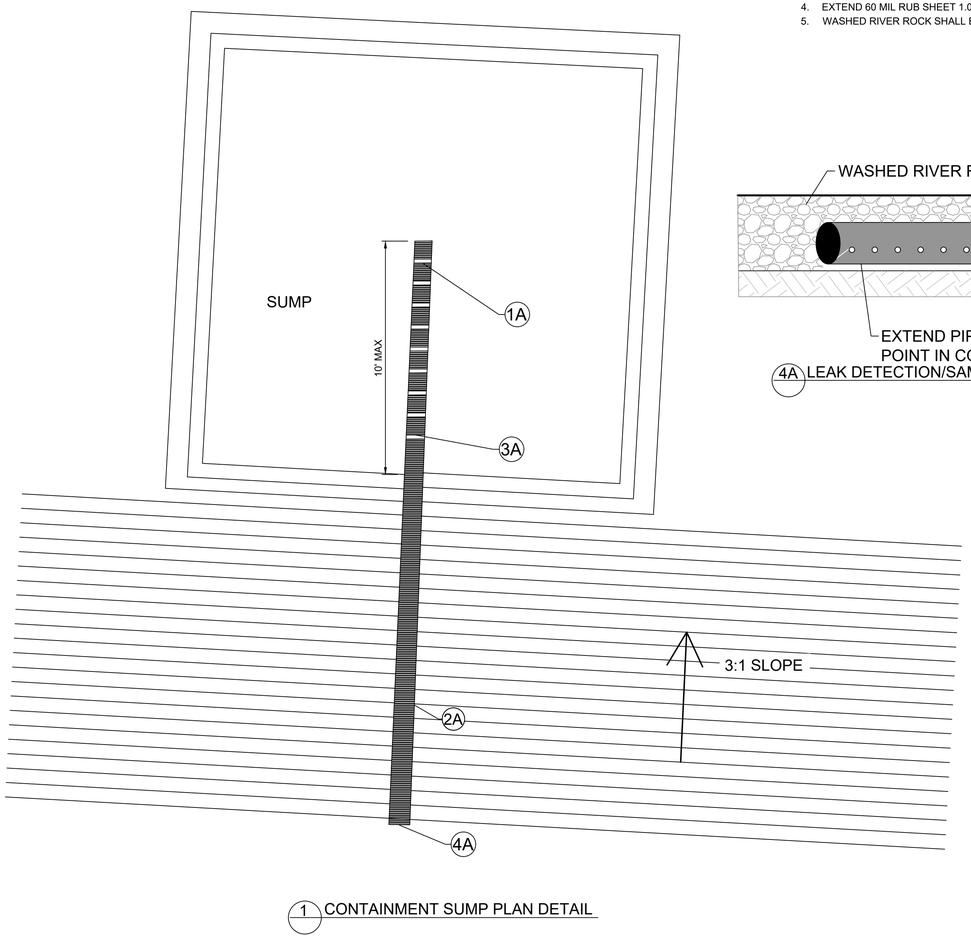
2A SIDE SLOPE LEAK DETECTION PIPE DETAIL



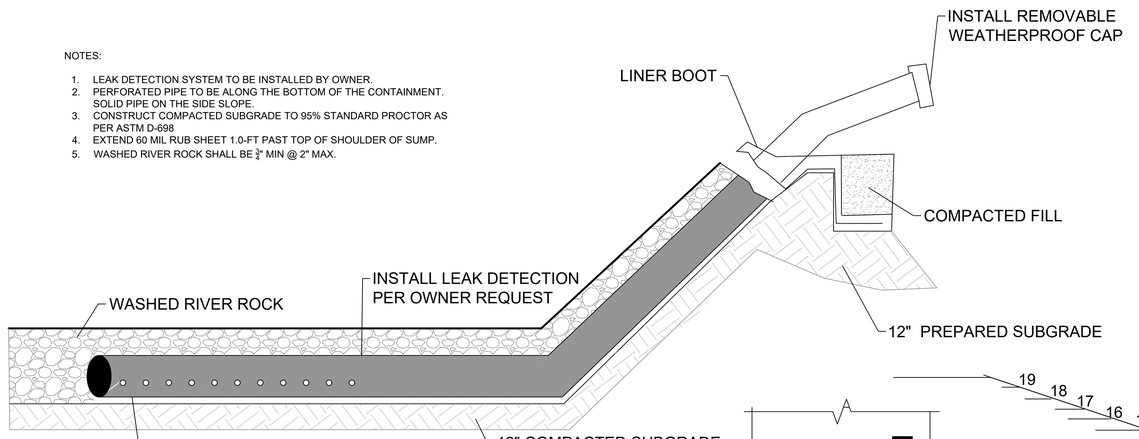
3A PERFORATED PIPE DETAIL

NOTES:

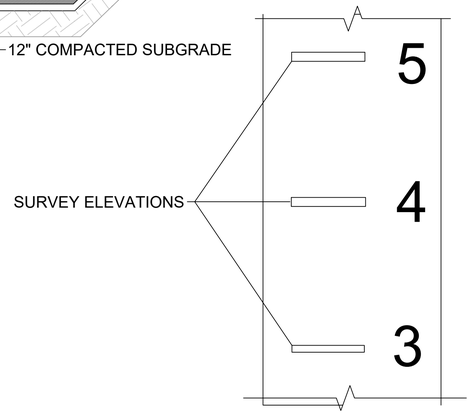
1. LEAK DETECTION SYSTEM TO BE INSTALLED BY OWNER.
2. PERFORATED PIPE TO BE ALONG THE BOTTOM OF THE CONTAINMENT. SOLID PIPE ON THE SIDE SLOPE.
3. CONSTRUCT COMPACTED SUBGRADE TO 95% STANDARD PROCTOR AS PER ASTM D-698
4. EXTEND 60 MIL RUB SHEET 1.0-FT PAST TOP OF SHOULDER OF SUMP.
5. WASHED RIVER ROCK SHALL BE ¾" MIN @ 2" MAX.

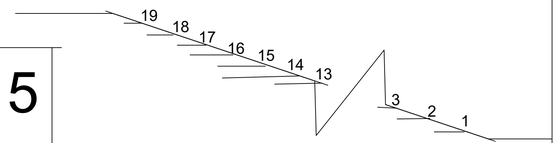


1 CONTAINMENT SUMP PLAN DETAIL



4A LEAK DETECTION/SAMPLING SYSTEM PROFILE





NOTE:

1. LEVEL MARKS TO BE LOCATED BY SURVEYOR
2. MARKS TO BE MADE BY AN EXTRUSION WELDER USING BLACK FILAMENT (OR WHITE FILAMENT ON BLACK LINER)
3. MARKS WILL BE DETERMINE ON THE FIELD BY THE OWNER AND CONTINUE TO THE TOP OF THE BERM.
4. REFERENCE PIT CAPACITY TABLES FOR ACCURATE ELEVATIONS.

2 WATER LEVEL MARKS

PROPOSED PIT REFERENCE TABLE

DETAIL	DESCRIPTION
PRIMARY LINER	60 MIL HDPE LINER
LEAK DETECTION	200 MIL GEONET
SECONDARY LINER	40 MIL HDPE LINER
UNDERLAYMENT	COMPACTED SUBGRADE/10 OZ GEOTEXTILE
BOTTOM OF POND	2933.00'
BERM (ROAD CREST)	2954.00'
LEAK DETECTION PIPING	8-IN DR11 X PERFORATED HEPE PIPE LEAK DETECTION PIPE

SquareRoot services
Engineering | Surveying
Materials Testing
7921 N World Dr.
Hobbs, NM 88242-9032
Squarerootservices.net
575-231-7347

ENGINEERING SHEET:
LEAK DETECTION DETAILS
OF
PROJECT NAME:
LOIS LANE RECYCLE FACILITY
FOR
CLIENT:
CONOCO PHILIPS

PROJECT NUMBER: 24263

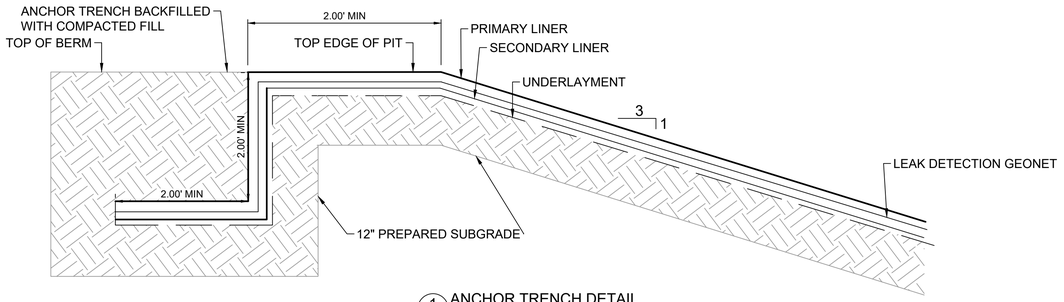
PROJECT ENGINEER: JEREMY BAKER, PE
DRAWN BY: XAVIER CLARK

REVISIONS

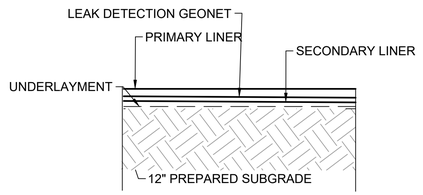
No.	DATE	DESCRIPTION

JEREMY BAKER NEW MEXICO 16207 LICENSED PROFESSIONAL ENGINEER
11/12/2024

SHEET: 6 of 8
CS-501



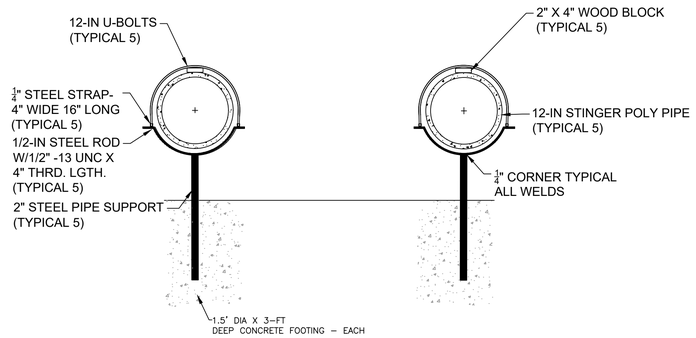
1 ANCHOR TRENCH DETAIL



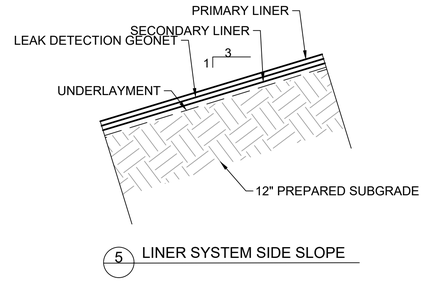
4 LINER SYSTEM FLOOR DETAIL

GENERAL NOTES:

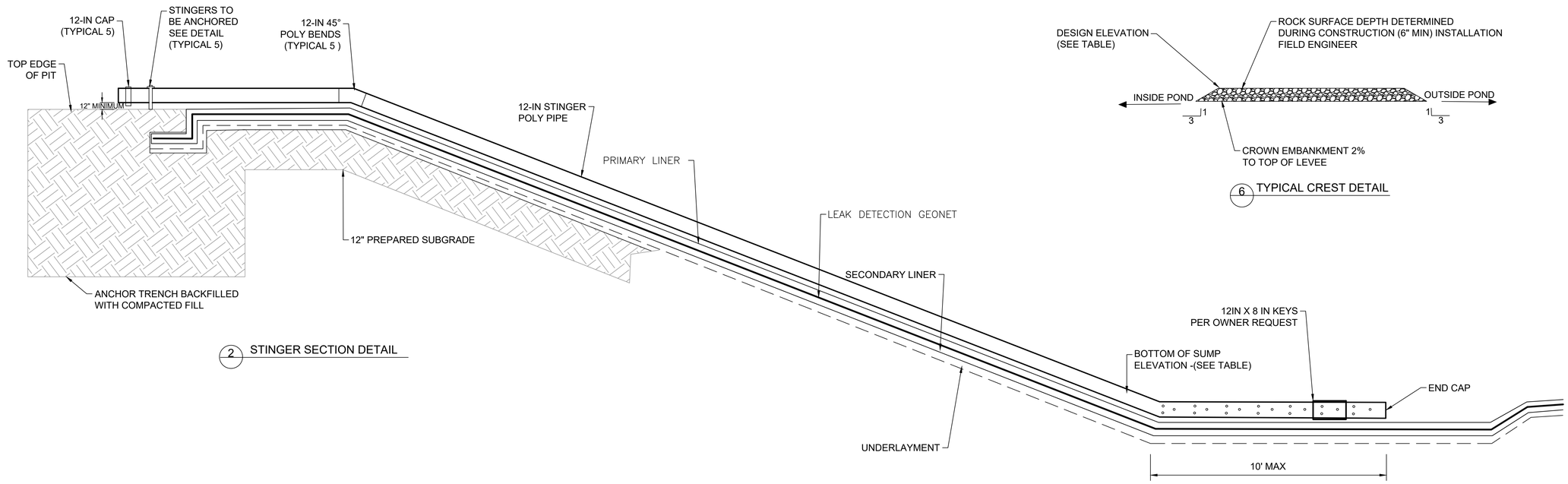
1. PREPARED SUBGRADE MEANS COMPACTED SMOOTH SUBGRADE FREE OF ROCK, ROOTS, WOOD DEBRIS, CONCRETE RUBBLE AND ANY SHARP OBJECTS THAT MAY PUNCTURE THE HDPE LINER, A MINIMUM COMPACTED DEPTH OF 12".
2. ALL INTERIOR SLOPES AND TOP OF BERMS TO BE SMOOTH DRUM ROLLED
3. ALL EMBANKMENT SLOPES SHALL HAVE A SLOPE (H:V RATIO) OF 3:1.
4. COMPACTED EARTH EMBANKMENTS TO BE CONSTRUCTED WITH 12 INCH (MAXIMUM LOOSE LIFTS, COMPACTED TO 95% STANDARD PROCTOR DENSITY)
5. PERFORM GEOTECHNICAL ANALYSIS ON EXISTING SOIL TO CONFIRM SOIL IS SUITABLE FOR USE IN THE LEVEE.
6. LINER SPECIFICATIONS PROVIDED ON SHEET CS - 501



3 STINGER SYSTEM ANCHOR DETAIL



5 LINER SYSTEM SIDE SLOPE



2 STINGER SECTION DETAIL

6 TYPICAL CREST DETAIL

SquareRoot services
Engineering | Surveying
Materials Testing
7921 N World Dr.
Hobbs, NM 88242-9032
Squarerootservices.net
575-231-7347

ENGINEERING SHEET:

LINER DETAILS

OF

PROJECT NAME:

LOIS LANE RECYCLE FACILITY

FOR

CLIENT:

CONOCO PHILIPS

PROJECT NUMBER: 24263

PROJECT ENGINEER: JEREMY BAKER, PE

DRAWN BY: XAVIER CLARK

REVISIONS

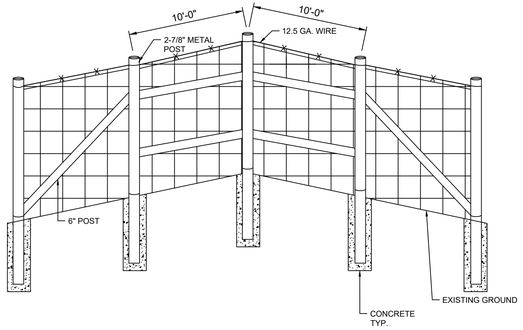
No.	DATE	DESCRIPTION

JEREMY BAKER NEW MEXICO 16207 LICENSED PROFESSIONAL ENGINEER

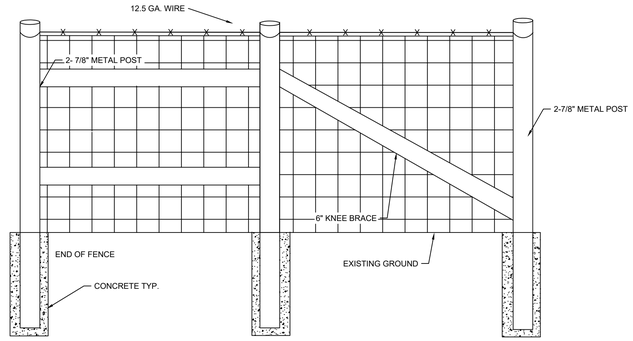
11/12/2024

SHEET: 7 of 8

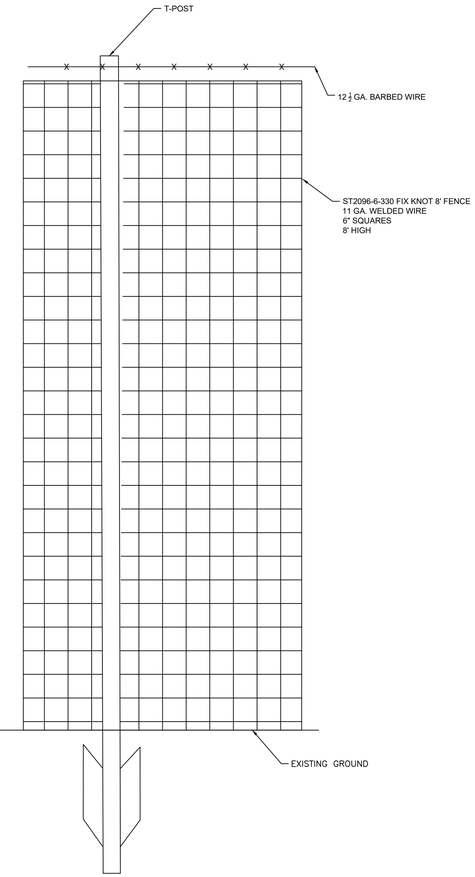
CS-502



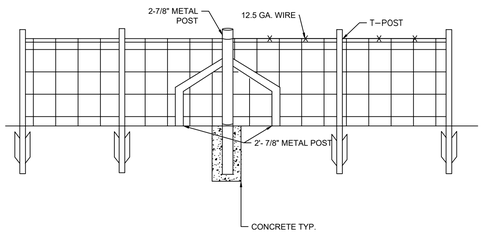
1 CORNER POST



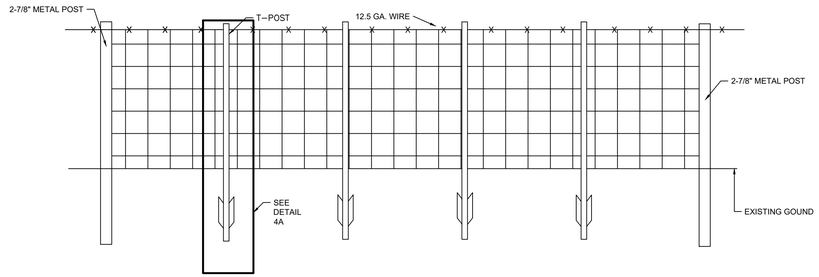
2 END POST



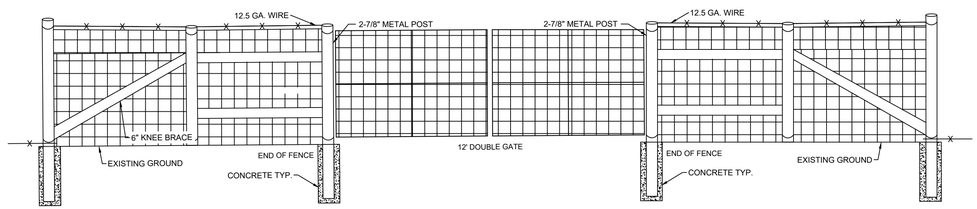
4A METAL POST



3 LINE BRACE POST



4 LINE POST



5 GATE POSTS

SquareRoot services

Engineering | Surveying
Materials Testing

7921 N World Dr.
Hobbs, NM 88242-9032
Squarerootservices.net
575-231-7347

ENGINEERING SHEET:

FENCE DETAILS

OF

PROJECT NAME:

LOIS LANE RECYCLE FACILITY

FOR

CLIENT:

CONOCO PHILIPS

PROJECT NUMBER:
24263

PROJECT ENGINEER:
JEREMY BAKER, PE

DRAWN BY:
XAVIER CLARK

REVISIONS

No.	DATE	DESCRIPTION

JEREMY BAKER NEW MEXICO 16207 LICENSED PROFESSIONAL ENGINEER

11/12/2024

SHEET: 8 of 8

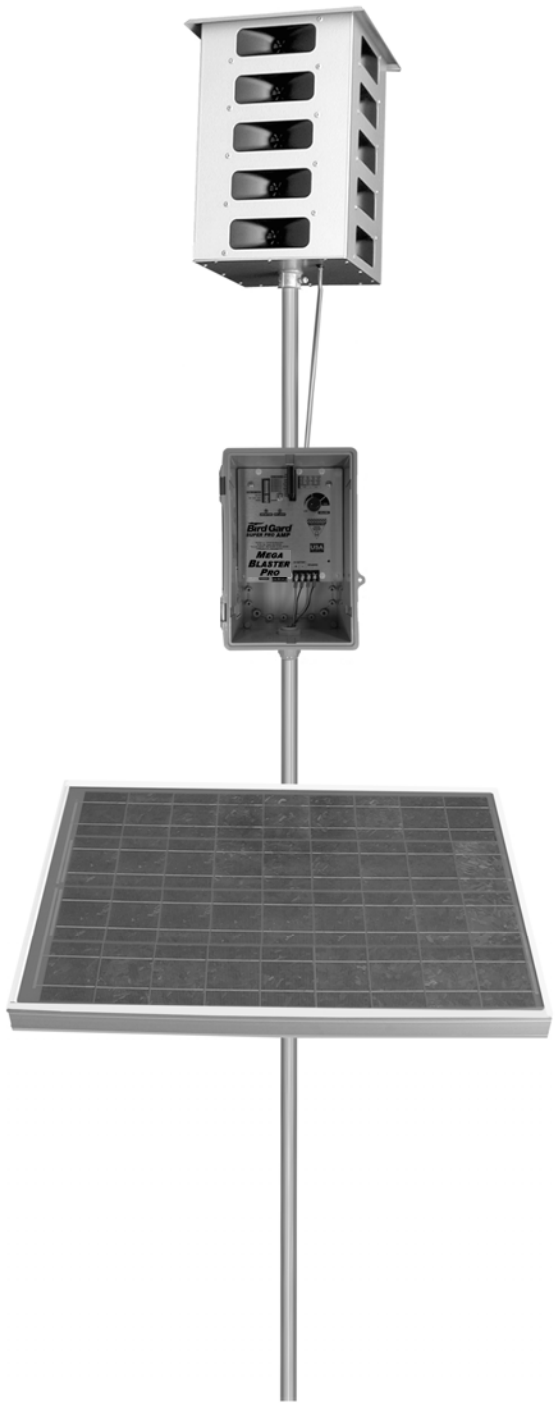
CS-503

AVIAN DETERRENT SYSTEM

MEGA BLASTER PRO

BIRD-X

User's Manual



Overview	2
Bird Control Management Guidelines	3
Materials List	4
Assembly	5
Control Unit	5
Solar Panel	5
Placement	6
Building a Mounting Pole or Mast	7
Installation	8
20-Speaker Tower	8
Solar Panel	8
Control Box	9
Solar Panel Connections	9
Settings	10
Recordings	10
Mode Settings	10
Warranty	12

Overview

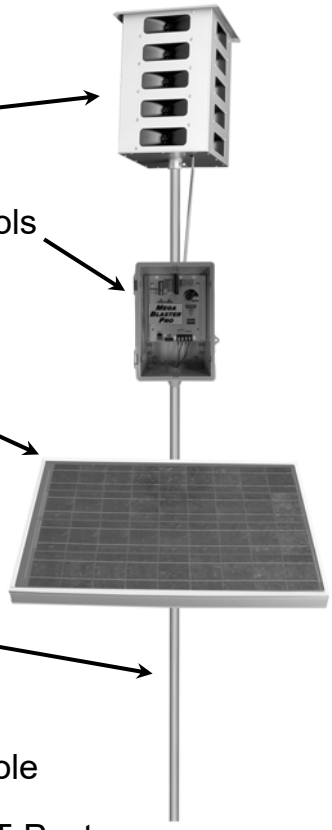
The Bird-X Mega Blaster Pro utilizes the innate power of the natural survival instincts of birds to effectively repel them. Digital recordings of distressed and alarmed birds, along with the sounds made by their natural predators are broadcast through high fidelity weather-resistant speakers over the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

Design and Construction Plan In Ground Containments

This plan addresses construction of the earthen containments.

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

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

Dike Protection and Structural Integrity

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

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

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 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

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 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.

Fencing

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

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 (see Volume 1 Lois Lane - Appendix Site Photographs, SP-4 and SP-5).
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 Volume 1 Lois Lane - Appendix Site Photographs, SP-4 and SP-5).

OPERATIONS AND MAINTENANCE PLAN

CLOSURE PLAN

Operation and Maintenance Plan
In Ground Containments

Overview

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

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

The operation of the containment is summarized below.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Monitoring, Inspection, and Reporting Plan

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

Weekly inspections consist of:

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

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

Monthly, the operator will:

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

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

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

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

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

Freeboard and Overtopping Prevention Plan

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

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

I. Cease discharging produced water to the containment.

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

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

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

Protocol for Leak Detection Monitoring, Fluid Removal and Reporting

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

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

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

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

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

Closure Plan
In Ground Containments

Overview

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

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

The operator shall substantially restore the impacted surface area to

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

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

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

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

Excavation and Removal Closure Plan – Protocols and Procedures

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

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

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

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

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

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

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

Reclamation and Re-vegetation

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

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

Closure Documentation

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

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

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

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

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

November 2024

Modification to
Rule 34 Registration: Volume 1
Lois Lane Containment
Section 27, T26S, R32E, Lea County

- ***Transmittal Letter***
- ***Siting Criteria Demonstration with Plates & Appendices***

Top Goggle Earth image of Lois Lane fresh water frac pond in March 2022

Bottom image of Lois Lane Rule 34 containment in December 2023

Prepared for:
ConocoPhillips
Houston, Texas

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

R. T. HICKS CONSULTANTS, LTD.

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

November 14, 2024

Ms. Leigh Barr
EMNRD - Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505
Via E-Mail

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

RE: ConocoPhillips Company, Lois Lane Containment
In-ground Containment C-147 Modification
Section, Lea County

Dear Ms. Barr and Ms. Venegas:

On behalf of ConocoPhillips, R.T. Hicks Consultants submits a C-147 ***modification*** to the registration for the above-referenced project. We believe you will find this package a material upgrade to the 2022 submission.

Volume 1 of the C-147 package contains:

- Transmittal Letter
- Siting Criteria Demonstration with Plates and Appendices as originally submitted

Volume 2 is modified to a form that OCD has come to expect from recently submitted C-147 packages for conversion of fresh water frac ponds to Rule 34 containments. Volume 2 includes:

- The C-147 Form to modify the registration of the in-ground containment
- Stamped Design Drawings with Liner Equivalency Demonstration and Avian Deterrence
- Recently Approved Plans for Design/Construction, O&M, Closure

This submission refers to the following elements that some OCD reviewers have considered variances for in-ground containments:

1. An equivalency demonstration written by experts for the proposed 40-mil HDPE secondary liner that has been previously approved by OCD. We maintain that the language of the Rule is clear, and a variance is not required.
2. OCD has approved the proposed Avian Protection Plan (Bird-X Mega Blaster Pro) for other containments. Thus, the plan meets the requirement of the rule that the "otherwise protective of wildlife, including migratory birds" and a variance is not required.
3. Using the proposed deer fence in lieu of a 4-strand barbed wire fence is not a variance. Because feral pigs, javelina and deer are present in the area, a tall game fence is required to comply with Section 19.15.34.12 D.1 of the Rule. The specification for fencing provided in 19.15.34.12 D.2 contradicts D.1 because pigs will move beneath the lower strand of a 4-foot high barbed wire fence and deer will jump over. Thus, compliance with D.2 results in a violation of D.1. We maintain

that compliance with D.1 is the critical component of the Rule and operators need not be required to submit a variance request to follow Best Management Practices and comply with the Rule. Nevertheless, Solaris will attach 4 strands of barbed wire to the game fence if required by OCD.

ConocoPhillips will transmit the registration package to OCD via the OCD.Online portal. In compliance with 19.15.34.10 of the Rule, ConocoPhillips provided this package to the BLM, the surface owner's representative. If you have any questions or concerns regarding this permit or the attached C-147 modification, please contact me. As always, we appreciate your work ethic and diligence.

Sincerely,
R.T. Hicks Consultants

Randall T. Hicks PG
Principal

Copy: ConocoPhillips Company,
BLM

SITING CRITERIA DEMONSTRATION

Distance to Groundwater

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

Plate 1 is a geologic/ topographic map that shows:

1. The Lois Lane Containment and recycling facility (Pintail Recycling Facility will provide treated produced water to the Lois Lane Containment) are identified by the blue striped polygons.
2. Water wells from the OSE database as a blue triangle inside colored circles that indicate well depth. OSE wells are often miss-located in the WATERS database as older wells are plotted in the center of the quarter, quarter, quarter, of the Section Township and Range. OSE wells showing no depth to water and no date are typically issued permits for wells that may or not be in existence at the time of writing this submission. OSE wells with "no data" are not shown on Plate 1.
3. Water wells from the USGS database as large triangles color-coded to the formation from which the well draws water.
4. Water wells, which are not documented in the public databases but were identified by field inspection or other published reports as colored squares (Misc. wells). Hicks Consultants measured depth to water in the Hackberry Windmill (Misc-391) in the southwest corner of Plate 1.
5. The depth-to-water from the most recent available measurement for each well is provided adjacent to the well symbol.

Plate 2 presents regional map that shows:

1. The Lois Lane Containment and Pintail recycling facility identified by the blue polygons.
2. Water wells measured by the USGS, the year of the measurement and the calculated elevation of the groundwater surface.
3. Water wells measured by professionals and documented in published reports.
4. Isocontour lines generated by Hicks Consultants that estimate the elevation of the groundwater surface.

Geology

The proposed recycling containment is located on an outcrop of Quaternary Age Older Alluvium deposits (Qoa on Plates 1 and 2). These deposits, often with a common caliche cap, have also been identified as the Plio-Pleistocene Gatuña Formation[1][2] and/or the Pecos Valley Alluvium (see discussion below). Where saturated, Older Alluvium is the uppermost source of fresh water in the area. As suggested in Plates 1 and 2, Quaternary piedmont and eolian deposits (Qe/Qp and Qe) overlie the Older Alluvium in the north and southeast areas of Plate 2. Underlying the Older Alluvium at the proposed recycling storage containment is probably the Triassic Dockum/Chinle Formation (terminology of this unit varies by author). The upper Chinle (T(r)cu) crops out slightly more than 2 miles to the northeast. The Santa Rosa Sandstone is the base of the Triassic units and underlies the Dockum/Chinle. The Santa Rosa Sandstone and thinner, discontinuous

[1] https://nmgs.nmt.edu/publications/guidebooks/downloads/31/31_p0213_p0217.pdf
[2] https://nmgs.nmt.edu/publications/guidebooks/downloads/44/44_p0219_p0230.pdf

sandstones in the upper Chinle also can provide water to wells in this area and will be the uppermost groundwater zone where the Older Alluvium is unsaturated.

Investigators based in Texas refer to the Older Alluvium (mapped in New Mexico) as the Pecos Valley Alluvium (mapped in Texas). Others, Hicks Consultants included, believe the Pecos Valley Alluvial Aquifer nomenclature should be limited to areas where alluvial sediment thickness exceeds about 200 feet in Texas. In these areas, Ogallala-age drainages flowed within dissolution and collapse features of buried Permian evaporite strata. The trough collapse features allow deposition of thick alluvial deposits. In New Mexico, one alluvium-filled trough is related to the San Simon Sink. The troughs in Texas are displayed in the figure below from *Pecos Valley Aquifer, West Texas: Structure and Brackish Groundwater*[3].

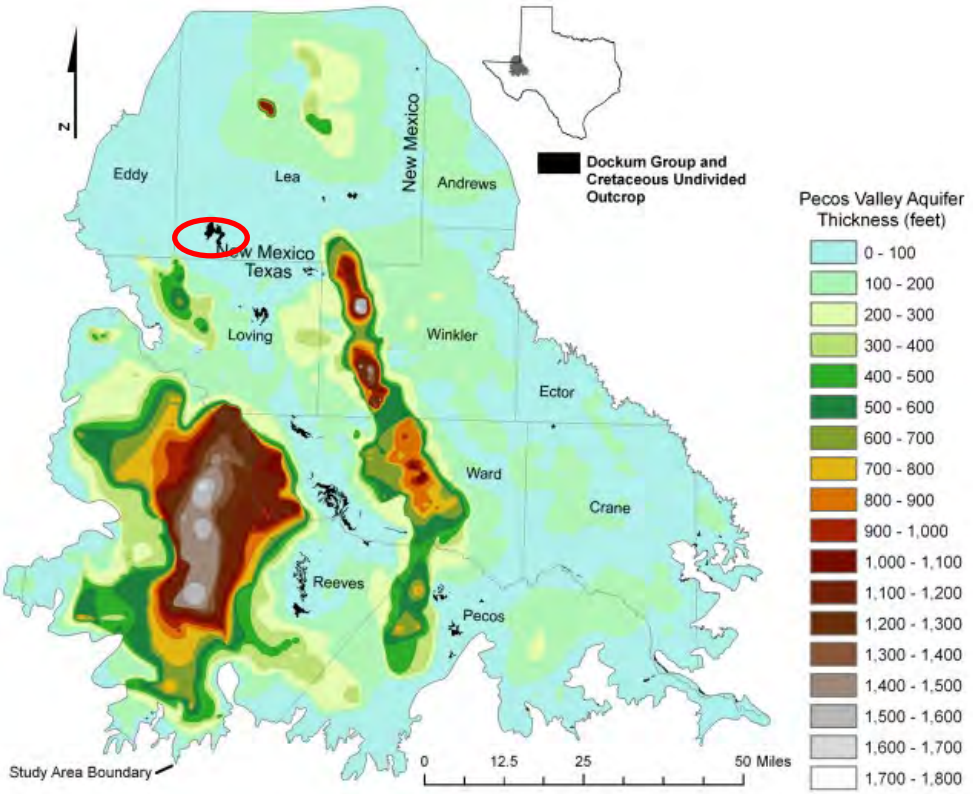


Figure 6-5. Thickness of the Pecos Valley Aquifer. Well control included 2,057 sites in Texas and New Mexico.

Using our 200-foot thickness criteria, the highly productive Pecos Valley Alluvial Aquifer does not underlie the proposed Lois Lane Containment, which lies within the red circle.

3 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiRsv_g5qH6AhVpMjQIHXSoALkQFnoECAkQAQ&url=https%3A%2F%2Fwww.twdb.texas.gov%2Fpublications%2Freports%2Fnumbered_reports%2Fdoc%2FR382_PecosValley.pdf&usg=AOvVaw1E8xs7PT-aMoDW7228WlBI)

Boring logs and driller's well records are presented in the Appendix Well Logs. Many of these logs have limited geologic value but we interpret the following for the wells nearest to the Lois Lane Containment at the Battle Axe Ranch headquarters (Section 21 26S 32E)

- C-2271 Pod2 shows "red sand rock" at 85 feet deep overlying "sandy shale". We believe this unit is the Chinle and the 40-foot thick "water sand" is the Santa Rosa Sandstone. This suggests that the older alluvium is 85 feet thick and dry. The "red bed" that is typically Chinle claystone, is 265 feet deep.
- C-2323 is at the same location (Section 21). The log lists "red bed" at 280 feet. "Red sandy shell [shale]" is probably the top of the Chinle at 110 feet. The "water bearing sand with gravel but no real water" would be the base of the Older Alluvium.
- C3595 is a nearly worthless driller's log with respect to geologic data. The "red bed" (Chinle) is identified at 200 feet. The 40-foot thick "brown sandstone" at 160 feet may be the Santa Rosa Sandstone or the base of the older alluvium. The 160 feet of white caliche and dry "brown sand" is surely alluvium.
- The four dry borings north of the Lois Lane Containment (Red Hill, Salado Draw 23, Salado Draw 13, Misc-442/BTA Pad), demonstrate that the uppermost 80-100 feet of underlying earth material is dry at these locations.

As indicated in the next section, the two USGS wells at the Battle Axe Ranch site are listed in the database as bedrock wells in the Rustler (9519) and Chinle (14883). These data allow us to conclude that the uppermost fresh water is in bedrock, probably the Chinle. A few wells in the area may draw water from the Chinle and underlying Quartermaster or Rustler Formations.

Groundwater Data

We relied upon the most recent data measured by the USGS and by other professionals (Misc. wells) to create the water table elevation map shown in Plate 2. Water level data from the OSE database rely upon observed water levels by drillers during the completion of the water well. The OSE dataset provides some useful data in certain areas. We did not use OSE data on Plate 2. Based upon our field survey and examination of Google Earth images, we are confident that the wells shown in Plate 2 are accurate with three exceptions.

During our field examinations for the Zia Hills Recycling Facility submission, we did not find any evidence, either on the ground or in recent or past Google Earth images, of USGS-9638 or USGS-9642 at the mapped locations. As is sometimes the case, the locations of wells in the public database are incorrect. Close examination of the USGS database shows that the latitude/longitude does not agree with the location provided by Section Township and Range (26S.31E.35.13 and 35.31). The one well identified by the USGS as two wells could be the "North Well" in Texas, which is mapped as 26S.31E.35.13 at an elevation of 3082 asl, about 1.6 miles southwest of the plotted locations.

The third error in the USGS database location on Plate 2 is USGS-9515, which plots at the Battle Axe Ranch headquarters. The USGS database shows this well at 26S.31E.01.42110, which is about 3 miles northwest and is obviously the same well as USGS-9501.

Data for the four USGS wells that plot closest to the Lois Lane Containment are in Appendix USGS Well Data.

For the potentiometric surface map (Plate 2), we honored all data that we know are accurate to the best of our knowledge. From the data presented in Plates 1 and 2, we conclude:

- The Hackberry Windmill may draw water from the Chinle/Dockum or the Older Alluvium aka Pecos Valley Alluvial Aquifer. Our measurement in 2019 is a static elevation.
- USGS-14883 is correctly located at the Battle Axe Ranch HQ and draws water from the Chinle/Dockum Formation.
- USGS-9515 and USGS-9501 are the same well and the similar elevations in 1987 and 1949 demonstrate a stable water level over time. This well draws water from the Rustler Formation.
- If USGS-9638 and USGS-9642 are the "North Well" in Texas, the 2950 groundwater elevation contour would move southwest, but the 3000 and 2975 contour lines would not change.
- Borings north and northeast of the Lois Lane Containment site demonstrate that the alluvium is not saturated in this area at a depth of 100 feet below land surface.
- On a regional scale, the Pecos Valley Alluvial Aquifer, the Chinle/Dockum aquifer and the Rustler Aquifer are connected hydraulicly and a potentiometric surface using data from all aquifers is appropriate.
- The elevation of the groundwater surface beneath the area in which the Lois Lane Containment will be constructed is no higher than 2980 feet above mean sea level (Plate 2). The uppermost groundwater zone is the Chinle/Dockum at the site.
- Using these data, distance between ground surface and the potentiometric surface of the regional aquifer is (3120-2980 =) 140 feet.

Distance to Municipal Boundaries and Fresh Water Fields

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

- The closest municipality is Malaga, NM approximately 26 miles to the northwest.
- The closest mapped public well field is near Jal, NM, about 20 miles to the east.

Distance to Subsurface Mines

Plate 4 and our general reconnaissance of the area demonstrate that the nearest mines are rock quarries. The area of interest is not within an area overlying a subsurface mine.

- The nearest mapped caliche pit is abandoned and lies approximately 3000 feet to the southeast.
- No subsurface mines lie below the proposed containment

Distance to High or Critical Karst Areas

Plate 5 and our general reconnaissance of the area demonstrate that neither unstable ground nor evidence of karst is present within the general area of the proposed containment.

- The nearest area mapped as high karst potential by the BLM is 15 miles west
- The area of the containment is mapped as medium potential karst

Distance to 100-Year Floodplain

Plate 6 demonstrates that the area of interest is within Zone X as designated by the Federal Emergency Management Agency with respect to the Flood Insurance Rate 100-Year Floodplain.

- Zone X is described as Areas Outside the 0.2% Annual Chance Floodplain.
- Our field inspection and examination of the topography permits a conclusion that the area of interest is not within any floodplain and has low risk for flooding.
- The nearest areas having a 1% chance of flooding is about 4 miles west-southwest of the proposed containment

Distance to Surface Water

Plate 7 and the site visit demonstrates that the area of interest is not within 300 feet of a continuously flowing watercourse or 200-feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark) or spring.

- The map depicts an “intermittent stream” and tributaries located about 1 mile northwest of the Lois Lane location
- Three “lake/ponds” exist within 1.5 miles of the proposed recycling containment
- No continuously flowing watercourses, significant watercourse or other water bodies, as defined by NMOCD Rules, exist within the prescribed setback criteria for the siting of a recycling containment.
- No springs were identified in Plate 7 or in the site visit.
- No playa lakes or lakebeds were identified by the site visit or databases.

Distance to Permanent Residence or Structures

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

- The nearest structures are a tank battery and other E&P facilities.
- Battle Axe Ranch facilities, water supply wells and a new caliche pit are about 1.25 miles northwest on Battle Axe Road.

Distance to Non-Public Water Supply

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

- Plate 1 shows the locations of all area water wells; the nearest water supply well is located at the Battle Axe Ranch, about 1.25 miles northwest on Battle Axe Road.
- No domestic water wells are located within 1,000 feet of the recycling area.
- No springs were identified within the mapping area (see Plate 7).

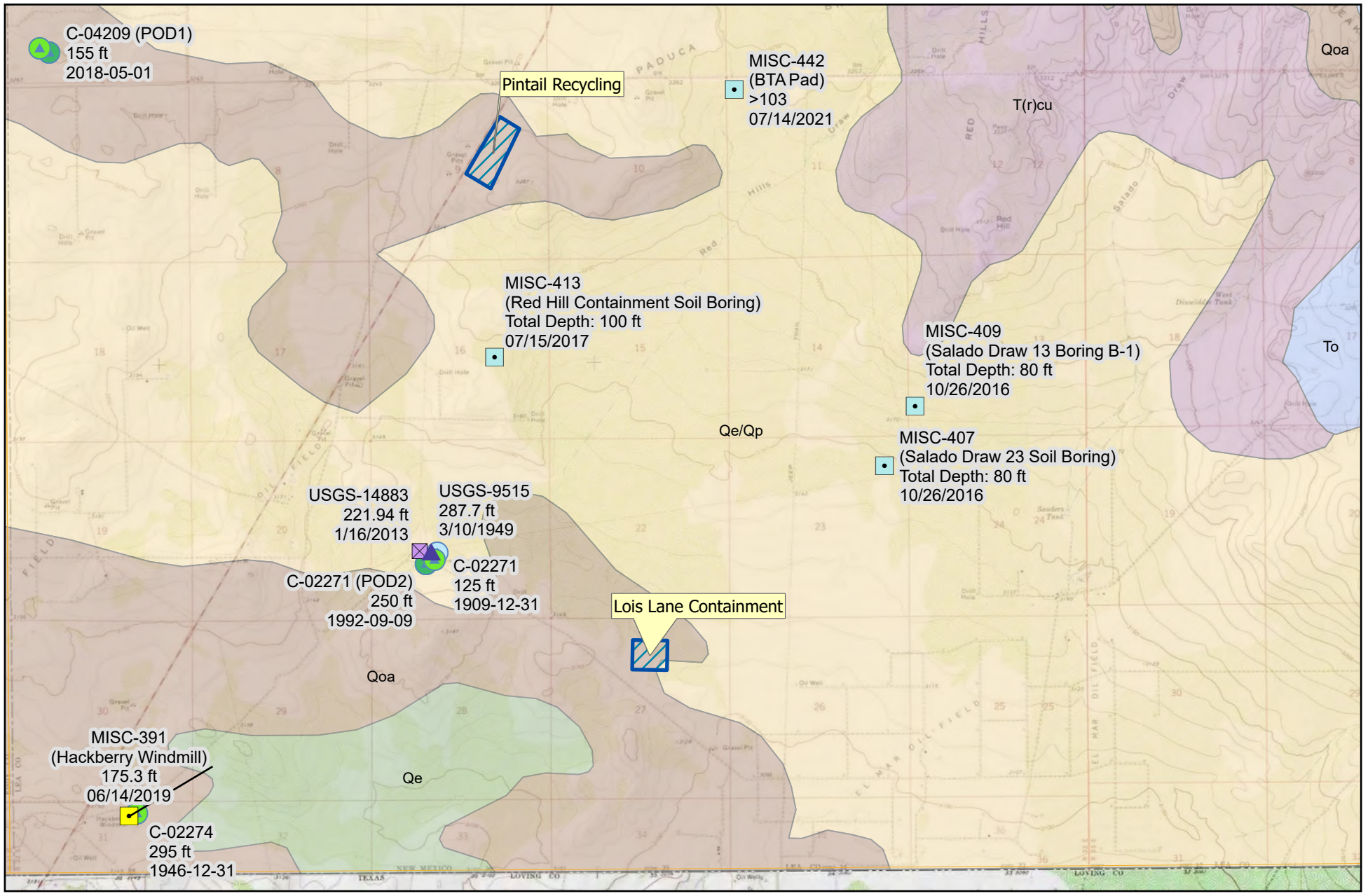
Distance to Wetlands

Plate 9 demonstrates the area of interest is not within 500 feet of wetlands.

- The nearest designated wetlands are associated with
    - A small, closed depression adjacent to the Hackberry Windmill located 3 miles southwest and
    - A Freshwater Pond lies about 2.25 miles east in what appears to be an abandoned caliche pit.

SITING CRITERIA DEMONSTRATION PLATES

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Depth to Groundwater in Nearby Wells & Geology	Plate 1
	ConocoPhillips - Lois Lane Containment	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx

polygon_spe

Recycling Containment Area

USGS Gauging Station (GW Elev, Date)

Aquifer Code, Well Status

Alluvium/Bolsom

Ogallala

Chinle

231DCKM, Site had been pumped recently.

Santa Rosa

Santa Rosa, Site was being pumped.

Rustler

<Null>, Site was being pumped.

Misc. Water Wells (GW Elev, Date)

Well Depth (ft)

No Data

<= 150

151 - 350

OSE Water Wells (DTW/Date)

Well Depth (ft)

<=150

151-350

351-500

501-1000

Potentiometric Surface (ft msl)

Isocontours

Isocontour

counties

NM Geology

Map Unit,Description

Qe, Quaternary-Eolian Deposits,Qe, Quaternary-Eolian Deposits

Qe/Qp, Quaternary-Eolian Piedmont Deposits

Qoa, Quaternary-Older Alluvial Deposits,Qoa, Quaternary-Older Alluvial Deposits

T(r)cu,Triassic-Upper Chinle Group,T(r)cu,Triassic-Upper Chinle Group

To, Tertiary-Ogallala Formation,To, Tertiary-Ogallala Formation

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Plates 1 & 2 Legend	
	ConocoPhillips - Lois Lane Containment	Sept 2022

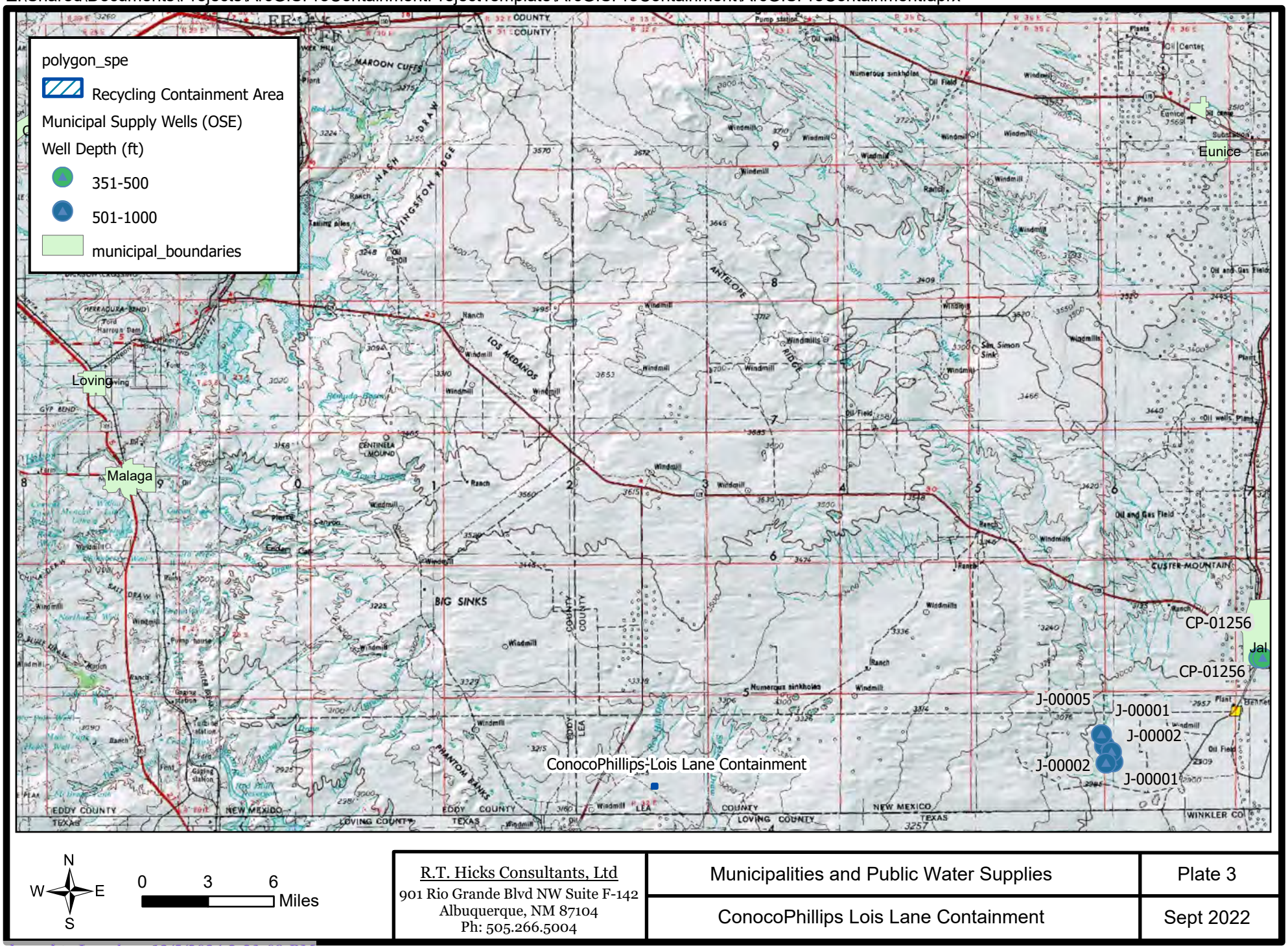
Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx

N
W E
S

0 0.5 1 Miles

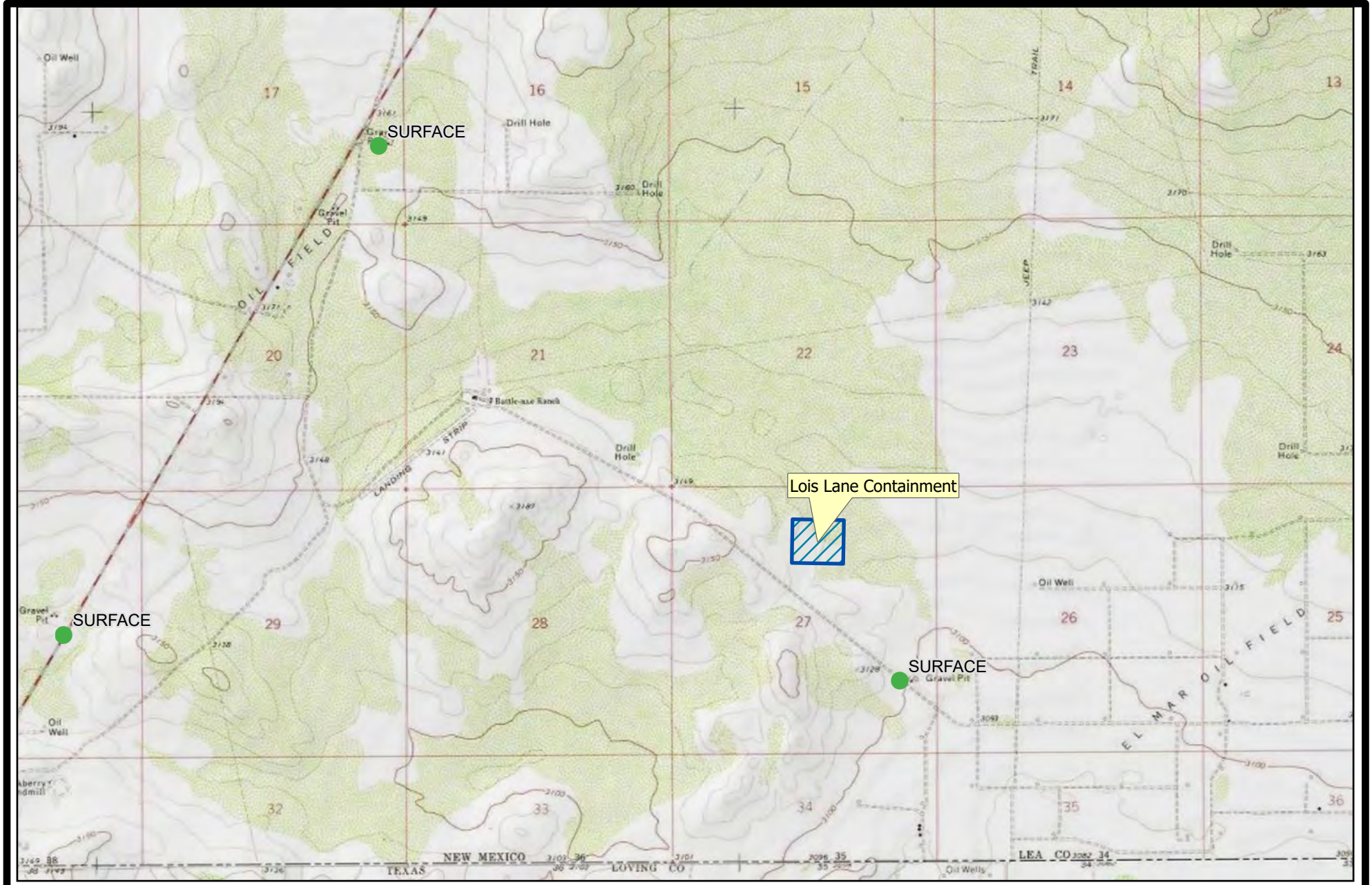
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Groundwater Elevation & Geology	Plate 2
	ConocoPhillips - Lois Lane Containment Surface Elevation = 3120	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Municipalities and Public Water Supplies	Plate 3
	ConocoPhillips Lois Lane Containment	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx

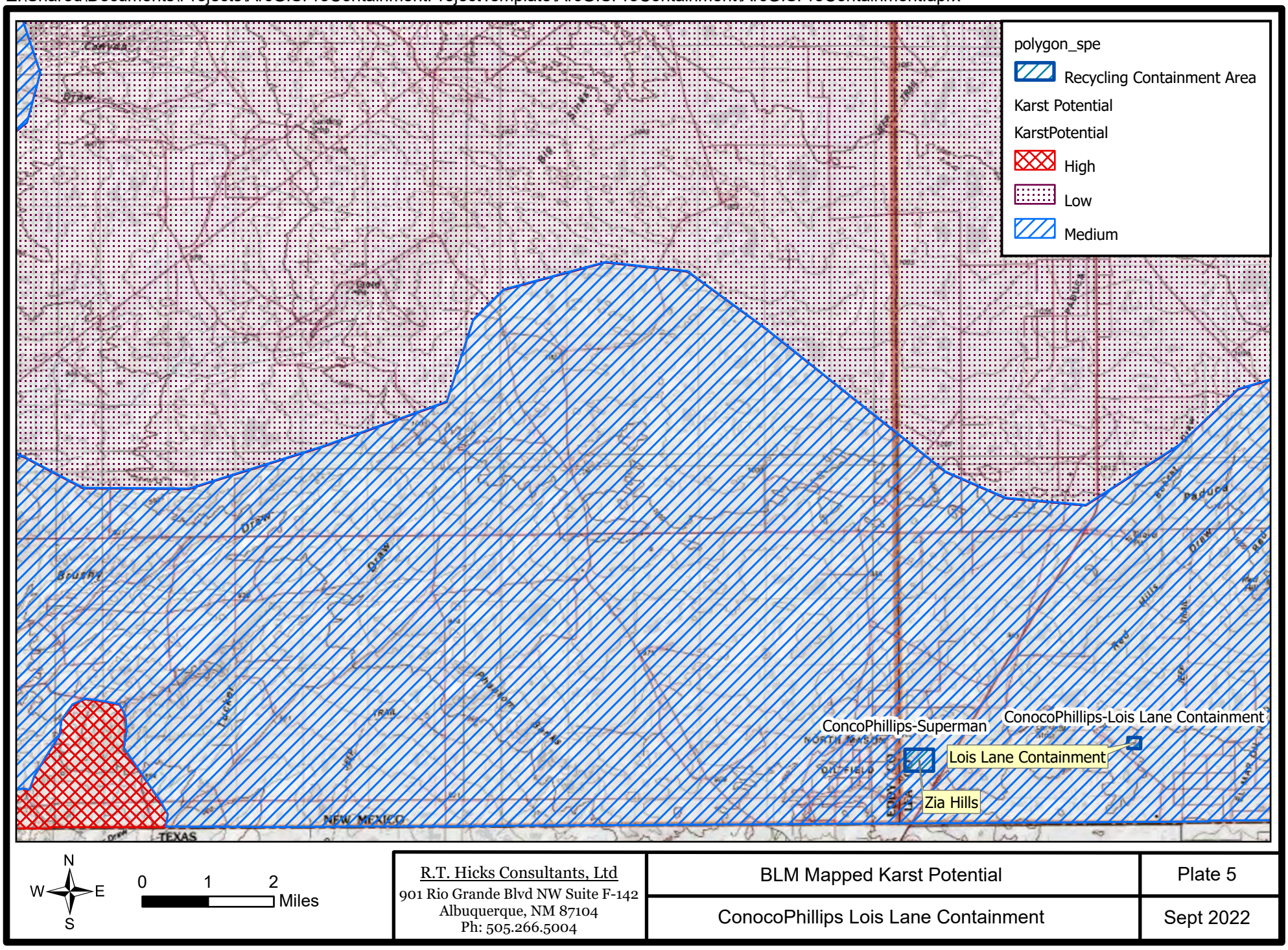


N
W E
S

0 1,500 3,000 US Feet

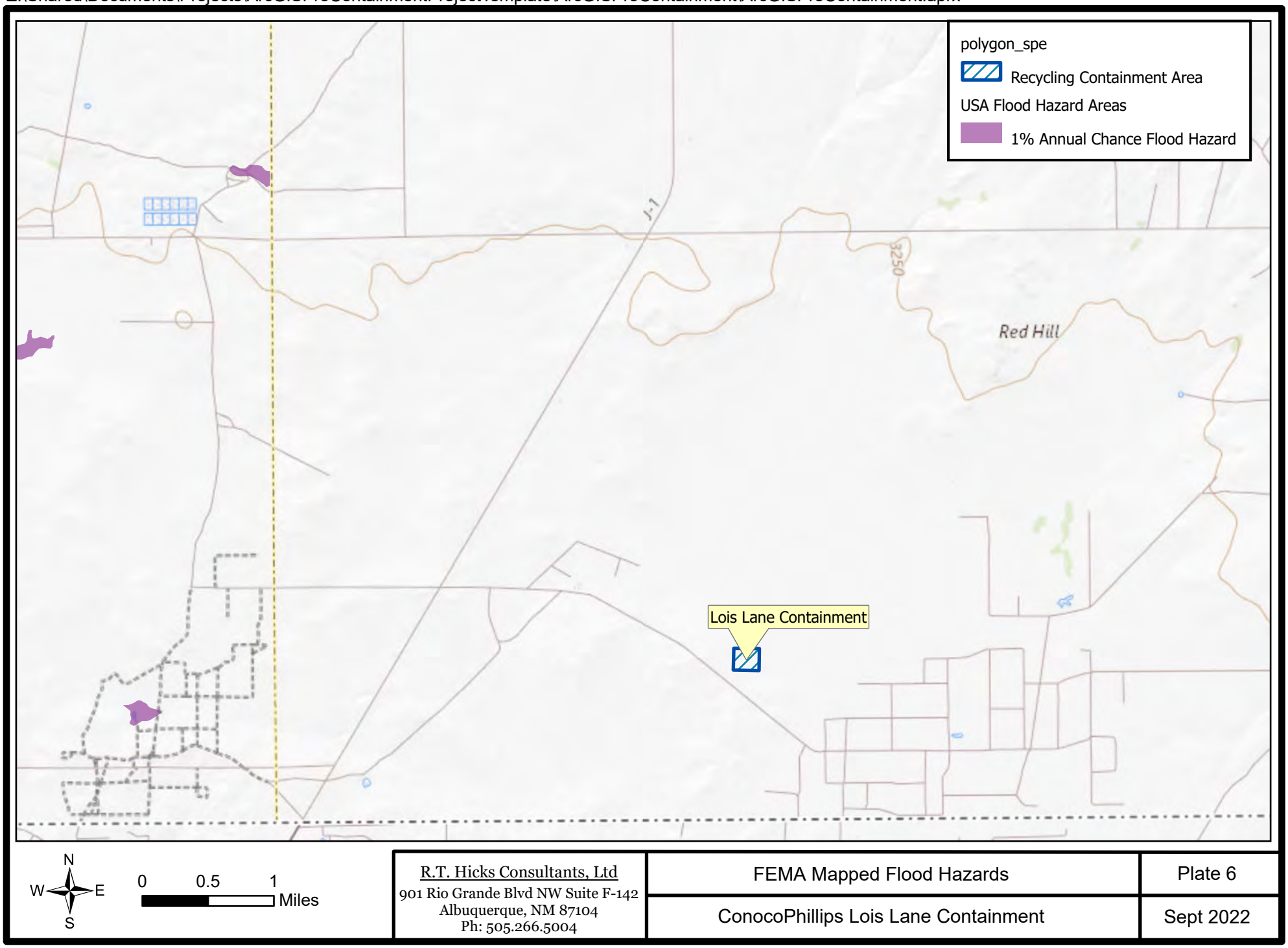
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Mines	Plate 4
	ConocoPhillips Lois Lane Containment	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx



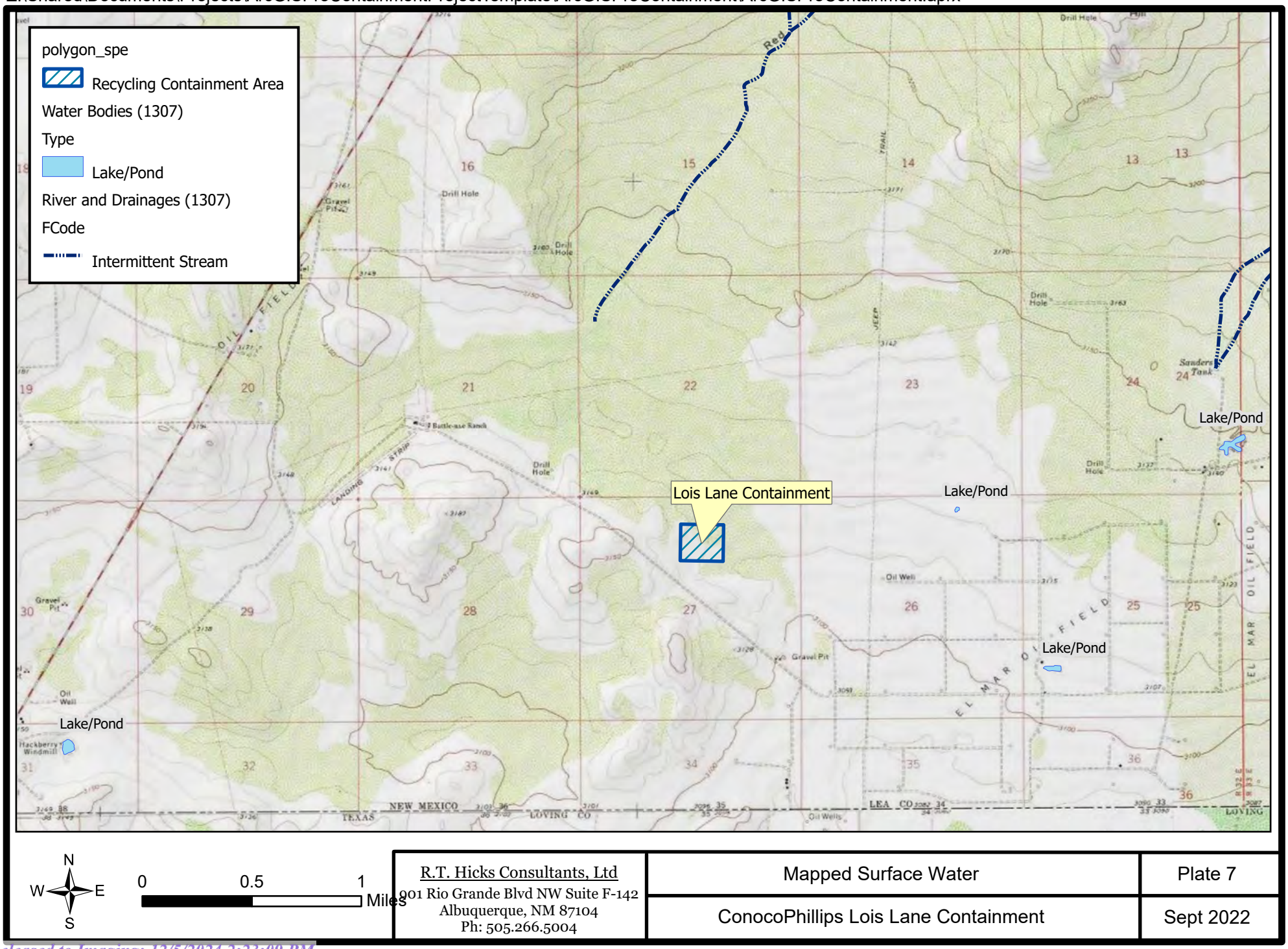
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	BLM Mapped Karst Potential	Plate 5
	ConocoPhillips Lois Lane Containment	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx



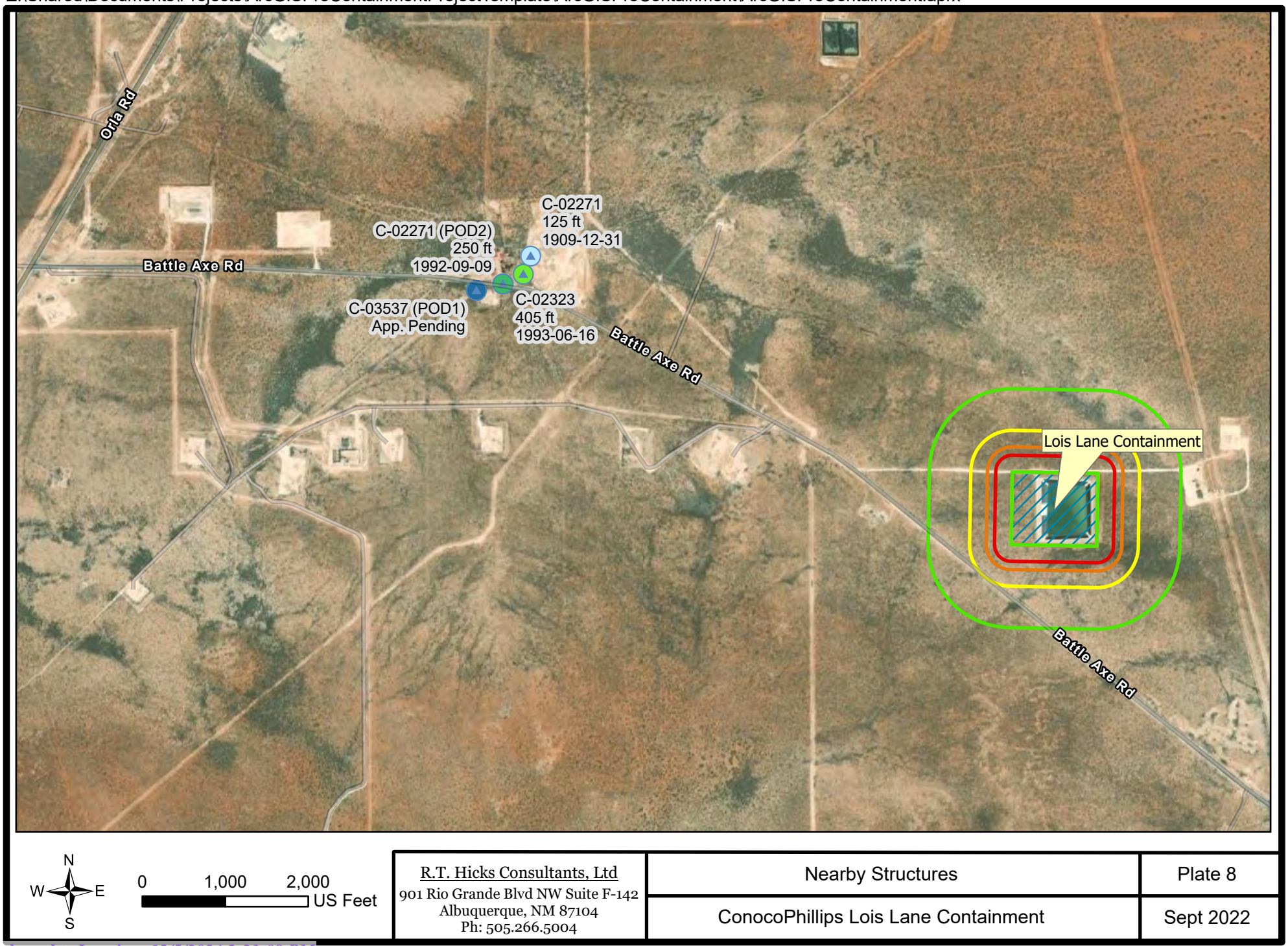
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	FEMA Mapped Flood Hazards	Plate 6
	ConocoPhillips Lois Lane Containment	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx



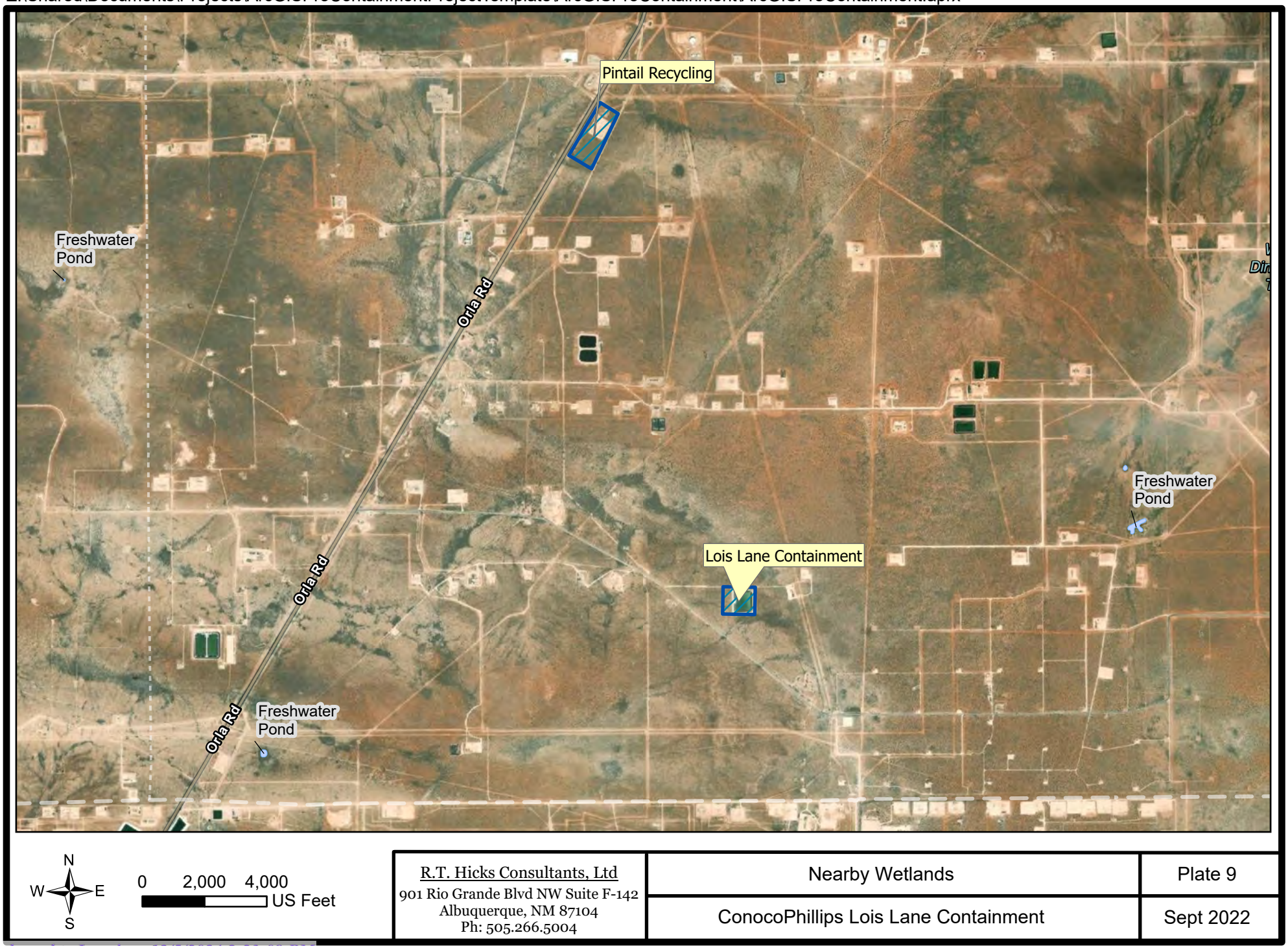
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Mapped Surface Water	Plate 7
	ConocoPhillips Lois Lane Containment	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures	Plate 8
	ConocoPhillips Lois Lane Containment	Sept 2022

Z:\Shared\Documents\Projects\ArcGISProContainmentProjectTemplate\ArcGISProContainment\ArcGISProContainment.aprx

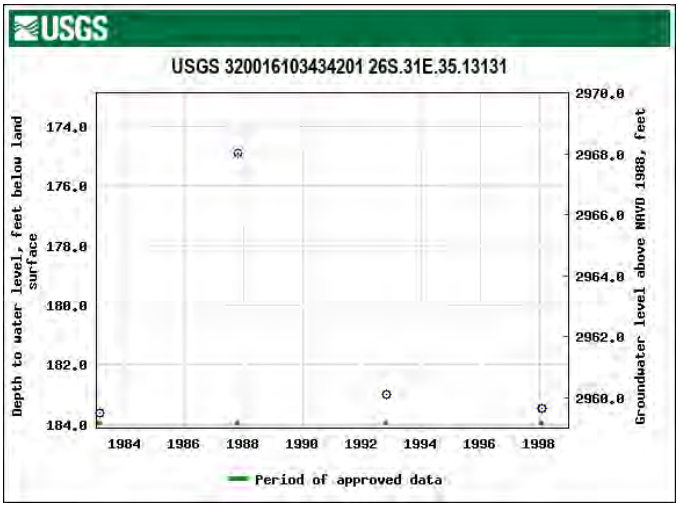


R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wetlands	Plate 9
	ConocoPhillips Lois Lane Containment	Sept 2022

APPENDIX WELL LOGS & USGS DATA

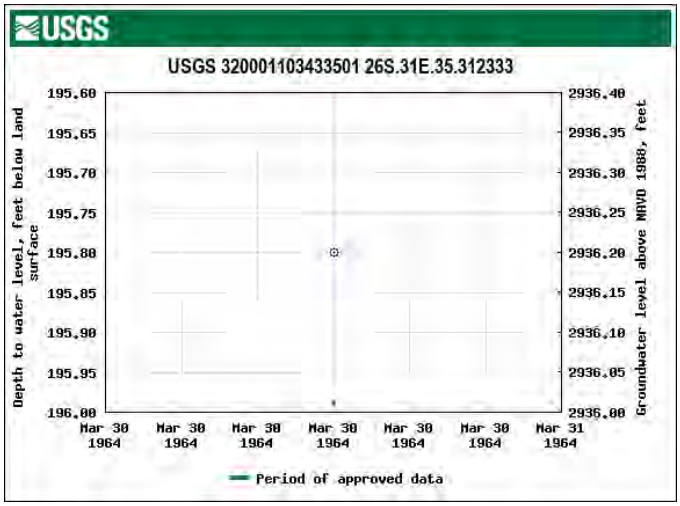
USGS 320016103434201 26S.31E.35.13131 AKA USGS-9638

Eddy County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°00'16", Longitude 103°43'42"
NAD27
Land-surface elevation 3,143 feet above NAVD88
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local



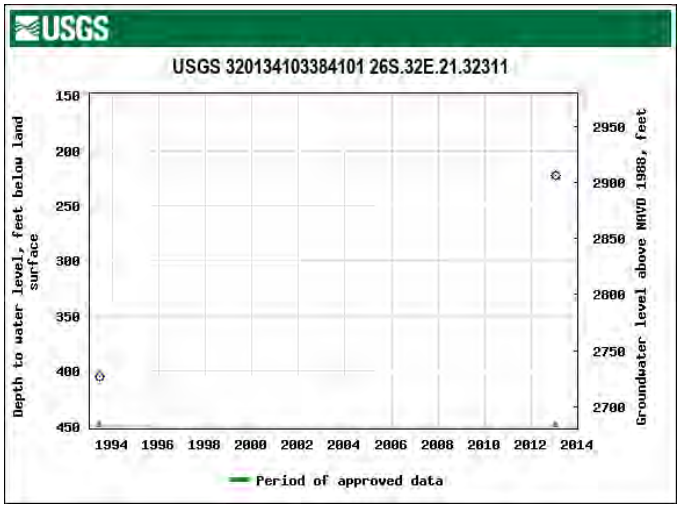
USGS 320001103433501 26S.31E.35.312333 AKA USGS-9642

Eddy County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°00'01", Longitude 103°43'35"
NAD27
Land-surface elevation 3,132 feet above NAVD88
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.



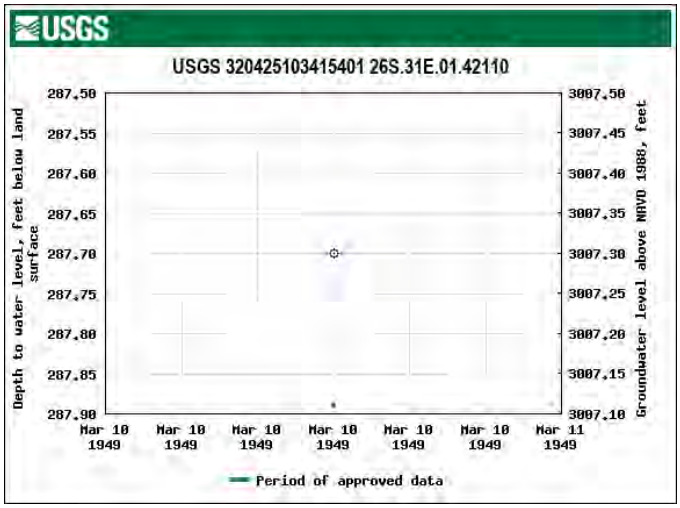
USGS 320134103384101 26S.32E.21.32311 AKA USGS-14883

Lea County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°01'35.2",
Longitude 103°41'01.8" NAD83
Land-surface elevation 3,130 feet above NAVD88
The depth of the well is 405 feet below land surface.
The depth of the hole is 405 feet below land surface.
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.
This well is completed in the Dockum Group (231DCKM) local aquifer.



USGS 320425103415401 26S.31E.01.42110 AKA USGS-9515

Eddy County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°04'25", Longitude 103°41'54" NAD27
Land-surface elevation 3,295 feet above NAVD88
The depth of the well is 340 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.



Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

Replacement well drilled in 1910.

(A) Owner of well Malcolm Madera Owner's Well No.
Street or Post Office Address Box 1986
City and State Carlsbad, Nm 88221

Well was drilled under Permit No. 13-96 and is located in the: outside of water basin

a. ¼ SW ¼ NE ¼ SW ¼ of Section 21 Township 26S 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 LEA County.

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

(B) Drilling Contractor W. L. VAN NOY License No. WD-208

Address BOX 7, OIL CENTER, NM 88266

Drilling Began 8-28-92 Completed 9-9-92 Type tools cable Size of hole ~~12~~ 10 in.

Elevation of land surface or at well is ft. Total depth of well 270 ft.

Completed well is [XX] shallow [ ] artesian. Depth to water upon completion of well 250 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			
225	265	40	Water sand	

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
~~40~~ 6 5/8	PVC		0	270			205	265

Section 4. RECORD OF MUDDING AND CEMENTING

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

'92 NOV 12 AM 10 09
STATE ENGINEER OFFICE
SANTA FE NEW MEXICO

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 October 28, 1992

Quad FWL FSL

File No. 13-96 (out of basin) C-2271 POD2 Use Dom. & Stk. Location No. 26.32.21.323

537012 ✓

Section 6. LOG OF HOLE -

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	20	20	Top soil
20	70	50	light brown sand
70	85	15	Part Red sand
85	95	10	Red sand rock
95	225	130	Sandy shale
225	265	40	Water sand
265	270	5	Red Bed

Section 7. REMARKS AND ADDITIONAL INFORMATION

STATE ENGINEER OFFICE
ROSWELL NEW MEXICO
'92 OCT 28 AM 11 48

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.

W. L. Van Noy
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, regardless of depth. When information is used as a plugging record, only Section 1(a) and Section 5 need be completed.

Revised June 1972

4652166
APW 194227

STATE ENGINEER OFFICE

WELL RECORD

'93 NOV 18 AM 9 10

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO

Section 1. GENERAL INFORMATION

(A) Owner of well M,R,Madera Trust Owner's Well No. C-2323
Street or Post Office Address P.O. Box 1689
City and State Carlsbad, NM 88220

Well was drilled under Permit No. C-2323 and is located in the:

a. SW ¼ NE ¼ SW ¼ ¼ of Section 21 Township 26S 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 Lea County.

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

(B) Drilling Contractor Billy Bentle License No. WD 1292

Address Box 533 Jal, NM 88252

Drilling Began May 25, 1993 Completed June 16, 1993 Type tools cable Size of hole 10 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 405 / 405 ft.

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

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
		400 ft.	brown sand rock	

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
	Steel pipe		0	100	10"		80	100
	steel pipe		0	200	8"			
	Steel pipe		0	405	7"		240	400

Section 4. RECORD OF MUDDING AND CEMENTING

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

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by:
_____
State Engineer Representative

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

FOR USE OF STATE ENGINEER ONLY

Date Received 06-24-93

Quad _____ FWL _____ FSL _____

File No. C-2323 Use Dom & Stk Location No. 26S.32E.21.32311

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	10	10	top soil
10	20	10	soft cliche
20	40	20	brown sand
40	50	10	coarse redish-brown sand
50	95	45	brown sand
95	110	15	water-bearing sand with gravel, but no real water
110	120	10	red sandy shell
120	145	25	brown sand rock
145	220	85	red sandy shell
220	280	60	soft red sandy shell with small gravel
280	290	10	red bed
290	350	60	red sandy shell
350	385	35	brown honey-comb sand-rock
385	400	15	brown sand water-bearing
400	405	5	water with brown sand rock

Section 7. REMARKS AND ADDITIONAL INFORMATION

STATE ENGINEER OFFICE
ROSWELL NEW MEXICO
'93 JUN 24 AM 10 57

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.

Teresa Bentley
Driller

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

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2013 OCT 30 P 12:37

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): C-3595	OSE FILE NUMBER(S): C-3595
WELL OWNER NAME(S): Oliver D Kiehne	PHONE (OPTIONAL): 432-448-6337
WELL OWNER MAILING ADDRESS: P.O. Box 135	CITY: Orla STATE: Tx ZIP: 79770

WELL LOCATION (FROM GPS): DEGREES / MINUTES / SECONDS

	DEGREES	MINUTES	SECONDS	
LATITUDE	32	01	32.61	N
LONGITUDE	103	40	56.71	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: CR 1 South to Battle Axe Rd – 3 miles east

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1654	John Sieman	Sieman Drilling & Equip. LLC

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
9/30/13	9/30/13	280'	280'	180'-0

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): 60'-0

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	200	10"	PVC	Certa Lok	6"	DR-17	Blank
200	240	10"	PVC	Certa Lok	6"	DR-17	.032 Screen
240	280	10	PVC	Certa Lok	6"	DR-17	Blank

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	10	3/8 hole plug Bentonite	6 sacks	gravity
40	280	10	3/8 pea gravel	4 yds	gravity

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

FILE NUMBER	POD NUMBER	TRN NUMBER
C-3595		517513

LOCATION: EXPL.

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	35	35	White Caliche	N	
35	160	125	Brown Sand	N	
160	200	40	Brown Sandstone	Y	3-5
200	280	80	Red clay & gravel mix Redbed	N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
	280			☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	
				☐ Y ☐ N	

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

TOTAL ESTIMATED WELL YIELD (gpm): 3-5

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: none

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: none

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:

[signature] John Sirman — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

10/2/13 — DATE

FOR OSE INTERNAL USE

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

FILE NUMBER	C-3595	POD NUMBER	1	TRN NUMBER	517513

LOCATION

PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

OSE DIT AUG 2 2021 PM4:45

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD1 (MW-1)	n/a	C-4549

WELL OWNER NAME(S)	PHONE (OPTIONAL)
BTA Oil Producers	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
104 S. Pecos St.	Midland	TX	79701

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	4	40.92	N
	LONGITUDE	103	37	53.68	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

NW NW NW Sec. 11 T26S R32E

2. DRILLING & CASING INFORMATION

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

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
07/14/2021	07/14/2021	temporary well material	103	n/a

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

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

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

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

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	103	±8.5	Boring- HSA	–	–	–	–

3. ANNULAR MATERIAL

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

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. C-4549	POD NO. 1	TRN NO. 698318	
LOCATION 26S-32E-11	1.1.1	WELL TAG ID NO. NA	PAGE 1 OF 2

OSE DIT AUG 2 2021 PM4:45

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	4	4	Caliche, Consolidated , White	Y ✓ N	
4	9	5	Caliche, Consolidated , with fine-grained, Tan	Y ✓ N	
9	14	5	Caliche, Consolidated , White	Y ✓ N	
14	19	5	Caliche, Consolidated , with fine-grained, Tan	Y ✓ N	
19	69	50	Sand, Fine-grained poorly graded, with caliche , Tanish Brown	Y ✓ N	
69	79	103	Clay, Stiff, High Plasticity, Dark Brown,	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface.

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

Shane Eldridge, Cameron Pruitt, Carmelo Trevino

6. SIGNATURE

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

Jack Atkins — Jackie D. Atkins — 07/29/2021

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

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

FILE NO. C-4549	POD NO. 1	TRN NO. 698318	
LOCATION 26S-32E-11	1.1.1	WELL TAG ID NO. NA	PAGE 2 OF 2

HCI DRILLING

THE DRILLING PROFESSIONALS

Soil Boring Log

Client	Phoenix Environmental LLC
Contractor	HCI Drilling
Date Completed	07/15/2017
Location	Red Hills West 21
Soil Boring Number	SB-1
Lithology	
0' – 11'	Caliche – White
11' – 12'	Sandstone – Pink
50' – 100'	Red Clay
GPS Coordinates	32.042248, 103.676538

Copies: Email (Phoenix Env)

Tetra Tech Inc.
4000 N. Big Spring, Suite 401
Midland, TX, 79705
Telephone: 432-682-4559
Fax: 432-682-3946

BOREHOLE ID: B-1

CLIENT Chevron **PROJECT NAME** Salado Draw Section 23 Frac Pond

PROJECT NUMBER 212C-MD-00649 **PROJECT LOCATION** Lea County, New Mexico

DATE(S) OF EXCAVATION: 10/26/2016 **GROUND ELEVATION: N/** **METHOD: HSA/Air Rotary**

CONSULTANT: Tetra Tech, Inc. **A LATITUDE: 32.033156N** **LOGGED BY: James Kennedy**

DRILLING CONTRACTOR: Yellow Jacket **LONGITUDE: 103.639194W** **DRILLED BY: Jason**

Notes: No groundwater encountered

DEPTH (ft)	SAMPLE TYPE	N Value	GRAPHIC LOG	MATERIAL DESCRIPTION
0				
	SS	1		Very Loose, Brown, Fine to Medium Grained **SAND** with Silt, Dry, with some roots
	SS	8		
				3.5
5	SS	41		Dense to Very Dense, Reddish Brown to Pink, Silty Fine to Medium Grained **SAND**, Calcareous, with Limestone Fragments, Dry
	SS	50/5"		
10	SS	50/1"		
15	SS	50/2"		
20	SS	50/2"		
25	SS	50/2"		
30	SS	50/3"		
35	SS	50/1"		
40	SS	50/1"		

BOREHOLE/TP/WELL - VECTOR SALADO - FRAC POND.GPJ LAB SUMMARY.GDT 11/28/16

(Continued Next Page)

TETRA TECH
Tetra Tech Inc.
4000 N. Big Spring, Suite 401
Midland, TX, 79705
Telephone: 432-682-4559
Fax: 432-682-3946

BOREHOLE ID: B-1

CLIENT Chevron
PROJECT NAME Salado Draw Section 23 Frac Pond
PROJECT NUMBER 212C-MD-00649
PROJECT LOCATION Lea County, New Mexico

DEPTH (ft)	SAMPLE TYPE	N Value	GRAPHIC LOG	MATERIAL DESCRIPTION
40				Dense to Very Dense, Reddish Brown to Pink, Silty Fine to Medium Grained **SAND**, Calcareous, with Limestone Fragments, Dry *(continued)*
45				
50	SS	50/0"		
55				
60				
65				
70				
75				
80				80.0 Borehole terminated at 80.0 feet.

BOREHOLE/TP/WELL - VECTOR SALADO - FRAC POND.GPJ LAB SUMMARY.GDT 11/28/16

Tetra Tech Inc.
4000 N. Big Spring, Suite 401
Midland, TX, 79705
Telephone: 432-682-4559
Fax: 432-682-3946

BOREHOLE ID: B-1

CLIENT Chevron **PROJECT NAME** Salado Draw Section 13 Frac Pond

PROJECT NUMBER 212C-MD-00649 **PROJECT LOCATION** Lea County, New Mexico

DATE(S) OF EXCAVATION: 10/26/2016 **GROUND ELEVATION: N/A** **METHOD: HSA/Air Rotary**

CONSULTANT: Tetra Tech, Inc. **LATITUDE: 32.038060N** **LOGGED BY: James Kennedy**

DRILLING CONTRACTOR: Yellow Jacket **LONGITUDE: 103.636220W** **DRILLED BY: Jason**

Notes: No groundwater encountered

DEPTH (ft)	SAMPLE TYPE	N Value	GRAPHIC LOG	MATERIAL DESCRIPTION
0				
	SS	1		Very Loose, Brown, Fine to Medium Grained **SAND** with Silt, Dry, with some roots
	SS	8		
				3.5
5	SS	41		Dense to Very Dense, Reddish Brown to Pink, Silty Fine to Medium Grained **SAND**, Calcareous, with Limestone Fragments, Dry
	SS	50/5"		
10	SS	50/1"		
15	SS	50/2"		
20	SS	50/2"		
25	SS	50/2"		
30	SS	50/3"		
35	SS	50/1"		
40	SS	50/1"		

BOREHOLE/TP/WELL - VECTOR SALADO - FRAC POND.GPJ LAB SUMMARY.GDT 11/28/16

(Continued Next Page)

Tetra Tech Inc.
4000 N. Big Spring, Suite 401
Midland, TX, 79705
Telephone: 432-682-4559
Fax: 432-682-3946

BOREHOLE ID: B-1

CLIENT Chevron **PROJECT NAME** Salado Draw Section 13 Frac Pond

PROJECT NUMBER 212C-MD-00649 **PROJECT LOCATION** Lea County, New Mexico

DEPTH (ft)	SAMPLE TYPE	N Value	GRAPHIC LOG	MATERIAL DESCRIPTION
40				Dense to Very Dense, Reddish Brown to Pink, Silty Fine to Medium Grained **SAND**, Calcareous, with Limestone Fragments, Dry *(continued)*
45				
50	SS	50/0"		
55				
60				
65				
70				
75				
80				80.0 Borehole terminated at 80.0 feet.

BOREHOLE/TP/WELL - VECTOR SALADO - FRAC POND.GPJ LAB SUMMARY.GDT 11/28/16

APPENDIX SITE PHOTOGRAPHS

LOIS LANE CONTAINMENT SITE PHOTOGRAPHS

SP-1 View east from ramp to the Lois Lane fresh water frac pond September 15, 2022

SP-2 View south from northeast corner of fresh water frac pond. Truck on horizon is traveling west on Battle Axe Road. Image shows nature of surrounding vegetation and terrain.

SP-3 – View east-southeast from west of fresh water frac pond showing nature of eolian sand soil and vegetation.

SP-4 Filling the Lois Lane Rule 34 Containment to permit produced water use for hydraulic stimulation soon after construction completion. Image taken October 26, 2022.

SP-5 Leak detection monitoring pipe on west side of containment (10/26/22)

LOIS LANE CONTAINMENT

Good morning Mr. Reed.

NMOCD has reviewed the recycling containment registration/permit application and related documents, submitted by [217817] CONOCOPHILLIPS COMPANY on 08/23/2024, Application ID: 376883 for the proposed Lois Lane Containment in Unit Letter B/G, Section 27, Township 26S, Range 32E, Lea County, New Mexico.
The registration/permit application request is denied for the following reasons:

- On 10/21/2022, OCD requested ConocoPhillips COMPANY [217817] to provide the engineering drawings and construction details specific to The Lois Lane Containment and not for the Zia Hills Containment.
- The Engineering Drawings in the application submitted on 08/23/2024, Application ID: 376883, correspond to the Zia Hills Containment.
- The OCD does not accept Engineering Drawings that do not correspond to the proposed containment.
- ConocoPhillips must provide the engineering designs signed by a Professional Engineer for the Lois Lane Containment.
- Appendix A is repeatedly mentioned in the permit application. There is not Appendix A in the application.
- Form C-147 was signed in 2022. Form C-147 must be updated with the current date.

Please review previous emails and make sure that any requested corrections are made before submitting another application.
Thank you for your cooperation.
Regards,

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

Venegas, Victoria, EMNRD

From: Venegas, Victoria, EMNRD
Sent: Thursday, December 5, 2024 2:16 PM
To: 'Reed, Timothy M'; 'BobbiJo Crain'
Subject: 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682]
Attachments: C-147 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682].pdf

1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682]

Good afternoon Mr. Reed.
NMOCD has reviewed the recycling containment permit application and related documents, submitted by [217817] CONOCOPHILLIPS COMPANY on 11/21/2024, Application ID 405575, for 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] in B-27-26S-32E, Lea County, New Mexico. The form C-147 and related documents is approved with the following conditions of approval:

- The purpose of this permit is for oil and gas activities regulated under the NMAC 19.15.34.3 STATUTORY AUTHORITY: 19.15.34 NMAC is adopted pursuant to the Oil and Gas Act, Paragraph (15) of Section 70-2-12(B) NMSA 1978, which authorizes the division to regulate the disposition of water produced or used in connection with the drilling for or producing of oil and gas or both and Paragraph (21) of Section 70-2-12(B) NMSA 1978 which authorizes the regulation of the disposition of nondomestic wastes from the exploration, development, production or storage of crude oil or natural gas.
- [217817] CONOCOPHILLIPS COMPANY shall construct, operate, maintain, close, and reclaim 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] in compliance with 19.15.34 NMAC.
- **1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] is approved for five years of operation from the date the facility started operations on 10/30/2022. 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] permit expires on 10/30/2027**. If [217817] CONOCOPHILLIPS COMPANY wishes to extend operations past five years, an annual permit extension request must be submitted using form C-147 through OCD Permitting by 09/30/2027.
- 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] consists of one earthen containment of 805,467 bbls at 3-foot freeboard.
- Water reuse and recycling from 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] is limited to wells owned and operated by [217817] CONOCOPHILLIPS COMPANY.
- A minimum of 3-feet freeboard must be maintained at 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682], 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 Permitting. An extension to extend the cessation of operation, not to exceed six months, may be submitted using a C-147 form through OCD Permitting.
- [217817] CONOCOPHILLIPS COMPANY 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 Permitting even if there is zero activity.
- [217817] CONOCOPHILLIPS COMPANY shall comply with 19.15.29 NMAC Releases in the event of any release of produced water or other oil field waste at 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682].

Please reference number 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] in all future communications.
Regards,

Victoria Venegas ● Environmental Specialist Advanced
EMNRD - Oil Conservation Division
506 W. Texas Ave. Artesia, NM 88210
575.909.0269 | **Victoria.Venegas@emnrd.nm.gov**

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

CONDITIONS

Operator:	OGRID:
CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	217817
	Action Number: 405575
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	• 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] is approved for five years of operation from the date the facility started operations on 10/30/2022. 1RF-504 - LOIS LANE CONTAINMENT [fVV2434037682] permit expires on 10/30/2027. If [217817] CONOCOPHILLIPS COMPANY wishes to extend operations past five years, an annual permit extension request must be submitted using form C-147 through OCD Permitting by 09/30/2027.	12/5/2024